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Deutsche Version: siehe Vorderseite

Module 800-CON-RJ45

Transfer module for measurement-device and module topologies

Installation manual



User Manual:

Janitza electronics GmbH
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Email: info@janitza.com
www.janitza.com

Janitza®

Relevant laws,
standards and directive used
Please see the declaration of conformity on our website (www.janitza.com) for the laws, standards and directives applied for the device by Janitza electronics GmbH.

INFORMATION
Our usage information uses the grammatical masculine form in a gender-neutral sense! This form always refers equally to women, men and diverse. In order to make the texts more readable, distinctions are not made. We ask for your understanding for these simplifications.

1 General

Disclaimer
Compliance with the usage information for the devices, modules and components is a prerequisite for safe operation and attaining the stated performance characteristics and product features. Janitza electronics GmbH assumes no liability for bodily injury, material damage or financial losses which result from disregard of the usage information. Make sure that your usage information is readily available and legible.

Further usage information, such as the installation manual or the user manual for the basic device, can be found on our website, www.janitza.com under Support > Downloads.

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Subject to technical alterations.
- Make sure that your device, module or component matches the installation manual.
- First make sure you have read and understood the usage information accompanying the product.
- Keep the usage information associated with the product available for the entire service life and pass it on to any possible subsequent users.
- Please find out about device revisions and the associated modifications of the usage information associated with your product at www.janitza.com.

Disposal
Please abide by national regulations! Dispose of individual parts, as applicable, depending on their composition and existing country-specific regulations, e.g. as:
- Electronic waste
- Batteries and rechargeable batteries
- Plastics
- Metals

or engage a certified disposal company to handle scrapping.

2 Safety

Safety information
The installation manual does not represent a complete set of all safety measures required for the operation of the device (module/component). Special operating conditions can require additional measures. The installation manual contains information which must be observed to ensure your personal safety and avoid material damage.

Symbols used on the device (module/component):

⚡	The additional symbol on the device itself indicates an electrical danger that can result in serious injuries or death.
⚠	This general warning symbol draws attention to a possible risk of injury. Be certain to observe all of the information listed under this symbol in order to avoid possible injury or even death.

Safety information in the installation manual is marked by a warning triangle and, in dependence on the degree of hazard, is displayed as follows:

⚠ DANGER
Warns of an imminent danger which results in serious or fatal injury (death).

⚠ WARNING
Warns of a potentially hazardous situation which could result in serious injury or death.

⚠ CAUTION
Warns of a possibly hazardous situation which can result in minor or moderate injury.

ATTENTION
Warns of an immediately hazardous situation which, if not avoided, can result in material or environmental damage.

INFORMATION
Indicates procedures in which there is **no** hazard of personal injury or material damage.

Safety measures
When operating electric devices, it is unavoidable for certain parts of these devices and their components to conduct hazardous voltage. Consequently, severe bodily injury or material damage can occur if they are not handled properly.

- Before making connections to the device and its components, ground the device by means of the ground wire connection, if present.
- Hazardous voltages can be present in all circuitry parts that are connected to the power supply.
- There can still be hazardous voltages present in the device or the components even after disconnection from the supply voltage (capacitor storage).
- Do not exceed the limit values specified in the user manual and on the rating plate! This must also be observed during testing and commissioning!
- Observe the safety information and warning notices in the usage information associated with the devices and their components!

⚠ WARNING

Hazard due to disregard of warning notices and safety information!
Disregard of warning notices and safety information on the device itself and in the usage information for the device and its components can lead to injuries or even death!
Observe the safety information and warning notices on the device itself and in the usage information associated with the devices and their components, such as:
· Installation manual
· Installation supplement
· User manual
· Supplement Safety Information

Qualified personnel
To avoid bodily injury and material damage, only qualified personnel with electrotechnical training are permitted to work on the device, module or component who have knowledge of:

- The national accident prevention regulations.
- Safety technology standards,
- Installation, commissioning and operation of the device and the components.

⚠ WARNING

Risk of injury due to electric voltage or electric current!
When handling electric currents or voltages, serious bodily injury or death can result from:
· Touching bare or stripped leads that are energized.
· Device or module inputs that pose a hazard when touched.
Before starting work on your system:
· **Disconnect the supply of power!**
· **Secure it against being switched on!**
· **Check to be sure it is de-energized!**
· **Ground and short circuit!**
· **Cover or block off adjacent live parts!**

Intended use
The modules/components

- is only intended for use in industrial areas.
- is intended as an expansion or transfer module for measurement-device and module topologies with suitable basic devices (see user manual of the respective module) in control cabinets and small installation distributors.
- may only be mounted with the basic device disconnected from the power supply (see step “Mounting”). Observe the usage information belonging to the basic device!

The basic device and the modules are not intended for installation

- in vehicles! The use of the basic device with modules and components in non-stationary equipment is considered an exceptional environmental condition and is only permitted by separate agreement.
- in environments with harmful oils, acids, gases, vapors, dusts, radiation, etc.
- in potentially explosive environments.

Incoming goods inspection
The prerequisites for trouble-free and safe operation of the devices, modules and components include proper transport, storage, setup and assembly, as well as proper operation and maintenance.
Exercise due caution when unpacking and packing the device, do not use force and only use suitable tools.
Check:

- Visually inspect the devices, modules and components for flawless mechanical condition.
- Check the scope of delivery (see user manual) for completeness before you begin installing your devices, modules and components.

If it can be assumed that safe operation is no longer possible, take your device, module or component out of operation immediately! Secure against unintentional startup!

It can be assumed that safe operation is impossible if the basic device, module or component, for example:

- Has visible damage.
- No longer functions despite an intact power supply.
- Was subjected to extended periods of unfavorable conditions (e.g. storage outside of the permissible climate thresholds without adjustment to the room climate, condensation, etc.) or transport stress (e.g. falling from an elevated position, even without visible external damage, etc.).

3 Device description and example topologies

The **800-CON-RJ45 transfer module** transfers the JanBus communication of a basic device via an RJ45 cable to spatially distant measuring points (please note the specification of suitable basic devices in the user manual). In this way, you can implement measurement-device and module topologies with flexible arrangement of your DIN rails (for DIN rail types, see Technical Data) in the control cabinet or small installation distributors.

Check the maximum number of module slots of your basic device (see user manual of the basic device). In order to use all available slots of a basic device, the following JanBus measurement-device and module topologies, for example, can be implemented with the 800-CON-RJ45 transfer module:

1. **A JanBus topology** consisting of 1-slot modules until the maximum number of slots of the basic device is exhausted (e.g. digital input module 800-DI14, current measurement module 800-CT8-A, current measurement module 800-CT8-LP).

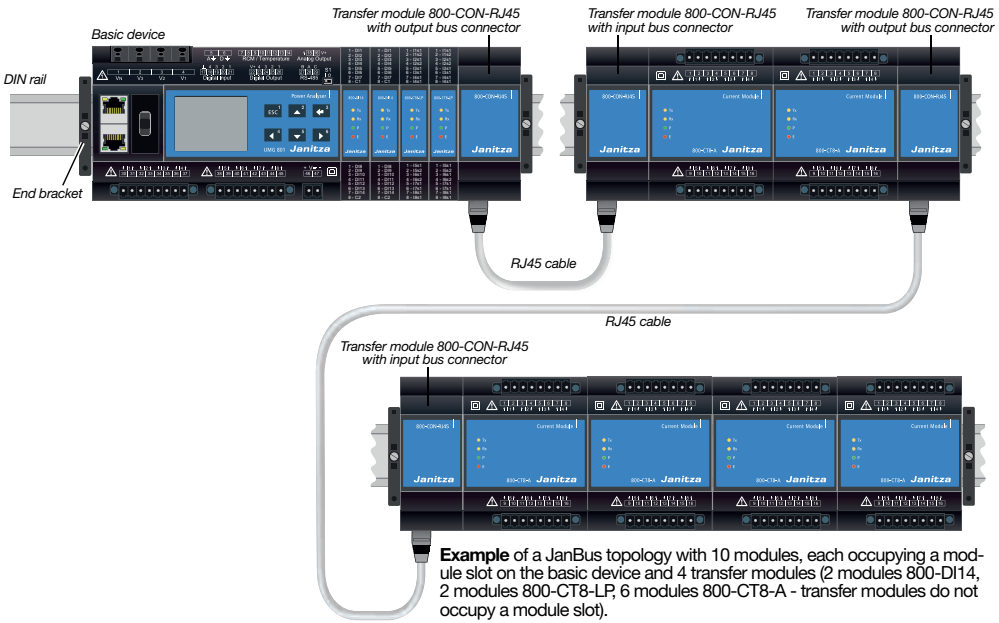
2. **A combined JanBus topology** consisting of 1-slot and X-slot modules until the maximum slot count of the basic device is exhausted (e.g. a combination of 1-slot and 3-slot modules, such as the 800-CT24).

3. **A JanBus topology 800-CT24,** e.g. consisting of several 3-slot modules, until the maximum slot number of the basic device is exhausted (e.g. a JanBus topology with 3 current measuring modules of the type 800-CT24, which together occupy 9 slots).

INFORMATION

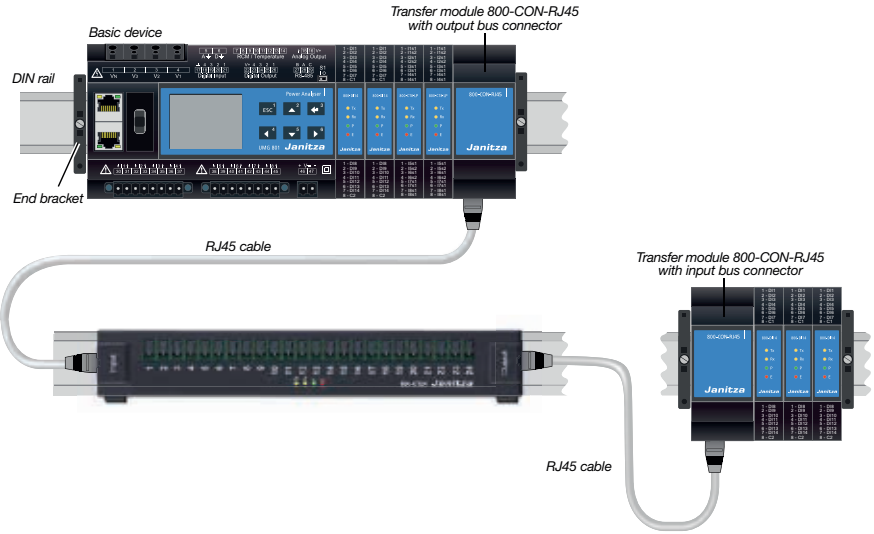
System limits:
· For the maximum bus length (JanBus - proprietary) for setting up measurement-device and module topologies, refer to the “Technical data”.
· Use a commercially available RJ45 cable (RJ45 patch cable) for trouble-free JanBus communication in your measurement-device and module topology.
· The 3 following measurement-device and module topologies with JanBus communication are examples! **Before mounting your measurement-device and module topology, please check the number of suitable modules and their slot assignment on the basic device (see user manual of the respective module).**
· **Do not exceed the maximum number of module slots of the basic device (the 800-CON-RJ45 transfer module does not occupy a slot)!**
· The scope of delivery of the 800-CON-RJ45 module can be found in the user manual for the module.

Example 1: JanBus topology with 1-slot modules



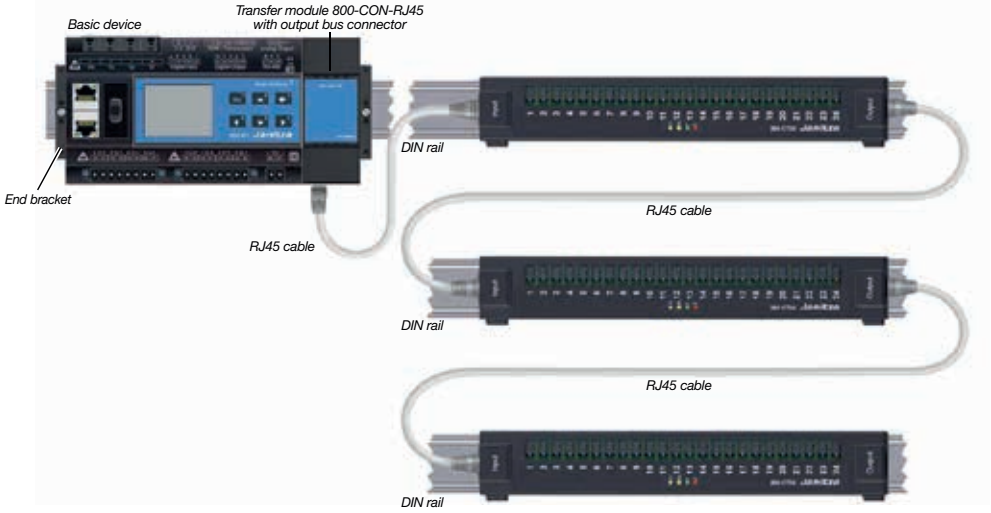
Example of a JanBus topology with 10 modules, each occupying a module slot on the basic device and 4 transfer modules (2 modules 800-DI14, 2 modules 800-CT8-LP, 6 modules 800-CT8-A - transfer modules do not occupy a module slot).

Example 2: Combined JanBus topology with 1-slot and 3-slot modules



Example of a combined JanBus topology with 5 digital input modules 800-DI14 (occupy 5 module slots on the basic device), 1 current measurement module 800-CT24 (occupies 3 module slots) and 2 current measurement modules 800-CT8-LP (occupy 2 module slots).

Example 3: JanBus topology with 3-slot modules



Example of a JanBus topology with 3 800-CT24 current measurement modules (each occupying 3 module slots on the basic device).

4 Mounting

⚠ CAUTION

Disregard of the installation instructions may cause property damage or personal injury!
Disregard of the installation instructions may cause damage to your basic device with module or destroy it and/or may also result in personal injury.

- In addition to the installation instructions for your module, also observe the installation instructions for your basic device, in particular the safety information and warning notices.
- Before installing modules
  - **Disconnect the supply of power to the system!**
  - **Secure it against being switched on!**
  - **Check to be sure it is de-energized!**
  - **Ground and short circuit!**
  - **Cover or block off adjacent live parts!**
- **Provide adequate air circulation in your installation environment and cooling, as needed, when the ambient temperatures are high.**
- **Return defective modules to Janitza electronics GmbH in accordance with the shipping instructions for air or road freight (complete with accessories).**
- **All usage information is also available as a download at www.janitza.com.**

ATTENTION

Improper handling or handling them too roughly can destroy your devices and modules!
Contacts, bottom bolts and retaining brackets can be damaged or broken off during mounting/dismounting.

- **Never touch or manipulate contacts!**
- **Protect the contacts during handling, transport and storage!**
- **Never mount/dismount devices/modules with force!**
- **Observe any further usage information on the devices, modules and components of your measurement-device and module topology as required.**

ATTENTION

Material damage due to confusion with the Ethernet interfaces!
The JanBus interface of the 800-CON-RJ45 module is a proprietary RJ45 JanBus interface! Any connection to an RJ45 Ethernet interface may interfere with devices and modules in your JanBus topology or cause your network to fail!

- **Use the JanBus interface of the 800-CON-RJ45 module exclusively in proprietary RJ45 JanBus topologies!**
- **Check with your network administrator for the correct setup of your measurement-device and module topology.**

INFORMATION

The scope of delivery of the 800-CON-RJ45 transfer module includes **one input and one output bus connector each,** so that each transfer module can be used with the corresponding bus connector at the output or input of a measurement-device and module series (see the step “Device description and example topologies”).

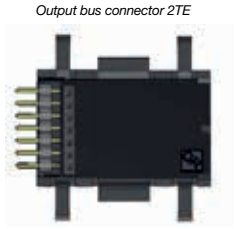


Fig.: Output bus connector for the 800-CON-RJ45 transfer module at the output of a series of measurement devices and modules.

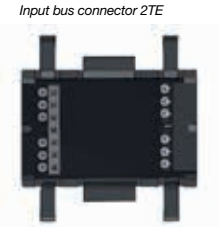


Fig.: Input bus connector for the 800-CON-RJ45 transfer module at the input of a series of measurement devices and modules.

While observing the mounting instructions for your basic device or the connected module (e.g. check the bus connector mounting!), mount the **800-CON-RJ45 transfer module with output bus connector** when the system is disconnected from the power supply as follows:

1. Press in open bottom bolts on the back of the transfer module.
2. If not already done, press the supplied **output bus connector** (JanBus interface) into the sockets on the back of the transfer module.

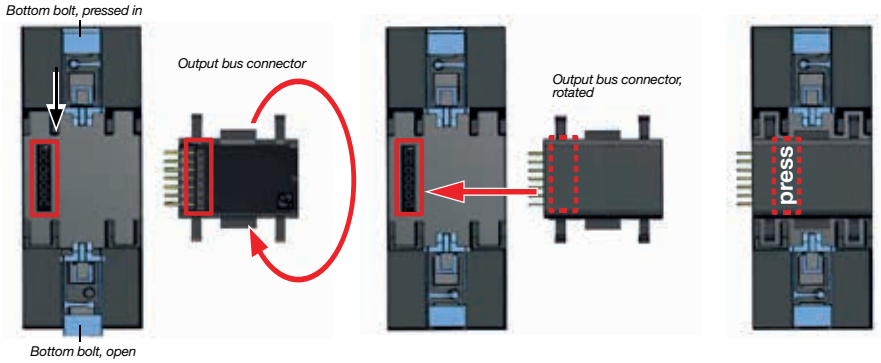
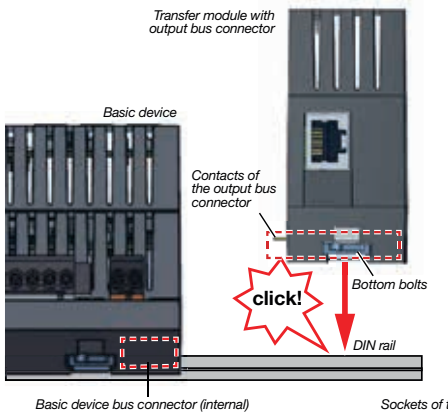


Fig.: Module rear views

3. Press the **transfer module with output bus connector** onto the DIN rail until the bottom bolts audibly engage.



4. Push the contacts of the transfer module with output bus connector into the **sockets of the basic device bus connector (or into the sockets of the connected module)** so that the devices are coupled.

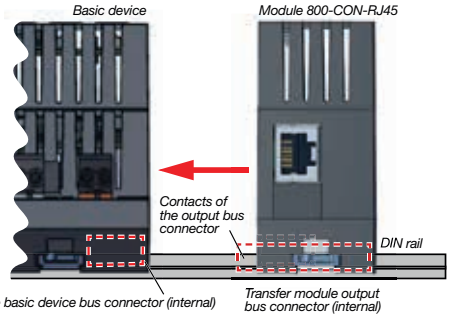


Fig.: Side view of coupling of basic device with module 800-CON-RJ45

INFORMATION

- **Before coupling the module, check to be certain your basic device is de-energized! Coupling while energized can destroy your basic device or module!**
- **The basic device automatically recognizes the module during the power-up procedure!**

5. Check the fit of your measurement-device and module series and mount end brackets.

INFORMATION

Always install the **800-CON-RJ45 transfer module with output bus connector** at the end of your measurement-device and module topology (observe the step "Connecting device and module series using transfer modules").

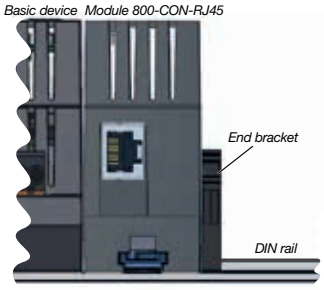


Fig.: Mounted 800-CON-RJ45 module with output bus connector

For spatially distant module series, mount the **800-CON-RJ45 transfer module with input bus connector** while the system is disconnected from the power supply:

1. Press in the open bottom bolts on the rear of the transfer module.

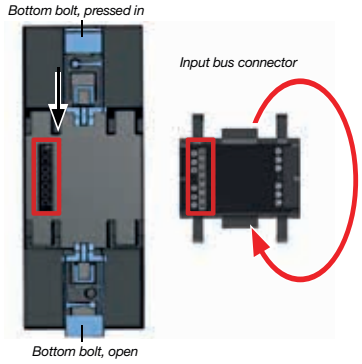
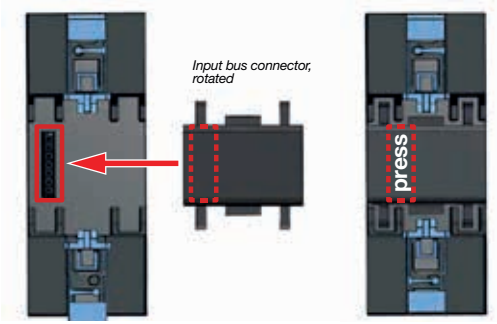
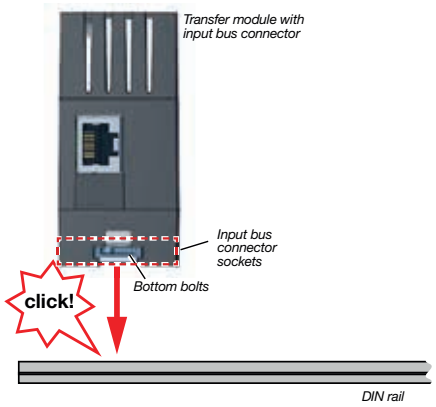


Fig.: Module rear views

2. If not already done, press the supplied **input bus connector** (JanBus interface) into the sockets on the back of the transfer module.



3. Press the **transfer module with input bus connector** onto the DIN rail until the bottom bolts audibly engage.



4. Mount further modules (e.g. current measuring modules, digital input modules) and push their contacts into the sockets of the input bus connector so that the devices are coupled to the transfer module.

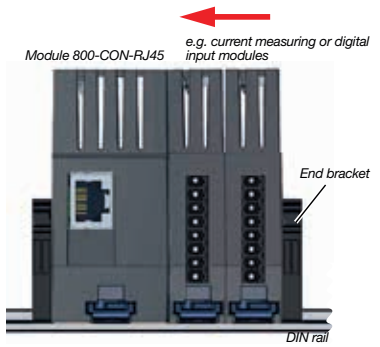


Fig.: Mounted 800-CON-RJ45 transfer module with input bus connector and modules connected in series

5. Finally, wire your series of measurement devices and modules, observing the usage information of all integrated devices and modules.

5

Connection of device and module series with transfer modules

For trouble-free operation of the devices and thus of the system, connect the transfer modules for JanBus communication with RJ45 cables (RJ45 patch cables - not included in delivery!). When mounting, make sure to provide sufficient space in your installation environment and to observe the bending radius of the RJ45 cables!

INFORMATION

The **800-CON-RJ45 transfer module with output bus connector** on the basic device or on modules connected in series
- is always located at the end of a series of measurement devices and modules
- **cannot** forward any JanBus communication via the output bus connector!

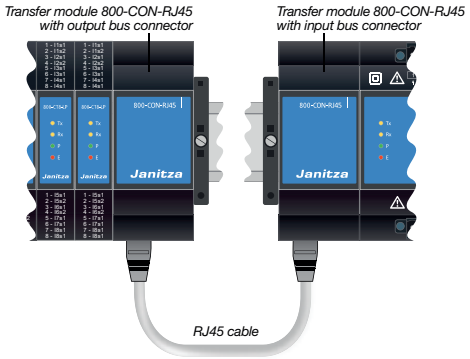


Fig. Example of measurement-device and module topology: RJ45 cabling of the transfer modules with output and input bus connectors.

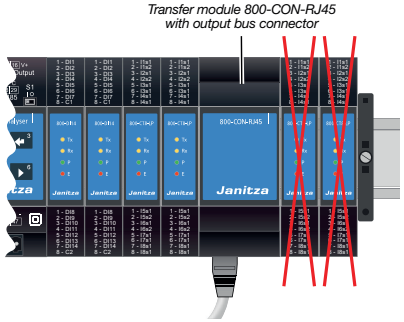


Fig. Example of measurement-device and module topology: No forwarding of JanBus communication by transfer modules with output bus connectors.

ATTENTION

The basic device in a topology with transfer modules does not recognize modules (e.g. current measuring modules, digital input modules) during the power-up procedure!
If there is no communication to modules, the module functions are not supported (e.g. current measurements).
- **Switch off the power supply to your system.**
- **Check the installation of the basic device with transfer module and the connection (JanBus interface/RJ45 cable) to your modules:**
  - **Check the contacts and seating of the transfer module on the bus connector.**
  - **Check the fit of the RJ45 cables, if necessary rewire the connected modules (use commercially available RJ45 patch cables).**
- **If necessary, restart the basic device.**
- **If these measures do not lead to the desired result, please contact our Support – www.janitza.com.**

INFORMATION

The scope of delivery of the 800-CON-RJ45 transfer module can be found in the user manual.

Further information about certain functions of a basic device with modules (e.g. current measurement modules or digital input modules) can be found in the usage information belonging to the devices, modules and components.

6 Dismounting

ATTENTION

Handling your module too roughly may cause damage to the module and result in material damage!
The bus connector contacts and the bottom bolts can be damaged or broken off when dismounting your module.
- **Never pull the module out of the DIN rail forcefully.**
- **First decouple the bus connectors (JanBus interface) and carefully unlock the bottom bolts of the module with a screwdriver!**

ATTENTION

Material damage due to disassembly or decoupling of the module during operation!
Dismounting or decoupling the module during communication with the basic device can cause damage to your devices!
- **Disconnect your system from the power supply prior to dismounting or decoupling the modules! Secure it against being switched back on! Check to be sure it is de-energized! Ground and short circuit! Cover or block off adjacent live parts!**

INFORMATION

After dismounting the 800-CON-RJ45 module, the GridVis® software deactivates the connected modules of the measurement-device and module topology as needed. Information on this and further procedures can be found in the online help for the GridVis® software.

Proceed in the same way when dismounting the 800-CON-RJ45 transfer module with output and input bus connector:

1. Disconnect the supply of power to the system! Secure against being switched on again! Check to be sure it is de-energized! Ground and short circuit! Cover or block off adjacent live parts!
2. Disconnect the wiring of the transfer module and remove the end brackets as needed.
3. Decouple the bus connectors (JanBus interface) of the transfer module from the basic device and/or the modules connected in series by pulling out the transfer module.
4. Unlock all bottom bolts of the transfer module. **Recommendation:** Use a screwdriver (be careful!).
5. Remove the transfer module from the DIN rail without damaging or even touching the bus connector contacts.

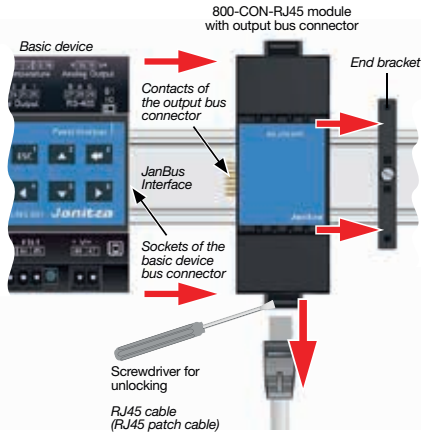


Fig. Dismounting the 800-CON-RJ45 transfer module with output bus connector

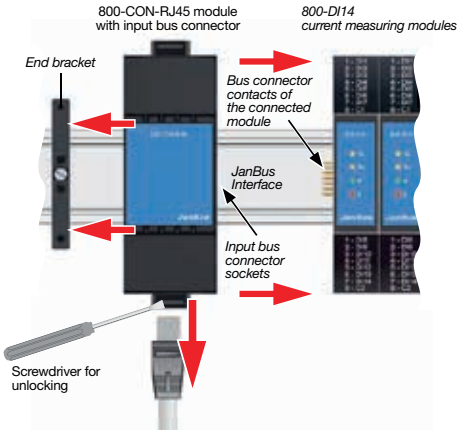


Fig. Dismounting the 800-CON-RJ45 transfer module with input bus connector

7 Technical data

General	
Net weight	62 g (0.14 lb)
Device dimensions	W = 36 mm (1.42 in), H = 90 mm (3.54 in), D = 76 mm (2.99 in)
Width of the device in width units (TE)	2TE (1TE = 18 mm)
Mounting orientation	As desired
Fastening/mounting - Suitable DIN rails - (35 mm / 1.38 in)	· TS 35/7.5 according to EN 60715 · TS 35/10 · TS 35/15 x 1.5
Protection against foreign matter and water	IP20 according to EN60529
Impact resistance	IK07 according to IEC 62262

Transport and storage The following information applies to devices, modules and components transported and stored in their original packaging	
Free fall	1 m (39.37 in)
Temperature	K55 -25 °C (-13 °F) to +70 °C (158 °F)
Relative humidity	0 to 95% at 25 °C (77 °F), no condensation

Environmental conditions during operation The device: · Is for weather-protected and stationary use. · Fulfills the operating conditions according to DIN IEC 60721-3-3. · Has protection class II according to IEC 60536 (VDE 0106, part 1), a ground wire connection is not required!	
Working temperature	-10 °C (14 °F) .. +55 °C (131 °F)
Relative humidity in operation	5 to 95% at 25 °C (77 °F), no condensation
Pollution degree	2
Ventilation	No forced ventilation required.

Interfaces	
JanBus interface (In) - (proprietary Ethernet)	RJ45 - JanBus interface via bus connector
JanBus interface (Out) - (proprietary Ethernet)	RJ45 - JanBus via RJ45 cable (RJ45 patch cable)
JanBus (proprietary) - Max. bus lengths/cable lengths of the RJ45 cables	Cat 7/7a = 100 m (AWG 22: Ø = 0.64 mm, cross-sectional area = 0.33 mm²)
	Cat 6/6a = 75 m (AWG 23: Ø = 0.57 mm, cross-sectional area = 0.26 mm²)
	Cat 5/5e = 60 m (AWG 24: Ø = 0.51 mm, cross-sectional area = 0.21 mm²)

INFORMATION

Detailed information and technical data on the module can be found in the user manual at www.janitza.com (download area).
Technical data on the basic device and information on how to proceed in the event of a fault can be found in the usage information of your basic device.

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