

# IN-LLT (Rev 1)

## Submersible Level Transmitter

### Description.

The Intech IN-LLT hydrostatic level transmitter is a fully sealed submersible pressure instrument. It is designed for liquid level measurement. The sensor and electronics are housed within a stainless steel IP68 housing and provide end users with an Industrial 4~20mA loop powered or 0~5Vdc signal. IN-LLT level transmitters are accurate, compact & light weight.

**Applications:** Pharmaceuticals, metallurgy, electricity, mines, municipal water supply, irrigation and hydrology.

### Features.

- Integrated construction, unnecessary to do outer adjustment.
- Sensor housing protection IP68.
- Cost-efficient, high reliability and stability.
- RoHS approved.



[www.intech.co.nz/in-llt](http://www.intech.co.nz/in-llt)

### Ordering Information.

ITEMS	CODE		DESCRIPTION
SERIES	IN-LLT-		Hydrostatic Level Transmitter.
OUTPUT	C-		4~20mA Output (loop powered).
	V-		0~5Vdc Output.
RANGE		1	0~1 m H <sub>2</sub> O with 10m Cable.
		5	0~5 m H <sub>2</sub> O with 10m Cable.
		10	0~10 m H <sub>2</sub> O with 15m Cable.
		20	0~20 m H <sub>2</sub> O with 30m Cable.
		50	0~50 m H <sub>2</sub> O with 60m Cable.
		100	0~100 m H <sub>2</sub> O with 110m Cable.
		150	0~150 m H <sub>2</sub> O with 160m Cable.
	200	0~200 m H <sub>2</sub> O with 210m Cable.	

### Ordering Example.

**IN-LLT-C-20:** Submersible Level Transmitter with 4~20mA Output, 0~20m H<sub>2</sub>O Range, 30m cable.

We strongly recommend that an overvoltage protection device is used with the IN-LLT if long runs of cable are involved in the installation; to protect against potential Lightning strike or earth potential rises.

Intech Lightning Protection Models: **LPN-OVP** (Rev 1) DIN Rail mount OVP unit or **NAA-102** Terminal Box with filter and integral OVP.

### Specifications.

Range (FS):	m H <sub>2</sub> O	1, 2, 5, 10, 20, 50, 100, 150, 200.	(See Ordering Information table.)
Overpressure:		2 times FS.	
Cable		Polyethylene.	
Accuracy:		0.5% FS.	
Stability:		range>20m H <sub>2</sub> O,	0.2% FS.
		range<20m H <sub>2</sub> O,	20mm H <sub>2</sub> O.
Thermal drift:		Zero.	Span.
		range>10m H <sub>2</sub> O	0.02% FS/°C
		range>10m H <sub>2</sub> O	0.05% FS/°C
Application temp. range:		-10~80°C.	
Storage temp. range:		-40~100°C.	
Current Output Model:		4~20mA (2-wire, Loop Powered).	
Power supply (U <sub>T</sub> ):		12~28Vdc.	
Load (Ω):		<(U <sub>T</sub> -12)/0.02.	
Voltage Output Model:		0~5V.	
Power Supply		12~28Vdc.	
Current Draw		<3mA.	

**Product Liability.** This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units at 25°C, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

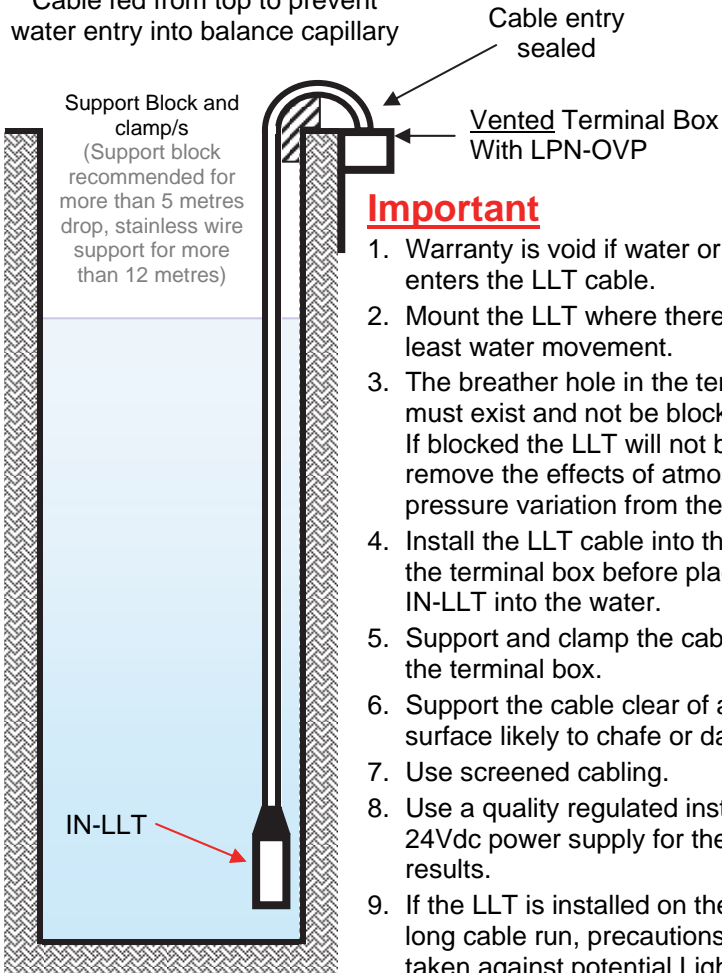
**Warning:** These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.

## Installation Notes:

1. In the event that IN-LLT units are being used with media other than water please ensure that the seals and cable will not be compromised.
2. Two kinds of cable are available: Polyethylene (PE) & Polyurethane (PUR). Polyethylene cable is the stock standard.
3. If the IN-LLT is prone to lightning strikes, we strongly recommend the use of the optional LPN-OVP to protect the device.
4. At standard conditions: ( $@4^{\circ}\text{C}$ ,  $g=9.80665\text{ m/s}^2$ )  
 $1\text{mH}_2\text{O} = 0.1\text{kgf/cm}^2 = 9.80665\text{kPa}$ .
5. For special requirements, please feel free to contact us.

## Installation Instructions.

Cable fed from top to prevent water entry into balance capillary

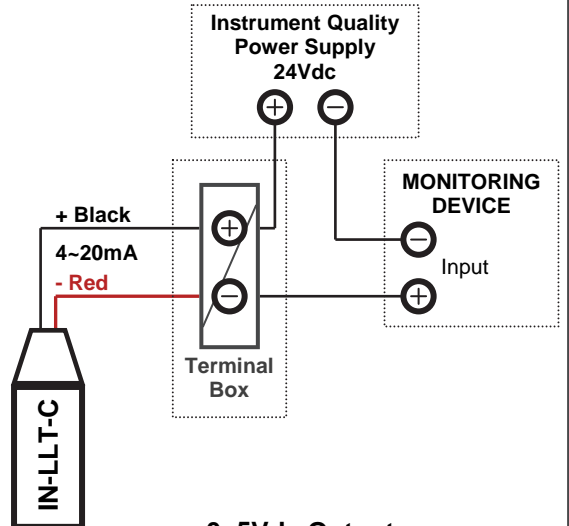


### Important

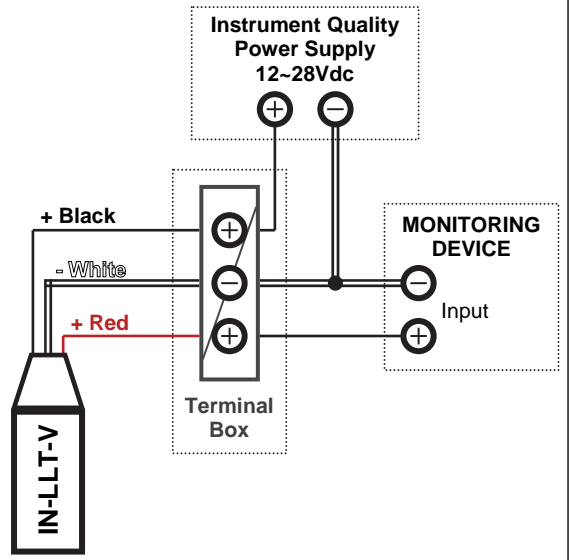
1. Warranty is void if water or any fluid enters the LLT cable.
2. Mount the LLT where there is the least water movement.
3. The breather hole in the terminal box must exist and not be blocked. If blocked the LLT will not be able to remove the effects of atmospheric pressure variation from the reading.
4. Install the LLT cable into the top of the terminal box before placing the IN-LLT into the water.
5. Support and clamp the cable before the terminal box.
6. Support the cable clear of any surface likely to chafe or damage it.
7. Use screened cabling.
8. Use a quality regulated instrument 24Vdc power supply for the best results.
9. If the LLT is installed on the end of a long cable run, precautions must be taken against potential Lightning strike or earth potential rises. We recommend either the LPN-OVP or NAA-102 for protection units.

## Wiring Diagrams.

### 4~20mA Output (loop powered):



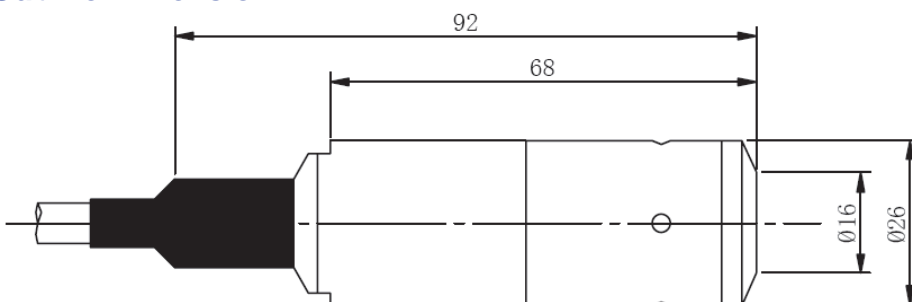
### 0~5Vdc Output:



## Construction Material.

- Housing: stainless steel 1Cr18Ni9Ti.
- Cable 7.5mm polyethylene cable.
- O-ring: Viton.
- Diaphragm: stainless steel 316L.
- Rubber casing: NBR.
- Connection box: aluminum-casting (ZL102) (optional).

## Outline Dimension.



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