



HVAC Controls

# Zoning & Specialty Controls Catalog

888.359.0362

[www.iohvaccontrols.com](http://www.iohvaccontrols.com)



Welcome to iO HVAC Controls. We are an HVAC controls company that manufactures and licenses unique products that are offered through wholesale distribution. Our products include zoning and dampers, fresh air ventilation kits, twinning and lead/lag controls, wireless relays, thermostats and other unique solutions that support the HVAC industry. Our goal is to provide wholesale distributors the HVAC solutions their contractor clients need, while providing the support and pricing to increase profitability. We are only a phone call away. Get catalogs, pricing, brochures, technical support and even on-site, live and On-Demand video training for you or your contractors.

We're different. We stock everything we offer in our catalog, we like to ship orders the same day, and we like that our engineers answer the phones so distributors and contractors get immediate customer support. We invent, we develop, and we patent products you can't get anywhere else. Finally, we manufacture, build and assemble our products here in America. We're different, and we think you'll like that.

Call us today to find out how we can help!

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# 2 Zone and 3 Zone Panels

## Zone Control Panels

ZP2-HC  
ZP3-HPS  
ZP3-HCMS

These panels represent the most contractor-friendly zoning solution today. The ZP2 is a single-stage heat/cool panel designed to control 2 zones in residential and light commercial applications. The two ZP3 models are designed to fit three-zone applications for single-stage, multi-stage, heat pump and dual fuel systems in residential and light commercial applications. All panels can accommodate 2 and 3 wire dampers.



ZP3-HPS shown

### Features and Benefits:

- Auto changeover
- First call priority with time share
- Electronic discharge air sensor (sold separately)
- LED status indication
- Independent fan control by zone
- Short cycle protection
- Works with 2 or 3 wire dampers
- Purge cycle option (*ZP3 panels only*)
- Competitively priced

**Warranty:** 10 years

### Specifications:

<b>Construction</b>	Aluminum enclosure with snap-on cover
<b>Mounting</b>	Snap track with 2 back plate screws
<b>Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Operating Temperature</b>	-40° F to 150° F
<b>Time Delays</b>	3 minutes off between cooling calls 3 minutes off on low limit 20 minute time share



ZP6

# 6 Zone Panel

## Zone Control Panel

The ZP6 is a 6 zone, two-position forced air zone control panel that can be expanded to 12 zones. The panel can be used with single-stage, multi-stage, heat pump and dual fuel equipment with up to 3 stages of heating and 2 stages of cooling. Slide switch configuration makes setup quick and easy. A wide range of control options provide ultimate application flexibility including adjustable high/low limits, adjustable high/low balance point, stage timing, capacity control and priority cooling control.

### Features and Benefits:

- 6 zones expandable up to 12
- Auto changeover
- Cooling priority or majority wins
- Twenty minute time share option
- LED status indication
- On-board adjustable high and low limits and balance points
- Staging by zone thermostat or adjustable stage timer
- Purge cycle option
- Works with 2 or 3 wire dampers
- Competitively priced

**Warranty:** 10 years



### 3-Zone Expansion Panel

ZP6-EP

This 3-zone expansion panel is used with the ZP6 zoning panel to increase the number of zones to 9 or 12.



### Specifications:

<b>Construction</b>	Aluminum enclosure with snap-on cover
<b>Mounting</b>	Snap track with 2 back plate screws
<b>Dimensions</b>	13.50" Height x 11.00" Width x 2.00" Depth
<b>Operating Temperature</b>	-40° F to 150° F
<b>Adjustable Limits</b>	High Limit (100° F to 175° F) Low Limit (40° F to 58° F) High Balance Point (55° F to 70° F) Low Balance Point (0° F to 50° F)
<b>Purge Cycle</b>	Off or 1 minute
<b>Fan Mode</b>	All zones or by zone thermostat

# ESP 2 Zone and 3 Zone Zone Control Panels

ZP2-HC-ESP  
ZP3-HPS-ESP  
ZP3-HCMS-ESP

Our ESP zone panels integrate our 2 and 3 zone panels with our award-winning ESP, (*Electronic Static Pressure*), technology. Each panel comes with a static pressure sensor. As zone dampers open and close, the static pressure sensor continuously monitors the system static pressure. If the static pressure goes above the static pressure setpoint, the panel will send a signal to all non-calling zone dampers to begin opening to a point where the static pressure setpoint is maintained. This eliminates the need for a conventional bypass damper.

The **ZP2-HC-ESP** is a single-stage heat/cool zone panel designed to control 2 zones in residential and light commercial applications. The **ZP3-HPS-ESP** model is designed to fit 3 zone applications for heat pump and dual fuel systems in residential and light commercial applications. The **ZP3-HCMS-ESP** model is designed to fit 3 zone applications for multi-stage heating and cooling in residential and light commercial applications.

## NO BYPASS REQUIRED!

### Features and Benefits:

- Built-in static pressure control eliminates the need for a bypass damper
- Auto changeover
- First call priority with time share
- Electronic discharge air sensor (sold separately)
- LED status indication
- Independent fan control by zone
- Short cycle protection
- Competitively priced
- Works with 2 or 3 wire dampers\*
- Adjustable high limit
- Adjustable high and low balance point (HPS)

**Warranty:** 10 years

*\*For ESP functionality, 3-wire MD dampers and static pressure sensor must be used*



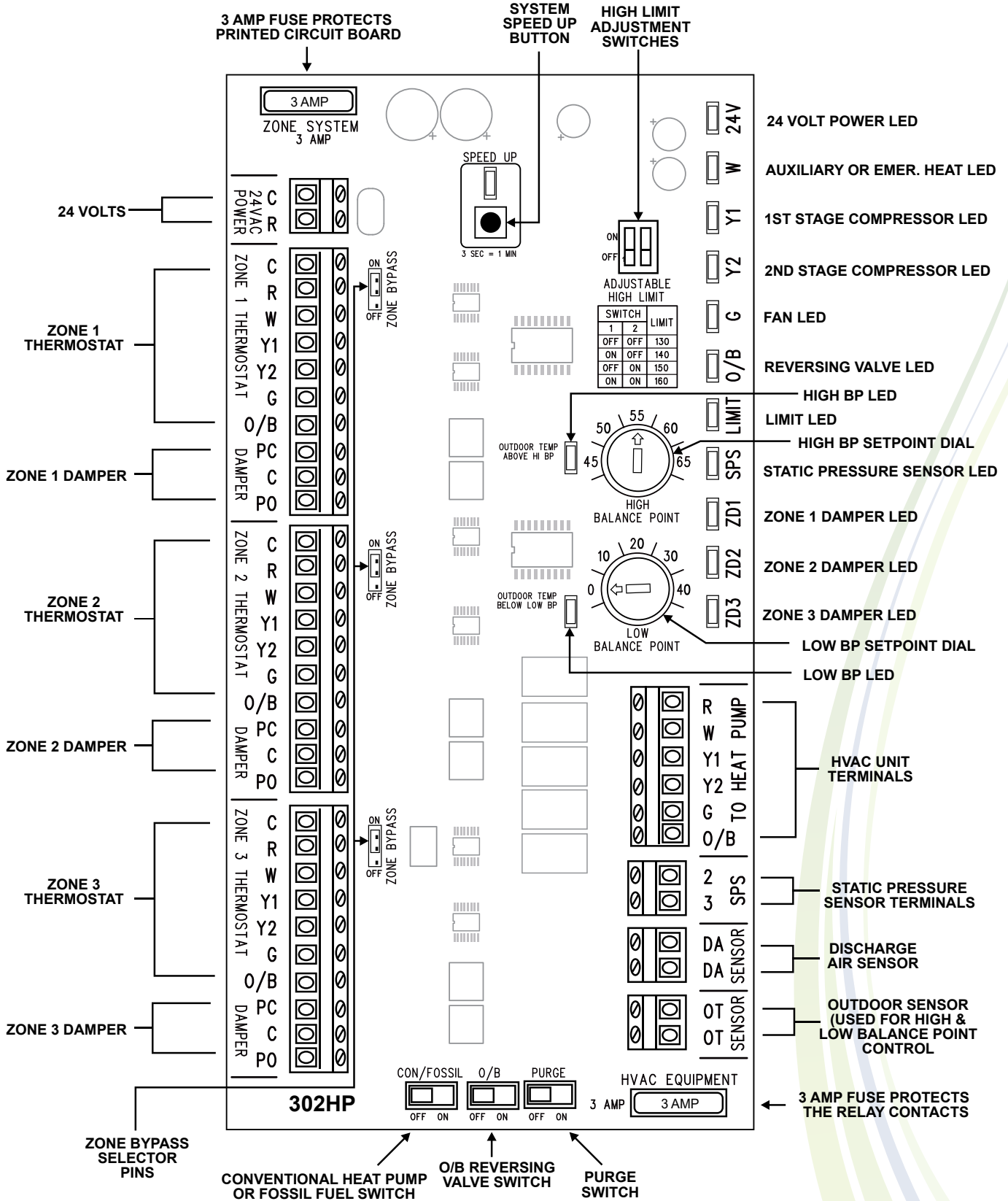
ZP3-HPS-ESP shown

Static pressure sensor included

### Specifications:

<b>Construction</b>	Aluminum enclosure with snap-on cover
<b>Mounting</b>	Snap track with 2 back plate screws
<b>Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Operating Temperature</b>	-40° F to 150° F
<b>Time Delays</b>	3 minutes off between cooling calls 3 minutes off on low limit 20 minute time share

# BOARD DIAGRAM



ZP3-HPS-ESP shown

# ESP 6 Zone Zone Control Panel

ZP6-ESP



The ZP6-ESP is a 6 zone panel that integrates our award winning ESP technology to completely eliminate the need to install a bypass damper. This 4H/2C zone panel comes with a static pressure sensor. The system works like any standard zone control system with one exception; a static pressure sensor continuously monitors the system static pressure. If the static pressure goes above setpoint, the ESP panel will power the non-calling zone dampers open just enough to relieve the excess pressure. Tests indicate that bleeding a small amount of conditioned air for a short time into non-calling zones has little to no impact on the zone temperature.

The panel can be used with single-stage, multi-stage, heat pump and dual fuel equipment. Programmable LCD and slide switch configuration makes setup quick and easy. A wide range of control options provide ultimate application flexibility including adjustable high/low limits, adjustable high/low balance point, stage timing, capacity control and priority cooling control.



Static pressure sensor included

## NO BYPASS REQUIRED!

### Features and Benefits:

- 6 zones expandable up to 12
- Auto changeover
- Cooling priority or majority wins
- Twenty minute time share option
- Optional night thermostat
- Humidification/Dehumidification pass-throughs
- Staging by zone thermostat or stage timer
- Purge cycle option
- Works with 2 or 3 wire dampers\*
- Adjustable high and low limit
- Adjustable high and low balance point

**Warranty:** 10 years

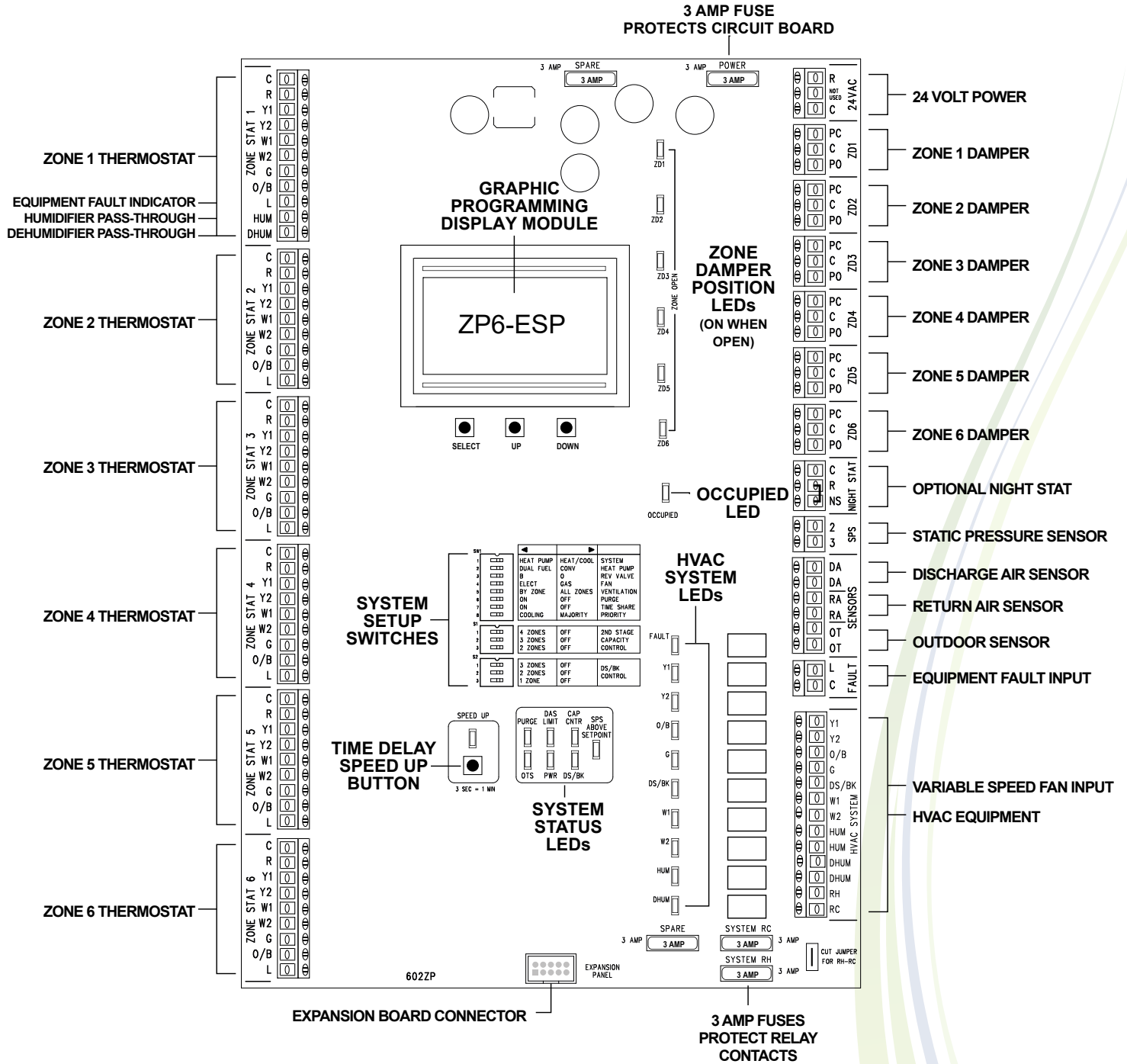
*\*For ESP functionality, 3-wire MD dampers and static pressure sensor must be used*

### Specifications:

<b>Construction</b>	Aluminum enclosure with snap-on cover
<b>Dimensions</b>	13.50" Height x 11.00" Width x 2.00" Depth
<b>Operating Temperature</b>	-40° F to 150° F
<b>Adjustable Limits</b>	High Limit (100° F to 175° F) Low Limit (40° F to 58° F) High Balance Point (55° F to 70° F) Low Balance Point (0° F to 50° F)
<b>Purge Cycle</b>	Off or 1 minute
<b>Fan Mode</b>	All zones or by zone thermostat



# BOARD DIAGRAM



# ESP-400

## Electronic Static Pressure Control Panel

ESP-400

The ESP-400 is an award winning add-on panel that is used with an existing zone panel. As zone dampers open and close, the ESP-400 continuously monitors the system static pressure and if required, sends a signal to zone dampers that are in the closed position to open to a point where the proper static pressure level is maintained. The small amount of air that is allowed to bleed into non-calling zones eliminates air noise and assures proper airflow through the HVAC system preventing coil freeze up.

### NO BYPASS REQUIRED!

#### Features and Benefits:

- Easy to install
- Lowers labor cost
- Lowers overall system cost
- Eliminates tight space issues
- Increases system efficiency
- Uses standard 3-wire zone dampers
- Prevents coil freeze-up
- Eliminates air noise
- Includes static pressure sensor
- Works with most manufacturers' zone panels

**Warranty:** 10 years

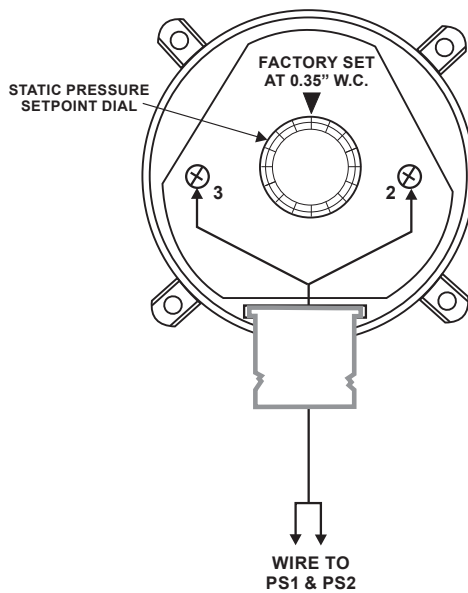
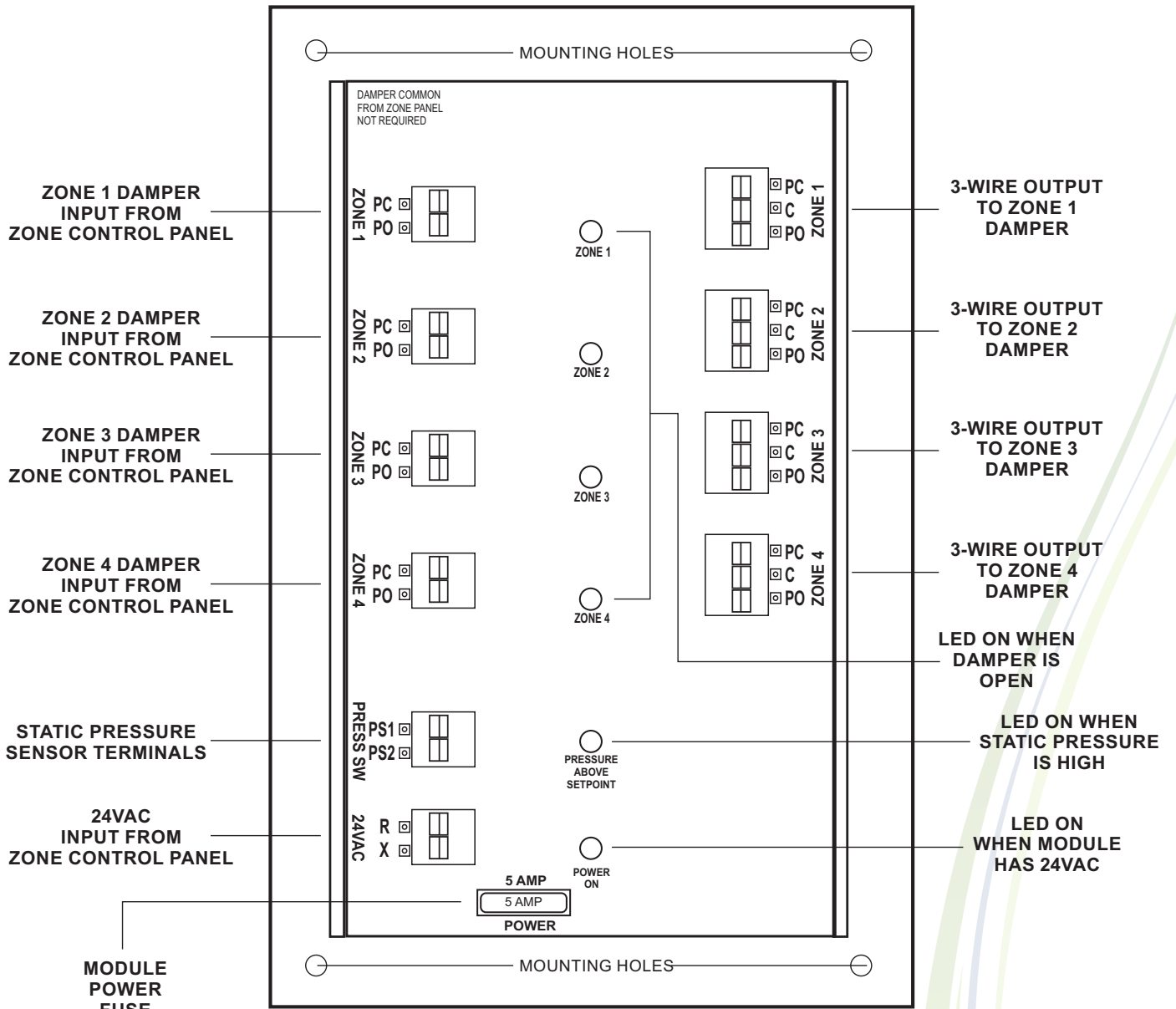


*Static pressure sensor included*

#### Specifications:

<b>Construction</b>	Aluminum enclosure with snap-on cover
<b>Mounting</b>	Snap track with 2 backplate screws
<b>Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Operating Temperature</b>	-40° F to 150° F

# BOARD DIAGRAM



# D and HD Series

## 2-Wire Round/Rectangular Zone Dampers

D-XX  
HD-XXXX

The D Series dampers are galvanized steel, single-blade dampers with a 24 volt spring return actuator. These dampers are shipped complete and ready for installation. They are rated for duct systems with less than 1.0" WC. The D Series damper has a simple adjustment for setting the minimum position.



### Features and Benefits:

- Compatible with most zone control panels
- 24-gauge steel shell
- Tight seal gasket
- 24V synchronous motor
- Quiet operation
- Simple adjustment for setting the minimum position

**Warranty:** 5 years

*Can be configured as PC/SO or PO/SC*

### Specifications:

Construction	24-gauge steel shell
Sizes	5", 6", 7", 8", 9", 10", 12", 14", 16", 18"
Damper Actuator Type	24VAC, 10VA, two-wire power close/spring open

The HD Series dampers are extruded aluminum parallel blade dampers with a 24 volt spring return actuator. These dampers are shipped complete and ready for installation. The HD Series dampers can be installed in any position. They are rated for duct systems with less than 1.0" WC. The damper has a simple adjustment for setting the minimum position.



### Features and Benefits:

- Compatible with most zone control panels
- Extruded aluminum
- 24V synchronous motor
- Quiet operation
- Simple adjustment for setting the minimum position

**Warranty:** 5 years

*Can be configured as PC/SO or PO/SC*

### Specifications:

Construction	Extruded aluminum
Sizes	6" x 6" to 36" x 24" side-mount or bottom-mount
Damper Actuator Type	24VAC, 10VA, two-wire power close/spring open



MD-XX  
MD-XXXX

# MD Series

## 3-Wire Dampers

The MD Series dampers are perfect for use with most zoning systems and recommended for use with all of our ESP zone panels. These dampers are shipped complete and ready for installation. The MD Series dampers can be installed in any position. They are rated for duct systems less than 1.0" WC. The MD Series damper has a simple adjustment for setting the minimum and maximum position.

### NO BYPASS REQUIRED!

#### Features and Benefits:

- 3-wire 24V motor; power close/ power open
- Compatible with ESP panels to eliminate bypass
- Quiet operation
- Simple adjustment for setting the minimum or maximum position

**Warranty:** 5 years

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**BELIMO**  
ACTUATORS



#### Specifications:

<b>Construction</b>	Round: 24-gauge steel shell Rectangular: extruded aluminum
<b>Sizes</b>	Round: 4" to 20" Rectangular: 6" x 6" to 30" x 20" side-mount and bottom-mount
<b>Damper Actuator Type</b>	24VAC, 2.5VA, three-wire power open/power close
<b>Timing</b>	60 seconds

# CD Series

## Carrier® Infinity® and Bryant® Evolution® Compatible Dampers

CD-XX  
 CD-XXXX  
 CRD-XX

iO HVAC Controls offers a wide selection of in-stock round and rectangular dampers that are compatible with the Carrier® Infinity® and Bryant® Evolution® zone control systems. We offer more sizes, better pricing and same-day shipping.



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 ACTUATORS

### Features and Benefits:

- Compatible with the Carrier® Infinity® and Bryant® Evolution® systems
- 3-wire 24V motor; power close/power open
- Large selection available in stock — ship the same day
- Round, rectangular and retrofit models offer installation flexibility
- Rectangular offers side-mount and bottom-mount
- Simple adjustment for setting the minimum position

**Warranty:** 10 years

### Specifications:

<b>Construction</b>	Round: 24-gauge steel shell Rectangular: extruded aluminum
<b>Sizes</b>	Round: 5" to 20" Rectangular: 6" x 6" to 36" x 24" side-mount or bottom-mount motor Retro: 5" to 10"
<b>Damper Actuator Type</b>	24VAC, 2.1VA, three-wire power open/power close
<b>Timing</b>	15 seconds

TD-XX  
 TD-XXXX  
 TRD-XX

# TD Series

## Trane® ComfortLink™ II and American Standard® AccuLink™ Compatible Dampers

iO HVAC Controls offers a wide selection of in-stock round and rectangular dampers that are compatible with the Trane® ComfortLink™ II and the American Standard® AccuLink™ zone control systems. We offer more sizes, better pricing and same-day shipping.

### Features and Benefits:

- Compatible with the Trane® ComfortLink™ II and the American Standard® AccuLink™ systems
- 3-wire 24V motor; power close/power open
- Large selection available in stock — ship the same day
- Round, rectangular and retrofit models offer installation flexibility
- Rectangular offers side-mount and bottom-mount
- Simple adjustment for setting the minimum position

**Warranty:** 10 years



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### Specifications:

<b>Construction</b>	Round: 24-gauge steel shell Rectangular: extruded aluminum
<b>Sizes</b>	Round: 5" to 20" Rectangular: 6" x 6" to 36" x 24" side-mount and bottom-mount Retro: 5" to 10"
<b>Damper Actuator Type</b>	24VAC, 2.5VA, three-wire power open/power close
<b>Timing</b>	60 seconds

# Retro Series

## Retrofit Zone Control Dampers

RD-XX

These low-cost dampers make it easy to quickly add zoning to an existing duct system. The Retro Damper is the perfect alternative to pneumatic systems that require special plastic tubing and pumps. This damper uses standard thermostat wire and will work with most zone control panels.



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### Features and Benefits:

- Compatible with most zone control panels
- 18-gauge steel
- Installation flexibility
- Saves time and labor expense
- Resolves tight space issues

**Warranty:** 5 years

### Specifications:

Construction	18-gauge steel
Sizes	5", 6", 7", 8", 9", 10"
Damper Actuator Type	24VAC, 1.5VA, three-wire power open/power close
Timing	60 seconds



The Motorized Zone Register is a low-cost, rugged motorized register designed to work with most forced air zone control systems. It can also be used as a stand-alone register with a wall mounted thermostat to eliminate over-heating or over-cooling in bonus rooms, sun rooms, guest rooms and basements. The MZR is the perfect solution when you are unable to install zone dampers.

### Features and Benefits:

- Low cost
- Easy to install
- Works with most forced air zone control systems
- Allows zoning to be installed in almost any application
- Can be used in floor and ceiling applications
- Designed to fit most register boots

**Warranty:** 5 years



### Specifications:

Operating Voltage	24VAC
Amperage	0.26A
VA Rating	6.5VA
Configuration	PC/SO or PO/SC

Dimensions	Color
4" x 10"	Tan and White
4" x 12"	Tan and White
4" x 14"	Tan and White
6" x 10"	White
6" x 12"	White
May require plenum-rated wire	

# BH and BV Series

## Barometric Bypass Dampers

BH-XX  
 BH-XXXX  
 BV-XX

BH and BV Series barometric bypass dampers are used to automatically bypass excess air when increases in duct pressure occur due to closing of zone dampers. Various relief air control settings are accomplished by simple adjustment of the weight on the arm. Barometric bypass dampers are recommended for systems up to 0.75" WC of static pressure. These come as horizontal (BH) or vertical (BV) configuration in both round and rectangular.



### Features and Benefits:

- Easy adjustment
- Many sizes available
- Installation flexibility
- Reduces system noise
- Round and rectangular
- Used for systems up to 10 tons

**Warranty:** 5 years

### Typical Bypass Damper Sizing:

1-1.5 Tons=6" / 2-2.5 Tons=8" / 3 Tons=10" / 4-5 Tons=12" / 6-7.5 Tons=14" / 10 Tons=16" / 12.5 Tons=18" / 15 Tons=20"  
 Systems that are 10 tons or more should use our EB series Electronic Bypass Dampers

### Specifications:

<b>Construction</b>	Round: 24-gauge steel shell, aluminum shaft, nylon bushings, blade seals, adjustable weights Rectangular: 22-gauge zinc plated steel frame, single-blade design, adjustable weights
<b>Sizes</b>	Round: 6" to 16" Rectangular: 12" x 8" to 20" x 12"
<b>Application</b>	Systems with static pressure up to 0.75" WC

EB-XX  
EB-XXXX

# EB Series

## Electronic Bypass Dampers

EB Series electronic bypass dampers are used to automatically bypass excess air when increases in duct pressure occur due to closing of zone dampers. The EB Series dampers utilize a floating-point actuator along with the iO-SPC static pressure control. The iO-SPC has a fully calibrated setpoint dial for easy setup and adjustment. The iO-SPC maintains the system static pressure by modulating the bypass damper. EB Series electronic bypass dampers are recommended for systems from 0.08" WC up to 1.20" WC of static pressure.

### Features and Benefits:

- Easy adjustment
- Calibrated at factory
- Many sizes available
- Installation flexibility
- Reduces system noise
- Round and rectangular

**Warranty:** 5 years



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### Typical Bypass Damper Sizing:

1-1.5 Tons=6" / 2-2.5 Tons=8" / 3 Tons=10" / 4-5 Tons=12" / 6-7.5 Tons=14" / 10 Tons=16" / 12.5 Tons=18" / 15 Tons=20"  
Over 15 tons or more should use 2 Electronic Bypass Dampers (i.e. 1 EB and 1 SD Aux Bypass Damper)

### Specifications:

<b>Construction</b>	Round: 24-gauge steel shell, aluminum shaft, nylon bushings, gasketed Rectangular: aluminum frame and blades, brass bushings
<b>Sizes</b>	Round: 6" to 20" Rectangular: 6" x 6" to 36" x 24"
<b>Application</b>	Systems with static pressure .08" to 1.20" WC
<b>Damper Actuator Type</b>	24VAC, 2VA, floating-point
<b>Timing</b>	90 seconds
<b>Damper Position Indicator</b>	Green LED indicates when the damper is opening.

# Zone One™

## Two-Position, Stand-Alone Dampers

D-Z1-XX

D-Z1-XXXX

The Zone One two-position, stand-alone damper is a control damper assembly designed to solve over-heating and over-cooling problems. It can be used to control a single room, or by using multiple dampers, zone multiple rooms. The damper is wired to a thermostat in the room or area that is too hot or too cold. Using a duct temperature sensor mounted on the damper, the damper will open or close to help maintain setpoint based on the air temperature in the duct system.



UT32 thermostat sold separately

### Features and Benefits:

- Stand-alone control of single room or multiple rooms
- Two-position
- Auto changeover
- Minimum position adjustment
- LED status indicator
- Controls pre-wired
- No control panel required
- Installation flexibility
- Round and rectangular dampers

**Warranty:** 5 years

### Specifications:

<b>Damper Construction</b>	Round: 24-gauge steel spiral shell, aluminum shaft, nylon bushings, gasketed Rectangular: aluminum frame and blades, nylon bushings
<b>Damper Sizes</b>	Round: 5" to 18" Rectangular: 8" x 6" to 34" x 10" side-mount or bottom-mount
<b>Damper Actuator Type</b>	24VAC, 10VA, 2-wire power open/spring close



UT32

# Titan Thermostat

## 3H/2C Touchscreen Thermostat

The Titan thermostat is a low-cost, universal touchscreen thermostat. The UT32 can be battery powered or hardwired, which makes it ideally suited for use in residential and light commercial applications.

### Features and Benefits:

- Battery powered or hardwired
- Manual or auto changeover
- Programmable or non-programmable
- Up to 3H/2C, gas/electric, heat pump or dual fuel
- Keypad lockout
- Adaptive recovery
- Assignable auxiliary relay
- Adjustable heating and cooling setpoint limits
- Outdoor temperature display  
*(with optional outdoor sensor, UT32-OTS)*
- Temperature averaging  
*(with optional indoor sensors, UT32-S1, UT32-S2)*
- Short cycle protection
- High setpoint temperature range makes it ideal for hot yoga rooms

**Warranty:** 5 years



**CONTRACTOR  
IMPRINTING  
AVAILABLE**

*(Call for details)*

### Specifications:

<b>Dimensions</b>	3.75" Height x 5.5" Width x 1.312" Depth
<b>Display Size</b>	2.375" Height x 4.125" Width
<b>Input Voltage</b>	24VAC, 50/60 Hz or 2 AA alkaline batteries
<b>Relay Rating</b>	24VAC @ 1Amp maximum per relay
<b>Operating Temperature</b>	32° F to 150° F
<b>Operating RH</b>	0% – 90% (non-condensing)
<b>Temperature Sensors</b>	10K NTC type 2
<b>Short Cycle Protection</b>	4 minutes
<b>Setpoint Range</b>	41° F to 122° F

# Fresh Air Ventilation Kit

iO-FAV-o6  
iO-FAV-o8

The Fresh Air Ventilation system is designed to introduce fresh air into a home through an intake damper controlled by a micro-processor logic panel. The iO-FAV has single adjustment setup, exhaust fan control option, outdoor temperature and/or humidity limit option and damper override capabilities. It is easy to install and meets ASHRAE Standard 62.2. The iO-FAV kit comes with a control panel, 20VA transformer and 6" or 8" round damper. The control panel is available separately (iO-FAVPAN) and can be ordered with additional size dampers.



## Features and Benefits:

- Micro-controller logic panel
- Status LEDs
- Single adjustment setup
- "Damper Closed" override switch
- Meets ASHRAE Standard 62.2
- Exhaust fan control options
- Remote damper override options
- Outdoor temperature and humidity override option
- Optional on-demand CO<sub>2</sub> ventilation

**Warranty:** 5 years



Outdoor Thermostat  
iO-ODT



Humidistat  
H8908A SPST

*Sold Separately*

## Specifications:

<b>Mounting</b>	Aluminum enclosure with snap-on cover
<b>Panel Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Adjustable Ventilation Schedule</b>	1 – 60 minutes
<b>Power</b>	24VAC
<b>Damper</b>	24VAC, 10VA, power open/spring close actuator

ASENSE-R-REL  
ASENSE-D-REL

# On-Demand CO<sub>2</sub> Ventilation



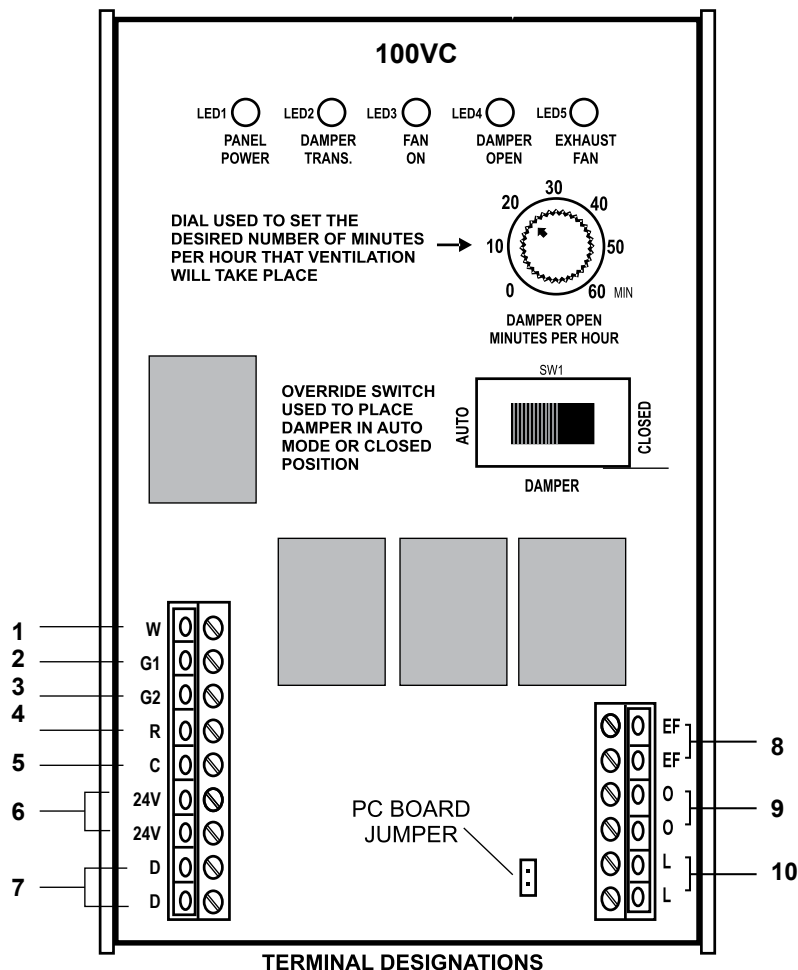
Sensors sold separately

Connecting the CO<sub>2</sub> sensor to the over-ride terminals on our Fresh Air Ventilation panel activates the on-demand ventilation function to provide fresh air. Contact iO HVAC Controls for engineering and installation instructions and schematics.

The ASENSE room and duct transmitters monitor the carbon dioxide (CO<sub>2</sub>) levels in industrial, school, and office type environments.

- Single beam non-dispersive infrared technology
- Relay energizes fresh air ventilation
- Measures the CO<sub>2</sub> concentration in the ambient air up to 2,000 ppm
- Limited 5 year manufacturer's warranty

## FAV DIAGRAM



- 1 - WIRES TO 'W' ON THE HVAC UNIT OR 'Y' ON HEAT PUMP
- 2 - WIRES TO 'G' (FAN) ON THE THERMOSTAT
- 3 - WIRES TO 'G' (FAN) ON THE HVAC UNIT
- 4 - WIRES TO 'R' (24V HOT) ON THE HVAC UNIT
- 5 - WIRES TO 'C' (24V COMMON) ON THE HVAC UNIT
- 6 - SEPARATE 24V TO POWER DAMPER
- 7 - 24V TO DAMPER (POWER OPEN / SPRING CLOSED)
- 8 - DRY CONTACT EXHAUST FAN OPTION (N.O.)
- 9 - REMOTE DAMPER OVERRIDE OPTION (N.O.)
- 10- OUTDOOR THERMOSTAT AND/OR HUMIDISTAT OVERRIDE OPTION (JUMPER MUST BE REMOVED)

# Wireless Relay Kit

iO-WR

**WIRELESS**  
PRODUCTS

The iO HVAC Controls Wireless Relay is the perfect solution when you can't run wire or existing wires have been cut or damaged. The Wireless Relay communicates wirelessly up to 100' between two devices via a 915MHz radio frequency. The Wireless Relay Kit contains 2 four-channel transceivers. The base module has 3 transmitting channels and 1 receiving channel. The satellite module has 3 receiving channels and 1 transmitting channel. The relays can be used to control or monitor heating and cooling equipment, condensing units, fans, pumps, lighting, and industrial equipment.



## Features and Benefits:

**Can wirelessly control or monitor the following:**

- Cooling equipment
- Heating equipment
- Condensing units
- Fans, pumps, lighting
- Industrial equipment
- Built-in signal strength indicator
- Satellite transceiver has a weatherproof gasket. Separate enclosure not required for outdoor installation

**Warranty:** 1 year

## Specifications: Base Module

Dimensions	5.125" Height x 2.625" Width x 1.125" Depth
Input Voltage	24VAC
Channels	4 channels (3 send, 1 receive)
Contact Rating	1A per channel
Addresses	Unlimited kits can be installed in the same building
Frequency	915MHz proprietary protocol
Range	100' from satellite module depending on building type

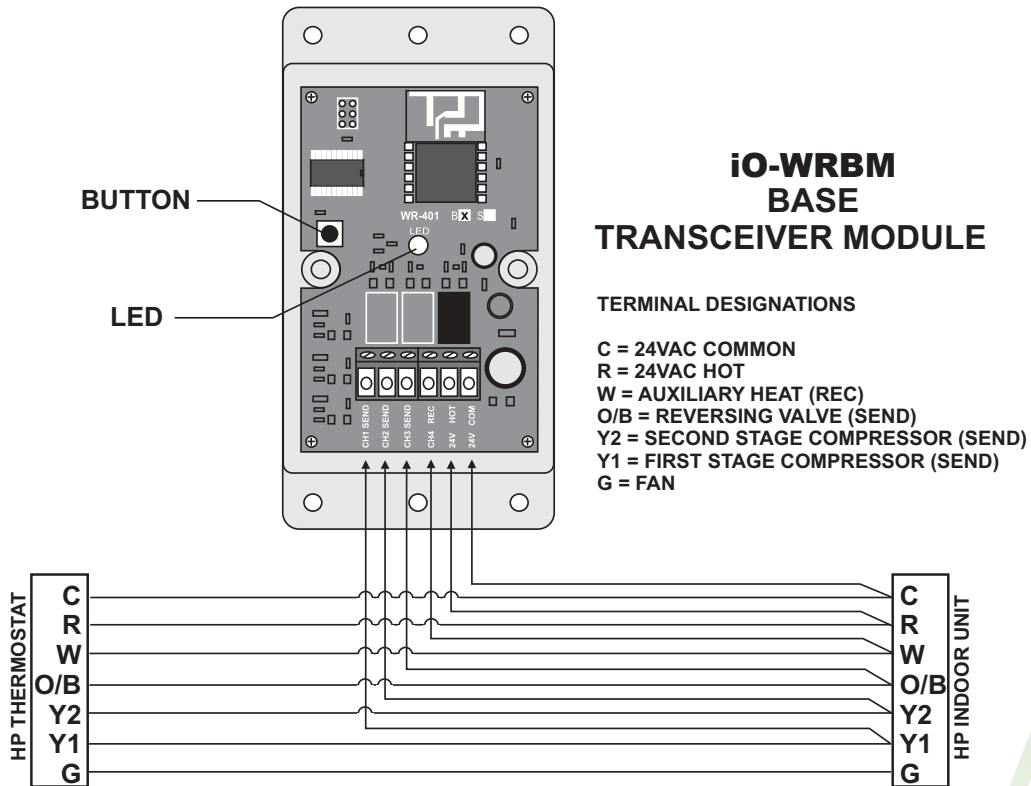
## Specifications: Satellite Module

Dimensions	5.125" Height x 2.625" Width x 1.125" Depth
Input Voltage	24VAC
Channels	4 channels (1 send, 3 receive)
Contact Rating	1A per channel
Addresses	Unlimited kits can be installed in the same building
Frequency	915MHz proprietary protocol
Range	100' from base module depending on building type

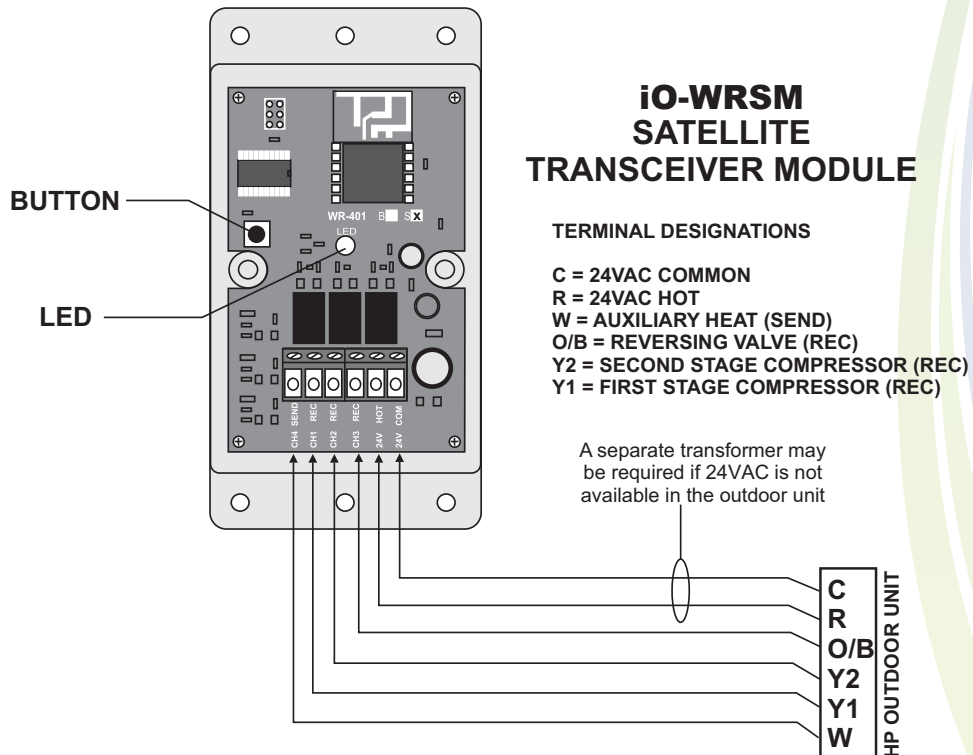


# WIRELESS RELAY DIAGRAM

## TYPICAL WIRING FOR 3 HEAT / 2 COOL HEAT PUMP



## TYPICAL WIRING FOR 3 HEAT / 2 COOL HEAT PUMP



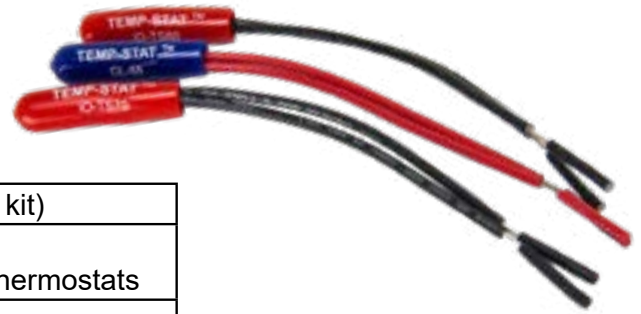
# Temp-Stat™

## Temporary Construction Thermostat

iO-TSXX

iO-CLXX

This temporary construction thermostat is preset to a non-adjustable temperature. Saves on energy costs during construction.



### Specifications:

<b>Input Voltage</b>	24VAC, 1A (line voltage control requires a relay kit)
<b>Heating Only</b>	41° F warehouse thermostat 55° F, 60° F, 65° F, 70° F, 75° F construction thermostats
<b>Cooling Only</b>	55° F compressor lockout thermostat 70° F, 75° F, 80° F construction thermostats

**Warranty:** 1 year

PART NUMBER	TEMPERATURE SETTING	DESCRIPTION
iO-TS60	60°	Heating application
iO-TS65	65°	Heating application
iO-TS70	70°	Heating application
iO-CL70	70°	Cooling application
iO-CL75	75°	Cooling application

### Special Application Thermostats

PART NUMBER	TEMPERATURE SETTING	DESCRIPTION
iO-TS41	41°	Heating application
iO-TS55	55°	Heating application
iO-CL55	55°	Compressor lock-out

# Conceal-A-Stat™

## Flush-Mounted, Tamper-Resistant Thermostats

iO-CSXXWP

iO-CSACXXWP

This concealed thermostat is designed to control unit heaters, cabinet heaters, in-wall heaters, fan coils or air conditioning units. Common applications include locker rooms, entryways, warehouses and hallways.



### Specifications:

<b>Input Voltage</b>	24VAC, 1A (line voltage controls requires a relay kit)
<b>Heating Only</b>	41° F, 60° F, 65° F, 70° F
<b>Cooling Only</b>	70° F, 75° F

**Warranty:** 1 year

PART NUMBER	TEMPERATURE SETTING	DESCRIPTION
iO-CS41WP	41°	Heating application
iO-CS60WP	60°	Heating application
iO-CS65WP	65°	Heating application
iO-CS70WP	70°	Heating application
iO-CSAC70WP	70°	Cooling application
iO-CSAC75WP	75°	Cooling application

### Accessories

PART NUMBER	DESCRIPTION
iO-CSRY120	Relay kit for 120 volt control circuits
iO-CSRY240	Relay kit for 240 volt control circuits

LW-1  
LW-2  
LW-3  
LW-4

# Wireless Lodge Watch

## Wireless Energy Management System

The Wireless Lodge Watch is a wireless monitoring system designed to save money on energy costs by making sure your equipment isn't running needlessly because a door or window has been left open. The LW detects when a door or window is left open for more than 2 minutes. The LW then locks out the HVAC equipment until it detects the closure of the door or window. This saves on energy costs, but also reduces short cycling of the HVAC equipment, reducing equipment icing, condensate pan overflow and wear on the equipment. Kits available for 1 to 4 doors and/or windows. Additional doors and/or windows can be added. Up to 30 transmitters per receiver module. Lodge Watch receiver module is for indoor use only.



**Features and Benefits:**

- Locks out HVAC equipment when doors or windows are left open
- Restores HVAC operation when doors and windows are closed
- Reduces energy consumption
- Reduces equipment maintenance
- Extends equipment life
- Up to 30 doors or windows monitored on one panel

**Warranty:** 5 years



*For outdoor installation of the receiver module, must specify Lodge Watch system in water tight enclosure.*

### Specifications:

<b>Receiver Module Dimensions</b>	4.75" Height x 8.75" Width x 2.25" Depth
<b>Sensor Dimensions</b>	3.15" Height x 1.3" Width x .60" Depth (combined)
<b>Transmitter Power</b>	Solar or CR1216 battery
<b>Control Module Power</b>	24VAC
<b>Transmission Range</b>	80 ft.
<b>Frequency</b>	902MHz
<b>Compliance</b>	FCC, IC

# Twinning Kit

iO-TWIN

The Twinning Kit is designed to allow a single thermostat to control two identical HVAC units. It can also be expanded to control 4 identical HVAC units with one thermostat. The iO-TWIN can be used on common or separate ducted systems with single-stage, multi-stage or heat pump equipment. Uses standard 18-gauge thermostat wire. Thermostats and HVAC units can be located up to 300' from the twinning kit panel.



## Features and Benefits:

- Easy to install and setup
- Uses standard 18-gauge thermostat wire
- Optional control of up to four units
- Reduces installation time and cost
- Can be used with the Lead/Lag Controller

**Warranty:** 5 years

## Specifications:

Mounting	Aluminum enclosure with snap-on cover
Dimensions	8.00" Height x 6.00" Width x 1.50" Depth
Input Voltage	24VAC



# Lead/Lag Controller

This versatile 24 volt Lead/Lag Controller offers balanced operating time between 2 redundant devices. Status LEDs indicate the controller is powered and which piece of equipment is currently being energized. The iO-LL can be used on HVAC equipment, industrial equipment, heating equipment, cooling equipment, fans, pumps and motors.

## Features and Benefits:

- Microprocessor controlled
- Compact design
- Isolated inputs and outputs
- Status LEDs
- Reduces equipment maintenance and wear
- Can be used with the Twinning Kit

**Warranty:** 5 years



## Specifications:

<b>Mounting</b>	Aluminum enclosure with snap-on cover
<b>Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Input Voltage</b>	24VAC

# Geothermal Interface Panel

iO-GEO

The Geothermal Interface Panel is designed to control a geothermal radiant floor heating system and a forced air geothermal system from a single room thermostat. The iO-GEO panel eliminates the hassle of installing a second thermostat because it integrates the radiant floor heat as Stage 1 and then the geothermal forced air heat pump for Stage 2.



## Features and Benefits:

- Stages the radiant floor heat with the geothermal forced air heat pump
- Can be used with any 3H/2C thermostat
- Uses standard 18-gauge thermostat wire
- Saves hours of installation time
- Reduces installation cost
- Simplifies servicing the system
- Provides a clean, professional installation

**Warranty:** 5 years

## Specifications:

<b>Mounting</b>	Aluminum enclosure with snap-on cover
<b>Enclosure Dimensions</b>	8.00" Height x 6.00" Width x 1.50" Depth
<b>Input Voltage</b>	24VAC, powered by equipment transformer

# Warning Watchdog™

## Condensing Unit Alarm System



### iO-WW

The Warning Watchdog is a condensing unit alarm system that sounds a loud siren and can also trigger a central alarm, phone dialer or other device. It can monitor up to 4 condensing units with one panel. This easy-to-install condensing unit alarm system can be used with packaged or split systems. The alarm will sound if refrigerant loss is detected, the disconnect is pulled, or wiring is cut.



**Warranty:** 1 year

### Warning Watchdog Packaged Hardwired Kits

ITEM	DESCRIPTION
iO-WW1	Logic panel with key lock, siren cut-off timer and siren silence switch Kit includes (1) iO-WWLP, (1) iO-WWPS, (1) iO-WWS, (1) iO-WWR240, (1) iO-WWPC
iO-WW2	Logic panel with key lock, siren cut-off timer and siren silence switch Kit includes (1) iO-WWLP, (1) iO-WWPS, (1) iO-WWS, (2) iO-WWR240, (2) iO-WWPC
iO-WW3	Logic panel with key lock, siren cut-off timer and siren silence switch Kit includes (1) iO-WWLP, (1) iO-WWPS, (1) iO-WWS, (3) iO-WWR240, (3) iO-WWPC
iO-WW4	Logic panel with key lock, siren cut-off timer and siren silence switch Kit includes (1) iO-WWLP, (1) iO-WWPS, (1) iO-WWS, (4) iO-WWR240, (4) iO-WWPC

### Warning Watchdog Components and Optional Items

iO-WWLP	Logic panel with key lock, siren cut-off timer and siren silence switch LEDs confirm alarm status
iO-WWPS	Power supply for iO-WWLP logic panel 12 volts DC - 1500mA
iO-WWPC	Encapsulated pressure control (mounts on liquid line schrader valve service port) Working pressure up to 600 PSI - 3500 PSI burst strength - opens in fall below 10 PSI
iO-WWR12	Relay for additional siren. SPDT 12 volt DC relay
iO-WWR240	Voltage monitoring relay - 240/208 volts Can be used with 240/208 single-phase or 3-phase
iO-WWR480	Voltage monitoring relay - 440/480 volts Can be used with 440/480 3-phase
iO-WWS	Outdoor/indoor siren 12VDC 118dB output
iO-WWTS	Encapsulated tamper switch Detects excessive vibration or movement of condensing unit
iO-WWTAM	Warning Watchdog tamper alert. Visual confirmation of open circuit

# Universal Malfunction Monitor

## Fix It Before It's Broken!

The UMM Universal Malfunction Monitor is a solid-state, 24 VAC interface module designed to accept a variety of dry contact inputs such as a current sensing relay, static pressure switch, refrigerant pressure switch or freeze stat. Based on the selected input, the module will trigger a SPDT relay after a selected time of 6 seconds or 6 minutes once the input contacts open. The relay contacts can be used to disrupt equipment operation and/or send a signal to an alarm or other external monitoring device that a malfunction has occurred. This can greatly reduce damage to equipment and property as well as save down time and expensive equipment failure costs.



### Features and Benefits:

- Multiple Sensor Options
- Easy to Install
- 6 second or 6 minute delay option depending on sensor

### Monitor Options:

- Static Pressure Sensor
- Coil Freeze Sensor
- Current Sensor
- Refrigerant Switch

**Warranty:** 1 year

### Specifications:

Dimensions with enclosure	5.00"W x 6.00"H x 1.5"D
Max Control Voltage	30VAC
Relay Contacts	SPDT (Rated at 5A)
Enclosure	Plastic

# UMM Kit Options

## Static Pressure Switch Application



### **UMM-SP**

The UMM-SP can monitor a HVAC system blower through the use of a static pressure switch. If no airflow is detected, the UMM will disrupt the thermostat signal. The sensor probe should be mounted in the main discharge air plenum.

## Freeze Stat Application



### **UMM-FS**

The UMM-FS can monitor the suction line temperature of an AC unit with the use of a freeze stat to prevent coil freeze up and potential water damage in the event of a blower motor failure, restricted airflow caused by dirty filter, clogged coil or low refrigerant. It is recommended that the time delay be set for 6 minutes to prevent false triggering due to cold ambient compressor start up. It is highly recommended that the Freeze Stat be wrapped with insulated tape.

## Current Sensor Relay Application



### **UMM-CS**

The UMM-CS can monitor the current to a HVAC blower using a current sensing relay. If no current is detected after 6 seconds, the relay contacts can be used to trigger an alarm or remote monitoring device. Make sure to connect 24VAC to the UMM that signals equipment to run. 0.25-150A sense range.

## Refrigeration Pressure Switch Application



### **UMM-RP**

The UMM-RP can monitor refrigerant pressure using a pressure control mounted on the liquid line side of a compressor. If the refrigerant pressure drops below the setpoint of the pressure control, the relay contact can be used to trigger an alarm or remote monitoring device.



# Time Clock

iO-TC

This 7-day programmable Time Clock can be used to control up to 8 ON/OFF events per day from a selection of 15 daily program combinations. The iO-TC is powered by 24VAC and has a self-charging lithium battery to maintain the real-time clock schedules in the event of a power failure. The iO-TC comes in a metal enclosure with key lock and conduit knock-outs located on the top, bottom and sides for ease of installation.



## Specifications:

<b>Mounting</b>	Metal enclosure with mounting holes
<b>Dimensions</b>	8.25" Height x 7.25" Width x 3.50" Depth
<b>Input Voltage</b>	24VAC

## Features and Benefits:

- 8 ON/OFF daily events
- 15 program combinations
- Lithium battery backup
- Easy to program
- LED ON/OFF status
- Spade connectors included
- Protective clear timer cover
- All metal, keyed lock enclosure with conduit knockouts

**Warranty:** 1 year

This easy-to-install Dual Fuel Kit can be used with heat pumps and fossil fuel furnaces having up to 4 stages of heating and 2 stages of cooling. They work by turning the heat pump off at a pre-determined outdoor temperature permitting the fossil fuel furnace to run in order to reach the room thermostat setpoint. Includes snap track mounting and outdoor balance point thermostat.

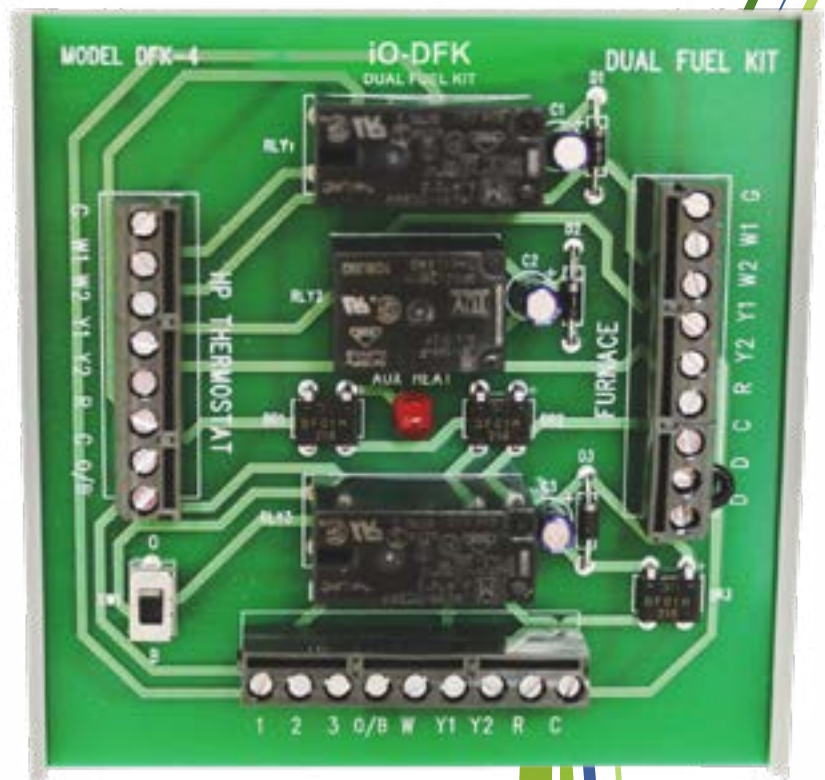
## Features and Benefits:

- Snap track mounting
- LED auxiliary heat indication
- Easy to read screw terminals
- 'O' and 'B' reversing valve selection switch
- Outdoor balance point thermostat included
- Provides professional looking installation

**Warranty:** 5 years



*iO-DFK-ODT included in kit*



## Specifications:

<b>Mounting</b>	Snap track
<b>Dimensions</b>	4.00" Height x 4.00" Width x 1.00" Depth
<b>Input Voltage</b>	24VAC
<b>Balance Point Range</b>	0° to 100° F

Today's programmable and connected thermostats often need a "common wire" to power the radio modules and other electronics. On average, 30% of all homes do not have a common wire at the thermostat. The iO-W1-100 uses multiplexing technology to allow an additional signal to be passed through the common wire.

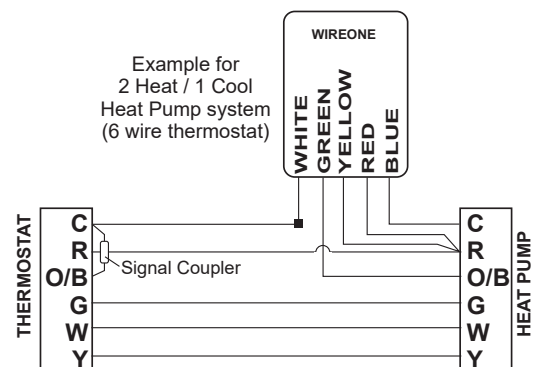
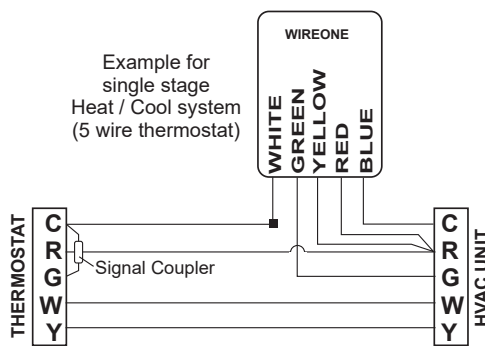


US Patents 7,922,100; 7,737,762;  
other patents pending

## Features and Benefits:

- Reduces installation time and cost
- Eliminates the need to run additional wiring
- Allows a single signal (W, Y or G) to be multiplexed over a common wire
- Supports single and dual transformer installations
- Supports both heat pump and conventional systems
- Provides short circuit protection through a self-resetting thermal fuse
- Includes a signal coupler and 5 splice wire caps
- Compatible with virtually all major thermostat brands

**Warranty:** 1 year



## Specifications:

Dimensions	0.83" Height x 3.00" Width x 1.38" Depth
Maximum Output Current	.5A
Maximum Output Current	30VAC

To see our full line of literature and displays, please visit [www.iohvaccontrols.com](http://www.iohvaccontrols.com)

# Showroom Displays



**Wireless Relay Counter Display**



**Temp-Stat Counter Display**



**Showroom Banner**



**Warning Watchdog Display with Hanger and Easel**



# Accessories



**20VA Transformer**  
*TR20VA001*  
 120/24 20VA Single Hub Foot Transformer



**40VA Transformer**  
*TR-40*  
 120V Primary 24V Secondary 40VA Transformer  
 Box mounted and multi-tap also available  
*TR-40-B, TR-40-MT*



**75VA Transformer**  
*TR-75*  
 480/240/208/120 Primary 24V Secondary 75VA Transformer with Circuit Breaker



**Discharge Air Sensor**  
*ZPA-DTS*  
 The ZPA-DTS is a duct-mounted temperature probe that provides capacity control of heating and cooling equipment. It senses the delivered air temperature and cuts off the heating or cooling when the delivered air temperature goes above or below normal operating limits.



**Outdoor Temperature Sensor**  
*ZPA-OTS*  
 The ZPA-OTS is installed in the heat pump unit when backup heat is being used. This outdoor temperature sensor detects the ambient temperature, directing the zoning panel when to switch to the auxiliary heat source.



**Outdoor Thermostat**  
*iO-ODT*  
 For use with dual fuel applications and high and/or low temperature lockout for fresh air ventilation.



**Static Pressure Controller**  
*iO-SPC*  
 The iO-SPC is a static pressure controller with a solid-state switching and timing circuit that enhances operation and improves reliability. The unit has a fully-calibrated setpoint dial for easy setup and adjustment.



**Remote Temperature Sensors**  
*UT32-S1, UT32-S2*  
 These sensors are used to monitor temperature in a remote location from the thermostat in indoor applications. Designed to be used with the iO Titan and T-32-P thermostats. For use with other thermostat manufacturers, check with our product engineers before ordering.



**Asense CO<sub>2</sub> Sensors**  
*ASENSE-R-REL, ASENSE-D-REL*  
 The ASENSE room and duct transmitters monitor the carbon dioxide (CO<sub>2</sub>) levels in industrial, school, and office type environments.





**BELIMO**

# Accessories



**Replacement Damper Actuator**  
*FP18-Motor*  
Belimo 24V, 60 second,  
18 in-lb Actuator



**Replacement Damper Actuator**  
*FP45-Motor*  
Belimo 24V, 90 second,  
45 in-lb Actuator



**Modulating, Spring Return Damper Actuator**  
*AFB24-MFT*  
For fail-safe, modulating control of dampers in HVAC systems.



**Zip Economizer**  
*ECON-ZIP-BASE*  
The ZIP Economizer™ is a modular designed, plug and play economizer control solution. The ZIP offers an extended temperature transfective LCD display, with on board help, providing information every step of the way.



**2-Way, Characterized Control Valve**  
*B214B, TR24-3-T US*  
This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops.



**Duct Sensor, Thermistor**  
*A/CP-D-8-PB*  
The standard plastic duct mount configuration has a mounting flange for quick installation and a foam pad to dampen vibrations.




**Microprocessor Based Humidity Sensor**  
*A/TUCH2-CP-0063*  
The microprocessor based A/TUCH2 can indicate room relative humidity, temperature, setpoint, fan speed, and occupied/unoccupied status with corresponding signals sent back to your DDC System.



**Differential DLP Sensor**  
*A/DLP-010-W-U-N-A-0*  
The DLP Series is based on a piezoresistive, silicon sensing element which senses differential pressure and provides an analog output.



**Toxic & Combustible Sensors**  
*Q5-CO-250P-0-X, Q5-NO2-10P-0-X*  
The Q5 Series is a microprocessor based "smart" gas transmitter. It is paired with either an electrochemical gas sensor for toxic gases, or a catalytic bead sensor for combustible gases.



Available through  
wholesale distribution



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