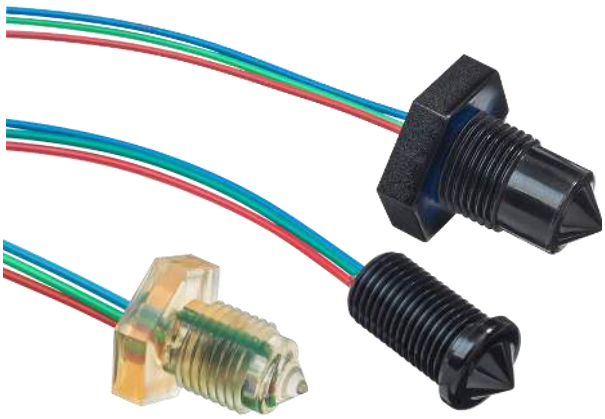
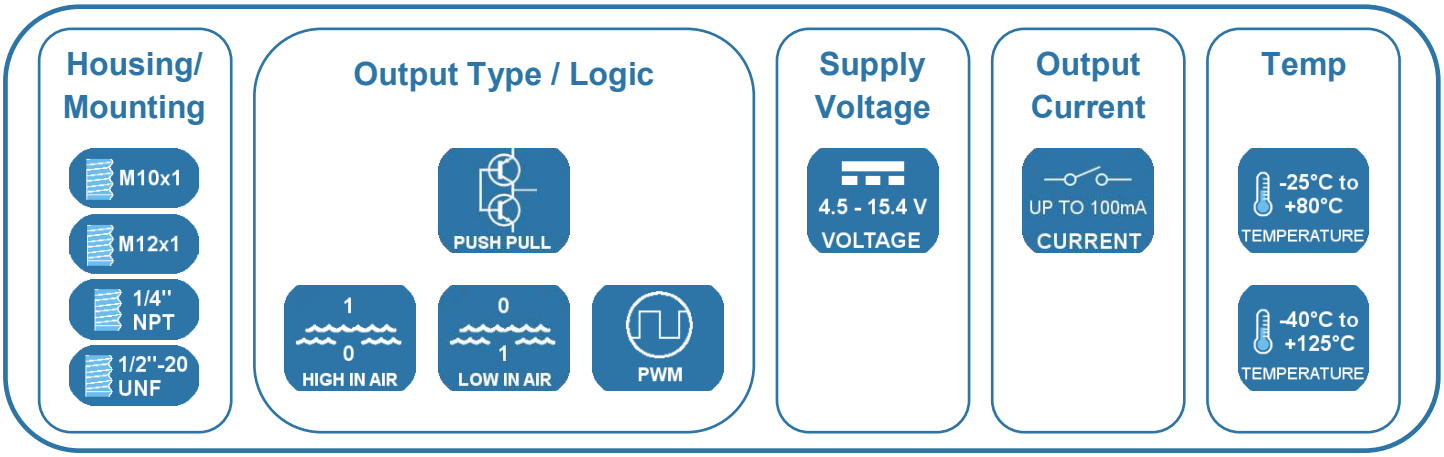
DATA SHEET
Liquid Level Switches
Optomax Digital Series

DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE



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



BENEFITS

- Low power
- Low cost
- Compact design

TECHNICAL SPECIFICATIONS

Supply voltage (Vs)		$4.5V_{DC}$ to $15.4V_{DC}$
	or	$4.5V_{DC}$ to $5.5V_{DC}$ (PWM output)
Supply current (Is)		2.5mA max. (Vs = $15.4V_{DC}$)
Output sink and source current (Iout)		100mA
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]
Sensor termination		24AWG, 250mm PVDF wires, 10mm tinned

OUTPUT VALUES

Output Voltage (Vout):	**Iout = 100mA**
Output High	Vout = Vs - 1.5V max
Output Low	Vout = 0V + 0.5V max
PWM	
Duty cycle in air	25% ± 10%
Duty cycle in liquid	75% ± 10%
Frequency	2kHz ± 10%

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

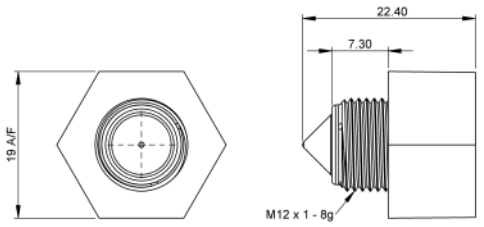
a) Before use check that the fluid in which you wish to use these devices is compatible either with Polysulfone or Trogamid®. Some common fluids and compatibility can be found in SST's Liquid Level Switches – Installation, Operation and Compatibility Guide (AN 0041).

b) When using Trogamid® above +85°C some oil based liquids can cause deformation of the sensing tip, and must be tested for compatibility.

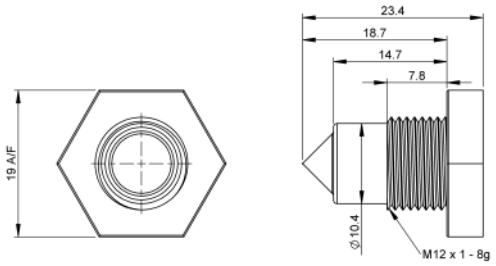
OUTLINE DRAWING

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

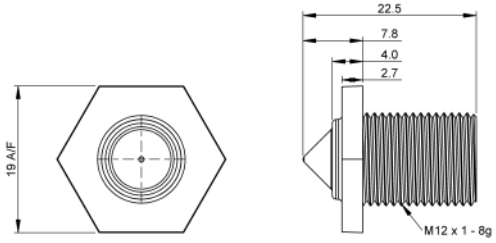
Type 1



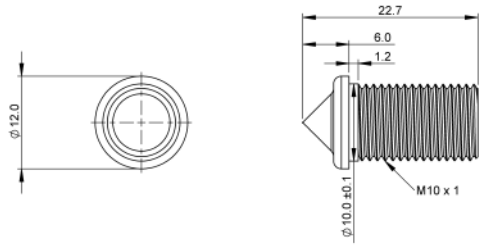
Type 2



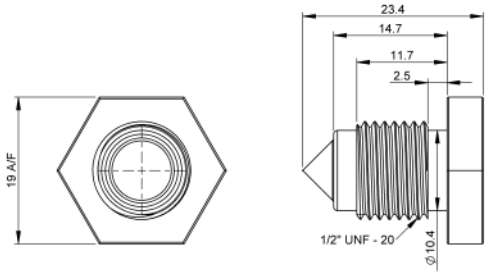
Type 3



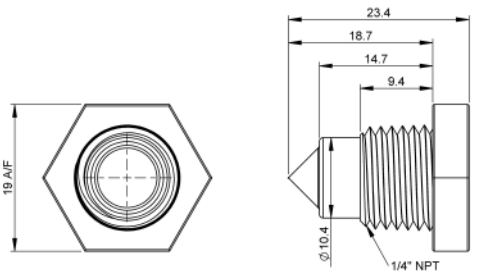
Type 5



Type 6



Type 7



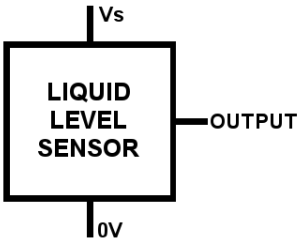
HOUSING SPECIFICATIONS

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

	Housing Series		
	Type 1	Type 2	Type 3
Thread	M12x1-8g		
Pressure[d]	7 bar / 101 psi maximum		
Tightening Torque	1.5 Nm / 13.26 in-lbs maximum		

	Housing Series		
	Type 5	Type 6	Type 7
Thread	M10x1	1/2”-20 UNF	1/4” NPT
Pressure[d]	20 bar / 209 psi max.	7 bar / 101 psi maximum	
Tightening Torque	1.5 Nm / 13.26 in-lbs maximum		

ELECTRICAL INTERFACE



Wire	Designation
Red	Vs
Green	Output
Blue	0V

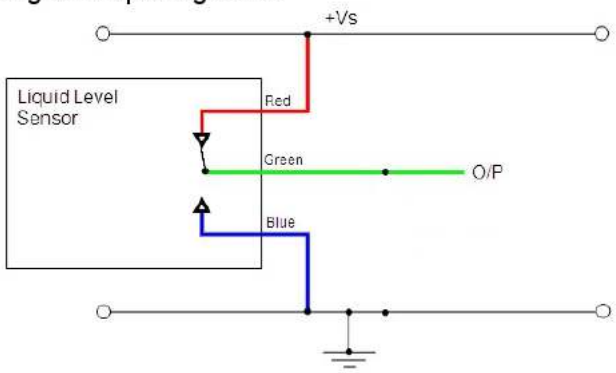
NOTES

c) Recommended nuts and sealing accessories outlined within the Accessory Table
d) When correctly sealed.

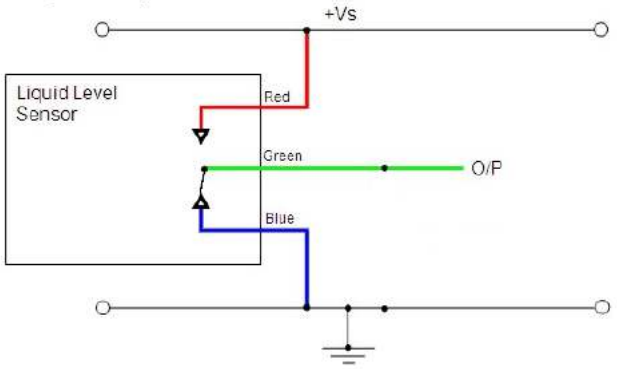
CIRCUIT DIAGRAMS

In order to suit any application, these sensors have been designed with various output circuit configurations.

Digital Output High in Air



Digital Output 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.

ORDER INFORMATION

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

Sensor mounted from inside vessel

L L X X X 0 D 3 X

Housing Material	Housing Type	Operating Temp.	Output Logic
C Polysulfone	**3** Type 3 M12x1-8g	**0** -25 °C to +80°C	**Blank** Output High in air
T Trogamid®	**5** Type 5 M10x1	**1** -40 °C to +125°C	**L** Output Low in air
			P PWM output

Sensor mounted from outside vessel

L L X X X 0 D 3 X S H

Housing Material	Housing Type	Operating Temp.	Output Logic
C Polysulfone	**1** Type 1 M12x1-8g	**0** -25 °C to +80°C	**Blank** Output High in air
T Trogamid®	**2** Type 2 M12x1-8g	**1** -40 °C to +125°C	**L** Output Low in air
	6 Type 6 1/2”-20 UNF		**P** PWM output
	7 Type 7 1/4” NPT		

Notes:

- Type 3 and Type 5 sensors are mounted internally.
- Types 1, 2, 6 & 7 sensors are mounted externally.

Please contact SST Sensing for details; email: technical@sstsensing.com

ACCESSORY TABLE

Thread	Housing Type	Accessory	Material	Order Code
M12	Type 2	Seal Washer	Nitrile	41000190-002
M12	Type 2	Seal Washer	EPDM	41000190-003
M12	Type 2	Seal Washer	VAMAC	41000190-004
M12	Type 2	'O' Ring	As Required	Not Sold by SST
M12	Type 2	Nut	Zinc-Plated Brass	LL-NUT-ZNC
M12	Type 2	Nut	Stainless Steel	LL-NUT-STS
M10	Type 5	Nut	Plastic (PLA)	LL-NUT-PLA
1/2" -20 UNF	Type 6	'O' Ring	As Required - See SAE J1926-1	Not Sold by SST
1/4" NPT	Type 7	Sealing Tape	PTFE	Not Sold By SST
1/4" NPT	Type 7	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.

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RoHS