



## AquaSensor AS 1000

### Description:

The AquaSensor AS 1000 is the further development of the successful AS 2000 series for online detection of water in oils, in particular as an OEM sensor for condition monitoring. It measures the water content relative to the saturation concentration (saturation point) and outputs the degree of saturation (saturation level) as a 4 .. 20 mA signal.


In addition the AS 1000 measures the temperature of the fluid and also provides this as a 4 .. 20 mA output signal.

The AS 1000 therefore enables hydraulic and lubrication oils to be monitored accurately, continuously and online.

### Special features:

- Reliable due to its compact and robust design
- Cost-effective sensor, also for use in OEM applications
- Not necessary to calibrate to different types of oil
- Pressure-resistant also during pulsations
- Wide fluid temperature range
- Early detection of water problems thereby preventing breakdowns and unnecessary interruption to operations.

### Technical specifications:

Input data	
Saturation level	0 ... 100 %
Temperature	-25 .. 100 °C
Operating pressure	-0.5 .. 50 bar
Burst pressure	≤ 630 bar
Parts in contact with medium	Mech. connection: Stainless steel / Vacuum-metallized ceramic Seal: Viton or EPDM
Output data	
Pin 2: Saturation level	
Output signal	4 .. 20 mA (corresponds to 0 .. 100 %) $R_{Lmax} = (U_B - 10 V) / 20 mA [k\Omega]$
Calibration accuracy	≤ ± 2 % FS max.
Accuracy in media measurements	≤ ± 3 % FS typ.
Pressure resistance	± 0.2 % FS / bar
Pin 4: Temperature	
Output signal	4 .. 20 mA (corresponds to -25 .. +100 °C) $R_{Lmax} = (U_B - 10 V) / 20 mA [k\Omega]$
Accuracy	≤ ± 2 % FS max.
Pin 5:	
	<b>HSI (HYDAC Sensor Interface)</b> Automatic sensor recognition
Ambient conditions	
Compensated temperature range	0 .. +90 °C
Operating temperature range	-40 .. +100 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range	-40 .. +125 °C
Viscosity range	1 .. 5000 cSt
Flow velocity	< 5 m/s
Fluid compatibility:	mineral oil based fluids, synthetic and natural esters
 mark	EN 61000-6-1 / 2 / 3 / 4
Protection class to DIN 40050	IP 67
Other data	
Supply voltage	12 .. 32 V DC
Residual ripple of supply voltage	≤ 5 %
Mechanical connection	G3/8 A DIN 3852
Torque value	25 Nm
Electrical connection:	M12x1, 5 pole
Weight	approx. 145 g

Note: Reverse polarity protection, short circuit protection are provided.  
**FS** (Full Scale) = relative to the complete measuring range  
**IV** (Initial Value)

## Model code:

AS 1 X 0 8 - C - 000

### Medium

- 0 = Mineral oils
- 1 = Phosphate ester

### Mechanical connection

- 0 = G3/8 A DIN 3852

### Electrical connection

- 8 = M12x1, 5 pole  
(connector not supplied)

### Signal technology

- C = Output 1 Pin 2 saturation level (4 .. 20 mA)  
Output 2 Pin 4 temperature (4 .. 20 mA)

### Modification number

- 000 = Standard

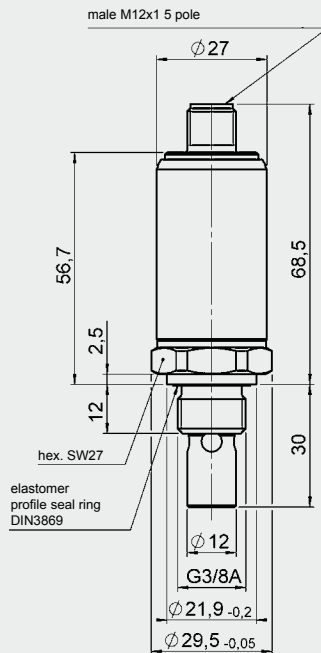
### Note:

On units with a different modification number, please read the label or the technical amendment details supplied with the unit.

### Accessories:

Appropriate accessories, such as electrical connectors, can be found in the Accessories section.

## Dimensions:



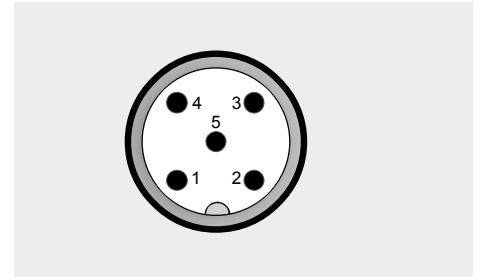
### Note:

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

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## Pin connections:



Pin	AS 1X08-C
1	+U <sub>B</sub>
2	Saturation level 4 .. 20 mA
3	0 V
4	Temperature 4 .. 20 mA
5	HSI*

\* **HSI** = **HYDAC** Sensor Interface (HYDAC's own communication interface)

## Display and read-out options:

### HDA 5500-1-1-xC-000

Digital Display Unit  
4 programmable switch outputs, which have been specifically designed for use with the AS 1000

HDA 5500-1-1-AC-000

Order no.: 908869

HDA 5500-1-1-DC-000

Order no.: 908870

### HMG 510

Portable 2-channel data recorder, specially designed for use with HSI and SMART sensors.

Order no.: 909889

### HMG 3000

Portable data recorder with full graphics colour display for indicating, displaying and editing measured values.

Order no.: 909439

Information on other read-out options can be found on our website at [www.hydac.com](http://www.hydac.com) or please contact your HYDAC representative.

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