



Module bus installation guide

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network analysis**

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Subject to technical changes

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Module bus installation guide

The KBR module bus is designed to connect KBR eBus devices with different expansion modules. At the same time, the user can establish a data connection and supply the modules with energy by connecting the configured cable bridges. Wiring errors, the most common cause of errors, is thus largely ruled out. The module bus is equipped with a 6-pin plug-in connector RJ12 (6P6C) as a physical interface. This cable connection that is commonly used in telephone technology can be easily established by the customer himself with the help of a crimping tool. The cables are set up as a 6-pin one-to-one configuration as follows: Figure 1:

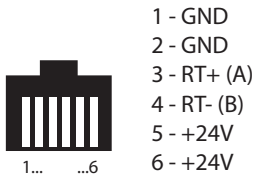


Figure: Module bus assignment



Note

For expansions, one of the most important aspects is to make sure that only one device is connected to the power supply of the module bus devices at any one time. If several devices with active power supply are interconnected, this could damage supply units. For assembly and wiring, the applicable regulations of the VDE (the German Electrical Engineering Association) must be observed.

As is the case with the eBus, communication takes place according to the master slave principle. This means that there can only be one master at the module bus. The module bus is designed for a maximum connection length of 30 m per segment, with the possibility of distance expansion. Here, take care that the correct power supply is used.

Module bus expansion

The following three factors have to be observed for expansion:

- 1. The length of each segment**
- 2. The number of modules per segment**
- 3. The energy supply of the modules**

Each segment may have a maximum length of 30 m and may include up to 32 devices. A module bus repeater multisys 2D2-BSBS essentially splits segments, making it possible to increase the total number of module bus devices to more than 32.

With the exception of the multimes 1D4-BS, all module bus devices are supplied via bus connections. The supply device, e.g. a central module, has to provide sufficient power to supply all of the connected modules. In the case of segment splitting using a module bus repeater, the latter supplies the new segment with power. For this purpose, it has an output power of 5W. This is sufficient, for example, for 3 multisio 1D2- 4RO relay modules. If more power is needed, you can use either an additional repeater or the module bus power supply unit. This may offer more power at 10 W; it does not, however, have a segment splitting feature. For this reason, it will not create a new logical segment.

Module bus expansion via eBUS

For distance expansion via eBus, the following must be observed: The multisys 2D2-BSES gateway "separates" the power supply of the modules from the data connection and assigns the latter to the modalities of the eBus (electrical isolation etc.). To convert back to the module bus, a multisys 2D2-ESBS is required, supplying up to 5 watts of power to the modules to be connected. For this KBR eBus expansion, keep in mind that this is a completely separate segment. This must not be an eBus controlled by the eBus master, and no other eBus devices may be connected to it. The reason for this is the master/slave principle: The respective central unit (multicomp 4D6 / multisio 4D6 / multimax 3D6) is the master at its respective module bus. If the module bus is connected to the (visualization) eBus via a gateway, the master function of the central unit would clash with the visualization master.

Module bus devices TCP/IP

With the multisys 2D2-BSET, module bus devices can be read out via TCP. The main purpose of this is to enable the modules to be accessed directly from visualization mode and, for example, status data to be called up.

Additionally, the module bus can also be expanded via Ethernet TCP/IP with the ...-BSET gateway. The modules have to be set up in pairs, with the supply of the detached module bus activated by a DIP switch. The possible output power in this configuration is 4 W, which, depending on the module type, is only sufficient for one or two modules. If a higher power is required, a multisys 1D4-PS24V power supply unit should be added.

Power supply

The modules are supplied via the module bus. The power supply unit of the supply device has to provide the additional power required for the devices connected. Depending on the supply device, the number of devices connected is limited. The power consumption of the individual modules differs and can also depend on the respective input status. The following table lists the power consumption and output in the worst case scenario:

Type	Consumption	Recovery
multicomp ..D6		9.0 W
multisio ..D6		9.0 W
multimax ..D6		9.0 W
multisys ..D4-PS24V		10.0 W
multisys ..D2-BSBS		5.0 W
multisys ..D2-ESBS		5.0 W
multisys ..D2-BSET		4.0 W
multisio ..D2-4DI	2.0 W	
multisio ..D2-4AI	1.0 W	
multisio ..D2-4CI	1.2 W	
multisio ..D2-1TI2RO	1.0 W	
multisio ..D2-4RO	1.3 W	
multisio ..D4-4R-ISO	1.3 W	
multisio ..D2-4TI	1.0 W	
multimes ..D4-BS	0.3 W	
Display	1.0 W	

Table 1: Power consumption of module bus devices

Technical parameters

System:	Master – slave, RS 485 half-duplex operation, asynchronous with fixed baud rate of 38400, 8 data bits, 1 stop bit, even parity
Topology:	Line structure, tree structure with bus repeaters
Stub:	None
Branching:	via bus repeater
Line type:	ready-to-use RJ12 cables
Bus line length:	30m max. per bus segment
Number of bus de- vices:	depending on master firmware
Safety device:	Telex checksum by XOR link

Table 2: Technical data KBR module bus

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