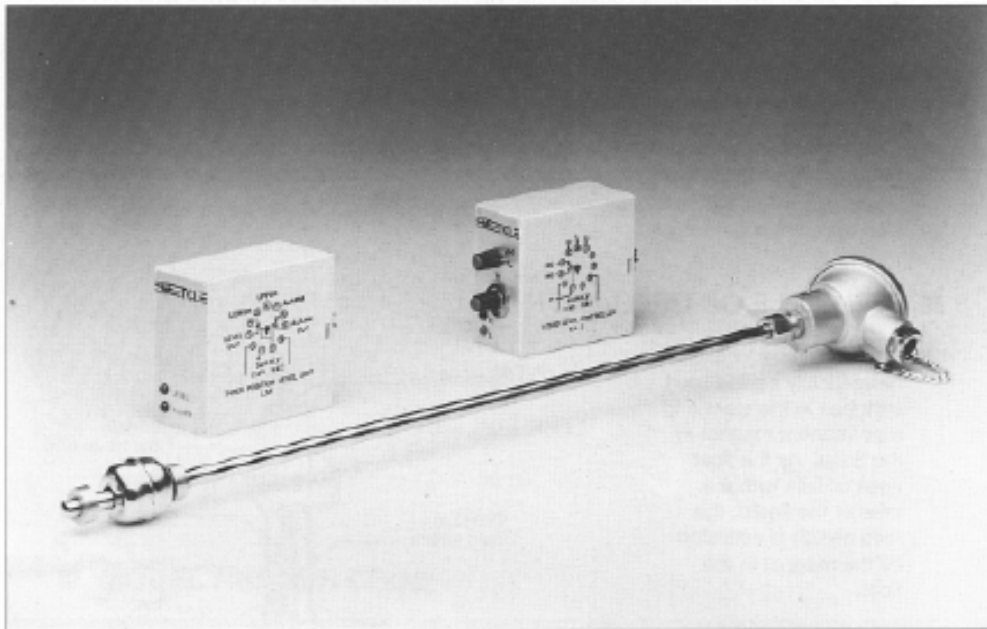


TCL

FR, LSR & CLC SERIES LIQUID LEVEL CONTROL



■ FEATURES

- **Simple and effective design**
- **Few parts to break or wear-out**
- **Proven reliability at low cost**



1. FR Series Level Switches

■ FEATURES

RELIABILITY

FR switches consist of 2, 2 or 3 floats on a stem with reed switches inside. There are few parts to break or wear out.

LONG SWITCH LIFE

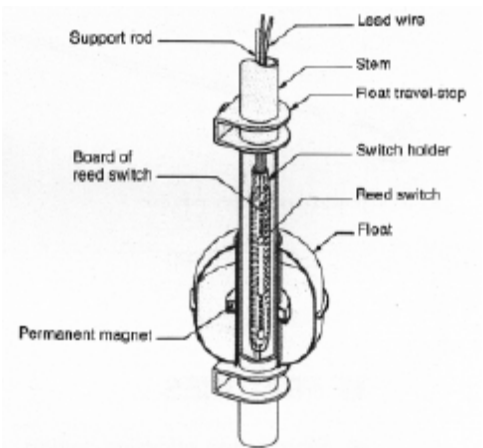
Designed for over 1 000 000 operations. The hermetically sealed switch is unaffected by hostile environmental conditions.

FLOAT DURABILITY

Metal floats are plasma-welded and buff polished. Special automatic welding equipment has been developed to meet our exacting standards.

■ PRINCIPLE OF OPERATION

FR series units contain hermetically sealed reed switches in the stem and a permanent magnet in the floats. As the float rises or falls with the level of the liquid, the reed switch is activated by the magnet in the float.





■ STANDARD SPECIFICATIONS

Switching Voltage	:	Max. 220V AC
Switching Current	:	Max. 0,5 A
Dielectric Strength	:	Max. 400V DC
Contact Resistance	:	Max. 100 m ohms
Operating Time	:	Typically 2 ms
Operating Frequency	:	Max. 2300 Hz
Standard Method of mounting	:	Adjustable Aluminium Flange Standard (OD – 65mm) or adjustable compression fitting upon request
Float material	:	304ss or Foamed Phenoie
Max Operating Temp	:	304ss : 100 deg.C Foamed Phenoie : 90 deg.C
Max Operating Pressure	:	304ss : 20 kg/cm2 Foamed Phenoie : 30 kg/cm2
Termination	:	Die-cast Aluminium Weatherproof Terminal Head (Other options available upon request)

■ MODEL NUMBER CODE

MODEL	SUFFIX CODE					DESCRIPTION
FR-	□-	□-	□-	□-	□	
FLOAT MATERIAL	CL5 CL2					304 ss FOAMED PHENOIE
NUMBER OF FLOATS	1 2 3					SINGLE LEVEL DUAL LEVEL TRI-LEVEL
DISTANCE (IN MM) OF SWITCHING POINTS OF FLOAT SWITCH FROM UNDER MOUNTING						FLOAT NO 1
						FLOAT NO 2
						FLOAT NO 3



2. LSR Level Switch Relays

The LSR is a level detector switch amplifier unit primarily in conjunction with the FR series switches.

The LSR has 3 basic modes of operation, as follows:

1. Upper and lower tank control unit with alarm
2. Two input, two output reed switch amplifier
3. Single input, single output reed switch amplifier

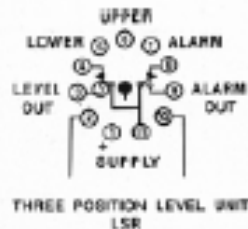
■ STANDARD SPECIFICATIONS

Supply Voltage	:	110V/ 220V AC
Output	:	Relay 5A 250V AC
Resistive Load		
Max Operating Speed	:	5 CPS
Breakdown Voltage (Output Relay)	:	1000V
Ambient Humidity	:	0 – 90% RH
Ambient Temp	:	0 – 50 deg.C
Max Distance from level Switch to LSR	:	10m
Max level Switch Excitation Current	:	20mA
Max level Switch Excitation Voltage	:	24V DC

■ MODEL NUMBER CODE

MODEL	SUFFIX CODE	DESCRIPTION
LSR-	□ □	
MOUNTING	1	11-PIN BASE MOUNTING
SUPPLY VOLTAGE	1 2	110v AC 220v AC

■ WIRING DIAGRAM





3. CLC Liquid Level Controllers

The CLC has been designed to provide efficient and reliable level control of electrically conducting liquids.

■ PRINCIPLE OF OPERATION

Operation is on the principle of electrolytic conductivity of a low level current through the liquid via electrodes set at the desired level. When the liquid makes or breaks contact with the electrodes, the relay contacts change state.

The unit provides high/ low alarm for one level or control between two levels of liquids. The relay can be selected to de-energise (fail safe) at high or low levels and prevent uncontrolled filling or emptying under fault conditions.

Sensitivity can be adjusted according to the type of liquid enabling decisive operation.

■ STANDARD SPECIFICATIONS

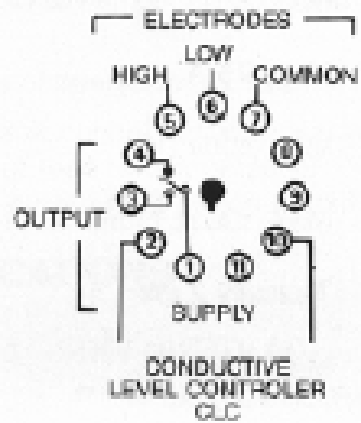
Supply Voltage	:	110V/ 220V AC
Output	:	Relay 5A 250V AC Resistive Load
Liquid Resistance	:	Up to 30 000 Ohms
Ambient Humidity	:	0 - 90% RH
Ambient Temp	:	0 - 50 deg.C

■ MODEL NUMBER CODE

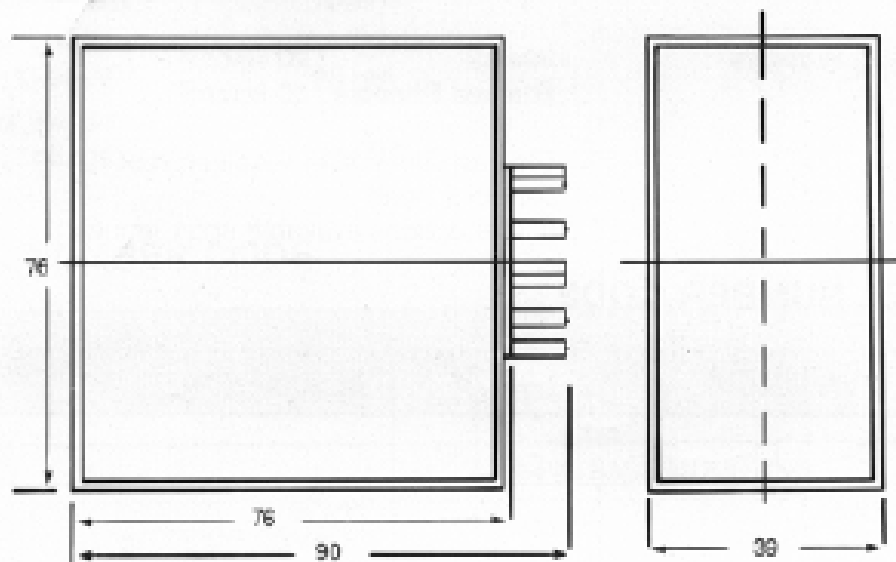
MODEL	SUFFIX CODE	DESCRIPTION
CLC-	<input type="checkbox"/> <input type="checkbox"/>	
MOUNTING	1	11-PIN BASE MOUNTING
SUPPLY VOLTAGE	1 2	110v AC 220v AC



■ WIRING DIAGRAM



■ EXTERNAL DIMENSIONS (Unit : mm) FOR LSR AND CLC UNITS



■ REPRESENTED BY:

