

User manual

DES-200

Digital environmental parameters sensor



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1. GENERAL INFORMATION

1.1. WARRANTED INFORMATION

CEL-MAR Company gives a two-year warranty on the **DES-200 sensor**. The warranty does not cover damage caused from improper use, materials consumption or any unauthorized changes. If the product does not function in accordance with the instructions, will be repaired or replaced.

All warranty and no warranty repairs must be returned with paid transport and insuring to the **CEL-MAR Company**.

CEL-MAR Company under no circumstances won't be responsible for ensuing damage from improper using the product or as a result of random causes: the lightning discharge, the flood, the fire and the like.

CEL-MAR Company is not be held responsible for damages and loss including: loss of profits, loss of data, pecuniary losses ensuing from using or the impossibility of using this product.

In specific cases **CEL-MAR Company** discontinue all warranties and in particular do not follow the user manual and do not accept terms of warranty by the user.

1.2. GENERAL CONDITIONS FOR SAFE USE

The device should install in the safe and stable place, the connecting cable should be arranged this way isn't exposed to treading, catching or tear out from sensor

Do not put device on the wet surface.

Do not connect devices for nondescript powering sources,

Do not damage or crush powering wires.

Do not make connection with wet hands.

Do not adapt, open or make holes in casings of the device!

Do not immerse device in water or no other liquid.

Do not put the fire opened on device sources: candles, an oil lamps and the like.

1.3. ENVIRONMENTAL PRESERVATION



This sign on the device inform about putting expended device with other waste materials. Device should send to the recycling. (In accordance with the act about the Electronic Appliance Expended from day 29 of July 2005)

1.4. SERVICE AND CONSERVATION

It is recommended to check the status of cases and sensor connecting cables, to eliminate the effect of mechanical damage on the quality of measurement.

Technical support at the number: +48 41 362-12-46 in 8.00-16.00, from Monday to Friday

2. APPLICATION

DES-200 Sensor is designed for multi-point measurement system of environmental parameters:

- rooms with structured cabling,
 - automation cubicles,
 - data communication cubicles,
- via the serial 1-WIRE Bus.

Application of 1-Wire bus enables:

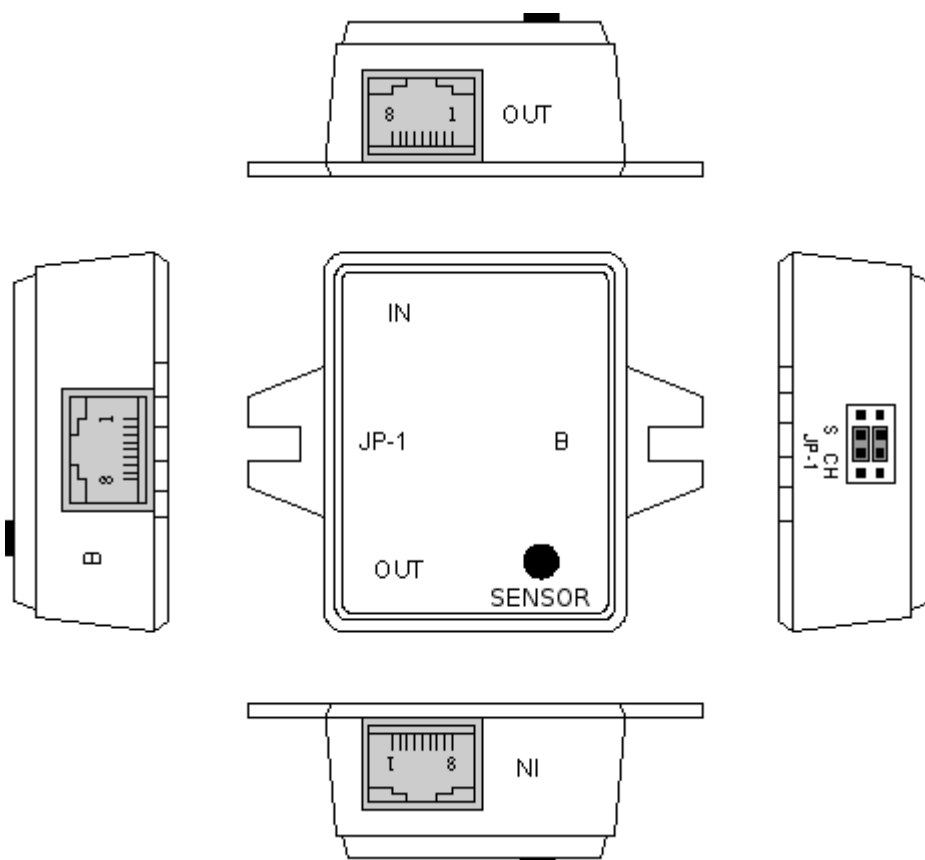
- the cooperation of many sensors connected to the same data lines,
- the deployment of sensors in various locations up to 260m,
- powering the sensors from the bus,
- guarantee the correct transmission of measurement data secure checksum CRC

3. COOPERATION WITH OTHER 1-WIRE DEVICES

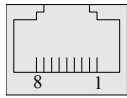
DES-200 sensor cooperates with 1-WIRE devices used for creation of monitoring and control systems for environmental parameters:

- ADA-401WP Thermosensor Module 1-WIRE to RS485-MODBUS,
- DNB-400 Passive 1-WIRE Bus Splitter,
- DNB-215 Passive 1-WIRE Bus Splitter,
- DNB-200 Passive 1-WIRE Bus Splitter,
- other 1-WIRE sensors eg. DTS-RJ45, DTS-103, DTS-107, DES-200, DES-215, DES-300.

4. SENSOR VIEW



5. SIGNALS LOCATION (FOR RJ45 PLUG)



Signals location of modular plug:

1. GND-R – GND return (cable RJ45/8WIRE – white-orange)
2. DQ-R – DQ return (cable RJ45/8WIRE - orange)
3. VDD – power supply +5VDC (cable RJ45/8WIRE - white-green)
4. DQ – data line (cable RJ45/8WIRE - blue)
5. GND – ground line (cable RJ45/8WIRE - white-blue)
6. NW – not use (cable RJ45/8WIRE - green)
7. NW - not use (cable RJ45/8WIRE - white-brown)
8. NW - not use (cable RJ45/8WIRE - brown)

6. JP-1 JUMPER SETTINGS

Setting of JP-1	Connection type	Topology
 S CH JP-1	Star connection	
 S CH JP-1	Chain connection	

8. VERSIONS

DES-200 -		-	
Sensor type:			
Temperature (-30°C ... +70°C)		T	
IN PREPARING - Relative humidity (0% ... 100%)		H	
IN PREPARING - Temperature and relative humidity (-30°C ... +70°C 0% ... 100%)		TH	
IN PREPARING - Atmospheric pressure (150hPa ... 1150hPa)		AP	
IN PREPARING - Temperature and atmospheric pressure (-30°C ... +70°C 150hPa ... 1150hPa)		TAP	
IN PREPARING - Sunlight (0% ... 100%)		SL	
IN PREPARING - Ambient light (0% ... 100%)		L	
Casing:			
For mounting with screws			1
For sticking			2

Order example:Product symbol: **DES-200-T-1**

T - Temperature sensor

1 - Casing for mounting with screws

9. SPECIFICATIONS

<i>Parameters</i>	<i>Data</i>
Temperature Sensor	
Measuring range	-30°C ... +70°C
Transducer	DS18B20
Measuring range of transducer	-55°C ... 125°C
Measuring accuracy of transducer	+/-0,5°C in scope -10°C...+85°C
Resolution transducer	12 bits (0,06°C)
Operating range	-30°C ... +70°C
(IN PREPARATION) Humidity Sensor	
Measuring range of relative humidity	0% ... 100% RH
Measuring accuracy of relative humidity	+/-3,50% RH
Operating temperature range	-30°C ... +70°C
(IN PREPARATION) Atmospheric Pressure Sensor	
Measuring range of atmospheric pressure	150 hPa ... 1150 hPa
Measuring accuracy of atmospheric pressure	+/-15 hPa
Operating temperature range	-30°C ... +70°C
(IN PREPARATION) Sunlight Sensor	
Measuring range of sunlight	---
Measuring accuracy of sunlight	---
Operating temperature range	-30°C ... +70°C
(IN PREPARATION) Ambient light Sensor	
Measuring range of ambient light	---
Measuring accuracy of ambient light	---
Operating temperature range	-30°C ... +70°C
General Parameters	
Supply voltage	from 1-WIRE Bus, VDD=5VDC

<i>Parameters</i>	<i>Data</i>
Max. power	10mW
Protection from reverse power polarization	YES Warning! for reverse powering, is shorted VDD to GND
Bus cabling	recommended UTP 4x2x0.5 AWG24 twisted cable
Casing	
Operating temperature	from -30°C to +70°C
Material	polystyrene
Protection degree	IP20
Dimensions	50,2 x 40,2 x 20,6 mm
Weight	0,02 kg
Storing and Transportation	
Storage temperature	-30°C ÷ +70°C
Humidity	5 ÷ 95% - non-condensing

Dear Customer,

Thank you for purchasing **CEL-MAR Company** products.

We hope that this user manual helped you to connect and start up the purchased device. We also wish to inform you that we are a manufacturer of: data transmission converters with interface RS232, RS485, RS422, USB, Current Loop, Fiber Optic Converters, 1-Wire, ETHERNET, Wi-Fi; digital sensors as: temperature, humidity, pressure, illumination; power supply

Please express your opinion by e-mail or phone on this product, and advise us how we can satisfy you present and future of expecting.

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