



## AquaSensor AS 3000

### Description

The AquaSensor AS 3000 is the further development of the proven AS 1000 series for the online detection of water in oils, particularly as a sensor for condition monitoring. It records the water saturation and the temperature of the operating fluid. The display allows you to view the current measured values or to adjust the parameter settings.

The measured values are output as a 4 ... 20 mA or 0 ... 10 V signal and are the basis for two parameterisable switching outputs.

The AS 3000 thus enables hydraulic and lubricating oils to be monitored accurately, continuously and online.

### Applications

- Mobile hydraulics
- Hydraulic and lubrication systems in industry

### Advantages

- 4 digit digital display, can be aligned in two axes
- User-friendly due to key programming
- Individual configuration
- Reliable on account of its compact, rugged design
- Economical sensor
- No calibration required for different oil types
- Pressure-resistant, even with pulsations
- Early detection of water problems thus preventing faults and unnecessary interruption to operations

### Technical specifications

Input data	
Level of saturation	0 to 100 %
Temperature	-25 to 100 °C / -13 to 212 °F
Operating pressure	-0.5 to 50 bar / -7.25 to 725 psi
Pressure resistance	≤ 630 bar / 9136 psi
Flow velocity	max. 5 m/s
Parts in contact with fluid	Mechanical connection: stainless steel / vacuum-metallised ceramic Seal: FKM or EPDM per type
Output data	
Analogue output	
Output signal (parameterisable)	4 to 20 mA ohmic resistance ≤ 500 Ω or 0 to 10 V ohmic resistance ≥ 1 kΩ corresponds to the measurement range factory setting selected in each case: 4 to 20 mA
Calibration accuracy	≤ ± 2 % FS max.
Accuracy in media measurements	≤ ± 3 % FS typ.
Pressure dependence	± 0.2 % FS / bar
Switching outputs	
Version (parameterisable)	PNP transistor outputs Normally open or normally closed Factory setting: normally closed
Allocation (parameterisable)	Degree of saturation or temperature Factory setting: degree of saturation (alarm 80% (SP 1), warning 60% (SP 2), activation temperature: 30 °C / 86 °F)
Switch current	maximum 1.2 A per output
Switch cycles	> 100 million
Ambient conditions	
Nominal temperature range (saturation)	0 to +80 °C / 32 to 176 °F
Storage temperature range	-40 to +80 °C / -40 to 176 °F
Fluid temperature range	-40 to +80 °C / -40 to 176 °F
Viscosity range	1 to 5000 mm <sup>2</sup> /s
Fluid compatibility	mineral oil based fluids, synthetic and natural esters per type
CE-mark	EN 61000-6-1 / 2 / 3 / 4
Protection class to DIN 40050	IP 67
Other data	
Supply voltage	18 to 32 V DC
Residual ripple of supply voltage	≤ 5%
Electrical connection	M 12x1, 5 pole
Display	4-digit, LED, 7-segment, red, height of digits 7 mm
Mechanical connection	G3/8 A acc. to DIN 3852
Torque value	25 Nm
Weight	~ 110 g

Note: reverse polarity protection, short circuit protection provided.  
FS (Full Scale) = relative to the full measuring range

## Order details

AS 3 0 0 8 - 5 - 000

### Type

AS = AquaSensor

### Measuring range

3 = 3000 Series

### Medium

0 = Mineral oils

1 = Phosphate ester (HFD-R)

### Mechanical connection

0 = G 3/8 A DIN 3852

### Electrical connection

8 = Male connector M12x1, 5 pin  
(female connector not supplied)

### Signal technology

5 = 2 switch outputs / 1 analogue output

### Modification number

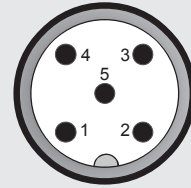
000 = standard

## Items supplied

- AquaSensor
- Operating manual

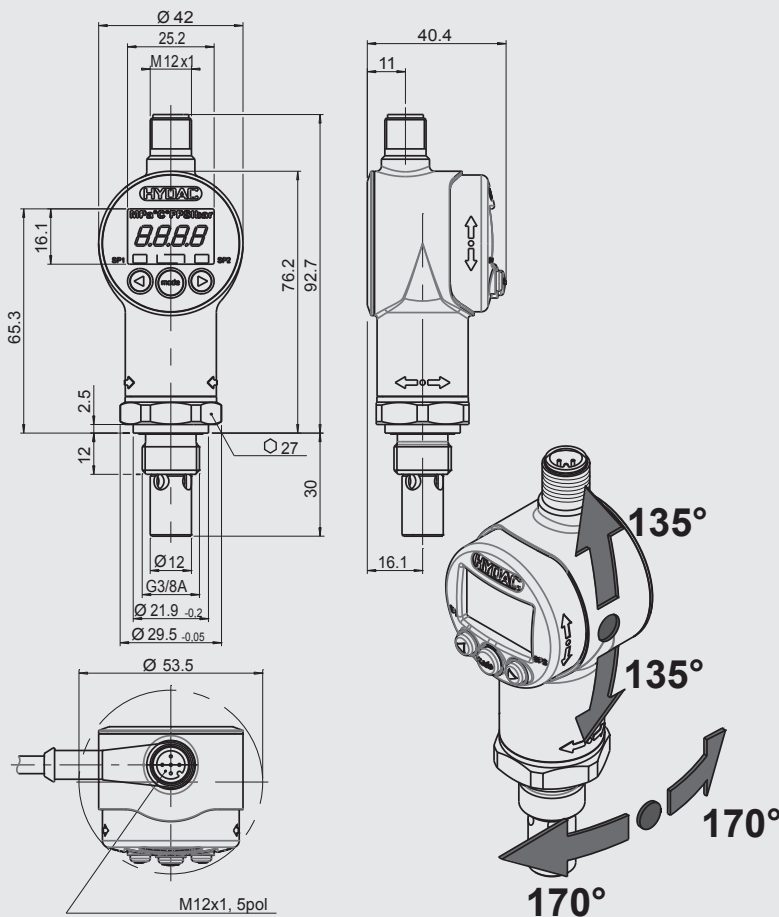
## Pin connections

M12x1, 5 pole



Pin	Assignment
1	Voltage supply 18-35 VDC
2	Analogue output
3	GND supply voltage
4	SP 1 (alarm)
5	SP 2 (warning)

## Dimensions



All dimensions in mm

## Accessories

### ZBE 08

Female connector, bent, shielded, 5 pin, M12x1  
Part no. 6006786

### ZBE 08S-02

Female connector, right-angled, with 2 m cable, shielded, 5 pin, M12x1  
Part no. 6019455

### ZBE 08S-05

Female connector, right-angled, with 5 m cable, shielded, 5 pin, M12x1  
Part no. 6019456

### ZBE 47S-05

Female connector, straight, with 5 m lead, shielded, 5 pin, M12x1  
Part no. 3484562

### PS5

Power supply unit with socket plug (female), 5 pole, M12x1  
Part no. 3399939

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the proper HYDAC department.

Subject to technical modifications.

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