



AquaSensor AS 1000

Saturation level

Temperature

2 switching outputs or
analogue output

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 saturation level and the temperature as a 4 .. 20 mA signal.

In the version with two switching outputs, the AS 1000 can be configured by the user via the HYDAC service units HMG 3010 and HMG 4000, the Condition Monitoring Unit CMU 1000 and the interface module CSI-B-2. The following parameters can be adjusted:

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

The AS 1000 therefore enables hydraulic and lubrication oils to be monitored accurately, continuously and online. As water problems are detected early on, malfunctions and unnecessary downtime can be reliably avoided.

Technical data:

Input data	
Saturation level	0 .. 100 %
Temperature	-25 .. 100 °C
Operating pressure	-0.5 .. 50 bar
Pressure resistance	≤ 630 bar
Mechanical connection	G3/8 A DIN 3852
Tightening torque, recommended	25 Nm
Parts in contact with fluid	Mechanical connection: stainless steel / vacuum-metallised ceramic Seal: FKM or EPDM
Output data	
Pin 2: Saturation level	
Output signal	4 .. 20 mA (corresponds to 0 .. 100 %) $R_{Lmax} = (U_B - 10 \text{ V}) / 20 \text{ mA [kW]}$ or switching output (configurable)
Calibration accuracy	≤ ± 2 % FS max.
Accuracy in media measurements	≤ ± 3 % FS typ.
Pressure dependence	± 0.025 % FS / bar
Pin 4: Temperature	
Output signal	4 .. 20 mA (corresponds to -25 .. +100 °C) $R_{Lmax} = (U_B - 10 \text{ V}) / 20 \text{ mA [kW]}$ or switching output (configurable)
Accuracy	≤ ± 2 % FS max.
Pin 5:	
HSI (HYDAC Sensor Interface) Automatic sensor recognition	
Switching outputs	
Type	PNP transistor outputs (configurable as N/O or N/C)
Switching current	maximum 1 A per switching 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 ²⁾	Mineral oil based fluids, synthetic and natural esters
CE mark	EN 61000-6-1 / 2 / 3 / 4
Protection class acc. to DIN EN 60529 ³⁾	IP 67
Other data	
Supply voltage	12 .. 32 V DC
Residual ripple of supply voltage	≤ 5 %
Current consumption	≤ 30 mA without outputs
Weight	~ 145 g

Note: reverse polarity protection, short circuit protection provided.

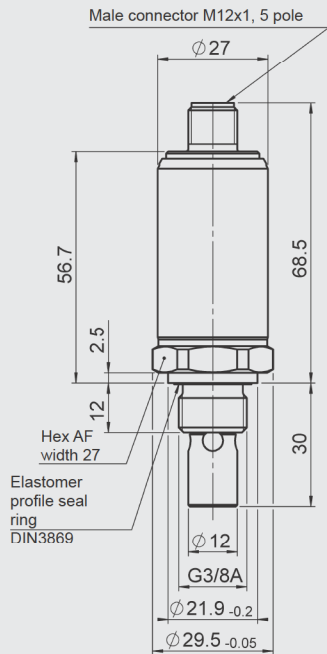
FS (Full Scale) = relative to complete measuring range

¹⁾ -25 °C with FKM seal, -40 °C on request

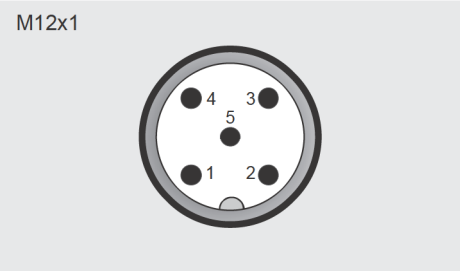
²⁾ Special fluids on request

³⁾ With mounted mating connector in corresponding protection class

Dimensions:



Pin connections:



Pin	AS 1X08-C	AS 1X08-2
1	+U _B	+U _B
2	Saturation level 4 .. 20 mA	SP2
3	0 V	0 V
4	Temperature 4 .. 20 mA	SP1
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 switching outputs, 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 measuring instrument, specially designed for use with HSI and SMART sensors
Order no.: 909889

HMG 3010 and HMG 4000
Portable data recorders with fully graphics-capable colour display for displaying, recording and processing measured values as well as for configuring of HSI and SMART sensors

CMU 1000
Electronic evaluation unit for online monitoring of measured value as well as for the configuration of HSI and SMART sensors
Order no. 920718

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.

Model code:

AS 1 X 0 8 - X - 000

Fluid ¹⁾
0 = operating fluid mineral oil-based
1 = operating fluid phosphate ester-based

Mechanical connection
0 = G3/8 A DIN 3852

Electrical connection
8 = male M12x1, 5 pole
(mating connector not supplied)

Output signal
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

Note:
¹⁾ Special fluids on request

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

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.