



SENSONETICS

Sensing today...with tomorrow's technology

SEN-421/422 PRESSURE/TEMPERATURE TRANSMITTERS



Real-time in-process temperature and pressure measurements

FEATURES

- Sapphire Diaphragm
- Fast response time < 100 microseconds
- Infinite cycle life @ rated FSPR
- Abrasion-proof diaphragm
- No harmful mercury, NaK or Push Rods
- No signal decay
- No hysteresis
- Ideal for ISO-9000 and Six Sigma

APPLICATIONS

- Polymer plants
- Fiber spinning
- Chemical process industries
- Pharmaceuticals
- Refineries
- Food processing
- Oil and gas
- Autoclaves

SEN 421 MELT PRESSURE TRANSMITTER

SEN 422 MELT PRESSURE AND TEMPERATURE TRANSMITTER

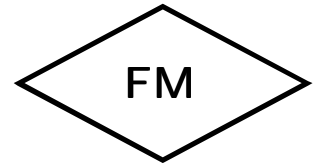
Sonsonetic's SEN-421 and SEN-422 Pressure/Temperature Transmitters utilize the same state-of-the-art, SILICON-ON-SAPPHIRE (S-O-S) technology as used in the revolutionary SEN-401 and SEN-402 which have rapidly established a proven track record for accuracy, reliability and durability in the thermoplastics and food extrusion industries.

S-O-S technology does not require high-temperature isolation of the sensing diaphragm, thereby eliminating the need for mercury, NaK fill or push rods. The sapphire diaphragm is fifty times harder than stainless steel, making it virtually impervious to wear due to abrasion. In addition, the SEN421 and SEN-422 are the world's only Factory Mutual approved, non-mercury filled melt pressure and pressure/temperature transmitters.

The SEN-421 Pressure Transmitter features an advanced 2-wire, 4-20mA amplifier which accommodates a wide range of supply voltages. For ease of calibration, there is minimal interaction between the amplifiers zero and span adjustments. The system also features lead reversal and short circuit protection.

The SEN-422 Pressure/Temperature Transmitter incorporates a silicon RTD on the sapphire force-collection diaphragm located at the tip of the transducer. This RTD/sapphire diaphragm is thermally isolated from the mounting wells. The result is a reliable transmitter that measures surface media temperature and pressure, while maintaining its accuracy over long periods of time. Moreover, it does not protrude into the melt stream and disrupt laminar flow.

Sonsonetic's combined pressure/temperature transmitters provide reliable measurement and control of a process's most important parameters, thus enabling users to protect equipment and personnel, increase production rates and to perform diagnostic tests.



APPROVED

SEN-421

Agency approved for intrinsically safe operation in hazardous locations

CLASS 1, DIVISION 1

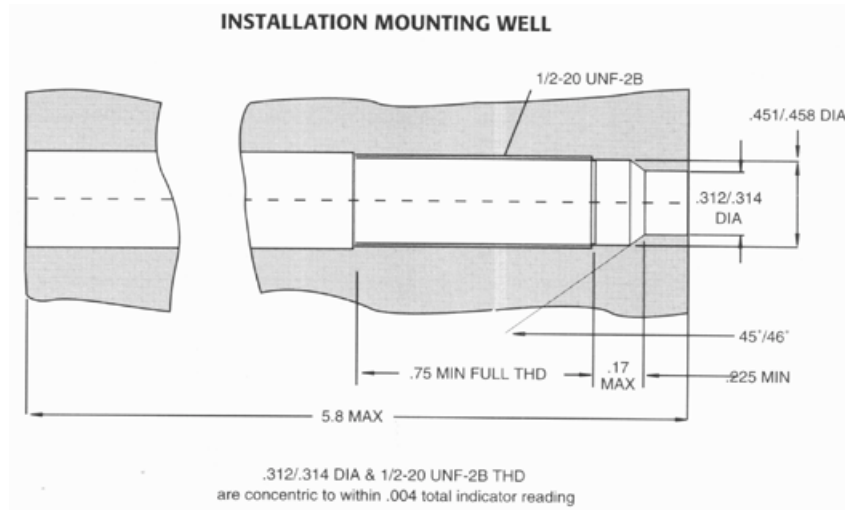
GROUPS A, B, C, D when installed in accordance with instructions.

SEN-422

System approved For CLASS 1, DIVISION 1 GROUPS C, D

Industry's only Factory Mutual approved, non-mercury-filled melt pressure transmitters.

PATENTED



SEN 421 MELT PRESSURE TRANSMITTER

SEN 422 MELT PRESSURE AND TEMPERATURE TRANSMITTER

Pressure Transmitter

Ranges: 0-150, 0-250, 0-500, 0-750, 0-1000, 0-1500, 0-3000, 0-5000, 0-7500, 0-10,000, 0-15,000, 0-30,000, 0-40,000 psi.

Combined error: Better than ~0.5% FSO

Repeatability: Better than r0.1% FSO

Resolution: Infinite

Maximum pressure: 2x full scale; 35,000 psi maximum

Wetted material: Single Crystal Sapphire

Case material: 17-4 pH and 300 series stainless steel

Mounting torque: 40 in-lbs nominal, 50 in-lbs maximum

Maximum diaphragm temperature: 750°F (400°C)

Thermal Zero shift: Better than ±0.01% FSO/°F

Thermal span shift: Better than ±0.005% FSO/°F

Consult Factory for other thermal compensation options. In normal operation, thermal offset is zeroed out during start-up calibration.

Temperature Transmitter

Range: 750°F (400°C) maximum

Resolution: Infinite

Sensor: On-diaphragm silicon RTD Calibration: 4mA @ 80°F, 20mA @ 500°F or 750°F

Electrical Characteristics

Current output: 4-20mA. SEN-422 has separate loops for pressure and temperature

Input voltage: 14-30 VDC

Maximum Load resistance: 800 Ω @ 30 VDC; 500 Ω @ 24 VDC

Zero: 4mA, field adjustable ±10%

Span: 20mA, field adjustable ±10%

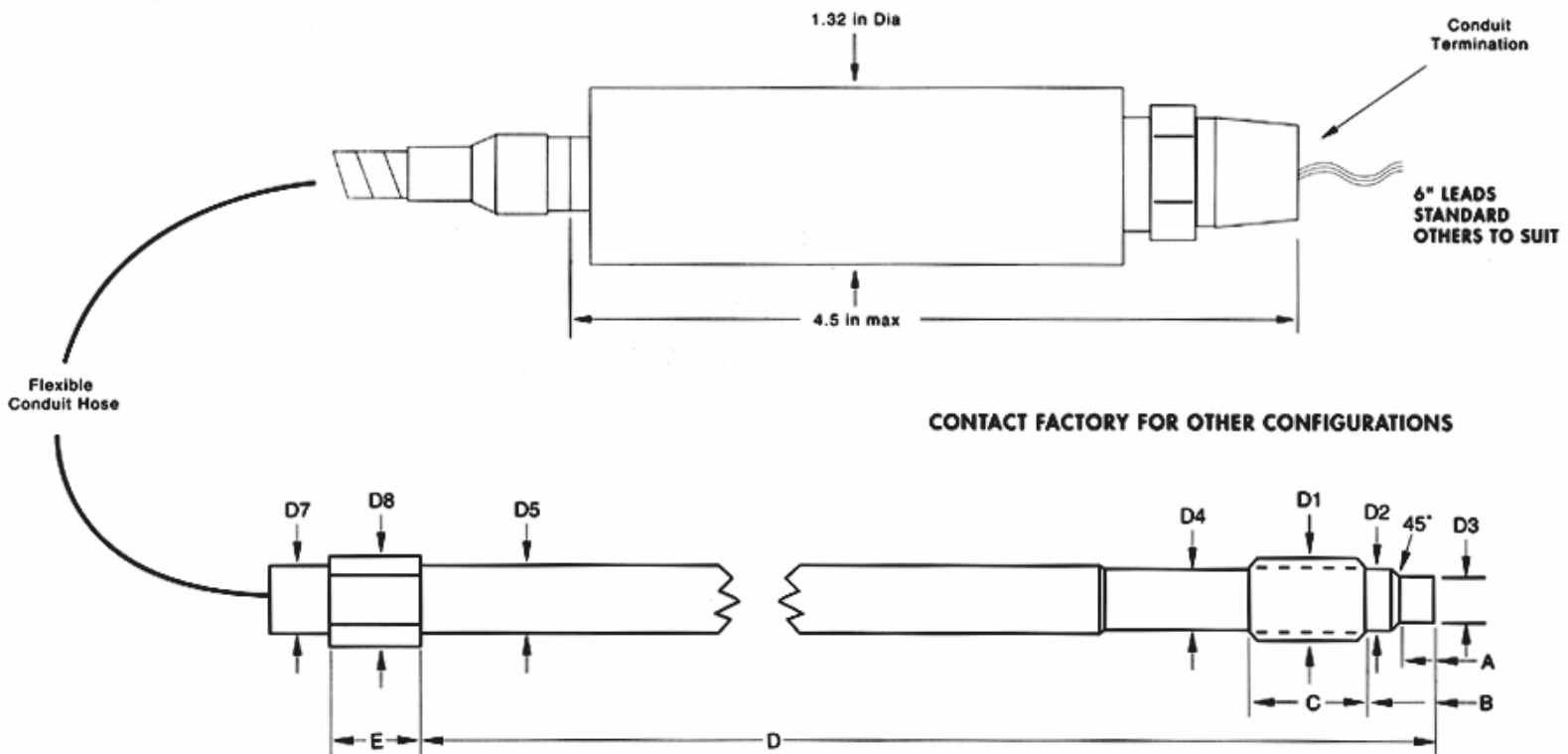
Lead reversal protection: Up to 5A

Response time: Better than 100 micro-sec

Factory mutual approved intrinsically safe:

SEN-421 Entity approved CLASS 1, DIV 1, GPS A, B, C, D

SEN-422 System approved CLASS 1, DIV 1, GPS C, D



OUTLINE DRAWING	D1	D2	D3	D4	D5	D6	D7	D8	A	B	C	D*	E
No. 10 (inches)	1/2 X 20	.40	.305	.42	.50 to .75	.500	.62	3/4 HEX	.209	.44	.62	6 or 12.5	.500

SEN 421 MELT PRESSURE TRANSMITTER

SEN 422 MELT PRESSURE AND TEMPERATURE TRANSMITTER

ORDERING INFORMATION

SEN-42X-XXX-XX-XXX-XXX-XXX

MODEL: _____

421 = PRESSURE TRANSMITTER, 4-20 mA

422 = PRESSURE AND TEMPERATURE, 4-20 mA

PRESSURE RANGE: _____

- | | |
|----------------|-----------------|
| 1.5C = 150 PSI | 5M = 5000 PSI |
| 2.5C = 250 PSI | 7.5M = 7500 PSI |
| 5C = 500 PSI | 10M = 10000 PSI |
| 7.5C = 750 PSI | 15M = 15000 PSI |
| 1M = 1000 PSI | 30M = 30000 PSI |
| 3M = 3000 PSI | 40M = 40000 PSI |

OUTLINE: _____

10 = No. 10 (1/2-20 UNF) 12 = METRIC THD (M18 X 1.5 THD)

STEM LENGTH: _____

- | | |
|------------------|----------------|
| 3 = 3 INCH | 12 = 12.5 INCH |
| 6 = 6 INCH (STD) | 15 = 15 INCH |
| 9 = 9 INCH | 18 = 18 INCH |
| W = WELDED | D = DISCONNECT |

FLEX LENGTH: _____

- | | | |
|--------------|--------------|----------------|
| 18 = 18 INCH | 60 = 60 INCH | 120 = 120 INCH |
| 36 = 36 INCH | 72 = 72 INCH | |
| 48 = 48 INCH | 84 = 84 INCH | |

TERMINATION: _____

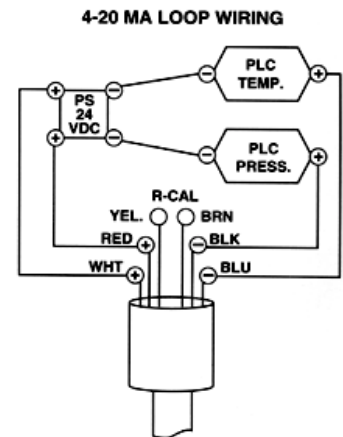
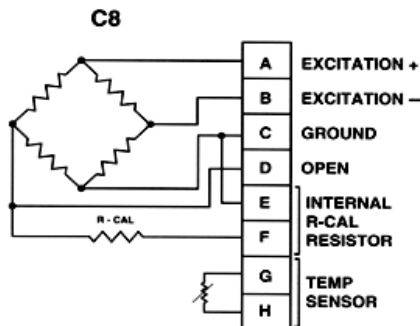
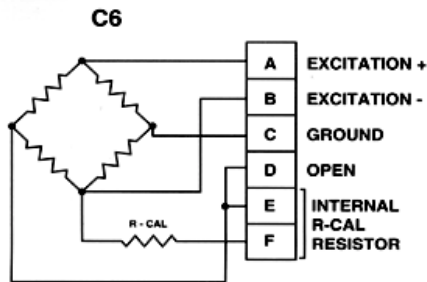
C6 = 6 PIN CONNECTOR FOR 421 PRESSURE ONLY--PTIH-10-6P

CA6 = 6 PIN CONNECTOR FOR 421 PRESSURE ONLY--PTO6A-10-6S (SR)

C8 = 8 PIN CONNECTOR FOR 422 PRESSURE AND TEMPERATURE--PCIH-12-8P

CA8 = 8 PIN CONNECTOR FOR 422 PRESSURE AND TEMPERATURE--PCO6A-12-8S (SR)

CD = CONDUIT FITTING (STANDARD)



	A	B	C	D	E	F	G	H
C6	RED	BLACK	GREEN	OPEN	YELLOW	BROWN		
C8/CD	RED	BLACK	GREEN	OPEN	YELLOW	BROWN	WHITE	BLUE