RIL290

LEVEL SWITCH FOR SIDE USE

LEVEL

RIL290 Level switch for side use

It can be used for dirty liquids, water, petroleum, cutting oils, and tolerates the presence of metal and ferrous particles, since the float does not hold a magnet and is integral with the rod.

The required length can be obtained simply by cutting the steel rod, using an ordinary pipe cutter; or the switching point can be varied by using a float with through hole allowing the required liquid control point to be modified whenever necessary.

One float can operate just one Reed (min. or max. level), or two Reeds (min. and empty and extra max. level) thus meeting the most complex needs.

Total safety since the electrical part is completely separate in the tank side and perfectly sealed with respect to the external side by means of ultrasonic welding.

The nylon-glass body is very strong and very resistant with respect to chemicals, and is ideal as an insulating container for the Reed contacts.

The RIL290 come standard with rods suitable for control of a max. measurement of 500 or 1000mm.
To obtain specific measurements, refer to the table on the next page.

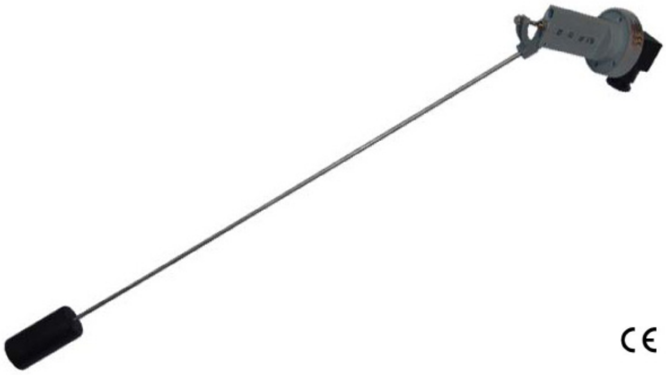
They can be ordered already arranged for the control of predetermined measurements.

This level switch for "side" use is very versatile: like the "RIL" range, it can also be used to control the maximum or minimum level and for controlling the minimum plus empty or maximum or overflow.

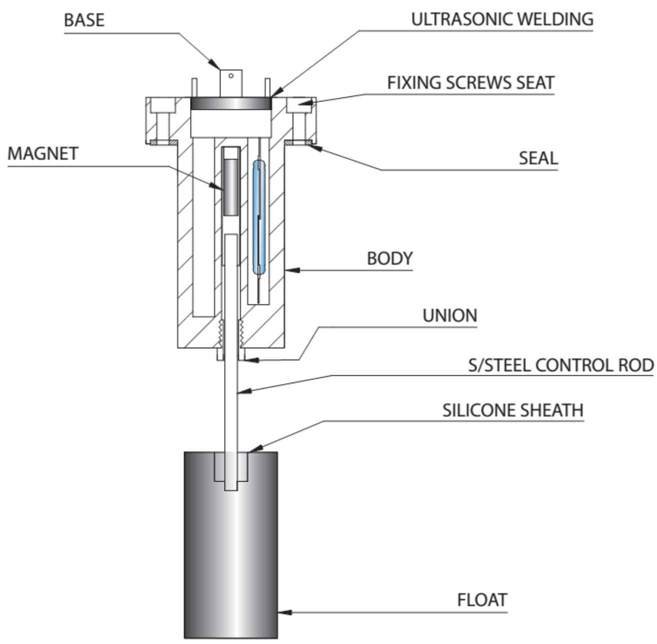
Unlike the "RIL" range, the distance between the 1st and 2nd signal is not fxed, but has an angular value, which gradually increases with the length of the rod.

This gives the designer many choices; in fact, by varying the length "L", the switching points of the 1st and 2st Reed vary (read on axis 1 and 2).

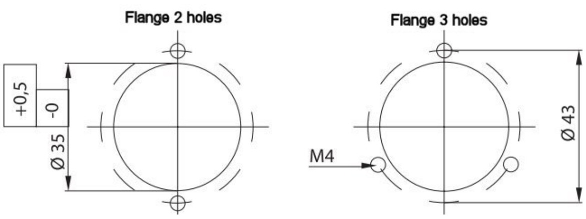
The Level (see diagram S3) can likewise be used to start a pump (1st Reed) on axis 1; the contact will remain closed until axis 2.
On axis 3 there will be the alarm signal (with diagram S4 there will also be the O.K. signal)



CE



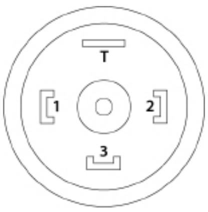
Fixing Diagram

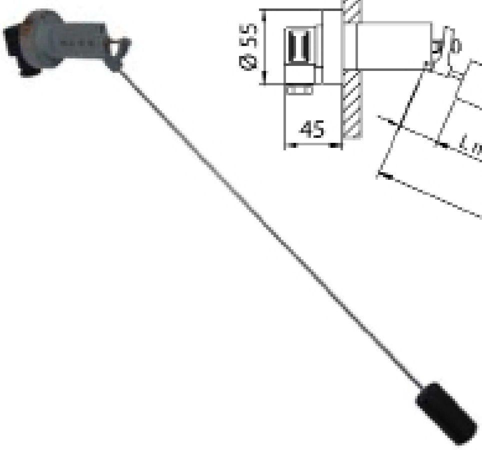


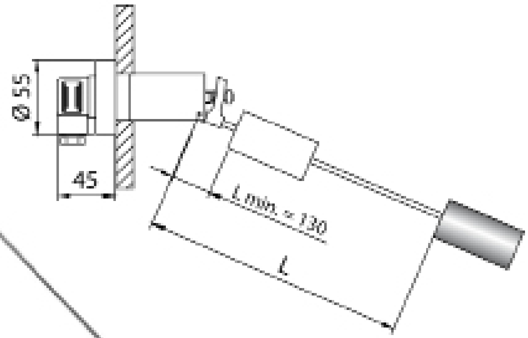
Through float

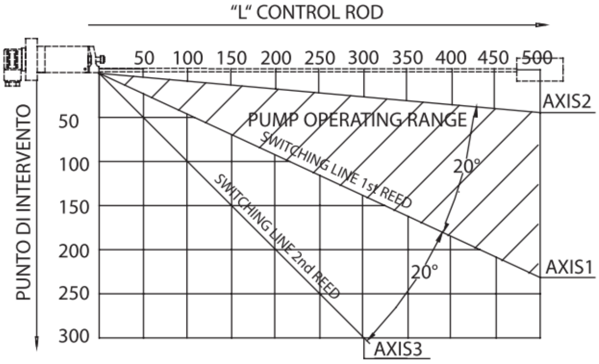
On request the float can be supplied with through hole and therefore be positioned in the required position without having to cut the rod (which can therefore be as long as the height of the tank).
If necessary, the liquid control point can be subsequently be modified as required by simply moving the float.
Available in request with AISI 316 stop.

Connection: Connector CE EN 175301-803-A IP65 PG.9/11









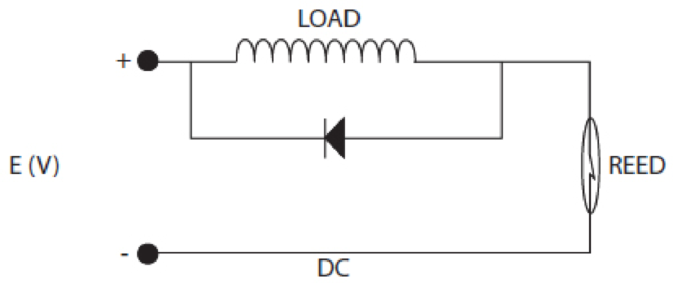
Model	CONNECTION	ELECTRICAL CONTACTS					REED	EXCHANGE REED STD	EXCHANGE REED PLC	EXCHANGE REED S2+S2	TEMPERATURE	PRESSURE
RIL290	FLANGE 3 orw 2 HOLES	S1 Closed in absence of liquid	S1A Closed in presence of liquid	S2 Exchan-ge	S3 Min. empty	S4 Special min. empty	3A. 60W 60 V.A. 230VDC 230VAC	1A. 60W 60 V.A. 250VDC 250VAC	1A. 20W 20.A. 150VDC 150VAC	0,5A. 30W 500 VDC	-20 ÷ +80°C (on request) -20 ÷ +120°C	10 Bar

IMPORTANT

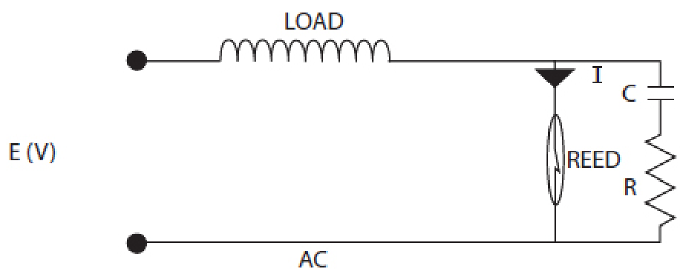
The electrical characteristics of the reed contacts, given in the descriptive tables, are supplied by the manufacturer. If the level indicator is connected to an inductive, resistive or capacitive load or lamp, permanent or temporary sticking of the contact may occur for particular load values, thus compromising its proper operation. It is advisable to appraise the nature of the load before connecting the level indicator. After identifying the type of load the level indicator will be connected to, a contact protection circuit must be included between the indicator and load, according to the following notes:

INDUCTIVE LOAD

When the reed contacts are used to control inductive loads such as motors, solenoid valves or solenoids, due to the very nature of the load, they are subject to voltage peaks (transients) during normal operation. These peaks can cause direct damage to the reed contact, significantly reducing its service life. With continuous operation, protection of the contact is relatively easy by simply installing a diode in parallel with the load. The polarity must be respected.



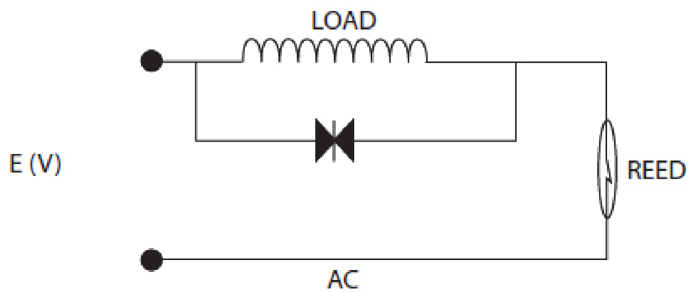
When the circuit is alternating, the diode cannot be used. Therefore an arc suppression unit must be used; in general this is a block of resistances and capacitances connected together in series and in parallel with the reed.



$$C = \frac{I^2}{10} \quad [\mu F]$$

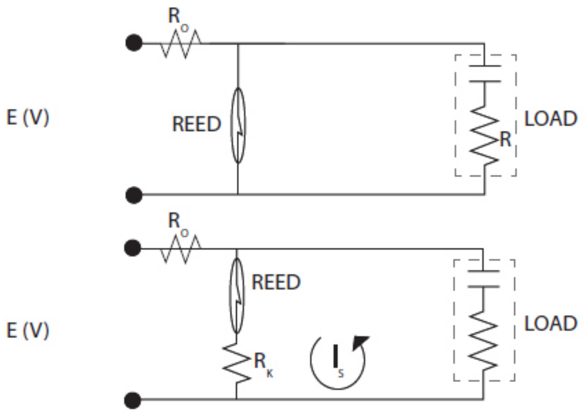
$$R = \frac{E}{10I\left(I + \frac{E}{50}\right)} \quad [\Omega]$$

When the contact remains open for a long time, it is advisable to install a varistor in parallel with the load.



CAPACITIVE AND RESISTIVE LOAD

Unlike the inductive load, in this case it is the current peaks caused by the charge and discharge of the capacitances that can cause faults in the reed contacts. When a capacitive load is commutated (e.g. even just the capacity of the cables) a discharge of strength depending on the capacity and length of the cables (considered as a series of resistances) passes through the reed contact.
The discharge current can be limited by a resistance in series with a capacitor, all in parallel with the load. The sizing of the resistance and the capacitance depends on the characteristics of the circuit. In any case the values can be determined in the most effective way to minimise the effects of this discharge. The figure shows typical examples of circuits protecting against charge / discharge current peaks.



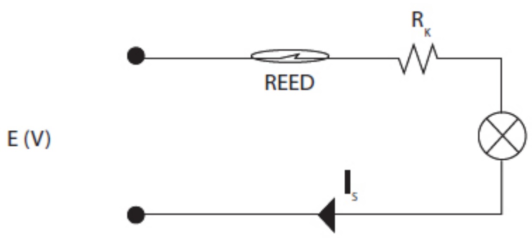
Where R is generally between 50 Ω e 500 Ω

Where R_K is the limiting resistance of current peaks.
To determine R_K, the following equation is used

$$I_S = \frac{\text{V stored in load}}{R_K\ [K\Omega]} < 0,1\ A$$

LAMP

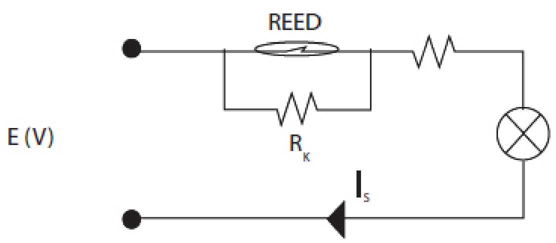
In fact, when the lamp filament is cold, i.e. the lamp is off, its resistance is approximately 10 times smaller than when it is hot. This means that if a reed contact is used to commutate a lamp, when it closes, even for just a short time, a current 10 times larger than that which would circulate during operation passes through the reed contact. If this value exceeds the maximum permissible, the contact could become damaged or its life expectancy reduced. This overcurrent can be limited by installing a resistance of adequate value in series with the lamp.



Where R_K must be such so that

$$0,5\ A < I_S < 1\ A \quad \text{con } I_S = \frac{E\ (V)}{R_K\ [\Omega]}$$

Another possibility is to connect a resistance in parallel with the reed, so that the lamp filament is preheated, and therefore not have extra current when the contact closes.



Where R_K must be such so that

$$R_K\ [K\Omega] < \frac{\text{filament resistance}}{3}$$

If the protection units described above cannot be obtained on the market, our technicians are at your complete disposal for any technical explanations or if faulty operation persists.