ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

TWO LEVEL CONTROLLER

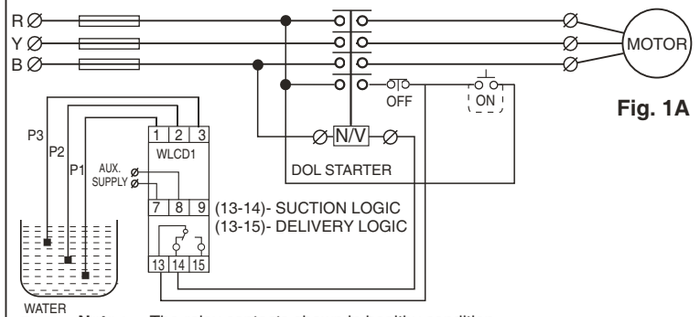
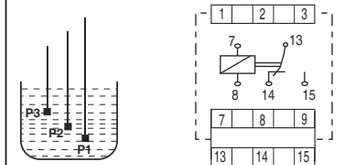


Fig. 1A

Note :-
- The relay contacts shown in healthy condition.
- The connections shown in fig. for SUCTION LOGIC.
- Provide an external link across ON push button as shown by dotted line.

CONNECTION DIGRAM

Fig. 1B



INDICATIONS

L1 : POWER ON
L2 : RELAY ON

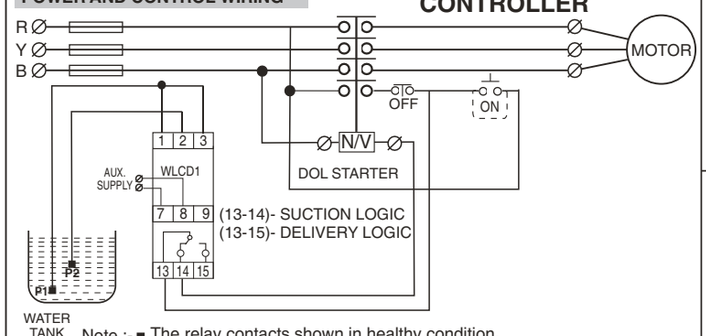
TERMINAL DETAILS

1: PROD 1 (Ref)
2: LOWER LEVEL PROD 2
3: UPPER LEVEL PROD 3
7,8 : AUX. SUPPLY
13-14 : O/P CONTACTS (C-NO)
13-15 : O/P CONTACTS (C-NC)

ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

ONE LEVEL CONTROLLER

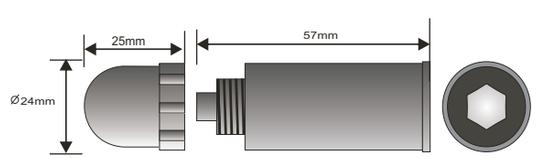
Fig. 2



Note :-
- The relay contacts shown in healthy condition.
- The connections shown in fig. for SUCTION LOGIC.
- Provide an external link across ON push button as shown by dotted line.

INPUT SENSOR DIMENSION

Fig. 3



ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

TWO LEVEL CONTROLLER FOR BOTH TANK

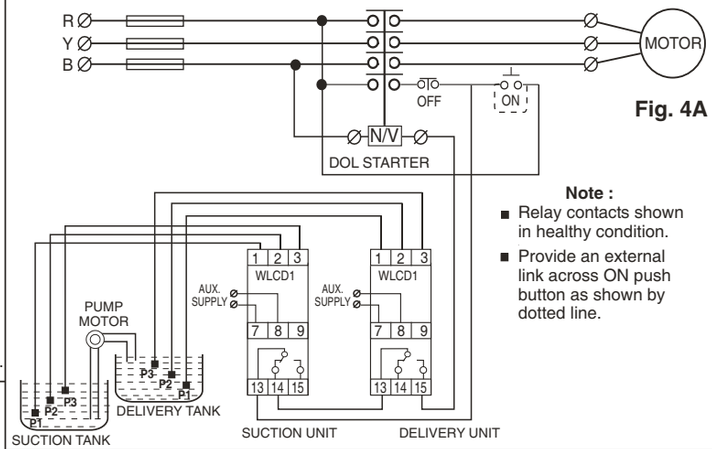


Fig. 4A

Note :
- Relay contacts shown in healthy condition.
- Provide an external link across ON push button as shown by dotted line.

TESTING CHART FIG.

Fig. 4B

No.	SENSOR PROD IN SUCTION TANK (T1) 1 P1	1 P2	1 P3	SENSOR PROD IN DELIVERY TANK (T2) 1 P1	1 P2	1 P3	RELAY OUT-PUT STATUS OF WLCD1
1	IN	IN	IN	IN	IN	IN	OFF
2	IN	IN	IN	IN	IN	OUT	OFF
3	IN	IN	IN	IN	OUT	OUT	ON
4	IN	IN	OUT	IN	IN	IN	OFF
5	IN	IN	OUT	IN	IN	OUT	OFF
6	IN	IN	OUT	IN	OUT	OUT	ON
7	IN	OUT	OUT	IN	IN	IN	OFF
8	IN	OUT	OUT	IN	IN	OUT	OFF
9	IN	OUT	OUT	IN	OUT	OUT	OFF

NOTE : IN : SENSOR PROD INSIDE THE WATER
OUT : SENSOR PROD OUTSIDE THE WATER

ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

TWO LEVEL CONTROLLER WITH EXTRA LOW OR EXTRA HIGH ALARM

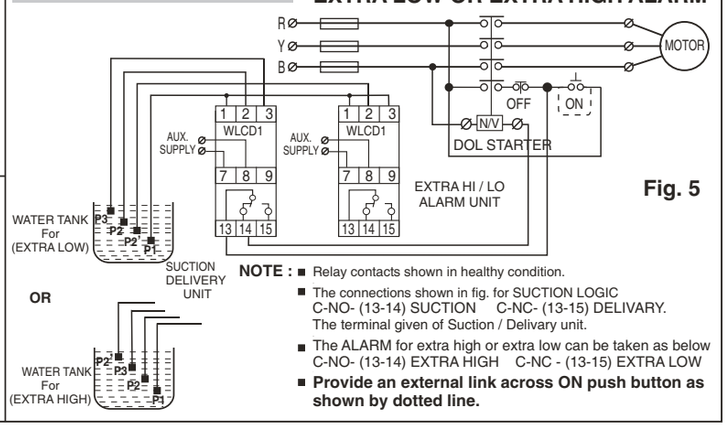
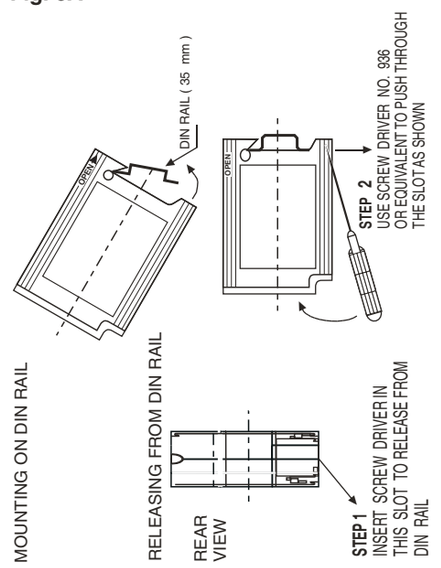


Fig. 5

NOTE :
- Relay contacts shown in healthy condition.
- The connections shown in fig. for SUCTION LOGIC
  C-NO- (13-14) SUCTION C-NC- (13-15) DELIVARY.
  The terminal given of Suction / Delivary unit.
- The ALARM for extra high or extra low can be taken as below
  C-NO- (13-14) EXTRA HIGH C-NC - (13-15) EXTRA LOW
- **Provide an external link across ON push button as shown by dotted line.**

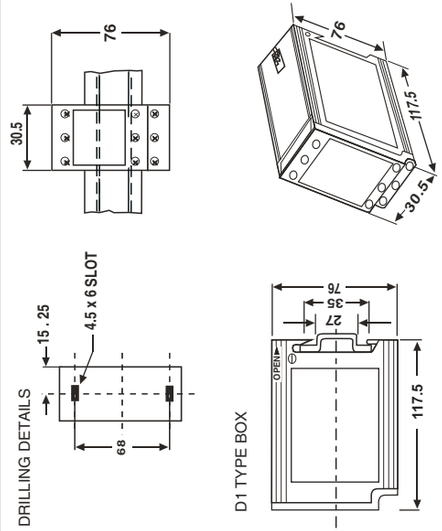
MOUNTING ON AND RELEASING FROM DIN RAIL

Fig. 6A



MOUNTING DIMMENSION

Fig. 6B



INSTALLATION INSTRUCTION MANUAL FOR WATER LEVEL CONTROLLER

WLC D1

WARRANTY

AGAINST
ALL MANUFACTURING DEFECTS
FOR 18 MONTHS
FROM DATE OF SUPPLY
OR 12 MONTHS FROM
INSTALLATION
WHICHEVER IS EARLIER

Manufactured by :

minilec®

S.NO. 1073/1-2-3,
AT POST : PIRANGOOT,
TAL : MULSHI, DIST. : PUNE (INDIA)
PIN : 412 111

VERSOIN - 06
(08 / 08 / 2014)

INSTALLATION INSTRUCTIONS FOR WLCD1

INTRODUCTION

Thank you for selecting and purchasing Minilec make water level controller WLCD1.

The following installation instructions would guide you in installing your WLCD1 and making the best use of it as per desired application.

WLCD1 is a Water Level Controller operating on electrical conductivity principle for controlling the pump operation automatically at two desired Water Levels in either the overhead tank or underground water tank / borewell.

WLCD1 is an auxillary relay & should be used in the control circuit.The output of the switching relay is 1 changeover contact of 5A, 240 VAC rating. (Resistive)

The WLCD1 unit is operating in AUTOMATIC MODE only.

SELECTION OF LOGIC

Your WLCD1 can be set to operate in either SUCTION logic or DELIVERY logic by using suitable output contact at either terminals 13 - 14 (C - NO) or 13 - 15 (C - NC) of WLCD1 respectively.

FUNCTION DURING SUCTION LOGIC

When you select SUCTION LOGIC by using output contact at terminals 13 & 14 (C - NO) then the level sensing prods P1,P2, P3 are to be put into the underground water tank.The pump motor will start automatically when the underground tank is full (i.e. when prod P1, P2 and upper level prod P3 are under water) & will stop automatically when the tank is empty (i.e.when prod P1 is under water and the lower levelprod P2 is out of water).

FUNCTION DURING DELIVERY LOGIC

When you select DELIVERY LOGIC by using output contact at terminals 13 & 15 C - NC) then the level sensing prods P1, P2, P3 are to be put into the overhead water tank. The pump motor will start automatically when the overhead tank is empty (i.e. when prod P1 is under water and lower level prod P2 is out of water) & will stop automatically when the overhead tank is full (i.e. when prod P1,P2 andthe upper level prod P3 are under water).

INPUT SENSOR

WLCD1 is to be used with Minilec sensor prod only. The sensor is of stainless steel material (For specific and typical applications you may use a sensor prod of suitable electrically conductive material in case Minilec sensor prod does not suit your requirement) . **Consult Minilec before using modified prod.** The Minilec sensor prod has a bolting arrangement for connecting a suitable cable & it is to be suspended from top opening of the water tank. (Ref. Fig.3 for Dimensions)

MOUNTING

Your WLCD1 can be RAIL mounted.(See Fig.6A for mounting it on RAIL and releasing it from RAIL respectively).It is suitable for 35 mm Rail. (for panel mounting & drilling details see Fig. 6 B).

CAUTION

1. Ensure that your WLCD1 is -
   * not installed near any heat sources like burner, sunlight, electric arc etc.
   * not subjected to abnormal operations.
   * installed as near to the starter as possible.
   * not subjected to direct rain,stormy winds & dust.
2. Ensure that the sensor prods are suspended from the top opening of the water tank in a suitable PVC conduct piping.Metal pipes should not be used. **The sensor prod should not be wall mounted on metallic water tanks.**
3. Ensure required water resistance by adjusting the sensitivity potentiometer given on front plate.

SENSITIVITY SETTING

Fix the sensitivity according to the liquid conductivity with the help of sensitivity potentiometer.

1) Keep all the prods in water and pot at maximum position. Now relay becomes ON.
2) Turn the pot towards minimum side till the relay becomes OFF.
3) Now adjust the pot above the setting where relay becomes on & doesn't get chatter by turning the pot towards maximum side. Now check this operation for 2/3 times for repet functional accuracy.

ELECTRICAL CONNECTIONS

See Fig.1B for electrical connection details of WLCD1. See Fig.1A for installation of WLCD1 in the control circuit. Auxillary supply voltage should be as marked on the front plate of the WLCD1.Connect P1,P2,P3 at terminals 1,2,3 of WLCD1. Connect the output relay contacts as shown in various applications suitable to your requirement. (Ref.Fig. No. 1 A/ 2 / 4A OR 5)

TECHNICAL SPECIFICATIONS OF WLCD1

1. **Auxillary supply voltage** 24/110/220/230/240/380/415/440 VAC ±20% 24VDC ±20%
2. **Frequency :** 50 Hz/60Hz ± 3%
3. **Power consumption :** 3VA
4. **Input Sensor :** 3 Nos. Stainless steel prods
5. **Sensitivity :** 1 KOhms - 200 KOhms
6. **Output relay & contact rating (Resistive) :** 1 Changeover Contact & 5A, 240 VAC
7. **Operating conditions :** Temperature : -5^{0}c to 60^{0}c Humidity : Upto 95% RH
8. **Life Expectancy :** 0.5×10^{6} operations at 100% rating.
9. **Trip setting :** According to the levels of sensor placed in the water tank.
10. **Trip Time Delay (secs):** Less than 1 sec.
11. **Resetting :** Automatic
12. **Indications:** Power on : L1 (Green) Relay on: L2(Red)
13. **Enclosure :** ABS
14. **Mounting :** 35mm rail mounting & panel mounting.
15. **Sensor Weight (gms) approx. :** 50 each
16. **Sensor dimensions overall(mm) (Single Prod) :** Ø 24 x 76 (L)
17. **Unit Weight (gms) approx. :** 300

APPLICATIONS :

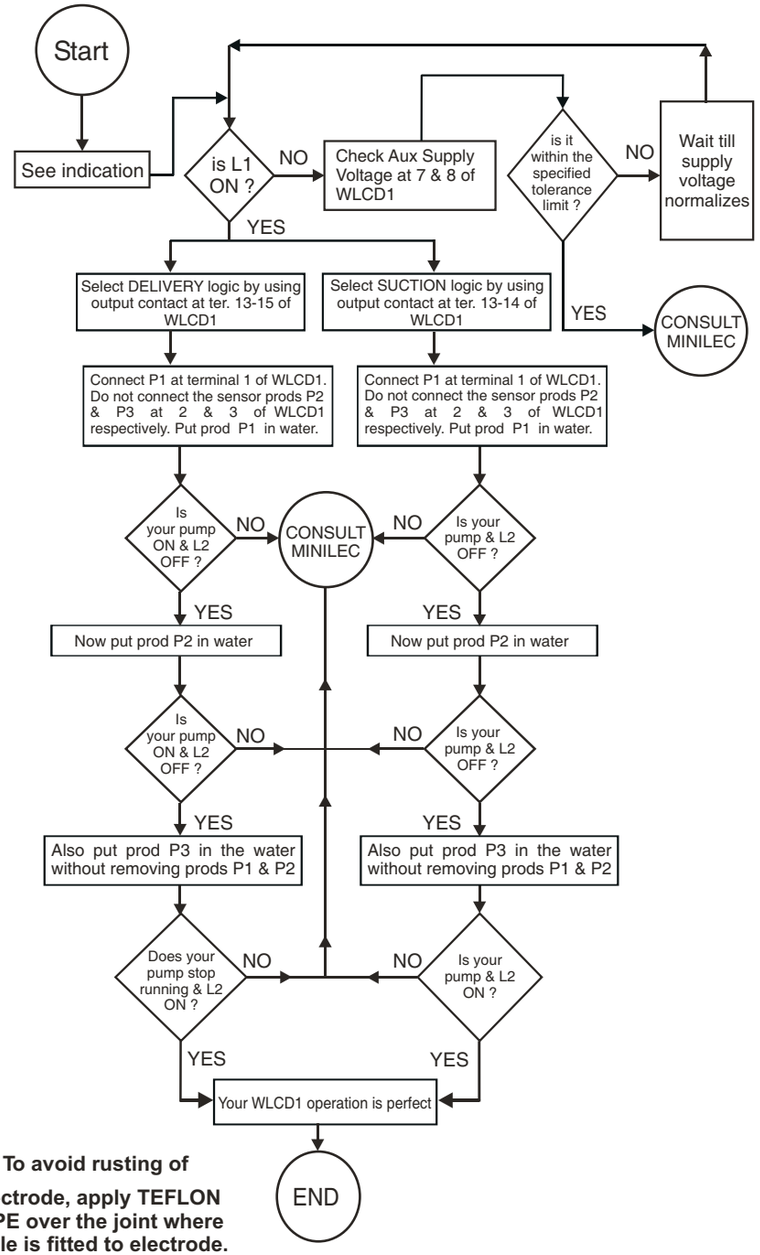
The WLCD1 is basically two level controller for either overhead or underground tank.

It can be used as one level controller for either overhead or underground tank. (Ref.Fig. No. 2 & corresponding note for electrical connections).

The WLCD1 can be used as two level controller for both overhead & underground tank. In this case two units are required.(Ref. Fig. No. 4A for electrical connections)

The extra high or extra low level can be detected by using the WLCD1 unit. This application also requires two units. (Ref.Fig. No. 5 for electrical connections)

TESTING PROCEDURE



To avoid rusting of electrode, apply TEFLON TAPE over the joint where cable is fitted to electrode.