

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 like OM3/4/5 series.

Features

- OW4 for R744 (CO₂) subcritical and selected HFC and HFO/HFO blends refrigerants
 - max. working pressure PS: 60 bar
- OW5 for R744 (CO₂) transcritical
 - max. working pressure PS: 100 bar
 - CO₂ optimized gasket material, not released for HFCs and HFO/HFO blends
 - 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 zones 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



OW4 TraxOil



OW5 TraxOil

Product Selection OW4 and OW5 (select one item of each group)

1. Base Units

Type	Part No.	Max. working pressure PS	Time delay alarm
OW4-020	805116	60 bar	20 sec
OW4-120	805118	60 bar	120 sec
OW5-120	805241	100 bar	120 sec

2. Adapter

Adapter	Part No.	Description
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
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

4. Cable Power Supply

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

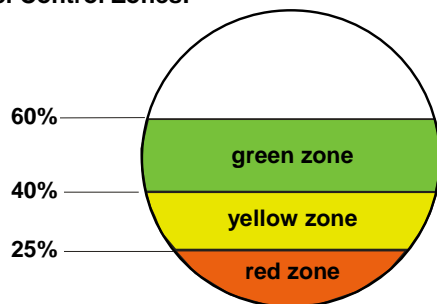
Type	Part No.	Description	Weight
ECT-623	804421	Transformer 230VAC / 24VAC, 60VA	1.20 kg
OM-HFC-K01	805081	Sealing Kit OW4 (consists of all O-rings, incl. adapter gaskets)	
OM-CO2-K01	805079	Sealing Kit OW5 (consists of all O-rings, incl. adapter gaskets)	

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	Function	Alarm
●	Oil Level in green zone (60 - 40%)	OK	
● ●	Oil Level in green zone (60 - 40%)	OK	
●	Oil Level in yellow zone (40 - 25%)	Warning	
● ●	Oil Level in red zone (25 - 0%)	Alarm	Yes, delay 20 s or 120 s

Technical Data

Marking	CE under: - Low Voltage Directive 14/35/EU - EMC Directive 14/30/EU
Applied Standards	EN 12284, EN 378, EN 61010, EN 50081-1, EN 50082-1
Max. working pressure PS Max. test pressure PT	OW4: 60 bar OW5: 100 bar OW4: 66 bar OW5: 110 bar
Supply voltage current	24 VAC, 50/60 Hz, ±10%, 0.05 A
Vibration resistance (EN60068-2-6)	max. 4 g, 10...250 Hz
Medium temperature	-20...+80°C
Ambient/Storage temperature	-15...+50°C
Medium compatibility	OW4: R410A, R134a, R22, R404A, R507, R407C, R407A, R407F, R1234ze, R448A, R449A, R450A, R513A, R452A OW4/OW5: CO ₂ All: 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. or 120 sec.
Protection class	IP65 (IEC529/EN 60529)
Weight	850 ... 920 g incl. adapter

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Adapter Connectivity Guideline OW4 & OW5

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

		Compressor series with OW4		Compressor series with OW5	
		for applications up to 46 bar	OW4 can be incorporated in compressors designed for CO ₂ transcritical in conjunction with oil receivers/reservoirs up to 60 bar	for transcritical CO ₂ applications	
Flange adapter	OM0-CUA 3- / 4-hole Part No. 805037	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	HGX4 CO2	-
		Copeland	4M & 6M (except transcritical 4MTL models), D2, D3, D4, D6, D9, 4CC, 6CC, ZBH	-	-
		Dorin	all KP, K sizes (except types mentioned under -CBB) H2000-9000CC/CS, HI1201CC, HI1501CC, 41VS-90VS SCC 250/300/350/380/500/750/ SCC-1500/1900/2000/2500/ -B, SCS 340/351/362/373/385/3K8/-D	CDS35, 501B, 701B, 751B, 901B, 1201B CDS41, 1501B, 2001B, 2401B, 2501B	-
		Frascold	Series A, B, D, F, S, V, W, Z	A-SK, D-SK, Q-SK, S-SK	-
	OM0-CCC 3-hole Part No. 805041	Copeland	D8D, D8S_ (except D8SJ and D8SK, installation only on one sight glass)	-	-
	OM0-CUD CO2 6- / 6-hole Part No. 805049	Dorin	-	-	CDxx M, H, B CD2S-200, -400
Thread adapter	OM0-CBB 1-1/8"-18 UNEF Part No. 805038	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	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, PS, NSL, 4- FHC, EHC, DHC, CHC	-
		Bock	HA12/22/34, HG12/22/34, HGX12P, HGX22P, HGX34P for R134a/R410A, HG12P-34P, HG22/34E	HGX12 / 22 / 34e..CO2	-
		Dorin	all H400-650EP, H1-1003CC/CS, HI1-HI751CC, K100CC/CS, K150CC/CS, K180CC/CS, K200CC, K230CS, K235CC, K240SB, K40CC, K50CS, K75CC/CS-	CDS11, 101B, 151B, 181B, 301B, 351B, 381B	-
		L'Unite Herm.	TAH, TAG	-	-
		Maneurop	LT, MT, SM, SZ	-	-
	OM0-CBB CO2 1-1/8"-18 UNEF Part No. 805338	Bitzer	-	-	4 - CTC, DTC, FTC, HTC, JTC, KTC, MTC, PTC
		Bock	-	-	HAX2...CO2 T, HGX34 / 46...CO2 T
		Copeland	-	-	4MSL, 4MTL
	OM0-CCA 3/4"-14 NPTF Part No. 805039	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	ZO34 to ZO104 - until 06/2014 ZOD34 to ZOD104 - until 06/2014*	-
OM0-CCB 1-1/8"-12 UNF Part No. 805040	Copeland	DK, DL	-	-	

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

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Adapter Connectivity Guideline OW4 & OW5

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

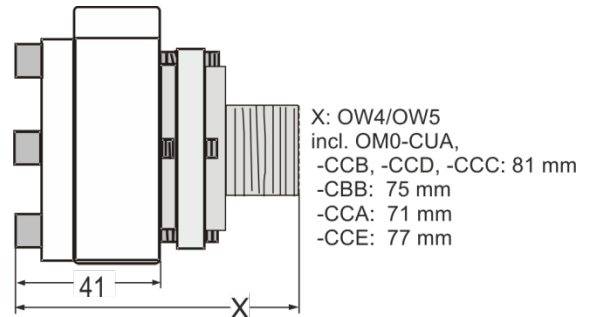
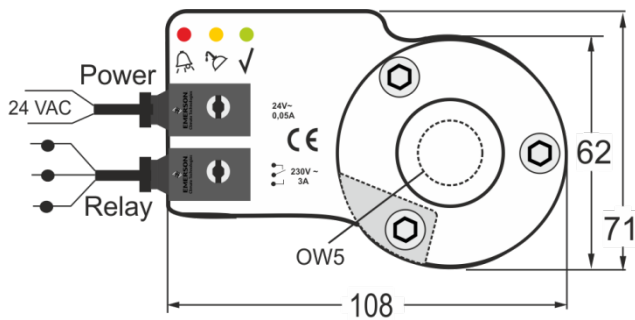
		Compressor series with OW4		Compressor series with OW5	
		for applications up to 46 bar	OW4 can be incorporated in compressors designed for CO ₂ transcritical in conjunction with oil receivers/reservoirs up to 60 bar	for transcritical CO ₂ applications	
Rotolock adapter	OM0-CCD 1-3/4"-12 UNF Part No. 805042	Copeland	ZB220, ZF24 to ZF48, ZH100/125/150 ZR90, 11, 12, 16, 19, 250 to ZR380	ZS56 to ZS11 ZP180, ZP235 to ZP485	-
		Bitzer	GSD80182, 80235, 80295 to 80485	-	-
	OM0-CCE 1-1/4"-12UNF Part No. 805043	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	ZO21, ZO34 to ZO104 - after 06/2014 ZOD34 to ZOD104 – after 06/2014*	-
		Bitzer	GSD60182 to 60235	-	-

Note: *) 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”!

Dimensions (mm)

Base Unit OW4 and OW5:



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Overview Adapters

Connection type		Connection size / Dimensions (mm)	Base Unit	Refrigerants	Material
Thread	OM0-CCA Part-No.805039	3/4"-14 NPTF 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CCA CO2 Part-No.805339		OW5	CO ₂	Steel & Aluminum
	OM0-CBB Part-No.805038	1-1/8"-18 UNF 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CBB CO2 Part-No.805338		OW5	CO ₂	Steel & Aluminum
	OM0-CCB Part-No.805040	1-1/8"-12 UNF 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CCB CO2 Part-No.805340		OW5	CO ₂	Steel & Aluminum
Rotalock	OM0-CCD Part-No.805042	1-3/4"-12 UNF 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CCD CO2 Part-No.805342		OW5	CO ₂	Steel & Aluminum
	OM0-CCE Part-No.805043	1-1/4"-12 UNF 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CCE CO2 Part-No.805343		OW5	CO ₂	Steel & Aluminum

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Overview Adapters

Connection type		Connection size / Dimensions (mm)	Base Unit	Refrigerants	Material
Flange ¹	OM0-CUA Part-No.805037	3 / 4-holes 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CUA CO2 Part-No.805337		OW5	CO ₂	Aluminum
	OM0-CCC Part-No. 805041	3 holes 	OW4	Selected HFC & HFO/ HFO blends CO ₂	Aluminum
	OM0-CCC CO2 Part-No. 805341		OW5	CO ₂	Aluminum
	OM0-CUD CO2 Part-No.805049	6/6 holes 	OW5	CO ₂	Aluminum

Note: ¹) M6 screws for fastening are not part of delivery.