

# Ultra high purity pressure transmitter with External zero adjustable device

## Model: PT863

Spec. sheet no. PD08-09

### Service intended

PT863 is specially designed for the ultra-high purity gas distribution system used in a semiconductor, electronic, medical, biotechnology and pharmaceutical industry. The transmitter has a water resistant, Stainless steel housing for complete protection from harsh environments. The transmitter offers the convenience and easy installation with the full capabilities of a highly accurate 4~20 mA 2-wire system design. The stainless steel surfaces make it compatible with a wide variety of gases, liquids and can be protected from harsh environment. It is extremely versatile and suitable for measuring dynamic or static pressure. The pressure to be measured acts through corrosion resistant stainless steel 630 diaphragm with a MEMS Piezoresistive effect sensors which are connected into a Wheatstone bridge. PT863 pressure transmitter is electrically temperature compensated.

### Technology

MEMS Piezoresistive effect sensor

### Accuracy

±0.25 % of full scale

### Operating temperature range

-20 ~ 80 °C

### Scale range

Refer to range code

### Enclosure rating

IP65



## Standard features

### Mechanical

#### Pressure connection

Stainless steel 316L electropolished low mount surface finish Ra≤0.15 μm

- Male or female face seal fitting
- Flow through type

#### Material wetted by process

Stainless steel 630 / Hastelloy C22 (Sensor)  
Stainless steel 316L (Connection)

### Electrical

#### Input power

12 ~ 24 VDC

#### Output signal

4 ~ 20 mA  
DC 2-wire loop powered technique

#### Load resistance max

500 Ω at 24 V

#### Response time (10 ~ 90 %)

≤20 milliseconds

**1. Base model**

**PT863** General type pressure transmitter with External zero adjustable device

**2. Sensor material**

**R** Stainless steel 630

**H** Hastelloy C22

**3. Connection type**

**A** Straight female (Swivel face seal)

**B** Straight male (Swivel face seal)

**C** Flow through female (Swivel face seal)

**D** Flow through male (Fixed face seal)

**X** Other type available on request

**4. Connection size**

**1** 9/16"-18 UNF

**5** Other units available on request

**5. Accuracy**

**G** ± 0.25 % full of scale

**6. Unit**

**A** Calibration in MPa

**B** Calibration in bar

**K** Calibration in kgf/cm<sup>2</sup>

**P** Calibration in psi (Standard)

**Z** Other calibration units available on request

**7. Range (psi)**

**011** -15 ~ 30

**012** -15 ~ 60

**013** -15 ~ 100

**014** -15 ~ 160

**015** -15 ~ 200

**016** -15 ~ 250

**017** -15 ~ 300

**018** -15 ~ 350

**019** -15 ~ 500

**020** -15 ~ 1000

**021** -15 ~ 2000

**022** -15 ~ 3000

**XXX** Other calibration ranges available on request

**8. Output signal**

**C** 4 ~ 20 mA Current output signal

**X** Other Signals on request

**9. Option**

**0** None (Standard)

**1** Accessories

**2** Circular connector (M12)

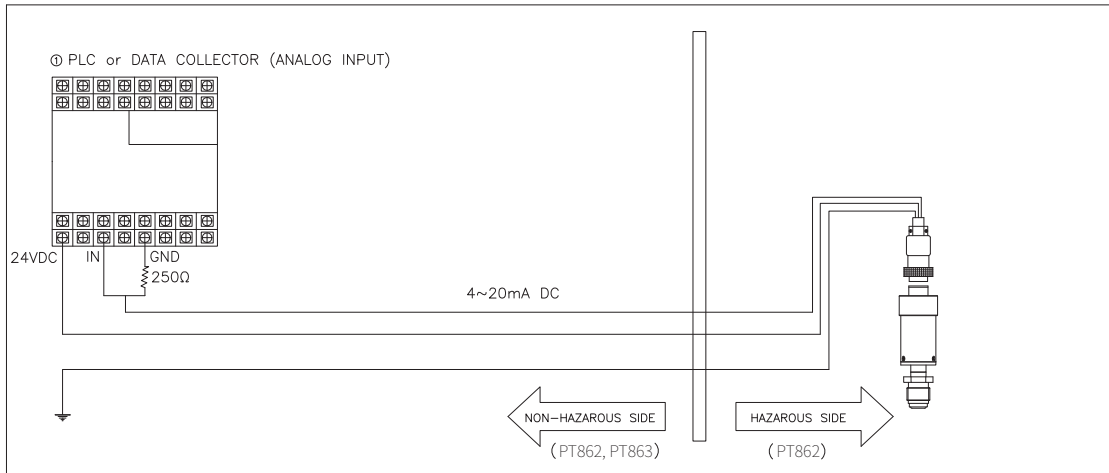
1	2	3	4	5	6	7	8	9
PT863	R	A	1	G	A	011	C	0

Sample  
ordering code

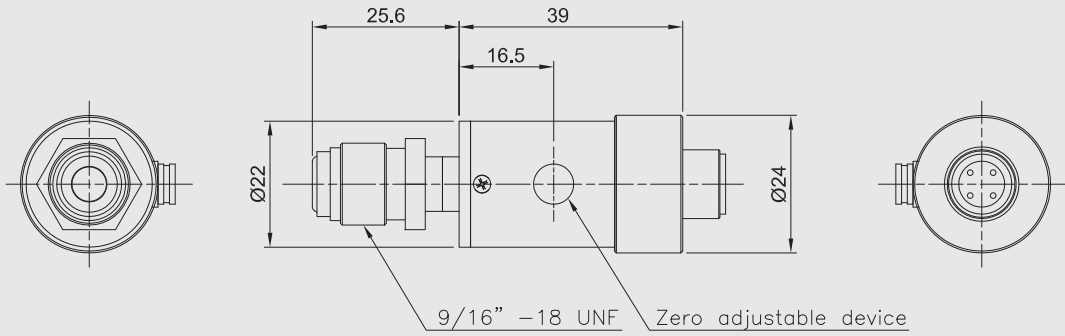
## Technical Data

Input	
Technology	MEMS Piezoresistive effect sensor
Pressure ranges	-15 ~ 30 psi to -15 ~ 3000 psi gauge pressure
Pressure reference	Gauge pressure
Overload	2 x full scale without damage (1.5 x full scale / 3000 psi)
Output	
Output signal	4~20 mA DC 2-wire loop powered technique
Full scale output signal	20 mA $\pm$ 0.25 %
Zero measured output	4 mA $\pm$ 0.25 %
Electrical Specifications	
Excitation voltage	12~40 V DC
Power consumption	0.48 W at DC 24 Volt, 20 mA
Load resistance max@24 V	500 $\Omega$ at 24 V
Influence of excitation	0.01 % FSO / V
Power ripple	$\leq$ 500 mV P-P
Protection	Against reverse polarity and overvoltage
Shock resistance	150 m/s <sup>2</sup> half sign wave/18 times
Vibration	10~500 Hz, 0.14 mm, 39.2 m/s <sup>2</sup>
Response time (10~90 %)	$\leq$ 20 milliseconds
High voltage strength	500 AC V (Wiring versus case)
EMC TEST	<b>EN 61000-6-2(EMS)</b>
	IEC 61000-4-2 (Electrostatic discharge (ESD))
	IEC 61000-4-3 (Electromagnetic field)
	IEC 61000-4-4 (Burst)
	IEC 61000-4-5 (Surge)
	IEC 61000-4-6 (Conducted RF)
	IEC 61000-4-8 (Power frequency magnetic field)
<b>EN 61000-6-4(EMI)</b>	
Performance Specifications	
Accuracy	$\pm$ 0.25 % FSO typical
Non-linearity	$\pm$ 0.2 % FSO typical
Repeatability	$\pm$ 0.1 % FSO typical
Pressure hysteresis	$\pm$ 0.3 % FSO typical
Long term stability	$\leq \pm$ 0.1 % FSO over 1 year
Reference temperature	25 °C
Operating temperature	-20 ~ 80 °C
Compensated temperature	-20 ~ 60 °C
Physical Specifications	
Demension	Refer to " Type of Mounting" in Specification sheet.
Process connection	Swivel male or female face seal fitting
	Flow through
Materials wetted by process	Sensor : Stainless steel 630, Hastelloy C22
	Connection : Stainless steel 316L
Enclosure rating	IP65 , depending on the electrical wiring
Influence of mounting position	Not critical

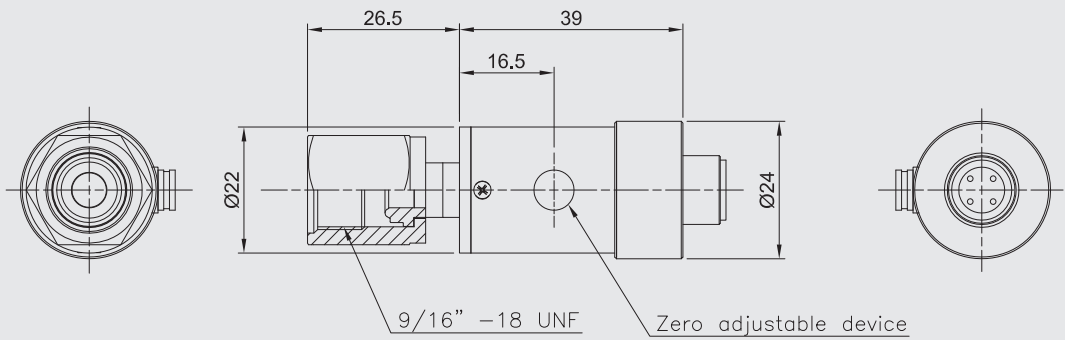
# General Type Pressure Monitoring System Typical Installation (PT863)



PT861, PT862, PT863 : Type of mounting (1/2)

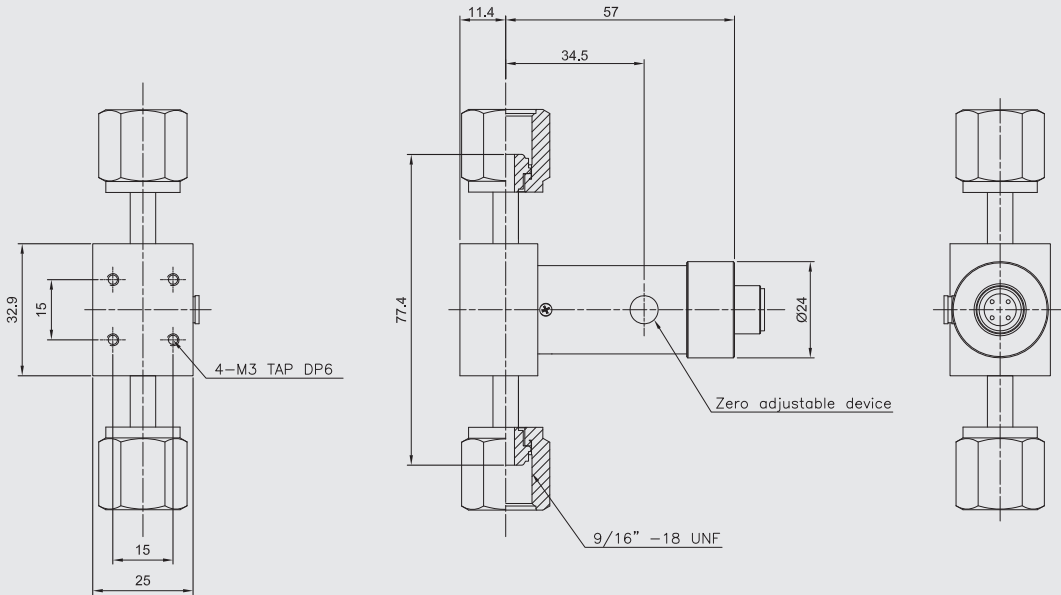


Straight male (Swivel face seal) Type

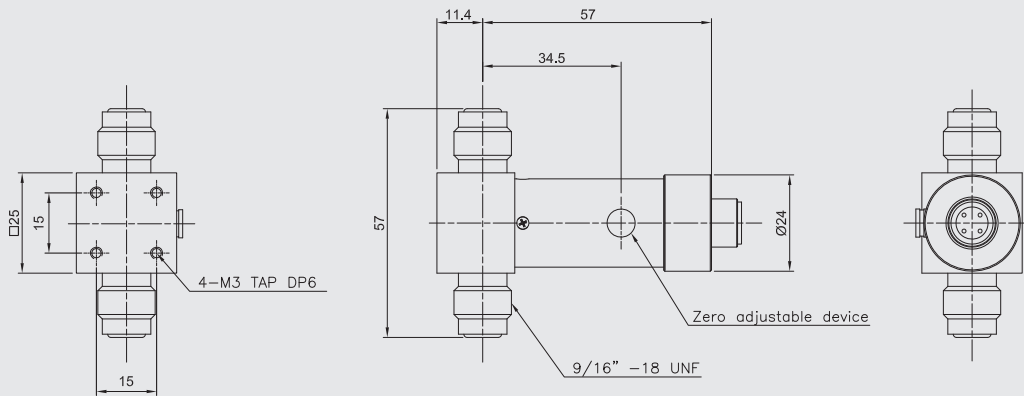


Straight female (Swivel face seal) Type

## PT861, PT862, PT863 : Type of mounting (2/2)



Flow Through Female (Swivel face seal) type



Flow Through Male (Fixed face seal) Type