



# Protran® PR3100

STANDARD PRESSURE TRANSMITTER



- CERAMIC THICK FILM SENSOR TECHNOLOGY
- PRESSURE RANGES 0-1bar TO 0-600bar
- 4-20mA TWO WIRE OUTPUT AS STANDARD (2mV/V, 0-20mA, 0-5Vdc or 0-10Vdc OPTIONAL)
- ACCURACY 0.30% NLHR
- OPTIONAL ATEX APPROVED VERSION (4-20mA ONLY)
- ALL STAINLESS STEEL HOUSING
- ALTERNATIVE PROCESS THREADS AVAILBLE
- AVAILABLE IN GAUGE OR ABSOLUTE REFERENCE

## DESCRIPTION

The PR3100 series pressure transmitters have been designed to meet the requirements of the majority of industrial applications of pressure measurement requiring an output of 4-20mA.

Robustly constructed from stainless steel this range of pressure transmitters incorporates the latest strain gauge technology together with a custom IC amplifier offering excellent stability and accuracy over a long service life. Output options include 2mV/V, 0-20mA, 0-5Vdc and 0-10Vdc. Electrical connection is via a detachable DIN connector allowing easy access to zero and span adjustment. Standard pressure connection is 1/2" BSP. Optional 1/4" BSP, 1/4" BSPT, 1/2" BSPT, 1/4" NPT, 1/2" NPT are also available on request. In addition PR3100 is available in corrosion resistant materials e.g. Hastalloy C, Inconel etc. Pressure ranges available from 0-1bar to 0-600bar.

Typical applications for this series of standard transmitters includes, mechanical and civil engineering installations, process plant, production test facilities, water resources, power generation and any application on fluid or gas requiring a stable repeatable and accurate output signal of 4-20mA.

An optional ATEX certified version of this product is available approved for explosion protection for flammable gases (zone 0), dusts (zone 20) and mining areas (group I MI).

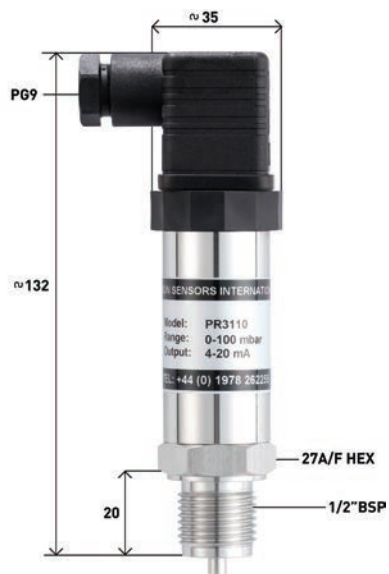


## PRESSURE RANGES

0 to 1bar through to 600bar, see table below for list of all standard pressure ranges.

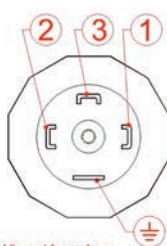
Range (bar)	Order Code	Range (bar)	Order Code	Abs range (bar)	Order Code
0-1 Vac	V001	0-40	0040	0-1	001A
0-1	0001	0-60	0060	0-1.6	1.6A
0-1.6	01.6	0-100	0100	0-2.5	2.5A
0-2.5	02.5	0-160	0160	0-4	004A
0-4	0004	0-250	0250	0-6	006A
0-6	0006	0-400	0400	0-10	010A
0-10	0010	0-600	0600	0-16	016A
0-16	0016	0-700	0700	0-25	025A
0-25	0025	0-1000	1000		

## DIMENSIONS (in mm)



### ELECTRICAL CONNECTION (mA)

Pin No.	2 wire
1	+supply
2	4-20mA signal
3	not fitted
⊥	to case

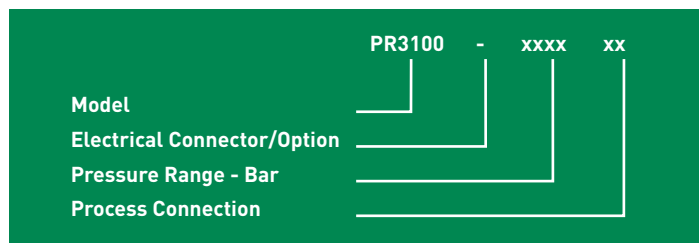


Viewed from above with socket removed.

### ELECTRICAL CONNECTION (Vdc)

Pin No.	4 wire	3 wire
1	-supply	Common
2	+supply	+supply
3	+output	+output
⊥	-output	to case

## ORDERING INFORMATION



### ELECTRICAL CONNECTION/OPTION

- DIN 43650 plug and socket 4-20mA Output
- Cable outlet 1 metre screened 4-20mA Output
- DIN 43650 plug and socket 0-5Vdc Output
- DIN 43650 plug and socket 0-10Vdc Output

### Order Code

- 
- A
- B
- C

### PROCESS CONNECTION

- 1/4" BSP male thread
- 1/2" BSP male thread
- 1/4" NPT male thread

### Order Code

- AB
- AC
- AM

### EXAMPLE

- Base Model
- DIN 43650 plug and socket 4-20mA Output
- Pressure range 0-16bar
- Pressure connection 1/2" BSP male

### Order Code

- PR3100
- 
- 0016
- AC

### Correct Part Number

For options not listed contact sales team

PR3100-0016AC

## SPECIFICATION

### PRESSURE REFERENCE

Gauge or Absolute

### OVERPRESSURE

Pressure can exceed rated range by the multiple shown below with no damage or change in calibration above  $\pm 0.5\%$ FS.  
2x for ranges 1bar to 400bar  
1.5x for 600bar

### OUTPUT SIGNAL

4-20 mA (2 wire configuration) as standard.  
Optional outputs available are  
0-5Vdc (4 wire),  
0-10Vdc (4 wire),  
2mV/V (4wire)

### ZERO OFFSET AND SPAN TOLERANCE

$\pm 0.08$ mA  
 $\pm 0.5\%$ FS adjustment with easy access trimming potentiometers on amplified version only.

### SUPPLY VOLTAGE

Measured across supply terminals on connector plug  
13-36Vdc for 4-20mA versions  
5-15Vdc for 2mV/V  
13-30Vdc for 0-5Vdc and 0-10Vdc versions

### PROTECTION OF SUPPLY VOLTAGE

Protected against supply voltage reversal up to 50Vdc

### LOAD DRIVING CAPABILITY (4-20mA version only)

Calculate Maximum load  $R_s = (U_b - 13V) / 20mA$   
E.g. with supply voltage load of 36vdc, maximum load is 1150ohms.

### ACCURACY (NON LINEARITY, HYSTERESIS & REPEATABILITY)

$\pm 0.30\%$  FS Typical max. Best fit straight line.

### PRESSURE MEDIA

All fluids compatible with 17/4PH and 303 stainless steel for ranges over 20bar, or alumina and 303 stainless steel for ranges 20bar and below.

### OPERATING TEMPERATURE RANGE

Ambient/Media:  $-20^\circ\text{C}$  to  $+85^\circ\text{C}$   
Storage:  $+5^\circ\text{C}$  to  $+40^\circ\text{C}$

### ATEX APPROVAL(4-20mA version only)

Ex II 1 G Ex ia IIC T4 Ga (zone 0)  
Ex II 1 D Ex ia IIIC T135°C Da (zone 20)  
EX I M 1 Ex ia I Ma (group I M1)

### ATEX SAFETY VALUES

$U_i = 28V$   
 $I_i = 119mA$   
 $P_i = 0.65W$   
 $L_i = 0.1$   
 $C_i = 74Nf$   
Temperature range =  $-20^\circ\text{C}$  to  $+70^\circ\text{C}$   
Max. cable length = 45m

### PRESSURE CONNECTION

1/2" BSP male (others on request)

### ELECTRICAL CONNECTION

Mating socket with screw terminal connections to DIN 43650, rated IP65.  
Option: flying lead with optional cable length

**DISCLAIMER** : ESI Technology Ltd operates a policy of continuous product development. We reserve the right to change specification without prior notice. All products manufactured by ESI Technology Ltd are calibrated using precision calibration equipment with traceability to international standards.

