

OM3 TraxOil Oil Management

Technical Bulletin

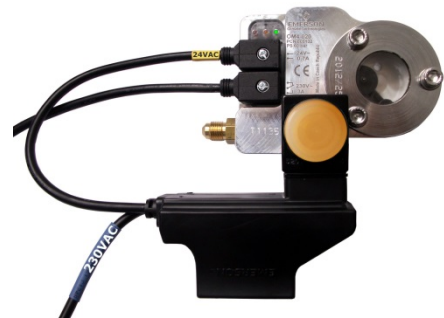
The OM3 TraxOil oil management is a self-contained system which provides both functions of oil level monitoring and active oil level balancing including alarm relay activation for compressor protection.

Features

- OM3 Series for HFC refrigerants with a max. operating pressure of 46 bar
- Self-contained unit with oil level sensor and integral solenoid to manage oil level supply
- 3 Zone Level Control by using precise Hall-Sensor measurement, not prone to errors by foaming or light like optical sensors
- Alarm, status and level indication by LED's
- Supply 24VAC or 230VAC
- SPDT output contact for compressor shut down or alarming, rating 230VAC / 3A
- Easy installation by sight-glass replacement and front side mounting without nuts
- Adapters suitable for various types of compressors
- Recommended by leading compressor manufacturers
- **CE** marking under Low Voltage and EMC Directive, **EAC**



OM3 TraxOil with ASC3 Coil (24VAC)



OM3 TraxOil with ASC3 Coil (230VAC)

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	46 bar	20 sec
OM3-120	805134		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 m
OM3-N60	805142	Connection to Relay 6 m
OM3-N100	805146	Connection to Relay 10 m

Supply voltage 24V ±10%

4. Solenoid Coil

Type	Part No.	
ASC3 24 VAC	801062	50/60 Hz, 17 VA

5. Cable Assembly Power Supply and Solenoid

OM3-P30	805151	24V, 3 m
OM3-P60	805152	24V, 6 m
OM3-P100	805153	24V, 10 m

Supply voltage 230V ±10%

4. Solenoid Coil

Type	Part No.	
ASC3 230 VAC	801064	50/60 Hz, 17 VA

5. Cable assembly with 230V module

OM-230V-3	805163	230V, 3 m
OM-230V-6	805164	230V, 6 m

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

Kit	Part No.	Base Unit	Part No.	Adapter	Part No.	Coil	Part No.
OM3-CUA	805030	OM3-020	805133	OM0-CUA	805037	ASC3 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		

Accessories and Spare Parts

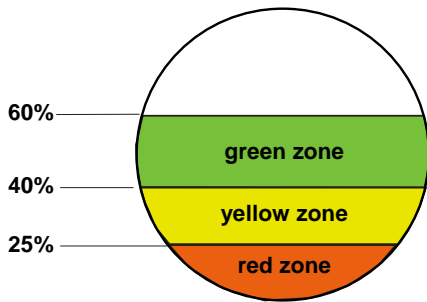
Type	Part No.	Description	Weight
ECT-623	804421	Transformer 230 VAC / 24VAC, 60 VA (supply of 3 pieces Base unit)	1.20 kg
ODP-33A	800366	Differential Oil Check Valve 3.5 bar, PS: 46 bar (Inlet 5/8"-UNF female, outlet 5/8"-UNF male)	0.14 kg
OM3-K01	805036	Repair Kit for HFC refrigerants (consists of sight glass with O-ring and screws, oil adapter with strainer, O-ring back side)	0.26 kg
ASC3-K01	801080	Coil Cap incl. O-Rings	0.10 kg
OM-HFC-K01	805081	Sealing Kit for HFC refrigerants (consists of all O-rings for OM3 and for all types of adapters)	
OM-HFC-K02	805083	Enclosing tube for HFC refrigerants (including O-ring), only for replacement of new version with hexagonal nut!	

Function

OM3 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 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 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



(intended only for connectivity of adapter to compressor series; detailed data see Selection Guide "Controls Navigator")

		Compressor Series (HFC refrigerants only)
OM0-CUA Part No. 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), HGX4/5/6/7-4 R134a, O-Series
	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), H2000-9000CC/CS, HI1201CC, HI1501CC, 41VS-90VS 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
OM0-CBB Part No. 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 4- CHC-9K/ DHC-7K/ EHC-6K/ FHC-5K
	Bock	HA12/22/34, HG12/22/34, HGX12P, HGX22P, HGX34P for R134a/R410A HG12P-34P, HG22/34E
	Dorin	all H400-650EP, H1-1003CC/CS, HI1-HI751CC, 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 Part No. 805039 Screw adapter 3/4"-14 NPTF	Bitzer	ZL, ZM
	Copeland	ZB15 to ZB48 - until 06/2014 ZBD21 to ZBD45 - until 06/2014 ZB56, 75, 92, 11 - until 05/2012 ZF06 to ZF25 - until 06/2014 ZF24 to ZF48 * - until 05/2012 ZS21 to ZS45 - until 06/2014 ZS56 to ZS11 - until 05/2012
OM0-CCB Part No. 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 Part No. 805042 Rotalock adapter 1-3/4"-12 UNF	Copeland	ZB220 ZF24 to ZF48 ZH100/125/150 ZP180, ZP235 to ZP485 ZR90, 11, 12, 16, 19, 250 to ZR380, ZS56 to ZS11
	Bitzer	GSD60182 to 60235, GSD80182, 80235, 80295 to 80485
OM0-CCE Part No. 805043 Rotalock adapter 1-1/4"-12UNF	Copeland	ZB15 to ZB48 - after 06/2014 ZB50, 58, 66, 76, 95, 114 ZBD21 to ZBD45 - after 06/2014 ZF06 to ZF25 - after 06/2014* ZF(D)18 - after 06/2014, ZF48 ZH40/45/50/64/75 ZP90/103/104/120/122/137/154/182 ZR94/108/125/144/160/190 ZS21 to ZS45 - after 06/2014
	Bitzer	GSD60182 to 60235, GSD80182, 80235, 80295 to 80485

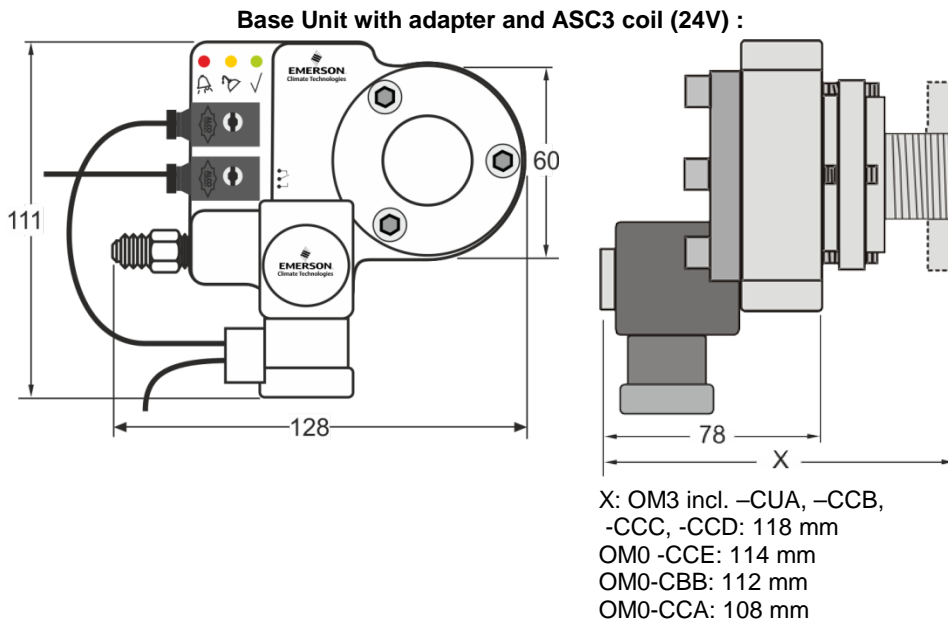
*) Digital/EVI versions of standard models have the same sight glass/ will use the same adapter as the standard model.

Other adapter 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.

Technical Data

Markings:	 under: - Low Voltage Directive 2006/95/EC - EMC Directive 89/336/EC 	Materials: Body and Adapter Screws Sight Glass	aluminum (EN AW 6060) galvanized steel nickel-plated steel (ISO 2081)
Applied Standards:	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1	Flow rate at $\Delta P = 3$ bar	340g/min. Oil (22°C coil temperature, oil type HM46)
Max. working pressure PS: Max. test pressure PT: Burst Pressure:	46 bar 50.1 bar 175 bar	Orientation of base unit:	Horizontal, +/- 1°
Supply voltage / total power: with 24VAC ASC3 coil with OM-230V-x module	24VAC, 50/60Hz, $\pm 10\%$, 17VA 230VAC, 50/60 Hz, $\pm 10\%$, 17VA	Level control:	40% to 60% of sight glass height
Solenoid valve MOPD	30 bar	Alarm contact:	max. 3A, 230VAC, SPDT dry contact
Vibration resistance (EN60068-2-6)	max. 4g, 10...250Hz	Time Delay Filling:	10 sec
Medium temperature Ambient/Storage temperature	-20...+80°C -20...+50°C	Time Delay Alarm:	20 sec: OM3-020, all OM3 Kits 120 sec: OM3-120
Medium compatibility	HFC refrigerants, mineral, synthetic and ester lubricants	Protection class	IP 65 (IEC529/EN 60529)
		Weight: 24V System 230V System	750 ... 920g incl. adapter 1100 ... 1270g incl. adapter
		Oil connection	7/16"-20 UNF male, with strainer and O-ring (replaceable, see Accessories)
		Enclosing tube	Replaceable, hexagon wrench size 18, see spare parts

Dimensions [mm]



Adapters	Side view	Front view (facing compressor):
OM0-CUA Part No. 805037 Flange adaptor 3- / 4-hole Three holes \varnothing 6.9 mm, Circle diameter 47.6 mm; Four holes \varnothing 6.9 mm, Circle diameter 50mm Weight: 0.16kg		
OM0-CBB Part No. 805038 Screw adaptor 1-1/8"-18 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCA Part No. 805039 Screw adaptor 3/4"-14 NPTF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCB Part No. 805040 Screw adaptor 1-1/8"-12 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.12kg		

Adapters	Side view	Front view (facing compressor):
OM0-CCC Part No. 805041 Flange adaptor 3-hole Three holes \varnothing 6.7 mm, Circle diameter 47.6 mm Weight: 0.16kg		
OM0-CCD Part No. 805042 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-CCE Part No. 805043 Rotalock adaptor 1-1/4"-12 UNF Weight: 0.16kg		

OM4 and OM5 TraxOil Oil Management

Technical Bulletin

OM4 and OM5 TraxOil Oil Management Systems have been specially developed for subcritical and transcritical CO₂ applications. All versions together with new adapters are equipped with special types of O-rings to guarantee safe long-term and reliable operation.

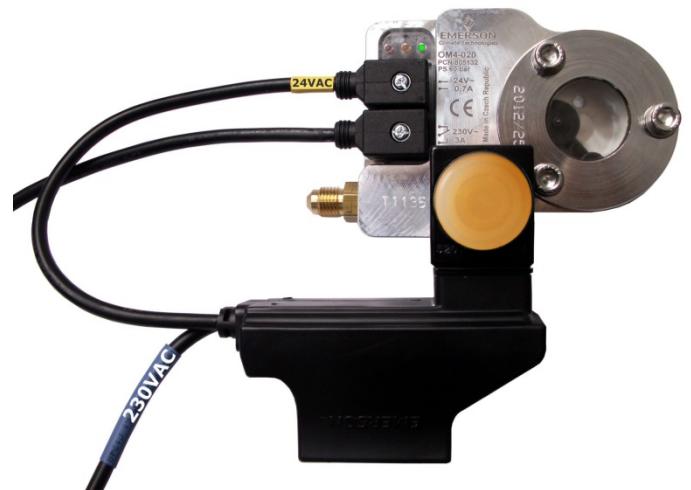
The TraxOil oil management is a self-contained and reliable electronically controlled system with an integrated solenoid valve, which feeds missing oil directly into the compressor sump. The sight glass function remains fully available, status and level information is indicated by LED's. The integrated alarm function with compressor shut down completes the overall proven solution for compressor protection.

Features

- OM5 for liquid R744 (CO₂) transcritical
 - max. working pressure PS 130 bar
 - max. operating pressure differential 100 bar
- OM4 for liquid R744 (CO₂) subcritical
 - max. working pressure PS 60 bar
- CO₂ optimized gasket material, not released for HFCs (OM4 after July 2015)
- Adapters with CO₂ optimized gasket material
- Self contained unit with oil level sensor and integral solenoid to manage oil level supply
- 3 Zone Level Control by using precise Hall-Sensor measurement, not prone to errors by foaming or light like optical sensors
- Alarm, status and level indication by LED's
- Supply 24VAC or 230VAC
- High wattage ASC3-W coil specially designed for OM5 to achieve high pressure differential MOPD of 100 bar
- SPDT output contact for compressor shut down or alarming, rating 230VAC / 3A
- Easy installation by sight-glass replacement and front side mounting without nuts
- Adapters suitable for various types of compressors
- Recommended by leading compressor manufacturers
- **CE** marking under Low Voltage and EMC Directive, **EAC**



OM5 + ASC3 Coil 24V



OM4 + ASC3 Coil 230V + 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
OM4-020	805135	60 bar	20 sec
OM4-120	805136		120 sec
OM5-020	805230	130 bar	20 sec
OM5-120	805231		120 sec

2. Adapter flanges

OM0-CUA CO2	805337	Flange adapter 3- / 4-hole
OM0-CCC CO2	805341	Flange adapter 3-hole
OM0-CUD CO2	805049	Flange adapter 6- / 6-hole
OM0-CBB CO2	805338	Screw adapter 1-1/8"-18 UNEF
OM0-CCA CO2	805339	Screw adapter 3/4"-14 NPTF
OM0-CCB CO2	805340	Screw adapter 1-1/8"-12 UNF
OM0-CCD CO2	805342	Rotalock adapter 1-3/4"-12UNF
OM0-CCE CO2	805343	Rotalock adapter 1-1/4"-12UNF

3. Cables Alarm Relay

OM3-N30	805141	Connection to Relay 3 m
OM3-N60	805142	Connection to Relay 6 m
OM3-N100	805146	Connection to Relay 10 m

Supply Voltage 24V ±10%

Supply Voltage 230V ±10%

4. Solenoid Coil

Type	Part No.	
for OM5: ASC3-W24VAC	801074	50/60 Hz, 38 VA
for OM4: ASC3-24VAC	801062	50/60 Hz, 17 VA

5. Cable Assembly Power Supply and Solenoid

OM3-P30	805151	24V, 3 m
OM3-P60	805152	24V, 6 m
OM3-P100	805153	24V, 10 m

4. Solenoid Coil

Type	Part No.	
for OM5: ASC3-W230VAC	801075	50/60 Hz, 38 VA
for OM4: ASC3-230VAC	801064	50/60 Hz, 17 VA

5. Cable assembly with 230V module

OM-230V-3	805163	230V, 3 m
OM-230V-6	805164	230V, 6 m

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

Kit	Part No.	Base unit	Part No.	Adapter	Part No.	Coil	Part No.
OM4-CUA CO2	805060	OM4-020 CO2	805135	OM0-CUA CO2	805337	ASC3 24 VAC	801062
OM4-CBB CO2	805062			OM0-CBB CO2	805338		
OM4-CCA CO2	805063			OM0-CCA CO2	805339		
OM4-CCB CO2	805064			OM0-CCB CO2	805340		
OM4-CCC CO2	805065			OM0-CCC CO2	805341		
OM4-CCD CO2	805061			OM0-CCD CO2	805342		
OM4-CCE CO2	805066			OM0-CCE CO2	805343		

Accessories and Spare Parts

Type	Part No.	Description	Weight
ECT-623	804421	Transformer 230 VAC / 24VAC, 60 VA (supply of 3 pieces Base unit)	1.20 kg
ASC3-K01	801080	Retainer Kit ASC3 incl. O-rings	0.10 kg
OM4-K01	805078	Repair Kit OM4 for CO ₂ (consists of sight glass with O-ring and screws, oil adapter with strainer, O-ring back side)	0.26 kg
OM5-K01	805067	Repair Kit OM5 for CO ₂ (consists of sight glass with O-ring and screws, oil adapter with strainer, O-ring back side)	0.26 kg
OM-CO2-K01	805079	Sealing Kit CO ₂ for OM4/OM5 (consists of all O-rings for OM4/5 and for all types of adapters)	
OM-CO2-K02	805082	Enclosing tube for CO ₂ (including O-ring), only for replacement of new version with hexagonal nut!	

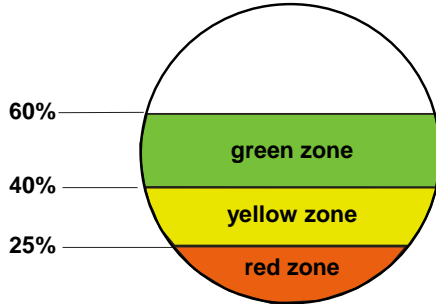
OM4 and OM5 TraxOil Oil Management

Function

OM4/OM5 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

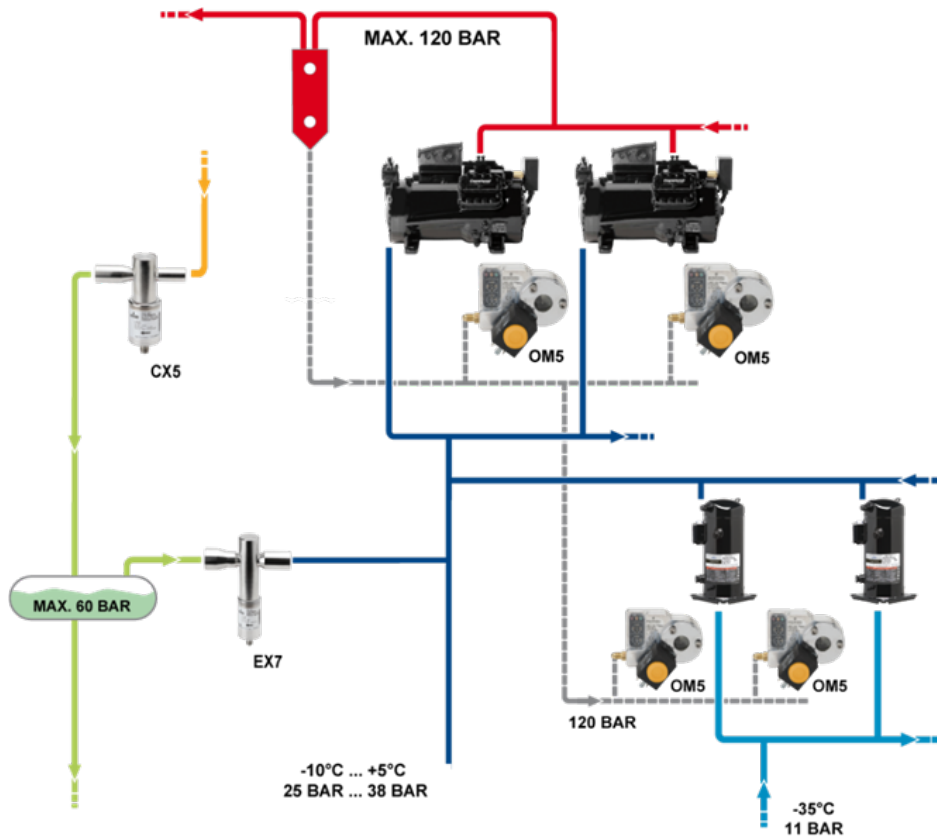
the oil level drops into the red zone OM4/OM5 TraxOil generates an alarm signal and the alarm contact (SPDT) changes into alarm state. The latter may be used to shut down the compressor. In the Alarm status the OM4/OM5 TraxOil is still feeding oil into the compressor. If the oil level comes back to normal, the Alarm will be reset.

Sight-Glass Level Control Zones:



LEDs	Status	Function	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

Typical transcritical CO₂ Application with OM5



Adapter Connectivity Guideline CO₂

(intended only for connectivity of adapter to compressor series; detailed data see Selection Guide “Controls Navigator”)

	Compressor series with OM4		Compressor series with OM5
	OM4 can be incorporated in compressors designed for CO ₂ transcritical in conjunction with oil receivers/reservoirs up to 60bar		
OM0-CUA CO2 Part No. 805337 Flange adapter 3- / 4-hole	Bitzer	4- VHC-10K, THC-12K, PHC-15K, NHC-20K, VSL-15K, TSL-20K, PSL-25K, NSL-30K	
	Bock	HGX4 CO2	
	Dorin	CDS35, 501B, 701B, 751B, 901B, 1201B CDS41, 1501B, 2001B, 2401B, 2501B	
	Frascold	A-SK, D-SK, Q-SK, S-SK	
OM0-CBB CO2 Part No. 805338 Screw adapter 1-1/8"-18 UNEF	Bitzer	2 - NSL, MSL, KSL, JSL, HSL, GSL, FSL, ESL, DSL, CSL, 2 – MHC, KHC, JHC, HHC, GHC, FHC, EHC, DHC, CHC, 4 - FSL, ESL, DSL, CSL, VSL, TSL, PSL, NSL, 4 – FHC, EHC, DHC, CHC	4 - CTC, DTC, FTC, HTC, JTC, KTC, MTC, PTC
	Bock	HGX12 / 22 / 34e...CO2	HAX2...CO2 T, HGX34 / 46...CO2 T
	Copeland		4MSL, 4MTL
	Dorin	CDS11, 101B, 151B, 181B, 301B, 351B, 381B	
OM0-CCA CO2 Part No. 805339 Screw adapter 3/4"-14 NPTF	Copeland	ZO34 to ZO104 - until 06/2014 ZOD34 to ZOD104 - until 06/2014*	
OM0-CCB CO2 Part No. 805340 Screw adapter 1-1/8"-12 UNF			
OM0-CCC CO2 Part No. 805341 Flange adapter 3-hole			
OM0-CCD OC2 Part No. 805342 Rotalock adapter 1-3/4"-12 UNF	Copeland	ZP180, ZP235 to ZP485	
OM0-CCE CO2 Part No. 805343 Rotalock adapter 1-1/4"-12UNF	Copeland	ZO21, ZO34 to ZO104 - after 06/2014 ZOD34 to ZOD104 – after 06/2014*	
OM0-CUD CO2 Part No. 805049 Flange adapter 6-/ 6-hole	Dorin		CDxx M, H, B CD2S-200, -400

*) Digital/EVI versions of standard models have the same sight glass/ will use the same adapter as the standard model.

Other adapter 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. Further information see Selection Tool “Controls Navigator”!

Technical Data



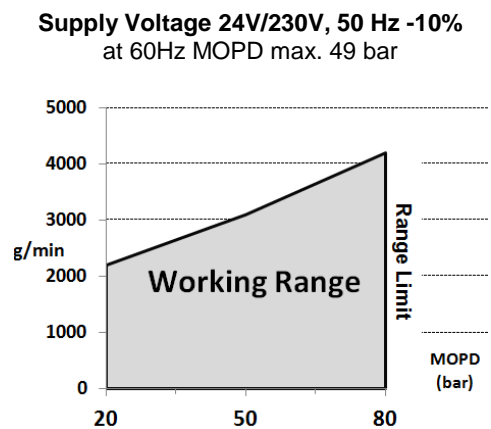
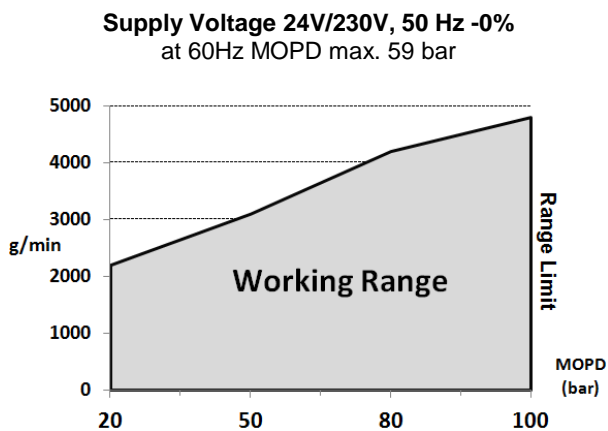
Markings:	 under: - Low Voltage Directive 2006/95/EC - EMC Directive 89/336/EC 	Materials: Body and Adapter Screws Sight Glass	aluminum (EN AW 6060) galvanized steel nickel-plated steel (ISO 2081)
Applied Standards:	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1	Flow rate	OM4 at $\Delta P = 3$ bar: 340g/min. (22°C oil temperature, oil type HM46) OM5 : see Fig. 1
Max. working pressure PS:	OM4 : 60 bar OM5 : HP side (inlet): 130 bar LP side (outlet): 100 bar	Orientation of base unit:	Horizontal, +/- 1°
Max. Test pressure PT: Burst pressure:	OM4 : 66 bar, OM5 : 143 bar, OM4 : 230 bar OM5 : 390 bar	Level control:	40% to 60% of sight glass height
Supply voltage / total power: with ASC3-24VAC coil	OM4 : 24VAC, 50/60 Hz, $\pm 10\%$, 17VA	Alarm contact:	max. 3A, 230VAC SPDT dry contact
with ASC3-230VAC coil and OM-230V-x module	230VAC, 50/60 Hz, $\pm 10\%$, 17VA	Time Delay Alarm:	20 sec.: OM4/OM5-020, all OM4 Kits 120 sec.: OM4/OM5-120
with ASC3-W24VAC coil with ASC3-W230VAC coil and OM-230V-x module	OM5 : 24VAC, 50/60 Hz, $\pm 10\%$, 38VA 230VAC, 50/60 Hz, $\pm 10\%$, 38VA	Time Delay Filling:	10 sec.
Solenoid valve MOPD	OM4 : 30 bar OM5 : 100 bar (50Hz) see Fig. 1 59 bar (60Hz)	Protection class	IP 65 (IEC529/EN 60529)
Vibration resistance (EN60068-2-6)	max. 4g, 10...250Hz	Weight: 24V System 230V System	750 ... 920g incl. adapter 1100 ... 1270g incl. adapter
Medium temperature Ambient/Storage temperature	-20...+80°C -20...+50°C	Oil connection	7/16"-20 UNF male, with strainer and O-ring (replaceable, see acc.)
Medium compatibility	CO ₂ only; mineral, synthetic and ester lubricants	Enclosing tube	Replaceable for cleaning, hexagon wrench size 18, see spare parts

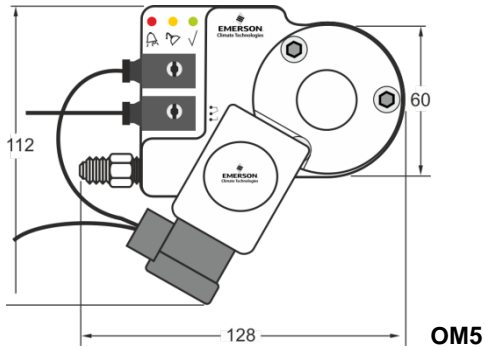
Fig. 1: OM5: Performance related to supply voltage: Flow Rate and Differential Pressure between inlet and outlet
(Oil type Reniso C85E, oil temperature 54°C)



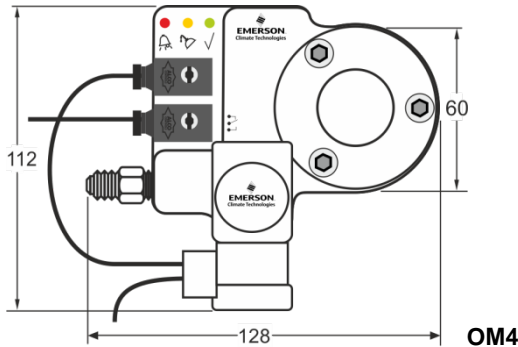
OM4 and OM5 TraxOil Oil Management

Dimensions [mm]

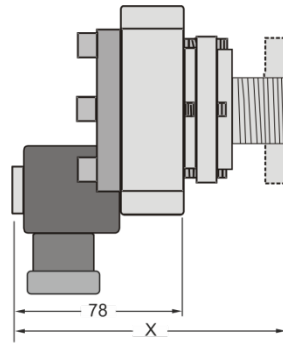
Base Unit with adapter and ASC3 coil (24V) :



OM5

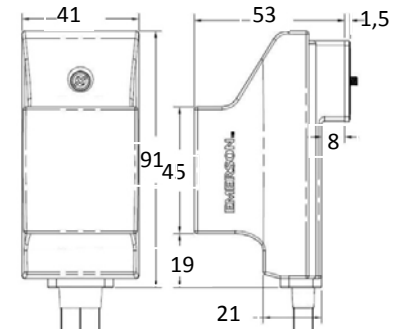


OM4



X: OM3 incl. -CUA, -CCB,
-CCC, -CCD: 118 mm
OM0 -CCE: 114 mm
OM0-CBB: 112 mm
OM0-CCA: 108 mm

OM-230V-x Module:



Adapters	Side view	Front view (facing compressor):
OM0-CUA CO2 Part No. 805337 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-CBB CO2 Part No. 805338 Screw adaptor 1-1/8"-18 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCA CO2 Part No. 805339 Screw adaptor 3/4"-14 NPTF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCB CO2 Part No. 805340 Screw adaptor 1-1/8"-12 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.12kg		

Adapters	Side view	Front view (facing compressor):
OM0-CCC CO2 Part No. 805341 Flange adaptor 3-hole Three holes \varnothing 6.7 mm, Circle diameter 47.6 mm Weight: 0.16kg		
OM0-CUD CO2 Part No. 805049 Flange adaptor 6-/ 6-hole 12 holes \varnothing 6.9 mm, circle diameter 47.6 mm; Weight: 0.12kg		
OM0-CCD CO2 Part No. 805342 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-CCE CO2 Part No. 805343 Rotalock Adaptor 1-1/4"-12 UNF Weight: 0.16kg		

OW3 TraxOil Oil Level Monitoring System

Technical Bulletin

OW3 TraxOil are intended for systems which require oil level monitoring and alarming, instead of active oil level balancing like OM3 series.

Features

- For HFC refrigerants only
- Max. working pressure PS: 46 bar
- 3 Zone Level Control by using precise Hall-sensor measurement, not prone to errors by foaming or light like optical sensors
- Alarm, status and 3 zone indication by LED's
- SPDT output contact for compressor shut down or alarming, rating (230VAC / 3A)
- Easy installation by sight-glass replacement and front side mounting without nuts
- Supply 24V AC, 50/60Hz
- Adapters suitable for various types of compressors
- Recommended by leading compressor manufacturers
- **CE** marking under Low Voltage and EMC Directive, **EAC**



OW3 TraxOil

Product Selection (select one item of each group)

1. Base Units (supplied without adapter)

Type	Part No.	Max. working pressure PS	Time delay alarm
OW3-020	805117	46 bar	20 sec

2. Adapter flanges

OM0-CUA	805037	Flange adapter 3- / 4-hole
OM0-CCC	805041	Flange adapter 3-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-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 m
OM3-N60	805142	Connection to Relay 6 m
OM3-N100	805146	Connection to Relay 10 m

4. Cable Power Supply

OW-24V-3	804672	Connection to Power Supply 24VAC 3 m
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Accessories and Spare Parts

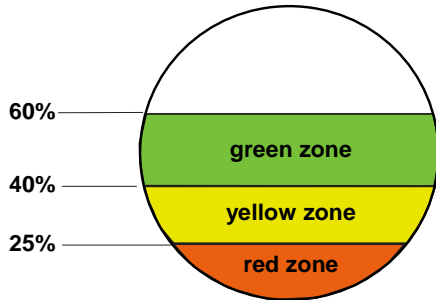
Type	Part No.	Description	Weight
ECT-623	804421	Transformer 230 VAC / 24VAC, 60 VA	1.20 kg
OM-HFC-K01	805081	Sealing Kit for HFC refrigerants (consists of all O-rings for OW3 and for all types of adapters)	

Function

OW3 TraxOil uses a Hall-Sensor to measure the oil level. Unaffected from foaming oil or light a magnetic float changes its position according to the oil level. The hall sensor converts these magnetic field changes into an equivalent signal, which is used by the integrated electronic controller to monitor the actual oil level by LEDs.

If the oil level drops into the red zone and after a delay time of 20 seconds OW3 TraxOil generates an alarm signal, the alarm contact (SPDT) changes into alarm state and the red LED flashes. The alarm contact may be used to shut down the compressor. If the oil level comes back to normal, the alarm will be reset.

Sight-Glass Level Control Zones:



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

Technical Data

Marking:	CE under: - Low Voltage Directive 2006/95/EC, - EMC Directive 89/336/EC EAC
Applied Standards:	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1
Max. working pressure PS: Max. test pressure PT: Burst Pressure:	46 bar 50.1 bar 175 bar
Supply voltage current	24VAC, 50/60Hz, ±10%, 0.05A
Vibration resistance (EN60068-2-6)	max. 4g, 10...250Hz
Medium temperature Ambient/Storage temperature	-20...+80°C -20...+50°C
Medium compatibility	HFC refrigerants only, mineral, synthetic and ester lubricants

Materials: Body and Adaptor Screws Sight Glass	aluminum (EN AW 6060) galvanized steel nickel-plated steel (ISO 2081)
Orientation of base unit:	horizontal, +/- 1°
Level control:	40%... 60% sight glass height
Alarm contact:	max. 3A, 230VAC SPDT dry contact
Time Delay Alarm:	20 sec
Protection class	IP65 (IEC529/EN 60529)
Weight	850 ... 920g incl. adapter

OW3 TraxOil Oil Level Monitoring System

Adapter Connectivity Guideline

(intended only for connectivity of adapter to compressor series; detailed data see Selection Guide "Controls Navigator")

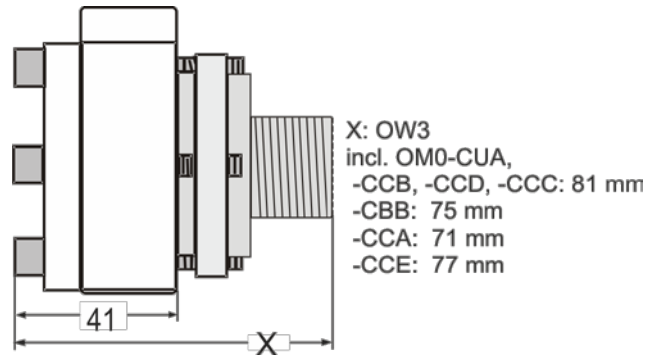
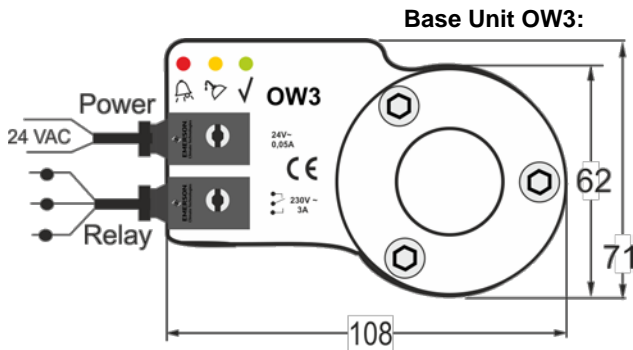
		Compressor Series (HFC refrigerants only)
OM0-CUA Part No. 805037 Flange adapter 3- / 4-hole	Arctic Circle	G2, G4, G6
	Bitzer	4VC, 4TC, 4PC, 4NC, 4J, 4H, 4G, 6J,6H, 6G, 6F, 8GC, 8FC 4- VHC-10K, THC-12K, PHC-15K, NHC-20K, VSL-15K, TSL-20K, PSL-25K, NSL-30K
	Bock	HA, HG (except HG/HA-34/22, see -CBB), HGX4/5/6/7-4 R134a, O-Series
	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), H2000-9000CC/CS, HI1201CC, HI1501CC, 41VS-90VS 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
OM0-CBB Part No. 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 4- CHC-9K/ DHC-7K/ EHC-6K/ FHC-5K
	Bock	HA12/22/34, HG12/22/34, HGX12P, HGX22P, HGX34P for R134a/R410A HG12P-34P, HG22/34E
	Dorin	all H400-650EP, H1-1003CC/CS, HI1-HI751CC, 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 Part No. 805039 Screw adapter 3/4"-14 NPTF	Bitzer	ZL, ZM
	Copeland	ZB15 to ZB48 - until 06/2014 ZBD21 to ZBD45 - until 06/2014 ZB56, 75, 92, 11 - until 05/2012 ZF06 to ZF25 - until 06/2014 ZF24 to ZF48 * - until 05/2012 ZS21 to ZS45 - until 06/2014 ZS56 to ZS11 - until 05/2012
OM0-CCB Part No. 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 Part No. 805042 Rotalock adapter 1-3/4"-12 UNF	Copeland	ZB220 ZF24 to ZF48 ZH100/125/150 ZP180, ZP235 to ZP485 ZR90, 11, 12, 16, 19, 250 to ZR380, ZS56 to ZS11
OM0-CCE Part No. 805043 Rotalock adapter 1-1/4"-12UNF	Copeland	ZB15 to ZB48 - after 06/2014 ZB50, 58, 66, 76, 95, 114 ZBD21 to ZBD45 - after 06/2014 ZF06 to ZF25 - after 06/2014* ZF(D)18 - after 06/2014, ZF48 ZH40/45/50/64/75 ZP90/103/104/120/122/137/154/182 ZR94/108/125/144/160/190 ZS21 to ZS45 - after 06/2014
	Bitzer	GSD60182 to 60235, GSD80182, 80235, 80295 to 80485

*) Digital/EVI versions of standard models have the same sight glass/ will use the same adapter as the standard model.

Other adapter 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.

OW3 TraxOil Oil Level Monitoring System

Dimensions [mm]



Adapters	Side view	Front view (facing compressor):
OM0-CUA Part No. 805037 Flange adaptor 3- / 4-hole Three holes \varnothing 6.9 mm, Circle diameter 47.6 mm; Four holes \varnothing 6.9 mm, Circle diameter 50mm Weight: 0.16kg		
OM0-CBB Part No. 805038 Screw adaptor 1-1/8"-18 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCA Part No. 805039 Screw adaptor 3/4"-14 NPTF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCB Part No. 805040 Screw adaptor 1-1/8"-12 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.12kg		

Adapters	Side view	Front view (facing compressor):
OM0-CCC Part No. 805041 Flange adaptor 3-hole Three holes \varnothing 6.7 mm, Circle diameter 47.6 mm Weight: 0.16kg		
OM0-CCD Part No. 805042 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-CCE Part No. 805043 Rotalock adaptor 1-1/4"-12 UNF Weight: 0.16kg		

OW4 and OW5 TraxOil Oil Level Monitoring System

Technical Bulletin

OW4 and OW5 TraxOil are intended for systems which require oil level monitoring and alarming instead of active oil level balancing.

Features

- OW5 for CO₂ transcritical (max. working pressure PS: 100 bar)
- OW4 for CO₂ subcritical (max. working pressure PS: 60 bar)
- CO₂ optimized gasket material, not released for HCFC and HFCs (OW4 after July 2015)
- Adapters with CO₂ optimized gasket material
- 3 Zone Level Control by using precise Hall-sensor measurement, not prone to errors by foaming or light like optical sensors
- Alarm, status and 3 zone indication by LED's
- SPDT output contact for compressor shut down or alarming, rating (230VAC / 3A)
- Easy installation by sight-glass replacement and front side mounting without nuts
- Supply 24V AC, 50/60Hz
- Adapters suitable for various types of compressors
- Recommended by leading compressor manufacturers
- **CE** marking under Low Voltage and EMC Directive, **ERC**



OW4 TraxOil



OW5 TraxOil

Product Selection (select one item of each group)

1. Base Units (supplied without adapter)

Type	Part No.	Max. working pressure PS	Time delay alarm
OW4-020	805116	60 bar	20 sec
OW5-120	805241	100 bar	120 sec

2. Adapter flanges

OM0-CUA CO2	805337	Flanschadapter 3- / 4-Loch Anschluss
OM0-CCC CO2	805341	Flanschadapter 3-Loch
OM0-CUD CO2	805049	Flanschadapter 6- / 6-Loch
OM0-CBB CO2	805338	Schraubadapter 1-1/8"-18 UNEF
OM0-CCA CO2	805339	Schraubadapter 3/4"-14 NPTF
OM0-CCB CO2	805340	Schraubadapter 1-1/8"-12 UNF
OM0-CCD CO2	805342	Rotalockadapter 1-3/4"-12UNF
OM0-CCE CO2	805343	Rotalockadapter 1-1/4"-12UNF

3. Cables Alarm Relay

OM3-N30	805141	Connection to Relay 3 m
OM3-N60	805142	Connection to Relay 6 m
OM3-N100	805146	Connection to Relay 10 m

4. Cable Power Supply

OW-24V-3	804672	Connection to Power Supply 24VAC 3 m
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Accessories and Spare Parts

Type	Part No.	Description	Weight
ECT-623	804421	Transformer 230VAC / 24VAC, 60VA	1.20 kg
OM-CO2-K01	805079	Sealing Kit CO ₂ (consists of all O-rings, incl. adapter gaskets)	

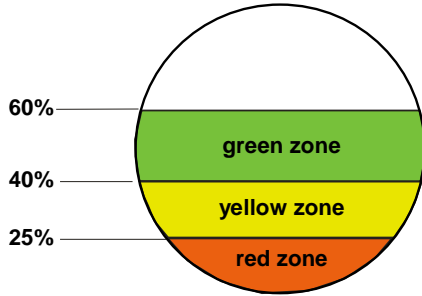
OW4 and OW5 TraxOil Oil Level Monitoring System

Function

OW4 and OW5 TraxOil use a Hall-Sensor to measure the oil level. Unaffected from foaming oil or light a magnetic float changes its position according to the oil level. The hall sensor converts these magnetic field changes into an equivalent signal, which is used by the integrated electronic controller to monitor the actual oil level by LEDs.

If the oil level drops into the red zone and after a delay time of 20/120 seconds OW4/OW5 TraxOil generates an alarm signal, the alarm contact (SPDT) changes into alarm state and the red LED flashes. The alarm contact may be used to shut down the compressor. If the oil level comes back to normal, the Alarm will be reset.

Sight-Glass Level Control Zones:



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

Technical Data

Marking:	CE under: - Low Voltage Directive 2006/95/EC, - EMC Directive 89/336/EC EAC
Applied Standards:	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1
Max. working pressure PS: Max. test pressure PT: Burst Pressure:	OW4: 60 bar OW5: 100 bar OW4: 66 bar OW5: 110 bar OW4: 230 bar OW5: 390 bar
Supply voltage current	24VAC, 50/60Hz, ±10%, 0.05A
Vibration resistance (EN60068-2-6)	max. 4g, 10....250Hz
Medium temperature Ambient/Storage temperature	-20...+80°C -20...+50°C
Medium compatibility	Only CO ₂ , mineral, synthetic and ester lubricants

Materials: Body and Adaptor Screws Sight Glass OW4/ OW5	aluminum (EN AW 6060) galvanized steel nickel-plated steel (ISO 2081)
Orientation of base unit:	horizontal, +/- 1°
Level control:	40%...60% sight glass height
Alarm contact:	max. 3A, 230VAC SPDT dry contact
Time Delay Alarm:	20 sec or 120 sec
Protection class	IP65 (IEC529/EN 60529)
Weight	850 ... 920g incl. adapter

OW4 and OW5 TraxOil Oil Level Monitoring System

Adapter Connectivity Guideline CO₂

(intended only for connectivity of adapter to compressor series; detailed data see Selection Guide "Controls Navigator")

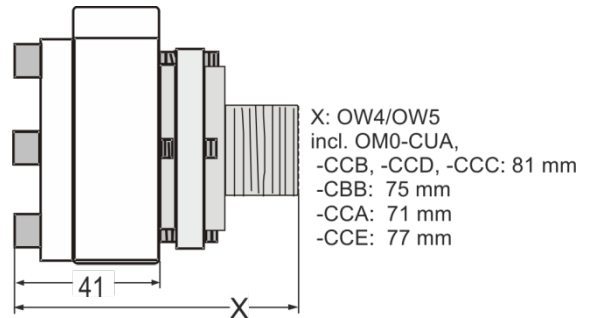
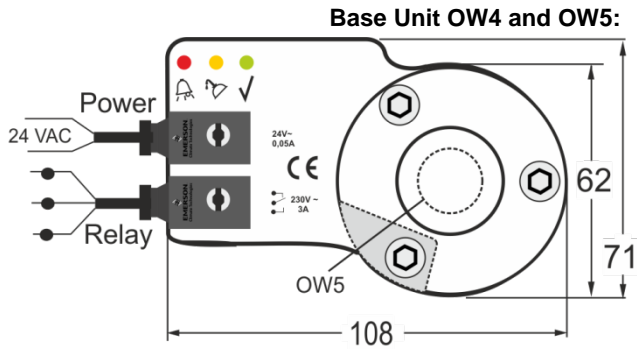
		Compressor series with OW4	Compressor series with OW5
		OW4 can be incorporated in compressors designed for CO ₂ transcritical in conjunction with oil receivers/reservoirs up to 60bar	
OM0-CUA CO2 Part No. 805337 Flange adapter 3- / 4-hole	Bitzer	4- VHC-10K, THC-12K, PHC-15K, NHC-20K, VSL-15K, TSL-20K, PSL-25K, NSL-30K	
	Bock	HGX4 CO2	
	Dorin	CDS35, 501B, 701B, 751B, 901B, 1201B CDS41, 1501B, 2001B, 2401B, 2501B	
	Frascold	A-SK, D-SK, Q-SK, S-SK	
OM0-CBB CO2 Part No. 805338 Screw adapter 1-1/8"-18 UNF	Bitzer	2 - NSL, MSL, KSL, JSL, HSL, GSL, FSL, ESL, DSL, CSL, 2 - MHC, KHC, JHC, HHC, GHC, FHC, EHC, DHC, CHC, 4 - FSL, ESL, DSL, CSL, VSL, TSL, PSL, NSL, 4 - FHC, EHC, DHC, CHC	4 - CTC, DTC, FTC, HTC, JTC, KTC, MTC, PTC
	Bock	HGX12 / 22 / 34e...CO2	HAX2...CO2 T, HGX34 / 46...CO2 T
	Copeland		4MSL, 4MTL
	Dorin	CDS11, 101B, 151B, 181B, 301B, 351B, 381B	
OM0-CCA CO2 Part No. 805339 Screw adapter 3/4"-14 NPTF	Copeland	ZO34 to ZO104 - until 06/2014 ZOD34 to ZOD104 - until 06/2014*	
OM0-CCB CO2 Part No. 805340 Screw adapter 1-1/8"-12 UNF			
OM0-CCC CO2 Part No. 805341 Flange adapter 3-hole			
OM0-CCD CO2 Part No. 805342 Rotalock adapter 1-3/4"-12 UNF	Copeland	ZP180, ZP235 to ZP485	
OM0-CCE CO2 Part No. 805343 Rotalock adapter 1-1/4"-12UNF	Copeland	ZO21, ZO34 to ZO104 - after 06/2014 ZOD34 to ZOD104 - after 06/2014*	
OM0-CUD CO2 Part No. 805049 Flange adapter 6- / 6-hole	Dorin		CDxx M, H, B CD2S-200, -400

*) Digital/EVI versions of standard models have the same sight glass/ will use the same adapter as the standard model.

Other adapter 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. Further information see Selection Tool "Controls Navigator"!

OW4 and OW5 TraxOil Oil Level Monitoring System

Dimensions [mm]



Adapters	Side view	Front view (facing compressor):
OM0-CUA CO2 Part No. 805337 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-CUD CO2 Part No. 805049 Flange adaptor 6-/ 6-hole 12 holes \varnothing 6.9 mm, circle diameter 47.6 mm; Weight: 0.12kg		
OM0-CBB CO2 Part No. 805338 Screw adaptor 1-1/8"-18 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCA CO2 Part No. 805339 Screw adaptor 3/4"-14 NPTF Additional flange ring for adaptor / base unit connection (included) Weight: 0.11kg		
OM0-CCB CO2 Part No. 805340 Screw adaptor 1-1/8"-12 UNF Additional flange ring for adaptor / base unit connection (included) Weight: 0.12kg		

Adapters	Side view	Front view (facing compressor):
OM0-CCC CO2 Part No. 805341 Flange adaptor 3-hole Three holes \varnothing 6.7 mm, Circle diameter 47.6 mm Weight: 0.16kg		
OM0-CCD CO2 Part No. 805342 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-CCE CO2 Part No. 805343 Rotalock Adaptor 1-1/4"-12 UNF Weight: 0.16kg		