



Measuring Head MF 010-O

The Durable Alternative to the Electrochemical Sensor Self Regulating and Error Protected

The dynamic measuring head MF 010-O consists of a zirconium dioxide chamber coated with glass. The chamber is periodically filled and emptied with the gas containing an unknown concentration of oxygen. As the partial pressure of oxygen is measured directly, the measuring head MF 010-O has several advantages compared to a conventional zirconium dioxide measuring head:

- Linear output signals.
- Concentration of oxygen can be detected in a range of 0 to 100%. Measuring precision is very high (1%).
- No reference gas is needed for calibration. The measuring head is self regulating and error protected.
- Very high life-expectancy.
- Low energy consumption.
- Does not depend on the mixture of gas to be measured.
- Independent of temperature.
- Flexible in use and adaptable to client specifications.
- TÜV approval



The dynamic measuring head MF 010-O is perfectly suited for applications where any given concentration of oxygen has to be measured, for example compost formulation plants, combustion facilities, bio technical and medical systems, aviation as well as silos in farming.

Technical Data

Transmitter		
Power Supply	Connector Socket	5 pins round connection M12 screw locker IP 67
Connections	Voltage	24 V DC
	Current	350 mA
	1 (in)	24 V DC +/- 2 %
	2 (bi)	Impulse and error external calibration
	3 (in)	GND
Resolution	4 (out)	0 to 10 V, linear, impedance 100 Ω or 4-20 mA please state with order
	5	PE - ground
Resolution	12 bit	
Temperature	-10°C to +50°C	
Housing	Aluminium	red
Housing protection	IP 54	
Weight		
Size	77 x 30 x 20 mm	
Sensor		
Heating-up time	approx. 5 min	
Measuring range	0,1 - 25 % Vol O ₂	*
Accuracy	± 1 %	
Repeatability	± 1 %	
Temperature	up to +250°C	
Exhaust gas velocity	up to 5 m/s	
Reaction time	approx. 3 s	
Tube	Length	220 mm**
	Diameter	12 mm
	Material	V2A

* Other ranges of request.

** Other lengths of request.

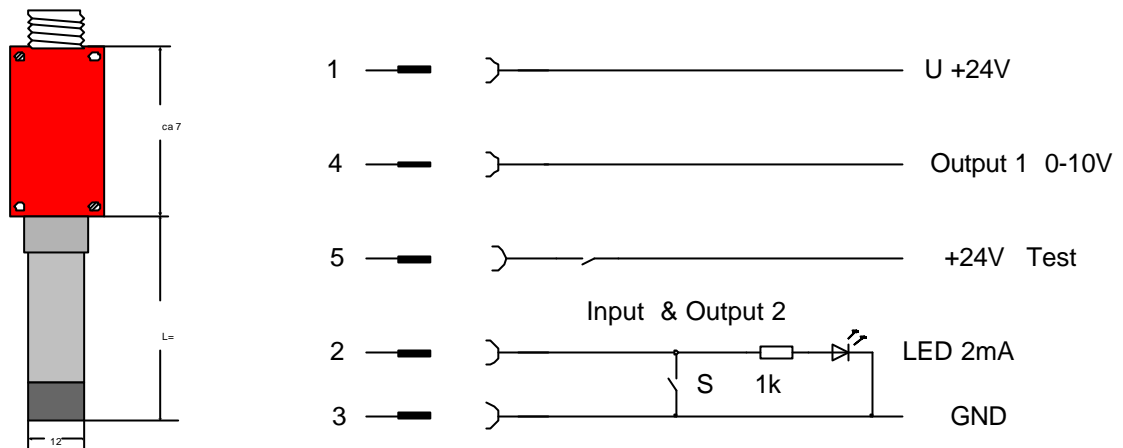


Figure 1: Measuring Head MF 010-O and pin connections

Calibration

The measuring head has to be exposed for at least 16 seconds to the atmosphere containing 20,9 Vol % O₂. Then switch S* is closed for at least 2 seconds and the measuring head calibrates automatically. For calibration the oxygen concentration has to be within the tolerance range of the measuring head of 10 %. Is the oxygen concentration outside the tolerance range, output at pin 2 (see fig.1) is 5 V for "error". Output at pin 2 is 0 V for "hardware error". Pin 4 can be adjusted after successful calibration. Pin 2 is not adjustable.

(*Only for the measure range 0,1 to 25 Vol % available. For all other ranges, the calibration results from the potentiometer).

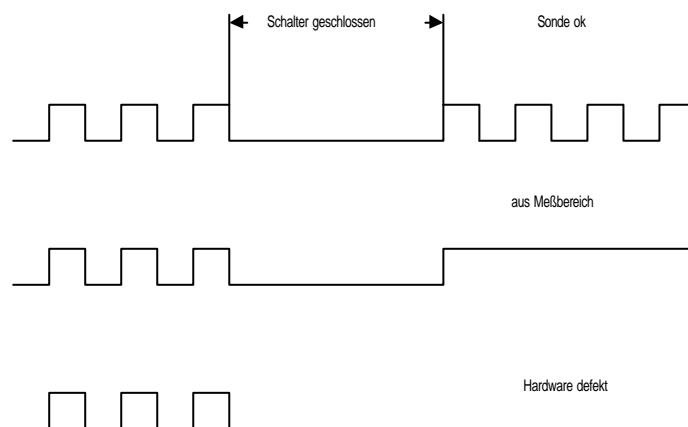


Figure 2: Output signals of Pin 2

Technical details subject to change