

Temperature & Humidity LED Display

Low Cost & Industrial Grade Cabinets

Kamal & Co

42, Mambalam High Road,
T Nagar, Chennai, 600017
sales@factorydisplay.com

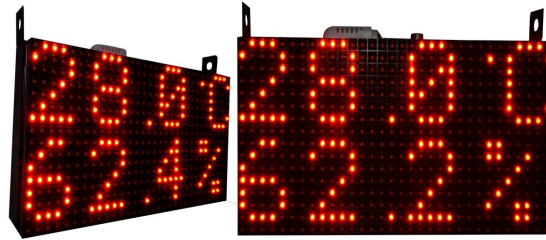
Description

This module has two displays Temperature and Humidity, suitable for environment monitor. The ambient temperature and relative humidity are measured using high performance DHT22 sensor which has output calibrated digital signal.

The DHT22 sensor has exclusive digital-signal-collecting-technique and humidity sensing technology, assuring its reliability and stability. Its sensing elements are connected with 8-bit single-chip computer. Every sensor of this model is temperature compensated and calibrated in accurate calibration chamber and the calibration-coefficient is saved in type of program in OTP memory, when the sensor is detecting, it will cite coefficient from memory.

Digital relative humidity & temperature sensor T22 Features

- ❖ High precision
- ❖ Capacitive type
- ❖ Full range temperature compensated
- ❖ Long transmission distance
- ❖ Calibrated digital signal
- ❖ Low power consumption



Product Features

- Highly accurate, fast & reliable sensing technology
- Outstanding long term stability
- Compact size, easy to install & flexible
- Complete environmental monitor
- Large led display with real time data

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Notes and Options

- All display are in Single colour.
- The Default supply is always in RED colour.
- Other colours on request at extra cost.
- RED colour Brightness is good for viewing both indoors and outdoors.
- For outdoor units – cost increases by 18% on base price.
- Titles and other fixed designs can be added to your specification.
- All units work off 230V AC mains (110V can be quoted for separately)
- Mounting provision
 - #1 – Top eye bolts – you can hang it from ceiling.
 - # 2 – Side clamps – you can bolt it to your supports.

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Sizes and Models						
Model	Digit Height (mm)	Layout	Height (mm)	Width (mm)	Depth (mm)	Max Power (W)
ECON-IC-T-11	120mm for Temp	12.3C	160	320	50	35
ECON-IC-T-22	240mm for Temp	12.3C	320	640	50	125
ECON-IC-RH-11	120mm for RH	12.3%	160	320	50	35
ECON-IC-RH-22	240mm for RH	12.3%	320	640	50	125
ECON-IC-TRH-11	50mm for Temp top line and 50mm for RH bottom line	12.3C 12.3%	160	320	50	35
ECON-IC-TRH-21	120mm for Temp top line and 120mm for RH bottom line	12.3C 12.3%	320	320	50	95
ECON-IC-TRH-12	120mm for Temp right side 120mm for RH left side	12.3C 12.3%	160	640	50	95

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Technical Specifications	
VOLTAGE	230 VAC 1 PHASE MAIN POWER
OPERATING TEMP	5 TO 55'C
STORAGE TEMP	0 TO 65'C
RELATIVE HUMIDITY	UPTO 95% RH NON CONDENSING
DISPLAY	FULL MATRIX
LED COLOUR	RED
CHARACTERS TABLE	ASCII CHAR. (CODE 30H TO 5 FH)
PROTOCOL	FULL DUPLEX, ASCII CODED,STX-ETX
INTERFACE BY	TEMPERATURE & HUMIDITY SENSOR DHT22 DIGITAL SIGNAL VIA SINGLE BUS
RANGE SETTING	RS232/485 COMMUNICATION TX-RX-GND
DATA TRANSFER RATE	9600 BAUD (8,n,1)
SETUP PARAMETERS STORAGE	IN AN EEPROM - NON VOLATILE MEM
SENSING ELEMENT	POLYMER CAPACITOR
OPERATING RANGE	HUMIDITY 0-100% RH TEMPERATURE -40~80 CELSIUS
ACCURACY	HUMIDITY +-2% RH(Max +-5%RH) TEMPERATURE <+-0.5 CELSIUS
RESOLUTION	HUMIDITY 0.1% RH TEMPERATURE 0.1 CELSIUS
REPEATABILITY	HUMIDITY 1% RH TEMPERATURE 0.2 CELSIUS
LONG TERM STABILITY	+0.5%RH/year
SENSING PERIOD	AVERAGE: 2s
ACCESSORIES	POWER CABLE 1 METER/RS232 CABLE

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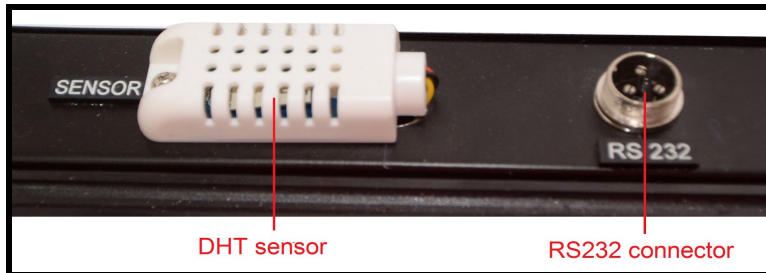
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Electrical Connections.

The display panel can be simply installed on a wall using the brackets provided at the back side.

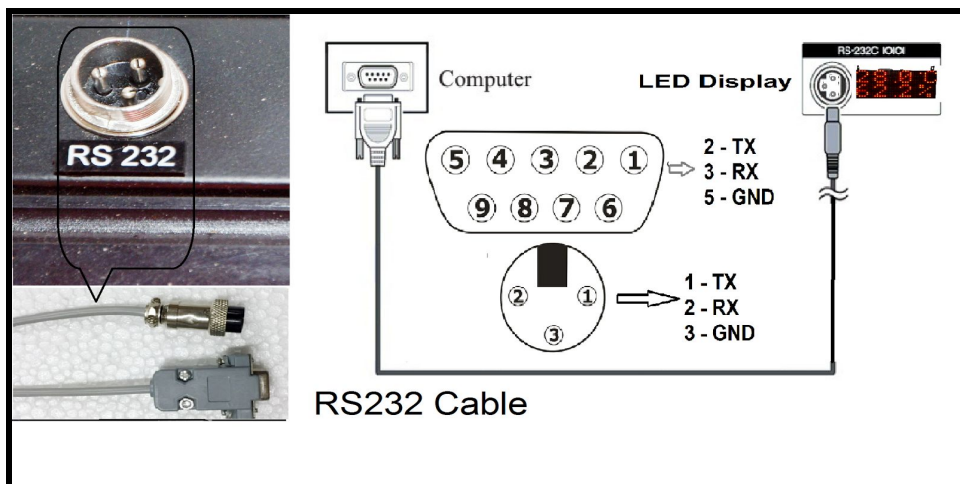
After installation Power up the unit.

Temperature and Humidity will be displayed as per model no.



Configuration Protocol. (For Logging - This feature is OPTIONAL and does not come with the default board.)

Connect the display with PC to calibrate and to change the log interval etc..



Connect the unit to serial port of computer through RS232 cable or connect the unit to computer through USB to serial adapter like USB to RS232 adapter or USB to RS485 adapter.

The RS232 / RS485 should be connected to the board and a terminal program like Hyperterminal, TeraTerm, putty or RealTerm should be used. The Board uses 9600 8,n,1 Setting.

In the terminal program

Set your communication port no,
Set Baud rate as 9600 Baud
Set Data as 8 Bit

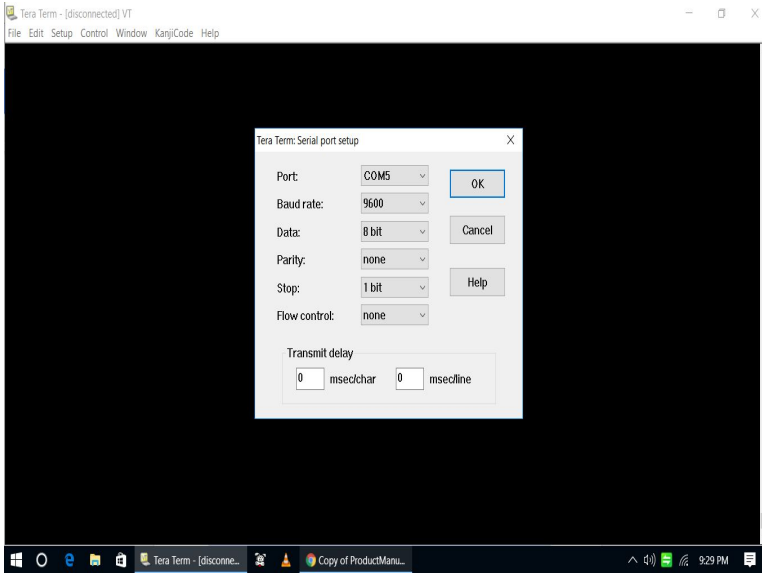
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Set Parity as none
Set Stop bit as 1 Bit



In the serial port Send the following packets for Setup.

Packet Format

Start of Packet SOP => [
End Of Packet EOP =>]

[ID Command Data CRC]

ID (2 chars) is the ID of the board default is 01

Command (1 char) is the command character which defines the function.

Data (n chars) is the data associated with the command.

CRC (2 chars) is the CRC for the data packet. To ignore CRC provide XX.

Command	Description	Example
Set Log Interval In Mins	This command sets the data logging interval in minutes	[ID ZL MM CRC] Ex: To set log interval 5min [01ZL05XX]
Dump Temperature Humidity Logs	This command dumps temperature and humidity data values in serial monitor .	[ID ZM CRC] Ex: [01ZMXX]

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Erase Temperature Humidity Logs.	This command erases temperature and humidity data values in serial monitor..	[ID ZN CRC] Ex: [01ZNXX]
Set DHT Read Interval	This command decides the data read interval in seconds from DHT sensor. The display will refresh the readings according to this set time interval.	[ID ZC DD CRC] Ex: For data read Interval 1 sec [01D01XX]
Set Brightness	This command is used to set the brightness of the led display. Where Brightness can be from 0-9.	[ID B N CRC] Ex: To set minimum brightness [01B1XX]
Advanced Commands (Do Not use without knowing what they do.)		
Set Temperature calibration adjust	This command is used to adjust the Temperature data calibration.	[ID ZI +DDD CRC] [ID ZI - DDD CRC] Ex: [01ZI123XX]
Set Humidity calibration adjust	This command is used to adjust the Humidity data calibration.	[ID ZJ +DDD CRC] [ID ZJ - DDD CRC] Ex: [01ZJ123XX]
CRC Calculation		
<p>The CRC is the ASCII Encoded HEX</p> <p>Ex: CRC is calculated by XORing all the characters from ID to end of data. STX character [is not included in the CRC.</p> <p>[01E2000.0169]</p> <pre>byte i, CalcCRC=0; for(i=1;i<PacketLen-2;i++) { CalcCRC = CalcCRC ^ InputText[i]; }</pre>		

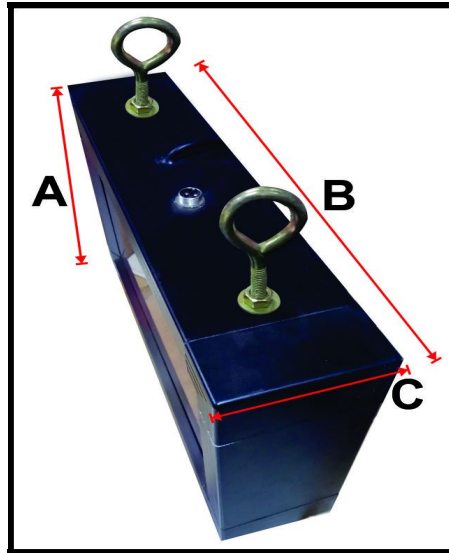
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Dimensions



All Units in mm

Model No	A	B	C
ECON-IC-T-11	250	410	93
ECON-IC-T-22	410	730	93
ECON-IC-RH-11	250	410	93
ECON-IC-RH-22	410	730	93
ECON-IC-TRH-11	250	410	93
ECON-IC-TRH-21	410	410	93
ECON-IC-TRH-12	250	730	93

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Heavy Duty Cabinet

- ❑ The Heavy Duty Cabinets make the LED board more durable and robust.
- ❑ The cabinets are made from extruded aluminium profiles and moulded corners for better appearance.
- ❑ The front filter used is Perspex / LEXAN ® sheets for UV and robust.
- ❑ The hanging hooks are also heavy and suited for mounting from your support structure.

Contact Information

No. 42, Mambalam High Road,
T. Nagar, Chennai - 600017,
Tamil Nadu, India

Phone : 91-44-28140111/222/333/444/555

Fax : 91-44-28140814

Email: sriram@factorydisplay.com, kamalco@gmail.com

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