Art. No. 12002

User Guide
eBus Coupler Ethernet

- eBus transceiver to read and write eBus data (physical layer OSI 1)
- Ethernet interface
- Galvanic separation for eBus and PC interface via optocoupler
- eBus input reverse polarity protection
- LED indicators for “Power”, “eBus Power” and “Activity”
- DIN rail housing for switchboard assembly
- Connection for eBus via screw terminals
- Easy switch cabinet installation
- Housing colour green

1 Introduction

Before you start assembling the eBus Coupler Ethernet and put the device into operation, please read this assembly and operating instructions carefully to the end, especially the section referring to the safety notes.

2 Product Description

With the eBus coupler Ethernet you may access the eBus in read and write mode via the network, so you may evaluate all data of your heating system with the according software and write new values to the heating bus.
The eBus coupler is equipped with a galvanic isolation between eBus and PC interface.
Due to the software filter, only the user data of the eBus are transmitted via the Ethernet. The filter ensures a significant reduction of the data volume.

The eBus input is bipolar, so you do not need to pay attention to the polarity of the eBus when connecting. The housing of the eBus coupler is designed for control cabinet installation.

As data interface to your PC, the eBus coupler is equipped with an Ethernet interface. A virtual serial interface (COM port) is available on the software side. Windows drivers are available on our website in the "Download" section.
On the front panel of the eBus coupler there is an LED display for "Power" and "Active". A green LED in the area of the eBus terminal indicates "eBus present".
An external power supply unit is required to operate the eBus coupler Ethernet; not included in the scope of delivery.
We recommend the use of one of our 12V or 24V DIN rail power supplies.

3 Technical Data

eBus Interface

Interface:	Transreceiver (read and write) for eBus conforming to the "eBus Specification, physical Layer OSI1 V1.3.1 last revised 3/2007, eBus Interest Group"
Data rate:	Serial, 2400 Baud, 8-bit UART mode (RS232, 2400, 8,N,1)
Switch threshold:	Adjustable via trimmer; adjustment range: 7-14V Low active bus: HIGH (1) => 15 - 24 VDC, LOW (0) => 9 - 12 VDC
Input / Connection:	2-pole, bipolar input (marking: A and B) Screw terminals (up to 2.5 mm² wire cross section)
Switch threshold:	12V, switch threshold for high-low recognition 12V
eBus voltage:	7-24 VDC, nominal 18V, power consumption max. 10 mA

Ethernet Interface

Connector:	RJ45, Fast Ethernet 10/100 MBit
Software interface:	Virtual serial port (VSP), UDP or TCP/IP
Isolation:	Galvanic isolation between PC- and eBus interface, min. 500VDC

4 Ambient conditions

Protection type:	IP20
Protection class:	III
Temperature,operation:	0°C to +60°C
Humidity:	10 to 92% (non-condensing)
Dimensions:	35 x 90 x 70 mm (WxHxD)

5 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, interference immunity
EN 61000-6-3, interference radiation
RoHS

6 Display LED

The module has various display LEDs. In the following the function of the displays:

Indicator	Designation	Function
LED PWR, green (front plate)	USB Power	Display for supply voltage, Bus coupler connected to PC
LED Data, green	Data	flashes during eBus activity lights up permanently when no eBus signal is connected
LED green in the clamping area	eBus Power	Power indicator for eBus connection

7 Calibration eBus Coupler (switching threshold)

The signal level of the eBus depends on various factors, such as line length, number and power consumption of the bus devices and can vary within a given range. To achieve high data recognition this eBus Coupler is equipped with an adjustable trimmer. This trimmer is recessed in the input terminal. Adjustments can be made by using the provided screwdriver.
For the adjustment we recommend an evaluation of the received data, e.g. via debug output window, (e.g. in IP-Symcon), or a terminal program. For adjustment, insert the screwdriver carefully into the opening in the connector panel with the number 8 and turn it to the left in small steps or to the right. The eBus coupler is correctly calibrated if the Sync characters "AA" in your evaluation software are correctly can be received. The "Data" LED on the front panel flashes when data is received and sent.

8 Software

Software for the VSP and for configuring the eBus Coupler is available for download at the download section on our webpage. We recommend using the latest versions. When the VSP service is fully installed, the eBus Coupler is available within your software as a serial bus coupler (COM port). Evaluation software is not included in the scope of delivery for this product.
In order to evaluate eBus data we recommend the IP-Symcon Forum (http://www.ip-symcon.de/wiki/EBus_Adapter) or the eBus Wicki page of eBus Friends (https://www.dokuwiki.org/dokuwiki#). We also recommend the eBus integration for FHEM (http://www.fhem.de) or the eBus service for Linux.

This eBus coupler is not supported by Vaillant vrDIALOG software. An example for reading eBus data (VWMon by Alexey Ozerov) can be found at http://baublog.ozerov.de/waermepumpe/vwmon-datenlogger-fuer-die-vaillant-waermepumpe/

9 Connection

Connection eBus

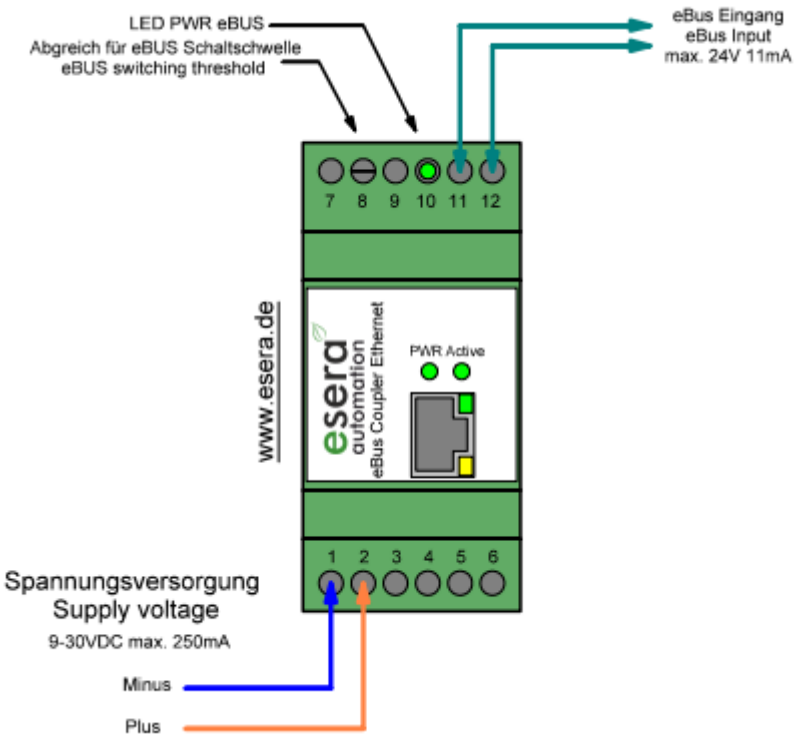
(Module top side)

7 = not connected
8 = Trimmer for signal level
9 9 = not connected
10 10 = LED indicator for eBus
11 = eBus
12 = eBus

Connection Input Power

(Module bottom side)

1 = Negative
2 = Positive
3 – 6 = not connected



10 Operating Conditions

The operation of the assembly group can take place only on condition of observing the required voltage and the ambient conditions. The operating position of the device is irrelevant. The device is meant to be used in dry or humid areas.
Should condensed water build up within the sensor, an acclimatization period of at least 2 hours must be met. The components can be operated only under the supervision of an electrically skilled person. Assembly groups and components do not belong into the hands of children
In industrial facilities, the accident prevention regulations of the federation of industrial professional associations for electrical installations and equipment must be observed. Do not operate the components in an environment with inflammable gases, vapors or dusts or in an environment where such gases, vapors or dusts may occur.

11 Assembly

The mounting place must be protected against moisture. The module may only be used in dry indoor rooms or in protected outside areas. The device is designed for fixed installation within a switching cabinet.

12 Disposal Note

Do not dispose this device in the household waste. Electronic devices must be disposed in accordance with directives for disposing of waste electrical and electronic equipment at local collection points for electronic waste material.

13 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 and 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 the device. 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.

14 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.
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