

Listed below are the considerations to be taken into account during the installation of the magnetic switches to protect the contacts depending on the load they have to endure and provide a long life to such equipment.

The contacts housed within the magnetic level switches are of the type "reed" (a glass capsule with a sheets on the inside that are activated or deactivated by the action of a magnetic field) and have little to do with any standard microswitch limit. That is why more attention should be sought on the type of load, voltage and current flowing through them.

Protections in the installation

It is highly recommended to protect the contacts in function of the load to endure:

- If it is connected to a PLC, no protection is required.
- If it is connected to the coil of a contactor or a relay, the protection is designed to absorb the spark occurs at the time of disconnection:
 - o In AC: connect one RC filter or one varistor in parallel with the coil (figure 1)
 - o In DC: connect one diode in parallel with the coil (figure 2)

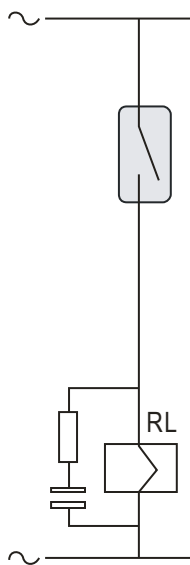


Figure 1.
Protection of the coil in AC

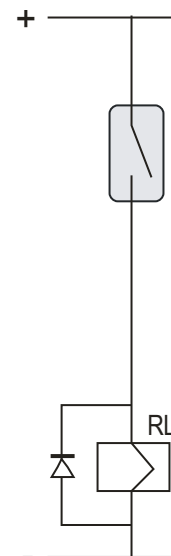


Figure 2.
Protection of the coil in DC

Tips for the installation

- Detection of the level using one sole control point
 - It is recommended that the control devices (pump, solenoid valve, etc.) be actived through an standard auxiliary relay (figure 3) or through a protective relay PSMS/DSMS (figure 4).
 - The gap for connection/disconnection of a reed switch is estimated between 5 and 10 mm. It means that the simple movement of the liquid. This means that the simple movement of the liquid during the filling or emptying maneuver can lead to repeated activation and deactivation of the control device with the consequent wear of both the reed contact as these devices. Prevention may be to use a timer (PSIA / DSIA) to delay the action on the control device until the sensor provides a signal maintained by the liquid level (Figure 5).

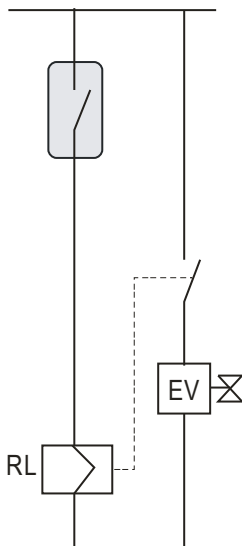


Figure 3.
Using an auxiliary relay

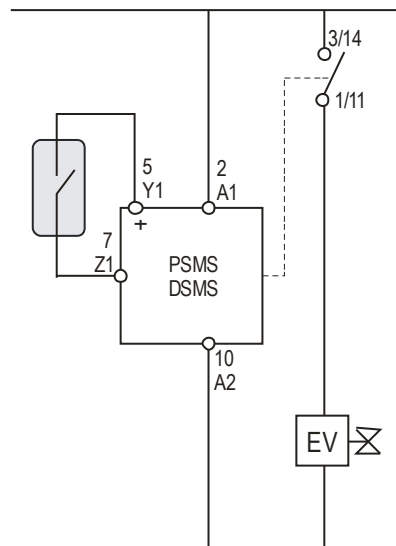


Figure 4.
Using a relay PSMS/DSMS

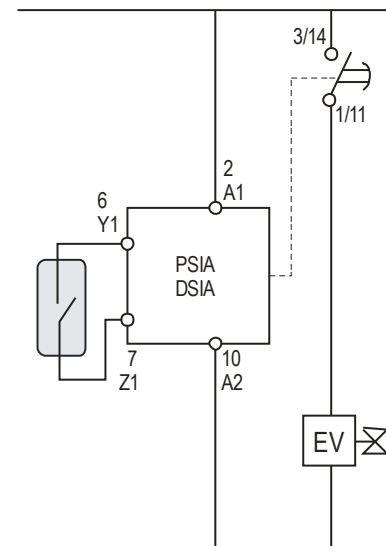


Figure 5
Delayed detection

- Detection of the level using two control points

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- It is used in automatic maneuvers for filling or emptying by activating the start and stop control device (pump, solenoid, etc.).
- Two different formats can be used:
 - Two magnetic switches with a single contact each one of them (figures 6 and 7).
 - One sole magnetic switch provided with two contacts placed at the required heights (figures 6 and 7).
 - One sole magnetic switch provided with a single contact that acts on a timer (PSIA / DSIA) and performs the maneuver by time difference (figure 5).

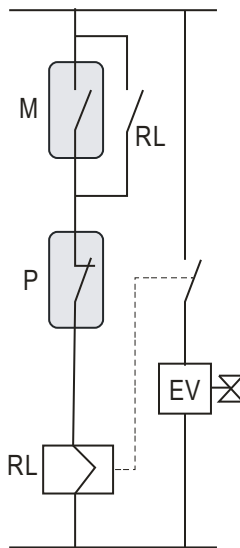


Figure 6.
Start-Stop with two contacts
and one auxiliary relay
(M=start; P=stop)

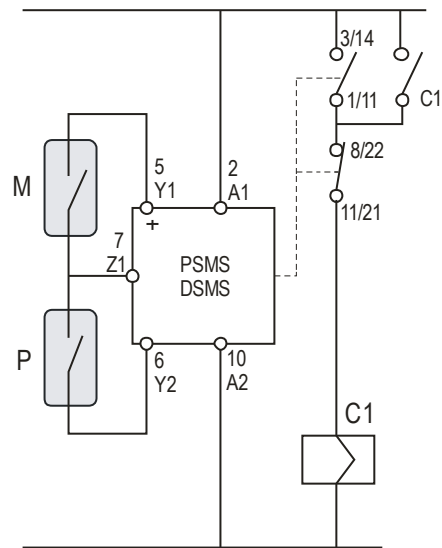


Figure 7.
Start-Stop with two contacts
and one relay PSMS/DSMS.
(M=start; P=stop)