

# Small Diameter Submersible



Shown with optional NPT conduit and optional FEP cable

## APPLICATIONS

- Well head measurement
- Groundwater monitoring
- Level measurement in open bodies of water
- Sewage lift and pumping stations
- Setting ponds and rainwater basins

## 611 SERIES

- Hydrostatic level measurement for use in applications including bore holes and wells with small diameters (outer diameter 0.87")
- Low power output signals for battery-powered applications, and optional temperature output available
- 5:1 turndown using optional HART® signal
- 316L Stainless Steel, PVDF and polyurethane wetted parts
- CE compliant to suppress RFI, EMI and ESD
- Certifications pending:
  - ATEX
  - CSA
  - IECEx

### SPECIFICATIONS

|                               |   |
|-------------------------------|---|
| <b>Output signals</b>         | 4 mA to 20 mA, 2-wire<br>4 mA to 20 mA + HART®, 2-wire<br>4 mA to 20 mA x 2 (pressure and temperature)*<br>0.1 Vdc to 2.5 Vdc, 3-wire<br>0.1 Vdc to 2.5 Vdc x 2 (pressure and temperature)*   |
| <b>Pressure ranges**</b>      | 0 inH <sub>2</sub> O to 50 inH <sub>2</sub> O through 0 psig to 100 psig  |
| <b>Accuracy</b>               | ± 1.0% of span (± 0.5% of span optional)<br>Includes non-linearity, hysteresis, zero offset and end value deviation per IEC 61298-2<br>Accuracy after turndown via HART®, ≤ ± 1.25% of scaled span (0.75% optional)<br>Temperature sensor 14 °F to 176 °F (-10 °C to 80 °C): ≤ ± 3.3 °F |
| <b>Stability</b>              | ≤ ± 0.1% of span per year   |
| <b>Switch on time</b>         | Output signals without HART®: ≤ 150 ms<br>Output signals with HART®: ≤ 250 ms   |
| <b>Settling time</b>          | Output signals without HART®: ≤ 100 ms<br>Output signals with HART®: ≤ 250 ms   |
| <b>Durability</b>             | > 100,000,000 full scale cycles   |
| <b>Temperature ranges</b>     | Compensated 32 °F to 176 °F (0 °C to 80 °C)<br>Effect ± 0.01%/ °F for zero and span<br>Standard Media 14 °F to 122 °F (-10 °C to 50 °C)<br>Optional Media -40 °F to 176 °F (-40 °C to 80 °C)<br>Storage -40 °F to 176 °F (-40 °C to 80 °C)  |
| <b>Power requirement***</b>   | 4mA to 20 mA: 8 Vdc to 36 Vdc<br>4 mA to 20 mA and HART®: 12-36 Vdc   |
| <b>Load limitations</b>       | 4 mA to 20 mA: ≤ (Vpower - 8 V) / 0.022 A<br>4 mA to 20 mA and HART®: ≤ (Vpower - 9.6 V) / 0.022 A  |
| <b>Proof pressure</b>         | 5 times range   |
| <b>Measuring element</b>      | Cap: PVDF<br>Sensor: 316 stainless steel, optional Hastelloy C-276<br>Cable: Polyurethane, optional FEP   |
| <b>Connection</b>             | 316 stainless steel   |
| <b>Housing material</b>       | 316 stainless steel, 318 LN optional  |
| <b>Environmental rating</b>   | IP68  |
| <b>Electromagnetic rating</b> | CE compliant to EMC norm EN 61326<br>RFI, EMI and ESD protection  |
| <b>Electrical protection</b>  | Reverse polarity protection, short circuit and resistance to overvoltage :DC 40V and increased overvoltage for lightning protection. Normal discharge current ≥ 10 kA, Rise time 8/20 μs  |
| <b>Max. submersion depth</b>  | 325 ft./100 meters  |
| <b>Vibration</b>              | 4 g's according to IEC 60068-2-6  |
| <b>Weight</b>                 | Approximately 10.6 oz. with standard nosecone - cable .5 lb per 10 ft.  |

\* Temperature measurement is based on the media temperature range

\*\* Other ranges and measuring units available including bar, mbar, MPa, kPa, and mH<sub>2</sub>O

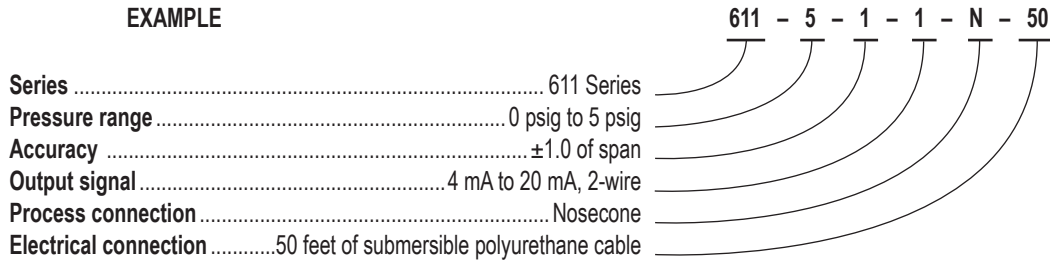
\*\*\* Unregulated

| ORDERING INFORMATION          |  |   |  |  |  |
|-------------------------------|--|---|--|--|--|
| <b>SERIES</b>                 | <b>611</b>   |   |  | <b>611H 318LN/Hastelloy C-276</b>                        |  |
| <b>PRESSURE RANGES</b>        | <b>50 inH<sub>2</sub>O</b> 0 inH <sub>2</sub> O to 50 inH <sub>2</sub> O                                   | <b>5</b> 0 psig to 5 psig (11.5 ftH <sub>2</sub> O)               | <b>50</b> 0 psig to 50 psig (115 ftH <sub>2</sub> O)                   | <b>100A</b> 0 psia to 100 psia                           |  |
|                               | <b>100 inH<sub>2</sub>O</b> 0 inH <sub>2</sub> O to 100 inH <sub>2</sub> O                                 | <b>10</b> 0 psig to 10 psig (23.1 ftH <sub>2</sub> O)             | <b>100</b> 0 psig to 100 psig (230.8 ftH <sub>2</sub> O)               |  |  |
|                               | <b>150 inH<sub>2</sub>O</b> 0 inH <sub>2</sub> O to 150 inH <sub>2</sub> O                                 | <b>15</b> 0 psig to 15 psig (34.6 ftH <sub>2</sub> O)             | <b>25A</b> 0 psia to 25 psia   |  |  |
|                               | <b>250 inH<sub>2</sub>O</b> 0 inH <sub>2</sub> O to 250 inH <sub>2</sub> O                                 | <b>25</b> 0 psig to 25 psig (57.7 ftH <sub>2</sub> O)             | <b>50A</b> 0 psia to 50 psia   |  |  |
|                               | psig = gauge pressure    psia = absolute pressure    Other ranges and measuring units available on request |   |  |  |  |
| <b>ACCURACIES</b>             | <b>1</b> ±1.0 of span  | <b>2</b> ±0.5% of span  |  |  |  |
| <b>OUTPUT SIGNALS</b>         | <b>1</b> 4 mA to 20 mA, 2-wire   | <b>48</b> 0.1 Vdc to 2.5 Vdc, 3 wire**                            |  |  |  |
|                               | <b>43</b> 4 mA to 20 mA, 2-wire and HART® signal   | <b>49</b> 0.1 Vdc to 2.5 Vdc x 2 (pressure and temperature) *, ** |  |  |  |
|                               | <b>47</b> 4 mA to 20 mA x 2 (pressure and temperature)*  |   |  |  |  |
| <b>PROCESS CONNECTIONS</b>    | <b>N</b> Nosecone  |   | <b>W</b> Weighted nosecone   |  |  |
| <b>ELECTRICAL CONNECTIONS</b> | <b>XX</b> Standard polyurethane (PUR) cable  |   | <b>62-XX</b> Polyurethane (PUR) cable with 1/2" NPT conduit connection |  |  |
|                               | <b>38-XX</b> Optional FEP cable  |   | <b>63-XX</b> FEP cable with 1/2" NPT conduit connection                |  |  |
|                               | <b>NOTE: XX = length of cable in feet</b>  |   |  |  |  |
| <b>OPTIONS</b>                | <b>CBC</b> Cable Clamp   | <b>LP</b> Lightning Protection                                    | <b>JB</b> Cable Junction Box (NEMA 4X)                                 | <b>HT</b> Increased media temperature (-40 °F to 176 °F) |  |

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

\* Temperature measurement is based on the media temperature range  
 \*\* Low power is optimized for battery operation

### EXAMPLE



### WIRING CODE SCHEMATICS

|  | Wiring                             | Cable |
|--|------------------------------------|-------|
| 4 mA to 20 mA & 4 mA to 20 mA, 2-wire and Hart signal® | + Supply                           | Brown |
|  | - Supply                           | Blue  |
|  | Shield                             | Grey  |
| 4 mA to 20 mA x 2 (pressure and temperature)           | + Supply (pressure sensor)         | Brown |
|  | - Supply (pressure sensor)         | Blue  |
|  | + Supply (temperature sensor)      | Green |
|  | - Supply (temperature sensor)      | White |
|  | Shield                             | Grey  |
| 0.1 Vdc to 2.5 Vdc, 3 wire                             | + Supply                           | Brown |
|  | - Supply                           | Blue  |
|  | Analog output                      | Black |
|  | Shield                             | Grey  |
| 0.1 Vdc to 2.5 Vdc x 2 (pressure and temperature)      | + Supply                           | Brown |
|  | - Supply                           | Blue  |
|  | Analog output (pressure sensor)    | Black |
|  | Analog output (temperature sensor) | Green |
|  | Shield                             | Grey  |

### With protective cap

