



# COML/H – Electronic Sensor for Low and High Liquid Level Control Models for 24V and 230V, MWP 60 and 120 bar New: T-Version for up to 100% Humidity

Electronic Liquid Level Sensor COML/H Product highlights:

- Sophisticated operating principle, stand-alone liquid level sensor
- High-precision Sensor technology allows a very precise level detection
- Flexible with a 24 VAC and a 230 VAC Version.

with Alarm function and separate



**Output signal.** 



- No incorrect measurement by foaming and dirty Oil/Refrigerant or incidence of light
- 2 separate Outputs: Alarm + Sensor output to switch an actuator
- Conforms to CE, EAC
- Protection class IP 65 , Electrical connection with molded plugs and cable
- T-models (i.e. COML-24-T) for up to 100% Humidity

<u>Technical Data</u>			
CE mark in compliance with		Media	See table 1, Mineral, Synthetic and
Low-Voltage	2014 / 35 / EU	Compatibility/	Ester oil, required Density min.
EMC Directive	2014 / 30 / EU	Density	0,5kg/l. Other Liquids on request.
Applicable standards	EN 378, EN 61010-1:2010,	Material	Housing and Adapter (EN AW 6081,
	EN 61326, EN 61000-6-2:2005,		6082), Sight Glass: 11SMnPb37
	EN61000-6-3:2007 + A1:2011		Screws: stainless steel
Pressure rating:	COML: 60 bar COMH: 120 bar	Time delay	Sensor Output: 10 sec
Test Pressure:	COML: 86 bar COMH: 172 bar		Alarm: 90 s
Power supply Voltage/	24VAC 50Hz, +10/-15%, 0,02 A	Alarm contact	max. 3A, 230V AC, floating
Current COML/H:	230VAC 50Hz +10/-15%, 0,02 A	Sensor Output	0,5A inductive, 1A resistive
Vibration resistance:	max. 4g, 10 250Hz,	Protection class	IP 65 (IEC529 / EN 60529)
	(EN 60068-2-6)		
Media/Storage Temp.:	-40 80°C	Humidity: COML/H	0-80% rH (none condensing)
Ambient temperature:	-40 50°C (static)	COM/L/H-T	Up to 100% humidity

#### Table 1

Refrigerant	Group acc. PED 2014/68/EC	Group acc. EN378	Refrigerant	Group acc. PED 2014/68/EC	Group acc. EN378
R404A R134a R448A R449A R450A	Ш	A1	R1234ze (E) R1234yf R32 R455A R454C	I	A2L
R513A R744			R1270 R290	I	A3



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## **Description**

COML/H offers a simple and compact level monitoring system with an integrated alarm function. In case of an insufficient/overfilled liquid level in a receiver (oil or refrigerant) an alarm signal will be generated. This ensures the reliable operation of the refrigeration system and avoids greater damage to the system components.

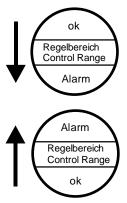
A Hall-effect sensor and a built-in float magnet system measuring the liquid level. Depending on the position of the float and the resulting change in magnetic field strength creates a variable output voltage. This is evaluated by an electronic board and the LED's will be driven accordingly. As soon the liquid level reaches the yellow zone the output Signal **S** will be switched on with a delay of 10 sec. A further drop/rise of Level to the red alarm range causes the Relays switches with a delay time of 90 seconds into the alarm state. This signal can be used for data processing or shut down of the system. If a correct fluid level can be restored, the alarm and the Signal (S) will be reset.

To monitor the minimum level COML/H will be installed in the normal position. For monitoring the maximum Level, the device is rotated by 180 ° for the installation (see Figure 1 on page 3). This means that one version can be used for both applications, minimum and maximum level control.

#### **Operation**

*Minimum* Level Control: Normal Range (ok) Control Range yellow/green and Alarm Range red/yellow when Level is < 40% Sight Glass

Maximum Level Control: Normal Range (ok) Control Range yellow/green and Alarm Range red/yellow when Level is > 60% Sight Glass



#### **Models**

Туре	COML	СОМН	Supply	Signal-	Max. operating	Weig	ht (g)
	P/N	P/N	Voltage	output	Pressure (bar)	COML	СОМН
COML/H-24	12057	12059	24.146		COML: 60	465	535
COML/H-24- <b>T</b>	12109	12110	24 VAC	0,5A induct./		470	540
COML/H-230	12058	12060	230 VAC	1A resistive	COMH: 120 bar	465	535
COML/H-230- <b>T</b>	12111	12112	230 VAC			470	540

Type Adapter	P/N	Connection	Weight (g)	Max. operating Pressure
COM-AD-012	12014	½" NPT	60	
COM-AD-114	12008	Rotalock 1-1/4"	105	120 bar
COM-AD-134	12007	Rotalock 1-3/4"	135	

#### Cables with Connector

Туре	P/N	Voltage	Length	Temperature Range (static)	Application	Weight (g)
N300	12021	24 and	3,0 m		Power	130
N600	12022	230 VAC	6,0 m	-4080°C	Supply	230
S300	12024	230 VAC	3,0 m	-4080 C	Relais	130
S600	12026		6.0 m		Reidis	230

Please order Sensor and Adapter separately. Delivery will be made assembled!

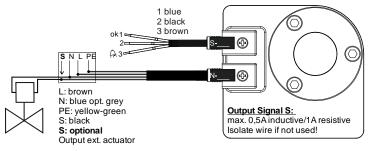
#### **Accessories**

Туре	P/N	Description	Weight (g)
TEA-20VA	14002	Tranformer230VAC / 24VAC, 15 VA	795
TEA-60VA	14001	Transformer 230VAC / 24VAC, 60 VA	1.180

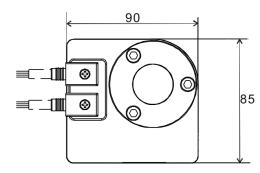


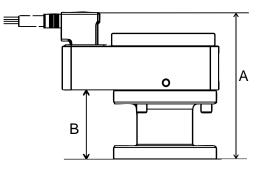


## **Electrical Connection**



## Dimension COML/H (mm)



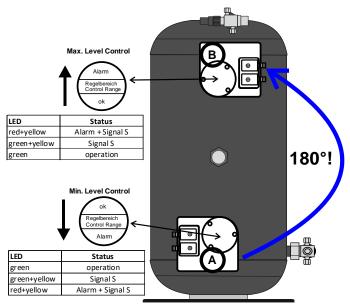


Туре	A (mm)	B (mm)
COM / 012	82	~21
COM / 114	96	35
COM/134	100	39





#### Installation min. and max. Level Control



The illustration shows that when the Level reaches the yellow area the Signal (S) is switched on with a time delay of 10 sec. A further drop/rise of Liquid Level leads the Float to reach the red area. Depending on the time the Float stays within the red area this may lead to an Alarm when the time delay is reached or exceeded. Should the level come back to the green area, both the Signal (S) and the Alarm will be reset/switched off. The Signal (S) will be generated always the Level is in the yellow area. The Alarm relays only will be generated if Level stays in the red area at least for the time delay period.



no Alarm Signal off

Time delay

24/230VAC

Signal on

Alarm off

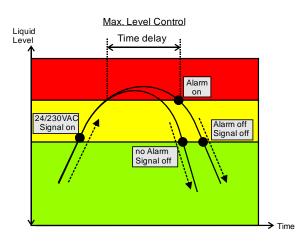
Signal off

→ Time

Alarm on

Minimum Level Control (Installation Pos. A)

#### Maximum Level Control (Installation Position B)



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