Installation Instructions for Standard and Extended Temperature

Industrial Series

Optical Liquid Level Sensors

GENERAL DESCRIPTION

The LLC Industrial Series liquid level sensor provides single point liquid detection via a TTL compatible output.

This sensor range was designed to directly switch incandescent indicators, sounders, relays or applications which require higher output power.

An infra-red LED and phototransistor accurately positioned at the base of the sensing tip ensure good optical coupling between the two when the sensor is in air. When the sensing tip is immersed in liquid, the infra-red light escapes from the cone causing a change in the amount of light detected at the phototransistor which makes the output change state. Various electrical outputs are available to suit different applications.

CLEANING

Proper fluids should be selected based on type of contamination to be removed. SST Sensing recommends freon and alcohol based solvents. DO NOT use chlorinated solvents such as tricholorethane 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 either polysulphone or trogamid.

ELECTRICAL SPECIFICATIONS

Supply Voltage (Vs)	+4.5 Vdc to +15.4Vdc or +8Vdc to +30Vdc
Supply Current (Is)	Max 2.5mA (Vs = 15.4Vdc) or Max 7.5mA (Vs = 30Vdc)
Output Type	An “L” in the part number after D3 indicates that the sensor output will be low in air. Otherwise the output will be high in air.
Output Sink and Source Current (Iout)	1A
Operating Temperatures	-25°C to +80°C (Standard) -40°C to +125°C (Extended)
Storage Temperatures	-30°C to +85°C (Standard) -40°C to +125°C (Extended)

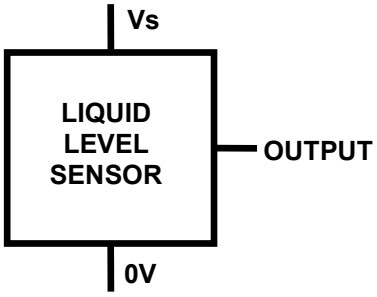
Output Voltage (Vout) Vs = 4.5 - 15.4Vdc Iout = 1A	**Output High** Vout = Vs - 1.5V Max **Output Low** Vout = 0V + 0.5V Max
Output Voltage (Vout) Vs = 8 - 30Vdc Iout = 1A	**Output High** Vout = Vs - 1.8V Max **Output Low** Vout = 0V + 0.7V Max
Output Voltage (Vout) Vs = 4.5 - 15.4Vdc and Vs = 8 - 30Vdc Iout = 0mA	**Output High** Vout = Vs - 0.3V Max **Output Low** Vout = 0V + 0.1V Max

MOUNTING AND HOUSING TYPES

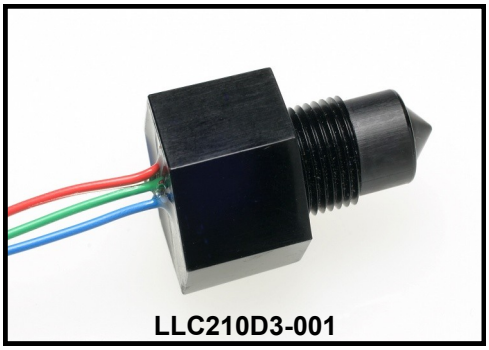
Housing Series	200 and 210 Series	600 and 610 Series	700 and 710 Series
Thread	M12x1x8g with Hex Nut*	½” SAE with O-Ring*	1/4” NPT
Tightening Torque	1.5 N m/13.26 in lb max.		
Pressure (when correctly sealed)	7 bar max		
Mounting Hole	Ø12mm	Ø ½ Inch	1/4” NPT Threaded
Housing Material	Polysulphone or Trogamid		
Sensor Termination	20AWG, 250mm PTFE Wires, 8mm Tinned		

* Hex nut and o-ring sold separately, please contact us for details. NPT version can be sealed with PTFE tape.

Sensor Output Wiring



WIRE	DESIGNATION
RED	Vs
GREEN	OUTPUT
BLUE	0V



LLC210D3-001

PART NUMBERING SYSTEM

LLX XX0D3XX- ITEM

Housing Material

C = Polysulphone
T = Trogamid

Housing Style

2 = 200 and 210 Series
6 = 600 and 610 Series
7 = 700 and 710 Series

Temp. Range

0 = -25°C to +80°C
1 = -40°C to +125°C

Output Circuit

001 = N-Channel Open Drain with Flyback Diode*
002 = Digital Output (Sink Current Only)
003 = N-Channel Open Drain
004 = P-Channel Open Drain
005 = N & P Channel Push-Pull Output
* For use with inductive loads

Supply Voltage

24 = 8 to 30Vdc
Blank = 4.5 to 15.4Vdc

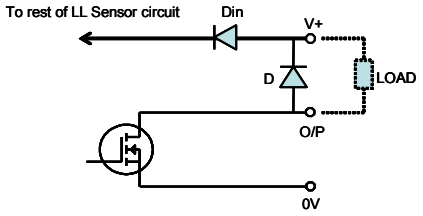
Output Polarity

L = Output low in air
Blank = Output high in air

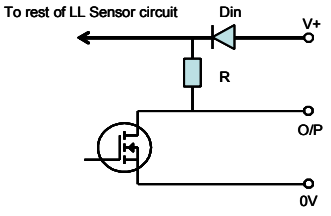
OUTPUT TYPES

In order to suit any application, these sensors have been designed with various output circuit configurations. They are identified by the a 3-digit code at the end of part number and are as follows:

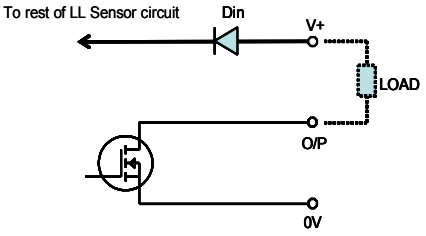
ITEM = -001
N-Channel Open Drain with Flyback protection diode for use with inductive loads



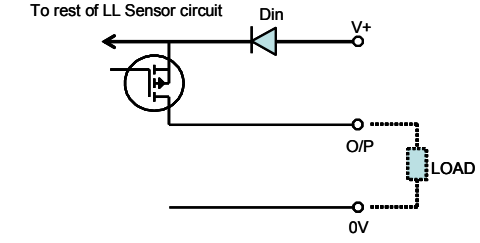
ITEM = -002
Digital output with internal pull-up resistor - Intended for connection to digital interface



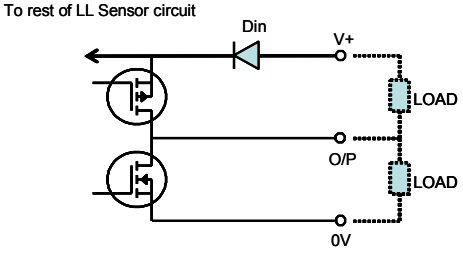
ITEM = -003
N-Channel Open Drain



ITEM = -004
P-Channel Open Drain

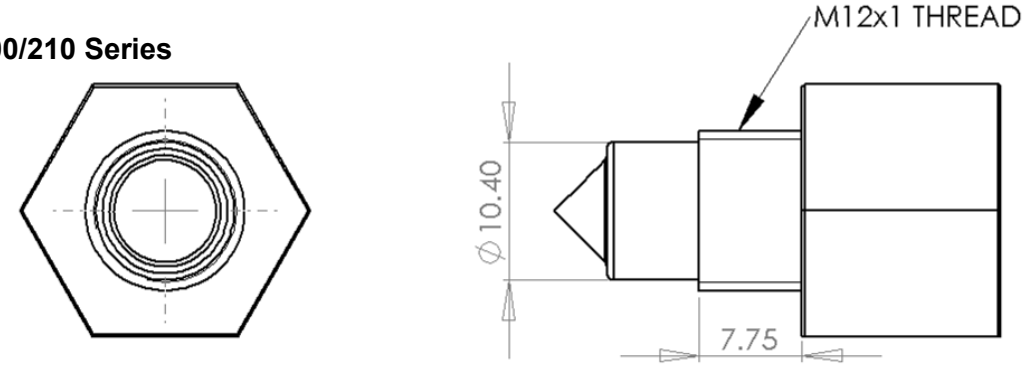


ITEM = -005
N & P-Channel Open Drain Push-Pull Output

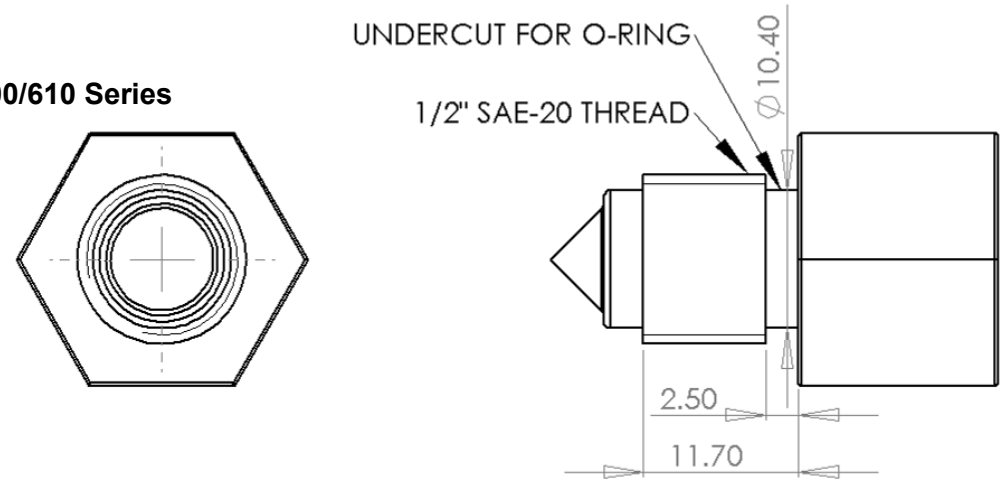


PRODUCT DIMENSIONS
(all dimensions in mm)

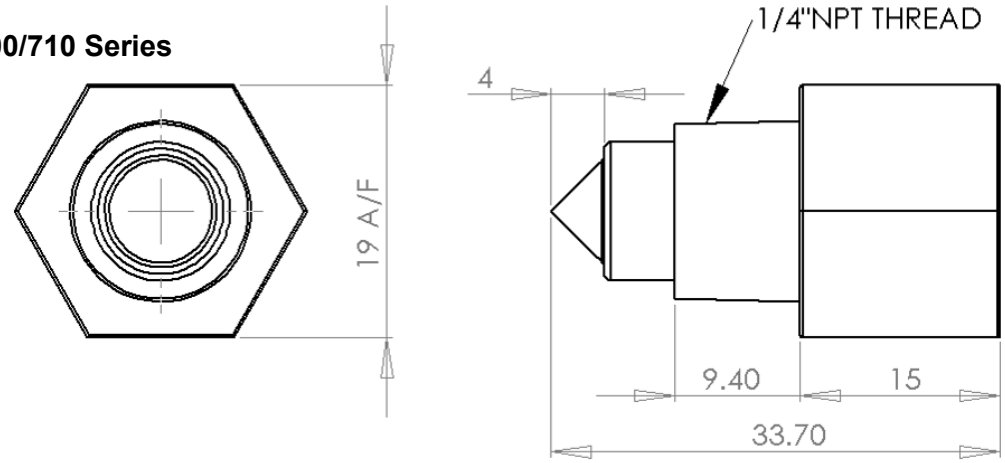
LLC200/210 Series



LLC600/610 Series



LLC700/710 Series



WARNING	**CAUTION**
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.**	Do not exceed maximum ratings. 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.**
It is the customer's responsibility to ensure that this product is suitable for use in their application. For technical assistance or advice, please email us	