



M7100

Pressure Transducer

SPECIFICATIONS

- Performance standard on and off highway engine and vehicle OEMs
- Rugged for heavy equipment and outdoor use
- Designed specifically for high volume applications
- Stainless steel wetted surfaces
- Medium to high pressures
- CE Approved
- UL Certified
- Gage

The M7100 pressure transducer from the Microfused line of MEAS sets a new price performance standard for demanding engine and vehicle, and industrial applications. This transducer is suitable for measurement of liquid or gas pressure, even for difficult media such as contaminated water, steam and corrosive fluids.

The transducer pressure cavity is machined from a solid piece of 17-4 PH stainless steel. The standard version includes a 1/4 NPT pipe thread allowing a leak-proof, all metal sealed system. There are no O-rings or organics exposed to the pressure media and the durability is excellent. This automotive grade pressure transducer with stainless steel hermetic pressure ports and integral electrical connector can boast up to 10,000psi (700bar). The M7100 is UL certified and exceeds the latest industrial CE requirements including surge protection and is overvoltage protected in both positive and reverse polarity.

FEATURES

- Hermetic Pressure Ports
- Integral Electrical Connector
- Survives High Vibration
- ±0.25% Accuracy
- Water Resistant 1M Immersion

APPLICATIONS

- On and Off Highway Engines and Vehicles
- HVAC Refrigeration Controls
- Compressors
- Hydraulics
- Energy and Water Management

STANDARD RANGES

Range (psi)	Range (bar)	Gage
0 to 150	0 to 010	•
0 to 200	0 to 014	•
0 to 300	0 to 020	•
0 to 500	0 to 035	•
0 to 01K	0 to 070	•
0 to 1K5	0 to 100	•
0 to 03K	0 to 200	•
0 to 05K	0 to 350	•
0 to 7K5	0 to 500	•
0 to 10K	0 to 700	•

PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified);

DADAMETEDO	ľ	MIN	TYP	N	IAX		NOTES
PARAMETERS	Steel	Copper		Steel	Copper	UNITS	
Load Resistance		10				ΚΩ	
Accuracy (combined linearity, hysteresis & repeatability)	-().25		0	.25	%Span	1
Total Error Band	-1.0	-2.5		1.0	2.5	%Span	2
Compensated Temperature	-20	-30		+85	120	°C	
Operating Temperature	-	40		+	125	°C	3
Storage Temperature	-	·50		+	125	°C	
Insulation Resistance (500Vdc)	1	100				ΜΩ	4
Short Circuit Protected			Yes				
Output Noise @ 1kHZ			10			mV	
Long Term Stability	-().25		0	.25	%Span/Year	
Frequency Response @ -3dB			1			kHz	

Notes

- 1. Best fit straight line.
- 2. TEB includes all accuracy errors, thermal errors, span and zero tolerances over the compensated temperature range.
- 3. Temperature range for product with standard cable is -20 $^{\circ}$ C to +105 $^{\circ}$ C.
- 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. Refer to pressure port Listing notes for installation recommendations.
- 8. This product can be configured for custom OEM requirements. Contact Factory for different transfer function. See "Pressure Transfer Function' diagram.
- 9. Maximum temperature range for product with standard cable is -20°C to 105°C.
- 10. Do not apply torque to connector housing of transducer
- 11. To ensure proper environmental sealing and electrical connections when using a mating connector, follow the connector manufacturer's installation guidelines.

ENVIRONMENTAL SPECIFICATIONS

Copper

Ambient Temperature: 25° PARAMETERS	C (unless otherwise specifie	,	MIN	TYP		IAX	UNITS	NOTES
PANAMETERS		Steel	Copper	ITP	Steel	Copper	UNITS	NOTES
Humidity (@40°C)					9	93	%RH	
Pressure Overload					2	2X	Rated	5
Pressure Burst					5X	3X	Rated	6
Pressure Cycle		1	0M				Cycles	
Madia Dragguro Dart	Steel		Fluids	compatible wit	h 17-4PH	Stainless Stee	el	
Media, Pressure Port	Copper	Fluids compatible with Brass					_	
041	Steel			20g, 10) ~ 2000Hz	<u>z</u>		
Mechanical Vibration		MIL-STD-810C, Method 514.2, Curve L					_	
	Copper	10g peak, 55~2000Hz MIL-STD-202G, Method 204D, Test Condition C						
	Steel			Half-Sine, P	eak: 50g,	11ms		
Mechanical Shock	Steel		MIL	-STD-202, Met	hod 213B,	Condition A		

Half-Sine, Peak: 50g, 11ms MIL-STD-202G, Method 213B, Condition A

Package Protection IP67 (IEC60529)

AGENCY APPROVALS

RoHS: RoHS 2 (Directive 2011/65/EU)				
Industrial Control Equipme	ent CSA 22.2 No. 14-10			
UL508 Certified				
EMC Performance Criteria	a: Output Change < ±1.5% FSO			
ESD	8kV Contact/15kV Air; Discharge Rate >10s			
IEC 61000-4-2				
EM Field	100V/m, 1kHz 80% Modulation, 80 ~ 1000MHz			
IEC 61000-4-3				
Electrical Fast Transient	Level 2, 1kV each line, capacitance coupling			
IEC 61000-4-4				
Surge	Level 2, 42Ω Impedance, Figure 11 (L-L 500V, L-E 1kV)			
IEC 61000-4-5				
Conducted RF	Level 2, 3V/130dB, 150kHz ~ 80MHz, 2s Dwell, Clamp Injection			
IEC 61000-4-6				
Pulse Magnetic Field	Level 3, 100A/m, 10 second pulse interval			
IEC 61000-4-9				
Emission	Class B, 30dB @ 30-230MHz, 37dB @ 230 – 1000MHz			
IEC 55022				

PRESSURE PORT INFORMATION

Pressure Port Options	Dim A	Tightening Torque (Nm)
2 = G1/4, BS5380, Male	.43 [11.0]	30~35
4 = 7-16-20 UNF, SAE J1926-2, Male, w/ O-Ring	.36 [9.1]	18~20
5 = 1/4-18 NPT Male	.56 [14.2]	2~3 T.F.F.T.
6 = 1/8-27 NPT Male	.38 [9.7]	2~3 T.F.F.T.
E = R1/4-19, Male	.56 [14.2]	2~3 T.F.F.T.
F = G1/4-19, BS5380, Female	.64 [16.3]	30~35
P = 7/16-20UNF Female w/ Integral Valve Depressor; 1/4 Flare Gasket SAE J513C, Copper	.64 [16.3]	15~16
Q = M10 x 1.0, ISO 6149-2, Male	.37 [9.5]	15~16
S = M12 x 1.5, ISO 6149-2, Male	.43 [11.0]	28~30
G = M14 x 1.5, ISO 6149-2, Male	.43 [11.0]	30~35
U = G1/4, DIN 3852-E, Male	.47 [12.0]	30~35

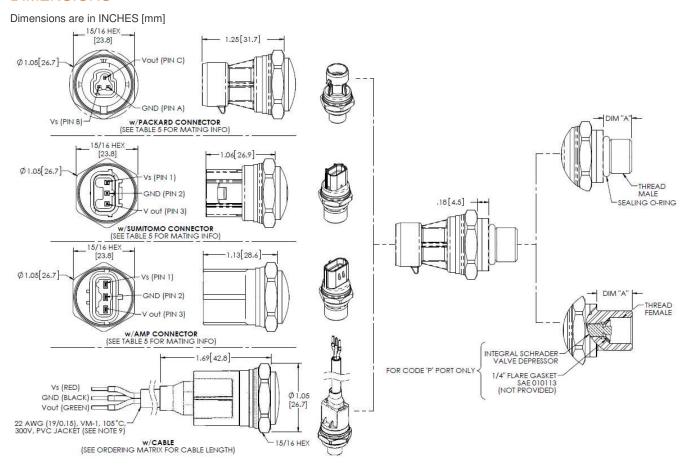
Notes: Installation

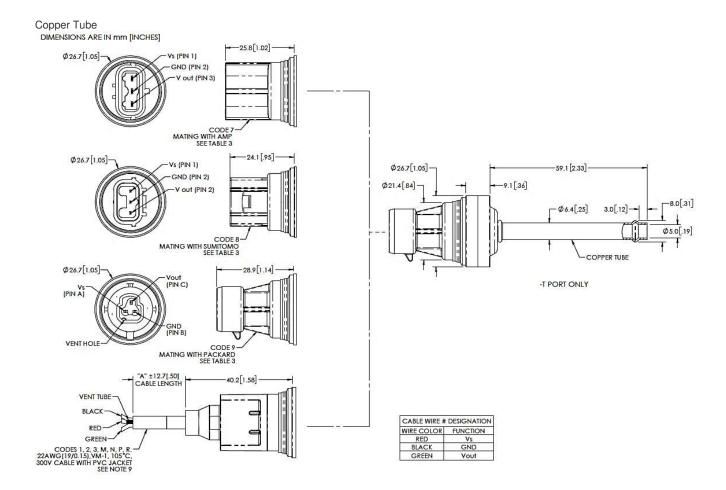
*T.F.F.T.: Turns From Finger Tight
Transducers can be installed by either spanner or deep socket. Torque values provided are for reference: actual torque depends upon mating port material, surface finish, lubrication and sealing mechanism. Transducers calibration and/or zero may shift if part is over-torqued during installation. Check for a zero shift after installing.

CONNECTOR INFORMATION

Connector	Connector, Pin Plating		Connector, Mating
Packard Metri-Pack 150 Series	powerandsignal.com	0.003 – 0.005 mm Sn	Housing P/N: 12065287
Fackard Metri-Fack 150 Series			Terminals P/N: 12103881
Sumitomo HV040 Series	sumitomokenki.com	0.003 mm Sn over	Housing P/N: 6189-6907
Sumillomo Avo40 Senes		0.0005 – 0.001 mm Cu	Terminals P/N: 8100-3067/8
AMP Econoseal-J Mark II 070 Series	te.com	0.0004 mm Au over	Housing P/N: 174357
AMP Econoseal-J Mark II 070 Series		0.0013 mm Ni	Terminals P/N: 171630

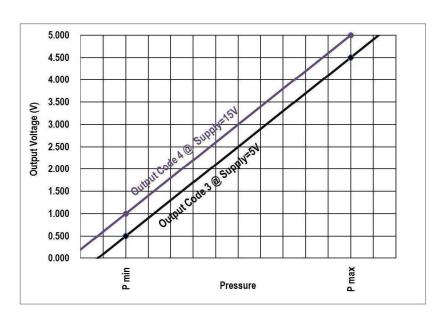
DIMENSIONS





CHARTS

Pressure Transfer Function



Output Type vs. Supply

Output Type (Code)	3	4
Supply Voltage	4.75 ~ 5.25V*	8 ~ 32V
Supply Current	4.0 ~	10.0mA
Output Voltage	0.5 ~ 4.5V*	1.0 ~ 5.0V
Reverse Voltage	1	6V
Overvoltage Protection	16V	32V

^{*} Output ratiometric to supply voltage

Pressure Range				
psi	bar			
150P	010B			
200P	014B			
300P	020B			
500P	035B			
01KP	070B			
1K5P	100B			
03KP	200B			
05KP	350B			
7K5P	500B			
10KP	700B			

Pressure Range (Cu Tube)			
psi	bar		
150P	010B		
300P	020B		
450P	030B		
500P	035B		
750P	050B		

Connection Type
1 = Cable 2 feet
2 = Cable 4 feet
3 = Cable 10 feet
7 = AMP070 Connector
8 = Sumitomo HV040 Connector
9 = Packard Connector
M = Cable 1 m
N = Cable 2 m
P = Cable 5 m
R = Cable 10 m

ORDERING INFORMATION

M71 <u>3 M</u> – <u>300P</u> G – <u>T B</u> 0000

Output	
Code	Output Voltage
3	0.5 – 4.5 V
4	1.0 – 5.0 V

Cable/	Connectors
1	Cable, 2 feet
2	Cable, 4 feet
3	Cable, 10 teet
7	Amp Connector
8	HV040 Sumitomo
9	Packard Connector
M	Cable 1 meter
N	Cable, 2 meter

Cable, 5 meter

Cable, 10 meter

R

Pressure Range [psi]		
psi	bar	
150P	010B	
200P	014B	
300P	020B	
450P	030B	
500P	035B	
750P	050B	
01KP	070B	
1K5P	100B	
03KP	200B	
05KP	350B	
7K5P	500B	
10KP	700B	

		Vent	
		0	17-4PH Stainless Steel
		В	Copper, C12200

Copper Tube Pressure Port (T) is available only with Copper, C12200 Vent Option (B) and non-black options

Pressure Port				
Code	Port			
2	G1/4,BS5380, Male			
4	7/16-20 UNF, SAE J1926-2, Male, w/ O-ring			
5	1/4-18 NPT Female			
6	1/8-27 NPT Male			
Е	R1/4-19 Male			
F	G1/4-19, BS5380, Female			
P	7/16-20 UNF Female w/ Integral Valve Depressor; 1/4 Flare Gasket SAE J513C, Copper			
Q	M10x1.0 ISO 6149-2, Male			
S	M12x1.5, ISO 6149-2, Male			
G	M14x1.5, ISO 6149-2, Male			
U	G1/4, DIN 3852-E, Male			
T	1/4" OD Copper Tube			

NORTH AMERICA

Measurement Specialties, Inc., a TE Connectivity Company Phone: 800-522-6752

Email: customercare.frmt@te.com

EUROPE

Options in green are for both Fittings Options in blue are for Copper fitting only. Options in black are for non-Copper fittings only

> Measurement Specialties (Europe), Ltd., a TE Connectivity Company Phone: +31 73 624 6999

Email: customercare.lcsb@te.com

ASIA

Measurement Specialties (China), Ltd., a TE Connectivity Company Phone: 0400-820-6015

Email: customercare.shzn@te.com

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