

User manual

ADA-DNB400T

Passive 1-WIRE Bus Splitter



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1. GENERAL INFORMATION

This product is manufactured by **CEL-MAR Company** and has been thoroughly checked and tested.

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

ADA-DNB400T splitter is covered by a two year warranty from date of sale. In case of being damaged, it will be repair or the damaged component will be replace. The warranty does not cover damage caused from improper use, materials consumption or any unauthorized changes. If the product does not function (is damaged), or not operate 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 be installed in a safe and stable places, the connecting cables 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. CE LABEL

The CE symbol on the device means compatibility with Electromagnetic Compatibility Directive **EMC 2014/30/WE**. Declaration of Conformity is delivered with purchased device.



1.4. 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)

1.5. SERVICE AND MAINTENANCE

It is recommended to check the condition of modular sockets and the sensors connecting cables, to eliminate the influence 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

1.6. PACK CONTENTS

ADA-DNB400T 1-WIRE splitter, user manual, CE declaration.

2. PROPERTIES

- Support 1-WIRE bus of 2-wire (2W) and 3-wire (3W),
- Separation of 1-Wire bus for 7 branches, with the total length should not exceed 300m for the 64 sensors,
- Signalling of voltage VDD (green LED) 1-WIRE network 3-wire,
- Signalling of voltage VCC (red LED) - additional 12VDC voltage to power the sensors DES-300, DES-216,
- Connection 1-WIRE network via plug-in screw terminal block,
- Cover adapt to rail mounting according to TS35 (DIN35) standard,
- Cover dimensions (W x D x H) 88mm x 58mm x 90 mm.

3. DESCRIPTION

ADA-DNB400T Splitter is used to for changing the 1-WIRE bus topology from lineal (chain type) to star type. **ADA-DNB400T** allows connection of digital sensors like: DS-18B20, DES-300, DES-215, DES-200, DTS-103, DTS-107; to multipoint measurement temperature system, based on ADA-401WP module in:

- in silos to connect temperature measurement probes,
- places with structured cabling,
- automation cubicles,
- data communication cubicles,
- devices

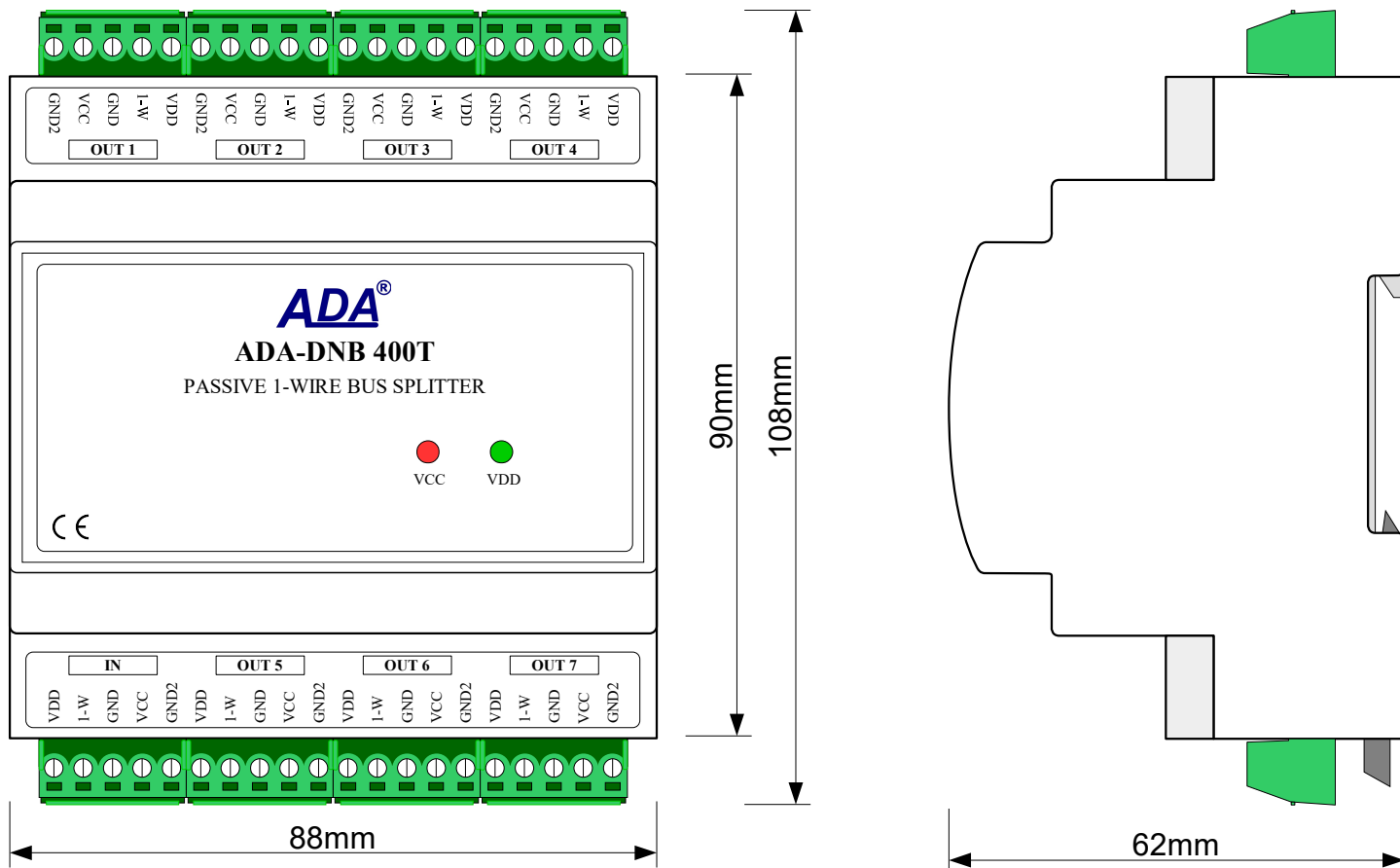
and outside temperature via the serial bus 1-WIRE.

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

4. ADA-DNB400T VIEW

Below drawing present ADA-DNB400T splitter of 1-WIRE network with input port IN and 7 output ports OUT.



5. SIGNALS ON PINS IN & OUT CONNECTORS

Symbol	Description
VDD	+5VDC power of 1-WIRE network Load current max. 500mA.
1-W	Data line (DQ) 1-WIRE network
GND	Signal ground of 1-WIRE network
VCC	Additional voltage +12VDC for powering sensors DES-300, DES-216. Load current max. 500mA.
GND2	Power ground of VCC voltage

6. INSTALLATION

This chapter will show how to use and connect ADA-DNB400T splitter to 1-WIRE network and power supply.

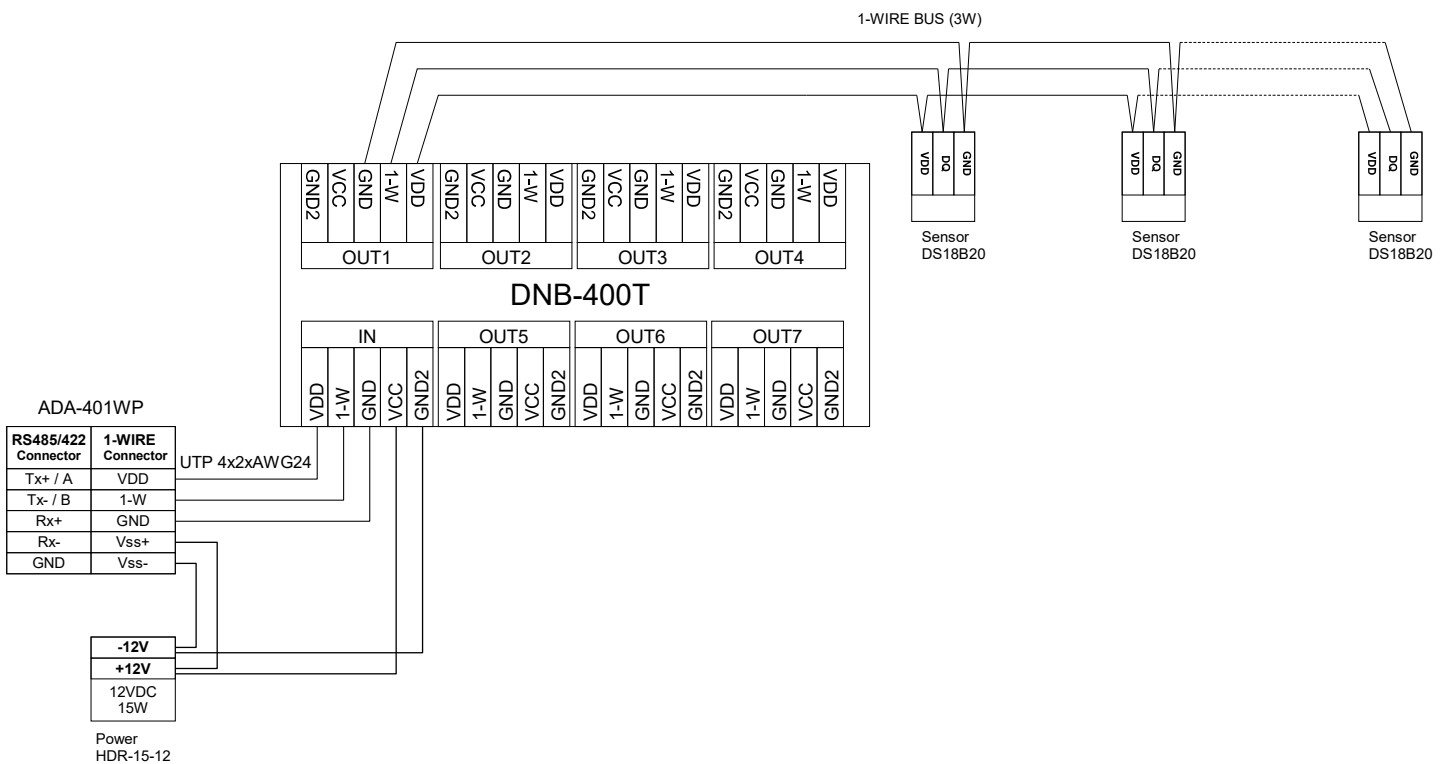
In the purpose of minimization of disruptions from environment is being recommended to:

- apply multipair type shielded cables, which shield can be connected to the earthing on one end of the cable,
- arrange signal cables in the distance not shorter than 25 cm from powering cables.
- apply cable of adequate cross-section due to voltage drops for converter powering,
- use suppression filters for powering converters that are installed within a single object.
- not supply converter from power circuit device that generates large impulse interference such as transmitters, contactors.

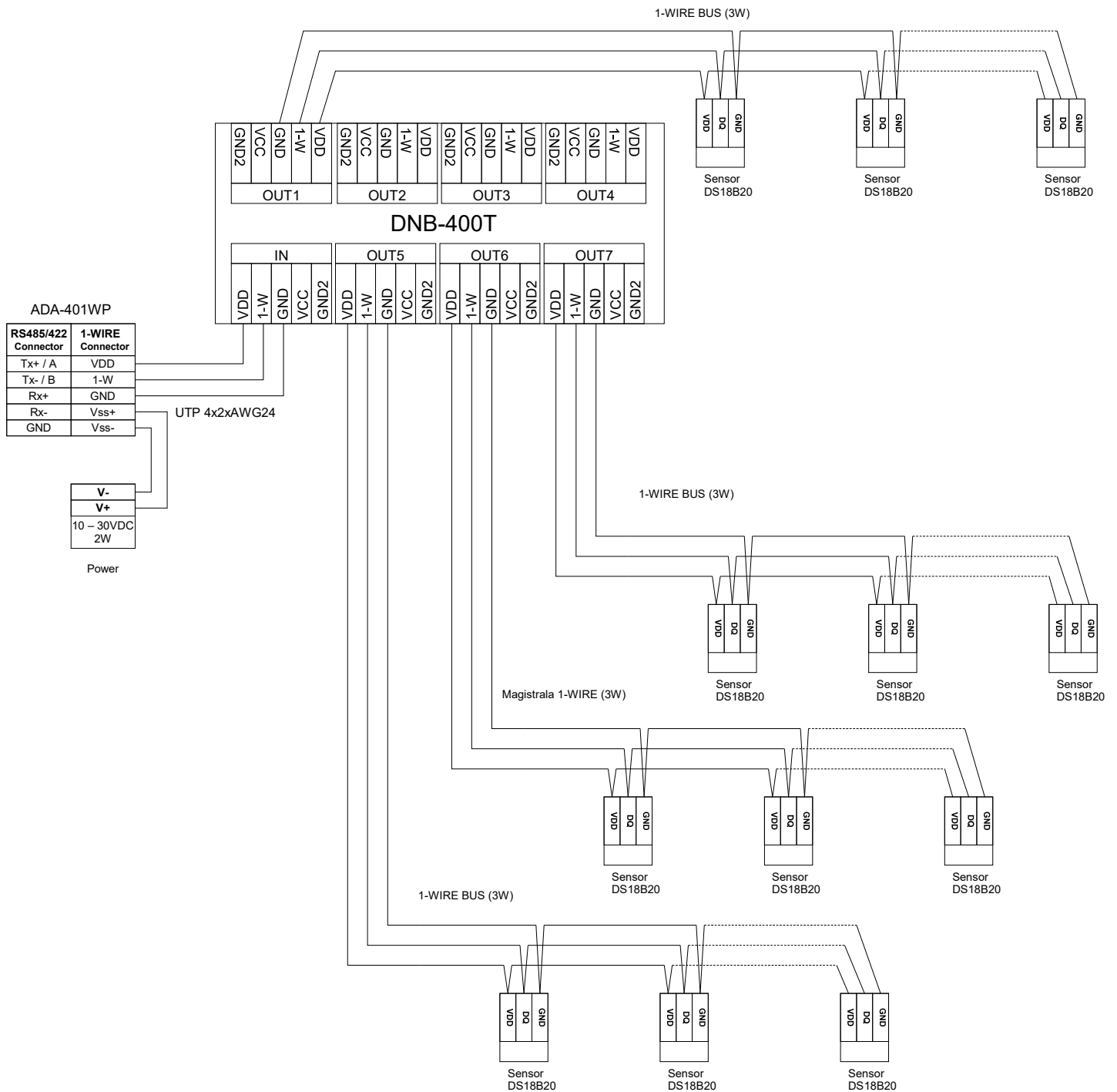
6.1. ASSEMBLING

The cover of ADA-DNB400T is adapted to assembly on TS-35 (DIN35) rail. To install the converter, should be mounted on the rail upper part of the cover, then press bottom part to hear characteristic „Click” sound.

6.2. ADA-401WP MODULE CONNECTION & ADDITIONAL VCC POWER



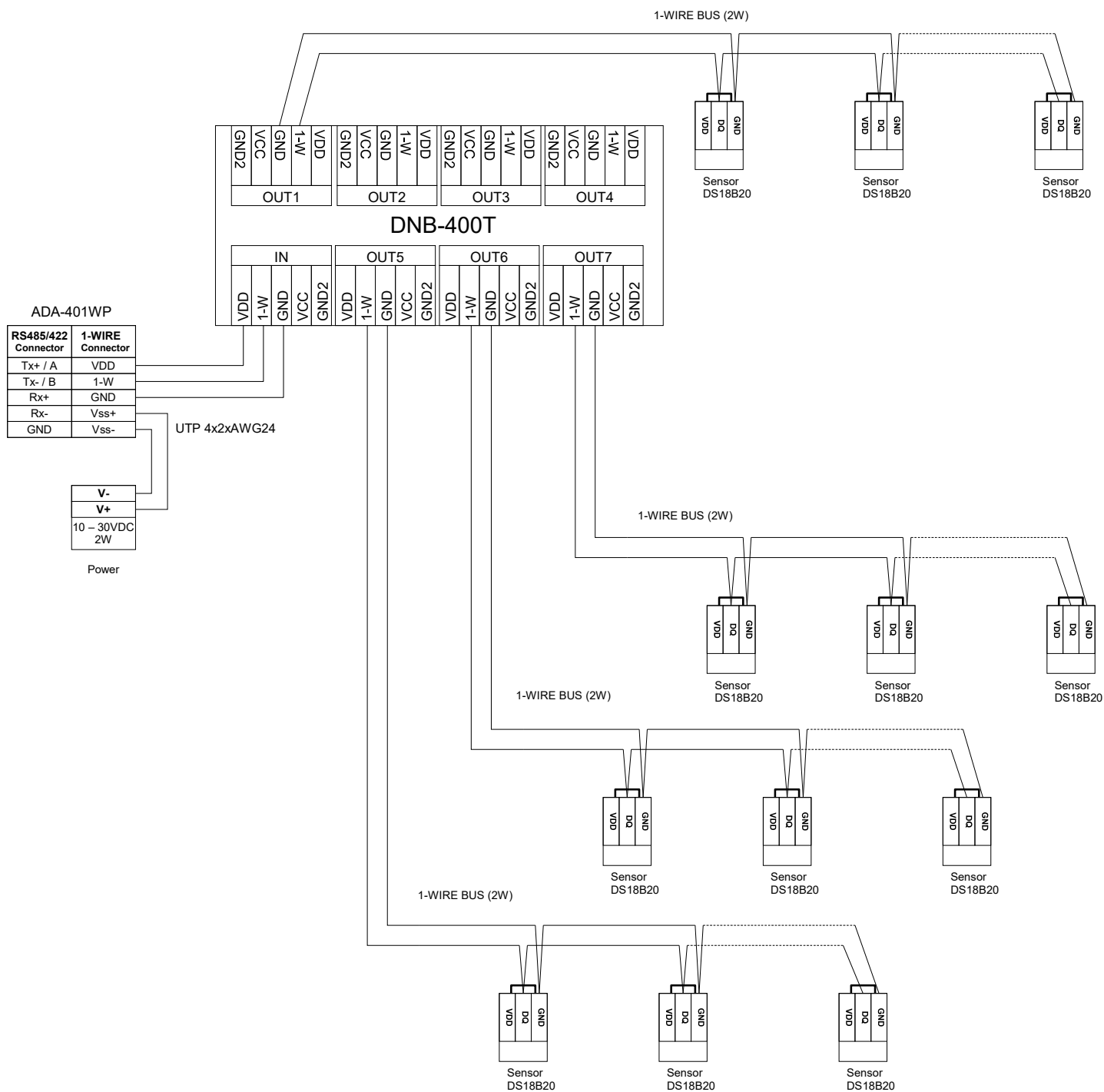
6.3. CONNECTION OF 1-WIRE NETWORK, 3-WIRE



ATTENTION!!

It is recommended that the bus with DS18B20 sensors was always connected to the OUT1 port. It will provide stable communication on 1-WIRE network.

6.4. CONNECTION OF 1-WIRE NETWORK, 2-WIRE



ATTENTION!!

It is recommended that the bus with DS18B20 sensors was always connected to the OUT1 port. It will provide stable communication on 1-WIRE network.

7. SPECIFICATION

TECHNICAL DATE	
Transition Parameters	
Interface	1-WIRE
Connector	Screw terminal, wire max. Ø 1,5mm ²
Line length	Up to 300 m depend on topology of 1-WIRE network and cables used
Baud rates (bps)	standard: do 16,3 kbps,
Transmission line	For Home & Office recommend: Twisted cable 1-pair or 2-pair, UTP Nx2x0,5 (24AWG), shield inside large interferences STP Nx2x0,5(24AWG)
Standards	1-WIRE
Electrical Parameters	
Power voltage VDD	5VDC
Circuit Load VDD	500mA
Power voltage VCC	12VDC
Circuit Load VCC	500mA
Optical signalisation	• VDD – green LED power 5VDC, • VCC – red LED additional power 12VDC
Electromagnetic compatibility	Resistance it disruptions according it the standard PN-EN 55024. Emission of disruptions according it the standard PN-EN 55022.
Safety requiring	According it the PN-EN 60950 norms.
Environment	Commercial and light industrial.
Environmental Parameters	
Operating temperature	-30 ÷ 60°C
Humidity	5 ÷ 95% - non-condensing
Storage temperature	-40 ÷ 70 °C
Casing	
Dimensions	88 mm x 58 mm x 90 mm
Material	ABS
Degree of casing protection	IP40
Weight	0,20 kg
According is a standard	DIN EN50022, DIN EN43880
Position during operation	Free
Mounting	Rail mounting according it is DIN35 standard / TS35.

Dear Customer,

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

We hope that this user manual helped connect and start up the device. 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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