



METALLUX

Swiss technology at your service



ME900/MEP900 datasheet

MONOLITHIC PIEZORESISTIVE CERAMIC PRESSURE TRANSDUCER

Metallux ME900 are ready to use monolithic pressure transducers made with 9 mm diameter ceramic cell mounted in dedicated housing. ME900 works following the piezoresistive principle, where the Wheatstone bridge is screen printed directly on one side of the ceramic diaphragm by means of thick film technology and signal conditioning electronics are added to generate 0.5...4.5 V ratiometric output. Pressure and temperature calibration is done electronically with the on-board ASIC and can be performed in bar or in psi.

Electronics provide offset and span correction when temperature changes. Aging detection is constantly performed. This new method guarantees precision and long-term stability.

The Metallux ME900 meets EMC requirements. The ASIC stores production lot specific data for sensor traceability and allows custom calibration.

Due to the excellent chemical resistance of the the Al₂O₃ ceramic, the ME900 sensors are suitable for nearly all aggressive media.

FEATURES

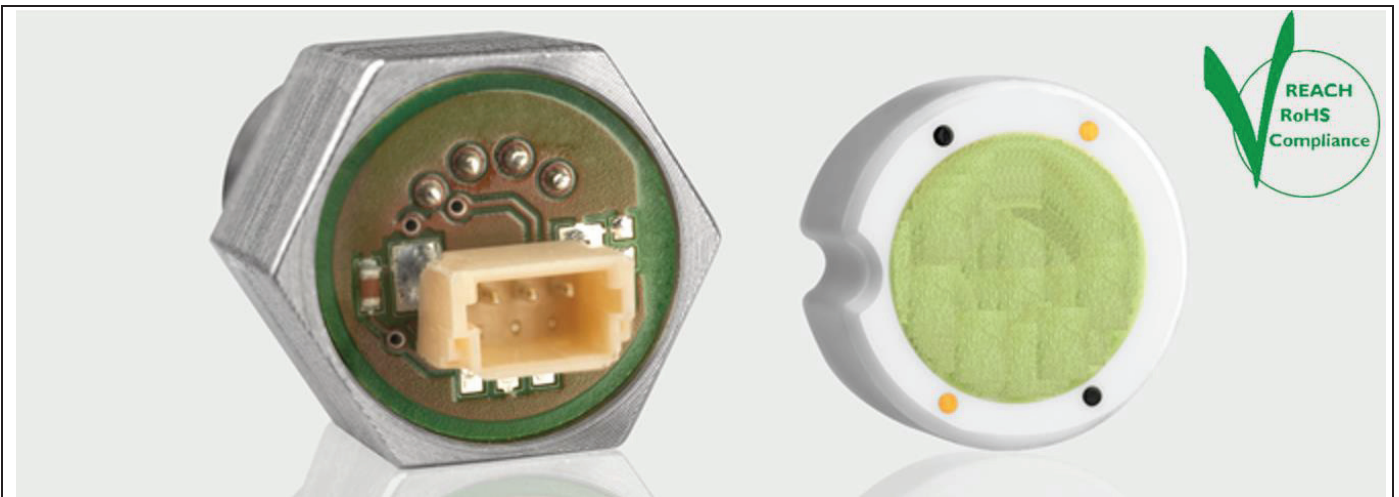
9 mm diameter cell

Ready to mount

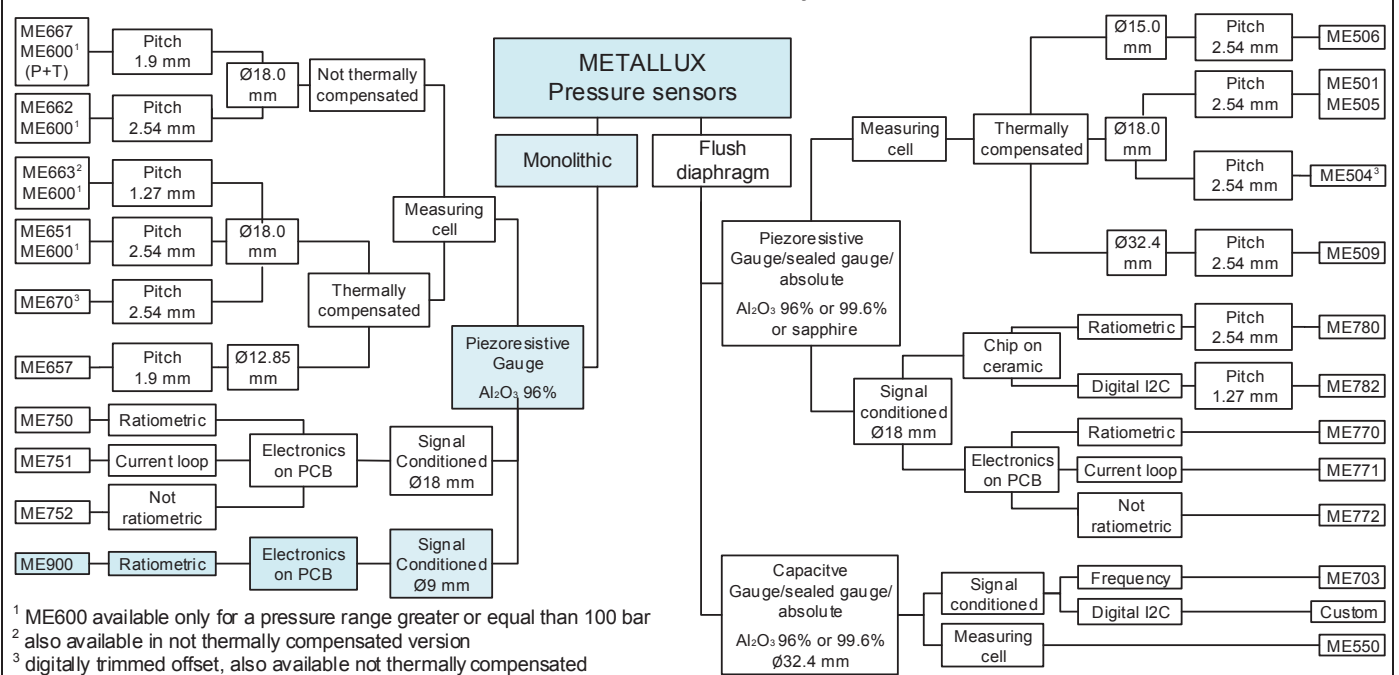
Stainless steel housing

Signal conditioning, on-board connector

EMC compliant



Pressure sensors family tree



¹ ME600 available only for a pressure range greater or equal than 100 bar
² also available in not thermally compensated version
³ digitally trimmed offset, also available not thermally compensated

Technical features

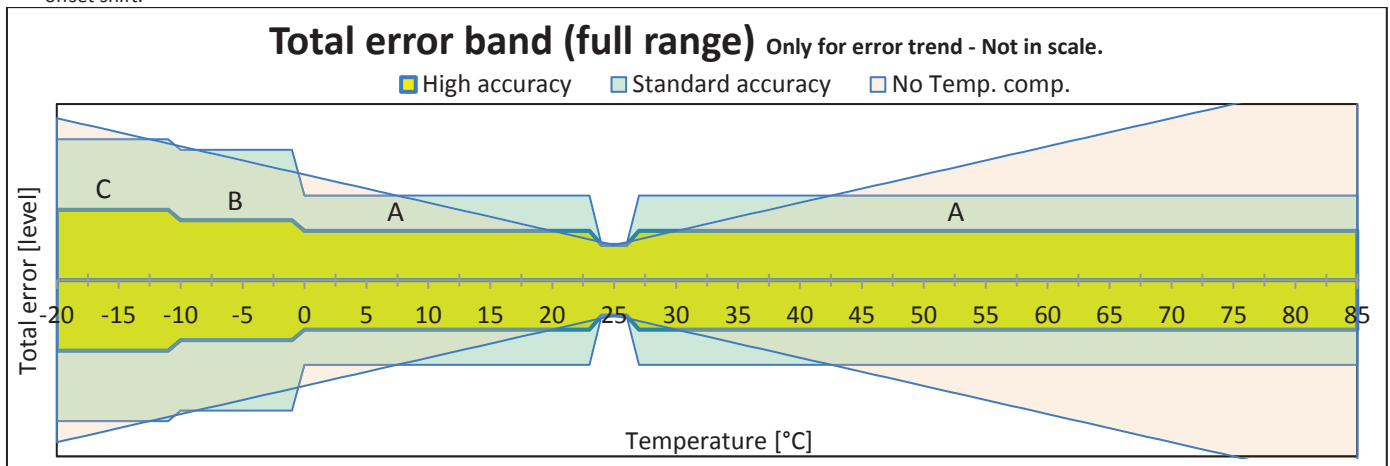
Parameters	Units	ME900 / MEP900	
Output	-	Ratiometric	
Output range	-	0.5...4.5 [V]	
Sensor type	-	Monolithic, gauge	
Technology	-	Piezo-resistive with electronic signal conditioning	
Material	-	Sensor : ceramic Al ₂ O ₃ 96% - Gasket : FKM - Housing : stainless steel AISI 316	
Weight	g	≤ 8 (without cable)	
Response time	ms	≤ 5	
Supply voltage	VDC	4.5...5.5	
Max current ¹	mA	6 (R _{LOAD} ≥ 2 kΩ)	
Operating temp.	°C	-20...+85 (-4 °F...+185 °F)	
Storage temp.	°C	-25...+90 (-13 °F...+194 °F)	
Compliant with	-	REACH, RoHS, Conflict Minerals free	
EMC / ESD ²	-	Electrostatic discharge	IEC/EN 61000-4-2(2009)
		Radiated electromagnetic field	IEC/EN 61000-4-3(2006)
		Electrical fast transient burst	IEC/EN 61000-4-3(2004) ²
		RF conducted disturbances	IEC/EN 61000-4-6(2014)

Pressure range		ME900 / MEP900			
Nominal pressure ²	ME	bar	10	20	50
	MEP	psi ³	150	300	750
Overload pressure		bar	20	40	100
		psi	290	580	1450
Burst pressure		bar	35	60	150
		psi	507	870	2175
Vacuum capability		bar	-1	-1	-1
		psi	-14.5	-14.5	-14.5

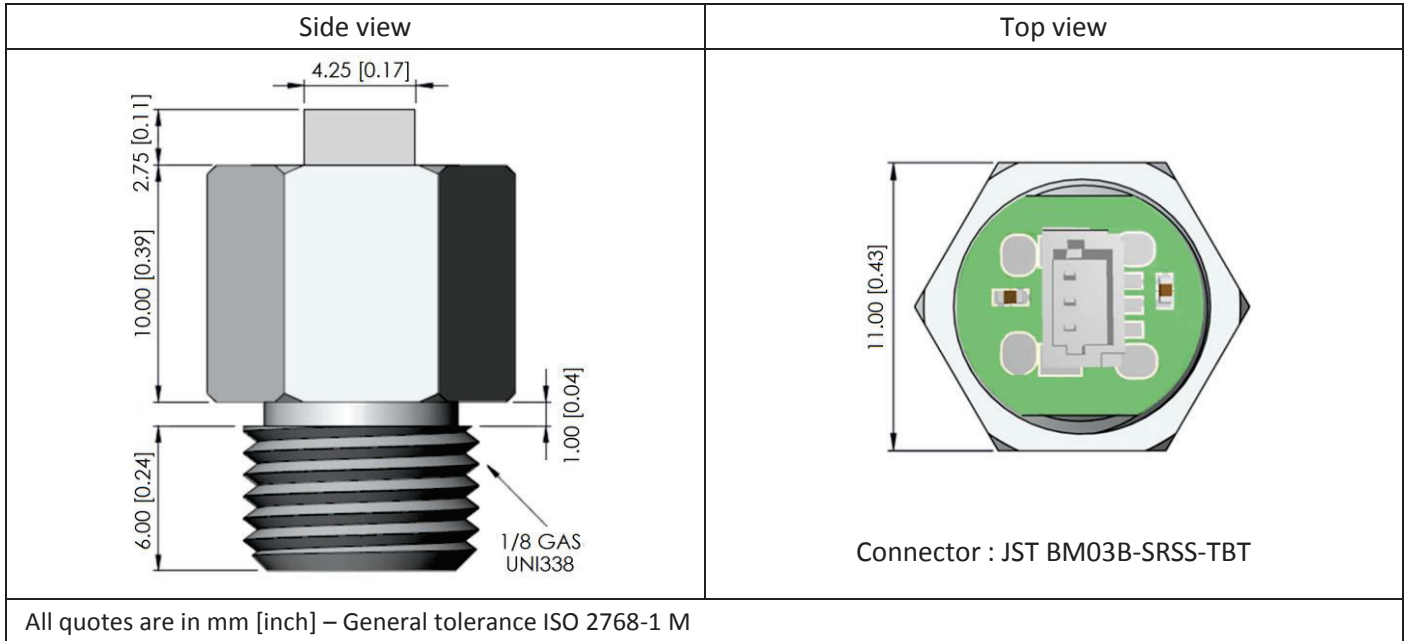
Accuracy ⁴ [%FS]	Calibration with high accuracy	
25°C (77 °F)	1.0	1.0
A) 0...85°C (32...185 °F)	1.4	1.6
B)-10...0°C (14...32 °F)	1.7	1.8
C)-20...-10°C (-4...14 °F)	2.0	2.2
Accuracy ⁴ [%FS]	Calibration with standard accuracy	
25°C (77 °F)	1.0	1.0
A) 0...85°C (32...185 °F)	2.4	2.6
B)-10...0°C (14...32 °F)	3.7	3.8
C)-20...-10°C (-4...14 °F)	4.0	4.2
Accuracy ⁴ [%FS]	Calibration without thermal compensation	
25°C (77 °F)	1.0	
-20...85 °C (-4...185 °F)	Max ± 0.08 %FS/K (Ceramic cell thermal offset shift + thermal span shift) + Accuracy at 25°C	

Unless indicated, all data are based on a reference temperature of 25°C.

1. During calibration or auto-zero, current consumption is < 30 mA
2. Housing must be grounded, EFT/Burst level is according to EN 61326-1:2013
3. Pressure ranges not shown specifically in the technical chart have performance of the nearest listed pressure range.
4. Psi values are not the exact conversion of bar value. Psi ranges are defined to cover different standard values.
5. Accuracy includes room temperature error of non-linearity, hysteresis and non-repeatability, offset and span deviation PLUS thermal span shift and thermal offset shift.

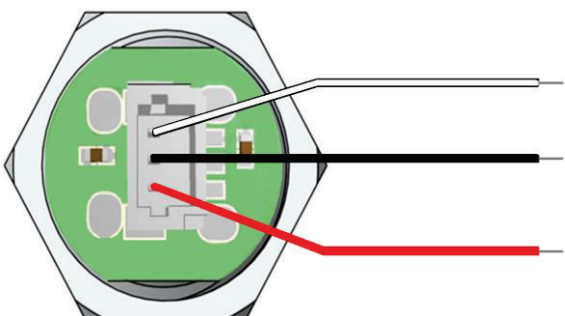


Mechanical drawings



Electrical terminations

ME900 Example: type 0, Connector plus 70 mm cable



Wire section : AWG 28

Cable length: L = 70.0 ± 5.0 [2.76 ± 0.2]

Stripping length: S = 5.0 ± 2.0 [0.20 ± 0.08]

Operating temperature: -20°C...+85°C

*programming through Vout wire

Ordering code

	ME	_	900	---	-
Pressure unit	bar	blank			
	psi	P			
Pressure range	ME	MEP		ME – MEP	
	0...10 bar	or	0...150 psi	010 – 150	
	0...20 bar	or	0...300 psi	020 – 300	
	0...50 bar	or	0...750 psi	050 – 750	
	0...100 bar	or	0...1k5 psi	100 – 1k5	
	Others on request (please specify)			999 – 999	
Calibration	High accuracy				0
	Standard accuracy				1
	No temperature compensation (calibration done at room temperature)				2
	Not calibrated, not compensated (electrical test only)				3
	Others on request (please specify)				9
Termination type	Connector plus 70 mm cable				0
	Only connector				1
	Others on request (please specify)				9

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