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M5200

Industrial Pressure Transducer

SPECIFICATIONS

- **Wide Temperature Range**
- **Compact**
- **Variety of Pressure Ports and Electrical Configurations**
- **Optional Stainless-Steel Snubber**
- **CE Compliant and Weatherproof**
- **UL Certified**
- **Gage, Sealed, Compound**

FEATURES

- Heavy Industrial CE Approval
- 10 V/m EMI Protection
- Reverse Polarity Protection on Input
- Short Circuit Protection on Output
- ±0.25% Accuracy
- ±1.0% Total Error Band
- Compact Outline
- -40°C to +125°C Operating Temperature
- Weatherproof

APPLICATIONS

- Industrial Process Control and Monitoring
- Advanced HVAC Systems
- Refrigeration Systems
- Automotive Test Stands
- Off-Road Vehicles
- Pumps and Compressors
- Hydraulic/Pneumatic Systems
- Agriculture Equipment
- Energy Generation and Management

The M5200 pressure transducers from the Microfused line of MEAS, with their modular design, offer maximum flexibility for different configurations. This latest series sets a new price performance standard for demanding commercial and heavy industrial applications. This series is suitable for measurement of liquid or gas pressure, even for difficult media such as contaminated water, steam, and mildly corrosive fluids.

The wetted material is made of either 17-4 PH or 316L stainless steel and the transducer's durability is excellent with no welds or organics exposed to the pressure media. The M5200 is weatherproof and exceeds the latest heavy industrial CE requirements including surge protection. The circuit is protected from reverse wiring at input and short circuit at output.

This product is geared to the OEM customer for low to mid volumes. MEAS stands ready to provide a custom design of the M5200 where the volume and application warrants. Additional configurations not listed are either available or possible. Please inquire for further information.

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STANDARD RANGES

Range (psi)	Range (Bar)	Gage	Sealed	Compound
0 to 050	0 to 3.5	•		•
0 to 100	0 to 007	•		•
	0 to 010	•		•
0 to 200		•		•
0 to 300	0 to 020	•		•
0 to 500	0 to 035	•		•
0 to 01k	0 to 070	•	•	•
0 to 03k	0 to 200	•	•	•
0 to 05k	0 to 350	•	•	•
0 to 07k	0 to 500	•	•	•
0 to 10k	0 to 700	•	•	•
0 to 15k	0 to 01k	•	•	•

Intermediate ranges available upon request

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Accuracy (combined non-linearity, hysteresis, and repeatability)	-0.25		0.25	%F.S.	BFSL
Isolation, Body to any Lead	100			MΩ	@500V_{DC}
Dielectric Strength			2	mA	@500V_{AC}, 1min
Pressure Cycles	1.00E+6			0~FS Cycles	
Proof Pressure	2X			Rated	
Burst Pressure	5X		20k psi	Rated	
Long Term Stability (1 year)	-0.25		0.25	%F.S.	
Total Error Band (17-4PH)	-1.0		1.0	%F.S.	Over compensated temperature range
Total Error Band (316L, ≤3k psi)	-1.5		1.5	%F.S.	Over compensated temperature range
KTotal Error Band (316L, >3k psi)	-2.0		2.0	%F.S.	Over compensated temperature range
Compensated Temperature	-20		+85	°C	
Operating Temperature	-40		+125	°C	Except cable 105°C max
Storage Temperature	-40		+125	°C	Except cable 105°C max
Load Resistance (R_L)	R_L > 100k			Ω	Voltage Output
Load Resistance (R_L)	< (Supply Voltage -9V) / 0.02A			Ω	Current Output
Current Consumption			5	mA	Voltage Output
Rise Time (10% to 90%)	<2ms (Voltage Output); <3ms (Current Output); Without Snubber				
Wetted Material	17-4PH or 316L Stainless Steel Port, 316L Stainless Steel Snubber				
Gage Pressure Reference Vent	Under 1k psi, customer to ensure venting through mating connector				
Bandwidth	DC to 1KHz (Typical)				
Shock	50g, 11msec Half Sine Shock per MIL-STD-202G, Method 213B, Condition A				
Vibration	±20g, MIL-STD-810C, Procedure 514.2, Fig 514.2-2, Curve L				

For custom configurations, consult factory.

Notes

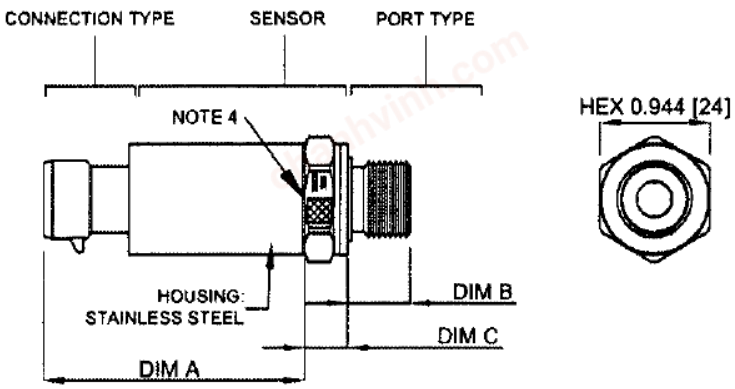
Compensated Temperature: The temperature range over which the product will produce an output proportional to pressure within the specified performance limits.
Operating Temperature: The temperature range over which the product will produce an output proportional to pressure but may not remain within the specified performance limits.
Storage Temperature: The temperature range over which the product can be stored safely in occasions without pressure applied or power input and remains rated performance. Beyond this temperature range may cause permanent damage to the product.
All configurations are built with supply voltage reverse and output short-circuit protections.

CE Compliance

EN 55022 Emissions Class A & B
IEC 61000-4-2 Electrostatic Discharge Immunity (8kV contact/15kV air)
IEC 61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (10V/m, 80M-1GHz)
IEC 61000-4-4 Electrical Fast Transient Immunity (1kV)
IEC 61000-4-5 Surge Immunity (V+ to V-: ±2KV/42Ω; L to Case: ±1KV/12Ω; V- to V_0: ±1KV/42Ω)
IEC 61000-4-6 Immunity to Conducted Disturbances Induced by Radio Frequency Fields (150K~80MHz, 10V level for voltage output models, 3V level for current output model)
IEC 61000-4-9 Pulse Magnetic Field Immunity (100A/m peak)

For all CE compliance tests, max allowed output deviation ±1.5 %F.S.

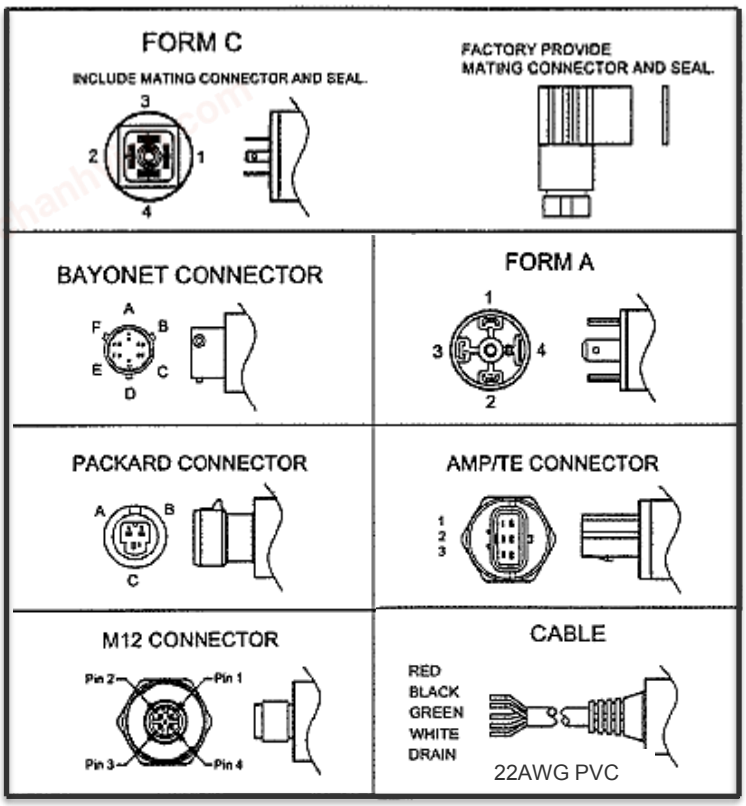
DIMENSIONS



Refer to installation instructions for recommended torque.

Note:

CODE	CONNECTION TYPE	DIM A
1	CABLE 2 FT	2.19 [55.6]
E	CABLE 3 FT	2.19 [55.6]
2	CABLE 4 FT	2.19 [55.6]
3	CABLE 10 FT	2.19 [55.6]
4	PACKARD CONNECTOR A	2.25 [57.2]
5	BAYONET CONNECTOR	1.94 [49.5]
6	FORM C	1.95 [49.5]
7	FORM A1	2.10 [53.3]
8	FORM A2	2.10 [53.3]
B	FORM A3	2.10 [53.3]
9	PACKARD CONNECTOR B	2.25 [57.2]
D	M12 CONNECTOR	1.95 [49.5]
M	CABLE 1 M	2.19 [55.6]
N	CABLE 2 M	2.19 [55.6]
P	CABLE 5 M	2.19 [55.6]
R	CABLE 10 M	2.19 [55.6]
A	AMP CONNECTOR	2.24 [56.9]



PRESSURE PORT TYPE

CODE	PORT	DIM B	DIM C REF.
2	1/4-19 BSPP	0.547 [13.9]	0.366 [9.3]
3	G3/8 JIS B2351	0.615 [15.6]	0.366 [9.3]
4	7/16-20UNF MALE SAE J1926-2 STRAIGHT THREAD, O-RING BUNA-N 90SH-904 (O-RING not provided by TE)	0.508 [12.9]	0.366 [9.3]
5	1/4-18 NPT	0.600 [15.2]	0.366 [9.3]
6	1/8-27 NPT	0.390 [9.91]	0.366 [9.3]
B	G1/4 JIS B2351	0.547 [13.9]	0.366 [9.3]
E	1/4-19 BSPT	0.500 [12.7]	0.366 [9.3]
F	1/4-19 BSPP FEMALE (without snubber)	0.621 [15.8]	0.366 [9.3]
P	7/16-20UNF FEMALE SAE J513 STRAIGHT THREAD WITH INTEGRAL VALVE DEPRESSOR	0.430 [10.9]	0.444 [11.3]
N	7/16-20UNF FEMALE SAE J513 STRAIGHT THREAD	0.430 [10.9]	0.444 [11.3]
Q	M10 x 1.0 mm ISO 6149-2	0.449 [11.4]	0.366 [9.3]
S	M12 x 1.5 mm ISO 6149-2	0.531 [13.5]	0.366 [9.3]
U	G1/4 DIN 3852 FORM E, GASKET DIN3869-14 NBR (Gasket not provided by TE)	0.519 [13.2]	0.366 [9.3]
W	M20 x 1.5 mm ISO 6149-2	0.551 [14.0]	0.441 [11.2]
G	M14 x 1.5 mm ISO 6149-2	0.531 [13.5]	0.366 [9.3]

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WIRING

Current Output Wiring				
CONNECTION	**+SUPPLY**	**-SUPPLY**	**NC. PINS**	**P REF VENT**
Bayonet	A	B	C,D,E	F
Packard, A	A	B	C	Hole Through Connector
Packard, B	B	A	C	Hole Through Connector
Cable	RED	BLK		In Cable
M12	1	3	2,4	Hole Through Connector
AMP/TE	1	2	3	Hole Through Connector
FORM C	1	2	3,4	Threads Through Connector
FORM A1	1	2	3,4	Threads Through Connector

Voltage Output Wiring					
CONNECTION	**+SUPPLY**	**+OUTPUT**	**COMMON**	**NC. PINS**	**P REF VENT**
Bayonet	A	B	C	D,E	F
Packard, A	A	C	B		Hole Through Connector
Packard, B	B	C	A		Hole Through Connector
Cable	RED	WHT	BLK		In Cable
M12	1	2	3	4	Hole Through Connector
AMP/TE	1	3	2		Hole Through Connector
FORM C	1	2	3	4	Threads Through Connector
FORM A1	1	3	2	4	Threads Through Connector
FORM A2	3	1	2	4	Threads Through Connector
FORM A3	1	2	3	4	Threads Through Connector

Notes:

1. NC pins are reserved for factory use only. **Customers should not use these connections**.
2. For cable connection, the drain wire is internally terminated to pressure port.

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CONNECTION TYPES

CONNECTION	DESCRIPTION	MATING HOUSING P/N	MATING TERMINAL P/N	RUBBER SEAL P/N
Bayonet	BAYONET PTIH-10-6P OR EQUIV	PT06A-10-6S MIL-C-26482	-	-
Packard	3-PIN METRI-PACK 150	12078090	12103881, QTY 3	-
M12	BINDER SERIES 713, 09 3431 77 04 OR EQUIV	4-POS FEMALE CONNECTOR	-	-
AMP/TE	AMP / TE 3-PIN ECONOSEAL J SERIES	174357-2 & 174358-7	171630-1 (AWG 20~24) 171662-1 (AWG 16~20) QTY 3	172746-1 (AWG 20~24) 172888-2 (AWG 16~20) QTY 3
FORM C	INDUSTRIAL STANDARD 9.4MM FORM C	HIRSCHMANN 933 024-100,OR, ATAM KD046000B7 (SEAL INCL.)	-	HIRSCHMANN 730 185-002
FORM A1, A2, A3	DIN EN 175 301-803-A 18MM	HIRSCHMANN 931 969-100,OR, ATAM KA245000B4 (SEAL INCL.)	-	HIRSCHMANN 730 801-002

Note: Transmitter of gage pressure type requires vent to atmosphere on the pressure reference side. This is accomplished via cable from the transmitter (the end of the cable should be terminated to clean and dry area) or through the customer mating connector/cable assembly which has internal vent path.

Suggested vented M12 mating connector P/N MB12FWAFF04ST-4 and MB12FWAFF04ST-3 at www.finecables.com for 0.157”~0.236” and 0.236”~0.315” diameter cable respectively.

WEATHERPROOF

WEATHER-PROOF RATING	
CONNECTION	**IP CODE**
Bayonet	IP67
Packard	IP66
Cable	IP67
M12	IP67
AMP/TE	IP67
FORM C	IP65
FORM A	IP65

Note: Weatherproof ratings are met when the mating connectors are installed properly, and the cable termination is to dry and clean area.

OUTPUTS

Code	Supply Voltage	Max Input Current	Output Signal	Pressure Rating	
				psi	bar
3	5 ± 0.25V, PROTECTED TO 30V	10mA	0.5V-4.5V RATIOMETRIC	50 – 15,000	3.5 – 1000
4	8 – 30V	10mA	1 – 5V		
5	9 – 30V	25mA	4 – 20mA		
6	8 – 30V	10mA	0 – 5V		
7	12 – 30V	10mA	0 – 10V		
8	8 – 30V	10mA	1 – 6V		
9	5 – 30V	10mA	0.5 – 4.5V		

ORDERING INFORMATION

M52 6 1 - 1 0 00 1 2 – 100P G

Output	
Code	**Output**
3	0.5 to 4.5V Ratiometric
4	1 to 5V
5	4 to 20mA
6	0 to 5V
7	0 to 10V
8	1 to 6V
9	0.5 to 4.5V

Connectors	
Code	Connection
1	Cable 2ft
E	Cable 3ft
2	Cable 4ft
3	Cable 10ft
4	Packard Connector A
5	Bayonet Connector
6	Form C
7	Form A1
8	Form A2 *
B	Form A3 *
9	Packard Connector B
D	M12 Connector
M	Cable 1m
N	Cable 2m
P	Cable 5m
R	Cable 10m
A	Amp Connector

*Only available for voltage output

Port Material	
Code	Description
0	17-4PH Stainless Steel
1	316L Stainless Steel

Cleaning	
0	No Selection
1	Oxygen Clean B40.1 Level IV
2	With Snubber

Label	
Code	Label Type
0	Adhesive Label
1	Laser Marking

Pressure Reference	
G	Gauge
S	Sealed (≥1k psi)
C	Compound

Pressure Ranges	
PSI STD	**BAR STD**
050P	3.5B
100P	007B
200P	010B
300P	020B
500P	035B
01KP	070B
03KP	200B
05KP	350B
07KP	500B
10KP	700B
15KP	01KB

Note: Compound pressure range is -14.7 to xxxpsig or -1 to xxxbarg. (e.g. 200PC: -14.7 to 200psig, 020BC: -1 to 20barg) Pressure Ranges between 50-15000psi (3.5-1000bar) are all available. Change Pressure Number Accordingly

Pressure Port	
Code	**Port**
2	1/4-19 BSPP
3	G3/8 JIS B2351
4	7/16-20 UNF Male SAE J1926-2 Straight Thread O-Ring Buna 90SH ID8.92xW1.83mm (O-ring not provided by TE)
5	1/4-18 NPT
6	1/8-27 NPT
B	G1/4 JIS B2351
E	1/4-19 BSPT
F	1/4-19 BSPP Female
P	7/16-20UNF Female SAE J513 Straight Thread w/ Integral Valve Depressor
N	7/16-20UNF Female SAE J513 Straight Thread
Q	M10X1.0mm ISO 6149-2
S	M12X1.5mm ISO 6149-2
U	G1/4 DIN 3852 Form E Gasket DIN3869-14 NBR (Gasket not provided by TE)
W	M20X1.5mm ISO 6149-2
G	M14X1.5mm ISO 6149-2

Note: Refer to online installation instruction for recommended torque. Installation instructions are available on our website in English and Chinese.

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