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AC Hard Starts

A/C Hard Starts

Choosing the correct hard start for the application combines a technical need with a professional preference. Select from the broadest offering of Hard Starts from the Pioneer of Hard Start technology.

Four (4) styles to choose from:

- **HT Series** High Torque Series Relay (EPR)/Capacitor combination
- **SPPE Elite Series** Electronic Potential Relay (EPR)/Capacitor combination
- **SPP Series** PTC/Capacitor combination
- **SK3W Series** 3-wire Potential Relay/Capacitor combination

Applications

- Use on any single phase air conditioner or refrigeration unit
- Low voltage situations
- Hard starting compressors



**NATE Recognized Course 1867-0002
SUPCO Hard Start Kits**

HT Series - HIGH TORQUE Hard Start Kits

Matching a high current potential relay with a high voltage capacitor means the ultimate *Torque* for the most reliable Hard Start Kits. Choose from 4 sizes for the best solution.



Features/Benefits

- Device includes high current potential relay and 330 VAC start capacitor.
- 40 Amp Electronic Potential relay (EPR) provides superior performance for low voltage applications.
- Senses Motor Start
- Instant Re-start
- Safety time delay if compressor fails to start
- Easy 2-wire installation
- Made in the USA
- UL recognized

Applications

- For use on ALL types of single phase 208 – 277 VAC air conditioning, heat pump and refrigeration compressors; including reciprocating, scroll and rotary from 1 – 5 hp.



Product Information

| SUPCO. PART NO. | RECOMMENDED RANGE | APPLICATION | INCREASE IN TORQUE (%) | CAPACITOR DIMENSIONS | CAPACITOR SPECIFICATIONS | REPLACES KICKSTART |
|-----------------|----------------------|-------------------------------------|------------------------|------------------------------|---------------------------|--------------------|
| HT70 | 1-3 hp | Cap Tube & Orifice Metering Devices | 1000 % | 6 3/4"L X 1 9/16"W X 2 1/2"H | 108-130 μ F X 330 VAC | KS8 |
| HT80 | 1-3 hp | All Metering Devices | 1000 % | 6 3/4"L X 1 9/16"W X 2 1/2"H | 189-227 μ F X 330 VAC | TO-5 |
| HT90 | Maneurop Compressors | All Maneurop Compressors + | 1000 % | 6 3/4"L X 1 9/16"W X 2 1/2"H | 233-280 μ F X 330 VAC | MP1 |
| HT100 | 3.5 - 5 hp | All Metering Devices | 1000 % | 6 3/4"L X 1 9/16"W X 2 1/2"H | 270-324 μ F X 330 VAC | KS1 |

+ Use HT80 for M/N's MT18JA* MTEJA* & MTZ18JA*

*** For HT Cross Reference refer to page 125 -127**

| Hard Start Comparison Selection Table | HT Series | SPPE Series | SK3W Series | SPP Series |
|--|-----------|-------------|-------------|------------|
| Start Sensing Technology | Voltage | Voltage | Voltage | NA |
| Uses Electronic Potential Relay (EPR) | Yes | Yes | Yes | No |
| Instant Re-Start | Yes | Yes | Yes | No |
| Senses Motor Start | Yes | Yes | Yes | No |
| Two wire, non-polarized | Yes | Yes | No | Yes |
| OEM Style, 3-wire | No | No | Yes | No |
| Replaces 3-wire capacitor kit | Yes | Yes | Yes | Yes |
| UL approved | Yes | Yes | Pending | Yes |
| PTCR Device | No | No | No | Yes |
| Backup Timing Safety Circuit | Yes | Yes | No | No |
| Potentially damaging to motor windings | No | No | No | No |
| Requires non-replaceable fuse protection | No | No | No | No |
| 330V Capacitor | Yes | Yes | Yes | No |

Potential Relay Devices

The Potential Relay start device has recently been the subject of considerable attention in the market place. Several manufacturers are promoting products with a variety of technologies. The primary distinction between the potential relay devices relates to a voltage sensing or current sensing capability.

The voltage sensing method monitors start winding developed voltage and actuates a mechanical or electronic potential relay to disengage the start capacitor. The electronic potential relay is inherently more reliable and precise than the older type mechanical potential relay. SUPCO employs voltage sensing technology with an electronic potential relay.

SPPE 'E Class' Series EPR/Capacitor Combination



See Page 123-124
for E Class Advantage
Tech Notes

Features/Benefits

- Electronic Potential Relay Technology (EPR)
- Backup electronic timing circuit to protect the compressor
- Voltage sensing
- Instant Re-start
- Easy 2-wire installation
- Can be used on PSC and CSIR type compressors
- 330 V Capacitor



| PART NO. | OPERATING | | |
|----------|---------------|------------------------|---------------------|
| | VOLTAGE (VAC) | RECOMMENDED RANGE (hp) | CAPACITOR SIZE (μF) |
| SPP4E | 90 – 130 | 1/8 – 1 | 88 – 106 |
| SPP5E | 170 – 277 | 1/3 – 2 | 43 – 52 |
| SPP6E | 170 – 277 | 1/2 – 3 | 88 – 106 |
| SPP7E | 170 – 277 | 1 – 4 | 130 – 156 |
| SPP8E | 170 – 277 | 1 and up | 189 – 227 |
| SPP9E | 170 – 277 | 1 and up | 233 – 280 |
| SPP10E | 170 – 277 | 3 and up | 270 – 324 |

SPP Series PTC/ Capacitor Combination



Features/Benefits

- Positive Temperature Coefficient Technology (PTC)
- Field proven reliability
- Easy 2-Wire installation
- Most economic



| PART NO. | VOLTAGE (VAC) | RECOMMENDED RANGE (hp) | INCREASE IN TORQUE (%) |
|----------|---------------|------------------------|------------------------|
| SPP* | 90 – 277 | 1/2 to 10 | 250% |
| SPP5 | 90 – 277 | 1/2 to 10 | 300% |
| SPP6 | 90 – 277 | 1/2 to 10 | 500% |
| SPP7S | 90 – 277 | 1/2 to 10 | 600% |

* This model does not include a capacitor

SK3W Series 3-Wire Potential Relay/Capacitor Combination



Features/Benefits

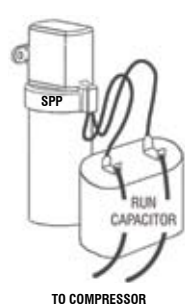
- OEM-Style 3-wire Installation
- Instant re-start
- Easy installation with "fast clamp-on" connection
- Models for standard and scroll compressors
- 330 VAC Start Capacitor Voltage



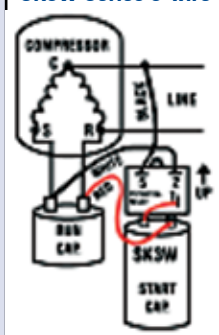
| PART NO. | hp RATINGS | COMPRESSOR | DROP-OUT VOLTAGE (VAC) | PICK-UP VOLTAGE (VAC) | MAXIMUM COIL VOLTAGE | CAPACITOR SIZE (μF) |
|----------|----------------------|------------|------------------------|-----------------------|----------------------|---------------------|
| SK3W2 | 1 thru. 2 hp | Standard | 60-135 | 204-233 | 500 VAC | 88 - 108 |
| SK3W3 | 2 1/2 thru. 3 1/2 hp | Standard | 60-121 | 171-184 | 420 VAC | 189 - 227 |
| SK3W5 | 4 thru. 5 hp | Standard | 60-121 | 171-184 | 420 VAC | 243 - 292 |
| SK3W4S | 3 thru. 4 hp | Scroll | 60-135 | 204-233 | 500 VAC | 189 - 227 |
| SK3W6S | 4 1/2 thru. 6 hp | Scroll | 60-121 | 171-184 | 420 VAC | 270 - 324 |

Application Note: 2-wire vs. 3-wire Installation

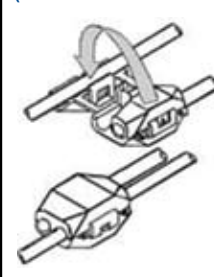
HT, SPP & SPPE Series 2-wire



SK3W Series 3-wire



"Fast Clamp-On" Connection (used with SK3W Series)



Relays

Universal Potential Relays

Replacing all potential relays, these WIRE TO WIRE Universal Potential Relays offer the ultimate in convenience. One potential relay to fit any application. Choose to “drop in” the SUPR Universal Potential Relay or “dial in” the exact pick-up voltage for the APR5 Adjustable Potential Relay. State of the Art electronic circuitry provides Wire to Wire replacement of any potential relay with added motor protection.

Applications

- Replaces all OEM potential relays
- Use on any single phase motor or air conditioning and refrigeration compressor up to 5 hp.

Features/Benefits

- Reduces inventory
- Wire to Wire Replacement for virtually ALL potential relays.
- Recycles instantly
- Replaces both 3 and 5 terminal potential relays
- Normally closed contacts
- Accommodates screw-on or push-on connections.
- Dimensions identical to industry standard potential relays.
- Easy replacement mounting with universal mounting bracket.
- Start winding protection if motor does not start.
- Prevents start capacitor venting when motor doesn't start.
- Contact Material: Silver Cadmium Oxide



SUPR Universal Potential Relay

- Time Function Relay
- Start Time: 1.0 - 1.5 seconds

Common Specifications

| | |
|----------------------------|---|
| Operating Voltage | 110 – 270 VAC, Single Phase |
| Amperage | 30 AMP |
| Motor Power Rating | up to 5 hp |
| Operating Position | Non-positional mounting. |
| Universal Mounting Bracket | Allows for easy installation. Unused portions of the bracket simply snap off with pliers. |
| Terminals | Screw or push-on. Adapters to convert screw-on to push-on are provided. |
| Dimensions | 1.75W x 2.25L x 1.50H |



APR5 Adjustable Potential Relay

- Adjustable, Voltage Sensitive Relay
- Set pick-up voltage
- Safety time out 1.0 – 1.5 seconds

90X Series Potential Relays

- Meets all requirements of OEM relays
- Universal break-off bracket



Features/Benefits

- 50/60 cycle
- Contact rating 35 amp @ 277 VAC
- Non-positional
- Instructions and wiring diagram included in each relay

| PART NO. | CONTINUOUS | | DROP | | OUT RELAY GROUPS* | REPLACES GE 3ARR |
|----------|--------------|--------------|--------------|------|--|------------------|
| | COIL VOLTAGE | PICK-UP MIN. | PICK-UP MAX. | MAX. | | |
| 9063 | 170 | 139 | 153 | 55 | 2J; 2K; 2L; 2M; 5N; 7J; 7K; 7L; 7M; 7N; 8L; 8M; 8N | |
| 9064 | 395 | 260 | 275 | 120 | 3A; 3B; 3AV; 3AU; 4A; 4B; 6A; 6B; 6AV; 10A; 10B; 10AU; 10AV; 14A; 14B; 16A | |
| 9065 | 332 | 168 | 182 | 90 | 3P; 3R; 3AP; 5P; 5R; 5S; 5T; 13P; 19N; 22S | |
| 9066 | 395 | 215 | 225 | 120 | 3U; 3V; 3AT; 6U; 6V; 6W; 16U | |
| 9067 | 420 | 295 | 315 | 125 | 3C; 3D; 3AA; 4C; 4D; 4BK; 6C; 6D; 6AA; 10C; 10D; 26A; 26B; 26C; 26D | |
| 9068 | 502 | 325 | 345 | 135 | 3E; 3F; 3AB; 3AC; 4E; 4F; 4G; 6E; 6F; 6G; 10H; 10AB; 10AC; 26E; 26F; 26G; 26H; 27E; 27F; 27G | |
| 9069 | 336 | 180 | 195 | 105 | 3S; 3T; 10S; 10T; 10AS; 13S; 13T; 20S; 25S; 25T | |
| 9070 | 253 | 285 | 305 | 77 | 5B; 5C; 5D; 5AA; 8B; 8C; 8D; 27A; 27B; 27C | |
| 9071 | 420 | 212 | 232 | 121 | 6TV; 6TW; 10V; 16TV; 20V | |

*Determine group from GE part number.



903X Series General Purpose Switching Relays

Double pole – double throw (DPDT)



Applications

- HVAC/ R
- Appliance vending machines
- Fan controls
- Business machines



| PART NO. | COIL VOLTAGE | TERMINAL 1-2-3 | TERMINAL 4-5-6 | CROSS REFERENCE | |
|----------|--------------|----------------|----------------|-----------------|------------|
| | | | | ESSEX/RBM | HONEYWELL |
| 90340 | 24 | power | power | 90-340 | R8222D1014 |
| 90341 | 110/12 | power | power | 90-341 | R4222D1013 |
| 90342 | 208/240 | power | power | 90-342 | R4222N1021 |

| CONTACT RATINGS | POWER 208/240V208/240V | | PILOT 277V | |
|-------------------|------------------------|------|------------|------|
| | 120V | 277V | 120V | 277V |
| Full Load Amps | 12 | 6 | - | - |
| Resistive Amps* | 15 | 15 | 3 | 3 |
| Locked Rotor Amps | 60 | 35 | - | - |
| Horsepower | 3/4 | 3/4 | 1/10 | 1/10 |

*0.75 power factor

902XX & 903XX Series General Purpose Fan Relays

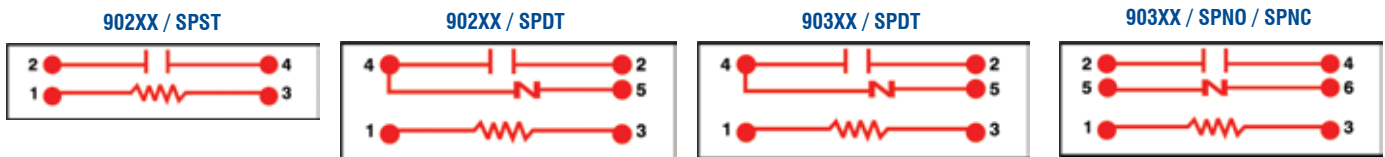


Engineering Data

- **CONTACTS:** SPST-NO, SPST-NC, SPDT, 1 NO/1 NC, Material/ Power - Silver Alloy, Material 1/2 Pilot - Fine Silver
- **POWER RATINGS (All Forms):** 125 VAC, 18A Resistive, 12 FLA, 60 LRA, 240/277 VAC, 18A Resistive, 8 FLA, 48 LRA
- **SPECIAL POWER RATINGS (Form 1 & 2):** 125 VAC, 14 FLA, 84 LRA, 277 VAC, 25A Resistive
- **PILOT RATINGS (All Forms):** 3A, 277 VAC Gen. Purpose, 250 VA @ 250 VAC, 277 VA @ 277 VAC, 125 VA @ 125 VAC
- **COILS :** Voltage Ratings - 24, 120, 208/240, 77 VAC, 12, 24 VAC Frequency - 50/60 Hz Pick-up Voltage - AC 85% of nominal, DC 75% of nominal, Power Ratings -AC DC, Inrush 5 VA 3VA, Sealed 3 VA 3 VA

| PART NO. | DESCRIPTION | AMPS | COIL VOLTAGE |
|----------|-------------|------|--------------|
| 90290 | SPST | 4 | 24V |
| 90291 | SPST | 4 | 120V |
| 90292 | SPST | 4 | 240V |
| 90293 | SPDT | 1 | 24V |
| 90294 | SPDT | 1 | 120V |
| 90295 | SPDT | 1 | 240V |
| 90370 | SPDT | 12 | 24V |
| 90372 | SPDT | 12 | 120V |
| 90374 | SPDT | 12 | 240V |
| 90380 | NO/NC | 13 | 24V |
| 90382 | NO/NC | 13 | 120V |
| 90384 | NO/NC | 13 | 240V |

Wiring Diagrams



Short Cycle Protector, Time Delay Relay and Contactor Combination

- Choose Delay on Break or Delay on Make model
- Ideal for split systems not supplied with contactor or time delay relay

- Prevents short cycling
- Contactor takes compressor load off the thermostat circuit

Features/Benefits

- Adjustable Delay
- Relay coil same voltage as load
- 1/4" male quick connect terminals
- Encapsulated circuitry
- Input Voltage: 208 - 230 VAC

| PART NO. | DELAY TYPE | DELAY RANGE |
|----------|---------------------|--------------------|
| TDP269 | Delay on Make (DOM) | 6 sec. to 300 sec. |



Compressor Protection Package Combination

Combines Hard Start Kit with maximum compressor protection.

Features/Benefits

- Can be installed in pilot circuits for 24 to 288 VAC
- Adjustable time delay from 6 seconds to 5 minutes
- Operates with or without cooling thermostat anticipator
- Only two terminal connection on Time Delay
- Can be mounted as an assembly or snapped apart for separate mounting
- Two models available to suit specific requirements

Applications

- Residential and commercial PSC A/C units and heat pumps
- For all PSC A/C units from 1 hp to 10 hp
- Can be used on 115 thru 288 VAC units
- For severe low voltage or hard starting compressors

| PART NO. | INCREASED TORQUE | TIME DELAY RANGE |
|----------|-------------------------|---------------------|
| SPP5TD | 270 ounce inches (300%) | 6 sec. to 5 minutes |
| SPP6TD | 390 ounce inches (500%) | 6 sec. to 5 minutes |

Capacitors

Facts About Capacitors

- Capacitors are rated by microfarads (uF) and voltage. The rated capacitor should not be changed since the motor operates at maximum efficiency when using a specified capacitor size. However a plus or minus 10 % rule of thumb applies to the microfarad rating when changing out a capacitor. If necessary, the replacement capacitor voltage rating can be higher than specified, but not lower without effecting the capacitor life.
- Always replace the run capacitor when installing a new motor. If a defective capacitor is in the circuit the motor will probably not run. If it does run, it will operate as if it is overloaded. The motor speed will be low; it will overheat and probably activate the motor overload protector causing short cycling.
- Capacitors can hold a charge for long periods of time. To prevent shock the capacitor should be discharged before it is removed. The proper procedure to do this is to use a 5000 to 20000 Ohm bleed resistor.
- To check capacitors, use a SUPCO Capacitor Tester p/n MFD10.

Capacitors



Motor Run Capacitors

Features

- Non – PCB biodegradable synthetic oil
- Physical interrupter for safety
- Operating temperature –13°F to + 185°F (- 25°C to + 85°C)
- Microfarad uF tolerance +/- 5 %
- Drawn steel case construction
- Quad blade quick connect terminals
- Hermetically sealed

Applications

- Air Conditioning Compressors
- Refrigeration Compressors
- Furnace Blower Motors
- Condenser Fan Motors

SINGLE - OVAL

| 370 VOLT | | 440 VOLT | |
|------------|------|------------|------|
| PART NO. | μF | PART NO. | μF |
| CR2X370 | 2 | CR2X440 | 2 |
| CR3X370 | 3 | CR3X440 | 3 |
| CR4X370 | 4 | CR4X440 | 4 |
| CR5X370 | 5 | CR5X440 | 5 |
| CR6X370 | 6 | CR6X440 | 6 |
| CR7.5X370 | 7.5 | CR7.5X440 | 7.5 |
| CR10X370 | 10 | CR10X440 | 10 |
| CR12.5X370 | 12.5 | CR12.5X440 | 12.5 |
| CR15X370 | 15 | CR15X440 | 15 |
| CR17.5X370 | 17.5 | CR17.5X440 | 17.5 |
| CR20X370 | 20 | CR20X440 | 20 |
| CR25X370 | 25 | CR25X440 | 25 |
| CR30X370 | 30 | CR30X440 | 30 |
| CR35X370 | 35 | CR35X440 | 35 |
| CR40X370 | 40 | CR40X440 | 40 |
| CR45X370 | 45 | CR45X440 | 45 |
| CR50X370 | 50 | CR50X440 | 50 |
| CR55X370 | 55 | CR55X440 | 55 |
| CR60X370 | 60 | CR60X440 | 60 |
| CR70X370 | 70 | | |

SINGLE - ROUND

| 370 VOLT | | 440 VOLT | |
|-----------|----|-----------|----|
| PART NO. | μF | PART NO. | μF |
| CR15X370R | 15 | CR5X440R | 5 |
| CR20X370R | 20 | CR10X440R | 10 |
| CR25X370R | 25 | CR15X440R | 15 |
| CR30X370R | 30 | CR20X440R | 20 |
| CR35X370R | 35 | CR25X440R | 25 |
| CR40X370R | 40 | CR30X440R | 30 |
| CR45X370R | 45 | CR35X440R | 35 |
| CR50X370R | 50 | CR40X440R | 40 |
| CR55X370R | 55 | CR45X440R | 45 |
| CR60X370R | 60 | CR50X440R | 50 |
| CR70X370R | 70 | CR55X440R | 55 |
| CR80X370R | 80 | CR60X440R | 60 |
| | | CR70X440R | 70 |
| | | CR80X440R | 80 |

DUAL - OVAL

| 370 VOLT | | 440 VOLT | |
|--------------|--------|--------------|--------|
| PART NO. | μF | PART NO. | μF |
| CD15+5X370 | 15+5 | CD20+5X440 | 20+5 |
| CD15+10X370 | 15+10 | CD25+5X440 | 25+5 |
| CD20+5X370 | 20+5 | CD25+7.5X440 | 25+7.5 |
| CD20+15X370 | 20+15 | CD25+10X440 | 25+10 |
| CD25+3X370 | 25+3 | CD30+5X440 | 30+5 |
| CD25+5X370 | 25+5 | CD35+5X440 | 35+5 |
| CD25+10X370 | 25+10 | CD35+7.5X440 | 35+7.5 |
| CD30+3X370 | 30+3 | CD40+5X440 | 40+5 |
| CD30+5X370 | 30+5 | CD40+7.5X440 | 40+7.5 |
| CD30+7.5X370 | 30+7.5 | CD45+5X440 | 45+5 |
| CD35+3X370 | 35+3 | CD45+7.5X440 | 45+7.5 |
| CD35+5X370 | 35+5 | CD50+5X440 | 50+5 |
| CD35+7.5X370 | 35+7.5 | CD55+5X440 | 55+5 |
| CD35+10X370 | 35+10 | CD55+10X440 | 55+10 |
| CD40+5X370 | 40+5 | CD60+5X440 | 60+5 |
| CD45+5X370 | 45+5 | | |
| CD55+5X370 | 55+5 | | |
| CD55+7.5X370 | 55+7.5 | | |
| CD60+10X370 | 60+10 | | |

DUAL - ROUND

| 370 VOLT | | 440 VOLT | |
|---------------|--------|---------------|--------|
| PART NO. | μF | PART NO. | μF |
| CD20+5X370R | 20+5 | CD20+5X440R | 20+5 |
| CD20+7.5X370R | 20+7.5 | CD25+5X440R | 25+5 |
| CD25+3X370R | 25+3 | CD25+7.5X440R | 25+7.5 |
| CD25+4X370R | 25+4 | CD30+5X440R | 30+5 |
| CD25+5X370R | 25+5 | CD30+7.5X440R | 30+7.5 |
| CD30+3X370R | 30+3 | CD35+5X440R | 35+5 |
| CD30+5X370R | 30+5 | CD35+7.5X440R | 35+7.5 |
| CD35+5X370R | 35+5 | CD35+10X440R | 35+10 |
| CD40+5X370R | 40+5 | CD40+5X440R | 40+5 |
| CD45+5X370R | 45+5 | CD40+7.5X440R | 40+7.5 |
| CD80+5X370R | 80+5 | CD40+10X440R | 40+10 |
| CD80+7.5X370R | 80+7.5 | CD45+5X440R | 45+5 |
| | | CD45+7.5X440R | 45+7.5 |
| | | CD50+5X440R | 50+5 |
| | | CD50+7.5X440R | 50+7.5 |
| | | CD55+5X440R | 55+5 |
| | | CD55+7.5X440R | 55+7.5 |
| | | CD55+10X440R | 55+10 |
| | | CD60+5X440R | 60+5 |
| | | CD60+7.5X440R | 60+7.5 |
| | | CD80+5X440R | 80+5 |
| | | CD80+7.5X440R | 80+7.5 |
| | | CD80+10X440R | 80+10 |

Capacitors



Motor Start Capacitors

UL approved Start Capacitors available in 110 VAC, 165 VAC, 220 VAC and 330 VAC.



Features

- Dry, electrolytic, no polarized type for intermittent duty in AC motors and compressors.
- Used where starting torques must be higher in relation to running torques.
- Moisture and oil resistant molded phenolic resin or plastic material.
- Standard dual blade terminals.
- Industry standard case sizes.

compressors.

110 VAC

| PART NO. | VALUE (µF) | CASE SIZE |
|-----------------|------------|-----------|
| CS21-25X110 | 21-25 | 1 |
| CS25-30X110 | 25-30 | 1 |
| CS30-36X110 | 30-36 | 1 |
| CS36-43X110 | 36-43 | 1 |
| CS43-56X110 | 43-56 | 1 |
| CS56-72X110 | 56-72 | 1 |
| CS64-77X110 | 64-77 | 1 |
| CS72-88X110 | 72-88 | 1 |
| CS88-108X110 | 88-108 | 1 |
| CS108-130X110 | 108-130 | 1 |
| CS124-156X110 | 124-156 | 1 |
| CS145-175X110 | 145-175 | 1 |
| CS161-193X110 | 161-193 | 1 |
| CS189-227X110 | 189-227 | 1 |
| CS200-240X110 | 200-240 | 2 |
| CS216-259X110 | 216-259 | 2 |
| CS233-292X110 | 233-292 | 4 |
| CS270-324X110 | 270-324 | 4 |
| CS300-360X110 | 300-360 | 4 |
| CS324-388X110 | 324-388 | 4 |
| CS340-408X110 | 340-408 | 4 |
| CS378-440X110 | 378-440 | 4 |
| CS400-480X110 | 400-480 | 5 |
| CS460-552X110 | 460-552 | 5 |
| CS540-648X110 | 540-648 | 5 |
| CS590-708X110 | 590-708 | 5 |
| CS708-850X110 | 708-850 | 7 |
| CS829-995X110 | 829-995 | 8 |
| CS1000-1200X110 | 1000-1200 | 8 |

165 VAC

| PART NO. | VALUE (µF) | CASE SIZE |
|---------------|------------|-----------|
| CS124-156X165 | 124-156 | 4 |
| CS145-175X165 | 145-175 | 4 |
| CS161-193X165 | 161-193 | 4 |
| CS233-292X165 | 233-292 | 5 |
| CS270-324X165 | 270-324 | 5 |

220 VAC

| PART NO. | VALUE (µF) | CASE SIZE |
|---------------|------------|-----------|
| CS21-25X220 | 21-25 | 1 |
| CS25-30X220 | 25-30 | 1 |
| CS30-36X220 | 30-36 | 1 |
| CS36-43X220 | 36-43 | 1 |
| CS43-56X220 | 43-56 | 2 |
| CS56-72X220 | 56-72 | 2 |
| CS64-77X220 | 64-77 | 4 |
| CS72-88X220 | 72-88 | 4 |
| CS88-108X220 | 88-108 | 4 |
| CS108-130X220 | 108-130 | 4 |
| CS124-156X220 | 124-156 | 5 |
| CS145-175X220 | 145-175 | 7 |
| CS161-193X220 | 161-193 | 7 |
| CS189-227X220 | 189-227 | 7 |
| CS216-259X220 | 216-259 | 8 |
| CS233-292X220 | 233-292 | 8 |
| CS270-324X220 | 270-324 | 8 |

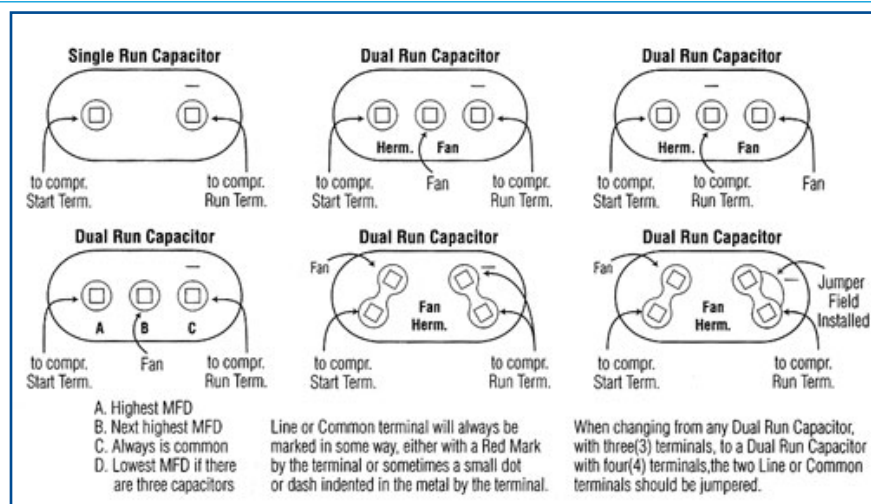
330 VAC

| PART NO. | VALUE (µF) | CASE SIZE |
|---------------|------------|-----------|
| CS21-25X330 | 21-25 | 1 |
| CS25-30X330 | 25-30 | 1 |
| CS30-36X330 | 30-36 | 4 |
| CS36-43X330 | 36-43 | 4 |
| CS43-56X330 | 43-56 | 4 |
| CS53-70X330 | 53-70 | 5 |
| CS56-72X330 | 56-72 | 5 |
| CS72-88X330 | 72-88 | 5 |
| CS88-108X330 | 88-108 | 7 |
| CS108-130X330 | 108-130 | 8 |
| CS124-156X330 | 124-156 | 8 |
| CS130-156X330 | 130-156 | 8 |
| CS145-175X330 | 145-175 | 8 |
| CS161-193X330 | 161-193 | 8 |
| CS189-227X330 | 189-227 | 8 |
| CS216-259X330 | 216-259 | 8 |
| CS270-324X330 | 270-324 | 8 |
| CS324-388X330 | 324-388 | 8 |

Case Dimensions

| CASE SIZE | DIAMETER | HEIGHT |
|-----------|----------|--------|
| 1 | 1 7/16" | 2 3/4" |
| 2 | 1 7/16" | 3 3/8" |
| 4 | 1 13/16" | 3 3/8" |
| 5 | 1 13/16" | 4 3/8" |
| 6 | 2 1/16" | 3 3/8" |
| 7 | 2 1/16" | 4 3/8" |
| 8 | 2 9/16" | 4 3/8" |

Wiring Diagrams for Run Capacitors



Contactors

SUPCO Brand Definite Purpose Contactors

SUPCO contactors are designed for use in HVAC&R systems. These contactors are available in 1.5, 2 and 3 pole configurations from 20 through 90 full amps. Compact universal design allows replacement of the most common brands.



Features

- Silver Cadmium Oxide Contacts
- Ranges: 20 – 90 FLA
- Poles: 1.5, 2 & 3
- Coil Voltages: 24, 120 & 240 VAC
- Terminations: #10-32 screw – 20, 25 & 30 FLA Models, Box Lug – 40, 50, 60, 75 & 90 FLA Models
- Temperature Range: - 40°F to + 150°F / (- 40°C to + 65°C)
- UL & CSA Approved



Benefits

- Economically priced
- Space saving dimensions allow for smaller panels and more wiring room.
- Interchangeable mounting with many competitive contactors.
- Complete competitive cross-reference available.

Applications

- Low drop out voltage making them ideal for any air conditioning, heating and refrigeration application.



| 1.5 POLE PART NO. | FULL LOAD AMPS | COIL VOLTAGE |
|-------------------|----------------|--------------|
| DP25241 | 25 | 24 |
| DP251201 | 25 | 120 |
| DP252401 | 25 | 240 |
| DP30241 | 30 | 24 |
| DP301201 | 30 | 120 |
| DP302401 | 30 | 240 |

| 2 POLE PART NO. | FULL LOAD AMPS | COIL VOLTAGE |
|-----------------|----------------|--------------|
| DP20242 | 20 | 24 |
| DP201202 | 20 | 120 |
| DP202402 | 20 | 240 |
| DP25242 | 25 | 24 |
| DP251202 | 25 | 120 |
| DP252402 | 25 | 240 |
| DP30242 | 30 | 24 |
| DP301202 | 30 | 120 |
| DP302402 | 30 | 240 |
| DP40242 | 40 | 24 |
| DP401202 | 40 | 120 |
| DP402402 | 40 | 240 |

| 3 POLE PART NO. | FULL LOAD AMPS | COIL VOLTAGE |
|-----------------|----------------|--------------|
| DP25243 | 25 | 24 |
| DP251203 | 25 | 120 |
| DP252403 | 25 | 240 |
| DP30243 | 30 | 24 |
| DP301203 | 30 | 120 |
| DP302403 | 30 | 240 |
| DP40243 | 40 | 24 |
| DP401203 | 40 | 120 |
| DP402403 | 40 | 240 |
| DP50243 | 50 | 24 |
| DP501203 | 50 | 120 |
| DP502403 | 50 | 240 |
| DP60243 | 60 | 24 |
| DP601203 | 60 | 120 |
| DP602403 | 60 | 240 |
| DP75243 | 75 | 24 |
| DP751203 | 75 | 120 |
| DP752403 | 75 | 240 |
| DP90243 | 90 | 24 |
| DP901203 | 90 | 120 |
| DP902403 | 90 | 240 |

Contactor Nomenclature

Example: DP30242
 DP = Definite Purpose
 30 = Full Load Amps
 24 = Coil Voltage
 2 = # Of Poles

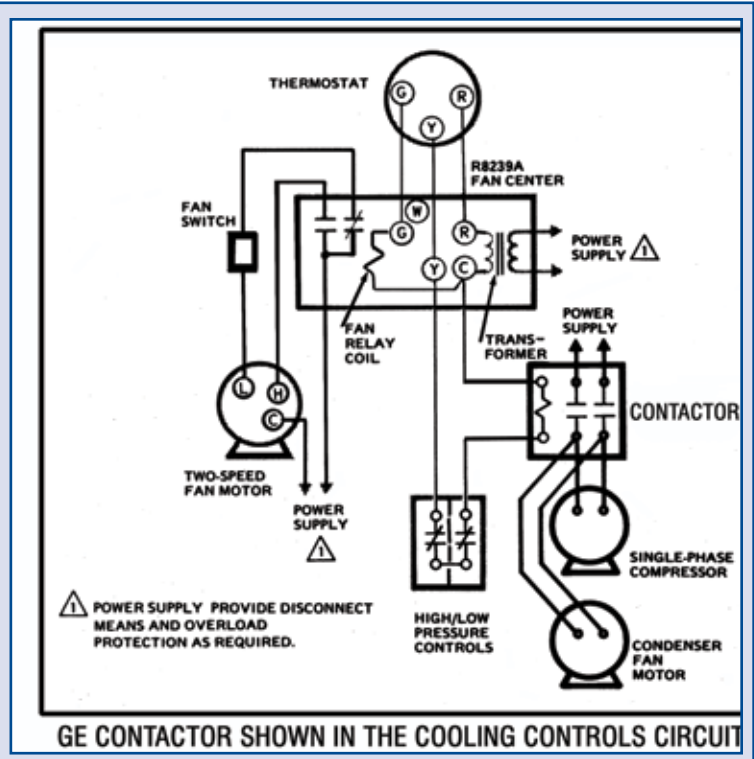
Application Note

The contactor is the primary controller in a cooling controls circuit. It is the switching device which activates the compressor motor to pump refrigerant through the system to provide cooling.

Contactors are used to break the power supply to the compressor. Either 1 or 2 poles are needed for single phase; 2 or 3 poles for 3 phase motors. Auxiliary contacts may be used for interlock switching, fan loads or crankcase heaters. If the contactor is selected with an adequate current rating, the condenser fan may also be wired in parallel with the compressor. Then the condenser fan is energized whenever the compressor is powered.

Checking Contactor Operation:

- Check contactor operation by switching the contactor from the system controls.
- Make sure that the pressure and overload controls can break the system circuit to prevent contactor operation, if necessary.



Contactors

Supco Brand Contactor Cross Reference

| PART NO. | ARROW | | CUTLER | | ELMWOOD | | | GE | | GLOBAL CUTLER | |
|----------|-------------|-------------|--------------|-------------------|--------------|-----------------|--------------------|-------------|-----------|---------------|--------|
| | GE | API | HART | HAMMER | DIVERSITECH | ELMWOOD | FURNAS | GE | GEMLINE | CUTLER | HAMMER |
| DP25241 | CR453CB3HAA | *** | C251NU10 | C25CNB125T | *** | *** | 45DG10AJD8A | CR353CB3AH1 | *** | 4140 | |
| DP251201 | CR453CB3AAA | *** | C251NU20 | C25CNB125A | *** | *** | 45DG10AFD8A | CR353CB3AA1 | *** | 4141 | |
| DP252401 | CR453CB3BAA | *** | C251NU30 | C25CNB125B | *** | *** | 45DG10AGA | CR353CB3AB1 | *** | 4142 | |
| DP30241 | CR453CC3HAA | *** | C301NU10 | C25CNB130T | *** | *** | 45EG10AJA | CR353CD3AH1 | *** | 4143 | |
| DP301201 | CR453CC3AAA | *** | C301NU20 | C25CNB130A | *** | *** | 45EG10AJA | CR353CD3AA1 | *** | 4144 | |
| DP302401 | CR453CC3BAA | *** | C301NU30 | C25CNB130B | *** | *** | 45EG10AGA | CR353CD3AB1 | *** | 4145 | |
| DP20242 | CR453CA2HAA | *** | C202U10 | C25BNB220T | *** | 30B020 | 45CG20AJ | CR353CA2AH1 | *** | 4101 | |
| DP201202 | CR453CA2AAA | *** | C202U20 | C25BNB220A | *** | 30B0-20 | 45CG20AF | CR353CA2AA1 | *** | 4102 | |
| DP202402 | CR453CA2BAA | *** | C202U30 | C25BNB220B | *** | *** | 45CG20AG | Same | *** | 4103 | |
| DP25242 | CR453CB2HAA | *** | C252U10 | C25BNB225T | DP25224 | 30C0-20 | 45DG20AJ | CR353CB2AH1 | *** | 4104 | |
| DP251202 | CR453CB2AAA | *** | C252U20 | C25BNB225A | DP252120 | 30C0-20 | 45DG20AF | CR353CB2AA1 | *** | 4105 | |
| DP252402 | CR453CB2BAA | *** | C252U30 | C25BNB225B | DP252240 | 30C0-20 | 45DG20AG | CR353CB2AB1 | *** | 4106 | |
| DP30242 | CR453CC2HAA | SA2S3024V | C302U10 | C25BNB230T | DP30224 | 30E0-20 | 45EG20AJ | CR353AC2AH1 | *** | 4107 | |
| DP301202 | CR453CC2AAA | SA2S30120V | C302U20 | C25BNB230A | DP302120 | 30E0-20 | 45EG20AF | CR353AC2AA1 | *** | 4108 | |
| DP302402 | CR453CC2BAA | SA2S30240V | C302U30 | C25BNB230B | DP302240 | 30E0-20 | 45EG20AG | CR353AC2AB1 | *** | 4109 | |
| DP40242 | CR453CE2HBB | SA2M4024V | ACC420U10 | C25DNF240T | DP40224 | 30F0-20 | 45GG20AJ | CR353AD2BH1 | *** | 4161 | |
| DP401202 | CR453CE2ABB | SA2M40120V | ACC420U20 | C25DNF240A | DP402120 | 30F0-20 | 45GG20AF | CR353AD2BA1 | *** | 4162 | |
| DP402402 | CR453CE2BBB | SA2M4024V | ACC420U30 | C25DNF240B | DP402240 | 30F0-20 | 45GG20AG | CR353AD2BB1 | *** | 4163 | |
| DP25243 | CR453AB3HAA | *** | ACC220U10 | C25DND325T | *** | 30D0-30 | 42AF35AJ | CR353AB3AH1 | DP2530 | 4110 | |
| DP251203 | CR453AB3AAA | *** | ACC220U20 | C25DND325A | *** | 30D0-30 | 42AF35AF | CR353AB3AA1 | DP2531 | 4111 | |
| DP252403 | CR453AB3BAA | *** | ACC220U30 | C25DND325B | *** | 30D0-30 | 42AF35AG | CR353AB3AB1 | DP2532 | 4112 | |
| DP30243 | CR453AC3HAA | SA3S3024V | ACC330U10 | C25DND330T | DP30324 | 30E0-30 | 42BF35AJ | CR353AC3AH1 | DP3030 | 4113 | |
| DP301203 | CR453AC3AAA | SA3S30120V | ACC330U20 | C25DND330A | DP303120 | 30E0-30 | 42BF35AF | CR353AC3AA1 | DP3031 | 4114 | |
| DP302403 | CR453AC3BAA | SA3S30240V | ACC330U30 | C25DND330B | DP303240 | 30E0-30 | 42BF35AG | CR353AC3AB1 | DP3032 | 4115 | |
| DP40243 | CR453AD3HBB | SA3M4024V | ACC430U10 | C25DNF340T | DP40324 | 30F0-30 | 42CF35AJ | CR353AD3BH1 | DP4030 | 4116 | |
| DP401203 | CR453AD3ABB | SA3M40120V | ACC430U20 | C25DNF340A | DP403120 | 30F0-30 | 42CF35AF | CR353AD3BA1 | DP4031 | 4117 | |
| DP402403 | CR453AD3BBB | SA3M40240V | ACC430U30 | C25DNF340B | DP403240 | 30F0-30 | 42CF35AG | CR353AD3BB1 | DP4032 | 4118 | |
| DP50243 | CR353FE3BH1 | SA3G5024V | ACC530U10 | C25FNF350T | DP50324 | 30G0-30 | 42DF35AJ | CR353FE3BH1 | DP5030 | 4128 | |
| DP501203 | CR353FE3BA1 | SA3G50120V | ACC530U20 | C25FNF350A | DP503120 | 30G0-30 | 42DF35AF | CR353FE3BA1 | DP5031 | 4129 | |
| DP502403 | CR353FE3BB1 | SA3G50240V | ACC530U30 | C25FNF350B | DP503240 | 30G0-30 | 42DF35AG | CR353FE3BB1 | DP5032 | 4130 | |
| DP60243 | CR353FF3BH1 | SA3A6024V | ACC530U10 | C25FNF360T | DP60324 | 30H0-30 | 42EF35AJ | CR353FF3BH1 | DP6030 | 4131 | |
| DP601203 | CR353FF3BA1 | SA3A60120V | ACC530U20 | C25FNF360A | DP603120 | 30H0-30 | 42EF35AF | CR353FF3BA1 | DP6031 | 4132 | |
| DP602403 | CR353FF3BB1 | SA3A60240V | ACC530U30 | C25FNF360B | DP603240 | 30H0-30 | 42EF35AG | CR353FF3BB1 | DP6032 | 4133 | |
| DP75243 | CR353EG3BH1 | *** | ACC730U10 | C25FNF375T | DP75324 | *** | 42FE35AJ | CR353EG3BH1 | *** | 4134 | |
| DP751203 | CR353EG3BA1 | *** | ACC730U20 | C25FNF375A | DP753120 | *** | 42FE35AF | CR353EG3BA1 | DP7531 | 4135 | |
| DP752403 | CR353EG3BB1 | *** | ACC730U30 | C25FNF375B | DP753240 | *** | 42FE35AG | CR353EG3BB1 | DP7532 | 4136 | |
| DP90243 | CR353EH3BH1 | *** | *** | C25GNF390T | DP90324 | *** | 42GE35AJ | CR353EH3BH1 | *** | 4137 | |
| DP901203 | CR353EH3BA1 | *** | ACC930U20 | C25GNF390A | DP903120 | *** | 42GE35AF | CR353EH3BA1 | DP9031 | 4138 | |
| DP902403 | CR353EH3BB1 | *** | ACC930U30 | C25GNF390B | DP903240 | *** | 42GE35AG | CR353EH3BB1 | DP9032 | 4139 | |
| PART NO. | HONEYWELL | HONEYWELL | JOSLYN CLARK | MA LINE POWER PRO | MARS ECONOMY | PACKARD / FASCO | PRODUCTS UNLIMITED | RBM/ESSEX | SQUARE D | STEVECO | |
| DP25241 | DP1025A5005 | *** | A77306654A3 | *** | *** | 1S25A | 310015Q01XXXA | *** | 8910DP21 | 94385 | |
| DP251201 | DP1025B5046 | *** | A77306654A1 | *** | *** | 1S25B | 310015T01XXXA | *** | *** | 94386 | |
| DP252401 | DP1025C5045 | *** | A77306654A2 | *** | *** | 1S25C | 310015U01XXXA | *** | *** | 94387 | |
| DP30241 | DP1030A5013 | *** | A77306653A3 | *** | 13067/13101 | 1S30A | 310015Q02XXXA | *** | 8910DP12 | 94388 | |
| DP301201 | DP1030B5020 | *** | A77306653A1 | *** | 13068 | 1S30B | 310015T02XXXA | *** | *** | 94389 | |
| DP302401 | DP1030C5029 | *** | A7730665312 | *** | 13069 | 1S30C | 310015U02XXXA | *** | *** | 94390 | |
| DP20242 | DP2020A5021 | *** | A77306680A3 | *** | 13071 | 2S20A | 310020Q03XXXA | 143-1 | DP12V14 | 90234 | |
| DP201202 | DP2020B5038 | *** | A77306680A1 | *** | 13072 | 2S20B | 310020T03XXXA | 143-1 | DP12V02 | 90235 | |
| DP202402 | DP2020C5037 | *** | A77306680A2 | *** | 13073 | 2S20C | 310020U03XXXA | *** | *** | 90236 | |
| DP25242 | *** | *** | A77306660A3 | *** | 13077 | *** | *** | 143-6 | DP22V14 | *** | |
| DP251202 | *** | *** | A77306660A1 | *** | 13078 | *** | *** | 143-6 | DP22V02 | *** | |
| DP252402 | *** | *** | A77306660A2 | *** | 13079 | *** | *** | 143-6 | DP22V09 | *** | |
| DP30242 | DP2030A5004 | DP2030A1003 | A77306657A3 | 8910DP32V14 | 14321/13104 | C2S30A | 310020Q06XXXA | 143-7 | DP32V14 | 90244 | |
| DP301202 | DP2030B5003 | DP2030B1002 | A77306657A1 | *** | 14322 | C2S30B | 310020T06XXXA | 143-7 | DP32V02 | 90245 | |
| DP302402 | DP2030C5002 | DP2030C1001 | A77306657A2 | *** | 14323 | C2S30C | 310020U06XXXA | 143-7 | DP32V09 | 90246 | |
| DP40242 | DP2040A5003 | *** | A77309045A3 | 8910DP42V14 | 14421 | C2S40A | 310020Q18XXXA | 154-4 | DPA42V14 | *** | |
| DP401202 | DP2040B5002 | *** | A77309045A1 | *** | 14422 | C2S40B | 310020T18XXXA | 154-4 | DPA42V02 | *** | |
| DP402402 | DP2040C5001 | *** | A77309045A2 | *** | 14423 | C2S40C | 310020U18XXXA | 154-4 | DPA42V09 | *** | |
| DP25243 | DP3025A5003 | DP3025A1002 | A77309040A3 | *** | 13001 | 3M25A | 310030Q8XXXAH | 154-2 | 8910DPA23 | 90160 | |
| DP251203 | DP3025B5002 | DP3025B1001 | A77309040A1 | *** | 13002 | 3M25B | 310030T8XXXAH | 154-2 | DPA23V02 | 90161 | |
| DP252403 | DP3025C5001 | DP3025C1000 | A77309040A2 | *** | 13003 | 3M25C | 310030U8XXXAH | 154-2 | DPA23V09 | 90162 | |
| DP30243 | DP3030A5003 | DP3030A1002 | A77309044A3 | 8910DPA33V14 | 14331/13007 | C3M30A | 310030Q9XXXAH | 154-3 | DPA33V14 | 90163 | |
| DP301203 | DP3030B5002 | DP3030B1001 | A77309044A1 | 8910DPA33V02 | 13008 | C3M30B | 310030T9XXXAH | 154-3 | DPA33V02 | 90164 | |
| DP302403 | DP3030C5001 | DP3030C1000 | A77309044A2 | 8910DPA33V09 | 13009 | C3M30C | 310030U9XXXAH | 154-3 | DPA33V09 | 90165 | |
| DP40243 | DP3040A5002 | DP3040A1001 | A77309046A3 | 8910DPA43V14 | 14431/13013 | C3M40A | 310030Q10XXXAH | 154-4 | DPA43V14 | 90170 | |
| DP401203 | DP3040B5001 | DP3040B1000 | A77309046A1 | 8910DPA43V02 | 13014 | C3M40B | 310030T10XXXAH | 154-4 | DPA43V02 | 90171 | |
| DP402403 | DP3040C5000 | DP3040C1009 | A77309046A2 | 8910DPA43V09 | 14433/13015 | C3M40C | 310030U10XXXAH | 154-4 | DPA43V09 | 90172 | |
| DP50243 | DP3050A5001 | DP3050A1000 | A77288514A3 | 8910DPA53V14 | 13200 | C3L50A | 310030Q16XXXCG | *** | 8910M03 | 92459 | |
| DP501203 | DP3050B5000 | DP3050B1009 | A77288514A1 | 8910DPA53V02 | 13201 | C3L50B | 310030T16XXXCG | *** | 8910M03 | 92460 | |
| DP502403 | DP3050C5009 | DP3050C1008 | A77288514A2 | 8910DPA53V09 | 13202 | C3L50C | 310030U16XXXCG | *** | 8910M03 | 92461 | |
| DP60243 | DP3060A5000 | DP3060A1009 | A77288517A3 | 8910DPA63V14 | 13220 | C3L60A | 310030Q17XXXCG | *** | 8910N03 | 92463 | |
| DP601203 | DP3060B5009 | DP3060B1008 | A77288517A1 | 8910DPA63V02 | 13221 | C3L60B | 310030T17XXXCG | *** | 8910N03 | 92464 | |
| DP602403 | DP3060C5008 | DP3060C1007 | A77288517A2 | 8910DPA63V09 | 13222 | C3L60C | 310030U17XXXCG | *** | 8910N03 | 92465 | |
| DP75243 | DP3075A5008 | DP3075A1007 | A77288520A3 | *** | 13240 | C3L75A | 3100Y30Q75XXXCG | *** | *** | 92467 | |
| DP751203 | DP3075B5007 | DP3075B1006 | A77288520A1 | *** | 13241 | C3L75B | 3100Y30T75XXXCG | *** | 8910P03 | 92468 | |
| DP752403 | DP3075C5006 | DP3075C1005 | A77288520A2 | *** | 13242 | C3L75C | 3100Y30U75XXXCG | *** | *** | 92469 | |
| DP90243 | *** | DP3090A1006 | *** | *** | 13260 | C3L90A | 3100Y30Q90XXXCG | *** | *** | *** | |
| DP901203 | *** | DP3090B1005 | *** | *** | 13261 | C3L90B | 3100Y30T90XXXCG | *** | 8910Q03 | *** | |
| DP902403 | *** | DP3090C1004 | *** | *** | 13262 | C3L90C | 3100Y30U90XXXCG | *** | *** | *** | |

Surge Protection

Surge Arrestors



LIGHTNING is the most obvious source of a power surge, but not the only culprit. Utility Events, Cycling of Air Conditioners, Generators, and Motors can also produce damaging surges. Protect your equipment with SUPCO's Surge Arrestors. With a full product line, we can protect all of your equipment.

These devices do not protect electronic appliances such as TVs, computers, microwaves, etc. They only protect dedicated electromechanical devices such as air conditioners. If whole house protection is required use SUPCO p/n **DTK-WH5**, which will protect AC power, coaxial and two telephone lines.



SCM1



SCMPLUS

SCM1, SCM & SCMPLUS Surge Arrestors

Features/Benefits

- Easy Installation at Disconnect or Panel
- Weatherproof Housing
- Indicator Light on some models for Surge Protection Present
- Promote Additional Profits
- Reduce Callbacks
- Keep Equipment Running

Surge Protection for:

- Air Conditioners
- Air Handlers
- Motors
- Refrigeration Systems
- Heat Pumps
- Pumps
- Furnaces
- Electro-Mechanical Devices

Specifications

| | SCM | SCMPLUS | SCMPLUS |
|-------------------------|--|--|---|
| Service Voltage | 120/240 Volt, Single Phase | 120/240 Volt, Single Phase | 120/240 Volt, Single Phase |
| Max. Surge Current | 26,000 Amps | 50,000 Amps | 100,000 Amps |
| Max. Energy Dissipation | 320 Joules | 420 Joules | 840 Joules |
| AC Protection Modes | L-L, L-G | L-L, L-G | L-L, L-G |
| Response Time | < 5ns Installed < 1ns Component Level | < 5ns Installed < 1ns Component Level | < 5ns Installed < 1ns Component Level |
| Operating Frequency | 0 – 400 Hz. | 0 – 400 Hz. | 0 – 400 Hz. |
| Diagnostics | N/A | N/A | Indicator light – Surge Suppression Present |
| Class | Secondary Surge Arrestor, Cat C | Secondary Surge Arrestor, Cat C | Secondary Surge Arrestor, Cat C |
| Installation Point | Electrical Panel, Electrical Disconnect | Electrical Panel, Electrical Disconnect | Electrical Panel, Electrical Disconnect |
| Connection Method | Hardwired parallel | Hardwired parallel | Hardwired parallel |
| Agency Approvals | UL, cUL, ANSI/IEEE C62.11 | UL, cUL, ANSI/IEEE C62.11 | UL, cUL, ANSI/IEEE C62.11 |
| Housing | High Impact Plastic | High Impact Plastic | High Impact Plastic |
| Housing Size | 2 in. x 2 in. | 4.35" x 3.55" x 1.60" | 4.35" x 3.55" x 1.60" |
| Weight | 1.0 lbs | .75 lbs | .75 lbs |
| Warranty | Limited Lifetime | Limited Lifetime | Limited Lifetime |

SCMPLUS Operation:

The SCMPLUS uses an LED diagnostics connected at each phase wire to indicate power, ground and surge protection activity.

LED Sequence:

- 1 LED = 120 VAC L-G operation
- 2 LED = 240 VAC L-L operation

Wiring The Surge Protector:

The SCM1, SCM and SCMPLUS include two black wires and one green wire. A surge protector works by shunting the voltage to ground. A good ground is imperative. The National Electrical Code (NEC) maximum resistance at ground is 25 ohms.

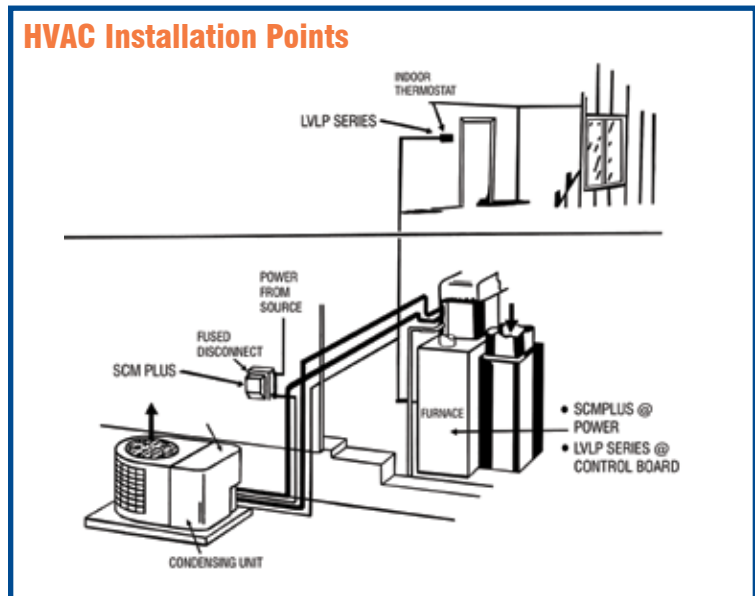
120 VOLT WIRING

- Black to Hot
- Black to Neutral
- Green to Ground

240 VOLT WIRING

- Black to Hot
- Black to Hot
- Green to Ground

HVAC Installation Points



* For Installation Instructions See Page 128

Refer to and abide by all Local and State Electrical Codes for proper installation of these devices.

Surge Protection



DTK-240-3CMPLUS

DTK-240-3CMPLUS 3 Phase Surge Arrestors

- 240 volt three phase
- 50,000 amp surge current, per phase
- Limited lifetime warranty

Air Conditioning & Heat Pump Surge Protection Applications

| EQUIPMENT SIZE | TRANSIENT POTENTIAL | PART NO. |
|----------------|--|---------------------------|
| Up to 5 Tons | Low to Moderate (Degrading arc fault Potential) | SCMPLUS DTK-3CM Series |

*Note: These items are special order. Please call SUPCO for more information (800) 333-9125

Specifications

| | DTK-240-3CMPLUS |
|-------------------------|--|
| Service Voltage | 240 VAC 3 phase |
| Max. Surge Current | 50,000 Amps |
| Continuous Current | Unlimited |
| Max. Energy Dissipation | 660 Joules |
| MCOV | 250 VAC (L-G) |
| AC Protection Modes | L-L, L-G |
| Response Time | < 5ns Installed, < 1ns Component Level |
| Operating Frequency | 0-400 Hz |
| Class | Secondary Surge Arrestor, Cat C |
| Installation Point | Meter base, main panel, disconnect or weatherhead |
| Connection Method | Hardwired parallel |
| Agency Approvals | UL-OWHX, cUL, ANSI/IEEE C62.11 |
| Housing | High Impact Plastic |
| Housing Size | 4.35" x 3.35" x 1.60" |
| Weight | 0.75 lbs |
| Warranty | Limited Lifetime |



DTK-LVLP Series

Low Voltage Applications

- Available in 4 pairs
- UL497B listed and UL497A models available
- Specify desired clamping voltage; 7, 15, 27, 52, 75, 95, 130
- Hardwire Series Connection

*Note: these units are only examples of the many applications. Voltages may vary between different manufacturers. Please call SUPCO Technical Support Representative for specific applications.

***Any other DTK Surge Arrestor Available by Special Order.**

| PART NO. | # OF WIRES PROTECTED | 130 VRMS | 95 VRMS | 75 VRMS | 52 VRMS | 27 VRMS | 15 VRMS | 7 VRMS |
|-----------|----------------------|----------|---------|---------|---------|---------|---------|--------|
| DTK-4LVLP | 8 wires | RUV | SGR | SPK | OPX | LV | X | D |

Example: DTK-1LVLP-SCP*-LV (30V DC, 2 wire) *Note: SCP adds over current protection.

RESIDENTIAL APPLICATIONS

| | |
|-----------------------|-------------------------------------|
| DTK-1LVLP-LV (24V AC) | Load side of 24v AC transformer |
| DTK-1LVLP-D (5V DC) | Thermostat lines, controls, sensors |

COMMERCIAL APPLICATIONS

| | |
|---|---|
| DTK-2 LVLP-SCP-RUV (130V DC) | Telephone lines at master/control Communications Panel |
| DTK-1-4 LVLP-LV (24V AC/DC) (SCP available) | 4-20 milliamp loop circuits for monitoring pressure, humidity, air quality, air flow... |
| DTK-1-4 LVLP-D (7V DC) | Communication circuits, RS485 Networks, temperature, air and liquid monitoring controls |



SCMPLUG

Providing the same protection of the SCM in a convenient, single outlet plug. Plug the SCMPLUG into an outlet, then plug your sensitive equipment into the SCMPLUG for surge protection!



APP120 All Purpose Protector

Benefits

- Helps prevent blown fuses
- Short cycle protection
- Prevents operation in low voltage conditions
- Prevents false starting attempts
- Easy installation
- LED to indicate proper operation
- Automatically restarts

Helps protect refrigerators, window air conditioners, dehumidifiers and other appliances from damage due to power interruptions. (Brown-outs)

Refer to and abide by all Local and State Electrical Codes for proper installation of these devices.

Specifications

| | APP120 |
|------------------------|-------------------------------|
| Minimum Starting Volts | 90 VAC single phase |
| Operating Volts | 115 VAC single phase |
| Maximum Switching | 1.0 HP @ 115 VAC (12,000 BTU) |

General Specifications

| | |
|-----------------------|--|
| Time Delay | 4 minutes \pm 1 minute |
| Power consumption | 10 mA |
| Operating Temperature | 14°F to 158°F (-10°C to 70°C) |
| Size | 9.055" X 4.72" X 3.15" (230mm X 120mm X 80mm) |

Motor Protection



TPMP2

Compact Three Phase Motor Protector

Features & Benefits

- Low cost three phase motor protection
- Easy Installation
- Compact design
- Monitors and protects against phase loss and phase imbalance only
- Operating Temperature -40°F to +167°F (-40°C to +75°C)
- 1/4" male spade terminal connections

Sequence of Operation

The TPMP series will disconnect the motor pilot when the monitored problem is detected. The TPMP series will only re-energize the circuit when all 3 phases are activated at the full voltage ratings and the delay on make time has elapsed. The TPMP2 does not have a time delay feature.

Applications

- HVAC/R Motors and Pumps
- HVAC/R Compressors
- Protects Scroll and Screw Compressors from reverse rotation
- Material Handling Equipment (Overhead Electric Crane Motors)
- Elevator Motors
- Utilities

TPMP2

| | |
|-------------------------|--|
| Input Line Voltage | 208 - 277 VAC |
| Control Voltage | 18 - 240 VAC |
| Frequency | 50/60 Hz |
| Imbalance | Fixed 7% |
| Total Power Consumption | 3 VA Maximum |
| Contact Type | N.O. & N.C. Type C |
| Resistive | 5 AMP 240 VAC/10 AMP 120 VAC |
| Fire Resistive Plastic | UL-94 VO |
| Dimensions | 2.35" x 2.43" x 1.1" (59.7 x 61.7 x 27.9 mm) |
| Weight | 2 oz. (54 gr) |



TPMPU

Universal Three Phase Motor Protector

Features & Benefits

- Low cost Universal three phase motor protection
- Easy Installation
- Minimizes inventory
- Monitors and protects against phase loss, reversal and imbalance
- Response time 80 milliseconds maximum
- Bright LED for on and fault indications
- Operating Temperature -40°F to 167°F (-40°C to 75°C)
- 1/4" male spade terminal connections
- Delay on make timer
- Adjustable 10 seconds to 5 minutes
- Tolerance +/- 20%

TPMPU

| | |
|-------------------------|--|
| Input Line Voltage | 180 - 600 VAC |
| Control Voltage | 18 - 240 VAC |
| Frequency | 50/60 Hz (cut wire for Hz) |
| Imbalance | Adjustable \pm 40 to 20% |
| Total Power Consumption | 3 VA Maximum |
| Contact Ratings | 10 AMP SPDT |
| Resistive | 10 AMP 240 VAC, 12 AMP 120 VAC/24 VAC |
| Inductive | 4.5 AMP 230 V- Cos. 0.6 |
| Fire Resistive Plastic | UL-94 VO |
| Dimensions | 5.35" x 3.68" x 1.26" (136 x 93.5 x 32 mm) |
| Weight | 6.35 oz. (180 gr) |

TPMPU Application Note

The TPMPU is designed to protect the motor against running with phases reversed. On your first start if the fault indication is ON and the motor did not start, switch any two of the lines (L1, L2, or L3) so that the TPMPU phases match the existing motor

Three Phase Motor Protector Tech Tip

Voltage Imbalance

The voltage applied to a three-phase motor must be balanced, meaning the applied voltage to each leg must be relatively the same. The applied voltage must not deviate more than 2% from the average supplied voltage. A voltage imbalance of greater than 2% will cause the windings within a motor to generate heat beyond its safe levels, leading to premature motor failure.

The following steps can be used to calculate the percentage of voltage imbalance:

1. Measure the voltage applied across each of the windings, from L1 to L2, L1 to L3 and L2 to L3.
2. Next, calculate the average supplied voltage. This is done by adding the three measured voltage values and dividing the sum by three.
3. Next calculate the maximum deviation of each of the measured voltages from the calculated average voltage.
4. The percentage of voltage imbalance can then be calculated using the following formula:

$$\% \text{ Voltage Imbalance} = \text{Maximum Deviation} / \text{Average Voltage} \times 100$$

For example, suppose the following voltages were measured:

- L1 to L2 - 221 volts
- L2 to L3 - 223 volts
- L1 to L3 - 220 volts

Calculate the average applied voltage:

$$221 \text{ volts} + 223 \text{ volts} + 220 \text{ volts} = 664 \text{ volts} / 3 = 221.3 \text{ volts} \\ (\text{average applied voltage})$$

Calculate the maximum deviation of each applied voltage from the calculated average voltage:

$$221.3 - 221 = 0.3 \text{ volts} \\ 223 - 221.3 = 1.7 \text{ volts} \\ 221.3 - 220 = 1.3 \text{ volts}$$

1.7 volts is the maximum deviation from the average calculated voltage.

Calculate the percentage of voltage imbalance:

$$\% \text{ Voltage Imbalance} = \text{Maximum Deviation} / \text{Average Voltage} \times 100$$

$$\% \text{ Voltage Imbalance} = 1.7 \text{ volts} / 221.3 \text{ volts} \times 100 = 0.77\%$$

Since this is well below 2%, the motor will operate safely.



SUPCO Commercial Refrigeration Defrost Controls

Designed to meet a wide variety of customer requirements. These electro-mechanical controls are used on many different types of commercial refrigeration equipment, including walk in boxes, reach in boxes, refrigerated cases and condensing units.



Features/Benefits

- Heavy-duty synchronous motor.
- Adjustable Defrost Initiation Frequency: One to six times per day.
- Adjustable Defrost Cycle Duration: 4 to 110 minutes in two-minute increments.
- Contact Arrangements: Electric heat, hot gas, or off cycle defrost available.
- Heavy-duty steel case with electrical knockouts in the sides, back and bottom.

Specifications

- Operating Voltages: 120 or 208/240 VAC, 60 Hz
- Amperage: 40-amp non-inductive @ 120, 208 or 240 VAC
- Maximum hp: 2 hp @ 120, 208 or 240 VAC
- Pilot Duty: 690 VA @ 120, 208 or 240 VAC
- Operating Temperature Range: -35°F to 175°F
- Overall Case Dimensions: 7.697" H x 4.4" W x 3.8" D
- Shipping Weight: S8040 series 3.5 lbs & S8141 series 3.75 lbs.

Applications

As a defrost control based upon the following functions.

- Time initiation and time termination.
- Time initiation and temperature termination.
- Time initiation and pressure termination.



Accessories

X3596 Dial Pins 5 Pins Per Pack

Models

| PART NO. | VOLTAGE | SWITCHING | | TIME INITIATED | TIME INITIATED |
|----------------|---------|------------------|--------------------|-----------------|------------------------------------|
| | | NO NORMALLY OPEN | NC NORMALLY CLOSED | TIME TERMINATED | TEMPERATURE OR PRESSURE TERMINATED |
| S804100 | 120 | 1 NO / 2 NC | | YES | NO |
| S804120 | 240 | 1 NO / 2 NC | | YES | NO |
| S804500 | 120 | 1 NO / 1 NC | | YES | NO |
| S804520 | 240 | 1 NO / 1 NC | | YES | NO |
| S814100 | 120 | 1 NO / 2 NC | | NO | YES |
| S814120 | 240 | 1 NO / 2 NC | | NO | YES |
| S814500 | 120 | 1 NO / 1 NC | | NO | YES |
| S814520 | 240 | 1 NO / 1 NC | | NO | YES |

Cross Reference

| SUPCO | PARAGON | PRECISION |
|----------------|---------|-----------|
| S804100 | 8041-00 | 6041-00 |
| S804120 | 8041-20 | 6041-20 |
| S804500 | 8045-00 | 6045-00 |
| S804520 | 8045-20 | 6045-20 |
| S814100 | 8141-00 | 6141-00 |
| S814120 | 8141-20 | 6141-20 |
| S814500 | 8145-00 | 6145-00 |
| S814520 | 8145-20 | 6145-20 |

M814520

EXACT DROP-IN REPLACEMENT MECHANISM for SUPCO S814520 and Paragon® 8145-20



**Sold in convenient
6-pack counter display!**

Timers

General Purpose 24 Hour Mechanical Type CD100 Series



CD101

Features

- Dial: 24 hour, 2 on and 2 off trippers
- Switch Rating: 40 amps resistive or tungsten, 1000 VA pilot duty, 2 hp and 120 or 240 volts.
- Operations: Up to 10 ON/OFF operations per 24 hours. With manual ON/OFF switch that allows circuit to be hand operated without disturbing scheduled setting.
- Minimum Setting: 1 hour between ON/OFF, 2 hours between OFF/ON.
- Enclosure: Non corrosive NEMA 1

Applications

- Pool filter pumps
- Indoor and outdoor lighting systems
- Pool heaters
- Sprinkler systems

| PART NO. | REPLACES | | | |
|----------|----------|-------|--------|-----------|
| | PARAGON | VOLTS | SWITCH | ENCLOSURE |
| CD101 | 4001-00 | 120 | SPST | NEMA1 |
| CD104 | 4004-71 | 240 | DPST | NEMA1 |

Accessories

X100 - Trippers (2 per bag)

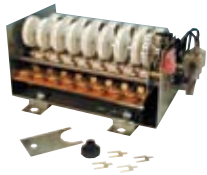
5000 Series Multi Circuit Defrost Controls



These accurate multi-circuit timing devices can individually operate from 1 to 24 switches.

Features

- Field adjustable defrost control combines ease of programming with accuracy and reliability.
- Positive snap acting switches to provide positive and immediate switching.
- Time Cycle: Adjustable in 2 minute increments from 2 to 120 minutes.
- Motor: Synchronous type, completely sealed and lubricated.
- Motor Power: 4 watts
- Motor Temperature Range: (Ambient): 35°F to 175°F
- Base: All steel construction, 16 gauge-channelled steel. Zinc plated for corrosion resistance and durability.
- Contact Transfers: Maximum number of contact transfers per 24-hour period for each program timer is 64 (8-switch unit) or 32 (4-switch unit).
- Terminals: 1/4" male quick connect (standard).



| PART NO. | VOLTS | Hz | NO. OF SWITCHES | NO. OF MOTORS |
|----------|-------|-------|-----------------|---------------|
| 50100B | 120 | 60 | 8 | 2 |
| 50103B | 240 | 60 | 8 | 2 |
| 5011 | Slave | Slave | 8 | Slave |
| 5014 | Slave | Slave | 4 | Slave |
| 50150B | 120 | 60 | 4 | 2 |
| 50153B | 240 | 60 | 4 | 2 |

Applications

The 5000 series controls are designed to control a series of operations with a variable time sequence; such as a refrigerator defrost cycle.

Electronic Adjustable Timers

Features

- Adjustable Interval Timers
- LED to indicate energized load
- Fast cycle button to alternate timer manually
- Automatic cycle is between 40 to 60 seconds
- Timer reset connection for external reset control
- Replaces most mechanical commercial timers
- Mounted using # 6 screws (not included)
- Available in 120 Volts or 220 Volts



Applications

- Defrost Heaters
- Motors
- Water Heaters
- Pumps
- Indoor or Outdoor Lighting Systems

Common Specifications for EDT12 and EDT13

| | |
|-----------------|--------------------------|
| On Time | 5 to 60 Minutes |
| Off Time | 1 to 27 Hours |
| Timing Accuracy | ±10% |
| Fast Cycle | Approximately 30 Seconds |

| PART NO. | OPERATING VOLTAGE | MAXIMUM MOTOR SWITCHING CAPACITY, hp | MAXIMUM SWITCHING CURRENT (RESISTIVE), AMP | NO. OF Set OF CONTACTS |
|----------|-------------------|--------------------------------------|--|------------------------|
| EDT12 | 120 | 1 | 27 | 1 |
| EDT12-20 | 220 | 2 | 25 | 1 |
| EDT13 | 120 | 1 | 27 | 2 |
| EDT13-20 | 220 | 2 | 25 | 2 |

EDT Series Electronic Adjustable Defrost Timers

Features/Benefits

- Universal Replacement
- Electronic Circuitry
- Adjustable Defrost Frequency 4 to 12 Hours
- Adjustable Defrost Time 10 to 35 Minutes
- Available in 115 & 208/240 Volts
- Standard Size & Mounting To Fit Most Applications
- No Ground Wire
- Quiet Operation & Durability
- Standard Terminal Configuration To Accommodate Most Connections
- Dust Proof Case
- Temperature Range: 32°F to 135°F (0°C to 57°C)
- Humidity Range: 10-95% Non-Condensing



| PART NO. | VOLTAGE | MAX. COMPRESSOR RATING | MAX. RESISTIVE LOAD |
|----------|-------------|------------------------|---------------------|
| EDT10 | 115 VAC | 1/3 HP | 10 Amp |
| EDT20 | 208/240 VAC | 1/3 HP | 5 Amp |
| EDT11 | 115 VAC | 3/4 HP | 20 Amp |
| EDT21 | 208/240 VAC | 3/4 HP | 20 Amp |

Optional Accessories

- WH3 - Three wire adapter kit
- WH4 - Four wire adapter kit

GC400 Series Cycle Defrost Controls

Constant Cut-in Universal Replacement

Features/Benefits

- 39°F Constant Cut-In
- Adjustable Cut Out
- Universal Mounting Hardware Included

Applications

- Provides automatic defrost each compressor cycle



| PART NO. | CALIBRATION °F | | | CAPILLARY | |
|----------|----------------|----------|----------|-----------|--------|
| | NORM OFF | WARM OFF | COLD OFF | CUT-IN | LENGTH |
| GC401 | 3 | -11 | -23 | 39 | 51" |
| GC405 | 12 | -5 | -15 | 39 | 60" |
| GC410 | 12 | 24 | 5 | 39 | 40" |

Thermostats rated 125 VAC, 1/2 HP, 20 Amps F.L - 80 Amps L.R., SPST switch action.

GC500 Series Cold Control

Constant Differential Universal Replacement

Features/Benefits

- Maintains Differential between On and Off Temperatures
- Adjustable Operating Temperatures
- Universal Mounting Hardware Included

Applications

- "Frostfree" and Conventional Refrigeration Units



| PART NO. | NORMAL °F | | CALIBRATION °F | | DIFF °F | CAPILLARY LENGTH |
|----------|-----------|----|----------------|---------|---------|------------------|
| | OFF | ON | WARM OFF | COLD ON | | |
| GC501 | 9 | 20 | 38 | -16 | 11 | 42" |
| GC503 | 9 | 26 | 42.5 | -16 | 17 | 42" |
| GC505 | 31 | 36 | 49 | 16 | 5 | 24" |
| GC506 | 18 | 31 | 48.5 | -7 | 13 | 24" |

Thermostats rated 125 VAC, 1/2 HP, 20 Amps F.L - 80 Amps L.R., SPST switch action.

GC600 Series Cold Control

Constant Differential Universal Replacement

Features/Benefits

- Maintains Differential between On and Off Temperatures
- Adjustable Operating Temperatures
- Universal Mounting Hardware Included

Applications

- Freezers



| PART NO. | NORMAL °F | | CALIBRATION °F | | DIFF °F | CAPILLARY LENGTH |
|----------|-----------|----|----------------|---------|---------|------------------|
| | OFF | ON | WARM OFF | COLD ON | | |
| GC601 | -5 | 4 | 22 | -29 | 9 | 78" |
| GC602 | -13 | 0 | 12 | -30 | 13 | 78" |
| GC604 | -12 | 6 | 20 | -34 | 18 | 36" |
| GC607 | -8 | 1 | 13 | -23 | 9 | 31" |

Thermostats rated 125 VAC, 1/2 HP, 20 Amps F.L - 80 Amps L.R., SPST switch action.

GC700 Series For Air Conditioners

Universal Replacement

Features/Benefits

- Covers a Wide Range of Applications
- Universal Mounting Hardware Included

Applications

- Room Air Conditioners



| PART NO. | RANGE °F | | | CAPILLARY DETAILS | | ELECTRICAL RATINGS | | |
|----------|----------|---------|---------|-------------------|----------|----------------------------|----------|------|
| | COLD Off | WARM On | DIFF °F | LENGTH | STYLE | 120 / 208 / 240 VAC SWITCH | F.I.A.L. | R.A |
| GC701 | 52 | 93 | 6 | 18" | Air Coil | SPST | 20 A | 80 A |
| GC702 | 52 | 93 | 6 | 36" | Straight | SPST | 30 A | 125A |
| GC707 | 52 | 93 | 6 | 36" | | StraightSPDT | | 25A |

SC1002 Temporary Cold Control

Features/Benefits

- Temporary Emergency Universal Replacement
- Keeps Equipment Up & Running Until Exact Replacement or Permanent Control Is Installed
- SC1002 Can Be Used As Permanent Control
- Three Mounting Options Available Suction Cup, Velcro or Screw Mounting
- Safe & Easy Installation

Applications

- Domestic & Commercial Refrigerators & Freezers

| PART NO. | TEMP. RANGE | DIFF °F | SWITCH |
|----------|--------------|---------|--------|
| SC1002 | -6°F to 40°F | 7° | SPST |



***For wiring accessories refer to pages 107 -110 Terminals & Connectors.**

Time Delays

TD Series Time Delays

Standard Features / Specifications

- Three styles available: Delay on Make, Delay on Break & By – Pass
- Fixed or adjustable delay ranges
- Initiate timer in 70 milliseconds
- Broad input voltage range (Pilot Circuit)
19 to 250 VAC/VDC, 50/60 Hz (TD60)
19 to 250 VAC ONLY, 50/60 Hz (TD70)
- Maximum load 1.0 amp, 10 amp inrush
- Varying models work with or without anticipator type thermostats
- Terminal or wire connections available

- Operating Temperature Range 0°F to 160° F (-18°C to 71°C)
- Compact Size 2" x 2" x .075" (5.08 x 5.08 x 1.9 cm)
- Non positional single hole mounting
- All parameters are subject to change as per special requirements
- By – pass a control or device during start up
- Helps to reduce power surges in multiple compressor applications

General Applications

- Protection from short cycling of compressor
- Ideal for compressor staging

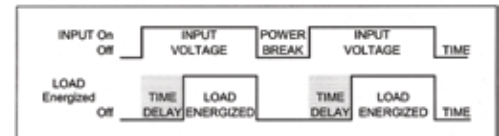


TD60 Series Delay on Make Timers (DOM)

Mode of Operation

- Upon application of power the time delay initiates. On completion of selected delay period, the load is energized. Timer will reset on power interruption or when thermostat disconnects.

Timing Diagram



| PART NO. | DELAY RANGE ADJUSTABLE | DELAY RANGE FIXED (min) | CONNECTIONS | REPLACES |
|----------|------------------------|-------------------------|-----------------------|--|
| TD68** | 6 sec to 8 min | n/a | 2 1/4" male terminals | Diversitech AC-800-ADM1 / ICM 105 / A-1 706 / Mars 32391 |
| TD69* | 6 sec to 8 min | n/a | 2 1/4" male terminals | Diversitech AC-800-ADM1 / ICM 102 / A-1 701 / Mars 32391 |
| TD69W* | 6 sec to 8 min | n/a | 2 6" long wire leads | |

*Cut the jumper to use in 120/240 volts. **The TD68 is not for use with a cooling anticipator.

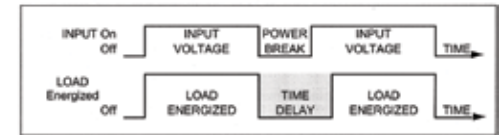


TD70 Series Delay on Break Timers (DOB)

Mode of Operation

- Upon application of power the load is energized immediately. When the thermostat opens or on power interruption the load is de-energized and the time delay initiates. The load will be energized again after the delay time has elapsed.

Timing Diagram



| PART NO. | DELAY RANGE ADJUSTABLE | DELAY RANGE FIXED (min) | CONNECTIONS | REPLACES |
|----------|------------------------|-------------------------|-----------------------|---|
| TD72** | 6 sec to 5 min | n/a | 2 1/4" male terminals | Diversitech ASC500-ADB1 / ICM203 / Mars 32392 / A-1 EAC-501-ADJ |
| TD73* | 6 sec to 5 min | n/a | 2 1/4" male terminals | Diversitech ASC500-ADB1 / ICM203 / Mars 32392 / A-1 EAC-501-ADJ |
| TD73W* | 6 sec to 5 min | n/a | 2 6" long wire leads | |

*Cut the jumper to use in 120/240 volts. **The TD72 is not for use with a cooling anticipator.

Ventilator Motors



SM550 Series Ventilator Motors

Features/Benefits

- Exact Replacement for Nutone Range Hood Ventilators
- C Frame Design
- SM550 Motor includes FB460 Impeller

Applications

- Range Hoods
- Bathroom Exhaust Fans

| PART NO. | SPEED | RPM | SHAFT | | STACK | LEAD | NUTONE | ROBERTSHAW |
|----------|-------|-----------------------|-----------------|----------|-------|--------------|--------|------------|
| | | | DIMENSIONS | ROTATION | | | NO. | NO. |
| SM550 | 1 | 3000 | 7/32" X 1 3/4" | CCW | 1/2" | 120 V Plug | C65878 | 33-100 |
| SM551 | 2 | High 3000 Low 1640 | 7/32" X 1 7/16" | CW | 7/8" | 2 Speed Plug | C52367 | 33-101 |
| SM552 | 1 | 3000 | 7/32" X 1 1/4" | CCW | 3/4" | 120 V Plug | C63675 | 33-103 |
| SM553 | 1 | 3000 | 7/32" X 1 3/4" | CCW | 3/4" | Eyelet | C66582 | 33-104 |
| SM554 | 2 | High 3300 Low 1500 | 7/32" X 1 7/16" | CCW | 7/8" | 2 Speed Plug | C27987 | 33-105 |
| SM555 | 1 | 3000 | 7/32" X 2 3/8" | CCW | 5/8" | 120 V Plug | C68627 | 33-106 |
| SM556 | 1 | 3000 | 7/32" X 1 7/8" | CCW | 5/8" | 120 V Plug | C34484 | N/A |

SM700 Series Ventilator Motors

Features/Benefits

- Exact Replacement for Broan Ventilators
- C Frame Design
- 120 Volts / 60 Hz
- CCW Rotation
- Multi Fit To Work With Other Brand Ventilators

Tech Tips

| PART NO. | SPEED | SHAFT DIA. | SHAFT STACK | SHAFT LENGTH | PLUG TYPE | REPLACES BROAN NO. |
|----------|-------|------------|-------------|--------------|-----------|--------------------|
| SM700 | 2 | 7/32" | 3/4" | 1 1/4" F | 3 PIN | 99080218 |
| SM701 | 1 | 1/4" | 7/8" | 2 3/4" F | 2 PRONG | 99080159 |
| SM702 | 1 | 1/4" | 7/8" | 2 3/4" F | 5 PIN | 99080160 |
| SM703 | 1 | 5/32" | 1/2" | 1 3/4" S | 2 PRONG | 99080245 |
| SM704 | 1 | 7/32" | 7/8" | 1 1/4" F | 2 PRONG | 99080166 |
| SM705 | 1 | .181" | 5/8" | 1 1/2" F | 2 PRONG | 99080216 |



- "F" suffix on shaft length indicates flat on shaft.
- "S" suffix indicates spline shaft.
- When replacing a motor make sure that the type, voltage, amperage, wattage, rotation, shaft size, stack size and the electrical connectors are the same as the original motor.

Evaporator Fan Motors

SM999 Universal Evaporator Fan Motor Kit – 120 VAC

Features/Benefits

- Prefastened Multi Fit, Break Off Mounting Bracket
- Break Off 2" Motor Shaft with Breakaways at 1/2" and 1-1/2"
- Includes All Mounting Accessories and Hardware
- Reversible Rotation
- Single Speed
- Shaft Diameter 1/8"

Applications

- Replaces Over 450 Different Evaporator Type Motors.
- Direct Replacement For The GEM 240 Series, Mars 90999 and Robertshaw 33-110, 33-112 & 33-114.



SM998 Universal Evaporator Fan Motor Kit – 220 VAC

Features/Benefits

- Includes the same Features & Benefits, Applications and Specifications as the SM999, except it operates on 220 VAC 50/60 Hz.
- Direct Replacement for the Mars 90998

| PART NO. | DESCRIPTION |
|----------|--|
| SM999 | 120 VAC, 3000 RPM, 1/200 hp, .31 AMP impedance protected |
| SM998 | 220 VAC, 3000 RPM, 1/200 hp, .31 AMP impedance protected |



Motor Rotation

To determine motor rotation:

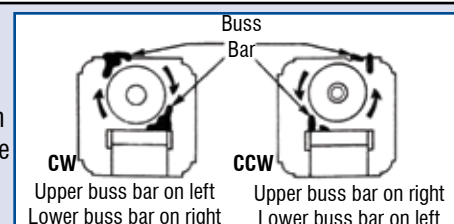
CW - Clockwise CCW - Counter Clockwise

A. Facing shaft end of motor, locate the copper Buss Bar as indicated in illustration.

B. The Buss Bar location determines shaft rotation.

Motor Rotation as viewed facing Shaft

CW - Clockwise Rotation
CCW - Counter Clockwise



Motors



SM140-40A Blower Fan Assembly

Features/Benefits

- Direct replacement kit for Nutone bath fans
- Replaces Nutone motor P/N K5895 and kit P/N K5894

- Kit includes single speed motor, 3 3/4"x2" blower wheel and mounting bracket.
- Motor includes 6" wire leads with molded plug.

| PART NO. | SPEED | RPM | VOLTS | AMPS | ROTATION | NUTONE |
|-----------|-------|------|-------|------|----------|-------------------------------------|
| SM140-40A | 1 | 2400 | 115 | 0.9 | CCWSE | K5894 Motor Kit K5895 Motor Only |

Exact Replacement & Utility Motors



SM600 Series Utility Motor Kits

Features/Benefits

- Versatile replacement for all "C" Frame and 3 1/2" Round Style motors
- Impedance Protected
- SM670, SM672 and SM673 include fan blades FB402 and FB550
- SM675 is thermal protected
- Available in sleeve or ballbearing design
- SM675 includes fan blade FB550 only
- Motor Kits include complete hardware and mounting kits

Applications

- Reach In Cooler & Freezer Evaporators
- Walk In Cooler & Freezer Evaporators
- Exhaust Fans
- Ventilator Fans
- Range Hoods
- Electric Unit Heaters



Specifications

| PART NO. | TYPE | VOLTS AC | RPM | CURRENT (AMPS) | SHAFT DIMENSIONS | STACK SIZE | ROTATION (REVERSIBLE) | ACME MIAMI | REPLACES BOHN | REPLACES ROBERTSHAW | REPLACES MARS |
|--------------------|--------|----------|-----------|----------------|------------------|------------|-----------------------|---------------------|-------------------------|---------------------|---------------|
| SM670 ^a | Sleeve | 120 | 3000 | 0.55 | 3/16" X 1-1/4" | 5/8" | CW/CCW | 600, 700, 710, 4670 | | 14001 | 90971 |
| SM671 | Sleeve | 120 | 3000 | 0.55 | 3/16" X 1 1/4" | 5/8" | CW/CCW | | | 14003 | |
| SM672 ^a | Sleeve | 240 | 3000 | 0.32 | 3/16" X 1 1/4" | 5/8" | CW/CCW | 602, 702, 4672 | | 14005 | 90982 |
| SM673 ^a | Sleeve | 120 | 3000/1550 | .55/.34 | 3/16" X 1 1/4" | 5/8" | CW/CCW | 4673 | | 14007 | |
| SM675 ^b | Sleeve | 120/240 | 3000 | 1.0/.50 | 3/16" X 2 3/8" | 1" | CW/CCW | 7502 | | 90970 | |
| SM676 | Sleeve | 120 | 3000 | 0.5 | 3/16" X 1 1/4" | 7/8" | CW/CCW | 780 | | 14011 | |
| SM678 | Sleeve | 120 | 3000 | 0.55 | 3/16" X 1 1/2" | 1/2" | CW/CCW | | | 14015 | |
| SM679 | Sleeve | 120 | 3000 | 0.5 | 7/32" X 1 1/2" | 5/8" | CW/CCW | | | 14017 | |
| SM680 | Sleeve | 120 | 3000 | 0.9 | 3/16" X 1 1/2" | 1 1/8" | CW/CCW | 750 | | 14019 | 90970 |
| SM681 | Sleeve | 120 | 3000/1550 | .82/.21 | 3/16" X 1 3/8" | 5/8" | CW/CCW | | | 14021 | |
| SM683 | Sleeve | 240 | 3000 | 0.25 | 3/16" X 1 1/4" | 7/8" | CW/CCW | | | 14025 | 90970 |
| SM684 | Sleeve | 120 | 3000/1550 | .82/.21 | 7/32" X 2 1/4" | 1" | CW/CCW | | | | |
| SM685 | Sleeve | 120 | 3000/1550 | .82/.21 | 3/16" X 1 3/4" | 7/8" | CW | | | | |
| SM690C | Sleeve | 120 | 3000 | 0.4 | 3/16" X 1 1/2" | 5/8" | CW | | | | |
| SM691 | Sleeve | 120 | 3000 | .80 | 3/16" X 1 1/4" | 5/8" | CW | | 5007S 5036F 5018S | | |
| SM692 | Sleeve | 240 | 3000 | .40 | 3/16" X 1-1/4" | 5/8" | CW | | 5007T 5018T | | |
| SM775 | Sleeve | 120/240 | 3000 | 1.0/.52 | 3/16" X 2-3/8" | 1" | CW/CCW | | | | |

^a Includes hardware kit: 2 fan blades, mounting bracket, hub adapter, 1/4" shaft adapter, & 5/16" shaft adapter.

^b Includes hardware kit: 1 fan blade, mounting bracket, hub adapter, 1/4" shaft adapter, & 5/16" shaft adapter. Motor shaft is 2 3/8" with breakoffs at 5/8" & 1 7/8" points.



SM6700B Motor Kit Assembly

Features/Benefits

- Replaces Acme Miami 700
- OEM replacement for Bohn, Heatcraft, Uppco, Singer, GE 33 Series.
- Kit includes reversible motor, three fan blades, hardware kit and Instructions.

Applications

- Commercial Refrigeration Evaporators

Specifications

| VOLTS | HERTZ | AMPS | RPM | SHAFT SIZE | STACK SIZE | BEARING TYPE |
|-------|-------|------|------|----------------|------------|--------------|
| 120 | 60 | .55 | 3000 | 3/16" x 1 1/4" | 5/8" | Sleeve |

SM6700B

Replacement Fan Blades 3/16" Hub

| Part No. | Dimensions |
|--------------------|----------------------|
| FB402 | 4", CW, 5 wing |
| FB455 (Bohn 5101B) | 5 9/16", CCW, 5 wing |
| FB550 | 5 1/2", CCW, 4 wing |

Motor Accessories



GFK1 Grease Fitting Kit

- One time installation
- Provide easy access at hard to reach lubrication points
- Makes preventative maintenance (PM's) routine
- Eliminates need for cover removal and equipment disassembly
- Complete with 10' high pressure tubing and required fittings
- Tubing rated -60°F to 200°F

HVAC - Duct Boosters



Conforms to UL Standard 507



DB Series Duct Boosters

For increased Air Flow in both hot and cold forced air systems, the DB Series Duct Boosters provide the easy, economical solution.

Features/Benefits

- Easy installation
- Energy savings
- Economical solution
- Fits in round, square or rectangular ducts
- Operates only when you want it
- 1 year warranty
- Motor is thermally protected
- Maximum operating temperature: 140°F (60°C)
- Maximum airstream temperature: 135°F (58°C)
- Motor thermal fuse: 150°F (64°C)

Applications

- Problem heating and cooling areas
- Low air flow areas

Installation Tools Required

- Screwdriver
- 1/2" and 1/8" sheet metal drill bits
- Sheet metal shears
- Electrical junction box (if required by code)

| PART NO. | DIMENSIONS | FAN BLADE | VOLTAGE | MOTOR RATINGS | CFM |
|----------|------------|-----------------|------------|------------------|-----|
| DB6 | 6" x 6" | 5.25", 1950 rpm | 115V 60Hz | .35 A, 30 Watts | 250 |
| DB6-220 | 6" x 6" | 5.25", 1950 rpm | 220V 50Hz | .25 A, 30 Watts | 250 |
| DB8 | 8" x 8" | 7", 1750 rpm | 115V 60 Hz | .75 A, 60 Watts | 500 |
| DB8-220 | 8" x 8" | 7", 1750 rpm | 220V 50 Hz | .45 A, 60 Watts | 500 |
| DB10 | 8" x 10" | 8", 1300 rpm | 115V 60 Hz | 1.5 A, 120 Watts | 650 |
| DB12 | 9" x 12" | 10", 1300 rpm | 115V60 Hz | 1.5 A, 120 Watts | 800 |

Mounting Kit and Templates included.



Use the SUPCO DAVM+ to check duct operation and efficiency. Refer to page 78 for complete details.

Fan Blades



Exact Replacement Plastic Impellers



Features/Benefits

- Broan & Nutone Exact Replacement Impellers
- 3 Sizes Available

Tech Tip

- “F” Suffix on impeller hole indicates impeller will accommodate flat shaft.

Applications

- Bathroom Ventilators
- Kitchen Ventilators

| PART NO. | REPLACES MFG. NO. | BLADE O.D. | HOLE I.D. |
|----------|-------------------|------------|-----------|
| SB001 | Nutone 68920 | 4 5/8" | .181F |
| FB460 | Broan 9910379H | 4 9/16" | .218 |
| FB461 | Broan 99110630 | 4 5/8" | .150 |

Plastic Blower Wheels



Features/Benefits

- 3 Sizes Available

Applications

- Bathroom Ventilators
- Kitchen Ventilators

| PART NO. | SHAFT | ROTATION | BOTTOM DIAMETER | DEPTH | TOP DIAMETER | OEM PART NO. |
|----------|-------|----------|-----------------|-------|--------------|---------------|
| FB250 | 1/8" | CW | 2 1/2" | 1" | 2 11/16" | |
| FB325 | 3/16" | CW | 3" | 1" | 3 1/4" | |
| FB590 | 1/4" | CW | 5 3/4" | 2" | 6 1/8" | Nutone 59000A |

Plastic Vent Hood Fan Blades



Features/Benefits

- 2 Sizes Available

Applications

- Ducted & Non Ducted Vent Hoods

| PART NO. | SHAFT | DIAMETER | NO. BLADES | ROTATION | PITCH | Volume |
|----------|-------|----------|------------|----------|-------|----------|
| FB660 | 7/32" | 6 5/8" | 5 | CW | 25° | High |
| FB665 | 7/32" | 6 5/8" | 5 | CW | 12° | Standard |

Use with SM500 series or SM700 series that have 7/32" w/flat shaft.
Replaces Nutone 68929300 and many Broan blades.

Plastic Fan Blades – General Purpose

Features/Benefits

- Celcon Plastic Construction
- Light Weight Design Reduces Bearing Wear & Vibrations
- 2 1/2" to 8" Diameter Sizes Available (1/2" increments)
- Integral Hub Available In 1/8", 3/16", 1/4" & 5/16" Sizes
- Color Coded Rotation White = CW Gray = CCW
- Eliminates Bent or Misaligned Blades
- Low Air Noise

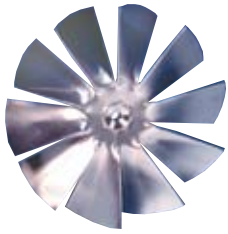
Applications

- Refrigerator & Freezer Evaporators
- Ventilators



| PART NO. | SHAFT | DIAMETER | NO. OF BLADES | ROTATION |
|----------|-------|----------|---------------|----------|
| FB302 | 3/16" | 3 1/2" | 4 | CW |
| FB350 | 3/16" | 3 1/2" | 4 | CW |
| FB401 | 1/8" | 4" | 5 | CW |
| FB402 | 3/16" | 4" | 5 | CW |
| FB403 | 1/8" | 4" | 5 | CCW |
| FB404 | 3/16" | 4" | 5 | CCW |
| FB501 | 3/16" | 5" | 5 | CW |
| FB504 | 3/16" | 5" | 5 | CCW |
| FB550 | 3/16" | 5 1/2" | 4 | CCW |

| PART NO. | SHAFT | DIAMETER | NO. OF BLADES | ROTATION |
|----------|-------|----------|---------------|----------|
| FB551 | 1/4" | 5 1/2" | 4 | CCW |
| FB601 | 3/16" | 6" | 6 | CW |
| FB604 | 3/16" | 6" | 4 | CCW |
| FB650 | 3/16" | 6 1/2" | 5 | CW |
| FB651 | 1/4" | 6 1/2" | 5 | CW |
| FB701 | 1/4" | 7" | 5 | CW |
| FB702 | 5/16" | 7" | 5 | CW |
| FB703 | 1/4" | 7" | 5 | CCW |
| FB803 | 1/4" | 8" | 5 | CCW |



Aluminum Fan Blades - General Purpose

Features/Benefits

- 22 Gauge Aluminum Alloy Construction
- Light Weight Design Reduces Bearing Wear & Vibration
- 4" to 6 1/2" Diameter Sizes Available (1/2" increments)
- Slotted Set Screw Hub Sizes 3/16", 7/32" & 1/4"
- Clockwise or Counter Clockwise Rotations

Applications

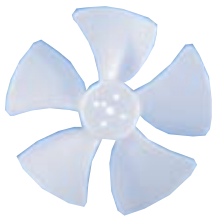
- Refrigerator & Freezer Evaporators
- Ventilators

Tech Tip

- Rotation is determined by facing air discharge

| PART NO. | SHAFT | DIAMETER | NO. BLADES | ROTATION | PITCH |
|----------|-------|----------|------------|----------|-------|
| FB152 | 3/16" | 4" | 10 | CCW | 35 |
| FB153 | 1/4" | 4" | 10 | CCW | 35 |
| FB156 | 3/16" | 4 1/2" | 10 | CW | 40 |
| FB157 | 1/4" | 4 1/2" | 10 | CW | 40 |
| FB158 | 3/16" | 4 1/2" | 10 | CCW | 40 |
| FB159 | 1/4" | 4 1/2" | 10 | CCW | 40 |
| FB162 | 3/16" | 5" | 4 | CW | 19 |
| FB163 | 7/32" | 5" | 4 | CW | 19 |
| FB164 | 1/4" | 5" | 4 | CW | 19 |
| FB165 | 3/16" | 5" | 4 | CCW | 19 |
| FB166 | 7/32" | 5" | 4 | CCW | 19 |
| FB167 | 1/4" | 5" | 4 | CCW | 19 |
| FB170 | 3/16" | 5 1/2" | 4 | CW | 22 |

| PART NO. | SHAFT | DIAMETER | NO. BLADES | ROTATION | PITCH |
|----------|-------|----------|------------|----------|-------|
| FB173 | 3/16" | 5 1/2" | 4 | CCW | 22 |
| FB175 | 1/4" | 5 1/2" | 4 | CCW | 22 |
| FB178 | 3/16" | 6" | 4 | CW | 20 |
| FB180 | 1/4" | 6" | 4 | CW | 20 |
| FB181 | 3/16" | 6" | 4 | CCW | 20 |
| FB182 | 7/32" | 6" | 4 | CCW | 20 |
| FB186 | 3/16" | 6 1/2" | 4 | CW | 20 |
| FB187 | 7/32" | 6 1/2" | 4 | CW | 20 |
| FB188 | 1/4" | 6 1/2" | 4 | CW | 20 |
| FB189 | 3/16" | 6 1/2" | 4 | CCW | 20 |
| FB190 | 7/32" | 6 1/2" | 4 | CCW | 20 |
| FB191 | 1/4" | 6 1/2" | 4 | CCW | 20 |



Plastic Fan Blades Direct Replacement and Hub Type

Features/Benefits

- Eight Popular Direct Replacements
- Available in Hub or Shaft Mount 1/8", 3/16"
- Clockwise & Counter Clockwise Rotations

Applications

- Refrigerator & Freezer Evaporators

| PART NO. | SHAFT | DIAMETER | BLADES | ROTATION | REPLACEMENT FOR |
|----------|-------|----------|--------|----------|---------------------------------|
| FB353 | HUB | 4" | 4 | CCW | Whpl/Cldspt 513543 |
| FB450 | 1/8" | 4 1/2" | 5 | CCW | GE WR60X114 |
| FB455 | 3/16" | 5 9/16" | 5 | CCW | Bohn 5101B |
| FB718G | HUB | 7" | 5 | CW | GEM FB718 SubZero 3-15-032-0 |



Aluminum Condenser Fan Blades

Features/Benefits

- Aluminum Construction
- 9 Popular Sizes Available
- 6" to 10" Diameter
- Clockwise & Counter Clockwise Rotations
- 5 Blades

Applications

- Unit Bearing Motors with 1/4" x 20 Threaded Shafts

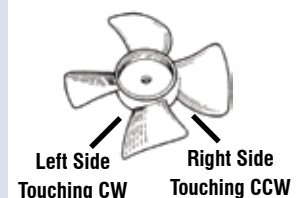
| PART NO. | DIAMETER | NO. OF BLADES | ROTATION | PITCH |
|----------|----------|---------------|----------|-------|
| FB101 | 6" | 5 | CW | 30° |
| FB103 | 7" | 5 | CCW | 20° |
| FB104 | 7" | 5 | CW | 20° |
| FB105 | 8" | 5 | CCW | 20° |
| FB106 | 8" | 5 | CW | 20° |
| FB107 | 8 3/4" | 5 | CW | 20° |
| FB108 | 10" | 5 | CCW | 29° |
| FB109 | 10" | 5 | CW | 22° |

Tech Tip

Fan Blade Rotation

To determine the blade rotation. CW – Clockwise & CCW – Counter Clockwise

1. Lay blade on a flat surface (either side up).
2. The direction of rotation is determined by observing which blade edge touches the flat surface.
3. Left side is touching the flat surface = CW.
4. Right side is touching the flat surface = CCW.



Pressure Switches



High precision control at economical prices...



Automatic Reset High, Low & Condenser Fan Cycling Pressure Switches

Features

- High Pressure SPST open on pressure rise
- Low Pressure SPST open on pressure fall
- Condenser Fan Cycling SPST open on pressure rise
- 1/4" SAE Female flare fitting with valve core depressor
- Snap acting stainless steel hermetically sealed sensor (SHP, SLP & SFC)
- Small size and light weight for direct mounting
- Excellent set point repeatability/stability
- Pressure Range: 0 to 650 PSI
- Burst Pressure: 5000 PSI

- Life @ Rated Load: 100,000 cycles
- Rated Voltage: 50/60 Hz, 24/120 / 240 Volts (6 RLA, 36 LRA)
- Temperatures: Ambient 20°F to 176°F (-30°C to 80°C). Fluid 60°F to 250°F (-50°C to 120°C).

Applications

- Refrigeration systems
- Air conditioning systems
- Heat pump systems

Specifications/Competitive Comparison

| LOW PRESSURE | | | | | | | | | | |
|--------------|----------|-----------|-----------|-----------------------|-------|------------|----------|---------------------|-----------------|------------|
| PART NO. | OPEN PSI | CLOSE PSI | TOLERANCE | KLIXON | MARS | A-1 | RANCO | ROBERTSHAW | JOHNSON CONTROL | GLOBAL |
| SLP0520 | 5 | 20 | ±5 PSI | PS80-K2-F0305-020-005 | 33329 | PS-LP05-20 | MPL-7001 | 3101-001 | P100AC-1C | GLP329 |
| SLP0530 | 5 | 30 | ±5 PSI | N/A | N/A | N/A | N/A | 3100-002, MG20-1132 | N/A | N/A |
| SLP1025 | 10 | 25 | ±5 PSI | PS80-K2-F0307-025-005 | 33330 | PS-LP10-25 | MPL-7011 | 3100-050 | P100AP201C | GLP330 |
| SLP1535 | 15 | 35 | ±5 PSI | PS80-K2-F0312-035-005 | 33333 | N/A | MPL7002 | 3100-001, MG20-1026 | P100AC2 | N/A |
| SLP2045 | 20 | 45 | ±5 PSI | N/A | N/A | N/A | N/A | 3100-003, MG20-1133 | N/A | N/A |
| SLP2550 | 25 | 50 | ±5 PSI | PS80-K2-F0316-050-005 | 33362 | PS-LP25-50 | MPL-7012 | MG21-2033 | N/A | GLP362 |
| SLP2565 | 25 | 65 | ±5 PSI | PS80-K2-F0323-065-005 | 33336 | N/A | N/A | 3101-002 | N/A | N/A |
| SLP2580 | 25 | 80 | ±5 PSI | PS80-K2-F0325-080-005 | 33363 | PS-LP25-80 | MPL-7003 | 3101-003, 3100-051 | N/A | GLP363 |
| SLP3560 | 35 | 60 | ±5 PSI | N/A | N/A | N/A | MPL7004 | 3100-004, MG20-1593 | N/A | N/A |
| SLP4560 | 45 | 60 | ±5 PSI | N/A | N/A | N/A | MPL7005 | N/A | P100AP2C | N/A |
| SLP4080 | 40 | 80 | ±5 PSI | PS80-K2-F0326-080-005 | 33364 | PS-LP40-80 | MPL-7014 | 3101-005, 3100-052 | N/A | GLP364 |
| SLP5090 | 50 | 90 | ±5 PSI | PS80-K2-F0328-090-005 | 33339 | N/A | N/A | N/A | N/A | N/A |
| SLP75100 | 75 | 100 | ±5 PSI | N/A | N/A | N/A | N/A | N/A | N/A | GLP342410A |
| SLP90120 | 90 | 120 | ±5 PSI | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| HIGH PRESSURE | | | | | | | | | | |
|---------------|----------|-----------|-----------|----------------------|--------------|--------------|----------|--------------------------------|------------------------|------------|
| PART NO. | OPEN PSI | CLOSE PSI | TOLERANCE | KLIXON | MARS | A-1 | RANCO | ROBERTSHAW | JOHNSON CONTROL | GLOBAL |
| SHP200150 | 200 | 150 | ±15 PSI | PS80-K1-0334-200-150 | 33353 | PS-HP200-150 | N/A | N/A | N/A | GHP353 |
| SHP250150 | 250 | 150 | ±15 PSI | PS80-K1-0336-250-150 | 33354 | PS-HP250-150 | N/A | N/A | N/A | GHP354 |
| SHP250180 | 250 | 180 | ±15 PSI | N/A | N/A | N/A | MPH7101 | N/A | N/A | N/A |
| SHP275195 | 275 | 195 | ±15 PSI | PS80-K1-0339-275-195 | 33310 | N/A | MPH-7102 | 3100-112 | P100CC9C | N/A |
| SHP300200 | 300 | 200 | ±15 PSI | PS80-K1-0341-300-200 | 33355 | PS-HP300-200 | MPH-7103 | N/A | N/A | GHP355 |
| SHP325225 | 325 | 225 | ±15 PSI | N/A | N/A | N/A | MPH7104 | N/A | N/A | N/A |
| SHP325230 | 325 | 230 | ±15 PSI | PS80-K1-0346-325-230 | 33313 | N/A | N/A | N/A | N/A | N/A |
| SHP350250 | 350 | 250 | ±15 PSI | PS80-K1-0348-350-250 | 33356, 33316 | PS-HP350250 | MPH-7105 | 3101-201, 3100-150, MG21-1125 | N/A | GHP356 |
| SHP375265 | 375 | 265 | ±15 PSI | PS80-K1-0353-375-265 | 33319 | N/A | MPH-7106 | 3100-111 | N/A | N/A |
| SHP400200 | 400 | 200 | ±15 PSI | PS80-K1-0357-400-200 | 33357 | PS-HP400-200 | N/A | 3100-152 | N/A | GHP357 |
| SHP400280 | 400 | 280 | ±15 PSI | PS80-K1-0358-400-280 | 33322 | N/A | N/A | N/A | N/A | N/A |
| SHP400300 | 400 | 300 | ±15 PSI | PS80-K1-0359-400-300 | 33358 | PS-HP400-300 | MPH-7107 | 3101-202, 3100-151, 6 MG21-112 | P100CA-1C/ P100CP1C | GHP358 |
| SHP425300 | 425 | 300 | ±15 PSI | PS80-K1-0360-425-300 | 33325 | N/A | N/A | N/A | N/A | N/A |
| SHP425325 | 425 | 325 | ±15 PSI | N/A | N/A | N/A | MPH7108 | 3100-100/3100-203, MG21-1046 | P100CA2C/ P100CP2C | N/A |
| SHP450250 | 450 | 250 | ±15 PSI | PS80-K1-0363-450-250 | 33359 | PS-HP450-250 | N/A | N/A | N/A | GHP359 |
| SHP600475 | 600 | 475 | ±15 PSI | N/A | N/A | N/A | N/A | N/A | N/A | GHP361410A |
| SHP610420 | 610 | 420 | ±15 PSI | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| MANUAL RESET HP | | | | | | | | | | |
|-----------------|----------|-----------|-----------|-------------|-------|------------|---------|--------------------|-----------------|--------|
| PART NO. | OPEN PSI | CLOSE PSI | TOLERANCE | KLIXON | MARS | A-1 | RANCO | ROBERTSHAW | JOHNSON CONTROL | GLOBAL |
| SMR375 | 375 | | ±15 PSI | N/A | N/A | N/A | MPH7109 | N/A | P100DC3C | N/A |
| SMR410 | 410 | | ±15 PSI | 29PSL012-24 | 33365 | PSMF-HP410 | MPH7110 | 3101-301, 3100-103 | P100DA-1C | N/A |
| SMR440 | 440 | | ±15 PSI | N/A | N/A | N/A | N/A | 3100-104 | N/A | N/A |
| SMR610 | 610 | | ±15 PSI | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Pressure Switches

Specifications/Competitive Comparison

| FAN CYCLING LP | | | | | | | | | | |
|----------------|----------|-----------|-----------|-------------------|-------|-----|----------|-------------------|-----------------|--------|
| PART NO. | OPEN PSI | CLOSE PSI | TOLERANCE | KLIXON | MARS | A-1 | RANCO | ROBERTSHAW | JOHNSON CONTROL | GLOBAL |
| SFC75120 | 75 | 120 | ±15 PSI | N/A | N/A | N/A | MPF7006 | N/A | N/A | N/A |
| SFC110170 | 110 | 170 | ±15 PSI | N/A | N/A | N/A | MPF7007 | N/A | N/A | N/A |
| SFC125265 | 125 | 265 | ±10 PSI | 20PS116KA264G126G | 33340 | N/A | N/A | N/A | N/A | N/A |
| SFC210275 | 210 | 275 | ±15 PSI | 20PS107KA275K210K | 33341 | N/A | MPF-7009 | 3101-101,3100-079 | N/A | GFC341 |
| SFC150225 | 150 | 225 | ±15 PSI | N/A | N/A | N/A | MPF-7008 | N/A | P100AP3C | N/A |
| SFC170250 | 170 | 250 | ±15 PSI | N/A | N/A | N/A | N/A | N/A | P100AP4C | N/A |
| SFC200240 | 200 | 240 | ±15 PSI | N/A | N/A | N/A | N/A | 3100-080 | N/A | N/A |
| SFC200365 | 200 | 365 | ±15 PSI | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| SFC300400 | 300 | 400 | ±15 PSI | N/A | N/A | N/A | MPF7010 | N/A | N/A | N/A |

Orange = New Items

Manual Reset High Pressure Switches

- Open on pressure rise
- 1/4" female SAE connection
- Increased reliability
- Maintenance free design
- Bistable disc
- Environmentally sealed sensors
- Safety Feature / Latching mechanism
- Line mount with mechanical fittings
- Pressure Range: 200 – 500 PSI
- Burst Pressure: 3500 PSI
- Proof Pressure: 600 PSI (Short term max over pressure)
- Life @ Rated Load: 30,000 cycles
- Rated Voltage: 50 / 60 Hz , 24 / 120 / 240 Volts (6 RLA, 36 LRA)
- Temperatures: Ambient 20°F to 176°F (-30°C to 80°C).
Fluid 60°F to 250°F (-50°C to 120°C).

Specifications/Competitive Comparison

| MANUAL RESET | | | | | | | | | | | |
|--------------|----------|-----------|-------------|-------|------------|---------|------------|-----------------|-----------|----------|----|
| PART NO. | OPEN PSI | TOLERANCE | KLIXON | MARS | A-1 | RANCO | ROBERTSHAW | TECUMSEH | JOHNSON | COPELAND | |
| SMR375 | 375 | ±15 PSI | | | | MPH7109 | | | P100DC3C | | |
| SMR410 | 410 | ±15 PSI | 29PSL012-24 | 33350 | PSMF-HP410 | MPH7110 | 3101-301 | N/A 3100-103 | P100DA-1C | | |
| SMR440 | 440 | ±15 PSI | N/A | | N/A | N/A | 3100-104 | N/A | N/A | | |
| SMR610 | 610 | ±15 PSI | | | | | | | | | NA |

Driers



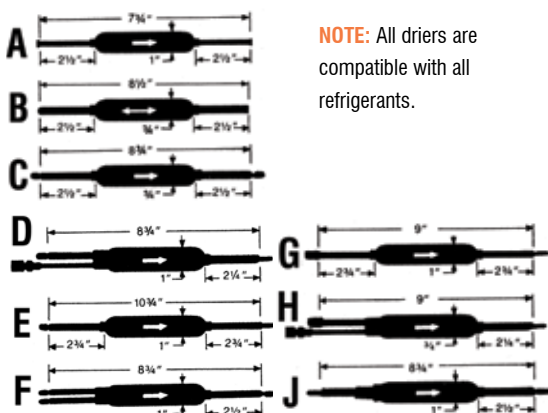
SUD Series Copper Driers

SUPCO Copper Driers are high quality, high capacity original equipment components for use on domestic and commercial refrigerators, freezers and air conditioners.

Features

- 100% XH-9 beaded molecular sieve
- Hermetically sealed
- Copper shells and end tubes
- High capacity
- Easy break off grooved ends

SIZE CHART



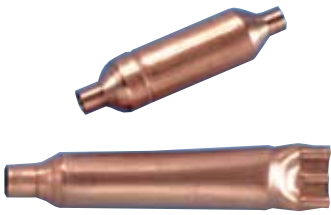
NOTE: All driers are compatible with all refrigerants.

| PART NO. | DROPS OF WATER REMOVED | | | | RECOMMENDED TONNAGE | |
|----------|------------------------|------|------|------|---------------------|------|
| | R-12 | | R-22 | | R-12 | R-22 |
| | 75° | 125° | 75° | 125° | | |
| SUD103 | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| SUD109 | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| SUD110 | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| SUD111 | 74 | 68 | 68 | 64 | 3/4 | 1 |
| SUD112 | 99 | 93 | 95 | 90 | 1 | 2 |
| SUD113 | 74 | 68 | 68 | 64 | 3/4 | 1 |
| SUD114 | 74 | 68 | 68 | 64 | 3/4 | 1 |
| SUD115 | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| SUD116 | 74 | 68 | 68 | 64 | 3/4 | 1 |

SUPCO Copper Extended Driers

| PART NO. | DESCRIPTION | INLET | OUTLET | DIMENSIONS (SEE CHART) |
|----------|----------------------|----------------------------------|--------------------|------------------------|
| SUD103 | 1" Plugged Ends | 1/4" O. D. | 1/4" O. D. | A |
| SUD109 | 3/4" Non-Directional | 1/4" O. D. | 1/4" O. D. | B |
| SUD110 | 3/4" Fused Ends | 1/4" O. D. | 1/4" O. D. | C |
| SUD111 | 1" Charging Drier | 1/4" O. D. 1/4" Flare | 1/4" O. D. or Cap | D |
| SUD112 | 1" Step Down Drier | 5/16" O. D. | 5/16" O. D. or Cap | E |
| SUD113 | 1" Double Inlet | (2) 1/4" O. D. | 1/4" O. D. | F |
| SUD114 | 1" Fused Ends | 1/4" I. D. 1/4" O. D. | 1/4" O. D. or Cap | G |
| SUD115 | 3/4" Charging Drier | 1/4" I. D. 1/4" O. D. 1/4" Flare | 1/4" O. D. or Cap | H |
| SUD116 | 1" Step Down Drier | 3/16", 1/4", 5/16" I. D. | 5/16" I. D. or Cap | J |

Driers



S200 Series Copper Strainers

SUPCO copper strainers are specifically designed for reopened systems. Each strainer contains an oversized screen area for filtering large quantities of foreign matter from systems that were burnt out.



| PART NO. | INLET | OUTLET | O.A. LENGTH | O.D. | FEED |
|----------|-------|----------------------|-------------|------|------|
| S210 | 1/4" | .098 CAP | 2 3/4" | 3/4" | 1 |
| S211 | 1/4" | .125 CAP | 2 3/4" | 3/4" | 1 |
| S212 | 1/4" | 1/4" | 2 3/4" | 3/4" | 1 |
| S213 | 5/16" | 5/16" | 2 3/4" | 3/4" | 1 |
| S214 | 3/8" | Double Feed Cap .125 | 4 1/2" | 5/8" | 2 |
| S215 | 3/8" | Triple Feed Cap .125 | 4 1/2" | 5/8" | 3 |
| S216 | 3/8" | 3/8" | 4 1/2" | 5/8" | 1 |
| S218 | 3/8" | .125 CAP | 4 1/2" | 5/8" | 1 |
| S219 | 3/8" | .146 CAP | 5" | 7/8" | 4 |
| S220 | 3/8" | .112 CAP | 4 1/2" | 7/8" | 6 |

Solder Connection Driers

| PART NO. | DESCRIPTION | INLET | OUTLET | DROPS OF WATER REMOVED | | | | RECOMMENDED TONNAGE | |
|----------|---------------------|-------|--------|------------------------|------|----------|------|---------------------|------|
| | | | | R-12 75° | 125° | R-22 75° | 125° | R-12 | R-22 |
| MD5 | 1" Drier (No Tubes) | 1/4" | CAP | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| MD6 | 1" Drier (No Tubes) | 3/8" | CAP | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |
| MD7 | 1" Drier (No Tubes) | 1/4" | 1/4" | 37.5 | 34 | 34 | 32 | 1/3 | 1/2 |

CSLD Series / Compact Suction Line Driers



Features/Benefits

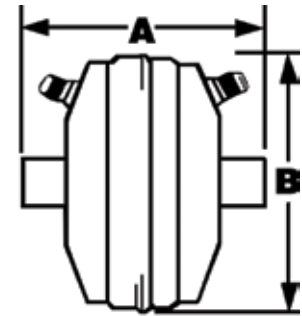
- Dual access valves
- High acid removal
- Solid copper fittings (available in solder only)
- Corrosion resistant epoxy powder paint finish

Applications

- The CSLD has a compact 14 cubic inch solid block desiccant core, designed when limited space is available.
- Compact suction line filter drier for moisture, acid and contaminant removal.
- For use with CFC, HCFC and HFC refrigerants.

Specifications

- Maximum working pressure (MWP): 500 PSIG
- Filtration: 40 microns



Nomenclature

Example: CSLD14S5

| CSLD | 14 | S | 5 |
|--------|------------------------|------------------|--------------------------|
| Series | Unit Size Cubic Inches | S=ODF Connection | Connection Size (in 1/8) |



| PART NO. | CONNECTIONS SIZE & TYPE | DIMENSION IN INCHES A B | FLOW CAPACITY IN TONS REFRIGERANT (1) (FOR KW MULTIPLY TONS BY 3.5 (2)) | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|-------------------------|----------------------------|--|-----|-----|-----|--------|-----|-----|-----|------|-----|-----|-----|--------|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|
| | | | R-12 | | | | R-134a | | | | R-22 | | | | R-407C | | | | R-410A | | | | | | |
| | | | EVAPORATOR TEMPERATURE (F) | | | | | | | | | | | | | | | | | | | | | | |
| | | | 40 | 20 | 0 | -20 | 40 | 20 | 0 | -20 | 40 | 20 | 0 | -20 | -40 | 40 | 20 | 0 | -20 | -40 | 40 | 20 | 0 | -20 | -40 |
| PRESSURE DROP (PSI) | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSLD14S4 | 1/2 ODF | 4 7/32 4 9/16 | 1.3 | 0.9 | 0.5 | 0.3 | 1.3 | 0.9 | 0.5 | 0.3 | 2 | 1.3 | 0.9 | 0.6 | 0.3 | 2.2 | 1.5 | 1.1 | 0.7 | 0.4 | 1.4 | 0.9 | 0.6 | 0.4 | 0.2 |
| CSLD14S5 | 5/8 ODF | 4 1/2 4 9/16 | 2.2 | 1.5 | 0.9 | 0.6 | 2.3 | 1.5 | 0.9 | 0.5 | 3.6 | 2.4 | 1.6 | 1 | 0.5 | 4 | 2.8 | 1.9 | 1.2 | 0.7 | 2.5 | 1.6 | 1.1 | 0.7 | 0.3 |
| CSLD14S6 | 3/4 ODF | 4 3/8 4 9/16 | 3 | 2.1 | 1.3 | 0.8 | 3.1 | 2.1 | 1.3 | 0.7 | 4.9 | 3.2 | 2.2 | 1.4 | 0.7 | 5.5 | 3.7 | 2.7 | 1.7 | 0.9 | 3.3 | 2.2 | 1.5 | 0.9 | 0.5 |
| CSLD14S7 | 7/8 ODF | 4 9/16 4 9/16 | 3.2 | 2.2 | 1.5 | 0.8 | 3.3 | 2.2 | 1.4 | 0.7 | 5.2 | 3.4 | 2.3 | 1.5 | 0.8 | 5.8 | 3.9 | 2.8 | 1.9 | 1.1 | 3.6 | 2.3 | 1.6 | 1 | 0.5 |
| CSLD14S9 | 1 1/8 ODF | 4 27/32 4 9/16 | 4.4 | 3.1 | 1.9 | 1.1 | 4.5 | 3 | 1.8 | 1 | 7 | 4.6 | 3.1 | 2 | 1 | 7.8 | 5.3 | 3.7 | 2.5 | 1.3 | 4.8 | 3.2 | 2.1 | 1.3 | 0.7 |

| PART NO. | CONNECTIONS SIZE & TYPE | FLOW CAPACITY IN TONS REFRIGERANT (FOR KW, MULTIPLY TONS BY 3.5) | | | | | | | | | |
|---------------------|-------------------------|---|-----|-----|-----|-----|------------|-----|-----|-----|-----|
| | | R-502 | | | | | R-404A/507 | | | | |
| | | EVAPORATOR TEMPERATURE (F) | | | | | | | | | |
| | | 40 | 20 | 0 | -20 | -40 | 40 | 20 | 0 | -20 | -40 |
| PRESSURE DROP (PSI) | | | | | | | | | | | |
| CSLD14S4 | 1/2 ODF | 1.3 | 0.8 | 0.5 | 0.3 | 0.2 | 1.3 | 0.8 | 0.5 | 0.3 | 0.2 |
| CSLD14S5 | 5/8 ODF | 2.7 | 1.7 | 1.1 | 0.7 | 0.3 | 2.6 | 1.7 | 1.1 | 0.7 | 0.3 |
| CSLD14S6 | 3/4 ODF | 3.7 | 2.3 | 1.5 | 0.9 | 0.5 | 3.6 | 2.3 | 1.5 | 0.9 | 0.5 |
| CSLD14S7 | 7/8 ODF | 4 | 2.4 | 1.6 | 1 | 0.5 | 3.9 | 2.4 | 1.6 | 1 | 0.5 |
| CSLD14S9 | 1 1/8 ODF | 5.1 | 3.1 | 2 | 1.3 | 0.7 | 4.9 | 3.1 | 2 | 1.3 | 0.7 |

(1) All ratings in accordance with ARI Standard 730-86

(2) For 2 PSI P, Multiply values by 1.4

Example: 1.0 tons x 3.5 = 3.5 kW



LLD Series Liquid Line Driers

Features/Benefits

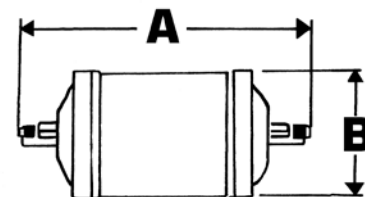
- Solid copper fittings
- Shock resistant steel construction
- High acid and moisture removal
- Corrosion resistant epoxy powder paint finish

Specifications

- Desiccant Blend: Activated Alumina with Molecular Sieve
- Filtration: 40 microns
- Maximum Working Pressure (MWP):
 Sizes 03-016 cubic inches = 600 psig
 Sizes 30-75 cubic inches = 500 psig

Applications

- Solid core liquid line filter drier ideal for use with CFC, HCFC and HFC refrigerants (R410A through 16" size only).
- Refrigeration Compressors
 - Air Conditioning Compressors
 - Heat Pump Compressors



Nomenclature

Example: LLD083S

| | | | |
|------------|------------------------|--------------------------|---------------------------------|
| LLD | 08 | 3 | S |
| Series | Unit Size Cubic Inches | Connection Size (in 1/8) | S=ODF Connection (Omit for SAE) |

LLD CAPACITY TABLES

| PART NO. | Connection SIZE & TYPE | Dimensions in Inches A B | | FLOW CAPACITY TONS @ 1 PSI Δ P (1)(4) (FOR KW, MULTIPLY TONS BY 3.5) | | | | | | | WATER CAPACITY / DROPS OF WATER | | | | | | | | | | | | | |
|----------|------------------------|-----------------------------|-------|--|--------|------|--------|--------|--------|-------|------------------------------------|-------|--------|-------|------|-------|--------|-------|--------|-------|-----------|-------|-------|-------|
| | | | | R-12 | R-134a | R-22 | R-410A | R-407C | R-404A | R-502 | R-12 | | R-134a | | R-22 | | R-407C | | R-410A | | R-404/507 | | R-502 | |
| | | | | | | | | | | | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F |
| LLD032 | 1/4 SAE | 4 5/16 | 1 5/8 | 1.6 | 1.9 | 2.1 | 2.1 | 2 | 1.4 | 1.3 | | | | | | | | | | | | | | |
| LLD032S | 1/4 ODF | 3 3/4 | 1 5/8 | 1.9 | 2.3 | 2.5 | 2.5 | 2.4 | 1.7 | 1.6 | | | | | | | | | | | | | | |
| LLD052 | 1/4 SAE | 4 7/8 | 2 1/2 | 1.6 | 2 | 2.2 | 2.2 | 2.1 | 1.4 | 1.4 | | | | | | | | | | | | | | |
| LLD052S | 1/4 ODF | 4 11/32 | 2 1/2 | 2.4 | 2.9 | 3.1 | 3.1 | 3.1 | 2.1 | 2 | 130 | 81 | 68 | 50 | 58 | 38 | 47 | 26 | 44 | 23 | 73 | 48 | 73 | 49 |
| LLD053 | 3/8 SAE | 5 3/16 | 2 1/2 | 3 | 3.7 | 4 | 4 | 3.9 | 2.7 | 2.6 | | | | | | | | | | | | | | |
| LLD053S | 3/8 ODF | 4 17/32 | 2 1/2 | 3.7 | 4.5 | 4.9 | 4.9 | 4.8 | 3.3 | 3.2 | | | | | | | | | | | | | | |
| LLD082 | 1/4 SAE | 5 13/16 | 2 1/2 | 1.6 | 2 | 2.2 | 2.2 | 2.1 | 1.4 | 1.4 | | | | | | | | | | | | | | |
| LLD082S | 1/4 ODF | 5 1/4 | 2 1/2 | 2.5 | 3.1 | 3.4 | 3.4 | 3.3 | 2.2 | 2.2 | | | | | | | | | | | | | | |
| LLD083 | 3/8 SAE | 6 3/32 | 2 1/2 | 3.5 | 4.3 | 4.7 | 4.7 | 4.6 | 3.1 | 3 | 188 | 117 | 101 | 76 | 87 | 57 | 68 | 39 | 63 | 34 | 109 | 73 | 105 | 71 |
| LLD083S | 3/8 ODF | 5 7/16 | 2 1/2 | 3.4 | 4.2 | 4.6 | 4.6 | 4.5 | 3 | 3 | | | | | | | | | | | | | | |
| LLD084 | 1/2 SAE | 6 11/32 | 2 1/2 | 5.5 | 6.7 | 7.3 | 7.3 | 7.1 | 4.9 | 4.7 | | | | | | | | | | | | | | |
| LLD084S | 1/2 ODF | 5 1/2 | 2 1/2 | 5.7 | 7 | 7.6 | 7.6 | 7.4 | 5.1 | 4.9 | | | | | | | | | | | | | | |
| LLD162 | 1/4 SAE | 6 19/32 | 2 1/2 | 1.6 | 2 | 2.2 | 2.2 | 2.1 | 1.4 | 1.4 | | | | | | | | | | | | | | |
| LLD163 | 3/8 SAE | 6 7/8 | 2 1/2 | 3.6 | 4.4 | 4.8 | 4.8 | 4.7 | 3.2 | 3.1 | | | | | | | | | | | | | | |
| LLD163S | 3/8 ODF | 6 7/32 | 2 1/2 | 4 | 4.9 | 5.3 | 5.3 | 5.2 | 3.6 | 3.5 | | | | | | | | | | | | | | |
| LLD164 | 1/2 SAE | 7 1/8 | 2 1/2 | 6.8 | 8.3 | 9 | 9 | 8.8 | 6 | 5.8 | 295 | 204 | 169 | 140 | 151 | 117 | 134 | 86 | 115 | 67 | 180 | 143 | 193 | 145 |
| LLD164S | 1/2 ODF | 6 9/32 | 2 1/2 | 7.1 | 8.6 | 9.3 | 9.3 | 9.1 | 6.2 | 6.1 | | | | | | | | | | | | | | |
| LLD165 | 5/8 SAE | 7 1/2 | 2 1/2 | 9.7 | 11.8 | 12.8 | 12.8 | 12.5 | 8.6 | 8.3 | | | | | | | | | | | | | | |
| LLD165S | 5/8 ODF | 6 17/32 | 2 1/2 | 10.7 | 13.1 | 14.2 | 14.2 | 13.9 | 9.5 | 9.2 | | | | | | | | | | | | | | |
| LLD303 | 3/8 SAE | 9 9/16 | 3 | 3.9 | 4.7 | 5.1 | | 5 | 3.4 | 3.3 | | | | | | | | | | | | | | |
| LLD303S | 3/8 ODF | 8 29/32 | 3 | | | | | | | | | | | | | | | | | | | | | |
| LLD304 | 1/2 SAE | 9 13/16 | 3 | 7.1 | 8.6 | 9.3 | | 9.1 | 6.2 | 6.1 | | | | | | | | | | | | | | |
| LLD304S | 1/2 ODF | 8 15/16 | 3 | 7.2 | 8.8 | 9.5 | | 9.4 | 6.4 | 6.2 | | | | | | | | | | | | | | |
| LLD305 | 5/8 SAE | 10 3/16 | 3 | 11.3 | 13.8 | 15 | | 14.7 | 10 | 9.7 | 615 | 444 | 359 | 278 | 314 | 218 | 309 | 212 | | | 385 | 272 | 427 | 335 |
| LLD306S | 3/4 ODF | 9 5/8 | 3 | 13 | 15.8 | 17.1 | | 16.8 | 11.5 | 11.1 | | | | | | | | | | | | | | |
| LLD307S | 7/8 ODF | 9 13/16 | 3 | 14.3 | 17.4 | 18.9 | | 18.5 | 12.6 | 12.3 | | | | | | | | | | | | | | |
| LLD309S | 1 1/8 ODF | 9 13/16 | 3 | 20.4 | 24.9 | 27 | | 26.5 | 18 | 17.5 | | | | | | | | | | | | | | |

(1) All ratings in accordance with ARI Standard 710-86.
 86° F liquid refrigerant temperature
 5°F saturated vapor temperature
 3.1 lbs./min./ton for R-134a
 2.9 lbs./min./ton for R-22 and R-407C
 4.0 lbs./min./ton for R-404A/507 and R-12
 4.4 lbs./min./ton for R-502
 2.7 lbs./min./ton for R-410A

(2) Water Capacities are based on:
 Equilibrium Point Dryness (EPD) of:
 50 parts per million for R-134a, R404-A/507,
 R-410A and R-407C
 60 parts per million for R-22
 30 parts per million for R-502
 15 parts per million for R-12

(3) 20 drops of water = 1 gram = 1 cc
 (4) For 2 PSI Δ P, Multiply values by 1.4

Driers

LLD LIQUID REFRIGERANT HOLDING CAPACITY - OUNCES

| UNIT SIZE | R-12 | | R-134a | | R-22 | | R407C | | R-410A | | R-404A/507 | | R-502 | |
|-----------|------|-------|--------|-------|------|-------|-------|-------|--------|-------|------------|-------|-------|-------|
| | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F |
| 03 | 2.4 | 2.2 | 2.2 | 2 | 2.2 | 2 | 2.1 | 1.9 | 2 | 1.7 | 1.9 | 1.7 | 2.2 | 2 |
| 05 | 5.9 | 6 | 5.5 | 5.5 | 5.4 | 5.4 | 5.2 | 5 | 4.8 | 4.5 | 4.7 | 4.5 | 5.5 | 5.4 |
| 08 | 8 | 7.4 | 7.4 | 6.7 | 7.3 | 6.6 | 7 | 6.2 | 6.5 | 5.5 | 6.4 | 5.5 | 7.5 | 6.6 |
| 16 | 14.5 | 12.5 | 13.4 | 11.4 | 13.2 | 11.2 | 12.6 | 10.4 | 11.7 | 9.4 | 11.6 | 9.3 | 13.5 | 11.2 |
| 30 | 21.8 | 19.9 | 20.1 | 18.1 | 19.8 | 17.8 | 18.9 | 16.6 | | | 17.4 | 14.7 | 20.2 | 17.7 |
| 41 | 29.3 | 26.8 | 26.9 | 24.4 | 26.6 | 23.9 | 25.4 | 22.3 | | | 23.3 | 19.7 | 27.2 | 23.8 |
| 75 | 52.8 | 48.3 | 48.6 | 43.9 | 48 | 43.1 | 45.8 | 40.2 | | | 42.1 | 35.6 | 49.1 | 43 |

R-410A The LLD filter-drier is UL listed for 600 PSIG maximum working pressure for all sizes through 16 cubic inches.

LLD LIQUID LINE FILTER DRIERS

| FILTER DRIER | REFRIGERATION, LOW TEMP. & COMMERCIAL INSTALLATIONS | | | AIR CONDITIONING | | | |
|-------------------|---|----------------|-------------|---------------------------------------|----------------|--------------------------------|-----------|
| | | | | FIELD REPLACEMENT FIELD INSTALLATIONS | | & OEM SELF CONTAINED EQUIPMENT | |
| | R-12/134a | R-22/407C/410A | R-404A/507A | R-12/134a | R-22/407C/410A | R-12/134a | R-22/407C |
| 032,032S,033,033S | 1/4 | 1/4 | 1/4 | 1/2 | 3/4 | 3/4 | 1 |
| 052,052S | 1/3 | 1/3 | 1/3 | 3/4 | 1 | 1 | 1 1/2 |
| 053,053S | 1 1/2 | 2 | 2 | 3 | | | |
| 082,082S | 1/2 | 1/2 | 1/2 | 3/4 | 1 1/2 | 1 | 2 |
| 0825S | 1 | 1 | 1 | 2 | 3 | 3 | 4 |
| 083,083S | 1 | 1 | 1 | 2 | 3 | 3 | 4 |
| 084,084S | 1.5 | 2 | 1 | 3 | 5 | 4 | 7 |
| 162,162S | 1 | 1 1/2 | 3/4 | 1 | 2 | 2 | 2 1/2 |
| 1625S | 2 | 2 1/2 | 2 | 3 | 4 | 4 | 5 |
| 163,163S | 2 | 4 | 2 | 4 | 6 | 5 | 7 1/2 |
| 164,164S | 2 | 4 | 2 | 4 | 6 | 5 | 7 1/2 |
| 165,165S | 3 | 5 | 2 1/2 | 5 | 7 1/2 | 7 1/2 | 10 |
| 303S | 3 | 3 | 2 | 3 | 4 1/2 | 4 | 5 |
| 304,304S | 3 | 5 | 3 | 5 | 7 1/2 | 7 1/2 | 9 |
| 305,305S | 5 | 7 1/2 | 5 | 8 | 10 | 10 | 14 |
| 306S | 7 1/2 | 7 1/2 | 5 | 7 1/2 | 12 1/2 | 15 | 20 |
| 307S | 7 1/2 | 7 1/2 | 5 | 7 1/2 | 12 1/2 | 15 | 20 |
| 309S | 7 1/2 | 10 | 7 1/2 | 10 | 12 1/2 | 15 | 20 |



SSLD Series / Suction Line Filter Driers

Features

- Dual access valves
- Solid copper fittings
- Corrosion resistant epoxy powder paint finish

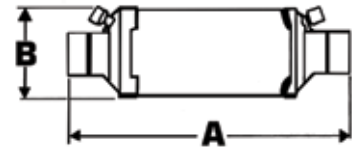
Applications

- To protect the compressor from dirt and all solid contaminants.

Specifications

- Filtration: 40 microns
- Maximum working pressure (MWP): 500 psig

SSLD Dimensions Diagram



Nomenclature

Example: SSDL167S

| SSLD | 16 | 7 | S |
|--------|----------------------|--------------------------|---------------------------------|
| Series | Unit Size Cubic Inch | Connection Size (in 1/8) | S=ODF Connection (omit for SAE) |

Flow Capacities in Refrigerant Tons at Selected Evaporator Temperatures

| PART NO. | CONNECTION SIZE & TYPE | DIMENSION IN INCHES | | R-134a | | | | R-22 | | | | R410A | | | | | | |
|----------|------------------------|----------------------|--------|--------|-------|-----|-------|-------|-------|-----|-------|-------|-------|------|-------|-------|-----|-----|
| | | | | +40°F | +20°F | 0°F | -20°F | +40°F | +20°F | 0°F | -20°F | +40°F | +20°F | 0°F | -20°F | -40°F | | |
| | | PRESSURE DROP IN PSI | | | | | | | | | | | | | | | | |
| SSLD83 | 3/8 SAE | 6 | 3 3/32 | 2 1/2 | 0.6 | 0.4 | 0.2 | 0.1 | 0.9 | 0.6 | 0.4 | 0.3 | 0.1 | 1.1 | 0.8 | 0.5 | 0.4 | 0.1 |
| SSLD83S | 3/8 ODF | 5 | 7/16 | 2 1/2 | 0.8 | 0.5 | 0.3 | 0.2 | 1.3 | 0.8 | 0.6 | 0.4 | 0.2 | 1.6 | 1 | 0.8 | 0.5 | 0.3 |
| SSLD84 | 1/2 SAE | 6 | 11/32 | 2 1/2 | 1.4 | 0.9 | 0.6 | 0.3 | 2.2 | 1.4 | 1 | 0.6 | 0.3 | 2.7 | 1.8 | 1.3 | 0.8 | 0.4 |
| SSLD84S | 1/2 ODF | 5 | 1/2 | 2 1/2 | 1.7 | 1.2 | 0.7 | 0.4 | 2.7 | 1.8 | 1.2 | 0.8 | 0.4 | 3.4 | 2.3 | 1.6 | 1.1 | 0.5 |
| SSLD85 | 5/8 SAE | 6 | 3/16 | 2 1/2 | 2.2 | 1.5 | 0.9 | 0.5 | 3.4 | 2.2 | 1.5 | 1 | 0.5 | 4.2 | 2.8 | 2 | 1.3 | 0.7 |
| SSLD85S | 5/8 ODF | 5 | 3/4 | 2 1/2 | 2.4 | 1.6 | 1 | 0.5 | 3.8 | 2.5 | 1.7 | 1.1 | 0.6 | 4.7 | 3.2 | 2.3 | 1.5 | 0.8 |
| SSLD164 | 1/2 SAE | 7 | 1/8 | 2 1/2 | 1.5 | 1 | 0.6 | 0.3 | 2.3 | 1.5 | 1 | 0.7 | 0.4 | 2.9 | 1.9 | 1.3 | 0.9 | 0.5 |
| SSLD165S | 5/8 ODF | 6 | 9/16 | 2 1/2 | 2.2 | 1.5 | 0.9 | 0.5 | 3.4 | 2.2 | 1.5 | 1 | 0.5 | 4.2 | 2.8 | 2 | 1.3 | 0.7 |
| SSLD166 | 3/4 SAE | 6 | 31/32 | 2 1/2 | 2.6 | 1.8 | 1.1 | 0.6 | 4.1 | 2.7 | 1.8 | 1.2 | 0.6 | | | | | |
| SSLD166S | 3/4 ODF | 6 | 31/32 | 2 1/2 | 2.6 | 1.8 | 1.1 | 0.6 | 4.1 | 2.7 | 1.8 | 1.2 | 0.6 | 5.1 | 3.4 | 2.4 | 1.6 | 0.8 |
| SSLD167S | 7/8 ODF | 7 | 1/8 | 2 1/2 | 2.7 | 1.8 | 1.1 | 0.6 | 4.6 | 2.8 | 1.9 | 1.1 | 0.6 | | | | | |
| SSLD305 | 5/8 SAE | 10 | 3/16 | 3 | 3 | 2 | 1.2 | 0.6 | 4.7 | 3.1 | 2.1 | 1.3 | 0.7 | 5.8 | 3.9 | 2.8 | 1.7 | 0.9 |
| SSLD305S | 5/8 ODF | 9 | 7/32 | 3 | 2.8 | 1.8 | 1.1 | 0.6 | 4.3 | 2.8 | 1.9 | 1.2 | 0.6 | 5.3 | 3.6 | 2.5 | 1.6 | 0.8 |
| SSLD306S | 3/4 ODF | 9 | 5/8 | 3 | 3.4 | 2.3 | 1.4 | 0.7 | 5.4 | 3.5 | 2.4 | 1.5 | 0.8 | 6.7 | 4.5 | 3.2 | 2 | 1.1 |
| SSLD307S | 7/8 SAE | 9 | 25/32 | 3 | 3.8 | 2.5 | 1.6 | 0.8 | 5.9 | 3.9 | 2.6 | 1.7 | 0.9 | 7.3 | 5 | 3.5 | 2.3 | 1.2 |
| SSLD417S | | | | | | | | | | | | | | 9.4 | 6.2 | 4.5 | 2.8 | 1.5 |
| SSLD419S | 1 1/8 ODF | 9 | 15/16 | 3 1/2 | 5.4 | 3.6 | 2.2 | 1.2 | 8.5 | 5.5 | 3.8 | 2.4 | 1.3 | 10.6 | 7 | 5.1 | 3.2 | 1.8 |

Flow Capacity Chart

| PART NO. | Connection SIZE & TYPE | Dimension in Inches | | +40°F | +20°F | 0°F | -20°F | -40°F | +40°F | +20°F | 0°F | -20°F | -40°F |
|----------|------------------------|---------------------|-------|-------|-------|-----|-------|-------|------------------|-------|-----|-------|-------|
| | | | | R407C | | | | | R-502/R404A/R507 | | | | |
| | | A | B | 3 | 2 | 1.5 | 1 | 0.5 | 3 | 2 | 1.5 | 1 | 0.5 |
| SSLD83 | 3/8 SAE | 6 3/32 | 2 1/2 | 1 | 0.6 | 0.4 | 0.3 | 0.1 | 0.7 | 0.5 | 0.3 | 0.2 | 0.1 |
| SSLD83S | 3/8 ODF | 5 7/16 | 2 1/2 | 1.4 | 0.9 | 0.6 | 0.4 | 0.2 | 1 | 0.7 | 0.5 | 0.3 | 0.1 |
| SSLD84 | 1/2 SAE | 6 11/32 | 2 1/2 | 2.3 | 1.5 | 1.1 | 0.6 | 0.3 | 1.8 | 1.1 | 0.8 | 0.5 | 0.3 |
| SSLD84S | 1/2 ODF | 5 1/2 | 2 1/2 | 2.9 | 1.9 | 1.3 | 0.8 | 0.4 | 2.2 | 1.4 | 1 | 0.6 | 0.3 |
| SSLD85 | 5/8 SAE | 6 3/16 | 2 1/2 | 3.6 | 2.3 | 1.6 | 1 | 0.5 | 2.8 | 1.8 | 1.2 | 0.8 | 0.4 |
| SSLD85S | 5/8 ODF | 5 3/4 | 2 1/2 | 4.1 | 2.7 | 1.8 | 1.2 | 0.6 | 3.1 | 2 | 1.3 | 0.8 | 0.4 |
| SSLD164 | 1/2 SAE | 7 1/8 | 2 1/2 | 2.5 | 1.6 | 1.1 | 0.7 | 0.4 | 1.9 | 1.2 | 0.8 | 0.5 | 0.3 |
| SSLD165S | 5/8 ODF | 6 9/16 | 2 1/2 | 3.6 | 2.3 | 1.6 | 1 | 0.5 | 2.8 | 1.8 | 1.2 | 0.8 | 0.4 |
| SSLD166 | 3/4 SAE | 6 31/32 | 2 1/2 | | | | | | 3.4 | 2.2 | 1.5 | 0.9 | 0.5 |
| SSLD166S | 3/4 ODF | 6 31/32 | 2 1/2 | 4.4 | 2.9 | 1.9 | 1.3 | 0.6 | 3.4 | 2.2 | 1.5 | 0.9 | 0.5 |
| SSLD167S | 7/8 ODF | 7 1/8 | 2 1/2 | | | | | | 4.3 | 2.6 | 1.7 | 1 | 0.6 |
| SSLD305 | 5/8 SAE | 10 3/16 | 3 | 5 | 3.3 | 2.2 | 1.4 | 0.7 | 3.8 | 2.5 | 1.7 | 1 | 0.5 |
| SSLD305S | 5/8 ODF | 9 7/32 | 3 | 4.6 | 3 | 2 | 1.3 | 0.6 | 3.6 | 2.3 | 1.5 | 1 | 0.5 |
| SSLD307S | 7/8 SAE | 9 25/32 | 3 | 6.3 | 4.1 | 2.7 | 1.8 | 0.9 | 4.9 | 3.1 | 2.1 | 1.3 | 0.7 |
| SSLD419S | 1 1/8 ODF | 9 15/16 | 3 1/2 | 9.1 | 5.9 | 4 | 2.5 | 1.3 | 6.9 | 4.5 | 3 | 1.9 | 1 |

All ratings in accordance with ARI standard 710-86

HP Series/Liquid Line Bi-Directional Heat Pump Driers



Features/Benefits

- 16 cubic inch drier in a 2 1/2" diameter shell
- Internal check valves allow flow and filtration in either direction.
- High moisture and acid removal
- Corrosion resistant epoxy powder paint finish
- Copeland approved for POE oils

Specifications

- Desiccant blend: 75% molecular sieve and 25% activated alumina (Bead).
- Filtration: 40 microns
- Maximum working pressure (MWP): Sizes 05 – 16

Applications

- Bi directional liquid line filter driers for heat pump applications using CFC, HCFC and HFC refrigerants.

Nomenclature

Example: HP165S

| HP | 16 | 5 | S |
|--------|---------------------------------|--------------------------------|------------------|
| Series | Unit Size Cubic Inches (in 1/8) | Connection Size (Omit for SAE) | S=ODF Connection |



HP CAPACITY TABLES

(1) All ratings in accordance with ARI Standard 710-86.
86°F liquid refrigerant temperature.
5°F saturated vapor temperature
3.1 lbs./min./ton for R-134a
2.9 lbs./min./ton for R-22 and R-407C
4.0 lbs. min./ton for R-404A/507 and R-12
4.4 lbs./min./ton for R-502
2.7 lbs./min./ton for R-410A

(2) Water Capacities are based on: Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507, R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12
30 parts per million for R-502

(3) 20 drops of water = 1 gram = 1 cc

(4) For 2 PSI D P, Multiply values by 1.4

| PART NO. | CONNECTION SIZE & TYPE | DIMENSIONS | | FLOW CAPACITY TONS @ 1 PSI Δ P(1)(4) | | | WATER CAPACITY TONS (2) DROPS OF WATER (3) | | | | | |
|----------|------------------------|------------|------|--------------------------------------|--------|--------|--|-------|--------|-------|--------|-------|
| | | | | (FOR KW, MULTIPLY TONS BY 3.5) | | | R-22 | | R-407C | | R-410A | |
| | | A | B | R-22 | R-410A | R-407C | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F |
| HP083 | 3/8 SAE | 6.28 | 2.63 | 4.5 | 4.5 | 4.4 | | | | | | |
| HP083S | 3/8 ODF | 5.63 | 2.63 | 5.1 | 5.1 | 5 | | | | | | |
| HP084 | 1/2 SAE | 6.53 | 2.63 | 6.4 | 6.4 | 6.3 | 159 | 144 | 106 | 79 | 85 | 75 |
| HP84S | 1/2 ODF | 5.66 | 2.63 | 6.7 | 6.7 | 6.6 | | | | | | |
| HP163 | 3/8 SAE | 6.97 | 2.63 | 4.6 | 4.6 | 4.5 | | | | | | |
| HP163S | 3/8 ODF | 6.31 | 2.63 | 5.2 | 5.2 | 5.1 | | | | | | |
| HP164 | 1/2 SAE | 7.22 | 2.63 | 7.7 | 7.7 | 7.6 | 323 | 294 | 237 | 179 | 178 | 160 |
| HP164S | 1/2 ODF | 6.34 | 2.63 | 8.1 | 8.1 | 7.9 | | | | | | |
| HP165 | 5/8 SAE | 7.59 | 3.09 | 8.3 | 8.3 | 8.1 | | | | | | |
| HP165S | 5/8 ODF | 6.63 | 2.63 | 8.7 | 8.7 | 8.5 | | | | | | |

HP CAPACITY TABLES

| UNIT SIZE | FLOW CAPACITY - TONS @ 1 PSI | | LIQUID REFRIGERANT HOLDING CAPACITY - Oz. | | | | | | WATER HOLDING CAPACITY DROPS | | | | | |
|-----------|------------------------------|--------|---|-------|-------|-------|--------|-------|------------------------------|-------|--------|-------|--------|-------|
| | | | R-22R | | R-407 | | R-410A | | R-22 | | R-407C | | R-410A | |
| | R-22/R-410A | R-407C | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F |
| 163S | 5.2 | 5.1 | | | | | | | | | | | | |
| 164 | 6.6 | 6.5 | | | | | | | | | | | | |
| 164S | 7.4 | 7.3 | 10.1 | 9.1 | 9.6 | 8.5 | 9 | 7.6 | 161 | 141 | 125 | 87 | 91 | 55 |
| 165 | 8 | 7.8 | | | | | | | | | | | | |
| 165S | 8.3 | 8.1 | | | | | | | | | | | | |

Driers

HERMETIC LIQUID LINE HP FILTER DRIERS

| UNIT SIZE | REFRIGERATION, LOW TEMP & COMMERCIAL INSTALLATIONS | | | AIR CONDITIONING | | | |
|-----------|--|----------------|-------------|---|----------------|-------------------------------|-----------|
| | | | | FIELD REPLACEMENT & FIELD INSTALLATIONS | | OEM: SELF CONTAINED EQUIPMENT | |
| | R-12/134A | R-22/407C/410A | R-404A/134A | R-12/134A | R-22/407C/410A | R-12/13A | R-22/407C |
| 083, 083S | 1 | 1 | 1 | 2 | 3 | 3 | 4 |
| 084, 084S | 1.5 | 2 | 1 | 3 | 5 | 4 | 7 |
| 162, 162S | 1 | 1.5 | 3/4 | 1 | 2 | 2 | 2 1/2 |
| 163, 163S | 2 | 4 | 2 | 4 | 6 | 5 | 7 1/2 |
| 164, 164S | 2 | 4 | 2 | 4 | 6 | 5 | 7 1/2 |
| 165, 165S | 3 | 5 | 2 1/2 | 5 | 7 1/2 | 7 1/2 | 10 |

LIQUID REFRIGERANT HOLDING CAPACITY - OUNCES

| UNIT SIZE | R-22 | | R-407C | | R-410A | |
|-----------|------|-------|--------|-------|--------|-------|
| | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F |
| 05 | 4.6 | 4.2 | 4.4 | 3.9 | 4.1 | 3.5 |
| 08 | 7.7 | 6.9 | 7.3 | 6.4 | 6.9 | 5.8 |
| 16 | 14.2 | 12.7 | 13.5 | 11.8 | 12.6 | 10.6 |
| 30 | 21.0 | 18.7 | 20.0 | 17.4 | -- | -- |

R-410A The HP filter-drier is UL listed for 600 PSIG maximum working pressure for all sizes through 16 cubic inches.



SSG Series Moisture Indicators

Features/Benefits

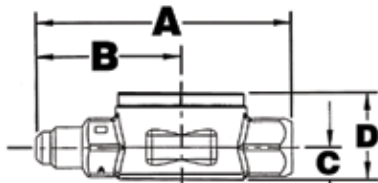
- Fully hermetic design
- 3% relative humidity indication compared to 10% paper indicators.
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures.
- Tri Color Coded
 - Blue = Dry optimal operation conditions,
 - Purple = Low levels of moisture indicated,
 - Pink = High levels of moisture detected
- Wide angle viewing high visibility window for ease of monitoring.
- All brass corrosion resistant body
- Solid copper fittings

Applications

- SUPCO's SSG is designed to provide an accurate method of determining the moisture content of a system's refrigerant.
- Unique 3% high accuracy moisture indicator for CFC, HCFC and HFC refrigerants, including R410A.

Specifications

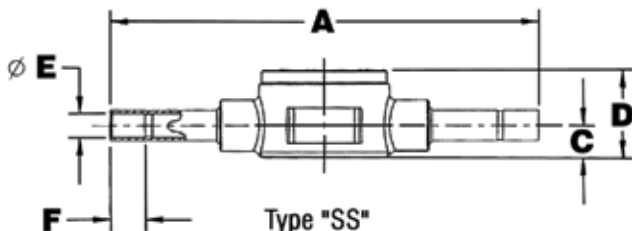
- 3% relative humidity sensitivity
- Maximum working pressure (MWP): 680 psig



Type "FM"

Female Flare X Male Flare

| PART NO. | CONNECTION SIZE & TYPE | DIMENSIONS | | | | | |
|----------|------------------------|------------|------------|-----------|-------------|-------------|------|
| | | A | B | C | D | E | F |
| SSGFM2 | 1/4 SAE | 2.75 ± .03 | 1.19 ± .03 | .34 ± .06 | .937 ± .06 | | |
| SSGFM3 | 3/8 SAE | 3.00 ± .03 | 1.31 ± .03 | .47 ± .06 | 1.187 ± .06 | | |
| SSGFM4 | 1/2 SAE | 3.22 ± .03 | 1.41 ± .03 | .47 ± .06 | 1.187 ± .06 | | |
| SSGSS2 | 1/4 ODF | 4.62 ± .10 | | .34 ± .06 | .937 ± .06 | .254 ± .002 | .375 |
| SSGSS3 | 3/8 ODF | 4.62 ± .10 | | .34 ± .06 | .937 ± .06 | .379 ± .002 | .402 |
| SSGSS4 | 1/2 ODF | 4.87 ± .10 | | .47 ± .06 | 1.187 ± .06 | .504 ± .003 | .500 |
| SSGSS5 | 5/8 ODF | 4.87 ± .10 | | .47 ± .06 | 1.187 ± .06 | .629 ± .003 | .625 |
| SSGSS7 | 7/8 ODF | 6.31 ± .10 | | .61 ± .06 | 1.500 ± .06 | .879 ± .003 | .750 |



Type "SS"

Tube Stub X Tube Stub

Nomenclature

Example: SSGSS3

| SSG | S | 3 |
|-------------------|----------------------------------|--------------------------|
| Supco Sight Glass | Connection style Solder x Solder | Connection size (in 1/8) |



Our Soft Copper Capillary Tubing is precision plug drawn with the internal diameter held to a tolerance of +/- .001. It has been thoroughly dehydrated, sealed and individually packaged.

BC Series Bullet® Restricto Cap Tubing

Fits **ANY** domestic and commercial refrigerator or room air conditioner from 1/8 H.P. to 5 H.P.

Features

- Precision Bore, Plus or Minus .001
- The Bullet Restricto Cap is consolidated into a five-pak replacement kit. It's guaranteed to provide you with uniformity on all applications.
- The five "Restricto Cap" sizes cover hundreds of applications (see chart below).
- Specification: ASTM B360

| PART NO. | SIZE | LENGTH |
|----------------|----------------------------|--------------|
| BC1 | .081 O.D. x .031 I.D. | 10 FT. COIL |
| BC2 | .093 O.D. x .040 I.D. | 12 FT. COIL |
| BC3 | .093 O.D. x .052 I.D. | 12 FT. COIL |
| BC4 | .125 O.D. x .064 I.D. | 12 FT. COIL |
| BC5 | .071 O.D. x .028 I.D. | 10 FT. COIL |
| BC1-100 | .081 O.D. x .031 I.D. | 100 FT. COIL |
| BC2-100 | .093 O.D. x .040 I.D. | 100 FT. COIL |
| BC3-100 | .093 O.D. x .052 I.D. | 100 FT. COIL |
| BC4-100 | .125 O.D. x .064 I.D. | 100 FT. COIL |
| BC5-100 | .071 O.D. x .028 I.D. | 100 FT. COIL |
| 5PAK | Five pack replacement kit. | |



CTC3 Cap Tube Computer

Calculate the flow rate of a defective cap tube and duplicate that flow rate with cap tubes that have a different I.D.

Features/Benefits

- Computes inside diameter, length, refrigerant, horsepower, application and flow rate
- Shows temperature/pressure charts for 12 refrigerants
- Compact, light weight & easy to use!
- Converts Cap Tubing used with refrigerants R12, 134A, R22, and R502 only.

Added Notes

- Use R12 conversion for R416A
- Use R134 conversion for R401A, R401B, R406A, R500, R409A
- Use R502 conversion for R402B, R403B, R404A, R407C, R408A



Reference chart for Bullet® "Restricto" Capillary Tubing for All Refrigerants in Low, Medium and High Applications

NOTE: This chart is average measurements for average conditions, and may have to be "fine tuned" for exact replacement. These charts are for Fan Cooled units only. Add 10% to the length of the cap tubing for Static Cooled Units.

NOTE: Application Temperatures are Saturated Suction Temperatures (SST).

SINGLE FEED

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|------------------|----------|----------|---------|----------|
| R12/R416A | 1/8 hp | 110" # 5 | 84" # 5 | 48" # 5 |
| | 1/6 hp | 71" # 5 | 96" # 1 | 72" # 1 |
| | 1/5 hp | 54" # 1 | 36" # 1 | 24" # 1 |
| | 1/4 hp | 43" # 1 | 90" # 2 | 60" # 2 |
| | 1/3 hp | 93" # 2 | 72" # 2 | 36" # 2 |
| | 1/2 hp | 96" # 3 | 48" # 3 | 90" # 4 |
| | 3/4 hp | 60" # 3 | 92" # 4 | 72" # 4 |
| | 1 hp | 36" # 3 | 84" # 4 | 54" # 4 |
| | 1-1/2 hp | 84" # 4 | 60" # 4 | 43" # 4 |
| | 2 hp | 55" # 4 | 40" # 4 | 26" # 4 |

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|---|----------|----------|----------|----------|
| R134A / R401A R401B/R406A R409A/R500 | 1/8 hp | 121" # 5 | 92" # 5 | 53" # 5 |
| | 1/6 hp | 78" # 5 | 106" # 1 | 79" # 1 |
| | 1/5 hp | 59" # 1 | 39" # 1 | 26" # 1 |
| | 1/4 hp | 47" # 1 | 99" # 2 | 66" # 2 |
| | 1/3 hp | 102" # 2 | 79" # 2 | 39" # 2 |
| | 1/2 hp | 105" # 3 | 52" # 3 | 99" # 4 |
| | 3/4 hp | 66" # 3 | 101" # 4 | 79" # 4 |
| | 1 hp | 39" # 3 | 92" # 4 | 59" # 4 |
| | 1-1/2 hp | 92" # 4 | 66" # 4 | 47" # 4 |
| | 2 hp | 61" # 4 | 44" # 4 | 29" # 4 |

NOTE: For Multiple Feeds with smaller HP's than those shown in the charts.

- Divide HP by number of feeds, go to Single Feed Chart, select a cap tube for the calculated HP and use that selection for each feed.
- Ex: 1 HP, LOW, R12 5 FEED USE: 1/5 HP, LOW, R12, SINGLE FEED CHART
- RESULT: 5 Feeds, 54" BC1

Cap Tubing

SINGLE FEED

| REF | hp | -10 LOW | +20 MED | +45 HIGH | |
|------------|-----------------------------------|---------|---------|----------|---------|
| R22 | 1/8 hp | 132" #5 | 101" #5 | 58" #5 | |
| | 1/6 hp | 86" #5 | 116" #1 | 86" #1 | |
| | 1/5 hp | 64" #1 | 42" #1 | 28" #1 | |
| | 1/4 hp | 51" #1 | 109" #2 | 72" #2 | |
| | 1/3 hp | 112" #2 | 87" #2 | 43" #2 | |
| | 1/2 hp | 115" #3 | 57" #3 | 109" #4 | |
| | 3/4 hp | 72" #3 | 111" #4 | 87" #4 | |
| | 1 hp | 42" #3 | 101" #4 | 65" #4 | |
| | 1-1/2 hp | 101" #4 | 72" #4 | 51" #4 | |
| | 2 hp | 67" #4 | 48" #4 | 32" #4 | |
| | R402A/R407A R407B/R507 | 1/8 hp | N/A | 122" #5 | 69" #5 |
| | | 1/6 hp | 104" #5 | 138" #1 | 105" #1 |
| 1/5 hp | | 77" #1 | 50" #1 | 34" #1 | |
| 1/4 hp | | 62" #1 | 34" #1 | 86" #2 | |
| 1/3 hp | | 33" #1 | 106" #2 | 52" #2 | |
| 1/2 hp | | 31" #2 | 69" #3 | 35" #3 | |
| 3/4 hp | | 87" #3 | 37" #3 | 106" #4 | |
| 1 hp | | 52" #3 | 30" #3 | 79" #4 | |
| 1-1/2 hp | | 32" #3 | 86" #4 | 62" #4 | |
| 2 hp | | 82" #4 | 58" #4 | 37" #4 | |

| REF | hp | -10 LOW | +20 MED | +45 HIGH | |
|---|--------------|---------|---------|----------|--------|
| R402B/R403B R404A/R407C R408A/R502 | 1/8 hp | 144" #5 | 111" #5 | 63" #5 | |
| | 1/6 hp | 95" #5 | 78" #5 | 95" #1 | |
| | 1/5 hp | 70" #1 | 46" #1 | 31" #1 | |
| | 1/4 hp | 56" #1 | 31" #1 | 79" #2 | |
| | 1/3 hp | 30" #1 | 96" #2 | 47" #2 | |
| | 1/2 hp | 29" #2 | 63" #3 | 32" #3 | |
| | 3/4 hp | 79" #3 | 32" #3 | 96" #4 | |
| | 1 hp | 46" #3 | 111" #4 | 72" #4 | |
| | 1-1/2 hp | 111" #4 | 79" #4 | 56" #4 | |
| | 2 hp | 74" #4 | 52" #4 | 34" #4 | |
| | R410A | 1/8 hp | N/A | 144" #5 | 81" #5 |
| | | 1/6 hp | 123" #5 | 100" #5 | 78" #5 |
| 1/5 hp | | 90" #1 | 60" #1 | 41" #1 | |
| 1/4 hp | | 73" #1 | 40" #1 | 101" #2 | |
| 1/3 hp | | 38" #1 | 30" #1 | 62" #2 | |
| 1/2 hp | | 37" #2 | 84" #3 | 42" #3 | |
| 3/4 hp | | 104" #3 | 44" #3 | 34" #3 | |
| 1 hp | | 62" #3 | 36" #3 | 94" #4 | |
| 1-1/2 hp | | 38" #3 | 103" #4 | 74" #4 | |
| 2 hp | | 96" #4 | 69" #4 | 45" #4 | |

DOUBLE FEED

(All double feed caps tubes require 2 lengths of each size listed below.)

| REF | hp | -10 LOW | +20 MED | +45 HIGH | |
|------------------|---|---------|--------------|----------|---------|
| R12/R416A | 1/2 hp | 43" #1 | 90" #2 | 60" #2 | |
| | 3/4 hp | 30" #1 | 63" #2 | 42" #2 | |
| | 1 hp | 96" #3 | 48" #3 | 90" #4 | |
| | 1 1/2 hp | 60" #3 | 92" #4 | 72" #4 | |
| | 2 hp | 36" #3 | 84" #4 | 54" #4 | |
| | 2 1/2 hp | 108" #4 | 72" #4 | 49" #4 | |
| | 3 hp | 84" #4 | 60" #4 | 43" #4 | |
| | 3 1/2 hp | 70" #4 | 54" #4 | 35" #4 | |
| | 4 hp | 55" #4 | 40" #4 | 26" #4 | |
| | R134A/R401A R401B/R406B R409A/R500 | 1/2 hp | 47" #1 | 99" #2 | 66" #2 |
| | | 3/4 hp | 33" #1 | 69" #2 | 46" #2 |
| | | 1 hp | 105" #3 | 52" #3 | 99" #4 |
| 1 1/2 hp | | 66" #3 | 101" #4 | 79" #4 | |
| 2 hp | | 40" #3 | 92" #4 | 59" #4 | |
| 2 1/2 hp | | 119" #4 | 79" #4 | 53" #4 | |
| 3 hp | | 92" #4 | 66" #4 | 47" #4 | |
| 3 1/2 hp | | 77" #4 | 59" #4 | 38" #4 | |
| 4 hp | | 60" #4 | 44" #4 | 29" #4 | |
| R22 | | 1/2 hp | 52" #1 | 108" #2 | 72" #2 |
| | | 3/4 hp | 36" #1 | 77" #2 | 50" #2 |
| | | 1 hp | 115" #3 | 58" #3 | 108" #4 |
| | 1 1/2 hp | 72" #3 | 110" #4 | 86" #4 | |
| | 2 hp | 43" #3 | 101" #4 | 65" #4 | |
| | 2 1/2 hp | 39" #3 | 87" #4 | 58" #4 | |
| | 3 hp | 101" #4 | #4 72" | #4 52" | |
| | #4 | | 3 1/2 hp 84" | #4 64" | |
| | 41" | #4 | 4 hp 66" | #4 48" | |
| | 31" | #4 | | | |

| REF | hp | -10 LOW | +20 MED | +45 HIGH | |
|---|-----------------------------------|---------|---------|----------|---------|
| R402B/R403B R404A/R407C R408A/R502 | 1/2 hp | 56" #1 | 119" #2 | 78" #2 | |
| | 3/4 hp | 39" #1 | 85" #2 | 55" #2 | |
| | 1 hp | 28" #2 | 63" #3 | 119" #4 | |
| | 1 1/2 hp | 79" #3 | 32" #3 | 94" #4 | |
| | 2 hp | 47" #3 | 110" #4 | 71" #4 | |
| | 2 1/2 hp | 43" #3 | 96" #4 | 64" #4 | |
| | 3 hp | 111" #4 | 79" #4 | 57" #4 | |
| | 3 1/2 hp | 92" #4 | 70" #4 | 46" #4 | |
| | 4 hp | 73" #4 | 53" #4 | 34" #4 | |
| | R402A/R407A R407B/R507 | 1/2 hp | 62" #1 | 32" #1 | 85" #2 |
| | | 3/4 hp | 43" #1 | 92" #2 | 60" #2 |
| | | 1 hp | 31" #2 | 70" #3 | 36" #3 |
| 1 1/2 hp | | 87" #3 | 35" #3 | 103" #4 | |
| 2 hp | | 52" #3 | 28" #3 | 78" #4 | |
| 2 1/2 hp | | 47" #3 | 106" #4 | 70" #4 | |
| 3 hp | | 32" #3 | 86" #4 | 62" #4 | |
| 3 1/2 hp | | 101" #4 | 77" #4 | 50" #4 | |
| 4 hp | | 80" #4 | 58" #4 | 37" #4 | |
| R410A | | 1/2 hp | 72" #1 | 37" #1 | 102" #2 |
| | | 3/4 hp | 50" #1 | 116" #2 | 70" #2 |
| | | 1 hp | 37" #2 | 83" #3 | 42" #3 |
| | 1 1/2 hp | 102" #3 | 44" #3 | 34" #3 | |
| | 2 hp | 62" #3 | 37" #3 | 93" #4 | |
| | 2 1/2 hp | 55" #3 | 32" #3 | 81" #4 | |
| | 3 hp | 38" #3 | 101" #4 | 74" #4 | |
| | 3 1/2 hp | 118" #4 | 90" #4 | 55" #4 | |
| | 4 hp | 92" #4 | 70" #4 | 41" #4 | |

TRIPLE FEED

(All triple feed cap tubes require 3 lengths of each size listed below.)

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|---|----------|---------|---------|----------|
| R12/R416A | 1 hp | 93" #2 | 72" #2 | 36" #2 |
| | 1 1/2 hp | 96" #3 | 48" #3 | 90" #4 |
| | 2 hp | 77" #3 | 38" #3 | 72" #4 |
| | 3 hp | 36" #3 | 84" #4 | 54" #4 |
| | 4 hp | 108" #4 | 63" #4 | 41" #4 |
| | 5 hp | 86" #4 | 50" #4 | 32" #4 |
| R134A/R401A R401B/R406A R409A/R500 | 1 hp | 102" #2 | 79" #2 | 39" #2 |
| | 1 1/2 hp | 105" #3 | 52" #3 | 99" #4 |
| | 2 hp | 84" #3 | 42" #3 | 79" #4 |
| | 3 hp | 40" #3 | 92" #4 | 59" #4 |
| | 4 hp | 30" #3 | 69" #4 | 45" #4 |
| | 5 hp | 94" #4 | 55" #4 | 35" #4 |
| R22 | 1 hp | 112" #2 | 86" #2 | 43" #2 |
| | 1 1/2 hp | 37" #2 | 58" #3 | 108" #4 |
| | 2 hp | 92" #3 | 46" #3 | 86" #4 |
| | 3 hp | 43" #3 | 100" #4 | 65" #4 |
| | 4 hp | 32" #3 | 75" #4 | 49" #4 |
| | 5 hp | 102" #4 | 60" #4 | 39" #4 |

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|---|----------|---------|---------|----------|
| R402B/R403B R404A/R407C R408A/R502 | 1 hp | 30" #1 | 94" #2 | 47" #2 |
| | 1 1/2 hp | 41" #2 | 63" #3 | 32" #3 |
| | 2 hp | 101" #3 | 50" #3 | 95" #4 |
| | 3 hp | 47" #3 | 110" #4 | 71" #4 |
| | 4 hp | 35" #3 | 83" #4 | 53" #4 |
| | 5 hp | 32" #3 | 66" #4 | 43" #4 |
| R402A/R407A R407B/R507 | 1 hp | 33" #1 | 104" #2 | 52" #2 |
| | 1 1/2 hp | 45" #2 | 70" #3 | 35" #3 |
| | 2 hp | 111" #3 | 55" #3 | 104" #4 |
| | 3 hp | 52" #3 | 31" #3 | 78" #4 |
| | 4 hp | 38" #3 | 91" #4 | 58" #4 |
| | 5 hp | 35" #3 | 72" #4 | 47" #4 |
| R410A | 1 hp | 39" #1 | 30" #1 | 62" #2 |
| | 1 1/2 hp | 54" #2 | 84" #3 | 42" #3 |
| | 2 hp | 27" #2 | 66" #3 | 32" #3 |
| | 3 hp | 62" #3 | 37" #3 | 94" #4 |
| | 4 hp | 46" #3 | 109" #4 | 68" #4 |
| | 5 hp | 42" #3 | 86" #4 | 56" #4 |

Cap Tubing

FOUR FEED (All four feed cap tubes require 4 lengths of each size listed below.)

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R12/R416A | 2 hp | 96" #3 | 48" #3 | 90" #4 |
| | 3 hp | 60" #3 | 92" #4 | 72" #4 |
| | 4 hp | 36" #3 | 84" #4 | 54" #4 |
| | 5 hp | 105" #4 | 67" #4 | 43" #4 |
| R134A/R401A R401B/R406A R409A/R500 | 2 hp | 105" #3 | 52" #3 | 99" #4 |
| | 3 hp | 66" #3 | 101" #4 | 79" #4 |
| | 4 hp | 40" #3 | 92" #4 | 59" #4 |
| | 5 hp | 32" #3 | 74" #4 | 47" #4 |
| R22 | 2 hp | 115" #3 | 58" #3 | 108" #4 |
| | 3 hp | 72" #3 | 110" #4 | 86" #4 |
| | 4 hp | 44" #3 | 101" #4 | 65" #4 |
| | 5 hp | 35" #3 | 81" #4 | 52" #4 |

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R402B/R403B R404A/R407C R408A/R502 | 2 hp | 29" #2 | 63" #3 | 32" #3 |
| | 3 hp | 79" #3 | 32" #3 | 94" #4 |
| | 4 hp | 47" #3 | 111" #4 | 71" #4 |
| | 5 hp | 38" #3 | 89" #4 | 57" #4 |
| R402A/R407A R407B/R507 | 2 hp | 31" #2 | 70" #3 | 35" #3 |
| | 3 hp | 87" #3 | 35" #3 | 103" #4 |
| | 4 hp | 52" #3 | 31" #3 | 78" #4 |
| | 5 hp | 42" #3 | 97" #4 | 63" #4 |
| R410A | 2 hp | 34" #2 | 81" #3 | 41" #3 |
| | 3 hp | 101" #3 | 48" #3 | 32" #3 |
| | 4 hp | 62" #3 | 36" #3 | 92" #4 |
| | 5 hp | 49" #3 | 30" #3 | 74" #4 |

FIVE FEED (All five feed cap tubes require 5 lengths of each size listed below.)

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R12/R416A | 2 hp | 115" #3 | 58" #3 | 108" #4 |
| | 3 hp | 81" #3 | 41" #3 | 77" #4 |
| | 4 hp | 57" #3 | 87" #4 | 68" #4 |
| | 5 hp | 36" #3 | 82" #4 | 54" #4 |
| R134A/R401A R401B/R406B R409A/R500 | 2 hp | 28" #2 | 62" #3 | 32" #3 |
| | 3 hp | 89" #3 | 45" #3 | 84" #4 |
| | 4 hp | 62" #3 | 95" #4 | 74" #4 |
| | 5 hp | 40" #3 | 92" #4 | 59" #4 |
| R22 | 2 hp | 32" #2 | 70" #3 | 35" #3 |
| | 3 hp | 97" #3 | 49" #3 | 92" #4 |
| | 4 hp | 68" #3 | 103" #4 | 81" #4 |
| | 5 hp | 48" #3 | 98" #4 | 65" #4 |

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R402B/R403B R404A/R407C R408A/R502 | 2 hp | 35" #2 | 77" #3 | 38" #3 |
| | 3 hp | 108" #3 | 54" #3 | 101" #4 |
| | 4 hp | 74" #3 | 114" #4 | 89" #4 |
| | 5 hp | 53" #3 | 108" #4 | 71" #4 |
| R402A/R407A R407B/R507 | 2 hp | 38" #2 | 84" #3 | 42" #3 |
| | 3 hp | 28" #2 | 59" #3 | 30" #3 |
| | 4 hp | 81" #3 | 35" #3 | 99" #4 |
| | 5 hp | 58" #3 | 31" #3 | 78" #4 |
| R410A | 2 hp | 45" #2 | 98" #3 | 49" #3 |
| | 3 hp | 31" #2 | 69" #3 | 35" #3 |
| | 4 hp | 95" #3 | 40" #3 | 30" #3 |
| | 5 hp | 67" #3 | 36" #3 | 91" #4 |

SIX FEED (All six feed cap tubes require 6 lengths of each size listed below.)

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R12/R116A | 2 hp | 93" #2 | 72" #2 | 36" #2 |
| | 3 hp | 96" #3 | 48" #3 | 90" #4 |
| | 4 hp | 82" #3 | 41" #3 | 77" #4 |
| | 5 hp | 56" #3 | 86" #4 | 68" #4 |
| R134A/R401A R401B/R406A R409A/R500 | 2 hp | 102" #2 | 79" #2 | 39" #2 |
| | 3 hp | 105" #3 | 52" #3 | 99" #4 |
| | 4 hp | 90" #3 | 45" #3 | 85" #4 |
| | 5 hp | 62" #3 | 95" #4 | 75" #4 |
| R22 | 2 hp | 112" #2 | 86" #2 | 43" #2 |
| | 3 hp | 115" #3 | 58" #3 | 108" #4 |
| | 4 hp | 98" #3 | 49" #3 | 92" #4 |
| | 5 hp | 68" #3 | 103" #4 | 81" #4 |

| REF | hp | -10 LOW | +20 MED | +45 HIGH |
|--|------|---------|---------|----------|
| R402B/R403B R404A/R407C R408A/R502 | 2 hp | 30" #1 | 94" #2 | 47" #2 |
| | 3 hp | 29" #2 | 63" #3 | 32" #3 |
| | 4 hp | 118" #3 | 53" #3 | 27" #3 |
| | 5 hp | 74" #3 | 30" #3 | 89" #4 |
| R402A/R407A R407B/R507 | 2 hp | 33" #1 | 103" #2 | 52" #2 |
| | 3 hp | 31" #2 | 70" #3 | 35" #3 |
| | 4 hp | 26" #2 | 58" #3 | 30" #3 |
| | 5 hp | 82" #3 | 33" #3 | 98" #4 |
| R410A | 2 hp | 40" #1 | 31" #1 | 62" #2 |
| | 3 hp | 37" #2 | 85" #3 | 42" #3 |
| | 4 hp | 33" #2 | 70" #3 | 36" #3 |
| | 5 hp | 98" #3 | 40" #3 | 32" #3 |

NOTE: For Multiple Feeds with smaller hp's than those shown in the charts.

- Divide hp by number of feeds, go to Single Feed Chart, select a cap tube for the calculated hp and use that selection for each feed.
- Ex: 1 hp, LOW, R12 5 FEED USE: 1/5 hp, LOW, R12, SINGLE FEED CHART
- RESULT: 5 Feeds, 54" BC1

Belts



Multi-Plus Dual Brand V-Belts

Clearly identifying RMA classic part number and dimensionally equivalent FHP number, the Multi-plus belt is designed to reduce total V-Belt investment.

- Consolidate belts sizes into a single belt line
- Able to handle classic and FHP drive applications

Applications

- HVAC
- Refrigeration
- Industrial



"A & B" Sec-



"BX" Section

"A" Section

Classical V Belts

- 1/2 inch top width
- 11/32 inch thick
- Dual Brand A & 4L

"B" Section

Classical V Belts

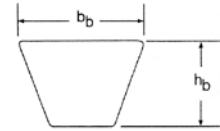
- 21/32 inch top width
- 13/32 inch thick
- Dual Brand B & 5L

"BX" Section

Cogged Multiple V Belts

- 21/32 inch top width
- 13/32 inch thick

| Belt Section (Pitch) | b (Angle) | bb (Width) | hb (Height) |
|----------------------|-----------|------------|-------------|
| A | 40° | .50 in | .31 in |
| B, BX | 40° | .66 in | .41 in |

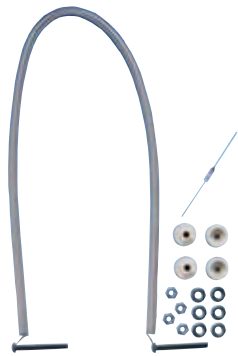


| PART NO. | CROSS to L's | APPROX. OUTSIDE LENGTH | PART NO. | CROSS to L's | APPROX. OUTSIDE LENGTH | PART NO. | CROSS to L's | APPROX. OUTSIDE LENGTH | PART NO. | CROSS to L's | APPROX. OUTSIDE LENGTH | PART NO. | CROSS to L's | APPROX. OUTSIDE LENGTH |
|----------|--------------|------------------------|----------|--------------|------------------------|----------|--------------|------------------------|----------|--------------|------------------------|----------|--------------|------------------------|
| A100 | 4L1020 | 102 | A65 | 4L670 | 67 | B44 | 5L470 | 47 | B102 | | 105 | BX66 | | 69 |
| A105 | | 107 | A66 | 4L680 | 68 | B45 | 5L480 | 48 | B104 | | 107 | BX67 | | 70 |
| A110 | | 112 | A67 | 4L690 | 69 | B46 | 5L490 | 49 | B105 | | 108 | BX70 | | 73 |
| A112 | | 114 | A68 | 4L700 | 70 | B47 | 5L500 | 50 | B106 | | 109 | BX71 | | 74 |
| A116 | | 118 | A69 | 4L710 | 71 | B48 | 5L510 | 51 | B107 | | 110 | BX75 | | 78 |
| A120 | | 122 | A70 | 4L720 | 72 | B49 | 5L520 | 52 | B110 | | 113 | BX77 | | 80 |
| A124 | | 126 | A71 | 4L730 | 73 | B50 | 5L530 | 53 | B111 | | 114 | BX78 | | 81 |
| A128 | | 130 | A72 | 4L740 | 74 | B51 | 5L540 | 54 | B112 | | 115 | BX80 | | 83 |
| A136 | | 138 | A73 | 4L750 | 75 | B52 | 5L550 | 55 | B114 | | 117 | BX81 | | 84 |
| A144 | | 146 | A74 | 4L760 | 76 | B53 | 5L560 | 56 | B115 | | 118 | BX82 | | 85 |
| A158 | | 160 | A75 | 4L770 | 77 | B54 | 5L570 | 57 | B116 | | 119 | BX83 | | 86 |
| A19 | 4L210 | 21 | A76 | 4L780 | 78 | B55 | 5L580 | 58 | B118 | | 121 | BX90 | | 93 |
| A20 | 4L220 | 22 | A77 | 4L790 | 79 | B56 | 5L590 | 59 | B120 | | 123 | BX93 | | 96 |
| A21 | 4L230 | 23 | A78 | 4L800 | 80 | B57 | 5L600 | 60 | B124 | | 127 | BX95 | | 98 |
| A22 | 4L240 | 24 | A79 | 4L810 | 81 | B58 | 5L610 | 61 | B126 | | 129 | BX96 | | 99 |
| A23 | 4L250 | 25 | A80 | 4L820 | 82 | B59 | 5L620 | 62 | B128 | | 131 | BX97 | | 100 |
| A24 | 4L260 | 26 | A81 | 4L830 | 83 | B60 | 5L630 | 63 | B130 | | 133 | BX99 | | 102 |
| A25 | 4L270 | 27 | A82 | 4L840 | 84 | B61 | 5L640 | 64 | B133 | | 136 | BX100 | | 103 |
| A26 | 4L280 | 28 | A83 | 4L850 | 85 | B62 | 5L650 | 65 | B134 | | 137 | BX103 | | 106 |
| A27 | 4L290 | 29 | A84 | 4L860 | 86 | B63 | 5L660 | 66 | B135 | | 138 | BX105 | | 108 |
| A28 | 4L300 | 30 | A85 | 4L870 | 87 | B64 | 5L670 | 67 | B136 | | 139 | BX112 | | 115 |
| A29 | 4L310 | 31 | A86 | 4L880 | 88 | B65 | 5L680 | 68 | B140 | | 143 | BX116 | | 119 |
| A30 | 4L320 | 32 | A87 | 4L890 | 89 | B66 | 5L690 | 69 | B144 | | 147 | BX120 | | 123 |
| A31 | 4L330 | 33 | A88 | 4L900 | 90 | B67 | 5L700 | 70 | B152 | | 155 | BX124 | | 127 |
| A32 | 4L340 | 34 | A89 | 4L910 | 91 | B68 | 5L710 | 71 | B158 | | 161 | BX128 | | 131 |
| A33 | 4L350 | 35 | A90 | 4L920 | 92 | B69 | 5L720 | 72 | B162 | | 165 | BX133 | | 135 |
| A34 | 4L360 | 36 | A91 | 4L930 | 93 | B70 | 5L730 | 73 | B195 | | 198 | BX136 | | 139 |
| A35 | 4L370 | 37 | A92 | 4L940 | 94 | B71 | 5L740 | 74 | B210 | | 213 | BX144 | | 147 |
| A36 | 4L380 | 38 | A93 | 4L950 | 95 | B72 | 5L750 | 75 | B225 | | 227 | BX150 | | 153 |
| A37 | 4L390 | 39 | A94 | 4L960 | 96 | B73 | 5L760 | 76 | B240 | | 242 | BX158 | | 161 |
| A38 | 4L400 | 40 | A95 | 4L970 | 97 | B74 | 5L770 | 77 | B255 | | 257 | BX162 | | 163 |
| A39 | 4L410 | 41 | A96 | 4L980 | 98 | B75 | 5L780 | 78 | B270 | | 272 | BX173 | | 176 |
| A40 | 4L420 | 42 | A97 | 4L990 | 99 | B76 | 5L790 | 79 | B285 | | 287 | BX180 | | 183 |
| A41 | 4L430 | 43 | A98 | 4L1000 | 100 | B77 | 5L800 | 80 | B300 | | 302 | BX195 | | 198 |
| A42 | 4L440 | 44 | A99 | 4L1010 | 101 | B78 | 5L810 | 81 | B315 | | 317 | BX210 | | 213 |
| A43 | 4L450 | 45 | B23 | 5L260 | 26 | B79 | 5L820 | 82 | B330 | | 332 | BX225 | | 226.5 |
| A44 | 4L460 | 46 | B24 | 5L270 | 27 | B80 | 5L830 | 83 | B360 | | 362 | BX240 | | 241.5 |
| A45 | 4L470 | 47 | B25 | 5L280 | 28 | B81 | 5L840 | 84 | BX35 | | 38 | BX255 | | 256.5 |
| A46 | 4L480 | 48 | B26 | 5L290 | 29 | B82 | 5L850 | 85 | BX36 | | 39 | BX270 | | 271.5 |
| A47 | 4L490 | 49 | B27 | 5L300 | 30 | B83 | 5L860 | 86 | BX38 | | 41 | BX300 | | 301.5 |
| A48 | 4L500 | 50 | B28 | 5L310 | 31 | B85 | 5L880 | 88 | BX42 | | 45 | | | |
| A49 | 4L510 | 51 | B29 | 5L320 | 32 | B86 | 5L890 | 89 | BX43 | | 46 | | | |
| A50 | 4L520 | 52 | B30 | 5L330 | 33 | B87 | 5L900 | 90 | BX46 | | 49 | | | |
| A51 | 4L530 | 53 | B31 | 5L340 | 34 | B88 | 5L910 | 91 | BX48 | | 51 | | | |
| A52 | 4L540 | 54 | B32 | 5L350 | 35 | B89 | 5L920 | 92 | BX50 | | 53 | | | |
| A53 | 4L550 | 55 | B33 | 5L360 | 36 | B90 | 5L930 | 93 | BX51 | | 54 | | | |
| A54 | 4L560 | 56 | B34 | 5L370 | 37 | B91 | 5L940 | 94 | BX53 | | 56 | | | |
| A55 | 4L570 | 57 | B35 | 5L380 | 38 | B92 | 5L950 | 95 | BX55 | | 58 | | | |
| A56 | 4L580 | 58 | B36 | 5L390 | 39 | B93 | 5L960 | 96 | BX56 | | 59 | | | |
| A57 | 4L590 | 59 | B37 | 5L400 | 40 | B94 | 5L970 | 97 | BX58 | | 61 | | | |
| A58 | 4L600 | 60 | B38 | 5L410 | 41 | B95 | 5L980 | 98 | BX59 | | 62 | | | |
| A59 | 4L610 | 61 | B39 | 5L420 | 42 | B96 | 5L990 | 99 | BX60 | | 63 | | | |
| A60 | 4L620 | 62 | B40 | 5L430 | 43 | B97 | 5L1000 | 100 | BX61 | | 64 | | | |
| A61 | 4L630 | 63 | B41 | 5L440 | 44 | B98 | 5L1010 | 101 | BX62 | | 65 | | | |
| A62 | 4L640 | 64 | B42 | 5L450 | 45 | B99 | 5L1020 | 102 | BX63 | | 66 | | | |
| A63 | 4L650 | 65 | B43 | 5L460 | 46 | B101 | | 104 | BX65 | | 68 | | | |

We have the full product line of HVAC Belts • Please call if you need other belts.

See page 105 for Belt Adjustment Tools (BJ10)

DH Series Duct Heater Coil Kits



DH500
(DH500 Series 3/8" O.D.)

Features/Benefits

- Nichrome heavy gauge construction.
- Welded terminal bolts for low resistance and longer life.
- Complete kits contain close wound coil to fit many applications, two male and two female bushings, terminal screws, nuts and washers to make a proper repair. The DH500 & DH500FC kits include the SUPCO STC in line series thermal cutoffs.

Applications

Replacement coil kits for many electric heat applications.

- Duct Heaters
- Electric Furnaces
- Air Curtains
- Strip Heaters

| PART NO. | MARS PART NO. | CLOSE WOUND LENGTH | WATTAGE AT VOLTS | WATTAGE AT VOLTS |
|----------|---------------|--------------------|------------------|------------------|
| DH500* | 34601 | 28" | 5000@240 | 3750@208 |
| DH500-3 | | 23" | 5000@480 | |
| DH500FC* | | 12" | 5000@240 | 3750@208 |
| DH501 | 34608 | 22" | 3500@240 | 2600W@208 |
| DH502-4 | | 18" | 2000@277 | |
| DH506 | 34630 | 26 1/2" | 4000@240 | |
| DH507 | | 18 1/2" | 3000@240 | 2250@208 |
| DH520 | 34652 | 31 1/2" | 6600@240 | 5000@208 |
| DH534 | 34656 | 26" | 6000@240 | 4500@208 |
| DH560 | | 28" | 5600@240 | 4200@208 |

*Includes 306°F Thermal Cutoff SUPCO p/n STC4300



DH500FC
(5/8" O.D.)

Tech Tip

The coil should be evenly stretched a minimum of 1 1/2 to 5 times the close wound length.

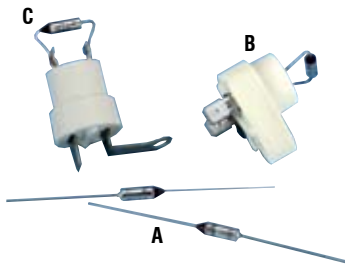
Tech Tip

When stretching coils measure length needed and stretch new coil slightly shorter. After installation, cycle with the heater on and allow full operation for 5 minutes. Any manufacturing flaws in the coil will show up quickly.



STC Series Thermal Cutoffs

THERMODISC



Features/Benefits

- STC thermal cutoffs are available in a range of temperature and electrical ratings to meet a variety of different applications.
- Provides reliable back up protection for temperature controlling thermostats and other over temperature conditions.
- One time operation.
- Three configurations available to accommodate in line or face plate mounting.
- Rated for continuous operating currents of up to 10 amps @ 250VAC (15 amps @ 120VAC).
- Used with the SUPCO DH series duct heaters.

Applications

Manufactured as a thermal safeguard, the SUPCO STC opens the circuit if the designed temperature limit is reached.

- Duct heaters
- Electric furnaces
- Heat Pump systems
- Portable electric heaters
- Industrial equipment
- Office machines

| PART NO. | T-O-D | DIVERSITEC | A-1 | OPEN TEMP. °F | OPEN TEMP. °C | TYPE | REF. |
|----------|--------------|------------|--------|---------------|---------------|------------------------|------|
| STC4257 | G4A01128C | HFL4257 | TC4257 | 262°F | 128°C | In Line | A |
| STC4283 | G4A01144C | | TC4283 | 291°F | 144°C | In Line | A |
| STC4300 | G4A01152C | HFL4300 | TC4300 | 306°F | 152°C | In Line | A |
| STC4333 | G4A01167C | HFL4333 | TC4333 | 333°F | 167°C | In Line | A |
| STC4358 | G4A01184C | | | 363°F | 184°C | In Line | A |
| STC4438 | G4A01228C | | TC4438 | 442°F | 228°C | In Line | A |
| STC4468 | G4A01240C | | TC4468 | 464°F | 240°C | In Line | A |
| STC5257 | G4AM0600128C | HFL5257 | TC5257 | 262°F | 128°C | Face Plate Straight | B |
| STC5300 | G4AM0600152C | HFL5300 | TC5300 | 306°F | 152°C | Face Plate Straight | B |
| STC5333 | G4AM0600167C | HFL5333 | TC5333 | 333°F | 167°C | Face Plate Straight | B |
| STC5337 | | | | 337°F | 169°C | | |
| STC5377 | G4AM0600192C | | TC5377 | 378°F | 192°C | Face Plate Straight | B |
| STC6257 | G4AM0600128C | | | 262°F | 128°C | Face Plate Right Angle | C |
| STC6300 | G4AM0600152C | | | 306°F | 152°C | Face Plate Right Angle | C |
| STC6333 | G4AM0600167C | | | 333°F | 167°C | Face Place Right Angle | C |



Heaters

CH Series Compressor Heaters



Features/Benefits

- Prevents refrigerant migration which causes compressor damage.
- Entire heating band is corrosion resistant
- Installs quickly and easily
- Low power consumption
- High temperature silicone rubber element
- 30" long insulated leads

Applications

- Air Conditioning
- Heat Pumps
- Refrigeration Compressors



| PART NO. | VOLTS | WATTS | GIRTH DIM. MIN. | GIRTH DIM. MAX. | COPELAND PART NO. | MARS PART NO | FITS COMPRESSOR |
|----------|-------|-------|-----------------|-----------------|-------------------|--------------|--|
| CH101 | 240 | 54 | 27 7/16" | 34 1/4" | | 32605 | Aspera: H, Bendix / Westinghouse: E, |
| CH101-3 | 480 | 54 | 27 7/16" | 34 1/4" | 018-0037-03 | 32608 | |
| CH102 | 240 | 60 | 25 3/4" | 32 9/16" | | 32609 | Tecumseh: AJ, Trane: D4340/7669 |
| CH103 | 240 | 45 | 24 3/4" | 31 9/16" | 018-0038-02 | 32613 | Bristol: H10B, H20B, H21G, H22B, H2NG-144 |
| CH104 | 240 | 75 | 41 1/2" | 48 5/16" | | 32617 | Carrier: 6A88, Fedder Chrysler 3009 |
| CH1042 | 120 | 75 | 41 1/2" | 48 5/16" | | 32619 | Bristol: H106, H206, H21G, H22G |
| CH105 | 240 | 50 | 32 1/2" | 39 5/16" | | 32621 | Copeland: ZR, Trane: DE4340, 7570 |
| CH1053 | 480 | 50 | 32 1/2" | 39 5/16" | | 32624 | |
| CH1202 | 120 | 90 | 30 3/16" | 37" | | | Copeland: BR |
| CH135 | 240 | 45 | 23 7/16" | 27 1/2" | | 32629 | |
| CH197 | 240 | 25 | 13 3/4" | 20 9/16" | | 32631 | Fedders Chrysler: 2870908, Sanyo: CR151F, CR20F, CR33F |

Transformers

Universal Fan Centers

Two economically priced products to choose from that cover all applications.



FC4011 & Universal FC4031

Features/Benefits

- DPDT plug-in style relay (90340)
- 40 VA transformer
- Mounts directly to 4" x 4" electrical box
- Color coded wiring for easy installation
- Universal FC4031 includes multi tap primary voltages for all applications, reduces inventory

Applications

- Provides low voltage control of line voltage fan motors and auxiliary circuits in HVAC systems



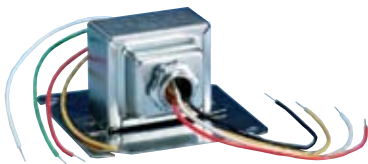
SPECIFICATIONS

| PART NO. | VA | PRIMARY VAC | SECONDARY VAC | hp | CONTACTS | REPLACES JARD | REPLACES MARS | REPLACES STEVECO |
|----------|----|-------------|---------------|-----|----------|---------------|---------------|------------------|
| FC4011 | 40 | 120 | 24 | 3/4 | DPDT | 4011FC | 24013 | 90-113 |
| FC4031 | 40 | 120/208/240 | 24 | 3/4 | DPDT | 4031FC | 24010 | 90-130 |

T45 Universal Transformer

A versatile transformer that can be used for many different applications. Accepts input voltages of 120, 208, and 240 VAC and provides a choice of secondary voltages of 2.5, 8, 12, 16 and 24 VAC.

- 50/60 Hz Class 2
- Enclosed Frame - Plate, Foot or Knock-Out Mount



| PART NO. | PRIMARY VAC | SECONDARY VAC | VA | H | W | D | MW |
|----------|-------------|---------------------|----|---------|--------|--------|----------|
| T45 | 120/208/240 | 2.5, 8, 12, 16 & 24 | 48 | 2 1/16" | 3 1/4" | 2 3/4" | 2 13/16" |

NOTE: Transformer is furnished with a 4" x 4" mounting plate, wire nuts, 1/2" conduit and 8" leads.

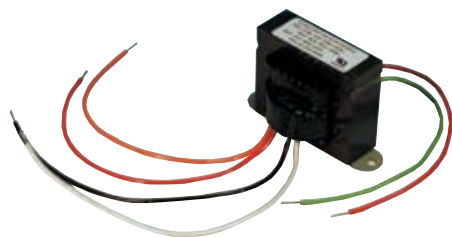


Control Transformers

A complete line of Control Transformers designed for HVAC/R applications.



- Foot or Multi-mount
- Output from 20 – 100 VA
- A multitude of Primary and Secondary combinations
- Circuit breakers and fuses where noted

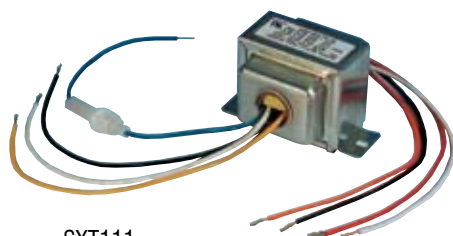


SXT105

Foot Mount Transformers

| PART NO. | PRIMARY V | SECONDARY V | OUTPUT VA | BREAKER/FUSE | MOUNT TYPE |
|----------|-----------------|-------------|-----------|--------------|------------|
| SXT100R | 120/208/240/480 | 24 | 100 | Breaker | Foot |
| SXT101 | 120/208/240 | 2.5/12/24 | 40 | Fuse | Foot |
| SXT103 | 277 | 24 | 40 | No | Foot |
| SXT104 | 208/240 | 24 | 40 | No | Foot |
| SXT105 | 120/208/240 | 24 | 40 | No | Foot |
| SXT114 | 120/208/240 | 24 | 20 | No | Foot |
| * SXT115 | 120/208/240 | 24 | 40 | No | Foot |
| SXT116 | 120 | 24 | 40 | No | Foot |
| SXT160 | 208/240 | 24 | 60 | Fuse | Foot |
| SXT79R | 120/208/240/480 | 24 | 75 | Breaker | Foot |

* Includes Metal Shroud.



SXT111

Multi-Mount Transformers

| PART NO. | PRIMARY V | SECONDARY V | OUTPUT VA | BREAKER/FUSE | MOUNT TYPE |
|----------|-------------|-------------|-----------|--------------|------------|
| SXT106 | 120/208/240 | 24 | 40 | No | Multi |
| SXT111 | 120/208/240 | 2.5/12/24 | 40 | Fuse | Multi |
| SXT112 | 120 | 24 | 40 | No | Multi |
| SXT113 | 208/240 | 24 | 40 | No | Multi |
| SXT148 | 120/208/240 | 2.5/12/24 | 48 | No | Multi |
| SXT150 | 120/208/240 | 24 | 50 | Fuse | Multi |

Cross Reference

Foot Mount

| PART NO. | JARD | MARS | UEI | WHITE-RODGERS | HONEYWELL |
|----------|--------|-------|---------|---------------|---------------------------------|
| SXT101 | 4032F | 50355 | UET101 | N/A | N/A |
| SXT104 | 4021F | 50353 | N/A | 90-T40F2 | AT40A1139, AT40B1032 |
| SXT105 | 4031F | 50354 | UET105 | 90-T40F3 | AT40A1121, AT40A1139, AT40B1214 |
| SXT114 | 2031F | 50351 | UET114 | N/A | AT20A1123 |
| SXT115 | 4031F | 50354 | UET115 | 90-T40F3 | AT40A1121, AT40A1139, AT40B1214 |
| SXT116 | 4011F | 50352 | N/A | 90-T40F1 | AT40A1121, AT40B1206 |
| SXT160 | 6021F | 50316 | UET160 | N/A | N/A |
| SXT79R | 7541C | 50321 | UET79R | 90-T75C3 | AT88A1005, AT88A1021, AT88A1047 |
| SXT100R | 10041C | 50341 | UET100R | N/A | N/A |

Multi-Mount

| PART NO. | JARD PART NO. | MARS PART NO. | UEI PART NO. | WHITE-RODGERS PART NO. | HONEYWELL PART NO. |
|----------|------------------|------------------|-----------------|---------------------------|---|
| SXT106 | 4031M | 50304 | N/A | 90-T40M3 | AT40A1018, AT72D1683, AT72D1691, AT140A1018 |
| SXT111 | 5032M | 50333 | UET111 | N/A | N/A |
| SXT112 | 4011M | 50302 | UET112 | 90-T40M1 | AT72D1683, AT140A1000 |
| SXT113 | 4021M | 50303 | UET113 | 90-T40M2 | AT72D1691, AT140A1026 |
| SXT148 | 5032M | 50333 | N/A | N/A | N/A |
| SXT150 | 5031M | 50314 | UET150 | 90-T50M3 | AT87A1106, AT87A1007, AT87A1049, AT87A1056, AT150A1007 |

Sequencers

THERMODISC



Features/Benefits

- Direct replacement for most fan & heat sequencing functions.
- 24 volt input control
- Contacts designated M1 – M2 of a multi timing sequencer will turn on first and turn off last, as required by UL and CSA for electric heating applications.
- Five second on delay between all subsequent stages, unless they function together.

Applications

The SUPCO Q Series Thermodisc Sequencers are field proven for controlling the operation of heating elements and/or blower motors in electric, gas or oil heat systems.

- Electric Furnaces
- Heat Pumps
- Gas Furnaces
- Oil Furnaces

Recommended Sequencer Packages for Electric Heating

Note 1: Auxiliary Contacts: In the above recommended packages, during the ON cycle, the auxiliary contacts complete the control circuit to subsequent 15S sequencers when more than one 15S sequencer is required. The auxiliary contacts may be any contacts in the first 15S sequencer except those marked M1-M2.

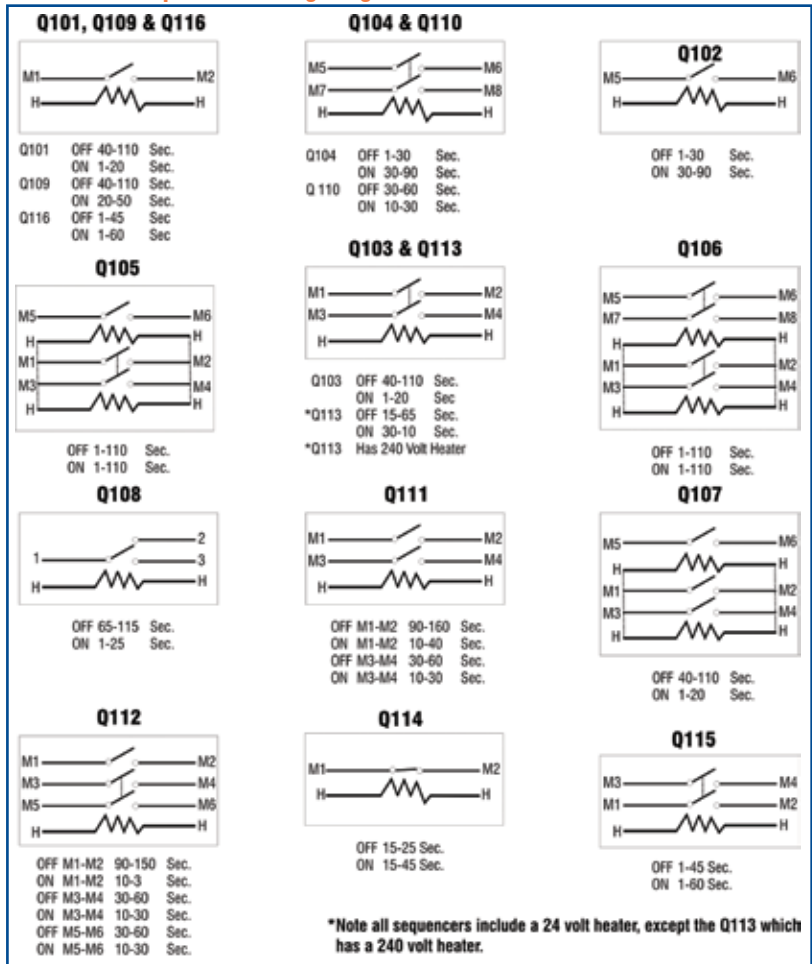
Note 2: Fan Interlock: The recommended combinations which contain more than one 15S sequencer include an extra set of contacts for fan interlock. (These are the first contacts of the second and third 15S sequencers.) A fan interlock is required by Underwriters Laboratories in order to guarantee that the fan will stay on until all elements are de-energized. All of the M1-M2 contacts of each 15S unit would be wired to the fan so that during the OFF cycle, the fan would stay energized regardless of the timing sequence of each package.

Note 3: Main Contacts, Electrical Ratings: 7FLA, 4LRA, 240 VAC inductive or 30A, 240 VAC resistive or 30A, 240 VAC total of inductive or resistive, with 7FLA, 240 VAC maximum inductive.

Note 4: Control Voltage on Heater Terminals (H): 24 VAC nominal (heater rated for 30 VAC/NEMA Class II circuit).



“Q” Series Sequencer Wiring Diagram



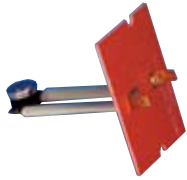
Cross Reference

| PART NO. | GEM | GLOBAL | MARS | WATSCO | KLIXON | W/R | INTERSTATE ELECTRIC I-9 | ZETTLER | OEM |
|----------|-------|--------|-------|--------|-------------|---------|-------------------------|------------|--|
| Q101 | GS101 | 24ZC-1 | 33241 | TDR10 | 6000AONI-98 | 24A34-1 | IES24A34-1 | ZC24A341-1 | *** |
| Q102 | GS102 | 24ZC-2 | 33242 | TDR15 | 6000AONI-97 | 24A34-2 | IES24A34-2 | ZC24A34-2 | *** |
| Q103 | GS103 | 24ZC-3 | 33244 | TDR20 | 6000AONI-87 | 24A34-3 | IES24A34-3 | ZC24A34-3 | Janitrol BT1256504 ICP/Carrier HQ1056789 |
| Q104 | GS104 | 24ZC-4 | 33245 | TDR25 | 6000AONI-86 | 24A34-4 | IES24A34-4 | ZC24A34-4 | *** |
| Q105 | GS105 | 24ZC-5 | 33232 | TDR30 | 51172-32 | 24A34-5 | IES24A34-5 | ZC24A34-5 | *** |
| Q106 | GS106 | 24ZC-6 | 33233 | *** | 51172-22 | 24A34-6 | IES24A34-6 | ZC24A34-6 | *** |
| Q107 | GS107 | *** | *** | *** | *** | *** | *** | *** | *** |
| Q108 | GS108 | *** | *** | *** | *** | *** | *** | *** | Goodman B13707-38 |
| Q109 | *** | *** | *** | *** | *** | *** | *** | *** | Janitrol BT1256500 |
| Q110 | *** | *** | *** | *** | *** | *** | *** | *** | Weatherking 422311608 |
| Q111 | *** | *** | *** | *** | *** | *** | *** | *** | Weatherking 422311606 |
| Q112 | *** | *** | *** | *** | *** | *** | *** | *** | Weatherking 422311607 |
| Q113 | *** | *** | 33265 | *** | 6000E4 | *** | *** | *** | *** |
| Q114 | *** | *** | *** | *** | *** | *** | *** | *** | Coleman 7670-307,308 308,130,913,101 |
| Q115 | *** | *** | 33246 | *** | 6000EOM | 24A52-1 | *** | *** | *** |
| Q116 | *** | *** | 33243 | *** | 6000AOM | 24A51-1 | *** | *** | *** |

*Note all sequencers include a 24 volt heater, except the Q113 which has a 240 volt heater.

Gas Furnace Limits and Plenum Thermostats

THERMODISC



- Direct OEM Replacements
- Economical
- Use 36T Electrical Ratings (page 42)



Plenum Thermostats

| PART NO. | DESCRIPTION | OPEN °F | CLOSE °F | BOARD WIDTH | BOARD HEIGHT | INSERTION LENGTH | BDP | | GOODMAN | LENNOX | YORK | |
|----------|--------------|---------|----------|-------------|--------------|------------------|--|-----------------------|---------------------------------------|---------------------------|--------------------|------------------------------------|
| | | | | | | | BRYANT DAY & NIGHT PAYNE | CARRIER JANITROL GMC | AIR-EASE ARMSTRONG CONCORD MAGIC CHEF | CORSAIR RUUD WEATHER KING | RHEEM TRANE GE | BORG-WARNER FRAZIER JOHNSON LUXAIR |
| SHL501 | L170-40 SPST | 170°F | 130°F | 1.88" | 2.8" | 3.12" | HH12ZA174A HH12ZA176A P331-2203 | | | | | |
| SHL502 | L180-30 SPST | 180°F | 150°F | 1.88" | 2.8" | 3.12" | HH12ZA178A | B1370001 | | | | |
| SHL503 | L190-40 SPST | 190°F | 150°F | 1.88" | 2.8" | 3.12" | HH12ZA189 HH12ZB190 HH12ZA193A P331-2205 | | | | | |
| SHL504 | L240-40 SPST | 240°F | 200°F | 1.88" | 2.8" | 3.12" | HH12ZA240 HH12ZA252A P331-2217 | | | | | |
| SHL505 | L140-40 SPST | 140°F | 100°F | 1.88" | 2.8" | 1.87" | HH12ZB140 | | | | | 025-29041-005 |
| SHL506 | L170-40 SPST | 170°F | 130°F | 1.88" | 2.8" | 1.87" | HH12ZB170 | | | 47-25349-02 | SWT1258 | |
| SHL507 | L140-30 SPST | 140°F | 110°F | 1.88" | 2.8" | 3.12" | HH12ZA140 | | 87F16 | | | 025-29041-005 |
| SHL508 | L190-20 SPST | 190°F | 170°F | 1.88" | 2.8" | 3.12" | HH12ZB190 HH12ZA193 HH12ZA189 P331-2005 | B1370913 | | 47-21711-03 | SWT1260 | 025-29041-006 |
| SHL509 | L240-30 SPST | 240°F | 210°F | 1.88" | 2.8" | 3.12" | HH12ZB240 HH12ZA240 HH12ZA252 P331-2217 | B1370903 | | | | |
| * SHL510 | L150-20 SPST | 150°F | 130°F | 1.625" | 1.44" | 3.12" | HH12ZB150 | | | 47-25349-03 | | |
| * SHL511 | L160-20 SPST | 160°F | 140°F | 1.625" | 1.44" | 3.12" | HH12ZB160 | 1370908S | | 47-21711-07 | | |
| * SHL512 | L170-20 SPST | 170°F | 150°F | 1.625" | 1.44" | 3.12" | HH12ZB170 | | | 47-25350-06 | | |
| * SHL513 | L170-40 SPST | 170°F | 130°F | 1.88" | 2.94" | 3.12" | HH12ZB170 | | 26H66 | | SWT1258 | |
| * SHL514 | L180-40 SPST | 180°F | 140°F | 1.88" | 2.94" | 3.12" | HH12ZB180 | | 37H73 | | | |
| * SHL515 | L200-40 SPST | 200°F | 160°F | 1.88" | 2.94" | 3.12" | HH12ZB200 HH12ZA199 HH12ZA201 | | 49L03 | 47-25349-05 | SWT1260 | 025-29041-006 |
| * SHL516 | L210-40 SPST | 210°F | 170°F | 1.88" | 2.94" | 3.12" | HH12ZB210 | | | | | |
| * SHL517 | L220-40 SPST | 220°F | 180°F | 1.88" | 2.94" | 3.12" | HH12ZB220 HH12ZA219 HH12ZA223 48NHT042 620BE 0122 | | | | SWT1273 | |
| * SHL518 | L250-40 SPST | 250°F | 210°F | 1.88" | 2.94" | 3.12" | HH12ZB250 HH12ZA251 P331-2208 | B1370012S | | | SWT1261 SWT1272 | |
| SHL519 | L155-30 SPST | 155°F | 125°F | 1.88" | 2.8" | 7.12" | | B1370006 B1370908S | | | | |

* Includes gasket

Manual Reset Limit Control* - Open on Rise



| PART NO. | DESCRIPTION | OPEN | CLOSE | PART NO. | DESCRIPTION | OPEN | CLOSE |
|----------|----------------------|------|--------|----------|----------------------|------|--------|
| SHM125 | Limit - Open on Rise | 125 | Manual | SHM190 | Limit - Open on Rise | 190 | Manual |
| SHM130 | Limit - Open on Rise | 130 | Manual | SHM200 | Limit - Open on Rise | 200 | Manual |
| SHM160 | Limit - Open on Rise | 160 | Manual | SHM290 | Limit - Open on Rise | 290 | Manual |
| SHM170 | Limit - Open on Rise | 170 | Manual | SHM350 | Limit - Open on Rise | 350 | Manual |
| SHM180 | Limit - Open on Rise | 180 | Manual | | | | |

* Adapter Flange Plate included with each thermostat. * Use 60T Electrical Ratings (page 42)

Thermostats

Rollout Switches

THERMODISC

Features/Benefits

- Auto and Manual Reset
- Offered in a broad temperature range to cover most heating applications

Applications

- Automatic or Manual Rollout safety in gas fired furnaces, unit heater and roof top units.



Small Flush Mount SPST Limit Thermostats (Flush Mount Automatic Rollout)

| PART NO. | TERMINALS | CUT OUT | CUT IN | DIFFERENTIAL |
|-----------|------------------|---------|--------|--------------|
| SLF130VA | Vertical 1/4" | 130 | 115 | 15 |
| SLF155VA | Vertical 1/4" | 155 | 115 | 40 |
| SLF158VB | Vertical 3/16" | 158 | 118 | 40 |
| SLF165VA | Vertical 1/4" | 165 | 125 | 40 |
| SLF170VA | Vertical 1/4" | 170 | 130 | 40 |
| SLF185VB | Vertical 3/16" | 185 | 145 | 40 |
| SLF190HA | Horizontal 1/4" | 190 | 150 | 40 |
| SLF194HB | Horizontal 3/16" | 194 | 154 | 40 |
| SLF194VB | Vertical 3/16" | 194 | 154 | 40 |
| SLF200HA | Horizontal 1/4" | 200 | 160 | 40 |
| SLF200VA | Vertical 1/4" | 200 | 160 | 40 |
| SLF210HA | Horizontal 1/4" | 210 | 170 | 40 |
| SLF222-VA | Vertical 1/4" | 222 | 182 | 40 |

Small Flush Mount SPST Limit Thermostats (Flush Mount Automatic Rollout)

| PART NO. | TERMINALS | CUT OUT | CUT IN | DIFFERENTIAL |
|----------|------------------|---------|--------|--------------|
| SLF230HA | Horizontal 1/4" | 230 | 190 | 40 |
| SLF230HB | Horizontal 3/16" | 230 | 190 | 40 |
| SLF250HA | Horizontal 1/4" | 250 | 200 | 50 |
| SLF252VB | Vertical 3/16" | 252 | 202 | 50 |
| SLF255VA | Vertical 1/4" | 255 | 205 | 50 |
| SLF260HA | Horizontal 1/4" | 260 | 210 | 50 |
| SLF275HB | Horizontal 3/16" | 275 | 225 | 50 |
| SLF275VB | Vertical 3/16" | 275 | 225 | 50 |
| SLF280HB | Horizontal 3/16" | 280 | 230 | 50 |
| SLF300HB | Horizontal 3/16" | 300 | 250 | 50 |
| SLF300VA | Vertical 1/4" | 300 | 250 | 50 |
| SLF330VA | Vertical 1/4" | 330 | 280 | 50 |

* Use 36T Electrical Ratings Page 42



Automatic Rollouts - SPST Limit Thermostats

| PART NO. | TERMINALS | CUT OUT | CUT IN | DIFFERENTIAL |
|----------|----------------|---------|--------|--------------|
| SLS120 | 45° angle 1/4" | 120 | 105 | 15 |
| SLS130 | 45° angle 1/4" | 130 | 115 | 15 |
| SLS140 | 45° angle 1/4" | 140 | 100 | 40 |
| SLS145 | 45° angle 1/4" | 145 | 105 | 40 |
| SLS150 | 45° angle 1/4" | 150 | 110 | 40 |
| SLS155 | 45° angle 1/4" | 155 | 115 | 40 |
| SLS160 | 45° angle 1/4" | 160 | 120 | 40 |
| SLS165 | 45° angle 1/4" | 165 | 125 | 40 |
| SLS170 | 45° angle 1/4" | 170 | 130 | 40 |
| SLS175 | 45° angle 1/4" | 175 | 135 | 40 |
| SLS180 | 45° angle 1/4" | 180 | 140 | 40 |

Automatic Rollouts - SPST Limit Thermostats

| PART NO. | TERMINALS | CUT OUT | CUT IN | DIFFERENTIAL |
|----------|------------------|---------|--------|--------------|
| SLS200 | 45° angle 1/4" | 200 | 160 | 40 |
| SLS250 | 45° angle 1/4" | 250 | 200 | 50 |
| SLS255 | 45° angle 1/4" | 255 | 205 | 50 |
| SLS265 | 45° angle 1/4" | 265 | 215 | 50 |
| SLS275 | 45° angle 1/4" | 275 | 225 | 50 |
| SLS285 | 45° angle 1/4" | 285 | 235 | 50 |
| SLS295 | 45° angle 1/4" | 295 | 245 | 50 |
| SLS300 | 45° angle 1/4" | 300 | 250 | 50 |
| SLS300HB | Horizontal 3/16" | 300 | 250 | 50 |
| SLS350 | 45° angle 1/4" | 350 | 300 | 50 |

* Use 36T Electrical Ratings Page 42



Manual Rollouts - SPST Limit Thermostats

| PART NO. | TERMINALS | CUT OUT | CUT IN | PART NO. | TERMINALS | CUT OUT | CUT IN |
|----------|---------------|---------|--------|-----------|---------------|---------|--------|
| SRL130 | Vertical 1/4" | 130 | Manual | SRL250 | Vertical 1/4" | 250 | Manual |
| SRL135 | Vertical 1/4" | 135 | Manual | SRL260 | Vertical 1/4" | 260 | Manual |
| SRL220 | Vertical 1/4" | 220 | Manual | SRL300 | Vertical 1/4" | 300 | Manual |
| SRL230 | Vertical 1/4" | 230 | Manual | SRL350 | Vertical 1/4" | 350 | Manual |
| SRL240 | Vertical 1/4" | 240 | Manual | SRL300ICP | | 300 | Manual |

* Use 36T Electrical Ratings Page 43

SRL Series X Ref

| PART NO. | REPLACES OEM | OEM P/N | PART NO. | REPLACES OEM | OEM P/N |
|----------|------------------------|-------------|-----------|------------------------|-------------|
| SRL130 | Rheem/Ruud Weatherking | 47-22453-01 | SRL260 | Nordyne | 626350 |
| SRL135 | Rheem/Ruud Weatherking | 47-22453-02 | SRL300 | Nordyne | 626343 |
| SRL220 | Nordyne | 626354 | | Rheem/Ruud Weatherking | 47-22861-02 |
| SRL230 | Nordyne | 626353 | SRL300ICP | ICP | 1013102 |
| SRL240 | Nordyne | 626355 | SRL350 | Goodman | B13701-54 |
| SRL250 | Nordyne | 626352 | | | |

* Use 36T Electrical Ratings Page 42

HVAC Flush Mount Adjustable Airstream Thermostats

| PART NO. | 5/16" AIRSTREAM INSERT | ADJUSTABLE RANGE | DIFFERENTIAL | BRAND | GEM NO. |
|----------|------------------------|------------------|--------------|-----------------------|-------------------|
| HF757 | Fan Close on Rise | 70 180 | 30 | White Rodgers | 757-1 |
| HL758 | Limit Open on Rise | 110 200 | 30 | White Rodgers Carrier | 758-1 HH680316 |



Adjustable AT Series

- Series covers almost 95% of heater and dryer applications
- Dial knob
- 40° adjustable range
- 1/4" quick connect terminals
- Use 60T Electrical Ratings (page 42)



AT

Adjustable Thermostats

| PART NO. | STANDARD | | DIFFERENTIAL |
|----------|----------|-------|--------------|
| | MOUNT | RANGE | |
| AT012 | 135 | 175 | 40 |
| AT013 | 175 | 215 | 40 |
| AT014 | 210 | 250 | 40 |
| AT015 | 250 | 290 | 40 |

Open on temperature rise

Adjustable Airflow Thermostats

| PART NO. | STANDARD | | DIFFERENTIAL |
|----------|----------|-------|--------------|
| | MOUNT | RANGE | |
| AT021 | 90 | 130 | 40 |
| AT022 | 140 | 180 | 40 |

Close on temperature rise

Fan Control* - Close on Rise

| PART NO. | DESCRIPTION | CUT | | DIFFERENTIAL |
|----------|----------------|-----|-----|--------------|
| | | OUT | IN | |
| SHF90 | Fan | 80 | 90 | 10 |
| SHF110 | Fan | 90 | 110 | 20 |
| SHF110DC | Fan - Deep Cup | 90 | 110 | 20 |
| SHF120 | Fan | 110 | 120 | 10 |
| SHF130 | Fan | 115 | 130 | 15 |
| SHF140 | Fan | 120 | 140 | 20 |
| SHF150 | Fan | 130 | 150 | 20 |
| SHF160 | Fan | 140 | 160 | 20 |
| SHF170 | Fan | 150 | 170 | 20 |
| SHF180 | Fan | 160 | 180 | 20 |
| SHF200 | Fan | 180 | 200 | 20 |
| SHF250 | Fan | 220 | 250 | 30 |

*Adapter Flange Plate included with each thermostat.

*Use 60T Electrical Ratings Page 42

Limit Control* - Open on Rise

| PART NO. | DESCRIPTION | CUT | | DIFFERENTIAL |
|----------|----------------------|-----|-----|--------------|
| | | OUT | IN | |
| SHL120 | Limit - Open on Rise | 120 | 110 | 10 |
| SHL140 | Limit - Open on Rise | 140 | 100 | 40 |
| SHL150 | Limit - Open on Rise | 150 | 110 | 40 |
| SHL160 | Limit - Open on Rise | 160 | 120 | 40 |
| SHL170 | Limit - Open on Rise | 170 | 130 | 40 |
| SHL180 | Limit - Open on Rise | 180 | 140 | 40 |
| SHL190 | Limit - Open on Rise | 190 | 150 | 40 |
| SHL200 | Limit - Open on Rise | 200 | 160 | 40 |
| SHL210 | Limit - Open on Rise | 210 | 130 | 80 |
| SHL230 | Limit - Open on Rise | 230 | 190 | 40 |
| SHL250 | Limit - Open on Rise | 250 | 210 | 40 |
| SHL300 | Limit - Open on Rise | 300 | 250 | 50 |
| SHL325 | Limit - Open on Rise | 325 | 275 | 50 |

*Adapter Flange Plate included with each thermostat.

*Use 60T Electrical Ratings Page 42



SHF



SHL

Deep Cup Limit Thermostats

| PART NO. | RANGE | | DIFFERENTIAL | BRAND | OEM NO. |
|----------|--------|---------|--------------|------------|---|
| | OPEN°F | CLOSE°F | | | |
| L135DC | 135 | 120 | 15 | Electrolux | 5308013213 |
| L145DC | 145 | 125 | 20 | Electrolux | 5308015847 |
| L210DC | 210 | 170 | 40 | Armstrong | 01851A-025 18J37 1851A 18J3701 |

*Use 60T Electrical Ratings Page 42



L135DC



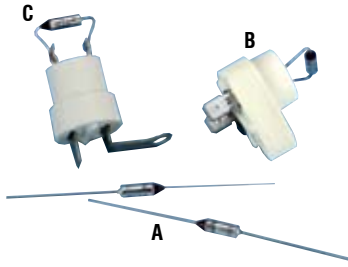
FL50

HVAC Flush Mount Staging Thermostats

| PART NO. | DESCRIPTION | CUT | | DIFFERENTIAL |
|----------|-------------------------|------|-------|--------------|
| | | OPEN | CLOSE | |
| FL50 | HVAC Staging Thermostat | 50 | 35 | 15 |
| FL60 | HVAC Staging Thermostat | 60 | 45 | 15 |

Thermostats

THERMODISC



Thermal Cut Outs

| PART NO. | PART NO. | OPEN | OPEN | | PART NO. | PART NO. | OPEN | OPEN | |
|----------|----------|-------|-------|-------|----------|----------|-------|-------|-------|
| 15 AMP | 25 AMP | TEMP. | TEMP. | | 15 AMP | 25 Amp | TEMP. | TEMP. | |
| SERIES 1 | SERIES 2 | °C | °F | STYLE | SERIES 1 | SERIES 2 | °C | °F | STYLE |
| STC4162 | STC8162 | 72 | 162 | A | STC4358 | | 184 | 363 | A |
| STC4170 | STC8170 | 77 | 170 | A | STC4438 | STC8438 | 226 | 438 | A |
| STC4183 | STC8183 | 84 | 183 | A | STC4468 | STC8468 | 242 | 468 | A |
| STC4199 | STC8199 | 93 | 199 | A | STC5257 | STC85257 | 125 | 257 | B |
| STC4208 | STC8208 | 98 | 208 | A | STC5283 | STC85283 | 139 | 283 | B |
| STC4220 | STC8220 | 104 | 220 | A | STC5300 | STC85300 | 149 | 300 | B |
| STC4228 | STC8228 | 109 | 228 | A | STC5333 | STC85333 | 167 | 333 | B |
| STC4242 | STC8242 | 117 | 242 | A | STC5377 | STC85377 | 192 | 377 | B |
| STC4250 | STC8250 | 121 | 250 | A | STC6257 | STC86257 | 125 | 257 | C |
| STC4257 | STC8257 | 125 | 257 | A | STC6283 | STC86283 | 139 | 283 | C |
| STC4283 | STC8283 | 139 | 283 | A | STC6300 | STC86300 | 149 | 300 | C |
| STC4300 | STC8300 | 149 | 300 | A | STC6333 | STC86333 | 167 | 333 | C |
| STC4333 | | 167 | 333 | A | STC6377 | STC86377 | 192 | 377 | C |
| | STC8378 | 192 | 378 | A | | | | | |

Series 1 Maximum Wattage 1800W @ 120V / 2400W @ 240
 Series 2 Maximum Wattage 1800W @ 120V / 6000W @ 240



Thermal Cut Outs

| PART NO. | TERMINALS | °C | °F | STYLE | PART NO. | TERMINALS | °C | °F | STYLE |
|----------|-----------|-----|-----|-------|----------|-----------|-----|-----|-------|
| STF4170 | QC. 1/4" | 77 | 170 | 36T | STF4249B | QC. 3/16" | 121 | 249 | 36T |
| STF4183 | QC. 1/4" | 84 | 183 | 36T | STF4262 | QC. 1/4" | 128 | 262 | 36T |
| STF4208 | QC. 1/4" | 98 | 208 | 36T | STF4291B | QC. 3/16" | 144 | 291 | 36T |
| STF4221 | QC. 1/4" | 105 | 221 | 36T | STF4305 | QC. 1/4" | 152 | 305 | 36T |
| STF4230 | QC. 1/4" | 110 | 230 | 36T | STF4305B | QC. 3/16" | 152 | 305 | 36T |
| STF4242 | QC. 1/4" | 117 | 242 | 36T | | | | | |

*Maximum Wattage 1800W @ 120V/2400W @ 240

Exact Replacement Commercial Refrigeration Defrost Thermostats

Exact Replacement Commercial Refrigeration Defrost Thermostats



- Surface Mount
- 2 wire heater limit
75°F - 40°F range
- SPST
- Resistive Amps: 25
- Volts AC: 120/240

| PART NO. | OPEN | CLOSE | MOUNT | REPLACES |
|----------|------|-------|---------|--|
| SL5708 | 75°F | 40°F | Surface | Bohn, Larkin, Chandler, Climate Control 5708L & 4752C |



- Surface Mount
- 3 wire fan and defrost
terminator 55°F - 35°F range
- SPDT
- Resistive Amps: 25
- Volts AC: 120/240

| PART NO. | OPEN | CLOSE | MOUNT | REPLACES |
|----------|------|-------|---------|--|
| SL5709 | 55°F | 35°F | Surface | Bohn, Larkin, Chandler, Climate Control 5709L & 4751C |



- Tube Mount
- 3 wire defrost control
55°F - 35°F range
- SPDT
- Resistive Amps: 25
- Volts AC: 120/240

| PART NO. | OPEN | CLOSE | MOUNT | REPLACES |
|----------|------|-------|-------|-------------------|
| SL79002 | 55°F | 30°F | Tube | Russell 103079002 |



- Surface Mount
- 3 wire defrost control
45°F - 30°F range
- SPDT
- Restrictive Amps: 25
- Volts AC: 120/240

| PART NO. | OPEN | CLOSE | MOUNT | REPLACES |
|----------|------|-------|---------|-------------------|
| SL79005 | 65°F | 30°F | Surface | Russell 103079005 |



Flush Mount SPST Thermostats

| PART NO. | DESCRIPTION | OPEN | CLOSE | DIFFERENTIAL | BRAND | REFERENCE |
|-----------------|------------------|------|-------|--------------|------------|------------|
| FL135 | Flush Mount SPST | 135 | 120 | 15 | Whirlpool | 295419 |
| | | | | | Maytag | C2735801 |
| FL15020 | Flush Mount SPST | 150 | 110 | 20 | Maytag | 302850 |
| FL15040 | Flush Mount SPST | 150 | 110 | 40 | Maytag | 302850 |
| FL155 | Flush Mount SPST | 155 | 125 | 30 | Maytag | 303036 |
| | | | | | | 305865 |
| FL190 | Flush Mount SPST | 190 | 180 | 10 | Maytag | 300858 |
| FL200 | Flush Mount SPST | 200 | 160 | 40 | Electrolux | 5308015856 |
| | | | | | Franklin | F136204 |
| | | | | | Whirlpool | 688474 |
| FL205 | Flush Mount SPST | 205 | 165 | 40 | Electrolux | 5308013695 |
| | | | | | | 5308950121 |
| | | | | | Maytag | 303396 |
| | | | | | | 338471 |
| | | | | | | 341196 |
| | | | | | Whirlpool | 279048 |
| | | | | | | 660036 |
| FL220 | Flush Mount SPST | 220 | 180 | 40 | Maytag | 301451 |
| | | | | | | 303395 |
| FL225 | Flush Mount SPST | 225 | 185 | 40 | Maytag | 62641 |
| | | | | | | 510701 |
| FL240 | Flush Mount SPST | 240 | 190 | 50 | Maytag | 305169 |
| FL260 | Flush Mount SPST | 260 | 210 | 50 | GE | WE4X5099 |
| | | | | | | WE4X5176 |
| | | | | | Whirlpool | 4452223 |
| FL285 | Flush Mount SPST | 285 | 235 | 50 | Electrolux | 5303281113 |
| FL320 | Flush Mount SPST | 320 | 270 | 50 | Electrolux | 5307531201 |
| | | | | | | 7525560 |
| FL350-50 | Flush Mount SPST | 350 | 300 | 50 | Maytag | 40113801 |

*Use 60T Electrical Ratings Page 42



Flush Mount SPDT Thermostats

| PART NO. | DESCRIPTION | OPEN | CLOSE | DIFFERENTIAL | BRAND | REFERENCE |
|---------------|------------------|------|-------|--------------|-----------|-----------|
| FLD135 | Flush Mount SPDT | 135 | 120 | 15 | Maytag | 61372M |
| | | | | | | R099113 |
| FLD205 | Flush Mount SPDT | 205 | 165 | 40 | Whirlpool | 279048 |
| | | | | | | 341247 |
| | | | | | | 660036 |

*Use 60T Electrical Ratings Page 42



SFPC Freeze Protection Control

- Protects air conditioning evaporator coil from freezing.
- Opens 35°F/Close 50°F
- Fits 7/8" O.D. Tubing
- Replaces: Trol-A-Temp FPC
- Includes clip to fit 7/8" O.D. tubing

Thermostats

THERMODISC



General Purpose L & LD Series

- Open on rise
- Close when temperature differential is reached
- 1/4" quick disconnect terminals

Applications

- Most home laundry dryers
- Fan and Limit Applications



"L" Series , Single Pole - Single Throw

| PART NO. | | | | PART NO. | | | |
|----------|-----------|------------|--------|-----------|------------|-----|-----|
| °DIFF. | OPEN (°F) | CLOSE (°F) | °DIFF. | OPEN (°F) | CLOSE (°F) | | |
| L120 | 10 | 120 | 110 | L190 | 40 | 190 | 150 |
| L125 | 10 | 125 | 115 | L200 | 40 | 200 | 160 |
| L130 | 15 | 130 | 115 | L205 | 40 | 205 | 165 |
| L135 | 15 | 135 | 120 | L225 | 40 | 225 | 185 |
| L140 | 20 | 140 | 120 | L240 | 40 | 240 | 200 |
| L145 | 20 | 145 | 125 | L250 | 40 | 250 | 210 |
| L150 | 20 | 150 | 130 | L260 | 40 | 260 | 220 |
| L155 | 20 | 155 | 135 | L270 | 40 | 270 | 230 |
| L160 | 20 | 160 | 140 | L290 | 40 | 290 | 250 |
| L165 | 20 | 165 | 145 | L300 | 40 | 300 | 260 |
| L170 | 20 | 170 | 150 | L320 | 40 | 320 | 280 |
| L175 | 20 | 175 | 155 | L340 | 40 | 340 | 300 |
| L180-20 | 20 | 180 | 160 | | | | |
| L180-40 | 40 | 180 | 140 | | | | |

Use 60T Electrical Ratings Below



"LD" Series, Single Pole - Double Pole

| PART NO. | DESCRIPTION | OPEN | CLOSE | DIFFERENTIAL |
|----------|------------------|------|-------|--------------|
| LD120 | SPDT Thermostats | 120 | 105 | 15 |
| LD130 | SPDT Thermostats | 130 | 115 | 15 |
| LD135 | SPDT Thermostats | 135 | 120 | 15 |
| LD140 | SPDT Thermostats | 140 | 120 | 20 |
| LD145 | SPDT Thermostats | 145 | 125 | 20 |
| LD155 | SPDT Thermostats | 155 | 135 | 20 |
| LD170 | SPDT Thermostats | 170 | 150 | 20 |
| LD190 | SPDT Thermostats | 190 | 170 | 20 |
| LD200 | SPDT Thermostats | 200 | 160 | 40 |
| LD210 | SPDT Thermostats | 210 | 170 | 40 |
| LD225 | SPDT Thermostats | 225 | 185 | 40 |
| LD240 | SPDT Thermostats | 240 | 200 | 40 |
| LD270 | SPDT Thermostats | 270 | 230 | 40 |
| LD290 | SPDT Thermostats | 290 | 250 | 40 |
| LD305 | SPDT Thermostats | 305 | 265 | 40 |

Use 60T Electrical Ratings Below

Terminal Adapters

| PART NO. | DESCRIPTION | WHERE USED |
|----------|---------------------------|--|
| T1121 | 2 to 1 Terminal Adapter | 1/4" QC Female to 2 Male 1/4" QC Chair Terminal |
| T1122 | 2 to 1 Terminal Adapter | 1/4" QC Female to 2 Male 1/4" QC Side by Side Terminal |
| T1123 | Screw to Terminal Adapter | 8 - 10 Stud to 1/4" QC Terminal |
| T1124 | Terminal to Screw Adapter | 1/4" QC Female to Screw Right Angle Terminal |
| T1125 | 2 to 1 Terminal Adapter | 1/4" QC Female to 1/4" QC Male Piggyback Terminal |



T1121



T1124



T1122



T1125



T1123

Typical Electrical Ratings

36T Electrical Ratings

| VAC | Resistive (Non-Inductive) | | Motor Rating (Inductive) | | Pilot Duty |
|-----|---------------------------|--------------|--------------------------|--------------|------------|
| | Full Load | Locked Rotor | Full Load | Locked Rotor | |
| 120 | 15A | 3A | 12A | 125 VA | |
| 240 | 10A | 1.5A | 6A | 125 VA | |

350°F Max Ambient Temperature

60T Electrical Ratings

| VAC | Resistive (Non-Inductive) | | Motor Rating (Inductive) | | Pilot Duty |
|-----|---------------------------|--------------|--------------------------|--------------|------------|
| | Full Load | Locked Rotor | Full Load | Locked Rotor | |
| 120 | 25A | 14A | 72A | 125 VA | |
| 240 | 25A | 10A | 60A | 125 VA | |

350°F Max Ambient Temperature



IG Series Flat Hot Surface Furnace Igniters

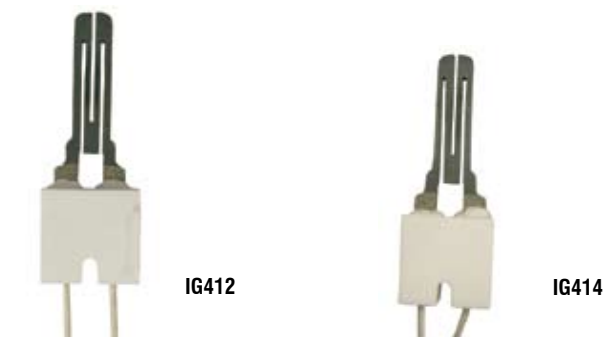
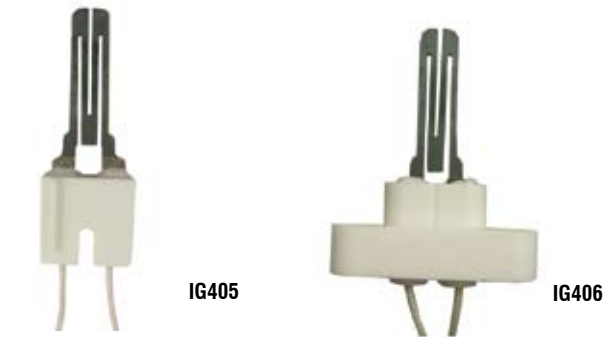
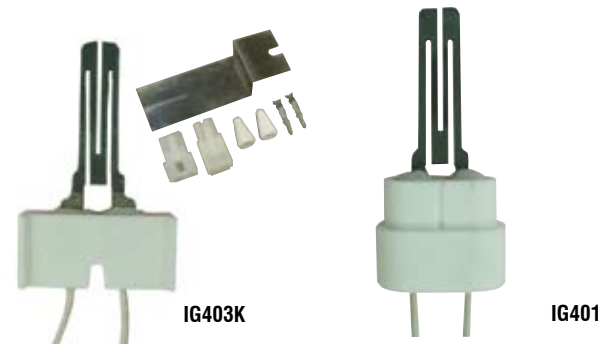
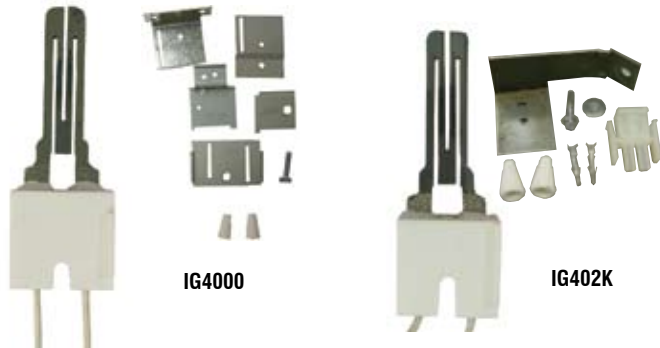
SUPCO's IG series flat hot surface igniters offer dependable ignition in all heating applications; including furnaces, boilers, rooftops, unit heaters, water heaters, swimming pool heaters and many other types of heating equipment. The SUPCO Flat Igniters offer an efficient, stronger more reliable hot surface Silicon Carbide (SiC) composition that uses a unique manufacturing process, compared to the existing Silicon Carbide design that has been used in heating equipment for years.

Specifications

- Time to temperature (1800° F): <17 seconds @ 102 VAC
- Voltage: 120 VAC
- Amperage: 3.5 – 5 AMPS @ 132 VAC maximum
- Cold Resistance: 40 - 100 OHMS @ 75°F +/- 10°F

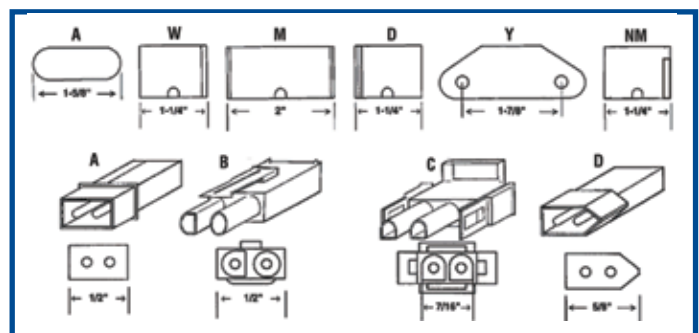
Features/Benefits

- Faster time to temperature response
- Stronger more durable design
- More robust in transit
- Higher resistance to oxidation
- Prolonged life
- 18 gauge nickel copper high temperature fiberglass insulated lead wires
- All kits include the necessary hardware, instructions (where applicable) and cross reference information for easy installation.
- Lower power consumption
- Superior gas lighting ability



Product Information

| UNIVERSAL KITS | ROBERTSHAW | CERAMIC BLOCK | TERMINAL CONNECTOR |
|-------------------|------------|---------------|--------------------|
| IG4000 | 41-402 | W | N/A |
| | 41-403 | M | N/A |
| | 41-404 | M | D |
| | 41-405 | D | N/A |
| | 41-407 | M | B |
| | 41-408 | W | C |
| | 41-409 | M | D |
| | 41-410 | W | B |
| | 41-412 | NM | D |
| | 41-414 | NM | D |
| | 41-1090 | W | N/A |
| | 41-238 | W | N/A |
| | 41-242 | W | N/A |
| IG402K | 41-402 | W | N/A |
| | 41-408 | W | C |
| | 41-410 | W | B |
| | 41-411 | W | C |
| IG403K | 41-403 | M | N/A |
| | 41-404 | M | D |
| | 41-407 | M | B |
| | 41-409 | M | D |
| EXACT KITS | | | |
| IG401 | 41-401 | A | A |
| IG405 | 41-405 | D | N/A |
| IG406 | 41-406 | Y | N/A |
| IG412 | 41-412 | NM | D |
| IG414 | 41-414 | NM | D |



Furnace Igniters

IG402K Cross Reference

| OEM | P/N | Robertshaw P/N | Exact | Functional |
|-------------------------|-------------|-------------------|-------|------------|
| American Road Equipment | 201W | 41-402 | | X |
| Armstrong Air | 38322B001 | 41-402 | | X |
| Claire Brothers | C-238 | 41-402 | | X |
| Claire Brothers | C-242 | 41-402 | | X |
| Coleman | 1474-051 | 41-402 | | X |
| Coleman | 1474-052 | 41-402 | | X |
| DMO Industries | 20834 | 41-402 | | X |
| Dornback Furnace | 271 W | 41-402 | | X |
| Enerco Tech | 10399 | 41-402 | | X |
| Evcon | 1474-051 | 41-402 | | X |
| Evcon | 1474-052 | 41-402 | | X |
| HUPP Industries | 9050 | 41-402 | | X |
| Majestic | 75-92-104 | 41-402 | | X |
| Majestic | 75-92-105 | 41-402 | | X |
| Metzger | 201N | 41-402 | | X |
| Metzger | 201W | 41-402 | | X |
| Mor Flo | 3200618 | 41-402 | | X |
| Nordyne | 105141000 | 41-402 | | X |
| Nordyne | 632-0880 | 41-402 | | X |
| Nordyne | 632-0770 | 41-402 | | X |
| Norton | 201K | 41-402 | | X |
| Norton | 201L | 41-402 | | X |
| Norton | 201N | 41-402 | | X |
| Norton | 201R | 41-402 | | X |
| Norton | 201W | 41-402 | | X |
| Norton | 271N | 41-402 | | X |
| Norton | 271W | 41-402 | | X |
| Rheem | 62-22441-01 | 41-408 | X | |
| Rheem | 62-22441-01 | 41-402 | | X |
| Rheem | 62-22868-02 | 41-411 | X | |
| Rheem | 62-22868-82 | 41-411 | X | |
| Rheem | 62-22868-93 | 41-411 | X | |
| Rheem | 62-22868-2 | 41-411 | X | |
| Roberts Gordon | 90436600 | 41-402 | | X |
| Superior Fireplace | 94851 | 41-402 | | X |
| Trane Company | B144676P01 | 41-410 | X | |
| Trane Company | B340039P01 | 41-408 | X | |
| Trane Company | 340039P01 | 41-402 | | X |
| Trane Company | IGN23 | 41-402 | | X |
| Trane Company | IGN34 | 41-408 | X | |
| Wayne Home Equipment | 62821-001 | 41-402 | | X |
| Wayne Home Equipment | 62821-002 | 41-402 | | X |
| White, LB | 120-07549 | 41-402 | | X |
| White LB Company | 120-07549 | 41-402 | | X |
| White Rodgers | 767A-357 | 41-402 | | X |
| White Rodgers | 767A-365 | 41-402 | | X |
| White Rodgers | 767A-366 | 41-402 | | X |
| White Rodgers | 767A-377 | 41-408 | | X |
| Williamson | 9050 | 41-402 | | X |

IG403K Cross Reference

| OEM | P/N | Robertshaw P/N | Exact | Functional |
|----------------|-------------|-------------------|-------|------------|
| Carrier Corp | LH33ZS001A | 41-409 | X | |
| Carrier Corp | LH33ZS002 | 41-409 | X | |
| Ducane | 20015201 | 41-409 | X | |
| Norton | 201 | 41-403 | | X |
| Norton | 271 | 41-403 | | X |
| Raypak | 600915 | 41-403 | | X |
| Roberts Gordon | 90434300 | 41-409 | | X |
| Snyder General | 1380672 | 41-409 | X | |
| Snyder General | 1380680 | 41-409 | X | |
| Snyder General | 1380654 | 41-403 | | X |
| Trane Company | B138196P01 | 41-403 | | X |
| Trane Company | IGN26 | 41-409 | X | |
| Trane Company | IGN26 | 41-403 | | X |
| Trane Company | IGN30 | 41-407 | X | |
| Trane Company | IGN30 | 41-403 | | X |
| Weil McClain | 511-330-139 | 41-409 | X | |
| Weil McClain | 511-330-193 | 41-403 | | X |
| Weil McClain | 511-330-190 | 41-404 | X | |

Supco Flat Igniter Cross Reference

| PART NO. P/N | OEM | OEM P/N | Robertshaw P/N | Exact | Functional |
|-----------------|--------------------|---------------|-------------------|-------|------------|
| IG401 | Amana | B1336102 | 41-401 | X | |
| IG401 | Amana | D99182 | 41-401 | X | |
| IG401 | Amana | 10041601 | 41-401 | X | |
| IG401 | Norton | 201A | 41-401 | X | |
| IG401 | Norton | 271A | 41-401 | X | |
| IG401 | Trianco-Heatmaker | 2600-359 | 41-401 | X | |
| IG401 | White Rodgers | 767A309 | 41-401 | X | |
| IG401 | White Rodgers | 767A356 | 41-401 | X | |
| IG405 | Detroit Radiant | 201D | 41-405 | X | |
| IG405 | Norton | 201D | 41-405 | X | |
| IG405 | Norton | 271P | 41-405 | X | |
| IG405 | Smith HB | 50018 | 41-405 | X | |
| IG405 | Viessman | 9302094 | 41-405 | X | |
| IG405 | White Rodgers | 767A361 | 41-405 | X | |
| IG405 | York International | 025-27766-000 | 41-405 | X | |
| IG405 | York International | 025-27774-000 | 41-405 | X | |
| IG405 | York International | 025-29043-000 | 41-405 | X | |
| IG405 | York International | 025-29050-000 | 41-405 | X | |
| IG405 | White Rogers | 767A-361 | 41-405 | X | |
| IG406 | American Appliance | 271B | 41-406 | X | |
| IG406 | Comfort Zone | 150114-04-01 | 41-406 | X | |
| IG406 | Mor Flo | 3200580 | 41-406 | X | |
| IG406 | Mor Flo | 3210401 | 41-406 | X | |
| IG406 | Norton | 201J | 41-406 | X | |
| IG406 | Norton | 201M | 41-406 | X | |
| IG406 | Norton | 201N | 41-406 | X | X |
| IG406 | Norton | 201Y | 41-406 | X | |
| IG406 | Norton | 271M | 41-406 | X | |
| IG406 | Norton | 271Y | 41-406 | X | |
| IG406 | Perfection Schwank | 108803-G1 | 41-406 | X | |
| IG406 | Weil McClain | 511-330-188 | 41-406 | X | |
| IG406 | Weil McClain | 511-330-148 | 41-406 | X | |
| IG406 | White Rogers | 767A-374 | | | |
| IG412 | Goodman | B1401009S | 41-412 | X | |
| IG412 | Goodman | B1401009 | 41-412 | X | |
| IG412 | Intercity Products | 1009604 | 41-412 | X | |
| IG412 | White Rogers | 767A-373 | 410412 | X | |
| IG414 | Arcoaire | 1096048 | 41-414 | X | |
| IG414 | Arcoaire | 1380680 | 41-414 | X | |
| IG414 | Comfortmaker | 1096048 | 41-414 | X | |
| IG414 | Heil | 1096048 | 41-414 | X | |
| IG414 | Intercity Products | 1096048 | 41-414 | X | |
| IG414 | Norton | 271NM | 41-414 | X | |
| IG414 | Tempstar | 1096048 | 41-414 | X | |
| IG414 | White Rogers | 767A-384 | 41-414 | X | |

Note: Partial Cross Reference. Contact SUPCO for complete Cross Reference.

Igniter Facts and Fiction

- Fact:** SUPCO's Igniters are made from high density silicon carbide. They are fragile and must be treated with care during installation.
- Fiction:** Handling an igniter with bare hands will cause premature failure.
- Fact:** Premature failure of an igniter can be caused by excess vibration, incorrect voltage or improper installation.
- Fiction:** Round igniter designs cannot be used to replace flat igniters.
- Fact:** By using proper mounting hardware, a round igniter can be used in place of an original flat igniter.
- Fiction:** If the replacement igniter looks the same as the original, it will work in the application.
- Fact:** Igniters differ in their ability to handle current (amps) and each is designed for a specific OEM application. Consult the cross reference information in this catalog sheet to identify the correct replacement.
- Fiction:** Testing for a good igniter is done by measuring its Resistance (Ohms).
- Fact:** The test of an igniter is done by measuring the current draw (amps) of the ignition circuit.
- Fiction:** A visual inspection of an igniter will identify whether it is operable.
- Fact:** Hairline cracks cannot be seen, and will cause improper operation of the igniter. It is recommended to use a current (amp) test.



Silicon Nitride Universal Furnace Igniters - 120 Volt

Silicon Nitride (SiNi) igniters offer the ultimate in durability and cycle life. Choose from three (3) Universal 120 V SiNi igniters to upgrade your ignition control system.

Features/Benefits

- Silicon Nitride technology for strong, durable operation and performance
- Easy installation: kits include igniter, mounting brackets, hardware, instructions & cross reference
- Universal replacements, reduces SKU's
- Replaces hundreds of OEM & competitors igniters
- Longer igniter life (non porous construction)
- Low energy consumption uses half the power
- Low energy consumption uses half the power of Silicon Carbide igniters
- Superior gas lighting ability, faster time to temperature response than Silicon Carbide igniters
- 120 volt full line voltage igniters no power supply module required

Applications

(Various types of gas fired equipment)

- Furnaces
- Boilers
- Unit Heaters
- Water Heaters

Note: Silicon Nitride HSI igniters CANNOT be used in Direct Sense Applications!



SSN4000

SSN4000 Ultimate Mini Universal Silicon Nitride Igniter-120 Volt

- Miniature design
- Life rated to 200,000 cycles
- 3 year warranty

Specifications

| | |
|-----------------------------|--|
| Operating Voltage | 115 VAC Min 102-132 VAC |
| Time To Temperature | 1800°F (982°C) <10 Seconds @ 115 VAC & 75°F ±10°F Ambient |
| Steady Temperature | 2366°F (1297°C) |
| Cold Resistance | 46 Ohms @ 75°F ±10°F |
| Steady Current | .53Amps @ 115 VAC |
| High Temperature Wire Leads | 6" 20 AWG 572°F (300C) UL1332 |
| Life Cycles | >200,000 |



SSN3000

SSN3000 Heavy Duty Universal Silicon Nitride Igniter - 120 Volt

- Robust design
- Life rated to 50,000 cycles
- 2 year warranty

Specifications for SSN3000/SSN3016

| | |
|-----------------------------|--|
| Operating Voltage | 115 VAC Min 102-132 VAC |
| Time To Temperature | 1800°F (982°C) <17 Seconds @ 102 VAC & 75°F ±10°F Ambient |
| Steady Temperature | 2366°F (1297°C) |
| Cold Resistance | 10 Ohms @ 75°F ±10°F |
| Steady Current | <4.25 Amps @ 132 VAC |
| High Temperature Wire Leads | 24" 18 AWG 842°F (450C) UL512B |
| Life Cycles | >50,000 |



SSN2000

SSN2000 Universal Silicon Nitride Igniter - 120 Volt

- Economic design
- Life rated to 50,000 cycles
- 1 year warranty
- CSA Approved

Specifications

| | |
|-----------------------------|---|
| Operating voltage | 120 VAC (±10-15%) |
| Time to 2102°F (1150°C) | <17 seconds @ 120 VAC |
| Steady temperature | 2156°F-2426°F (1180°C-1330°C) @ 120 VAC |
| Cold resistance | 15-30 Ohms @ 77°F (25°C) |
| Steady current | 1.3 Amps (±0.3 Amps @ 120 VAC) |
| High temperature wire leads | 20 AWG UL10362 482°F |
| Life cycles | >50,000 |

A universal replacement igniter kit that replaces over 100 igniters and incorporates the durable and energy saving Silicon Nitride (Si3N4) technology.



SSN3016

SSN3016 Direct Replacement Silicon Nitride Igniter - 120 Volt

- Robust Design
- Stronger Physical Durability
- <17 sec Time to Temp
- Replaces **Goodman** Igniters- B140105, B1401009
- >50,000 cycles
- 2 year warranty

Furnace Igniters

SSN4000 Cross Reference

| | | | | | | | |
|--|--|---|---|--|---|--|---|
| Amana 10735002 10755002 B138196P01 B144676P02 B340039P01 B144676P01 | DMO/Olsen ECR Ind 26789 20834 Dornback 271W Ducane 2400-048 20015201 | 50018 1148245 9050 101344 Heatmaker 2400-048 2400-286 2600-359 3079-100 9330-102 Hupp Ind 62374 GE/Hot Point WG37X11 ICP/Heil WG37X34 Comfortmaker/Arcoaire Tempstar/Keeperite Snyder General 1009980 1096048 1009604 1001344 1380680 B1193939 1148145 1096047 1380654 1380672 1148245 John Woods/GSW PV/Integra 86483 6905332 3260618 HB Smith Johnstone | L37-698 L37-699 L37-700 L37-812 L37-814 L37-815 L37-816 L40-765 LB White Co 120-07549 Lennox 33J3701 96P01 36N77 98P77 98P78 Majestic 75-92-104 75-92-105 Metzger 201N 201W 271R Mor Flo 3200618 201A Nordyne/Tappan Frigidaire/Philco 271A Intertherm/Miller 201R 903758 201 105141000 271 RH622286893 271NM Nordyne/Tappan 26789 Raypak | Frigidaire/Philco 50015 Intertherm/Miller 600915 Rheem 62-22441-01 62-22668-93 62-212868-82 62-22868-02 903758 632-3811 632-3540 Norton 101M 201D 201K 201L 201M 201P 201W 271M 271P 271R 271RS 271W 271A 271A 201 201 271 271NM Olsen 600915 Rheem/Rudd 62-22868-93 62-22441-01 62-22868-82 90434300 90436600 | 11120-100-1402 11120-100-1403 11120-100-1405 11120-100-1407 11120-100-1408 11120-100-1409 Surface Igniter FC007 FC024 FC035 FC046 FC050 FC051 FC055 Superior Fireplace 94851 Temp Controls 9302-094 Trane 3400339P01 B340039P01 B12996P01 B144676P01 B144676P02 B138196P01 IGN21 IGN26 IGN28 IGN30 IGN34 B144676P01 B144676P02 Trane | B138196P01 IGN21 IGN23 IGN26 IGN28 IGN30 IGN34 Trianco Heatmaker 2600-359 Viessmann 9302-093 9302-094 Wayne Home Equipment 62821-001 62821-002 Weil McLain 29074 511-330-139 511-330-193 511-330-190 Whirlpool 99794323 B144676P01 99794328 White LB Co 120-07549 White Rodgers | 767A-301 767A-303 767A-306 767A-309 767A-350 767A-352 767A-353 767A-354 767A-356 767A-364 767A-365 767A-366 767A-370 767A-371 767A-372 Williamson 9050 York 025-32626-000 473-12509-001 373-09154-700 025-27774-000 025-29043-000 025-29050-000 025-27766-000 025-30277-000 025-32638-002 025-32625-000 025-31801-000 373-05342-700 025-27766-000 |
|--|--|---|---|--|---|--|---|

SSN3000 Cross Reference

| | | | | | | | |
|--|---|---|---|--|---|---|---|
| Amana 10735002 10755002 B138196P01 B144676P02 B340039P01 B144676P01 | Detroit/Brant Radiant/ 14740512 201D HB Smith 101344 1148245 Johnstone 1096047 1380654 1380672 1148245 John Woods/ GWSV 86483 71082 HB Smith 50018 9050 | Lennox 33J3701 96P01 36N77 98P77 98P78 Majestic 75-92-104 75-92-105 Metzger 201N 201W 271R Mor-Flo 3200618 201A Nordyne/Tappan Frigidaire/Philco 271A Intertherm/Miller 201R 903110 105141000 632-0880 902661 L37-699 902694 903758 632-3811 Norton 101M 201D 201K | Norton 201L 201M 201P 201W 271M 271N 271P 271R 271RS 271W 201A 271A 201R 201 271 271NM Olsen 201 26789 Raypak 600915 Rheem/Rudd 62-22868-93 62-22441-01 62-22868-82 Roberts Gordon 90434300 90436600 | Robertshaw/ Uniline 41-238 41-242 41-402 41-403 41-404 41-405 41-407 41-408 41-409 41-410 41-412 41-1090 41-402N 41-403N 41-404N 41-405N 41-407N 41-408N 41-409N 41-410N 41-412N Surface Igniter FC007 FC011 FC014 FC018 FC020 FC021 FC022 FC023 FC024 FC025 FC027 | Surface Igniter FC028 FC029 FC030 FC032 FC034 FC035 FC037 FC040 FC041 FC045 FC046 FC048 FC050 FC051 Starlite 11120-100-1402 11120-100-1403 11120-100-1405 11120-100-1407 11120-100-1408 11120-100-1409 Superior Fireplace 94851 Temp Controls 9302-094 Trane 3400339P01 B340039P01 B12996P01 B144676P01 B138196P01 IGN21 IGN26 IGN28 IGN30 IGN34 | Trane IGN28 IGN30 IGN34 B144676P01 B144676P02 B138196P01 IGN21 IGN23 IGN26 IGN28 IGN30 IGN34 Trianco Heatmaker 2600-359 Viessmann 9302-093 9302-094 Wayne Home Equipment 62821-001 62821-002 Weil McLain 29074 511-330-139 511-330-193 511-330-190 Whirlpool 99794323 B144676P01 99794328 White LB Co 120-07549 | White Rodgers 767A-301 767A-303 767A-306 767A-309 767A-350 767A-352 767A-353 767A-354 767A-356 767A-370 767A-371 767A-372 Williamson 9050 York 025-32626-000 473-12509-001 373-09154-700 025-27774-000 025-29043-000 025-29050-000 025-27766-000 025-30277-000 025-32638-002 025-32625-000 025-31801-000 373-05342-700 025-27766-000 |
|--|---|---|---|--|---|---|---|

SSN2000 Cross Reference

| | | | | | | | | |
|---|--|---|---|--|--|--|---|--|
| American Appliance 271B American Road Equip 201W Arcoaire 1096048 Carrier Corp 1380680 Armstrong Air 38322B001 Carlin 871975 LH33ZS001A LH33ZS002 Claire Brothers C238 C242 Coleman 1474-051 174-052 | Comfortmaker 1096048 Comfort Zone 150114-04-01 Detroit Radiator 201D 20015201 DMO Industries 20834 Dornback Furnace 271W Ducane 20015201 Enerco Tech 10399 Evcon 1474-051 1474-052 Goodman 10401009 B1401018S | HB Smith 50018 Heil 1096048 Hupp Industries 9050 ICP 1009604 1096048 3200618 Igniters Direct 271W HSIURK120V FC007 LB White 120-07549 Majestic 75-92-104 75-92-105 | Mars 67930 67931 67932 Metzger 201W Mor Flo 3200618 3210401 3200618 Nordyne 105141000 632-0770 632-0880 902661 902694 903110 FC007 | Norton 201, 201D, 201J, 201K, 201L 201M, 201N, 201R, 201W 201Y, 271, 271D, 271M 271N, 271NM, 271P 271W, 271Y Perfection Schwank 108803-G1 Raypak 600915 Rheem 62821-001 62-22868-82 62-22868-93 Roberts Gordon 90434300 90436600 Robertshaw 41-402, 41-403, 41-404 41-405, 41-406, 41-407, 41-408 | Robertshaw 41-409, 41-410, 41-411 41-412, 41-413, 41-414 Snyder General Tempstar 380654 1380672 1380680 Superior Fireplace 94851 Tempstar 1096048 1148245 Trane 340039P01, B138196P01 B144676P01, B144676P02 B340039P01, IGN21 IGN23, IGN26, IGN30, IGN34 Viessmann 9302-094 | Wayne Home Equip 62-22441-01 62-22441-02 Weil McLain 511-330-139 511-330-190 511-330-193 White LB Co 120-07549 White Rodgers 21D64-2 767A-301 767A-303 767A-306 767A-310 767A-311 767A-350 767A-353 767A-354 | White Rodgers 767A-361 767A-364 767A-365 767A-366 767A-370 767A-371 767A-372 767A-373 767A-374 767A-375 767A-376 767A-377 767A-382 767A-383 767A-384 F767A-357 F767-A361 F767-A365 767A-357 | Williamson 9050 York Intl 025-27766-000 025-27774-000 373-05342-700 025-29043-000 025-29050-000 025-32625-000 025-32626-000 025-33241-000 373-05342-700 473-12509-001 F767-A366 |
|---|--|---|---|--|--|--|---|--|

Furnace Igniters



SSN24 - Silicon Nitride Universal 24 VOLT Igniter & Flame Rod Assembly Kit



Features/Benefits

- Silicon Nitride design for strong, durable operation and performance.
- Low energy consumption.
- Backward compatible with all 24 Volt Honeywell 1st & 2nd generation Smart Valves.
- Specifically used with the Honeywell Smart Valve™
- CSA approved
- Pre-assembled SiNi igniter & Ni Chrome flame rod, mounting clip, instructions and cross reference.

Applications

- Furnaces, boilers, unit heaters, hot water heaters, fireplaces, pool heaters and spas that utilize the Honeywell Smart Valve.

Specifications

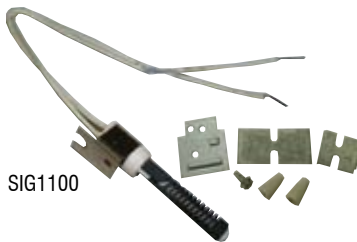
| | |
|------------------------------|--------------------------|
| Operating Voltage | 24 VAC + / - 10 - 15 % |
| Time To Reach 1800 F (982 C) | < 3 Seconds @ 24 VAC |
| Cold Resistance | 4 - 6 Ohms @ 75 F (24 C) |
| Steady Current | 0.8 - 1.2 Amps |
| Life Cycles | 200,000 |

Uses & Replacements

| Used In Honeywell Smart Valves™ | Replaces Flame Rod Assemblies |
|---------------------------------|-------------------------------|
| SV9500 | 1009524 |
| SV9500M2603 | 1149856 |
| SV9500M2674 | 42640001 |
| SV9500M2682 | Q3400A |
| SV9501M2528 | Q3400A1016 |
| SV9600 | Q3400A1024 |
| SV9600H | Q3400A1040 |
| SV9401 | Q3450 |
| SV9402 | Q3480 |
| SV9403 | Q3620 |
| SV9501 | Mars |
| SV9502 | 68012 |
| SV9503 | Igniters Direct |
| SV9601 | AFN643 |
| SV9602 | |

SIG Series Round Furnace Igniters

Utilizing a spiral design, SUPCO's full line of igniters have greater physical strength and longer life. Including mounting hardware, where necessary, direct replacement of original equipment parts is easy (Including round and flat original parts). Choose the igniter for your application. For 115 - 120V applications.



SIG1100

SIG1100 - Universal Round Furnace Igniter Kit

Designed to replace over 170 part numbers including Robertshaw, Norton and many other original equipment manufacturers.

- Engineered Reaction Bonded Silicon Carbide Design
- Greater Physical Strength
- Lower Power Consumption
- Superior Gas Lighting Ability
- Easy Installation
- Minimizes Inventory
- Replaces SIG1000

SIG100 Series

Exact Replacement Hot Surface Igniters

- Replaces Exact OEM Hot Surface Igniters
- Highest density silicone carbide - greater physical strength
- Double helix spiral design - requires less current to light
- Easy installation - no modifications or adapters necessary



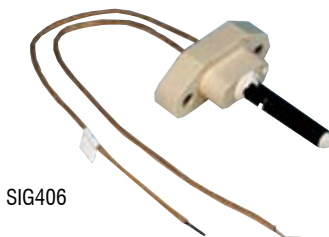
SIG102

| PART NO. | GEM |
|----------|-------|
| SIG100 | IG100 |
| SIG101 | IG101 |
| SIG102 | IG102 |
| SIG104 | |
| SIG106 | IG106 |
| SIG107 | IG107 |
| SIG108 | IG108 |
| SIG109 | IG109 |
| SIG111 | IG111 |

SIG400 Series

Direct Replacement Hot Surface Igniters

- Strong design using more silicon carbide with deeper crystallization.
- Non-positional, double helix design - smoother ignition
- New slip fit kits, slide-in lock and go!



SIG406

| PART NO. | ROBERTSHAW |
|----------|------------|
| SIG401 | 41-401 |
| SIG402 | 41-402 |
| SIG403 | 41-403 |
| SIG405 | 41-405 |
| SIG406 | 41-406 |
| SIG407 | 41-407 |
| SIG408 | 41-408 |
| SIG1100 | 41-409 |
| SIG410 | 41-410 |
| | 41-411 |
| SIG414 | 41-414 |

Furnace Igniters

OEM Cross Reference for Furnace Igniters

| OEM NO. | DIRECT REPL. | FUNCT. REPL. | OEM NO. | DIRECT REPL. | FUNCT. REPL. | OEM NO. | DIRECT REPL. | FUNCT. REPL. | OEM NO. | DIRECT REPL. | FUNCT. REPL. | OEM NO. | DIRECT REPL. | FUNCT. REPL. |
|---|--------------|--------------|---|--------------|--------------|---|--------------|--------------|--|--------------|--------------|---|--------------|--------------|
| American Road Equipment | | | 14740052 | | SIG1000 | John Woods Power | | | Perfection Schwank | | | Tappan (roof top system) | | |
| 201W | | SIG1000 | 14740511 | SIG102 | SIG1000 | 86483 | GR412 | | 108803-61 | SIG406 | | 632-320A | | SIG1000 |
| Amana | | | EZ-Flo | | | L.B. White | | | Polaris | | | Trane / GE | | |
| 10735002 | SIG102 | SIG414 | 62374 | SIG107 | | 120-07549 | SIG100 | | 6901800 | SIG401 | | 340039P01 | | SIG1000 |
| 10041601 | | SIG414 | G.S.W. | | | Lennox / Aire-Ease / American Air | | | 6903767 | SIG401 | | B138196P01 | SIG100 | |
| 767A-356 | | SIG414 | 71082 | GR412 | | Armstrong / Concord / Magic Chef | | | 6903768 | SIG401 | | B1446676P01 | | SIG1000 |
| B1336101 | | SIG414 | 86483 | GR412 | | 33J3701 | | | Raypak | | | B144676P02 | SIG100 | |
| B1336102 | | SIG414 | Gem Products | | | Lochinvar | | | Rheem (Water Heater) | | | B340039P01 | | SIG1000 |
| B14010-15S | | SIG414 | SIG100 | SIG100 | | PLT2400 | SIG104 | SIG1000 | 600915 | SIG100 | | IGN21 | SIG100 | |
| D99182 | | SIG414 | SIG1000 | SIG1000 | | PLT3400 | SIG104 | | Rheem / Corsair / Ruud / Weather King | | | IGN23 | | SIG1000 |
| D9918201 | | SIG414 | SIG101 | SIG101 | SIG1000 | Majestic | | | AP12553 | GR412 | | IGN26 | | SIG1000 |
| D9918202 | | SIG414 | SIG102 | SIG102 | SIG1000 | 75-92-104 | SIG402 | SIG1000 | AP12554 | GR412 | | IGN30 | | SIG1000 |
| D9918202A | | SIG414 | SIG104 | SIG104 | SIG1000 | 75-92-105 | SIG402 | SIG1000 | 75-07-061 | GR412 | | IGN34 | | SIG1000 |
| R0156525 | | SIG414 | SIG106 | SIG406 | | 201W | SIG402 | SIG1000 | Trianco / Heatmaster | | | KIT03033 | SIG100 | |
| R0157462 | | SIG414 | SIG107 | SIG107 | | Mor-Flo | | | Weather King | | | 2400-048 | SIG401 | |
| American Appliance | | | Giant Water Heater (Power Vent) | | | Nordyne / Frigidaire / Tappan / Philco / Intertherm / Miller | | | 62-22441-01 | SIG402 | SIG1000 | 2400-286 | SIG401 | |
| 6901800 | SIG406 | | 56000125 | | SIG1000 | 902661 | SIG101 | SIG1000 | 62-22441-01 | SIG408 | SIG1000 | 2600-359 | SIG401 | |
| 6903767 | SIG406 | | Glow Core | | | 902694 | SIG101 | SIG1000 | 62-22441-01 | | SIG1000 | 3079-100 | SIG401 | |
| 271B | SIG406 | | 1950001 | SIG406 | | 9031100 | SIG104 | SIG1000 | 62-22441-01 | | SIG1000 | 933-102 | SIG401 | |
| American Water Heater | | | 1950006 | SIG104 | SIG1000 | 105141000 | | SIG1000 | 62-22868-82 | | SIG1000 | Viessman | | |
| 6901800 | SIG401 | | HSRK7 | SIG406 | | 632-0770 | | SIG1000 | 62-22868-92 | | SIG1000 | 9302-083 | SIG100 | |
| 6903767 | SIG401 | | Goodman / Janitrol | | | 632-0880 | | SIG1000 | 62-22868-93 | SIG408 | | 9302-094 | SIG100 | |
| 6903768 | SIG401 | | 10735002 | SIG102 | SIG414 | RH62286892 | SIG102 | SIG1000 | SP10972 | SIG108 | SIG1000 | Wayne Home Equipment | | |
| Armstrong Air | | | B1336101 | SIG414 | | RH62286893 | SIG102 | SIG1000 | Roberts Gordon | | | 62821-001 | SIG100 | |
| 38322B001 | | SIG1000 | B1336102 | SIG414 | | Norton | | | 90434300 | | SIG1000 | 62821-002 | SIG100 | |
| Brant Radiant | | | B14010-15S | SIG414 | | 101M | SIG409 | SIG1000 | 90436600 | SIG402 | SIG1000 | Weil Mclain | | |
| 201D | | SIG1000 | B1401009 | | SIG107 | 101W | | SIG1000 | Robertshaw / Eaton / Invensys | | | 511-330-139 | SIG100 | |
| Carrier / Payne / Day & Night / Bryant / BDP | | | D99182 | | SIG414 | 201 | | SIG1000 | 41-238 | | SIG1000 | 511-330-188 | SIG406 | |
| LH333S001A | SIG100 | | D9918201 | | SIG414 | 201A | SIG401 | | 41-242 | | SIG1000 | 511-330-190 | SIG100 | |
| LH333S002 | SIG100 | | D9918202 | | SIG414 | 201D | SIG405 | SIG1000 | 41-401 | SIG401 | | 511-330-193 | SIG100 | |
| LH333S003 | SIG100 | | D9918202A | | SIG414 | 201J | SIG406 | | 41-402 | SIG402 | SIG1000 | White-Rogers | | |
| LH333S004 | SIG100 | | R0156525 | | SIG414 | 201K | SIG402 | SIG1000 | 41-403 | SIG403 | SIG1000 | 767A-301 | SIG100 | |
| Claire Bros | | | R0157462 | | SIG414 | 201L | SIG402 | SIG1000 | 41-404 | SIG404 | SIG1000 | 767A-303 | SIG100 | |
| C-238 | SIG102 | SIG1000 | Grimsby Stove | | | 201M | SIG406 | | 41-405 | SIG405 | SIG1000 | 767A-306 | SIG100 | |
| C-238-1 | SIG102 | SIG1000 | ZCO-035 | SIG102 | SIG1000 | 201N | SIG402 | SIG1000 | 41-406 | SIG406 | | 767A-309 | | SIG1000 |
| C-242 | | SIG1000 | H.B. Smith | | | 201P | | SIG1000 | 41-407 | SIG407 | SIG1000 | 767A-310 | | SIG1000 |
| C-263 | | SIG1000 | 50018 | SIG100 | | 201R | | SIG1000 | 41-408 | SIG408 | SIG1000 | 767A-311 | | SIG1000 |
| Coleman | | | Hupp Industries | | | 201W | SIG402 | SIG1000 | 41-409 | SIG409 | SIG1000 | 767A-311 | | SIG1000 |
| 1474-051 | | SIG1000 | 09050 | | SIG1000 | 201X | | SIG1000 | 41-410 | SIG410 | SIG1000 | 767A-311 | | SIG1000 |
| 1474-052 | | SIG1000 | ICP (International Comfort Products) | | | 201Y | SIG406 | | 41-412 | SIG107 | | 767A-311 | | SIG1000 |
| 1474-511 | SIG102 | SIG1000 | 1096047 | SIG107 | | 271 | SIG403 | SIG1000 | Snyder General | | | 767A-350 | SIG100 | |
| 1474-521 | SIG102 | SIG1000 | Integra | | | 271A | SIG401 | | 1380654 | SIG100 | | 767A-353 | SIG100 | |
| Comfort Zone | | | 3260618 | SIG402 | SIG1000 | 271B | SIG406 | | 1380672 | SIG100 | | 767A-354 | SIG100 | |
| 150114-04-01 | | SIG1000 | 6905032 | SIG402 | SIG1000 | 271D | | SIG1000 | 1380680 | SIG100 | | 767A-356 | | SIG1000 |
| Detroit | | | Intercity/Arco/Comfortmaker/Heil/Heil-Quaker/ICP Commercial/Tempstar | | | 271E | SIG406 | | Suburban | | | 767A-357 | SIG100 | |
| 201D | | SIG1000 | 1001344 | SIG405 | SIG1000 | 271F | SIG406 | | 10098002 | SIG402 | SIG1000 | 767A-361 | SIG100 | |
| DMO Industries | | | 1009604 | SIG107 | | 271G | SIG406 | | Superior Fireplace | | | 767A-364 | | SIG1000 |
| 20834 | SIG102 | SIG1000 | 100-9980 | SIG102 | SIG1000 | 271H | SIG406 | | 94851 | | SIG1000 | 767A-365 | | SIG1000 |
| 26789 | | SIG1000 | 1096048 | | SIG414 | 271I | SIG406 | | Surface Igniter / Carborundum | | | 767A-366 | | SIG1000 |
| Dornback | | | 1148245 | SIG405 | SIG1000 | 271J | SIG406 | | FC007 | SIG101 | SIG1000 | Williamson | | |
| 271W | | SIG1000 | 1096047 | SIG107 | | 271M | SIG406 | | FC035 | SIG101 | SIG1000 | 9050 | SIG102 | SIG1000 |
| Ducane | | | Olsen Industries | | | 271N | SIG402 | SIG1000 | FC035 KI | SIG101 | SIG1000 | York / Borg Warner / Frazier-Johnson / Luxaire | | |
| 20015201 | SIG100 | | 20834 | SIG102 | SIG1000 | 271P | SIG406 | | FC046 | SIG102 | SIG1000 | 025-27766-000 | | SIG1000 |
| Enerco Tech | | | 26789 | | SIG1000 | 271Q | SIG406 | | FC046 KI | SIG102 | SIG1000 | 025-27774-000 | SIG100 | |
| 10399 | | SIG1000 | ICP Commercial/Tempstar | | | 271R | GR412 | | FC047 | SIG104 | SIG1000 | 025-27776-000 | SIG100 | |
| Evcon | | | 1001344 | SIG405 | SIG1000 | 271S | SIG406 | | FC047 KI | SIG104 | SIG1000 | 025-29043-000 | SIG100 | |
| 14740051 | | SIG1000 | 1009604 | SIG107 | | 271T | SIG406 | | FC050 | SIG104 | SIG1000 | 025-29050-000 | SIG100 | |
| | | | 100-9980 | SIG102 | SIG1000 | 271U | SIG406 | | FC050 KI | SIG405 | SIG1000 | 025-32625-000 | SIG102 | SIG1000 |
| | | | 1096048 | | SIG414 | 271V | SIG406 | | FC053 | SIG401 | | 025-32626-000 | SIG102 | SIG1000 |
| | | | 1148245 | SIG405 | SIG1000 | 271W | SIG402 | SIG1000 | FC053 KI | SIG401 | | 373-09154-700 | SIG102 | SIG1000 |
| | | | 1096047 | SIG107 | | 271X | SIG406 | | FT001 | SIG100 | | 473-12509-001 | SIG102 | SIG1000 |
| | | | | | | 501A | GR412 | | FT001 KI | SIG100 | | | | |
| | | | | | | | | | FY009 | SIG406 | | | | |
| | | | | | | | | | FY009 KI | SIG406 | | | | |

Furnace Igniters

SIG1100 Cross Reference - Also Replaces SUPCO SIG1000

| | | | |
|---------------------------------------|---------------------------|------------------------|----------|
| Amana Icp/Heil/ 10735002 Arco Aire | Rheem Rudd 62-22868-93 | Norton 101M | |
| Arco Aire Comfortmaker | 62-22441-01 | 201D | |
| See ICP Tempstar | 62-22868-82 | 201K | |
| Armstrong Keeprite | Roberts-Gordon | 201L | |
| 38322B0011096048 | 90434300 | 201M | |
| Clare Bros. 1009604 | 90436600 | 201P | |
| C238 1001344 | Superior | 201W | |
| C238-1 1380680 | Fireplace | 271D | |
| Coleman/Evcon | 1148245 | 94851 | 271M |
| 147405111 Integra | Trane | 271N | |
| 147405126905032 | 3400339P01 | 271P | |
| Detroit/ 3260618 | B340039P01 | 271R | |
| Brant Radiant | Johnstone | B12996P01 | 271RS |
| 201D L37-699 | B144676P01 | 271W | |
| DMO/Olsen L37-700 | B144676P02 | Robertshaw/ Uniline | |
| ECR Ind. L37-812 | B138196P01 | 41-238 | |
| 26789 L37-814 | IGN21 | 41-242 | |
| 20834 L37-815 | IGN23 | 41-402 | |
| Dornback L37-816 | IGN26 | 41-403 | |
| 271W L.B. White Co | IGN28 | 41-404 | |
| Ducane 120-07549 | IGN30 | 41-405 | |
| 20015201 Lennox | IGN34 | 41-407 | |
| Enerco Tech. 33J3701 | Viessmann | 41-408 | |
| 10399 Majestic | 9302-093 | 41-409 | |
| Giant P.V. 75-92-104 | 9302-094 | Wayne Home | 41-410 |
| Water Heaters | 75-92-105 | 41-1090 | |
| 526000125 Metzger | Equipment | Surface Igniter | |
| 526000025201N | 62821-001 | 62821-002 | FC007 |
| Goodman/Janitrol | 201W | FC024 | |
| B1172606 Mor-Flo | Weil McLain | FC035 | |
| B11939393200618 | 29074 | 511-330-139 | FC046 |
| Grimsby Stove | Nordyne/Tappan | FC050 | |
| ZCO-350 Frigidaire/Philco | 511-330-193 | FC051 | |
| John Woods/ Intertherm/Miller | 511-330-190 | White-Rodgers | |
| GSW P.V. 903110 | Williamson | 09050 | 767A-301 |
| Water Heaters | 105141000 | 767A-303 | |
| 86483RH622286893 | York | 767A-306 | |
| H.B. Smith 632-0770 | 025-32626-000 | 767A-310 | |
| 50018 632-0880 | 473-12509-001 | 767A-311 | |
| Hupp Ind 902661 | 373-09154-700 | 767A-350 | |
| 9050 902694 | 025-27774-000 | | |
| 903758025-29043-000 | 767A-353 | | |
| 632-3811025-29050-000 | 767A-354 | | |
| 632-3540025-27766-000 | 767A-357 | | |
| Raypak 025-30277-000 | 767A-361 | | |
| 600915025-32638-002 | 767A-364 | | |
| 025-32625-000 | 767A-365 | | |
| 025-31801-000 | 767A-366 | | |
| 373-05342-700 | 767A-370 | | |
| 767A-371 | | | |
| 767A-372 | | | |

Electrical Specifications for Round Igniters

| PART NO. | SIC SERIES | STEADY STATE CURRENT | OHMS |
|---|------------|---|--|
| SIG1100, SIG101, SIG102, SIG104, SIG106, IG107, SSIG108, SIG111, SIG112, SIG402, SIG403, SIG405, SIG406, SIG407, SIG408, SIG410, SIG414 | FC | 2.75 amps minimum @ 98 VAC 3.0-3.36 amps @ 115 VAC 4 amps maximum @ 132 VAC | 36 @ 98 VAC 38-34 @ 115 VAC 33 @ 132 VAC |
| SIG100 | FT | 2.3 amps minimum @ 98 VAC 2.5-3.0 amps @ 115 VAC | 43 @ 98 VAC 46-38 @ 115 VAC |
| SIG113 | FF | 3.3 amps maximum @ 132 VAC 2.3 amps minimum @ 98 VAC 3.0-3.6 amps @ 115 vac 4 amps maximum @ 132 vac | 40 @ 132 VAC 43 @ 98 VAC 38-34 @ 115 VAC 33 @ 132 VAC |

Wall Thermostats



A Division of SUPCO

Thermostats...loaded with features, designed for value!

All CTC Thermostats Feature

User Friendly Programs and Features

- **Attractive Styling**
Blends well in any residential application.
- **Overheat Protection**
Prevents lock-up in the heat mode by not allowing heat to come on if temperature is over 95 degrees.
- **Static Protection**
Handles electrical spikes of up to 20,000 volts that could otherwise damage the system.

See Selection Guide
On Page 54

All CTC Digital and Programmable Thermostats

Features:

- Latching relays for system compatibility
- Soft touch keypad
- Low battery indicator
- INDIGLO® Backlight
- Easy, front load battery access
- 2 AA batteries included
- °F/°C selector
- 3 year warranty

Are Compatible With:

- 24 VAC heat/cool, heat only or cool only systems
 - Gas, electric or oil systems
 - Millivolt systems
 - 2 wire hydronic systems
- (Not for use with 110/220V systems)**

Have These Specifications:

- 20-30 VAC, 50/60 Hz
- Current draws 0.1 to 1.5 amps
- Temperature set range: 45°F to 95°F (7°C to 35°C)
- Operating differential +/- 1° F
- Compressor protection: 4 min. delay on break

Touchscreen



43855

**Universal Touchscreen Programmable Conventional Thermostat
3 Heat/2 Cool Thermostat/Multi-Stage Heat Pump with Optional Humidity Control**



Additional Features:

- Pre-programmed with easy to change presets
- Simultaneous Time and Temperature visibility for easy programming
- Large, easy to read display for clear, wide angle viewing
- Auto season changeover, ambi touch display glows red in heat mode and blue in cool mode.
- Humidity sensing control
- Refresh programmable fan
- Keyboard lock

- Filter Monitor
- Energy Monitor
- "System On" indicators
- Auto heat recovery
- Patented "Home Today" override
- Temporary and Vacation Hold override with Programmable Hold
- AC or battery powered. 3 AA batteries included
- Low battery warning

Also Compatible With Most:

- Up to three-stage heat/two-stage cool conventional
 - Single-stage heat pumps
 - AC or hardwired
- (Not for use with 110/220V systems)**

Additional Specifications:

- Current draws 2.0 Amps max per terminal. 4.0 Amps max overall.
- Temperature display limits: 15°F to 99°F (-9°C to 37°C)
- Terminations: RH, RC/R, C, Y1, Y2, W1, W2, W3, E, O, B, G, L, H
- Product dimensions: 6"W x 4 5/8"H x 1 3/8"D

Digital



43054

For Conventional Systems and Single-Stage Heat Pumps with Blue Back Light

Additional Features:

- Electronic digital accuracy
- Large, easy-to-read LCD
- Filter change indicator
- No programming required
- No leveling required

Additional Specifications:

- 43054 Terminations: RC/O, RH/B, Y, W, G, R
- Bimetal freeze protection

43055

Has the same specifications as 43054, and includes a convenient Remote Control.

- Remote wireless up to 100 feet away





A Division of SUPCO

Wall Thermostats



43057 ● Digital Heat Pump Thermostat



- Additional Features:**
- Filter monitor
 - AC powered with non-volatile memory to maintain user settings-no batteries required
 - Refresh programmable fan mode
 - Residential cooling fan delay, user selectable
 - Adjustable 1st and 2nd stage span adjustment
 - Staging timer
 - Heat/Cool auto cutoff
 - Bi-metal freeze protection

- Also Compatible With Most:**
- Two-stage heat pumps with 2 heat/2 cool, gas or electric auxiliary heat conventional
 - Two-stage heat pumps with 2 heat/1 cool, gas or electric auxiliary heat conventional
 - Single-stage heat pumps
 - Not for use with 110V/220V systems

- Additional Specifications:**
- Terminals: R, B, W2, E, G, O, Y2, Y1, L, C
 - Electrical Rating: 20-30 VAC, 50/60 Hz
 - Current Draw: 1 Amp max load/terminal, 2.5 Amp max load all
 - Compressor protection 3.5 min. delay on break
 - Product Dimensions: 4 7/8"W x 4 3/8"H x 1 3/8"D

43058 ● For Multi-Stage Heat Pump/ Conventional Two-Stage Heat/ Cool Thermostat With Auto Season Changeover



43058

43658 Remote Sensor (Sold Separately)



43658

- Additional Features:**
- Energy Monitor
 - Filter Monitor
 - No programming required
 - "System On" indicators
 - Keyboard lock
 - Auto heat recovery
 - AC powered with 2 AAA battery backup
 - Optional hardwire remote sensors (43658)

- Additional Specifications:**
- Display temperature limits: 40° to 95°F
 - Terminations: R, Y1, Y2, W1, W2, E, O, B, G, L, C
 - Remote Sensor Terminations: RS1+, RS1-, RS2+, RS2-
 - Conventional two-stage heat/cool systems (Not for use with 110V/220V systems)
 - Multi-stage heat/cool

- Also Compatible With Most:**
- Two-stage heat pumps with 2 heat/2 cool
 - Two-stage heat pumps with 2 heat/1 cool
 - Single-stage heat pumps

Programmable

43154 ● 5 Day/2 Day Programming, 4 Periods Per Day For Conventional Heat/Cool or Single-Stage Heat Pump Systems



- Additional Features:**
- Adjustable cycle rate
 - Pre-programmed
 - Easy "Front Load" battery access
 - Mechanical low temperature protection
 - Filter Monitor
 - Up-opening door
 - Two-stage low battery warning with fail safe protection

- Also Compatible With Most:**
- Single-stage heat pumps
- Additional Specifications:**
- Terminations: G, RC, RH, Y/O, WB, Y1



43168 ● 5 Day/2 Day, 5-1-1 Day or 7 Day Programmable Multi Stage Heat Pump Thermostat



- Additional Features:**
- Blue back light
 - Filter Monitor
 - AC powered with non-volatile memory to maintain user settings-no batteries required
 - Refresh programmable fan mode
 - Residual cooling fan delay, user selectable
 - Adjustable 1st and 2nd stage span adjustment
 - Staging timer
 - Heat/Cool auto cutoff
 - Bi-metal freeze protection
 - Pre-Programmed
 - Easy "Front Load" battery case
 - Latching relay outputs



- Also Compatible With Most:**
- Two-stage heat pumps with 2 heat/2 cool, gas or electric auxiliary heat
 - Two-stage heat pumps with 2 heat/1 cool, gas or electric auxiliary heat
 - Single-stage heat pumps
 - Not for use with 110V/220V systems

- Additional Specifications:**
- Terminations: R, B, W2, E, G, O, Y2, Y1, L, C

Wall Thermostats



A Division of SUPCO



43355 ●
7 Day Programming, 4 Programs Per Day



Additional Features:

- Adjustable cycle rate
- Pre-programmed
- Easy "Front Load" battery access
- Energy and filter use monitors
- Up-opening door
- Daylight Savings key
- Temporary and vacation overrides
- Programmable Hold
- Home Today Override
- Two-stage low battery warning with fail safe protection

Also Compatible With Most:

- Single-stage heat pumps

Additional Specifications:

- Terminations: G, RC, RH, Y/O, W/B, Y1



43503 ●
7 Day Programming, 4 Programs Per Day
With Auto Season Changeover



Additional Features:

- Auto Programming
- Keyboard lock
- Easy Front Load battery access
- Energy and filter use monitors
- Patented Home Today temporary override
- Vacation Hold override

Additional Specifications:

- Terminations: RC, RH, W, Y/Y1, G, O/B



43558

43558 ●
7 Day Programming, 4 Programs
Per Day For Multi-Stage Heat Pump/
Conventional Two-Stage Heat/Cool With
Auto-Season Changeover



Additional Features:

- Energy Monitor
- "System On" indicators
- Keyboard lock
- Auto heat recovery
- Preprogrammed
- Filter Monitor
- Temporary/Vacation overrides
- Programmable Hold
- Home Today override
- Auto season changeover
- Optional hardwire remote sensors (43658)
- AC powered with 2 AAA battery backup

Also Compatible With Most:

- Two-stage heat pumps with 2 heat/2 cool
- Two-stage heat pumps with 2 heat/1 cool
- Single-stage heat pumps
- Conventional two-stage heat/cool systems (Not for use with 110V/220V systems)
- Multi-stage heat/cool

Additional Specifications:

- Terminations: R, Y1, Y2, W1, W2, E, O, B, G, L, C



43658

43658 Remote Sensor (Sold Separately)



43665

43665 ●
7 Day Programming,
4 Programs Per Day &
Optional Remote Sensing



Additional Features:

- Pre-programmed with easy-to-change presets
- Programmable fan
- Keyboard lock
- Energy and filter use monitors
- Patented Home Today™ temporary override
- Temporary and vacation hold override with programmable hold
- Daylight saving key
- Tri-lingual English, Spanish, French display
- Mechanical low temperature protection

Also Compatible With Most:

- Single-stage heat pumps

Additional Specifications:

- Terminations: G, W/B, Y/O, R/C, RC1, RH, Y1
- Remote Sensor Terminations: Wireless
- Product Dimensions: 6 1/8"W x 5 1/8"H x 1 1/2"D



43758
Wireless Remote Sensor
(optional)





A Division of SUPCO

Wall Thermostats

Mechanical

All models offer our “quiet switching” mercury bulb design and require no additional sub-base for heating, cooling or heating/cooling installation. All deliver maximum performance at a value price! All Mechanical Thermostats have a one year warranty.



43004 – Horizontal



43005 – Vertical

Heating/Cooling Thermostats

43004 – Horizontal ●

- For use with most 4 or 5 wire 24 VAC systems and single-stage heat pumps
- Adjustable heat anticipator
- Terminations: RC, RH, W, Y, G, O, B

43005 – Vertical



43320 – Vertical

Cooling Only Thermostat

43320 – Vertical ●

- For use with most 2 wire 24 VAC systems
- Fixed cooling anticipator
- Terminations: RC, Y



43309 – Horizontal



43359 – Horizontal

Heating Only Thermostats

43309 – Horizontal ●

- For use with most 2 wire 24 VAC and millivolt systems
- Adjustable heat anticipator
- Terminations: RH, W

43359 – Horizontal

- 3 wire heat zone control
- Adjustable heat anticipator
- Terminations: R, Y, W

Wall Thermostat Features



A Division of SUPCO

| Mechanical | | Adjustable Heat Anticipator | Quiet Switching | Most Gas, Oil or Electric | 24 VAC Nominal | Millivolt | Terminals |
|------------|------------------------------|-----------------------------|-----------------|---------------------------|----------------|-----------|------------|
| 43320 | Vertical Cool Only | | ● | | ● | | RC, Y |
| 43309 | Horizontal Heat Only | ● | ● | ● | ● | ● | RH, W |
| 43359 | Horizontal Heat Zone Control | | ● | ● | ● | ● | R, Y, W |
| 43004 | Horizontal | ● | ● | ● | ● | | RH, RC, G, |
| 43005 | Vertical | ● | ● | ● | ● | | RH, RC, G, |

Y, W, O, B

Y, W, O, B

| Digital | | Large LCD Digital Accuracy | Easy to Read Display | Filter Change Indicator | Low °F/°C Readout | No Battery Powered | Heat/Cool & Battery Indicator | Leveling Required | Heat Only Systems | Terminals | Remote Sensor Terminals |
|---------|---|----------------------------|----------------------|-------------------------|-------------------|--------------------|-------------------------------|-------------------|-------------------|--------------------------------|-------------------------|
| 43054 | Electronic w/ Blue Night-Light | ● | ● | ● | ● | ● | ● | ● | ● | RC/O, RH/B, Y, W, G, R | |
| 43055 | Electronic w/Blue Night-Light w/Remote | ● | ● | ● | ● | ● | ● | ● | ● | RC/O, RH/B, Y, W, G, R | |
| 43057 | Digital Multi-Stage Heat Pump/ Conventional | ● | ● | ● | ● | | ● | ● | ● | R, B, W2, E, G, O, Y2 Y1, L, C | RS1+ RS1- RS2+ RS2- |
| 43058 | Digital Multi-Stage | ● | ● | ● | ● | Battery Backup | ● | ● | ● | R, Y1, Y2, W1, W2, | RS1+ RS1- |

| Programmable | | Program Flexibility | Programs Per Day | Pre Programmed | Auto Recovery | Filter Change Indicator | °F/°C Readout | Temporary & Vacation Overrides | Home Today Override | Energy Monitor | Battery Powered | Auto Changeover | Keyboard Lock | Single-Stage Heat Heat Pump | Terminals | Remote Sensor Terminals |
|--------------|---|---------------------|------------------|----------------|---------------|-------------------------|---------------|--------------------------------|---------------------|----------------|-----------------|-----------------|---------------|-----------------------------|---|-------------------------|
| 43154 | Programmable w/Blue Night-Light | 5+2 | 4 | ● | ● | ● | ● | ● | | ● | ● | | | ● | RC, RH, Y/O, W/B, Y1, G | |
| 43168 | Programmable Multi-Stage Heat Pump | 5+2 5+1+1 7 | 4 | ● | ● | ● | ● | ● | ● | ● | | | ● | ● | R, B, W2, W G, O, Y2, Y1, L, C | |
| 43355 | Programmable w/Blue Night-Light | 7 | 4 | ● | ● | ● | ● | ● | ● | ● | ● | | | ● | RC, RH, Y/O, W/B, Y1, G | |
| 43503 | Programmable w/AutoSeason Changeover | 7 | 4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | W, RH, RC, G, Y/Y1, O/B | |
| 43558 | Programmable Multi-Stage Heat Pump/ Conventional | 7 | 4 | ● | ● | ● | ● | ● | ● | ● | Battery Backup | ● | ● | ● | R, Y1, Y2, W1, W2, E, O, B, G, L, C | RS1+ RS1- RS2+ RS2- |
| 43665 | Programmable w/AutoSeason Changeover | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | G, W/B, Y/O RC, RCI, RH, Y1 | WIRELESS |
| 43855 | Touchscreen Programmable 3H/2C Conventional Heat Pump | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | RH, RC/R, C, Y1, Y2, W1 W2, W3, E O, B, G, L, H | |

Thermostats Guards

SUPCO offers a complete line of metal and plastic thermostat guards for the HVAC industry. Manufactured with the highest quality materials and production standards to ensure rugged dependability and attractive appearance.

Metal Thermostat Guards

- 18-22 Gauge Steel
- Baked Enamel Finish
- Louvered Cover
- Maximum Protection

Plastic Thermostat Guards

- Hi-Impact Plastic
- Clear
- Opaque
- Bronze

All Models

- Locking Key
- Mounting hardware
- Vertical or Horizontal Mounting



Designer Series
BTG-DK



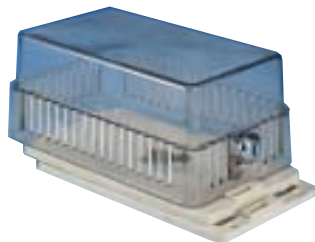
Universal Series
BTG-UO2



Elite Series
BTG-EK



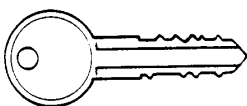
Classic Series
BTG-O



Regal Series
BTG-RK



Sentinal Series
BTG-54VL



F336

| PART NO. | DESCRIPTION | INSIDE DIMENSIONS SOLID BASE (H x W x D) | INSIDE DIMENSIONS RING BASE (H x W x D) |
|------------------|-----------------|--|---|
| Designer | | | |
| BTG-DK | Clear Plastic | 4 1/4" x 7 5/8" x 2 1/8" | 4 1/8" x 7-1/16" x 2-1/4" |
| BTG-DB2 | Bronze Plastic | 4 1/4" x 7 5/8" x 2 1/8" | 4 1/8" x 7-1/16" x 2-1/4" |
| BTG-DO | Opaque Plastic | 4 1/4" x 7 5/8" x 2 1/8" | 4 1/8" x 7-1/16" x 2-1/4" |
| Universal | | | |
| BTG-UK2 | Clear Plastic | 8 1/4" x 5 3/8" x 3 1/2" | 8 1/8" x 4 5/8" x 3-5/8" |
| BTG-UB2 | Bronze Plastic | 8 1/4" x 5 3/8" x 3 1/2" | 8 1/8" x 4 5/8" x 3-5/8" |
| BTG-UO2 | Opaque Plastic | 8 1/4" x 5 3/8" x 3 1/2" | 8 1/8" x 4 5/8" x 3-5/8" |
| BTG-UM | Metal | 8 1/4" x 5 3/8" x 3 1/2" | - |
| BTG-UWM | Metal | - | 6 3/4" x 4 1/2" x 3 9/16" |
| Elite | | | |
| BTG-EK | Clear Plastic | 3 7/8" x 3 1/2" x 2 1/2" | - |
| BTG-EO | Opaque Plastic | 3 7/8" x 3 1/2" x 2 1/2" | - |
| BTG-EM | Metal | 3 7/8" x 3 1/2" x 2 1/2" | - |
| Classic | | | |
| BTG-K | Clear Plastic | 5 1/4" x 4 3/8" x 3" | 5 1/4" x 4 5/8" x 3 1/4" |
| BTG-O | Opaque Plastic | 5 1/4" x 4 3/8" x 3" | 5 1/4" x 4 5/8" x 3 1/4" |
| BTG-KM | Metal | 5 1/4" x 4 3/8" x 3" | - |
| BTG-KWM | Metal | - | 5 1/4" x 4 5/8" x 3 1/4" |
| Regal | | | |
| BTG-RK | Clear Plastic | 6 3/8" x 3 1/2" x 3" | 6 3/8" x 3 1/2" x 3 1/4" |
| BTG-RB2 | Bronze Plastic | 6 3/8" x 3 1/2" x 3" | 6 3/8" x 3 1/2" x 3 1/4" |
| BTG-RO | Opaque Plastic | 6 3/8" x 3 1/2" x 3" | 6 3/8" x 3 1/2" x 3 1/4" |
| BTG-RM | Metal | 6 3/8" x 3 1/2" x 3" | - |
| BTG-RWM | Metal | - | 6 3/8" x 3 1/2" x 3 1/4" |
| Sentinal | | | |
| BTG-54VL | Metal Hinged | 6 1/4" x 4 1/4" x 3 1/8" | - |
| BTG-54VLW | Metal Hinged | - | 6" x 3 3/4" x 3 1/8" |
| F336 | Replacement Key | Fits All Models | |

Service & Installation Products

Li'L Popper Control Board Circuit Breaker

The POP3 or POP5 provide a temporary emergency fix for control boards that continue to blow fuses or that are shorted out.



Features/Benefits

- Two common sizes to choose from: 3 or 5 amp
- Includes quick setting thermal cut out.
- Self-adhesive backing for easy temporary installation
- Keeps homeowner and/or building owner up and running with no inconvenient down time until the original control board can be replaced.

Applications

- Gas Fired Equipment
- Furnaces
- Roof Top Units
- Boilers
- Unit Heaters
- Water Heaters
- Pool Heaters
- Hot Tubs
- Fireplaces

Product Information

| PART NO. | Voltage | DESCRIPTION |
|----------|---------|-------------------------------------|
| POP3 | 24 | 3 amp control board circuit breaker |
| POP5 | 120/240 | 5 amp control board circuit breaker |

Tech Tip

- SUPCO recommends using the Li'L Popper as a **"temporary fix"** only, until the original control board can be replaced.

ECAP321 High Efficiency PVC Flue Cap

The affordable approach to flue pipe problems starts at the TOP! The ECAP321 PVC Flue Cap protects today's high efficiency furnaces from dirt, moisture and other debris.



Features/Benefits

- Protection for high efficiency furnaces
- Universal flue cap fits 1.5", 2" and 3" PVC pipe
- Reduces draft inducer motor rust
- Helps to eliminate pressure switch service calls
- Resistant to UV radiation and oxidative degradation
- CSA approved for use in 90% AFUE heating applications

Applications

- 90% high efficiency furnaces with a PVC flue pipe
- Used for vertical or horizontal venting applications



Anti-Vibration Pads

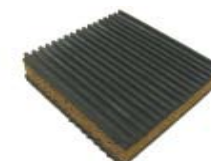
SUPCO offers four different types of Anti Vibration Pads that provide vibration dampening and leveling of HVAC/R, Appliance and Industrial equipment.



ISO Cube



All Rubber



Rubber & Cork

Features/Benefits

- Three different types include Rubber & Cork, All Rubber and ISO Cube.
- Made of the highest quality elastomeric materials.
- Oil, chemical & age resistant padding.
- Maximum load capacity
 - 50 psi for Rubber & Cork and All Rubber.
 - 180 psi for the ISO Cube.

Applications

- Air Conditioners
- Heat Pumps
- Furnaces
- Boilers
- Air Handlers
- Compressors
- Ice Machines
- Refrigerators
- Washers
- Dryers
- Dishwashers
- Stoves & Ovens
- Presses
- Machinery
- Shelving

Specifications

- Pull Strength: 6.5 Mpa
- Extension Rate Until Broken: 310%
- Permanent Distortion Rate Until Broken: 12%

General Description

| PART NO. | DESCRIPTION | CARTON QTY. |
|---|----------------------------------|-------------|
| RUBBER & CORK ANTI VIBRATION PAD | | |
| SP2C | 2" x 2" x 7/8" Rubber/Cork Pad | 48 |
| SP3C | 3" x 3" x 7/8" Rubber/Cork Pad | 36 |
| SP4C | 4" x 4" x 7/8" Rubber/Cork Pad | 24 |
| SP6C | 6" x 6" x 7/8" Rubber/Cork Pad | 24 |
| SP12C | 12" x 12" x 7/8" Rubber/Cork Pad | 12 |
| SP18C | 18" x 18" x 7/8" Rubber/Cork Pad | 6 |
| ALL RUBBER ANTI VIBRATION PAD | | |
| SP2 | 2" x 2" x 3/8" All Rubber Pad | 48 |
| SP3 | 3" x 3" x 3/8" All Rubber Pad | 36 |
| SP4 | 4" x 4" x 3/8" All Rubber Pad | 24 |
| SP6 | 6" x 6" x 3/8" All Rubber Pad | 24 |
| SP18 | 18" x 18" x 3/8" All Rubber Pad | 6 |
| ISO CUBE ANTI VIBRATION PAD | | |
| SIS018 | 18" x 18" x 3/4" ISO Cube | 6 |



The Hard Start Pioneer...

Your Source For All Hard Starts

With the constant changes in compressor technologies, hard start development has evolved from simple Positive Temperature Coefficient (PTC) Technology through 2 and 3 wire Potential Relay Technology. Trust **SUPCO**-the **Hard Start-Pioneer**-to provide the choice that fits your application.



SPP Series

The first 2-wire Hard Start utilizing PTC Technology, still provides field proven reliability.

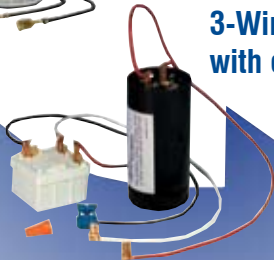


SPPE "E Class" Series

Economical Potential Relay Technology, with the comfort of a backup safety.

SK3W Series

3-Wire Potential Relay Technology, for the closest OEM equivalent, with easy installation.



High Torque Series

SUPCO's Ultimate Hard Start, combining unequalled current handling ability and high energy capacity.

40 Amp electronic potential relay (EPR) provides superior performance for low voltage applications.



See Pages 2-3 for more details

URCO Ultimate Series

Newly Designed for Systems with or without Run Capacitors, the URCO Series provides the **ULTIMATE** in protection for all SUPCO's Ultimate Hard Start, combining unequalled current handling ability and high energy capacity.



- Pre-wired to work in systems with or without a run capacitor
- Provides High Torque Start
- Reduces Truck Stock - This is the only one you need!
- 1/4" push-on terminals for run capacitor
- 90° Fusite connector for compressor
- Including wiring diagram
- Includes wire nuts

See Page 59 for more details

Refrigeration Relays, Overloads & Hard Starts

For Refrigeration Systems Without Run Capacitors

SUPCO offers the most complete line of refrigeration relays, overloads and hard starts in the industry. For refrigeration systems with and without run capacitors, just choose the right combination for your application. All combinations are pre-wired for fast installation.



ICG and PO Series Relays

Features/Benefits

- ICG Series features a “snap-on” bracket
- PO Series installs on compressors with “pin-type” terminals.
- Fastest cool down time of any solid state relays
- Can be used with and without start capacitor.

Applications

- One size for all compressors from 1/12 hp through 1/2 hp.
- Replaces all current type relays.



RO & PRO Series Relay and Overload Combinations

- RO Series features “snap-on” bracket
- PRO Series installs on “pin-type” terminal.
- Locked rotor protection eliminates start winding overheating
- Can be used with and without start capacitor motors from 1/4 to 1/3 hp.

Applications

- Select the right match to replace refrigerator compressor relay and overload units from 1/12 through 1/2 hp, 115 – 230 VAC.



RSC Series Relay and Start Capacitor Combination

Features/ Benefits

- Replaces current-type relays
- Provides a boost for hard start and unbalanced systems
- Prevents low voltage starting problems

Applications

- One size for all compressors from 1/12 hp through 1/2 hp.
- For domestic and commercial refrigeration systems and freezers



RCO Series 3 N' 1 Relay, Overload and Start Capacitor Combination

Features/Benefits

- Replaces relay, overload and provides a boost for hard start and unbalanced systems
- Prevents low voltage starting problems

SS410 Super Start Relay Overload Combination

Features/Benefits

- Equipped with an electro-mechanical relay, locked rotor protector and a 255 μ F start capacitor.
- Increases torque to its maximum capacity

Selection Table For Refrigeration Systems Without Run Capacitors

| PART NO. | START | | MOUNTING | hp RATING | VOLTAGE (VAC) |
|----------|-------|----------|---------------|------------|---------------|
| | RELAY | OVERLOAD | | | |
| ICG1 | * | | Quick Connect | 1/12 - 1/2 | 115 |
| ICG-220 | * | | Quick Connect | 1/12 - 1/2 | 230 |
| PO115 | * | | Push - on | 1/12 - 1/2 | 115 |
| PO230 | * | | Push - on | 1/12 - 1/2 | 230 |
| RO81 | * | * | Quick Connect | 1/12 - 1/5 | 115 |
| RO41 | * | * | Quick Connect | 1/4 - 1/3 | 115 |
| RO82 | * | * | Quick Connect | 1/12 - 1/8 | 230 |
| RO62 | * | * | Quick Connect | 1/6 - 1/5 | 230 |
| RO42 | * | * | Quick Connect | 1/4 - 1/3 | 230 |
| PRO81 | * | * | Push - on | 1/12 - 1/5 | 115 |
| PRO41 | * | * | Push - on | 1/4 - 1/3 | 115 |
| PRO21 | * | * | Push - on | 1/2 | 115 |
| PRO82 | * | * | Push - on | 1/12 - 1/8 | 230 |
| PRO62 | * | * | Push - on | 1/6 - 1/5 | 230 |
| PRO42 | * | * | Push - on | 1/4 - 1/3 | 230 |
| PRO22 | * | * | Push - on | 1/2 - 2/3 | 230 |
| RSC20 | * | * | Quick Connect | 1/12 - 1/2 | 230 |
| RC0810 | * | * | Quick Connect | 1/12 - 1/5 | 115 |
| RC0410 | * | * | Quick Connect | 1/4 - 1/3 | 115 |
| RC0210 | * | * | Quick Connect | 1/2 | 115 |
| RC0820 | * | * | Quick Connect | 1/12 - 1/8 | 230 |
| RC0620 | * | * | Quick Connect | 1/6 - 1/5 | 230 |
| RC0420 | * | * | Quick Connect | 1/4 - 1/3 | 230 |
| RC0220 | * | * | Quick Connect | 1/2 | 230 |
| SS410 | * | * | Quick Connect | 1/4 - 1/3 | 115 |

RCO/URCO/PRO/URPO/RO/URO Current Ratings

| PART NO. | FULL LOAD | TRIP IN |
|--|-----------|-------------------------|
| | AMPS | CURRENT AFTER 6-16 SEC. |
| RC0810/URCO810/PRO81/URP081/RO81/URO81 | 4.05Amps | 12 Amps |
| RC0410/URCO410/PRO41/URP041/RO41/URO41 | 7.5 Amps | 22 Amps |
| RC0210/URCO210 | 13.3 Amps | 40 Amps |
| RC0820/URCO820/PRO82/URP082/RO82/URO82 | 1.66 Amps | 6 Amps |
| RC0420/URCO420/PRO42/URP042/RO42/URO42 | 4.05 Amps | 12 Amps |
| RC0620/URCO620/PRO62/URP062/RO62/URO62 | 1.66 Amps | 6 Amps |
| RC0220/PRO22/URP022/URO22 | 7.5 Amps | 22 Amps |

Applications

- Select the right match to replace refrigerator compressor relay and overload units from 1/12 through 1/2 hp, 115 – 230 VAC.
- For all capillary systems

Applications

- For all motors including high starting torque motors from 1/4 to 1/3 hp.

Features/Benefits

Refrigeration Relays, Overloads & Hard Starts

For Refrigeration Systems **WITH OR WITHOUT RUN Capacitors** Maintain a high efficiency system or save an old system with SUPCO's Ultimate Series.



URCO Series Ultimate Relay Capacitor Overload

Features/Benefits

- Replaces relay, capacitor and overload
- Available in popular sizes, ranging from 1/12 hp to 1/2 hp
 - "Push-on" compressor terminals, and 1/4" capacitor terminals
- Designed for modern high efficiency compressors
- Helps older compressors to start and run cooler
- Easy mount clip for quick installation
- Easy to read instructions
- Prevents low voltage starting problems

Applications

- Domestic Refrigerator Compressors to 1/2 hp
- Light Commercial Refrigeration Compressors to 1/2 hp.

- Works on "RSIR", "CSIR", "PSC", & "CSR" compressors

3 N' 1 for High torque starts
Run Capacitor Wiring for high efficiency systems

| PART NO. | hp RATING | VOLTS |
|----------|-------------|-------|
| URCO210 | 1/3 to 1/2 | 115 |
| URCO410 | 1/4 to 1/3 | 115 |
| URCO810 | 1/12 to 1/5 | 115 |



URCORG Series 4 N' 1 Ultimate Relay, Capacitor, Overload and Run Capacitor

Features/Benefits

- Same Features and Benefits of the Ultimate URCO Series
- Adds a closely matches system Run Capacitor

Replaces current-type relays

| PART NO. | hp RATING | RUN CAPACITOR | |
|-----------|-------------|---------------|-------|
| | | Size μ Fd | VOLTS |
| URCO810RC | 1/12 to 1/5 | 12.5 | 115 |
| URCO410RC | 1/4 to 1/3 | 15 | 115 |
| URCO210RC | 1/3 to 1/2 | 20 | 115 |



URO Ultimate Relay Overload

Features/Benefits

- Replaces relay and overload
- Locked rotor protection, eliminates start winding overheating
- Available in popular sizes, ranging from 1/12 hp to 1/2 hp
- "Snap -on" bracket for easy mounting
- Quick and easy installation
- Wiring instructions on the package
- Instructions on adding a start capacitor and/or run capacitor
- Wire leads for those odd installations, Wire nuts included

Applications

- Domestic Refrigerator Compressors to 1/2 hp
- Light Commercial Refrigeration Compressors to 1/2 hp.

Replaces relay & overload

| PART NO. | hp RATING | VOLTS |
|----------|-------------|-------|
| URO41 | 1/4 to 1/3 | 115 |
| URO81 | 1/12 to 1/5 | 115 |

- Works on "RSIR", "CSIR", "PSC", & "CSR" compressors



UPRO Ultimate Push-on Relay

Features/Benefits

- Replaces relay and overload
- Available in popular sizes, ranging from 1/12 hp to 1/2 hp
- "Push-on" relay overload
- Quick connect push-on terminals for run and/or start capacitor
- Wiring instructions on the package
- Instructions for adding a start capacitor and/or run capacitor

Applications

- Domestic Refrigerator Compressors to 1/2 hp
- Light Commercial Refrigeration Compressors to 1/2 hp.

Replaces relay & overload

| PART NO. | hp RATING | VOLTS |
|----------|-------------|-------|
| UPRO21 | 1/3 to 1/2 | 115 |
| UPRO41 | 1/4 to 1/3 | 115 |
| UPRO81 | 1/12 to 1/5 | 115 |

- Works on "RSIR", "CSIR", "PSC", & "CSR" compressors



URSC10/URSC20 Ultimate Relay Start Capacitor

Features/Benefits

- Replaces current-type relays
- Provides a boost for hard start and unbalanced systems
- No additional wires required

Applications

- One size for all compressors from 1/20 hp to 1/2 hp
- For domestic and commercial refrigeration systems and freezers
- Works on "RSIR", "CSIR", "PSC", & "CSR" compressors

Replaces current-type relays

| PART NO. | hp RATING | VOLTS |
|----------|-------------|-------|
| URSC10 | 1/20 to 1/2 | 120 |
| URSC20 | 1/20 to 1/2 | 240 |



Refrigeration Relays, Overloads & Hard Starts

OV Series Universal Replacement Motor Protectors

Features/Benefits

- Built in temperature activated disc opens and closes the motor overload protector's contacts.
- Excessive heat generated by the compressor, motor or crankcase heater will open the contacts to help protect the equipment from serious damage or burnout.
- UL and CSA Approved

Applications

- Used in heat pumps, air conditioners, motors, refrigerators, freezers, pumps, water coolers, and heating applications.



OVKIT Overload Kit

- Contains one of each overload (10 total)

| PART NO. | LOCKED ROTOR | | HORSEPOWER AT 120 VOLTS | | | | | | | | | GEM NO. | MARS NO. | |
|----------|--------------|------|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|---------|----------|-------|
| | AMPS | | 1/20 | 1/1 | 1/10 | 1/8 | 1/6 | 1/5 | 1/4 | 1/3 | 1/2 | | | 3/4 |
| OV32 | 12.0 | 13.5 | • | • | | | | | | | | | MP359 | 35004 |
| OV34 | 14.0 | 15.5 | | • | • | • | • | • | | | | | MP358 | 35007 |
| OV36 | 16.0 | 18.0 | | | • | • | • | • | | | | | MP357 | 35009 |
| OV38 | 18.5 | 22.0 | | | • | • | • | • | • | | | | MP354 | 35010 |
| OV40 | 22.5 | 26.5 | | | | | • | • | • | | | | MP360 | 35011 |
| OV42 | 27.0 | 31.0 | | | | | • | • | • | | | | MP355 | 35012 |
| OV44 | 31.5 | 35.5 | | | | | | | • | • | | | MP361 | 35017 |
| OV46 | 36.0 | 40.0 | | | | | | | • | • | • | | MP352 | 35018 |
| OV48 | 40.5 | 44.5 | | | | | | | | • | • | • | MP351 | 35019 |
| OV50 | 45.0 | 49.0 | | | | | | | | | • | • | MP362 | 35020 |

| PART NO. | LOCKED ROTOR | | HORSEPOWER AT 120 VOLTS | | | | | | | | | | | GEM NO. | MARS NO. | |
|----------|--------------|------|-------------------------|-----|-----|-----|-----|------|-----|------|-----|------|-----|---------|----------|-------|
| | AMPS | | 1/10 | 1/8 | 1/6 | 1/5 | 1/4 | 1/4+ | 1/3 | 1/3+ | 1/2 | 1/2+ | 3/4 | | | 1 |
| OV32 | 12.0 | 13.5 | • | • | • | • | • | • | • | | | | | | MP359 | 35004 |
| OV34 | 14.0 | 15.5 | • | • | • | • | • | • | • | | | | | | MP358 | 35007 |
| OV36 | 16.0 | 18.0 | | | • | • | • | • | • | | | | | | MP357 | 35009 |
| OV38 | 18.5 | 22.0 | | | | • | • | • | • | • | | | | | MP354 | 35010 |
| OV40 | 22.5 | 26.5 | | | | | | • | • | • | • | • | • | | MP360 | 35011 |
| OV42 | 27.0 | 31.0 | | | | | | • | • | • | • | • | • | | MP355 | 35012 |
| OV44 | 31.5 | 35.5 | | | | | | | | | • | • | • | | MP361 | 35017 |
| OV46 | 36.0 | 40.0 | | | | | | | | | • | • | • | | MP352 | 35018 |
| OV48 | 40.5 | 44.5 | | | | | | | | | • | • | • | | MP351 | 35019 |
| OV50 | 45.0 | 49.0 | | | | | | | | | | | • | | MP362 | 35020 |

This application guide is offered as a guide only when no other information is available.

The application will vary with compressor manufacturer's systems and condenser applications (static, fan, and water cooled, etc.)

Other factors include refrigerant, motor type, and efficiency.

Application Note: Locked Rotor Amperage Measurement. To determine the locked rotor amperage use the following procedure:

1. Disconnect source of electrical supply.
2. By-pass defective overload with jumper.
3. Remove wire from start terminal of compressor.
4. Place hook-on ampmeter on wire going to common or run terminal of compressor.
5. Connect plug to source of current and read ampmeter.
6. If unit does not have a start capacitor, add 1/2 of ampere reading to obtain the locked rotor amps.
Example: If ampere reading is 21, add 1/2 (+11.5) = 32.5 locked rotor amps.
7. If unit has a start capacitor, add 10% of ampere reading. Example: If ampere reading is 21, add 10% (+2.1) = 23.1 locked rotor amps.
8. Replace defective overload and replace wire removed from start terminal.

NOTE: The above procedure should only be used when the motor winding is at ambient temperature.

Direct Replacement Solid State Relays, Overloads and Relay/Overload Combinations

- Direct Replacements for numerous OEM's
- Use OL Series Overloads with IC Series, PO Series and UR115



| PART NO. | RELAY OVERLOAD | HORSEPOWER | VAC | # OF TERMINALS | COMPRESSOR CONNECTIONS | CAPATIBLE | CAPACITOR REPLACES OEM NO. |
|----------|----------------|-------------|---------|----------------|------------------------|-----------|--|
| IC100 | * | 1/12 to 1/3 | 120 | 2 | 2 | Yes | 216594300, WR7X194, WR7X214, 4318083 |
| IC102 | * | 1/2 to 1/3 | 120 | 3 | 2 | Yes | 5303007173, WR7X240, WR7X5142, 68857-1 |
| OL1 | --- | 1/5 to 1/4 | 120/240 | 1 | 1 | --- | 5303299560, 216100110 |
| OL2 | --- | 1/4 to 1/3+ | 120/240 | 1 | 1 | --- | 5303270406, WR8X122 |
| OL3 | --- | 1/6 to 1/5 | 120/240 | 1 | 1 | --- | 5303276514 |
| OL4 | --- | 1/4 to 1/3+ | 120/240 | 1 | 1 | --- | 5303206885, 2154945 |

* IC100, IC102 replaces PON

Refrigeration Relays, Overloads & Hard Starts

Motor Protector Cross Reference

| HP/TYPE | SUPCO OV | TECUMSEH O/L | HP/TYPE | SUPCO OV | TECUMSEH O/L | HP/TYPE | SUPCO OV | TECUMSEH O/L | HP/TYPE | SUPCO OV | TECUMSEH O/L |
|------------|-------------|-----------------|-----------------------|-------------|-----------------|------------|-------------|-----------------|------------|-------------|-----------------|
| 1/8 Fan | OV34 | 83281 / 83282 | 1/5 Fan | OV38 | 83030 / 83131 | 1/4 Static | OV44 | 83013 / 83017 | 1/3 Fan | OV46 | 83031 / 83074 |
| | | 83316 / 83438 | | | 83183 / 83183-1 | | | 83036 / 83063 | | | 83168 / 83168-1 |
| | | 83441 / 83461 | | | 83290 / 83426 | | | 83145-1 / 83172 | | | 83257 / 83257-1 |
| | | 83473 / 83606 | | | 83439 / 83448 | | | 83172 / 83172-1 | | | 83257-2 / 83293 |
| | | 83628 / 83711 | | | 83743 / 83743-1 | | | 83192 / 83192-1 | | | 83307 / 83332 |
| 1/6 Fan | OV36 | 83018 / 83021 | 1/5 Static | OV40 | 8300MRT58 | 1/4 Static | OV44 | 83013 / 83017 | 1/3 Static | OV46 | 83031 / 83074 |
| | | 83042 / 83077 | | | 83047 / 83171 | | | 83036 / 83063 | | | 83168 / 83168-1 |
| 1/8 Static | | 83091 / 83160 | 1/4 Fan | OV42 | 83011 / 83139 | | | 83013 / 83017 | | | 83031 / 83074 |
| | | 83160-1 / 83165 | | | 83161 / 83161-1 | | | 83036 / 83063 | | | 83168 / 83168-1 |
| | | 83165-1 / 83191 | | | 83163 / 83163-1 | | | 83145-1 / 83172 | | | 83257 / 83257-1 |
| | | 8191-1 / 83287 | | | 83259 / 83289 | | | 83172 / 83172-1 | | | 83257-2 / 83293 |
| | | 83463 / 83691 | | | 83292 / 83323 | | | 83192 / 83192-1 | | | 83307 / 83332 |
| | | 83006 | | | | | | 83321 / 83373 | | | 83390 / 83413 |
| | | | | | | | | 83376-1 / 83378 | | | 83413-1 / 83415 |
| | | | | | | | | 83400 / 83435 | | | 83429 / 83430 |
| | | 83459 / 83647 | 83453 / 83454 | | | | | | | | |
| | | 83681 / 83694 | 83464 / 83498 | | | | | | | | |
| | | 83736-1 / 83766 | 83498-1 / 83625 | | | | | | | | |
| | | 83376-1 / 83378 | 83631 / 83637 | | | | | | | | |
| | | 83789 | 83640 / 83708 | | | | | | | | |
| | | | 83713 / 83714 / 83754 | | | | | | | | |
| | | | 8300MRT26 | | | | | | | | |
| | | | 8300MRT60 | | | | | | | | |
| | | | 83219 | | | | | | | | |
| | | | 83434 | | | | | | | | |
| | | | 83673 | | | | | | | | |
| | | | 83765 | | | | | | | | |

Valves & Fittings



BPV Series Bullet® Piercing Valves

The *ONLY* valve with a permanent type, patented gasket application!



SUPCO's "Bullet® Piercing Valve" utilizes the same type of gasket found under the head plate of most air conditioning compressors. When installed, the gasket actually compresses the copper tubing .020" creating a permanent, leakproof seal that will withstand any pressure and temperature for the life of the unit.

Features

- Patented valve gasket application provides 50 times more sealing area than competitive "O" ring types
- A sealing force of over 180 inch lbs., torque tested with 500 lbs., pressure tested at 250°F
- Precision piercing needle is engineered for concentricity and hardness to insure perfect seating every time
- Nonpositional mounting — No adapter valve required
- Requires only a 2" clearance area for installation and operation
- Hex key wrench included — No additional tools required
- Corrosion resistant plated

Applications

- Install on the high side as a permanent valve on the job
- Install on round suction lines or uneven tubing

| PART NO. | O.D. TUBING SIZE | PACKAGING |
|----------------|-------------------|-----------|
| BPV31* | 1/4", 5/16", 3/8" | 12/Box |
| BPV31D* | 1/4", 5/16", 3/8" | 48/Box |
| BPV21* | 1/2", 5/8" | 8/Box |
| BPV36 | 3/16" | 12/Box |
| BPV14 | 1/4" | 12/Box |
| BPV56 | 5/16" | 12/Box |
| BPV38 | 3/8" | 12/Box |
| BPV12 | 1/2" | 8/Box |
| BPV58 | 5/8" | 8/Box |
| BPV34 | 3/4" | 1/Box |
| BPV78 | 7/8" | 1/Box |

*NOTE: BPV31 and BPV21 are furnished with adapter sleeves for indicated multiple use applications.

Gasket "O" Rings



| PART NO. | ID SIZE | DESCRIPTION | PART NO. | ID SIZE | DESCRIPTION |
|---------------|---------|--------------------------------|---------------|---------|---------------------------------------|
| SF0099 | 5/32" | Used for SF5050 Valve | SF1060 | 3/16" | Used in brass caps. |
| SF0101 | 1/4" | — | SF1090 | 5/16" | Black rubber (used for SF2070) |
| SF0111 | 5/16" | Black rubber (used for SF3900) | SF5501 | 1/4" | White teflon (used for SF5500 Series) |

Valves & Fittings



SA Series Adjustable Line Tap Valves

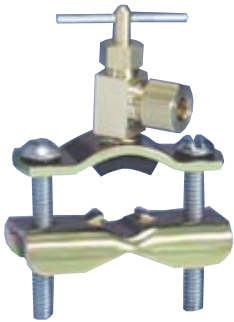
Features

- Available in two sizes to accommodate five different OD tube sizes.
- Depressor valve action
- Can be mounted in any position
- Retracting needle ensures no restriction
- Throw away depressor pin simplifies line piercing
- Hex wrench included
- Adapter sleeves included
- Can be used with all refrigerants including R410A
- Maximum operating pressure 800 PSI
- Sold in 12 packs

Applications

- Used to provide access fitting without having to remove refrigerant from air conditioning, refrigeration and heat pump systems.

| PART NO. | TUBE SIZE OD | REPLACES |
|----------|-------------------|---------------------------------|
| SA1 | 1/4", 5/16", 3/8" | A1 Watsco, A1 Diversitech, QTM1 |
| SA2 | 1/2", 5/8" | A2 Watsco, A2 Diversitech, QTM2 |



STV Series Self-Tapping Water Valves

Features

- Self piercing on copper tubing or 0.035" wall hard PVC
- Fits 3/8" O.D. through 1 3/8" O.D. tubing or pipe
- Can be installed on pipe with existing hole
- Stainless steel piercing needle
- Molded gasket has a two stage seal on both tubing and valve
- Threaded bottom bracket for easy installation
- Includes all fittings for copper and plastic tubing
- Maximum water temperature 180°F/82°C

| PART NO. | FLOW RATE | OUTLET | PIERCING NEEDLE | APPLICATION | COMMENTS |
|----------|-----------|------------|---------------------------------|-----------------|------------------------------------|
| STV2 | 1 GPM | 1/4" Comp. | 1/8" Dia. (Hollow) | Ice Maker Kits | Reversible lower bracket |
| STV3 | 1 GPM | 1/4" Comp. | 1/8" Dia. (Hollow) | Humidifier Kits | |
| STV4 | 1 GPM | 1/4" Comp. | 3/32" Dia. (Solid, retractable) | Humidifier Kits | 1/8" M.P.T. on body valve included |



STV2D Conventional "Drill" Type Valve

Features

- Must pre-drill 1/4" hole in pipe or tubing
- Increased water flow from standard water valve
- Fits up to 1 3/8" O.D. Copper tubing
- Fits 1/2" or 3/4" galvanized iron water pipe
- Flow rate: 1 GPM
- Maximum water temperature 180°F/82°C
- Includes all fittings for 1/4" O.D. copper and plastic tubing

Tech Tip: Designed to be used on city water pressure only 30-40 psi.



FTV Series Self-Tapping Valves

TAP INTO ANY TUBE OR PIPE WITHOUT SHUTTING DOWN, DRILLING OR CUTTING!

Applications

- Humidifiers, water coolers, vending machines, oil lines and steam systems.
- Maximum operating pressure 500 psi

| PART NO. | BRANCH TAP FITTING | APPLICATION |
|----------|--------------------|--|
| FTV12 | 3/8" SAE Flare | 1/2" Steel or brass pipe approx. 7/8" O.D. |

Not intended for gas applications.

Line Service Valves



| PART NO. | DESCRIPTION | PIPE THREAD | PART NO. | DESCRIPTION | PIPE THREAD |
|----------|--|-------------|----------|--|-------------|
| SF1010 | 1/8" copper tubing, wrench cap and core | — | SF3603 | 3/16" copper tubing, wrench cap and core | 1/8" m. |
| SF2525 | 1/4" copper tubing, wrench cap and core | — | SF3604 | 1/4" copper tubing, wrench cap and core | 1/8" m. |
| SF3600 | 1/8" ID hole, 3/16", 1/4", 5/16" steps, 1/8" MPT below hex wrench cap and core | — | SF3605 | 5/16" copper tubing, wrench cap and core | — |
| SF3602 | 1/4" copper tubing, 3/16" & 1/8" copper bushings, wrench cap and core | 1/8" m. | SF3606 | 3/8" copper tubing, wrench cap and core | — |
| | | | SF3608 | 1/8" copper tubing, wrench cap and core | 1/8" m. |



SF5421 Tee Fitting Service Valve

SF5421 is a copper tee with the body brazed on. Furnished complete with core and wrench cap. The 1/4" I.D. x 5/16" O.D. will service 1/4", 5/16", and 3/8" tubing.

Valves & Fittings

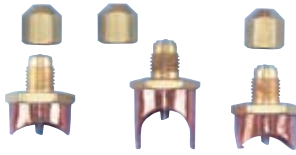
SF5000 Series Saddle Valve Copper to Copper



Completely self tapping. Steel pin with core penetrates line and is locked into valve body in one operation, simply by tightening cap.



SF5514 SF5516 SF5538 SF5558



SF5518 SF5534 SF5578

| PART NO. | TUBING | PART NO. | TUBING |
|----------|-------------|----------|-----------|
| SF5512 | 1/2" O.D. | SF5534 | 3/4" O.D. |
| SF5514 | 1/4" O.D. | SF5538 | 3/8" O.D. |
| SF5516 | 5/16" O.D. | SF5558 | 5/8" O.D. |
| SF5518 | 1 1/8" O.D. | SF5578 | 7/8" O.D. |

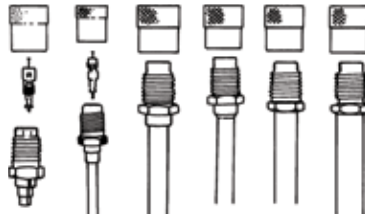
Replacement Gasket

| PART NO. | QUANTITY |
|----------|-------------|
| SF5501 | 25 per pack |

SF8400 Series Economy Service Valves

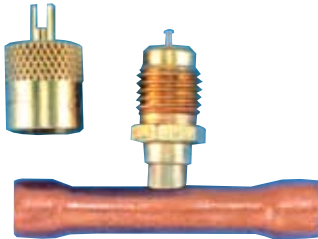


SF8400 SF8408 SF8403 SF8404 SF8405 SF8406



| PART NO. | I.D. HOLE | O.D. | MOUNTING |
|----------|-----------|-------------------------|-----------------------------|
| SF8400 | 1/8" | 3/16", 1/4", 5/16" Step | Braze Only with SF1515 Core |
| SF8408 | 1/8" Tube | 3/16", 1/4", 5/16" Step | |
| SF8403 | | 3/16" Tube, 1/4" Step | |
| SF8404 | | 1/4" Tube | |
| SF8405 | | 5/16" Tube | |
| SF8406 | | 3/8" Tube | |

SF8000 Series Universal Line Valves



Available in various sizes. Copper Tee with the body brazed on. Two styles - a flared or straight end copper piece. (See chart below for exact size.)

Straight Copper Piece

| PART NO. | LENGTH | I.D. | O.D. |
|----------|---------|--------|--------|
| SF8418 | 1 7/8" | 1 1/8" | 1 1/4" |
| SF8434 | 1 5/16" | 3/4" | 13/16" |
| SF8478 | 1 9/16" | 7/8" | 1" |

Flared Copper Piece

| PART NO. | LENGTH | I.D. | O.D. |
|----------|---------|-------|--------|
| SF8412 | 1 3/4" | 1/2" | 9/16" |
| SF8414 | 2 9/32" | 1/4" | 5/16" |
| SF8416 | 2" | 5/16" | 3/8" |
| SF8458 | 2" | 5/8" | 11/16" |

SF4040 Charging Hose Flow-Control Valve

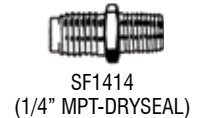
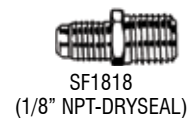


- Reliable and easy to use
- Install on the end of a charging hose and minimize refrigerant loss during servicing
- A quarter turn of the handle makes quick work of turning on and off
- Straight flow through design offers maximum flow rate
- Brass depressor tip fully engages valve core

SF1818 and SF1414 Brass Bodies



- Both bodies complete with neoprene seal, core and cap.
- Each is a quarter male flare above the hex.

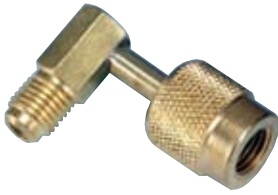


Valve Replacement Parts



| PART NO. | DESCRIPTION |
|----------|---|
| SF2235 | Heavy duty hex brass cap with dual neoprene or metal seal |
| SF2245 | Heavy duty round brass cap with neoprene seal |
| SF2250 | Heavy duty round brass cap with handy core wrench on top and neoprene seal |
| SF4450 | Valve core with neoprene seal compatible with most refrigerants (Replaces SF1515) |
| SF5161 | 5/16" OD neoprene hose gasket for charging hoses |

Valves & Fittings



Adapters/Couplers

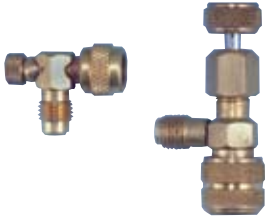
Quick coupler valve depressors complete with leakproof neoprene seal and depressor tips. Use to make connection between equipment with unlike threads. Made of CDA 360 brass. Available in straight and 90° configuration.

| PART NO. | DESCRIPTION |
|----------|--|
| SF2010 | 1/4" female flare swivel x 1/4" male flare access, 90° configuration. Depressor tip and seal, no valve core. |
| SF2012 | 1/4" female flare swivel x 1/2" Acme male, depressor tip and seal |
| SF2020 | 1/4" female flare hex x 1/2" Acme male |
| SF2028 | 1/4" male flare x 1/2" Acme female swivel, depressor tip seal |



SF2035 Hose Gas Retaining Coupler

- 1/4" female flare retainer Sure-seal x 1/4" male flare



SF2060 & SF5050 Thumbscrew Core Depressors

For use on a 1/4" male flare to allow the core to be opened to the degree of flow desired. Solid brass construction. Compact design makes it ideal in close quarters.

| PART NO. | DESCRIPTION |
|----------|--|
| SF2060 | For 1/4" male flares. |
| SF5050 | For 1/4" male flares. Made small for use in close quarters |



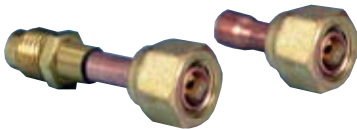
SF2070 Hose Gas Retainer and Core Depressor Tool

This tool is attached to a charging hose, then it is coupled to an access fitting. Thumb screw the depressor tip down to depress the core and allow gas to flow through the hose. Thumb screw back to allow the core to shut off. The depressor tip rod will back seat in a Teflon gasket to retain the gas in the hose. There will be no loss of the gas in the hose when you disconnect from the access fitting.



SF2090 Hose Gas Retaining Coupler

- 90° 1/4" female flare retainer x 1/4" male flare



SF2595 and SF2597 Gauge Adapter

SF2595 A 1 1/4" piece of 1/4" copper tubing, double flared on one end with a 1/4" female flare nut and a depressor tip. The end of the copper tube opposite the female flare has been swaged to allow 1/4" copper tube to enter for brazing.

SF2597 A 1 1/4" piece of 1/4" copper tubing, double flared on one end with a 1/4" female flare and a depressor tip. The other end has a 1/4" male flare that has been brazed on. A core may be inserted in the 1/4" male flare, but is not provided.



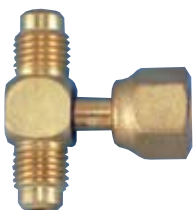
Gauge Adapters

| PART NO. | DESCRIPTION |
|----------|--|
| SF5014 | 1/4" male flare to 3/16" fittings. Contains depressor pin. |



SF8725 Connector

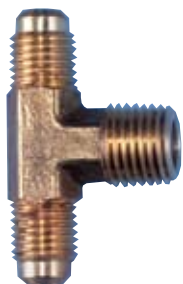
The SF8725 has a gasket in the 1/4" hex nut. The valve body is stationary. When threads of existing system fittings are stripped and a new core won't go in, use this. It has a core and no depressor tip.



Tee Connectors

| PART NO. | DESCRIPTION |
|----------|---|
| SF9601 | 1/4" m. flare x 1/4" flare nut with depressor tip x 1/4" m. flare on the branch with one valve core |
| SF9602 | 1/4" m. flare with valve core x 1/4" m. flare x 1/4" f. flare nut with depressor tip on the branch |
| SF9603 | All brass connector tee. 1/4" m. flare with valve core and cap x 1/4" m. flare x 1/4" f. flare nut with depressor tip on the branch |

Valves & Fittings



SF9600 Series 1/4" Flare Forged Access Tees

- Forged brass tee
- All 1/4" flares are threaded for valve cores

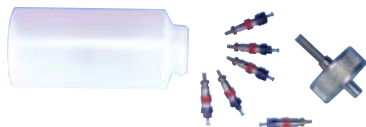
| PART NO. | SIZE | MPT END I.D. |
|----------|---|---------------------------------|
| SF9613 | 1/4" m. flare x 1/4" m. flare x 1/4" m. flare, two valve cores, no caps | |
| SF9614 | 1/4" m. flare x 1/4" MPT x 1/4" m. flare access on branch, one cap and one valve core | 5/16" for brazing a copper tube |
| SF9615 | 1/4" m. flare x 1/4" m. flare x 1/4" MPT on branch, one cap and one valve core | 5/16" for brazing a copper tube |
| SF9616 | 1/4" m. flare x 1/8" MPT x 1/4" m. flare access on branch, one cap and valve core | 1/4" for brazing a copper tube |
| SF9620 | 1/4" m. flare x 1/4" m. flare x 1/8" MPT on branch, one cap and valve core | 1/4" for brazing a copper tube |



SF9644 Connector

2 - 1/4" male flares, one with core and cap, in a "U" shape. At the side is a 1/4" female flare with depressor tip and opposite that is an additional 1/4" male flare

Valve Tools



SF3800 Chaser

- Two tools, a core wrench and thread chaser, complete with a core carrying case and six cores
- Length with core wrench lid 3 1/2"



SF3813 Valve Core Remover/Container

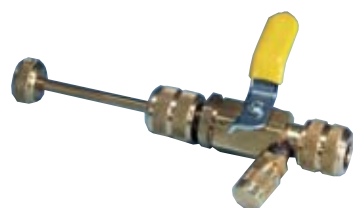
- Heavy-duty, all brass
- Includes 3 valve cores
- Length is 3"



Core Removal Tools*

| PART NO. | DESCRIPTION |
|----------|--|
| SF3900 | Designed for removing and replacing a "Schrader" type core, without losing the charge. All brass construction. |
| SF3910 | Same as above with an additional side port (1/4" male flare) with core. |

* Not compatible with R-410A



Core Removal Tools (with Ball Valve)*

| PART NO. | DESCRIPTION |
|----------|--|
| SF3920 | Removes a valve core from a 1/4" male flare access fitting without loss of refrigerant. Because it has a ball valve inside rather than a stem-type valve, the tool can be closed with just a quarter turn. |
| SF3930 | Same as above with an additional port |
| SF5555 | CRT repair kit (o-rings) |

* Not compatible with R-410A



SF3970 Internal Temperature Reading Tool*

(Measures -58°F to +302°F)

This two piece tool provides a better way of obtaining a temperature reading inside the system. It allows you to insert the digital thermometer through an access fitting, and you can adjust for superheat while you're inside. Furnished complete with core extractor tool and digital thermometer. Easy to follow instructions included.

Replaces SF3940 and SF3960

* Not compatible with R-410A



SF4311 "FasTap" Tube Piercing Pliers

Fast refrigerant recovery with pliers that clamp on and pierce tube. Pliers work on copper tubing sizes ranging from 1/4" to 7/8" OD. They are simple to use and light weight. Adjust pliers to proper size, align tip to the center of tube, clamp down and pierce with quick action. Piercing tip is self-sharpening, but also easily replaceable.



SF4314 Tube Piercing Pliers Replacement Tip

Condensate Drain Pans



Commercial Condensate Evaporator Pans

For condensate applications where no drain is available, choose from these popular, large capacity sized pans. SUPCO commercial refrigeration condensate evaporator pans are made from top quality materials for durable, long life.

Features/Benefits:

- CP804-HD 20 guage stainless steel. All others use 22 guage.
- Corrosion resistant stainless steel construction.
- Made from top quality materials and components for longer more durable use.
- Positive evaporation
- High limit safety and float switch operation
- Available In 120 volts, 208 volts and 240 volts
- Warranty-One Year from date of installation
- Space saving

Applications:

- Evaporates defrost and condensation where no drain is available.
- Used in supermarket refrigeration systems and elevators.
- These pans are used for water dissipation **ONLY! DO NOT OPERATE "DRY"**.
- Clean the pan and check the float every 30 days for optimum performance and operation.



Specifications

| PART NO. | CAPACITY | VOLTS | WATTS | AMPS | DIMENSIONS L x W x H | DISSIPATION RATE | |
|-------------|----------|-------|-------|------|----------------------|------------------|----------|
| | | | | | | PER DAY | REPLACES |
| CP801 | 1 3/4 qt | 120 | 400 | 3.3 | 10" x 7" x 2 1/2" | 3 Gallon | DM04T1S |
| CP802 | 2 1/2 qt | 120 | 800 | 6.6 | 13" x 7" x 2 1/2" | 6 Gallon | DM08S1S |
| CP802-240 | 2 1/2 qt | 240 | 800 | 3.3 | 13" x 7" x 2 1/2" | 6 Gallon | |
| CP804 | 4 1/2 qt | 120 | 1000 | 8.34 | 13" x 7" x 4" | 10 Gallon | DM10MS1 |
| CP804-240 | 4 1/2 qt | 240 | 1000 | 4.17 | 13" x 7" x 4" | 6 Gallon | |
| CP804HD | 7 1/2 qt | 120 | 1000 | 8.34 | 13" x 10" x 4" | 6 Gallon | DM10W1D |
| CP804HD-240 | 7 1/2 qt | 240 | 1000 | 4.17 | 13" x 10" x 4" | 6 Gallon | |
| CP807 | 7 1/2 qt | 120 | 1000 | 8.34 | 13" x 10" x 4" | 10 Gallon | DM10W1S |
| CP807-240 | 7 1/2 qt | 240 | 1000 | 4.8 | 13" x 10" x 4" | 10 Gallon | DM10W3 |
| CP815 | 15 qt | 120 | 1440 | 12 | 21" x 13" x 4" | 12 Gallon | DM15WW1D |
| CP815-240 | 15 qt | 240 | 1500 | 6.28 | 21" x 13" x 4" | 12 Gallon | DM15WW3 |
| CP816 | 7 qt | 120 | 500 | 4.17 | 13" x 10" x 4" | 4.5 Gallon | DM05W1D |
| CP817 | 7 qt | 208 | 1000 | 4.81 | 13" x 10" x 4" | 8 Gallon | DM10W2D |
| CP818 | 7 qt | 208 | 1000 | 4.81 | 13" x 10" x 4" | 8 Gallon | DM10W2S |
| CP819 | 7 qt | 120 | 1500 | 12.5 | 13" x 10" x 4" | 12 Gallon | DM15W1D |
| CP820 | 7 qt | 208 | 1500 | 7.21 | 13" x 10" x 4" | 12 Gallon | DM15W2D |
| CP821 | 7 qt | 208 | 1500 | 7.21 | 21" x 10" x 4" | 12 Gallon | DM15WW2D |

Replacement Parts

| PART NO. | FLOAT PART NO. | HEATER PART NO. | MICROSWITCH PART NO. | THERMOSTAT PART NO. |
|-------------|----------------|-----------------|----------------------|---------------------|
| CP801 | CPFLOAT | CPH801 | CPS800 | CPT800 |
| CP802 | CPFLOAT | CPH802 | CPS800 | CPT800 |
| CP802-240 | CPFLOAT | CPH802-240 | CPS800 | CPT800 |
| CP804 | CPFLOAT4 | CPH8047 | CPS800 | CPT800 |
| CP804-240 | CPFLOAT4 | CPH804-240 | CPS800 | CPT800 |
| CP804HD | CPFLOAT4 | CPH804HD | CPS800 | CPT800 |
| CP804HD-240 | CPFLOAT4 | CPH804HD-240 | CPS800 | CPT800 |
| CP807 | CPFLOAT4 | CPH8047 | CPS800 | CPT800 |
| CP807-240 | CPFLOAT4 | CPH807-240 | CPS800 | CPT800 |
| CP815 | CPFLOAT4 | CPH815 | CPS800 | CPT800 |
| CP815-240 | CPFLOAT4 | CPH815-240 | CPS800 | CPT800 |
| CP816 | CPFLOAT | CPH816 | CPS800 | CPT800 |
| CP817 | CPFLOAT | CPH817 | CPS800 | CPT800 |
| CP818 | CPFLOAT | CPH818 | CPS800 | CPT800 |
| CP819 | CPFLOAT | CPH819 | CPS800 | CPT800 |
| CP820 | CPFLOAT | CPH820 | CPS800 | CPT800 |
| CP821 | CPFLOAT | CPH821 | CPS800 | CPT800 |

Cross Reference on page 129



70 Condensate Drain

Authorized, cost effective replacement drain for most commercial refrigerators and freezers.

Features/Benefits:

- PTC Control supplies only required heat to evaporate water.
- Thermostat and float NOT required
- Self regulating
- Uniform heating
- Die cast aluminum eliminates corrosion
- Removable cord set for easy cleaning
- Die cast aluminum eliminates corrosion
- Removable cord set for easy cleaning
- Die cast aluminum eliminates corrosion
- Removable cord set for easy cleaning
- Fast evaporation rate (6 oz./ hour)
- Low Profile(3") to fit tight spaces
- NSF, UL and CSA(where noted) approved

| PART NO. | CAPACITY | VOLTS | WATTS | AMPS | EVAPORATE. | |
|-----------|----------|-------|-------|------|------------|-----------------------|
| | | | | | RATE | SIZE |
| 70 | 50 oz | 115 | 300 | 2.61 | 6 oz/hr | 12 1/4" x 4 3/4" x 3" |
| 70-220 | 50 oz | 220 | 300 | 1.36 | 6 oz/hr | 12 1/4" x 4 3/4" x 3" |
| 70CSA* | 50 oz | 115 | 190 | 1.65 | 6 oz/hr | 12 1/4" x 4 3/4" x 3" |
| 70CSA220* | 50 oz | 220 | 190 | .86 | 6 oz/hr | 12 1/4" x 4 3/4" x 3" |

*CSA indicates CSA approval. ** All are 50/60 HZ



30-OS, 31 & 75 Condensate Drains

- Standard cast aluminum condensate drains complete with long life heating element and mounting legs.
- Designed for continuous use.

| PART NO. | CAPACITY | VOLTS | WATTS | AMPS | EVAPORATE. | |
|------------|----------|-------|-------|------|------------|-----------------------|
| | | | | | RATE | SIZE |
| 30-OS* | 38 oz | 120 | 160 | 1.33 | 8 oz/hr | 10" x 4" x 2 7/8" |
| 30-220-OS* | 38 oz | 220 | 160 | .73 | 8 oz/hr | 10" x 4" x 2 7/8" |
| 31 | 50 oz | 120 | 160 | 1.33 | 6 oz/hr | 10" x 4 1/2" x 3 3/8" |
| 31-220 | 50 oz | 220 | 160 | .73 | 6 oz/hr | 10" x 4 1/2" x 3 3/8" |
| 75 | 75 oz | 120 | 320 | 2.67 | 14 oz/hr | 10" x 9" x 2 3/4" |
| 75-220 | 75 oz | 220 | 320 | 1.45 | 14 oz/hr | 10" x 9" x 2 3/4" |

* Indicates NSF listing ** All are 50/60 HZ

Wall Mount Brackets

| PART NO. | CONDENSATE DRAIN NO. |
|----------|-------------------------|
| 30WM | 30-OS Series, 75 Series |
| 31WM | 31 Series |

Condensate Drain Pans

DP34 Drain Plus HVAC Condensate Drain [Visit www.drainplus.com for complete information.](http://www.drainplus.com)

A drain solution defined for HVAC condensate lines. Negative coil pressure needs some type of drain trap. Drain Plus was developed specifically for this purpose.



Features/Benefits

- Lifetime Warranty
- Prevents Dry Trap Syndrome
- Easy installation
- Removable cap for easy cleaning and inspection of the condensate line.
- Replaces conventional PVC P-Traps.

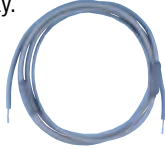
Specifications

- 3/4" PVC
- Durable Schedule 40 PVC material.



Drain Heaters

All SUPCO Drain and Door Heaters are designed for continuous use to protect drains against ice build up which leads to clogging. All of these heaters cannot be cut, spliced, extended or altered in any way.



SH200 Series Flexible Braided Aluminum Drain Heaters

Features/Benefits

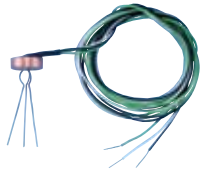
- Aluminum Construction
- Variety of Lengths and Wattage's Available

Applications

- Domestic and Commercial Refrigeration
- Air Conditioner & Heat Pump Systems
- Condensate Drain Pans, Tubes and Troughs

Part numbers SH201 thru SH207

- Available in 220 Volts (Special Order)



SH250 Universal Drain Heater

Features/Benefits

- Used With Existing Heater or Where No Heater Exists
- Available in 220 Volts (Special Order)

Tech Tip

- The SH250 Universal Drain Heater is designed for "series wiring connection" only.

| PART NO. | DIAMETER | PRONG LENGTH | WIRE LEADS |
|----------|----------|--------------|------------|
| SH250 | 0.91" | 2.25" | 56" |



SH250 Series Silicone Drain Heaters

Features/Benefits

- Silicone Construction
- Designed For Waterproof Low Wattage Heat
- GE Serpentine Coil Heater Applications

Tech Tip

- The SH252 Silicone Drain Heater is designed for "series wiring connection" only.
- SH251 replaces GE WR51X72, Frigidaire 6582706
- SH252 replaces Frigidaire 7517924

Part numbers SH251 and SH252



SH500 Series Drain Heaters

Features/Benefits

- Durable Metal Braid
- Available In 220 Volts (Special Order)
- Heater Tip 7/16" Diameter

- Silicone Construction
- Designed For Waterproof Low Wattage Heat

Part numbers SH500 thru SH505

Foil Heaters



SH220 Series Aluminum Foil Heaters

Features/Benefits

- Pressure Sensitive Adhesive Backing For Easy Installation
- Six Assorted Shapes and Wattage's
- Available in 220 Volts (Special Order)

Heater Specifications

| PART NO. | VOLTS | WATTS | SIZE | PART NO. | VOLTS | WATTS | SIZE |
|----------|-------|-------|-------------------|----------|-------|-------|-----------------|
| SH201 | 115 | 15 | 18" 23" | SH250 | 120 | 3 | |
| SH202 | 115 | 45 | 29" 23" | SH251 | 115 | 8 | heater tip - 3" |
| SH203 | 115 | 55 | 44" 23" | SH281 | 120 | 3 | 36 1/2' ft. |
| SH204 | 115 | 75 | 48" 23" | SH282 | 120 | 3 | 18' ft. |
| SH205 | 115 | 65 | 56" 23" | SH283 | 220 | 3 | 36' ft. |
| SH206 | 115 | 80 | 70" 23" | SH284 | 220 | 3 | 18' ft. |
| SH207 | 115 | 110 | 86" 23" | SH500 | 120 | 11 | 9" 18" |
| SH221 | 115 | 6 | 10" x 1" | SH502 | 120 | 15 | 13" 18" |
| SH222 | 115 | 10 | 24" x 1 1/4" | SH503 | 240 | 15 | 13" 18" |
| SH223 | 115 | 10 | 14 1/2" x 5 1/2" | SH504 | 120 | 25 | 21" 18" |
| SH225 | 115 | 15 | 10 1/2" x 10 1/2" | SH505 | 240 | 25 | 21" 18" |
| SH226 | 115 | 40 | 10 1/2" x 10 1/2" | | | | |

Applications

- Commercial & Domestic Refrigeration
- Mullions
- Drain Troughs
- Drain Pans
- Spot Heating

Door Heaters



SH280 Series Door Heaters Mullion & Dew Point

Features/Benefits

- Prevents Moisture on Glass Display Doors
- Eliminates Frost Build Up On Doors & Cabinet Fronts

Applications

- Commercial & Domestic Refrigerators & Freezers

Part numbers SH281 thru SH284

Tech Tip - These heaters are water resistant only, not water proof. These heaters can get wet, but they cannot sit in water for any period of time.

Vacuum & Pressure Gauges



VG64 Digital Vacuum Gauge

Suitable for field or laboratory use, the VG64 delivers high precision at a low price.

Features/Benefits

- Ultra fine resolution: (1 Micron when vacuum \leq 200 Microns)
- Reads vacuum in 7 international units
- Display updates every 1/2 second
- Convenient built in hanger
- Cleaning port provides quick cleaning and drying of sensor
- Low battery Indicator



Accessories

PART NO.

10475 120 V Power Adapter

MFDCASE Soft Pouch

VGCVacuum Gauge Coupler



VGC Vacuum Gauge Coupler

- Eliminates leaks during service



VG64S Single Port Digital Vacuum Gauge

Same great features and specifications with single port connection.

See page 129 for
Connection Application Note



VG60 Electronic Vacuum Gauge

10 segment color coded LED readout provides fast response of vacuum measurements.

Features/Benefits

- Pocket size—only 5 1/2" x 1 3/4" x 1 1/2"
- Cleanable sensor
- Single switch operation
- Low battery indication
- Color coded LED display
- Built-in hanger
- Soft case included (MFDCASE)



Accessories

PART NO.

DPGT 120 V Power Adapter



VG61 Electronic Vacuum Gauge

Enjoy the same features as the VG60 in a durable hard case. Sensor cord extends to 5 feet.

Features/Benefits

- Cleanable sensor
- Single switch operation
- Low battery indication
- Color coded LED display



VG65 Professional Series Digital Vacuum Gauge

Same great specifications as the VG64 in a rugged service case.

Features/Benefits

- Extendable service card



VG66 Professional Series Analog Vacuum Gauge

Features/Benefits

- Vacuum range 50 – 5000 microns
- 5 inch Analog meter
- Cleanable Vacuum Sensor
- 500 psi maximum overpressure
- Low battery indicator
- Expandable sensor cord (up to 6 feet)
- Sensor cord extendable using standard telephone cord
- Rugged Service case



Vacuum & Pressure Gauges

Vacuum Gauge Specifications

| | VG64/VG64S | VG60 | VG61 | VG65 | VG66 |
|-----------------------------|--|--|--|---|-----------------------------------|
| Sensor Type | Thermistor | Thermistor | Thermistor | Thermistor | Thermistor |
| Connector Type | Standard 1/4" male flare fitting. | Standard 1/4" male flare fitting. | Standard 1/4" male flare fitting. | Standard 1/4" male flare fitting. | Standard 1/4" male flare fitting. |
| Vacuum Range | 0 – 12,000 Microns (0 – 1,600 Pascals) | 50 – 5,000 Microns | 50 – 5,000 Microns | 0 – 12,000 Microns (0 – 1,600 Pascals) | 10 – 5,000 Microns |
| Scale | Microns, PSI, InHg, milliBars, Pascals, Torr, milliTorr | Microns - 10 LED segments atmosphere to 50 Microns | Microns - 10 LED segments atmosphere to 50 Microns | Microns, PSI, InHg, milliBars, Pascals, Torr, milliTorr | Microns, Torr |
| Resolution | 0-200: 1 Micron 201-500: 5 Microns 501-1,000: 10 Microns 1,001-2,000: 50 Microns 2,001-5,000: 250 Microns 5,001-8,000: 500 Microns 8,001-12,000: 1,000 Microns | | | 0-200: 1 Micron 201-500: 5 Microns 501-1,000: 10 Microns 1,001-2,000: 50 Microns 2,001-5,000: 250 Microns 5,001-8,000: 500 Microns | |
| Operating Temperature Range | 35°F to 125°F (2°C to 52°C) | | 35°F to 125°F (2°C to 52°C) | | |
| Overpressure | 500 PSI Max (20 Bar) | 500 PSI Max (20 BAR) | 500 PSI Max (20 BAR) | 500 PSI Max (20 BAR) | 500 PSI Max (20 BAR) |
| Accuracy | ±10% (100-1000 Microns) | | | ±10% (100-1000 Microns) | |
| Power Source | 9 V Battery (not included) | 9 V battery (not included) | 9 V battery (not included) | 9 V battery (not included) | 9 V battery (not included) |
| Auto Shutoff | Yes | No | No | Yes | N/A |
| Dimensions | 5 1/2" x 3" x 1 1/4" | 5 1/2" x 1 3/4" x 1 1/2" | 9 1/2" x 6 3/4" x 2 3/4" | 5 1/2" x 3" x 1 1/4" | 9 1/4" x 7 1/2" x 2 3/4" |
| Weight | 6.7 oz | 6.8 oz | 1.8 lbs. | 1 lb 11 oz | 2 lbs 6 oz |

DPG25V/DPG100/DPG1000 - Digital Pressure Gauges



MADE IN THE USA



The DPG Series are digital pressure gauges featuring multiple units, selectable zero reference and automatic power off to conserve battery power. The DPG100/DPG1000 can be used with any media compatible with 17-4PH stainless steel.

Features/Benefits

- High Accuracy
- Measurement Units PSI, Bar, Kg/cm , ATM
- Easy To Use
- Stainless Steel Sensor
- No Welds or "O" Rings
- 1/8 NPT Female Connection
- Long Battery Life
- 1 Hour Auto Off

Applications

- HVAC Refrigerant Lines
- Steam Pipes
- Process Piping
- Compressed Air Lines
- Specialty Gas Piping

Product Specifications

| | DPG25V | DPG100 | DPG1000 |
|---|------------------------------------|--|-------------------------------|
| Pressure Range | -14.7 to 25 PSI | -14 to + 100 PSI | -14 to + 1000 PSI |
| Measurement Units | InHg PSI Kg/cm, ATM | PSI, BAR, Kg/cm, ATM | PSI, BAR, |
| Resolution | PSI InHg BAR Kg/cm Atm | 0.1 0.01 * 0.01 * | 1.0 * 0.1 0.1 0.1 |
| Accuracy | | < ± 0.5% BFSL (includes Non-linearity, Hysteresis and Non-repeatability) | |
| Stability (1 year) | | ±0.25% FS (typ) | |
| Overrange Protection | | 2X Rated Pressure | |
| Burst Pressure | | 5X or 20,000 psi whichever is less. | |
| Pressure Cycles | | > 100 Million | |
| Operating Temperature Range | | 32°F to 130°F (0°C to 55°C) | |
| Storage Temperature Range | | -40°F to 150°F (-40°C to 65°C) | |
| Compensated Temperature Range | | 32°F to 130°F (0°C to 55°C) | |
| Temperature Compensation Zero | | < ± 1.5% of FS | |
| Temperature Compensation Span | | < ± 1.5% of FS | |
| Pressure Sensor Connection | | 1/8 NPT Female | |
| Update Rate | | 3 Samples per Second (typ) | |
| Power | | 9 Volt Alkaline Battery | |
| Automatic Power Off | | 1 Hour | |
| Battery Life 100 Hours Continuous Operation (typ) | | | |

Temperature, Humidity Testers & Thermometers

Infrared Thermometers



PIT1

- 1:1 Optical Ratio
- Pocket Size
- Min/Max Measurements



LIT6

- 6:1 Optical Ratio
- Laser Pointer
- Backlight



LIT8B

- 8:1 Optical Ratio
- Laser Pointer
- Trigger Style
- Backlight
- Minimum/Maximum Measurements



LIT11TC

- 11:1 Optical Ratio
- Laser Pointer
- High & Low Temperature Range
- Backlight
- Carrying Case Included
- K-Type Thermocouple (probe included)
 - Temperature Range 58°F to 482°F (14°C to 250°C)
 - Full range: -83.2°F to 1999°F (-64°C to 1400°C)
 - Temperature Accuracy $\pm 1\%$ of reading or 2°F

Laser Infrared Thermometers offer precise, non-contact measurement in a lightweight, hand held instrument. With one hand operation, they are ideal for a wide variety of applications.

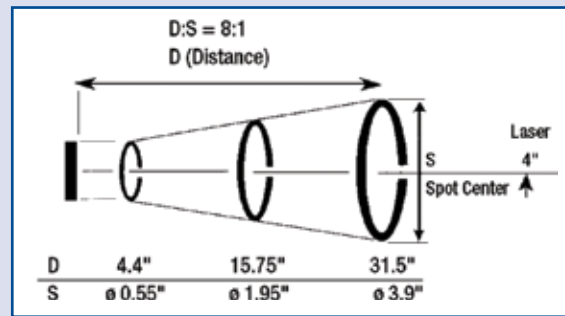
Applications

- Refrigeration Systems
- Heating Systems
- Supply and Return Registers
- Circuit Breaker Panels
- Motors/Bearings
- Transformers
- Ducts
- And More

Application Note:

What is Distance to Spot Ratio (D:S)?

This is the size of the measurement field that a non-contact infrared thermometer uses to provide a temperature reading. The infrared thermometer averages the temperature of that field to calculate the temperature reading. For example, a D:S ratio of 8:1 means that the measurement field measures approximately 1 foot in diameter when the target is approximately 8 feet away.



Emissivity:

The ability of a surface to reflect the infrared radiation relative to an ideal surface. A flat black surface is as close to ideal as you can get. Most infrared thermometers have a fixed emissivity of .95. The more reflective the surface the lower the emissivity adjustment should be.

Infrared Specifications

| | PIT1 | LIT6 | LIT8B | LIT11TC |
|--------------------|---|---|---|--|
| Optical Ratio | 1:1 | 6:1 | 8:1 | 11:1 |
| Temperature Range | -27°F to 428°F (-33°C to +220°C) | 0°F to 500°F (-18°C to 260°C) | -4°F to 662°F (-20°C to 350°C) | -76 °F to 932°F (-60°C to 500°C) |
| Best Resolution | .1°F (.1°C) | .1°F (.1°C) | 1°F (1°C) | .1°F (.1°C) |
| Accuracy | $\pm 2\%$ of reading or +4°F (2°C) | $\pm 2\%$ of reading or +4°F (2°C) | $\pm 2\%$ of reading or $\pm 4\text{°F}$ (2°C) | $\pm 2\text{°F}$ ($\pm 1\text{°C}$) |
| Emissivity | 0.95 adjustable | 0.95 fixed | 0.95 fixed | 0.95 adjustable |
| Automatic shut off | Yes | Yes | Yes | Yes |
| Power Supply | CR2032 (Included) | 9V Battery (Not Included) | 9V Battery (Included) | 2 AAA Batteries (Included) |
| Weight | 1.3 oz. (32g) | 5.3 oz. (150g) | 5.8 oz. (180g) | 6.3 oz. (179g) |
| Dimensions | .7" X 1.5" X 2.7" (18mm X 37mm X 68mm) | 5.1" X 2" X 1.25" (18mm X 50mm X 42mm) | 6.4" X 3.2" X 2.4" (159mm X 79mm X 57mm) | 6.9" X 1.5" X 2.8" (175 X 39 X 71mm) |

Temperature, Humidity Testers & Thermometers



DSP1000 Digital Psychrometer

The DSP1000 provides fast, accurate measurements for analysis of critical environmental conditions.

- Temperature
- Humidity
- Fast Response
- Dual Display
- Max Hold
- No Twirling
- No Reading Charts
- No Water Necessary

Features

- Fast Response Time
- High Accuracy
- Temperature
- Humidity
- Dewpoint Temperature
- Wet Bulb Temperature
- Max Hold
- Data Hold Function
- Micro Processor-based Design
- Dual Display Temperature & Humidity
- Auto Power Off (Disable Sleep Mode)
- Backlight
- 1 Year Warranty

Applications

- Cellophane
- Chemical
- Laboratory
- Pharmaceuticals
- Textile
- Paper
- Photographic
- Printing
- Snowmaking
- Tobacco
- Indoor Air Quality
- Wine Storage
- Floral
- Meat

Specifications

| RANGE | |
|-----------------------|--|
| Humidity | 0-100% RH (Non-Condensing) |
| Temperature | -22°F to 212°F (-30°C to 100°C) |
| Dewpoint Temperature | -22°F to 212°F (-30°C to 100°C) |
| Wet Bulb Temperature | 32°F to 176°F (0°C to 80°C) |
| ACCURACY | |
| Humidity | ±2% RH (20% RH to 80% RH) ±2.5% RH (all other ranges) |
| Temperature | ±0.9°F/±0.5°C (at 77°F/25°C) ±1.5°F/±0.8°C (all other ranges) |
| Resolution | 0.01% RH, 0.01°F/0.01°C |
| Response Time | 10s (90% at +77°F (+25°C) still air) |
| Battery Type | 9V Battery NEDA 1604, IEC 6F22 (included) |
| Operation Temperature | 32°F to 104°F/0°C to 40°C (<80%RH) |
| Storage Temperature | 14°F to 140°F/-10°C to 60°C (<70%RH) |
| Size (H X W X D) | 8.86" X 1.77" X 1.34" (225mm X 45mm X 34mm) |
| Weight | 7.05oz (200g) |



DDT2 Digital Differential Thermometer

With its Dual Display, the DDT2 provides instant measurements for two Temperature points (T1,T2) and their difference (T1-T2).

Features/Benefits

- Dual K-Type Thermocouple Inputs
- Temperature Differential Measurement (T1-T2)
- Records Up to 8 Min/Max/Avg Measurements
- Relative Function provides instant Temperature Difference between successive measurements
- Dual Display
- Auto-Ranging
- Data Hold
- Auto Power Off
- Vinyl Case Included

Applications

- Superheat Measurements (T1-T2)
- Ambient Temperature Measurements
- Food Service
- Oven Temperature measurements
- Surface Temperature Measurements
- Measure HVAC and Refrigeration System Temperatures

PT100 Digital Pocket Surface Thermometer



Features/Benefits

- Ultra sensitive air and surface reading probe
- Provides fast response—within seconds
- Temperature "HOLD" switch—keeps readings fixed

Applications

- Speedy recovery - reclaim temperature measurement
- Measures evaporator plate and condensing temperatures
- Air inlet, outlet and surrounding air

| PART NO. | DESCRIPTION |
|----------|-----------------------|
| PT100 | Fahrenheit Model |
| PT100C | Celsius Model |
| PT100H | High Temp. Fahrenheit |
| PT100HC | High Temp. Celsius |

Temperature, Humidity Testers & Thermometers

Temperature and Humidity Tester Specifications

| | DDT2 | PT100 | TPM110 | THP2 | THC120 | STD5-105 |
|----------------------|---|--|---------------------------------------|--|-------------------------------|-----------------------------------|
| # of inputs | 2 | 1 | 1 | 1 Temp./1 Hum. | 1 Temp./1 Hum. | 1 |
| Thermo - couple Type | K | | J | | | |
| Differential | * | | | | | |
| Data Hold | * | * | | | | |
| Min/ Max | * | | | | * | |
| Dual Display | * | | | | Triple Display | |
| Auto-Off | * | | | | | |
| Temp. Range | -328°F to 2498°F -200°C to 1370°C | PT100/PT100C -40°F to 199.9°F -40°C to 93.28°C PT100H/PT100HC -40°F to 250°F -40°C to 120°C | -70°F to 199°F -56.67°C to 93.28°C | -4°F to 122°F -20°C to 50°C | +32°F to 120°F 0°C to 50°C | -60°F to +160°F -51°C to 107°C |
| Temp. Resolution | 0.1°F -200°F to 200°F 1°F otherwise | 0.1°F -40°F to 199.9°F 1.0°F (-40° to 250°F) | 1.0°F | 0.1°F | 0.1°F | 0.1°F |
| Temp. Accuracy | ±0.5% Rdg+2°F | 0.2 Surface 1.0 Air | ±1°F | ±2°F | ±1.8°F or 1.0°C | |
| Humidity Range | | | | 10% to 90% RH | +10% to 9% RH | |
| Humidity Resolution | | | | 1% RH | 1% RH | |
| Humidity Accuracy | | | | ±5% for -40% to 80% RH otherwise | ±5% RH ±8% | |
| Power | 9V Alkaline | 9V Alkaline | 120/240V 50/60 Hz | Button cell (1) LR44 | AAA (1) Batteries | Solar |
| Size (HxLxW) | 7.25" X 2.5" X 1.4" | 1.5" X 6.75" X 0.8" | 3.38" X 3.38" | 6.5" X 1.75" X .6" | 3.75" X 4 1/8" X 7/8" | 4 1/2" X 1 1/8" X 9/16" |
| Weight | 7.2 oz | 7.2 oz | 7.4 oz | 2 oz | 3 oz | 2 oz |
| Warranty | 1 year | 1 year | 1 year | 1 year | 1 year | 1 year |

K-Type Thermocouple Probes



TPFDA



TPP



TPS

Temperature Probe Specifications

| | TPFDA | TPP PIERCING | TPS SURFACE |
|---|----------------------------------|----------------------------------|-----------------------------------|
| Temp. Range: | -40°F to 550°F -40°C to 288°C | -58°F to 482°F -50°C to 250°C | -58°F to 1202°F -50°C to 650°C |
| Subminiature connector | * | * | * |
| 4' bead tip probe with FDA approved insulation | * | | |
| 3.7" heavy duty chisel tip insertion probe with handle and 4' cord | | | |
| 4" heavy duty spring loaded tip surface probe with handle and 4' cord | | * | |

STD5-105 Solar Powered Digital Thermometer



Features/Benefits

- 60°F to +160°F
- 51°C to 107°C
- 36" Probe Length
- Selector Switch for °F or °C
- 4 1/2" W x 1 1/8" H x 9/16" D
- 3/8" High LCD Display
- 10 Second Update

Applications

- Refrigerator/Freezer
- Food Processing
- Environmental Temperature Measurement



Temperature, Humidity Testers & Thermometers



THP2 Thermo-Hygrometer Pen

Features/Benefits

- Measures Temperature & Humidity, Simultaneously
- Dual Display
- Temperature in °F or °C
- Pocket Clip
- Battery Included
- Min/Max Memory



THC120 Indoor Digital Thermo-Hygrometer w/ Clock



Features/Benefits

- Table top or wall mount
- Measure Temperature and Humidity Simultaneously
- Real Time Clock
- Large Display
- Temperature Range: 32°F to 120°F (0°C to 50°C)
- Humidity Range: 10% to 90%
- °F/°C Switchable
- Min/Max Temperature and Humidity memory function



TPM110 Temperature Indicator

A highly reliable, extremely accurate temperature indicator. Custom designed faceplates with your company name or logo are available with quantity orders.

| PART NO. | | |
|----------|---------|------------------|
| TPM110 | 110 VAC | Fahrenheit Model |

Specifications

| | |
|-------------------------|------------------------------------|
| Ambient Operating Range | 32°F to 150°F |
| Line Voltage | 120 VAC |
| Probe | Encapsulated Sensor w/6' long cord |
| Case | High Impact Thermoplastic |
| Scale | -40°F to 199°F (-40°C to 93.28°C) |

Features/Benefits

- Large LCD display
- Easy installation
- Thermocouple wire can be extended to 500'
- Can calibrate in the field

Applications

- Direct replacement for old style 2 1/4" and 2 1/2" dial gauges
- Commercial Refrigeration/Freezer Panels
- Hospital/Laboratory Control Panels

Pocket Digital Thermometers

ST09



- -40°F to 392°F (-40°C to 200°C)
- Accuracy: $\pm 2^\circ\text{F}$ Full Scale Full Scale
- Min/Max
- °F/°C Switch
- Protective Sheath
- Data Hold
- ON/OFF Switch
- Pocket Clip
- Battery Included (STBAT)
- Drop Resistant
- Waterproof
- 2 1/2" Long Stem
- Auto Off (20 min.)

Applications

- Refrigerators/Freezers
- Food Processing/Prep.
- Heating/Ventilating

ST10



- -50°F to 392°F (-45°C to 200°C)
- Accuracy: $\pm 2^\circ\text{F}$ or $\pm 1^\circ\text{C}$
- °F/°C Switch
- Large LCD
- Display updates every second
- Battery included. Free Spare Battery (STBAT)
- Pocket Clip
- 4 23/32" (12cm) Stainless Steel Stem

Applications

- Refrigerators/Freezers
- Food Processing/Prep.
- Heating/Ventilating

Pocket Dial Thermometers

ST01/ST02



- 1" dial
- 5" stem
- °F only
- Recalibration adjustment
- Temperature Range:
 - ST01 -40°F to 160°F
 - ST02 0°F to 220°F

Application

- Refrigerators/Freezers
- Air Conditioners

ST07/ST08



- 1 3/4" dial
- 5" stem
- °F and °C
- Recalibration adjustment
- Temperature Range:
 - ST07 0°F to 220°F (-18°C to 105°C)
 - ST08 -40°F to 160°F (-40°C to 70°C)

Application

- Air Conditioners
- Refrigerators/Freezers

Appliance Thermometers

ST03/ ST04



- Stainless Steel Construction
- Hangs or stands
- °F and °C
- Unbreakable lens

| PART NO. | TEMPERATURE RANGE | APPLICATION |
|----------|--------------------------------|------------------------|
| ST03 | -20°F to 80°F (-30°C to 27°C) | Refrigerators |
| ST04 | 100°F to 600°F (38°C to 315°C) | Ovens |
| ST06 | -40° to 80°F (-40° to 27°C) | Refrigerators/Freezers |

ST06



- Horizontal design
- °F and °C

- Stainless steel wire clips for easy hanging

Temperature Alarms & Controls

TA Series Temperature Alarms



All of your temperature sensitive areas are protected with the broadest line of temperature alarms: single and dual set point, wireless remote, battery operated and multi-channel. Select the right one for your application.

Features/Benefits

- Adjustable alarm temperature ranges
- Audible and visual alarm
- Built-in terminals for remote alarm or telephone dialer connection (except TA7)
- Alarm switch for 'No delay' or '1 hour delay'

Applications

- Food Markets, Convenience Stores, Supermarkets
- Restaurants, Florists, Greenhouses
- Laboratories, Pharmaceutical Storage Facilities
- Refrigerated Transport, Cold Storage Facilities
- Computer



TA22

Digital Display Single Set Temperature Alarm

The easy to read display features Current Temperature, Alarm Status, Over/ Under mode indicator, Alarm Set Point and Temperature Units (°F or °C).

- Adjustable range from -40°F to +160°F (-40°C to +71°C)
- AC Adapter included
- 80 db Audible Alarm



TA2

Single Set Point Temperature Alarm

A reliable, inexpensive alarm for refrigerators and freezers. Just flip a switch to activate alarm on a rise or fall in temperature.

- Adjustable range from -10°F to +80°F (-25°C to +30°C)
- 90 db audible alarm
- AC Adapter included

MODEL NO.

| | |
|-----------------|--------------------------|
| TA2 | 120 VAC Fahrenheit Model |
| TA2C | 120 VAC Celsius Model |
| TA2-220 | 220 VAC Fahrenheit Model |
| TA2-220C | 220 VAC Celsius Model |



TA6

Dual Set Point Temperature Alarm

Alarms on a rise **AND** fall in temperature.

- Adjustable Range from -10°F to +80°F (-25°C to +30°C)
- 90 db Audible Alarm
- AC Adapter included

MODEL NO.

| | |
|----------------|--------------------------|
| TA6 | 120 VAC Fahrenheit Model |
| TA6C | 120 VAC Celsius Model |
| TA6220 | 220 VAC Fahrenheit Model |
| TA6C220 | 220 VAC Celsius Model |



TA7

Battery Operated Temperature Alarm

For sensitive temperature applications in remote areas, this battery operated unit is inexpensive and easy to install. Alarms on rise in temperature only.

- Adjustable Range from -10°F to 80°F (-25°C to 30°C)
- 70 db Audible Alarm

MODEL NO.

| | |
|-------------|------------------|
| TA7 | Fahrenheit Model |
| TA7C | Celsius Model |

Temperature Alarm Specifications

| | TA2 | TA6 | TA7 | TA22 |
|-----------------------------------|---|---|---|---|
| Alarm Channels | 1 | 1 | 1 | 1 |
| Alarm Adjustment Range | -10°F to 80°F (-25°C to 30°C, Celsius model) | -10°F to 80°F (-25°C to 30°C, Celsius model) | -10°F to 80°F (-25°C to 30°C, Celsius model) | -40°F to 160°F (-40°C to 71°C) |
| Probe | Encapsulated sensor with 6 ft. cord | Encapsulated sensor with 15 ft. cord | Encapsulated sensor with 6 ft. cord | Precision thermistor with 6 ft. cord |
| Sensor Type | Thermistor | Thermistor | Thermistor | Thermistor |
| Maximum Probe extension | 200 ft. | 200 ft. | 100 ft. | |
| Temperature Accuracy (Display) | ±2°F (+/- 1°C) | ±2°F (+/- 1°C) | ±2°F (+/- 1°C) | ±2°F (+/- 1°C) |
| Remote Alarm Connections | Screw type, 120 VAC, 5 Amp (dry contacts) | Screw type 120 VAC, 5 Amp max., (dry contacts) | None | Screw type, 120 VAC 5 Amp max |
| Power | 120 VAC (220 V optional) | 120 VAC (220 V optional) | 9 V alkaline battery (not included) | 120 VAC (220 V optional) |
| Case | Hi-impact thermoplastic | Hi-impact thermoplastic | Hi-impact thermoplastic | Hi-impact thermoplastic |
| Mounting | Surface, external holes provided | Surface, external holes provided | Surface, adhesive pads/ key hole slot | Surface, external holes provided |
| Dimensions | 3" x 4 7/8" x 1 5/8" | 3" x 4 7/8" x 1 5/8" | 5 3/4" x 1 1/2" x 1" | 3" x 5" x 1 1/2" |
| Weight | 13 oz | 13 oz | 5 oz | 13 oz |
| Warranty | 1 year | 1 year | 1 year | 1 year |

Temperature Alarms & Controls



THA2 Temperature Humidity Alarm with logging capability

The THA2 is a multi-function product that monitors Temperature, Humidity and Dew Point, provides alarms for out of range conditions and continuously logs data. No computer setup is needed.

Benefits

Measures and Logs

- Temperature
- Humidity
- Dew Point

Applications

- Food Markets, Convenience Stores, Supermarkets
- Restaurants, Florists, Greenhouses
- Laboratories, Pharmaceutical Storage Facilities
- Refrigerated Transport, Cold Storage Facilities
- Computer Rooms

Features

- Audible and Visual Alarm for Temperature, Humidity and Dew Point (condensation)
- Digital Display
- Log up to 170 Days of Data
- Relay Contacts for Remote Alarm or Auto Dialer (ADTA)
- PC Software Included
- Serial Port Connection (for USB connection use optional USBS adapter)
- Remote Sensor Up to 300 ft

REPLACEMENT PROBE

THA2P 15' Cable Length

ACCESSORIES

19994 100' Cable Extension

19955 300' Cable Extension

THA2 Specifications

Stand alone front panel operation, with user lockout for security. PC software is provided with the unit for viewing data history.

| SENSOR PROBE | |
|---------------------------------|--|
| Operating Temperature Range | -40°F to 140°F (-40°C to 60°C) |
| Operating Humidity Range | 0 to 95% RH, non condensing |
| Temperature Accuracy | ±2°F (+/- 1°C) |
| Temperature Resolution | 0.1°F or °C |
| Humidity Accuracy | ±2% RH |
| Humidity Resolution | 0.1% RH |
| Calibration | User calibration for Temperature and Humidity |
| Dimensions | 3.8"L x 1.1"D |
| Weight | 0.9 oz. |
| Cable Length 15' Included | 300 ft. maximum |
| BASE UNIT | |
| Operating Temperature Range | 32°F to 130°F (0°C to 54°C) |
| Storage Temperature | 0°F to 130°F (-18°C to 54°C) |
| Operating Humidity | 0% RH to 95% RH, non condensing* |
| Power Source | 12V to 24 VAC/VDC, 0.78W alarm active |
| Battery Backup | 9V alkaline battery for 35 hours operation during power outage |
| Clock Battery | CR2032, 10 years typical |
| Relay | N.O and N.C dry contact 5A 250V, resistive load |
| Dimensions | 5.5" x 4.5" x 1.6" |
| Weight (without battery backup) | 8.6 oz. |

| ALARM SPECIFICATIONS | |
|------------------------|--|
| Temperature Alarm | High and Low Temperature and Humidity alarms. Condensation alarm |
| Alarm Delay | User selectable, up to 2 hours |
| Alarm Indication | Audio, Visual and a relay for remote alarm and phone dialer |
| LOGGING SPECIFICATIONS | |
| Sample Rate | 1 second to 30 minutes |
| Data History Storage | 2 hours to 170 days, depending on the sample rate |
| Memory Capacity | 8150 samples for Temperature, Humidity and Dew Point |

* The sensor probe is not designed for continuous exposure to high humidity or caustic and or corrosive chemicals such as, but not limited, to concrete or chlorine.



ADTA Auto Dialer For Temperature Alarms

- Call up to 4 telephone numbers
- 16 second message
- Non-Volatile memory for numbers and voice message
- Internal 9V back up battery (not included)
- LCD display
- 120V power adapter (included)

Temperature Alarm Accessories

| | TA2 | TAL2 | TA4 | TA6 | TA7 | TA3 | TAP4 |
|--|-----|------|-----|-----|-----|-----|------|
| SW25 25' Extension Wire | * | * | | * | * | | * |
| SW50 50' Extension Wire | * | * | | * | * | | * |
| SW75 75' Extension Wire | * | * | | * | * | | * |
| SW100 100' Extension Wire | * | * | | * | * | | * |
| TCW25 25' Type J Thermocouple Wire | | | * | | | * | |
| TCW50 50' Type J Thermocouple Wire | | | * | | | * | |
| TCW75 75' Type J Thermocouple Wire | | | * | | | * | |
| TCW100 100' Type J Thermocouple Wire | | | * | | | * | |
| TA3P Probe w/ 6' Type J Thermocouple Wire | | | | | | * | |

Temperature Alarm Accessories

| | TA2 | TAL2 | TA4 | TA6 | TA7 | TA3 | TAP4 |
|---|-----|------|-----|-----|-----|-----|---------|
| 11093 Probe w/ 6' extension wire | * | | | * | | | |
| TA7PROBE Probe w/ 4' extension wire | | | | | * | | |
| 14265 Replacement Sensor | | * | | | | | * |
| USBS USB to Serial Interface | | * | | | | | |
| 13495 Serial Port Cable | | * | | | | | |
| ADTA Auto Dialer | * | * | * | * | | * | * |
| 14263 120 V Power Adapter (Supplied) | * | | | * | | | * |
| 20540 Replacement Sensor | | * | | * | | | |
| 6' new style metal tip (after serial #) 405-099 | | | | | | | 412-029 |

Temperature Alarms & Controls



TAP4 Four (4) Probe Temperature Alarm

Set alarms for 4 separate temperature applications. Provides a quick alert for a multitude of temperature problems.



| PART NO. | |
|-----------|------------------------------------|
| TAP4 | -40°F to 60°F; 0°F to 100°F, 120V |
| TAP4-220 | -40°F to 60°F; 0°F to 100°F, 220V |
| TAP4C | -18°C to 38°C; -40°C to 16°C, 120V |
| TAP4C-220 | -18°C to 38°C; -40°C to 16°C, 220V |

TAP4 Specifications

| TAP4 | |
|--------------------------|--|
| Alarm Channels | 4 |
| Alarm Adjustment Range | -40°F to 60°F and 0°F to 100°F (-18°C to 38°C and -40°C to 16°C, Celsius model) |
| Probe (14265) | Encapsulated sensor with 15 ft. cord (4 included) |
| Sensor Type | Thermistor |
| Maximum Probe extension | 300 ft. |
| Remote Alarm Connections | Terminal strip screw connection 120VAC, 5 Amp max., (dry contacts) |
| Power | 110V or 220V power adapter supplied |
| Battery Backup | 9V alkaline battery (not included) |
| Case | NEMA 3 Type |
| Mounting | Surface, keyhole or recessed screws |
| Dimensions | 6" x 7 1/2" x 3" |
| Weight | 1.9 Lbs (0.86kg) |
| Warranty | 1 year |



TA3 Digital Temperature Alarm

This panel mounted temperature alarm with digital display provides both an audible and visual alarm.

Alarms on rise or fall in temperature.

- Adjustable Range from -50°F to +170°F (-25°C to +96°C)

| PART NO. | | |
|----------|---------|------------------|
| TA3 | 120 VAC | Fahrenheit Model |
| TA3C | 120 VAC | Celsius Model |
| TA3-220 | 220 VAC | Fahrenheit Model |
| TA3C220 | 220 VAC | Celsius Model |

TA3 Specifications

| TA3 | |
|--------------------------|--|
| Alarm Channels | 1 |
| Alarm Adjustment Range | -50°F to 170°F (-30°C to 96°C, for Celsius model) |
| Probe | Encapsulated sensor with 6 ft. cord (TA3P) |
| Sensor Type | J-Type Thermocouple |
| Maximum Probe extension | 2000 ft. |
| Remote Alarm Connections | Screw type 120 VAC, N.O., 0.1 Amps max., (dry contacts) |
| Power | 120 VAC (220 V optional) |
| Battery Backup | 9V alkaline battery (not included) |
| Case | Panel Mount (1 3/4" x 3 5/8" cut out required) |
| Dimensions | 1 11/16" x 3 9/16" x 5 3/16" |
| Weight | 24 oz |
| Warranty | 1 year |



TAL2 Dual Temperature Alarm Logger

Set high and low alarms for two (2) temperature sensitive applications, and track their temperature trends, simultaneously.



Logger Functions

- Programmable interval (1 sec. to 18 hrs.)
- Data rollover
- Store 32,250 (single temp.) or 16,125 (dual temp.) data points
- Battery backup
- Software and cable included
- Minimum System Requirements: 8MB of RAM, 2M of disk space, 800 x 600 resolution, 1 free COM port or a free USB port (optional USB interface is required, p/n USBS)

Alarm Functions

- Adjustable Range from -50°F to 86°F (-45°C to 30°C)
- Audible alarm & Relay contacts
- Relay contacts can connect to remote alarm dialer
- Programmable alarm delay
- Alarm event storage (up to 45 events)

TAL2 Specifications

| TAL2 | | TAL2 | |
|-------------------------|--------------------------------------|--------------------------|---|
| Alarm Channels | 2 | Power | 110V or 220V power adapter supplied (p/n 14950) |
| Alarm Adjustment Range | -50°F to 86°F (-45°C to 30°C) | Battery Backup | 9V alkaline battery (not included) |
| Accuracy | ±2% | Case | Hi-Impact thermoplastic |
| Probe (p/n 14265) | Encapsulated sensor with 15 ft. cord | Dimensions | 3" x 2.5" x 1.1" |
| Sensor Type | Thermistor | Weight | 2.5 oz |
| Maximum Probe extension | 300 ft. 48 volts, 100mA maximum | Warranty | 1 year |
| | | Remote Alarm Connections | Normally Open (N.O.) Closed on alarm. |



M500 Insulation Tester/Electronic Megohmmeter

An inexpensive alternative to expensive taut band (swing needle) megohmmeters, the M500 provides fast and accurate measurements to verify the condition of insulation.



Features/Benefits

- Measure insulation values up to 1000 megohms @ 500 VAC
- Zone scale to indicate insulation condition
- Hand held
- Test Leads store in case
- Operates on 2 C batteries (not included)
- Impact resistant
- Soft carrying case included

Applications

- Test motor winding insulation and diagnose heat damaged, deteriorating insulation in...
- Hermetic Refrigeration compressors
 - Appliances
 - Panel boards
 - Relay control circuits
 - Motors

Specialty Instrument Selection Guide

- Measurement/Function - Insulation Resistance
- Range - 20 to 1000 megohms

Standard Accessories

PART NO.

MCASE Soft Case



M501 Insulation Tester/Electronic Megohmmeter

Enjoy the same great features of the M500 in a sturdy service case.



Specialty Instrument Selection Guide

- Measurement/Function - Insulation Resistance
- Range - 20 to 1000 megohms

Application Note:

Testing HVAC and Refrigeration Compressors and Motors

Many HVAC and Refrigeration motors require special test parameters since the winding operates in an oil and refrigerant atmosphere.

In a hermetic motor, under normal conditions the oil and refrigerant have a high electrical resistance. However, when they are contaminated with moisture, the electrical resistance changes and a low megohm reading of the winding terminal to ground may actually be the resistance of the contaminants in the oil and not in the winding insulation.

Newer motors have an insulation resistance value of more than 100 megohms, typically. Measurements of 50 megohms or less indicate a problem. Either the winding insulation is deteriorating or the oil/refrigerant is contaminated.

Installing an oversized drier may clean up the system or another possible solution could be replacing all the compressor oil. In either case, if the megohm tests show even the slightest improvement in resistance values the remedy may have checked a declining condition.

A good 'rule of thumb' is to smell a small sample of the oil. If the motor was ever severely overloaded, it will leave a tell tale trace in the oil that can only be removed by changing all of it.

The odor of burnt insulation is easily recognized and a low resistance value of 20 megohms or less will verify that the motor insulation may be severely damaged.



MFD10 Digital Capacitor Tester

With one hand operation, the MFD10 provides the fastest measurements for capacitor values.



Features/Benefits

- Range 0.01 to 10,000 mF
- Accuracy $\pm 5\%$
- Test clip storage within case
- Alligator clips to capacitor terminals
- LED display
- One button operation
- Operates on one 9V Battery (not included)
- Soft carrying case included

Applications

- Verification of Start and Run Capacitors
- Checks for open and short capacitors
- Identify unmarked capacitors
- Confirms weak capacitors
- Use as continuity tester

Specialty Instrument Selection Guide

- Measurement/Function - Capacitance
- Range - 0.01 to 10,000 MFD

Standard Accessories

PART NO.

MFDCASE Soft Case

MFDUSE Fuse

Specialty Meters

DAVM+ Digital Air Flow/Volume Meter

Measure Air Flow (FPM) and Volume (CFM) in the palm of your hand. Compact and easy to use, the DAVM+ also measures Temperature, Humidity and Light. Ideal for air balancing and other indoor air quality applications.

Features/Benefits

- Measures Feet per Minute (FPM) and Cubic Feet per Minute (CFM)
- Easy CFM Set-Up Flow Chart with Grille Free Area Chart (Included)
- Measures Temperature and Humidity
- °F/°C Selectable
- Standard K-Type Thermocouple Connector
- Measures Light Levels (LUX)
- Multi-Channel Display
- Data Hold
- One-Hand Operation
- Carrying Case (SCASE) Included

Applications

- Identify Air Flow Problems
- Air Quality
- Air Balancing
- Measure Light Levels

General Specifications

| | |
|-----------------------|---|
| Measurement | Anemometer, Humidity, Temperature, Light, Air flow (CFM/CMM). |
| Operating Humidity | 80% RH Max |
| Operating Temperature | 32° to 122°F (0 to 50°C) |
| Over Input Display | Indication of " - - - " |
| Power Supply | 9V battery (not included) |
| Power Consumption | Approx. 6.2 mA DC |
| Weight | 5.6 oz (160g) |
| Dimension | 6.14" x 2.36" x 1.29" 156 x 60 x 33 mm |

Measurement Specifications

| MEASUREMENT | | RANGE | RESOLUTION | ACCURACY |
|--------------------------|-------------------------|---------------------|--------------|--|
| Air Velocity | ft/min | 80 to 5,910 ft/min | 1 ft/min | ≤ 20 m/s : ± 3% F.S. > 20 m/s : ± 4% F.S. |
| | m/s | 0.4 to 30.0 m/s | 0.1 m/s | |
| | km/h | 1.4 to 108.0 km/h | 0.1 km/h | |
| | MPH | 0.9 to 67.0 mile/h | 0.1 MPH | |
| | knots | 0.8 to 58.3 knots | 0.1 knots | |
| Temperature (thermistor) | ° F | 32° to 122 °F | 0.1 °F | ± 2.5 °F |
| | ° C | 0° to 50 °C | 0.1 °C | ± 1.2 °C |
| Air Flow | CFM (cube feet/min) | 1,908,400 CFM | 0.001 to 100 | 0.001 to 1 |
| | CMM (cube meter/min) | CMM | 54,000 CMM | |
| | | | | |
| Humidity | % RH | 10 to 95 % RH | 0.1 % RH | < 70% RH : > 70% RH : : ± (4%rdg+1.2%RH) |
| | | 10 to 95% RH | | |
| | | ± 4% RH | | |
| Light | Lux | 0 to 2,200 Lux | 1 Lux | ± 5% rdg ± 8 dgt |
| | | 1,800 to 20,000 Lux | 10 Lux | |
| | | 0 to 20,000 Lux | | |
| | | 0 to 2,000 Fc | | |
| Temperature (Type K) | | -148 to 2,372 °F | | +(1% rdg + 2°F) +(1% rdg + 1°C) |
| | | -100 to 1,300 °C | | |
| *auto range | Ft-cd | 0 to 204.0 Fc | 1 Ft-cd | |
| | | 170 to 2,000 Fc | 1 Ft-cd | |



Accessories

STANDARD

SCASE Soft Carrying Case

OPTIONAL

TPFDA FDA Approved Thermocouple Probe

TPP Thermocouple Piercing Probe

TPS Thermocouple Surface Probe

MEASUREMENT AREA SET

CFM 0.01 to 322.92 feet square

CMM 0.001 to 30.000 meter square

RPT61 Pressure Temperature Chart Master

For instant information, the PT Chart Master eliminates the need for traditional pressure/temperature charts. Accurate and easy to use, the RPT61 provides pressure and temperature correlation for 66 different refrigerants.

Features/Benefits

- Choose Pressure in PSI, BAR or Mpa
- Choose Temperature in °F or °C.
- 66 Refrigerant Tables
- Large LCD
- Auto off (after 5 min.)
- Pocket size
- Battery Included Power: 3 V (CR2032)
- Soft carrying case included
- 1 year Warranty

Applications

- For calculating Superheat or Sub-Cooling

Specifications

| PRESSURE UNITS | RANGE |
|-------------------|----------------|
| PSI | 5.1 to 462.5 |
| BAR | 0.35 to 31.88 |
| MPa | 0.035 to 3.188 |
| TEMPERATURE UNITS | |
| Fahrenheit | -40°F to 155°F |
| Celsius | -40°C to 68°C |





IAQ Series Indoor Air Quality Instruments

SUPCO's IAQ Series measure Carbon Dioxide (CO₂), Temperature and Humidity with Dew Point and Wet Bulb. Ideal for air quality

diagnosis, they can be useful in identifying sick building syndrome due to high levels of CO₂. Choose from a hand held meter or a wall mounted/ desktop monitor.



IAQ50

Common Features/ Benefits

- Non-Dispersive Infrared (NDIR) Sensor
- Visible/ Audible (80db) CO₂ Alarm
- Large Triple Function LCD Display
- Min./ Max., Average Recall
- Alarm Output Relay
- Long Time Drift Compensation
- Non-Dispersive Infrared (NDIR) Sensor
- 12 VDC Power Adapter (120 VAC Supplied)
- TWA (Time-Weighted Average) 8 HRS
- STEL (Short-term exposure limit) 15 Minutes

Applications

- Residential
- Offices
- Restaurants
- Warehouses
- Garages
- Green Houses



IAQ55

IAQ50 Wall Mounted Indoor Air Quality Monitor

...for continuous monitoring of important IAQ parameters.

- Desktop or Wall Mounting
- Alarm Output Relay
- 12 V Power Adapter (included)

IAQ55 Handheld Indoor Air Quality Monitor

...for pinpointing IAQ problem areas

- Portable
- Backlight LCD Display Function
- Auto Shut-off

Specifications

| CO2 | IAQ55 | IAQ50 |
|---------------------|--|-----------------------------------|
| Range | 0-2000ppm 2001-9999 (out of scale) | |
| Resolution | 1ppm | |
| Accuracy | ±75ppm±5%rdg (0-2000 ppm) | ±50ppm±5%rdg (0-2000 ppm) |
| | Not specified for out of scale | Not specified for out of scale |
| Pressure Dependence | +1.6% reading per kPa deviation from normal pressure, 100kPa | |
| TEMPERATURE | | |
| Range | 14 to 140°F (-10.0 to 60.0°C) | |
| Resolution | 0.1°F (0.1°C) | |
| Accuracy | ±0.9°F (± 0.6°C) | |
| HUMIDITY | | |
| Range | 0.0 to 99% Non-Condensing | |
| Resolution | 0.1% | |
| Accuracy | + -3% (10 to 90%) + -5% (others) | |
| GENERAL | | |
| Warm Up | 30 seconds | |
| Operating | +32 to 122°F (0 to 50°C) 0-95% RH Non-Condensing | |
| Storage | -4 to 140°F (-20 to 60°C) 0-99% RH Non-Condensing | |
| Power | 4 AA batteries (Included) | 12V adapter (Included) |
| Battery Life | 24 hours (Alkaline) | |

CO1000 Carbon Monoxide Meter

Measure CO quickly and easily in working and living environments.



Features/Benefits

- Backlit LCD
- Automatic calibration
- Max Hold and Data Hold
- Auto Power Off
- Audible Alarm
- From 35 PPM to 200 PPM, the beeper sounds periodically
- Above 200 PPM, the beeper sounds continuously

Applications

- Check dangerous CO levels
- Identify malfunctioning equipment

Specifications

| | |
|------------------------|---|
| Measurement Range | 0 to 1000 PPM |
| Measurement Resolution | 1 PPM |
| Accuracy | 5% or ±10 PPM (0-100 PPM) 10% ± 10 PPM (>100PPM) |
| Warm Up Period | < 2 Seconds |
| Operating Temperature | 32°F to 122°F (0°C to 50°C) |
| Storage Temperature | -22°F to 140°F (-30° to 60°C) |
| Operating Humidity | 0-99% Relative Humidity (non-condensing) |
| Battery | 9V (included) |
| Auto Power Off | After 15 minutes of inactivity |
| Sensor Type | Stabilized electrochemical Gas-specific (CO) |
| Typical Sensor Life | 3 years |

CL50 Combustible Gas Leak Detector

Detect Combustible Gas quickly and easily. With Audible and Visual alarms, the inexpensive, pocket-size CL50 Provides accurate and instantaneous response in a combustible environment.



Features/Benefits

- Detects Combustible Gases and Static Electricity
- Audible and Visual Alarms
 - Green LED Indicates Power is On
 - Red LED and Buzzer Indicates Presence of Combustible Gas
 - Yellow LED and Buzzer Indicates Static Electricity is Detected
- Pocket Size • Easy to Use • 1 Year Warranty

SPECIFICATIONS

| | |
|-------------------------|------------------------------------|
| Operating Temperature | 14°F to 122°F (-10°C to 50°C) |
| Operating Humidity | 95% RH or Lower (non-condensing) |
| Natural Gas Sensitivity | 500 ppm min, 6500 ppm max |
| Propane Sensitivity | 1000 ppm min, 6500 ppm max |
| Power Consumption | DC 200mA |
| Battery | 1.5V X 2(AAA Size) |
| Duration of Use | Approximately 4 hours continuously |
| Dimensions | 6.5 in. X 0.08 in. (164 mm X 21mm) |
| Weight | .88 oz. (25g) |

Specialty Meters

DDM55 Dual Digital Manometer

Isolate difficult pressure problems in natural gas and propane systems with the DDM55 dual input Digital Manometer. Providing a differential measurement, the DDM55 accurately tests for leaks in low-pressure gas systems and more.



Features/Benefits

- Dual input
- Range: -55.0 to +55.0 Inches Water Column
- Resolution to 0.01"
- Provides Differential Measurements
- 11 Units of Measure
- Data Hold
- LCD Display w/ Backlight
- Auto Power Off
- 9 V Battery Included
- Soft Carrying Case Included

Applications

- Confirm Pressure Switch Operation
- Regulator Adjustments
- Set Delivery Pressures
- Leakage Tests

Specifications

| FUNCTION | RANGE | RESOLUTION |
|------------------------|----------|------------|
| InH ₂ O | +/-55.40 | 0.01 |
| psi | +/-2.000 | 0.001 |
| Mbar | +/-137.8 | 0.1 |
| kPa | +/-137.9 | 0.01 |
| inHg | +/-0.407 | 0.001 |
| mmHg | +/-103.4 | 0.1 |
| ozin ² | 32.00 | 0.01 |
| FtH ₂ O | 4.612 | 0.001 |
| cmH ₂ O | 140.6 | 0.1 |
| Kgcm ² .140 | 0.001 | |
| Bar | 0.137 | 0.001 |

MTM1028 Moisture Test Meter

Moisture is the #1 reason for mold problems. The MTM1028 provides details to moisture levels in virtually all materials. Use the piercing probes with 3 foot cable to test for moisture anywhere.



Features/Benefits

- Indicates 10% to 28% moisture levels
- Dual scale for maximum resolution
- Dual piercing probes
- 3 foot coiled cable

Applications

- Pinpoint areas ideal for mold growth
- Locate water leaks and check for wet rot
- Find out if potentially damaging excess moisture is present
- Detect moisture level in wood, concrete, plaster, carpet and more.



WA100 Water Alarm w/Remote Sensor

Protect property and valuable possessions. With its 85dB alarm, the WA100 will alert you immediately of the presence of water.

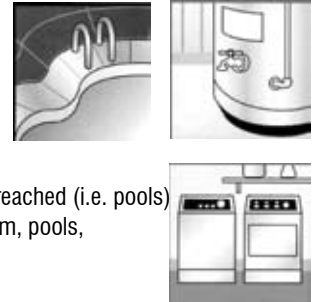


Features/Benefits

- 85 dB alarm sounds for up to 3 days.
- Remote sensor has 6 foot wire
- Dual position sensor
- Test button
- Wall mountable alarm

Applications

- Warns of leaks and overflows
- Alerts user when desired water level is reached (i.e. pools)
- Kitchen, laundry, furnace, computer room, pools, aquariums, more...



DHS55 Digital Handheld Scale

This compact handheld scale provides quick measurements for your refrigeration applications.



Features/Benefits

- 55 lbs max scale
- 2% accuracy
- One button operation
- Lbs/Kgs switchable
- 9 V battery included

Specialty Instrument Selection Guide

- Measurement/Function - Weight
- Range - 0 to 55 lbs

CTC3 Cap Tube Computer

Calculate the flow rate of a defective cap tube and duplicate that flow rate with cap tubes that have a different I.D.



Features/Benefits

- Computes inside diameter, length, refrigerant, horse power, application and flow rate
- Shows temperature/pressure charts for 12 refrigerants
- Compact, light weight & easy to use!
- Converts Cap Tubing used with refrigerants R12, 134A, R22, and R502

Specialty Instrument Selection Guide

- Measurement/Function - Cap Tube parameters
- Range - Various

Note: See Cap Tubing Section pages 29-31 for a complete listing of Cap Tubing Replacements used with alternative refrigerants.

Multimeter & Current Probes



DM10T Economy Digital Multimeter with Temperature

The DM10T Digital Multimeter provides an economical solution to your everyday electrical and temperature measurement needs.

Features/Benefits

- 1000 Volts DC
- Continuity
- 2M W Resistance
- 10 Amps DC
- 750 Volts AC
- Temperature

Current Probes



CPH100 HVAC Current Probe

Features/Benefits

- 400 Amps AC
- DC μ Amps
- AC/DC Volts
- Resistance
- Capacitance
- Temperature
- Frequency
- Continuity
- Auto Shut off
- 1 year Warranty
- Includes Test Leads



Applications

- HVAC Equipment Consumption
- Flame Safeguard circuits (CPH100)
- Branch Circuit Current
- AC Line and Control Voltages
- Continuity Check
- Temperature Testing
- Capacitor Testing



CP070 Open Jaw Multi Probe

Features/Benefits

- Simultaneous measurements: 200 Amps AC and one of the following:
 - AC or DC Volts
 - Resistance
 - Capacitance
 - Frequency
- Two LCD displays
- 3 year Warranty

Digital Multimeters and Current Probe Specifications

| | DM10T | CP070 | CPH100 |
|---------------------------------------|--|--|--|
| Volts AC | 750 | 600 | 600 |
| Volts AC Best Resolution | 1 V | 1mV | 0.1mV |
| Volts DC | 1000 | 600 | 600 |
| Volts DC Best Resolution | 0.1 mV | 0.1mV | 0.1mV |
| Amps AC | 10 | 200A | 400A |
| Amps AC Best Resolution | 0.1mA | 100mA | 0.1A |
| Frequency (Hz) | | 9.999MHz | 150.0KHz |
| Frequency Best Resolution | | 0.001Hz | 0.001Hz |
| Base Accuracy (DC Volts) (AC Amps) | $\pm 0.5\% \pm 2$ dgts | $\pm 1.2\% \pm 2$ dgts $\pm 3.0\% \pm 3$ dgts | $\pm (1.5\% + 3$ dgts) $\pm (2.0\% + 3$ dgts) |
| Resistance max. (Ohms) | 2 M | 40M | 40M |
| Continuity | Yes | Yes | Yes |
| Capacitance | | 200 μ F | 100.0 μ F |
| Best Resolution | | 1pF | 0.01nF |
| Temperature | -4 °F to 2498° F (-20° C to 1370 °C) | | -50°F to 2372°F -5°C to 1300°C |
| Temperature Accuracy | $\pm 3 \pm 2$ digits | | $\pm (3\% + 5$ digits) |
| Display (Counts) | 2,000 | 2,000 | 4,000 |
| Data Hold | | Yes | Yes |
| Sleep Mode | | | Auto Shut Off |
| Operating Temperature | 32° F to 74° F (0°C to 23°C) | 14°F to 122°F (-10°C to 50°C) | 14°F to 122°F (-10°C to 50°C) |
| Storage Temp. Temperature | | -22°F to 140°F (-30°C to 60°C) | -22°F to 140°F (-30°C to 60°C) |
| Relative Humidity | 0% to 75% RH | 0% to 90% RH | 0% to 90% RH |
| Fuse Protection | mA: 0.2A/ 250V | | |
| Power | 9 V Battery (included) | 2 AA Batteries (included) | 2 1.5V AAA Batteries (included) |
| Size | 5.5"L x 3"W x 1.5"D (140mm x 76mm x 36mm) | 8.5"L x 2.0"W x 1.7"D (216mm x 51mm x 43mm) | 7.9"L X 2.0"W X 1.4"D (200mm X 50mm X 35mm) |
| Weight | 8 oz (227 g) | 16 Oz. (454g) | 7.1oz (200g) |
| Warranty | 1 Year | | 1 Year |

Optional Accessories



TLA Test Leads

- 1000V AC or DC max
- 10 Amps max
- Includes screw-on alligator clips



TPFDA FDA Approved Temperature Probe



SCDM/SCCP Soft Deluxe Cases

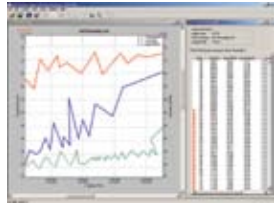
Features/Benefits

- Rugged Cordura Case
- Zippered Case

Soft Case Dimensions

| PART NO. | DIMENSIONS |
|----------|-------------------------------------|
| SCDM | 6 1/4" Wide 9 3/4" Long 2 1/2" Deep |
| SCCP | 5 1/4" Wide 7 1/4" Long 2 1/2" Deep |

Data Loggers



DVTH Data View Data Logger Temperature Humidity Logger with Display



Record and INSTANTLY display trends for temperature, humidity and dew point with the DVTH. Monitor real time measurements for instant environmental conditions. When you're ready, download over 40,000 data points to your PC for further analysis. Data logging has never been this visual!

Features/ Benefits

- Text Display: Real time temperature, humidity and dew point. Logging summary, sample rate, memory used and memory left
- Graph Display: Shows measurement trends graphically, with scrolling feature.
- Visual over and under alarm indicators for temperature and humidity
- USB connection (cable included)
- Compatible with Windows™ 98SE, ME, 2000, XP, Vista and above
- Calibration through software

Applications:

- Refrigerators/Freezers
- Commercial Refrigeration Systems
- Wine Storage
- Greenhouses
- Florists
- Museums
- Medical Storage Facilities
- Laboratories

Logger Specifications

| | |
|------------------------------|--|
| Text Display | Displays real time temperature, humidity and dew point. Displays logging summary, sample rate, memory used and memory left. |
| Graph Display | Shows measurement trends graphically. Graph can be scrolled through the entire logged data. |
| Sample Point Capacity | 43,344 points for temperature only. 21,672 points for temperature, humidity and dew point. |
| Alarms | Visual over and under alarm indicator for temperature and humidity. Dew point alarms are not available |
| Calibration | User single point offset calibration is available through software for both temperature and humidity. Calibration is password protected. |
| Operating Temperature | 15°F to 150°F (-10°C to 65°C) |
| Storage Temperature | -5°F to 160°F (-20°C to 70°C) |
| Time Accuracy | ±100ppm @75°F |
| Relative Humidity Range | 0% to 99%RH, non condensing. |
| Relative Humidity Accuracy | ± 2%RH, from 10% to 90% RH |
| Relative Humidity Resolution | 0.01%RH |
| Temperature Accuracy | ±1°F (0.5°C) |
| Temperature Resolution | 0.01°F or 0.01°C |
| Dimensions | 4" x 3.05" x 1.5" (10.2cm x 7.7cm x 3.8cm) |
| Weight | 7.0 oz (200g) |
| Power Source | 3 AA Alkaline or Lithium batteries |
| Battery Life (average use) | 2 Years |

Software Specifications

| | |
|--------------------------------|--|
| PC Interface | USB port. USB cable is included |
| Sampling Interval | User selectable from 1 second to 18 hours, in 1 second increments. |
| Data Security | Unique factory set logger ID. Recording session counter. Password protected calibration. |
| Operating System Compatibility | Windows 98SE, Windows ME, Windows 2000, Windows XP, Vista and above. <u>Not compatible with Windows NT or Windows 95.</u> |
| Minimum System Requirements | 5MB of free disk space, 800 x 600 screen resolution, 1 free USB port. |
| Recording Start | On button press, immediate after setup, or at a user specified date and time. |
| Recording Mode | Stop on memory full, or continuous recording with memory rollover |
| Real Time Status | Visual indication through the status LED. Software real time status. |
| User Calibration | Password protected calibration for each channel. |
| User Information | Up to 30 characters |
| Logger Channels | User selectable. Disabling channels increases the storage capacity of the other channels. |
| Units | US and Metric |
| Data Format | Exportable to text or Excel files. |

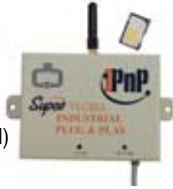
Super Vision Series - 5 in 1 Temperature and Humidity Printer Logger

The VLT Loggers are feature packed, strip recorder/alarm devices. Models with 1 to 4 channels to monitor temperature, humidity or switches with programmability for each. The Large digital display, PC Interface without additional software, 4 modes of printing and remote alarm dialer contacts give these devices features found on products costing much more.



EN 2830

VLCELL (optional)
Cellular Data
Transfer



VLT Temperature Data Logger Recorder

Features/Benefits

- Monitoring, logging, alarms and printing in real time
- Up to 4 input channels of temperature, humidity and switches
- Reading intervals from 1 to 120 minutes, 1 min. increments
- Over and under alarms plus delay setting for each channel
- Operating and setting by means of 6 function keys
- Printed help and instruction messages on request during unit setup
- 1 channel printing in auto scale graph mode, including alarms
- 1 to 4 channel printing full reports in 3 text modes, including alarms
- On line display/minimum or maximum on request
- Exporting real time data thru RS-232 PC port- no software needed
- °F or °C degrees, date format: dd/mm/yy or mm/dd/yy
- Battery back up
- Low battery, chart end and probe error indicators and alarms buzzer
- Remote alarm output via relay contacts of 0.5A, 115V
- Remote probes 33' (10 meters) cable length, extendible up to 100'
- Data and settings retained after power failure
- Base unit operating humidity: 0 to 95% RH, non-condensing



Specification

| | |
|-----------------------------|---|
| Base Unit | |
| Operating Temperature Range | 32°F to +140°F (-0°C to +60°C) with alkaline battery 0°F to +150°F (-18°C to +65°C) with lithium battery |
| Operating Humidity | 0 to 95% RH, non-condensing |
| Storage Temperature | -40°F to +150°F (-40°C to +65°C) |
| Battery Back-up | 9 volt |
| Clock battery | 3.6 volt lithium |
| Dimensions | 8.2" X 5.3" X 2.7" (208.6 mm X 135 mm X 69 mm) |
| Weight | 2.6 lbs. (1.8 kg) |

| PART NO. | INPUT | MEASURING OPTIONS | INCLUDED PROBES 33' | SAMPLE CAPACITY |
|-----------------|-----------|--|--|--|
| VLTH-12 | 12 VAC/DC | Any combination of temperature and switches up to 4 channels | 1 "VLT PROBE" (for temperature) 1 "VLS CABLE" (on/off indication) | 16,200 points of temperature and switches (4 probes) |
| VLTH-115 | 115 VAC | | | |
| VLTH-230 | 220 VAC | | | |
| VLT-12 | 12 VAC/DC | Temp., humidity and switch or 2 channels of temp. and humidity | 1 "VLTH PROBE" (temp./humidity) 1 "VLS CABLE" (on/off indication) | 16,200 points temperature, and humidity (4 channel) |
| VLT-115 | 115 VAC | | | |
| VLT-230 | 220 VAC | | | |

Accessories

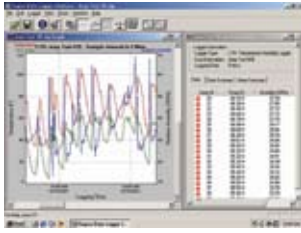
| | |
|-----------------|------------------------------|
| VLPAPER | 2" Thermal chart roll 131' |
| VLWPCASE | Water proof case + lock |
| VLSK | Remote alarm silencer |
| CABLE10H | Sensor extension 10' |
| CABLE33H | Sensor extension 33' |
| VPR | Power reducer 24 to 12V |
| ADTA | Auto phone dialer |
| VLCEL | Cellular adaptor to internet |

| PROBE MODEL | WORKING RANGE | RESOLUTION | ACCURACY | REPEATABILITY | RESPONSE |
|-------------------|--|------------|----------|---------------|-----------|
| VLT PROBE | -40°/130°C | 0.1°C | ±0, 3°C | ±0.1°C | 5-30 Sec. |
| Temperature | -40°/266°F | 0.2°F | ±0.6°F | ±0.2°F | |
| VLTH PROBE | -40°/85°C | 0.1°C | ±0, 5°C | ±0.1°C | 5-30 Sec. |
| Temperature | -40°/185°F | 0.1°F | ±1, 0°F | ±0.2°F | |
| and Humidity | 10.0/89.9% RH | 0.1% RH | ±2% RH | ±0.1% RH | 6-10 Sec. |
| | 0.1-9.9/90-100% | 0.1% RH | ±4% RH | ±0.5% RH | Sec. |
| VLS CABLE | Recognized dry contacts - for On/Off indication switch | | | | 1 Sec. |

Data Loggers

LOGiT Series

Select the right Logger for your application...



Features/Benefits

- Stores over 10,000 measurement points
- 1 second to 18 hour sample rate; 1 second increments
- Custom user identification (30 characters)
- Real Time data monitoring
- Over/Under Alarm threshold settings
- Visual alarm indication
- User selectable Recording Start (Specify date & time, immediate after setup or on door close)
- Tamper proof
- 20 month battery life (at 1 minute sample rate)
- Data rollover option
- Unique logger ID
- One PC Software operates with all loggers (LLS not included)
- Graphic or text data
- Zoom capability
- USB interface optional (USBS)
- 1 year warranty

Application Note:

The LOGiT Series Data Loggers have one common PC Software and Interface Kit (LLS or LLSU).

Choose one or more LOGiT Data Loggers and the appropriate PC Software Interface Kit to complete your Data Logger selection. See page 87 for details.

For Temperature and Temperature/Humidity Sensitive Applications:

- Refrigerators/Freezers
- Commercial Refrigeration Systems
- Medical Storage Facilities
- Laboratories
- Greenhouses
- Florists
- Museums



LT2 Temperature Logger (Internal & External)

- One Internal and One External Temperature Measurement, simultaneously



LTT Dual Temperature Logger

- 2 Independent External Temperature Measurements & Temperature Differential
- 2 DLTP6 Sensors (Included)



LTC Thermocouple Temperature Logger

- One Internal and One External (J, K, E, T, R, S Thermocouples) Temperature Measurement



LTH Temperature and Humidity Logger

- Integral Temperature, Humidity and Dew Point Measurements



LPT Pressure and Temperature Logger

- External Pressure and Temperature Measurements

For Pressure and Temperature Sensitive Applications:

- Compressor Run Cycles
- Testing New Installations
- Pneumatic air lines
- Tracking Intermittent Problems
- Superheat Measurements



LCV Current and Voltage Logger

- External Current Probe and Voltage Measurements

For Simultaneous Single Phase Current and Voltage Monitoring:

- Compressor and Fan Run Cycles
- Verification of Power Conditions
- Use three LCV's for Three Phase Applications



L420 4 – 20 ma Logger

- Connection for 4 – 20 ma loop measurements

For Monitoring 4 – 20 ma Process control loops in:

- Manufacturing
- Package Handling
- Automated Test Systems

LT2, LTH, LTC & LTT Data Logger Specifications

| | LT2 | LTH | LTC | LTT |
|--|--|--|--|--|
| Sample Point Capacity | 21,500 points (Single channel) 10,750 points and differential (Dual channel) | 21,500 for temperature only 10,750 points for Temperature, Humidity and Dew Point | 10,750 points for external and internal temperature | 21,500 temperature points (1 probe) 10,750 temperature points and differential (2 probes) |
| Sampling Rate | 1 second to 18 hours | 1 second to 18 hours | 1 second to 18 hours | 1 second to 18 hours |
| Alarms | Over and under alarms for each probe. | Over and under alarms for temperature & humidity. | Over and under alarms for each probe | Over and under alarms for each probe. |
| Temperature Range (Internal Sensor) | 32°F to 140°F (0°C to 60°C) w/ Alkaline Battery -40°F to 150°F (-40°C to 65°C) w/ Lithium Battery | 32°F to 140°F (0°C to 60°C) w/ Alkaline Battery -40°F to 150°F (-40°C to 65°C) w/ Lithium Battery | 32°F to 140°F (0°C to 60°C) w/ Alkaline Battery -40°F to 150°F (-40°C to 65°C) w/ Lithium Battery | |
| Temperature Range (External Sensor) | -40°F to 150°F (-40°C to 65°C) | | Depends on thermocouple J,K,E,T,R,S | -50°F to 300°F (-46°C to 150°C) 2DLTP6 |
| Accuracy | ±1.0°F (0.5°C) | ±2°F (1°C) | Depends on thermocouple | ±2°F (1°C) |
| Resolution | 0.1°F (0.05°C) | 0.1°F (0.05°C) | 0.1°F (0.05°C) | 0.1°F (0.05°C) |
| Time Accuracy | ±100ppm @75°F | ±100ppm @75°F | ±100ppm @75°F | ±100ppm @75°F |
| Relative Humidity Range | | 0% to 99.9% RH, Non-condensing. | | 0% to 95% RH, non-condensing |
| Relative Humidity Accuracy | | ±2% full scale, from 0% to 95% RH for temperatures between 32°F and 140°F (0°C to 60°C) | | |
| Relative Humidity Resolution | | 0.1% RH | | |
| Temperature using Alkaline Battery | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) |
| Temperature using Lithium Battery | -40°F to 150°F (-40°C to 65°C) | -40°F to 150°F (-40°C to 65°C) | -40°F to 150°F (-40°C to 65°C) | -40°F to 150°F (-40°C to 65°C) |
| Operating Range Humidity | 0% to 95% RH, Non-condensing | 0% to 99.9% RH, Non-condensing | | |
| Storage Temperature | -40°F to 170°F (-40°C to 77°C) | -40°F to 170°F (-40°C to 77°C) | -40°F to 170°F (-40°C to 77°C) | -40°F to 170°F (-40°C to 77°C) |
| Calibration | Single point offset calibration available through software. | Single point offset calibration available through software. Humidity is factory calibrated. | Single point offset calibration available through software. | Single point offset calibration available through software. |
| Dimensions | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) |
| Weight | 2.5 oz (71g) | 2.5 oz (71g) | 2.5 oz (71g) | 2.5 oz (71g) |
| Power Source | 9V Alkaline or Lithium battery (not included) | 9V Alkaline or Lithium battery (not included) | 9V Alkaline or Lithium battery (not included) | 9V Alkaline or Lithium battery (not included) |
| Battery Life (average use) | 18 Months using Alkaline Battery 36 Months using Lithium Battery | 20 Months using Alkaline Battery 40 Months using Lithium Battery | 20 Months using Alkaline Battery 40 Months using Lithium Battery | 20 Months using Alkaline Battery 40 Months using Lithium Battery |

*Note: Logger needs optional **LLS** or **LLSU** Software package to program data logger and download data for analysis. It is not included with any LOGit data logger.

*Note: The SUPCO LOGit and DL Series Loggers are NOT compatible.

Data Loggers

LPT, LCV & L420 Data Logger Specifications

| | LPT | LCV | L420 |
|-------------------------------------|---|---|---|
| Sample Point Capacity | 10,750 points for Pressure & Temperature 21,500 points for Pressure OR Temperature | 10,750 points for Current & Voltage 21,500 points for Current OR Voltage | 21,500 points |
| Sampling Rate | 1 second to 18 hours | 1 second to 18 hours | 1 second to 18 hours |
| Alarms | Over and under alarms for Pressure & Temperature | Over and under alarms for current and voltage | Over and under alarm |
| Temperature Range (External Sensor) | -40°F to 150°F (-40°C to 65°C) | | |
| Accuracy | ±1°F (0.5°C) | | |
| Resolution | 0.1°F (0.05°C) | | |
| Time Accuracy | ±100ppm @75°F | ±100ppm @75°F | ±100ppm @75°F |
| Pressure Range | 0-500 psi | | |
| Pressure Sensor Temperature Range | -4°F to 185°F -20°C to 85°C | | |
| Compensated Temperature Range | 32°F to 130°F 0°C to 55°C | | |
| Pressure Accuracy | ±3 psi | | |
| Pressure Resolution | 0.15 psi | | |
| Pressure Connection | 1/4" MPT Pressure Sensor Connection | | |
| Input Current Range | | 0-300 Amps | 0-40 ma |
| Current Accuracy | | ±5% | ±0.05 ma |
| Current Resolution | | 0.1 Amp AC | 0.01 ma |
| Voltage Range | | 0-500 Volts AC | |
| Voltage Accuracy | | ±1 VAC | |
| Voltage Resolution | | 0.1 VAC | |
| Temperature using Alkaline Battery | 32°F to 130°F (0°C to 54°C) | 32°F to 130°F (0°C to 54°C) | 32°F to 140°F (0°C to 60°C) |
| Temperature using Lithium Battery | -40°F to 150°F (-40°C to 65°C) | -40°F to 150°F (-40°C to 65°C) | -40°F to 150°F (-40°C to 65°C) |
| Operating Range Humidity | Non-condensing | 0% to 95% RH, Non-condensing | 0% to 95% RH, Non-condensing |
| Storage Temperature | -40°F to 170°F (-40°C to 77°C) | -40°F to 170°F (-40°C to 77°C) | -40°F to 170°F (-40°C to 77°C) |
| Calibration | Single point offset calibration available through software. Pressure is factory calibrated. | Single point offset calibration available through software. Current and Voltage are factory calibrated. | Single point offset calibration available through software. |
| Dimensions | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) | 3" x 2.5" x 1.1" (7.6cm x 6.4cm x 2.8cm) |
| Weight | 2.5 oz (71g) | 2.5 oz (71g) | 2.5 oz (71g) |
| Power Source | 9V Alkaline or Lithium battery (not included) | 9V Alkaline or Lithium battery (not included) | 9V Alkaline or Lithium battery (not included) |



LLS LOGiT PC Software and Interface for Serial Connection

- PC Software on CD ROM
- LINT Interface
- Cable for LOGiTs to Serial Port (CABLE6)



LLSU LOGiT PC Software and Interface for USB Connection

- PC Software on CD ROM
- LINTU Interface
- Cable for LOGiTs to USB Port (19449)

Benefits/Specifications

- Compatible with Windows 95 and above
- Graphic and Text Data
- 3 Memory modes: Stop on full, record continuously, or memory rollover
- Real time monitoring
- Password protected calibration of each channel
- Data exportable to Text or Excel
- Maximum Serial Interface 50 feet.
- Minimum System Requirements: 8MB RAM, 2MB Disk Space, 800 x 600 Resolution, COM port or USB port

LOGiT Accessories

| Standard Accessories | | LT2 | LTH | LTC | LTT | LPT | LCV | L420 |
|----------------------|---|-----|-----|-----|-----|-----|-----|------|
| 14265-001 | 15' Remote Temperature Sensor | * | | | | * | | |
| DLTP6 | 4" Stainless Steel 6' Temperature Sensor | | | | (2) | | | |
| TPFDA | K-type Thermocouple with 4' FDA Approved Insulation | | | * | | | | |
| 12867 | 300 A Current Probe† | | | | | | * | |

| Optional Accessories | | LT2 | LTH | LTC | LTT | LPT | LCV | L420 |
|----------------------|--|-----|-----|-----|-----|-----|-----|------|
| LITH9B | Lithium Battery | * | * | | * | * | * | * |
| USBS | USB to Serial Interface | * | * | | * | * | * | * |
| LLS | LOGiT PC Software & Interface | * | * | * | * | * | * | * |
| LLSU | LOGiT PC Software & Interface | * | * | * | * | * | * | * |
| SW25 | 25' Temperature Sensor Extension Wire | * | | | | * | | |
| SW50 | 50' Temperature Sensor Extension Wire | * | | | | * | | |
| SW75 | 75' Temperature Sensor Extension Wire | * | | | | * | | |
| SW100 | 100' Temperature Sensor Extension Wire | * | | | | * | | |
| CABLE10T | 10' Sensor Extension Wire | | | | | * | | |
| CABLE10H | 10' Sensor Extension Wire (Max 3) | | | | * | | | |

†Pressure probe must be factory calibrated with LPT logger

*Current sensor must be factory calibrated with LCV logger

Data Loggers

SL Series Miniature Data Loggers

Choose from Temperature, Humidity and Dew Point, or Temperature only Data Logging in a miniature, self-contained device. The SL Series Data Loggers provide concise measurements for critical environmental conditions.



For Temperature and/or Humidity Sensitive Applications:

- Refrigerators/Freezers
- Greenhouses
- Wine Storage
- Museums
- Commercial Refrigeration Systems
- Florists
- Medical Storage Facilities
- Laboratories

SL300TH

Measures Temperature, Humidity and Dew Point simultaneously

Features/Benefits

- Windows™ 98SE, ME, 2000, XP, Vista and above compatible software (included)
- Not compatible with Windows™ 95 or NT**
- PC, delayed start or push button recording control
- Temperature and Humidity alarm with visual indication on demand
- User selectable stop on memory full or memory rollover for continuous recording
- Real time monitoring
- View graph and text simultaneously
- Can calibrate through software
- Displays temperature in °F or °C
- USB Interface standard (Cable Included)



| SL300TH | |
|------------------------------|---|
| Sample Point Capacity | 43,344 for Temperature only. 21,672 for Temperature, Humidity and Dew Point |
| Sample Rate | 1 second to 18 hours |
| Alarms | High and low temperature and humidity alarms w/visual indication on demand |
| Temperature Range | -40°F to 160°F (-40°C to 70°C) |
| Temperature Accuracy | ±1°F (±0.5°C) |
| Temperature Resolution | 0.1°F or 0.1°C |
| Relative Humidity Range | 0% to 99% RH, non condensing |
| Relative Humidity Accuracy | ±2% RH from 10% to 90% RH |
| Relative Humidity Resolution | 0.01% RH |
| Calibration: | Single point offset calibration available through software For both Temperature and Humidity |
| Time Accuracy | ±100 ppm @ 75°F |
| Dimensions | 3" x 1.6" x 0.6" (7.6cm x 4.0cm x 1.5cm) |
| Weight | 1.0 oz (28g) |
| Power Source | 3 V (CR2032) Lithium battery (Included) |
| Battery Life | 6 years typical |



SL300T

Measures Temperature only

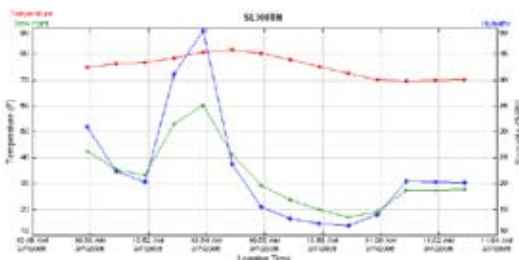
Features/Benefits

- Windows™ 98SE, 2000, ME, XP and Vista and above compatible software (included)
- Not compatible with Windows™ 95 or NT**
- PC, delayed start or push button recording control
- Temperature alarm with visual indication on demand
- User selectable stop on memory full or memory rollover for continuous recording
- Real time monitoring
- View graph & text simultaneously
- Can calibrate through software
- Displays temperature in °F or °C
- USB Interface Standard (Cable Included)

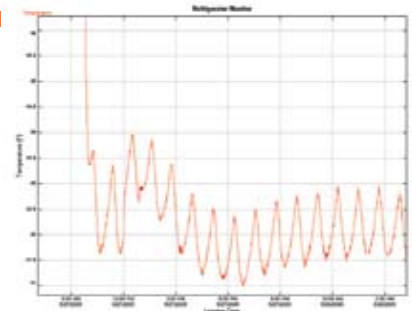


| SL300T | |
|-----------------------|---|
| Sample Point Capacity | 43,344 Temperature Samples |
| Sample Rate | 1 second to 18 hours |
| Alarms | High and low Temperature alarms w/visual indication on demand |
| Temperature Range | -40°F to 185°F (-40°C to 85°C) |
| Temperature Accuracy | ±1°F (±0.5°C) |
| Calibration | Single point offset calibration available through software for Temperature. Password protected |
| Time Accuracy | ±100 ppm @ 75°F |
| Dimensions | 3" x 1.6" x 0.6" (7.6cm x 4.0cm x 1.5cm) |
| Weight | 1.0 oz (28g) |
| Power Source | 3.0 V (CR2032) Lithium battery (Included) |
| Battery Life | Up to 6 years |

SL300TH Graph



SL300T Graph





CRTH2

Temperature/Humidity/Dew Point Recorder

Selectable chart speeds from 1 1/2 hours to 31 days. Temperature ranges from -40°F to 130°F (-40°C to 55°C). With a 6-foot remote probe, 115V operation and battery back-up, the CRTH2 provides the ultimate in versatility and reliability.



Features/ Benefits

- Measures Temperature, Humidity and Dew Point
- Advanced, reliable micro-controller design
- Built – in “Last Setting” memory
- Two (2) line LCD display
- Easy-to-use membrane keypad
- All functions user selectable from front panel.
- °F / °C selectable
- Remote combination temperature/humidity probe with 6 foot cable
- Field calibration of probe
- Combination of 24 Speed and Temperature Ranges
- 6” circular chart
- Chart number displayed when Time & Temperature Ranges selected
- Single turn or continuous chart rotation
- Two (2) independent pens
- Alarm with delay for over and under temperature & humidity
- Audible and Visual Alarm indication
- Remote Alarm or telephone dialer connection (Optional Auto-dialer – ADTA)
- Standard 115 VAC operation
- Optional 12 VDC operation for auto or marine
- 48 hour battery back-up
- Low battery warning on display
- Durable polycarbonate case with full-view cover
- Free Standing or Wall mount
- Snap-on extra support legs
- Fold away carrying handle

CRTH2 Specifications

| | |
|-------------------------------|---|
| Temp Range/Accuracy | -40°F to 130°F ± 2°F (-40°C to 55°C ± 1°C) |
| RH Range/ Accuracy | 0 to 95% (non condensing) at 32°F to 130°F ± 2% (0°C to 55°C) ambient |
| Dew Point Range | 32°F to 130°F (0° to 55°C) |
| Chart Diameter | 6 inches |
| Chart Rotation Mode | Continuous or Single turn |
| Chart Rotation Speed | 1.5, 3, 6, 12 & 24 hrs, 7 & 31 days |
| Chart Speed Accuracy | ± 1% |
| Charts | 60 assorted included |
| Display | LCD 16 characters x 2 lines |
| Temperature Alarm Range | -20°F to 120°F (-30°C to 50°C) |
| Relative Humidity Alarm Range | 0 to 100% |
| Alarm Delay | NO DELAY, 10 mins., 30 mins., 1 hr. or 2 hrs. |
| Remote Alarm Connection | NO, 48 VAC/DC, 0.1 A resistive load |
| Ambient Operating Temperature | 32°F to 120°F (0°C to 49°C) |
| Primary Power | 115 VAC, 50/60 Hz (230 VAC, 50/60 Hz optional) |
| Alternate Power | 12 V vehicle operation (need optional adapter) |
| Battery backup | 8 AA alkaline batteries (not included) |
| Battery Life | 48 hrs. continuous |
| Dimensions | 9 1/4" x 7 1/4" x 2 3/4" |
| Weight | 4 lbs. 15 oz. |

CRTH2 Accessories

| PART NO. | DESCRIPTION |
|-----------|---------------------------------|
| KTH | Temperature/ Humidity Probe |
| CABLE10H | Extension cable for KTH (2 max) |
| CRPENR | Red Recorder Pen |
| CRPENB | Blue Recorder Pen |
| CRT | 115 VAC Power Adapter |
| CRT220 | 220 VAC Power Adapter |
| CRTH2 | 115V 50/60 Hz |
| CRTH2-220 | 220V 50/60 Hz |
| ADTA | Auto-Phone Dialer (Page 75) |



Recorder Charts

| TEMPERATURE RANGE 1 | HUMIDITY RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
|---------------------|------------------|-----------|-----------|----------|-----------|
| -20°F to 120°F | 0-100% Humidity | E20120F12 | E20120F24 | E20120F7 | E20120F31 |
| -20°F to 50°F | 0-100% Humidity | E2050F12 | E2050F24 | E2050F7 | E2050F31 |
| 40°F to 110°F | 0-100% Humidity | E40110F12 | E40110F24 | E40110F7 | E40110F31 |
| -30°C to 50°C | 0-100% Humidity | E3050C12 | E3050C24 | E3050C7 | E3050C31 |
| -30°C to 10°C | 0-100% Humidity | E3010C12 | E3010C24 | E3010C7 | E3010C31 |
| 5°C to 45°C | 0-100% Humidity | E545C12 | E545C24 | E545C7 | E545C31 |

Chart Recorders

SR Series Strip Chart Recorders

The SR Series Strip Chart Recorders provide long length recordings with maximum detail. Choose the model that suits your application.



Features/ Benefits:

- LCD alphanumeric display
- Adjustable chart speed (1/4 inch per hour to 2 inches per minute)
- Recording length: 2 hours to 40 days
- Over / Under Alarm with 100ma N.O. Relay and audible alarm
- Delay / No Delay Alarm
- Battery backup
- 220 V operation (optional)
- RS-232C port
- Use inches or mm charts
- Field calibrated with user adjustment
- Free standing or wall mount
- Chart length 20' (2 included)



SRB - Temperature Recorder

Applications

- Refrigeration/Freezer, Laboratory and Environmental applications
- Measures and records temperature in air, gas, liquids, powders, solids and semi-solids

Features/Benefits

- Temperature Ranges: -40°F to 150°F (-40°C to 60°C)
- Remote readings from up to 100 ft. (CABLE 10T optional)
- Programmable speed and temperature ranges



SRTH - Temperature/ Humidity Recorder

Applications

- Monitor critical temperature and humidity simultaneously

Features/Benefits

- Temperature Ranges: -40°F to 150°F (-40°C to 60°C)
- Humidity Range: 0 to 95% RH
- Programmable speed and temperature ranges



SRJ - J-Type Thermocouple Temperature Recorder

Applications

- Broad temperature range
- Measures and records temperature in air, gas, liquids, powders, solids and semi-solids

Features/Benefits

- Temperature Ranges: -40°F to 1000°F (-40°C to 500°C)
- Remote readings from up to 2000 ft. (Use TCW25, TCW50, TCW75, TCW100)
- Programmable speed and temperature ranges



SR4-20 4 to 20 mA and DC Voltage Recorder

Applications

- Verification of process control loops

Features/Benefits

- Current Range: 0 to 20 mA, 4 to 20 mA
- Voltage Range: 0 to 5 VDC, 0 to 100 mV
- Programmable speed and current and voltage ranges



SRV - AC Voltage Recorder

Applications

- Line voltage
- Intermittent voltage problems

Features/Benefits

- Voltage Range: 0 to 500 VAC, single phase
- Programmable speed and voltage ranges
- Use 3 recorders for 3 phase applications



SRC - AC Current Recorder

Applications

- Load distribution
- Compressor and fan run cycles

Features/Benefits

- Current Range: 0 to 300 Amps AC, single phase (current probe included)
- Programmable speed and current ranges
- Use 3 recorders for 3 phase applications

Chart Recorders

SR Series Common Specifications

| | | |
|-------------------------|---|---------------|
| Display | Alphanumeric LCD 16 Characters 2 Line | |
| Chart | Strip chart (20' x 4 3/4") | |
| Chart Speeds | 1/4 inch/hour | 1/2 cm/hour |
| | 1 inch/hour | 2 cm/hour |
| | 2 inches/hour | 4 cm/hour |
| | 4 inches/hour | 8 cm/hour |
| | 8 inches/hour | 16 cm/hour |
| | 1/4 inch/minute | 1/2 cm/minute |
| | 1/2 inch/minute | 1 cm/minute |
| | 1 inch/minute | 2 cm/minute |
| 2 inches/minute | 4 cm/minute | |
| Chart Speed Accuracy | ±1% | |
| Alarm Delay Range | No Delay, 10 Min., 30 Min., 1 Hr., 90 Min. or 2 Hr. | |
| Remote Alarm Connection | N.O. 48 VAC/DC, 0.1 Amp Dry Contacts | |

| | |
|-------------------------------------|---|
| Operating ambient temperature range | 32°F to 125°F (0° to 50°C) |
| Storage temperature | 0° to 125°F (-18° to 50°C) |
| Primary power | 115 VAC, 50/60 Hz Adapter (220-240 VAC, 50 Hz. optional) |
| Backup power | 8 AA alkaline batteries (not supplied) |
| Alternative power | 12 Volt vehicle operation with optional adapter |
| Power Consumption | 3.5 Watts Max. |
| Mounting | Vertical or Horizontal, Free Standing or Wall Mounted |
| Dimensions | 9.25" x 7.25" x 2" (235mm X 184mm X 51mm) |
| Weight | 2.5 lb. (1.3 kg) |

SR Series Specifications

| | SRB | SRJ | SRV | SRC | SR420 | SRTH | |
|--------------|---|--|--|---|--|--|--|
| Range | -40°F to 150°F (-40°C to 60°C) | -40° to 1000°F (-40° to 500°C) | 0 to 500 VAC | 0 to 300 Amps AC using supplied clamp-on probe | 0-5.0 Volts DC 0-20ma DC 4-20ma DC | -40 to 150°F (0 to 60°C) 0 - 100% RH | |
| Chart Ranges | -40°F to 60°F -40°C to 60°C 50°F to 150°F -30°C to 20°C 0°F to 100°F 0°C to 50°C | -40°F to 60°F -40°C to 60°C 0°F to 250°F -30°C to 20°C 50°F to 150°F 0°C to 50°C 0°F to 100°F 0°C to 100°C 0°F to 500°F 0°C to 500°C 0°F to 1000°F | 0 to 50 VAC 0 to 100 VAC 50 to 150 VAC 0 to 250 VAC 0 to 500 VAC | 0 to 10 AMP 0 to 50 AMP 0 to 100 AMP 50 to 150 AMP 0 to 250 AMP | 0 to 5.00 Volts 0 to 100 mV 0 to 20 mA 4 to 20 mA | ±0.01 Volt ±1 mV ±0.1 mA ±0.1mA | -40°F to 60°F -40°C to 60°C 50°F to 150°F -30°C to 20°C 0°F to 99°F 0°C to 50°C |
| Accuracy | ±2°F (±1°C) | ±2°F (±1°C) | ±0.5 VAC | ±5% | 0 to 5.00 Volts 0 to 100 mV 0 to 20 ma 4 to 20 ma | ±0.01 Volt ±1 mV ±0.1 mA ±0.1mA | ±2°F (±1°C) ±2% (0 - 95% RH) |
| Probe | TP15 Temperature probe with 15' cable (cable extension is available) | 6' High Temperature Thermocouple Probe | 3' Voltage leads with Alligator clips | 0-300 Amp AC Current Probe | | KTH Temperature/ Humidity with 6' cable 95% RH (Non-Condensing) | |
| Alarm Range | -40°F to 150°F (-40°C to 60°C) | -40°F to 1000°F (-40°C to 500°C) | 0 to 500 VAC | 0 to 300 AMP | 0 to 20 ma (DC) 0 to 5 Volts (DC) 0 to 100 mV (DC) | 40°F to 150°F (-40°F to 60°C) 0 to 100% RH | |

SR Series Accessories

| PART NO. | DESCRIPTION | SRB | SRJ | SRV | SRC | SR420 | SRTH |
|----------|---|-----|-----|-----|-----|-------|------|
| ADTA | Automatic Dialer | * | * | * | * | * | * |
| CABLE10H | Extension cable for KTH | | | | | | * |
| CABLE10T | 10' cable | * | | | | | |
| CABLE15 | 15' cable for sensor probes | | | | | | * |
| CABLE25 | 25' cable for sensor probes | | | | | | * |
| CABLE6 | 6' cable for sensor probes | | | | | | * |
| CRPEN | Black Pen | * | * | * | * | * | * |
| CRPENB | Blue Pen | * | * | * | * | * | * |
| CRPENR | Red Pen | * | * | * | * | * | * |
| CRT | Power Adapter | * | * | * | * | * | * |
| CRT220 | Power Adapter | * | * | * | * | * | * |
| CRT220UK | Power Adapter | * | * | * | * | * | * |
| HTP5 | 6' high temperature thermocouple wire | | * | | | | |
| HTP5100 | 100' high temperature thermocouple wire | | * | | | | |
| HTP515 | 15' high temperature thermocouple wire | | * | | | | |
| HTP525 | 25' high temperature thermocouple wire | | * | | | | |
| HTP550 | 50' high temperature thermocouple wire | | * | | | | |
| KTH | Temperature Humidity Probe | | | | | | * |
| SCR11 | Strip Chart (American Scale) (20') | * | * | * | * | * | * |
| SCR12 | Strip Chart (Metric Scale) (20') | * | * | * | * | * | * |
| SRVLA | Voltage leads with Alligator clips | | | * | | | |
| TCW100 | Type J Thermocouple Wire - 100' wire only | | * | | | | |
| TCW25 | Type J Thermocouple Wire - 25' wire only | | * | | | | |
| TCW50 | Type J Thermocouple Wire - 50' wire only | | * | | | | |
| TCW75 | Type J Thermocouple Wire - 75' wire only | | * | | | | |
| TP15 | 15' wire with 4" stainless steel sensor | * | | | | | |

Note:
Replacement current probe must be calibrated at factory.

Chart Recorders

Circular Chart Recorders

The CR87 Six(6) Inch Chart Recorder Series set the standard for reliable and rugged trend reporting. Choose the right model for your application.

Common Features/Benefits

- Micro-controller design
- Large LED Display
- Front Panel controls
- Single or continuous chart rotation
- Choose from 120V or 220V models (see chart)
- Battery Backup
- 12 Volt operation. Allows use in vehicular or marine operations.
- Comes with 2 cartridge pens & 60 (6" dia.) assorted charts
- Convenient folding handle
- Fold-out support stand
- Free standing or wall mount



NEW DESIGN



CR87B - Temperature Recorder

Applications

- Designed for Refrigerators/Freezers, Laboratory and Environmental Applications
- Measures and records temperature in air, gas, liquids, powders, solids, and semi-solids

CR87B Series Recording Charts

| TEMP. RANGE | 6 Hrs. | 24 Hrs. | 7 Days | 31 Days |
|---------------|---------|---------|---------|---------|
| -40°F to 30°F | CR87-4 | CR87-1 | CR87-7 | CR87-19 |
| -20°F to 50°F | CR87-5 | CR87-2 | CR87-8 | CR87-20 |
| 50°F to 120°F | CR87-6 | CR87-3 | CR87-9 | CR87-21 |
| -40°C to 0°C | CR87-13 | CR87-10 | CR87-16 | CR87-22 |
| -30°C to 10°C | CR87-14 | CR87-11 | CR87-17 | CR87-23 |
| 10°C to 50°C | CR87-15 | CR87-12 | CR87-18 | CR87-24 |

Features/Benefits

- Temperature range: -40°F to 120°F (-40°C to 50°C)
- Remote readings from up to 100 ft. (optional sensor wire p/n CABLE10T)
- Programmable speed and temperature ranges

| PART NO. | TEMP. READING | OPERATING VOLTAGE |
|-----------|---------------|--------------------|
| CR87B | Fahrenheit | 110-120V, 50/60 Hz |
| CR87BC | Celsius | 110-120V, 50/60 Hz |
| CR87B220 | Fahrenheit | 220-240V, 50/60 Hz |
| CR87B220C | Celsius | 220-240V, 50/60 Hz |

Extension Cable for CR87B Temperature Sensor

| PART NO. | DESCRIPTION |
|----------|-----------------------|
| CABLE10T | 10' cable 100 ft. max |

Temperature Sensor for CR87B (31 Day Version)

| PART NO. | DESCRIPTION |
|----------|---|
| TP15 | 15' wire with 4" stainless steel sensor |

CR87J - Temperature Recorder

Applications

- Designed for Refrigerators/Freezers, Laboratory and Environmental Applications
- Measures and records temperature in air, gas, powders, solids, and semi-solids

Features/Benefits

- Type J Thermocouple
- Temperature range: -40°F to 120°F (-40°C to 50°C)
- Remote readings
- Programmable speed and temperature ranges
- Snap-on support legs
- Remote Readings from up to 200ft (see accessory table)

| PART NO. | TEMP. READING | OPERATING VOLTAGE |
|-----------|---------------|--------------------|
| CR87J | Fahrenheit | 110-120V, 50/60 Hz |
| CR87JC | Celsius | 110-120V, 50/60 Hz |
| CR87J220 | Fahrenheit | 220-240V, 50/60 Hz |
| CR87J220C | Celsius | 220-240V, 50/60 Hz |

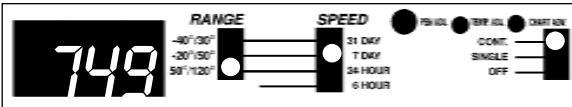
CR87J Series Recording Charts

| TEMP. RANGE | 6 Hrs. | 24 Hrs. | 7 Days |
|---------------|---------|---------|---------|
| -40°F to 30°F | CR87-4 | CR87-1 | CR87-7 |
| -20°F to 50°F | CR87-5 | CR87-2 | CR87-8 |
| 50°F to 120°F | CR87-6 | CR87-3 | CR87-9 |
| -40°C to 0°C | CR87-13 | CR87-10 | CR87-16 |
| -30°C to 10°C | CR87-14 | CR87-11 | CR87-17 |
| 10°C to 50°C | CR87-15 | CR87-12 | CR87-18 |

Temperature Sensor for CR87J

| PART NO. | DESCRIPTION |
|----------|---|
| CR15B | 15' wire with 4" stainless steel sensor |

Front Panel View



CR87HT - High Temperature Recorder

Applications

- Broad range of Temperature Applications
- Measures and records temperature in air, gas, liquids, powders, solids, and semi-solids

Features/Benefits

- Temperature range: 0°F to 1000°F (0°C to 500°C)
- Remote readings from up to 2000 ft. (See accessory table)
- Programmable speed and temperature ranges
- Snap-on support legs

High Temperature Sensor for CR87HT

| PART NO. | DESCRIPTION |
|----------|---|
| HTP5 | 6' high temperature thermocouple wire |
| HTP515 | 15' high temperature thermocouple wire |
| HTP525 | 25' high temperature thermocouple wire |
| HTP550 | 50' high temperature thermocouple wire |
| HTP5100 | 100' high temperature thermocouple wire |

| PART NO. | TEMP. READING | OPERATING VOLTAGE |
|-----------|---------------|---------------------|
| CR87HT | Fahrenheit | 110-120V, 50/60 Hz. |
| CR87HT22C | Celsius | 220-240V, 50/60 Hz. |
| CR87HT220 | Fahrenheit | 220-240V, 50/60 Hz. |
| CR87HTC | Celsius | 110-120V, 50.60 Hz. |

CR87HT Series Recording Charts

| TEMP. RANGE | 6 Hrs. | 24 Hrs. | 7 Days | 31 Days |
|----------------|-----------|-----------|-----------|-----------|
| 0°F to 250°F | CR1000-4 | CR1000-1 | CR1000-7 | CR1000-19 |
| 0°F to 500°F | CR1000-5 | CR1000-2 | CR1000-8 | CR1000-20 |
| 500° to 1000°F | CR1000-6 | CR1000-3 | | |
| 0°C to 120°C | CR1000-13 | CR1000-10 | CR1000-16 | CR1000-22 |
| 0°C to 250°C | CR1000-14 | CR1000-11 | CR1000-17 | CR1000-23 |
| 250° to 500°C | CR1000-15 | CR1000-12 | CR1000-18 | CR1000-24 |

Front Panel View

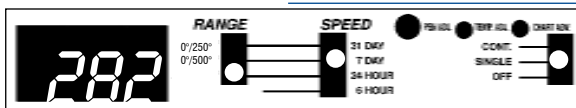


Chart Recorders

CR87P - Pressure Recorder



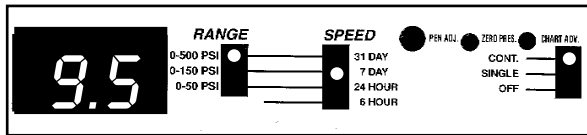
Applications

- Run Cycles
- Pneumatic air lines
- Test new installations
- Track intermittent problems

Features/Benefits

- Pressure Range 0 to 500 PSI (0 to 35 BAR)
- Stainless steel 17-4 Pressure sensor with port 1/4 NPT
- 2500 PSI burst pressure
- Rated for any gas or fluid compatible with 17-4 stainless steel
- Programmable speed and pressure ranges
- Snap-on support legs

Front Panel View



| PART NO. READING IN VOLTAGE | TEMP | OPERATING |
|-----------------------------|------|---------------------|
| CR87P | PSI | 110-120V, 50/60Hz. |
| CR87P220 | PSI | 220-240V, 50/60Hz. |
| CR87PB | BAR | 110-120V, 50/60 Hz. |
| CR87PB220 | BAR | 220-240V, 50/60 Hz. |

CR87P Series Recording Charts

| RANGE | 6 HRS. | 24 HRS. | 7DAYS | 31DAYS |
|-------------|----------|-----------|----------|-----------|
| 0 - 500 PSI | 6H500PSI | 24H500PSI | 7D500PSI | 31D500PSI |
| 0 - 150 PSI | 6H150PSI | 24H150PSI | 7D150PSI | 31D150PSI |
| 0 - 50 PSI | 6H50PSI | 24H50PSI | 7D50PSI | 31D50PSI |

CR87PB Series Recording Charts

| PRESSURE RANGE | 6 HRS. | 24 HRS. | 7 DAYS | 31DAYS |
|----------------|----------|-----------|----------|-----------|
| 0 - 35 BAR | 6H35BAR | 24H35BAR | 7D35BAR | 31D35BAR |
| 0 - 10 BAR | 6H10BAR | 24H10BAR | 7D10BAR | 31D10BAR |
| 0 - 3.5 BAR | 6H3.5BAR | 24H3.5BAR | 7D3.5BAR | 31D3.5BAR |

Pressure Sensor For CR87P, CR87PB

| PART NO. | DESCRIPTION |
|----------|---|
| CR87PA | Replacement pressure sensor and adapter |

CR87E - Event Recorder



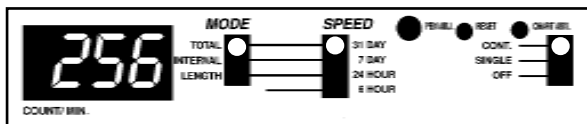
Applications

- Time Studies
- Usage Tests
- Verification Tests

Features/Benefits

- Complete with probes for Voltage, Sound and Light
- Displays length of event, time between events or total events
- Programmable speed and event information
- Snap-on support legs

Front Panel View



| PART NO. | OPERATING VOLTAGE |
|----------|-----------------------|
| CR87E | 110-120 VAC, 50/60 Hz |
| CR87E220 | 220-240 VAC, 50/60 Hz |

CR87E Series Recording Charts

| 6 Hrs. | 24 Hrs. |
|----------|-----------|
| EVENT-6H | EVENT-24H |
| 7 Days | 31 Days |
| EVENT-7D | EVENT-31D |

Event Sensors For CR87E

| PART NO. | DESCRIPTION |
|----------|---|
| KEV | Replacement voltage sensor with adapter |
| KEL | Replacement light sensor with adapter |
| KES | Replacement sound sensor with adapter |

CR87V - Voltage Recorder



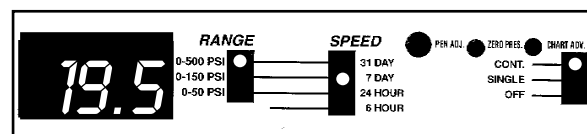
Applications

- Low Voltage or 4-20 ma control circuits
- Process control applications
- Manufacturing

Features/Benefits

- Choose voltage or current measurements
- Voltage Range 0 – 5V, 0-10 mV
- Current Range 0 – 20 mA, 4-20 mA
- Programmable speed and voltage or current ranges
- Snap-on support legs

Front Panel View



| PART NO. | OPERATING VOLTAGE |
|----------|--------------------|
| CR87V | 110-120V, 50/60Hz. |
| CR87V220 | 220-240V, 50/60Hz. |

CR87V Series Recording Charts

| 6 HRS. | 24 HRS. |
|---------|---------|
| CR87-57 | CR87-58 |
| 7 DAYS | 31 DAYS |
| CR87-59 | CR87-60 |

Chart Recorders



Custom Series - Temperature Recorder

The Custom Series 6 Inch Temperature Recorders have the same general features as the CR87 Series, with the ability to customize your temperature measurement range. The custom unit has an internal temperature sensor and can be placed directly in the environment that it will monitor.

Custom Series Specifications

- Chart Speed Accuracy - $\pm 1.5\%$
- Chart Diameter - 6 inches
- Case Size - 9 1/4" x 7" x 2 3/4"
- Weight - 5 lbs.
- Battery Life - One Year
- Temperature Accuracy - $\pm 2^\circ\text{F}$
- Temperature Sensor - Sensor Bi-metal

Applications

- Designed for Refrigerators/ Freezer, Storage areas, Laboratories, Computer Rooms, etc.
- Custom temperature range means exact application needs.

Features/Benefits

- Internal Bi-metal Sensor
- Custom Temperature and Speed Selection
- 9V Battery Operation (not included)
- AC Adapter (included)
- Snap-on support legs

| PART NO. WITH DISPLAY | TEMP. RANGE | RECORD TIME |
|-----------------------|----------------|-------------|
| SD120F7 | -20°F to 120°F | 7 Days |
| SD120F24 | -20°F to 120°F | 24 Hrs |
| SD100F7 | 0°F to 100°F | 7 Days |
| SD50C7 | -30°C to 50°C | 7 Days |

Custom Series Recording Charts

| SD MODELS | 7 DAYS | 24 HOURS |
|----------------|----------|-----------|
| TEMP RANGE | | |
| -20°F to 120°F | S20120F7 | S20120F24 |
| 0°F to 100°F | S0100F7 | S0100F24 |
| 45°F to 90°F | S4590F7 | S4590F24 |
| -30°C to 50°C | S3050C7 | S3050C24 |
| 0°C to 45°C | S045C7 | S045C24 |

Note: Standard 6" diameter recording charts are available for Fahrenheit and Celsius Recorders, and are packaged in quantities of 60 per box.

Additional Recorder Accessories



Type J Thermocouple Wire with Sensor for CR86/CR87

| PART NO. | DESCRIPTION |
|----------|--|
| CR15B | 15' wire with 4" stainless steel sensor (included) |
| CR25B | 25' wire with 4" stainless steel sensor |
| CR50B | 50' wire with 4" stainless steel sensor |

| PART NO. | DESCRIPTION |
|----------|--|
| CR75B | 75' wire with 4" stainless steel sensor |
| CR100B | 100' wire with 4" stainless steel sensor |



Power Adapters

(FOR CR87B, CR87E, CR87P, CR87HT, CR86, CRTH2 & CRTT2)

| PART NO. | INPUT | OUTPUT |
|--------------------|---------|--------|
| CRT (USA) | 120 VAC | 12 VDC |
| CRT220 (Europe) | 220 VAC | 12 VDC |
| CRT220UK (England) | 220 VAC | 12 VDC |

(FOR CUSTOM SERIES)

| PART NO. | INPUT | OUTPUT |
|---------------------|---------|--------|
| DPGT (USA) | 120 VAC | 9 VDC |
| DPGT220US (USA) | 220 VAC | 9 VDC |
| DPGT220UK (England) | 220 VAC | 9 VDC |
| DPGT220EU (Europe) | 220 VAC | 9 VDC |



Extension Cable for Event Sensors (KEV, KEL, KES) and CR87PA Pressure Sensor

| PART NO. | DESCRIPTION |
|----------|-------------|
| CABLE6 | 6' cable |
| CABLE15 | 15' cable |
| CABLE25 | 25' cable |



Nonsubmersible Type Air Sensor for CRTH2 & CRTT2

| PART NO. | DESCRIPTION |
|-------------|-----------------------|
| THP5(CRTH2) | 15' with plug-in jack |
| TTP5(CRTT2) | 15' with plug-in jack |



Type J Thermocouple Wire for Sensors CR87J

| PART NO. | DESCRIPTION |
|----------|----------------|
| TCW25 | 25' wire only |
| TCW50 | 50' wire only |
| TCW75 | 75' wire only |
| TCW100 | 100' wire only |



Replacement Pens

| PART NO. | DESCRIPTION |
|----------|-------------|
| CRPEN | Black pen |
| CRPENR | Red pen |
| CRPENB | Blue pen |

Chart Recorders

Recorder Specifications

| | CR87B/J | CR87HT | CR87P | CR87V | CR87E |
|-------------------------------------|--|--|---|--|--|
| Ambient operating temperature range | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) | 32°F to 140°F (0°C to 60°C) |
| Ambient operating relative humidity | 96% maximum | 96% maximum | 96% maximum | 96% maximum | 96% maximum |
| CR87B chart speed selectable | 6 hours, 24 hours, 7 days, 31 days | 6 hours, 24 hours, 7 days, 31 days | 6 hours, 24 hours, 7 days, 31 days | 6 hours, 24 hours, 7 days, 31 days | 6 hours, 24 hours, 7 days, 31 days |
| CR87J chart | 6 hours, 24 hours, 7 days | 6 hours, 24 hours, 7 days | 6 hours, 24 hours, 7 days | 6 hours, 24 hours, 7 days | 6 hours, 24 hours, 7 days |
| Chart rotation mode | Single turn or continuous | Single turn or continuous | Single turn or continuous | Single turn or continuous | Single turn or continuous |
| Chart speed accuracy | ±1% | ±1% | ±1% | ±1% | ±1% |
| Chart diameter | 6 inches | 6 inches | 6 inches | 6 inches | 6 inches |
| Display | 3 digit LED 0.5" | 3 digit LED 0.5" | 3 digit LED 0.5" | 3 digit LED 0.5" | 3 digit LED 0.5" |
| Primary power supply | 120 VAC, 50/60Hz. (220-240 VAC, 50/60Hz. optional CR87B-220) 12 Volt vehicle operation with optional adapter | 120 VAC, 50/60Hz. (220-240 VAC, 50/60Hz. optional - CR87HT22C) 12 Volt vehicle operation with optional adapter | 120 VAC, 50/60Hz. (220-240 VAC, 50/60Hz. optional - CR87PB) 12 Volt vehicle operation with optional adapter | 120 VAC, 50/60Hz. (220-240 VAC, 50/60Hz. optional - CR87V-220) | 120 VAC, 50/60Hz. (220-240 VAC, 50/60Hz. optional - CR87V-220) |
| Battery backup | (8) AA Alkaline batteries (not supplied) | (8) AA Alkaline batteries (not supplied) | (8) AA Alkaline batteries (not supplied) | (8) AA Alkaline batteries (not supplied) | (8) AA Alkaline batteries (not supplied) |
| Battery Life | 48 hours continuous use | 48 hours continuous use | 48 hours continuous use | 48 hours continuous use | 48 hours continuous use |
| Recording Pen | Ink type | Ink type | Ink type | Ink type | Ink type |
| Case Size | 9 1/4" x 7 1/4" x 2 3/4" | 9 1/4" x 7 1/4" x 2 3/4" | 9 1/4" x 7 1/4" x 2 3/4" | 9 1/4" x 7 1/4" x 2 3/4" | 9 1/4" x 7 1/4" x 2 3/4" |
| Weight | 4 lbs., 7 oz. | 4 lbs., 7 oz. | 4 lbs., 7 oz. | 4 lbs., 7 oz. | 4 lbs., 7 oz. |
| Pressure Range | | | 0 to 500 PSI, 0 to 150 PSI | | |
| PSI Model | | | 0 to 50 PSI, | | |
| Pressure Range BAR Model | | | 0 to 35 BAR, 0 to 10 BAR | | |
| Voltage Ranges (Selectable) | | | | 0-100mv 0-5V | |
| Current Range | | | | 0-20ma, 4-20ma | |
| LED Display | | | | 0-5.00 Volts 0-100 mV, 0-20.0 ma | |
| Voltage Accuracy | | | | 0-5.00 Volts ±0.01 Volt 0-100mV ±1mV | |
| Current Accuracy | | | | 0-20ma ±0.1mA 4-20ma ±0.1mA | |
| Temp. Scale Selectable (Fahrenheit) | -40°F to 30°F, -20°F to 50°F 50°F to 120°F | 0°F to +250°F, 0°F to 500°F, 500°F to 1000°F | | | |
| Temp. Scale Selectable (Celsius) | -40°C to 0°C, -30°C to 10°C 10°C to 50°C | 0°C to 120°C, 0°C to 250°C 250°C to 500°C | | | |
| Temperature Accuracy | ±1°C or ±2°F | ±1°C or ±2°F | | | |
| Pressure Accuracy | | | ±1% F.S. | | |
| Temperature Sensor | 15' long sensor wire with 4" Stainless Steel submersible temperature probe | 6' long high temperature type "J" thermocouple wire probe. Can not be used in liquid or semi-solid. | ±1% F.S. | | |
| KEV Range | | | | | 24 VAC to 270 VAC (50/60Hz.) 24 VDC to 180 VDC |
| KEL Range | | | | | Illumination threshold range 18 Lux to 1900 Lux ±20 |
| KES Range | | | | | Sound threshold range 40 dB to 114 dB @ 1Khz ±20% |
| EVENT PROBES | | | | | |
| KEV | | | | | AC/DC Voltage detecting with two wire clip leads |
| KEL | | | | | A sensitive photocell |
| KES | | | | | A sensitive audio transducer |

Chart Recorders

Universal Recorder/Service Logger

The CR4 six (6) inch Universal Chart Recorder offers the ultimate in flexibility. Choose one of 5 sensors for your application, connect it to the CR4 Universal Recorder, make desired speed selection and start recording.

When your application calls for a different sensor, just change probes for the same recorder.

If you prefer to log data and download to a computer for analysis, the SL4 Service Logger has the same great flexibility as the CR4. The same probes can be used with the SL4.



CR4



SL4

Features/ Benefits

- Automatic Probe recognition
- Front panel touch pad
- Full Time data view
- Memory backup (CR4)
- Interchangeable and replaceable probes
- Field calibration of probes
- Independent Channel Alarms (CR4)
- PC software included (SL4) (Windows 95 & 98 compatible only)

5 Interchangeable Probes

- KTH Temperature and Humidity Probe
- KTT Dual Temperature Probes
- KTP Temperature and Pressure Probes
- KPP Dual Pressure Probes
- KTE Temperature/Event Probes

CR4 & SL4 Specifications

| | CR4 | SL4 |
|-------------------------------|--|--|
| Chart Diameter | 6 inches | |
| Recording Time | | 5 hrs. to 40 days |
| Chart Rotation Mode | Continuous or Single turn | |
| Memory | | 16 K non-volatile |
| Chart Rotation Speed | 1.5, 3, 6, 12 & 24 hrs, 7 & 31 days | |
| Printer Interface | | Parallel (centronics compatible) |
| Chart Speed Accuracy | ±1% | |
| Charts | 60 assorted included | |
| Display | LCD (2 line) | LCD (2 line) |
| Temperature Alarm Range | -20°F to 120°F (-30°C to 50°C) | |
| Relative Humidity Alarm Range | 0 to 95% (Non-Condensing) | 0 to 95% (Non-Condensing) |
| Pressure Alarm Range | 0 to 500 PSI (0 to 35 Bar) | |
| Alarm Delay | NO DELAY, 10 mins., 30 mins., 1 hr. or 2 hrs. | |
| Remote Alarm Connection | NO, 48 VAC/DC, 0.1 A resistive load | |
| Operating Temperature | 32°F to 120°F (0°C to 49°C) | 32°F to 150°F (0°C to 65°C) |
| Primary Power | 115 VAC, 50/60 Hz (230 VAC, 50/60 Hz optional) | 115 VAC, 50/60 Hz (230 VAC, 50/60 Hz optional) |
| Alternate Power | 12 V vehicle operation (need optional adapter) | 12 V vehicle operation (need optional adapter) |
| Battery backup | 8 AA alkaline batteries | 9 V battery |
| Battery Life | 48 hrs. continuous | 24 hrs. |

CR4 & SL4 Accessories

| PART NO. | DESCRIPTION | CR4 | SL4 | KTH | KTT | KTP | KPP | KTE |
|----------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|
| KTH | Temperature/ Humidity Probe | * | * | | | | | |
| KTT | Dual Temperature Probes | * | * | | | | | |
| KTP | Temperature and Pressure Probes | * | * | | | | | |
| KPP | Dual Pressure Probes | * | * | | | | | |
| KTE | Temperature/ Event Probes | * | * | | | | | |
| CABLE10H | Extension cable for KTH (2 max) | | | * | | | | |
| CABLE6 | 6 ft. cable for sensor probes | | | | * | * | * | * |
| CABLE15 | 15 ft. cable for sensor probes | | | | * | * | * | * |
| CABLE25 | 25 ft. cable for sensor probes | | | | * | * | * | * |
| TP6 | Temperature sensor with 6 ft. wire | | | | * | * | | |
| TP15 | Temperature sensor with 15 ft. wire | | | | * | * | | |
| CRPEN | Black Recorder Pen | * | | | | | | |
| CRPENR | Red Recorder Pen | * | | | | | | |
| CRPENB | Blue Recorder Pen | * | | | | | | |
| CR4CABLE | RS232 Data Cable | * | | | | | | |
| PC6 | 6 ft. Printer cable | | * | | | | | |
| CC6 | 6 ft. Computer Transfer cable | | * | | | | | |
| CRT | 115 VAC Power Adapter | * | * | | | | | |
| CRT220 | 220 VAC Power Adapter | * | * | | | | | |
| MCASE | Carrying Case | | * | | | | | |

Universal Recorder Probes



KTH - Temperature/Humidity Probe

Complete with combination temperature, humidity probe. Allows for precision measurement of temperature, humidity and dew point. (Non-Condensing). Probe can be extended up to 25 feet, use p/n CABLE10H (max)



KTT - Dual Temperature Probes

Complete with two precision temperature probes. Allows for two independent temperature measurements. Includes adapter and connecting cable. Perfect for refrigerators, freezers, indoor-outdoor recording, etc. Temperature probe can be extended 20', use P/N CABLE10T (2 max/probe)



KTP - Temperature/ Pressure Probes

Complete with independent precision pressure and temperature probes. Measures and records temperature and pressure simultaneously. Ideal for solving intermittent compressor problems. Includes a connecting cable and adapter. Perfect for refrigerators, freezers, indoor-outdoor recording, etc. Temperature probe can be extended 20', use P/N CABLE10T (2 max/probe)



KPP - Dual Pressure Probes

Complete with two pressure probes. Measure and record two pressures simultaneously. Includes connecting cable and adapter.



KTE - Temperature/Event Probes

Complete with precision temperature probe, event probe, a connecting cable and adapter. Allows the service engineer to analyze various equipment running cycles.

Interchangeable* Probes for CR4 and SL4

| PROBE TYPE | PART NO. | TEMP RANGE/ ACCURACY | VOLTAGE RANGE | RH RANGE/ ACCURACY | PRESS RANGE/ ACCURACY | DEW POINT RANGE |
|-------------|----------|--|----------------------------------|--|-------------------------------|------------------------------|
| Temp/RH | KTH | -40°F to 130°F ±2°F (-40° to 55°C ±1°C) | — | 0-95% at 32° to 130°F ±2% (0° to 55°C) ambient | — | 32° to 130°F (0° to 55°C) |
| Temp/Temp | KTT | -40°F to 130°F ±2°F (-40° to 55°C ±1°C) | — | — | — | — |
| Temp/Press | KTP | -40°F to 130°F ±2°F (-40° to 55°C ±1°C) | — | — | 0-500 PSI (0-35 BAR) ±1%FS | — |
| Press/Press | KPP | — | — | — | 0-500 PSI (0-35 BAR) ±1%FS | — |
| Temp/Event | KTE | -40°F to 130°F ±2°F (-40° to 55°C ±1°C) | 24 VAC-270VAC (24 VDC-180VDC) | — | — | — |

*All probes can be used with the Service Logger and the Universal Recorder.

DR Series

The DR disposable temperature recorder is an inexpensive, one time use temperature recorder - indispensable for HVAC/R uses. It gives an accurate strip chart recording of a wide ambient temperature range. It can be easily changed on the job!

Applications

- Monitoring temperature sensitive goods in-transit, walk-in boxes, warehouses, HACCP and more.

Features

- Pull TAB to start
- Detachable three part water resistant job information form
- Unique serial number on chart and recorder for positive identification
- HACCP documentation
- NIS traceable calibration
- ABS Plastic enclosure

PART NO.

| | |
|------|---------|
| DR10 | 10 days |
| DR40 | 40 days |

Specifications

| | |
|----------------------|--|
| Temperature Range | -20°F to 100°F (-28°C to 38°C) |
| Temperature Accuracy | ±2°F (±1°C) or better |
| Day Spans | DR10 10 Day (°F & °C) DR40 40 Day (°F & °C) |
| Chart Resolution | 10 Day 2.50" per day |
| Power/Shelf Life | 1.5 volt AA battery 1 year from date of purchase |
| Calibration | NIST Traceable |
| Tamper-Proof | Pre-sealed at the factory |
| Security Seal | |
| Case Quantity | 40 instruments |
| Enclosure | ABS plastic |
| Weight/Dimensions | 10.5 oz (297.7 gm) 6.50" L x 3.50" W x 2.56"H 16.51 cm x 6.50 cm x 8.89 cm |

1 - Hazard Analysis Critica IO Control Points
2 - HACCP Required * DR10 - Replaces DR5

Chart Recorders

Universal Recorder Charts

| KTH RANGE 1 | KTH RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
|----------------|-----------------|-----------|-----------|-----------|-----------|
| -20°F to 120°F | 0-100% HUMIDITY | E20120F12 | E20120F24 | E20120F7 | E20120F31 |
| -20°F to 50°F | 0-100% HUMIDITY | | | E2050F7 | E2050F31 |
| 40°F to 110°F | 0-100% HUMIDITY | E40110F12 | E40110F24 | E40110F7 | E40110F31 |
| -30°C to 50°C | 0-100% HUMIDITY | E3050C12 | E3050C24 | E3050C7 | E3050C31 |
| -30°C to 10°C | 0-100% HUMIDITY | E3010C12 | E3010C24 | E3010C7 | E3010C31 |
| 5°C to 45°C | 0-100% HUMIDITY | E545C12 | E545C24 | E545C7 | E545C31 |
| KTT RANGE 1 | KTT RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
| -20°F to 120°F | -20°F to 50°F | CRTT2-2 | CRTT2-1 | CRTT2-3 | CRTT2-21 |
| -20°F to 50°F | 40°F to 110°F | CRTT2-5 | CRTT2-4 | CRTT2-6 | CRTT2-19 |
| 40°F to 110°F | -20°F to 120°F | CRTT2-8 | CRTT2-7 | CRTT2-9 | CRTT2-20 |
| -30°C to 50°C | 5°C to 45°C | CRTT2-11 | CRTT2-10 | CRTT2-12 | |
| 5°C to 45°C | -30°C to 10°C | CRTT2-14 | CRTT2-13 | CRTT2-15 | CRTT2-24 |
| -30°C to 10°C | -30°C to 50°C | CRTT2-17 | CRTT2-16 | CRTT2-18 | CRTT2-23 |
| KTE RANGE 1 | KTE RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
| -20°F to 120°F | ON/OFF | | | V20120F7D | V20120F31 |
| -20°F to 50°F | ON/OFF | V2050F12 | | V2050F7 | V2050F31 |
| 40°F to 110°F | ON/OFF | V40110F12 | V40110F24 | V40110F7 | V40110F31 |
| -30°C to 50°C | ON/OFF | V3050C12 | V3050C24 | V3050C7 | V3050C31 |
| 5°C to 45°C | ON/OFF | V545C12 | V545C24 | V545C7 | V545C34 |
| -30°C to 10°C | ON/OFF | V3010C12 | V3010C24 | V3010C7 | V3010C31 |
| KPP RANGE 1 | KPP RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
| 0-50 PSI | 0-150 PSI | CRPP2-1 | CRPP2-7 | CRPP2-13 | CRPP2-19 |
| 0-50 PSI | 0-500 PSI | | CRPP2-8 | CRPP2-14 | CRPP2-20 |
| 0-150 PSI | 0-500 PSI | CRPP2-3 | CRPP2-9 | CRPP2-15 | |
| 0-3.5 BAR | 0-10 BAR | CRPP2-4 | CRPP2-10 | CRPP2-16 | CRPP2-22 |
| 0-3.5 BAR | 0-35 BAR | CRPP2-5 | CRPP2-11 | CRPP2-17 | CRPP2-23 |
| 0-10 BAR | 0-35 BAR | CRPP2-6 | CRPP2-12 | CRPP2-18 | CRPP2-24 |
| KTP RANGE 1 | KTP RANGE 2 | 12 HR | 24 HR | 7 DAY | 31 DAY |
| -20°F to 120°F | 0-50 PSI | C RTP2-1 | | | |
| -20°F to 120°F | 0-150 PSI | | C RTP2-11 | C RTP2-38 | |
| -20°F to 120°F | 0-500 PSI | C RTP2-3 | C RTP2-12 | C RTP2-39 | |
| -20°F to 50°F | 0-50 PSI | C RTP2-4 | C RTP2-13 | C RTP2-40 | C RTP2-58 |
| -20°F to 50°F | 0-150 PSI | C RTP2-5 | C RTP2-14 | C RTP2-41 | C RTP2-59 |
| -20°F to 50°F | 0-500 PSI | C RTP2-6 | C RTP2-15 | C RTP2-42 | C RTP2-60 |
| 40°F to 110°F | 0-50 PSI | C RTP2-7 | C RTP2-16 | C RTP2-43 | C RTP2-61 |
| 40°F to 110°F | 0-150 PSI | C RTP2-8 | C RTP2-17 | C RTP2-44 | C RTP2-62 |
| 40°F to 110°F | 0-500 PSI | C RTP2-9 | C RTP2-18 | C RTP2-45 | C RTP2-63 |
| -30°C to 50°C | 0-3.5 BAR | C RTP2-19 | C RTP2-28 | C RTP2-46 | C RTP2-64 |
| -30°C to 50°C | 0-10 BAR | C RTP2-20 | C RTP2-29 | C RTP2-47 | C RTP2-65 |
| -30°C to 50°C | 0-35 BAR | | C RTP2-30 | C RTP2-48 | C RTP2-66 |
| -30°C to 10°C | 0-3.5 BAR | C RTP2-22 | C RTP2-31 | C RTP2-49 | C RTP2-67 |
| -30°C to 10°C | 0-10 BAR | C RTP2-23 | C RTP2-32 | C RTP2-50 | C RTP2-68 |
| -30°C to 10°C | 0-35 BAR | C RTP2-24 | C RTP2-33 | C RTP2-51 | C RTP2-69 |
| 5°C to 45°C | 0-3.5 BAR | C RTP2-25 | C RTP2-34 | C RTP2-52 | C RTP2-70 |
| 5°C to 45°C | 0-10 BAR | C RTP2-26 | C RTP2-35 | C RTP2-53 | C RTP2-71 |
| 5°C to 45°C | 0-35 BAR | C RTP2-27 | C RTP2-36 | C RTP2-54 | C RTP2-72 |

DA86420 4 in 1 Multi-Socket

Features/Benefits

- Replaces the four most common nut drivers. SAE socket sizes 1/4", 3/8", 5/16", 7/16".
- Telescoping action provides two socket sizes at each end.
- High-torque grip textured, non-slip surface.
- 12/display box



Security Multi-Driver

Features/Benefits

- Features extra-long 3" nosepiece reaches even recessed fasteners.
- Includes 14 security tips plus 2 standard tips on eight 3" long, double-ended bits.



Bits Included

| | |
|------------------|---------------------------|
| HEX SECURITY | 1/8", 9/64", 5/32", 3/16" |
| SPANNER | 4, 6, 8, 10 |
| ROBERTS SECURITY | 1, 2 |
| TORX SECURITY | 10, 15, 20, 25 |
| PHILLIPS | 2 |
| SLOT | 7/32" |

PART NO.

| | |
|---------------|--------------------------|
| SAB454 | Countertop Display of 12 |
| SAB444 | Clamshell Packaging |

Classic Multi-Driver

Features/Benefits

- Standard size driver. Replaces 16 of the most frequently used bits.



Bits Included

| | |
|----------|---------------------------|
| HEX | 3/32", 1/8", 5/32", 3/16" |
| ROBERTS | 2, 3 |
| SLOT | 1/4", 3/16" |
| TORX | 15, 20, 25, 30 |
| PHILLIPS | 0, 1, 2, 3 |

PART NO.

| | |
|---------------|--------------------------|
| SAB243 | Countertop Display of 12 |
| SAB233 | Clamshell Packaging |

Ratchet Multi-Driver

Features/Benefits

- Heavy-duty reversible ratchet mechanism.
- Adjustable angle nosepiece swivels 180° and locks into the angle you need.
- Also available with a 7-piece SAE socket set which includes these sockets: 3/16", 5/16", 3/8", 7/16", 11/32", 1/2", Plus adapter bit.



Bits Included

| | |
|----------|---------------------------|
| HEX | 3/32", 1/8", 5/32", 3/16" |
| ROBERTS | 2, 3; |
| SLOT | 1/4", 3/16" |
| TORX | 15, 20, 25, 30 |
| PHILLIPS | 0, 1, 2, 3 |

PART NO.

| | |
|----------------|--|
| DA86400 | Clamshell Packaging |
| SAB515 | Driver with SAE Socket Set (Clamshell Packaging) |

SAB710 Ratio Multi-Driver

Features/Benefits

- Multi-driver replaces 16 screwdrivers.
- 4 to 1 ratio nosepiece turns four times with each turn of the handle.
- 1 to 1 ratio nosepiece turns with the handle.
- Reversible ratchet changes direction quickly with one hand, even during use.
- 8 extra-long (3") double-ended bits. Bits store in the handle and a 1/4" nut driver in the nose.



Bits Included

| | |
|----------|---------------------------|
| HEX | 3/32", 1/8", 5/32", 3/16" |
| ROBERTS | 2, 3 |
| SLOT | 1/4", 3/16" |
| TORX | 15, 20, 25, 30 |
| PHILLIPS | 0, 1, 2, 3 |

Hi Torq 6 in 1 Driver

Features/Benefits

- 6 in 1 driver available with standard or security (tamper-proof) bits. Has a nut driver on each end and double-ended bits.
- Handle ergonomic. Oversized, tapered, three-sided, maximizes torque force, minimizes exertion for less hand fatigue.
- Kraton rubber grip handle coating tacky, non-sticky surface, for a non-slip grip—even when wet or oily.

Standard Bit Load

| | |
|------------|-------------|
| PHILLIPS | 1, 2; |
| SLOT | 3/16", 1/4" |
| NUT DRIVER | 1/4", 5/16" |

Security Bit Load

| | |
|---------------|----------------|
| TORX SECURITY | 15, 20, 25, 30 |
| NUT DRIVER | 1/4", 5/16" |

PART NO.

DA76440 Standard

DA76450 Security



DA76460 Flexible Lighted Magnet Pickup

Features/Benefits

- LED technology. Super-bright lights, no light bulbs to replace.
- Efficient illumination of the search area. Light is located at the magnet end; 23" total length.
- Strong 5 pound magnet.
- Magnet is encased in a brass shield. Directs the magnetic force to the tip, won't attract peripheral objects.
- Flexible pickup. Thin shaft that bends to any angle without breaking.
- Uses 3 button cell batteries (357/SR4 – included).



Telescoping Lighted Magnet Pickup

Features/Benefits

- Telescoping magnet pickup telescopes to 26", collapses to 7"
- Telescoping pickup and mirror.
- Oversized mirror (2.25" diameter) with a universal joint that adjusts to any angle telescopes to 36", collapses to 8"



PART NO.

ELB913 Telescoping Magnet Pickup (Pickup Only)

ELB910 Telescoping Pickup & Mirror (3 pc. Set Includes Pickup, Mirror, Case)

ELB717 Nut Driver Set, 7 pc. SAE

Features/Benefits

- Color-coded hollow shafts accommodate longer fasteners.
- Extra-deep sockets securely grip nuts and bolts.
- Includes 7 SAE sizes: 3/16", 1/4", 5/16", 11/32", 3/8", 7/16", 1/2".



RC5003 Utility Jack Knife

Features/Benefits

- Lock-back design holds blade securely during use, folds to 3.5".
- Patented quick change blade mechanism allows you to slide in a new blade without disassembling the knife or using tools.
- No special blades to order. Accepts double-notched standard-and contractor- blades.
- Includes 5 spare blades in reusable blade holder.
- Stainless steel belt clip.



RC5010 Mini Utility Jack Knife

Features/Benefits

- Folds to 2.5". Compact, fits conveniently on an included key ring.
- Same quick change mechanism and heavy-duty construction
- 10 spare blades in reusable blade holder are included. Mini replacement blades are sold separately.



PART NO. DESCRIPTION

RC5010 Mini Utility Knife

RC5019 Mini Replacement Blades



2 in 1 Cutter/Stripper

Features/Benefits

- Cuts wire with one end, grabs and strips wire with the other.
- Stripper self-adjusts to wire; no stripping holes.
- 5" model strips stranded wire sizes 26 to 14 awg.
- 6" model strips electrical wire sizes 14 to 10 awg.
- Cutting head is full-flush cutting and low profile with stainless steel, induction-hardened jaws.

| PART NO. | DESCRIPTION |
|----------|-------------------------|
| ELB250 | 5" for Low Voltage Wire |
| ELB251 | 6" for Electrical Wire |



RC4300 3 in 1 Multi Pliers

Features/Benefits

- Three interchangeable plier heads lock into place, won't slip during use.
- Double lever design yield twice the force of standard pliers.
- Handle of chrome molybdenum and PVC, warranted for life.
- Plier heads are induction-hardened carbon steel, which carry a three-year warranty.
- Set includes long nose, diagonal cutting and combination plier heads in a Velcro-close ripstop nylon holster.



Heavy Duty Pliers Assortment

Features/Benefits

- Super heavy-duty oversized cross section, induction-hardened cutting edges and hot-riveted joints.
- Two-color textured non-slip handles.
- Professional quality materials and construction make this assortment a great value.

| PART NO. | DESCRIPTION |
|----------|--------------------|
| ELB305 | 8" Diagonal Cutter |
| ELB304 | 7" Diagonal Cutter |
| ELB301 | 10" Crimping |
| ELB312 | 8.5" Linesman |



Heavy Duty Pliers-11" Extended

Features/Benefits

- Specialty pliers, 11" reach and a choice of nose angles.
- Professional quality.
- Two-color textured handles.
- Model selection includes straight nose, or curves of 20°, 45°, or 90°.

| PART NO. | DESCRIPTION |
|----------|-------------|
| ELB320 | Straight |
| ELB321 | 45° Angle |



ELB714 Torpedo Level 9"

Features/Benefits

- Three 360° vials are tinted for easy reading: one plumb, one level, one 45°.
- Magnetic strip and top read window.



ELB340 Dual Snap Ring Pliers

Features/Benefits

- Lighten your toolbox.
- All-in-one tool removes both internal and external snap rings.
- Spring-loaded over sized handle, cushioned for comfortable use.



Heavy Duty Pliers-Telecom

Features/Benefits

- The most efficient pliers for telecom use - cut, strip and crimp with one tool.
- Long nose pliers, one skinning hole to strip 22 awg wire and feature a cross-jaw grip.
- Diagonal cutting pliers, two skinning holes for stripping 16 and 22 AWG wire.
- Quality construction, drop-forged chrome vanadium steel with hot-riveted joint.
- Both models have induction-hardened cutting edges and crimper features between handles.
- Velcro-close ripstop nylon holster included with each tool.

| PART NO. |
|------------------|
| ELB101 Long Nose |

Tools



Ratcheting Pipe Wrench

Features/Benefits

- Oversized jaws automatically set-to-fit for one-handed operation.
- Ratcheting jaw doesn't require resetting between turns.
- Power jaw clamps tighter as you increase torque force.
- 360° Swivel head allows full leverage in tight spots.
- Heavy-gauge chrome vanadium steel has excellent durability.

PART NO.

RC3110 10" Wrench Opens to 4.5"

RC3114 14" Wrench opens to 2.5"



Precision Adjustable Wrench

Features/Benefits

- Oversized jaw opens 18% wider than standard wrenches
- Dual calibrated jaw.
- Oversized grip has superior balance to reduce hand fatigue.
- Constructed of heavy-gauge, industrial-quality steel insuring durability.

PART NO.

RC2106 6" spans 15/16"

RC2108 8" spans 1 1/8"

RC2110 10" spans 1 5/16"

RC2112 12" spans 1 9/16"



DA76210 12" Box Joint Pump Pliers

Benefits/Features

- Heavy-duty box joint construction can't torque out, won't loosen with use.
- Self-gripping jaw pattern provides tight, secure grip, even on slippery pipes.
- Cushioned, non-slip grip.
- Industrial quality chrome vanadium steel with induction-hardened teeth.



ELB713 Electrician's Fish Stick Set

Features/Benefits

- Economical, efficient, and snarl-free way to pull or push wire.
- Safe, non-conductive flexible PVC plastic, bends easily around obstacles.
- Five-piece set contains 5 connectable rods, 24" long and 3/8" diameter.
- Includes 2 bull tip slotted heads for attaching wire.
- Rods feature rust-resistant internal connectors.
- Set includes nylon carrying case.



ELB402 Quick Release Tubing Cutter

Features/Benefits

- Auto ratchet closure sets to pipe automatically.
- Quick release, spring-loaded retractor releases pipe instantly.
- Lightweight aluminum body with built-in reamer feature.
- Cuts 1/4" to 2" o.d. copper tubing.



RC1220 Pry-Angle™ Adjustable Prybar

Features/Benefits

- Clawhead is indexed to lock into 5 positions: 180° (straight), 155°, 130°, 105°, 80°.
- Super tough locking mechanism with thumb lever allows one handed angle changes.
- Industrial quality high carbon steel construction meets ANSI standard, rated at 300 foot/lbs. torque.



ELB400 Mini Tubing Cutter

Features/Benefits

- Tough, lightweight aluminum cutter for copper pipe 1/8" – 7/8" o.d.
- One Spare wheel included.



ELB721 Mini Cable Tie Gun

Features/Benefits

- The right cable tie gun for small jobs.
- Compact size accommodates plastic cable ties up to 0.25" in width.
- Twist cable gun to cut and trim off excess cable tie length.



Fish Tape

Features/Benefits

- Trigger for constant tension and finger grips around the reel keep the tape under control and retracting tightly.
- Tape reel cleans the tape as it retracts.
- Refills sold separately.

| PART NO. | DESCRIPTION |
|----------|-------------|
| ELB710 | 50' Length |
| ELB711 | 100' Length |



ELB701-L Cable Splicing Knife

Features/Benefits

- Coping-type blade is machined from fine cutlery steel.
- Non-slip, textured rubberized handle.
- Heavy-duty leather carrying sheath included.



ELB400

Features/Benefits

- Prevent injuries from sharp cable ties—the safety cutter has a square cutting profile that blunt-cuts wire ties and other plastics.
- Professional quality, spring-loaded handles with precision ground, hardened steel jaws.
- To leave a blunt edge on wire tie bundles, place flush edge of cutter head toward the bundle, then cut.



FBP100 - Fan Blade Puller

Features/Benefits

- Sturdy, heavy duty steel
- 5/8" steel center shaft
- 4 pull fingers
- Alignment tool included
- Has flats for wrench
- Fine thread version provides additional torque & pulling power



Blower Wheel Pullers

A fast and easy method to remove blower wheel from shaft without damage to the blower, blower motor or shaft.

| PART NO. | DESCRIPTION |
|----------|---------------------------------|
| SF3500 | Drive bolt shank and 1 1/4" hub |
| SF3510 | Drive bolt shank and 1 3/8" hub |
| SF3515 | 1 3/8" hub only |
| SF3525 | 1 1/2" hub only |
| SF3535 | 1 5/8" hub only |
| SF3570 | Blower wheel puller kit |

Tools & Accessories



CTP1- Capillary Tube Cutter

5" stripper and cutter. Fast, efficient and all purpose.



TC2 - Heavy Duty Tube Cutter

- For clean cuts in hard or soft copper aluminum, brass, thin wall steel and stainless steel.
- Rollers have flared cut off groove
- Complete with foldaway reamer blade and spare cutting wheel.
- Cuts tubes from 1/8" thru 1 1/8" O.D.
- Replacement cutting wheel p/n TC2W



UFC1 - Fin Comb

Cleans and straightens fins for better operating efficiency.



FPT10, FPT13 & FPT15 Fin Jack

Straightens and separates bent fins quickly and easily. One tool can be used for up to 3 sizes of fins.

| PART NO. | DESCRIPTION |
|----------|---------------------------|
| FPT10 | 9 & 10 Fins per inch |
| FPT13 | 11, 12 & 13 Fins per inch |
| FPT15 | 14, 15 & 16 Fins per inch |



FCR6 - Handy Ring Fin Comb Set

Six of the most popular Fin Combs covering twelve different size fins on a convenient ring. Includes FC0810, FC0915, FC1113, FC1214, FC1617, and FC1820.

| FINS PER | | | FINS PER | | |
|----------|-----------|--------|----------|-----------|--------|
| PART NO. | INCH | COLOR | PART NO. | INCH | COLOR |
| FC0810 | 8 and 10 | Orange | FC1617 | 16 and 17 | Lime |
| FC0915 | 9 and 15 | Yellow | FC1820 | 18 and 20 | Red |
| FC1113 | 11 and 13 | Blue | FC2224 | 22 and 24 | Purple |
| FC1214 | 12 and 14 | Green | | | |



Fin Combs

Straighten and clean evaporator and condenser fins.



SF4311- "FasTap" Tube Piercing Pliers

- Fast refrigerant recovery: Just clamp and recover
- Tubing sizes 1/4" to 7/8" OD
- Replaceable self-sharpening tip
- Simple to use
- Light weight



SF4314 - Tube Piercing Pliers Replacement Tip



SF3970 - Internal Temperature Reading Tool

Take Internal Temperatures of Refrigerant Lines digitally.

- Accurately adjust superheat
- Simple instructions
- Inserts through access fitting (supplied)

Includes: Core Removal Tool and Digital Thermometer
Replaces SF3940 AND SF3960



DHS55 - Digital Handheld Scale

This compact handheld scale provides quick measurements for your refrigeration applications.

Features/Benefits

- 55 lbs max scale
- 2% accuracy
- One button operation
- Auto shut off
- Lbs/Kgs switchable
- Max weight memory
- 9 V battery included



HVT2 - Safe-T-Tester Screwdriver

- 110-220 VAC
- Light in handle indicates power



P89 - Voltage Detector

- 12-440 VAC

- Non-contact Voltage Detection



Tools & Accessories



Telescoping Tools

Match Clip, Magnet, and Inspection Mirrors

Features/Benefits

- Double ball joint head adjustment
- Extendable/retractable design
- Magnified glass mirror available with IM4
- Carry pouch included
- Glass Mirrors

| PART NO. | DESCRIPTION | EXTENDED LENGTH |
|----------|--|-----------------|
| IM1 | 1.25" Round Glass Mirror, Pocket Clip | 27" |
| IM2 | 1" x 2" Oval Glass Mirror, Pocket Clip | 28" |
| IM3 | 2.25" Round Glass Mirror, Vinyl Grip Handle | 14.5" |
| IM4 | 2.25" Round Magnifying Glass Mirror, Vinyl Grip Handle | 14.5" |
| IM5 | 2.25" x 3.25" Rectangular Glass Mirror, Vinyl Grip Handle | 15.5" |
| IMK3 | Combination Tool, Pocket Clip Includes: Match Clip, Magnet, 2" Round Mirror & PVC Pouch | 27" |



FWB1 - Fin Wisk Brush

Features

- Long lasting, sturdy Bristle Design



RCB1 - Refrigeration Coil Brush

Features

- 27 1/2" long
- 12" brush length
- 1 1/2" and 3/4" bristle length



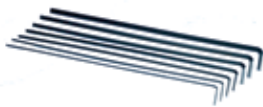
Air Conditioning & Refrigeration Wrenches

| PART NO. | DESCRIPTION |
|----------|--|
| RW516 | 1/4" - 3/16" Sq. x 3/8" - 5/16" Hex |
| RW916 | 1/4" - 3/16" Sq. x 1/2" - 9/16" Hex |
| RWA10 | Hex adapter for refrigeration wrenches |



UW1- Universal Wrench

Ranges in sizes from 1/4", 5/16", 11/32", and 3/8".



HK7 - Hex Key Wrench Set

Consists of seven 12" long hex wrenches: 5/64", 3/32", 1/8", 5/32", 3/16", 7/32" and 1/4".



BJ10 - Belt-Jack Instant Belt Tightener

Designed to set belt tension and to help align pulleys on all belt driven units including blower motors, compressors, transmissions, and automotive components.

- Opens from 4 1/2" to 15" with extender
- Heavy duty 3/8-16 thread

BJ10PLUS - Belt-Jack Instant Belt Tightener

Same as BJ10 Plus an extra 6" extension

Tools & Accessories



TC103 Test Cord

- 6', heavy duty, 16 gauge wire
- Male plug to medium duty spring clips
- 2 wire, black/red



TC104

- 24", heavy duty, 16 gauge wire
- Female plug to medium size spring clips
- 3 wire, black/red/green



TA3001

- 15' long, 1" nylon webbing
- Adjusts from 1' to 15'
- Ratchet handle w/ quick release
- Vinyl coated "S" hooks at each end
- 3000 lb. capacity



THS60

- 5' long, 3/4" polypropylene web strap
- Reinforced grommet
- Spring loaded buckle at one end



SR6N1- 6 in 1 Ratchet Screwdriver

Sold in 12 pack display!

- Ratchet Action
- 3-Settings:
 - Forward
 - Manual
 - Reverse
- Bit Sizes
 - Slotted: 3/16" (5mm) and 1/4" (6mm)
 - Phillips: #1 and #2
 - Nut Driver: 1/4" and 5/16"



SAR21- 21 in 1 Angling Ratchet Screwdriver

Sold in 6 pack display!

- 21 Bit Sizes
- Multi-Position Angle
- Bit Storage

Accessories

| | |
|---------------|-----------------------------|
| 70056A | Replacement socket w/holder |
| 70056B | Replacement bits w/holder |

Terminals & Connectors

SUPCO Terminals, Cable Clamps, Grommets, Heat Shrink Tubing, Cable and Duct Ties are available in three convenient packages:

- The service pack is handy and low priced, ideal for small jobs.
- The BX (Box) which includes 50 or 100 pieces.
- The C Pack (Bag) which include 100 pieces.

SWC Series - Nylon Cable Clamps



| PART NO. | DESCRIPTION | PKG QTY |
|----------|------------------------------------|---------|
| SWC03 | Nylon Cable Clamp 3/16" (.187) | 40 |
| SWC04 | Nylon Cable Clamp 1/4" (.250) | 35 |
| SWC05 | Nylon Cable Clamp 5/16" (.3125) | 35 |
| SWC08 | Nylon Cable Clamp 1/2" (.500) | 25 |
| SWC110 | Nylon Cable Clamp 5/8" | 20 |
| SWCA1 | Cable Clamps, Assorted, 1/8" to 1" | 26 |

SGV Series - Grommets, Vinyl (by panel hole size)



| PART NO. | DESCRIPTION | PKG QTY |
|----------|---------------------------|---------|
| SGV05 | Grommets 5/16" (.3125) | 15 |
| SGV06 | Grommets 3/8" (.375) | 13 |
| SGV07 | Grommets 7/16" (.437) | 12 |
| SGV08 | Grommets 1/2" (.500) | 12 |
| SGV14 | Grommets 7/8" | 4 |
| SGVA1 | Assorted Grommets - Small | 15 |
| SGVA2 | Assorted Grommets - Large | 5 |

SHS Series - Heat Shrink Tubing, Polyolefin 50% Shrink



| PART NO. | DESCRIPTION | PKG QTY |
|----------|----------------------------------|---------|
| SHS03 | Heat Shrink Tubing 3/16" ID x 4" | 8 |
| SHS04 | Heat Shrink Tubing 1/4" ID x 4" | 7 |
| SHS012 | Heat Shrink Tubing 3/4" ID x 4" | 4 |
| SHS16 | Heat Shrink Tubing 1" ID x 4" | 3 |
| SHSA1 | Assorted 3/16", 1/4", 3/8" x 4" | 7 |
| SHSA2 | Assorted 1/2", 3/4", 1" x 4" | 4 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|-------------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1001 | 12-10 .250 (1/4") female tab | 15 |
| T1001C | 12-10 .250 (1/4") female tab | 100 |
| T1002 | 16-14 .250 (1/4") female tab | 20 |
| T2002 | 16-14 .187 (3/16") female tab | 20 |
| T2002C | 16-14 .187 (3/16") female tab | 100 |
| T2004 | 22-18 .250 (1/4") female tab | 20 |
| T2004C | 22-18 .250 (1/4") female tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|-----------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1003 | 16-14 .250 (1/4") male tab | 20 |
| T1004 | 12-10 .250 (1/4") male tab | 15 |
| T1004C | 12-10 .250 (1/4") male tab | 100 |
| T2003 | 16-14 .187 (3/16") male tab | 20 |
| T2003C | 16-14 .187 (3/16") male tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|--|---------|
| Quick Disconnects - Insulated | | |
| T1005 | 16-14 .250 (1/4") female fully insulated | 10 |
| T1005C | 16-14 .250 (1/4") female fully insulated | 100 |
| T1007 | 18-22 .250 (1/4") female fully insulated | 10 |
| T1009 | 12-10 .250 (1/4") female fully insulated | 10 |
| T1009C | 12-10 .250 (1/4") female fully insulated | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|--|---------|
| Quick Disconnects - Insulated | | |
| T1006 | 16-14 .250 (1/4") male fully insulated | 10 |
| T1010 | 12-10 .250 (1/4") male fully insulated | 10 |
| T1010C | 12-10 .250 (1/4") male fully insulated | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|-----------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1021 | .250 (1/4") double male tab | 10 |
| T1021C | .250 (1/4") double male tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|-----------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1022 | .250 (1/4") double male tab | 10 |
| T1022C | .250 (1/4") double male tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|-----------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1023 | .250 (1/4") triple male tab | 10 |
| T1023C | .250 (1/4") triple male tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---|---|---------|
| Quick Disconnects - Non Insulated | | |
| T1104 | 16-14 .250 (1/4") flag | 20 |
| T1104C | 16-14 .250 (1/4") flag | 100 |
| T1106 | 16-14 .187 (3/16") flag | 20 |
| Quick Disconnects - High Temp to 900 F | | |
| T1113 | 16-14 .250 (1/4") female x 90 degree flag | 20 |
| T1113C | 16-14 .250 (1/4") female x 90 degree flag | 100 |

Terminals & Connectors



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---|-------------------------------|---------|
| Quick Disconnects - Non Insulated | | |
| T1102 | 16-14 .250 (1/4") female tab | 20 |
| T1102C | 16-14 .250 (1/4") female tab | 100 |
| T1105 | 16-14 .187 (3/16") female tab | 20 |
| T1105C | 16-14 .187 (3/16") female tab | 100 |
| T1107 | 22-18 .110 (7/64") female tab | 20 |
| T2001 | 22-18 .110 (1/4") female tab | 20 |
| T2001C | 22-18 .110 (1/4") female tab | 100 |
| Quick Disconnects - High Temp to 900°F | | |
| T1111 | 16-14 .250 (1/4") female tab | 20 |
| T1111C | 16-14 .250 (1/4") female tab | 100 |
| T1112 | 12-10 .250 (1/4") female tab | 15 |
| T1112C | 12-10 .250 (1/4") female tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--|----------------------------------|---------|
| Quick Disconnects - Non Insulated | | |
| T1110 | 16-14 .157 (5/32") bullet female | 20 |
| T1110C | 16-14 .157 (5/32") bullet female | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--|--|---------|
| Quick Disconnects - Non Insulated | | |
| T1109 | 16-14 .250 (1/4") female tab w/insulation crimp | 20 |
| T1120 | 16-14 .312 (5/16") female tab w/insulation crimp | 10 |
| T1120C | 16-14 .312 (5/16") female tab w/insulation crimp | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---|---|---------|
| Quick Disconnects - High Temp to 900°F | | |
| T1114 | 12-10 .250 (1/4") female x 90 degree flag | 20 |
| T1114C | 12-10 .250 (1/4") female x 90 degree flag | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|----------------------------------|----------------------------|---------|
| Spade Flanged - Insulated | | |
| T1042 | 22-18 #8 stud 11/64" I.D. | 20 |
| T1042C | 22-18 #8 stud 11/64" I.D. | 100 |
| T1043 | 16-14 #8 stud 11/64" I.D. | 20 |
| T1043C | 16-14 #8 stud 11/64" I.D. | 100 |
| T1044C | 16-14 #10 stud 13/64" I.D. | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------|----------------------------|---------|
| Spade - Insulated | | |
| T1047 | 22-18 #8 stud 11/64" I.D. | 20 |
| T1047C | 22-18 #8 stud 11/64" I.D. | 100 |
| T1048 | 16-14 #10 stud 13/64" I.D. | 20 |
| T1049 | 12-10 #10 stud 13/64" I.D. | 15 |
| T1049C | 12-10 #10 stud 13/64" I.D. | 100 |
| T1050 | 12-10 #8 stud 11/64" I.D. | 15 |
| T1050C | 12-10 #8 stud 11/64" I.D. | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------------|------------------------------------|---------|
| Quick Disconnects - Insulated | | |
| T1027 | 16-14 .250 (1/4") male/female p.b. | 10 |
| T1027C | 16-14 .250 (1/4") male/female p.b. | 100 |
| T1028C | 22-18 .250 (1/4") male/female p.b. | 100 |
| T1029 | 12-10 .250 (1/4") male/female p.b. | 10 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--|----------------------------|---------|
| Quick Disconnects - Non Insulated | | |
| T1103 | 16-14 .250 (1/4") male tab | 20 |
| T1103C | 16-14 .250 (1/4") male tab | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--|--------------------------------|---------|
| Quick Disconnects - Non Insulated | | |
| T1108C | 16-14 .157 (5/32") bullet male | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------|----------------------------|---------|
| Rings - Insulated | | |
| T1030 | 22-18 #6 stud 9/64" I.D. | 10 |
| T1030C | 22-18 #6 stud 9/64" I.D. | 100 |
| T1031C | 22-18 #8 stud 11/64" I.D. | 100 |
| T1032C | 22-18 #10 stud 13/64" I.D. | 100 |
| T1033 | 16-14 #8 stud 11/64" I.D. | 20 |
| T1034 | 16-14 #10 stud 13/64" I.D. | 20 |
| T1035 | 16-14 1/4 stud 17/64" I.D. | 15 |
| T1035C | 16-14 1/4 stud 17/64" I.D. | 100 |
| T1036 | 12-10 #8 stud 11/64" I.D. | 15 |
| T1036C | 12-10 #8 stud 11/64" I.D. | 100 |
| T1037 | 12-10 #10 stud 13/64" I.D. | 15 |
| T1037C | 12-10 #10 stud 13/64" I.D. | 100 |
| T1038 | 12-10 1/4 stud 17/64" I.D. | 15 |
| T1039 | 16-14 3/8 stud 25/64" I.D. | 15 |
| T1039C | 16-14 3/8 stud 25/64" I.D. | 100 |
| T1040C | 12-10 3/8 stud 25/64" I.D. | 100 |
| T2033 | 16-14 #6 stud 9/64" I.D. | 20 |
| T2033C | 16-14 #6 stud 9/64" I.D. | 100 |
| T2065 | #8 1/4 stud 17/64" I.D. | 15 |
| T2065C | #8 1/4 stud 17/64" I.D. | 100 |
| T2066C | #6 1/4 stud 17/64" I.D. | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|----------------------------------|----------------------------|---------|
| Spade Flanged - Insulated | | |
| T1141 | 22-18 #8 stud 11/64" I.D. | 20 |
| T1141C | 22-18 #8 stud 11/64" I.D. | 100 |
| T1142 | 22-18 #10 stud 13/64" I.D. | 20 |
| T1143 | 16-14 #8 stud 11/64" I.D. | 20 |
| T1143C | 16-14 #8 stud 11/64" I.D. | 100 |
| T1144 | 16-14 #10 stud 13/64" I.D. | 20 |

Terminals & Connectors



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------------|----------------------------|---------|
| Spade - Non Insulated | | |
| T1145 | 22-18 #10 stud 13/64" I.D. | 10 |
| T1145C | 22-18 #10 stud 13/64" I.D. | 100 |
| T1146 | 16-14 #10 stud 13/64" I.D. | 10 |
| T1147 | 10-12 #10 stud 13/64" I.D. | 10 |
| T1147C | 10-12 #10 stud 13/64" I.D. | 100 |
| T114750 | WIRE CNCTR, SM, GRAY | 50 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|-----------------------------------|-----------------------------|---------|
| Rings - Non Insulated | | |
| T1131 | 22-18 #8 stud 11/64" I.D. | 20 |
| T1131C | 22-18 #8 stud 11/64" I.D. | 100 |
| T1133C | 16-14 #8 stud 11/64" I.D. | 100 |
| T1134 | 16-14 #10 stud 11/64" I.D. | 20 |
| T1134C | 16-14 #10 stud 11/64" I.D. | 100 |
| T1135 | 16-14 1/4" stud 17/64" I.D. | 20 |
| T1135C | 16-14 1/4" stud 17/64" I.D. | 100 |
| T1136 | 12-10 #8 stud 11/64" I.D. | 20 |
| T1136C | 12-10 #8 stud 11/64" I.D. | 100 |
| T1137 | 12-10 #10 stud 13/64" I.D. | 20 |
| T1137C | 12-10 #10 stud 13/64" I.D. | 100 |
| T1138 | 12-10 1/4" stud 17/64" I.D. | 15 |
| T1138C | 12-10 1/4" stud 17/64" I.D. | 100 |
| Rings - High Temp to 900°F | | |
| T1115 | 16-14 #10 stud 13/64" I.D. | 20 |
| T1115C | 16-14 #10 stud 13/64" I.D. | 100 |
| T1116 | 16-14 1/4" stud 17/64" I.D. | 20 |
| T1116C | 16-14 1/4" stud 17/64" I.D. | 100 |
| T1117 | 12-10 #10 stud 13/64" I.D. | 20 |
| T1117C | 12-10 #10 stud 13/64" I.D. | 100 |
| T1118 | 12-10 1/4" stud 17/64" I.D. | 15 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---------------------------|--------------------------|---------|
| Line Tap Connector | | |
| T1061 | 22-18 line tap connector | 10 |
| T1061C | 22-18 line tap connector | 100 |
| T1062C | 16-14 line tap connector | 100 |
| T1064 | 12-10 line tap connector | 5 |
| T1064C | 12-10 line tap connector | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------|--------------------------|---------|
| Butt Connectors | | |
| T1051 | 22-18 insulated - red | 20 |
| T1051C | 22-18 insulated - red | 100 |
| T1052 | 16-14 insulated - blue | 20 |
| T1052C | 16-14 insulated - blue | 100 |
| T1053 | 12-10 insulated - yellow | 15 |
| T1053C | 12-10 insulated - yellow | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|-------------------------------|---------|
| Connectors and Adapters | | |
| T1121 | .250 (1/4") 2 male x 1 female | 10 |
| T1121C | .250 (1/4") 2 male x 1 female | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------|---------------------|---------|
| Butt Connectors | | |
| T1119 | 22-18 non insulated | 20 |
| T1119C | 22-18 non insulated | 100 |
| T2067 | #8 non insulated | 20 |
| T2067C | #8 non insulated | 100 |
| T2068 | #6 non insulated | 20 |
| T2068C | #6 non insulated | 100 |
| T2111 | 16-14 non insulated | 20 |
| T2111C | 16-14 non insulated | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|-------------------------------|---------|
| Connectors and Adapters | | |
| T1122 | .250 (1/4") 2 male x 1 female | 10 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------|---|---------|
| Wire Connectors | | |
| T1150 | Small blue wire nut with spring insert | 20 |
| T1150C | Small blue wire nut with spring insert | 100 |
| T1151 | Medium orange wire nut with spring insert | 15 |
| T1151C | Medium orange wire nut with spring insert | 100 |
| T1152 | Large yellow wire nut with spring insert | 15 |
| T1152C | Large yellow wire nut with spring insert | 100 |
| T1153 | Extra large red wire nut with spring insert | 10 |
| T1153C | Extra large red wire nut with spring insert | 100 |
| T1161C | Small yellow wire nut without insert | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---------------------------------|----------------------|---------|
| Line Tap with Disconnect | | |
| T1065 | 18-14 line taps only | 10 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|-------------------------------|---------|
| Connectors and Adapters | | |
| T1124 | .250 (1/4") female x #6 screw | 10 |
| T1124C | .250 (1/4") female x #6 screw | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------------|----------------------------|---------|
| Closed End Connectors | | |
| T1056 | 22-18 insulated crimp type | 20 |
| T1056C | 22-18 insulated crimp type | 100 |
| T1057 | 16-14 insulated crimp type | 15 |
| T1057C | 16-14 insulated crimp type | 100 |
| T1058 | 12-10 insulated crimp type | 15 |
| T1058C | 12-10 insulated crimp type | 100 |
| T1059 | #8 insulated crimp type | 15 |
| T1059C | #8 insulated crimp type | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|------------------------|---------|
| Connectors and Adapters | | |
| T1123 | .250 (1/4") x #10 stud | 10 |
| T1123C | .250 (1/4") x #10 stud | 100 |

Terminals & Connectors



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|-------------------------------|---------|
| Connectors and Adapters | | |
| T1125 | .250 (1/4") 2 male x 1 female | 10 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------------------|---------------------------------------|---------|
| Connectors and Adapters | | |
| T1129 | 12-8 .250 (1/4") compressor terminal | 10 |
| T1129C | 12-8 .250 (1/4") compressor terminal | 100 |
| T1130 | 16-14 .250 (1/4") compressor terminal | 10 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---|---|---------|
| High Heat Porcelain Wire Connectors (Up To 1800 F) | | |
| T1164 | Small #1 high heat porcelain wire nut 18 - 14 wire | 15 |
| T1164C | Small #1 high heat porcelain wire nut 18 - 14 wire | 100 |
| T1165 | Small #3 high heat porcelain wire nut 12 - 10 wire | 15 |
| T1165C | Small #3 high heat porcelain wire nut 12 - 10 wire | 100 |
| T2070 | Small #1 high heat porcelain wire nut 8 - 10 wire | 10 |
| T2070C | Small #7 high heat porcelain wire nut 8 - 10 wire | 100 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------|---|---------|
| Alligator Clips | | |
| T1196 | small includes black and red insulators | 3 pair |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|--------------------|-----------------------------------|---------|
| Banana Plug | | |
| T1179 | includes black and red insulators | 1 pair |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|-----------------------------------|--|---------|
| Heavy Duty Alligator Clips | | |
| T1186 | small includes black and red insulators | 1 pair |
| T1187 | medium includes black and red insulators | 1 pair |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|---|--------------------|---------|
| Scotchlok Electrical Spring Connectors | | |
| T1166 | Small yellow | 15 |
| T1166C | Small yellow | 100 |
| T1167 | Medium red | 10 |
| T1167C | Medium red | 100 |
| T1168 | Large gray | 5 |
| T1168L | Large gray | 50 |
| T1169 | Extra large blue | 5 |
| T1169L | Extra large blue | 50 |



| PART NO. | SIZE / DESCRIPTION | PKG QTY |
|------------------------|--------------------------------|---------|
| Alligator Clips | | |
| T1191 | Small standard clips | 10 |
| T1192 | Medium standard clips | 5 |
| T1193 | Medium for use with test leads | 5 |



12 per case

M444 Aerosol Lubricant & Metal Protectant

Specially created and perfected for Professional technicians and mechanics everywhere... and there is nothing like it in the world!

- Turns old tools into new ones
- Can be used on cars, trucks, bicycles, fishing gear, marine gear, electrical and electronic gear, machinery, appliances etc.

Applications

- Lubricates
- Prevents Rust and Corrosion
- Repels Moisture
- Restores Tools and Equipment



M098



M044

M098 Zoom Spout® Oiler

A paraffin base, non-gumming, high quality lubricating oil

- All-Purpose Lubricating Oil
- Flexible spout extends and retracts, adjusts to any "in-between" length
- Withstands high temperatures without breaking down
- Viscosity 92-99 @ 140°F

Applications

- All types of motors, blowers, oil burner bearings, linkages, appliance pumps, etc...
- Normal and High speed shaft bearings

Rust Buster® Solvent

Dissolves Rust

- Telescoping Pullout Spout
- Loosens rust in seconds
- No lingering odor
- Counter Display Case

| PART NO. | BOTTLE SIZE | PACKAGING |
|----------|-------------|-----------|
| M098 | 4 oz | 12/Case |
| M044 | 4 oz | 12/Case |



SUPCO88 Oil Additive

Introduced in 1954 and valued worldwide, this super lubricant is a "must use" in repair and preventative maintenance programs.

- Compatible with all refrigeration oils
- Dissolves sludge buildup on bearing and valve surfaces
- Prevents binding of high speed compressors
- Prevents excess wear in motors and compressors

| PART NO. | BOTTLE SIZE | PACKAGING |
|----------|-------------|-----------|
| S8 | 8 OZ. | 24/Case |

Application Notes:

To Prevent Excess Wear on Expansion Valves and Capillaries Mix one part SUPCO88 to 9 parts refrigeration oil.

- Prevents excess wear on expansion valve needles and seats.
- Penetrates the pores of ALL moving metal parts of the expansion valve for constant lubrication.

Extend the Life of ALL Motors (i.e. for Blowers and Air Conditioners)

- A few drops will help free a "frozen" or sticking motor shaft
- Mix 9 to one for regular bearing maintenance.
- Decreases "bearing to shaft" friction and sludge accumulation when mixed 9 to one.

More Efficiency for High Speed Compressors

- Increases the lubricating capability of mineral oils in high speed compressors.
- Used in new units to reduce current draw by reducing friction and preventing overloading.
- SUPCO88 can be left in the system permanently.



SO100/ST200

Slimeout®

Condensate Pan Conditioning Tablets

- Slimeout® tablets prevent plugging of the air conditioning condensate drip pans and drain lines
- Slimeout® does not release any chlorine or other noxious fumes
- Slimeout® eliminates odors
- Slimeout® easily solves problems

| | PART NO. | PART NO. |
|---------------------|---------------|---------------|
| | SO100 | ST200 |
| Description | Slime Out | Slime Tab |
| Tablets Jar | 100 | 200 |
| Tablet Size | 35 grams | 20 grams |
| Initial Application | 2 tabs/3 tons | 3 tabs/3 tons |
| Maintenance | 2 per month | 3 per month |

Chemicals



Leak Lock and Leak Lock GOLD with Teflon

A resin based soft setting brushable paste pipe joint compound resistant to all refrigerants, oils, water and most chemicals, liquids and gases.

- Use with pressures to 10,000 PSI to full vacuums.
- Temperature range -200°F to 400°F, (-93°C) to (204°C).
- It never hardens and it never becomes brittle.
- Ideal for joining all metals, plastics and other materials.
- Will stick to all clean surfaces.
- GUARANTEES A PERFECT SEAL... UNDER ALL CONDITIONS
- Will stick to all clean surfaces.
- Prevent vibration from loosening nuts, bolts, plugs and fittings.
- Non Toxic



Regular

| PART NO. | SIZE | PKG |
|----------|-----------------------------|---------|
| HS10001 | 1 1/3 oz Tube | 12/Case |
| HS10004 | 4 oz Brush Top Plastic Jar | 12/Case |
| HS10016 | 16 oz Brush Top Plastic Jar | 12/Case |
| HS10128 | 1 Gallon Can | 1 |

Teflon

| PART NO. | SIZE | PKG |
|----------|-----------------------------|---------|
| HS11001 | 1 1/3 oz TUBE | 12/Case |
| HS11004 | 4 oz Brush Top Plastic Jar | 12/Case |
| HS11016 | 16 oz Brush Top Plastic Jar | 12/Case |
| HS11128 | 1 Gallon Can | 1 |

Red Epoxy

When you need a sealant you can count on. High Performance, Heat Cured, Two Part, Epoxy Kit

- Exhibits a Color Change When Cured (Turns Gold)
- May Be Cured With a Hot Air Gun or Open Flame in Minutes
- -100°F to 300°F, (-73°C to 149°C)
- Working Pressure in Excess of 3000 PSI
- Tensile Strength: 6000 PSI
- Works on Vertical Surfaces
- Pressure Tested to 3000 PSI
- Simple, Quick Mixing & Application
- Oil, Gas, Fuel & Solvent Resistant
- No Rush, No Wait, You Control Curing Time
- Equipment is Serviceable Immediately
- Use on All Metals and Rigid Plastics
- HVAC & Refrigeration
- Plumbing & Appliances
- Automotive & Marine
- Petrochemical, Manufacturing
- Industrial, Commercial, Institutional



| PART NO. | SIZE | PKG |
|----------|------------------------------|---------|
| HS12001 | Kit Including 2 1/2 oz Tubes | 12/Case |

Solderlene

High Quality, Paste Type, Non-Acid Soldering Flux.

- Industrial strength wetting agents to promote solder flow
- For use with low and mid-temp. soft solders, both lead and lead-free
- Effective on all metals except aluminum and magnesium.
- Brush Top Plastic Jars



| PART NO. | SIZE | PKG |
|----------|-------|---------|
| HS30004 | 4 oz | 12/Case |
| HS30016 | 16 oz | 12/Case |

Thawzone (New Formula)

The original liquid dehydrant, frees your frozen system in minutes. It seeks out moisture and chemically bonds to it.

- Enhanced moisture control in even the most advanced systems.
- Aids with oil return in low temperature systems.
- Compatible with all refrigerants and refrigeration lubricants.
- Helps prevent the formation of acid.
- No Methanol
- Environmentally Sound
- Safer
- Biodegradable, non-polluting
- Non-Poisonous



| PART NO. | SIZE | PKG |
|----------|-------|---------|
| HS17001 | 1 oz | 24/Case |
| HS17004 | 4 oz | 12/Case |
| HS17016 | 16 oz | 6/Case |

Add 1/8 fluid ounce (3.75 ml) of THAWZONE directly to the refrigerant of any system for every 1 lb. of refrigerant in the system.

*HIGH SIDE SYSTEM INJECTOR (part no. HSINJ001) IS RECOMMENDED FOR INTRODUCING THAWZONE INTO AN OPERATING SYSTEM.

Spiro Lite UV Bulb

120 Volt Florescent UV Light Source
For Your Light Trouble

| PART NO. | PKG |
|----------|-----|
| HSUVB001 | 1 |





Highside System Injector

Use for introducing any liquid into the low side of a charged hermetic system.

- Entirely reusable
- Constructed of rugged aluminum for long life
- Designed for use with any standard manifold gauge and requires no extra valves or fittings
- Drip proof, no spill design takes the mess out of maintenance
- Helps prevent the venting of refrigerants into the atmosphere.
- Prevents the introduction of air into an operating system.
- It can be used on sealed operating systems to avoid shutdowns.
- Use with Trace, Trace 2, Thawzone and Acid Neutralizer
- Compatible with all refrigerants

| PART NO. | PKG |
|----------|-----|
| HSINJ001 | 1 |



Gas Leak Detector Low Temp

Leaks appear as large strong bubbles which cling to the surface and are fluorescent under a black light.

- Non-freezing
- Fluorescent
- Rated to -30°F (-34°C)
- Non-toxic
- Non-hazardous
- Bubble-type gas leak detector

Use On:

- Hot and cold piping
- Natural Gas
- Most Gases
- Air
- All Refrigerants

| PART NO. | SIZE | TYPE | PKG |
|-----------------|--------|-------------------------|---------|
| LOW TEMP | | | |
| HS22008 | 8 oz | Plastic Bottle w/Dauber | 24/Case |
| HS22032 | 32 oz | Trigger Sprayer Bottle | 12/Case |
| HS22128 | 1 Gal. | Plastic Bottle | 6/Case |
| MID TEMP | | | |
| HS23008 | 8 oz | Plastic bottle w/Dauber | 24/Case |
| HS23032 | 32 oz | Trigger Sprayer Bottle | 12/Case |
| HS23128 | 1 Gal. | Plastic Bottle | 6/Case |

Gas Leak Detector Mid Temp

Same as above except:

- Rated to 27°F (-3°C)



Trace2

A red penetrant dye in a polyolester base that is completely compatible with all refrigerants and lubricants, old and new. Use to locate the hardest to find leaks under the toughest conditions in low light or dark areas.

- Leaks show as bright red stains
- For refrigeration and hydraulic systems
- Florescent with any ultraviolet light source
- Non-volatile and will not sludge or deposit gum
- Clearly visible, even through ice and frost
- Locates leaks exactly, no false positives

Trace

A red penetrant dye in a mineral oil base that is completely harmless to refrigeration, air conditioning and hydraulic equipment.

Hydro Trace

Locate hard-to-find leaks in any closed system containing water and/or antifreeze compounds such as Propylene Glycol and Ethylene Glycol. When added to a system leaks are easily visible as bright red stains under normal lighting conditions and as a bright orange glow when exposed to an ultraviolet light source.

Applications Include:

- Refrigeration
- Hydronics
- Automotive
- Process Cooling
- Chemically Inert
- Will not harm equipment or seals



| WITH SUPERBRITE UV TRACER | | |
|---------------------------|----------------------|---------|
| PART NO. | SIZE | PKG |
| TRACE2 | | |
| HS21004 | 4 oz Plastic Bottle | 12/Case |
| HS21016 | 16 oz Plastic Bottle | 6/Case |
| HS21128 | 1 Gallon Can | 4/Case |
| TRACE | | |
| HS20004 | 4 oz Plastic Bottle | 12/Case |
| HS20016 | 16 oz Plastic Bottle | 6/Case |
| HS20128 | 1 Gallon Can | 4/Case |
| HYDRO TRACE | | |
| HS26004 | 4 oz Plastic Bottle | 12/Case |
| HS26016 | 16 oz Plastic Bottle | 6/Case |
| HS26128 | 1 Gallon Can | 4/Case |

Trace2 and Trace are the easiest and least expensive way to locate leaks in an operating system and are for use in systems where the lubricants travel with refrigerants.

Chemicals



Trax

Bubble-type liquid leak detector formulated to produce long lasting bubbles under 'job-site' conditions.

- Clear
- No Cleanup
- Environmentally Friendly
- Evaporates Leaving No Residue
- Temp Range: 27°F to 200°F (-3°C to 93°C).
- Non-Toxic
- Does Not Pit Surfaces
- Detects Leaks as Small as 1 Micron
- Oxygen Compatible

Meets the performance requirements of Military specifications: MIL 25567 Type I A, B & C.

| PART NO. | SIZE | TYPE | PKG |
|----------|----------|------------------------------------|---------|
| HS24000 | 1 1/3 oz | Squeeze Bottle | 24/Case |
| HS24010 | 10 oz | Squeeze Bottle w/ Extensible Spout | 12/Case |
| HS24128 | 1 GAL. | Bottle | 6/Case |



Dye Wash

Removes any type of leak detecting dye from equipment and Pipe surfaces to prevent false readings during future and follow-up leak detection.

- Non-Toxic
- Environmentally Friendly
- Non-Corrosive
- Easy To Use

| PART NO. | SIZE | PKG |
|----------|--------------------|---------|
| HS51032 | 32 oz Spray Bottle | 12/Case |

Oil Checker

Highside Chemicals introduces the newest chemical tool for easily identifying all refrigeration, air conditioning and heat pump lubricants in just seconds.



Features/Benefits

- Easy to use two step process that identifies all types of oils.
- Test results within seconds
- Each kit includes two complete tests.
- Should be used to check the type of oil in a system before adding any additional oil.
- Compatible with Mineral, Alkybenzene and Polyolester type oils.
- Saves time and money by eliminating the need for a refractometer or expensive laboratory tests.
- Avoids the costly mistake of mixing POE and Mineral refrigeration oils.

| PART NO. | PKG |
|----------|---------|
| HS16501 | 12/Case |



The Acid Test - 4 COMPLETE TESTS IN EACH KIT

For detecting the presence and formation of acid in air conditioning and refrigeration systems.

- Easy to use
- No Complicated Charts
- Results in Seconds
- Very Inexpensive
- Non-Toxic
- Non-Hazardous
- Accurate Results
- Eliminates Guess Work
- Safe Formula
- Biodegradable
- Non-Flammable
- For use with all Refrigerants

| PART NO. | PKG |
|----------|---------|
| HS16001 | 12/Case |

Simple to Understand Color Change Indicators!

- BLUE OR VIOLET . No Acid Present
- GREEN..... Moderately Acidic
- YELLOW Acidic

Acid Neutralizer

The BEST Acid Treatment available neutralizes residual acid caused by compressor burnout. *The Cure for Acid Problems.*

- Works Fast
- Circulates Quickly
- Compatible with ALL Lubricants
- Safe, Will Not Harm System Components
- No Complicated Charts
- No Solids or Solid Residuals
- Compatible with ALL Refrigerants
- Neutralizes Acid in Recovery Equipment
- Easy to Use
- Can Prevent Compressor Burnout

A vital part of any preventative maintenance program.

| PART NO. | SIZE | PKG |
|----------|-------|---------|
| HS18004 | 4 oz. | 12/Case |



* MSDS Sheets are available for all chemicals, visit www.supco.com



Super Flush AC/R Internal System Cleaner

Neutralizes and Removes Acid Caused By Compressor Burnout

- Biodegradable
- Easy to Use
- Cleans in a Single Treatment
- Compatible with All Refrigerants and Refrigeration Oils
- Does Not Contain Halogenated Solvents
- Cleaning Agent for all A/C and Refrigeration Parts
- Environmentally Safe
- Non-Flammable
- Saves Time and Money

One Treatment Cleans and Removes:

- Sludge
- Gum
- Debris
- Moisture
- Carbon Deposits
- Tar
- Grease
- Organic Acids
- Soot
- Mineral Acids

Use:

- Before a system retrofit
- After a compressor burnout
- Recovery, Recycling and Reclamation Equipment
- On automotive (Remove immediately)



| PART NO. | SIZE | PKG |
|----------|-----------------------|---------|
| HS55032 | 32 oz Plastic Bottle | 12/Case |
| HS55128 | 1 Gal. Plastic Bottle | 6/Case |

Coil Tamer Products Made For The Professionals

PINK STUFF

Heavy Duty, Foaming, Acid Based Concentrated Liquid Coil Cleaner Foaming Action Pushes Dirt Out of Coils to be Rinsed Away.

- Non Flammable
- Easy to Use
- Non Oily
- Biodegradable

Cleans and Brightens:

- Condenser Coils
- Evaporator Coils
- Equipment Surfaces

Effective On:

- Heavy Oxidation
- Mold
- Lint
- Oily Dirt
- Algae
- Mildew
- Grease
- Oils

Easily Applied Using Standard Low Pressure Sprayer

| PART NO. | SIZE | PKG |
|----------|-----------------------|--------|
| HS58128 | 1 Gal. Plastic Bottle | 4/Case |



GREEN STUFF

Concentrated Alkaline Based Liquid Coil Cleaner

- Non Flammable
- Fast Acting
- Non Oily
- Biodegradable
- Brightens

For Heavy Duty Cleaning and Degreasing of:

- Condenser Coils
- Permanent Filters
- Evaporator Coils
- Equipment Surfaces
- Fins
- Electronic Cells

Effective On:

- Grease
- Lint
- Tar
- Mold
- Dirt
- Mildew
- Oil
- Dust
- Algae
- Nicotine

Self Rinsing on Evaporator Coils and is Easily Applied with a Low Pressure Sprayer.

| PART NO. | SIZE | PKG |
|----------|-----------------------|--------|
| HS59128 | 1 Gal. Plastic Bottle | 4/Case |



EV Coil Max

Powerful Coil Cleaner in Powder Form to Avoid Dangerous Liquid Spills.

- Environmentally Friendly
- Virtually Odorless
- Easy to Use and Clean Up
- Lowers Freight Costs
- Extra Long Shelf Life
- Its powder form is a safer alternative to liquid coil cleaners
- No Acidic Residue
- Fast Acting
- Prevents Corrosion
- Less Storage Space

*16 oz equals 1 gallon 6:1 (9 lbs or 144oz weight) solution

| PART NO. | SIZE | PKG |
|----------|-------------------|---------|
| HS56011 | 16 oz Plastic Jar | 12/Case |



HL Coil Brite Coil Cleaner

Acid Based, Powder Coil Cleaner with Controlled Foaming Action

- Clean the Toughest Coils
- Mild Odor
- Indefinite Shelf Life
- Nonflammable
- Lowers Freight Costs
- Less Storage Space
- Easy to Use
- No Dangerous Liquid Spills
- Makes Old Coils Look New
- Easy Rinse for Quick Cleaning

*14oz equals 1 gallon 6:1 (9 lbs or 144oz weight) solution

| PART NO. | SIZE | PKG |
|----------|----------------------|---------|
| HS57014 | 14 oz Plastic Bottle | 12/Case |





Coil Blaster Solvent

Solvent Based High Pressure Aerosol Coil Cleaner

- Pleasantly Scented
- Nonflammable
- Degreases
- Fast Drying
- Nonconductive
- Safe To Use On Equipment While Running

- Basting Aerosol Nozzle
- No Residue
- Easy To Use
- No Cleanup

Use On:

- Evaporator Coils
- Electrical Equipment
- Condenser Coils
- Automotive Parts
- All HVAC/R Equipment
- Electrical Components

Effective On:

- Dirt
- Grime
- Grease
- Oil

| PART NO. | SIZE | PKG |
|----------|-------------------|---------|
| HS58520 | 18 oz Aerosol Can | 12/Case |



HD Jet Foamer Coil Cleaner

Heavy Duty Foaming Coil Cleaner in an aerosol can

- Convenient
- Pleasant Scent
- Environmentally Friendly
- No Ozone Depleters
- 360
- No Chlorinated Solvents
- Easy to Store
- Water Based
- Nonflammable
- Corrosion Inhibitors
- Spray Nozzle

Use On:

- Evaporator Coils
- Condenser Coils

Will Not Harm Plastics, Metals or Surrounding Equipment

Quickly and Easily Liquifies:

- Dirt
- Oil
- Deposits
- Grease
- Residues

| PART NO. | SIZE | PKG |
|----------|-------------------|---------|
| HS59520 | 19 oz Aerosol Can | 12/Case |



ICEMAX Nickel Safe Ice Machine Cleaner

High Performance Ice Machine Cleaner in a Powder avoids dangerous and messy spills that can damage your facility, vehicles and destroy other valuable inventory. Prevents liquid spills that can attract unnecessary regulatory attention.

- Inhibits Formation of Scale
- Prevents Corrosion
- Environmentally Friendly
- Will Not Separate or Chemically Change Over Time
- Indefinite Shelf Life (When Kept Sealed)
- Saves Freight Costs
- Maximum Scale Removing Power
- No Acidic Residue
- Makes 1 Gallon of Concentrated Cleaner

| PART NO. | SIZE | PKG |
|----------|--------|---------|
| HS50004 | 4.4 oz | 12/Case |



Filter Fan & Vent Cleaner

Heavy duty cleaner specifically formulated for the heating, ventilation, air-conditioning and refrigeration industry.

- Biodegradable
- Non-Corrosive
- Easy to Use
- Environmentally Friendly
- Non-Toxic
- Safe & Effective

Removes:

- Dust
- Grease
- Tar Deposits
- Dirt
- Oil

Use On:

- Electronic Cells
- Permanent Air Filters
- All Vents & Vent Surfaces
- Equipment Surfaces
- Most Air Cleaning Equipment
- Permanent Pre-Filters
- Fan Blades, Plastic & Metal

| PART NO. | SIZE | PKG |
|----------|---------------------------|---------|
| HS52032 | 32oz Plastic Spray Bottle | 12/Case |
| HS52128 | 1 Gal. Plastic Refill | 6/Case |

CDC Anti-Clog

Condensate Drainpan Conditioner

Laboratory proven to kill 99% of Legionnaire's Disease bacteria and a broad spectrum of harmful bacteria including those causing the common cold and other respiratory ailments.

- EPA Registered
- Improved Chemical Formulation
- Water activated timed-release
- 3 to 6 months, 24 hours/day service
- Works in equipment of all sizes (Available in 2 Sizes)
- Filter material meters biocide for consistent chemical release
- Sealed, tamper proof housing prevents skin contact w/ biocide
- Designed not to clog drain hole
- Can be placed vertically or horizontally
- Ph neutralizers help protect drainpan against corrosion
- 40% more high efficiency biocide (by weight)

Use CDC ANTI-CLOG* wherever there is Air Conditioning and Refrigeration Equipment

| PART NO. | SIZE | PKG |
|----------|---------------------|---------|
| HS52105 | Units up to 5 Tons | 24/Case |
| HS52115 | Units up to 15 Tons | 12/Case |

* MSDS Sheets are available for all chemicals, visit www.supco.com



ICE BLOCK Heat Transfer & Anti-Freeze

Propylene Glycol based anti-freeze and heat transfer fluid capable of providing pipe burst protection to temperatures as low as -100°F (-73°C). All ingredients are generally regarded as safe by the FDA, making ICE BLOCK the recommended anti-freeze protection where there is possible contact with potable water sources.

- Non-Toxic
- Chemically Stable - Will Not Separate
- Maximum Heat Transfer
- Protects Pipes and Other System Components From Freeze Damage
- Safe and Easy to Use
- Lubricates As It Works
- Safe For Use Where Contact with Potable Water is Possible
- Maximum Corrosion Protection
- Will Not Leave Deposits

Applications Include:

- Refrigeration Systems
- Chilled Water Systems
- Coil Defrosting
- Ice Making Machines
- Water Based Heat Extraction System
- Snow Melting Systems
- Winterization of Any Water Based Systems
- Hydronic Heating Systems
- Solar Heating & Hot Water Systems
- Cooling Systems & Chillers
- Immersion Freezing
- Air Hydronic, Heat Pumps & Furnaces.
- Process Cooling
- Ground Water Coupled Heat Pumps
- Cooling Towers
- Industrial Heat Transfer Systems
- Fire Hydrant & Sprinkler System

| PART NO. | SIZE | PKG |
|----------|----------|--------|
| HS15128 | 1 Gallon | 6/Case |



KLEEN-AIR Odor Absorber

- Simply open the spout to absorb and remove all kinds of odors.
- One 8 ounce bottle works for 1 year in a 9' x 12' room

| PART NO. | SIZE | PKG |
|----------|-------|---------|
| KA12 | 8 oz. | 12/Case |



Epoxy Putty

- Cures Wet or Dry - will cure underwater
- Mixes like clay hardens like steel
- After curing, can be sanded, drilled, tapped, machined, sawn, or painted.
- Initial set in 10 to 15 minutes, hard set 1 hour, with full cure in 24 hours.
- Temperature range -65°F to +250°F
- Works on glass, wood, plastic, fiberglass, tile, concrete, and many more.

| PART NO. | DESCRIPTION | QUANTITY PER CARTON | REPLACES GEM NO. |
|----------|--------------------------------|---------------------|------------------|
| 9900H | Tan Epoxy Putty 4" blocks | 24 | — |
| 9904H | White Epoxy Putty 4" blocks | 24 | EP8002 Half-size |
| 9904K | White Epoxy Putty 8" blocks | 24 | EP8002 |
| 9906H | Aluminum Epoxy Putty 4" blocks | 24 | EP8001 Half-size |
| 9906K | Aluminum Epoxy Putty 8" blocks | 24 | EP8001 |
| 9915K | White Fast Set Epoxy Paste | 24 | — |

English Conversion Factors & Data

To Convert Measurements

| From | To | Multiply By |
|------------------|------------------|-------------|
| Cubic Feet | Cubic Inches | 1728. |
| Cubic Inches | Cubic Feet | 0.00058 |
| Cubic Feet | Gallons | 7.480 |
| Gallons | Cubic Feet | 0.1337 |
| Cubic Inches | Gallons | 0.00433 |
| Gallons | Cubic Inches | 231. |
| Barrels | Gallons | 42. |
| Gallons | Barrels | 0.0238 |
| Imperial Gallons | U.S. Gallons | 1.2009 |
| U.S. Gallons | Imperial Gallons | 0.8326 |
| Feet | Inches | 12. |
| Inches | Feet | 0.0833 |
| Square Feet | Square Inches | 144. |
| Square Inches | Square Feet | 0.00695 |
| Short Tons | Pounds | 2000. |
| Liters | U.S. Gallons | 0.2642 |

To Convert Pressure (at 32° F)

| From | To | Multiply By |
|---------------------|---------------------|-------------|
| Inches of Water | Pounds per Sq. Inch | 0.03612 |
| Pounds per Sq. Inch | Inches of Water | 27.686 |
| Feet of Water | Pounds o Sq. Inch | 0.4334 |
| Pounds per Sq. Inch | Feet of Water | 2.307 |
| Inches of Mercury | Pounds per Sq. Inch | 0.4912 |
| Pounds per Sq. Inch | Inches of Mercury | 2.036 |
| Atmospheres | Pounds per Sq. Inch | 14.696 |
| Pounds per Sq. Inch | Atmospheres | 0.06804 |

To Convert Power

| From | To | Multiply By |
|-----------------------|-----------------------|-------------|
| Horsepower | Metric Horsepower | 1.014 |
| Horsepower | Ft./Power per Minute | 33000. |
| Horsepower | Kilowatts | 0.746 |
| Kilowatts | Horsepower | 1.3404 |
| British Thermal Units | Foot/Pounds | 778.177 |
| Foot/Pounds | British Thermal Units | 0.001285 |
| British Thermal Units | Horsepower Hours | 0.0003927 |
| Horsepower Hours | British Thermal Units | 2544.1 |
| British Thermal Units | Kilowatt Hours | 0.0002928 |
| Kilowatt Hours | British Thermal Units | 3415. |
| Watt Hours | British Thermal Units | 3.415 |

Volume-Weight Conversions

wt. lbs.

| | |
|---------------------------------------|---------|
| 1 Cubic Foot of Water..... | 62.4* |
| 1 Cubic Inch of Water..... | 0.0361* |
| 1 Gallon of Water..... | 8.33* |
| 1 Cubic Foot of Air..... | .075+ |
| 1 Cubic Inch of Steel..... | 0.284 |
| 1 Cubic Foot of Brick (Building)..... | 112-120 |
| 1 Cubic Foot of Concrete..... | 120-140 |
| 1 Cubic Foot of Earth..... | 70-120 |

* at 32° F

+ at 70° F. -29.92" Hg.

English to Metric Conversion Factors

To Convert Measurements

| From | To | Multiply By |
|-----------------------|--------------------|-------------|
| Cubic Feet | Cubic Centimeters | 28317.0 |
| Cubic Inches | Cubic Centimeters | 16.387 |
| Cubic Feet | Liters | 28.32 |
| Gallons | Liters | 3.7854 |
| Cubic Inches | Liters | 0.0164 |
| Gallons | Cubic Centimeters | 3785.4 |
| Barrels | Cubic Meters | 1.0551 |
| Imperial Gallons | Cubic Meters | 0.0045461 |
| U.S. Gallons | Cubic Meters | 0.0037854 |
| Feet | Meters | 0.3048 |
| Inches | Meters | 0.0254 |
| Square Feet | Square Meters | 0.0929 |
| Square Inches | Square Centimeters | 6.452 |
| Ton (Short, 2000 lb.) | Kilograms | 907.2 |
| Liter | Cubic Meters | 0.001 |
| Pounds | Kilograms | 0.45359 |

To Convert Pressure (at 32° F)

| From | To | Multiply By |
|---------------------|--------------------|-------------|
| Inches of Water | Newton/Sq. Meter | 249.082 |
| Pounds per Sq. Inch | Newton/Sq. Meter | 6894.8 |
| Feet of Water | Newton/Sq. Meter | 2988.98 |
| Pounds per Sq. Inch | Kilograms/Sq. Cent | 0.07031 |
| Inches of Mercury | Newton/Sq. Meter | 3386.4 |
| Pounds per Sq. Inch | Dyne/Sq. Cent. | 68948.0 |
| Atmospheres | Newton/Sq. Meter | 101325.0 |
| Pascal | Newton/Sq. Meter | 1.0 |

To Convert Energy, Heat and Power

| From | To | Multiply By |
|------------------------|----------------------|-------------|
| Horsepower | Watt | 745.7 |
| British Thermal Units | Joule | 1054.35 |
| Foot-Pounds | Joule | 1.3558 |
| British Thermal Units | Calorie | 252.0 |
| British Thermal Units | Watt-Second | 1054.35 |
| Watt-Second | Joule | 1.0 |
| Calorie | Joule | 4.184 |
| Watt-Hours | Joule | 3600.0 |
| Kilocalorie/Minute | Watt | 69.73 |
| Ton (Refrigeration) | Watt | 3516.8 |
| BTU/Hour | Watt | 0.29288 |
| BTU/In./Hr. Ft.(2) ° F | Watt/Meter K | 0.14413 |
| BTU/Hr. at 10° F TD | Kcal/Hr. at 6° C. TD | 0.252 |
| BTU/Hr. at 15° F TD | Kcal/Hr. at 8° C. TD | 0.252 |

Volume-Weight Conversions

Wt. Kilograms

| | |
|---------------------------------------|---------|
| 1 Cubic Foot of Water..... | 28.3* |
| 1 Cubic Inch of Water..... | 0.0164* |
| 1 Gallon of Water..... | 3.788 |
| 1 Cubic Foot of Air..... | 0.034+ |
| 1 Cubic Inch of Steel..... | 0.1288 |
| 1 Cubic Foot of Brick (Building)..... | 51-54 |
| 1 Cubic Foot of Concrete..... | 54-64 |
| 1 Cubic Foot of Earth..... | 32-54 |

* at 32° F

+ at 70° F. -29.92" Hg.

Single Phase Heating Element Conversion Chart

| 240 Volts | 208 Volts | 120 Volts |
|------------|------------|------------|
| 6000 Watts | 4500 Watts | 1500 Watts |
| 5000 Watts | 3750 Watts | 1250 Watts |
| 4000 Watts | 3000 Watts | 1000 Watts |
| 3000 Watts | 2250 Watts | 750 Watts |
| 2500 Watts | 1875 Watts | 625 Watts |
| 2000 Watts | 1500 Watts | 500 Watts |

Always use a higher voltage element to replace a lower voltage element
To calculate the wattage at a lower voltage see formula's below.

Convert 480V to 240V, Multiply wattage at 480V times 25%.

Convert 240V to 208V, Multiply wattage at 240V times 75%.

Convert 240V to 120V, Multiply wattage at 240V times 25%.

Convert 208V to 120V, Multiply wattage at 208V times 33%.

For use in single phase 60hz. applications only.

Ohms Law Wheel



This chart shows four ways to figure each value:

Amps (I), Volts (E), Ohms (R), or Watts (W)

Example:

A 4800 watt electric heat element is connected to a 240 volt circuit. How many Amps (I) does it draw?

Solution:

Locate Amps section of chart-
 $\frac{\text{Watts (W)}}{\text{Volts (E)}} = \text{Amps (I)}$

Thus $4800 / 240 = 20$ Amps. Carried further, what is the resistance?

$\frac{\text{Volts}^2 (E^2)}{\text{Watts (W)}} = \text{Ohms (R)}$ $240 \times 240 / 4800 = 12$ Ohms

Horse Power - Ampere Table

| Approximate Horsepower | | 120 Volts | | 240 Volts | |
|------------------------|----|-----------|--------------|-----------|--------------|
| | | Full Load | Locked Rotor | Full Load | Locked Rotor |
| 1/4 | AC | 4.4 | 26.4 | 2.2 | 13.2 |
| | DC | — | — | — | — |
| 1/4 | AC | 5.8 | 34.8 | 2.9 | 17.4 |
| | DC | 2.9 | 29.0 | 1.5 | 15.0 |
| 1/3 | AC | 7.2 | 43.2 | 3.6 | 21.6 |
| | DC | 3.6 | 36.0 | 1.8 | 18.0 |
| 1/2 | AC | 9.8 | 58.8 | 4.9 | 29.4 |
| | DC | 5.2 | 52.0 | 2.6 | 26.0 |
| 3/4 | AC | 13.8 | 82.8 | 6.9 | 41.4 |
| | DC | 7.4 | 74.0 | 3.7 | 37.0 |
| 1 | AC | 16.0 | 96.0 | 8.0 | 48.0 |
| | DC | 9.4 | 94.0 | 4.7 | 47.0 |
| 1 1/2 | AC | 20.0 | 120.0 | 10.0 | 60.0 |
| | DC | 13.2 | 132.0 | 6.6 | 66.0 |
| 2 | AC | 24.0 | 144.0 | 12.0 | 72.0 |
| | DC | 17.0 | 170.0 | 8.5 | 85.0 |
| 3 | AC | 34.0 | 204.0 | 17.0 | 102.0 |
| | DC | 25.0 | 250.0 | 12.2 | 122.0 |
| 5 | AC | 56.0 | 366.0 | 28.0 | 168.0 |
| | DC | — | — | 20.0 | 200.0 |
| 7 1/2 | AC | 80.0 | 480.0 | 40.0 | 240.0 |
| | DC | — | — | 29.0 | 290.0 |

* Locked rotor ratings shown are 6 times full load on AC and 10 time full load on DC. The above chart is offered as a guide only, as all motors do not necessarily come within the maximum ratings shown in the chart.

| Thermal Units | | |
|------------------------------|-------------------|---|
| Latent heat of ice | = 144 BTU/lb | = 288,000 BTU/ton |
| 1 ton refrigeration | = 12,000 BTU/hr | = 288,000/24 hours |
| 1 British Thermal Unit (BTU) | | = .252 kcal |
| 1 kilo - calorie (kcal) | | = 3.97 BTU |
| 1 BTU/lb | | = 0.555 kcal/kg |
| 1 watt | | = 1.8 BTU/lb |
| | | = 1 kcal/kg/°C. |
| | | = 3.413 BTU/hr |
| Heat, Energy, Work | | |
| 1 ft lb | = .001285 BTU | = 0.13826 kg-meter |
| 1 joule | = 1 watt - second | = .000948 BTU |
| 1 BTU | = 778.1 ft lb | = .252 kcal |
| 1 KCAL | = 3.968 BTU | = 1000 cal |
| 1 hp-hr | = .746 kw-hr | = 2544.7 BTU |
| 1 kw-hr | = 1.341 hp-hr | = 3413 BTU |
| 1 boiler horsepower | = 33479 BTU/hr | = Evaporation of 34.5 water/hr at 212° F. |

Approximate Temperature Guide

| Application | Average Temperature | Difference Between Coil and Room |
|-----------------------------------|---------------------|----------------------------------|
| Wet produce walk-in | 40° | 10° |
| Dry produce walk-in | 40° | 13° |
| Produce cases | 40° | 18° |
| Mortuary vaults - Blower coil | 32° to 35° | 18° |
| Enclosed service meat case | 35° | 15° |
| Open shelf service meat case | 29° | 25° |
| Dairy case | 35° to 38° | 25° |
| Freezer cases - General | -5° to -10° | 10° |
| Ice cream - Holding | -15° | 10° |
| Ice cream - Dipping | | |
| Vanilla | 8° | 10° |
| Chocolate | 6° | 10° |
| Fruit | 4° | 10° |
| Soda fountains - Fruits and syrup | 35° to 38° | 10° |
| Air conditioning | 75° | 40° |
| Fruit boxes | 50° to 55° | 20° |
| Water chillers - Air conditioning | 45° | 10° |
| Water coolers - Drinking | 38° to 50° | 10° |
| Refrigerators | 35° | 20° |
| Biscuit cases | 35° | 20° |
| Milk coolers | 40° | 10° |
| Work rooms | 35° to 50° | 10° to 20° |

Temperature Conversion Chart

| Fahrenheit | Celsius | Fahrenheit | Celsius |
|------------|---------|------------|---------|
| 500 | 260.0 | 150 | 65.6 |
| 475 | 246.1 | 145 | 62.8 |
| 450 | 232.2 | 140 | 60.0 |
| 425 | 218.3 | 135 | 57.2 |
| 400 | 204.4 | 130 | 54.4 |
| 390 | 198.8 | 125 | 51.7 |
| 380 | 193.3 | 120 | 48.9 |
| 370 | 187.8 | 115 | 46.1 |
| 360 | 182.2 | 110 | 43.3 |
| 350 | 176.7 | 105 | 40.6 |
| 340 | 171.1 | 100 | 37.8 |
| 330 | 165.6 | 95 | 35.0 |
| 320 | 160.0 | 90 | 32.2 |
| 310 | 154.4 | 85 | 29.4 |
| 300 | 148.9 | 80 | 26.7 |
| 290 | 143.3 | 75 | 23.9 |
| 280 | 137.8 | 70 | 21.1 |
| 270 | 132.2 | 65 | 18.3 |
| 260 | 126.7 | 60 | 15.6 |
| 250 | 121.1 | 55 | 12.8 |
| 245 | 118.3 | 50 | 10.0 |
| 240 | 115.6 | 45 | 7.2 |
| 235 | 112.8 | 40 | 4.4 |
| 230 | 110.0 | 35 | 1.7 |
| 225 | 107.2 | 32 | 0.0 |
| 220 | 104.4 | 30 | -1.1 |
| 215 | 101.7 | 25 | -3.9 |
| 212 | 100.0 | 20 | -6.7 |
| 210 | 98.9 | 15 | -9.4 |
| 205 | 96.1 | 10 | -12.2 |
| 200 | 93.3 | 5 | -15.0 |
| 195 | 90.6 | 0 | -17.8 |
| 190 | 87.8 | -5 | -20.6 |
| 185 | 85.0 | -10 | -23.3 |
| 180 | 82.2 | -15 | -26.1 |
| 175 | 79.4 | -20 | -28.9 |
| 170 | 76.7 | -25 | -31.7 |
| 165 | 73.9 | -30 | -34.4 |
| 160 | 71.1 | -35 | -37.2 |
| 155 | 68.3 | -40 | -40.0 |

Conversion Factors:

Fahrenheit to Celsius: Degrees Fahrenheit minus 32 x 5/9 (0.556)

Celsius to Fahrenheit: Degrees Celsius times 9/5 (1.8) plus 32

Decimal Equivalents

| Inch Fraction | Inch Decimal | Millimeters |
|---------------|--------------|-------------|
| 1/16 | 0.0625 | 1.588 |
| 5/64 | 0.07812 | 1.984 |
| 3/32 | 0.09375 | 2.381 |
| 7/64 | 0.10937 | 2.778 |
| 1/8 | 0.1250 | 3.175 |
| 9/64 | 0.14062 | 3.572 |
| 5/32 | 0.15625 | 3.969 |
| 11/64 | 0.17187 | 4.366 |
| 3/16 | 0.1875 | 4.763 |
| 13/64 | 0.20312 | 5.159 |
| 7/32 | 0.21875 | 5.556 |
| 15/64 | 0.23437 | 5.953 |
| 1/4 | 0.2500 | 6.350 |
| 17/64 | 0.26562 | 6.747 |
| 9/32 | 0.28125 | 7.144 |
| 19/64 | 0.29687 | 7.541 |
| 5/16 | 0.3125 | 7.938 |
| 21/64 | 0.32812 | 8.334 |
| 11/32 | 0.34375 | 8.731 |
| 23/64 | 0.35937 | 9.128 |
| 3/8 | 0.3750 | 9.525 |
| 25/64 | 0.39062 | 9.922 |
| 13/32 | 0.40625 | 10.319 |
| 27/64 | 0.42187 | 10.716 |
| 7/16 | 0.4375 | 11.113 |
| 29/64 | 0.45312 | 11.509 |
| 15/32 | 0.46875 | 11.906 |
| 31/64 | 0.48437 | 12.303 |
| 1/2 | 0.5 | 12.700 |
| 33/64 | 0.51652 | 13.097 |
| 17/32 | 0.53125 | 13.494 |
| 35/64 | 0.54687 | 13.891 |
| 9/16 | 0.5625 | 14.288 |
| 37/64 | 0.57812 | 14.684 |
| 19/32 | 0.59375 | 15.081 |
| 39/64 | 0.60937 | 15.478 |
| 5/8 | 0.625 | 15.875 |
| 41/64 | 0.64062 | 16.272 |
| 21/32 | 0.65625 | 16.669 |
| 43/64 | 0.67187 | 17.066 |
| 11/16 | 0.6875 | 17.463 |
| 45/64 | 0.70312 | 17.859 |
| 23/32 | 0.71875 | 18.256 |
| 47/64 | 0.73437 | 18.653 |
| 3/4 | 0.750 | 19.050 |
| 49/64 | 0.76562 | 19.447 |
| 25/32 | 0.78125 | 19.884 |
| 51/64 | 0.79687 | 20.241 |
| 13/16 | 0.8125 | 20.638 |
| 53/64 | 0.82812 | 21.034 |
| 27/32 | 0.84375 | 21.431 |
| 55/64 | 0.85937 | 21.828 |
| 7/8 | 0.875 | 22.225 |
| 57/64 | 0.89062 | 22.622 |
| 29/32 | 0.90625 | 23.019 |
| 59/64 | 0.92187 | 23.416 |
| 15/16 | 0.9375 | 23.813 |
| 61/64 | 0.95312 | 24.209 |
| 31/32 | 0.96875 | 24.606 |
| 63/64 | 0.98437 | 25.003 |
| | 1.000 | 25.400 |

Refrigerant Temperature Pressure Chart

 Figures = Vacuum **Black Figures = Vapor (PSIG)** **Bold Figures = Liquid (PSIG)**

| °F | R-12 | R-134a | R-401A | R-409A | R-22 | R-410A | R-502 | R-404A | R-507 | R-402A | R-408A | R-717 |
|-----|-------|--------|--------------|--------------|-------|--------|-------|--------------|-------|--------------|--------------|-------|
| -50 | 15.4 | 18.4 | 18.5 | — | 6.2 | 5.8 | 0.2 | 0.0 | 0.9 | 1.2 | 2.4 | 14.3 |
| -48 | 14.6 | 17.7 | 17.7 | — | 4.8 | 6.9 | 0.7 | 0.8 | 1.7 | 2.1 | 1.0 | 13.1 |
| -46 | 13.8 | 17.0 | 17.0 | — | 3.4 | 8.0 | 1.5 | 1.6 | 2.6 | 2.9 | .3 | 12.1 |
| -44 | 12.9 | 16.2 | 16.0 | — | 2.0 | 9.2 | 2.3 | 2.5 | 3.5 | 3.9 | 1.1 | 11.0 |
| -42 | 11.9 | 15.4 | 15.0 | — | 0.5 | 10.4 | 3.2 | 3.4 | 4.5 | 4.9 | 1.9 | 9.9 |
| -40 | 11.0 | 14.5 | 14.5 | 12.9 | 0.5 | 11.7 | 4.1 | 5.5 | 5.5 | 5.9 | 2.8 | 8.7 |
| -38 | 10.0 | 13.7 | 13.5 | 12.0 | 1.3 | 13.0 | 5.0 | 6.5 | 6.5 | 6.9 | 3.7 | 7.4 |
| -36 | 8.9 | 12.8 | 12.5 | 11.0 | 2.2 | 14.4 | 6.0 | 7.5 | 7.6 | 8.0 | 4.6 | 6.1 |
| -34 | 7.8 | 11.8 | 11.5 | 10.0 | 3.0 | 15.9 | 7.0 | 8.6 | 8.7 | 9.2 | 5.6 | 4.7 |
| -32 | 6.7 | 10.8 | 10.6 | 9.0 | 4.0 | 17.3 | 8.1 | 9.7 | 9.9 | 10.3 | 6.6 | 3.2 |
| -30 | 5.5 | 9.7 | 9.0 | 7.9 | 4.9 | 18.9 | 9.2 | 10.8 | 11.1 | 11.6 | 7.6 | 1.6 |
| -28 | 4.3 | 8.6 | 8.3 | 6.8 | 5.9 | 20.5 | 10.3 | 12.0 | 12.4 | 12.8 | 8.7 | 0.0 |
| -26 | 3.0 | 7.7 | 7.0 | 5.6 | 6.9 | 22.2 | 11.5 | 13.2 | 13.7 | 14.1 | 9.8 | 0.6 |
| -24 | 1.6 | 6.2 | 6.0 | 4.4 | 7.9 | 23.9 | 12.7 | 14.5 | 15.0 | 15.5 | 11.0 | 1.7 |
| -22 | 0.3 | 4.9 | 4.5 | 3.2 | 9.0 | 25.7 | 14.0 | 15.8 | 16.4 | 16.9 | 12.2 | 2.6 |
| -20 | 0.6 | 3.6 | 3.5 | 1.9 | 10.1 | 27.5 | 15.3 | 17.1 | 17.8 | 18.4 | 13.5 | 3.6 |
| -18 | 1.3 | 2.3 | 2.0 | .5 | 11.3 | 29.4 | 16.7 | 18.5 | 19.3 | 19.9 | 14.7 | 4.6 |
| -16 | 2.1 | 0.8 | 0.5 | .5 | 12.5 | 31.4 | 18.1 | 20.0 | 20.9 | 21.5 | 16.1 | 5.6 |
| -14 | 2.8 | 0.3 | 0.4 | 1.2 | 13.8 | 33.5 | 19.5 | 21.5 | 22.5 | 23.1 | 17.5 | 6.7 |
| -12 | 3.7 | 1.1 | 1.4 | 2.0 | 15.1 | 35.6 | 21.0 | 23.0 | 24.1 | 24.8 | 18.9 | 7.9 |
| -10 | 4.5 | 1.9 | 2.2 | 2.8 | 16.5 | 37.8 | 22.6 | 24.6 | 25.8 | 26.5 | 20.4 | 9.0 |
| -8 | 5.4 | 2.8 | 3.1 | 3.6 | 17.9 | 40.0 | 24.2 | 26.3 | 27.6 | 28.3 | 22.0 | 10.3 |
| -6 | 6.3 | 3.6 | 3.9 | 4.4 | 19.3 | 42.4 | 25.8 | 28.0 | 29.4 | 30.2 | 23.6 | 11.6 |
| -4 | 7.2 | 4.5 | 4.8 | 5.3 | 20.8 | 44.8 | 27.5 | 29.8 | 31.3 | 32.1 | 25.2 | 12.9 |
| -2 | 8.2 | 5.5 | 5.7 | 6.2 | 22.4 | 47.3 | 29.3 | 31.6 | 33.2 | 34.1 | 26.9 | 14.3 |
| 0 | 9.2 | 6.5 | 6.7 | 7.2 | 24.0 | 49.8 | 31.1 | 33.5 | 35.2 | 36.1 | 28.7 | 15.7 |
| 2 | 10.2 | 7.5 | 8.0 | 8.2 | 25.6 | 52.5 | 32.9 | 34.8 | 37.3 | 38.1 | 30.5 | 17.2 |
| 4 | 11.2 | 8.5 | 8.8 | 9.2 | 27.3 | 55.2 | 34.9 | 37.4 | 39.4 | 40.4 | 32.3 | 18.8 |
| 6 | 12.3 | 9.6 | 9.9 | 10.2 | 29.1 | 58.0 | 36.9 | 39.4 | 41.6 | 42.6 | 34.3 | 20.4 |
| 8 | 13.5 | 10.8 | 11.0 | 11.3 | 30.9 | 60.9 | 38.9 | 41.6 | 43.8 | 44.9 | 36.3 | 22.1 |
| 10 | 14.6 | 12.0 | 12.2 | 12.5 | 32.8 | 63.9 | 41.0 | 43.7 | 46.2 | 47.3 | 38.3 | 23.8 |
| 12 | 15.8 | 13.1 | 13.4 | 13.6 | 34.7 | 67.0 | 43.2 | 46.0 | 48.5 | 49.7 | 40.4 | 25.6 |
| 14 | 17.1 | 14.4 | 14.6 | 14.8 | 36.7 | 70.2 | 45.4 | 48.3 | 51.0 | 52.5 | 42.6 | 27.5 |
| 16 | 18.4 | 15.7 | 15.9 | 16.1 | 38.7 | 73.4 | 47.7 | 50.7 | 53.5 | 54.8 | 44.9 | 29.4 |
| 18 | 19.7 | 17.0 | 17.2 | 17.4 | 40.9 | 76.8 | 50.0 | 53.1 | 56.1 | 57.5 | 47.2 | 31.4 |
| 20 | 21.0 | 18.4 | 18.6 | 18.7 | 43.0 | 80.2 | 52.5 | 55.6 | 58.8 | 60.2 | 49.5 | 33.5 |
| 22 | 22.4 | 19.9 | 20.0 | 20.0 | 45.3 | 83.8 | 54.9 | 58.2 | 61.5 | 63.0 | 52.0 | 35.7 |
| 24 | 23.9 | 21.4 | 21.5 | 21.5 | 47.6 | 87.4 | 57.5 | 60.9 | 64.3 | 65.9 | 54.5 | 37.9 |
| 26 | 25.4 | 22.9 | 23.0 | 22.9 | 49.9 | 91.2 | 60.1 | 63.6 | 67.2 | 68.9 | 57.1 | 40.2 |
| 28 | 26.9 | 24.5 | 24.6 | 24.4 | 52.4 | 95.1 | 62.8 | 66.5 | 70.2 | 72.0 | 59.8 | 42.6 |
| 30 | 28.5 | 26.1 | 26.2 | 26.0 | 54.9 | 99.0 | 65.6 | 69.4 | 73.3 | 75.1 | 62.5 | 45.0 |
| 32 | 30.1 | 27.8 | 27.9 | 27.6 | 57.5 | 103.1 | 68.4 | 72.3 | 76.4 | 78.3 | 65.3 | 47.6 |
| 34 | 31.7 | 29.5 | 29.6 | 29.2 | 60.1 | 107.3 | 71.3 | 75.4 | 79.6 | 81.6 | 68.2 | 50.2 |
| 36 | 33.4 | 31.3 | 31.3 | 30.9 | 62.8 | 111.6 | 74.3 | 78.5 | 82.9 | 85.0 | 71.2 | 52.9 |
| 38 | 35.2 | 33.2 | 33.2 | 32.7 | 65.6 | 116.0 | 77.4 | 81.8 | 86.3 | 88.5 | 74.2 | 55.7 |
| 40 | 36.9 | 35.1 | 35.0 | 34.5 | 68.5 | 120.5 | 80.5 | 85.1 | 89.8 | 92.1 | 77.4 | 58.6 |
| 42 | 38.8 | 37.0 | 37.0 | 36.3 | 71.5 | 125.1 | 83.8 | 88.5 | 93.4 | 95.7 | 80.6 | 61.6 |
| 44 | 40.7 | 39.1 | 39.0 | 38.2 | 74.5 | 129.9 | 87.0 | 91.9 | 97.0 | 99.5 | 83.9 | 64.5 |
| 46 | 42.7 | 41.1 | 41.0 | 40.2 | 77.6 | 134.8 | 90.4 | 95.5 | 100.8 | 103.4 | 87.3 | 67.9 |
| 48 | 44.7 | 43.3 | 43.1 | 42.2 | 80.7 | 139.8 | 93.9 | 99.2 | 104.6 | 107.3 | 90.7 | 70.9 |
| 50 | 46.7 | 45.5 | 45.3 | 44.3 | 84.0 | 144.9 | 97.4 | 102.9 | 108.6 | 111.4 | 94.3 | 74.5 |
| 52 | 48.8 | 47.7 | 60.0 | 63.6 | 87.3 | 150.2 | 101.0 | 109.0 | 112.6 | 120.0 | 99.4 | 77.7 |
| 54 | 51.0 | 50.1 | 62.0 | 66.2 | 90.8 | 155.6 | 104.8 | 113.0 | 116.7 | 124.0 | 103.0 | 81.5 |
| 56 | 53.2 | 52.3 | 65.0 | 68.9 | 94.3 | 161.1 | 108.6 | 117.0 | 121.0 | 129.0 | 107.1 | 85.0 |
| 58 | 55.4 | 55.0 | 68.0 | 71.6 | 97.9 | 166.7 | 112.4 | 121.0 | 125.3 | 133.0 | 111.0 | 89.0 |
| 60 | 57.7 | 57.5 | 70.0 | 74.5 | 101.6 | 172.5 | 116.4 | 125.0 | 129.7 | 138.0 | 113.5 | 92.9 |
| 62 | 60.1 | 60.1 | 73.0 | 77.3 | 105.4 | 178.5 | 120.4 | 130.0 | 134.3 | 142.0 | 119.2 | 96.9 |
| 64 | 62.5 | 62.7 | 76.0 | 80.3 | 109.3 | 184.5 | 124.6 | 134.0 | 139.0 | 147.0 | 123.5 | 100.7 |
| 66 | 65.0 | 65.5 | 79.0 | 83.3 | 113.2 | 190.7 | 128.8 | 139.0 | 143.7 | 152.0 | 127.0 | 105.3 |
| 68 | 67.6 | 68.3 | 82.0 | 86.4 | 117.3 | 197.1 | 133.2 | 144.0 | 148.6 | 157.0 | 132.0 | 109.3 |
| 70 | 70.2 | 71.2 | 85.0 | 89.5 | 121.4 | 203.6 | 137.6 | 148.0 | 153.6 | 160.4 | 135.1 | 114.1 |
| 72 | 72.9 | 74.2 | 89.0 | 92.8 | 125.7 | 210.3 | 142.2 | 153.0 | 158.7 | 168.0 | 141.5 | 118.7 |
| 74 | 75.6 | 77.2 | 92.0 | 96.0 | 130.0 | 217.1 | 146.8 | 158.0 | 163.9 | 173.0 | 146.2 | 123.4 |
| 76 | 78.4 | 80.3 | 95.0 | 99.4 | 134.5 | 224.0 | 151.5 | 164.0 | 169.3 | 179.0 | 151.0 | 128.3 |
| 78 | 81.3 | 83.5 | 99.0 | 102.9 | 139.0 | 231.1 | 156.3 | 169.0 | 174.7 | 184.0 | 156.0 | 133.2 |
| 80 | 84.2 | 86.8 | 102.0 | 106.4 | 143.6 | 238.4 | 161.2 | 174.0 | 180.3 | 190.0 | 159.4 | 138.3 |
| 82 | 87.2 | 90.2 | 106.0 | 110.0 | 148.4 | 245.9 | 166.2 | 180.0 | 186.0 | 193.6 | 166.4 | 143.6 |
| 84 | 90.2 | 93.6 | 109.0 | 113.7 | 153.2 | 253.5 | 171.4 | 185.0 | 191.9 | 202.0 | 171.0 | 149.0 |
| 86 | 93.3 | 97.1 | 113.0 | 117.4 | 158.2 | 261.2 | 176.6 | 191.0 | 197.8 | 208.0 | 177.0 | 154.5 |
| 88 | 96.5 | 100.7 | 117.0 | 121.2 | 163.2 | 269.2 | 181.9 | 197.0 | 203.9 | 214.0 | 182.0 | 160.1 |
| 90 | 99.8 | 104.4 | 121.0 | 125.1 | 168.4 | 277.3 | 187.4 | 203.0 | 210.2 | 220.0 | 186.4 | 165.9 |
| 92 | 103.1 | 108.2 | 125.0 | 129.1 | 173.7 | 285.5 | 192.9 | 209.0 | 216.6 | 227.0 | 194.2 | 171.9 |
| 94 | 106.5 | 112.1 | 129.0 | 133.2 | 179.1 | 294.0 | 198.6 | 215.0 | 223.1 | 234.0 | 200.1 | 178.0 |
| 96 | 110.0 | 116.1 | 133.0 | 137.4 | 184.6 | 302.6 | 204.3 | 222.0 | 229.8 | 240.0 | 206.2 | 184.2 |
| 98 | 113.5 | 120.1 | 138.0 | 141.6 | 190.2 | 311.4 | 210.2 | 229.0 | 236.6 | 247.0 | 212.3 | 190.6 |
| 100 | 117.2 | 124.3 | 142.0 | 146.0 | 195.9 | 320.4 | 216.2 | 235.0 | 243.5 | 254.0 | 216.6 | 197.2 |
| 102 | 120.9 | 128.5 | 146.0 | 150.4 | 201.8 | 329.6 | 222.3 | 242.0 | 250.6 | 261.0 | 225.1 | 203.4 |
| 104 | 124.7 | 132.9 | 151.0 | 154.9 | 207.7 | 339.0 | 228.5 | 249.0 | 257.9 | 269.0 | 231.6 | 210.2 |
| 106 | 128.5 | 137.3 | 156.0 | 159.5 | 213.8 | 348.5 | 234.9 | 256.0 | 265.3 | 276.0 | 238.3 | 217.3 |
| 108 | 132.4 | 142.8 | 160.0 | 164.2 | 220.0 | 358.3 | 241.3 | 264.0 | 272.9 | 284.0 | 245.2 | 224.4 |
| 110 | 136.4 | 146.5 | 165.0 | 169.0 | 226.4 | 368.2 | 247.9 | 271.0 | 280.6 | 292.0 | 250.0 | 232.3 |
| 112 | 140.5 | 151.3 | 170.0 | 173.9 | 232.8 | 378.3 | 254.6 | 279.0 | 288.6 | 299.0 | 259.2 | 239.3 |
| 114 | 144.7 | 156.1 | 175.0 | 178.8 | 239.4 | 388.7 | 261.5 | 286.0 | 296.6 | 307.0 | 266.0 | 247.0 |
| 116 | 148.9 | 161.1 | 180.0 | 183.9 | 246.1 | 399.2 | 268.4 | 294.0 | 304.9 | 316.0 | 273.0 | 254.8 |
| 118 | 153.2 | 166.1 | 185.0 | 189.1 | 252.9 | 410.0 | 275.5 | 302.0 | 313.3 | 324.0 | 281.0 | 262.9 |
| 120 | 157.7 | 171.3 | 191.0 | 194.3 | 259.9 | 420.9 | 282.7 | 311.0 | 321.9 | 332.0 | 286.8 | 271.7 |
| 122 | 162.2 | 176.6 | 196.0 | 199.7 | 267.0 | 432.1 | 290.1 | 319.0 | 330.7 | 341.0 | 296.9 | 279.5 |
| 124 | 166.7 | 182.0 | 202.0 | 205.2 | 274.3 | 443.5 | 297.6 | 328.0 | 339.7 | 350.0 | 304.9 | 288.0 |
| 126 | 171.4 | 187.5 | 207.0 | 210.8 | 281.6 | 455.1 | 305.2 | 336.0 | 348.9 | 359.0 | 313.0 | 296.8 |
| 128 | 176.2 | 193.1 | 213.0 | 216.5 | 289.1 | 466.9 | 313.1 | 345.0 | 358.2 | 368.0 | 321.3 | 305.7 |
| 130 | 181.0 | 198.9 | 219.0 | 222.3 | 296.8 | 478.9 | 320.8 | 354.0 | 367.8 | 377.0 | 327.4 | 315.0 |
| 132 | 185.9 | 204.7 | 225.0 | 228.2 | 304.6 | 491.2 | 328. | | | | | |

Refrigerant Temperature Pressure Chart

| °C | °F | R-12 | R-134A | R-401A | R-22 | R-410A | R-502 | R-404A | R-507 |
|-----|-----|-------|--------|--------|-------|--------|-------|--------|-------|
| -46 | -50 | 15.4 | 18.4 | 18.5 | 6.2 | 5.8 | 0.2 | 0.0 | 0.9 |
| -44 | -48 | 14.6 | 17.7 | 17.7 | 4.8 | 6.9 | 0.7 | 0.8 | 1.7 |
| -43 | -46 | 13.8 | 17.0 | 17.0 | 3.4 | 8.0 | 1.5 | 1.6 | 2.6 |
| -42 | -44 | 12.9 | 16.2 | 16.0 | 2.0 | 9.2 | 2.3 | 2.5 | 3.5 |
| -41 | -42 | 11.9 | 15.4 | 15.0 | 0.5 | 10.4 | 3.2 | 3.4 | 4.5 |
| -40 | -40 | 11.0 | 14.5 | 14.5 | 0.5 | 11.7 | 4.1 | 5.5 | 5.5 |
| -39 | -38 | 10.0 | 13.7 | 13.5 | 1.3 | 13.0 | 5.0 | 6.5 | 6.5 |
| -38 | -36 | 8.9 | 12.8 | 12.5 | 2.2 | 14.4 | 6.0 | 7.5 | 7.6 |
| -37 | -34 | 7.8 | 11.8 | 11.5 | 3.0 | 15.9 | 7.0 | 8.6 | 8.7 |
| -36 | -32 | 6.7 | 10.8 | 10.6 | 4.0 | 17.3 | 8.1 | 9.7 | 9.9 |
| -34 | -30 | 5.5 | 9.7 | 9.0 | 4.9 | 18.9 | 9.2 | 10.8 | 11.1 |
| -33 | -28 | 4.3 | 8.6 | 8.3 | 5.9 | 20.5 | 10.3 | 12.0 | 12.4 |
| -32 | -26 | 3.0 | 7.7 | 7.0 | 6.9 | 22.2 | 11.5 | 13.2 | 13.7 |
| -31 | -24 | 1.6 | 6.2 | 6.0 | 7.9 | 23.9 | 12.7 | 14.5 | 15.0 |
| -30 | -22 | 0.3 | 4.9 | 4.5 | 9.0 | 25.7 | 14.0 | 15.8 | 16.4 |
| -29 | -20 | 0.6 | 3.6 | 3.5 | 10.1 | 27.5 | 15.3 | 17.1 | 17.8 |
| -28 | -18 | 1.3 | 2.3 | 2.0 | 11.3 | 29.4 | 16.7 | 18.5 | 19.3 |
| -27 | -16 | 2.1 | 0.8 | 0.5 | 12.5 | 31.4 | 18.1 | 20.0 | 20.9 |
| -26 | -14 | 2.8 | 0.3 | 0.4 | 13.8 | 33.5 | 19.5 | 21.5 | 22.5 |
| -24 | -12 | 3.7 | 1.1 | 1.4 | 15.1 | 35.6 | 21.0 | 23.0 | 24.1 |
| -23 | -10 | 4.5 | 1.9 | 2.2 | 16.5 | 37.8 | 22.6 | 24.6 | 25.8 |
| -22 | -8 | 5.4 | 2.8 | 3.1 | 17.9 | 40.0 | 24.2 | 26.3 | 27.6 |
| -21 | -6 | 6.3 | 3.6 | 3.9 | 19.3 | 42.4 | 25.8 | 28.0 | 29.4 |
| -20 | -4 | 7.2 | 4.5 | 4.8 | 20.8 | 44.8 | 27.5 | 29.8 | 31.3 |
| -19 | -2 | 8.2 | 5.5 | 5.7 | 22.4 | 47.3 | 29.3 | 31.6 | 33.2 |
| -18 | 0 | 9.2 | 6.5 | 6.7 | 24.0 | 49.8 | 31.1 | 33.5 | 35.2 |
| -17 | 2 | 10.2 | 7.5 | 8.0 | 25.6 | 52.5 | 32.9 | 34.8 | 37.3 |
| -16 | 4 | 11.2 | 8.5 | 8.8 | 27.3 | 55.2 | 34.9 | 37.4 | 39.4 |
| -14 | 6 | 12.3 | 9.6 | 9.9 | 29.1 | 58.0 | 36.9 | 39.4 | 41.6 |
| -13 | 8 | 13.5 | 10.8 | 11.0 | 30.9 | 60.9 | 38.9 | 41.6 | 43.8 |
| -12 | 10 | 14.6 | 12.0 | 12.2 | 32.8 | 63.9 | 41.0 | 43.7 | 46.2 |
| -11 | 12 | 15.8 | 13.1 | 13.4 | 34.7 | 67.0 | 43.2 | 46.0 | 48.5 |
| -10 | 14 | 17.1 | 14.4 | 14.6 | 36.7 | 70.2 | 45.4 | 48.3 | 51.0 |
| -9 | 16 | 18.4 | 15.7 | 15.9 | 38.7 | 73.4 | 47.7 | 50.7 | 53.5 |
| -8 | 18 | 19.7 | 17.0 | 17.2 | 40.9 | 76.8 | 50.0 | 53.1 | 56.1 |
| -7 | 20 | 21.0 | 18.4 | 18.6 | 43.0 | 80.2 | 52.5 | 55.6 | 58.8 |
| -6 | 22 | 22.4 | 19.9 | 20.0 | 45.3 | 83.8 | 54.9 | 58.2 | 61.5 |
| -4 | 24 | 23.9 | 21.4 | 21.5 | 47.6 | 87.4 | 57.5 | 60.9 | 64.3 |
| -3 | 26 | 25.4 | 22.9 | 23.0 | 49.9 | 91.2 | 60.1 | 63.6 | 67.2 |
| -2 | 28 | 26.9 | 24.5 | 24.6 | 52.4 | 95.1 | 62.8 | 66.5 | 70.2 |
| -1 | 30 | 28.5 | 26.1 | 26.2 | 54.9 | 99.0 | 65.6 | 69.4 | 73.3 |
| 0 | 32 | 30.1 | 27.8 | 27.9 | 57.5 | 103.1 | 68.4 | 72.3 | 76.4 |
| 1 | 34 | 31.7 | 29.5 | 29.6 | 60.1 | 107.3 | 71.3 | 75.4 | 79.6 |
| 2 | 36 | 33.4 | 31.3 | 31.3 | 62.8 | 111.6 | 74.3 | 78.5 | 82.9 |
| 3 | 38 | 35.2 | 33.2 | 33.2 | 65.6 | 116.0 | 77.4 | 81.8 | 86.3 |
| 4 | 40 | 36.9 | 35.1 | 35.0 | 68.5 | 120.5 | 80.5 | 85.1 | 89.8 |
| 6 | 42 | 38.8 | 37.0 | 37.0 | 71.5 | 125.1 | 83.8 | 88.5 | 93.4 |
| 7 | 44 | 40.7 | 39.1 | 39.0 | 74.5 | 129.9 | 87.0 | 91.9 | 97.0 |
| 8 | 46 | 42.7 | 41.1 | 41.0 | 77.6 | 134.8 | 90.4 | 95.5 | 100.8 |
| 9 | 48 | 44.7 | 43.3 | 43.1 | 80.7 | 139.8 | 93.9 | 99.2 | 104.6 |
| 10 | 50 | 46.7 | 45.5 | 45.3 | 84.0 | 144.9 | 97.4 | 102.8 | 108.6 |
| 11 | 52 | 48.8 | 47.7 | 48.0 | 87.3 | 150.2 | 101.0 | 109.0 | 112.6 |
| 12 | 54 | 51.0 | 50.1 | 50.0 | 90.8 | 155.6 | 104.8 | 113.0 | 116.7 |
| 13 | 56 | 53.2 | 52.3 | 52.0 | 94.3 | 161.1 | 108.6 | 117.0 | 121.0 |
| 14 | 58 | 55.4 | 55.0 | 55.0 | 97.9 | 166.7 | 112.4 | 121.0 | 125.3 |
| 16 | 60 | 57.7 | 57.5 | 57.0 | 101.6 | 172.5 | 116.4 | 125.0 | 129.7 |
| 17 | 62 | 60.1 | 60.1 | 60.0 | 105.4 | 178.5 | 120.4 | 130.0 | 134.3 |
| 18 | 64 | 62.5 | 62.7 | 62.0 | 109.3 | 184.5 | 124.6 | 134.0 | 139.0 |
| 19 | 66 | 65.0 | 65.5 | 65.0 | 113.2 | 190.7 | 128.8 | 139.0 | 143.7 |
| 20 | 68 | 67.6 | 68.3 | 68.0 | 117.3 | 197.1 | 133.2 | 144.0 | 148.6 |
| 21 | 70 | 70.2 | 71.2 | 70.0 | 121.4 | 203.6 | 137.6 | 148.0 | 153.6 |
| 22 | 72 | 72.9 | 74.2 | 73.0 | 125.7 | 210.3 | 142.2 | 153.0 | 158.7 |
| 23 | 74 | 75.6 | 77.2 | 75.0 | 130.0 | 217.1 | 146.8 | 158.0 | 163.9 |
| 24 | 76 | 78.4 | 80.3 | 78.0 | 134.5 | 224.0 | 151.5 | 164.0 | 169.3 |
| 26 | 78 | 81.3 | 83.5 | 80.0 | 139.0 | 231.1 | 156.3 | 169.0 | 174.7 |
| 27 | 80 | 84.2 | 86.8 | 83.0 | 143.6 | 238.4 | 161.2 | 174.0 | 180.3 |
| 28 | 82 | 87.2 | 90.2 | 86.0 | 148.4 | 245.9 | 166.2 | 180.0 | 186.0 |
| 29 | 84 | 90.2 | 93.6 | 89.0 | 153.2 | 253.5 | 171.4 | 185.0 | 191.9 |
| 30 | 86 | 93.3 | 97.1 | 92.0 | 158.2 | 261.2 | 176.6 | 191.0 | 197.8 |
| 31 | 88 | 96.5 | 100.7 | 95.0 | 163.2 | 269.2 | 181.9 | 197.0 | 203.9 |
| 32 | 90 | 99.8 | 104.4 | 98.0 | 168.4 | 277.3 | 187.4 | 203.0 | 210.2 |
| 33 | 92 | 103.1 | 108.2 | 101.0 | 173.7 | 285.5 | 192.9 | 209.0 | 216.6 |
| 34 | 94 | 106.5 | 112.1 | 104.0 | 179.1 | 294.0 | 198.6 | 215.0 | 223.1 |
| 36 | 96 | 110.0 | 116.1 | 107.0 | 184.6 | 302.6 | 204.3 | 222.0 | 229.8 |
| 37 | 98 | 113.5 | 120.1 | 110.0 | 190.2 | 311.4 | 210.2 | 229.0 | 236.6 |
| 38 | 100 | 117.2 | 124.3 | 113.0 | 195.9 | 320.4 | 216.2 | 235.0 | 243.5 |
| 39 | 102 | 120.9 | 128.5 | 116.0 | 201.8 | 329.6 | 222.3 | 242.0 | 250.6 |
| 40 | 104 | 124.7 | 132.9 | 119.0 | 207.7 | 339.0 | 228.5 | 249.0 | 257.9 |
| 41 | 106 | 128.5 | 137.3 | 122.0 | 213.8 | 348.5 | 234.9 | 256.0 | 265.3 |
| 42 | 108 | 132.4 | 142.8 | 125.0 | 220.0 | 358.3 | 241.3 | 264.0 | 272.9 |
| 43 | 110 | 136.4 | 146.5 | 128.0 | 226.4 | 368.2 | 247.9 | 271.0 | 280.6 |
| 44 | 112 | 140.5 | 151.3 | 131.0 | 232.8 | 378.3 | 254.6 | 279.0 | 288.6 |
| 46 | 114 | 144.7 | 156.1 | 134.0 | 239.4 | 388.7 | 261.5 | 286.0 | 296.6 |
| 47 | 116 | 148.9 | 161.1 | 137.0 | 246.1 | 399.2 | 268.4 | 294.0 | 304.9 |
| 48 | 118 | 153.2 | 166.1 | 140.0 | 252.9 | 410.0 | 275.5 | 302.0 | 313.3 |
| 49 | 120 | 157.7 | 171.3 | 143.0 | 259.9 | 420.9 | 282.7 | 311.0 | 321.9 |
| 50 | 122 | 162.2 | 176.6 | 146.0 | 267.0 | 432.1 | 290.1 | 319.0 | 330.7 |
| 51 | 124 | 166.7 | 182.0 | 149.0 | 274.3 | 443.5 | 297.6 | 328.0 | 339.7 |
| 52 | 126 | 171.4 | 187.5 | 152.0 | 281.6 | 455.1 | 305.2 | 336.0 | 348.9 |
| 53 | 128 | 176.2 | 193.1 | 155.0 | 289.1 | 466.9 | 312.9 | 345.0 | 358.2 |
| 54 | 130 | 181.0 | 198.9 | 158.0 | 296.8 | 478.9 | 320.8 | 354.0 | 367.8 |
| 56 | 132 | 185.9 | 204.7 | 161.0 | 304.6 | 491.2 | 328.9 | 364.0 | 377.6 |
| 57 | 134 | 191.0 | 210.7 | 164.0 | 312.5 | 503.7 | 337.1 | 373.0 | 387.5 |
| 58 | 136 | 196.1 | 216.8 | 167.0 | 320.6 | 516.4 | 345.4 | 383.0 | 397.7 |
| 59 | 138 | 201.3 | 223.0 | 170.0 | 328.9 | 529.4 | 353.9 | 392.0 | 408.1 |
| 60 | 140 | 206.6 | 229.4 | 173.0 | 337.3 | 542.5 | 362.6 | 402.0 | 418.7 |
| 61 | 142 | 212.0 | 235.8 | 176.0 | 345.8 | 556.0 | 371.4 | 413.0 | 429.6 |
| 62 | 144 | 217.5 | 242.4 | 179.0 | 354.5 | 569.6 | 380.4 | 423.0 | 440.6 |
| 63 | 146 | 223.1 | 249.2 | 182.0 | 363.3 | 583.6 | 389.5 | 434.0 | 451.9 |
| 64 | 148 | 228.8 | 256.0 | 185.0 | 372.3 | 597.7 | 398.9 | 444.0 | 462.0 |
| 66 | 150 | 234.6 | 263.0 | 188.0 | 381.5 | 612.1 | 408.4 | 449.0 | 473.3 |

The E Class Advantage

Are Compressor Hard Start Devices Needed?

Compressor hard start devices are a luxury item for service technicians to use in rectifying a myriad of compressor start problems. It is true that the majority of hard start device applications result from the marginal voltages delivered by electric utilities during peak demand periods. As the predominant application is air conditioning, the hard start device can serve as an insurance policy for compressor starts when voltages drop to 90% of rated line conditions. The ability to ensure a compressor start under low voltage conditions can serve to minimize the number of “nuisance” service calls and allow a service contractor to focus on true problem events.

As the air conditioning industry has expanded and diversified, numerous types and models of air conditioning units and compressors have entered the marketplace. This diverse proliferation has resulted in the need to provide a one-size-fits-all compressor start device. Investigations recently undertaken by SUPCO indicate that a start device should be closely matched to the compressor, and a one size for all approach may actually cause damage to a compressor if applied incorrectly. All SUPCO technology employs the appropriate safeguards to ensure against compressor damage due to misapplied start devices. This situation does not exist for most other start device manufacturers.

General Function

It is pertinent to discuss the general application and function of a hard start device. A capacitor in conjunction with a switching device (typically a relay) is introduced across the start windings of a single-phase compressor. Figure 1. illustrates the typical wiring arrangement for a 2-wire and a 3-wire connection.

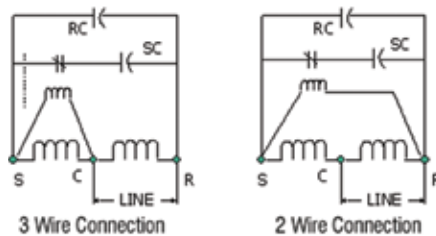


Figure 1. Wiring Configurations

When the compressor is called upon to start, the start capacitor provides a voltage boost to the start winding of the motor (effectively simulating the phasor lead/lag of a three-phase motor) and causes the motor rotor to turn. At some point, when the capacitor is released from the start winding, the motor continues to run.

In a 3 wire configuration, the potential relay opens at a manufacturer’s specified voltage across the start winding of the motor, effectively removing the start capacitor from the circuit. A third wire is necessary to connect to the run winding. In a 2 wire configuration, the potential relay and start capacitor are connected across the run and start winding. The potential relay opens at a specified increment above line voltage, thus removing the start capacitor from the circuit. There is no need for a third wire.

The size of the capacitor significantly impacts the characteristics of the start winding. Figure 2. shows the generalized impedances for the compressor motor and start devices. As such, the start capacitor should be carefully matched to the specific compressor.

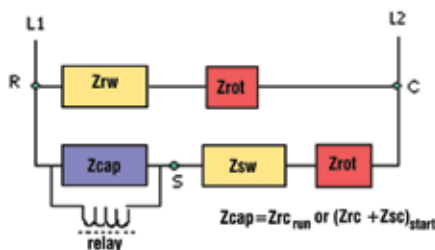


Figure 2. 2 Wire Potential Relay Equivalent Circuit

Hard Start Technology

Two main types of start devices exist in the marketplace today. SUPCO has developed a full range of products in both types to provide a customer with all applicable choices. Both types have their own desirable applications and each have specific advantages. The two types of start devices discussed below are

1. PTC – Positive Temperature Coefficient devices
2. Potential Relay devices – voltage sensing and current sensing

PTC Devices

The PTC device has been successfully employed in a number of applications for many years. SUPCO models SPP, SPP5, SPP6, SPP7S employ PTC technology to ensure that the start capacitor has dropped from the start circuit after an appropriate amount of time has elapsed. This device utilizes a ceramic element with a predictable thermal response to the introduction of electric current. As current is introduced across the start windings, the PTC element begins to warm. When the PTC device reaches approximately 250° F (corresponding to 0.6-0.8 seconds), the resistance in the element increases and creates an open switch that releases the start winding from the circuit. The 0.6-0.8 seconds that the PTC device allows the start windings to be engaged is generally enough time to enable the compressor to start. The advantage of this device is its simplicity. A two-wire connection between the run and start terminals on the compressor is all that is required to provide reliable starts in most cases.

However, this device has several limitations that should be considered if the application is critical.

- The PTC device has no ability to sense whether the compressor has actually started.
- The amount of time provided for a start boost is dictated solely by the temperature of the ceramic device, which has warmed due to the introduction of the starting current.
- If the compressor does not start before the temperature threshold has been reached, it will not start until the PTC device cycles through a cool-down period (usually 2 - 3 minutes). Many view this start approach as an appropriate safety measure. The PTC effectively limits the continued unsuccessful cycling of the start windings that can often result in a motor burnout. Others will argue that a start device should be able to re-cycle immediately. If this feature is desired, a PTC is not the correct start device application.

Potential Relay Devices

The Potential Relay start device has recently been the subject of considerable attention in the market place. Several manufacturers are promoting products with a variety of technologies. The primary distinction between the potential relay devices relates to a voltage sensing or current sensing capability.

The voltage sensing method monitors start winding developed voltage and actuates a mechanical or electronic potential relay to disengage the start capacitor. The electronic potential relay is inherently more reliable and precise than the older type mechanical potential relay. SUPCO employs voltage sensing technology with an electronic potential relay.

The current sensing approach senses current through the run winding and drops the start capacitor out of the circuit based upon a threshold value. Both methods have proven effective in providing devices that are able to “sense” when a compressor has started and thus providing more reliable compressor starts in marginal conditions. However, the current sensing method must employ an internal fuse to protect the motor from potential damage and is more difficult to connect than the 2-wire voltage sensing approach.

Capacitor Size

The proliferation of potential relay type devices has resulted in the notion that one capacitor can be employed to start all compressors. That is, use the biggest capacitor and give the compressor a “big kick” to get it started. The sensing characteristic will drop the capacitor out of the start circuit when necessary and thus the compressor will not be harmed. This idea, however, is flawed. The use of a capacitor that is too large for the impedance characteristics of the windings in some compressors can actually result in significant compressor damage. Recent investigations indicate that this situation is particularly evident in voltage sensing devices.

Figure 3. shows a successful compressor start. The run-start and start-common voltages increase to a maximum value and the total supply current drops to operating conditions when the start device is dropped from the circuit. While Figure 4. shows an unsuccessful (locked rotor) compressor start. In this figure, the run-start voltage never increases to a point indicating motor start. The total supply current remains at a maximum and the motor never starts.

Figure 3. Good Start

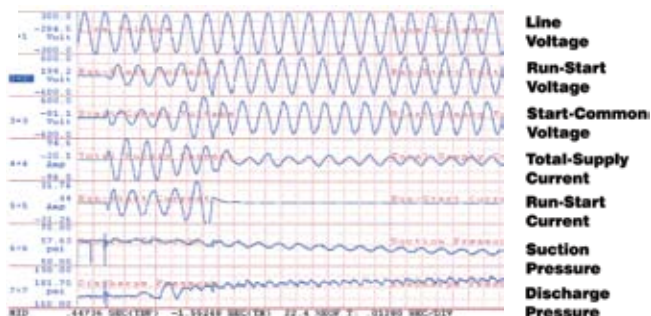
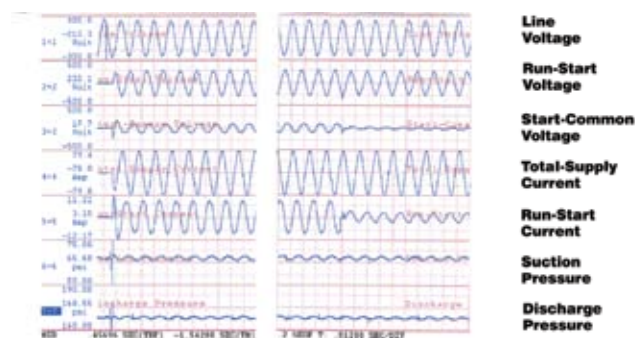
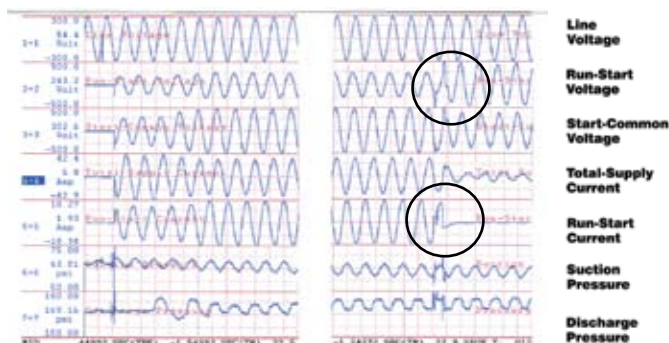


Figure 4. No Start



If the start capacitor is too large for the application, the capacitor can actually mask the developed voltage in the start windings and keep the start capacitor in the circuit continuously. Figure 5. illustrates a compressor start with a capacitor that is too large. The motor is actually running, but the run-start voltage is suppressed below the trigger voltage of the start device. As a result, the start capacitor remains in the circuit as the motor runs. A secondary, fail-safe method is necessary to ensure that the start device is ultimately removed from the circuit. This event can be seen at the end of the time duration of the run-start current highlighted in Figure 5.

Figure 5. Start with Oversized Capacitor with Safety Timing Circuit



A start device that fails to remove the start capacitor from the circuit has the potential to cause premature failure of the start windings in the compressor.

Figure 6 shows the same compressor start using an oversized capacitor without a safety timing circuit. The run-start voltage is suppressed by the combined characteristics of the motor windings and the extra large capacitor. It never reaches the prescribed threshold voltage defined by the thermal relay for removing the start capacitor from the circuit. The total supply current remains near the locked rotor value even after the motor has started (as highlighted in Figure 6).

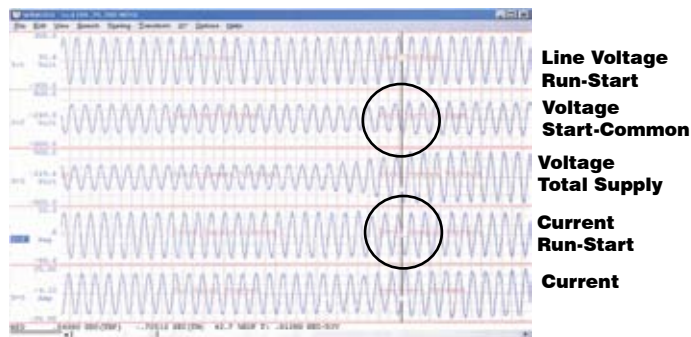


Figure 6. Start with Oversized Capacitor with out Safety Timing Circuit

If the capacitor is never removed from the start windings, premature winding failure could occur. As such, care should be taken when selecting capacitor sizes for an application. Care should also be taken regarding products that tout a “bigger capacitor is better” approach to compressor starting. SUPCO E-Class devices provide a secondary timing safety device to ensure that the start capacitor is dropped from the circuit in a fail-safe mode. Figure 5. also shows that the start winding voltage drops appropriately after the start capacitor has been removed in a SUPCO E-Class device.

The E Class Advantage

Compressor start devices are available in a variety of forms. Specific applications call for specific products. SUPCO is one of very few manufacturers in the marketplace who provide a complete line of start devices to fit any application. PTC devices fulfill and will continue to fulfill specific needs in the industry. Potential relay devices can be found in a wide assortment. Care should be employed in selecting potential relay devices to ensure that all state-of-the-art developments are included in the product. The SUPCO E-Class Series comprise the most advanced developments in start device technology:

1. Voltage sensing technology that monitors for motor start (current sensing devices require internal fuse protection).
2. A 2-wire connection that simplifies installation
3. A secondary timing circuit that ensures that the capacitor is not permanently left in the start winding circuit
4. A fully electronic device – minimizing the limitations of mechanical devices and secondary fusing associated with triac devices
5. A start device matched with an appropriately sized capacitor to cover the range of compressors for the intended application (one size does not fit all)

The use of compressor start devices results from a need to ensure that a compressor (usually air conditioning) will start under voltage conditions that are less than ideal. As discussed, several options exist in the market to address compressor start concerns. Start devices exist in many forms for specific applications. SUPCO provides a full range of products in all relevant technologies to effectively match the proper start device to the application. Care should be taken to utilize a device that meets the requirements of the job. Extra caution should be observed when employing the “one-size-fits-all” and “a bigger capacitor is better” approach to applying a start device. Consult SUPCO, a manufacturer with a complete product range, to ensure the greatest success in the start device application.

SUPCO HT Series Cross Reference to Potential Relay & Start Capacitor Combinations

| 110/220/330 V Capacitor | (88/106) & (108/130) μ F | (124/149) & (130/157) μ F | (145/175), (161/193), (189/227) μ F | (216/259) & (270/324) μ F |
|---|------------------------------|-------------------------------|---|-------------------------------|
| Mars Potential Relay & Start Cap | SUPCO | SUPCO | | SUPCO |
| 63 | HT70 | HT80 | | HT100 |
| 64 | HT70 | HT80 | | HT100 |
| 65 | HT70 | HT80 | | HT100 |
| 66 | HT70 | HT80 | | HT100 |
| 67 | HT70 | HT80 | | HT100 |
| 68 | HT70 | HT80 | | HT100 |
| 69 | HT70 | HT80 | | HT100 |
| 70 | HT70 | HT80 | | HT100 |
| 71 | HT70 | HT80 | | HT100 |
| Copeland Potential Relay & Start Cap | SUPCO | SUPCO | | SUPCO |
| 040-0001-00 | HT70 | HT80 | | HT100 |
| 040-0001-01 | HT70 | HT80 | | HT100 |
| 040-0001-03 | HT70 | HT80 | | HT100 |
| 040-0001-04 | HT70 | HT80 | | HT100 |
| 040-0001-05/940-0001-71 | HT70 | HT80 | | HT100 |
| 040-0001-08 | HT70 | HT80 | | HT100 |
| 040-0001-09 | HT70 | HT80 | | HT100 |
| 040-0001-10/940-0001-72 | HT70 | HT80 | | HT100 |
| 040-0001-11/040-0001-51 | HT70 | HT80 | | HT100 |
| 040-0001-12/040-0001-64 | HT70 | HT80 | | HT100 |
| 040-0001-17/040-0001-53 | HT70 | HT80 | | HT100 |
| 040-0001-18/040-0001-63 | HT70 | HT80 | | HT100 |
| 040-0001-19/040-0001-54 | HT70 | HT80 | | HT100 |
| 040-0001-20/040-0001-55 | HT70 | HT80 | | HT100 |
| 040-0001-22/940-0001-75 | HT70 | HT80 | | HT100 |
| 040-0001-23/940-0001-76 | HT70 | HT80 | | HT100 |
| 040-0001-24/940-0001-77 | HT70 | HT80 | | HT100 |
| 040-0001-25 | HT70 | HT80 | | HT100 |
| 040-0001-27/940-0001-78 | HT70 | HT80 | | HT100 |
| 040-0001-30 | HT70 | HT80 | | HT100 |
| 040-0001-31/040-0001-52 | HT70 | HT80 | | HT100 |
| 040-0001-34/040-0001-68 | HT70 | HT80 | | HT100 |
| 040-0001-35/040-0001-59 | HT70 | HT80 | | HT100 |
| 040-0001-36/040-0001-58 | HT70 | HT80 | | HT100 |
| 040-0001-37/040-0001-70 | HT70 | HT80 | | HT100 |
| 040-0001-38/040-0001-60 | HT70 | HT80 | | HT100 |
| 040-0001-41/040-0001-80 | HT70 | HT80 | | HT100 |
| 040-0001-43/940-0001-84 | HT70 | HT80 | | HT100 |
| 040-0001-46/940-0001-85 | HT70 | HT80 | | HT100 |
| 040-0001-48/940-0001-48 | HT70 | HT80 | | HT100 |
| 040-0001-49/940-0001-49 | HT70 | HT80 | | HT100 |
| 040-0001-50/940-0001-50 | HT70 | HT80 | | HT100 |
| 040-0001-51/940-0001-51 | HT70 | HT80 | | HT100 |
| 040-0001-52/9400001-52 | HT70 | HT80 | | HT100 |
| 040-0001-53/940-0001-53 | HT70 | HT80 | | HT100 |
| 040-0001-54/940-0001-54 | HT70 | HT80 | | HT100 |
| 040-0001-55/940-0001-55 | HT70 | HT80 | | HT100 |
| 040-0001-56/940-0001-56 | HT70 | HT80 | | HT100 |
| 040-0001-57/940-0001-57 | HT70 | HT80 | | HT100 |
| 040-0001-59/940-0001-59 | HT70 | HT80 | | HT100 |
| 040-0001-60/940-0001-60 | HT70 | HT80 | | HT100 |
| 040-0001-61/940-0001-61 | HT70 | HT80 | | HT100 |
| 040-0001-62/940-0001-62 | HT70 | HT80 | | HT100 |
| 040-0001-63/940-0001-63 | HT70 | HT80 | | HT100 |
| 040-0001-64/940-0001-64 | HT70 | HT80 | | HT100 |
| 040-0001-65/940-0001-65 | HT70 | HT80 | | HT100 |
| 040-0001-66/940-0001-66 | HT70 | HT80 | | HT100 |
| 040-0001-67/940-0001-67 | HT70 | HT80 | | HT100 |
| 040-0001-68/940-0001-68 | HT70 | HT80 | | HT100 |
| 040-0001-69/940-0001-69 | HT70 | HT80 | | HT100 |
| 040-0001-70 | HT70 | HT80 | | HT100 |
| 040-0001-71/940-0001-71 | HT70 | HT80 | | HT100 |
| 040-0001-72 | HT70 | HT80 | | HT100 |
| 040-0001-73 | HT70 | HT80 | | HT100 |
| 040-0001-74 | HT70 | HT80 | | HT100 |
| 040-0001-75/940-0001-75 | HT70 | HT80 | | HT100 |
| 040-0001-76 | HT70 | HT80 | | HT100 |
| 040-0001-77 | HT70 | HT80 | | HT100 |
| 040-0001-78 | HT70 | HT80 | | HT100 |
| 040-0001-79/940-0001-79 | HT70 | HT80 | | HT100 |
| 040-0001-80/940-0001-80 | HT70 | HT80 | | HT100 |
| 040-0001-82 | HT70 | HT80 | | HT100 |
| 040-0001-83 | HT70 | HT80 | | HT100 |
| 040-0001-84 | HT70 | HT80 | | HT100 |
| 040-0001-85 | HT70 | HT80 | | HT100 |

SUPCO HT Series Cross Reference to Potential Relay & Start Capacitor Combinations

| 110/220/330 V Capacitor | (88/106) & (108/130) μ F | (124/149) & (130/157) μ F | (145/175), (161/193), (189/227) μ F | (216/259) & (270/324) μ F |
|---|------------------------------|-------------------------------|---|-------------------------------|
| Copeland Potential Relay & Start Cap | SUPCO | SUPCO | SUPCO | SUPCO |
| 040-0001-85 | HT70 | HT80 | HT80 | HT100 |
| 040-0001-86 | HT70 | HT80 | HT80 | HT100 |
| 040-0001-87 | HT70 | HT80 | HT80 | HT100 |
| 040-0001-88 | HT70 | HT80 | HT80 | HT100 |
| 040-0001-89 | HT70 | HT80 | HT80 | HT100 |
| 040-0007-00 | HT70 | HT80 | HT80 | HT100 |
| 040-0007-02 | HT70 | HT80 | HT80 | HT100 |
| 040-0007-04/940-0007-04 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-00/940-0046-18 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-01/940-0046-19 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-02 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-05/999-9999-99 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-07 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-08/940-0046-20 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-09/940-0046-21 | HT70 | HT80 | HT80 | HT100 |
| 040-0046-10/940-0046-10 | HT70 | HT80 | HT80 | HT100 |
| Tecumseh Potential Relay & Start Cap | SUPCO | SUPCO | SUPCO | SUPCO |
| P82960 | HT70 | HT80 | HT80 | HT100 |
| P82961 | HT70 | HT80 | HT80 | HT100 |
| P82962 | HT70 | HT80 | HT80 | HT100 |
| P82963 | HT70 | HT80 | HT80 | HT100 |
| P82964 | HT70 | HT80 | HT80 | HT100 |
| P82965 | HT70 | HT80 | HT80 | HT100 |
| P82966 | HT70 | HT80 | HT80 | HT100 |
| P82967 | HT70 | HT80 | HT80 | HT100 |
| P82968 | HT70 | HT80 | HT80 | HT100 |
| P82969 | HT70 | HT80 | HT80 | HT100 |
| P82970 | HT70 | HT80 | HT80 | HT100 |
| P82972 | HT70 | HT80 | HT80 | HT100 |
| P82973 | HT70 | HT80 | HT80 | HT100 |
| Bristol Potential Relay & Start Cap | SUPCO | SUPCO | SUPCO | SUPCO |
| 650058 | HT70 | HT80 | HT80 | HT100 |
| 650097 | HT70 | HT80 | HT80 | HT100 |
| 650143 | HT70 | HT80 | HT80 | HT100 |
| 650153 | HT70 | HT80 | HT80 | HT100 |
| 650155 | HT70 | HT80 | HT80 | HT100 |
| 650160 | HT70 | HT80 | HT80 | HT100 |
| 650169 | HT70 | HT80 | HT80 | HT100 |
| 350304 | HT70 | HT80 | HT80 | HT100 |
| 650409 | HT70 | HT80 | HT80 | HT100 |
| 650410 | HT70 | HT80 | HT80 | HT100 |
| 650512 | HT70 | HT80 | HT80 | HT100 |
| 650567 | HT70 | HT80 | HT80 | HT100 |
| 650568 | HT70 | HT80 | HT80 | HT100 |
| 650569 | HT70 | HT80 | HT80 | HT100 |
| 650570 | HT70 | HT80 | HT80 | HT100 |
| 650571 | HT70 | HT80 | HT80 | HT100 |
| 650855 | HT70 | HT80 | HT80 | HT100 |
| 650879 | HT70 | HT80 | HT80 | HT100 |
| 650887 | HT70 | HT80 | HT80 | HT100 |
| 650889 | HT70 | HT80 | HT80 | HT100 |
| 650919 | HT70 | HT80 | HT80 | HT100 |
| 650926 | HT70 | HT80 | HT80 | HT100 |
| 650929 | HT70 | HT80 | HT80 | HT100 |
| 650942 | HT70 | HT80 | HT80 | HT100 |
| 950943 | HT70 | HT80 | HT80 | HT100 |
| 650944 | HT70 | HT80 | HT80 | HT100 |
| 650945 | HT70 | HT80 | HT80 | HT100 |
| 650946 | HT70 | HT80 | HT80 | HT100 |
| 650947 | HT70 | HT80 | HT80 | HT100 |
| 650948 | HT70 | HT80 | HT80 | HT100 |
| 650949 | HT70 | HT80 | HT80 | HT100 |
| 650950 | HT70 | HT80 | HT80 | HT100 |
| 650951 | HT70 | HT80 | HT80 | HT100 |
| 650959 | HT70 | HT80 | HT80 | HT100 |
| 650962 | HT70 | HT80 | HT80 | HT100 |
| 650965 | HT70 | HT80 | HT80 | HT100 |
| 650968 | HT70 | HT80 | HT80 | HT100 |
| 650971 | HT70 | HT80 | HT80 | HT100 |
| 650972 | HT70 | HT80 | HT80 | HT100 |
| 650975 | HT70 | HT80 | HT80 | HT100 |
| 650976 | HT70 | HT80 | HT80 | HT100 |
| 650977 | HT70 | HT80 | HT80 | HT100 |
| 650978 | HT70 | HT80 | HT80 | HT100 |
| 650979 | HT70 | HT80 | HT80 | HT100 |

SUPCO HT Series Cross Reference to Potential Relay & Start Capacitor Combinations

| 110/220/330 V Capacitor | (88/106) & (108/130) μ F | (124/149) & (130/157) μ F | (145/175), (161/193), (189/227) μ F | (216/259) & (270/324) μ F |
|---|------------------------------|-------------------------------|---|-------------------------------|
| White Rodgers/RBM Potential Relay & Start Cap Cross Reference To Supco | | | | |
| 90-1 | HT70 | HT80 | HT80 | HT100 |
| 90-2 | HT70 | HT80 | HT80 | HT100 |
| 90-3 | HT70 | HT80 | HT80 | HT100 |
| 90-4 | HT70 | HT80 | HT80 | HT100 |
| 90-5 | HT70 | HT80 | HT80 | HT100 |
| 90-6 | HT70 | HT80 | HT80 | HT100 |
| 90-7 | HT70 | HT80 | HT80 | HT100 |
| 90-8 | HT70 | HT80 | HT80 | HT100 |
| 90-9 | HT70 | HT80 | HT80 | HT100 |
| 90-10 | HT70 | HT80 | HT80 | HT100 |
| 90-11 | HT70 | HT80 | HT80 | HT100 |
| 90-12 | HT70 | HT80 | HT80 | HT100 |
| 90-13 | HT70 | HT80 | HT80 | HT100 |
| 90-14 | HT70 | HT80 | HT80 | HT100 |
| 90-15 | HT70 | HT80 | HT80 | HT100 |
| 90-16 | HT70 | HT80 | HT80 | HT100 |
| 90-17 | HT70 | HT80 | HT80 | HT100 |
| 90-18 | HT70 | HT80 | HT80 | HT100 |
| 90-19 | HT70 | HT80 | HT80 | HT100 |
| 90-20 | HT70 | HT80 | HT80 | HT100 |
| 90-21 | HT70 | HT80 | HT80 | HT100 |
| 90-22 | HT70 | HT80 | HT80 | HT100 |
| 90-23 | HT70 | HT80 | HT80 | HT100 |
| 90-24 | HT70 | HT80 | HT80 | HT100 |
| 90-25 | HT70 | HT80 | HT80 | HT100 |
| 90-26 | HT70 | HT80 | HT80 | HT100 |
| 90-27 | HT70 | HT80 | HT80 | HT100 |
| 90-40 | HT70 | HT80 | HT80 | HT100 |
| 90-41 | HT70 | HT80 | HT80 | HT100 |
| 90-63 | HT70 | HT80 | HT80 | HT100 |
| 90-64 | HT70 | HT80 | HT80 | HT100 |
| 90-65 | HT70 | HT80 | HT80 | HT100 |
| 90-66 | HT70 | HT80 | HT80 | HT100 |
| 90-67 | HT70 | HT80 | HT80 | HT100 |
| 90-68 | HT70 | HT80 | HT80 | HT100 |
| 90-69 | HT70 | HT80 | HT80 | HT100 |

SUPCO To OEM Cross Reference

| SUPCO | Kickstart | Coleman/Fraser Johnson/Luxaire/Source One | |
|-------|--------------------|---|-----------------|
| HT70 | KS8 | 024-32005-000 | |
| HT80 | TO5 | 024-31994-000 | |
| HT90 | MP1 | N/A | |
| HT100 | KS1 | 024-31995-000 | |
| SUPCO | Intercity Products | Maneurop/Danfoss | Rheem/Ruud |
| HT70 | N/A | N/A | 42KS8 |
| HT80 | 1160725 | N/A | 42-102004-02-00 |
| HT90 | N/A | 7305543 | N/A |
| HT100 | N/A | N/A | 42-102004-01-00 |
| SUPCO | Trane | Whirlpool | York |
| HT70 | N/A | 8088840 | N/A |
| HT80 | CPT00697 | 8088838 | 161485 |
| HT90 | N/A | N/A | N/A |
| HT100 | KIT2786 | 8088839 | N/A |
| SUPCO | Goodman | Lennox | |
| HT70 | N/A | N/A | |
| HT80 | TO5 | 89P36 | |
| HT90 | N/A | N/A | |
| HT100 | KS1 | 77N48 | |

SUPCO To Wholesale Cross Reference

| SUPCO | Kickstart | Barsco | Fidelitone |
|-------|-----------|----------------|------------|
| HT70 | KS8 | N/A | N/A |
| HT80 | TO5 | 3370020 | 96--TO-5P |
| HT90 | MP1 | N/A | N/A |
| HT100 | KS1 | 33770010 | N/A |
| SUPCO | Insko | Johnson Supply | Johnstone |
| HT70 | 4680110 | N/A | B13-545 |
| HT80 | 4680500 | 509950 | B11-947 |
| HT90 | N/A | N/A | B12-856 |
| HT100 | 4680098 | 509710 | B12-855 |
| SUPCO | Protech | | |
| HT70 | 42-KS8 | | |
| HT80 | 42-TO5 | | |
| HT90 | N/A | | |
| HT100 | 42-KS1 | | |