

## User Guide

### Distribution Module for 1-Wire Bus system

### 1-Wire Extender 2

#### Performance characteristics

- Distributor for 1-Wire temperature sensors with RJ12 connectors
- 6 connections for cable temperature sensors
- Housing for DIN rail mounting
- Connection via Push In terminal or RJ45 modular socket
- LED display for 5V voltage

#### Typical fields of application

- Temperature monitoring of heat storage tanks
- Heating control, building control systems and air conditioning systems
- Quality assurance
- Laboratory equipment, scientific equipment
- Industrial temperature measurement



## 1 Introduction

Before you begin mounting the 1-Wire Extender 2 and putting the device into operation, read these Operating Instructions carefully until the end, especially the section referring to the Safety Instructions.

## 2 Product description

The 1-Wire Extender 2 is intended as a distributor for ESERA 1-Wire cable temperature sensors with RJ12 connector. The 1-Wire Extender 2 greatly accelerates and extremely simplifies the installation and wiring of cable temperature sensors. The 1-Wire Extender 2 can be used, for example, in the area of a heating system to measure flow and return flow temperatures and domestic hot water temperature.

Suitable cable temperature sensors for this distributor:

Article numbers 11106, 11107 and 11119.

By connecting the 1-wire cable temperature sensors via RJ12 connectors, wiring errors due to terminal connections or "luster terminals" are eliminated.

The cable temperature sensors and the 1-Wire Extender 2 form a coordinated cabling system.

For coupling to control systems, we recommend the use of an ESERA 1-Wire Controller. This simplifies the software connection enormously due to the many automatic functions.

No software is required for this module.

### 3 Technical data

Output: 6 x RJ12 sockets, connected in parallel (5V, GND and Data)  
Input: Push In terminal and 1x RJ45 socket, connected in parallel (12V, 5V, GND and Data)  
Display: LED for 5 V voltage  
Operating voltage: 5 V= (+/-10%) for RJ12 jacks  
Current consumption: approx. 2 mA  
Protection circuits: Overvoltage protection (5 V line), ESD and reverse polarity protection

Temperature, operation: 0°C to +50°C  
Humidity: 10 - 92% (non-condensing)  
Dimensions: Housing 112x41x 35 (LxWxH)  
Protection class: III  
Housing protection type: IP0

### 4 Conformity

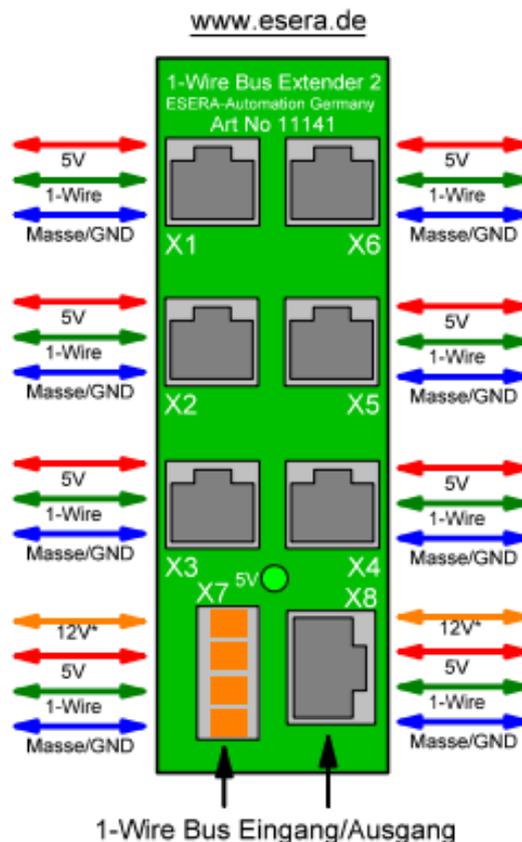
EN 50090-2-2  
EN 61000-4-2, ESD  
EN 61000-4-3, HF  
EN 61000-4-4, Burst  
EN 61000-4-5, Surge  
EN 61000-6-1, Fault-free operation  
EN 61000-6-3, Stray radiation  
RoHS

### 5 Connection 1-Wire network (input/output)

The Push In terminal (X7, screwless terminal) and the RJ45 modular socket (X8) are connected in parallel. This allows the input signal to be added via one of the two connectors. It is also possible to use the two connectors (X7 and X8) as adapters from network cables to single cables.

The 12V connection is only provided between the two connectors X7 and X8.

### 6 Connection plan



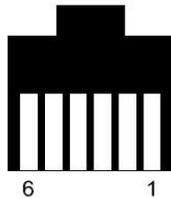
### 7 Assignment RJ12 socket (output)

The distribution module has 6 RJ12 sockets connected in parallel for connecting ESERA 1-Wire cable temperature sensors. For other cable sensors, be sure to observe the assignment.

Socket Assignment:

1	not connected
2	Ground
3	1-Wire Data
4	1-Wire Data
5	+5 V
6	not connected

RJ-12 Buchse



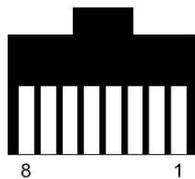
### 8 Assignment RJ45 socket (input/output)

The Push In terminal and the RJ45 socket are connected in parallel, which means that both connections can be used equally.

Socket Assignment:

1	GND
2	+5V
3	GND
4	1-Wire Data
5	GND
6	not connected
7	+12V
8	GND

RJ-45 Buchse



### 9 1-Wire Network

Further information on system cabling and topology can be found in our documentation "Basics, Tips and Background Information" in the shop at <https://www.esera.de/1-wire-Grundlagen/>

### 10 Operating conditions

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

If condensation is formed, allow at least 2 hours for the unit to acclimatize.

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

The accident prevention regulations of the "Verband der gewerblichen Berufsgenossenschaften für elektrische Anlagen und Betriebsmittel" must be observed in commercial facilities.

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

### 11 Disposal note

Do not dispose of the device within the household waste!

According to the directive concerning old electrical and electronic appliances, electronic devices must be disposed of via the collecting points for old electronic appliances!



### 12 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](https://en.wikipedia.org/wiki/German_Statutory_Accident_Insurance)) must be carried out.

### 13 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.

If defects occur for which the ESERA GmbH is responsible, and in the case of replacement goods, the replacement is faulty, the buyer has the right to have the original purchase price refunded or a reduction of the purchase price.

ESERA GmbH accepts liability neither for the constant and uninterrupted availability of the ESERA GmbH or for technical or electronic errors in the online offer.

We are constantly developing our products further and reserve the right to make changes and improvements to any of the products described in this documentation without prior notice. Should you require documents or information on older versions, please contact us by e-mail at [info@esera.de](mailto:info@esera.de).

### 14 Trademarks

All mentioned designations, logos, names and trademarks (including those which are not explicitly marked) are trademarks, registered trademarks or other copyright or trademarks or titles or legally protected designations of their respective owners and are hereby expressly recognized as such by us. The mention of these designations, logos, names and trademarks is made for identification purposes only and does not represent a claim of any kind on the part of ESERA GmbH on these designations, logos, names and trademarks. Moreover, from their appearance on ESERA GmbH webpages it cannot be concluded that designations, logos, names and trademarks are free of commercial property rights. **ESERA and Auto-E-Connect are registered trademarks of ESERA GmbH.**

### 15 Contact

ESERA GmbH  
 Adelindastrasse 20  
 87600 Kaufbeuren  
 GERMANY  
 Tel.: +49 8341 999 80-0  
 Fax: +49 8341 999 80-10  
[www.esera.de](http://www.esera.de)  
[info@esera.de](mailto:info@esera.de)  
 WEEE-Number: DE30249510