PZ770

Miniature Pressure Sensor

Engineered and manufactured by PMC-STS

Benefits

- Lightweight design allows effortless installation and integration into complex systems (e.g. supports strict aerospace weight budgets)
- Industry-leading static accuracy ensures precise and repeatable measurements
- Wide measuring ranges accommodate varying system requirements and simplify sensor selection

Typical Applications

- Aerospace
- Motorsports
- Test and Measurement
- Fuel Cell
- Industrial

Technical Specifications

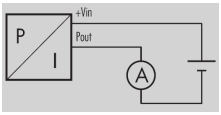
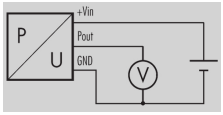
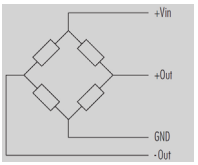
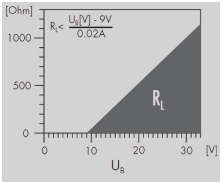
Parameter	Specification Pressure range #1		Specification Pressure range #2	
Pressure Range	0 ... <60 psi (0 ... <4.1 bar)		60 ... <145 psi (4.1 ... <10.3 bar)	
Proof Pressure	3x FS		3x FS	
Burst Pressure	> 12000 psi (> 850 bar)		> 12000 psi (> 850 bar)	
Output signal	mA	voltage	mA	voltage
Static Accuracies [1]	≤ 0.2 % FS			
32–160°F (0–70°C) Total Error Band [2]	≤ 0.8 % FS			
-15–212°F (-25–100°C) Total Error Band [2]	≤ 1.2 % FS			
-40–255°F (-40–125°C) Total Error Band [2]	≤ 3.8 % FS			
Operating Temperature Range	-40–300°F (-40–150°C)		-40–300°F (-40–150°C)	

Parameter	Specification Pressure range #3		Specification Pressure range #4	
Pressure Range	145 ... <360 psi (10.3 ... <25 bar)		360 ... <1015 psi (25 ... <70 bar)	
Proof Pressure	3x FS		3x FS	
Burst Pressure	> 12000 psi (> 850 bar)		> 12000 psi (> 850 bar)	
Output signal	mA	voltage	mA	voltage
Static Accuracy [1]	≤ 0.15%FS	≤ 0.15%FS		
32–160°F (0–70°C) Total Error Band [2]	≤ 0.4 % FS	≤ 0.3%FS		
-15–212°F (-25–100°C) Total Error Band [2]	≤ 0.6 % FS	≤ 0.5%FS		
-40–255°F (-40–125°C) Total Error Band [2]	≤ 1.6 % FS	≤ 1.2%FS		
Operating Temperature Range	-40–300°F (-40–150°C)		-40–300°F (-40–150°C)	

Parameter	Specification Pressure range #5		Specification Pressure range #6	
Pressure Range	1015 ... <2320 psi (70 ... <160 bar)		2320 ...6000 psi (160 ... 413 bar) [3]	
Proof Pressure	3x FS		3x FS	
Burst Pressure	> 12000 psi (> 850 bar)		> 12000 psi (> 850 bar)	
Output signal	mA	voltage	mA	voltage
Static Accuracies [1]	≤ 0.2%FS	≤ 0.2%FS		
32–160°F (0–70°C) Total Error Band [2]	≤ 0.4%FS	≤ 0.4%FS		
-15–212°F (-25–100°C) Total Error Band [2]	≤ 0.6%FS	≤ 0.6%FS		
-40–255°F (-40–125°C) Total Error Band [2]	≤ 1.2%FS	≤ 1.2%FS		
Operating Temperature Range	-40–300°F (-40–150°C)		-40–300°F (-40–150°C)	

[1] Zero based accuracy according to EN-61298, incl. hysteresis and repeatability at ambient temperature
[2] Total error including accuracy and temperature influences at max. signal span (16mA for current loop; 4 VDC for voltage loop)
[3] Reduced service life at pressures > 5000 psi

Electrical Specifications

Parameter	Specification		
Power Supply for current loop (4-20 mA)	9 ... 40 VDC		
Power Supply for voltage output (0.5–4.5 VDC)	7 ... 36 VDC		
Power Supply for ratiometric output (mV/V)	1 ... 10 VDC		
Bandwith	1000 Hz		
Supply Influence	< 0.05%		
Start Up Time	To be defined/tested		
Parameter	**4–20 mA**	**0.5–4.5 VDC**	**mV/V**
Circuit Diagram			
Load Resistance		<1k Ohm	
Reverse Polarity Protection	Yes		

Qualifications

Immunity Test	Test Level	Standard
Power Frequency Magnetic Field (50/60 Hz)	30 A/m	IEC 61000-4-8
Radiated RF Electromagnetic Field (80 MHz – 1.0 GHz)	10 V/m, 80% AM (1 kHz)	IEC 61000-4-3
Radiated RF Electromagnetic Field (1.4 – 6.0 GHz)	3 V/m, 80% AM (1 kHz)	IEC 61000-4-3
Electrostatic Discharge (ESD) – Contact	±4 kV	IEC 61000-4-2
Electrostatic Discharge (ESD) – Air	±8 kV	IEC 61000-4-2

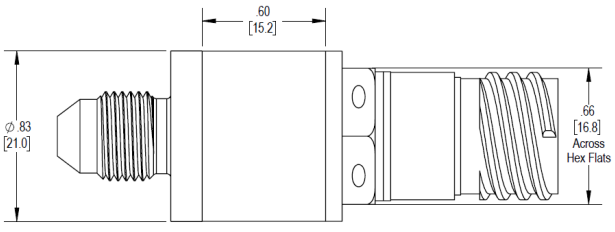
Mechanical Tests	Test Level	Standard
Shock	100g	Mil-Std-810
Vibration	5kHz Sine at 100g	Mil-Std-810 Curve L

Physical Specifications

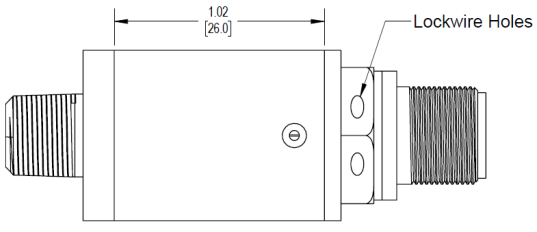
Parameter	Specification
Oil Filling	AS100 Halocarbon PAO-4, Non Silicone Dowsil 510
Weight, Connector Version	1.7 oz
Transducer	Super Duplex - High Strength Alloy Steel
Housing	316L Stainless Steel

Mechanical Details

Dimension for Absolute pressure type



Dimension for Gage pressure type



Process Connections

Fig. A - 1/8 NPT

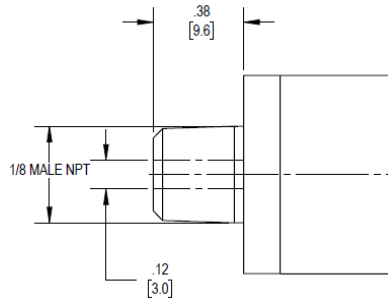


Fig. C - M10 x 1 no Cone

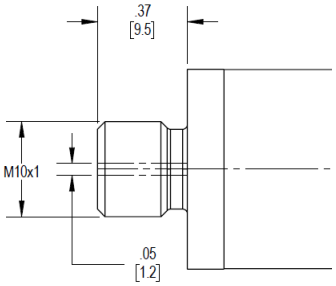


Fig. F - 5/16-24 UNF-3A with Cone

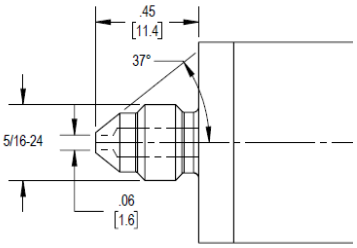


Fig. G - 3/8-24 UNF-3A with cone

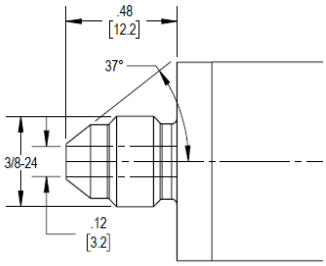


Fig. H - 7/16-20 UNF-3A with Cone

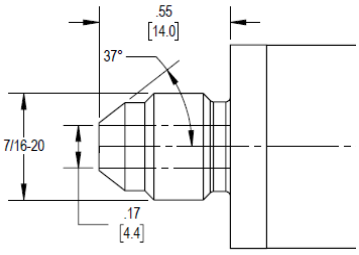


Fig. J - 5/16-24 UNF-3A no Cone

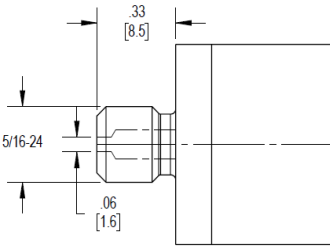


Fig. K - 3/8-24 UNF-3A no Cone

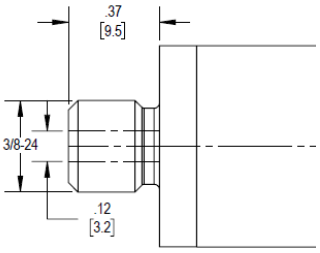


Fig. L - 7/16-20 UNF-3A no Cone

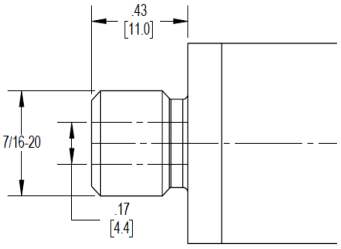


Fig. M - 5/16-24 UNJF-3A with Cone

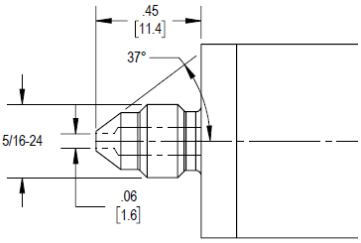


Fig. N - 3/8-24 UNJF-3A with Cone

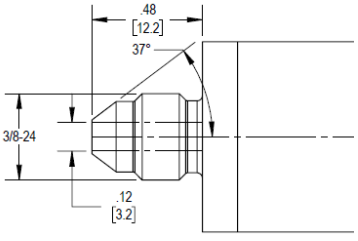
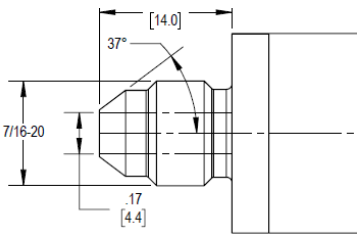


Fig. P - 7/16-20 UNJF-3A with Cone



Electrical Connections

Fig. 2 - FEP Cable with DR25 Sleeving

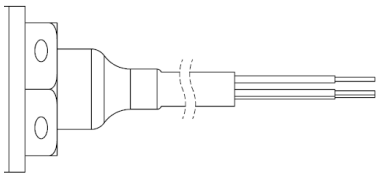


Fig. 3 - D38999, 6 Pins

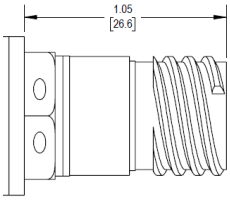


Fig. 4 - M12x1, 4 Pins

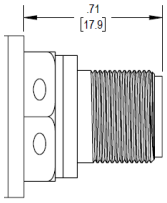


Fig. 5 - MIL-C-26482, 6 Pins

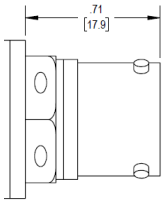
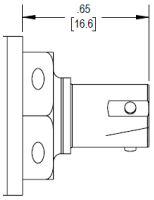


Fig. 6 - 8STA1Y0205PN170 (Souriau), 5 Pins



4-20 mA Current Loop

Cable Option		
+Supply	Return	Factory Use Only
Red	Black	White

Connector Option			
+Supply	Return	Factory Use Only	Not Connected
Pin 1 (A)	Pin 2 (B)	Pin 3 (C)	All Others

Voltage Output

Cable Option		
+Supply	Return	+Output
Red	Black	White

Connector Option			
+Supply	Common	+Output	Not Connected
Pin 1 (A)	Pin 2 (B)	Pin 3 (C)	All Others

mV/V Output

Cable Option			
+IN	-IN	+Output	-Output
Red	Black	Green	White

Connector Option				
+IN	-IN	+Output	-Output	Not Connected
Pin 1 (A)	Pin 2 (B)	Pin 3 (C)	Pin 4 (D)	All Others

PZ770 Ordering Options

PZ770-23XX-XXXXXXX		X	X	-	X	X	X	X	X	X	X
Pressure Type	Absolute	A									
Pressure Range	15 psi (1.03 bar)		D								
	20 psi (1.38 bar)		E								
	25 psi (1.72 bar)		F								
	50 psi (3.45 bar)		G								
	75 psi (5.17 bar)		H								
	100 psi (6.89 bar)		J								
	150 psi (10.3 bar)		K								
	200 psi (13.8 bar)		L								
	300 psi (20.7 bar)		M								
	500 psi (34.5 bar)		N								
	750 psi (51.7 bar)		P								
	1000 psi (68.9 bar)		Q								
	1500 psi (103 bar)		R								
	2000 psi (138 bar)		S								
	3000 psi (207 bar)		T								
	4000 psi (276 bar)		U								
	5000 psi (345 bar)		V								
	6000 psi (414 bar)		W								
	Special range available upon request		X								
Process Connectors	1/8” NPT, M				A						
	M10 x 1, M without Cone				C						
	5/16-24 UNF, Male with Cone				F						
	3/8-24 UNF, M with Cone				G						
	7/16-20 UNF, M with Cone				H						
	5/16-24 UNF, M without Cone				J						
	3/8-24 UNF, M without Cone				K						
	7/16-20 UNF, M without Cone				L						
	5/16-24 UNJF M, with Cone				M						
	3/8-24 UNJF, M with Cone				N						
	7/16-20 UNJF, M with Cone				P						

PZ770-23XX-XXXXXXX		X	X	-	X	X	X	X	X	X	X
Electrical Connection	FEP cable with DR25 sleeving [1]					2					
	D38999, 6 pins					3					
	M12 x 1, 4 Pins					4					
	MIL-C-26482, 6 Pins					5					
	8STA1Y0205PN170 (Souriau), 5 Pins					6					
	Special					9					
Output Signal	mV/V (Ratiometric), 4 Wire						1				
	0.5 to 4.5 VDC , 3 Wire						2				
	4-20 mA, 2 Wire						3				
Static Accuracy	Typical							A0			
	Enhanced accuracy available upon request							A1			
Potting	Standard, Silicone elastomer (Silgard)								P0		
	Optional, Space potting (Thermo-Bond 51)								P1		
Oil Fill	AS100									F1	
	PAO-4, Non Silicone									F2	
	Dowsil 510									F3	
	Halocarbon [2]									F4	
Oxygen Cleaning	not included										C0
	included										C1
Cable length	Specified in feet										

[1] Max. Cable length = 25 feet (7,6 m)
[2] Halocarbon oil filled modules are limited in:
- Pressures ≤ 5800 psi (400 bar)
- Operating temperatures ≥ 210° F (100°C) are not specified for permanent operation