

OPTRONIC OIL LEVEL REGULATOR

The function of the Optronic Oil Level Regulator is to control the oil level in the compressor crankcase using proven optical sensor technology. This protects the compressor from damage.

Applications

The Optronic regulator is suitable for both low and high pressure oil management systems. It is designed for use with scroll and reciprocating compressors.

This regulator is approved for HFC refrigerants and POE oils. For other refrigerant/oil combinations, please contact Henry Technologies.

How it works

The Optronic regulator controls the oil in the compressor crankcase at 1/2 sight glass level.

An optical sensor monitors the oil level continuously. When the sensor detects a low oil condition, there is a 15 second time delay prior to oil feed. This is to ensure stability and prevent overflow.

A solenoid valve allows oil to be pulse fed into the compressor at 3 second on/off intervals, to minimise foaming. If demand is not satisfied after 2 minutes of oil feed, a low level alarm is activated by means of a fail-safe electrical contact.

During the alarm condition the regulator will continue to pulse feed. The alarm will automatically reset if the oil returns to a 1/2 sight glass level. The alarm contact can be used to switch off the compressor in the event of a low oil level condition.

The power supply connection is an integral part of the electronic control module. The electronic control module houses a PCB which controls the operation of the Optronic.

The Optronic regulator is fitted to the sight glass port on the compressor and has an integral sight glass that allows visual inspection of the crankcase oil level.

Main Features

- Patented optical sensor technology#
- CE approved
- Approved by compressor manufacturers
- Compact
- Low level alarm
- IP54 protection class
- Easy electrical connection
- Visual LED status display
- No moving parts
- Premium quality neoprene seals
- Male and female electrical connectors supplied with each unit
- Oil sight glass for visual inspection

US patent 5278426

Models

- OP-02 complete with 3/4" NPT adaptor
- OP-02NA supplied with no adaptor



Technical Specification

Allowable operating pressure:	0 to 35 barg
Maximum differential pressure:	24 barg
Maximum ambient temperature:	45°C
Maximum fluid temperature:	80°C
Supply voltage:	24V AC 50/60 Hz
Rated operating current:	0.5 Amps
Electrical connection:	4-pin M12 circular, IEC60947-5-2
Alarm contact:	Volt free, normally open*
Alarm contact rating:	24V DC@2A, 120V AC@2A
Wiring:	4-pin connector
Power supply:	Pins 1 & 2
Alarm contact:	Pins 3 & 4
Protection class:	IP 54
Status LED's:	4
Oil inlet connection:	1/4 SAE Flare
Weight:	1.2 kg

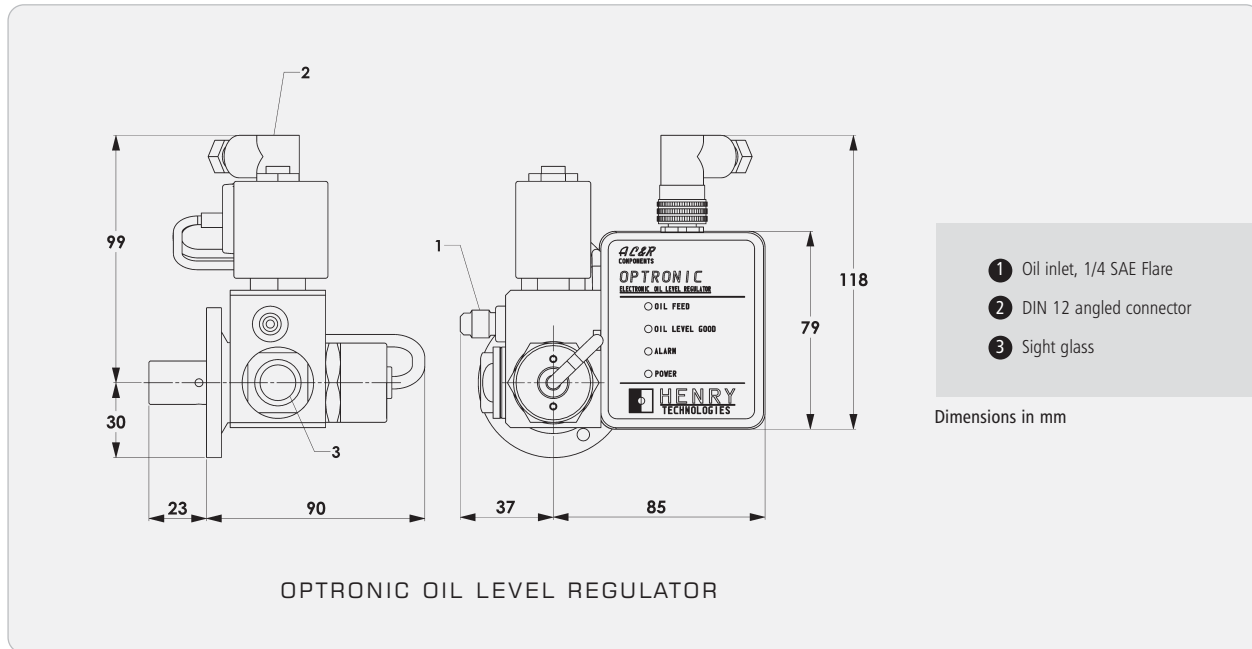
CE marked for EMC directive

* The alarm contacts are closed when power is applied

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Materials of Construction

The main valve body components are made from plated carbon steel.
The electronic control module's enclosure is made from tough ABS plastic.



Refer to the table for compressor adaptors:-

OPTRONIC ADAPTORS		
Part No	Compressor Type	Mounting Style
A4134	Bitzer Octagon	1 1/8"-18 UNEF thread with O-ring
A4149	Scroll	3/4" NPT
A4221	Maneurop	1 1/8"-18 UNEF thread with teflon gasket
A4382	Copeland ZR Scroll	1 1/8"-12 UNF thread with O-ring
A4562*	Copeland & Bitzer, up to 4 cylinders	3 & 4 bolt combination flange with O-ring
A4563*	Copeland & Bitzer, up to 6 cylinders	3 & 4 bolt combination flange with O-ring
A4762	Copeland Scroll	1 1/4"-12 UNF thread Rotalock with teflon gasket
A4766	Copeland Scroll	1 3/4"-12 UN thread Rotalock with teflon gasket

* Adaptors are only suitable for Bitzer compressors manufactured after May 1997 as they do not have the oil guard feature

Flow rate data

The flow rate of oil through the Optronic oil regulator is dependent on the pressure differential between the supply line and the compressor crankcase. Gravity pressure level should be included also, if applicable. The graph illustrates typical flow rates at various pressures. The flow can be reduced by inserting the A4775 1/4" flare adaptor.

Installation – Main issues

1. The electronic module will be damaged if the 24V supply voltage is exceeded.
2. Power to the unit should be maintained during compressor running, stand-by and shutdown modes.
3. To protect the regulator from system debris, a filter drier is recommended.

