

# Measuring Accuracy of PendoTECH PressureMAT<sup>®</sup> and PT Transmitters

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PMAT-TCA: Test cable assembly for PressureMAT accuracy check

## Measuring Accuracy of PressureMAT

Set monitor to 2 decimal places:

1. Press the Back button 3 times to access the Global Setting Menu
2. Toggle Cursor to Control Service and press Select
3. With the cursor next to Decimal, press Select and the up arrow to show ON then press Select to save change
4. Press Home to return to the main screen

Attach PMAT TCA with black and red leads to PMAT channel to be measured

- Black is negative
- Red is positive

Attach calibrated millivolt generator to the leads.

With the mV generator on, but no voltage being applied (generating 0.00 mV), press the TARE button on the PMAT to zero the channel.

Create the Applied Voltage (mV) using the generator, using the values in the table below.

Record the found pressure and compare to Theoretical Pressure + Allowed Deviation:

Theoretical Pressure		Applied Voltage	Found Pressure		Allowed Deviation +/-*	
psi	bar	mV	psi	bar	psi	bar
1.00	0.07	1.034			0.04	0.01
5.00	0.34	5.179			0.08	0.01
10.00	0.69	10.439			0.13	0.01
30.00	2.07	31.136			0.33	0.02
50.00	3.45	50.137			0.53	0.04
60.00	4.14	58.959			0.63	0.04

\* 1% of Target Pressure + 0.03 psi/0.0021 bar

Measuring Accuracy of PressureMAT Sensor Transmitter

Attach PMAT TCA with black and red leads to the transmitter

- Black is negative
- Red is positive

Attach calibrated millivolt generator to the leads

With the mV generator on, but no voltage being applied (generating 0.00 mV), tare the transmitter.

- Connect terminals 5 and 6 with dry contact, or...
- Tare the transmitter in the HMI/PLC  
 Note: If the transmitter is connected to a HMI/PLC there may be additional error caused by the accuracy of the HMI/PLC

Create the Applied Voltage (mV) using the generator, using the values in the table below

Record the found pressure and compare to Theoretical Pressure + Allowed Deviation

**PT-30**

Theoretical Pressure		Applied Voltage	Found Pressure		Allowed Deviation +/-*	
psi	bar	mV	psi	bar	psi	bar
0.00	0.00	0			0.13	0.01
7.50	0.52	4.937			0.14	0.01
15.00	1.03	9.875			0.15	0.01
22.50	1.55	14.813			0.16	0.01
30.00	2.07	19.751			0.18	0.01

\*See Transmitter data sheet for details

**PT-60**

Theoretical Pressure		Applied Voltage	Found Pressure		Allowed Deviation +/-*	
psi	bar	mV	psi	bar	psi	bar
0.00	0.00	0			0.26	0.02
15.00	1.03	9.903			0.27	0.02
30.00	2.07	19.795			0.30	0.02
45.00	3.10	28.955			0.32	0.02
60.00	4.14	37.322			0.34	0.02

\*See Transmitter data sheet for details

PTR 7.5psi

Theoretical Pressure		Applied Voltage	Found Pressure		Allowed Deviation +/-*	
psi	bar	mV	psi	bar	psi	bar
-11.5	-0.79	-7.429			0.05	0.003
0.00	0.00	0.00			0.06	0.004
2.00	0.14	1.292			0.06	0.004
6.00	0.41	3.877			0.07	0.005
7.5	0.52	4.845			0.08	0.006

\*See Transmitter data sheet for details

PTR 75psi

Theoretical Pressure		Applied Voltage	Found Pressure		Allowed Deviation +/-*	
psi	bar	mV	psi	bar	psi	bar
-11.5	-0.79	-7.429			0.3	0.020
0.00	0.00	0.00			0.31	0.021
15.00	1.03	9.69			0.34	0.023
45.00	3.10	28.451			0.38	0.026
75.00	5.17	44.346			0.43	0.030

\*See Transmitter data sheet for details