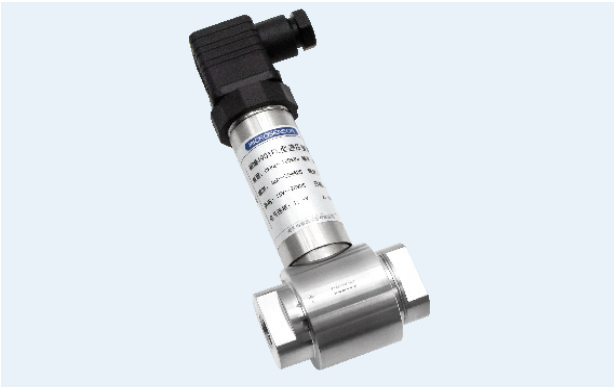
Differential Pressure Transmitter for Oxygen Measurement

MDM4901FL



Applications

- Medical & Pharmaceutical
- Aerospace & Aviation
- Firefighting
- Submarine

Features

- Laser welding, fully sealed construction
- Reversed polarity and transient overcurrent/ overvoltage protection, conforming to EMI protection requirements
- CE, EAC certified and RoHS compliant

Introduction

MDM4901FL Differential Pressure Transmitter is a high-precision, high-stability, and high-safety instrument designed for oxygen measurement. Filled with Fluorinated® oil, it ensures reliable performance and long-term stability.

Widely used in the medical and pharmaceutical industries, it provides accurate gas pressure measurement in medical oxygen systems and storage tanks. Its cleaning process complies with ISO 15001 and ASTM G93, ensuring suitability for high-purity environments.

Specifications

Range	0bar ～ 0.4bar…35bar
Overpressure	Positive pressure: ≤ 2 times FS; Negative pressure: No overpressure allowed
Max. static pressure	≤ 200bar
Pressure type	Differential pressure
Accuracy	Refer to Measuring Range & Accuracy
Long-term stability	±0.5%FS/year (≤ 2bar)
	±0.2%FS/year (＞ 2bar)
Operating temperature	-30°C～ 80°C (B1, B11)
	-20°C ～ 70°C (B2, cable material: PE)
	-20°C ～ 80°C(B2, cable material: PUR)
Storage temperature	-40°C～ 120°C (B1, B11)
	-20°C～ 85°C (B2)
Vibration	10g, 30Hz ～ 2000Hz
Shock	100g, 11ms
IP rating	IP65
Weight	≤ 400g

Measuring Range & Accuracy

Differential Pressure (DP)

Unit	Measuring Range	Accuracy	Overpressure	Code
kPa	0 - 40	±0.5%FS	100	K040
	0 - 50		100	K050
	0 - 60		100	K060
	0 - 70		100	K070
	0 - 80		200	K080
	0 - 90		200	K090
	0 - 100		200	K100
	0 - 160		300	K160
	0 - 200		400	K200
	0 - 250		500	K250
	0 - 300		600	K300
	0 - 400		1000	K400
	0 - 500		1000	K500
	0 - 600		1000	K600
	0 - 700		1400	K700
	0 - 800		1600	K800
	0 - 900		1800	K900
MPa	0 - 1	±0.5%FS	2	M1D0
	0 - 1.6		3	M1D6
	0 - 2		4	M2D0
	0 - 2.5		5	M2D5
	0 - 3		6	M3D0
	0 - 3.5		6	M3D5
psi	0 - 5	±0.5%FS	10	P005
	0 - 10		15	P010
	0 - 15		20	P015
	0 - 30		45	P030
	0 - 60		150	P060
	0 - 100		150	P100
	0 - 160		300	P160
	0 - 200		300	P200
	0 - 300		450	P300
	0 - 500		750	P500

Unit	Measuring Range	Accuracy	Overpressure	Code
mbar	0 - 400	±0.5%FS	1000	m400
	0 - 500		1000	m500
	0 - 600		1200	m600
	0 - 700		1400	m700
	0 - 800		1600	m800
	0 - 900		1800	m900
bar	0 - 1	±0.5%FS	2	B001
	0 - 1.6		3	B1D6
	0 - 2		4	B002
	0 - 2.5		5	B2D5
	0 - 3		6	B003
	0 - 4		10	B004
	0 - 5		10	B005
	0 - 6		10	B006
	0 - 7		14	B007
	0 - 8		16	B008
	0 - 9		18	B009
	0 - 10		20	B010
	0 - 16		30	B016
	0 - 20		40	B020
	0 - 25		50	B025
	0 - 30		60	B030
	0 - 35		60	B035

Thermal error

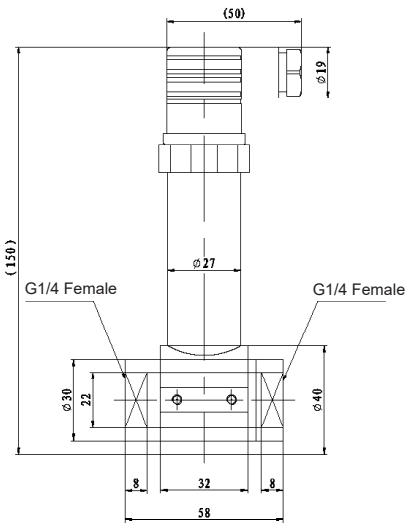
Zero thermal error	±0.03%FS/℃（≤ 1bar）
	±0.02%FS/℃（> 1bar）
Span thermal error	±0.03%FS/℃（≤ 1bar）
	±0.02%FS/℃（> 1bar）

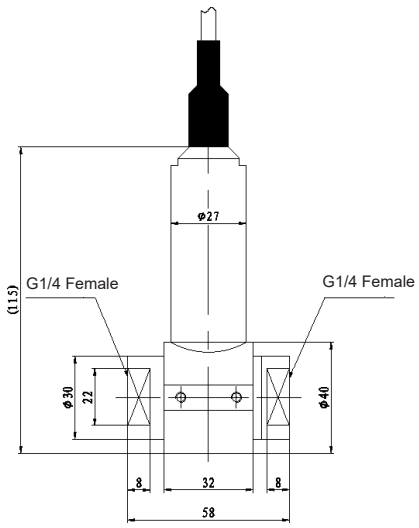
Output Signals

Output signal	Supply voltage	Output type	Load resistance
4mA~20mA DC(E)	15V~28V DC (Intrinsically safe powered by safety barrier)	2-wire	≤(U-15)/0.02(Ω)
0V~5V DC(J)		3-wire	> 10 kΩ
1V~5V DC(F)			
0V~10V DC(V)			

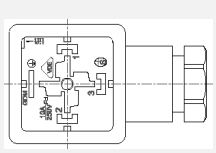
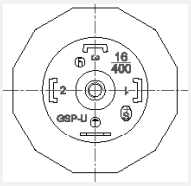
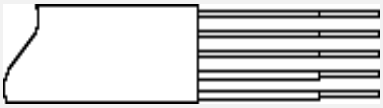
Outline Construction

Unit: mm





Electrical Connection

Definition	4-pin connector（B1）		Cable（B2）	
				
	Current 2-wire	Voltage 3-wire	Current 2-wire	Voltage 3-wire
+V	1	1	Red	Red
+OUT	2	3	Black	White
GND	Null	2	Null	Black

Construction Materials

Wetted Parts

Isolated diaphragm: Stainless steel 316L

Pressure port: Stainless steel 304/Stainless steel 316L

Non-Wetted Parts

Housing: Stainless steel 304/ Stainless steel 316L

Cable: PE/PUR

Order Guide

MDM4901FL	Differential Pressure Transmitter
Range	Measuring range 0bar ～ 0.4bar…35bar
XXXX	Range-specific code

Code	Output signal
E	4mA~20mA DC
J	0V~5V DC
F	1V~5V DC
V	0V~10V DC

Code	Power supply
V13	15V~28V DC

Code	Accuracy
A2	±0.5%FS

Code	Construction material		
	Isolated diaphragm	Pressure port	Housing
22	SS 316L	SS 304	SS 304
24	SS 316L	SS 316L	SS 316L

Code	Process connection
C4	G1/4 Female
C8	NPT1/4 Female

Code	Electrical connection
B1	4-pin connector
B2	Cable
B11	4-pin connector with 1.5 m PVC cable

Code	Cable material
P1	PE (standard)
P2	PUR
N	None (optional for non-cable connection)

Code	Cable length (unit: m)
N	None (optional for non-cable connection)
L001	1
L1D5	1.5
L002	2
L003	3
L005	5
L006	6
L007	7
L008	8
L009	9
L010	10

Code	Accessory
N	None
M6	M6 digital indicator
M7	M7 digital indicator
Yb3	Yb junction box (3-core terminals)
Yc3	MS200 (3-core terminals)
Yd	PD140
YeM6	Ye（M6）
YeM7	Ye（M7）
Ye	Ye（without indicator）

MDM4901FL	M3D5	E	V13	A2	22	C4	B2	P1	L1D5	N	The complete spec.

Notes

1. M6 or M7 indicators are only optional for transmitters with a 4mA~20mA output signal, with a power supply of ≥ 16V DC.
2. The ambient temperature of transmitter should be -20°C~ 70°C with M6 indicator, while -10°C~ 60°C with M7 indicator.
3. To ensure safe and reliable operation, a three-valve manifold should be installed between the measurement point and the transmitter, allowing the medium be applied the high- and low-pressure sides of the differential pressure transmitter gradually and evenly.
4. Ensure the static pressure at the measurement point does not exceed 200bar, and the overpressure on the high- and low-pressure sides of the transmitter remains within specified limits.
5. For other special requirements, please consult with the MICROSENSOR and specify them in the order.