

Instruction Sheet

PA-00388

OMB & OMC Instruction Sheet

FEATURES

- Self contained unit with oil level sensor and integral solenoid to manage oil level supply
- Hall-effect sensor for precise measurement of oil level
- Alarm and status indication by LEDs
- SPDT output contact for compressor shutdown or alarming
- Easy installation by sightglass replacement
- Adapters suitable for various types of compressors including conventional and scroll compressors
- Signal generated by gravity based float – not prone to errors from foaming like optical sensors
- Sacrificial magnet for reliable operation

SAFETY INSTRUCTIONS

WARNING: Before opening any system, make sure the pressure in the system is brought to and remains at atmospheric pressure. Failure to comply can result in personal injury and/or system damage.

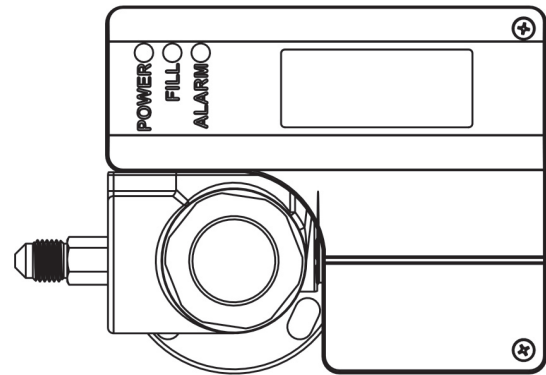
WARNING: The OMB/C operates by using a strong magnetic sensor. It is important to keep the control free of any steel or iron particles which could accumulate on it during installation. These may hamper or prevent the control from operating.

1. Read installation instructions thoroughly. Failure to follow instructions may result in product failure, system damage, or personal injury.
2. Do not open system under pressure.
3. Ensure supply voltage is within specified OMB/C limits.
4. Disconnect supply voltage from system/OMB/C before installation/service. Comply with local electrical regulations when wiring OMB/C.
5. Do not exceed maximum working pressure.
6. Keep temperature within nominal limits.
7. Work should be performed by qualified service personnel or a licensed contractor.

SPECIFICATIONS	OMB	OMC	OMC NH ₃	OMC CO ₂
Maximum Working Pressure (MWP)		870 psig		1885 psig
Solenoid min/max OPD		0/350 psig		0/1450 psig
Supply Voltage	24V, 50/60 Hz	120V, 220-240V, 50/60 Hz	24V, 120V, 220-240V 50/60Hz	
Solenoid Coil	EMF			
Current Consumption	0.6 Amp (24V)	0.15 Amp (120V), 0.07 Amp (220-240V)	0.6 Amp (24V), 0.15 Amp (120V), 0.07 Amp (220-240V)	
Time Delay for Low Level Signal	10 seconds			
Time Delay After Setpoint Recovery	5 seconds			
Alarm Delay Time (Including Alarm Contact)	120 seconds			
Alarm Switch	SPDT			
Alarm Contact Rating	10A @ 120VAC 50/60 Hz, 5A @ 250VAC 50/60 Hz, 3A @ 30VDC			
Refrigerant Compatibility	Class A1 (incl. subcritical CO ₂)	Ammonia	Transcritical CO ₂	
Refrigerant Temperature	-40° to 180°F Maximum			
Ambient Temperature - Storage	-40° to 120°F Maximum			
Ambient Temperature - Intermittent Duty	-40° to 120°F Maximum			
Oil Supply Fitting	1/4" Male SAE			
	(Brass)	(Stainless Steel)	(Brass)	

INSTALLATION INSTRUCTIONS

1. Read installation instructions thoroughly.
2. Assure that you have the appropriate mounting adapter kit for the compressor. See adapter kit instruction sheet (PA-00316) for choosing proper adapter and installation instructions.
3. O-ring replacement kit (KS-30368) can be used on the OMB, OMC and W-OLC controls.
4. If replacement of OMB or OMC is required, replace like for like.



OMC

INSTRUCTIONS FOR FIELD CHANGEOUT OF OMB OR OMC OIL CONTROL

This instruction has been developed to minimize down time based upon actual field experience. Read through the entire instruction before proceeding with the change-out.

IMPORTANT: Do not remove the control box from the valve body for any reason. This will damage the control and cause the Hall-effect sensor to lose calibration. Do not use the control as a step. The solenoid coil is not replaceable; the entire control must be replaced.

Tools Recommended: 7/16" nut driver; 7/16" open-end wrench; adjustable wrench; slotted screwdriver; wire stripper; manifold gauge set; refrigeration valve wrench (Additional items which may be required depending on application: 1' of 1/4" refrigerant grade copper tubing. 2-1/4" brass flare nuts; flaring tool; 3/8" male flare by 1/4" female flare adapter; 3-electrical wire nuts).

1. Disconnect all electrical power to the compressor.
2. Safely connect gauge bar hoses in the following sequence: discharge line to backseat port of an adjacent compressor service valve; common line to oil pressure port on crankcase of compressor on which control is to be changed; suction line to suction manifold on compressor rack. (Manifold valves should be closed.)
3. Close discharge, suction, and oil feed service valves on compressor.
4. Open the gauge manifold discharge hand wheel to pressurize the crankcase to discharge pressure. (**Important: Do not exceed allowable pressure limits set by the compressor manufacturer for the crankcase.**)
5. After pressurizing the crankcase to a safe pressure, close manifold gauge discharge wheel.
6. Open the gauge manifold suction wheel to allow the high pressure in the crankcase to meter the oil into the suction manifold.
7. After the oil is below the sight glass on the compressor crankcase, close the suction hand wheel and safely reclaim the remaining refrigerant pressure in the crankcase.
8. After all the pressure is depleted in the crankcase, remove the existing oil control as follows:
 - A. Disconnect the electrical leads at the control and label each if wire color codes change.
 - B. Remove flexible conduit (if used) at the junction box.



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- C. Disconnect the oil supply line. Note: A new one may need to be fabricated, or an adapter required, if replacing an OMB with an OMC.
- D. Remove the flange mounting bolts which hold the control to the adapter and remove existing control.
9. Install supplied O-ring in the O-ring groove of the new control. Remove "knockout plugs" from the junction box or electrical enclosure of the new control. On OMC units installed with adapter kits, install injection tube per diagram – note that it installs at a slight angle (Figure 2). Thread tube in hand tight and tighten ½ turn (20-30 in-lb) with a wrench or pliers.
10. With the solenoid off, mount and level the new control to existing adapter using 1/4 - 20 UNC-2A x 3/4" long bolts:
- A. If replacing an OMB or an OMC, turn the ringed adapter flange approximately 1/4 turn counterclockwise to provide the correct three (3) hole alignment since the holes are not equidistant. (Important: If the current adapter has an O-ring groove, replace with the correct adapter for the application - see catalog.)
- B. If replacing an OMC CO₂, all five (5) holes between the adapter and control should be aligned correctly. Be sure that the O-ring has not fallen out of the groove and tighten bolts evenly to 40 in.-lbs.
11. Reconnect the oil inlet line.
12. With pressure valved off, remove gauge manifold, cap ports, open service valves and check for leaks.
13. If reconnecting an OMB refer to step A, if connecting an OMC refer to step B
- A. (OMB) Reconnect electrical power following color code and install solenoid coil and power plugs. Note: Do not energize solenoid coil before replacing on enclosing tube.
- B. (OMC) Remove cover and refer to wiring schematic below to reconnect power following color codes. Replace cover and assemble screws to hand tight using #1 Phillips screwdriver. Note: Do not use electric screwdriver.
14. Check that the green LED is on. Yellow LED should come on after about 10 seconds.

15. Check that the solenoid is energized and that the control is filling. (Note: If crankcase does not fill in 2 minutes, the red LED should come on.) (Solenoid remains on to continue filling.) If the alarm trips before the crankcase is filled to ½ sight glass, remove power to oil control for several seconds and reinstall to reset alarm. If OMB, disconnect power by removing power plug. If OMC, refer to wiring schematic below. Compressor should then fill to 1/2 sight glass and yellow "fill" LED should go out.
16. Restart the compressor using the reverse procedure to shutting it down.
17. Recheck for leaks and repair if necessary.

Important: Injection tube is not used on reciprocating compressors where the control is mounted directly to the crankcase.

LED Codes When Lit:

Green – Power is supplied to OMB/C.

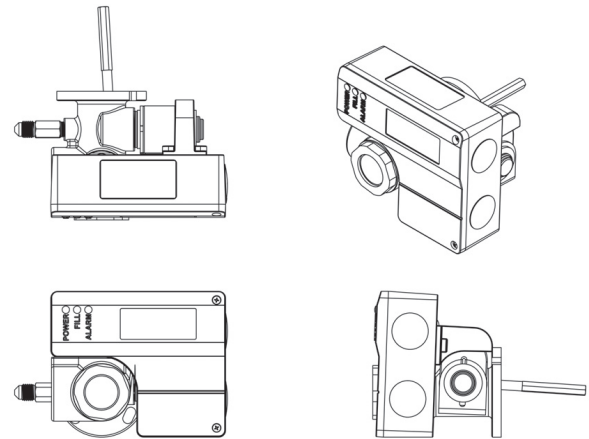
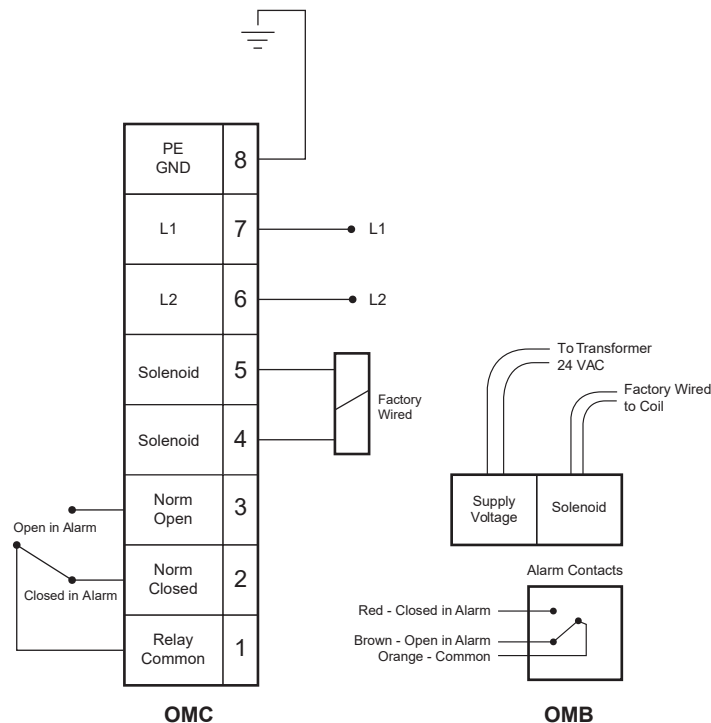
Yellow – Float sensor determined that the oil level has been below ½ sight glass for over 10 seconds. Fill solenoid has been activated.

Red (continually lit) – Oil level has remained below ½ sight glass for over two minutes after fill solenoid has been activated. Alarm has been activated and compressor is prevented from operating until oil level reaches ½ sight glass when alarm automatically resets.

Red (flashing) – There have been five auto reset alarms registered within a 30 minute period. Alarm circuit is now locked on and compressor locked off. Fill solenoid is de-energized. Alarm remains locked in until power lead is manually unplugged and again plugged back into device.

Note: OMB/C units used on scroll compressors require the use of an injection tube - this tube is shipped wired to the unit but not installed. It is to be screwed into the rear of the unit, and tightened hand tight plus one half turn (20-30 in-lb). When properly installed, the tube will be at a slight angle relative to the OMB/C . See figure 2 below.

**FIGURE 1
Electrical Wiring Diagram**



**OMC
FIGURE 2**

Note: Use of crimp type wiring connectors is highly recommended. If wire nuts must be used, taping joint after assembly with electrical tape is required.