



## AquaSensor AS 3000 with IO-Link Interface



### Description:

The AS 3000 with its IO Link communication interface and integrated digital display is used for the online detection of water in oils, particularly as a sensor for condition monitoring. In addition, the AS 3000 measures the temperature of the operating fluid.

The instrument has a switching output and additional output that can be configured as switching or analogue (4 .. 20 mA or 0 .. 10 V).

Compared with the standard version, the IO-Link interface enables bidirectional communication between the device and the control. Parameterisation and cyclical transmission of process and service data is therefore possible.

The AquaSensor AS 3000 with communication interface IO-Link according to specification V1.1 has been specially designed to connect sensors in automation systems.

Typical fields of application are machine tools, handling and assembly automation, intralogistics or packaging industry.

### Special features:

- IO Link interface
- 1 PNP transistor output
- Additional signal output, can be configured as PNP transistor switching output or analogue output
- Not necessary to calibrate to different types of oil
- Wide fluid temperature range
- 4-digit display
- Display rotates in two planes for optimal alignment

### 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	
Output signals	Output 1: PNP transistor switching output Output 2: can be configured as PNP transistor switching output or analogue output
Calibration accuracy	≤ ± 2 % FS max.
Accuracy in media measurements	≤ ± 3 % FS typ.
Pressure dependence	± 0.2 % FS / bar
Analogue output	
Signal	selectable: 4 .. 20 mA      load resistance max. 500 Ω 0 .. 10 V      load resist. min. 1 kΩ corresponds to measuring range selected
Switch outputs	
Type	PNP transistor switching outputs
Assignment	Selectable: Saturation level or temperature
Switching current	max. 250 A per switching output
Switching cycles	> 100 million
Parameterisation	
	<b>Via IO-Link interface, with HYDAC programming device HPG 3000 or push-buttons on the AS 3000</b>
Environmental conditions	
Compensated temperature range	0 .. +80 °C
Operating temperature range	-25 .. +80 °C
Storage temperature range	-40 .. +80 °C
Fluid temperature range <sup>1)</sup>	-40 .. +100 °C / -25 .. +100 °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	18 .. 35 V DC
Current consumption	≤ 0.590 A with active switching outputs ≤ 90 mA with inactive switching outputs ≤ 110 mA with inactive switching output and analogue output
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  
<sup>1)</sup> -25 °C with FPM or EPDM seal, -40 °C on request

## Setting options:

All terms and symbols used for setting the AS 3000 as well as the menu structure comply with the specifications in the VDMA Standard.

## Setting ranges for the switch outputs:

Measuring range	Lower limit of RP	Upper limit of SP
0..100 %	1 %	100 %

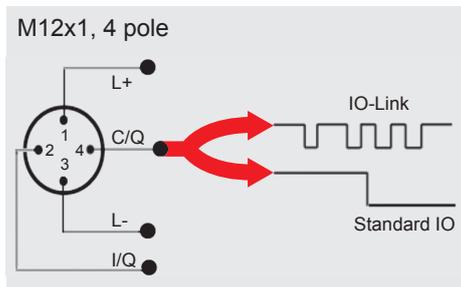
Measuring range	Minimum difference betw. RP and SP	Increment*
0 .. 100	1 %	0.2 %
-25 .. 100 °C		0.1 °C

\* All ranges given in the table are adjustable by the increments shown.  
SP = switching point  
RP = switch-back point

## Additional functions:

- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on and switch-off delay adjustable from 0.00 .. 99.99 seconds
- Analogue output signal selectable 4 .. 20 mA or 0 .. 10 V

## Pin connections:



Pin	Signal	Description
1	L+	Supply voltage
2	I/Q	Switching output (SP2) / analogue output
3	L-	Gnd
4	C/Q	IO-Link communication / switching output (SP1)

## IO-Link-specific data:

Baud rate	38.4 kBaud *
Cycle time	2.5 ms
Process data width	16 Bit
Frame type	2.2
Specification	V1.1

\* Connection with unshielded standard sensor line possible up to a max. line length of 20 m.

Download the IO Device Description (IODD) from:

<http://www.hydac.com/de-en/service/downloads-software-on-request/>

## Model code:

**AS 3 X 0 6 - L - 000**

### Medium

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

### Mechanical connection

- 0 = G3/8 A DIN 3852

### Electrical connection

- 6 = Male M12x1, 4-pole (connector not supplied)

### Output

- L = IO Link interface

### Modification number

- 000 = Standard

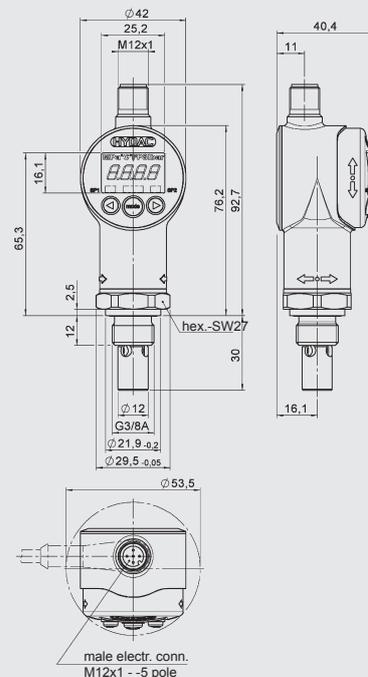
## Notes:

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

## Accessories:

Appropriate accessories, such as electrical connectors, mechanical connection adaptors, etc. can be found in the Accessories brochure.

## 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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