

INFRA-RED OIL CONTROLLER

I-ROC-LV

The function of the Infra-Red Oil Controller is to control the oil level in the compressor crankcase using proven optical sensor technology.

Applications

The I-ROC-LV Oil Regulator can be used with Low and High Pressure Oil Management Systems on a single compressor or on multi-compressor racks. The I-ROC-LV Oil Regulator is fitted to the sight glass housing of the compressor and has an integral sight glass that allows visual inspection of the crankcase oil level. The regulator comes ready to mount to several popular compressors using the 3 or 4 bolt, 1-7/8" BC, universal flange. Oil Level Regulator Adapter Kits are available for additional applications. The I-ROC-LV Oil Regulators are suitable for use with ASHRAE 34 Class A1 refrigerants and their associated oils, as well as other industrial fluids non-corrosive to aluminum, steel, brass, and synthetic rubber.

Main Features

- Patented optical sensor technology*
- Universal flange compressor connection
- SAE flare oil connection
- Fixed oil level control at 1/2 sight glass
- Low level alarm circuit
- Replacement parts available
- Adapters available for most popular compressor models

How it works

The oil is regulated at 1/2 Sight Glass using variable pulse timing. When a low oil condition is detected, oil begins to pulse into the compressor at the time intervals shown in the Operation Table. As the duration of oil filling increases, the oil pulse time increases to better meet the oil demand. If demand is not satisfied after 2 minutes of continuous oil feed, a low level alarm is initiated by means of a fail-safe electrical contact. During the alarm condition the regulator will continue to pulse feed oil. The alarm will reset automatically if the oil returns to 1/2 glass. The alarm contact may be used to shut down the compressor in the event of a low level condition.

Technical Specifications

Max working pressure: 650 PSI (45 Bar)
Max differential pressure: 350 PSI (24 Bar)
Max ambient temp: 140°F (60°C)
Max fluid temp: 176°F (80°C)
Supply voltage: 24V, 60HZ
Operating current: 0.6 Amps@24V
Alarm contact rating: 5A@240VAC, SPDT

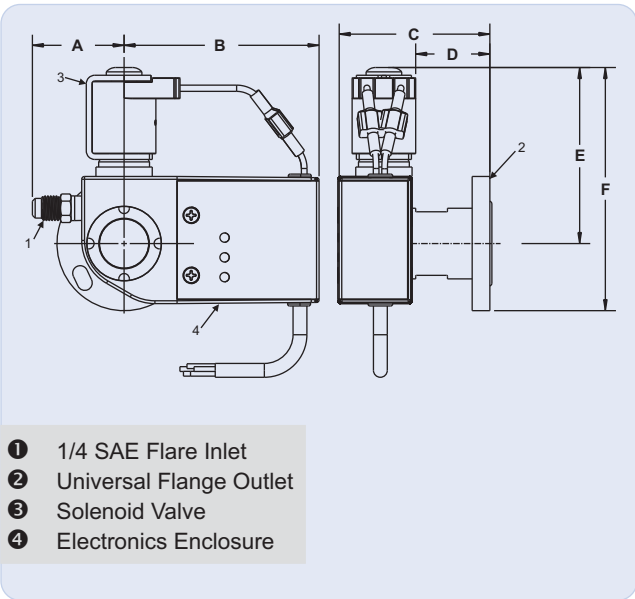
Henry Technologies' I-ROC-LV Oil Level Controller meets the requirements of UL 429 and is USR and CNR recognized by Underwriters Laboratories, Inc.

Materials of Construction

The valve body is made of aluminum. The inlet connection is made of brass. The outlet adapter is made of plated steel and the electronics enclosure is made of molded plastic.

Installation - Notes

1. To protect the Oil Level Regulator from system debris, an Oil Strainer, Oil Filter or Oil Filter Drier is recommended.
2. The operating differential oil pressure should be within the range of the Regulator's specification.
3. The 1/2 sight glass oil level must be in line with the compressor manufacturer's guidelines.
4. If the alarm output is used to shut down a compressor, an external time delay should be fitted into the circuit.
5. The electronic module will be damaged if the 24V supply voltage is exceeded.
6. Power to the unit should be maintained during compressor running, stand-by and shutdown modes.
7. Full instructions are given in the Product Instruction Sheet included with each Regulator.



Part No	Dimensions (inch)						Weight (lbs)
	A	B	C	D	E	F	
OP-03-1/2	1.62	3.45	2.69	1.31	3.12	4.30	1.3

OPERATION TABLE				
Oil Level	Oil Fill Duration	Oil Fill Pulse Timing	Oil LED	Alarm
Good	N/A	No oil flow	Solid	No
Low	0 - 60 seconds	1.0 sec ON/1.8 sec OFF	Blinking	No
Low	61 - 120 seconds	2.0 sec ON/2.0 sec OFF	Blinking	No
Low	120+ seconds	3.0 sec ON/3.0 sec OFF	Blinking	Yes

ELECTRO-MECHANICAL OIL LEVEL REGULATOR

The function of an Electro-Mechanical Oil Level Regulator is to control the oil level in the compressor crankcase when used as part of a Low or High Pressure Oil Management System.

Applications

Electro-Mechanical Oil Level Regulators can be used with Low and High Pressure Oil Management Systems on a single compressor or on multi-compressor racks. The S-9030 Regulators is designed to bolt directly to the sight glass housing on the compressor crankcase. Henry Technologies offers a wide variety of Adapters to allow use on most popular compressor models.

The S-9030 Electro-Mechanical Oil Level Regulator can be adjusted to maintain an oil level between 1/4 and 1/2 sight glass. The S-9030 maintains the oil level at any pressure differential between 5 and 300 PSI (0.35 and 20.7 Bar).

The Henry Technologies' Electro-Mechanical Oil Level Regulator is suitable for use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, brass, copper, and Teflon.

Main Features

- Patented Henry Technologies' Design*
- 3 Bolt, 1-7/8" BC Compressor Connections
- SAE flare oil and equalization connections
- Supply = 24 VAC, 6 Watt
- Adjustable oil level between 1/4 and 1/2 sight glass
- Low level alarm circuit
- Replacement parts available for all major components
- Pressure equalization ports for multi compressor applications
- Adapters available for most popular compress models

Technical Specifications

Maximum Working Pressure = 450 PSI (31 Bar)
Allowable Pressure Differential = 5 to 300 PSI (0.35 to 20.7 Bar)
Allowable Operating Temperature = -14°F to +212°F (-10°C to +100°C)

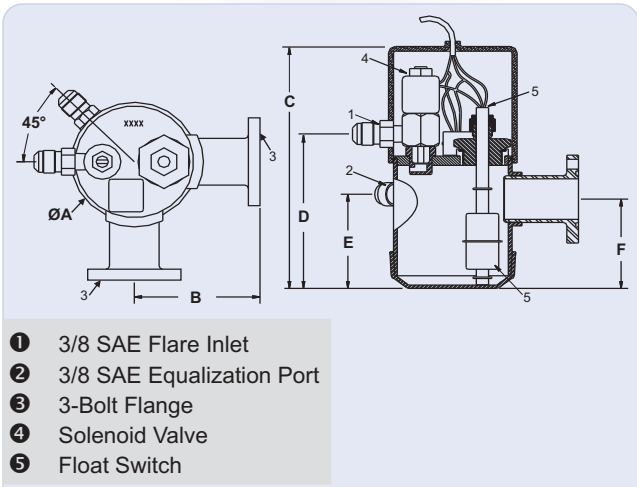
Henry Technologies' Electro-Mechanical Oil Level Regulator is UL and C-UL Listed by Underwriters Laboratories, Inc.

Materials of Construction

The shell and caps are made of steel. All connections are made of plated steel, and the protective cap is made of vinyl.

Installation - Notes

1. To protect the Oil Level Regulator from system debris, an Oil Strainer, Oil Filter or Oil Filter Drier is recommended.
2. The Oil Level Regulator should not be subjected to excessive vibration.
3. The operating differential oil pressure should be within the range of the Regulator's specification.
4. The oil level must be set and controlled in line with the compressor manufacturer's guidelines.
5. If the alarm output is used to shut down a compressor, an external time delay should be fitted into the circuit.
6. Full instructions are given in the Product Instruction Sheet included with each Regulator.



Part No	Dimensions (inch)						Weight (lbs)
	ØA	B	C	D	E	F	
S-9030	3.0	3.18	6.5	4.15	2.53	2.4	4.0

REPLACEMENT PART TABLE	
Part No	Description
3-044-016	Float Switch
3-047-017	Solenoid Valve Kit

MECHANICAL OIL LEVEL REGULATORS

The function of a Mechanical Oil Level Regulator is to control the oil level in the compressor crankcase when used as part of a Low Pressure Oil Management System.

Applications

Oil Level Regulators are typically used as part of a Low Pressure Oil Management System on parallel compressor racks. Mechanical Oil Level Regulators are designed to bolt directly to the sight glass housing on the compressor crankcase. Henry Technologies offers fixed level and adjustable level Oil Level Regulators, as well as a wide variety of Adapters to allow use on most popular compressor models.

The S-9010 Mechanical Oil Level Regulator maintains a fixed oil level at 1/2 sight glass. The S-9010 maintains the oil level at any pressure differential between 5 and 30 PSI (0.35 to 2.0 Bar)

The S-9090 Mechanical Oil Level Regulator can be adjusted to maintain an oil level between 1/4 and 5/8 sight glass. The S-9090 maintains the oil level at any pressure differential between 5 and 90 PSI (0.35 and 6.2 Bar). Henry Technologies' exclusive design allows for oil level adjustment while the system is in operation eliminating the need of system shut down or disconnection of oil supply lines.

The S-9130 Mechanical Oil Level Regulator can be adjusted to maintain an oil level between 1/4 and 5/8 sight glass. The S-9130 maintains the oil level at any pressure differential between 5 and 90 PSI (0.35 and 6.2 Bar). Henry Technologies' exclusive design allows for oil level adjustment while the system is in operation eliminating the need of system shut down or disconnection of oil supply lines.

All Henry Technologies' Mechanical Oil Level Regulators are suitable for use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, brass, copper, nylon and synthetic rubber.

Main Features

- 3 bolt on 1-7/8" or universal flange compressor connections
- SAE flare oil and equalization connections
- Adjustable oil level on select models
- Pressure equalization ports for multi compressor applications
- Adapters available for most popular compress models

Technical Specifications

Maximum working pressure = 450 PSI (31 Bar)

Allowable pressure differential S-9010 = 5 to 30 PSI (0.35 to 2.0 Bar)

Allowable pressure differential S-9090 & S-9130 = 5 to 90 PSI (0.35 to 6.2 Bar)

Allowable operating temperature = +32°F to +266°F (0°C to +130°C)

Henry Technologies' Mechanical Oil Level Regulators are UL and C-UL Listed by Underwriters Laboratories, Inc.



Materials of Construction

The shell and caps are made of steel. The float valve is made of brass with a stainless steel needle. The float ball is made of stainless steel and all connections are made of plated steel.

Installation - Notes

1. To protect the Oil Level Regulator from system debris, an Oil Strainer, Oil Filter or Oil Filter Drier is recommended.
2. The Oil Level Regulator can be fitted directly to 2, 3 and 4 cylinder compressors and to most 6-cylinder compressors that use a standard 3 or 4 bolt sight glass. For other compressor configurations, an adaptor will be required.
3. The Oil Level Regulator should not be subjected to excessive vibration. The operating differential oil pressure should be within the range of the Regulator's specification.
4. The oil level must be set and controlled in line with the compressor manufacturer's guidelines.
5. Full instructions are given in the Product Instruction Sheet included with each Regulator.

- ① 3/8 SAE Flare Inlet ③ Compressor Connection Flange
 ② 3/8 SAE Equalization Port ④ Adjustment Screw

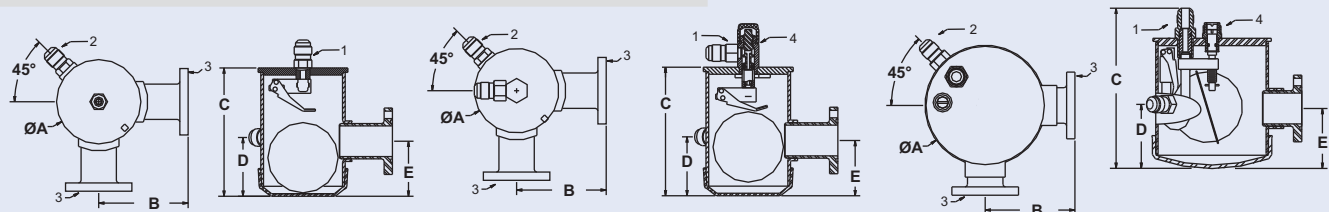


FIG 1

FIG 2

FIG 3

Part No	Fig No	Dimensions (inch)					Flange Type	Weight (lbs)
		ØA	B	C	D	E		
S-9010	1	3.0	3.18	4.56	2.09	1.96	3 on 1-7/8"	3.2
S-9090	2	3.0	3.18	4.56	2.09	1.96	3 on 1-7/8"	3.3
S-9130	3	4.0	3.18	4.55	2.25	2.12	Universal Flange	3.9

OIL REGULATOR ADAPTER KITS

The function of an Oil Regulator Adapter Kit is to allow Mechanical, Electro-Mechanical, and Optronic Oil Level Regulators to be installed on most popular compressor models.

Applications

Due to various compressor sight glass configurations, Henry Technologies offers several adapter kits to install Oil Level Regulators. The Standard Adapter Kit (3-033-201) is included with all Mechanical and Electro-Mechanical Oil Level Regulators. Included in the 3-033-201 kit is (2) O-Rings, one Quad Ring, Bolts, and Nuts. All adapters with sight glass patterns different from 3 Bolt 1-7/8" BC also include the standard adapter kit. Oil Regulators Adapter Kits are suitable for use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, copper, and synthetic rubber.

Materials of Construction

Although construction varies, all adapters are made from carbon steel. The O-Rings are made of Neoprene and hardware is made from Grade 5 Steel.

Installation - Notes

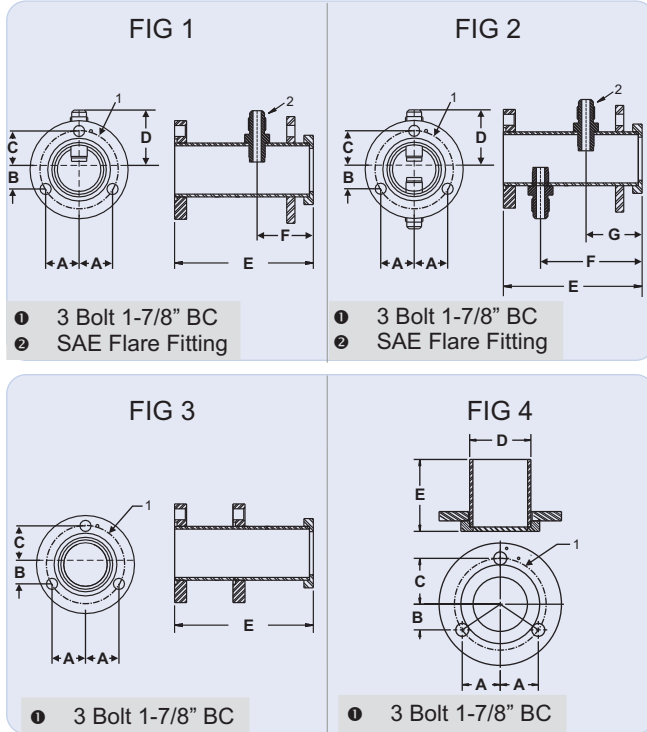
1. Do NOT operate ANY Oil Level Regulator at 1/4 sight glass when using an adapter with an inside diameter smaller than the Oil Level Regulator flange port.
2. Oil Level Regulator installation should follow requirements of compressor manufacturers where applicable.
3. Full Instructions are provided in the Product Instruction Sheet included with each Adapter Kit.

Compressor Manufacturer	Model Number	Recommended Oil	Sight Glass Configuration	Henry Technologies Kit Number
Bitzer	-	1/2 Glass	4 bolt 50mm BC	3-033-253
Bock	AM,F	1/2 Glass	4 bolt 1 31/32" BC	3-033-244
Bristol	-	1/2 Glass	15/16" -20 Thread	3-033-242
Carrier Carlyle	10 hp & under: DA, DR, 5F, 06D, 06CC	1/4 Glass	1 1/2" -18 Thread	3-033-204
Carrier Carlyle	15 hp & over: EA, ER, 06E, 06CC	1/4 Glass	3 bolt 1 7/8" BC	3-033-201
Copeland	Under 5 tons: Copelametic HA,KA,EA,3A,LA,ER,3R	1/2 Glass	1 1/8"-12 Thread	3-033-202
Copeland	Discus,2D,3D,4D,6D,9D,4R,6R,9D,9R,MD,MR,NR	1/4 Glass	3 bolt 1 7/8" BC	3-033-201
Copeland	Older Model	1/4 Glass	4 bolt 2 1/8" BC	3-033-207
Copeland	8R,8D	1/4 Glass	3 bolt 1 7/8" BC	3-033-212
Copeland	8DP3	1/4 Glass	3 bolt 1 7/8" BC	3-033-254
Copeland	Scroll	1/2 Glass	3/4" NPT	3-033-218
Dunham-Bush	Big 4	1/2 Glass	3 bolt 1 7/8" BC	3-033-201
Dunham-Bush	D	1/2 Glass	4 bolt 2 1/8" BC	3-033-203
Frascold	All models	1/2 Glass	3 bolt 1 7/8" BC	3-033-201
Grasso Thermtrol	-	1/2 Glass	1" NPT	3-033-228
Maneurop	All models	1/2 Glass	1 1/8"-18 Thread	3-033-246
Prestcold	K	1/2 Glass	1 1/8" -12 Thread	3-033-202
Prestcold	C,E,R,L,LG	1/2 Glass	42mm Thread	3-033-216
Schnacke-Grasso	-	1/2 Glass	2"-16 Thread	3-033-205
Schnacke-Grasso	-	1/2 Glass	1 1/4" NPT	3-033-219
Tecumseh	P,R,S,PA,RA,SA,CK,CM,CH,CG	1/2 Glass	1 1/8"-12 Thread	3-033-202
Trane	M,R	1/2 Glass	3 bolt 1 7/8 BC	3-033-201
Trane	-	1/2 Glass	5 bolt 2 1/8 BC	3-033-206
Trane	K	1/2 Glass	3/4" NPT	3-033-218
Vilter	-	1/2 Glass	1 1/2" NPT	3-033-208
Vilter	-	1/2 Glass	2" NPT	3-033-209
York	GC,GS,JS	1/2 Glass	3 bolt 1 7/8 BC	3-033-201
York	-	1/2 Glass	1" NPT	3-033-228

OIL LEVEL COMPONENTS

Universal Adaptor Kits and Valves

UNIVERSAL ADAPTER KITS



Part No	Description	Fig No	Dimensions (inch)						
3-033-226	Equalization	1	0.777	0.524	0.937	1.38	3.22	1.31	N/A
3-033-221	Double 1/4 SAE Flare Equalization	2	0.777	0.524	0.937	1.38	3.22	2.00	1.31
3-033-227	Double 3/8 SAE Flare Equalization	2	0.777	0.524	0.937	1.75	3.23	2.00	1.31
3-033-212	Short Extension	3	0.777	0.524	0.937	N/A	2.59	N/A	N/A
3-033-254	Long Extension	3	0.777	0.524	0.937	N/A	3.25	N/A	N/A
3-033-217	Universal Adapter	4	0.777	0.524	0.937	1.25	1.91	N/A	N/A

Applications

Henry Technologies offers a number of universal Equalization and Extension Adapter Kits for use in applications where Standard Adapter Kits will not work. The Equalization Adapter Kits include SAE flare fittings to allow non-equalized Oil Level Regulators to be interconnected (equalized). Extension Adapters are available if extra clearance is needed between the Oil Level Regulator and Compressor. All Universal Adapter Kits are suitable for use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, copper, and synthetic rubber.

Technical Specifications

Maximum working pressure = 450 PSI (31 Bar)

Allowable operating temperature = 14°F to +212°F (-10°C to +100°C)

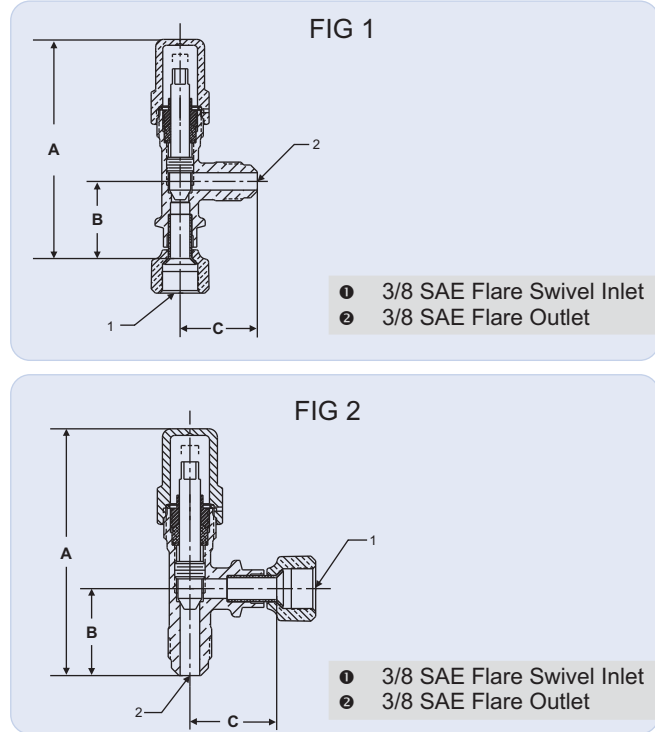
Materials of Construction

All adapters are made from carbon steel. The O-Rings are made of Neoprene and hardware is made from Grade 5 Steel.

Installation - Notes

1. Do NOT operate ANY Oil Level Regulator at 1/4 sight glass when using an adapter with an inside diameter smaller than the Oil Level Regulator flange port.
2. Oil Level Regulator installation should follow requirements of compressor manufacturers where applicable.
3. Full Instructions are provided in the Product Instruction Sheet included with each Adapter Kit.

SHUT-OFF BRASS VALVES



Part No	Fig No	Dimensions (inch)			Weight (lbs)
S-9106V	1	3.55	1.25	1.25	0.45
S-9106H	2	3.55	1.25	1.25	0.45

Applications

Henry Technologies' Brass Shut-off Valves are offered in vertical and horizontal configurations. Both configurations are designed to mount on oil inlet connections and equalization line connections of Oil Level Regulators and Oil Separator return fittings. The valves allow each Oil Level Regulator to be isolated if service is required on a Compressor, Oil Level Regulator, Oil Filter, Oil Filter-Drier, or Oil Strainer. The inlet of each valve has a female swivel SAE flare connection which allows 360° positioning of the male SAE flare connection for most convenient mounting of oil or equalization lines. Henry Technologies' Brass Shut-off Valves are suitable for use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non-corrosive to steel, brass, copper and nylon.

Technical Specifications

Maximum working pressure = 450 PSI (31 Bar)

Allowable operating temperature = 14°F to +212°F (-10°C to +100°C)

Materials of Construction

The valve body is made of brass. The stem is made from steel. The swivel connection is made from brass and copper and the seal cap is made from brass.