

Alco Controls

TraxOil OM3 and OM4 Oil Management

Technical Bulletin

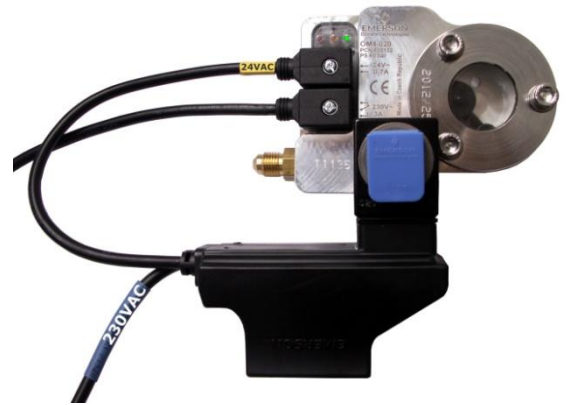
The OM3/OM4 TraxOil oil management is a self-contained system which provides both functions of oil level monitoring and active oil level balancing including alarm relay activation for compressor protection.

Features

- OM4 Series for CO₂ and R410A
- OM3 Series for HFC refrigerants
- IP65 rating with molded housing and cable assemblies
- Supply 24VAC or 230VAC
- 3 Zone Level Control by using precise Hall-Sensor measurement, not prone to errors by foaming or light like optical sensors
- SPDT output contact for compressor shut down or alarming, rating 230VAC / 3A
- Easy installation by sight-glass replacement and front side mounting without nuts
- Self contained unit with oil level sensor and integral solenoid to manage oil level supply
- Alarm, status and level indication by LED's
- Adapters suitable for various types of compressors
- Recommended by leading compressor manufacturers



OM4 TraxOil with 24V supply



OM4 with OM-230V

Product Selection (select one item of each group)

1. Base Units (supplied without adapter and coil)

Type	Part No.	Max. working pressure	Time delay alarm
OM3-020	805133	35 bar	20 sec
OM3-120	805134		120 sec
OM4-020	805135	60 bar	20 sec
OM4-120	805136		120 sec

2. Adapter flanges

OM0-CUA	805037	Flange adapter 3- / 4-hole
OM0-CBB	805038	Screw adapter 1-1/8"-18 UNEF
OM0-CCA	805039	Screw adapter 3/4"-14 NPTF
OM0-CCB	805040	Screw adapter 1-1/8"-12 UNF
OM0-CCC	805041	Flange adapter 3-hole
OM0-CCD	805042	Rotalock adapter 1-3/4"-12UNF
OM0-CCE	805043	Rotalock adapter 1-1/4"-12UNF

3. Cables Alarm Relay

OM3-N30	805141	Connection to Relay 3.0m
OM3-N60	805142	Connection to Relay 6.0m

Supply voltage 24V

4. Solenoid Coil

Type	Part No.	
ASC 24 VAC	801062	50/60 Hz, 15 VA

5. Cable Assembly Power Supply and Solenoid

OM3-P30	805151	24V, 3.0m
OM3-P60	805152	24V, 6.0m

Supply voltage 230V

4. Solenoid Coil

Type	Part No.	
ASC 230 VAC	801064	50/60 Hz, 15 VA

5. Cable assembly with 230V module

OM-230V-3	805161	230V, 3.0m
OM-230V-6	805162	230V, 6.0m

Oil Management Kits including adapter and 24V Coil: cross reference

Kit inc. Adapter	Part No.	Base Unit	Part No.	Adapter	Part No.	Coil	Part No.
OM3-CUA	805030	OM3-020	805133	OM0-CUA	805037	ASC 24 VAC	801062
OM3-CBB	805032			OM0-CBB	805038		
OM3-CCA	805033			OM0-CCA	805039		
OM3-CCB	805034			OM0-CCB	805040		
OM3-CCC	805035			OM0-CCC	805041		
OM3-CCD	805031			OM0-CCD	805042		
OM3-CCE	805029			OM0-CCE	805043		
OM4-CUA	805060	OM4-020	805135	OM0-CUA	805037	ASC 24 VAC	801062
OM4-CBB	805062			OM0-CBB	805038		
OM4-CCA	805063			OM0-CCA	805039		
OM4-CCB	805064			OM0-CCB	805040		
OM4-CCC	805065			OM0-CCC	805041		
OM4-CCD	805061			OM0-CCD	805042		
OM4-CCE	805066			OM0-CCE	805043		

Accessories and Spare Parts

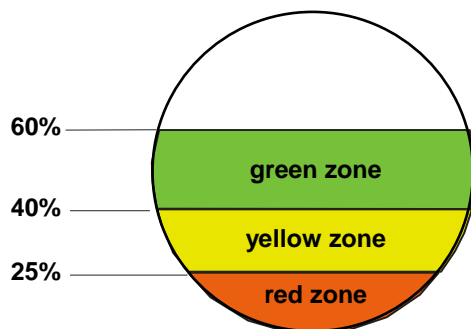
Type	Part No.	Description	Weight
ECT-323	804424	Transformer 230 VAC / 24VAC, 25 VA (supply of 1 piece Base unit)	0,82 kg
ECT-623	804421	Transformer 230 VAC / 24VAC, 60 VA (supply of 3 pieces Base unit)	1,20 kg
ODP-33A	800366	Differential Oil Check Valve 3.5 bar, PS: 35 bar, OM3 only (Inlet 5/8"-UNF female, outlet 5/8"-UNF male)	0,14 kg
OM3-K01	805036	Repair Kit for all types (consists of all necessary gaskets, coil clip, oil adapter with screen, sightglas)	0,26 kg

Function

OM3/OM4 TraxOil uses a Hall-Sensor to measure the oil level. A magnetic float changes its position according to the oil level, not prone to errors by foaming or light. The hall sensor converts these magnetic field changes into an equivalent signal, which is used by the electronic controller to open or close an integrated solenoid valve which feeds missing oil directly into the compressor sump. If

the oil level drops into the red zone OM3/OM4 TraxOil generates an alarm signal and the alarm contact (SPDT) changes into alarm state. The latter may be used to shut down the compressor. In the Alarm status the OM3/OM4 TraxOil is still feeding oil into the compressor. If the oil level comes back to normal, the Alarm will be reset.

Sight-Glass Level Control Zones:



LEDs	Status / Function	Function	Alarm
●	Oil Level in green zone (60 - 40%)		
● ●	Oil Level in green zone (60 - 40%)	Injection, delay 10s	
●	Oil Level in yellow zone (40 - 25%)	Injection	
● ●	Oil Level in red zone (25 - 0%)	Injection	Yes, delay 20s or 120s

Adapter Selection Guideline

Compressor series with OM3:

Compressor series with OM4:

OM4 can be incorporated in compressors designed for CO₂ transcritical in conjunction with oil receivers/reservoirs up to 60bar

OM0-CUA PartNo. 805037 Flange adapter 3- / 4-hole	Arctic Circle	G2, G4, G6	
	Bitzer	4VC, 4TC, 4PC, 4NC, 4J, 4H, 4G, 6J,6H, 6G, 6F, 8GC, 8FC	4- VHC-10K, THC-12K, PHC-15K, NHC-20K, VSL-15K, TSL-20K, PSL-25K, NSL-30K
	Bock	HA, HG (except HG/HA-34/22, see -CBB), O-Series	HGX4/310-4, 385-4, 464-4, 555-4
	Copeland	4M & 6M (except transcritical 4MTL models), D2, D3, D4, D6, D9, 4CC, 6CC, ZBH	
	Dorin	all KP, K sizes (except those mentioned under -CBB)	SCC 250/300/350/380/500/750/1500/1900/2000/2500/ -B, SCS 340/351/362/373/385/3K8/-D
	Frascold	Series A, B, D, F, S, V, W, Z	A-SK, D-SK, F-SK, Q-SK, S-SK
OM0-CBB PartNo. 805038 Screw adapter 1-1/8"-18 UNEF	Bitzer	2KC, 2JC, 2HC, 2GC, 2FC, 2EC, 2DC, 2CC, 4FC, 4EC, 4DC, 4CC	2- KHC-05K/ JHC-07K/ HHC-2K/ GHC-2K/ FHC-3K/ EHC-3K/ DHC-3K/ CHC-4K, MHC-05K, KSL-1K/ JSL-2K/ HSL-3K/ GSL-3K/ FSL-4K/ ESL-4K/ DSL-5K/ CSL-6K/ MSL-7K, 4- CHC-9K/ DHC-7K/ EHC-6K/ FHC-5K MTC,KTC,JTC-10K & 15K, HTC-15K & 20K, FTC-20K & 30K
	Bock	HA12/22/34, HG12/22/34	HGX12P/40-4, 50-4, 60-4,75-4 HGX22P110-4, 125-4, 160-4, 190-4 HGX34P215-4, 255-4
	Copeland		4MTL
	Dorin	all H, K100CC/CS, K150CC/CS, K180CC/CS, K200CC, K230CS, K235CC, K240SB, K40CC, K50CS, K75CC/CS-	
	L'Unite Herm.	TAH, TAG	
	Maneurop	LT, MT, SM, SZ	
OM0-CCA PartNo. 805039 Screw adapter 3/4"-14 NPTF	Bitzer	ZL, ZM	
	Copeland	ZB 15 to ZB45 ZB 56, 75, 92, 11 - until May 2012 ZF 06 to ZF11; ZF13 to ZF18 * ZF 24 to ZF 48 * - until May 2012 ZS 21 to ZS 45 ZS 56 to ZS 11 - until May 2012	ZO34, ZO45, ZO58, ZO88, ZO104, ZOD34
OM0-CCB PartNo. 805040 Screw adapter 1-1/8"-12 UNF	Copeland	DK, DL	
OM0-CCC Part No. 805041 Flange adapter 3-hole	Copeland	D8D, D8S_ (except D8SJ and D8SK, installation only on one sight glass)	
OM0-CCD PartNo. 805042 Rotalock adapter 1-3/4"-12 UNF	Copeland	ZB220, ZH, ZR 90, 11, 12, 16,19 ZR250 to ZR380, ZF 24 to ZF 48, ZS 56 to ZS 11	ZP180, ZP 235 to ZP 485
OM0-CCE PartNo. 805043 Rotalock adapter 1-1/4"-12 UNF	Copeland	ZB50, 58, 66, 76, 95, 114, ZR 94/108/125/144/160/190	ZP90/103/120/137/154/182, ZO21
	Bitzer		GSD60182 to 60235 GSD80182, 80235, 80295 to 80485

*) Digital or EVI variations of standard models have the same sight glass/ will use the same adaptor as the standard model
Other adaptor types on request!

Our applications engineering advice and the information contained in this guideline are based on experience and are made to the best of our knowledge and belief, they must be regarded however as non-binding advice without guarantee.

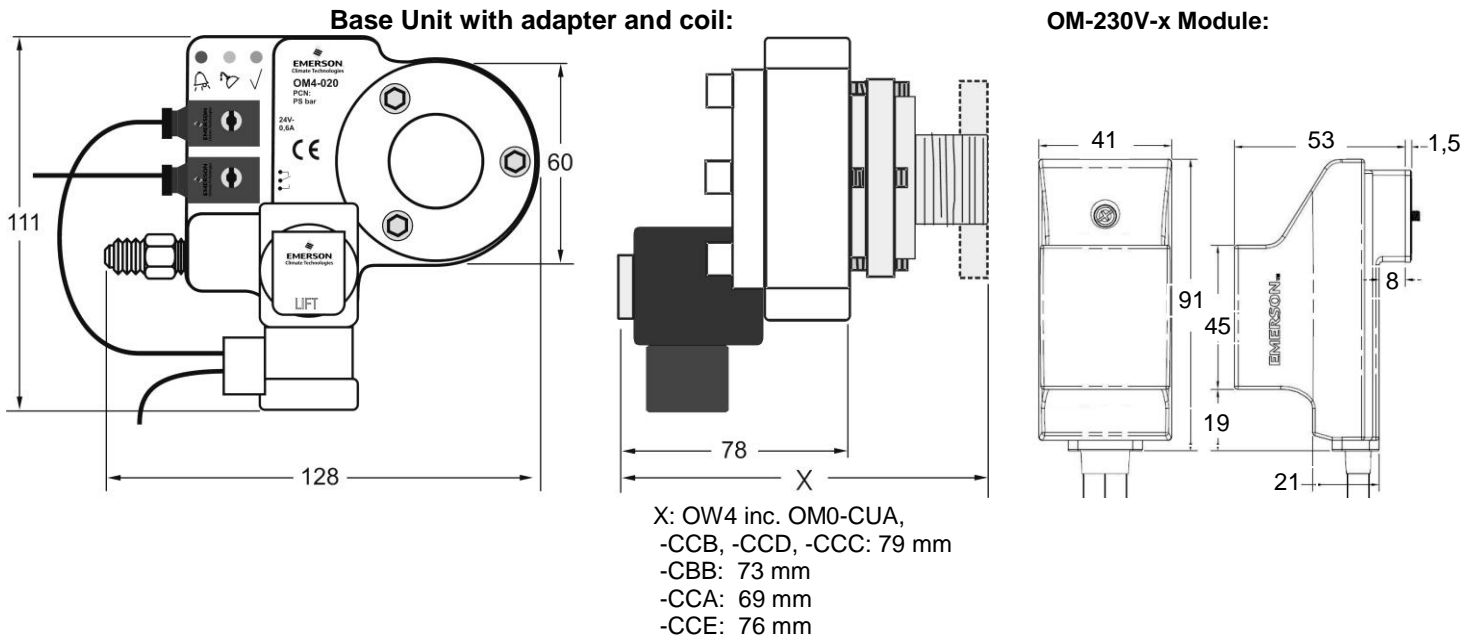
TraxOil OM3 and OM4 Oil Management

Technical Data

CE marked under: Low Voltage Directive EMC Directive	2006/95/EC 89/336/EC	Materials: Body and Adaptor Screws Sight Glass	Aluminum (EN AW 6060) stainless Steel (ISO 4762) nickel-plated Steel (1.05.03 DIN EN10027)
Applied Standards:	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1	Flow rate at $\Delta P = 3,5\text{bar}$	0,9ltr/min. water at 20°C ambient
Max. working pressure PS: Max. test pressure PT: Burst Pressure:	OM3: 35bar OM4: 60 bar OM3: 39 bar OM4: 66 bar OM3: 175bar OM4: 230 bar	Orientation of base unit: Level control:	Horizontal, +/- 1° 40% to 60% sight glass height
Supply voltage / total power: OM3/4 with 24Vac ASC coil OM3/4 with OM-230V-x module	24VAC, 50/60Hz, +10/-15%, 17VA 230VAC, 50/60 Hz, 17VA	Alarm contact:	max. 3A, 230VAC SPDT dry contact
Solenoid valve MOPD	OM3: 21bar; OM4: 30bar	Time Delay Alarm:	20 sec.: OM3/OM4-020, all OM3/4 Kits 120 sec.: OM3-120, OM4-120
Vibration resistance (EN60068-2-6)	max. 4g, 10...250Hz	Time Delay Filling:	10 sec.
Medium temperature Ambient/Storage temperature	-20 to 80°C -20 to 50°C	Protection class	IP 65 (IEC529/EN 60529)
Medium compatibility	HCFC, HFC, CO ₂ , mineral, synthetic and ester lubricants	Weight: 24V System 230V System	750 ... 920g inc. adapter 1100 ... 1270g inc. adapter
		Oil connection	7/16"-20 UNF male, with strainer and O- ring (replaceable, see acc.)

TraxOil OM3 and OM4 Oil Management

Dimensions (in mm)



Adapters	Side view	Front view (facing compressor):	Adapters	Side view	Front view (facing compressor):
OM0-CUA (805 037) Flange adaptor 3- / 4-hole 3 holes \varnothing 6.9 mm, Circle diameter 47.6 mm; 4 holes \varnothing 6.9 mm, Circle diameter 50mm Weight: 0,16kg			OM0-CCC (805 041) Flange adapter 3-hole Three holes \varnothing 6.7 mm, Circle diameter 47.6 mm Weight: 0,16kg		
OM0-CBB (805 038) Screw adaptor 1-1/8"-18 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0,11kg			OM0-CCD (805 042) Rotalock adaptor 1-3/4"-12 UNF one piece adaptor consists of OM0-CCA and Rotalock adaptor 1-3/4"-12 UNF Weight: 0,18kg		
OM0-CCA (805 039) Screw adaptor 3/4"-14 NPTF Additional flange ring for adaptor / base unit connection (included) Weight: 0,11kg			OM0-CCE (805 043) Rotalock Adaptor 1-1/4"-12 UNF Weight: 0,16kg		
OM0-CBB (805 040) Screw adaptor 1-1/8"-12 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0,12kg					