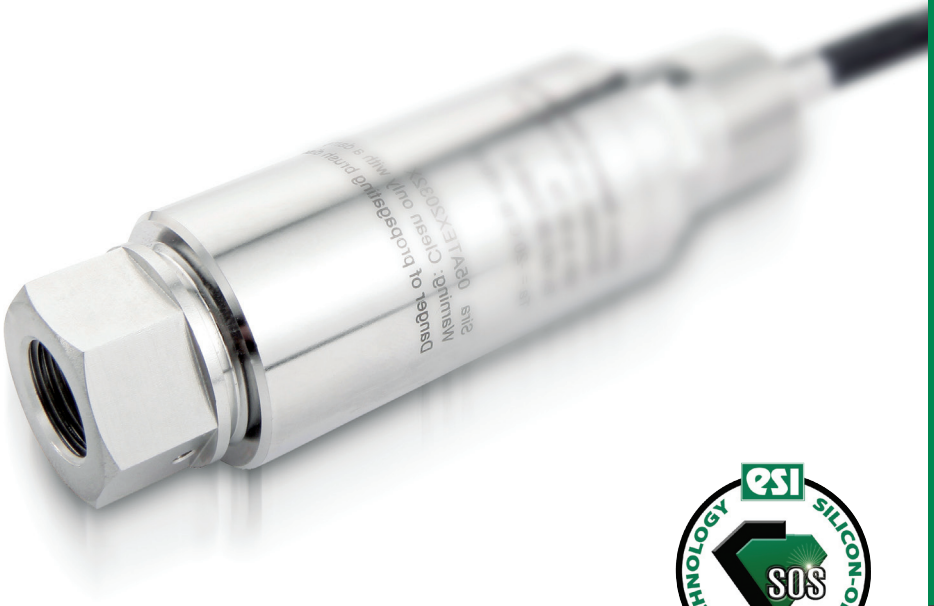
Protran®PR3900

HAZARDOUS AREA PRESSURE TRANSMITTER



- SILICON-ON-SAPPHIRE SENSOR TECHNOLOGY
- PRESSURE RANGES 0-10bar TO 0-1500bar
- 4-20mA TWO WIRE OUTPUT
- ACCURACY 0.30% NLHR
- PROTECTION BY INTRINSIC SAFETY TO EEX IA IIC T4
- ATEX CERTIFIED FOR HAZARDOUS AREAS: ZONE 0 GAS GROUP IIC, TEMPERATURE CLASS T4, ZONE 20 DUST AND M1 MINING
- NACE CORROSION RESISTANCE

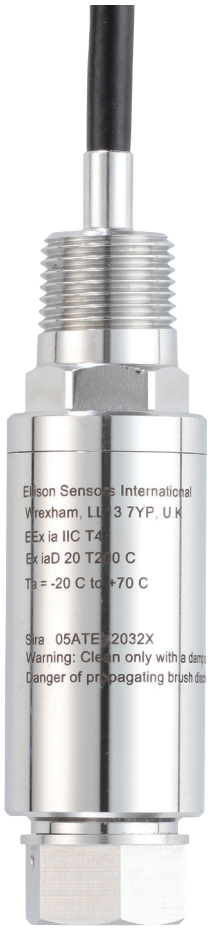
DESCRIPTION

The PR3900 pressure transmitter is designed to meet the majority of industrial pressure measurement applications where installation in an explosive and hazardous area is required.

Designed and certified in accordance with the ATEX directive 94/9/EC this product is intended for installation and operation in potentially explosive atmospheres in zone 0 gas group IIC, temperature class T4 and zone 20 dust and M1 mining. Protection is by intrinsic safety when used with a safety or isolation barrier. The PR3900 provides a stable and accurate intrinsically safe two wire output signal of 4-20mA when powered through a safety or isolating barrier such as MTL7706+, MTL5541 or other similar protection device.

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure. The sapphire sensor element is then molecularly bonded to a titanium alloy sub-diaphragm. This enables the sensor to endure higher over- pressures and provides superb corrosion resistance. The completed sensor exhibits virtually no hysteresis and excellent long-term stability. With outstanding insulation properties, the sapphire substrate allows the sensor to operate over a very wide temperature range without loss of performance.

The fully welded stainless steel enclosure makes the product extremely robust and able to withstand corrosive demanding environments. Electrical connection is via a strong and durable polyurethane cable with integral vent tube for effective gauge venting to atmosphere. In addition to the standard 1/4"NPT female connection optional 1/4"and 1/2"BSP male and 1/2"NPT male process connections are also available. Applications include any above ground explosive / hazardous environment installations, oil and gas industries and volatile chemical processing and storage. Pressure ranges available from 0-10bar to 0-1500bar.

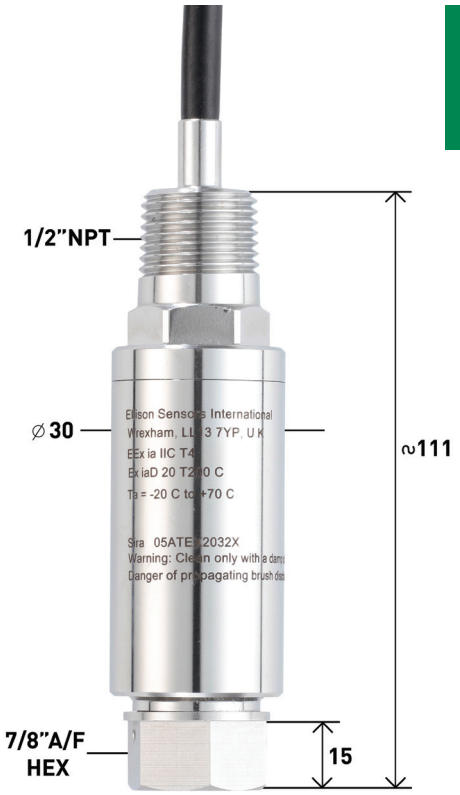


PRESSURE RANGES

0 - 10bar through to 1500 bar, see table below for list of all standard pressure ranges.

Range (bar)	Order Code	Range (bar)	Order Code
0-10	0010	0-160	0160
0-16	0016	0-250	0250
0-25	0025	0-400	0400
0-40	0040	0-600	0600
0-60	0060	0-1000	1000
0-100	0100	0-1500	1500

DIMENSIONS (in mm)



ELECTRICAL CONNECTION

Colour code	Function
Red	Supply (13-36Vdc)
Blue	Signal (4-20mA)
Drain Wire	Cable Screen

ORDERING INFORMATION

PR3900 - xxxx xx

- Model
- Electrical Connector
- Pressure Range - Bar
- Process Connection

ELECTRICAL CONNECTION/OPTION	Order Code
1/2" NPT Conduit with 1m Pu cable	-
PROCESS CONNECTION	**Order Code**
1/4" BSP male thread	AB
1/4" NPT female thread	AR
9/16" x 18 UNF-2B (F250C)	DE
EXAMPLE	**Order Code**
Output signal 4-20mA ATEX	PR3900
1/2" NPT conduit with 1m Pu cable	-
Pressure range 0-100barg	0100
Pressure connection 1/4" NPT female thread	AR
Correct Part Number	PR3900-0100AR

For options not listed contact sales team

SPECIFICATION

PRESSURE REFERENCE

Gauge

OVERPRESSURE

Pressure can exceed rated range by the multiple shown below with no damage or change in calibration above ±0.5%FS.
2x for ranges up to 600 bar
1.5x for 1000 bar
1.1x for 1500 bar

HAZARDOUS AREA

ATEX II 1 GD for operation in explosive atmospheres in zone 0 gas group IIC, temperature class T4, zone 20 dust, and ATEX 1 M1 mining. Protection is by intrinsic safety when used with a safety or isolation barrier. In accordance with ATEX directive 94/9/EC.

ATEX CERTIFICATION CODE

Ex II 1 G Ex ia IIC T4 (zone 0)
Ex II 1 D Ex ia IIIC T135°C (zone 20)
Ex I M 1 Ex ia I (mining M1)
having the following safety values; Ui=28V, Ii=119mA, Pi=0.65W, Li=0.1uH, Ci=74nF,
TA -20°C to +70°C.

OUTPUT SIGNAL

4-20mA (2 wire configuration) as standard.

ZERO OFFSET AND SPAN TOLERANCE

±0.08mA

SUPPLY VOLTAGE

Measured across supply terminals on connector plug 13-36Vdc, UI=28Vdc

PROTECTION OF SUPPLY VOLTAGE

Protected against supply voltage reversal up to 50Vdc

ACCURACY (NON LINEARITY, HYSTERESIS & REPEATABILITY)

±0.30%FS Typical Max. Best fit straight line.

PRESSURE MEDIA

All fluids compatible with 300 series stainless steel and titanium alloy diaphragm.

OPERATING TEMPERATURE RANGE

Ambient: -40° to +85°C
Media: -50° to +125°C
Storage: 5° to 40°C

TEMPERATURE EFFECTS

±1.5%FS total error band for -20° to +70°C
Typical thermal zero and span coefficients ±0.015%FS/°C

ELECTROMAGNETIC CAPABILITY

Emissions: EN61000-6-4
Immunity: EN61000-6-2

PRESSURE CONNECTION

1/4"NPT female standard (others available on request)

INGRESS PROTECTION

Fully welded housing, IP67 when correctly installed to conduit connection.

ELECTRICAL CONNECTION

Submersible polyurethane cable (1 meter length) with integral screen, Kevlar strain cord and vent tube. Conductor size 7/0.20mm2(24awg).