

User Manual

DTS-103

Digital Temperature Sensor



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1. GENERAL INFORMATION

Thank you for your purchase of **CEL-MAR Company** product. This product has been completely tested and is covered by a 2 years warranty.

If any questions or problems arise during installation or use of this product, please do not hesitate to contact Technical Support at +48 41 362-12-46 or e-mail support@cel-mar.pl.

1.1. WARRANTED INFORMATION

CEL-MAR Company gives 2 years warranty on the **DTS-103 sensor**. The warranty does not cover damage caused from improper use, materials consumption or any unauthorized changes. If the product does not function accordance with the instructions, will be repaired. 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 be installed in a safe and stable places, the connection cable should be arranged so as not to be exposed to trampling, attaching, or pulling out of the circuit.

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 MAINTENANCE

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

Technical support is available at number +48 41 362-12-46 in 8.00-16.00, from Monday to Friday or e-mail support@cel-mar.pl.

2. APPLICATION

DTS-103 sensor for remote multi-point measurement temperature:

- rooms,
- devices,
- automation cubicles,
- data communication cubicles,

and outside temperature via the serial bus 1-WIRE.

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 300m,
- powering the sensors from the bus,
- guarantee the correct transmission of measurement data secure checksum CRC

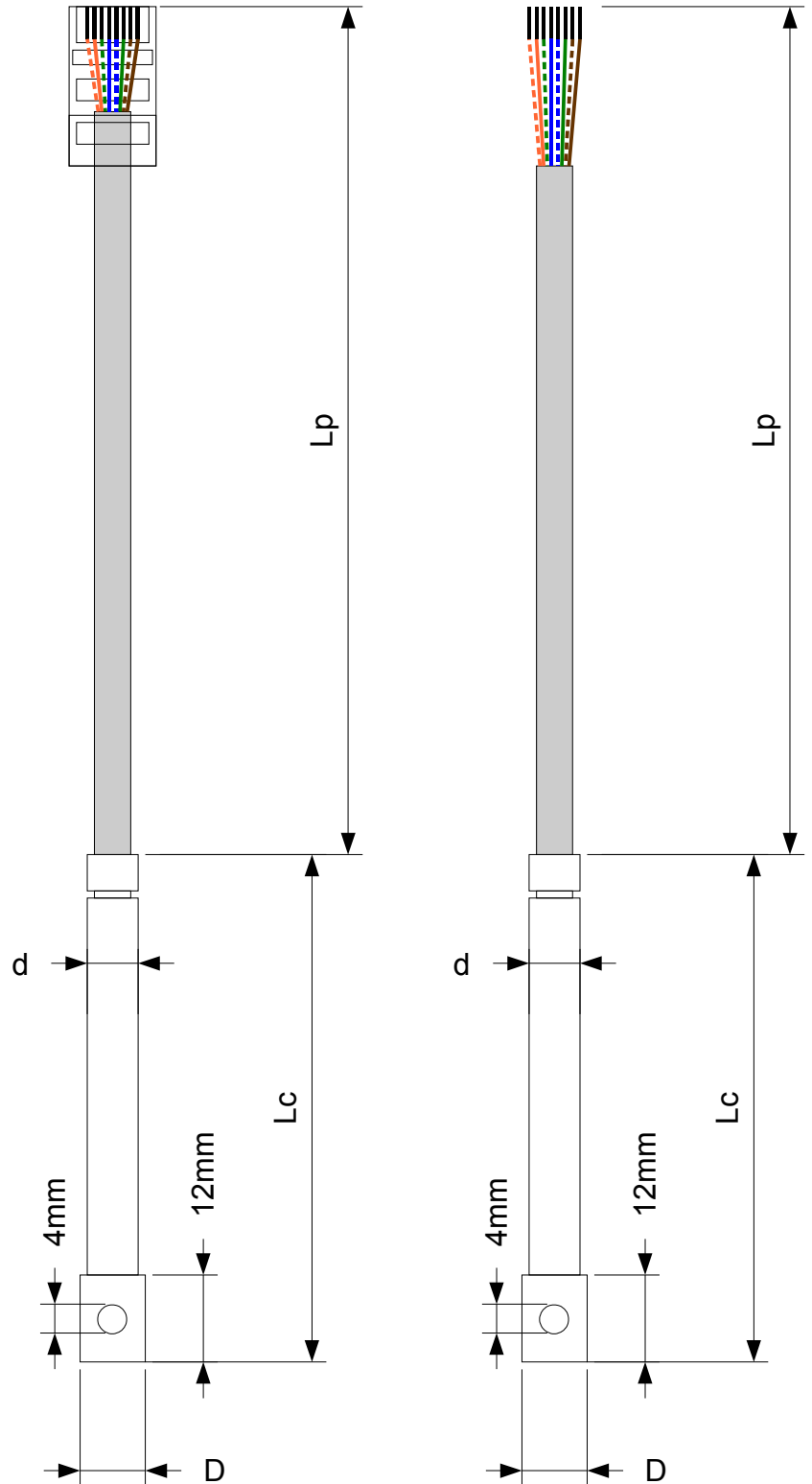
3. COOPERATION WITH OTHER 1-WIRE DEVICES

DTS-103 sensor cooperates with 1-WIRE devices used for creation of monitoring and control systems for environmental parameters:

- ADA-401WP Measuring Module 1-WIRE to MODBUS-RTU,
- 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. VERSIONS

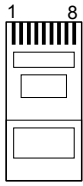
Position	Parameter	Value
A	External diameter of measuring part d [mm]	6 / 0 - without screw hole 6 / 4 - with screw hole 4mm
B	Length of measuring part Lc [mm]	70
C	Protection tube material	1 – brass 2 – stainless steel 1.4541
D	Cable length L [m]	1,5/2,0/2,5...
E	Cable	1 – PCV (-20°C...+85°C), 2 - Teflon-Silicon (-40°C...+200°C) 3 - Teflon-Teflon (-70°C...+260°C)
F	1-WIRE bus type connectors	1 – wires 2 – RJ45 plug
G	Connection type	E – final F – straight-through



5. ORDER EXAMPLE

DTS-103-6/4-70-1-1,5-1-1-F – sensor dimensions = 6mm with screw hole 4mm, length $L_c = 70$ mm, cover sensor with brass, cable length 1,5m, PCV cable, wires type connection, straight-through type of connection.

6. SIGNALS ON PINS OF RJ45 PLUG

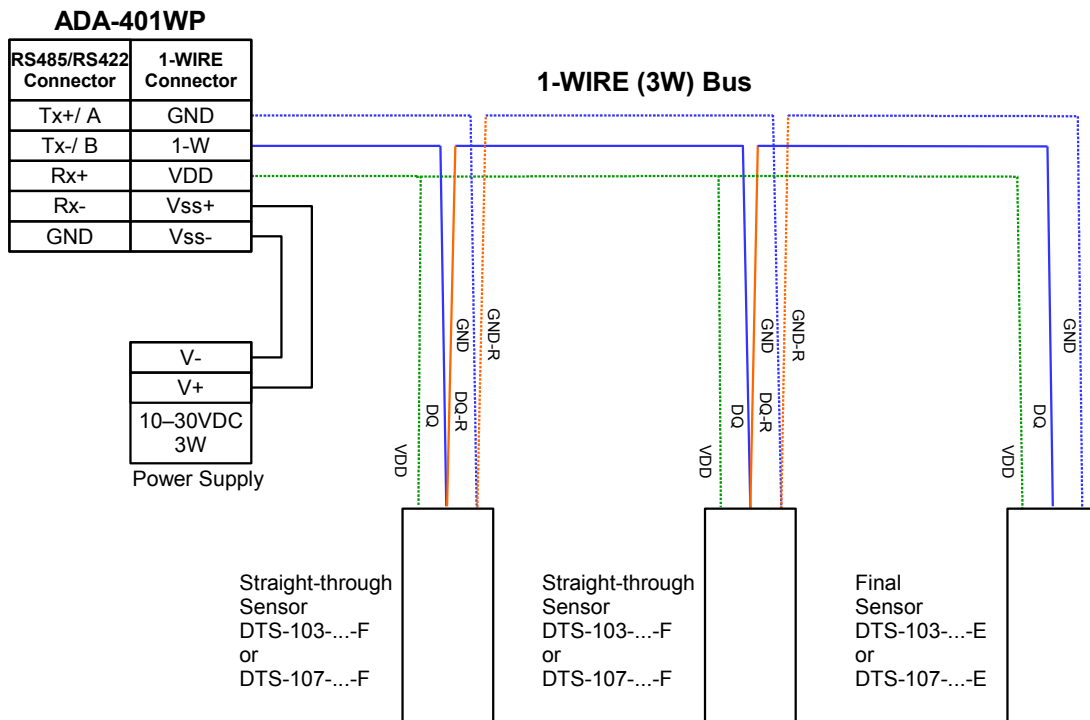


1. GND-R – GND return (RJ45/8WIRE cable – white-orange)
2. DQ-R – DQ return (RJ45/8WIRE cable - orange)
3. VDD – power +5VDC (RJ45/8WIRE cable - white-green)
4. DQ – Data line (RJ45/8WIRE cable - blue)
5. GND – Ground line (RJ45/8WIRE cable - white-blue)
6. NW - unused (RJ45/8WIRE cable - green)
7. NW - unused (RJ45/8WIRE cable - white-brown)
8. NW – unused (RJ45/8WIRE cable - brown)

7. SIGNALS ON THE WIRES

Signal	Signal description	Color of wire in UTP cable
GND-R	Ground line – return GND	white-orange
DQ-R	Data line – return DQ	orange
VDD	Power line +5VDC	white-green
DQ	Data line	blue
GND	Ground line	white-blue
NW	unused	green
NW	unused	white-brown
NW	unused	brown

8. EXAMPLE CONNECTION OF FINAL & STRAIGHT-THROUGH SENSOR TO 1-WIRE BUS



9. TECHNICAL DATA

<i>Parameters</i>	<i>Data</i>
Measuring range	from -55°C to +125°C (depend on cable and protection tube material)
Measuring accuracy	+/-0,5°C outside scope -10°C...+85°C
Resolution	12 bitów (0,06°C)
Transducer	DS18B20
Protection tube material	- stainless steel 1.4541, - brass
Cover protection degree	IP65

Dear Customer,

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

We hope that this User manual helped to connect and start the purchased equipment.

We also wish to remind you that CEL-MAR Company are a manufacturer of the widest selections of data communications products in the world in applications such as: data transmission converters in RS232, RS485, RS422, USB, Current Loop, Fibre-Optic and Ethernet Converters and many others.

We welcome your feedback so please contact us to tell how you like our products and how we can satisfy you present and future needs.

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