



PRESSURE MEASUREMENT CONTENTS

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Industrial Range of
Pressure Transmitters



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II-P001

INDUSTRIAL RANGE OF PRESSURE TRANSMITTERS

- Compact and rugged constructions
- Accuracies to < +/- 0.05%
- Wide range of process and electrical connections
- Stable, repeatable and reliable
- Compensated Ceramic Technology
- Cost effective for OEM's & End users
- Special sensors to your specification



Description

The IIP01 range of pressure transducers and transmitters has been chosen by Industrial Interface as a range that meets the needs of both OEM and end-users in the competitive pressure measurement market.

There is also a ZigBee wireless transmitter which can be used to take pressure readings in hard to reach places or drastically reduce installation costs.

The instruments are designed around a standardised stainless steel housing with a wide range of process and electrical connection options. Electrical connections include DIN, cable gland and Amphenol variants with signal outputs of mV, volts and mA.

Pressure ranges from 250mB through to 700 Bar are available as standard in both absolute and gauge versions.

The use of ASIC based technology allows accuracies ranging from the standard 0.25% through to an exceptional 0.05% and a range of thermal specifications to suit both OEM and end users.

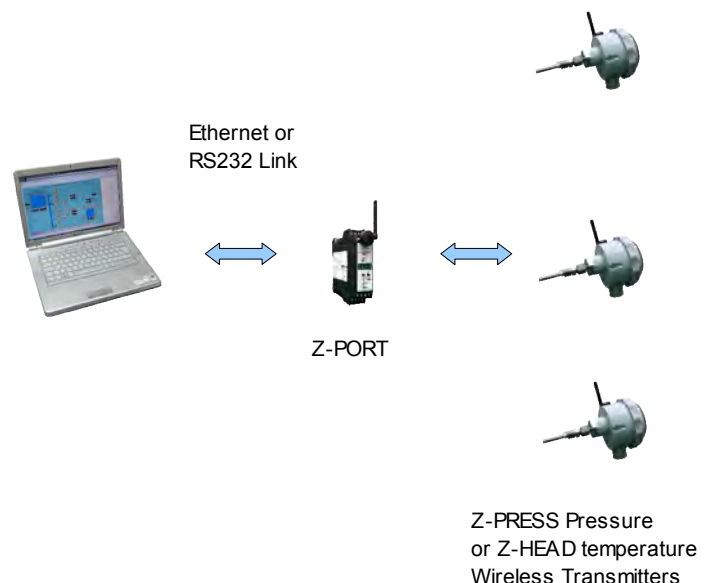
Variants with in-built displays and alarm contacts are also available, please contact sales if you have a particular requirement.

Typical Applications

Typical applications include:

- Pneumatic & hydraulic controlled
- Process Control
- Tank level measurement
- Compressors / pumping
- Heating & Ventilation
- OEM machines

Application Example: Wireless Pressure and Temperature Measurement





Pressure Specification

Pressure Ranges	0.25, 0.5, 0.75, 1, 1.6, 2, 5, 10,16,20,35,50,100,200,250,400,600,700
Pressure Datum	Gauge, Sealed Gauge or Absolute
Burst Pressures	> x 3 rated calibrated range (for 600 & 700 bar ranges Contact Sales)
Overpressure	X 1.5 rated calibrated range (for 600 & 700 bar ranges Contact Sales)
Pressure Media	Liquids and Gases compatible with Stainless Steel, Alumina Al ₂ O ₃ & seal of choice

Input Specifications

Electrical Excitation	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0.5 to 4.5 V	2 - 32V dc 10 – 32V dc 10 – 32V dc 10 – 32V dc 13 – 32V dc 5V dc	Supply Voltage Effects	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0.5 to 4.5 V	ratiometric <0.001% span <0.001% span <0.001% span <0.001% span ratiometric
Input Current	millivolt voltage	< 3mA < 4mA	Input Resistance	millivolt	11 k ohm
Reverse Polarity Protection	-	Yes	Insulation Resistance	-	>500M ohm @ 50Vdc

Output Specification

Zero Output	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0.5 to 4.5 V	0mV +/- 0.2mV/V 0mV +/- 1% 4mA +/- 1% span 1V +/- 1% span 0V +/- 1% span 0.5V +/- 1% span	Span Output	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0.5 to 4.5 V	Various mV/V 100/200mV +/-1% 16mA +/- 1% 4V +/- 1% 10V +/- 1% 4V +/- 1%
Accuracy (Includes non-linearity, hysteresis, repeatability at ambient temperatures)	Option 1 Option 2 Option 3	<+/- 0.25% span BFSL <+/- 0.1% span BFSL <+/- 0.01% span BFSL	Output Resistance	millivolt voltage -	11 k ohm < 500 ohm -

Environmental Specification

Operating Temperature	-	- 20 °C to +135 °C	Compensated Temperature	- 20 °C to +80 °C
Max. Process Temp	-	+150 °C (short periods)	Storage Temperature	- 40 °C to +140 °C
Thermal Zero Shift (TZS)	Option 1 Option 2 Option 3	<+/- 0.04% / span / °C <+/- 0.02% / span / °C <+/- 0.01% / span / °C	Thermal Span Shift (TSS)	<+/- 0.015% / °C
Shock	-	100 g / 11mS	Vibration	10g RMS (20-2000 Hz)

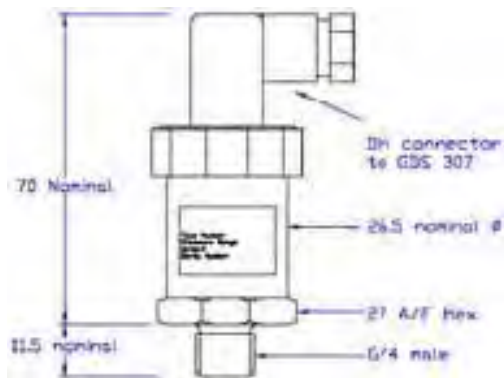
Miscellaneous

Weight	100 g
Response Time	millivolt: < 1 mS, amplified < 10mS
EMC Immunity	EN 50082-1 (< +/- 2% errors)

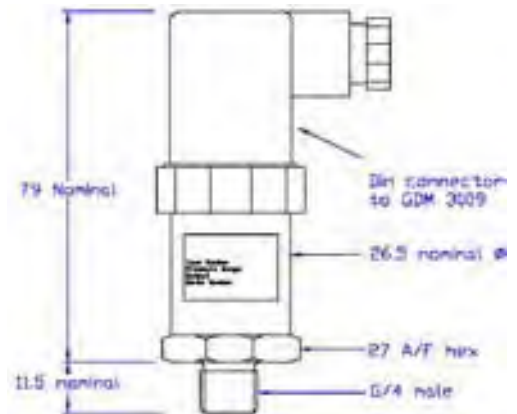


Dimensions and Connections

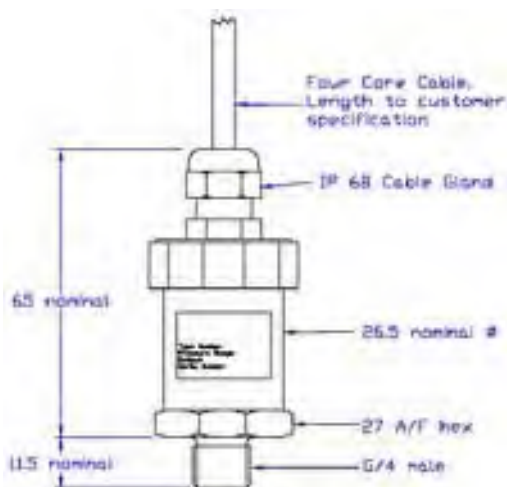
GDS 307 DIN 43650 Plug & Socket



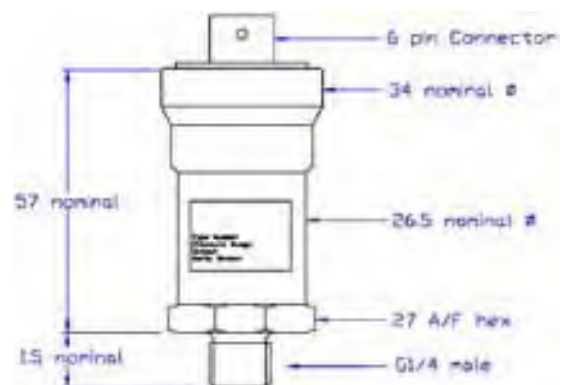
GDM 3009 DIN 43650 Plug & Socket



IP65 Cable Gland Assembly



IP67 Amphenol Connector
(IP54 on gauge versions)



Connection Details

Output Type	Connection	GDS 307	GDM 3009	Cable	Amphenol
mV	+ve Supply +ve Output -ve Supply -ve Output	1 2 3 earth	1 2 3 earth	Red Green Blue Yellow	1 2 3 4
4 – 20 mA	+ve Supply -ve Supply earth	1 2 earth	1 2 earth	Red Blue Yellow	1 2 earth
Volts	+ve Supply -ve Supply Output	1 2 3	1 2 3	Red Blue Green	1 2 3



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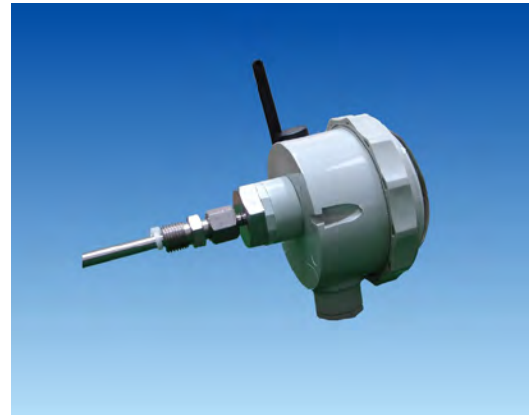
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Z-PRESS

ZIGBEE WIRELESS ENABLED PRESSURE TRANSMITTER

- Battery Powered Wireless ZigBee Pressure Transmitter
- Wide Range of Input ranges from 0.25 to 700 bar gauge or absolute
- Long Battery Life, Low level Alarm
- Wide range of connection heads
- High Accuracy, better than 0.1% span



Description

The Z-PRESS ZigBee enabled pressure transmitter can be used to measure a wide range of pressures and transmits the measured variable to a 2.4GHz ZigBee receiver unit.

There are two main applications of the Z-PRESS unit.

The first is to create a network of wireless pressure transmitters with all the measurements then being available via RS232 or Ethernet connection using the Z-PORT wireless ZigBee receiver.

The second is to use the Z-PRESS in conjunction with a Z-200 receiver unit to generate a standard 4-20mA or 0-10 Volts without the use of cabling.

These two applications are shown opposite.

The Z-PRESS is specially designed to maximise battery life and in a typical application the battery life can exceed three years. The data update rate is user selectable to suit the requirement of each measured variable and so maximise battery life.

Typical update rates include 1 second, 10 seconds, 60 seconds or 1 hour. The unit also transmits a signal strength reading which can be remotely monitored.

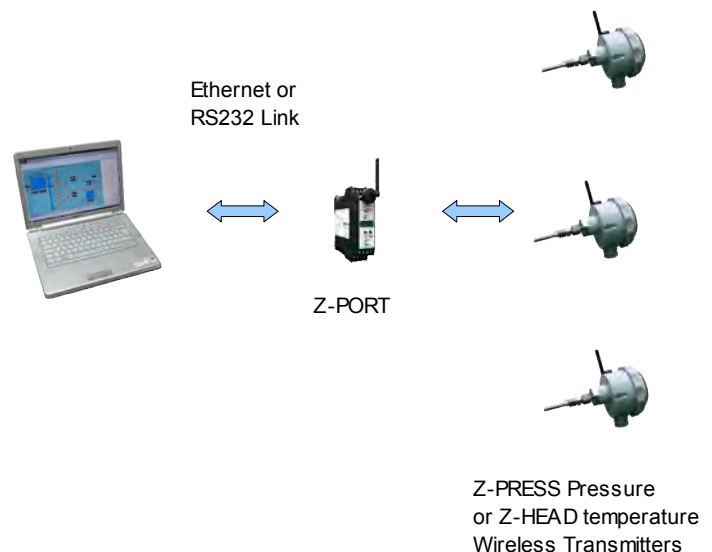
The unit can be supplied with a wide range of process connections and body styles.

If you have a particular application in mind please contact our sales department.

Application 1: Wireless Pressure Measurement.



Application 2: Wireless ZigBee Network





Parameter	Min	Typ	Max	Comments
Supply Voltage		3.6V		Battery Powered
Supply Current (mA)			40	When transmitting data
Pressure Ranges	0.25	5	700	Barg or Bara
Process Conn.Material				303 Stainless Steel
Seal Material				Viton
Diaphragm Material				Aluminium Oxide
Accuracy		<+/- 0.1%		Span (BFSL)
IP Rating		IP 65		
Thermal Zero Drift			0.01%/Span/°C	
Operating Ambient	-20°C		70°C	
Media Temperature	-20°C		135°C	
Notes	Other materials and connecting heads available, please call sales			



Installation Data	
Mounting	In Head or wall mount
Orientation	Any
Connections	Screw Clamp with pressure plate
Conductor size	0.5-4.0mm
Insulation Stripping	12mm
Weight	Approx 70g
Enclosure Size	85mm dia x 57mm deep

Connection Details

1. Power Supply -ve
2. Power Supply +ve
3. Input +ve
4. Input -ve
5. Bridge Excitation
6. Bridge Excitation

Ordering Information

Please supply:

Part Number:	Z-PRESS
Input Type:	e.g Gauge Pressure
Input Range:	e.g 0 – 5 Barg
Power Supply:	Battery powered



IIP-DISP

PRESSURE TRANSMITTER WITH DISPLAY AND SWITCHES

- Rotable Display and Housing
- Display Accuracy 0.1% +/- 1 digit
- Bright 4 digit LED Display
- 4 – 20 mA Output Option
- 1 or 2 PNP Alarm contacts
- Min / Max Value Memory
- Ex version available
- Cost Effective solution



Description

The IIP-DISP is a combination of a pressure transmitter, an intelligent pressure switch and a digital display.

The unit can measure pressure ranges from 0.6 bar to 600 bar, display the actual value on a 4-digit LED display, output a 4-20mA signal and have 2 PNP alarm outputs.

The IIP-DISP uses a mechanically and chemically robust ceramic diaphragm making the unit suitable for most media types, an optional PVDF pressure port covers even more aggressive medium and there is a fat and oil free version for applications with oxygen.

The unit can be set up using the built-in front panel keys with access protection. Functions include configuration of the display, the setting and resetting of alarm points between 0 – 100% of the nominal input pressure, alarm hysteresis and switch on and switch off delay times.

An optional EX version is available for 4-20mA output only.

Typical Applications

Typical applications include:

Pneumatic & hydraulic control
Process Control
Tank level measurement
Compressors / pumping
Heating & Ventilation
OEM machines



Pressure Specification

Pressure Ranges	-1 -0, 0.6, 1, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600
Pressure Datum	Gauge or Absolute
Overpressure	3, 3, 3, 7, 7, 12, 12, 25, 50, 50, 120, 120, 250, 500, 500, 600, 750

Output Specifications

Analogue Output		
Standard	2-wire 4 -20mA Vs = 18-41 Vdc	Ex-protection: Vs = 17 -28 Vdc
Optional	3-wire 0-10V Vs = 15-36 Vdc	
Accuracy	IEC 60770 < +/- 0.5% FSO	BFSL: < +/- 0.25% FSO
Permissible Load	Current 2-wire: Rmax = ((Vs-Vsmin)/0.02) Voltage 3-wire: Rmin = 10 k ohm	
Response Time	< 10mS	

Contact Output		
Number, type	1 or 2 independent PNP contacts	
Switching current	Standard: contact rating max. 125 mA, Ex-protection: max. switching current 70mA	Short-circuit resistant max permissible inductivity: 4.7 mH
Accuracy of contacts	IEC 60770 < +/- 0.5% FSO	BFSL: < +/- 0.25% FSO
Repeatability	< +/- 0.2% FSO	
Switching Frequency	Max 10 Hz	
Delay Time	0 – 100 sec	

Display

Display	
Type	4-digit red LED display, digit height 7mm digit width 4.85mm (angle 10 deg)
Range	-1999 to + 9999
Accuracy	0.1% +/- 1 digit
Digital damping	0.3 to 30 sec (programmable)
Measured value update	0.0 to 10 sec (programmable)

Miscellaneous

Weight	Approx 200 g
Vibration	5 g RMS (20 to 2000 Hz)
Shock	100 g / 11 mS
EMC Immunity	EN 50082-1 (< +/- 2% errors)
Thermal error for offset and span	<= +/- 0.2% FSO / 10K between -25 and 85 degC
Medium Temperature	-25 to 135 degC
Operating Temperature	-25 to 85 degC



II-L002

HYDROSTATIC LEVEL TRANSMITTER

- Compact 25mm rugged construction
- Accuracies to < +/- 0.05%
- Detachable cable assembly
- Stable, repeatable and reliable
- Compensated Ceramic Technology
- Submersible to 200m
- Built-in lightning protection
- ZigBee Wireless version available



Description

The IIL002 detachable submersible level transmitter has many advantages over similar units.

The product is designed so that the cable can be detached from the transmitter so the cable need not be removed from site when the unit is serviced or calibrated.

There is also a ZigBee wireless transmitter which can be used to take level readings in hard to reach places or to drastically reduce installation costs.

The unit utilises the latest programmable ASIC based electronics and accuracy can be selected from 0.25% to an exceptional 0.05% BFLS.

An integrated 4 wire temperature sensor is optional to give both level and temperature measurements of the measured media, again saving on space and cost.

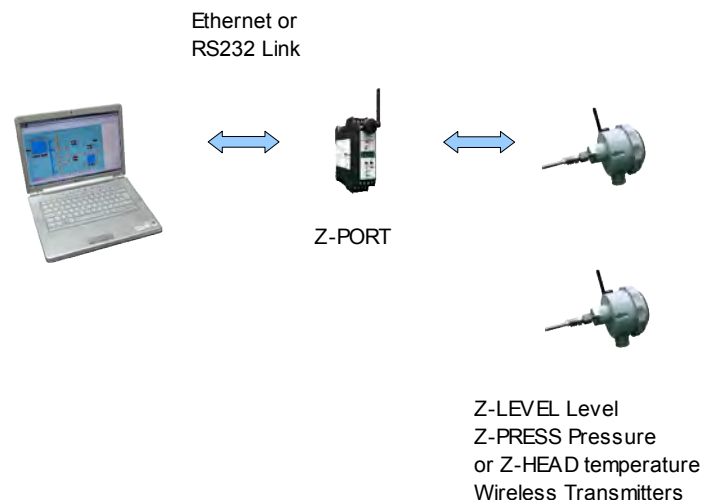
Typical Applications

Typical applications include:

- Tank level measurement
- Hydrostatic Level measurement
- Bore Holes
- Breweries
- Reservoirs
- Rivers and estuaries



Application Example: Wireless Level Measurement





Pressure Specification

Pressure Ranges	2.5 mWg through to 200mWg (Customer specific ranges on request)
Pressure Datum	Gauge, Sealed Gauge or Absolute
Burst Pressures	> x 3 rated calibrated range
Overpressure	X 1.5 rated calibrated range
Pressure Media	Liquids and Gases compatible with Stainless Steel, Alumina Al ₂ O ₃ & seal of choice

Input Specifications

Electrical Excitation	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0 – 2 V	2 - 32V dc 10 – 32V dc 10 – 32V dc 10 – 32V dc 13 – 32V dc 2V dc	Supply Voltage Effects	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0 to 2 V	ratiometric <0.001% span <0.001% span <0.001% span <0.001% span <0.001% span
Input Current	millivolt voltage	< 3mA < 4mA	Input Resistance	millivolt	11 k ohm
Reverse Polarity Protection	-	Yes	Insulation Resistance	-	>500M ohm @ 50Vdc

Output Specification

Zero Output	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0 to 2V	0mV +/- 0.2mV/V 0mV +/- 1% 4mA +/- 1% span 1V +/- 1% span 0V +/- 1% span 2V +/- 1% span	Span Output	millivolt 100/200mV 4 – 20 mA 1 – 5 V 0 – 10 V 0.5 to 4.5 V	Various mV/V 100/200mV +/-1% 16mA +/- 1% 4V +/- 1% 10V +/- 1% 2V +/- 1%
Accuracy <small>(Includes non-linearity, hysteresis, repeatability at ambient temperatures)</small>	Option 1 Option 2 Option 3	<+/- 0.25% span BFSL <+/- 0.1% span BFSL <+/- 0.05% span BFSL	Output Resistance	millivolt voltage -	11 k ohm < 500 ohm -

Environmental Specification

Operating Temperature	-	- 20 °C to +80 °C	Compensated Temperature	20 °C +/- 20 °C
Max. Process Temp	-	+100 °C	Storage Temperature	- 40 °C to +140 °C
Thermal Zero Shift (TZS)	Option 1 Option 2 Option 3	<+/- 0.04% / span / °C <+/- 0.02% / span / °C <+/- 0.01% / span / °C	Thermal Span Shift (TSS)	<+/- 0.015% / °C
Shock	-	100 g / 11mS	Vibration	10g RMS (20-2000 Hz)

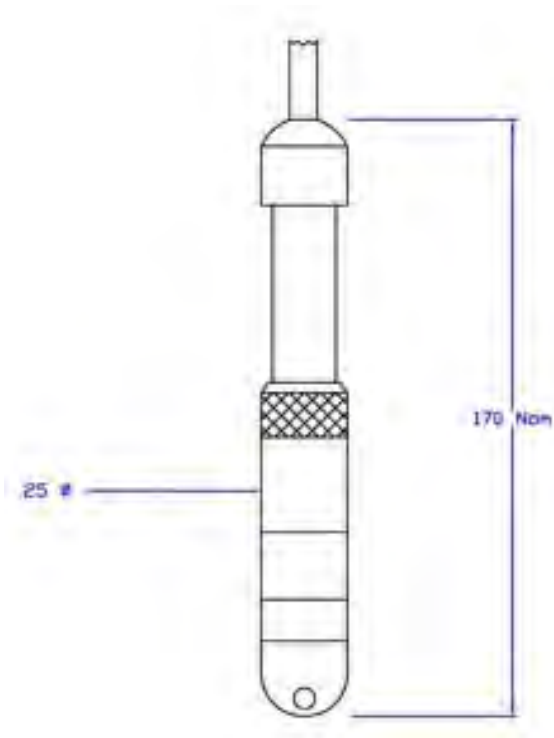
Miscellaneous

Weight	350 g with 1m of cable (no need for additional sink weight)
Response Time	millivolt: < 1 mS, amplified < 10mS
EMC Immunity / Lightning Protection	EN 50082-1 (< +/- 2% errors) / EN61000-4-5

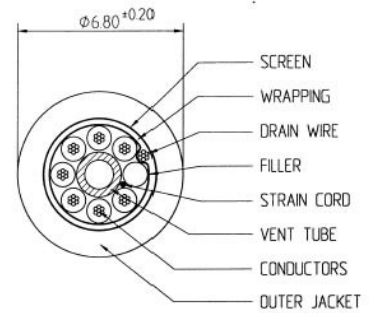


Dimensions and Connections

Outline Drawing



Cable Details



Connection Details

Output Type	Connection	Cable
4 – 20mA with Temperature option	PT100 -ve wire PT100 +ve wire PT100 -ve wire PT100 +ve wire	Yellow Green Brown Black
4 – 20 mA	+ve Supply -ve Supply earth	Red Blue White
Volts	+ve Supply -ve Supply Output	Red Blue Green
mV	+ve Supply +ve Output -ve Supply -ve Output	Red Green Blue Yellow



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