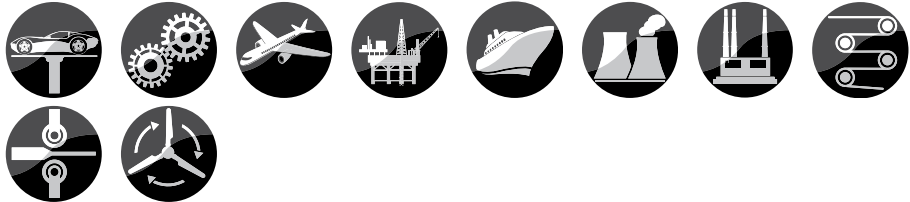


## HYDAC Lab Fluid Condition Sensor



### Applications



### Description

HYDACLab sensors are compact, multi-functional sensors for determining the condition of fluids in real-time. Operators are kept informed of changes in fluid condition as they occur and can immediately change the operating conditions accordingly. Changes in fluid condition that might occur due to aging or mixing with other fluids, for example, are indicated by measuring fluid temperature, relative moisture content and relative changes in fluid viscosity and fluid dielectric constant. Those measurements are available as analog signals or switching signals at the electrical output of the HYDACLab for activating warning devices or alarms.

Please contact Product Management to discuss your particular application for this product.

### Technical Details

Sensor Specifications	
Relative moisture content	0 to 100% of saturated concentration
Temperature measure range	-13° to 212°F
Dielectric constant ( $E_r$ )	1 to 10
Operating pressure - psi	< 725
Rated pressure - psi	8700
Fluid flow velocity	< 5m/s
Mechanical connection	G 3/4 DIN 3852 E
Tightening torque	22 lb-ft (30 Nm)
Parts in contact with media	Stainless Steel, FPM seal
Output Data - Humidity Measurement	
Output signal	4 to 20 mA at 0 to 100%
Calibration accuracy	≤ ±2% FS max
Accuracy	≤ ±3% FS typ*
Output Data - Temperature Measurements	
Output signal	4 to 20 mA for -13° to 212°F (-25° to 100°C)
Accuracy	≤ ±3% FS max
Output Data - Relative Changes in Dielectric Constant	
Output signal	12 mA ± 8 mA (corresponds to ± 30% Initial Value)
Accuracy	see below**
Switching Specifications	
Type	Signal 1 (Normally Closed) / PNP-transistor switching output / Switching level: ≥ (UB - 4 V)
Switching current	0.5 mA max.
Preset warning level SP1	Relative humidity ≥ 85% Temperature ≥ 80°C (176°F) Changes in relative dielectric constant ±15% (temp. comp.)
Environmental Condition	
Operating temperature range	-4° to 176°F
Storage temperature range	-40° to 194°F
Media Compatibility	HLP mineral oils (compatibility w/ HLP-D mineral oils is optionally available) HEES and HETG esters
CE mark	EN 61000-6-1 / 2 / 3 / 4
Environmental Protection	IP 67
Electrical Specifications	
Supply voltage, 2-wire	10 to 36 VDC
Residual ripple supply voltage	≤ 5%
Electrical Connection	5 pole, M12x1, male
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard
Weight	Approximately 205 g

### Approvals



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

\*Contact factory for other ranges

\*\*The accuracy of measurements of changes in relative dielectric constant vary according to the applications and the types of fluids involved, and the sensor's own calibration. More detailed information on this is available on request.

\*The max. accuracy achievable when measuring relative humidity is heavily dependent on the type of fluid additive. More precise information on this is available on request

\*\*The accuracy achievable when measuring the relative change in dielectric constant is dependent on the application, the type of oil and the individual calibration of the sensor. More detailed information is available on request.

## Model Code

HLB 1 X 0 8 - 1 C - 000 F1

### Variables

- 3 = Temperature
- = Relative Humidity
- = Relative change in dielectric constant (DC)

### Mechanical Connection

- 0 = G 3/4 A to DIN 3852

### Electrical Connection

- 8 = M12x1 plug, 5 pole (connector not included)

### Output Type, Signal 1

- 1 = NC switching signal

### Output Type, Signal 2

- C = 4 to 20 mA analog signal

### Modification Number

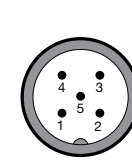
- 000 = Standard

### Seal Material

- F1 = FPM Seal (hydraulic oil)

## Pin Connections

M12x1, 5 pole



### Pin 1308

- 1 +U<sub>B</sub>
- 2 Signal 1
- 3 Ground
- 4 Signal 2
- 5 unused

Please contact Product Management to discuss your particular application for this product.

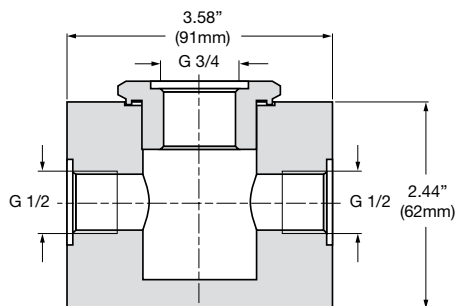
## ZBM 21

Mounting Block for HYDAC LAB

Part #03244260



## Dimensions



## Dimensions

