Dynisco

From lab to production,
providing a window into the process

ECHO™

MELT PRESSURE SENSORS

Trusted for Quality, Reliability and Accurate Performance at an Affordable Price

Description

Dynisco's Echo™ Series of melt pressure sensors offer quality performance and value for plastic processing utilizing standard configurations and pressure ranges. Echo sensors are designed to meet customer requirements by providing a combination of economic value and performance for general extrusion applications while providing a ±0.2% repeatability when measuring process pressures. Use Echo Series sensors when the application requires a quality measurement for optimized control, but not the costs of all the extra features.

Echo was designed with the best engineering practices and is backed by Dynisco with two full years of warranty - double the protection of comparably-priced sensors.

Echo sensor diaphragms are coated with Titanium Aluminum Nitride, as a standard offering, providing superior performance over less effective Titanium Nitride coatings.

Dynisco technology is widely accepted by OEM's and end users throughout the world. The Echo Series sensors are available with 3.33mV/V, 4-20mA, 0-5VDC or 0-10VDC outputs designed to work with most industrial controls. In addition to melt pressure measurements, Echo Series offer a optional melt temperature measurement with type J, K thermocouples or RTD. The Echo Series are equipped with a 1/2-20 UNF or M18 thread for installation in standard transducer mounting holes. Additional mounting configurations are available.

Features

- 2 year warranty
- Accuracy better than ±0.5%
- TiAlN diaphragm coating is standard
- mV/V, 0-10VDC, or mA outputs available
- Integral temperature sensor option
- Available in configurations that fit most extruder applications
- 1.5M, 3M, 5M, 7.5M, 10M & 15M psi pressure range capability
- Alternative fill model available

Performance Characteristics	
Input, Excitation:	mV/V: 10VDC recommended, 12VDC max VDC: 16-30VDC
	mA: 14-30VDC
Output, Analog:	3.33mV/V, 0-10VDC, or 4-20mA
Accuracy*:	±0.5% FS
Repeatability:	±0.2 FSO
Electronics Operating Temp, max:	mV/V: 250°F (120°C); mA, VDC: 185°F (85°C)
Overload Pressure Rating:	1.5 x FSO
Pressure Ranges (psi):	1.5M, 3M, 5M, 7.5M, 10M & 15M
Pressure Units:	PSI, Bar, Kg/cm^2, MPa, KPA
Zero Balance Adjustment (±% FS):	mV/V: na; VDC: ±15%; mA: ±20%
Zero Balance Setting (±% FS):	mV/V: ±10%; VDC, mA: ±0.5%
Bridge Resistance:	mV/V: 345Ω, min
Insulation Resistance:	mV/V: 1000 MΩ @50VDC; VDC, mA: 100 MΩ @50VDC
Internal Shunt Calibration (R-Cal):	80% FSO ±1.0% FSO
Mechanical & Packaging	
Sensor Technology:	4-arm bonded foil strain gage Wheatstone bridge
Diaphragm Temperature:	662°F (350°C) for Rigid; 752°F (400°C) for Flex
Zero Shift (process temp change) Mercury:	25 psi/100°F (45psi/100°C), nominal
Zero Shift (process temp change) NaK:	43 psi/100°F (90psi/100°C), nominal
Diaphragm Wetted Parts:	17-4 PH SST
Electrical Connection:	6 pin or Hirschmann
Process Connection:	1/2-20 UNF thread (45° conical seal) M14, M18, M22
Mounting Torque:	250 in/lbs, max
Temperature Sensor (optional):	J or K-type thermocouple with 3 inch flex, PT100 RTD
Approvals & Certifications	
CE:	Directive 2004/108/EC
Recommended Accessories	
Mounting Hole Matching Tool Kit:	Part Number 200925
6-pin Bendix Mating Connector:	Part Number 711600
Mounting Bracket (Electronics):	Part Number 200941
Cable Assemblies, Indicators, Controllers:	Consult distributor or Dynisco
Replacement Thermocouples:	
K Type 6" Snout	Item Number HY001715
J Type 6" Snout	Item Number HY001722
J Type 9" Snout	Item Number HY001723
J Type 12" Snout	Item Number HY001724
PT100 RTD 6" Snout	Item Number HY001726

*Accuracy is defined as the combined error expressed as a percentage of full scale output. Combined error includes linearity (BSL), as defined in ISA-S37.1.

**To avoid bending a 6" snout using a 12" wrench, do not apply more than listed torque without supporting bending moment. When applying torque to a snout longer than 12", counteract the bending moment with a support.

Ordering Guide

Mercury

ECHO-XXX-XXX-XXX-XXX-XXX-XXX-XXX-XXX

Output
MV3 = 3.33mV/V
MA4 = 4-20mA
VT1 = 0-10 V
VT5 = 0-5V

Units of Measure
PSI = PSI
BAR = Bar
KG2 = Kg/cm²
MPA = MPa

Pressure Range

R17 =	1.5M psi;	100Kg/cm²	100 Bar;	10MPa
R20 =	3M psi;	200Kg/cm²	200 Bar;	20MPa
R21 =	5M psi;	350Kg/cm²	350 Bar;	35MPa
R22 =	7.5M psi;	500Kg/cm²	500 Bar;	50MPa
R23 =	10M psi;	700Kg/cm²	700 Bar;	70MPa
R24 =	15M psi;	1000 Kg/cm²	1000 Bar;	100MPa

Process Connection
UNF = 1/2-20 UNF
M14 = M14 x 1.5
M18 = M18 x 1.5
M22 = M22 x 1.5

Thermocouple
NTR = No Thermocouple or RTD
TCJ = Thermocouple J-type with 3 inch flex
TCK = Thermocouple K-type with 3 inch flex
RTD = PT100 RTD

Flexible Length ±10% Nominal
NFL = No Flex Length
F18 = 18 inches (45.7 cm)
F30 = 30 inches (76.2 cm)

Snout Length
S06 = 6 inch (15.2 cm)
S09 = 9 inch (22.9 cm)
S12 = 12 inch (30.4 cm)

Electrical Connection
6PN = 6 pin connector
HIR = Hirschmann connector

NaK

ECHO-XXX-XXX-XXX-XXX-XXX-XXX-XXX-XXX-N

Output
MV3 = 3.33mV/V
MA4 = 4-20mA
VT1 = 0-10 V
VT5 = 0-5V

Units of Measure
PSI = PSI
BAR = Bar
KG2 = Kg/cm²
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Pressure Range

R17 =	1.5M psi;	100Kg/cm²	100 Bar;	10MPa
R20 =	3M psi;	200Kg/cm²	200 Bar;	20MPa
R21 =	5M psi;	350Kg/cm²	350 Bar;	35MPa
R22 =	7.5M psi;	500Kg/cm²	500 Bar;	50MPa
R23 =	10M psi;	700Kg/cm²	700 Bar;	70MPa

Process Connection
UNF = 1/2-20 UNF

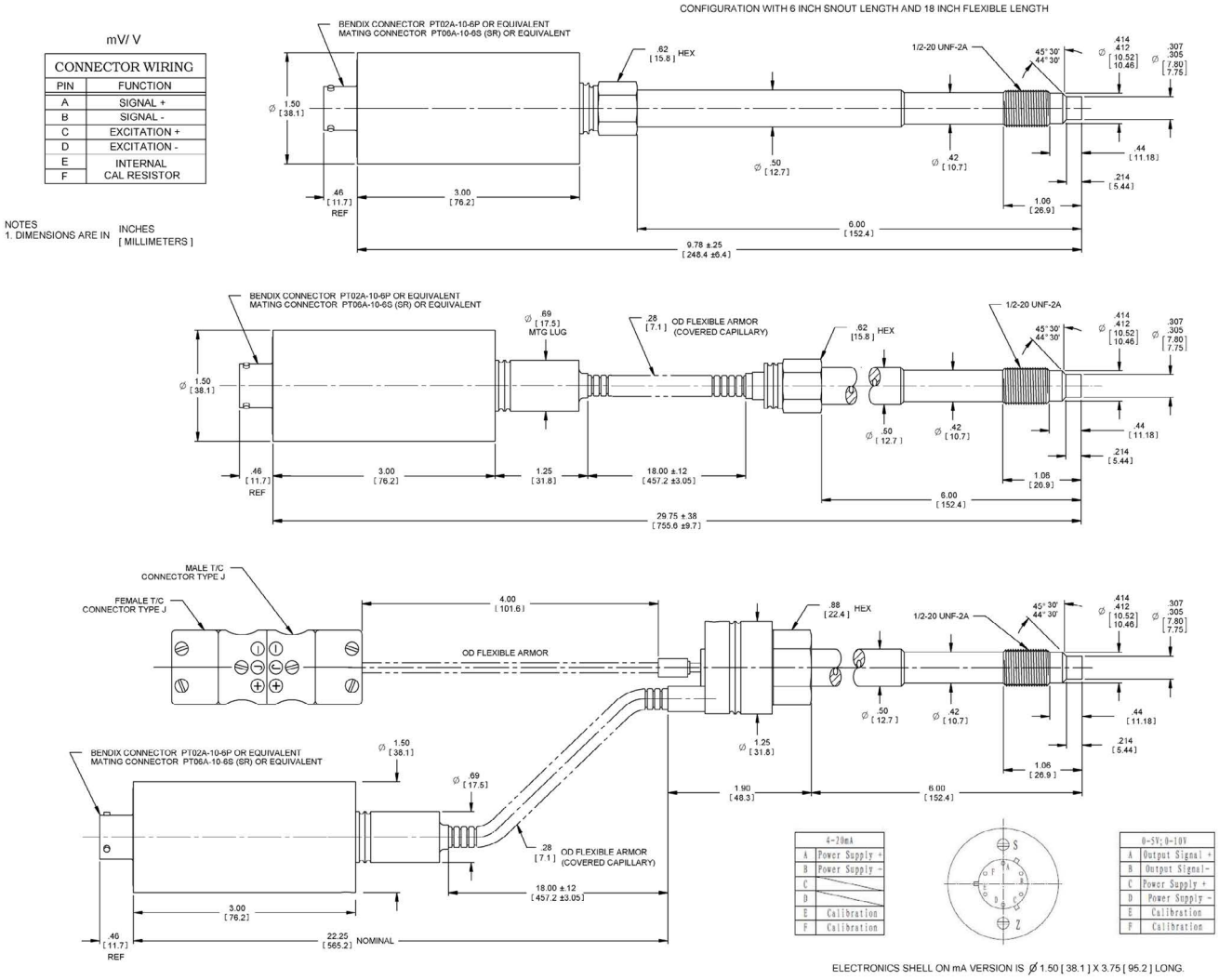
Thermocouple
NTR = No Thermocouple or RTD
TCJ = Thermocouple J-type with 3 inch flex
TCK = Thermocouple K-type with 3 inch flex
RTD = PT100 RTD

Flexible Length ±10% Nominal
NFL = No Flex Length
F18 = 18 inches (45.7 cm)
*F18 is only offered with S06 snout length

Snout Length
S06 = 6 inch (15.2 cm)
S12 = 12 inch (30.4 cm)
*S12 is only offered with NFL flexible length

Electrical Connection
6PN = 6 pin connector
HIR = Hirschmann Connector

Dimensions



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Refer to www.dynisco.com for access to Operator Manual and other support documentation.
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