
GSI 04-20 Analog Transmitter

Analog Float Gauge Transmitter

The GSI 04-20 Transmitter converts level measurement from a standard mechanical tank gauge to a 4-20 mA analog signal compatible with any industrial grade receiver. The GSI 04-20 Transmitter was designed for simplicity of installation and calibration. Its design utilizes only reputable subsystem components, enhancing system stability, quality, and availability of replacement parts.

Principle of Operation:

The basic purpose of the GSI-04-20 analog transmitter is to convert the internal rotational motion of a mechanical tape and float level gauge into a 4-20 mA signal representing product level. This rotational motion is available from the mechanical level gauge's output shaft.

The GSI-04-20 analog level transmitter will mount directly to your GSI-2570, or most manufacturers' mechanical gauge heads. When coupled to the gauge head's output shaft the GSI-04-20 utilizes the shaft's rotation to turn a standard 10 turn potentiometer through a precision gear set. The potentiometer's resistance value is then used to establish a variable amplifier gain and thereby derive a 4-20 mA signal.

Mechanical Highlights:

The GSI-04-20 transmitter offers features not found in other manufacturers' units. We believe that it is the simplest, most reliable unit anywhere. All GSI-04-20 transmitters feature:

- An internal potentiometer coupled to a gearset through a clutch assembly. If the product level exceeds the maximum range, due to being out of calibration, the clutch assembly protects the transmitter from excess mechanical stress.
- The GSI 04-20 transmitter produces maximum output at or above the transmitter's maximum range. This mode of operation is superior to other manufacturers' units that reset to minimum value when the level exceeds maximum range. The advantage is that if a transmitter is out of calibration, the GSI-04-20 will consistently provide a 20 mA signal when the transmitter is at maximum regardless of product level.
- The GSI-04-20 Transmitter uses 100% interchangeable precision gear sets, a common potentiometer, and a universal amplifier. Therefore, a transmitter ordered for a specific range can be converted to any other available range by simply replacing the gear set.
- The GSI-04-20 uses only three major components which greatly simplifies repairs and reduces parts inventories.



Temperature Option:

The GSI-04-20 may be ordered with an independent 20 mA temperature output. Two additional wires for field wiring are required along with a separate RTD probe. The RTD provides the input for

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a separate 4-20 mA transmitter and all voltage requirements are the same for both the level and the temperature transmitters. The RTD transmitter is mounted in the same housing and field wiring connections are made at the housing. The unit can be provided for use with either a copper or platinum RTD.

Specifications:

Output:	4-20 m Amps	Range:	8.5 to 60 feet (2.59 to 18.13 Meters)
Accuracy:	0.4% of basic range	Limit Switches:	1, 2, 3, or 4 Limit Switches
Temp. Range:	-25° to 160°F (-31.7° to 71°C)	Materials:	Cast Aluminum Housing, Anodized Internals, and Stainless Steel Trim
Power:	Loop or Externally Powered (2 or 4 wire)	Environmental:	Class 1, Group C&D*
Voltage:	16-46 VDC, 24 VDC, or 115 VAC	Wiring:	18 Awg instrument cable (2 or 4 wire)
		Max Load:	1400 OHMS
		Max Load:	(24V) 600 OHMS

*Consult GSI for other area classifications

*Specifications subject to change without notice

GSI 04-20 Transmitter Ordering Information

BASE MODEL: GSI – 0420 - A - B - C (Optional; when required)

(A) = Power:

- | | |
|-----|--------------------------------------|
| (5) | 2 WIRE 16-42 VDC (UL & CSA approval) |
| (6) | 4 WIRE 24 VDC (UL & CSA approval) |
| (7) | 4 WIRE 115 VAC (No approvals) |

(B) = Transmitter Range (in feet): (Divide Feet by 3.28 for Meters)

- | | | | | | |
|-----|----------|-----|---------|-----|---------|
| (A) | 8.5 - 10 | (I) | 21 - 24 | (O) | 39 - 41 |
| (B) | 10 - 11 | (J) | 24 - 27 | (Q) | 41 - 42 |
| (D) | 11 - 13 | (K) | 27 - 30 | (R) | 42 - 47 |
| (E) | 13 - 15 | (L) | 30 - 34 | (S) | 47 - 50 |
| (F) | 15 - 17 | (M) | 34 - 36 | (T) | 50 - 53 |
| (G) | 17 - 19 | (N) | 36 - 39 | (U) | 53 - 60 |
| (H) | 19 - 21 | | | | |

(C) = OPTIONS

Alarm Switches:

- | | |
|-----|----------------------|
| (1) | One Alarm Switch |
| (2) | Two Alarm Switches |
| (3) | Three Alarm Switches |
| (4) | Four Alarm Switches |

Display:

- | | |
|-------|-------------------------|
| (DSX) | Analog receiver, NEMA 7 |
|-------|-------------------------|

Temperature:

- | | |
|-----|---------------------------|
| (C) | Copper 100 ohms @ 77° F |
| (P) | Platinum 100 ohms @ 32° F |

Example:

Model No.: GSI-0420-5-S-2

- (5) = Power; 2 WIRE 16-42 VDC
(UL & CSA approval)
(S) = Transmitter Range; 47 - 50 Feet
(2) = Alarm Switches; Two Alarm
Switches