





# **MODEL 7880** DUAL - PRESSURE & TEMPERATURE TRANSDUCER

#### STANDARD WIRING CONFIGURATION\*

PIN	DUAL 4-20mA OUTPUT	3-WIRE OUTPUT WITH DUAL VDC
A/1	+EXC/SIG (PRESS)	+EXC (PRESS)
B/2	-EXC/SIG (PRESS)	+SIG (PRESS)
C/3	+EXC/SIG (TEMP)	-EXC/SIG (PRESS)
D/4	-EXC/SIG (TEMP)	+EXC (TEMP)
E/5	N/C	+SIG (TEMP)
F/6	N/C	-EXC/SIG (TEMP)



See page two for additional wiring options.



## **PRODUCT OVERVIEW:**

GP:50's 7880 aerospace grade pressure and temperature transducer provides reliable measurements from -65 °F to +250 °F (-59 °C to +121 °C) while withstanding the harsh conditions associated with space exploration. The compact size and rugged design are an excellent choice for on-board space flight or military vehicle applications where space and weight constraints are critical.

#### REF DIMENSIONS ONLY. CONSULT FACTORY FOR ACTUAL DIMENSIONS.

## FEATURES:

- Dual pressure and temperature outputs
- Operating ranges from -65 °F to +250 °F (-54 °C to +121 °C)
- Lightweight, 8 oz (0.2 kg)
- Dual analog outputs
- 100 or 1000  $\Omega$  platinum RTD on temperature
- Pressure ranges from 0-1 PSI thru 0-15,000 PSI

## **APPLICATIONS:**

- Propulsion systems
- Military and defense applications
- Space flight vehicles
- Military vehicles

### **OPTIONS:**

- 0 to 5 Vdc or 0 to 10 Vdc output (4-wire isolated option)
- 4-20 mA output
- Digital outputs: CanBUS, RS485 or USB
- 2, 3 or 4 wire RTD
- Hydrogen or LOX compatibility options
- Custom probe lengths
- Various MIL-SPECS available. Consult factory.



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# GP:50 MODEL 7880

## **REFERENCE SPECIFICATIONS**

# (Standard configurations shown, consult factory for other options)

ELECTRICAL		
Output Signal:	Pressure: 4-20 mA 0 to 5 Vdc or 0 to 10 Vdc or (isolated options) CanBUS or RS485 Options Temperature: 4-20 mA 0 to 5 Vdc or 0 to 10 Vdc or (isolated options) CanBUS or RS485 Options 100 Ohm 2 wire Platinum RTD 0.00385 Alpha Ω/ Ω/deg C, Class B 1000 Ohm 2 wire Platinum RTD 0.00385 Alpha Ω/ Ω/deg C, Class B	
Excitation Voltage:	10 to 36 Vdc (Options may affect this)	
RLoad max:	(4-20 mA)=((Power supply Voltage - 9.0V) / .020) - Wire Resistance. (Options may affect this, consult factory)	
Circuit Protection:	EMI/RFI, some options may affect ratings	
Response Time:	Pressure: <4 ms Temperature: <2 Seconds	

MATERIALS OF CONSTRUCTION		
Probe:	17-4 PH (Inconel, Monel or Nitronic 50 available)	
Housing:	316 Stainless Steel	
O-Ring:	Buna-N (Nitrile) is standard.	
Internal Fill:	Silicone or Fomblin oil fill <300 PSI (Consult factory for options)	

ACCURACY (BFSL): Non-Linearity @ +70 °F)		
Standard:	Pressure: $\leq \pm 0.3\%$ FSO	
	Temperature: <±3.0% FSO, (±1.0% FSO optional)	
Non-linearity:	≤±0.20% FSO (Typ)	
Hysteresis:	≤±0.1% FSO (Typ)	
Repeatability:	≤±0.1% FSO (Typ)	
Zero Balance:	±1.0% FSO	
Span Balance:	±1.0% FSO	

(BFSL method used. Improved options available.)

Calibration:	NIST Traceable Cert
Workmanship:	IPC-A-610 Soldering
Quality System:	AS9100

Options may affect specifications. Please consult factory for your specific needs.

MECHANICAL		
Process Connection:	per AS930-4	
Electrical Connection:	PTIH-10-6P standard, options available	
Probe Length:	1" From port end (optionals lengths and ports available)	
Proof Pressure:	1.5X or 22.5X Max whichever is less (May affect Probe size)	
Burst Pressure:	2X-5X, range dependent	
Approximate Weight:	8 oz (0.2 kg)	

#### **PRESSURE RANGES**

15 thru 0 to 15K PSIA, PSIG or PSISG options (1 thru 1,034 BAR)

PRESSURE TRANSMITTER THERMAL SPECIFICATIONS		
Operating Range:-65 °F to +250 °F (-54) °C to +121 °C)		
Compensated Range:	0 °F to +180 °F (-17.8 °C to +82 °C)	
Compensated Ranges from -65 °F to +250 °F (-54 °C to +121 °C) available		
Effect on Zero & Span:	$\pm 1.0\%$ FSO/100 °F (Improved specifications available)	

#### STANDARD WIRING CONFIGURATION\*

4-20mA OUTPUT	PIN	DESCRIPTION WITH 3-WIRE RTD	DESCRIPTION WITH 2-WIRE RTD
	A/1	+EXC/SIG (PRESS)	+EXC/SIG (PRESS)
	B/2	N/C	N/C
	C/3	RTD**	N/C
	D/4	-EXC/SIG (PRESS)	-EXC/SIG (PRESS)
	E/5	RTD**	RTD
	F/6	RTD	RTD

VDC 3-WIRE OUTPUT	PIN	DESCRIPTION WITH 3-WIRE RTD	DESCRIPTION WITH 2-WIRE RTD
	A/1	+EXC (PRESS)	+EXC (PRESS)
	B/2	+SIG (PRESS)	+SIG (PRESS)
	C/3	RTD**	N/C
	D/4	-EXC/SIG (PRESS)	-EXC/SIG (PRESS)
	E/5	RTD**	RTD
	F/6	RTD	RTD

\*FOR NON-STANDARD WIRING CONFIGURATION CONSULT FACTORY \*\*JUMPERED



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