



WORKING PRINCIPLE

Latch Solenoid is supplied with two windings and permanent magnet housed in a enclosure. Permanent magnet has less strength to pull the plunger. However, it is strong enough to retain the plunger in energized condition once actuated. The latch winding when energised, pulls the plunger. when energised is strong enough to pull the plunger. Once the plunger is pulled up by energising latch solenoid, permanent magnet is strong enough to retain the plunger in energised condition eventhough electric supply to the Latch Solenoid is switched off.

On energising delatch solenoid, magnetic force is created which opposes magnetic force of the permanent magnet thereby releasing plunger.

Latch Solenoid can be fitted to any 2,3,4 & 5 Ports Single Solenoid Valve for converting valve to remain stayput in the event of power failure.

The Latch Solenoid are available in following construction.

| Enclosure | Code | Identification Mark |
|---|-------|---------------------|
| WEATHERPROOF IP 67 | | |
| Plug In, PG9 | 25-LC | |
| Terminal Box 1/2" NPT(F) | 16-LC | N |
| Terminal Box M20x1.5(F) | 19-LC | M |
| EXPLOSIONPROOF Exd IIC T6, IP 67 | | |
| Cable Entry 1/2" NPT (F) | 37-LC | N |
| Cable Entry M20 x 1.5 | 39-LC | M |

INSTALLATION

Ensure that :

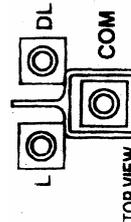
- The solenoid valve is properly installed in desired position ensuring that water / process fluid cannot enter the solenoid provided (a) the solenoid cover is properly fitted & cable gland is of good quality fitted using correct engineering practice.
- Provide cable of sufficient rating for operating solenoid. The maximum power rating of the solenoid is $\leq 20W$. Cable should not be less than 1.5 mm².
- Select cable gland matching to the cable entry provided on the solenoid and the diameter of the cable.
- The cable and cable gland should meet local standards.
- The wiring, cable gland fixing etc. is meeting local regulations and sound engineering practice.
- Provide earthing to the solenoid if needed by local authorities. Earthing Terminals are provided inside termination area as well as externally on the solenoid housing.
- The cable ends are properly fixed by tightening terminal screws provided in the termination area.
- The cover of the solenoid should fully tightened with rubber gasket in its usual place.
- The solenoid is provided by works with Test Leads to facilitate valve testing at test bed. Kindly remove the same from termination before final installation of the valve.
- Latch Coil can be fitted to any 2, 3, 4 & 5 Ports Single Solenoid Valve for converting valve to remain stayput in the event of power failure.
- The **Manual Override** cannot be utilized. In case if **Manual Override** is needed, it should be ordered in advance prior to despatch.
- **For Explosionproof Enclosure, Refer Instruction Manual No. IM/C/001.**
- To identify Latch Solenoid the same should in yellow colour.

- Solenoid Valve selected with LC option are effective to work as "LC" with Manual Override only when the coil is fitted on the valve.

CAUTION

- Prevent excess voltage as it may damage solenoid and create undue heating of the solenoid.
- Do not keep solenoid energized if it is not fitted on the valve.
- Excessive tightening of the nut can damage the solenoid.
- For satisfactory working of the valve, electric supply to terminal common and latch or common and delatch should not be provided simultaneously.

CONNECTION DIAGRAM & OPERATION



For latching Solenoid Valve, connect rated voltage positive to terminal marked "L" and ground to terminal marked "COM". For delatching Solenoid Valve, connect rated voltage positive to terminal "DL" and ground to terminal "COM".

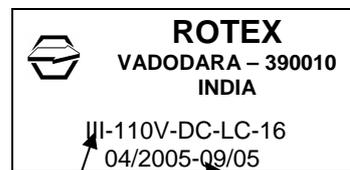
REMOVING / REPLACING THE SOLENOID

- The electric supply must be switched off and isolated before opening cover.
- Remove cable from terminal and then cable gland from the solenoid.
- Ensure that the new solenoid has same voltage, current rating, cable entry, insulation, temperature class, special version etc. Check label contents completely.
- Remove solenoid by opening Nut (Part No.37).
- Fix new solenoid and tighten the Nut till solenoid just stops rotating.

CHECKING OF THE SOLENOID

- Mega Ohms insulation between winding and solenoid housing should be more than 100 mega Ohms at 500V DC.
- If possible, conduct High voltage test between winding and the housing at 1500 V for AC for 1 minute and trip current sensitivity @ 25 mA.
- Check the soundness of the O Ring and Gasket fitted on the cover. It should not have any crack or deformity due to ageing.

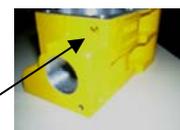
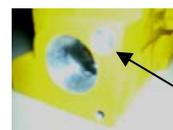
SOLENOID LABEL



(1) Solenoid Code
II/III = Size
110V = Voltage
DC = Current
16 = Construction
(2) Plan No. & Mfg. Month and year.

(1)

(2)



Cable Entry Identification



Latch Solenoid