



Wireless Instrumentation Gauge Pressure Field Unit



Gauge Pressure Field Unit Description

The Gauge Pressure Field Unit is self powered and contains a pressure sensor, signal conditioning circuitry and a RF transceiver operating in the 902 MHz to 928 MHz ISM license free band. Remote mount sensors and high-gain antennas are available as options. The field units are completely free of field wiring for power and signal transmission, making them ideal for automating remote pressure monitoring in all types of industrial environments. Data from the sensor is transmitted to the Base Radio for centralized monitoring and data acquisition. The user may specify sample and transmit updates between once per second and once per minute. Transmit rate changes can also be triggered based on events that are defined in terms of measurement limits or rates of movement. This function allows for maximization of battery life while ensuring that all important process events are monitored.

Technical Specifications

Pressure Range

Model	Upper Range Limit (URL)	Overload Limit	Safety Limit
GP-x-x-5	5 PSIG	10 PSI	30 PSI
GP-x-x-15	15 PSIG	30 PSI	500 PSI
GP-x-x-30	30 PSIG	60 PSI	500 PSI
GP-x-x-100	100 PSIG	200 PSI	500 PSI
GP-x-x-250	250 PSIG	500 PSI	1500 PSI
GP-x-x-1000	1000 PSIG	2000 PSI	10000 PSI
GP-x-x-2500	2500 PSIG		
GP-x-x-5000	5000 PSIG	12000 PSI	20000 PSI
GP-x-x-10000	10000 PSIG		

Accuracy

- $\pm 0.1\%$ of sensor URL including combined effects of linearity, hysteresis, repeatability and temperature (applies to standard unit without isolating seals) NOTE: addition of seals will reduce accuracy due to thermal effects of fill fluid.

Stability

- Combined zero and span stability: less than $\pm 0.1\%$ of sensor URL per year at 70°F

Output Resolution

- 24 bit Analog to Digital conversion - see specification sheets for the Base Radio and Analog Output Modules for descriptions of analog and digital output options.

Operating Ambient Environment

- -40° F to +250° F (-40° C to +121° C) process temperature, steady state
- -40° F to +230° F (-40° C to +110° C) ambient temperature sensor
- -40° F to +185° F (-40° C to +85° C) electronics
- -4° F to +158° F (-20° C to +70° C) display (full visibility)
- -40° F to +185° F (-40° C to +85° C) display (with reduced visibility)
- Humidity Limits: 0 to 95 %, non-condensing

Power Characteristics

- Self-contained power
- 'C' Size 3.6 V lithium battery
- Up to twenty (20) year battery life (depends on sample rate and RF update rate), field replaceable

Technical Specifications—Continued

RF Characteristics

902 MHz – 928 MHz Frequency Hopping Spread Spectrum (FHSS), FCC certified ISM license-free band
Up to 3000' range from Base Radio with clear line of sight; 500' to 1000' typical range with obstructions The RF module in each Field Unit is individually tested and calibrated over the full temperature range to ensure reliable wireless operation

Self-Diagnostics

Low battery alarm – indicates the need to replace the battery (approximately one month warning)
Contains extensive self-checking software and hardware that continuously monitors the operation. Any sensor or device parameter out of spec is identified and reported

Local Configuration

Integrated LCD display with membrane switch buttons
Display provides pressure reading and error messages, if applicable
Configure sampling and RF parameters locally using membrane switch buttons

Materials of Construction

Type 316 stainless steel base and diaphragm
Standard 1/2" MNPT (other options available)
GE Lexan® cover. V-0 rating and UV stable

Operating Shock and Vibration

Certified per IEC EN00068 2-6 (vibration) and 2-27 (shock)

Random Vibration Characteristics

Certified to withstand 6 g's, 15 minutes per axis from 9 – 500Hz

Electromagnetic Compatibility (CE Compliance)

Operates within specification in fields from 80 to 1,000 MHz with field strengths to 30 V/m. Meets EN 50082-1 general immunity standard and EN 55011 compatibility emissions standard

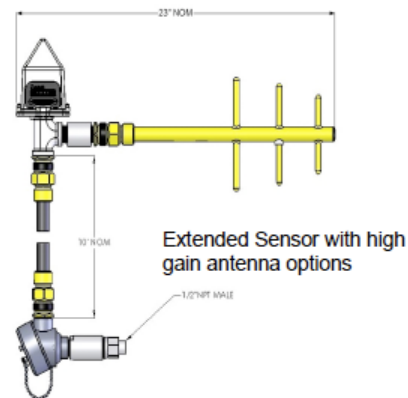
Industrial Certification

Rated for industrial use -40° F to 185° (-40° C to 85° C)
FM NEMA 4 or 4X weather-proof enclosure FM rated intrinsically safe for Class I, II, III; Div 1, Groups A, B, C, D, E, F & G; Class I, II, III, Div 2, Groups A, B, C, D, F & G. CSA Type 4 or 4X weather-proof enclosure CSA rated intrinsically safe for Class I, Div 1, Groups A, B, C & D. Class II, Div 1, Groups E, F & G; Class III, Div 1 ATEX II1G, EEx1a IIC T4

Intrinsic Safety Parameters

FM Class T4 for max operating temp ≤ +85° C CSA Temp Code T3, operating temp ≤ +85° C CSA Class I, Div 2 Temp Code T4, operating temp ≤ +85°

Extended sensor option allows remote placement of electronics for improved mechanical and radio performance. High gain antennas can also be supplied to increase range.



Model	Gauge Pressure Field Unit		
GP	Gauge Pressure		
	Code	Sensor Mounting	
	I	INTEGRAL SENSOR MOUNTING	
	E	REMOTE SENSOR MOUNTING (standard sense cable 10 ft.– other sense cable lengths available as special order)	
	X	EXPLOSION PROOF INTEGRAL SENSOR	
	Y	EXPLOSION PROOF REMOTE SENSOR	
	Code	Yagi Antenna Option	
	Y6	HIGH GAIN YAGI ANTENNA (only available with remote sensor mounting)*	
	Code	Pressure Range PSI	
	5, 15, 30, 100, 250, 1000, 2500, 5000, 10000	SENSOR FULL SCALE PSIG	
GP-	E-	Y6-	30
			TYPICAL MODEL NUMBER