

 ION Electricals Pvt. Ltd.

OPERATING MANUAL

OF



CLC5R

INTELLIGENT TEMPERATURE CONTROLLER

- Make sure you read this operating manual before using the CLC5R.
- Store this operating manual safely so that you can use it in future.

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1.GETTING STARTED

THIS SECTION MAKES YOU FAMILIAR WITH OUR **CLC5R – INTELLIGENT TEMPERATURE CONTROLLER.**

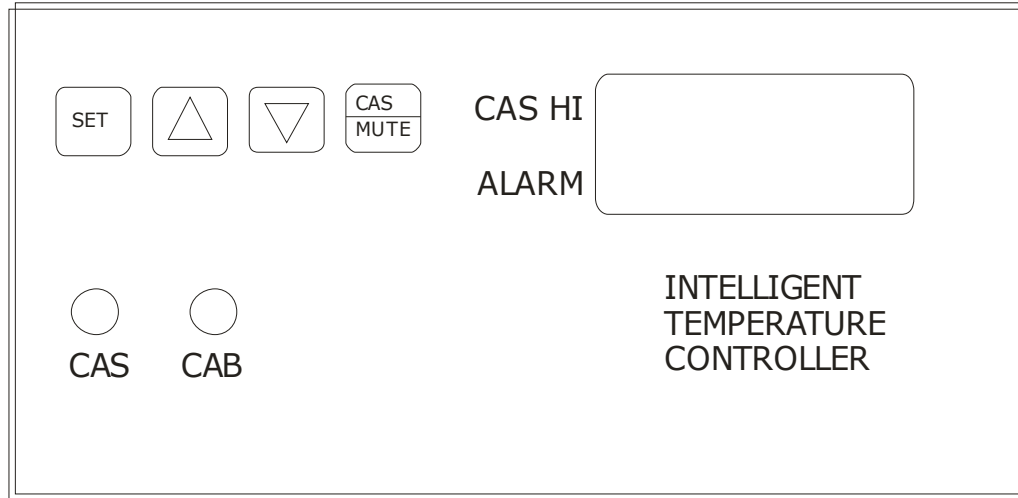


Figure 1: Front panel of CLC5R

1.1 KEYBOARD FUNCTIONS

| <u>KEYS</u> | <u>FUNCTION</u> |
|----------------|---|
| SET | To see Temperature Set point |
| △ | Increments the flashing number |
| ▽ | Decrements the flashing number |
| MUTE/CAS | To see Cascade Temperature & To Mute Alarm sound |
| CAS ○ CAB ○ | These LED lamps glows, when the respective relay is energized |

1.2 FEATURES

1. Set point adjustment through push switches on the front panel.
2. Audio visual alarm.
3. Led indication for relay on status.

1.3 SPECIFICATION

1. Input Sensor : PT-100 for Cabinet & PT –100 for Cascade
2. Control Range : -40 to -85°C Adjustable
3. 5°C Adjustable
4. Cascade and Cabinet delay adjustable from 1 to 255 secs
5. Alarm High & Low for Cabinet is adjustable.
6. Resolution : 1°C
7. Size : 96(H) X 192(W) X 165(D)
8. Cutout: 92 X 188 mm
9. Relay output: 5 Amp. Resistive load
10. Power consumption : 10 VA max

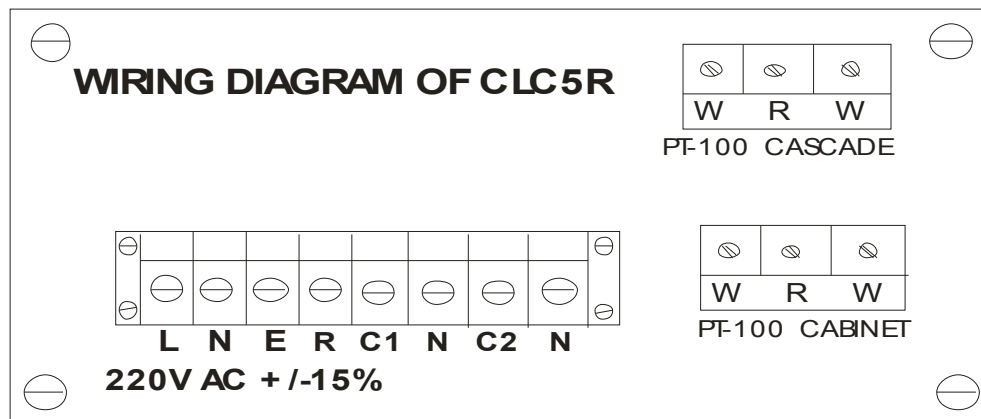


Figure 2: Back View of CLC5R

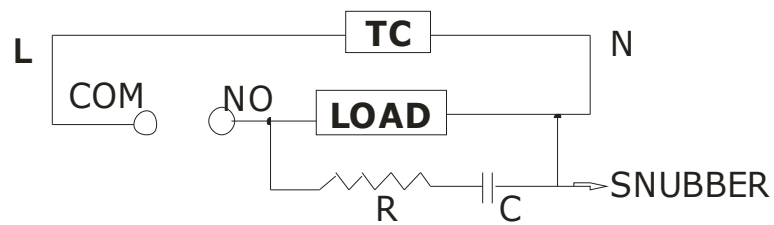
1.4 TERMINAL CONNECTION

| | |
|----|---|
| L | LIVE (SUPPLY) |
| N | NEUTRAL (SUPPLY) |
| E | EARTH |
| R | NO CONNECTION |
| C1 | LIVE OF CABINET COMPRESSOR |
| N | NEUTRAL OF CABINET COMPRESSOR |
| C2 | LIVE OF CASCADE COMPRESSOR |
| N | NEUTRAL OF CASCADE COMPRESSOR |
| W | WHITE/BLACK WIRE OF 3 WIRE PT-100 SENSOR OF CABINET/CASCADE |
| R | RED WIRE OF 3 WIRE PT-100 SENSOR OF CABINET/CASCADE |
| W | WHITE/BLACK WIRE OF 3 WIRE PT-100 SENSOR OF CABINET/CASCADE |

1.5 NOTE

**If load is inductive,
connect snubber across load**

CONNECTION FOR LOAD



R=56 OHMS / 2 WATT.

C=0.1 MFD / 250 V AC

TC=TEMPERATURE CONTROLLER

2.LEARNING TO OPERATE

2.1 TO BEGIN WITH

- Check the connections & switch on the mains supply
- Push “up & down” keys together for 40 secs.
- “**PdL**” will be displayed. This is cascade delay in seconds. Set it by “up or down key” to desired value. Push “set” key to save it.
- Now display will show “**cdL**”. This is cabinet delay in seconds. Set it by up or down key. Push set key to save it & go to next mode.
- Now display will show “**cHy**”. This is cabinet differential. Set it by up or down key. Push set key to save it.
- Now display will show “**ALL**”. This is alarm low for cabinet set. Set it by up or down key. Push set key to save it.
- Now display will show “**ALH**”. This is alarm high for cabinet set. Set it by up or down key. Push set key to save it.
- Now display will show “**StL**”. This is set low for cascade. Set it by up or down key. Push set key to save it.
- Now display will show “**Sth**”. This is set high for cascade. Set it by up or down key. Push set key to save it.
- Now display will show “**rGL**”. This is set lower side set range lock for cabinet. Set it by up or down key. Push set key to save it.
- Now display will show “**rGH**”. This is set higher side set range lock for cabinet. Set it by up or down key.

2.2 SETTING

- Check all the connections & switch on the mains supply.
- During “power on”, display will show “**CAS**” for 2 seconds. If both sensors are not connected then display will show “**Err1**” / “**Err2**”. If sensors are connected properly then (in normal mode) display will show **Cabinet Temperature**. One can see **Cascade temperature** by pushing “CAS/MUTE Key”.
- Push “SET” key & hold it, Display will show **set value**. Then set desired Set value by using increment / decrement keys on front panel.
{For Ex: -70 °C} Cabinet Relay will ON if Cascade temperature reaches to -30 °C & it will Cut off if Cascade temperature goes below -10°C. It also cuts off if Cabinet temperature reaches to Set point (say “-85”). It will restart after differential.(if the differential is 5 °C then it will restart above -80°C).
- Alarm will start sounding if Cabinet temperature goes 20 °C (if “ALH” is set to 20) above set Temperature or 10 °C (if “ALL” is set to 10) below set temperature & “- (**alarm**)” will flash on display to show Alarm indication.
- Audio alarm can be muted by pressing “CAS/MUTE” switch.
- “CAS HI” segment will glow if the cascade temperature goes above “StH”.

2.3 PC INTERFACING

- First of all install the software ("setup.exe" file) on your pc with the cd supplied us. Your pc should have one "com" port free.
- Connect female part of the communication cable (supplied by us) to your pc com port & male part to "clc5r" (back side "D-connector").
- After finishing installation you will find "unilogger" in program menu. Just move the cursor on that. Now you will find another sub folder as "unilogger". Click on that.
- Data monitor screen will appear on the display. Click on connect. If the connection of com port & cable is proper then you will find the name "clc5r" ahead of connected device.
- "Log" is disabled so click to buffer. Set the logging time on "stop" window & click on "get data". Pc will start logging.
- To save particular file, click on "save data". One can save logged readings in simple text format. To clear it, click on "clear log"

3. TROUBLE SHOOTING

1. **Sensor open indication**: Display shows “**Err1**” for cabinet & “**Err2**” for cascade
2. **Sensor reverse**: If the RTD is not connected as per connection diagram then it will show erratic temperature.
3. **Not showing proper temp**: Loose connection on terminal or calibration problem.
4. **Problem in relay operation**: Check connection as per wiring diagram given.