

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
- Switch when wet or dry options available
- Protected against damage from transient and reverse polarity voltages



Housing/ Mounting M12x1 1/4" NPT 1/2" UNF	Output Type / Logic N-TYPE P-TYPE PUSH PULL HIGH IN AIR LOW IN AIR	Supply Voltage 4.5 - 15.4 V VOLTAGE 8 - 30 V VOLTAGE	Output Current UP TO 1A CURRENT	Temp -25°C to +80°C TEMPERATURE -40°C to +125°C TEMPERATURE
---	---	---	---	--

BENEFITS

- High Power
- Industrial Supply Voltage
- Direct load driven design
- Intelligent switching
- High Temperature

APPLICATIONS

- Valve / Pump control
- Leak detection
- Tank level control; fill/empty
- Overfill protection
- Sump level switching

OUTPUT VALUES

Output Voltage (Vout):

Iout = 1A

Vs = 4.5—15.4V_{DC}

Output High
Output Low

Vout = Vs - 1.5V max
Vout = 0V + 0.5V max

Output Voltage (Vout):

Iout = 1A

Vs = 8—30V_{DC}

Output High
Output Low

Vout = Vs - 1.8V max
Vout = 0V + 0.7V max

Output Current (Iout)

1A max^c

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})

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^a Polysulfone or Trogamid^{®b}

Switch termination 20AWG, 250mm PVDF wires, or 22AWG PVC cable.

Other sensor options available on request, email:

technical@sstsensing.com

Need help? Ask the expert
Tel: + 44 (0)1236 459 020
and ask for "Technical"



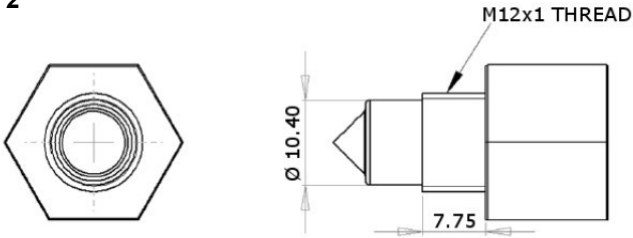
NOTES

- Before use check that the fluid in which you wish to use these devices is compatible either with Polysulfone or Trogamid[®]. Some common fluids and compatibility can be found in SST's [Liquid Level Switches – Installation, Operation and Compatibility Guide \(AN 0041\)](#).
- When using Trogamid[®] above +85°C some oil based liquids can cause deformation of the sensing tip, and must be tested for compatibility.
- Except on N-type with a 10kΩ internal resistor (-002).

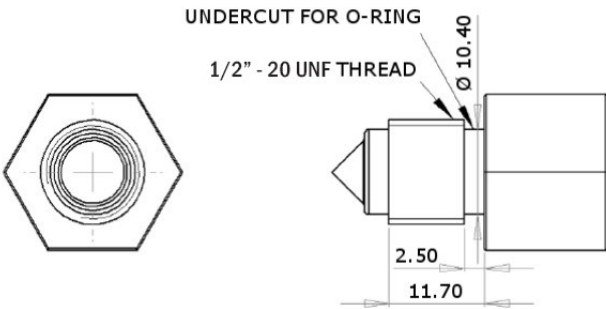
OUTLINE DRAWING

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

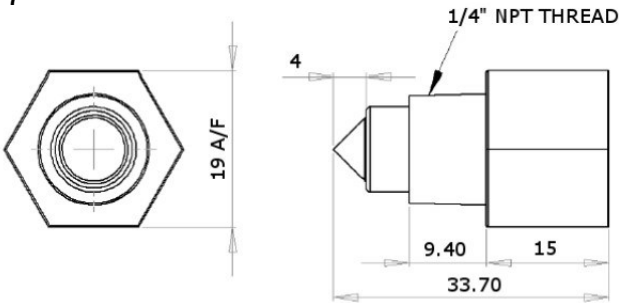
Type 2



Type 6



Type 7

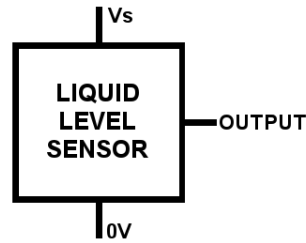


HOUSING SPECIFICATIONS

Installation drawings and 3D (.step) files available on [the product webpage](#).

	Housing Type		
	Type 2	Type 6	Type 7
Thread ^d	M12x1x 8g	1/2"-20 UNF ^e	1/4" NPT ^f
Pressure ^g	20bar / 290 psi maximum		
Tightening Torque	1.5 Nm / 13.26 in-lbs maximum		

ELECTRICAL INTERFACE



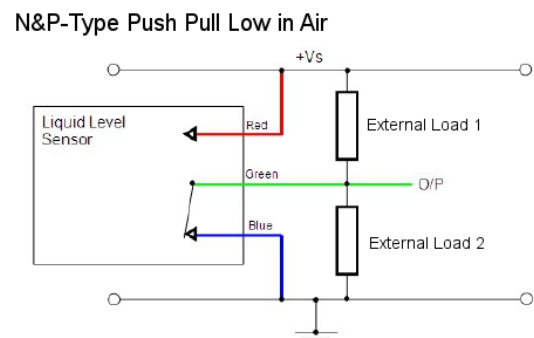
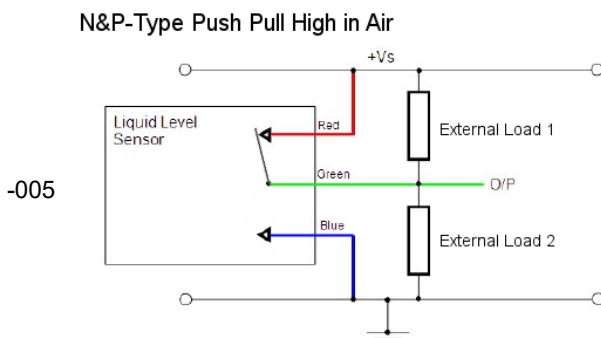
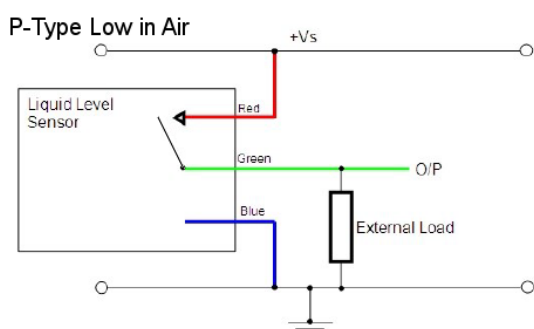
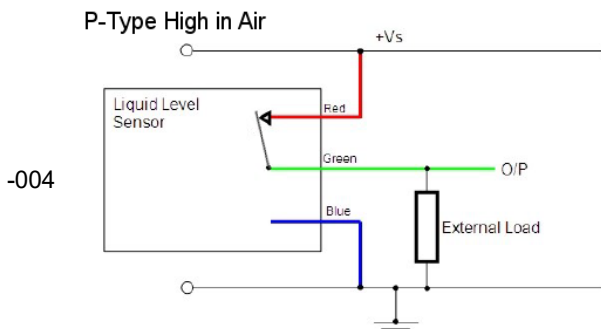
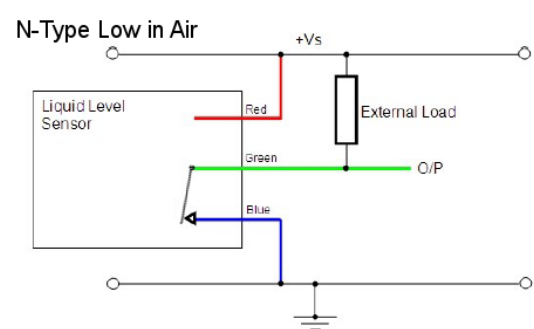
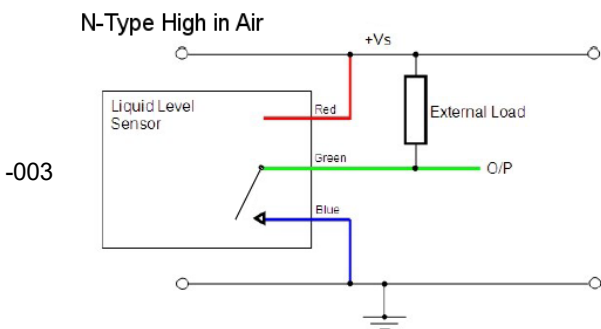
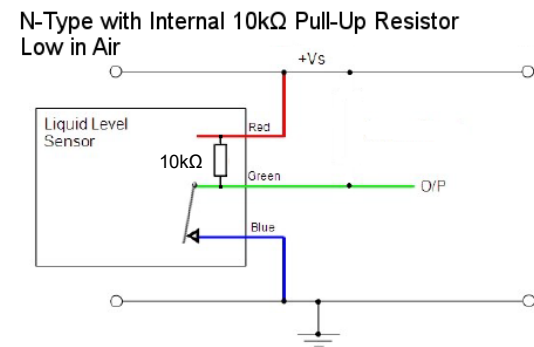
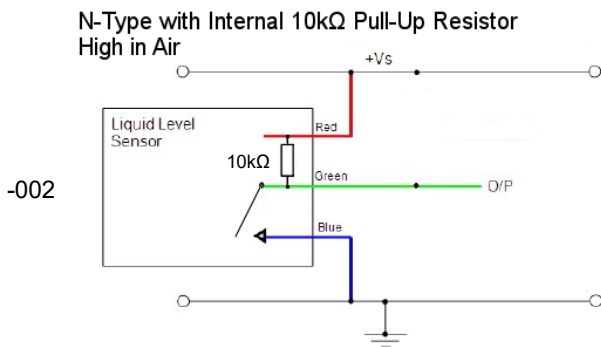
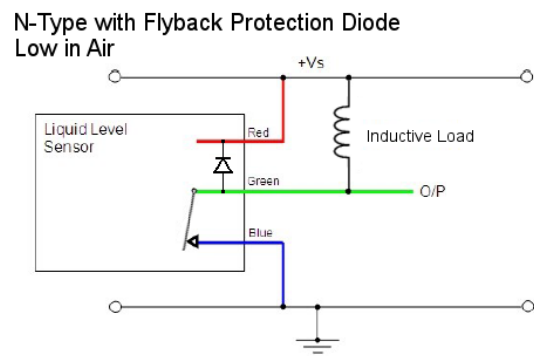
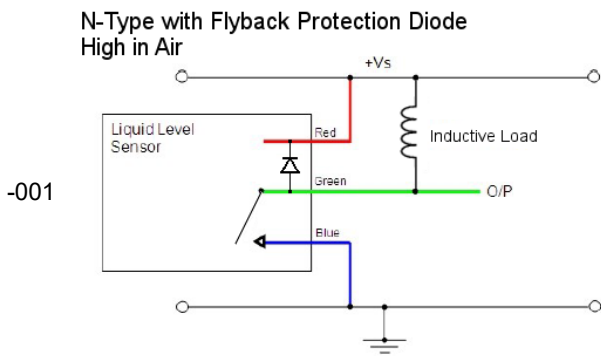
Wire	Cable	Designation
Red	Brown	Vs
Green	Black	Output
Blue	Blue	0V



NOTES

- Recommended nuts and sealing accessories outlined within the [Accessory Table](#)
- Suitable for SAE-5 straight threaded port. Refer to SAE Standard J1926-1 (ISO 11926-1) for more information.
- NPT version can be sealed with PTFE tape.
- SST supplied M12 seal washer only suitable for low pressure environments (<7 bar). For higher pressure applications O-rings, PTFE tape or other sealing compounds are recommended. Customers should test in their application as required.

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](#).



CAUTION: Take care when connecting loads.

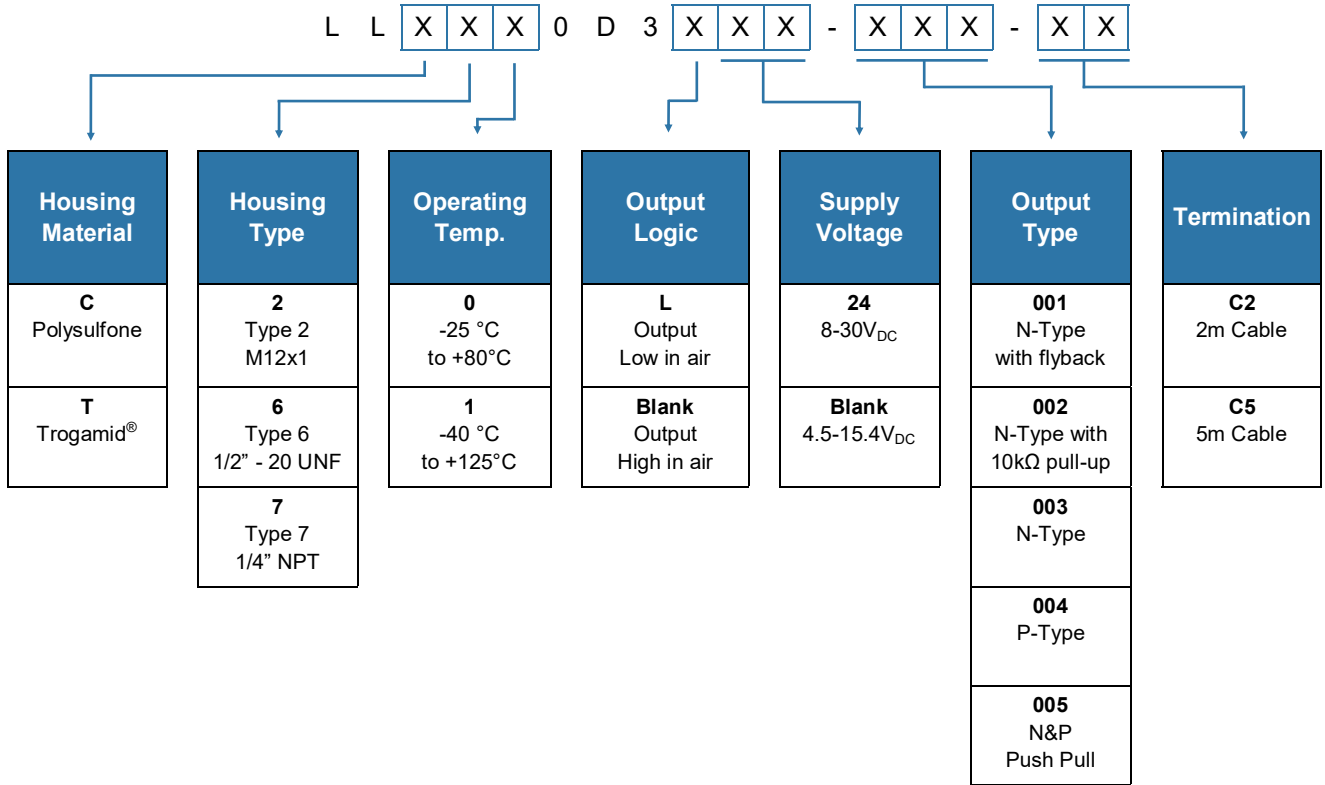
The minimum load impedance should not be less than $V_s/\text{max output current}$.

Note: Shorting the output to V_s or $0V$ will result in irreparable damage to the sensor.

Note: Colours shown are for 3-wire version. See electrical interface table on [page 2](#) for equivalent cable colours.

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.



ACCESSORY TABLE

Thread	Housing Type	Accessory	Material	Order Code
M12	2x0	Seal Washer	Nitrile	41000190-002
M12	2x0	Seal Washer	EPDM	41000190-003
M12	2x0	Seal Washer	VAMAC	41000190-004
M12	2x0	‘O’ Ring	As Required	Not Sold by SST
M12	2x0	Nut	Zinc-Plated Brass	LL-NUT-ZNC
M12	2x0	Nut	Stainless Steel	LL-NUT-STS
1/2" -20 UNF	6x0	‘O’ Ring	As Required - See SAE J1926-1	Not Sold by SST
1/4" NPT	7x0	Sealing Tape	PTFE	Not Sold By SST
1/4" NPT	7x0	Sealing Compound	Sealing Compound must be compatible with housing material	Not Sold By SST

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.

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®.

For technical assistance or advice, please email:
technical@sstsensing.com

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.