te.com



VERTICAL LIQUID LEVEL SWITCHES

VS Series

High- or low-level switching

N.O./N.C. SPST or SPDT outputs

Mounted on the top/bottom wall of a tank

Certified reed switch (UL component listed)

Many different configurations available

Features

- Voltage rating up to 250VAC
- Current rating up to 1.0 amp
- Compact design and low profile
- Optional cable lengths
- Includes mounting hardware

Applications

- Water and fuel storage tanks
- Full and/or empty detection
- Pump on/off controls
- Marine bilge and ballast tanks
- Flood detection and prevention
- Coolant level indication
- Livestock watering tanks
- Irrigation systems
- Water treatment plants
- Waste water tanks

The VS series of point liquid level switches demonstrates a high degree of reliability due to the use of non-reactive wetted components and a unique reed switch designed specifically for level sensing applications. The sensor utilizes a moving float with an embedded magnet to activate a reed switch located in the sensor body. As the liquid level raises the float, it moves into close proximity to the reed switch and actuates it to give an open contact or closed contact switch indication.

The reliability of this sensor results from a very simple operating principle, a single moving part, media compatible wetted materials, and a unique reed switch design that has a UL recognized component certification.

The sensor mounts into the top or bottom wall of a liquid storage tank using either a 1/2” NPT or M16 x 2.0 threaded fitting. The M16 mount is available in either an internal or external configuration. The output is a simple N.O. or N.C. SPST, or SPDT reed switch that utilizes Ruthenium contact points for reliability. Changing from a N.O. output to a N.C. output is done by removing the float and reattaching it in an inverted orientation. This change can be done in the field. Electrical outputs are a single pair or three wires with PVC insulation and optional lengths of 0.5 m or 2.0 m.

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Absolute Maximum Ratings [1]

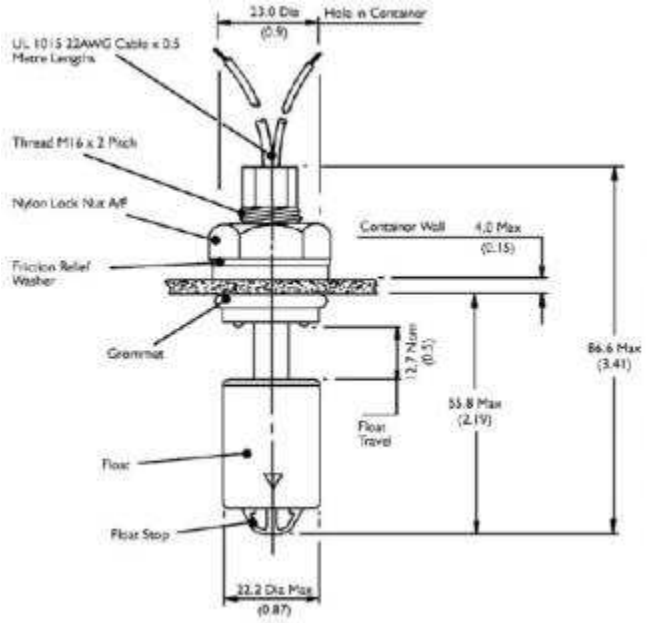
Parameter	Model Type	Min	Max	Units	Notes/Conditions
DC contact voltage (SPST)	VSx01		100	V	Do not exceed 15W
DC contact current (SPST)			1	A	
RMS contact voltage (SPST)			120	V	
RMS contact current (SPST)			1	A	
DC contact voltage (SPST)	VSx09		200	V	Do not exceed 70W
DC contact current (SPST)			1.0	A	
RMS contact voltage (SPST)			250	V	
RMS contact current (SPST)			1.0	A	
DC contact voltage (SPDT)	VSx04		170	V	Do not exceed 5.0W
DC contact current (N.O. SPDT)			0.4	A	
DC contact current (N.C. SPDT)			0.125	A	
RMS contact voltage (SPDT)			125	V	
RMS contact current (SPDT)			0.125	A	
Operating and storage temperature		-30	130	°C	
Fitting pressure		-1.0	4.7	Bar	Internal tank pressure
Tank wall thickness (Internal mount)		1.0	10	mm	
Tank wall thickness (External mount)		1.0	4.0	mm	

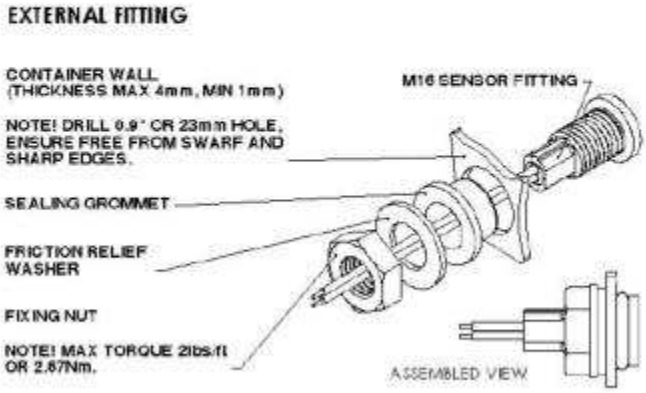
[1] Maximum limits the device will withstand without damage

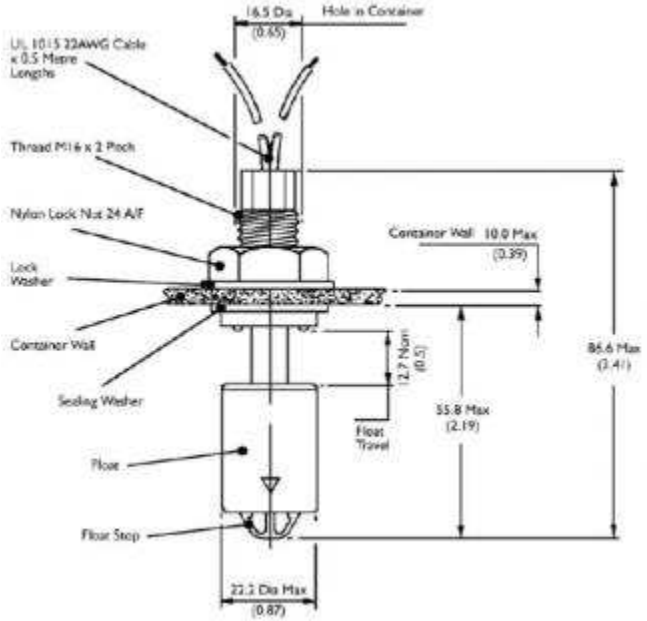
Product Specifications

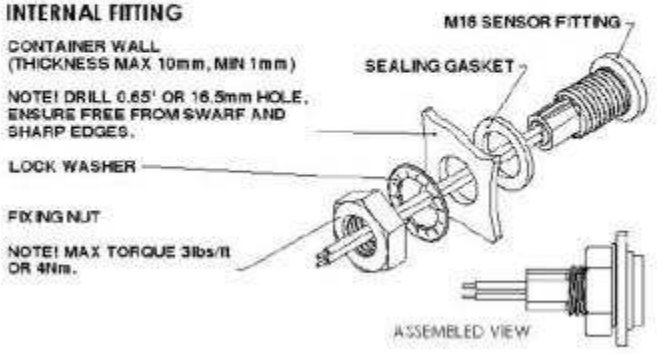
Parameter	Details & Options
Mounting Orientation	Top/bottom entry
Fitting	Internal or External
Switch Operation	N.C. when float at bottom stop (SPST) N.O. when float is inverted (SPST)
Contact Forms	Form A (SPST) or Form C (SPDT)
Contact Material	Ruthenium
Contact resistance (max)	250 mΩ (SPST)
Housing and Float Material	Glass filled nylon 6.6 (better for oil, fuel, non-ionic liquids) Glass filled polypropylene (better for aqueous media and solutions)
Cable Description	22 AWG 16/0.2mm PVC insulated, UL/CSA/BS6361
Shock	±50g 11ms half sign duration
Vibration	±35g 0 – 500Hz
Ambient Humidity	0 – 95% RH (non-condensing)
Ingress Protection	IP68 (wetted surfaces) IP65 (non-wetted surfaces)
Approvals & Certifications	UL file E98428

Outline Dimensions

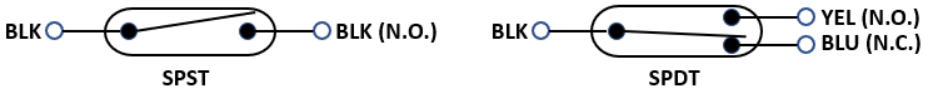






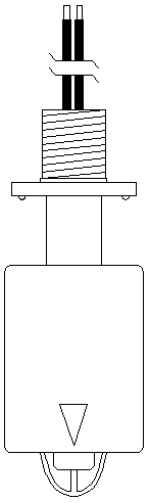


Schematic

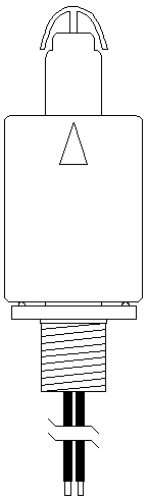


Switch position with no magnet present

Mounting Orientations



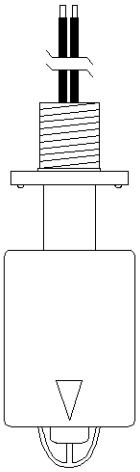
Top Mount	
Condition	**Switch (SPST)**
No liquid	Closed
Liquid	Open



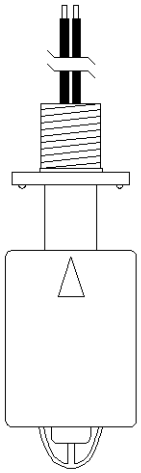
Bottom Mount	
Condition	**Switch (SPST)**
No liquid	Open
Liquid	Closed

Application Information

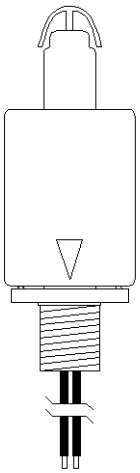
The versatile design of the VCS series level sensor provides four different mounting and operating modes. The sensor can mount at either the top or bottom of a liquid storage tank. In either position, the float can be oriented to provide a N.O. or N.C. contact. Because the magnet is positioned at one end of the float, it can be removed from the body, turned upside down, and reinstalled to provide any of the four configurations shown below.



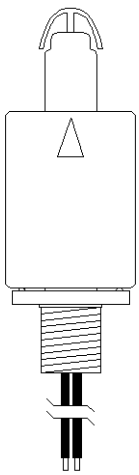
TOP MOUNT
SWITCH - N.C.



TOP MOUNT
SWITCH - N.O.



BOTTOM MOUNT
SWITCH - N.C.



BOTTOM MOUNT
SWITCH - N.O.

To remove and re-orient the float, gently squeeze the retainer clips at the end of the sensor and slide the float off the body. Reinstall the float by sliding it back over the stem ensuring that it passes the clips and allows them to return to their original position.

Ordering Information

Model Number

VS _ _ _ - _ _ _

Material (body + float)

3	Glass-filled nylon 6.6
8	Glass-filled polypropylene

Switch Options

01	Form A (N.O. SPST)
04	Form C (SPDT)
09	Form A (N.O. SPST)

Seal Material Options

Blank	Silicone
N	Nitrile

Cable Length Options

1	0.5m Single insulated PVC
2	2.0m Single insulated PVC

Fitting Options

1	Internal M16
2	External M16
3	½" NPT
5	Universal fitting kit (Options 1 & 2)

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