

Techtrol Level Controller - "TLC-N"



Innovating Level Controls since 1984

Techtrol Level Controller TLC-N be used in conjunction with Conductivity type Level Switch to indicate status remotely / control room. It is available as Panel or Wall mounting (IP 66) with option of Ex-proof Gr IIA & IIB.

Pre Installation Check :

A) Independent Mode :

- 1) Connect controller "TLC-N" to "Supply" & ensure that its "LED glows".
- 2) Connect single wire to terminal "C" of controller and connect its open end to all the terminals individually (one by one) and ensure that their respective "LED" s glow and relay contacts changeover.
- 3) The controller is ready for installation on above results being positive.



Panel

B) Latched Mode:

Latching means, initially if Low level is ON then it remains ON till High level reaches & vice versa. Initially if controller is not provided with latching mode, keep the DIP switch no.2 & 7 in ON condition, however to achieve latching mode refer following.

- 1) Power ON the controller, see that GREEN color LED is glowing.
- 2) Check the Latching between L1 & L2 level.
- 3) Make the DIP switch combinations as.
- 4) DIP 1 Switch : 4 & 6 ON
- 5) See the LED L2 is ON & RL2 is ON
- 6) Now short the terminals C, 2 & 1 thro' wire, see the LED L1 & Relay RL1 is ON and LED L2, Relay RL2 turns OFF. L1 remains ON even if we remove the short of C & 1 (L1 level). Now remove the short of C & 2 also. Now LED L2, Relay RL2 turns ON and LED L1, Relay RL1 turns OFF.
- 7) Similarly check Latching between L3 & L4 level by DIP2 Switch : 4 & 6 ON.



Wall WP



Ex - Proof

Installation Procedure :

Panel Mounted :

Identify the mounting position & prepare a 68 x 68mm "cutout" on panel. Mount the controller from front & secure it in place by using fixing clamps.

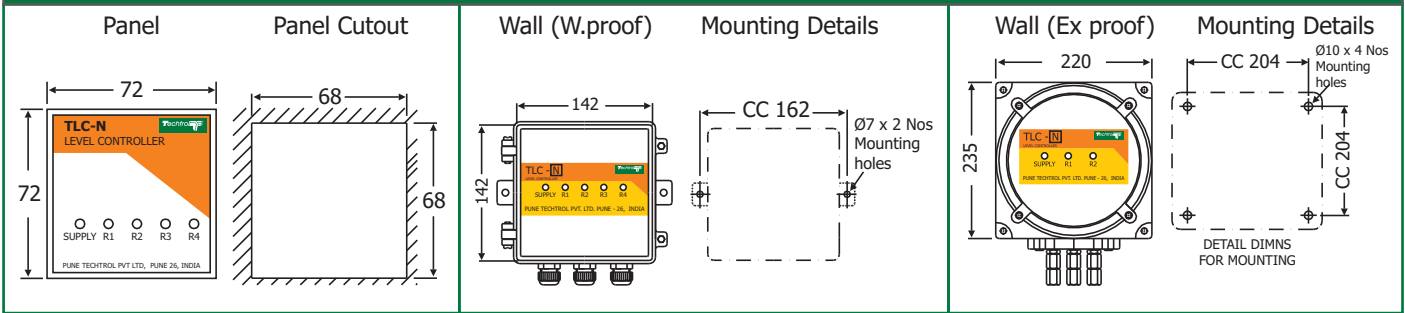
Wall Mounted :

Mount controller on the identified position ensuring that its surface is flat. Secure it via two mounting holes provided on enclosure.

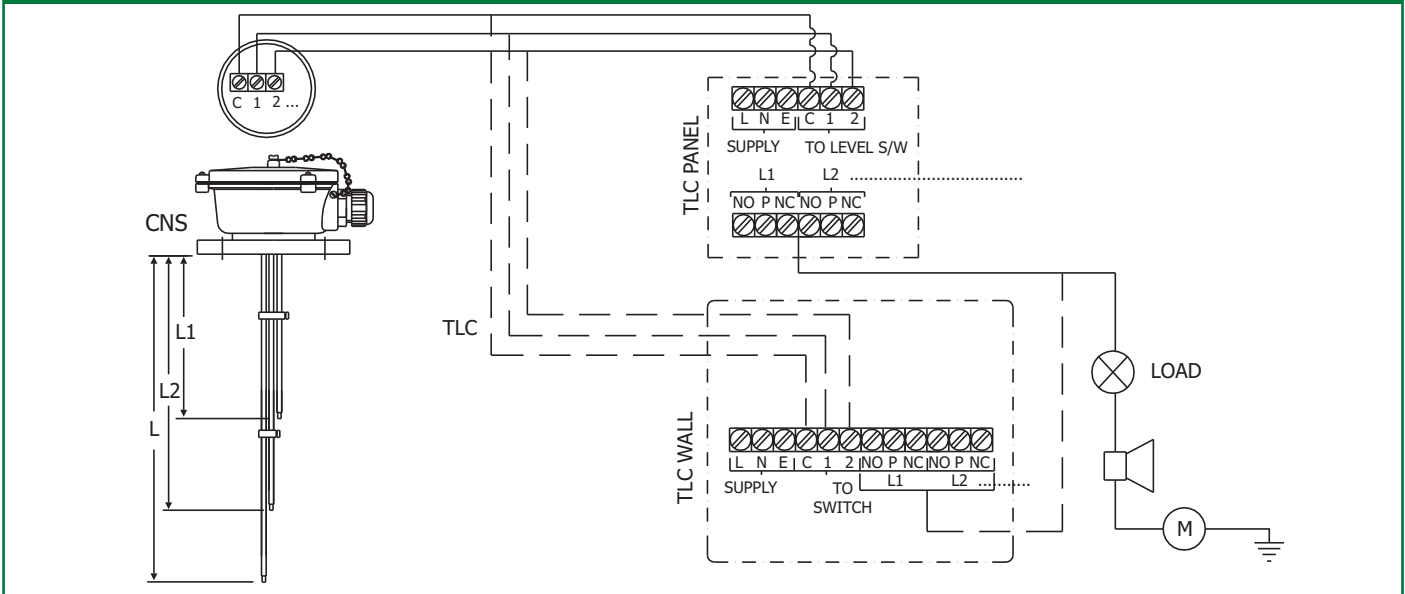
Please ensure following:

1. Mounting surface flat & not subjected to vibrations.
2. It is not in close proximity to "high voltage cables", "contactors or drive controls".
3. Should not be mounted in a "confined space" where temperatures may exceed the rated temperature.
4. Outdoor installation must be protected from "direct sunlight" or "server weather conditions".

Front View :



Termination & Wiring Daigram :



Set the following DIP switch combinations and check FSH, FSL and LATCHING operation in between the level set set points. FAIL SAFE HIGH or FAIL SAFE LOW can be set through DIP Switches as follows

Set Point	Cond.	Dip Switch Position	LED & Relay status				
			PS	L1 & RL1	L2 & RL2	L3 & RL3	L4 & RL4
Level 1	FSH	DIP 1 SW 8 ON others OFF	ON	ON	--	--	--
Level 1	FSL	DIP 1 SW 7 ON others OFF	ON	OFF	--	--	--
Level 2	FSH	DIP 1 SW 1 ON others OFF	ON	--	ON	--	--
Level 2	FSL	DIP 1 SW 2 ON others OFF	ON	--	OFF	--	--
Level 3	FSH	DIP 2 SW 8 ON others OFF	ON	--	--	ON	--
Level 3	FSL	DIP 2 SW 7 ON others OFF	ON	--	--	OFF	--
Level 4	FSH	DIP 2 SW 1 ON others OFF	ON	--	--	--	ON
Level 4	FSL	DIP 2 SW 2 ON others OFF	ON	--	--	--	OFF

FSH = Fail safe high, when level reaches at and above high level the Relay & LEDs are OFF

FSL = Fail safe low, when level reaches at and below low level the Relay & LEDs are OFF

Latching of Preset Levels :

Techtrol controller is provided with "8-way DIP Switch" to enable the user to achieve "Latching Mode" Set LATCHING OPERATION THROUGH DIP SWITCHES as follows,

Set Point	Dip Switch Position	LED & Relay status				
		PS	L1 & RL1	L2 & RL2	L3 & RL3	L4 & RL4
L1, L2	DIP 1 SW 4, 6 ON others OFF	ON	OFF	ON	--	--
L1, L2	DIP 1 SW 3, 5 ON others OFF	ON	ON	OFF	--	--
L3, L4	DIP 2 SW 4, 6 ON others OFF	ON	--	--	OFF	ON
L3, L4	DIP 2 SW 3, 5 ON others OFF	ON	--	--	ON	OFF

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Precautions : (please ensure the following) ⚠

- " Supply voltage" & "current" in excess of rated capacity will permanently damage the circuit.
- Controller is "properly earthed"
- In case of Wall mounted version, Enclosure is closed with its protective cover & gasket and there is "NO GAP" between "CABLE GLAND ID" for weather proofness (IP-65).
- In "hazardous locations" do not remove the enclosure cover before disconnecting switch from supply.
- The supply wiring should be routed away from the power cable, electromagnetic contactors, power relays & motors nearby.
- Do wiring as per standard electrical code & select proper cable to match connected load.
- Switch "ON" the "power supply" only after that all the electrical connections have been completed.

Periodic Maintenance :

- 1) Wipe the probe rod to remove deposits of scaling formed on it. In case, the liquid is highly viscous / contains floating material, cleaning is done frequently.
- 2) Tighten terminal screws, spacers in case of probe, if loose.
- 3) Visually examine internal PCB for any damage, probe sleeving brakage probe rod bend.
- 4) Close enclosure with its protective cover after maintenance.
- 5) Controller cleaning from inside for removal of dust or foreign particles.

Trouble Shooting :

Fault / Defect	Cause	Solution
Level indicating LED's OFF.	a) Improper wiring of controller or from probe to controller. b) Improper supply. c) Fuse blown.	a) Rewire correctly as per "terminal wiring" b) Use correct supply as per specifications. c) Replace fuse (500 mA).
No change in level / Relay.	a) Improper wiring.	a) Rewire correctly as per "terminal wiring"
Improper Relay operation.	a) DIP switch setting not proper.	a) Reset DIP switch.
Repeated blowing of fuse.	a) Improper power supply. Fluctuation in supply or due to spike in supply b) Metal debris may present inside enclosure	a) Use correct supply as per specifications. b) Clean enclosure from inside by using compressed air.
Load not getting ON	a) Loose connection Improper wiring. Relay not getting ON.	a) Tighten wiring. Do proper wiring as per termination. Check relay function.
Level indicating LED continuous ON / False signal.	a) Probe short.	Check probe insulation : a) Visually b) By meager, between body & particular probe.
In case of acidic liquid, level not sensed.	a) Coating stored on sensing tip of probe.	a) Remove coating from sensing tip of probe

All dimensions in mm, except specified.

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NSIC-CRISIL SE-1A

MAN/TLC-N/Rev 00/10-12