



WIO200

Water in oil sensor

Datasheet 111197-902 Rev. 1.09

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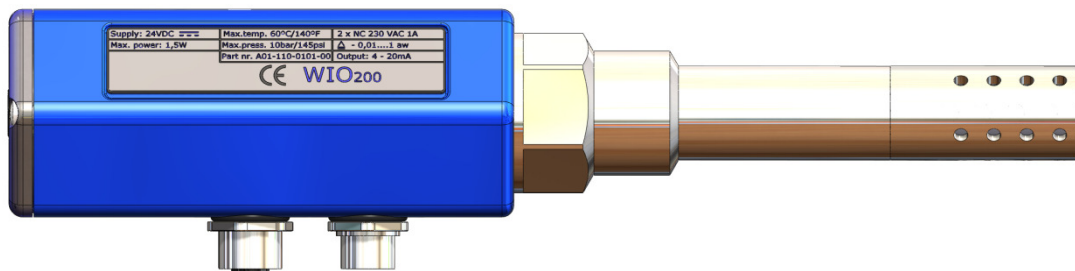


Introduction

This datasheet provides technical data regarding the WIO (water in oil) sensor system. The system consist of a WIO Sensor, terminal box and cables. The WIO Sensor is an insitu sensor which measures water content in lubrication oils on ship engine or similar. The Terminal box connects the sensor to power supply and to the ships surveillance system. The supplied cables are for connection between the WIO Sensor and the Terminal box



Technical Sensor Data

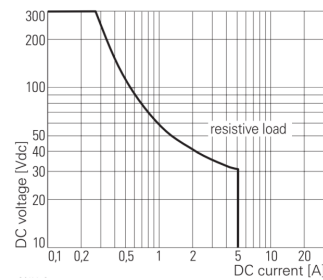


Output	
Analogue output	4 – 20 mA (galvanic isolated)
Max. Load (analogue output)	< 500Ω ¹
Measurement Range (4 – 20 mA)	0,01 – 1,00 a _w
Accuracy (0,05-0,95 a _w)	± 0,03 a _w
Accuracy (outside 0,05-0,95 a _w)	± 0,05 a _w
Resolution	< 0,004 a _w
Input	
Supply nominal voltage	24V DC ± 20%
Max. residual voltage ripple	10%
Maximum Load current	58 mA + output load current
Max. Power input	< 2,4 VA
Relays	
Contact arrangement	Normally Open (N-O)
Rated voltage	250 VAC
Max. switching voltage	400VAC
Rated current	5A
Breaking capacity max.	1250VA

¹ This specification is under the assumption that the number of Terminal boxes with Display attached to the WIO is maximum one. If more Terminal boxes with Display are to be connected, then call PAJ for advice.



Max. DC Load breaking capacity



Relay 1	„HA alarm“
Relay 2	„HHA alarm“
Default HA alarm	0,50 a _w
Default HHA alarm	0,90 a _w
Media for measurement	
Lubrication oil	Grade SAE 30/TBN 5-10
Max. Oil temperature	85 °C
Max. Oil pressure	40 Bar
Response times	
Delay before valid data from start-up	< 30 s
Delay before valid data from installation (first use)	10 minutes
Device Failure Indication	
Analogue output	< 2 mA
Manual test	
Press sensor button for 5 seconds	HA Alarm turns on for 5 seconds
Press sensor button for 10 seconds	HHA Alarm turns on for 5 seconds
Miscellaneous	
Ambient Temperature, running / storage	0 - +85 °C / -30 - +85 °C
Relative humidity for running and storage	10% up to 95%, no condensation
Re calibration	Recommended with max 3 years interval
Warranty	2 years
Cables	Shielded cables, 2 meter, PG9 plugs
Approvals	
Germanischer Lloyd	Cert. no 75 956 – 09 HH.
Enclosure	
Weight	626 grams (1,38 Lbs.)
Connection (mechanical)	ISO 228-1 G ¾ male thread.
Enclosure material	Stainless Steel
Protective type	IP66



Technical Data Terminal Box



The Sensor is connected to the Terminal box. Power must be connected to the terminal box, and the 4-20 mA and relay alarm output can be access thru the Terminal box.

Enclosure	
Weight	626 grams (1,38 Lbs.)
Connection (mechanical)	2 x PG9 connectors (male + female)
Enclosure material	Aluminium
Protective type	IP66
Warranty	2 years
Order	
Order number	A01-110-0102-00



Technical Data Terminal Box



The display is an indication of the water level in the oil. Display can be shipped as PPM (H₂O), % (H₂O) or a_w

Enclosure	
Weight	626 grams (1,38 Lbs.)
Connection (mechanical)	2 x PG9 connectors (male + female)
Enclosure material	Aluminium
Protective type	IP66
Warranty	2 years
Display version - a _w	
Accuracy (0,05-0,95 a _w)	± 0,03 a _w
Resolution	<0,004 a _w
Order No.	Call
Display version - PPM (H ₂ O)	
Accuracy (0,05-0,95 a _w)	30% (FS)
Resolution	10 ppm
Order No.	A01-110-0104-00
Display version – % (H ₂ O)	
Accuracy (0,05-0,95 a _w)	30% (FS)
Resolution	10 ppm
Order No.	A01-110-0106-00

Upon ordering a PPM (H₂O), % (H₂O) display the customer must specify the water saturation point in PPM of the used oil at the preferred working temperature of the oil. The saturation point is typically between 3000-10000 PPM. Alternatively the customer can ship 10 liters of oil to PAJ for inspection including specification of the working oil temperature.

Dimensions (in mm):

