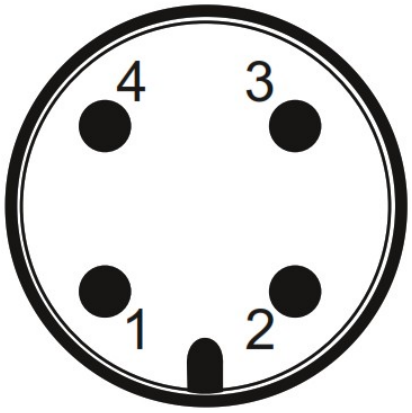
E E ELEKTRONIK MOP301 Moisture in Oil Probe with Modbus RTU User Guide

QUICK GUIDE
MOP301 – Moisture in Oil Probe with Modbus RTU
Find this document and further product information on our website at www.epluse.com/mop301.

Electrical Connection

Important note:
The manufacturer cannot be held responsible for personal injuries or damage to property as a result of incorrect handling, installation, wiring, power supply and maintenance of the device.



M12 device plug front view

Pin number	Function
1	Supply voltage 24 V DC class III (Europe) / class 2 (North America)
2	RS485 B (D-)
3	GND
4	RS485 A (D+)

Modbus Setup

	Factory settings	Selectable values
Baudrate	9 600	9 600, 19 200, 38 400, 57 600, 115 200
Data bits	8	8
Parity	Even	None, even, odd
Stop bits	1	1, 2
Modbus address	70	1…247

The recommended settings for multiple devices in a Modbus RTU network are 9600, 8, Even, 1. The MOP301 represents 1 unit load in a Modbus network.
Device address, baud rate, parity and stop bits can be set via:

1. PCS10, Product Configuration Software and the appropriate configuration cable HA011018. The PCS10 can be downloaded free of charge from **www.epluse.com/pcs10**.
2. Modbus protocol in the register 60001 (0x00) and 60002 (0x01).
   See Application Note Modbus AN0103 (available at **www.epluse.com/mop301**).

The serial number in ASCII format is located at read register address 30001-30008 (16 bits per address). The firmware version is located at register address 30009 (bit 15…8 = major release; bit 7…0 = minor release). The sensor name is located at register address 30010.

Communication settings (INTEGER 16 bit)		
Parameter	**Register number 1) [DEC]**	**Protocol Address 2) [HEX]**
Write register: function code 0x06		
Modbus address (Slave ID)	1	0x00
Modbus protocol settings 3)	2	0x01
Device information (INTEGER 16 bit)		
Parameter	**Register number 1) [DEC]**	**Protocol Address 2) [HEX]**
Read register: function code 0x03 / 0x04		
Serial number (as ASCII)	1	0x00
Firmware version	9	0x08
Sensor Name	10	0x09

1. Register number starts from 1.
2. Protocol address starts from 0.
3. For Modbus protocol settings see Application Note Modbus AN0103 (available on **www.epluse.com/mop301**).

Modbus Register Map

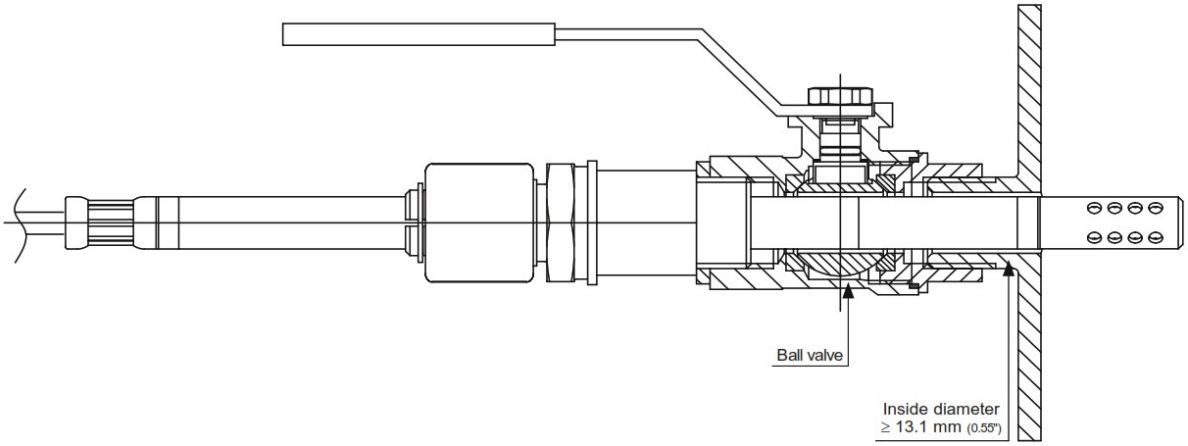
FLOAT 32 bit:

Parameter	**Unit**	**Register number 1) [Dec]**	**Register address 2) [HEX]**
Read register: function code 0x03 / 0x04			
Water activity aw	–	1135	0x46E
Water content x	ppm	1141	0x474
Temperature T	°C	1003	0x3EA
	°F	1005	0x3EC
Oil parameter A	–	224	0xDF
Oil parameter B	–	226	0xE1
Write register: function code 0x10			
Oil parameter A 3)	–	101	0x64
Oil parameter B 3)	–	103	0x66

1. Register number starts from 1
2. Register address starts from 0
3. **Examples:** Writing Parameter A -2663.30005 decimal: E7 10 00 64 00 02 04 74 CD C5 26 E5 BA
   Writing Parameters A and B -1663.30005 and 7.3705 decimal: E7 10 00 64 00 04 08 E9 9A C4 CF DB 23 40 EB AB 61
   If two parameters are to be uploaded, it is recommended to write them with a single command.

Installation

Please note:
Continuous oil flow allows for short response time. In such installations, place the sensor with the perforated filter at least partially within the oil.



Mounting example with a ball valve (not included in the scope of supply).
For further mounting options, please refer to the user manual on our website: **www.epluse.com/mop301**

INFORMATION
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Documents / Resources

E E ELEKTRONIK MOP301 Moisture in Oil Probe with Modbus RTU [pdf] User Guide
MOP301 Moisture in Oil Probe with Modbus RTU, MOP301, Moisture in Oil Probe with Modbus RTU, Moisture in Oil Probe, Oil Probe, Probe

References

- E+E **Sensor Technology: Humidity, CO2, Flow & Temperature Measurement**