Monitoring Air Temperature

Large size numeric LED Display with Temperature Sensor and IR Remote control

User Manual (Version 1.02)

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1. Brief Description

The set of large size LED numerical display, temperature sensor and IR remote control is designed to measure and display air temperature in large format. The temperature value is transferred into display from the sensor probe installed some distance from display.

LED display consists of super-bright 3-color 7-segment modules with digit height 100 mm. LED color can be set with IR remote control to red, green, or yellow. It is also possible to set the temperature limits (high and low) and displayed values will gradually change color when these limits are exceeded.

Frame construction of display is made of aesthetic anodized aluminum frame, platinum matt color and gray tinted front glass. Back panel is from steel, painted with black powder paint. Although the displays are suitable for use in indoor environment only, the temperature sensor can be installed indoor or outdoor. Flexible power cord for connecting to power mains is attached to back panel of display.

2. Technical Specifications – LED Display

- Designation name: CDN 100/3 T RG L20 230AC RS485/1WIRE
- Number of lines: 1
- Number of digits: 3
- Digit height: 100 mm
- Readability range: up to 40 m
- Displaying format: 88.8 °C (one decimal place)
- Displaying elements: Super-bright 7-segment LED modules, suitable for indoor light conditions, LED chips of AlInGaP type.
- LED color: Red, green, orange
- Fixed label: °C, white on black background
- Frame enclosure: Anodized aluminum frame, platinum matt color, steel back panel coated with black powder paint.
- Communication interface: 1Wire – for connecting temperature sensor
RS485 – for connecting more displays in series
IR – for infrared remote control

- Brightness control — Automatic, depending on ambient light conditions, or direct control of brightness level by user via IR remote control.
- Dimensions — 480 mm x 190 mm x 50 mm
- Enclosure protection class — IP 20 (for indoor use only)
- Power supply — 100 – 240 VAC, 50/60Hz
- Operation temperature — 0°C ÷ +50°C
- Power consumption — 6 W max
- Connections — RJ11 – 4-pin, for temperature sensor.
RS485 – terminal connector, for firmware update via PC.
- Mounting — Mounting brackets for wall installation included.

3. Technical Specifications – Temperature Sensor

- Designation name — TSU SENSOR 68 5DC 1WIRE
- Measuring temperature range — -55°C to +125°C
- Accuracy — ±0,5°C in range from -10°C to +85°C
±2°C in range from -55 to +125°C
- Resolution — 0,1°C
- Cable length — 2 m (other lengths up to 5 m possible, on request)
- Connector — RJ10

4. Technical Specifications – IR Remote Control

- Designation name — HCU Keyboard IR
- Range of operation — up to 25 meters from display
- Batteries — 2 pcs. AAA 1,5V, alkaline (included)

5. Display Features

- Control of different parameters via IR remote control.
- Measured values can be displayed in °C or °F. (Requires change of unit label.)
- Brightness level can be set manually by user, or automatic brightness control can be set in dependence of ambient light conditions.
- LED color of digits can be set to red, green and orange. It is also possible to make various tints of these colors. (Gradual transitions between red/green/yellow.)
- LED color can gradually change automatically in dependence of the measured value.
- Flashing of displayed value when preset high/low limits are exceeded.
- Up to 64 devices can be interconnected on the RS485 serial bus line.
- Communication address for RS485 serial line can be changed.
- Fixed correction offset of the measured value can be set in range from ±0,1° to ±9,9°C. (Although it is not normally advised as sensors are already calibrated from factory.)

6. Display Control

The function buttons **F1, F2, F3, F4** on the IR remote control are used to call the menu items of different parameters of display. Aim the IR remote control toward front side of display and press one of the function buttons **F1 – F4** according to desired parameter which you want to change.

Once in the function menu, use the **Upp arrow** / **Down arrow** to select item to change and confirm your selection with **OK** button (located in the middle of arrows).

F1 **OFS** Correction offset. Using the up/down arrow set the value of desired offset correction for the measured values. Default factory setting is 0,0°C. (Not normally used as the sensor is already calibrated.)

tU Temperature units. Select °C or °F. (Can require label change as well.)

F2 **CoL** LED color setting.
Select desired color by holding button **„up arrow“ / „down arrow“**, to change color and confirm with **OK** button.

F3 **Lou** Sets the lower limit. When this limit is exceeded:
Value on display will be blinking when blinking function is ON.
Value on display will change color to green if color temperature function is ON.

UPP Sets the upper limit. When this limit is exceeded:
Value on display will be blinking when blinking function is ON.
Value on display will change color to red if color temperature function is ON.

bOL Blinking (flashing) of display ON / OFF. Sets the blinking of display after exceeding the upper or lower limit. Select **oFF** or **on**.

Ct Color temperature. Displayed value will automatically change color according to measured temperature. Select **oFF** or **on** with arrow buttons.

MENU

br Brightness control (manual or automatic).
Select desired option with button „**up arrow**“ / „**down arrow**“, confirm with **OK**.

- **di** direct control of fixed brightness level.
- **Au** automatic control of brightness according to ambient light.

bL Brightness Level.
Set direct brightness level from 1 to 100 when manual (di) option is selected.
Set slope of brightness regulation curve when automatic (Au) option is selected.
Select desired option with button **„up arrow“ / „down arrow“**, confirm with **OK**.

Adr Change of display address RS485. Used when more displays are connected on serial RS485 network bus.

It is possible to recover default factory setting of display by pressing the **RESET** button and confirming this selection by pressing **OK** button within 3 seconds.

If the **ESC** button or nothing is pressed within 3 seconds, parameters will not change.

7. Service Address

In case of any questions or malfunctioning of your device please contact:

ELEN, s.r.o.
Lubochnianska 16
080 06 Lubotice
SLOVAK REPUBLIC

Tel.: +421 / 51 77 33 700
+421 / 51 75 99 140

e-mail: sales@elen.sk
http: www.elen.eu