



The type 2270 is a rugged, high performance ultrasonic level measurement sensor, having transducer and processing electronics incorporated in one single housing. It provides all the sophisticated echo detection features of the well accepted 2260 Ultrasonic Level Transmitters.

For single and multiple tank applications 2-wire sensors are recommended using either HART protocol or 4 to 20 mA for the direct communication with a panel mount controller or a PLC.

Either for liquid level measurement in sumps or tanks, for tank contents measurement, or open channel flow measurement, the 2270 Level Sensors provide the answer. Sensing ranges up to 6 m (19.7 ft) are available. PP and PVDF sensor bodies provide best chemical resistance in applications where concentrated chemical shall be detected.

## Features

- 2 wire compact sensor
- Non-contact level measuring
- Narrow 5° beam angle
- Level, volume and open channel flow
- Compact housing
- 32 points of linearization
- Fully temperature compensated electronics
- Outstanding signal processing software providing highly accurate measuring results
- PP or PVDF sensor body provides best chemical resistance
- Secondary lightning protection
- 4 to 20 mA / HART interface



## Applications

- River water
- Seawater
- Potable water
- Demineralized water
- Treated water

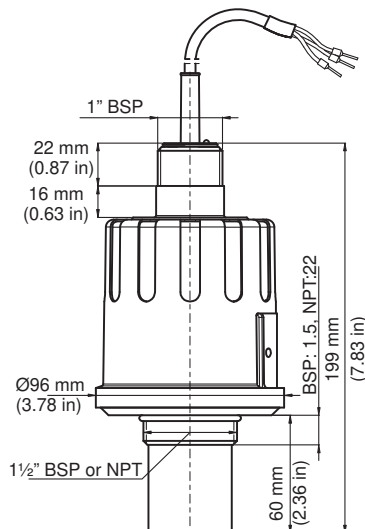


## Specifications (Type 2270-X-XX-4)

| General                       |             |                                                                            |
|-------------------------------|-------------|----------------------------------------------------------------------------|
| Range                         |             | 0.2 to 4 m / 0.65 to 13 ft                                                 |
| Total Beam Angle              |             | 6°                                                                         |
| Measuring Frequency           |             | 80 kHz                                                                     |
| Accuracy *                    |             | ± (0.2 % of measured distance plus 0.05 % of range)                        |
| Resolution                    |             | <2 m (6.6 ft): 1 mm (0.04 in.), 2 to 4 m (6.6 to 13.1 ft): 2 mm (0.08 in.) |
| Environmental                 |             |                                                                            |
| Process Temperature           |             | −30 °C to +90 °C (−22 °F to +194°F)                                        |
| Ambient Temperature           |             | −30 °C to +80 °C (−22 °F to +176°F)                                        |
| Process Pressure (absolute)   |             | 0.05 to 0.3 MPa (0.5 to 3 bar) 7.25 psi to 43.5 psi                        |
| Enclosure                     |             |                                                                            |
| Enclosure and Sensor Material |             | PP or PVDF                                                                 |
| Cable Material                |             | Cable sealing: EPDM, cable isolation: PVC                                  |
| Ingress Protection            |             | IP68 / NEMA 6P                                                             |
| Process Connection            |             | 1½" BSP / NPT                                                              |
| Sealing                       |             |                                                                            |
|                               | PP sensor   | EPDM                                                                       |
|                               | PVDF sensor | FPM (Viton)                                                                |
| Electrical                    |             |                                                                            |
| Outputs                       |             | 2-wire 4–20 mA , max. 600 Ohm; HART interface, Rt >= 250 Ohm               |
| Power Supply                  |             | DC 12 to 36 V                                                              |
| Power Consumption             |             | max. 720 mW, overload protected                                            |
| Connecting                    |             | 6 x 0,5 mm² shielded cable; Ø 6 mm x 5 m (30 m max.)                       |
| Electric shock protection     |             | Class III, low voltage                                                     |
| Standard and Approvals        |             |                                                                            |
| General Approvals             |             | CE                                                                         |

\* Under optimal circumstances of reflection and stabilized transducer temperature

## Dimensions

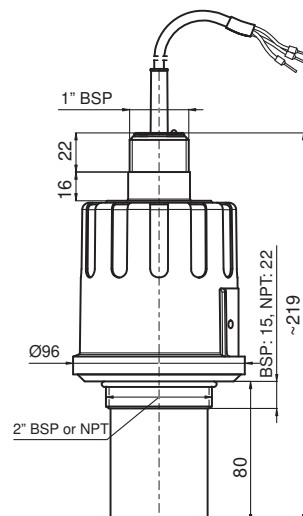
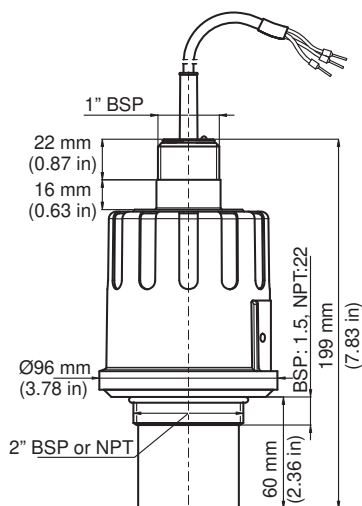


## Specifications (Type 2270-X-XX-6 / 2270-X-XX-8)

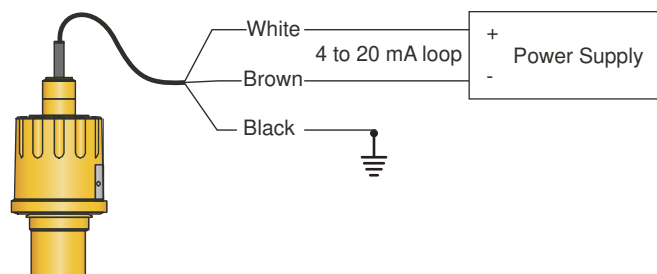
| General                       |                                                                                                           |             |
|-------------------------------|-----------------------------------------------------------------------------------------------------------|-------------|
| Type                          | 2270-X-XX-6                                                                                               | 2270-X-XX-8 |
| Range                         | 0.25 to 6 m / 0.82 to 20 ft                                                                               | 0.35 to 8 m |
| Total Beam Angle              | 5°                                                                                                        | 7°          |
| Measuring Frequency           | 80 kHz                                                                                                    | 50 kHz      |
| Accuracy *                    | ± (0.2 % of measured distance plus 0.05 % of range)                                                       |             |
| Resolution                    | <2 m (6.6 ft): 1 mm (0.04 in.); 2 to 5 m (6.6 to 16.4 ft): 2 mm (0.08 in.);<br>6 m (19.7): 5 mm (0.2 in.) |             |
| Environmental                 |                                                                                                           |             |
| Process Temperature           | −30 °C to +90 °C (−22 °F to +194 °F)                                                                      |             |
| Ambient Temperature           | −30 °C to +80 °C (−22 °F to +176 °F)                                                                      |             |
| Process Pressure (absolute)   | 0.05 to 0.3 MPa (0.5 to 3 bar) 7.25 psi to 43.5 psi                                                       |             |
| Enclosure                     |                                                                                                           |             |
| Enclosure and Sensor Material | PP or PVDF                                                                                                |             |
| Cable Material                | Cable sealing: EPDM, cable isolation: PVC                                                                 |             |
| Ingress Protection            | IP68 / NEMA 6P                                                                                            |             |
| Process Connection            | 2" BSP / NPT                                                                                              |             |
| Sealing                       |                                                                                                           |             |
|                               | PP sensor                                                                                                 | EPDM        |
|                               | PVDF sensor                                                                                               | FPM (Viton) |
| Electrical                    |                                                                                                           |             |
| Outputs                       | 2-wire 4–20 mA , max. 600 Ohm; HART interface, Rt >= 250 Ohm                                              |             |
| Power Supply                  | DC 12 to 36 V                                                                                             |             |
| Power Consumption             | max. 720 mW, overload protected                                                                           |             |
| Connecting                    | 6 x 0,5 mm² shielded cable; Ø 6 mm x 5 m (30 m max.)                                                      |             |
| Electric Shock Protection     | Class III, low voltage                                                                                    |             |
| Standard and Approvals        |                                                                                                           |             |
| General Approvals             | CE                                                                                                        |             |

\* Under optimal circumstances of reflection and stabilized transducer temperature

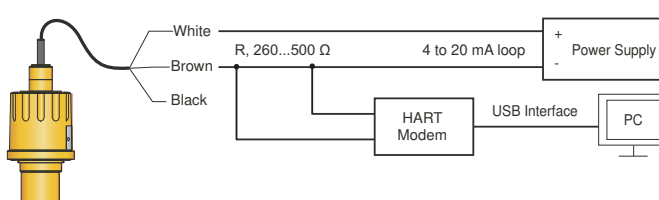
## Dimensions



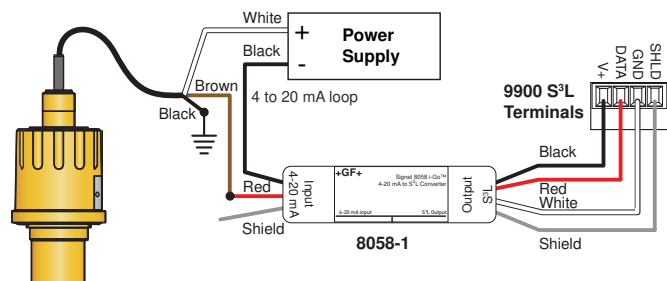
## 4 to 20 mA Loop Wiring



## HART Interface Wiring



## Wiring to 9900 Universal Transmitter



## Ordering Information



| Mfr. Part No.                   | Code               | Description                                                        |
|---------------------------------|--------------------|--------------------------------------------------------------------|
| <b>Versions with NPT thread</b> |                    |                                                                    |
| 2270-P-1N-4                     | <b>159 300 169</b> | Range 4 m (13.1 ft), PP body, 4 to 20 mA 2-wire/HART, NPT thread   |
| 2270-P-1N-6                     | <b>159 300 170</b> | Range 6 m (19.7 ft), PP body, 4 to 20 mA 2-wire/HART, NPT thread   |
| 2270-P-1N-8                     | <b>159 300 116</b> | Range 8 m (26.2 ft), PP body, 4 to 20 mA 2-wire/HART, NPT thread   |
| 2270-V-1N-4                     | <b>159 300 176</b> | Range 4 m (13.1 ft), PVDF body, 4 to 20 mA 2-wire/HART, NPT thread |
| 2270-V-1N-6                     | <b>159 300 177</b> | Range 6 m (19.7 ft), PVDF body, 4 to 20 mA 2-wire/HART, NPT thread |
| 2270-V-1N-8                     | <b>159 300 117</b> | Range 8 m (26.2 ft), PVDF body, 4 to 20 mA 2-wire/HART, NPT thread |
| <b>Versions with BSP thread</b> |                    |                                                                    |
| 2270-P-1B-4                     | <b>159 300 155</b> | Range 4 m (13.1 ft), PP body, 4 to 20 mA 2-wire/HART, BSP thread   |
| 2270-P-1B-6                     | <b>159 300 156</b> | Range 6 m (19.7 ft), PP body, 4 to 20 mA 2-wire/HART, BSP thread   |
| 2270-P-1B-8                     | <b>159 300 111</b> | Range 8 m (26.2 ft), PP body, 4 to 20 mA 2-wire/HART, BSP thread   |
| 2270-V-1B-4                     | <b>159 300 162</b> | Range 4 m (13.1 ft), PVDF body, 4 to 20 mA 2-wire/HART, BSP thread |
| 2270-V-1B-6                     | <b>159 300 163</b> | Range 6 m (19.7 ft), PVDF body, 4 to 20 mA 2-wire/HART, BSP thread |
| 2270-V-1B-8                     | <b>159 300 115</b> | Range 8 m (26.2 ft), PVDF body, 4 to 20 mA 2-wire/HART, BSP thread |

## Accessories

| Code               | Description                      |
|--------------------|----------------------------------|
| <b>159 300 181</b> | HART - USB Modem                 |
| <b>159 300 182</b> | HART - USB Modem, DIN Rail       |
| <b>159 300 183</b> | HART - USB Modem, DIN Rail, ATEX |