# ULS Ultrasonic Level Sensors

## Product Overview:

The ULS series from S&S Middle East offers a range of advanced ultrasonic level sensors designed for precise level measurement in tanks or sumps. These sensors provide a 4-20mA output for seamless integration with BMS systems or alarms. Utilizing non-intrusive ultrasonic pulse technology, they can measure any liquid type.

The sensors are encased in robust IP68-rated housings and are mounted at the top of the tank. Setup is simple, using push buttons to define full and empty levels. Available in two standard ranges of 6m and 8m, the ULS series also offers optional features such as relay outputs, HART communication, and an LCD display/programming module for enhanced functionality.

## Features:

- Non-intrusive design for hassle-free operation
- Simple and quick setup process
- Easily mounted on top of the tank
- Integrated temperature compensation for enhanced accuracy

## Partcodes

| Polypropylene Housing (Liquid) | PVDF Housing (Diesel) | |
|---|---|---|
| ULS-L-3802 | ULS-D-3802 | 0.25m to 6m depth |
| ULS-L-3702 | ULS-D-3702 | 0.35m to 8m depth |
| ULS-L-3804 | ULS-D-3804 | 0.25m to 6m depth with HART output |
| ULS-L-3704 | ULS-D-3704 | 0.35m to 8m depth with HART output |
| ULS-L-S-3802 | ULS-D-S-3802 | 0.25m to 6m depth with display screen |
| ULS-L-S-3702 | ULS-D-S-3702 | 0.35m to 8m depth with display screen |
| ULS-L-S-3804 | ULS-D-S-3804 | 0.25m to 6m depth with HART output & display screen |
| ULS-L-S-3704 | ULS-D-S-3704 | 0.25m to 6m depth with HART output & display screen |
| | | |
| ULS-L-3806 | ULS-D-3806 | 0.25m to 6m depth - explosion proof |
| ULS-L-3706 | ULS-D-3706 | 0.35m to 8m depth - explosion proof |
| ULS-L-3808 | ULS-D-3808 | 0.25m to 6m depth with HART output - explosion proof |
| ULS-L-3708 | ULS-D-3708 | 0.35m to 8m depth with HART output - explosion proof |
| ULS-L-S-3806 | ULS-D-S-3806 | 0.25m to 6m depth with display screen - explosion proof |
| ULS-L-S-3706 | ULS-D-S-3706 | 0.35m to 8m depth with display screen - explosion proof |
| ULS-L-S-3808 | ULS-D-S-3808 | 0.25m to 6m depth with HART output & display screen - explosion proof |
| ULS-L-S-3708 | ULS-D-S-3708 | 0.25m to 6m depth with HART output & display screen - explosion proof |

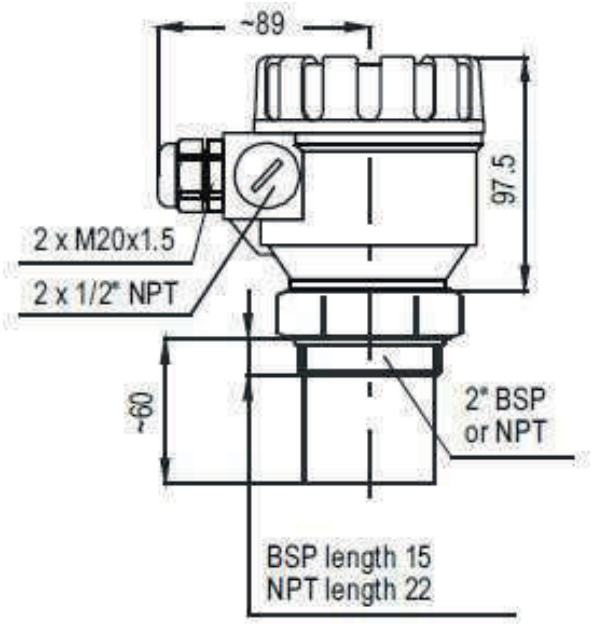
## Default Measurement Options:

| Measured Current mA | Indicated distance m (range) | |
|---|---|---|
| | -370 | -380 |
| 4.0 | 8.00 | 6.00 |
| 6.0 | 7.04 | 5.28 |
| 8.0 | 6.09 | 4.56 |
| 10 | 5.13 | 3.84 |
| 12 | 4.18 | 3.13 |
| 14 | 3.22 | 2.41 |
| 16 | 2.26 | 1.69 |
| 18 | 1.31 | 0.97 |
| 20 | 0.35 | 0.25 |

# PRODUCT SPEC SHEET Ultrasonic Level Sensors

## Technical Specifications:

| | |
|---|---|
| Power supply: | 12 to 36Vdc 720mW 2-wire loop powered |
| Output signal: | 4-20mA loop (maximum 600 Ohm load) |
| Measuring range: | |
| -370 versions | 0.35 to 8.0m (20mA to 4mA - can be reversed) |
| -380 versions | 0.25 to 6.0m (20mA to 4mA - can be reversed) |
| Accuracy: | ± (0.2% measured distance plus 0.05% of the range) |
| Resolution: | |
| >2m | 1mm |
| 2m to 5m | 2mm |
| over 5m | 5mm |
| Beam angle: | |
| -370 versions | 7° |
| -380 versions | 5° |
| Process temperature: | |
| -2 and -4 versions | -30 to +90°C |
| -6 and -8 versions | -20 to +70°C |
| Operating pressure: | 0.3 to 3 bar |
| IP rating: | |
| Housing | IP67 |
| Sensor | IP68 |
| Materials: | |
| ULS-L | Polypropylene |
| ULS-D | PVDF (recommended for diesel) |
| Mounting: | 2" BSP |
| Electromagnetic compatibility: | EN61326 |
| Digital communications: (option) | Hart |
| Integral relay: (option) | SPDT 1A @ 30Vdc |
| Display: (option) | 6 digit LCD display |
| Country of origin: | Hungary |




## Installation Instructions:

**Installation of the BSP threaded models:**

**Secure the Unit**
- Screw the unit into position.
- Use an open wrench for tightening, ensuring the maximum torque does not exceed 20 Nm.
- Once tightened, the enclosure can be rotated to the desired position. (A safety bolt restricts rotation to a maximum of 350°.)

**Electrostatic Discharge Precautions**
- To prevent damage caused by electrostatic discharge (ESD) via the terminal, follow standard ESD precautions.
- Touch a properly grounded point before removing the enclosure cover to neutralize static charge.

**Wiring**
- Ensure the power supply is switched off at the source.
- Remove the cover of the housing and, if applicable, take out the display module to access the screw terminals.
- Use cables with a core cross-section of 0.5 to 1.5 mm² for connections.

**Grounding**
- Connect the sensor's ground screw to an external ground point to ensure proper grounding.

**Power and Programming**
- Turn on the unit and perform any necessary programming adjustments.

**Seal and Close**
- After programming, ensure the enclosure is properly sealed and the cover is securely closed.

**NOTE:**
If mounting the unit directly onto a tank without using the recommended mounting flange, ensure the mounting material is non-metallic. Metallic mountings may cause resonance, which can affect the performance of ultrasonic sensors.