# DATA SHEET
Liquid Level Switches
Optomax Industrial Series

FEATURES

- Liquid level switches that can detect almost any liquid type; oil or water based
- Choice of material; Polysulfone (standard) or Trogamid®
- Choice of threads and terminal connections
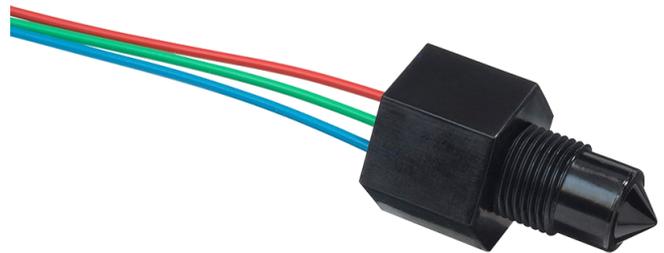
Housing/ Mounting	Output Type / Logic			Supply Voltage	Output Current	Temp
M12x1	N-TYPE	P-TYPE	PUSH PULL	4.5 - 15.4 V VOLTAGE	UP TO 1A CURRENT	-25°C to +80°C TEMPERATURE
1/4" NPT	1 / 0 HIGH IN AIR	0 / 1 LOW IN AIR		8 - 30 V VOLTAGE		-40°C to +125°C TEMPERATURE
1/2" SAE						

BENEFITS

- High power
- Industrial supply voltage
- Direct load drive design

TECHNICAL SPECIFICATIONS

Supply voltage (Vs)	$4.5V_{DC}$ to $15.4V_{DC}$
or	$8V_{DC}$ to $30V_{DC}$
Supply current (Is)	2.5mA max. ($Vs = 15.4V_{DC}$)
or	7.5mA max. ($Vs = 30V_{DC}$)
Output sink and source current (Iout)	1A
Operating temperatures	Standard: -25°C to +80°C
	Extended: -40°C to +125°C
Storage temperatures	Standard: -30°C to +85°C
	Extended: -40°C to +125°C
Housing material[1, 2]	Polysulfone or Trogamid®
Sensor termination	20AWG, 250mm PTFE wires, 8mm tinned

OUTPUT VALUES

Output Voltage[3] (Vout): Iout = 1A
Vs = 4.5—$15.4V_{DC}$

Output High	Vout = Vs - 1.5V max
Output Low	Vout = 0V + 0.5V max

Output Voltage (Vout): Iout = 1A
Vs = 8—$30V_{DC}$

|	
Output High	Vout = Vs - 1.8V max
Output Low	Vout = 0V + 0.7V max

NOTES

1) Above +85°C, Trogamid is suitable for water based liquids. Oil based liquids can cause deformation of the sensing tip and must be tested for compatibility.
2) Before use check that the fluid in which you wish to use these devices is compatible either with Polysulfone or Trogamid®.
3) Voltages applicable to output value stated.

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⬚ OUTLINE DRAWING

All dimensions shown in mm. Tolerances = ±1mm.

LLx2x0 Series

M12x1 THREAD
Ø 10.40
7.75

LLx6x0 Series

UNDERCUT FOR O-RING
1/2" SAE-20 THREAD
Ø 10.40
2.50
11.70
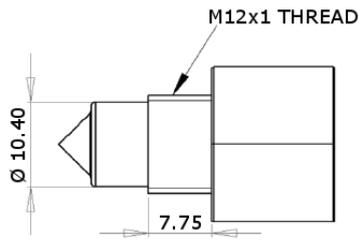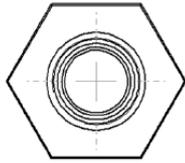
LLx7x0 Series
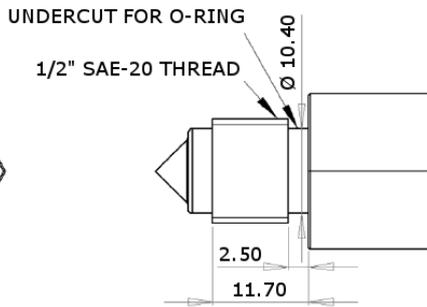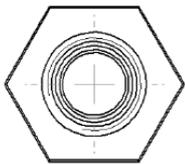
1/4" NPT THREAD
19 A/F
4
9.40   15
33.70
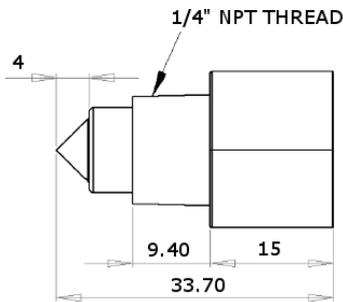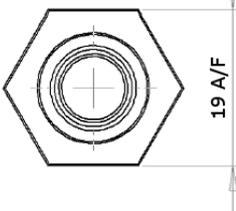
⚙ HOUSING SPECIFICATIONS

	Housing Series		
	2x0	**6x0**	**7x0**
Thread	M12x1x8g with hex nut[1]	1/2" SAE with O-ring[1]	1/4" NPT[2]
Pressure[3]	7 bar /101 psi maximum		
Tightening Torque	1.5 Nm / 13.26 in-lbs maximum		

⚡ ELECTRICAL INTERFACE

Vs
LIQUID LEVEL SENSOR — OUTPUT
0V
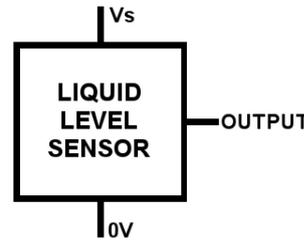
Wire	Designation
Red	Vs
Green	Output
Blue	0V

NOTES

1) Hex nut and O-ring sold separately; email:
2) NPT version can be sealed with PTFE tape.
3) When correctly sealed.

CIRCUIT DIAGRAMS

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

N-Type with Flyback Protection Diode High in Air
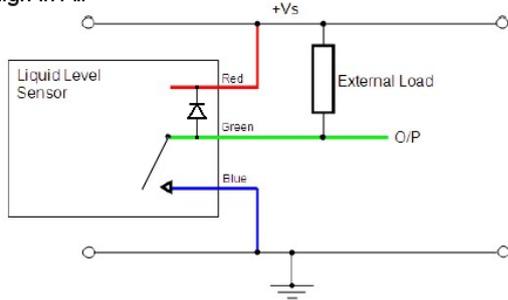
N-Type with Flyback Protection Diode Low in Air
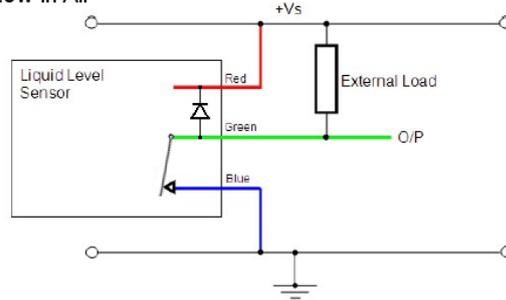
N-Type with Internal 10kΩ Pull-Up Resistor High in Air
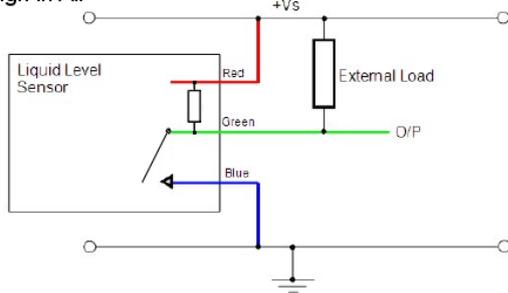
N-Type with Internal 10kΩ Pull-Up Resistor Low in Air
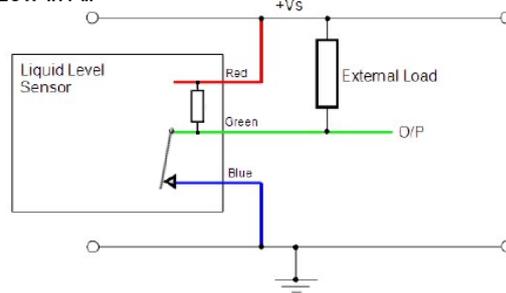
N-Type High in Air
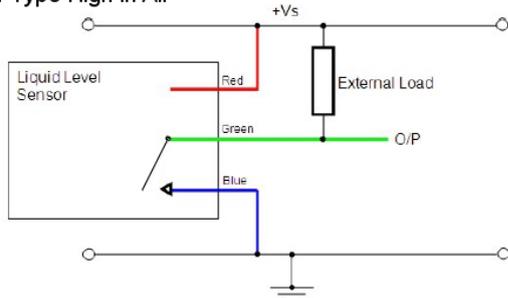
N-Type Low in Air
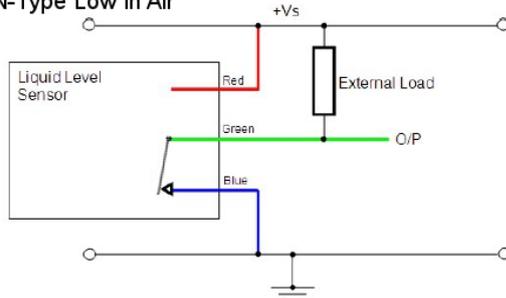
P-Type High in Air
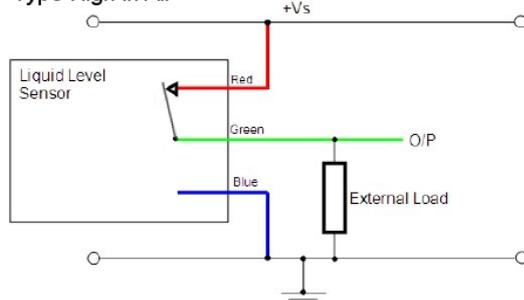
P-Type Low in Air
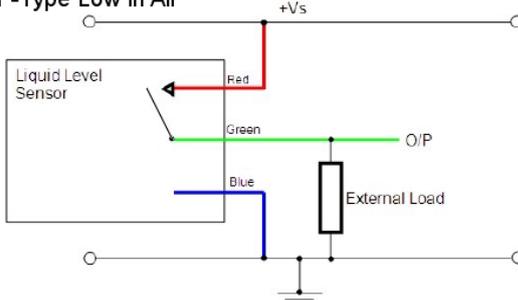
N&P-Type Push Pull High in Air
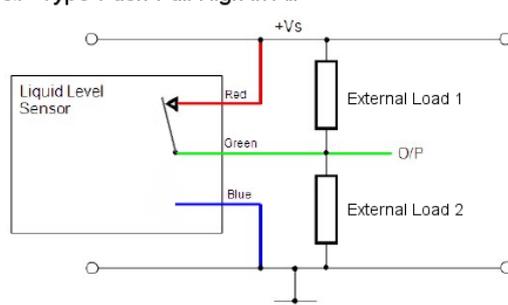
N&P-Type Push Pull Low in Air
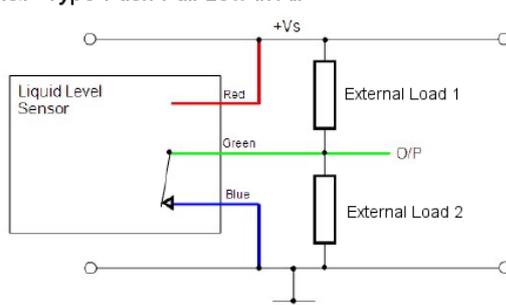
CAUTION: Take care when connecting loads.
The minimum load impedance should not exceed Vs/max output current.
Note: Shorting the output to Vs or 0V will result in irreparable damage to the sensor.

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ORDER INFORMATION

Generate your specific part number using the convention shown below. Use only those letters and numbers that correspond to the sensor and output options you require — omit those you do not.

L L X X X 0 D 3 X X X - X X X

| Housing Material	Housing Type	Operating Temp.	Output Logic	Supply Voltage	Output Type
C Polysulfone	**2** 2x0 series M12x1	**0** -25 °C to +80°C	**L** Output Low in air	**24** 8-30V$_{DC}$	**001** N-Type with flyback
T Trogamid®	**6** 6x0 series 1/2" SAE	**1** -40 °C to +125°C	**Blank** Output High in air	**Blank** 4.5-15.4V$_{DC}$	**002** N-Type with 10kΩ pull-up
	7 7x0 series 1/4" NPT				**003** N-Type
					004 P-Type
					005 N&P Push Pull
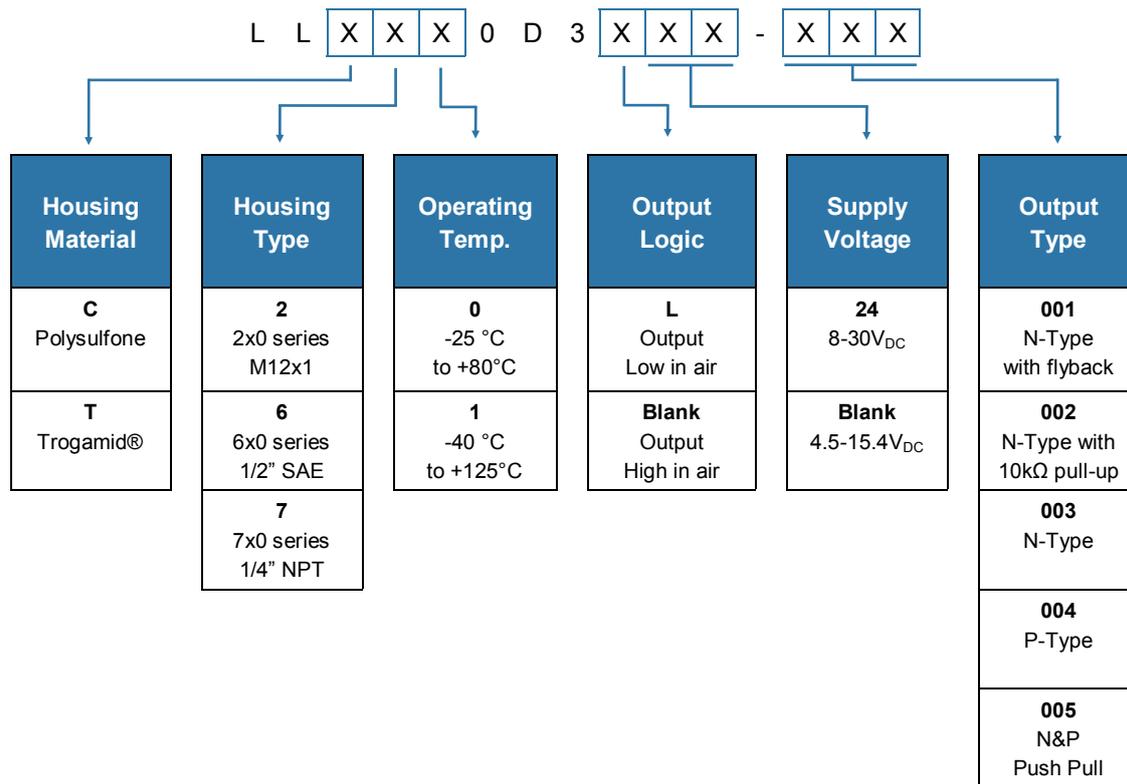
⚠ CAUTION

Do not exceed maximum ratings and ensure sensor(s) are operated in accordance with their requirements.

Carefully follow all wiring instructions. Incorrect wiring can cause permanent damage to the device.

SST Sensing Ltd recommend using alcohol based cleaning agents. Do NOT use chlorinated solvents such as trichloroethane as these are likely to attack the sensor material.

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

ℹ INFORMATION

As customer applications are outside of SST Sensing Ltd.'s control, the information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the equipment is suitable for their intended application. Before use, check that the fluid in which you wish to use these devices is compatible with Polysulfone or Trogamid®.

General Note: SST Sensing Ltd. reserves the right to make changes to product specifications without notice or liability. All information is subject to SST Sensing Ltd.'s own data and considered accurate at time of going to print.

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RoHS

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