



U7000 Series

Pressure Transmitter Sensor

High Accuracy, Rugged Stainless-Steel Pressure Transmitter for Data Center Thermal Management

Oil Filled MEMS Pressure Transducers

The **TE U7000 Pressure Transmitter** is a next-generation industrial pressure sensor built on TE's proven **UltraStable™ MEMS technology platform**. Combining TE's advanced MEMS sensing element with the latest **IS2450 ASIC**, the U7000 delivers an excellent balance of accuracy, reliability, long-term stability, and cost-effective performance for demanding industrial applications.

Designed primarily for **data center thermal management and liquid cooling systems**, the U7000 is also well suited for energy storage systems (ESS/BESS), renewable energy applications, water management systems, and other industrial process control applications.

The sensor features an **all-welded stainless-steel pressure cavity** with no internal O-rings or organic materials exposed to the pressure media, making it suitable for measuring the pressure of liquids and gases, including contaminated water, steam, and mildly corrosive fluids. A variety of **leak-proof, all-metal pressure connections** are available to ensure long-term durability and reliable operation in harsh environments.

With high reliability, low power consumption, and excellent media compatibility, the U7000 is available in standard pressure ranges from **0 to 50 psi up to 0 to 300 psi (20 bar)**. Additional pressure ranges, output options, and custom configurations are available upon request.

Product Highlights

Latest generation ASIC from TE, high performance, high reliability;

Ultra Stable TE MEMS Die Technology;

4-20mA output;

Multiple pressure fittings and electrical connecting;

Flexible customization for specific application requirements.

Features

- Hermetic Pressure Ports
- Compact Mechanical Design
- $\pm 0.2\%$ span Pressure Accuracy
- $\pm 0.1\%$ span/year Long Term Stability
- $\pm 1\%$ span TEB
- 4-20mA Output
- IP67
- UL Certification
- -20-85°C Operating Temperature

Applications

- Data Center Thermal Management
- Liquid Cooling System
- ESS/BESS Thermal Management
- Water Management System
- Other Industrial Applications

Standard Pressure Ranges

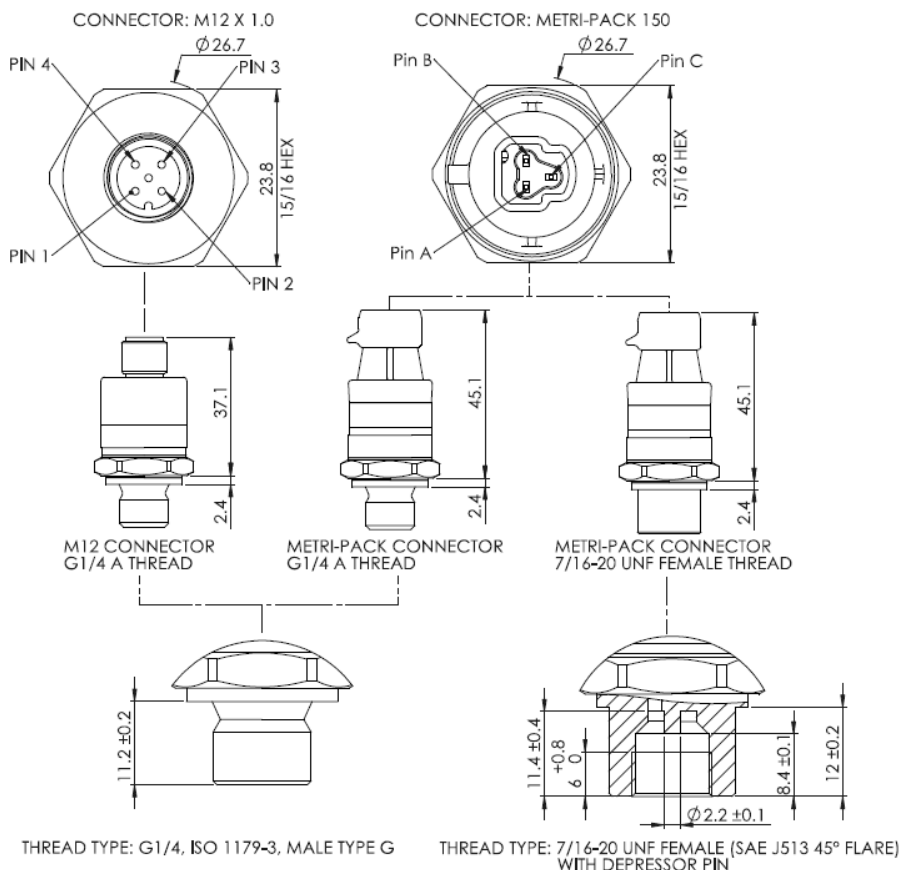
Range (psi)	Range (Bar)	Gauge	Absolute
0 to 100	0 to 7	•	•
0 to 150	0 to 10	•	•
0 to 180	0 to 12	•	•

Intermediate ranges available upon request.

Certifications

CE Compliance Test and Standards
IEC 61000-4-2 Electrostatic Discharge Immunity (4kV contact / 8kV air discharge, discharge rate>10s)
IEC 61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (3V/m, 1kHz 80% modulation, 80M-1GHz)
IEC 61000-4-4 Electrical Fast Transient / Burst Immunity (Level 2, 0.5kV each line, capacitance coupling)
IEC 61000-4-5 Surge, ±1kV Line to ground, Class B
IEC 61000-4-6 Immunity to Conducted Disturb. Induced by Radio Freq. (Level 2, 3V rms, 150K~80MHz, 2s dwell, clamp injection)
IEC 61000-4-8 Power Frequency Magnetic Field (Pulse magnetic field immunity, 3A/m peak)
UL 61010
Industrial measurement equipment, UL category: PICQ 2/8

Dimensions



M12 PIN SEQUENCE	
PIN CODE	TERMINATION
PIN 1	+ SUPPLY
PIN 2	NC
PIN 3	- SUPPLY
PIN 4	NC

METRI-PACK PIN SEQUENCE	
PIN CODE	TERMINATION
PIN A	- SUPPLY
PIN B	+ SUPPLY
PIN C	NC

Specifications

Parameters	Min	Typical	Max	Units	Notes
SUPPLY VOLTAGE	8	24	28	V _{DC}	
PRESSURE ACCURACY (COMBINED LINEARITY, HYSTERESIS & REPEATABILITY)	-0.2		0.2	%SPAN	2
PRESSURE TOTAL ERROR BAND	-1		1	%SPAN	3
PRESSURE COMPENSATED TEMPERATURE	0		65	°C	
OPERATING TEMPERATURE	-20		85	°C	
STORAGE TEMPERATURE	-20		85	°C	
INSULATION RESISTANCE (500VDC)	100M			OHM	4
DIELECTRIC STRENGTH (500VAC, 1 MIN)			5	mA	4
REVERSE POWER POLARITY PROTECTED	YES				
RoHS & REACH	YES				
LONG TERM STABILITY (ZERO, SPAN)	-0.1		0.1	%SPAN/ YEAR	
PRESSURE OVERLOAD			3X	RATED	5
PRESSURE BURST			4X	RATED	6
PRESSURE CYCLE	1M			CYCLES	7
MEDIA, PRESSURE PORT	FLUIDS COMPATIBLE WITH 304L/316L ST STL				
MECHANICAL VIBRATION	20G, 10~2000Hz MIL-STD-810C, METHOD 514.2, CURVE L				
MECHANICAL SHOCK	HALF-SINE, PEAK: 50g, 11ms MIL-STD-202G, METHOD 213B, COND A				
IP RATING	IP67 (IEC60529)				8

NOTES:

1. UNLESS OTHER SPECIFIED, ALL PARAMETERS ARE MEASURED AT 25 °C, 24VDC.
2. BEST FIT STRAIGHT LINE. $ACCURACY = \sqrt[3]{LINEARITY^2 + HYSTERESIS^2 + REPEATABILITY^2}$
3. TEB INCLUDES ALL ACCURACY ERRORS, THERMAL ERRORS, SPAN AND ZERO TOLERANCES OVER THE COMPENSATED RANGE.
4. BETWEEN SENSOR BODY TO ANY PINS OF CONNECTOR.
5. THE MAXIMUM PRESSURE THAT CAN BE APPLIED WITHOUT CHANGING THE TRANSDUCER'S PERFORMANCE OR ACCURACY.
6. THE MAXIMUM PRESSURE THAT CAN BE APPLIED TO A TRANSDUCER WITHOUT RUPTURE OF EITHER THE SENSING ELEMENT OR TRANSDUCER.
7. TEST FROM ATM TO FULL PRESSURE.
8. IP RATING NOT INCLUDING CABLE TERMINAL.
9. THIS PRODUCT CAN BE CONFIGURED FOR CUSTOM OEM REQUIREMENTS.
10. TRANSDUCERS CAN BE INSTALLED BY EITHER SPANNER OR DEEP SOCKET. TORQUE VALUES PROVIDED ARE FOR REFERENCE: ACTUAL TORQUE DEPENDS UPON MATING PORT MATERIAL, SURFACE FINISH, LUBRICATION AND SEALING MECHANISM. TRANSDUCER CALIBRATION AND/OR ZERO MAY SHIFT IF PART IS OVER-TORQUED DURING INSTALLATION. CHECK FOR A ZERO SHIFT AFTER INSTALLING.

Ordering Information

