

# MiO-21

## Moisture in Oil Transmitter (ppm Meter)



### DESCRIPTION

MiO-21 is a fast, reliable and accurate online detector for water activity (aw) in oil and temperature (T). It is very suitable for integration in OEM application with its rugged housing and excellent performance.

MiO-21 is ideal for online monitoring of moisture in lubrication, hydraulic or insulation oil, which is significant for the long-term performance and preventive maintenance of plant and machinery.



### MAJOR FEATURES

- Continuous measurement of water activity in oil and temperature
- Professional calculation of moisture content in ppm for transformer oil
- Accurate and reliable, robust design under hostile environments
- Convenient local & remote calibration
- Excellent pollution & pressure tolerance
- Compact, easy for integration
- Analog and Digital Signals Output

## TECHNICAL PARAMETERS

### Water activity

Measurement range	0 ... 1 aw	
Accuracy	0 ... 0.6	± 0.02 aw
	0.6 ... 1	± 0.03 aw
Resolution	0.001 aw	
Response time (typical)	< 1 min	

### Water in oil

Measurement range	0...100ppm, 500ppm, 1000ppm, 2000ppm or customized Accuracy ±10% or 10ppm (choose the higher one)
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### Temperature

Measurement range	-40 ... 120 °C
Accuracy (at +25 °C)	± 0.3 °C
Working temperature	-40 ... +80 °C
Storage temperature	-40 ... +80 °C Oil
temperature permitted	-40 ... +120 °C

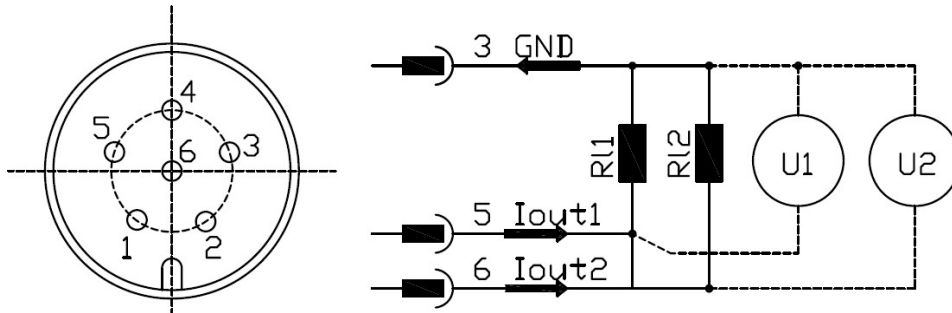
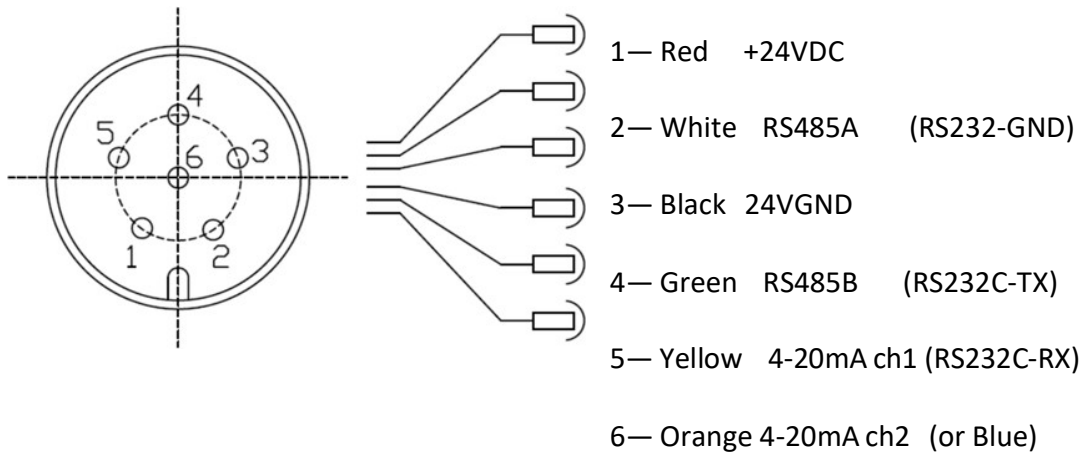
### Output

Digital signal	RS485 MODBUS RTU, RS232 (optional)
Analog signal	4~20mA, resistive load 200...500Ω

### Others

Housing material	316 & 304 stainless steel
Weight	200g (transmitter), 270g(package)
Package size	172×117×53 mm carton
Ingress Protection	IP65
Mechanical connections	G 1/2" ISO or 1/2" NPT
Pressure range	Max 20 bar (confirm with ACT for other ranges)
Resistance load	200 ... 500 Ω
Supply voltage	DC 9V-36V(RS485 communication), DC15V-36V(@4-20mA)
Supply current	<5mA+load current
Cable specification	M8*1, 6 pin
Cable length	2 m
Standard applied	CE certified, EN61326-1, EN61000-3, EN61010 class B

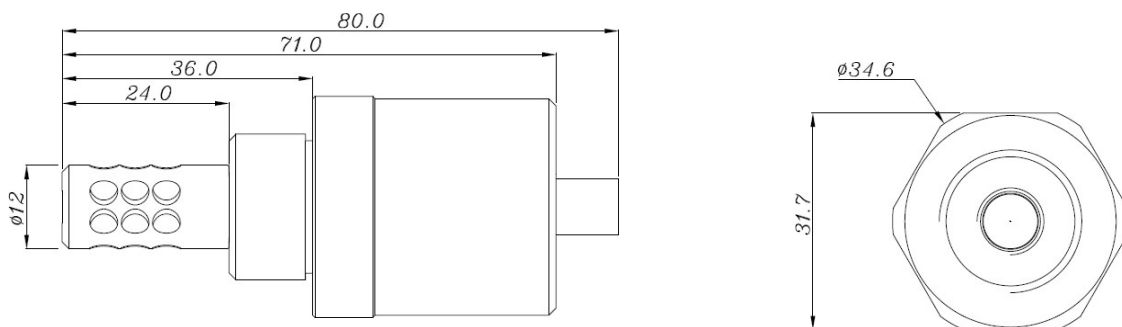
## CONNECTOR DEFINITION



### Note:

For 4-20mA output connection, we will recommend load resistance of 250Ω or 500Ω (better 500Ω) for RL1 & RL2. If you need higher than 500Ω or lower than 100Ω, please confirm with ACT upon order.

## STRUCTURE DIMENSION (MM)



## OPTION & PARTS

Stainless steel filter USB-RS485  
 converter USB-RS232 converter Seal  
 washer: ISO G1/2" |  
 Connecting cable: 2m, M8 screw thread, 90°bend angle  
 3m, M8 screw thread, 90°bend angle  
 Display and control unit: MiO-21D (optional)



## ORDER INFO

Moisture in Oil and Temperature Transmitter		MiO-21					
Measurement range	0...1 aw + -40...120°C	1					
	0...100 ppm + -40...120°C <sup>1)</sup>	2					
	0...__ppm + -40...120°C	3					
Measurement parameters	aw + T		1				
	ppm + T		2				
Signal Output	RS485 modbus RTU			1			
	RS485+4-20mA			2			
	RS232			3			
4-20mA Ch 1	No				A		
	T -40 ...120°C				B		
	Others __ ...__°C				C		
4-20mA Ch 2	No					A	
	aw 0 ...1					B	
	ppm 0 ...__ppm					C	
Mechanical connection	G 1/2" ISO pipe thread						A
	1/2" NPT taper thread						B

1) ppm is only applicable to mineral transformer oil. If you need to measure ppm value in other oil, please contact us.

## EXAMPLE FOR ORDER:

### MiO-21- 222BCA

Measurement range: 0...100 ppm + -40...120°C

Measurement parameters: ppm + T

Output: RS485+4-20mA

4-20mA Ch 1: T -40 ...120°C

4-20mA Ch 2: ppm 0 ...100 ppmT range: -40 ... 120°C

Mechanical connections: G1/2" ISO