

User Guide

5-fold distribution module for 1-Wire Temperature Sensors 1-Wire Extension 5

Features

- Distributor for 1-Wire Temperature sensors with RJ12 connectors
- 5 outputs for temperature sensors
- Housing for wall mounting
- Connection via screw plug connector
- Improvement of the signal quality through additional electronics

Typical areas of application

- Temperature monitoring of heat storage tanks
- Heating control, building management system and air conditioning
- Monitoring of frozen goods
- Quality assurance
- laboratory equipment, scientific devices
- Industrial temperature measurement



Illustration similar ,module without LED displays

1 Introduction

Before you start to install the 1-Wire Extension 5 and put the device into operation, please read this manual carefully until the end, especially the section of the safety instructions.

2 Product Description

The 1-Wire Extension 5 is designed as local distributor for 1-Wire temperature sensors with RJ12 connector. In combination with the different cable lengths of the temperature sensors a simple and fast cabling of up to 5 temperature sensors is possible, e.g. in the area of a heating system or industrial plant.

The design of the outputs with RJ12 sockets eliminates errors compared to distributors with clamp connections or "luster terminals".

The cable temperature sensors and the 1-Wire Extension 5 form a coordinated cabling system.

As further system components for the 1-Wire network, we recommend the use of a [1-Wire Hub II](#) as power supply, [1-Wire bus coupler](#) or [1-Wire Controller 1](#) as coupling to the control computer.

No software is required for this module.

7 1-Wire Network

For short connection lengths, no special requirements are placed on the cable used. With unshielded cable, a longer connection length can be achieved in an undisturbed environment, since the capacitive bus load is lower. A total length of 60 m should be achievable without additional measures.

In a disturbed environment, the cable should be shielded (e.g. CAT5 cable) to improve the interference sensitivity of the system. Due to the higher capacitive load, the maximum possible connection length is reduced.

The special feature of the wiring of the sensors is the "BUS technology": All sensors are operated in parallel on a three- or four-core cable, which is used for power supply and data communication.

Note: You can find basic information and tips on the 1-Wire bus system on the ESERA website at <https://www.esera.de/1-wire-grundlagen/>

8 Operating conditions

The module may only be operated at the voltages and ambient conditions specified for it. The device can be operated in any position. The device is intended for use in dry and dust-free rooms.

If condensation forms, wait at least 2 hours for the device to acclimatize.

The modules may only be put into operation under the supervision of a qualified electrician.

In commercial facilities, the accident prevention regulations of the Association of Commercial Employer's Liability Insurance Associations for electrical systems and equipment must be observed.

Do not operate the module in an environment in which flammable gases, vapors or dusts are or may be present.

9 Disposal note

Do not dispose of the device in household waste! Electronic devices must be disposed of according to the directive on waste electrical and electronic equipment on local collection points for electronic waste must be disposed of!



10 Safety instructions

When using products that come into contact with electrical voltage, the valid VDE regulations must be observed, especially VDE 0100, VDE 0550/0551, VDE 0700, VDE 0711 and VDE 0860

- All final or wiring work must be carried out with the power turned off.
- Before opening the device, always unplug or make sure that the unit is disconnected from the mains.
- Components, modules or devices may only be put into service if they are mounted in a contact proof housing. During installation they must not have power applied.
- Tools may only be used on devices, components or assemblies when it is certain that the devices are disconnected from the power supply and electrical charges stored in the components inside the device have been discharged.
- Live cables or wires to which the device or an assembly is connected, must always be tested for insulation faults or breaks.
- If an error is detected in the supply line, the device must be immediately taken out of operation until the faulty cable has been replaced.
- When using components or modules it is absolutely necessary to comply with the requirements set out in the accompanying description specifications for electrical quantities.
- If the available description is not clear to the non-commercial end-user what the applicable electrical characteristics for a part or assembly are, how to connect an external circuit, which external components or additional devices can be connected or which values these external components may have, a qualified electrician must be consulted.
- It must be examined generally before the commissioning of a device, whether this device or module is basically suitable for the application in which it is to be used.
- In case of doubt, consultation with experts or the manufacturer of the components used is absolutely necessary.
- For operational and connection errors outside of our control, we assume no liability of any kind for any resulting damage.
- Kits should be returned without their housing when not functional with an exact error description and the accompanying instructions. Without an error description it is not possible to repair. For time-consuming assembly or disassembly of cases charges will be invoiced.
- During installation and handling of components which later have mains potential on their parts, the relevant VDE regulations must be observed.
- Devices that are to be operated at a voltage greater than 35 VDC / 12mA, may only be connected by a qualified electrician and put into operation.
- Commissioning may only be realized if the circuit is built into a contact proof housing.

- If measurements with an open housing are unavoidable, for safety reasons an isolating transformer must be installed upstream or a suitable power supply can be used.
- After installing the required tests according to DGUV / regulation 3 (German statutory accident insurance, https://en.wikipedia.org/wiki/German_Statutory_Accident_Insurance) must be carried out.

11 Warranty

ESERA GmbH guarantees that the goods sold at the time of transfer of risk to be free from material and workmanship defects and have the contractually assured characteristics. The statutory warranty period of two years begins from date of invoice. The warranty does not extend to the normal operational wear and normal wear and tear. Customer claims for damages, for example, for non-performance, fault in contracting, breach of secondary contractual obligations, consequential damages, damages resulting from unauthorized usage and other legal grounds are excluded. Excepting to this, ESERA GmbH accepts liability for the absence of a guaranteed quality resulting from intent or gross negligence. Claims made under the Product Liability Act are not affected.

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