

M7 - Permanent Quartz Sensor

The M7 Permanent Quartz Sensor is designed to provide operators with high quality real-time pressure and temperature data.

When accuracy, resolution and long term pressure-temperature stability is a prerequisite, you can count on the M7 Quartz sensor every time.

FEATURES

- Real Time Surface Readout
- Robust Telemetry
- Low Power Consumption
- Compact Size
- Accurate High Quality Data
- Electron Beam welded sensor
- No Elastomers
- Vacuum sealed electronics

APPLICATIONS

- Monitoring of Real-Time Downhole Pressure
- Production Optimization
- Fluid Level Monitoring
- Production Testing Substitute
- Horizontal Interface Testing
- Build-up Data
- Input for Pump Control

DESIGN OPTIONS

Materials	Stainless Steel 316	Hastelloy C - 276
Style	Tubing pressure sensing	Casing pressure sensing



M7 Permanent Quartz Sensor Specifications

SPECIFICATIONS	
Approximate Length	25.25"
Diameter	3/4"
Cable Heads	Tube wire
Circuit	Hybrid
Housing Material	Inconel 718 + C -276
Diaphragm Material	Inconel Bellows

TEMPERATURE SPECIFICATIONS	
Standard Ranges	25°C - 150°C
Accuracy ² (°C)	0.5
Typical Accuracy (°C)	0.15
Achievable Resolution ³ (°C/sec)	< 0.005
Repeatability (°C)	< 0.01
Average Sensitivity (Hz/°C)	180
Frequency Output Range (kHz)	10 - 70
Drift at 150°C (°C/year)	< 0.1

PRESSURE SPECIFICATIONS				
Sensor	Thickness Shear Mode Quartz Resonator			
Standard Ranges ¹	0 - 5,000 psi	0 - 10,000 psi	0 - 16,000 psi	0 - 20,000 psi
Available Calibration Temp. Ranges	25°C - 150°C	25°C - 150°C	25°C - 150°C	25°C - 150°C
Accuracy ² (% FS)	0.02	0.015	0.02	0.02
Typical Accuracy (% FS)	0.015	0.012	0.015	0.015
Achievable Resolution ³ (psi/sec)	< 0.006	< 0.006	< 0.008	< 0.008
Repeatability (% FS)	< 0.01	< 0.01	< 0.01	< 0.01
Nominal Sensitivity (Hz/psi)	2.8	2.8	2.5	2.5
Drift at 14 psi and 25°C (% FS/year)	Negligible	Negligible	Negligible	Negligible
Drift at Max. Pressure & Temperature (% FS/year)	0.02	0.02	0.02	0.02

POWER SPECIFICATIONS	
Source	On site
Voltage	25V
Current	15mA

Part Number	
TL-0016-001-0750-N07718-PP-TTT	Temperature in °C
	Pressure x 1,000 psi

¹ Units calibrated with bellows meet performance specifications from 200 psi to full scale. Operating range is from 0 to FS.
² Accuracy is the combined effects of repeatability, hysteresis, and corrected linearity over the calibrated temperature range
³ Achievable Resolution assumes a 7.2 MHz reference is used as the clock in a period-based counter