KBR
Energy Management

Operating instructions
Technical parameters

Interfaces for
KBR eBus, Modbus
and Modulbus

multisys D2-ESET/MSMT-4
multisys D2-BSET-4

System | english

In our download centre you will find the appropriate instructions for KBR devices.
https://www.kbr.de/en/download/operating instructions/

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Thank you for choosing a KBR quality product.

To familiarise yourself with the operation and programming of the appliance and to ensure that you can always use the full range of functions of this high-quality product, you should read these operating instructions carefully.

The individual chapters explain the technical details of the appliance and show how damage can be avoided through proper installation and commissioning.

Operating instructions

The operating instructions must be kept within easy reach of the user of the device (e.g. in the switch cabinet). Even if the device is resold to third parties, the operating instructions remain part of the device.

Should we have made any errors in the operating instructions despite taking the greatest care, or should something not be described clearly enough, we would like to thank you in advance for your suggestions.

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1 multisys D2-ESET/MSMT-4 and multisys D2-BSET-4 general

The multisys D2-ESET/MSMT-4 connects the KBR eBus to the PC via an Ethernet connection.

The transmission protocols are:
- KBR eBus
- Modbus

The two interfaces (RS-485 on the KBR eBus side and Ethernet on the network side) are electrically isolated.

The multisys D2-BSET-4 connects the KBR module bus to the PC via an Ethernet connection.

The two interfaces (RS-485 on the module bus side and Ethernet on the network side) are electrically isolated.

If necessary, the RS-485 interface on the KBR eBus or module bus side can be terminated using four DIP switches (terminating resistors are built into the multisys).
The device has a power LED to check the supply voltage).

The multisys D2-ESET/MSMT-4 and the multisys D2-BSET-4 have their own power supply (<10 VA; 100 VA).

power supply (<10 VA; 100 - 240 V ±10% DC/50/60 Hz) and is suitable for wall mounting on a standard rail 7.5 mm deep in accordance with DIN EN50022 (for distribution board installation) suitable.

NOTE

The Ethernet interface settings are identical for multisys D2-ESET/MSMT-4 and multisys D2-BSET-4 are identical.

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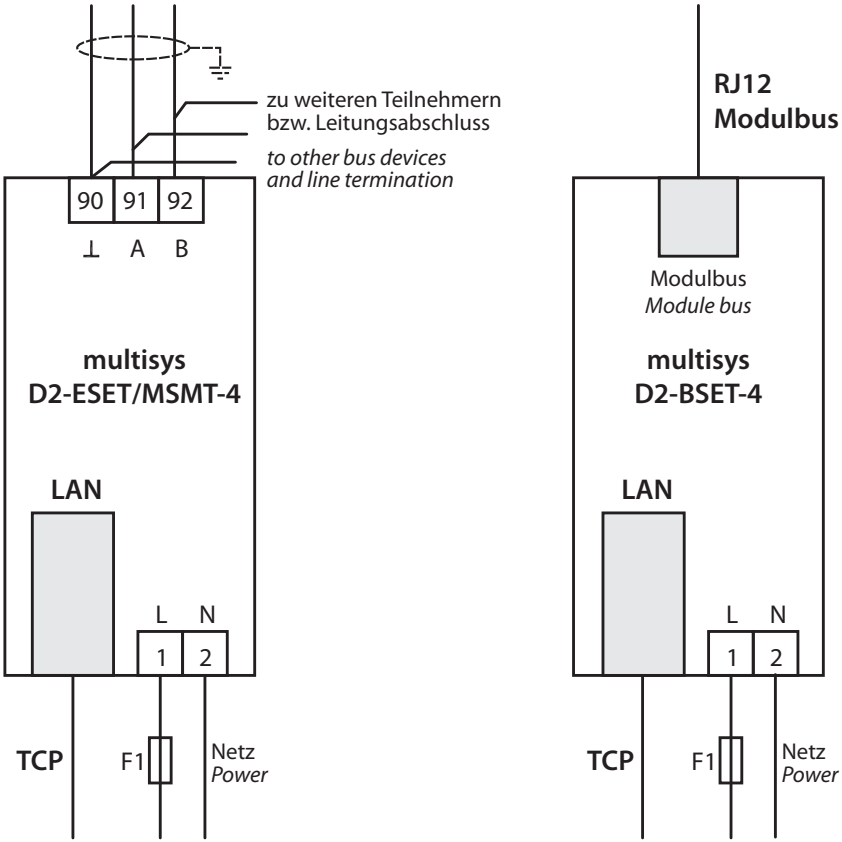
Both versions are described below.

1.1 Wiring diagram



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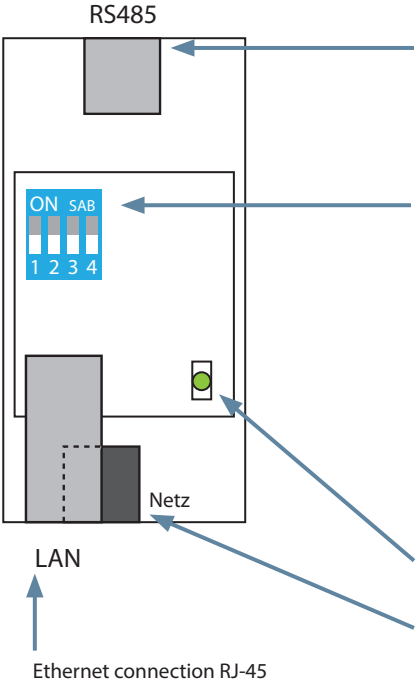
2 Hardware configuration

2.1 RS485 interface and LAN

The RS-485 interface is permanently set to the KBR eBus parameters 38400 baud, 8 data bits, parity even, 1 stop bit. If necessary, it can be terminated using four DIP switches.



RS-485
(3-pin pin header, 3.5 mm),
Terminal no. 90 = Ground, 91 = A, 92 = B
(according to KBR nomenclature)

DIP switch for the termination of the RS-485:

DIP1 and DIP2 ON, DIP3 OFF = Failsafe active

DIP1 and DIP2 OFF, DIP3 ON = termination active

DIP1 and DIP2 OFF, DIP3 OFF = no failsafe,
no termination, DIP4 is not assigned!

NOTE

The failsafe termination may only be active once in a bus segment!

Control LED for the power supply

Supply voltage
<10 VA; 100 - 240 V ±10 % DC/50/60 Hz
(pin header 2-pin, 5 mm)

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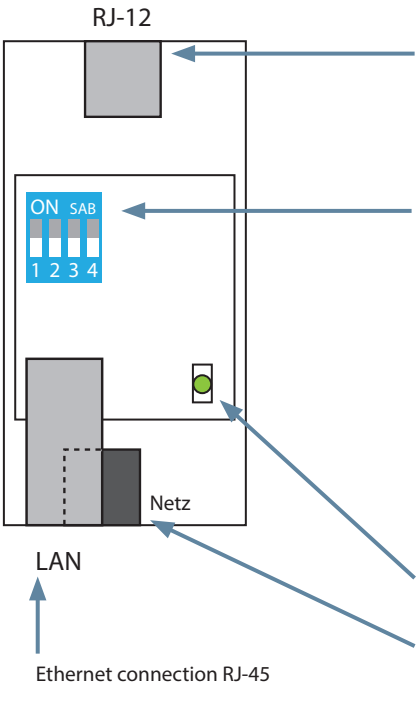
2.2 LAN and KBR module bus interfaces (multisys D2-BSET-4)

The module bus interface is permanently set to the module bus parameters 38400 baud, 8 data bits, parity even, 1 stop bit. If required, it can be terminated using four DIP switches.



RJ-12 for the KBR module bus

DIP switch for the termination of the RJ-12:

DIP1 and DIP2 ON, DIP3 OFF = Failsafe active

DIP1 and DIP2 OFF, DIP3 ON = termination active

DIP1 and DIP2 OFF, DIP3 OFF = no failsafe, no termination, DIP4 switches the 24V supply voltage on the RJ-12.

NOTE

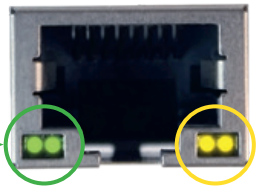
The failsafe termination may only be active once in a bus segment!

Control LED for the power supply

Supply voltage
<10 VA; 100 - 240 V ±10 % DC/50/60 Hz
(pin header 2-pin, 5 mm)

The operating status of the LAN interface (E-Port) is indicated by two LEDs:

Connection LED (left)	
Off	No connection
Green	10 / 100 Mbits



Activity LED (right)	
Off	No data
Yellow	Data

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3 Software configuration multisys D2-ESET / MSMT-4

The LAN port is parameterised using a web browser and the web interface in the LAN port.

The connected device is accessible at the factory-set IP address 192.168.0.1

Alternatively, parameterisation can also be carried out using a software tool. It can also be used to search the network for devices (see chapter 3.7).

https://www.kbr.de/en/download/apps-software-gsd-dateien/

NOTE

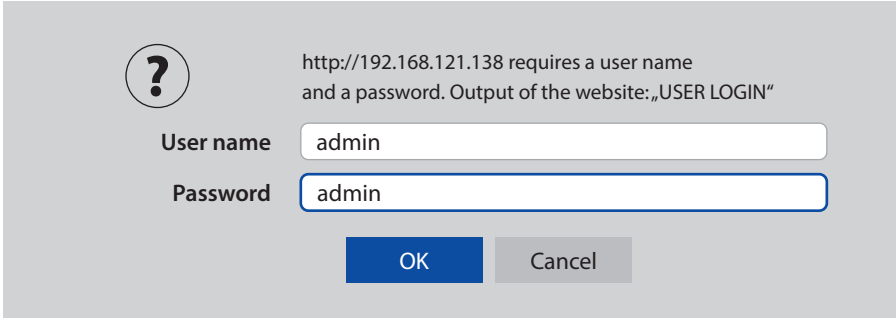
After installing the tool, it is recommended to check for updates via, Setting' -> ,Software setting.

If the device is parameterised to DHCP and no DHCP server is available, the device falls back to the IP address 169.254.173.207.

NOTE

For security reasons, the IP address of the device should be changed immediately to prevent unauthorised access to the device from outside.
The device should also be password-protected.

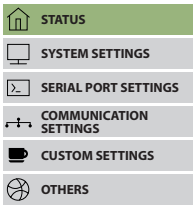
User name/password



Further settings can then be made on the following pages.

3.1 Status

Here you will find information on the status of your system.



Status

System running status overview

System state

Product Name E20	MAC 289C6E8CFDC1
DHCP Disable	IP 192.168.121.60
Subnet Mask 255.255.255.0	Gateway 127.0.0.1
DNS 127.0.0.1	Firmeware Version 1.34.13
System Zime NTP Disabled	Total Running Time 25 Day 2:15:46
Remaning RAM 25076	Max Block Size 21284
Configuration Protected Disable	

Serial Port State

Received Bytes 792225	Received Frames 72024
Sent Bytes 875628	Sent Frames 72969
Failed Bytes 0	Failed Frames 0
Config 19200,8,1,EVEN	

Communication State - 'netp'

Received Bytes 875628	Received Frames 72969
Sent Bytes 792225	Sent Frames 72024
Failed Bytes 0	Failed Frames 0
Protocol TCP-SERVER	State Server Created

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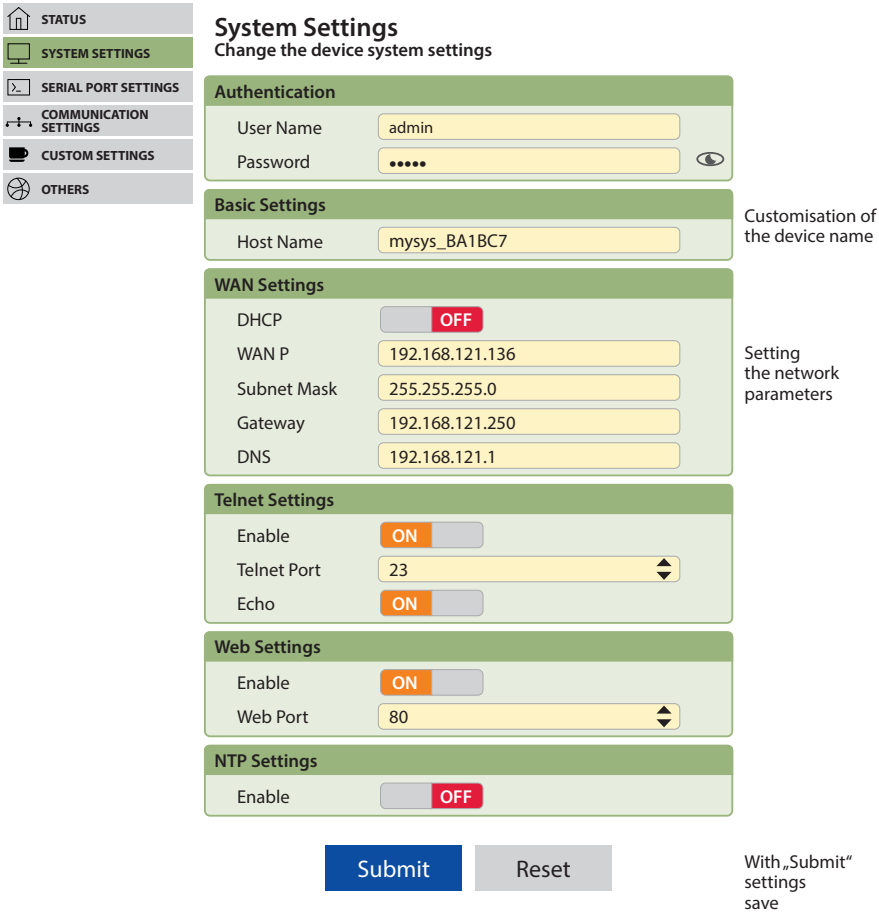
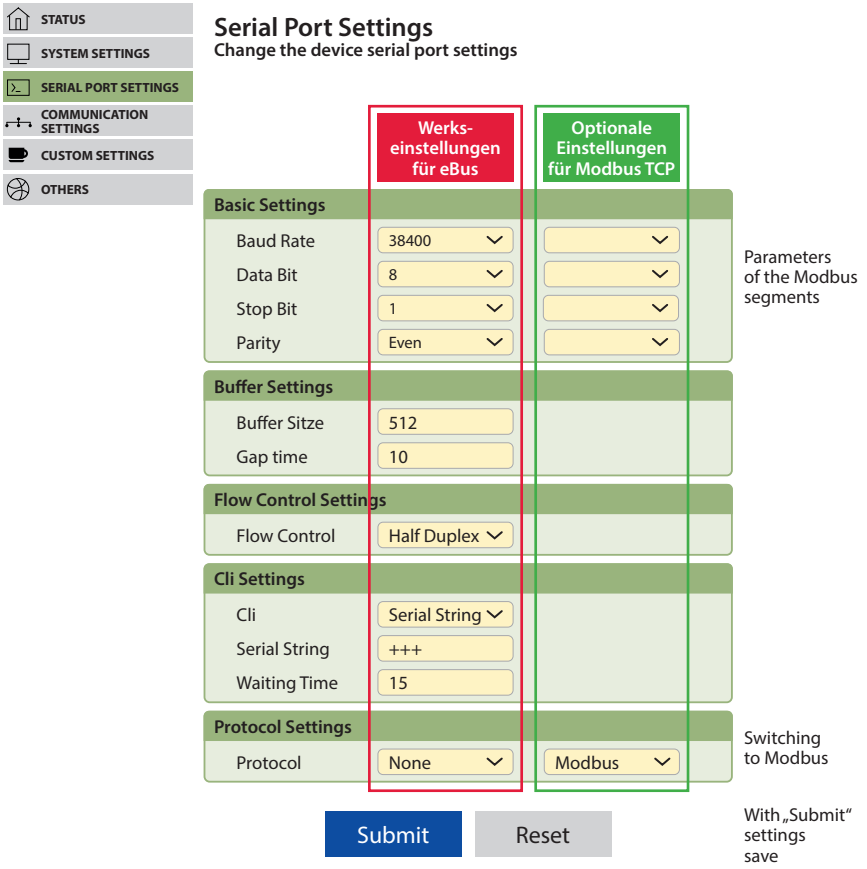
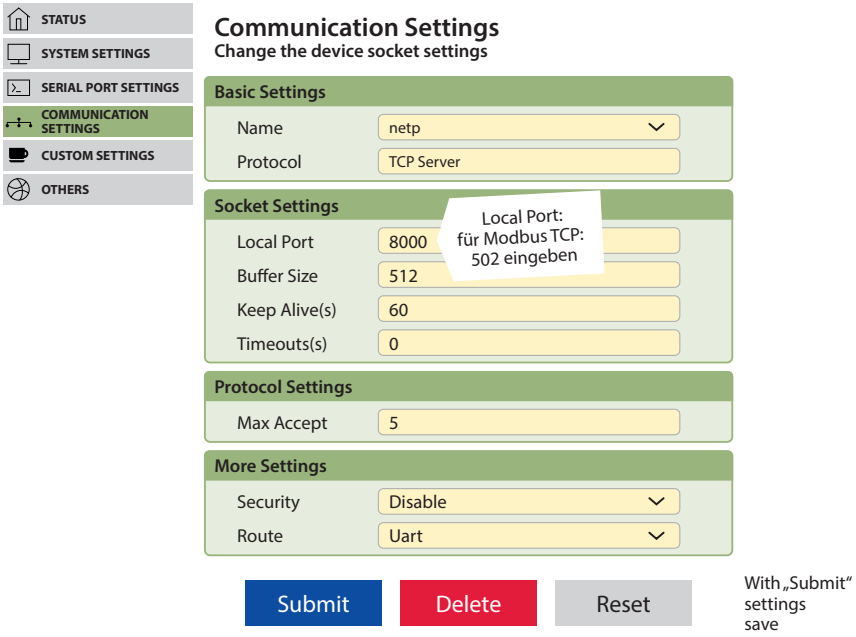
3.2 Setting options



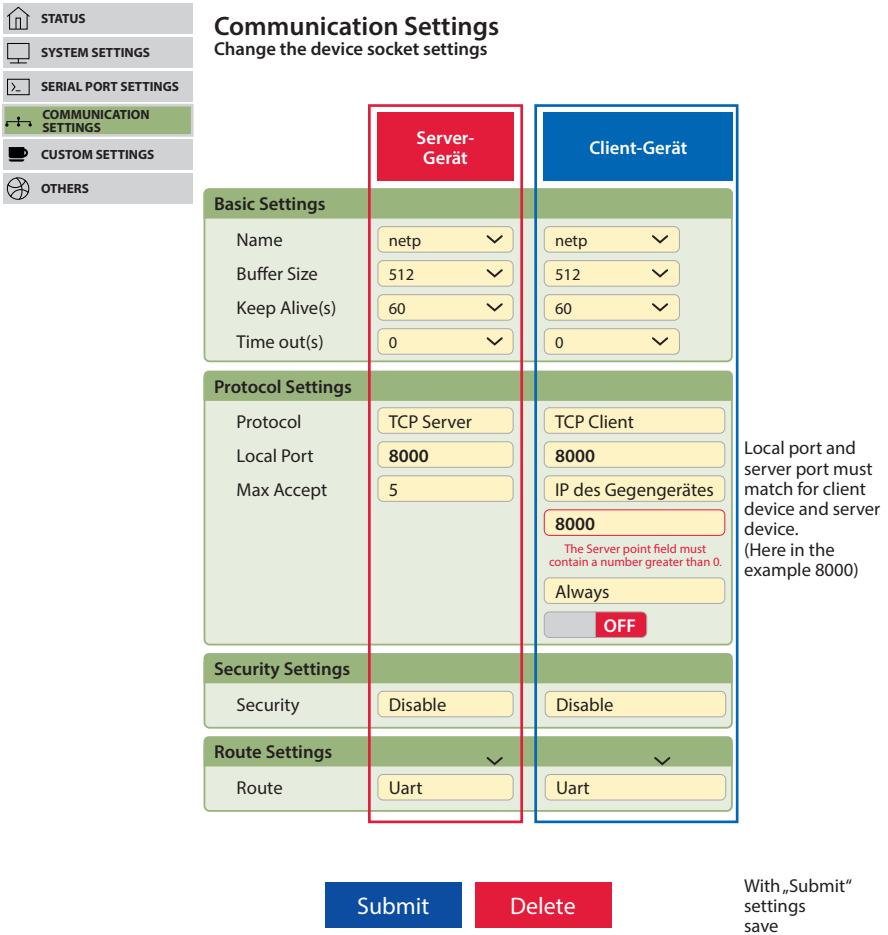
3.3 Serial Port Settings



3.4 Communication Settings



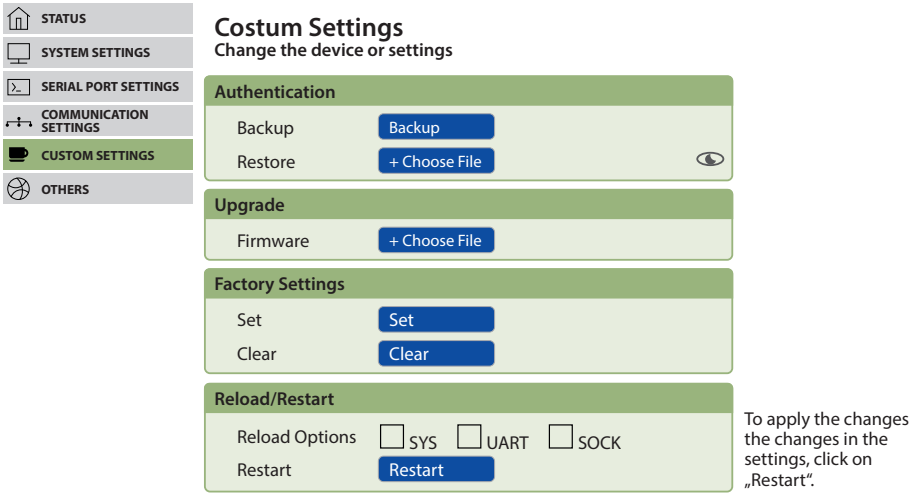
3.4.1 Box2Box Communication Settings



Local port and server port must match for client device and server device. (Here in the example 8000)

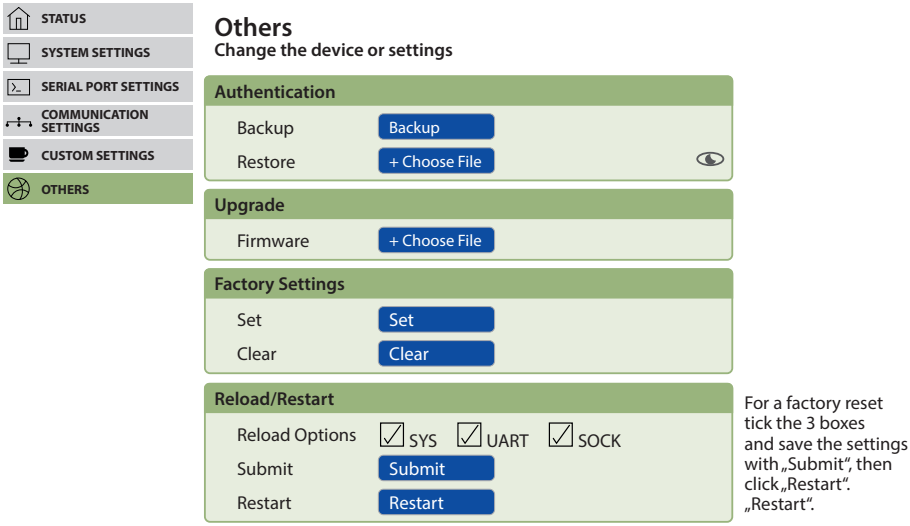
With „Submit" settings save

3.5 Apply changes



To apply the changes the changes in the settings, click on „Restart".

3.6 Reset to factory settings



For a factory reset tick the 3 boxes and save the settings with „Submit", then click „Restart". „Restart".

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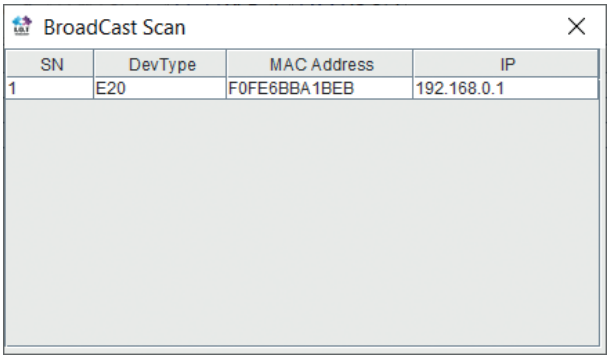
3.7 IP address to a device, whose address is not in the address range of the network

The ‚BroadCast Scan' window can be opened in the main window of the IOTService tool via Setting (C) -> BroadCast.

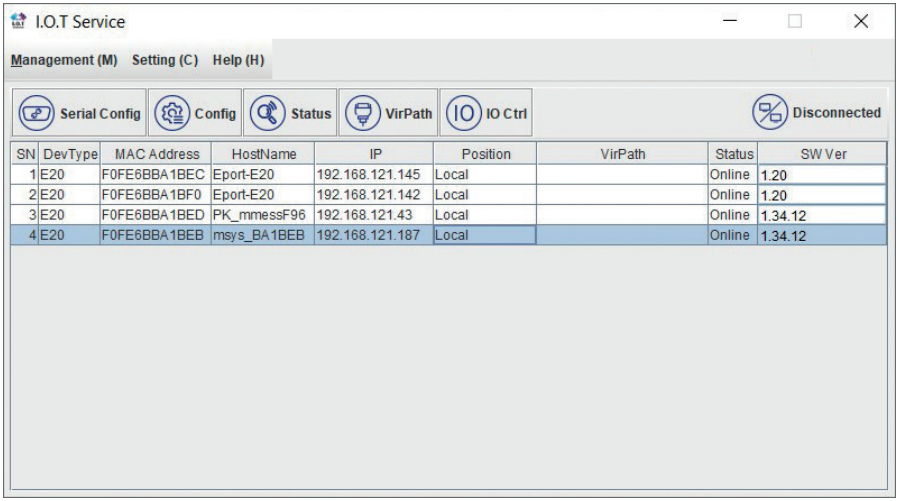


The devices that are found in the network without a valid network address are listed here.

Double-click on the line with the device to open the ‚Fast Setting' window:

A valid IP address and the subnet mask can be set here.

The settings are accepted with ‚Confirm'.
The device should then appear in the list in the main window of, IOT Service'.



After selecting the device, click on „Config" to proceed to parameterisation.

4 Software configuration multisys D2-BSET-4

The Ethernet interface of the multisys LAN eBus can be configured via the Ethernet interface via the Lantronix DeviceInstaller tool.

NOTE

The UART parameters must be adapted to the local bus parameters. The devices are assigned the IP address 192.168.0.1 before delivery. It is therefore advisable to check whether the device can be addressed via this IP address.

Depending on the IP address, the following procedures are available:

4.1 Procedure for IP address 192.168.0.1 or unknown

Das Gerät kann mit dem Lantronix-Tool „DeviceInstaller" konfiguriert werden.

To do this, use the link

Browser https://ltrxdev.atlassian.net/wiki/spaces/LTRXTS/pages/106070471/Latest+version+of+DeviceInstaller (as of 31/03/2022) to download and install the two programmes Microsoft NET Framework version 2.0 and Lantronix Device-Installer (first install Microsoft's .NET Framework version 2.0).

After starting the DeviceInstaller, the connected network is scanned and the Lantronix ports found are displayed and can be edited further.

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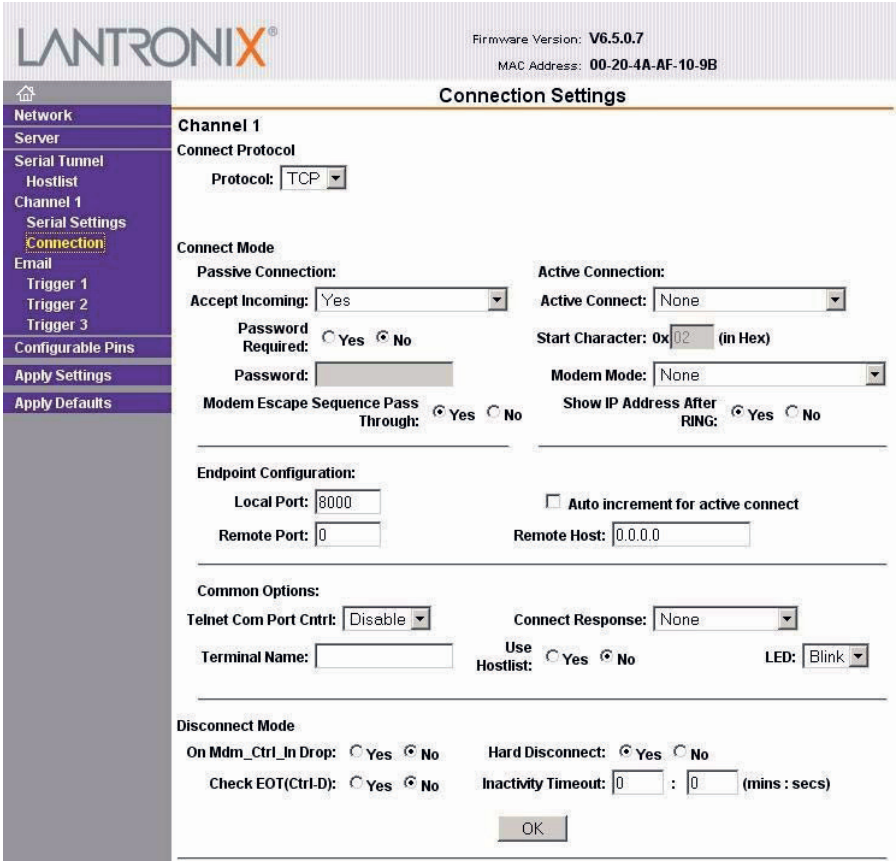
4.1.1 Settings with a web browser

The settings that can be made using a web browser, are documented in the following images.

Enter the following IP address in your browser page: 192.168.0.1.

Settings Channel 1 / Connection.



4.1.2 Box-to-box operation

In Box-to-Box mode, any two serial ports of multisys D2-BSET-4 can be logically connected to each other via the network. The two connected serial end devices are in constant online contact in this operating mode. Any additional data traffic or other network protocols have no influence on the connection.

In this operating mode, a permanent TCP connection is established between the server port and the client port. The server port works as a TCP client and is therefore responsible for opening (after configuration or reset) and closing (after deactivating the „Box to Box" operating mode).

On the network side, the multisys D2-ESET-4 of a box-to-box connection only exchanges data if serial user data is also available. There is no acknowledgement traffic beyond the TCP protocol.

4.1.3 Settings of the multisys D2-BSET-4 in server mode

NOTE

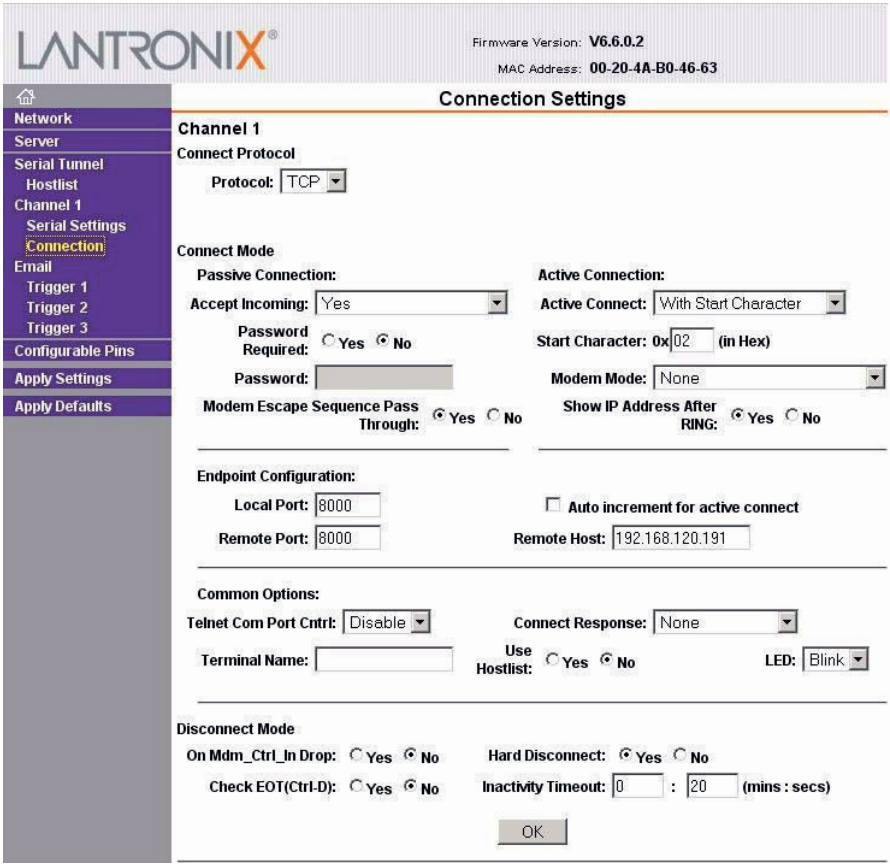
For the settings in server mode, see chapter 4.1.1

4.1.4 Settings of the multisys D2-BSET-4 in client mode

The settings that can be made using a web browser are documented in the following images.

Settings Channel 1 / Serial Settings.

Settings Channel 1 / Connection.



5 Technical data

5.1 Power supply

Power supply	<10 VA; 100 - 240 V ±10 % DC/50/60 Hz

5.2 Electrical connection

Connection elements Plug-in terminals		Steckklemmen
Control voltage inputg	Fuse protection	max. 6 A
LAN connection		Modular socket 8P8C
BUS connection	Connection material	For correct operation Only use shielded and twisted-pair cables; e.g. I-Y(St)Y 2 x 2 x 0.8
BUS-connection **multisys D2-ESET/MSMT-4**	BUS connection via RS-485 device	Device Terminal 90 (⏚) Terminal91 (A) Terminal 92 (B)
BUS-connection **multisys D2-BSET-4**		Modular cable 6-pin, RJ-12 plug: 6P6C Max. DC output power: 4 W

5.3 Mechanical data

Top-hat rail device	Housing dimensions	90 x 36 x 61 mm (H x W x T),
	Mounting type	Wall mounting on standard rail 7.5 mm deep, according to DIN EN 50022 Suitable for distribution board installation
	Weight	ca. 120 g

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5.4 Standards and other

Environmental conditions	Standards	DIN EN 60721-3-3:1995-09 + DIN EN 60721-3-3/A2:1997-07; 3K5+3Z11; (IEC721-3-3;3K5+3Z11)	
	Operating temperature	K55 (-5 °C … +55 °C)	
	Air humidity	5 % …. 95 %	
	Storage temperature	-25 °C … +70 °C	
	Operating altitude	0 … 2000 m über NN	
Electrical safety	Standards	DIN EN 61010-1:2011-07; DIN EN 61010-2-030:2011-07	
	Protection class	I	
	Overvoltage category	Power supply:	CAT III: 300 V
	Rated surge voltage	4 kV	
Protection class	Standards	DIN EN 60529:2014-09	
	Terminals	IP 20	

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