



AquaSensor AS 1000

Description:

The AquaSensor AS 1000 is the culmination of continued development of the successful AS 2000 series for online detection of water in oils, in particular as an OEM sensor for fluid conditioning monitoring. It measures the degree of saturation and the temperature of the fluid.

In the analogue output version, the AS 1000 transmits the values for the degree of saturation and the temperature as a 4 .. 20 mA signal.

In the version with 2 switch outputs, the AS 1000 can be configured individually using the HYDAC service instrument HMG 3010, the Condition Monitoring Unit CMU 1000 and the interface module CSI-B-2.

The following parameters can be adjusted:

- Saturation level / temperature
- Switch points
- Switch mode of the switch outputs
- Switching direction
- Switch delay times

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
- Individual configuration
- Early detection of water problems thereby preventing breakdowns and unnecessary interruption to operations.

Technical data:

Input data

Saturation level	0 ... 100 %
Temperature	-25 .. 100 °C
Operating pressure	-0.5 .. 50 bar
Burst pressure	≤ 630 bar
Mechanical connection	G3/8 A DIN 3852
Torque value	25 Nm
Parts in contact with medium	Mech. connection: Stainless steel / Vacuum-metallized ceramic Seal: FPM or EPDM

Output data

Pin 2: Saturation level

Output signal	4 .. 20 mA (corresponds to 0 .. 100 %) $R_{Lmax} = (U_B - 10 V) / 20 \text{ mA} [\text{k}\Omega]$ or switch output (configurable)
Calibration accuracy	≤ ± 2 % FS max.
Accuracy in media measurements	≤ ± 3 % FS typ.
Pressure dependency	± 0.2 % FS / bar

Pin 4: Temperature

Output signal	4 .. 20 mA (corresponds to -25 .. 100 %) $R_{Lmax} = (U_B - 10 V) / 20 \text{ mA} [\text{k}\Omega]$ or switch output (configurable)
Accuracy	≤ ± 2 % FS max.

Pin 5: HSI (HYDAC Sensor Interface)
Automatic sensor recognition

Switch outputs

Type	PNP transistor outputs (configurable as N/O or N/C)
Switching current	max. 1 A per switch output

Environmental conditions

Compensated temperature range	0 .. +90 °C
Operating temperature range ¹⁾	-40 .. +100 °C / -25 .. +100 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range ¹⁾	-40 .. +125 °C / -25 .. +125 °C
Viscosity range	1 .. 5000 cSt
Flow velocity	< 5 m/s
Fluid compatibility	mineral oil based fluids, synthetic and natural esters

CE mark EN 61000-6-1 / 2 / 3 / 4
Protection class to IEC 60529 IP 67

Other data

Supply voltage	12 .. 32 V DC
Residual ripple of supply voltage	≤ 5 %
Weight	~ 145 g

Note: Reverse polarity protection, short circuit protection are provided.
FS (Full Scale) = relative to complete measuring range
¹⁾ -25 °C with FPM or EPDM seal, -40 °C on request

Model code:

AS 1 X 0 8 - X - 000

Medium

- 0 = Mineral oils
- 1 = Phosphate ester, e.g. Skydrol

Mechanical connection

- 0 = G3/8 A DIN 3852

Electrical connection

- 8 = Male 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)
- 2 = 2 switching outputs

Modification number

- 000 = Standard

Notice:

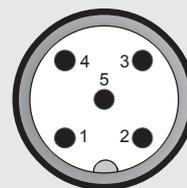
On instruments with a different modification number, please read the label or the technical amendment details supplied with the instruments.

Accessories:

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

Pin connections:

M12x1



Pin	AS 1X08-C	AS 1X08-2
1	+U _B	+U _B
2	Saturation level 4 .. 20 mA	SP 1
3	0 V	0 V
4	Temperature 4 .. 20 mA	SP 2
5	HSI*	HSI*

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

Display, read-out and configuration options:

HDA 5500-1-1-xC-000

Digital Display Unit with 2 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 displaying measured values with HSI and SMART sensors

Order no.: 909889

HMG 3010

Portable data recorder with full graphics colour display for indicating, displaying and editing measured values as well as for configuration of HSI and SMART sensors

Order no.: 920930

CMU 1000

Electronic evaluation unit for online measured value monitoring as well as for the configuration of HSI and SMART sensors

Order no. 920716

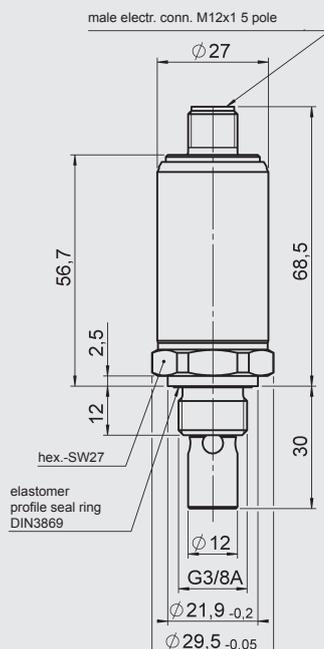
CSI-B-2

Interface module, enables configuration of HSI and SMART sensors using HYDAC PC software CMWIN

Order no. 920134

Information on other read-out options can be found on our website at www.hydac.com or please contact your HYDAC representative.

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.

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