Techtrol Level Indicator Controller –TLIC

Techtrol
Innovating Solutions Since 1984

TLIC is used in conjunction with **2 wire** or **4 wire** transmitter for remote indication and control

Panel Mounted IP41

Wall Mounted IP65

Wall Mounted Exd IIB

Pre - installation check

- Ensure that no physical damage is caused to TLIC during transit.
- Connect controller to appropriate power supply (230 VAC or 24 VDC as ordered). Refer fig 2.
- Connect transmitter/ calibrator output of 4-20 mA to I/P terminals of TLIC with multi-meter in series (Refer fig 2).
- Power on the supply and the display will show some readings.
- Adjust the input to 4 mA and display will show lowest value.
- Gradually increase the input from 4 to 20 mA and observe the displayed value increasing to its maximum.

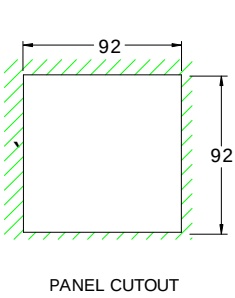
During installation, please ensure…

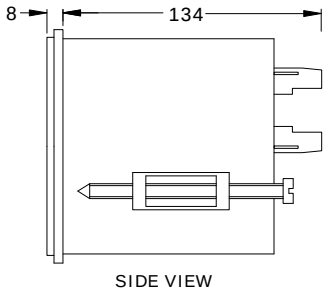
- Identify mounting location away from high voltage cables, contactors.
- The ambient temp around location should be maintained below 50^{0}C
- TLIC should be protected from direct sunlight by using sun shield.
- Create 92 x 92 mm cutout on panel and mount the TLIC from front and secure it with fixing clamps.
- For wall mounted enclosure, mounting surface should be flat and vibration free
- Drill holes at appropriate locations. Mount TLIC on location and secure it on four mounting holes. Refer figures in mounting details.

Mounting Details

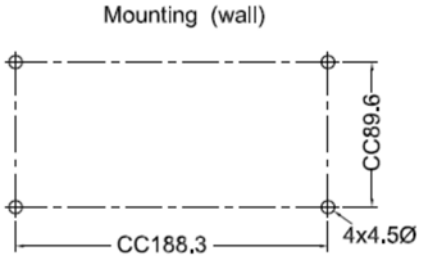
Fig 1

a) **Panel Mounted**

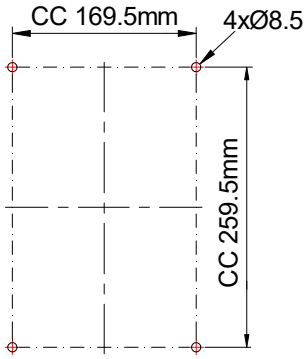




b) **Wall Mounted IP65**



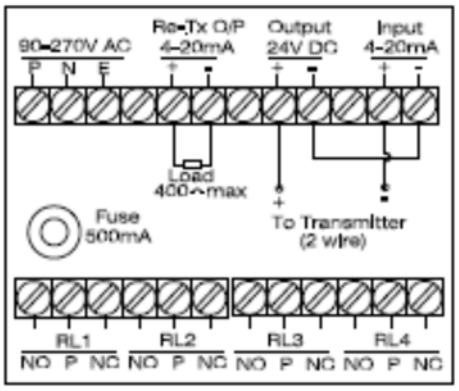
c) **Wall Mounted Exd IIB**



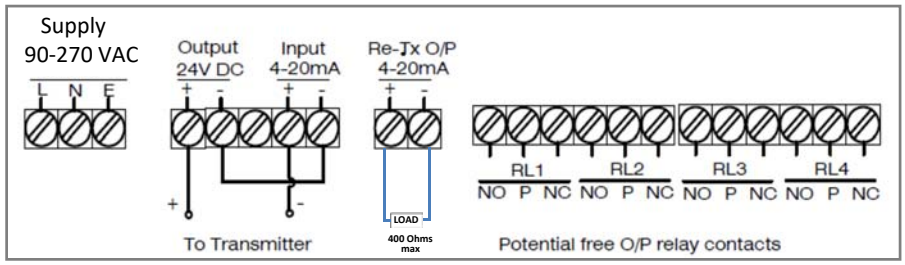
Termination and Wiring

Fig 2

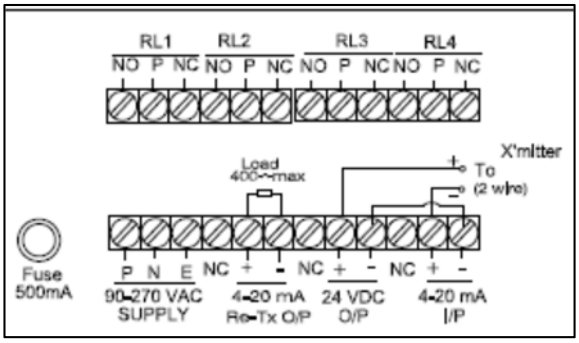
b) **Panel Mounted**

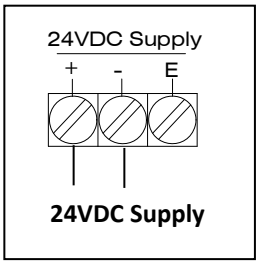


a) **Wall Mounted IP65**



c) **Wall Mounted Exd IIB**





- During wiring, supply should be kept **off**.
- Connect power supply (90-270 VAC or 24 VDC as ordered) to supply terminals of TLIC.
- In case of **24VDC supply**, ensure **correct polarity**.
- Connect shorting wire in –ve terminal of 24 VDC o/p and 4-20mA I/P terminals. Connect 4-20mA o/p

of 2 wire transmitter at +ve of 24 VDC O/P and 4-20mA I/P terminals as shown in figure 2

- Whenever Re-transmission is provided, it is isolated type. (max load 400 ohms)

Precautions

- Ensure TLIC is duly earthed and located in areas having ambient temperature < 50ºC.
- During wiring, supply should be kept off for safety. Wiring should run away from high voltage cables, contactors and inductive loads.
- Before switching on supply, ensure wiring is correct and completed as per termination & wiring diagram.
- Use suitable snubber in case of inductive load across contactor / relay coil.
- In case of wall mounted type TLIC, ensure enclosure is closed with its cover & gasket and there is no gap between cable OD and cable gland ID.

Programming

'TLIC' is programmed through keys provided on its front panel for parameters, in conjunction with display. Correct programming is essential for obtaining accuracy, reliable performance & control.

4 Alarm LED indications corresponds to relay actuation status i.e. LED ON = RELAY ON

Modes of operation

Program Mode: In this mode, user can program the unit for measuring span, bottom offset, relay set & reset points.

Run Mode: In this mode, unit will be ON and reads and displays the level.

Key Functions

'F' Function Key to enter in programming mode or to exit from programming menu.

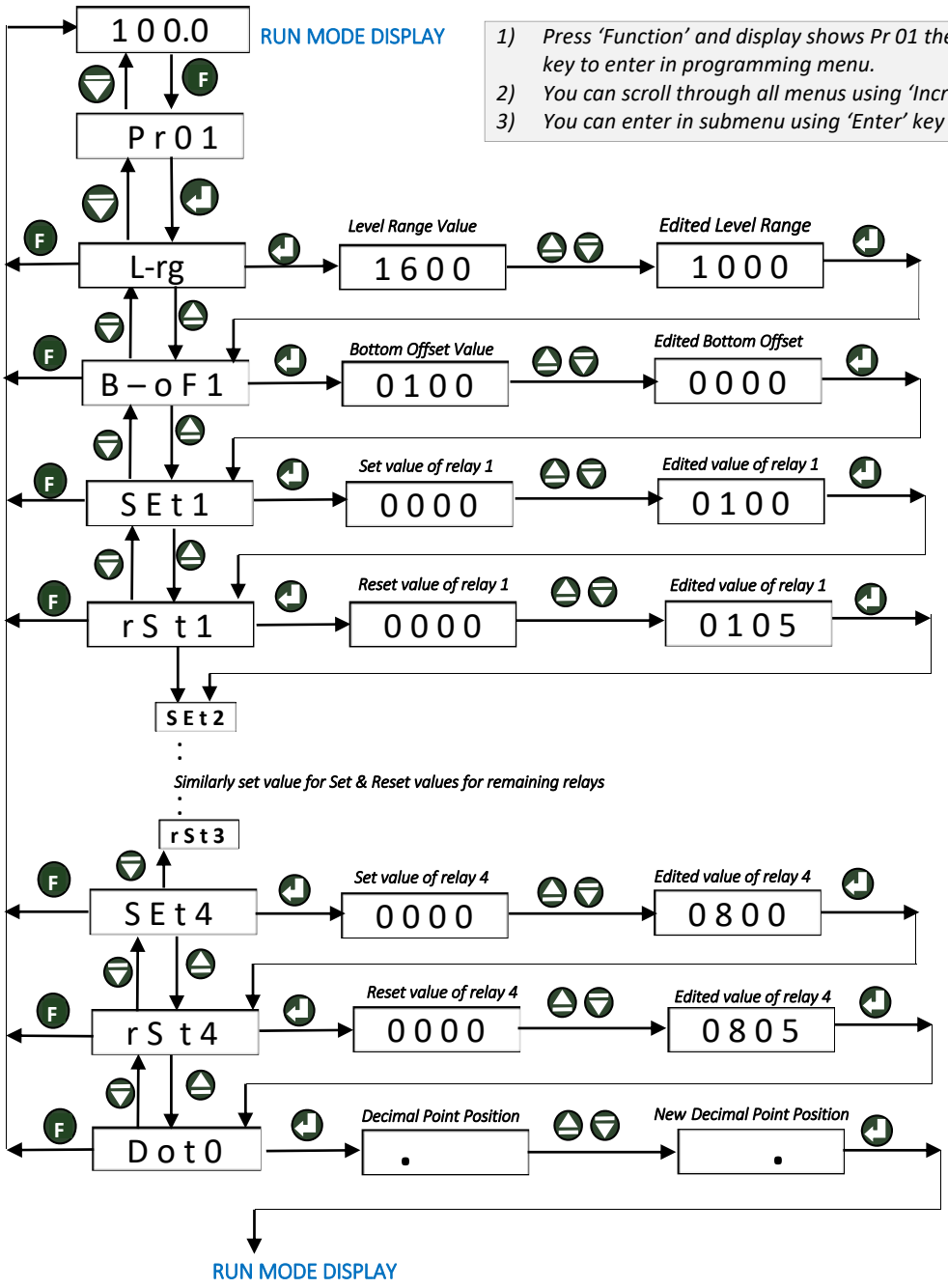
'ENT' Enter Key to enter in submenu and save changes and enters in next submenu

'DEC' Decrement' Key to decrement the digit value while parameter setting or go to previous submenu

'INC' Increment Key to increment digit value while parameter setting or go to next submenu

Front View

Programming Flow Chart



1) *Press 'Function' and display shows Pr 01 then press 'Enter' key to enter in programming menu.*
2) *You can scroll through all menus using 'Increment' key*
3) *You can enter in submenu using 'Enter' key*

Set Level Range
You can set it betⁿ
0000 to 9999

Set Bottom Offset
You can set it betⁿ
0000 to 9999

Set value for **relay 1**
Set point

Set value for **relay 1**
Reset point

Set value for **relay 4**
Set point

Set value for **relay 4**
Reset point

Select decimal point position as required

Troubleshooting

SL	Problem	Cause	Solution
1	No Display	1. Improper supply or loose connection 2. Wrong supply polarity in case of 24VDC 3. Fuse blown	1. Check supply & tighten loose connection 2. Connect 24 VDC with correct polarity 3. Check supply is within limit. Replace fuse (F1) (500mA)
2	No change in display value.	1. No change in signal from X'mitter. 2. Wrong connection	1. Problem in transmitter 2. Check and connect X'mitter with correct polarity
3	Fluctuation in display value.	1. O/P of 'X'mitter' is fluctuating 2. Turbulence in liquid	1. Check & tighten loose connections if any 2. Install X'mitter at turbulent free location
5	Incorrect Relay Operation	1. Incorrect Relay Setting	1. Recheck and program for correct set & reset values
6	Re- transmission current not proper	1. Incorrect programming of re-transmission 2. Improper wiring	1. Recheck programmed values 2. Refer 'Termination & Wiring' for correct wiring

Specifications

Range : 0 to 9999
Decimal Position : Selectable
Accuracy : 0.25% FSD
Display : 0.5", 4 digits, seven segment LED
Programming : Through keypad
No of Set Points : Four
Power Supply : 90-270VAC or 24VDC ± 10%
Supply to transmitter: 24 VDC @30mA
Input : 4-20mA from transmitter
Output : 4 Relays x SPDT, 5A 250VAC, Potential free contacts
Power : 15 VA
LED Indication : Green-Supply, Red- Level set point
Level LED Status : LED On= Relay On
Enclosure : 1) ABS plastic IP41 panel mtg., Size: 96 x 96 x 134(D) mm
2) ABS plastic IP65 Wall mtg., x PG 11 Cable Gland
Size: 200 L x 120 B x 75 H mm
3) Cast Al. Exd Gr. IIB wall mtg. x ½" NPT DC Cable Glands.
Size: 275 (L) x 185 (W) x 175(D) mm
Special Feature : Retransmission o/p (4-20 mA) isolated (max 00 Ohms load)
Amb. Temp : 0 - 55ºC
Humidity : 90% Non-condensing