

INSTALLING AND OPERATING THE KELCO L SERIES LEVEL SWITCH



Please read these installation and operating instructions fully and carefully before installing or servicing this level switch. The L Series Level Switch is mains voltage device. Death or serious injury may result if this switch is not correctly installed and operated. All electrical work must be performed by a fully qualified and licenced electrician.

OVERVIEW

The L Series level switch is a side entry tank level switch that provide a single switch point level reference when installed in the side wall of a tank or vessel. This document sets out in detail the installation and functions of the level switch and some of the main ways in which it can be used.

APPLICATION

The L Series level switch has been specifically designed to be used in both water and aggressive chemical solutions. The process connection on the switch is available in either Polypropylene or 316 Stainless Steel. The float and all other wetted parts of the switch are made from glass reinforced Polypropylene (for general use) or glass reinforced Nylon (for Diesel applications).

The all Polypropylene models are suitable for use in a wide range of liquids including potable water, sea water, acids, bases, ground water and many chemical solutions containing dissolved mineral salts. The switches should not be used in organic solvents. If there is any doubt about the suitability of this switch for a specific application, please contact the manufacturer before installing the switch.



Without its lid in place the L Series Level Switch is not water resistant and present a potential shock hazard. Take great care not to splash water onto the switch when the lid is not in place. Always replace the lid and fully tighten its securing screw after wiring or servicing this switch.

INSTALLATION

This level switch should be installed in a tank socket on the side wall of a tank. The switch requires a minimum of 25mm of clearance above and below its centre line axis to facilitate the free movement of its float, see drawing.



After installing or servicing this level switch always replace its lid and fully tighten its lid screw. Also ensure the cable gland is fully tightened. Never leave the lid off the level switch for extended periods. Without its lid in place this level switch is not water resistant and presents a potential shock hazard. Take great care not to splash water onto the inside of the level switch's electrical housing when the lid is not in place. Without its lid the level switch is not weather or insect proof and presents a potential shock hazard that may result in death or serious injury.

Do not install this switch in either pressure vessels or in vented tanks where the liquid temperature is greater than the ratings in the table below. Safety should always be considered when installing this switch, particularly where aggressive or dangerous process liquids are involved.

This level switch is intended to be installed in the horizontal plane in the side of a tank or riser pipe. A suitable female threaded tank socket should be installed at a level where the switch point is required. The level switch is supplied with a float designed to pass through the inside diameter of a standard pipe thread socket. This allows the switch to be installed from the outside of the tank. Apply thread tape or sealant to the thread on the switch and screw the switch into the tank socket using the spanner flats on the process adaptor of the switch. Do not screw the switch into the tank socket by twisting the electrical housing, always use the spanner flats provided. Do not wind the switch all the way into the tank socket, leave a gap of approximately 4mm between the end of the thread on the switch and the face of the tank socket. Orient the switch so the float arm rises and falls vertically. The cable entry on the switch must be on the underside of the switch and pointing straight down.

OPERATING LIMITATIONS

Model	L20 / L21-S (All Polypropylene)	L20 / L21-SS (Stainless)	L20 / L21-D (Diesel)
Maximum operating pressure (Static or Dynamic) at ambient temperature	10 Bars (145 PSI)	10 Bars (145 PSI)	10 Bars (145 PSI)
Minimum burst pressure (Body) at ambient temperature	45 Bars (652 PSI)	500 Bars (7251 PSI)	500 Bars (7251 PSI)
Maximum operating temperature	60°C See note below	80°C	80°C
Minimum operating temperature	0°C	0°C	0°C
Minimum liquid S.G.	0.8	0.8	0.8
Ingress protection rating	IP67	IP67	IP67

1) Do not expose this level switch to freezing. If the level switch is to be used in areas where low temperatures will be encountered, always lag the tank and switch to prevent the unit from freezing. 2) Do not use this level switch in hot liquid applications. 3) This Level Switch is not designed to be used in water hotter than 50°C 4) Do not exceed the recommended pressure limitations outlined in the document

Please note: Maximum operating pressure of the Polypropylene L21-S must be linearly de-rated as operating temperature is increased so that at 60°C the maximum permissible operating pressure for the switch does not exceed one Bar absolute.

ELECTRICAL DATA



WARNING

All electrical work associated with the L Series level switch must be carried out by qualified electrical personnel and all electrical work must conform to AS/NZ (or equivalent) standards and to local wiring rules.

ELECTRICAL DATA REED SWITCH MODELS. All reed switch models are supplied set up to operate as single pole double throw break before make switches. They are suitable for all low wetting current and low voltage applications such as PLC control, signalling in telemetry systems and relay logic circuits. **The reed switch model can not switch electric motors directly.**

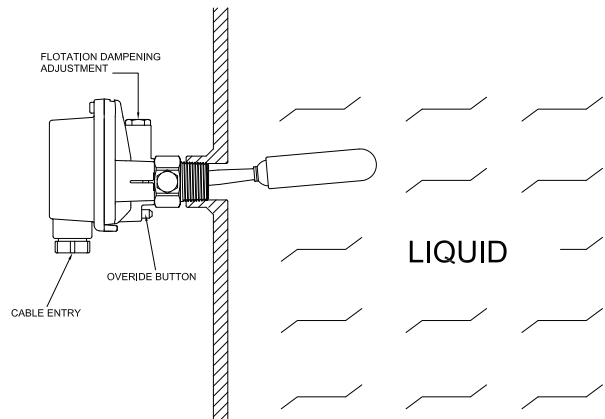
SWITCH TYPE	CONTACT	SWITCHED POWER	SWITCHED VOLTAGE MAXIMUM	SWITCHED CURRENT (RESISTIVE)	CARRY CURRENT	BREAKDOWN VOLTAGE	TYPICAL APPLICATIONS
DRY CONTACT REED SWITCH	S.P.D.T BREAK BEFORE MAKE	20W / VA MAXIMUM	140V AC 150V DC	1 AMP MAXIMUM	2 AMP MAXIMUM	200V MINIMUM	PLC, TELEMETRY & GENERAL LOW VOLTAGE CONTROL APPLICATIONS

ELECTRICAL DATA MICROSWITCH MODELS The L Series level switch is suitable for all general control circuit applications from low voltage signalling up to 500V AC. It is ideal for the control of pump starters, relay logic circuits, and for the direct control of contactors and electronic timers.

RATED VOLTAGE	NON INDUCTIVE LOADS				INDUCTIVE LOADS			
	RESISTIVE LOAD		LAMP LOAD		INDUCTIVE LOAD		MOTOR LOAD	
	NO	NC	NO	NC	NO	NC	NO	NC
125 VAC	15A		3A	1.5A	15A		5A	2.5A
250 VAC	15A		2.5A	1.25A	15A		3A	1.5A
500 VAC	10A		1.5A	0.75A	6A		1.5A	0.75
8 VDC	15A		3A	1.5A	15A		5A	2.5A
14 VDC	15A		3A	1.5A	10A		5A	2.5A
30 VDC	6A		3A	1.5A	5A		5A	2.5A
125 VDC	0.5A		0.5A	0.25A	0.05A		0.05A	0.05A
250 VDC	0.5A		0.5A	0.25A	0.03A		0.03A	0.03A

TYPICAL INSTALLATION

TYPICAL TANK APPLICATION WITH THE FLOAT SWITCH SCREWED INTO A 25mm (1") SOCKET FIXED TO THE SIDE OF THE TANK.



If the L Series Level switch is not used in a manner specified by the manufacturer, all warranties stated or implied will be rendered invalid.

SPARE PARTS Spare parts are available for the L Series level switch, contact your supplier.

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