

SECTION C – INFRASTRUCTURE TECHNICAL SPECIFICATIONS**1. INSTRUMENTATION****1.1 PRESSURE SENSOR****Supply Submersible Pressure Transmitter**

The Tenderer shall supply an IP68 4 – 20mA submersible pressure transmitter for water level measurement along rivers and canals 4 – 20mA to allow for the effective measurement of water levels. Submersible pressure transmitter shall meet the following recommended minimum but not limited to the specification:

Minimum Specification:

Type	Description
Output signal type Signal, Current (2-wire)	4 - 20 mA
Voltage - Power Supply	DC 10 - 30 V
Ingress protection (per IEC 60529)	IP 68
Lightning protection	1.5 J per EN 61000-4-5
Power supply	DC 24 V
Submersion depths	- Submersible pressure transmitter with FEP cable: up to 100 m - Submersible pressure transmitter with PUR cable: up to 300 m
Weight	- Level probe approx. 200 g - Cable: approx. 80 g/m - Additional weight (accessories): approx. 500 g
Accuracy at reference conditions	- Measuring ranges < 0.25 bar: $\leq \pm 0.50$ % of span - Measuring ranges ≥ 0.25 bar: $\leq \pm 0.25$ % of span - Including non-linearity, hysteresis, zero offset and end value - Deviation (corresponds to measured error per IEC 61298-2).
Non-linearity (per IEC 61298-2)	$\leq \pm 0.2$ % of span
Long-term stability at reference conditions	$\leq \pm 0.2$ % of span/year
Dimensions(mm)	- Length: 130 – 147 - Breadth:

1.2 ULTRASONIC SENSOR**1.2.1 Supply Loop Powered Ultrasonic Non-Contact Level Sensor**

The Tenderer shall Supply a new weather resistant IP68 4 – 20mA calibrated loop powered ultrasonic level sensor (Non-Contact level sensor) flow measurement capable of being mounted of brackets and inside enclosure deemed to be required by the onsite environment that will allow for the effective measurement. The ultrasonic loop powered non-contact level sensor shall meet the following recommended minimum but not limited to the specification:

Minimum Specification:

Type	Description
Measuring principle	Ultrasonic
Characteristic / Application	Separated version with field housing or top hat rail housing for control cabinet instrumentation, 300 m in-between sensor and transmitter
Supply / Communication	4-wire (HART, Profibus DP)
Accuracy	+/- 2mm + 0.17% of measured distance
Blocking distance	0.4 m
Process pressure / max. overpressure limit	0.7 bar ... 4 bar
Communication	Transmitter: 4 ... 20 mA HART Profibus DP
Output	4...20mA