



Metallux ME550 pressure sensors are made with a ceramic base plate and a flush diaphragm and work following the capacitive principle, in which the pressure measurement is given by the variation of capacitance due to deformation of a capacitor's plates. The moving capacitor plate is screen printed on the flush ceramic diaphragm which is, in turn, glued to the sensor's body. The capacitor plate faces the inside where a cavity is made and the diaphragm's opposite side can therefore be exposed directly to the medium to be measured. Sensor's vent hole is protected against humidity and dirt by a special filter glued to the ceramic cell (PCS).

The wide diameter (32.4 mm) and the use of the capacitive technology make the ME550 a sensor suitable for measuring very low pressures, as low as 60 mbar.

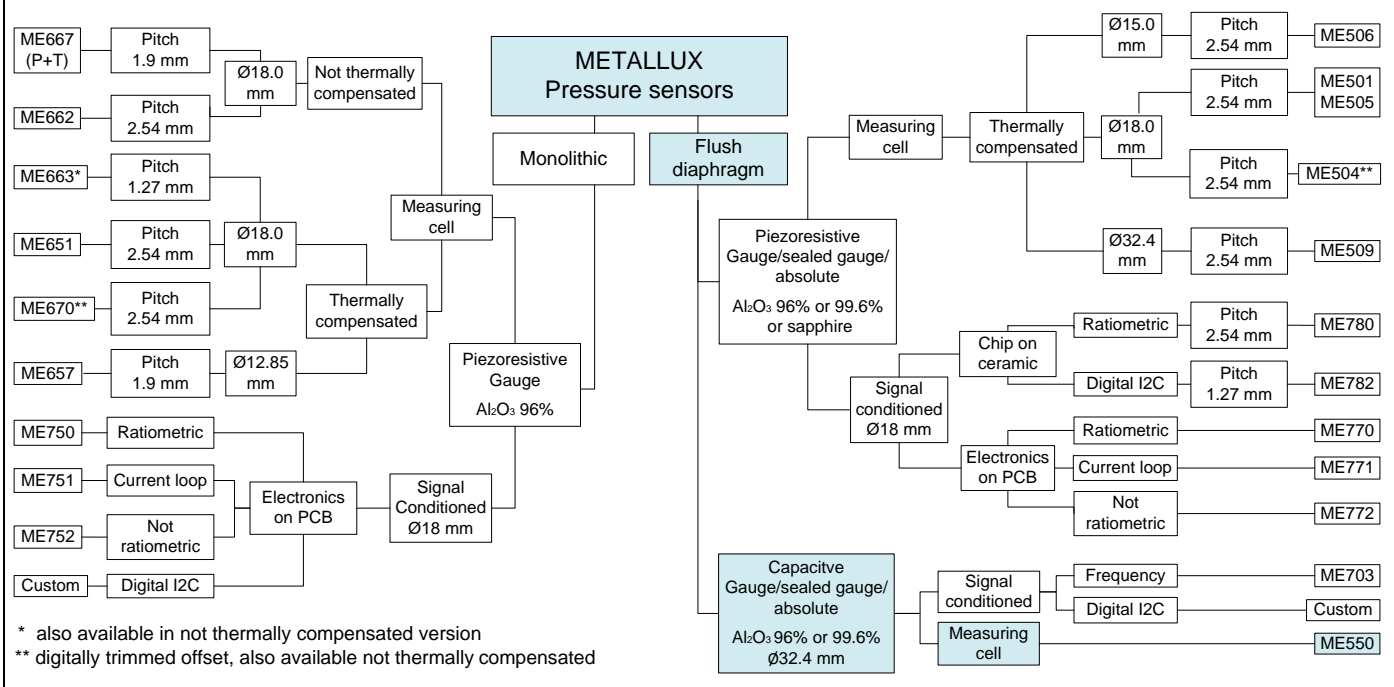
Nevertheless, ME550 sensors feature a high burst pressure, making them quite reliable in many applications.

Because of the Al₂O₃ ceramic excellent chemical resistance (aggressive gases, most of solvents and acids, etc.), no additional protection is normally required. Metallux ME550 sensors can be provided in the gauge or absolute versions.

- FEATURES**
- High resistance to corrosion and abrasions
 - High sensitivity at very low pressure
 - High burst pressure
 - High immunity to disturbances



Pressure sensors family tree



Technical characteristics

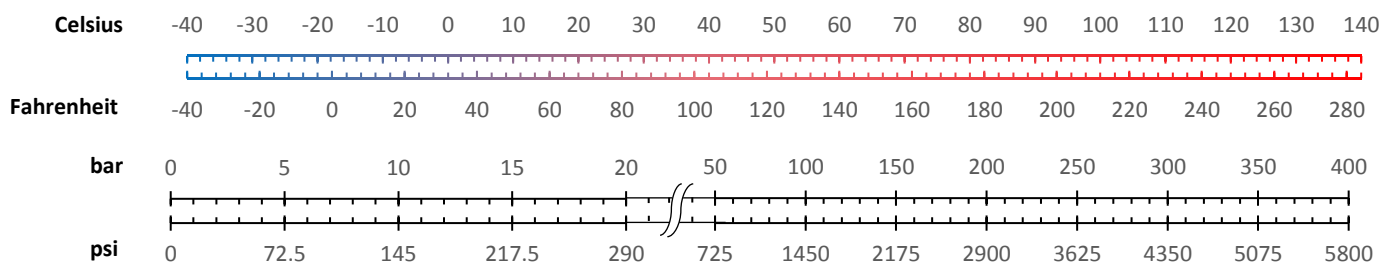
Parameters	Units	Description
Sensor type	-	Flush diaphragm, absolute (A) or gauge (R)
Technology	-	Capacitive / ratio
Base material	-	Ceramic Al ₂ O ₃ 96%
Diaphragm material	-	Ceramic Al ₂ O ₃ 96% or 99.9%
Weight	g	≤ 20 (ceramic cell only)
Response time	ms	≤ 10
Capacity (Cx and Cr)	pF	50 - 80
Offset	-	Cx/Cr = 1 ± 0.07
Life Cycles	-	> 1'000'000
Operating temperature	°C	-40...+135 (-40 °F...+275 °F)
Storage temperature	°C	-40...+150 (-40 °F...+302 °F)
Compliant with	-	REACH, RoHS, Conflict Minerals Free

Nominal pressure FSO	bar	0.060	0.160	0.400	1	2	5	10	20
	psi ¹	0.9	2.3	5.8	14.5	29.0	72.5	145.0	290.0
Overload pressure	bar	2	4	6	8	15	25	35	60
	psi ¹	29	58	67	116	217	362	507	942
Vacuum capability	bar	-0.200	-0.300	-0.500	-0.800	-1.00	-1.00	-1.00	-1.00
	psi ¹	-2.9	-4.3	-7	-14	-14	-14	-14	-14
Pressure type	-	R	R	R	A / R	A / R	A / R	A / R	A / R
Total thickness	mm	5.23	5.28	5.41	5.51	5.63	5.85	5.90	6.34
	in	0.206	0.208	0.213	0.217	0.222	0.230	0.232	0.249
Sensitivity ²	-	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45	0.15 - 0.45
Non-Linearity (max.)	%FS	±12.0	±12.0	±12.0	±12.0	±12.0	±12.0	±12.0	±12.0
Hysteresis (max.)	%FS	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1
Stability (max)	%FS	±0.2	±0.2	±0.2	±0.2	±0.2	±0.2	±0.2	±0.2
Reliability tests ³	-	1000 hours @85 °C (185 °F) & 85 %RH		500 thermal shocks -40°C...+150 °C (-40 °F... +302 °F)		1000 hours burn-in @150 °C (302 °F)		1 million 0 bar to P _{nom} pressure cycles	

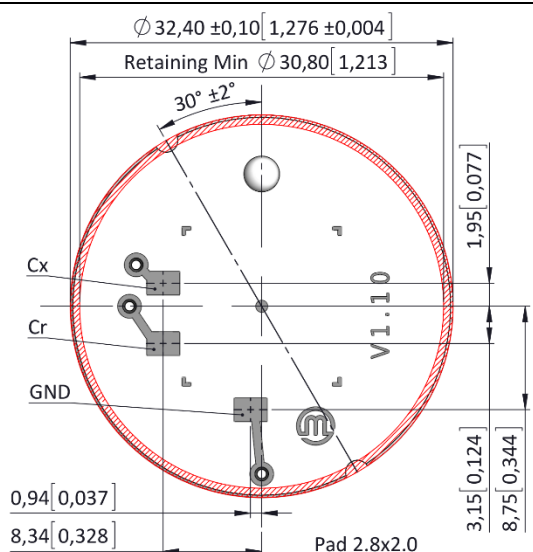
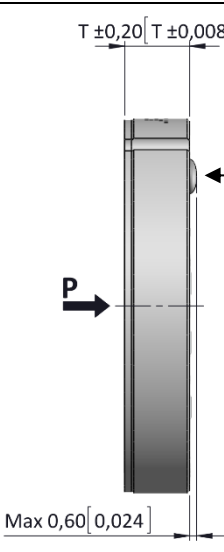
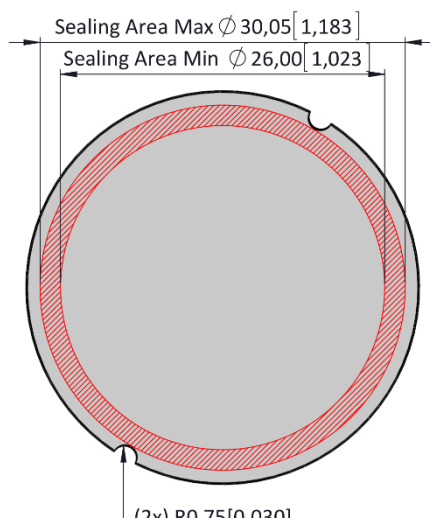
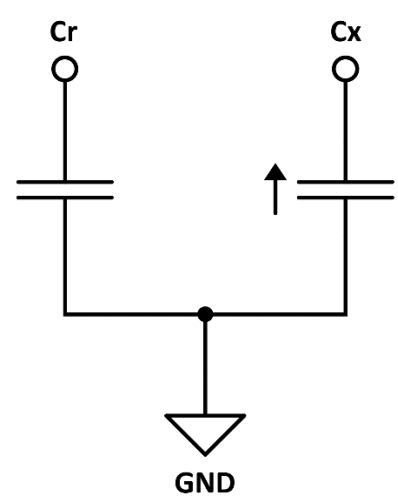
Tests performed at 25°C in Metallux housings, unless otherwise specified. Different housings may affect performances.

1. Psi values for reference only.
2. Sensitivity = Cx/Cr 100% – Cx /Cr 0%
3. All technical characteristics will remain within indicated ranges performing the above-mentioned reliability tests.

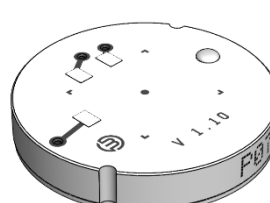
Conversion tools



Mechanical drawings and electrical schematics

Top View	Side View
 <p> $\varnothing 32,40 \pm 0,10 [1,276 \pm 0,004]$ Retaining Min $\varnothing 30,80 [1,213]$ $30^\circ \pm 2^\circ$ $1,95 [0,077]$ $0,94 [0,037]$ $8,34 [0,328]$ $3,15 [0,124]$ $8,75 [0,344]$ Pad 2.8x2.0 (3x) Pads 2.8 x 2.0 [0,11x0,078] </p>	 <p> $T \pm 0,20 [T \pm 0,008]$ Absolute version: Vent hole is sealed with tin. Gauge version: Vent hole is protected with PCS. Max 0,60 [0,024] </p>
Bottom View	Schematics
 <p> Sealing Area Max $\varnothing 30,05 [1,183]$ Sealing Area Min $\varnothing 26,00 [1,023]$ (2x) R0,75 [0,030] </p>	
All quotes are in mm [inch] – General tolerance ISO 2768-1 M	

Electrical terminations

<p>Example: type 0, pretinned soldering pad</p>  <p> <i>Max. tin thickness:</i> 0.3 [0.01] <i>Op. Temp:</i> -40°C...+135°C (-40 °F...275 °F) </p>	<p>Other type available on request</p> <p> Type 1, pins $L = 13 \pm 0.5 \text{ mm} [0.51 \pm 0.02]$ Type 2, wires $50.8 \pm 2 [2 \pm 0.08]$ </p>
All quotes are in mm [inch] – General tolerance ISO 2768-1 M	

Ordering code

	ME550	-	----	-	-	-
Sensor type	Absolute	A				
	Gauge	R				
Pressure range	0...60 mbar [0...7 psi] [-/R]		0600			
	0...160 mbar [0...14 psi] [-/R]		1600			
	0...400 mbar [0...29 psi] [-/R]		4000			
	0...1 bar [0...72 psi] [A/R]		1001			
	0...2 bar [0...145 psi] [A/R]		2001			
	0...5 bar [0...290 psi] [A/R]		5001			
	0...10 bar [0...720 psi] [A/R]		1002			
	0...20 bar [0...1450 psi] [A/R]		2002			
Others on request (please specify)		9999				
Diaphragm material	Al ₂ O ₃ 96%			0		
	Al ₂ O ₃ 99.9%			1		
	Others on request (please specify)			9		
Electrical termination	Pretinned soldering pad				0	
	Pins, 13 mm				1	
	Wires				2	
	Others on request (please specify)				9	
Venting hole pipe	Without					0
	Standard metal pipe ϕ 1.2mm x 6 mm height					1