

LLE Series Liquid Level Sensors



Features

- Solid state technology
- Small size
- Digital output
- Pre-wired
- Electrically robust

Description

The enhanced series of liquid level sensors incorporates a photo-transistor trigger which provides a digital output that denotes the presence or absence of liquid.

The mode of operation is derived from the principle of total internal reflection. An LED and photo-transistor are housed within a plastic dome at the head of the device. When no liquid is present, light from the LED is internally reflected from the dome to the photo-transistor. When liquid covers the dome, the effective refractive index at the dome-liquid boundary changes, allowing some light from the LED to escape. Thus the amount of light received by the photo-transistor is reduced and the output switches, indicating the presence of liquid. This method of liquid level sensing is very fast, and almost instantaneous for water.

Benefits

- Accurate repeatable switching point
- Can be mounted in applications where space is limited
- Microprocessor compatible
- Easy to install saving assembly time
- Reverse polarity, over voltage, short circuit and transient protection

Typical applications

- Home appliances
- Spa baths
- Vending machines
- Food and beverage
- Medical
- Compressors
- Machine tools
- Automotive

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING

MISUSE OF DOCUMENTATION

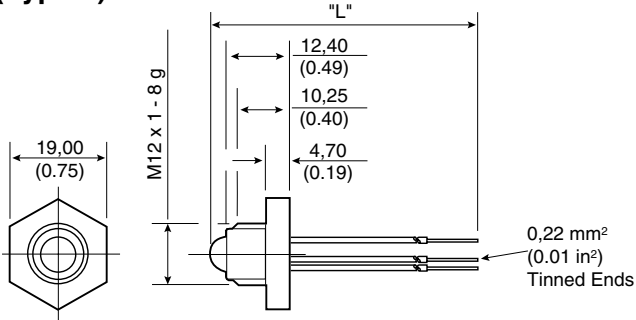
- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

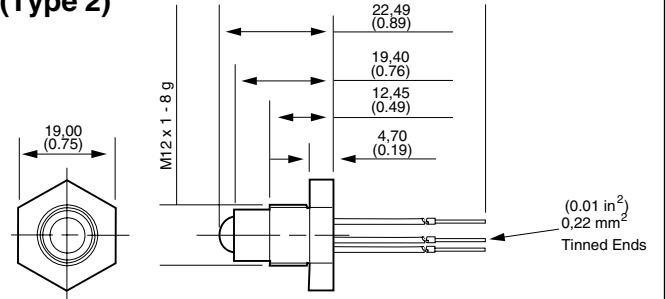
LLE Series Liquid Level Sensors

Mounting drawing (in mm and inches)

LLE101000 (Type 1)



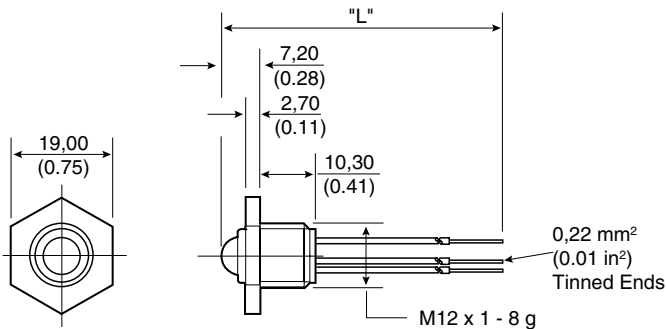
LLE102000 (Type 2)



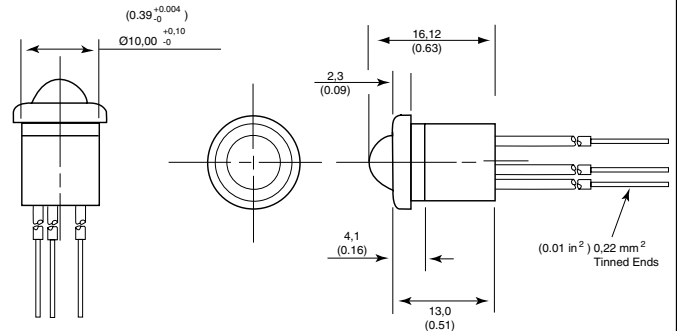
Notes

- 1 Recommended panel hole size \varnothing 12,5 ± 0.3 mm (0.49 \pm 0.01 in)
- 2 'O' ring seal supplied unassembled

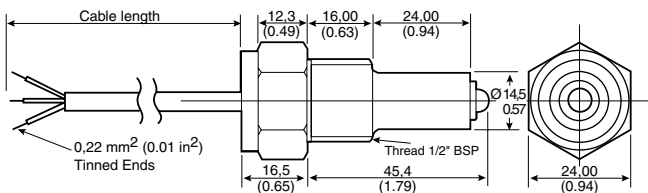
LLE103000 (Type 3)



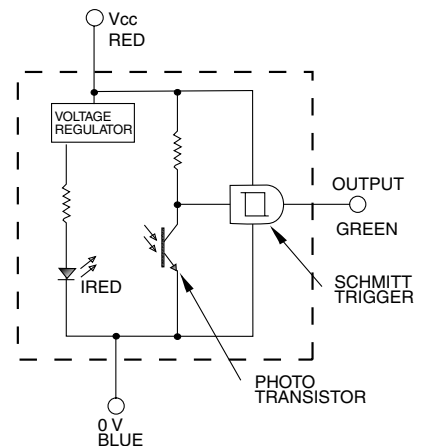
LLE105000 (Type 5)



LLE205000 LLE305000



Electrical diagram



Installation instructions for LLE Series Liquid level sensors

PK XP-4059

Issue 3

GENERAL DESCRIPTION

The LLE Series liquid level sensor provides a single point detection via a TTL compatible output. When liquid is present on the surface of the sensor the output sinks up to a maximum of 10 mA.

LED and phototransistor chips are sealed into the base of the plastic dome, in such a position that light is totally internally reflected from the dome boundary to the phototransistor.

Thus the output is normally high. When liquid covers the dome, the change in refractive index at the boundary means light escapes into the liquid, so less light reaches the phototransistor which thus causes the output to switch low.

CLEANING

Proper fluids should be selected based on type of contaminant to be removed. Honeywell recommends freon and alcohol based solvents. Do not use chlorinated solvents such as trichlorethane as these are likely to attack the sensor material.

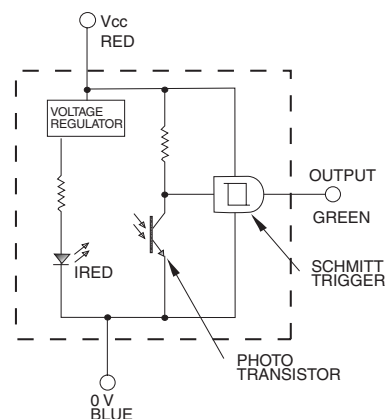
LIQUID MEDIA COMPATIBILITY

Before use check that the fluid in which you wish to use these devices is compatible with polysulphone.

ELECTRICAL SPECIFICATIONS

	Standard temperature	High temperature
Supply voltage (Vcc)	+5 Vdc to +12 Vdc \pm 5 %	
Supply current @ 25 °C (77 °F)	15 mA nominal	5 mA nominal
Output sink current (Io) @ 25 °C (77 °F) @ 5 Vdc	10 mA max.	40 mA max.
Operating temperature	-25 °C to 80 °C (-13 °F to 176 °F)	-40 °C to 125 °C (-40 °F to 257 °F)
Storage temperature	-30 °C to 85 °C (-22 °F to 185 °F)	-40 °C to 125 °C (-40 °F to 257 °F)

ELECTRICAL DIAGRAM



MOUNTING

Catalogue Listing			
Standard temperature	LLE101000/102000/103000	LLE205000/305000	LLE105000
High temperature	LLE101101/102101/103101	LLE205100/305100	LLE105100
Thread	M12x1x8 g	1/2" BSPT	—
Tightening torque	1,5 N m/13.26 in lb max.	85 N m/62.69 ft lb	—
Pressure (using washer supplied)	5 bar max.	25 bar max.	—
Mounting hole	—	—	10 mm

WARNING PERSONAL INJURY

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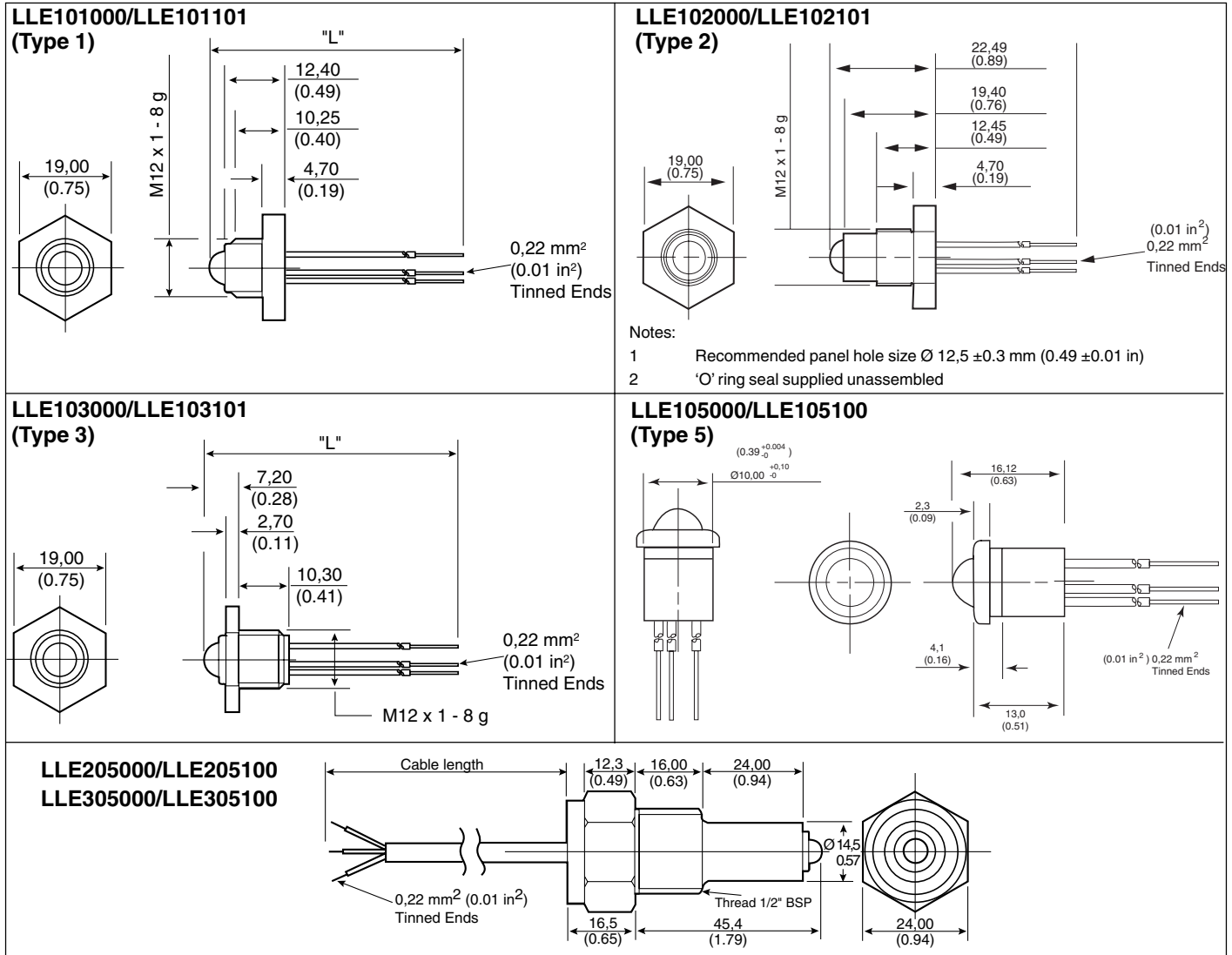
Failure to comply with these instructions could result in death or serious injury.

CAUTION

- Do not exceed maximum supply voltage.
- Although the sensor is protected against supply reversal, it is not recommended.
- Do not overtighten screw-in type.
- Do not use chlorinated solvents.
- Do not mount with dome pointing downwards.

Failure to comply with these instructions may result in product damage.

MOUNTING DIMENSIONS IN MM (INCHES) FOR REFERENCE ONLY



- Notes:
- 1 Recommended panel hole size $\varnothing 12,5 \pm 0,3$ mm (0.49 \pm 0.01 in)
 - 2 'O' ring seal supplied unassembled