OM3, OM4 and OM5 – TraxOil

Oil Management System

General information

A1 A2L

The Copeland 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 are indicated by LED's. The integrated alarm function with compressor shut down completes the overall proven solution for compressor protection.

While OM3 is the well-proven solution for HFC & HFO blended refrigerants, OM4 can also be used for subcritical CO_2 systems.

OM5 TraxOil has been specially developed for trans-critical CO_2 applications; the new adapters are equipped with special types of O-rings to guarantee safe long-term and reliable operation.

For selected A2L applications with Copeland scroll there is a braze adapter available (see table 2, page 2).

Features

- 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 24 VAC or 230 VAC
- SPDT output contact for compressor shut down or alarming, rating 230 VAC / 3 A
- 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 LVD and EMC Directive,

NOTE: Product types for safety class A3, please refer to separate documents.



OM3 / OM4

OM3 and OM4 for selected HFC & HFO/HFO blended refrigerants

- OM3: max. allowable pressure PS: 46 bar
- OM4: max. allowable pressure PS: 60 bar

  NOTE: for A2L refrigerant applications…
  - Shall be positioned out of the potentially flammable zone where any leaked refrigerant could flow or stagnate or shall be sufficiently ventilated, so the concentration of any leaked refrigerant never reaches 50% of Lowest Flammable Limit.
  - After installation and before charging the system with the refrigerants, a leak test must be performed, and the acceptance criteria shall be according to the relevant standard as per the EN 378.
  - The power supply must be 24 VAC only.
  - The voltage of alarm contact is max. 24 VAC.

OM4 for R744 (CO_2) subcritical,

- max. allowable pressure PS: 60 bar



OM5

OM5 for R744 (CO_2) transcritical,

- Max. allowable pressure PS:
  Inlet: 130 bar; Outlet to compressor: 100 bar
- CO_2 optimized gasket material
- Adapters with CO_2 optimized gasket material
- High wattage ESC-W… coil to achieve high pressure differential MOPD of 100 bar

Selection Table OM3 / OM4 (select one item of each group)

1. Base Units (supplied without adapter and coil)

Type	Part no.	Max. allowable pressure PS	Time delay alarm	Illustration
OM3-020	**805133**	46 bar	20 sec.	
OM3-120	**805134**		120 sec.	
OM4-020	**805135**	60 bar	20 sec.	
OM4-120	**805136**		120 sec.	

2. Adapter

Type	Part no.	Description	Illustration
OM0-CUA	**805037**	Flange adapter 3- / 4-hole	**See page Adapter overview**
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-CCL	**805261**	Braze adapter Ø22.5 mm	

NOTE: For use with A2L refrigerants only the OM0-CCL can be used!

3. Cable Alarm Relay

Type	Part no.	Description	Illustration
OM3-N30	**804910(M)***	Connection to Relay 3 m	
OM3-N60	**804911(M)***	Connection to Relay 6 m	
OM3-N100	**804912(M)***	Connection to Relay 10 m	
OM3-N150	**804913(M)***	Connection to Relay 15 m	
OM3-N250	**804914(M)***	Connection to Relay 25 m	

4. Solenoid Coil

Supply Voltage 24V			
Type	**Part no.**	**Frequency**	**Illustration**
ESC-24VAC	**801033**	50 Hz, 17 VA	

4. Solenoid Coil*

Supply Voltage 230V			
Type	**Part no.**	**Frequency**	**Illustration**
ESC-230VAC	**801031**	50 Hz, 17 VA	

5. Cable Assembly Power Supply and Solenoid

Type	Part no.	Description	Illustration
OM3-P30	**804920(M)***	24 V, 3 m	
OM3-P60	**804921(M)***	24 V, 6 m	
OM3-P100	**804922(M)***	24 V, 10 m	
OM3-P150	**804923(M)***	24 V, 15 m	
OM3-P250	**804924(M)***	24 V, 25 m	

5. Cable assembly with 230V module*

Type	Part no.	Description	Illustration
OM-230V-3	**804930(M)***	230 V, 3 m	
OM-230V-6	**804931(M)***	230 V, 6 m	
OM-230V-10	**804932(M)***	230 V, 10 m	
OM-230V-15	**804933(M)***	230 V, 15 m	
OM-230V-25	**804934(M)***	230 V, 25 m	

NOTE: *) Do not use with A2L refrigerant!

NOTE: * M = Multipack (20 pcs)
For assistance with selection, please contact your local Copeland Sales offices.

Selection Table OM5 (select one item of each group)

1. Base Units (supplied without adapter and coil)

Type	Part no.	Max. allowable pressure PS	Time delay alarm	Illustration
OM5-020	**805230**	130 bar	20 sec.	
OM5-120	**805231**		120 sec.	

2. Adapter

Type	Part no.	Description	Illustration
OM0-CUA CO2	**805337**	Flange adapter 3- / 4-hole	**See page Adapter overview**
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. Cable Alarm Relay

Type	Part no.	Description	Illustration
OM3-N30	**804910(M)***	Connection to Relay 3 m	
OM3-N60	**804911(M)***	Connection to Relay 6 m	
OM3-N100	**804912(M)***	Connection to Relay 10 m	
OM3-N150	**804913(M)***	Connection to Relay 15 m	
OM3-N250	**804914(M)***	Connection to Relay 25 m	

4. Solenoid Coil

Supply Voltage 24V			
Type	**Part no.**	**Frequency**	**Illustration**
ESC-W24VAC	**801028**	50 Hz, 38 VA	

4. Solenoid Coil

Supply Voltage 230V			
Type	**Part no.**	**Frequency**	**Illustration**
ESC-W230VAC	**801029**	50 Hz, 38 VA	

5. Cable Assembly Power Supply and Solenoid

Type	Part no.	Description	Illustration
OM3-P30	**804920(M)***	24 V, 3 m	
OM3-P60	**804921(M)***	24 V, 6 m	
OM3-P100	**804922(M)***	24 V, 10 m	
OM3-P150	**804923(M)***	24 V, 15 m	
OM3-P250	**804924(M)***	24 V, 25 m	

5. Cable assembly with 230V module

Type	Part no.	Description	Illustration
OM-230V-3	**804930(M)***	230 V, 3 m	
OM-230V-6	**804931(M)***	230 V, 6 m	
OM-230V-10	**804932(M)***	230 V, 10 m	
OM-230V-15	**804933(M)***	230 V, 15 m	
OM-230V-25	**804934(M)***	230 V, 25 m	

NOTE: * M = Multipack (20 pcs)
For assistance with selection, please contact your local Copeland Sales offices.

Oil Management Kits including Base Unit, Adapter and 24 V ESC Coil:

Kits incl. Adapter	Part no.
OM3-CUA	805301
OM3-CBB	805303
OM3-CCA	805304
OM3-CCB	805305
OM3-CCC	805306
OM3-CCD	805302
OM3-CCE	805300
OM3-CCL (A2L)	805126

Base Unit	Part no.	Adapter	Part no.	Coil	Part no.
OM3-020	805133	OM0-CUA	805037	ESC 24 VAC	801033
		OM0-CBB	805038		
		OM0-CCA	805039		
		OM0-CCB	805040		
		OM0-CCC	805041		
		OM0-CCD	805042		
		OM0-CCE	805043		
		OM0-CCL	805261		

OM4-CUA	805307
OM4-CBB	805309
OM4-CCA	805310
OM4-CCB	805311
OM4-CCC	805312
OM4-CCD	805308
OM4-CCE	805313
OM4-CCL (A2L)	805129

OM4-020	805135	OM0-CUA	805037	ESC 24 VAC	801033
		OM0-CBB	805038		
		OM0-CCA	805039		
		OM0-CCB	805040		
		OM0-CCC	805041		
		OM0-CCD	805042		
		OM0-CCE	805043		
		OM0-CCL	805261		

Accessories and Spare Parts

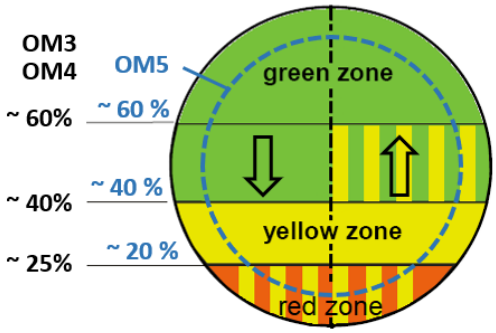
Type	Part no.	Description	Weight
ECT-623	804421	Transformer 230 VAC / 24 VAC, 60 VA (supply of 3 pieces Base unit)	1.20 kg
ESC-K01	801034	Screw cap (incl. 2x O-ring & fixing retainer)	0.01 kg
ODP-33A	800366	Differential Oil Check Valve 3.5 bar, PS: 46 bar (Inlet 5/8”-UNF female, outlet 5/8”-UNF male)	0.14 kg
OM3-K01	805036	Repair Kit OM3/OM4 (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-HFC-K01	805081	Sealing Kit OM3/OM4 (consists of all O-rings for OM3/OM4 and for all types of adapters)	0.01 kg
OM-HFC-K02	805083	Enclosing tube for OM3/OM4 (including O-ring), only for replacement of version with hexagonal nut!	0.11 kg
OM-CO2-K01	805079	Sealing Kit CO_2 for OM5 (consists of all O-rings for OM5 and for all types of adapters)	0.01 kg
OM-CO2-K02	805082	Enclosing tube for OM5 (including O-ring), only for replacement of version with hexagonal nut!	0.11 kg

Function

OM3/OM4/OM5 TraxOil use 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

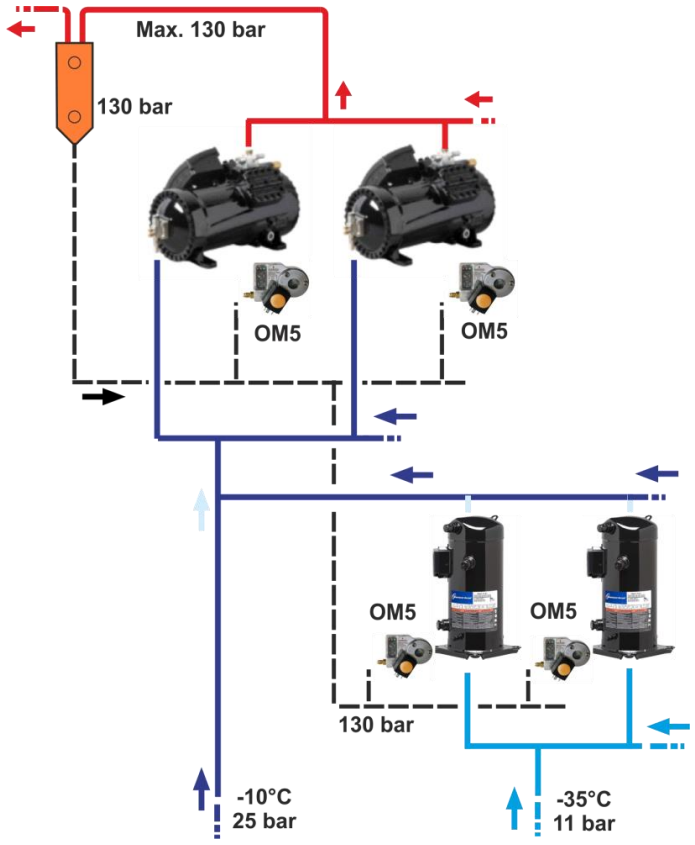
OM3/OM4/OM5 TraxOil generates an alarm signal and the alarm contact (SPDT) changes into alarm state. The latter may be used to shut down the compressor. In the Alarm status the TraxOil is still feeding oil into the compressor. If the oil level comes back to normal, the Alarm will be reset.

Sight-Glass Level Control Zones:

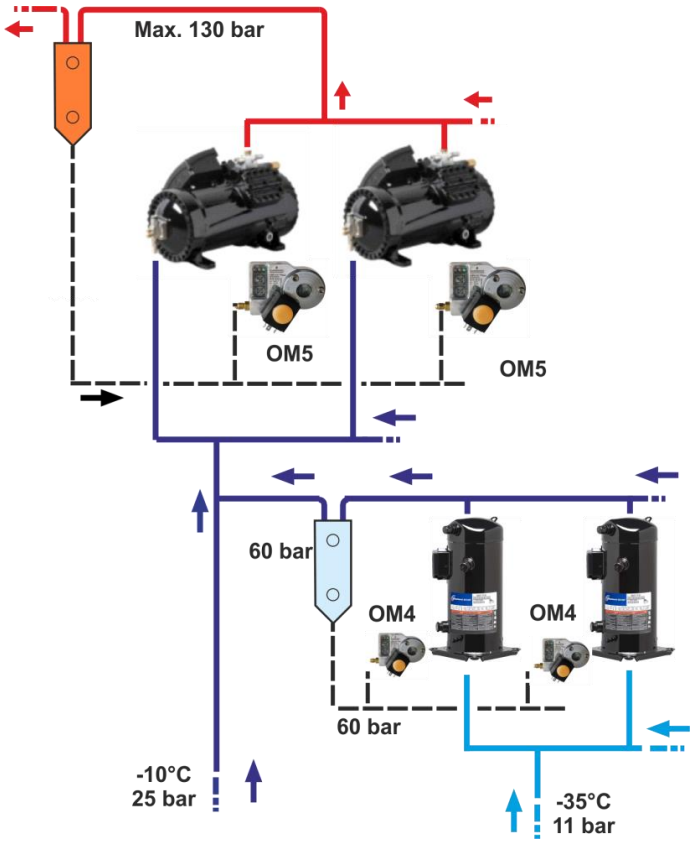


LEDs	Status	Function	Alarm
●	Oil Level in green zone ⇩ (60 - 40%, OM3/4)		
● ●	Oil Level in green zone ⇧ (60 - 40%, OM3/4)	Injection	
●	Oil Level in yellow zone (40 - 25%, OM3/4)	Injection, delay 10 s	
● ●	Oil Level in red zone (25 - 0%, OM3/4)	Injection	Yes, delay 20 s or 120 s

Typical transcritical/subcritical CO_2 Application with OM5



Typical transcritial/subcritical CO_2 application with OM4/OM5



Technical Data - OM3 / OM4 / OM5

Max. allowable Pressure PS	OM3	46 bar	Weight		
	OM4	60 bar		24 V System	750…920 g incl. adapter
	OM5	HP side (inlet) 130 bar LP side (outlet) 100 bar		230 V System	1100…1270 g incl. adapter
Max. Test Pressure PT			Materials		
	OM3	51 bar		Body and Adapter	Aluminum alloy, Brass, Steel
	OM4	66 bar		Screws	galvanized steel
	OM5	143 bar		Sight Glass	nickel-plated steel (ISO 2081)
Temperatures			Released Refrigerants		
	Storage/ Ambient/ Transport	-15…+50 °C		**Fluid group II**	R134a, R404A, R407C, R450A, R452A, R448A, R449A, R507, R513A, R410A, R744** (A1)
	Medium	Oil inlet +5…+80 °C compressor side: -20…+80 °C (oil/refrigerant mixture)		**Fluid group I**	R32, R452B, R454B, R454A, R454C, R455A, R1234ze, R1234yf (A2L)
Solenoid valve MOPD			Alarm contact		max. 3 A, 230 VAC, SPDT dry contact
	OM3/4	30 bar			
	OM5	100 bar see Fig. 1			
Protection Class (IEC 529, EN 60529)		IP65	Time Delay Alarm		
				OM…-020 & Kits	20 sec.
				OM…-120	120 sec.
Vibration Resistance		max. 4 g, 10….250 Hz	Time Delay Filling		10 sec.
Enclosing tube		Replaceable for cleaning, hexagon wrench size 18	Level control		40%...60% of sight glass height
Oil connection		7/16”-20 UNF male, with strainer and O-ring (replaceable)	Applied Standards/ Directives		EN 61010-1, EN 378-2, EN 12178, EN 61326 (equipment group I, class B), RoHS 2011/65/EU
Supply voltage / Solenoid Coils	OM3/4	*ESC-24VAC:* 24 VAC±10 %, 50 Hz, 17 VA *ESC-230VAC*:* 230 VAC±10 % 50 Hz, 17 VA*	Markings		CE acc. EMC & LVD, cULus (OM3/OM4)
	OM5	*ESC-W24VAC:* 24 VAC ±10 %, 50 Hz, 38 VA			

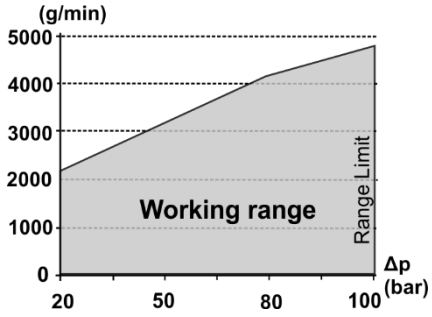
NOTE: *) not for A2L, with OM230V -x module **) OM3/4 only subcritical, OM5 transcritical with special $C0_2$ adapters

Technical Data - ESC Coil

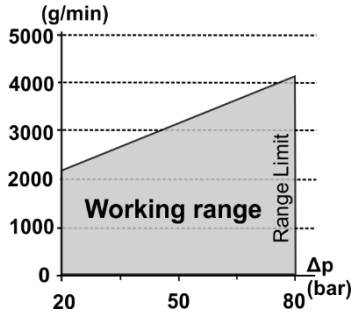
Ambient Temperature	-40…+60 °C	Supply Voltage variation	±10 %
Vibration resistance (EN60068-2-6)	0.7 g - 10...200 Hz	Applied Standards/ Directives	EN 60947-1, EN 60947-5-1 RoHS 2011/65/EU
Protection class	IP65 (with assembled plug and cable)	Markings:	
		ESC-24VAC	cULus
		ESC-230VAC	CE, , cULus
		ESC-W24VAC	--
		ESC-W230VAC	CE,

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)

Supply Voltage 24 V / 230 V -0%
(only 50 Hz)



Supply Voltage 24 V / 230 V -10%
(only 50 Hz)

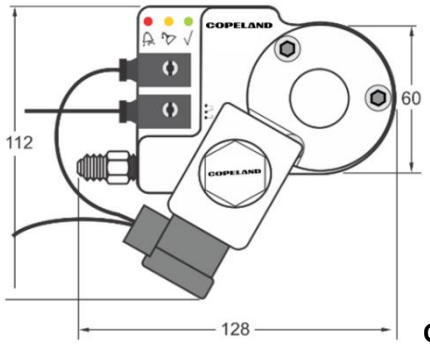


Adapter Selection for OM3 / OM4 / OM5

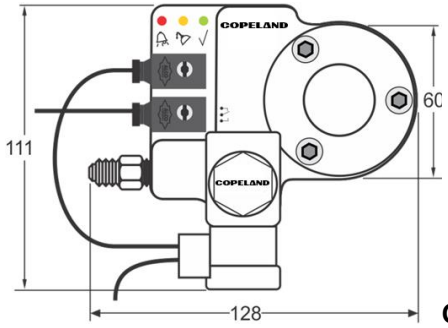
			Compressor Series with OM3	Compressor series with OM4	Compressor series with OM5
			for applications up to 46 bar	OM4 can be incorporated in compressors designed for CO_2 transcritical in conjunction with oil receivers/reservoirs up to 60 bar	for transcritical CO_2 applications
Flange	**OM0-CUA** **3- / 4-hole** Part no. 805037	Bitzer Bock Copeland Dorin Frascold	Please refer to free program “Select” for selection of adapter matching to each compressor brand/ type		
Flange	**OM0-CCC** **3-hole** Part no. 805041	Copeland			
Flange	**OM0-CUD CO2** **6-/ 6-hole** Part no. 805049	Dorin			
Thread	**OM0-CBB** **1-1/8“-18 UNEF** Part no. 805038	Bitzer Bock Dorin L’Unite Herm. Maneurop			
Thread	**OM0-CBB CO2** **1-1/8“-18 UNEF** Part no. 805338	Bitzer Bock Copeland			
Thread	**OM0-CCA** **3/4“-14 NPTF** Part no. 805039	Bitzer Copeland			
Thread	**OM0-CCB** **1-1/8“-12 UNF** Part no. 805040	Copeland			
Rotalock	**OM0-CCD** **1-3/4“-12 UNF** Part no. 805042	Copeland Bitzer			
Rotalock	**OM0-CCE** **1-1/4”-12UNF** Part no. 805043	Copeland Bitzer			
Braze	**OM0-CCL** Part no. 805261	Copeland YB..K1E	NOTE: 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.		

Dimension (mm)

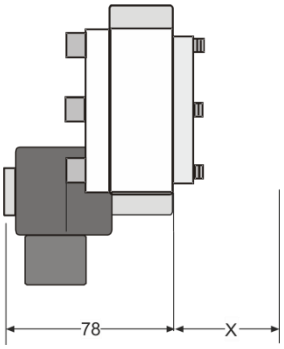
Base Unit with coil



OM5 + ESC-W…

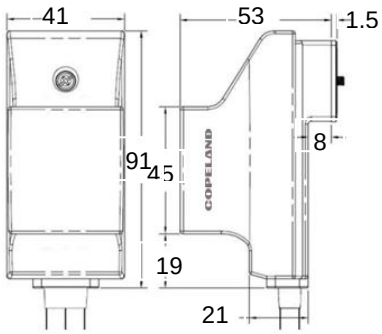


OM3/4 + ESC…

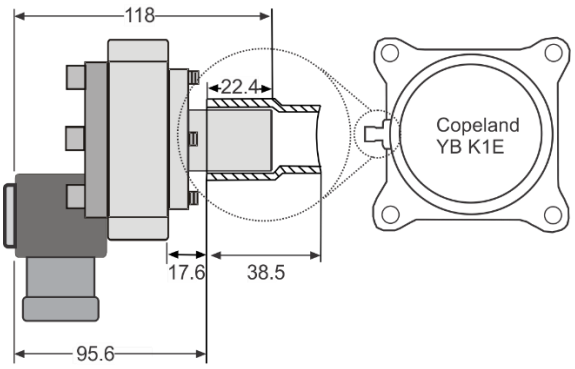


X: see table “Overview Adapters”

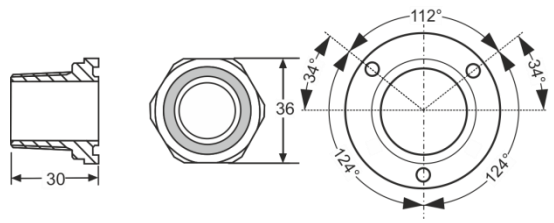
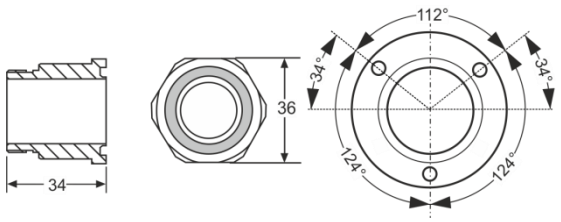
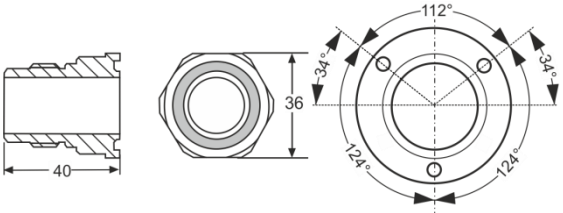
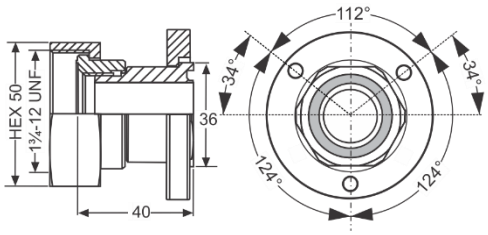
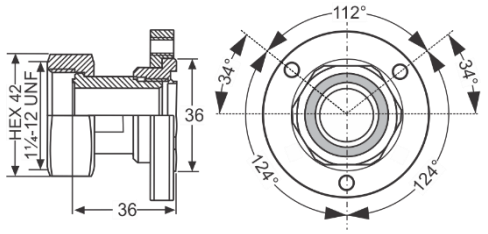
OM-230V-x Module:



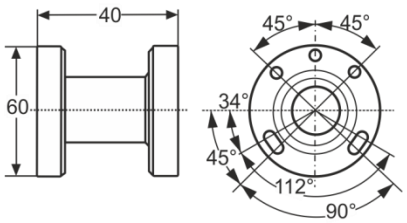
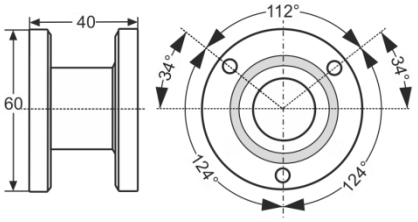
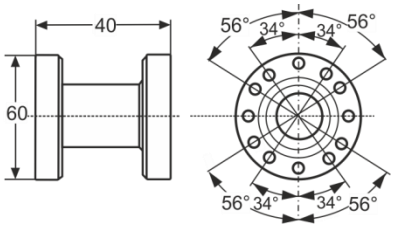
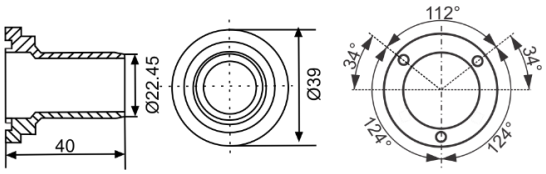
Base Unit with braze adapter OM0-CCL (for selected A2Lrefrigerants)



Adapters overview

Connection type		Connection size / Dimensions (mm)	Base unit	Ref.	Material	
					Adapter	Flange
Thread	**OM0-CCA** Part no. 805039	3/4"-14 NPTF 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	Aluminium
	OM0-CCA CO2 Part no. 805339		OM5	CO_2	Aluminium	Steel
	OM0-CBB Part no. 805038	1-1/8"-18 UNEF 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	Aluminium
	OM0-CBB CO2 Part no. 805338		OM5	CO_2	Aluminium	Steel
	OM0-CCB Part no. 805040	1-1/8"-12 UNF 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	Aluminium
	OM0-CCB CO2 Part no. 805340		OM5	CO_2	Aluminium	Steel
Rotalock	**OM0-CCD** Part no. 805042	1-3/4"-12 UNF 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	Aluminium
	OM0-CCD CO2 Part no. 805342		OM5	CO_2	Aluminium	Steel
	OM0-CCE Part no. 805043	**1-1/4"-12 UNF** 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	Aluminium
	OM0-CCE CO2 Part no. 805343		OM5	CO_2	Aluminium	Steel

Adapters overview (continued)

Connection type		Connection size / Dimensions (mm)	Base unit	Refr.	Material	
					Adapter	Flange
Flange[1]	**OM0-CUA** Part no. 805037	3- / 4-holes 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	
	OM0-CUA CO2 Part no. 805337		OM5	CO_2	Aluminium	
	OM0-CCC Part no. 805041	3 holes 	OM3 OM4	listed HFC & HFO/ HFO blends (page 6) CO_2	Aluminium	
	OM0-CCC CO2 Part no. 805341		OM5	CO_2	Aluminium	
	OM0-CUD CO2 Part no. 805049	6-/6 holes 	OM5	CO_2	Aluminium	
Braze	**OM0-CCL** Part no. 805261		OM3 OM4	listed A2L refrigerant	Brass	Steel

NOTE: [1]) M6 screws for fastening are not part of delivery.

DISCLAIMER: The Copeland logo is a trademark and service mark of Copeland LP or one of its affiliates. Copeland Europe GmbH shall not be liable for errors in the stated capacities, dimensions, etc., as well as typographic errors. Products, specifications, assumptions, designs and technical data contained in this document are subject to modification by us without prior notice. Illustrations are not binding. ©2025 Copeland LP. All rights reserved.