

DN-109TH DN-119TH DN-129TH DN-189TH



Digits of 57, 100, 250 or 180mm in height.
Temperature and humidity display.
Probe protection: IP67
Temperature format: 23.4 °
Humidity format: H 56 %.
1 or 2 displaying sides.

Application field.

The DN-109TH/DN-119TH/DN-129TH/DN-189TH are large displays that can show the relative humidity and temperature of environmental, freezers and refrigerators, storage rooms,

The probe has IP67 protection.



Perfect visibility .

DN-109TH, DN-119TH, DN-129TH and DN-189TH have a very good visibility. Digits of DN-109TH are 57mm height, digits of DN-119TH are 100mm, digits of DN-129TH are 250mm and digits of DN-189TH are 180mm. These features makes them readable in almost any light environment from up to 25 and 120m.

Indoor displays will not be installed in places where the level of illumination is greater than 1000 lux.

If a protection degree IP65 is needed then it is available the models DN-119e(h)/TH and DN-189e(h)/TH .

Protection degree.

Protection IP41, for industrial environment .

Models DN-109e(h)/TH and DN-119e(h)/TH with IP-65 protection for per outdoor environment.

Probe characteristics.

Thermometer: Precision: $\pm 0,5^{\circ}\text{C}$ at 25°C .

Resolution: $0,1^{\circ}\text{C}$.

Temperature range: -20°C to 80°C

Hygrometer: Precision: $\pm 3,5\%$ between 30% and 70%

Resolution: 1%

Humidity range: 0% to 99%

Protection degree: IP67

GENERAL SPECIFICATIONS

	DN-109TH	DN-119TH	DN-129TH	DN-189TH
Numeric display Height	57mm	100mm	250mm	180mm
Visibility	30 meters	50 meters	120 meters	90 meters
Supply voltage	100VAC to 240VAC 50/60Hz . Option 24VCC			
Display sides	One or two			
Mesures	288x122x120	414x175x120	985x366x120	660x251x120
Housing	Rugged aluminum extrusion			
Protection degree	IP-41 or IP-65		IP-41	IP-41 or IP-65
Mounting	By lateral supports that allow assembly in the wall or suspended			
Functions	1- Temperature, 2- Humidity, 3- Temperature and humidity alternating			
Setting parameters	By pushbuttons			

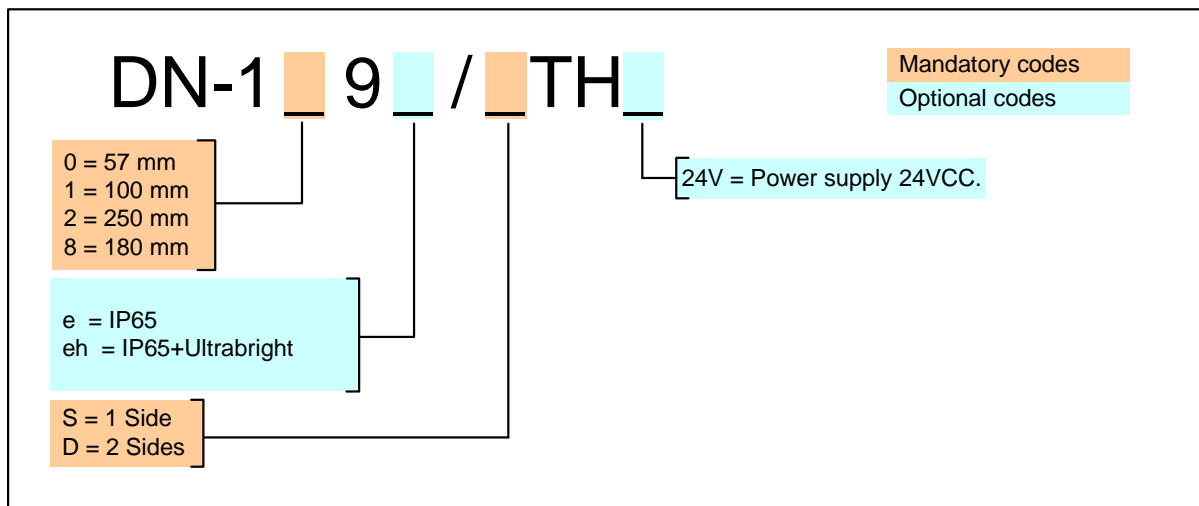
Specifications

Power supply	100VAC to 240VAC 50/60Hz . Option 24VCC
Case material	Aluminum extruded
Mounting	Wall or suspension
Display	Red led
Frontal	Methacrylate
Back	PVC
Operating temperature	0° a 50°C

Protection degree and luminosity

Protection degree	IP41	IP65	IP65
Luminosity	Indoor	Indoor	Outdoor
Models	DN-109/STH DN-109/DTH DN-119/STH DN-119/DTH DN-129/STH DN-129/DTH DN-189/STH DN-189/DTH	DN-109e/STH DN-109e/DTH DN-119e/STH DN-119e/DTH DN-189e/STH DN-189e/DTH	DN-119eh/STH DN-119eh/DTH DN-189eh/STH DN-189eh/DTH

Model referents



EXAMPLES:

DN-109/STH

Display DN-109TH , one side,
Protection degree IP41, power supply 220VAC.

DN-119eh/DTH24V

Display DN-119TH , two sides,
Protection degree IP65, ultra bright luminosity , power supply 24VCC



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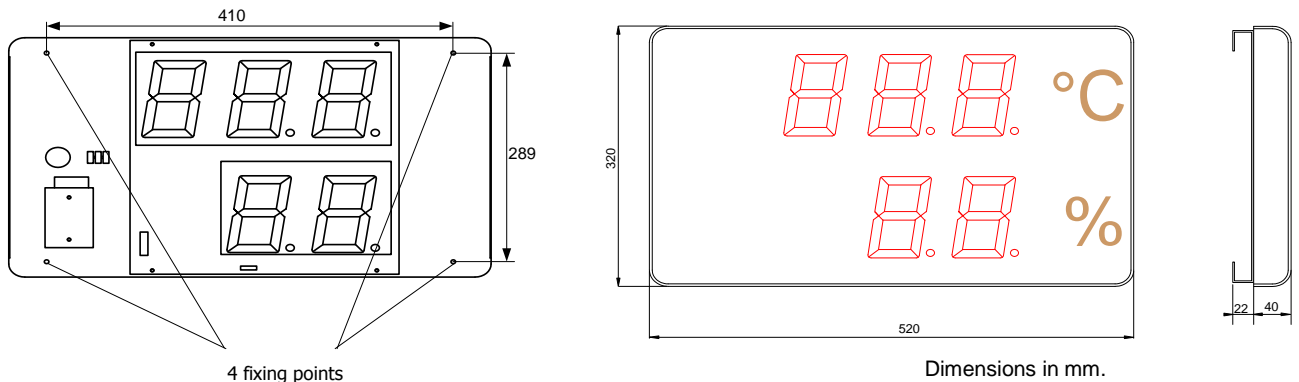
SUMMARIZED USER MANUAL DN-119/2TH

Temperature & Humidity Indicator

DN-119/2S(TH and R) indicator installation.

DN-119/2STH indicators can be hung on the wall in the two following ways:

1. **Suspended on the wall:** Drill two holes to suit two of the four wall plugs on the wall at a distance of 410mm between them. Insert two screws into the plugs leaving about 4mm of them out to hang on indicator through the upper zig-zag shape.
2. **Hung onto the wall:** Take the methacrylate front cover out. Dispose the four supplied wall plugs as shown in the figure below (left side). Insert first two screws into the upper plugs leaving about 4mm of them out. Hang on indicator through the upper zig-zag shape. Insert the other two screws into the lower plugs and screw all four until indicator gets well fitted. Place again the front cover.

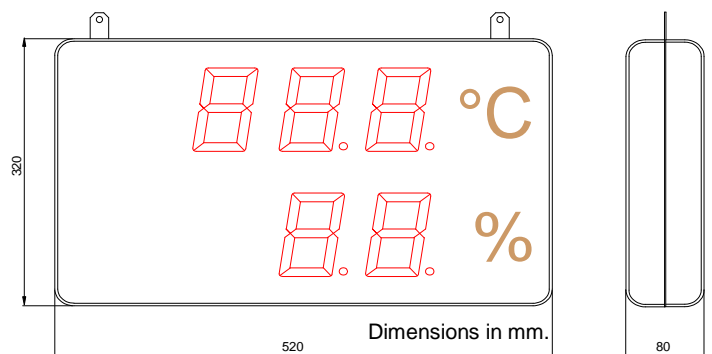


DN-119/2D(TH and R) indicator installation.

DN-119/2D(TH and R) indicators must be installed suspended by two provided fixing elements on the upper side of the case. Hanging systems as cables or chains can be used for this purpose.

Power supply and temperature sensor cables can be attached to one of the hanging elements to avoid them to be tensioned.

NEVER USE POWER SUPPLY OR SENSOR CABLE TO HANG THIS INDICATOR!



Power supply.

This unit can be powered from **100V AC to 240V AC, 50/60Hz**. It must be connected to a plug with a protective earth pin.

If it is necessary to install a power supply cable extension, it must be done using the strip connector provided on the inside of this unit.

In DN-119/2DTH models, power supply cables enter the unit through cable gland connectors.

Temperature & Humidity sensor installation.

Temperature & Humidity sensor is located inside a black nylon with a waterproof protective cap which allows air and moisture to pass through. Sensor connection is done through a cable gland connector. This sensor dispositive must not be manipulate in order to maintain IP65 sealing protection degree.

This sensor should be placed to a height of a 1.7m above floor level. Since this equipment is due to be installed in public areas, the protection of this sensor cable with a protective tube is strongly recommended.

The following points must be avoided during installation when placing the sensor:

1. Air drafts due to doors.
2. Placing sensor near heat and air conditioning outlets.
3. Placing sensor near product refrigerators.
4. Placing sensor on walls that receive harsh, direct sunlight.

DN-119/2TH and DN-119/2R INDICATORS AND SENSOR SPECIFICATIONS.

Power supply 100 VAC to 240 VAC 50/60Hz
Power consumption DN-119/2S(TH and R) 12 VA.
Power consumption DN-119/2D(TH and R) 24 VA

Display 7 segment digits of 100mm-High+Decimal point.
 Red, blue, white or green LED colour depending
 on model. 50m visibility.

Text Serigraphy: °C and %.

Environmental conditions Working temperature: 0°C to 50°C.
 Storage temperature: -10°C to 60°C
 Relative humidity: 5÷95% (non-condensing).
 Maximum ambient light: 1000 lux.
 Protection degree: IP41.

DN-119/2S(TH and R) weight .. 5kg.
DN-119/2D(TH and R) weight . 7kg.

Temperature sensor

Resolution: 0,1°C
 Accuracy: ±0,5° @ 25°C
 Response time: 20s
 Working temperature: -20°C to 80°C

Humidity sensor

Resolution: 1%
 Accuracy: ±3,5% @ 30%÷70%
 Response time: 4s

Environmental conditions

Sensor protection degree IP65

RS-485 serial option

Serie **DN-119/2THX** and **DN-119/2RX** indicators admit a RS-485 connection. This connection is done through a DB9 male connector present on the inside of the instrument. The figure on the right shows the corresponding wiring diagram.

RS-485 parameters can be modified through the 2 inside upper programming keys provided by the unit. Key description is the following:

Key 'Advance': « * » ; Key 'increase' « + »

Parameter 1. Indicator address:

Allows to set indicator address in a RS-485 network and can be configured from **0** up to **99**.

Parameter 2: Bit rate, data Bits, parity and stop Bits.

Serial RS-485 parameters are showed in the table. In parameter 2, code value indicated must be programmed according the number of stop Bits. Select '**01**' to '**18**' for one stop Bit and, '**19**' to '**36**' for two stop Bits.

Parameter 3: Sensor control and communication protocol.

This parameter performs two functions:

Left digit. Sensor control:

- 0 - Disables sensor data.
- 1 - Enables sensor data.

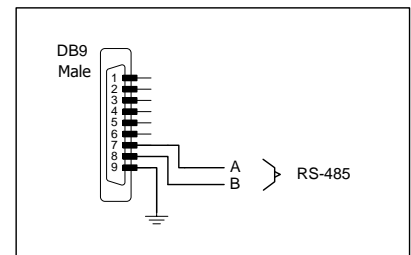
Right digit. Communication protocol:

The following protocols are available:

- 0 - ASCII. Very simple protocol that uses ASCII characters format.
- 1 - ModBus RTU-ASCII. Uses ModBus RTU protocol but, temperature and humidity data are codified in ASCII in the same data block.
- 2 - ModBus RTU-Word. Uses ModBus RTU-Word protocol. Temperature and humidity data are treated as independent words.

In case of instruments that receive data through serial port (**DN-119/2R**), sensor data must be disabled.

Parameter F: Exit parameters configuration: Select parameter F and then press « * » key.



Code		Bit rate	Data Bits	Parity
1 Stop Bit	2 Stop Bit			
01	19	4800Bd	7	None
02	20	9600Bd	7	None
03	21	19200Bd	7	None
04	22	4800Bd	8	None
05	23	9600Bd	8	None
06	24	19200Bd	8	None
07	25	4800Bd	7	Even
08	26	9600Bd	7	Even
09	27	19200Bd	7	Even
10	28	4800Bd	8	Even
11	29	9600Bd	8	Even
12	30	19200Bd	8	Even
13	31	4800Bd	7	Odd
14	32	9600Bd	7	Odd
15	33	19200Bd	7	Odd
16	34	4800Bd	8	Odd
17	35	9600Bd	8	Odd
18	36	19200Bd	8	Odd

Ethernet and Wifi Option

DN-119/2THNE and **DN-119/2RNE** indicators admit ethernet connection whereas DN-119/2THNW and DN-119/2RNW admit connection via Wifi.

Parameters can be modified through the 2 inside upper programming keys provided by the unit. Key description is the following:

Key 'Advance': « * » ; Key 'increase' « + »

Parameter 1: Instrument MAC address: To know instrument MAC address access to parameter 1 to visualize its last three values by pressing « * » key. First three values are always '**00-20-4A**'. The first value that appears corresponds to code MAC fourth position.

Parameter 2: Load IP configuration through serial port:

Serial port RS-232 and Hyperterminal soft application (or similar) must be used the first time that serial port is accessed.

Parameter 3: Communications protocol:

This parameter performs two functions:

Left digit. Sensor control:

- 0 - Disables sensor data.
- 1 - Enables sensor data.

Right digit. Communication protocol:

The following protocols are available:

- 0 - TCP/IP. Very simple protocol that uses ASCII characters format.
- 1 - ModBus TCP. Uses ModBus TCP protocol. Temperature and humidity data can be codified in ASCII or as an integer.

Parameter 4: Load default configuration in Ethernet or Wifi port.

To load communication port default values enter '**99**' and press « * » key. While parameters are loading '**99**' blinks on display.

Parameter F: Exit parameters configuration: Select parameter F and then press « * » key.

