COML/H – Electronic Sensor for Low and High Liquid Level Control
Models for 24V and 230V, MWP 60 and 130 bar
New: T-Version for up to 100% Humidity

Electronic Liquid Level Sensor COML/H with Alarm function and separate Output signal. **Flexible with a 24 VAC and a 230 VAC Version.** CE EAC RoHS 2011/65/EU "Made in Germany"	**Product highlights:** • Sophisticated operating principle, stand-alone liquid level sensor • High-precision Sensor technology allows a very precise level detection • 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

Technical Data

CE mark in compliance with **Low-Voltage** **EMC Directive**	 2014 / 35 / EU 2014 / 30 / EU	**Media Compatibility/ Density**	See table 1, Mineral, Synthetic and Ester oil, required Density min. 0,5kg/l. Other Liquids on request.
Applicable standards	EN 378, EN 61010-1:2010, EN 61326, EN 61000-6-2:2005, EN61000-6-3:2007 + A1:2011	**Material**	Housing and Adapter (EN AW 6081, 6082), Sight Glass: 11SMnPb37 Screws: stainless steel
Pressure rating: **Test Pressure:**	COML: 60 bar COMH: 130 bar COML: 86 bar COMH: 186 bar	**Time delay**	Sensor Output: 10 sec Alarm: 90 s
Power supply Voltage/ Current COML/H:	24VAC 50Hz, +10/-15%, 0,02 A 230VAC 50Hz +10/-15%, 0,02 A	**Alarm contact Sensor Output**	max. 3A, 230V AC, floating 0,5A inductive, 1A resistive
Vibration resistance:	max. 4g, 10... 250Hz, (EN 60068-2-6)	**Protection class**	IP 65 (IEC529 / EN 60529)
Media/Storage Temp.: **Ambient temperature:**	-40 … 80°C -40 … 50°C (static)	**Humidity: COML/H COM/L/H-T**	0-80% rH (none condensing) 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	**II**	**A1**	R1234ze (E) R1234yf R32 R455A R454C	**I**	**A2L**
R513A R744			R1270 R290	**I**	**A3**

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Description

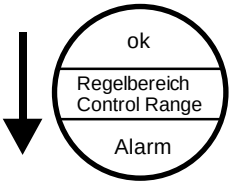
COML/H offers a simple and compact level monitoring system with an integrated alarm function. In case of an insufficient/overfilled liquid level in a receiver (oil or refrigerant) an alarm signal will be generated. This ensures the reliable operation of the refrigeration system and avoids greater damage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

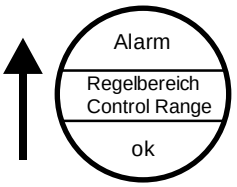
To monitor the minimum level COML/H will be installed in the normal position. For monitoring the maximum Level, the device is rotated by 180 ° for the installation (see Figure 1 on page 3). This means that one version can be used for both applications, minimum and maximum level control.

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

Type	COML P/N	COMH P/N	Supply Voltage	Signal-output	Max. operating Pressure (bar)	Weight (g)	
						COML	COMH
COML/H-24	12057	12059	24 VAC	0,5A induct./ 1A resistive	COML: 60	465	535
COML/H-24-**T**	12109	12110				470	540
COML/H-230	12058	12060	230 VAC		COMH: 130 bar	465	535
COML/H-230-**T**	12111	12112				470	540

Type Adapter	P/N	Connection	Weight (g)	Max. operating Pressure
COM-AD-012	12014	½“ NPT	60	130 bar
COM-AD-034	12004	¾”NPT	80	
COM-AD-114	12008	Rotalock 1-1/4“	105	
COM-AD-134	12007	Rotalock 1-3/4“	135	
COM-AD-118-18 (*)	12005	1-1/8”-18UNEF	75	

(*) also in stainless steel available

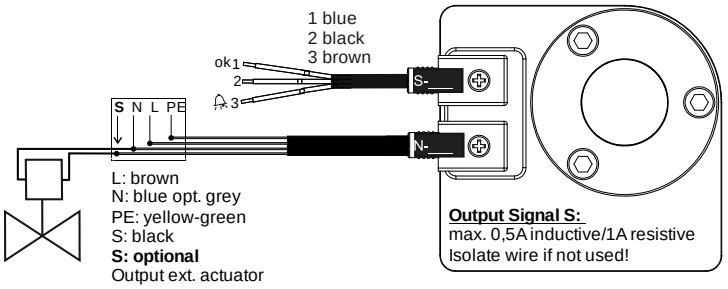
Cables with Connector

Type	P/N	Voltage	Length	Temperature Range (static)	Application	Weight (g)
N300	12021	24 and 230 VAC	3,0 m	-40…80°C	Power Supply	130
N600	12022		6,0 m			230
S300	12024	230 VAC	3,0 m		Relais	130
S600	12026		6.0 m			230

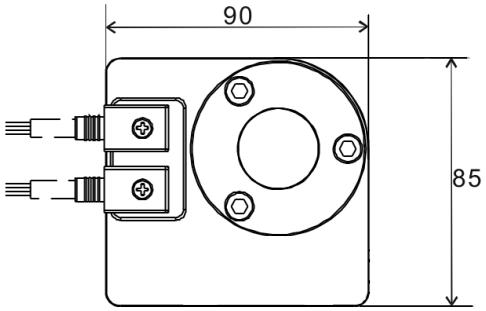
Accessories

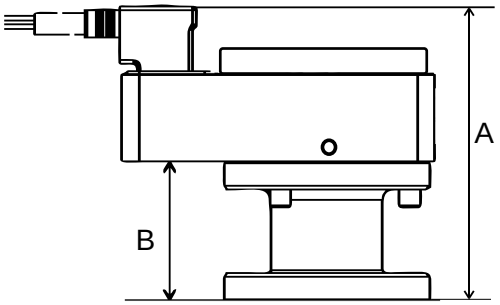
Type	P/N	Description	Weight (g)
TEA-20VA	14002	Tranformer230VAC / 24VAC, 15 VA	795
TEA-60VA	14001	Transformer 230VAC / 24VAC, 60 VA	1.180

Electrical Connection



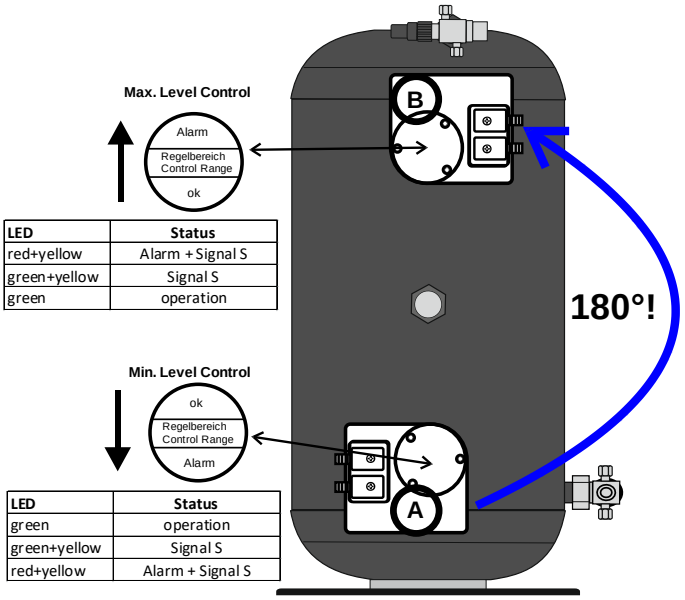
Dimension COML/H (mm)





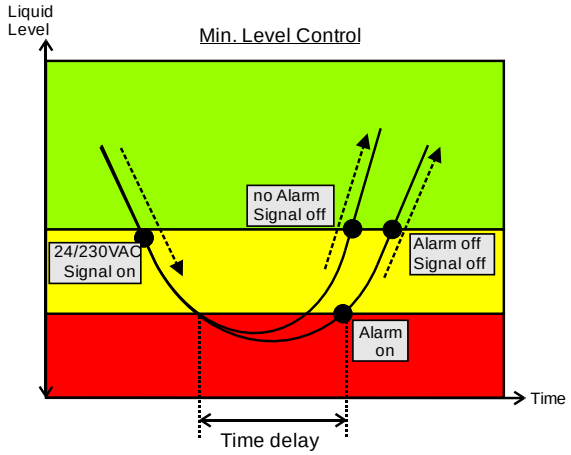
Type	A (mm)	B (mm)
COM__ / 012	82	~21
COM__ / 114	96	35
COM-_ / 134	100	39

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.

Minimum Level Control (Installation Pos. A)



Maximum Level Control (Installation Position B)