

914G

Pressure Transmitter Gauge



Features

The 914G is an industrial-grade pressure instrument ideal for use in process control. The mechanical sensor is based off pressure transmitter for stain raga resistance, built off a ceramic diaphragm that provides accuracy and thickness. The output provides a 4/20mA signal with HART communication. Powered by a high performance CPU this instrument is able to perform high precision thermal compensation plus many diagnosis procedures to assure its reliability. Differential Pressure transmitters have a limitless number of industrial applications.

- HART technology 4/20mA ideal for acquisition of data and process control.
- Pressure measurement from 4bar to 350bar.
- Overpressure and static pressure suitable for industrial installations.
- Compatible with many liquids, steam and gases.
- Suitable for pressure measurement and level.
- Compatible with tubes and pipe connections, option for flanges and remote seal.

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Functional description

The 914G is used for pressure measurement in the process control industry. It utilizes a pressure sensor based on strain gage resistance technology, in which application of certain differential pressure will cause the sensor diaphragm to deflect. This deflection results in two different resistances, R-High and R-Low. A microprocessor based CPU board calculates the deflection of the this diaphragm based on the resistances read and then converts the deflection to pressure applied.

The sensor diaphragm is built from a special ceramic disc that is embedded in process fluid for protection and pressure transmission. Ceramic disc is built out of corrosion providing longevity of the instrument, with options of SS316L, Hastelloy C or Tantalum. This process diaphragm can be exposed to a large variety of fluids and gases found in industrial applications.

The measured signals are transmitted through a traditional analog 4/20mA signal for many uses like PID control, analogical data acquisition, signal measurement, etc. In addition, a digital HART protocol is also available on the signal line; enabling the possibility for configuration changes and the monitoring of additional process measurements. The HART protocol enables online configuration of the instrument without any interference to the analogical signaling.

The cumulative result is a highly stable, accurate and low maintenance device that is suitable for a large variety of applications.

Configurations and parameterization

The 914G transmitter goes beyond the basic functionality of pressure measurement. It can read ambient temperature, convert the measured pressure to level, has configurable function blocks, several options for local display indication and also supports all variables specified by the HART protocol for the pressure class.

For configuration of the transmitter we recommend the Springfield Research line of HART Communicators. They will make configuration simple and safe. We offer 3 lines of HART configurators specifically designed for our 914G transmitter: Hand Held CONF-ROBUST Pocket Communicator; the CONF-TABLET Tablet Configurator; or the CONF-PC Laptop Communicator. These communicators are based in Windows operating system, allowing the utilization of personal computers as configuration tools while the CONF-ROBUST delivers a complete handheld solution based on the proven Palm OS platform.

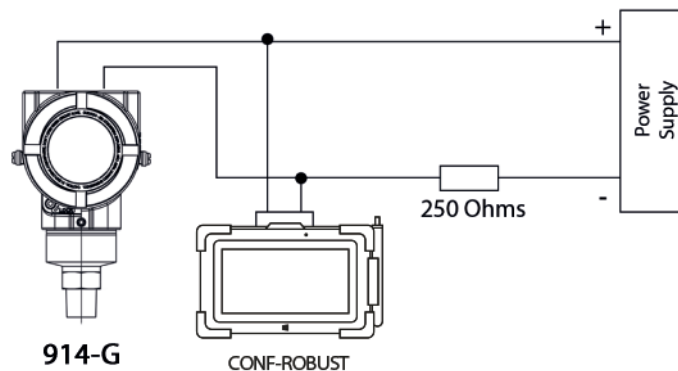


Fig. 1. - Connection Diagram

Functional Specification

Process fluid:	Liquid, gas and steam.
Output communication:	Two-wire 4-20mA according to NAMUR NE 43
Digital Communication:	HART Protocol® 7.0
Power supply:	12 to 55Vdc.
EC-Information:	PED Directive (97/23/EC) - Pressure Equipment Directive EMC Directive (2004/108/EC) Electromagnetic Interference
Zero adjustments and Spam:	Non-interactive, via local adjustment or HART® communication
Load limitation:	<p>Resistance = $(46 * \text{supply voltage} - 10.5) \text{ Ohms}$. See picture below.</p> <p>The graph plots Load (Ohms) on the vertical axis (0 to 2000) against Power Supply (Volts) on the horizontal axis (12 to 55). A diagonal line starts at (12, 0) and ends at (55, 2000). The area below this line is shaded and labeled 'Operation Area'. A box labeled '4 - 20 mA Digital Communication' is located above the line, and a box labeled 'Only 4 - 20 mA' is located below the line.</p>
Failure alarm:	Detailed diagnostics through HART communication, including sensor problems, overpressure and high temperature. Diagnostic through digital signal according to NAMUR N43 with configurable output to 3.6 or 21 mA.
Temperature limit:	Ambient -40 to 85C Process: -40 to 100C Storage: -40 to 100C
Data configuration:	Via HART communicator version 7.0 being able to use: HTCOM, HART Communicator for Tablet Computers HLCOM, HART Communicator for LapTop e DeskTop HPCOM, HART Communicator for Hand Held Computer.
Overpressure:	25% over nominal range Over pressure and static pressure beyond the established limit may cause dangerous accidents and also permanent damages of the pressure sensor.
Turn-on time:	Less than 3 seconds from power-up. Full accuracy within 8 times the damping value.
Ambient humidity:	0 to 100% relative humidity.
Volumetric displacement:	Less than 0.15cm ³ for nominal pressure.
Damping adjustment:	Adjustable between 0 and 128 seconds.

Performance Specifications

Power supply effect:	+/- 0.005% of calibration per 1 Volt variation.
Vibration effect:	+/- 0.25% of calibration for vibrations according to IEC60770-1 specifications. 10-60Hz, 0.21mm movement 60-2000Hz, 29.4m/s ² acceleration
Thermo effect:	+/- 0.5% in the maximum scale for each 25C of variation +/- 0.2% in minimum scale around zero.
Mounting position error:	Measurable in low range, can be eliminated via zero trim.

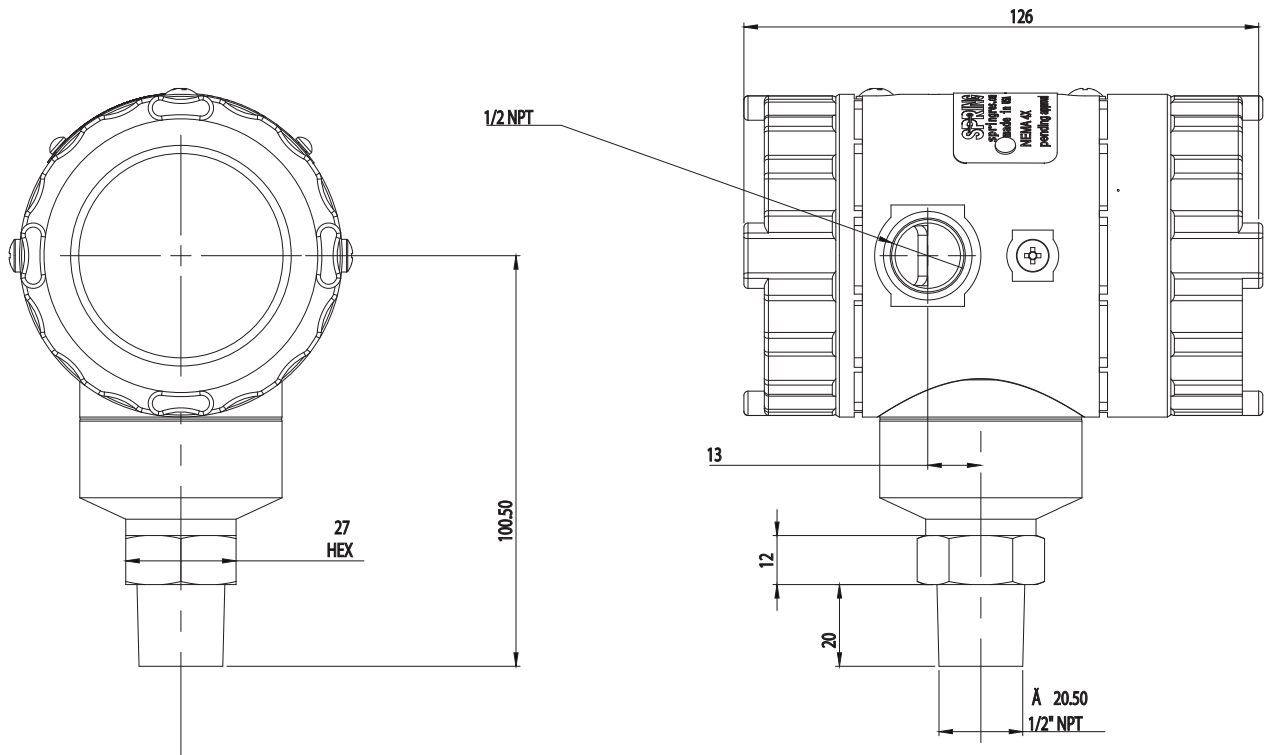
Mechanic Specifications

Electric connection:	1/2" NPT.
Process connection:	1/2" NPT.
Wetted parts:	Ceramic diaphragm. Teflon O` Ring Flanges SS316L
Non wetted parts:	Aluminum frame AD11 Cover O` Ring in Buna-N Sensor structure in SS304 Screws and nuts SS304
Mounting:	Mounting clamp for tube 2"(DN 50) or plane superficies. Can be mounted directly in manifold valves.
Estimated weight :	1 Kg for all instruments without adaptations.

Ordering Code

914G Capacitive Pressure Gauge Transmitter											
:	Communication protocol										
:	H	HART 7.0 - 4 to 20mA									
:	F	Fieldbus Foundation									
:	P	Profibus PA									
:	:	COD.	Type	Span Limits			Span Limits			Turn Down	<p>Note: The range can be extended up to 0.75 LRL* and 1.2 URL** with small degradation of accuracy. *LRL = Lower range limit **URL = Upper range limit</p>
:	:			Min	Max	Units	Min	Max	Units	Max	
:	:	6	Range 6	200	700	Kpa	2.0	7.0	bar	6	
:	:	7	Range 7	345	2068	Kpa	3.45	20.68	bar	6	
:	:	8	Range 8	1170	6890	Kpa	11.17	68.9	bar	6	
:	:	9	Range 9	3480	20680	Kpa	34.8	206.8	bar	6	
:	:	10	Range 10	5000	35000	Kpa	50	350	bar	6	
:	:	:	Corrugated Diaphragm Material								
:	:	:	C	Ceramic							
:	:	:	O	Other on request							
:	:	:	:	:	:	Electronic Enclosure					
:	:	:	:	:	:	A	Aluminum with powder coating				
:	:	:	:	:	:	I	Stainless steel SS303				
:	:	:	:	:	:	O	Other on request				
:	:	:	:	:	:	:	Process Connection				
:	:	:	:	:	:	:	N	1/2" - 18 NPT			
:	:	:	:	:	:	:	O	Other on request			
914G	H	6	C	D	S	V	N				

Mechanical Dimensions



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