



## ILLSU series

### Submersible Tank Gauging Level Transmitter



- **Piezo-resistive sensor**
- **Stainless steel housing and diaphragm**
- **Accuracy <0.5% FS BFSL**
- **Various outputs including Volts and mA.**
- **Depth ranges from 0-48" (0-4ft) to 0-480" (0-40ft) WG**

#### Options available on the IMTG transmitter.

Pressure range  
Voltage or current output  
Cable length

#### Suitable applications

Static tank level  
Container or chamber level  
Vehicle tank level  
IBC, IBC Tote or Pallet Tank  
Rainwater harvesting

The ILLSU is designed for use in continuous submersion in liquids such as water, oils and fuels in small tanks, where conventional mechanical level switches and sensors are not ideal and more level 'control' and measurement is required.

The probe uses a piezo-resistive silicon sensing technology, isolated from the media by a diaphragm within the stainless steel housing. It offers excellent stability, repeatability and resolution for applications where a small tank level is required, from as low as 3ft through to 40 ft high tanks.

Each device is temperature compensated, calibrated and supplied with a traceable serial number and calibration certificate.

#### Performance

|                                                                    |        |                                          |
|--------------------------------------------------------------------|--------|------------------------------------------|
| Accuracy (Non-Linearity & Hysteresis) $\leq \pm 0.5\%$ / FS (BFSL) |        |                                          |
| Setting Errors (offsets)                                           | 2-wire | Zero & Full Scale, $\leq \pm 0.5\%$ / FS |
|                                                                    | 3-wire | Zero & Full Scale, $\leq \pm 0.5\%$ / FS |
| Permissible Load                                                   | 2-wire | $R_{max} = [(Supply - 9min)/0.02]\Omega$ |
|                                                                    | 3-wire | $R_{min} = 10k\Omega$                    |
| Influence Effects                                                  | Supply | $< 0.005\%$ FS / 1V                      |
|                                                                    | Load   | 0.05% FSO / k $\Omega$                   |

Custom versions can be made for particular applications.

#### Electrical Protection

Supply reverse polarity No damage/no function  
Electromagnetic compatibility CE Compliant

#### Mechanical Stability

Shock 100g / 11s  
Vibration 10g RMS (20 - 2000Hz)

#### Temperatures & Thermal Effects

Media Temperature -20°C (Non-freezing) to +60°C  
Storage temperature -20°C to +70°C  
Compensated temperature range 20°C  $\pm$  25°C  
Thermal Zero Shift (TZS)  $\leq \pm 0.04\%$  / FS/°C  
Thermal Span Shift (TSS)  $\leq \pm 0.015\%$  / °C

#### Material Specifications

Housing 303 Stainless Steel  
"O" ring seals Viton  
Diaphragm 316L Stainless Steel  
Cable sheath material FEP standard  
Media wetted parts Housing, "O" ring seal, diaphragm, cable sheath  
Weight Transmitter: approx 2.65oz (75g)  
Cable: 1.7oz (48g) per yard  
Installation position Any, small zero shift when tilted through 90°  
Operational life > 100x 10<sup>6</sup> cycles  
Insulation resistance 50M $\Omega$ @50Vdc

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**ISO9001 CERTIFIED**

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#### Pressure Ranges and Passive mV/V Outputs

|                          |        |     |     |     |      |      |
|--------------------------|--------|-----|-----|-----|------|------|
| Nominal Pressure, Gauge  | inchWG | 40  | 100 | 200 | 280  | 400  |
| Permissible Overpressure | inchWG | 800 | 800 | 800 | 2000 | 2000 |

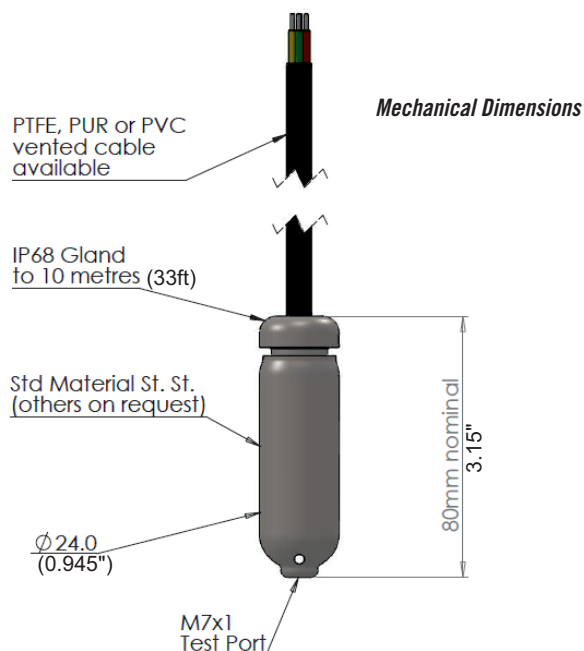
#### Output Signals and Supply Voltages

| Wire system Output |                               | Supply Voltage | Connection   | Wire Colours |
|--------------------|-------------------------------|----------------|--------------|--------------|
| 2-wire             | 4-20mA                        | 9-32Vdc        | +ve Supply   | Brown        |
|                    |                               |                | -ve Supply   | White        |
|                    |                               |                | Ground       | Pink         |
|                    |                               |                | Cable Screen | Green        |
| 3-wire             | 0.5-4.5Vdc<br>non-ratiometric | 9-32Vdc        | +ve Supply   | Brown        |
|                    |                               |                | -ve Supply   | White        |
|                    |                               |                | +ve Output   | Yellow       |
|                    |                               |                | Ground       | Pink         |
|                    |                               |                | Cable Screen | Green        |

Care must be taken regarding screening and earthing when using voltage output

| Part No           | Pressure Range | Cable Length | Output            |
|-------------------|----------------|--------------|-------------------|
| ILLSU-Gi048-5-003 | 0-48" WG       | 10ft         | 4-20mA            |
| ILLSU-Gi120-5-005 | 0-120" WG      | 16ft         | 4-20mA            |
| ILLSU-Gi240-5-008 | 0-240" WG      | 26ft         | 4-20mA            |
| ILLSU-Gi360-5-012 | 0-360" WG      | 40ft         | 4-20mA            |
| ILLSU-Gi480-5-016 | 0-480" WG      | 52ft         | 4-20mA            |
| ILLSU-Gi048-D-003 | 0-48" WG       | 10ft         | 0.5 to 4.5V 3Wire |
| ILLSU-Gi120-D-005 | 0-120" WG      | 16ft         | 0.5 to 4.5V 3Wire |
| ILLSU-Gi240-D-008 | 0-240" WG      | 26ft         | 0.5 to 4.5V 3Wire |
| ILLSU-Gi360-D-012 | 0-360" WG      | 40ft         | 0.5 to 4.5V 3Wire |
| ILLSU-Gi480-D-016 | 0-480" WG      | 52ft         | 0.5 to 4.5V 3Wire |

(Custom ranges and outputs available on request)



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