

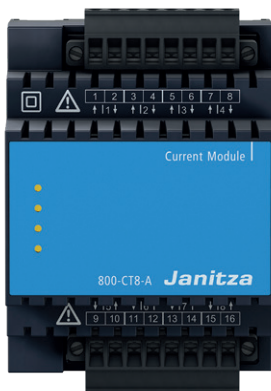
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800-CT8-A current measuring module 800-CON transfer modules Extension modules for the UMG 801

User manual and technical data



800-CT8-A
current measuring module



800-CON
transfer modules (set of 2)



Modules for UMG 801

Doc. no.: 2.053.023.0a

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The German version is the original edition of the documentation

Subject to technical changes.

The contents of our documentation have been compiled with great care and reflect the current state of the information available to us. Nonetheless, we wish to point out that updates of this document are not always possible at the same time as technical refinements are implemented in our products. Please see our website under www.janitza.de for the current version.

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1. Information on the devices and the user manual

1.1 Disclaimer

Compliance with the usage information for the devices (modules/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.

Ensure that the usage information for the products is legible and accessible.

1.2 Copyright notice

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Any reproduction, processing, distribution or other use of this usage information, in whole or in part, is prohibited.

All trademarks and the rights arising from them are the property of the respective owners of these rights.

1.3 Technical changes

- Make sure that your device (modules/components) matches the user manual.
- This user manual applies to the modules for the UMG 801. Separate validities and distinctions are marked.
- 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.
- Find out about device revisions and the associated modifications of the usage information associated with your product at www.janitza.de.

1.4 About this user manual

If you have questions, suggestions or ideas for improvement of the user manual, please let us know via email at: info@janitza.de.

INFORMATION

This user manual describes the modules for the UMG 801 and provides information on the operation of the devices.

Also consult the additional usage information relevant for this user manual, such as:

- Installation instructions.
- Data sheets.
- The "Safety information" supplement.
- The supplement on mounting the modules.
- Usage information on the basic device.

Moreover, the **GridVis**[®] software has an "online help" feature.

1.5 Defective device/disposal

Before sending **defective devices, modules or components** back to the manufacturer for testing:

- Contact the manufacturer's Support department.
- Send devices, modules or components complete with all accessories.
- When doing so, please bear the terms for transportation in mind.

INFORMATION

Please return defective or damaged devices, modules or components to Janitza electronics GmbH in accordance with the shipping instructions for air or road freight (complete with accessories). Observe special regulations for devices with built-in batteries or rechargeable batteries!

Do not attempt to open or repair the device (the module, the component) on your own because otherwise all warranty claims become invalid!

For the **disposal** of the device (the module, the component), please observe 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

Engage a certified disposal company to handle scrapping as needed.

Information on “Service and maintenance” of your device can be found in chapter 15 on page 56.

2. Safety

The chapter on Safety contains information which must be observed to ensure your personal safety and avoid material damage.

2.1 Display of warning notices and safety information

The warning notices shown below

- are found throughout the usage information.
- can be found on the devices themselves.
- indicate potential risks and hazards,
- underscore aspects of the information provided that clarifies or simplifies procedures.



This additional symbol on the device (module/ component) itself indicates an electrical hazard that can lead to severe injury 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.



2.2 Hazard levels

Warning and safety information is marked by a warning symbol, and the hazard levels are shown as follows, depending on the degree of hazard:

DANGER

Warns of an imminent danger which, if not avoided, results in serious or fatal injury.

WARNING

Warns of a potentially hazardous situation which, if not avoided, could result in serious injury or death.

CAUTION

Warns of an immediately hazardous situation which, if not avoided, 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.

2.3 Product safety

The devices, components and modules reflect current engineering practice and accepted safety standards, but hazards can arise nonetheless.

Observe the safety regulations and warning notices. If notices are disregarded, this can lead to personal injury and/or damage to the product.

Every type of tampering with or use of the devices and the modules,

- which goes beyond the mechanical, electrical or other operating limits can lead to personal injury and/or damage to the product;
- constitutes "misuse" and/or "negligence" under the product's warranty and thus voids the warranty for any possible resulting damage.

Read and understand the user manual and the usage information on the basic device before installing, operating, maintaining and using the devices, components and modules.

Only operate the devices, components and modules when they are in perfect condition and in compliance with this user manual and the usage information that is included. Send defective devices, components or modules back to the manufacturer in compliance with proper transport conditions.

Retain the user manual throughout the service life of your product and keep it at hand for consultation.

When using the device, component or module, also observe the legal and safety regulations for your system that are applicable for the respective use case.

2.4 Hazards when handling the device, components and modules

When operating electric devices, components or modules, it is unavoidable for certain parts of these devices to conduct hazardous voltage. Consequently, severe bodily injury or material damage can occur if they are not handled properly. Therefore, when handling our devices, components, or modules, always observe the following:

- 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!
- Take note of the safety and warning notices in all usage information that belongs to the device, components or modules!



WARNING

Risk of injury due to electrical current and voltage!

Severe bodily injury or death can result! Therefore please abide by the following:

- **Do not touch bare, stripped wires or device inputs that are dangerous to touch on the devices, components and modules.**
- **Switch off your installation before commencing work! 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!**
- **During operation and troubleshooting (especially with DIN rail devices), check the environment for dangerous voltages and switch these off if necessary!**
- **Wear protective clothing and protective equipment in accordance with applicable guidelines when working on electrical systems!**
- **Before making connections, ground the device / component / module by means of the ground wire connection, if present!**
- **Do not touching bare or stripped leads that are energized! Equip stranded conductors with wire ferrules!**
- **Hazardous voltages can be present in all circuitry parts that are connected to the power supply.**
- **Protect wires, cables and devices with a suitable line circuit breaker/fuse!**
- **Never switch off, remove or tamper with safety devices!**
- **There can still be hazardous voltages present in the device or in the component (module) even after it has been disconnected from the supply voltage (capacitor storage).**
- **Do not operate equipment with current transformer circuits when open.**
- **Only connect screw terminals with the same number of poles and design!**
- **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.**
- **Take note of the safety and warning notices in the usage information that belongs to the device, components or modules!**

2.5 Electrically qualified personnel

To avoid bodily injury and material damage, only electrically qualified personnel are permitted to work on the devices and their components, modules, assemblies, systems and current circuits who have knowledge of:

- the national and international accident prevention regulations,
- safety technology standards,
- installation, commissioning, operation, disconnection, grounding and marking of electrical equipment,
- the requirements concerning personal protective equipment.

Electrically qualified persons within the scope of the technical safety information of all usage information associated with the device and its components (modules) are persons who can furnish proof of qualification as an electrically skilled person.

WARNING

Warning against unauthorized manipulation or improper use of the device or its components (modules)!

Opening, dismantling or unauthorized manipulation of the device and its components (modules) which goes beyond the mechanical, electrical or other operating limits indicated can lead to material damage or injury, up to and including death.

- **Only electrically qualified personnel are permitted to work on the devices and their components (modules), assemblies, systems and current circuits.**
- **Always use your device or component (module) only in the manner described in the associated documentation.**
- **If there is discernible damage, send the device or the component (module) back to the manufacturer!**

2.6 Warranty in the event of damage

Any unauthorized tampering with or use of the device, component or module constitutes "misuse" and/or "negligence" under the product's warranty and thus voids the warranty for any possible resulting damage. In this regard, please take note of chap. „3.4 Intended use“ on page 15.

2.7 Safety information for handling current transformers

WARNING

Risk of injury due to large currents and high electrical voltage on the current transformers!

Current transformers operated while open on the secondary side (high voltage peaks pose a hazard when touched) can result in severe bodily injury or death.

- **Avoid operating the current transformers while open; short circuit the unloaded transformers!**
- **Before interrupting the current supply, short circuit the secondary connections of the current transformers. Switch any test switches that automatically short circuit the secondary lines of the current transformers to the "Test" status (Check the test switch/short circuiting connection beforehand)!**
- **Only use current transformers with basic insulation to IEC 61010-1:2010!**
- **Caution, even current transformers rated as safe for open operation can pose a hazard when touched during operation while open!**
- **Make sure that screw terminals for the current transformer connection on the device are adequately tightened!**
- **Comply with the information and provisions in the documentation of your current transformers!**

CAUTION

Risk of injury or damage to the meter due to high measurement currents at the connections of the current transformers!

High measurement currents can cause temperatures of up to 80 °C (176 °F) on the connections of the current transformers

- **Use wiring that is designed for an operating temperature of at least 80 °C (176 °F)!**
- **The current transformers can be hot even after the power supply has been switched off. Allow the connections of the current transformers and the connecting cables to cool down before touching them!**

CAUTION

Risk of injury or damage to the basic device (module) and/or your system due to a short circuit!

Inadequate insulation at the current measurement inputs of the modules with respect to the supply circuits of the basic device can cause dangerous voltages at the measuring input or damage to your device (module)/system.

- **Ensure reinforced or double insulation with respect to the supply circuits!**

3. Product description

3.1 800-CT8-A module

The current measuring module

- extends the functional range of the basic device to include additional current measuring channels (2 groups of 4 current measuring channels each);
- is suitable for current transformers with transformer ratios of $\dots/1$ A or $\dots/5$ A.

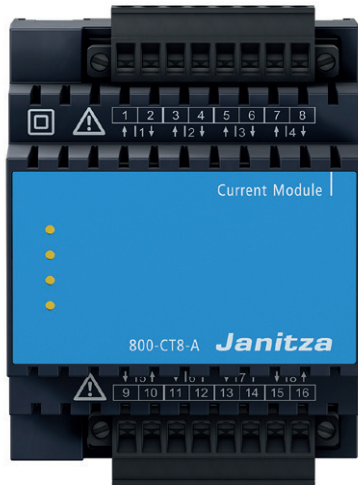


Fig.: 800-CT8-A module

The basic device (UMG 801) with current measuring module measures current exclusively via current transformers. The current transformers require a basic insulation according to IEC 61010-1:2010 for the nominal voltage of the circuit.

i INFORMATION

When setting up your meter and module topology, note that:

- The UMG 801 as the basic device allows the mounting of up to 10 modules.
- The scope of delivery for the module includes the appropriate bus connector (JanBus interface) for connection to the basic device.
- The maximum bus length of the JanBus is 100 m.

3.2 800-CON module (set of 2)

The module set, consisting of 2 transfer modules, is used to connect remote measurement points. With the transfer modules, you can implement meter and module topologies (e.g. UMG 801 with modules 800-CT8-A) with flexible arrangement of your DIN rails (for types, see Technical Data) in the switchboard cabinet or small distribution board.



Fig.: 800-CON module (transfer module, output / input)

i INFORMATION

- Both modules in the set of 2 are suitable as input or output modules!
- The scope of delivery for the transfer modules includes the appropriate bus connector (JanBus interface).
- When setting up your meter and module topology, make sure that the maximum bus length of the JanBus is 100 m.

i INFORMATION

Please also observe all usage information associated with the basic device in addition to the usage information for the modules!

3.3 Incoming goods inspection

The prerequisites for trouble-free and safe operation of the modules 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:

- The modules by performing a visual inspection to ensure flawless mechanical condition.
- The scope of delivery (see chap. 3.7 and 3.8) with respect to completeness before beginning with assembly and installation.

If it must be assumed that safe operation of your basic device with module is not possible:

1. **Switch off the power to your system (your device)!**
2. **Secure it against being switched back on!**
3. **Check to be sure it is de-energized!**
4. **Ground and short circuit the system (device)!**
5. **Cover or block off adjacent live parts!**

Safe operation is impossible, if, for example, the basic device with module:

- 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.).

ATTENTION

Improper handling may cause damage to the module and result in material damage!

The contacts of the bus connectors (Janbus interface) can bend or break off and destroy the bus connector.

- Never touch or manipulate the contacts of the bus connector!
- Never force the bus connector into the module! Please refer to the chapter on this „**4. Mounting**“ on page 18.
- **When handling, transporting and storing the module, protect the contacts of the bus connector!**

3.4 Intended use

The modules/components

- Are intended as expansion or transfer modules for the basic device UMG 801 in switch cabinets and small distribution boards.
- Must only be mounted with basic devices that are disconnected from the power supply (see chap. „4. Mounting“ on page 18).

i INFORMATION

Please note:

More information on certain functions of the basic device with modules can be found in the usage information for the basic device.

The basic device and the modules (800-CT8-A and 800-CON) are not designed for installation:

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

3.5 Overview of module functions

800-CT8-A module:

- 8 current measurement inputs (2 groups of 4)
- Measuring category 300 V CAT II
- Nominal current 1 A/5 A configurable

800-CON module:

- JanBus interface (proprietary) via bus connector and twisted pair, shielded data cable (1:1 connection via shield clamps) to device and module series (see section „5.4 Data cable for connecting the 800-CON transfer modules“ on page 31).

3.6 EU conformity declaration

Please see the EU declaration of conformity posted at www.janitza.de for the laws, standards and directives applied by Janitza electronics GmbH for the devices.

3.7 Scope of delivery, 800-CT8-A current measuring module.

Quantity	Part. no.	Designation
1	52.31.201	Module 800-CT8-A (current measuring module)
1	52.31.207	Bus connector - Current measuring module
1	10.01.953	End bracket
1	33.03.378	Installation instructions (DE/EN) "Current measuring module for the UMG 801"
1	33.03.342	"Safety information" supplement (12 languages)
1	33.03.059	"Mounting" supplement
1	10.01.853	Screw terminal, plug-in, 8-pole (current measurement I1..I4 and I5..I8)

Tab. Scope of delivery, 800-CT8-A current measuring module

3.8 Scope of delivery, 800-CON transfer module (set of 2).

Quantity	Part. no.	Designation
1	52.31.210	800-CON module - Transfer module (set of 2)
1	52.31.208	Bus connector - Transfer on right
1	52.31.209	Bus connector - Transfer on left
2	10.02.188	Shield clamps
2	10.01.953	End bracket (Weidmüller)
1	33.03.379	Installation instructions (DE/EN) "Transfer modules for the UMG 801"
1	33.03.342	"Safety information" supplement (12 languages)
1	33.03.059	"Mounting" supplement
2	10.01.938	Screw terminal, plug-in, 8-pole

Tab. Scope of delivery, 800-CON transfer module

3.9 Accessories "800-CON transfer module"

Quantity	Part. no.	Designation
1	08.02.451	Data cable for connecting the "transfer modules" (1000 mm - pre-assembled, twisted pair data cable)
1	08.02.452	Data cable for connecting the "transfer modules" (225 mm - pre-assembled, twisted pair stranded hook-up wires)

Tab. Accessories

i INFORMATION

- The modules are delivered with the necessary screw terminals and bus connectors (JanBus interface) for connection to the basic device or other modules.
- All supplied options and design variants are described on the delivery note.
- With the GridVis® network analysis software available at www.janitza.de, you can configure your basic device with modules and read out data for analysis (prerequisite: PC connection with your basic device).

3.10 Operating concept

Options to configure the basic device with current measuring module or to read measured values:

- Display and buttons on the basic device (user interface).
- GridVis® network analysis software.
- RS-485 interface or Ethernet interface.

INFORMATION

Please take note of the documentation of your basic device (without the module)! Basic or identical information and chapters, such as

- **Commissioning**
- **Configuration**
- **Technical data**
- **Error messages**
- **Procedure in the event of a malfunction, etc. can be found in the usage information of your basic device.**

A list of parameters and Modbus addresses with data on your basic device with module is available for you as a download at www.janitza.de.

3.11 GridVis® network analysis software

With the GridVis® software, you have the perfect tool for programming, reading out and visualizing measurement data (download at www.janitza.de).

Performance characteristics of the GridVis® software

- Configuration of the device
- Graphic display of measured values
- Online help and tutorials

Connections to the PC (GridVis® software)

Connections for communication between the PC and the basic device with modules can be found in chapter 6 on page 32.

INFORMATION

This user manual describes the modules and provides information on the operation of the modules via the basic device (UMG 801). The GridVis® software has an online help with tutorials.

4. Mounting

⚠ CAUTION

Disregard of the assembly instructions may cause property damage or personal injury!

Disregard of the assembly 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 and warning information.
- 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.de.

2. If this has not yet been done, plug the bus connector (JanBus interface) included in delivery into the sockets on the rear of your module.

ATTENTION

Improper handling may cause damage to the module and result in material damage!

The contacts of the bus connectors (Janbus interface) can bend or break off and destroy the bus connector.

- Never touch or manipulate the contacts of the bus connector!
- Never force the bus connector into the module!
- When handling, transporting and storing the module, protect the contacts of the bus connector!

4.1 Mounting the 800-CT8-A module

Observe the mounting instructions for your basic device (e.g. check bus connector installation!) and mount the 800-CT8-A module in the de-energized system as follows:

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

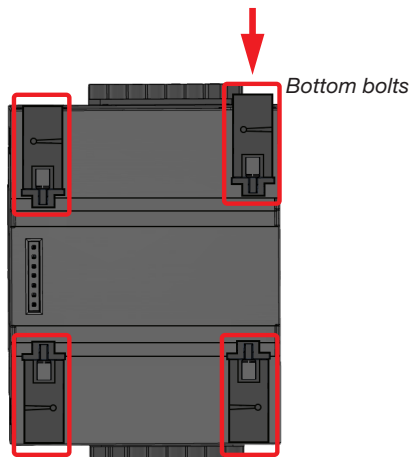


Fig.: Module rear view

i INFORMATION

The following module assembly sequence must be observed!

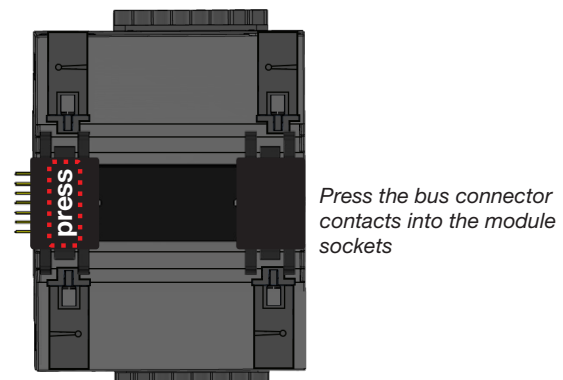
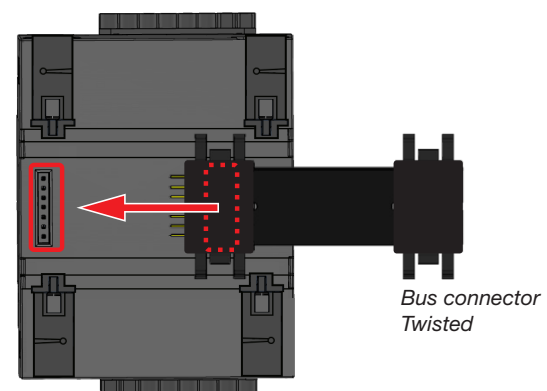
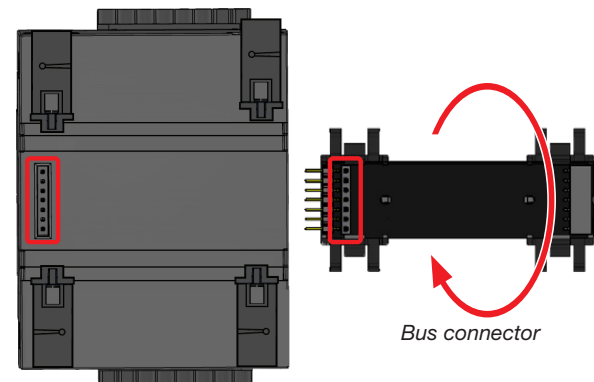


Fig.: Module rear view.

- Press your module with the bus connector onto the DIN rail (for suitable DIN rail types see chapter „11. Technical data - 800-CT8-A current measuring module“ on page 47) until the 4 bottom bolts snap into place.

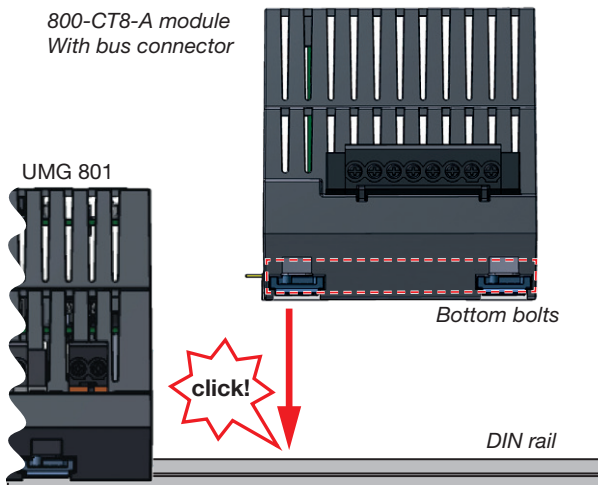


Fig.: Side view, UMG 801 and 800-CT8-A module

i 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!

- Push the contacts of your module bus connector into the sockets of the basic device bus connector (or into the sockets of the attached module) so that the bus connectors (devices) are coupled.

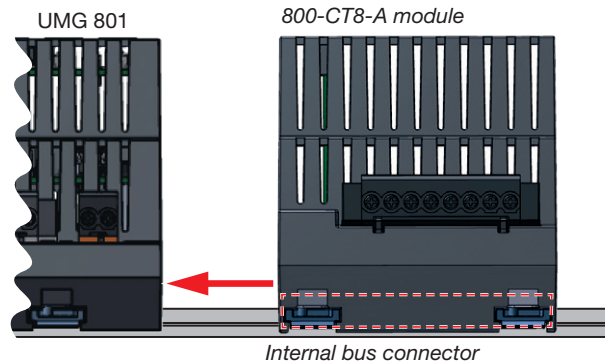


Fig.: Side view, UMG 801 and 800-CT8-A module

- Then cable your module and apply voltage to the basic device (system).

i INFORMATION

The basic device automatically recognizes the module during the power-up procedure!

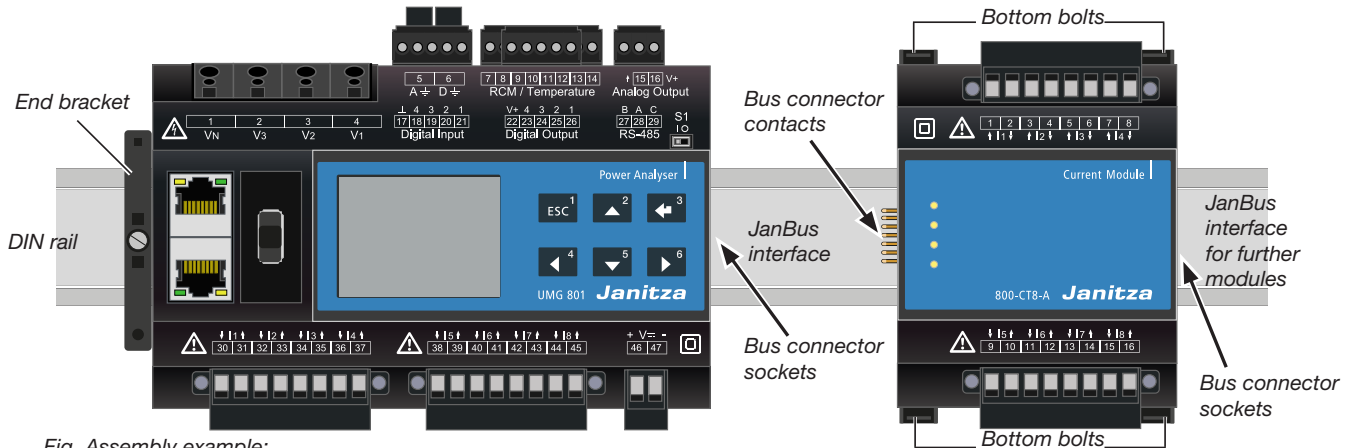


Fig. Assembly example:
Front view UMG 801 (basic device) with 800-CT8-A module

i INFORMATION

After installing your module, check the function of the communication between the basic device and the module using the display on the basic device as follows:

- When you are in the *Home* measuring display of the basic device, pressing the button 1 ESC takes you to the *Menu* window.
- Use buttons 2 (▲) and 5 (▼) to select the menu item *System information* and confirm with button 3 Enter.
- The *System information* window with the items *Basic device* and *Module 1* appears.

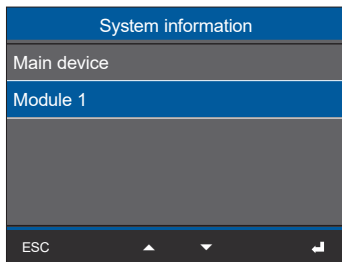


Fig.: System information window with the entries of the basic device and module 1.

- The basic device has detected module 1.

Observe the following:

- The basic device allows the mounting of **up to 10 modules!**
- The maximum bus length of the JanBus is 100 m.
- Always start and end your device and module series with end brackets (cf. Fig. "Example of a meter and module topology" on page 30).

Error after starting the basic device with module:

i INFORMATION

The basic device does not recognize modules during the power-up procedure!

If there is no communication to modules, the module functions are not supported (e.g. current measurements).

- **Disconnect your system from the power supply and check the condition of the bus connectors and the connections of your modules to the basic device (JanBus interface).** If necessary, push the contacts of the module bus connectors into the sockets of the basic device bus connector or the attached modules so that the bus connectors (devices) are coupled.
- For remote module series, check the connection of the transfer modules with the connection via the shield clamps.
- If necessary, restart the basic device.
- If these measures do not lead to the desired result, please contact our Support – www.janitza.de

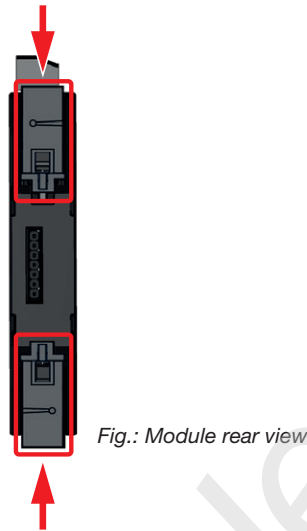
i INFORMATION

The figure above shows an example of mounting the 800-CT8-A module. Use end brackets to set up your device and module series on the DIN rails.

4.2 Mounting the 800-CON module

Observe the mounting instructions of your basic device (e.g. check bus connector installation!) and mount the 800-CON module (transfer module) in the de-energized system as follows:

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



i INFORMATION

- The following module assembly sequence must be observed!
- Always mount components of your JanBus system from the output bus connector to the input bus connector. This will avoid an incorrect connection of remote JanBus systems! Cf. chapter „5.3 Data transfer with 800-CON module“ on page 30.

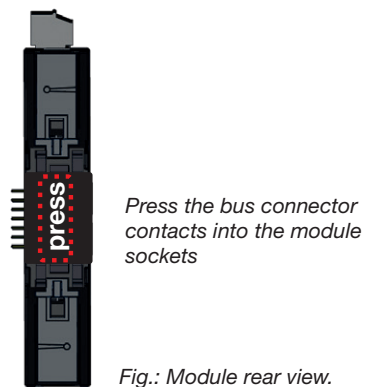
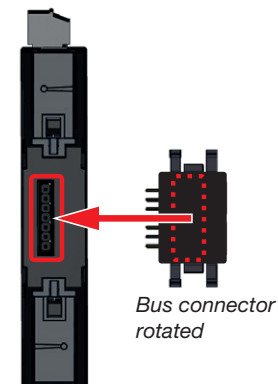
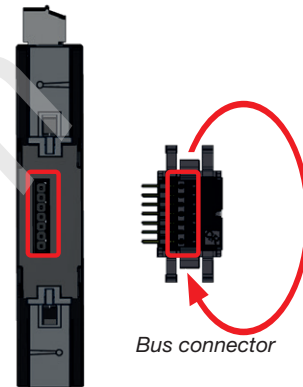
ATTENTION

Improper handling may cause damage to the module and result in material damage!

The contacts of the bus connectors (JanBus interface) can bend or break off and destroy the bus connector.

- **Never touch or manipulate the contacts of the bus connector!**
- **Never force the bus connector into the module!**
- **When handling, transporting and storing the module, protect the contacts of the bus connector!**

2. If this has not yet been done, plug the bus connector (JanBus interface) included in delivery into the sockets on the rear of your module.



- Press your module with the bus connector onto the DIN rail (for suitable DIN rail types see chapter „13. Technical data - 800-CON transfer module“ on page 51) until the 2 bottom bolts snap into place.

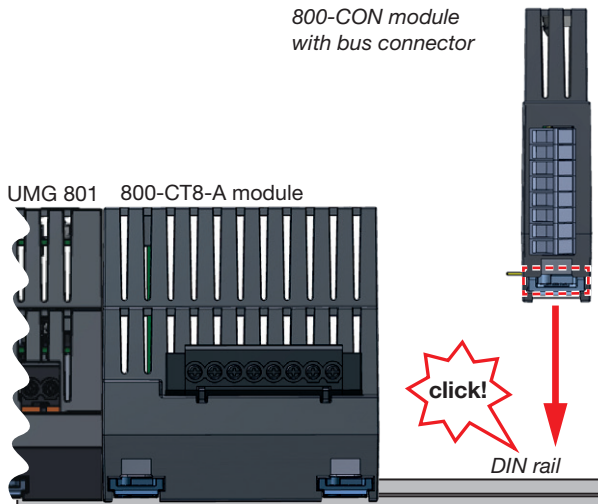


Fig.: Side view, UMG 801, 800-CT8-A and 800-CON module

- Push the contacts of your module bus connector into the sockets of the connected module (or basic device) so that the bus connectors (devices) are coupled.
- End your device and module series with end brackets (see Fig. Example "Devices and module series" in chapter 4.3 on page 22).

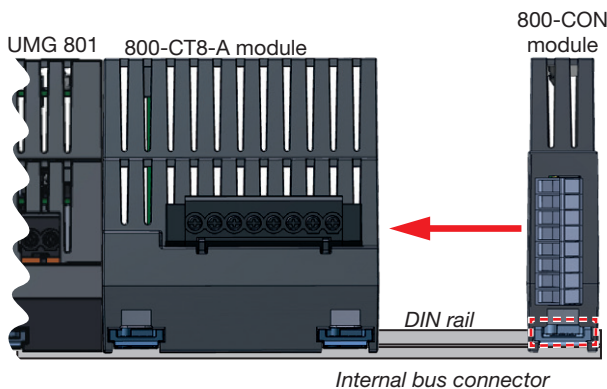


Fig.: Side view, UMG 801, 800-CT8-A and 800-CON module

- Then cable your module and apply voltage to the basic device (system). The basic device recognizes the plugged in module automatically.

4.3 Connection of device and module series with the 800-CON transfer modules

To ensure trouble-free operation of your device series with modules and thus your system, connect your transfer modules via shield clamps. The shield connection serves as protection against overvoltages and electromagnetic interference. Also provide a strain relief during installation that protects the data cable from being torn out unintentionally. Connect the transfer modules with the recommended data cables. Please note the warnings and information below!

ATTENTION

Incorrect installation of the data cable can destroy your basic device with modules or your system! A faulty or incorrectly installed data cable between the transfer modules can lead to the destruction of your basic device with modules and thus to material damage.

- For the connection between the transfer modules, use a twisted pair, stranded, shielded data cable with a 1:1 cable connection (cf. Chap „5.4 Data cable for connecting the 800-CON transfer modules“ on page 31)!
- Always connect your transfer modules via shield clamps with a strain relief!
- Protect your system against overvoltages and electromagnetic interference by connecting the data cable shield to the shield clamp!
- Always connect the data cable shield (ground) within the same grounding potentials! With different ground potentials, connect the data cable shield at least at one end!

ATTENTION

Improper handling may cause damage to the module and result in material damage!

The contacts of the bus connector (Janbus interface) can bend or break off and destroy the bus connector!

- Never touch or manipulate the contacts of the bus connector.
- Never force the transfer module with bus connector contacts into the bus connector sockets!
- When handling, transporting and storing the transfer module, protect the contacts of the bus connector!

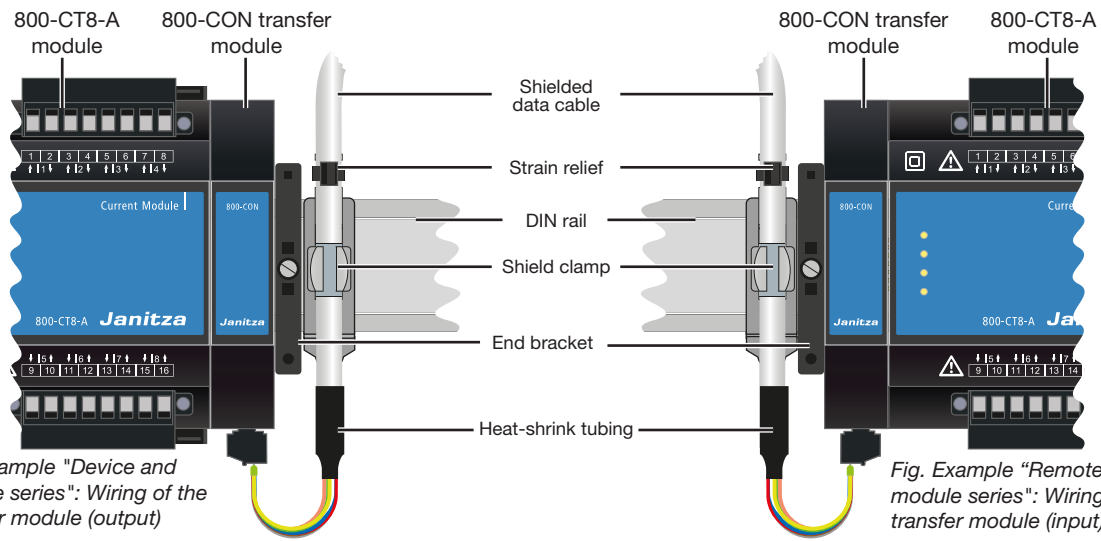


Fig. Example "Device and module series": Wiring of the transfer module (output)

Fig. Example "Remote module series": Wiring of the transfer module (input)

i INFORMATION

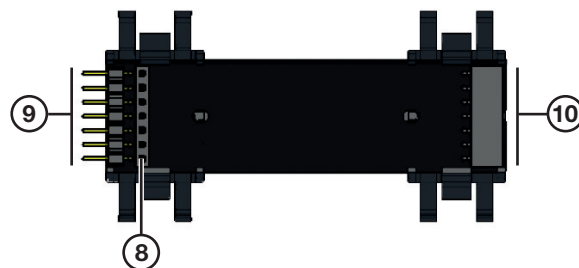
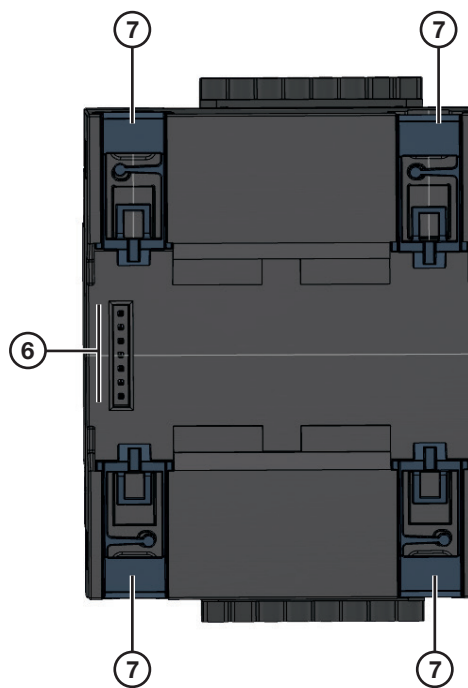
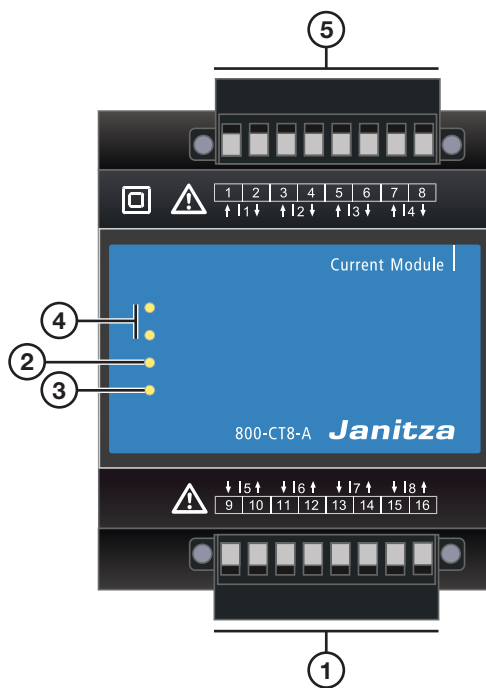
The basic device does not recognize modules during the power-up procedure!

If there is no communication to modules, the module functions are not supported (e.g. current measurements).

- **Disconnect your system from the power supply and check the condition of the bus connectors and the connections of your modules to the basic device (JanBus interface). If necessary, push the contacts of the module bus connectors into the sockets of the basic device bus connector or the attached modules so that the bus connectors (devices) are coupled.**
- **For remote module series, check the connection of the transfer modules with the connection via the shield clamps.**
- **If necessary, restart the basic device.**
- **If these measures do not lead to the desired result, please contact our Support – www.janitzza.de**

Observe the recommended data cables for the connection between the transfer modules (see chap. „5.4 Data cable for connecting the 800-CON transfer modules“ on page 31)!

4.4 Connections/controls on 800-CT8-A module

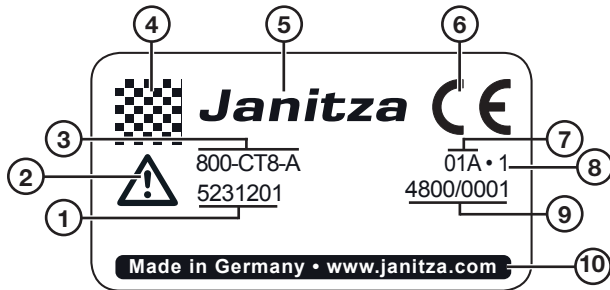


i INFORMATION

The current measuring module is supplied with the necessary screw terminals and bus connectors (JanBus interface) for connection to the basic device or other modules.

Item	Designation	Description
1	4 current measurement inputs in the group, terminals 9/10, 11/12, 13/14, 15/16	Current measurements I5, I6, I7, I8
2	LED	Lights "green" if the supply of power via the JanBus interface of the basic device is correct; the device is ready for operation.
3	LED	Lights up "red" at power-up and remains so until completion of initialization (module not yet initialized). Then there is a switchover to cyclic data exchange (pos. 4).
4	2 LEDs	Blink "orange" during operation and indicate cyclic data exchange.
5	4 current measurement inputs in the group, terminals 1/2, 3/4, 5/6, 7/8	Current measurements I1, I2, I3, I4
6	JanBus interface	Connection sockets for the bus connector
7	Bottom bolt	For mounting the module on the DIN rail
8	JanBus interface	Bus connector insertion into the module
9	Bus connector contacts (JanBus)	Connection to the basic device (or connected modules)
10	Bus connector sockets (JanBus)	Connection of additional modules

4.5 Marking of the 800-CT8-A module - Rating plate



Item	Designation	Description
1	Part number	Current measurements I5, I6, I7, I8
2	Symbol for "Danger sign"	General hazard symbol. Be certain to observe the warning notices applied to the device and shown in the documentation in order to avoid possible injury or even death.
3	Device type	Device designation
4	DataMatrix code	Coded manufacturer data
5	Manufacturer's logo	Logo of the device manufacturer
6	CE conformity marking	See „3.6 EU conformity declaration“ on page 15
7	Manufacturer-specific data	Manufacturer data
8	Hardware version	Hardware version of the module
9	Type/serial number	Number for identification of the device
10	Designation of origin/web address	Country of origin and manufacturer's web address

4.6 Connections/controls on 800-CON module

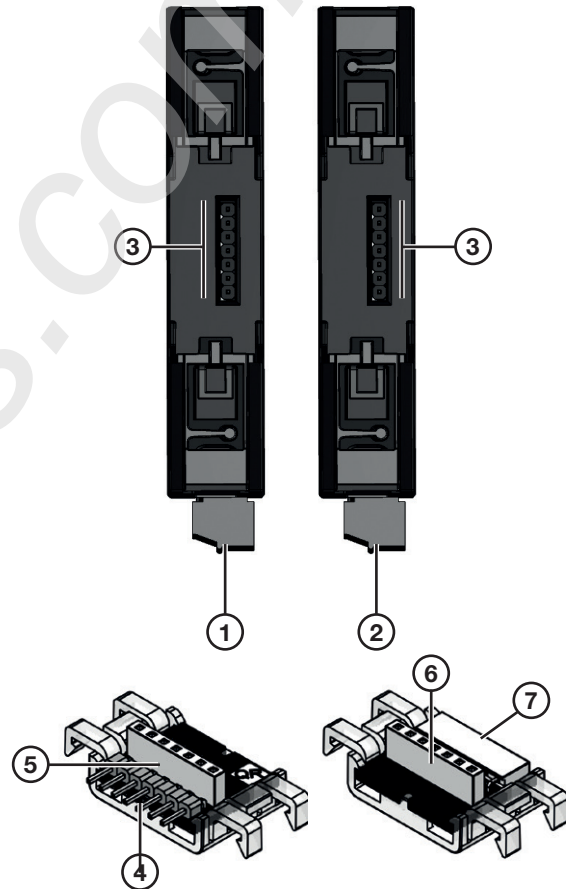
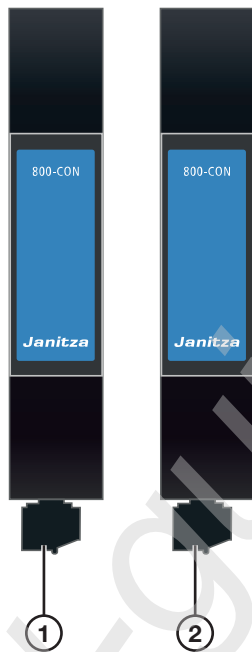
i INFORMATION

The transfer modules (800-CON) of the set of 2 are suitable as output or input modules!
However, make sure to mount the correct bus connectors (output and input)!

Always mount components of your JanBus system from the output bus connector to the input bus connector. This will avoid an incorrect connection of remote JanBus systems! Cf. chapter „5.3 Data transfer with 800-CON module“ on page 30.

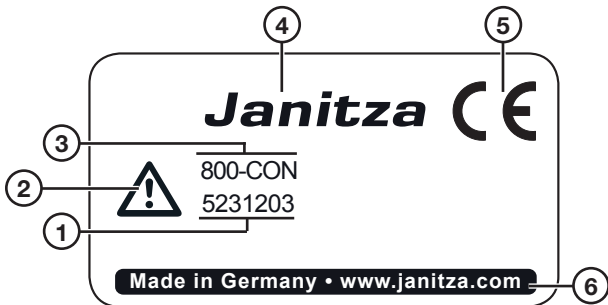
i INFORMATION

The transfer modules are supplied with the necessary screw terminals and bus connectors (JanBus interface) for connection to the basic device or other modules.



Item	Designation	Description
1	Screw terminals, 8-pole	Output or input module
2	Screw terminals, 8-pole	Output or input module
3	JanBus interface - rear of module	Connection sockets for the bus connector (note output/input!)
4	Transfer module output bus connector	Plug for insertion into the basic device or an attached module
5	Transfer module output bus connector	Connector for insertion into the rear of the module
6	Transfer module input bus connector	Connector for insertion into the rear of the module
7	Transfer module input bus connector	Sockets for module insertion

4.7 Marking of the 800-CON module - rating plate



Item	Designation	Description
1	Part number	Current measurements I5, I6, I7, I8
2	Symbol for "Danger sign"	General hazard symbol. Be certain to observe the warning notices applied to the device and shown in the documentation in order to avoid possible injury or even death.
3	Device type	Device designation
4	Manufacturer's logo	Logo of the device manufacturer
5	CE conformity marking	See „3.6 EU conformity declaration“ on page 15
6	Designation of origin/web address	Country of origin and manufacturer's web address

5. Installation

5.1 Current measurement with module 800-CT8-A

Your 800-CT8-A module in combination with the basic device (UMG 801):

- measures current exclusively via current transformers.
- allows the connection of current transformers with secondary currents of $\dots/1$ A and $\dots/5$ A for current measurement inputs I1 to I8.
- has a current transformer ratio of 5 A/5 A (I1 to I8) as the default setting.
- does not measure DC currents.

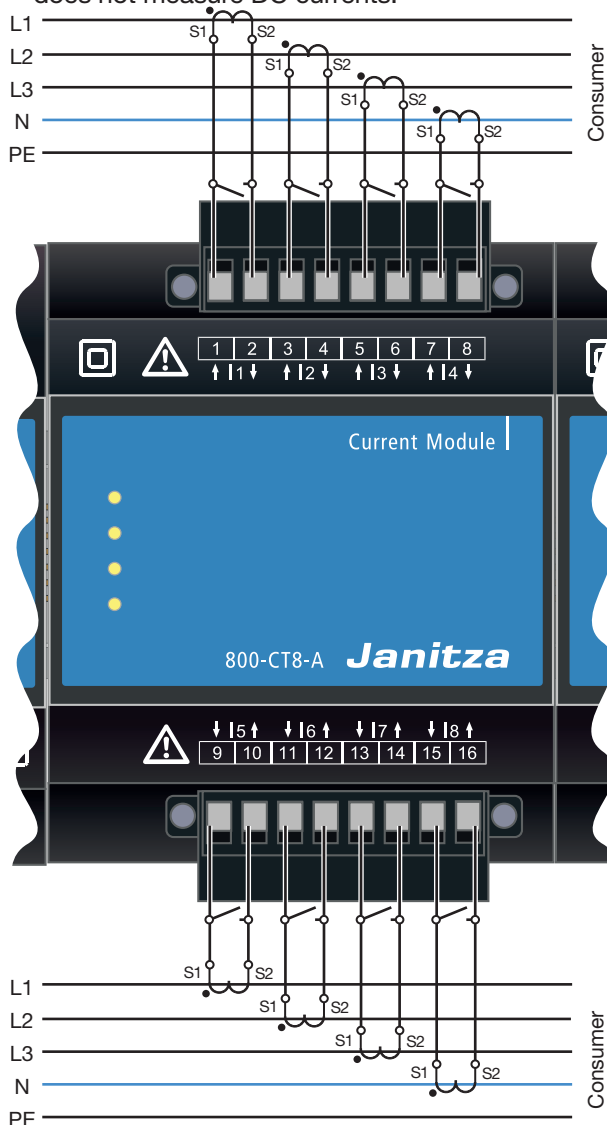


Fig. Connection variant "Current measurement" with 800-CT8-A module and terminal assignment.

i INFORMATION

You can configure the current transformer ratios via the user interface of the basic device or conveniently using the "Device configuration" function of the GridVis® software.

Observe the following:

- For single measurements, the phase assignment of the current measuring channels is arbitrary. The measurement of system performance characteristics requires phase L1 - L3.
- The connection variants for current measurement in the usage information of your basic device

! WARNING

Warning of electrical currents and voltages

Current transformers operated while exposed on the secondary side (high voltage peaks) can result in severe bodily injury or death.

Avoid exposed operation of the current transformers and short circuit unloaded transformers!

⚠ WARNING

Risk of injury due to high currents and high electrical voltages!
 Severe bodily injury or death can result from:

- Touching bare or stripped leads that are energized.
- Inputs of devices, components and modules are dangerous to touch.

Therefore, please note for your system:

- **Disconnect the supply of power before starting work!**
- **Secure it against being switched on!**
- **Check to be sure it is de-energized!**
- **Ground and short circuit! Use the ground connection points with the ground symbol for grounding!**
- **Cover or block off adjacent live parts!**

⚠ CAUTION

Risk of injury or damage to the device due to high measurement currents at the connections of the current transformers or the current measurement inputs of the device!
 High measurement currents can cause temperatures of up to 80 °C (176 °F) on the connections of the current transformers

- **Use wiring that is designed for an operating temperature of at least 80 °C (176 °F)!**
- **The current transformers can be hot even after the power supply has been switched off. Allow the connections of the current transformers and the connecting cables to cool down before touching them!**
- **Make sure that screw terminals for the current transformer connection on the device are adequately tightened!**
- **Ground connections present on the secondary windings of the current transformers must be connected to ground!**
- **Observe the general safety information for handling current transformers in the chap. „2.7 Safety information for handling current transformers“ on page 12.**
- **Comply with the information and provisions in the usage information of your current transformers!**

5.2 Example schematic diagram “Connection variants for current measurement”

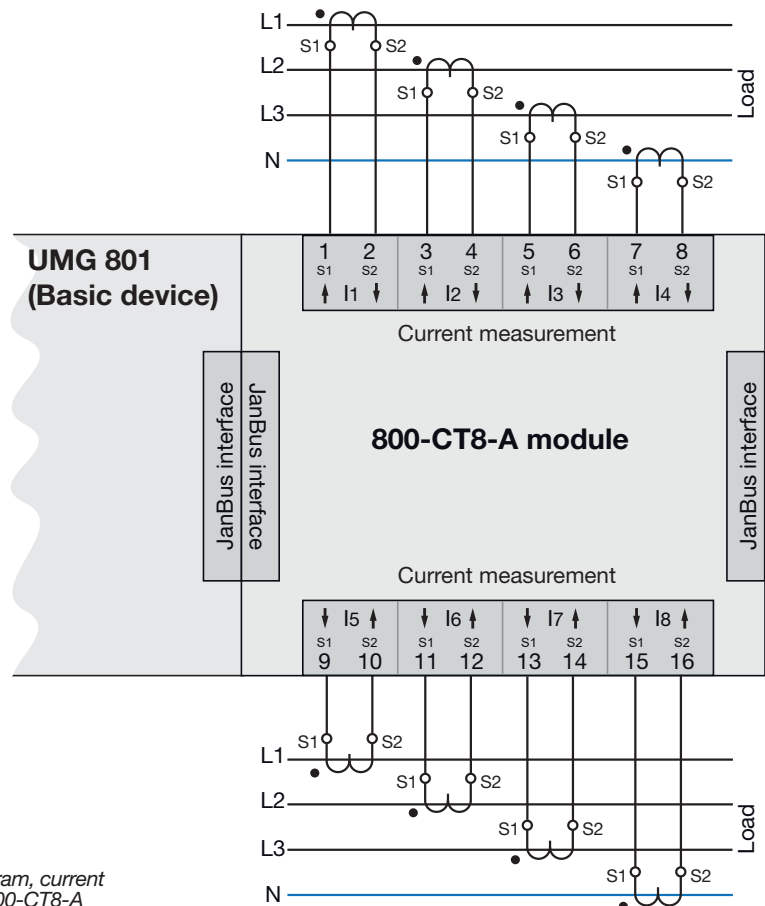


Fig. Example schematic diagram, current measurement with module 800-CT8-A

5.3 Data transfer with 800-CON module

Your 800-CON transfer module (set of 2) in combination with a basic device (UMG 801) and current measuring modules serve to connect remote measurement points.

With the transfer modules, you can implement meter and module topologies (e.g. UMG 801 with 800-CT8-A current measuring modules) with flexible arrangement of your DIN rails in the switchboard cabinet or small distribution board (for DIN rail types, see chapter „13. Technical data - 800-CON transfer module“ on page 51).

i INFORMATION

- When setting up your meter and module topology, bear in mind that the UMG 801 as the basic device allows the mounting of **up to 10 modules**.
- **Always mount components of your JanBus system from the output bus connector to the input bus connector (from left to right). This will avoid an incorrect connection of remote JanBus systems!**
- **Use end brackets and shield clamps with a strain relief to mount your meter and module topology on a suitable DIN rail (see chap. „13. Technical data - 800-CON transfer module“ on page 51.**
- The recommended data cables can be found in chap. „5.4 Data cable for connecting the 800-CON transfer modules“ on page 31.
- When setting up your meter and module topology, make sure that the maximum bus length of the JanBus is 100 m.

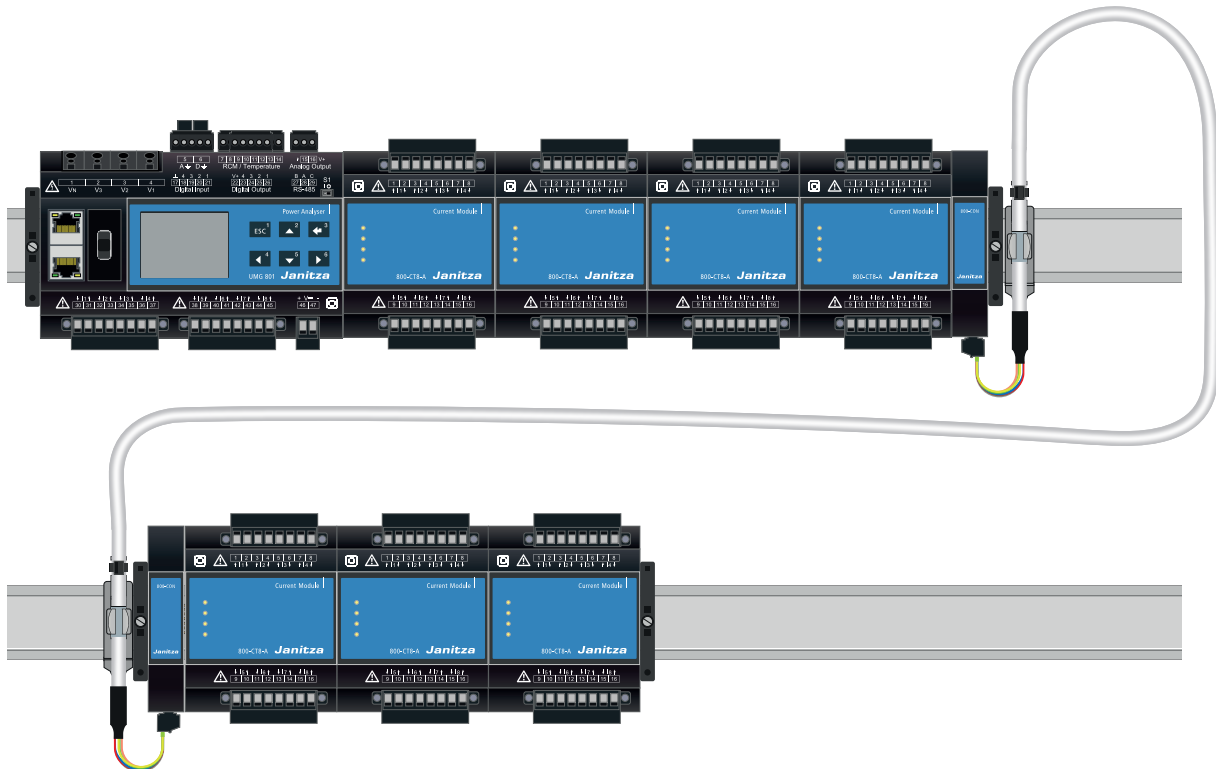


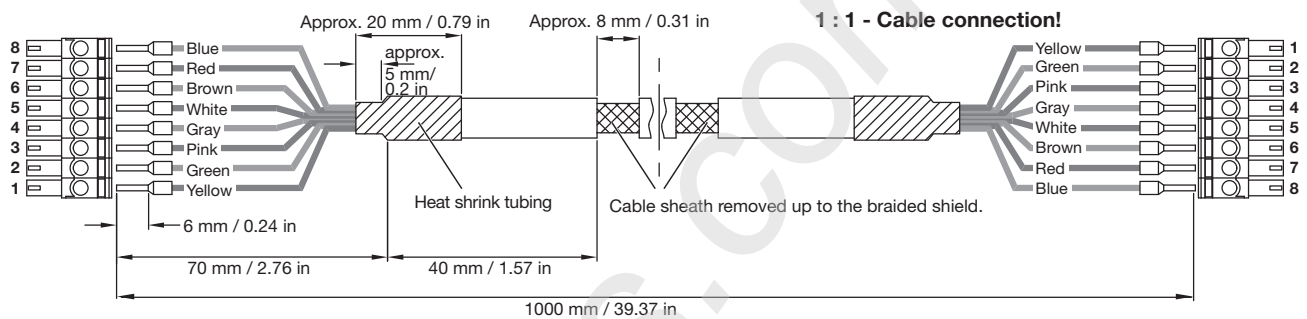
Fig. Example of a meter and module topology

5.4 Data cable for connecting the 800-CON transfer modules

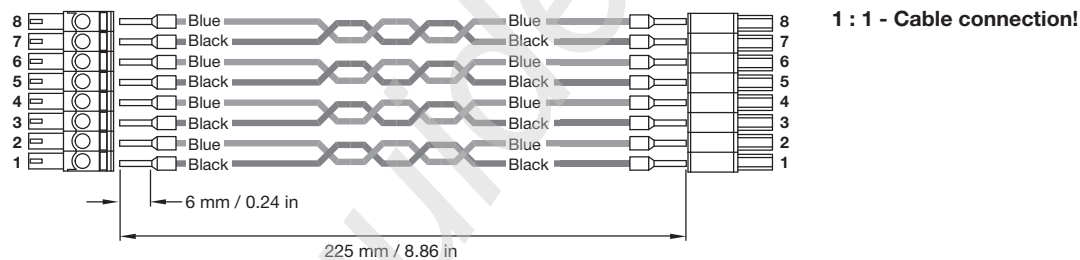
Recommendation:

Use the following data cables for smooth communication in your meter and module topology for connecting the 800-CON transfer modules:

Twisted pair, shielded data cable with color code to DIN 47100 (4 x 2 x 0.25) - Lapp Unitronic LiYCY (TP)



Twisted pair stranded hook-up wire, Lapp LiY 0.25², black/blue.



i INFORMATION

Ordering information for the data cables can be found in the chapter page 16.

6. PC connection

6.1 PC connection of the current measuring modules via the basic device (UMG 801)

Configure your current measuring module via the display and the buttons on your basic device (UMG 801).

Use the **Ethernet interface of the basic device** to connect your module/module series to a PC. The PC, with the GridVis® software or generic OPC UA client installed, is used to configure or read out your modules/module series.

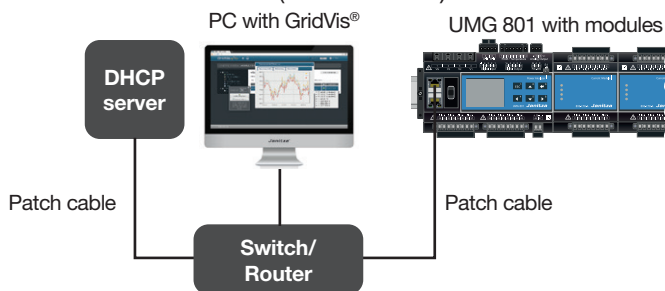
i INFORMATION

Further information on PC connections of the basic device can be found in the UMG 801 user manual.

6.2 PC connection of the basic device (UMG 801) with current measuring module or your module series via the Ethernet interface

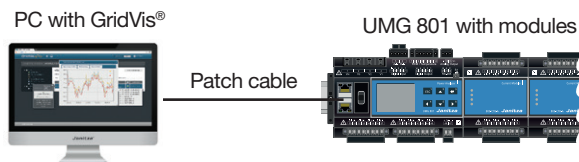
Connection to a DHCP server and PC.

The DHCP server automatically assigns IP addresses to the basic device (with modules) and the PC.



PC direct connection to the basic device with modules.

PC and basic device require a fixed IP address.



i INFORMATION

Detailed descriptions of connection via the Ethernet interface of the basic device can be found in the UMG 801 user manual.

7. Operation and button functions of the basic device with module

7.1 Operation and button functions of the basic device with 800-CT8-CON module

The basic device with module has a display and 6 function buttons to enable installation, commissioning and configuration without a PC.

i INFORMATION

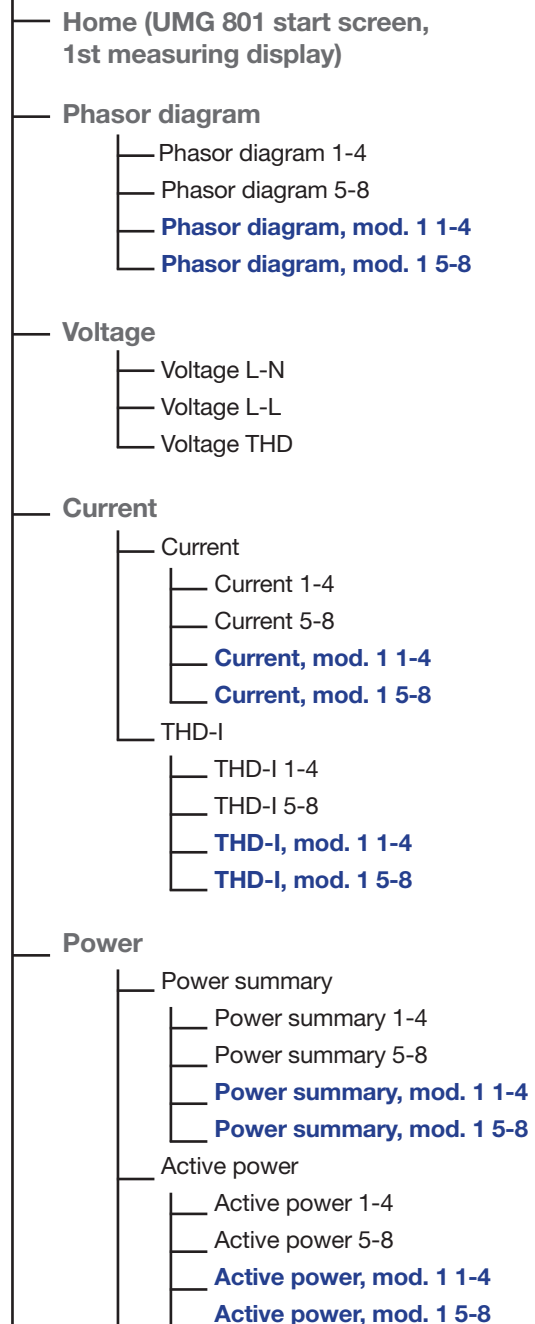
- The configuration of your module and the display of module-relevant measurement data is carried out via the basic device.
- For details and information on the display and button functions of the basic device, refer to the usage information of the basic device.
- With the **GridVis® network analysis software** available at www.janitza.de, you can configure your basic device with modules and read out data for analysis (prerequisite: PC connection with your basic device).

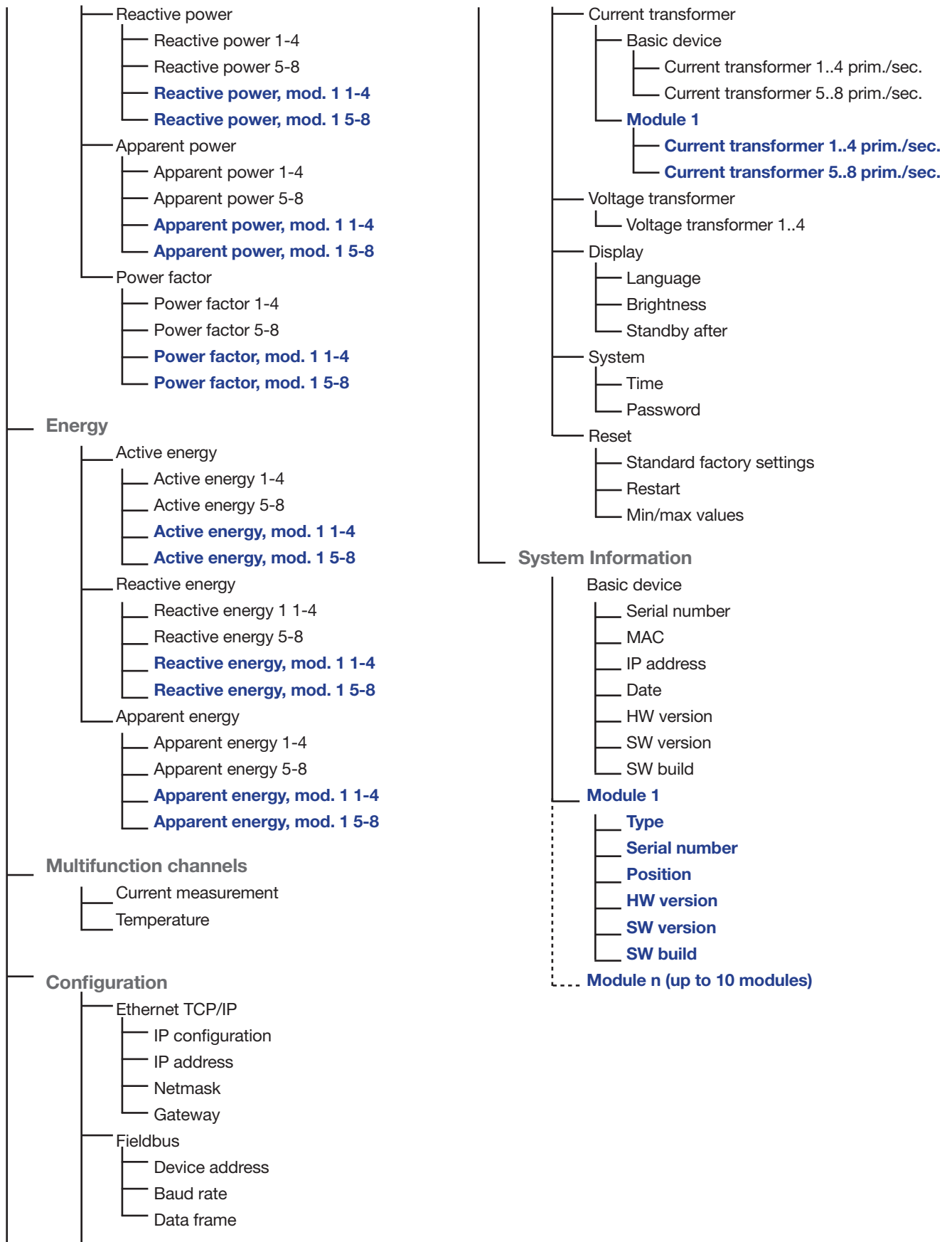
7.2 Module-relevant menu items of the basic device with one module

i INFORMATION

The following graphic shows the module-relevant menu items of the basic device with **one** module. **The module-relevant items of the basic device can contain up to 10 modules!**

Menu





8. Module-relevant configurations

8.1 800-CT8-A module - Current transformer Configuration on the basic device

i INFORMATION

Before configuring the current transformer ratios, be certain to connect the transformers in compliance with the specifications on the device rating plate and the technical data!

- Press function button 1 *ESC* to open the menu.
- Use buttons 2 “▲” and 5 “▼” to select the menu item *Configuration* and confirm with button 3 *Enter*.
- The *Configuration* window appears.
- In the *Configuration* window, use buttons 2 “▲” and 5 “▼” to select the menu item *Current transformers* and confirm with button 3 *Enter*.

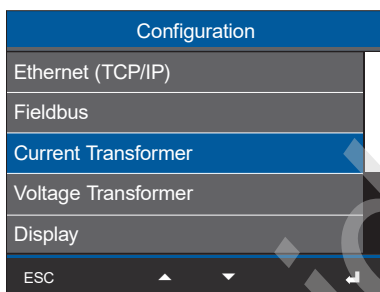


Fig. Window Configuration -> item Current transformer

- The *Current transformers* window appears.

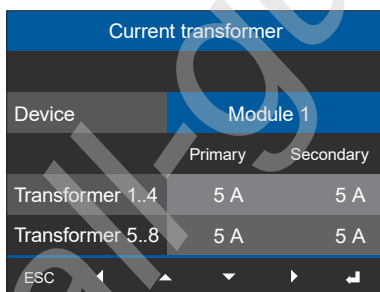


Fig. Window, Current transformer module 1 -> item Device

- In the *Current transformers* window, choose the item *Device* and confirm with button 3 *Enter*.
- The item *Device* appears marked in “blue.”
- Use buttons 2 “▲” and 5 “▼” to select the item for your series module *Module 1* (up to 10 modules) and confirm with button 3 *Enter*.

- Use button 5 “▼” to go to the setting for the primary side of the current transformers 1-4 of the module (current measurement inputs I1..I4).
- The item for the primary side of the current transformers I1..I4 appears marked in “blue.”
- Press button 3 *Enter*.
- The item for the primary side of the current transformers I1..I4 “blinks.”
- Use buttons 4 (◀) and 6 (▶) to change the position of the digit to be set and buttons 2 (▲) and 5 (▼) to change the digit (-1/+1).
- Confirm your entries with button 3 *Enter* or end the action by pressing button 1 *ESC*.

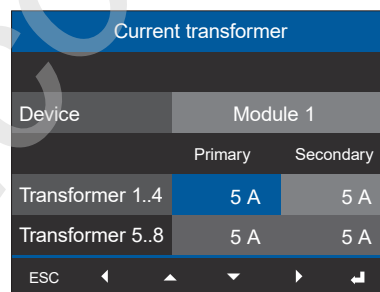


Fig. Window, Current transformer module 1 -> item Primary for current transformer 1..4.

- Use button 6 (▶) to go to the configuration of the secondary side of the current transformers I1..I4 of the module.
- Configure the secondary side of the current transformers I1..I4 of the module in the same way.
- Confirm your entries with button 3 *Enter* or end the action by pressing button 1 *ESC*.
- Use the function buttons to configure the **Current transformer ratio 5-8 (I5..I8)** – Primary and secondary side – of the module, as described above.
- To return to the menu, confirm your entries with button 3 *Enter* or end the action by pressing button 1 *ESC*.

i INFORMATION

You can also configure current and voltage transformer ratios in the device configuration of the **GridVis®** page 37). A description of the configuration can be found in the online help or in the tutorials for the software.

8.2 800-CT8-A module - Current transformer Configuration in the GridVis® software

An assistant in the GridVis® network visualization software helps with all module-relevant settings. Also note the usage information of the basic device.

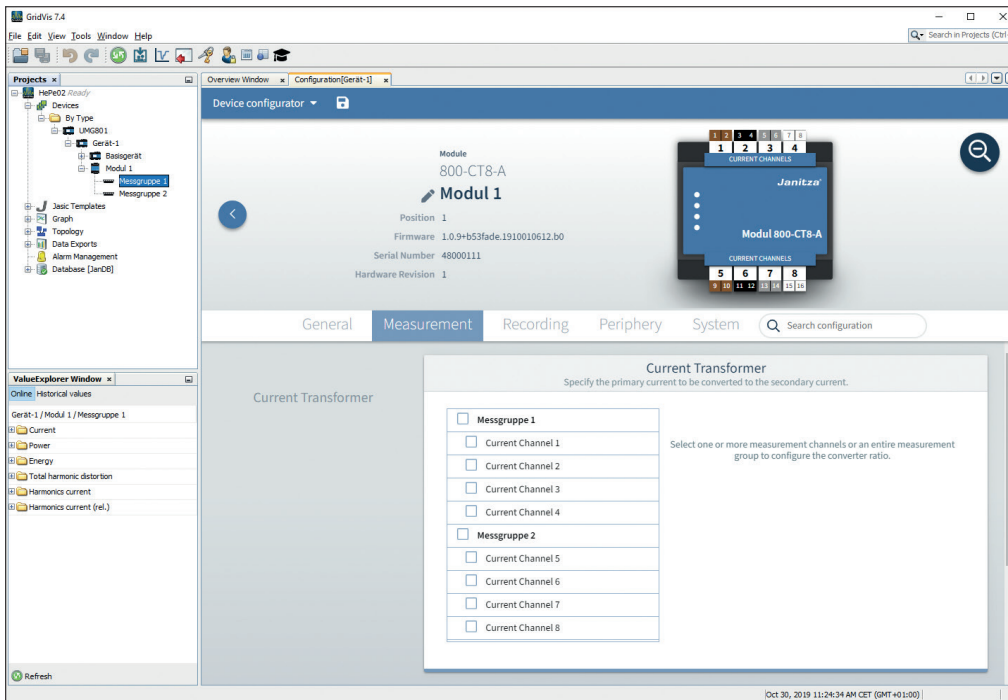


Fig. Current transformer configuration "Module 1" in the GridVis software®.

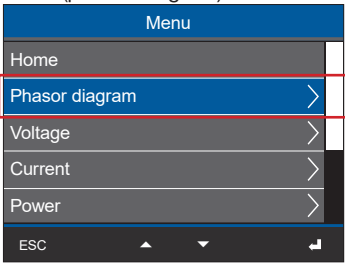
9. Module-relevant measuring displays

9.1 800-CT8-A module - Measuring displays

INFORMATION

The following measured value and instrument displays of the basic device do not show a concrete application and may differ depending on the connection of your basic device with modules and the measuring environment! A basic device allows the connection of **up to 10 current measuring modules**. Further measured value and instrument displays can be found in the usage information for the basic device.

Menu (phasor diagram)



Phasor diagram

- Phasor diagram 1-4
- Phasor diagram 5-8
- Phasor diagram Mod. 1 1-4
- Phasor diagram Mod. 1 5-8

ESC

Phasor diagram Mod. 1 1-4

	U1	U2	U3	I1	I2	I3
L1	230.0V					
	45.0°			2.229A		
L2	229.7V					
	40.0°			2.228A		
L3	229.7V					
	52.0°			2.228A		

ESC

Display, Voltage L1, L2, L3; current L1, L2, L3; phase shift between voltage and current L1, L2, L3.

Phasor diagram

- Phasor diagram 1-4
- Phasor diagram 5-8
- Phasor diagram Mod. 1 1-4
- Phasor diagram Mod. 1 5-8

ESC

Phasor diagram Mod. 1 5-8

	U1	U2	U3	I5	I6	I7
L5	229.8V					
	44.0°			2.227A		
L6	230.0V					
	41.0°			2.229A		
L7	229.7V					
	50.0°			2.229A		

ESC

Display, Voltage L5, L6, L7; current L5, L6, L7; phase shift between voltage and current L5, L6, L7.

Menu (Current)

Menu	
Home	
Phasor diagram	>
Voltage	>
Current	>
Power	>
ESC	▲ ▼ ▾

Submenu (Current)

Current	
Current	>
THD I	>
ESC	▲ ▼ ▾

Current			
Current 1-4			
Current 5-8			
Current Mod. 1 1-4			
Current Mod. 1 5-8			
ESC	▲ ▼ ▾		▾ ▶

Current Mod. 1 1-4			
	Value	Avg.	Max.
L1	1.940A	1.940A	1.940A
L2	1.940A	1.940A	1.940A
L3	1.940A	1.940A	1.940A
L4	0.001A	0.001A	0.001A
ESC	▲ ▼ ▾		▾ ▶

Display, Current (1-4) L1, L2, L3, L4 with mean and maximum values.

Current			
Current 1-4			
Current 5-8			
Current Mod. 1 1-4			
Current Mod. 1 5-8			
ESC	▲ ▼ ▾		▾ ▶

Current Mod. 1 5-8			
	Value	Avg.	Max.
L5	1.930A	1.930A	1.930A
L6	1.930A	1.930A	1.930A
L7	1.930A	1.930A	1.930A
L8	0.001A	0.001A	0.001A
ESC	▲ ▼ ▾		▾ ▶

Display, Current (5-8) L5, L6, L7, L8 with mean and maximum values.

Submenu (THD-I)

Current	
Current	>
THD I	>
ESC	▲ ▼ ▾

THD I			
THD I 1-4			
THD I 5-8			
THD I Mod. 1 1-4			
THD I Mod. 1 5-8			
ESC	▲ ▼ ▾		▾ ▶

THD I Mod. 1 1-4			
	Value	Avg.	Max.
L1	166.3%	166.3%	166.3%
L2	166.4%	166.4%	166.4%
L3	166.4%	166.4%	166.4%
L4	201.1%	207.0%	222.2%
ESC	▲ ▼ ▾		▾ ▶

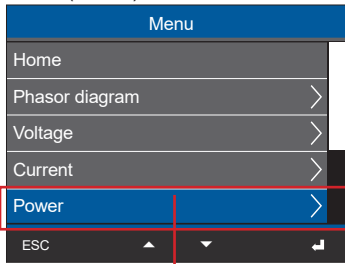
Display, THD-I (1-4) - L1, L2, L3, L4 (Total Harmonic Distortion of the current in %) with average and maximum values.

THD I			
THD I 1-4			
THD I 5-8			
THD I Mod. 1 1-4			
THD I Mod. 1 5-8			
ESC	▲ ▼ ▾		▾ ▶

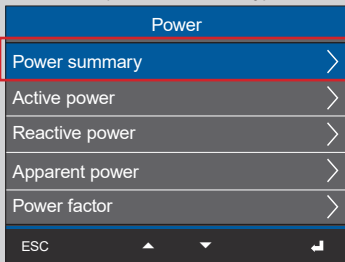
THD I Mod. 1 5-8			
	Value	Avg.	Max.
L5	166.3%	166.3%	166.3%
L6	166.4%	166.4%	166.4%
L7	166.4%	166.4%	166.4%
L8	209.3%	212.3%	227.6%
ESC	▲ ▼ ▾		▾ ▶

Display, THD-I (5-8) - L5, L6, L7, L8 with mean and maximum values.

Menu (Power)



Submenu (Power summary)



Power summary

- Power summary 1-4
- Power summary 5-8
- Power summary Mod. 1 1-4**
- Power summary Mod. 1 5-8
- ESC

Power summary Mod. 1 1-4

	P	Q	S
L1	0.10kW	-0.00kvar	0.19kVA
L2	0.10kW	-0.00kvar	0.19kVA
L3	0.10kW	-0.00kvar	0.19kVA
Σ	0.31kW	-0.00kvar	0.58kVA

ESC

Display, Summary of active, reactive and apparent power for L1, L2, L3 and their sum.

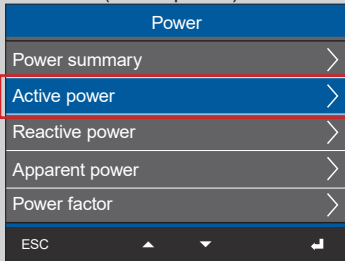
Power summary Mod. 1 5-8

	P	Q	S
L5	0.11kW	-0.00kvar	0.20kVA
L6	0.11kW	-0.00kvar	0.20kVA
L7	0.11kW	-0.00kvar	0.20kVA
Σ	0.34kW	-0.00kvar	0.61kVA

ESC

Display, Summary of active, reactive and apparent power for L5, L6, L7 and their sum.

Submenu (Active power)



Active power

- Active power 1-4
- Active power 5-8
- Active power Mod. 1 1-4**
- Active power Mod. 1 5-8
- ESC

Active power Mod. 1 1-4

	Value	Avg.
L1	0.10kW	0.10kW
L2	0.10kW	0.10kW
L3	0.10kW	0.10kW
Σ	0.31kW	0.31kW

ESC

Display, Active power 1-4 for L1, L2, L3 with average values and sums.

Active power Mod. 1 5-8

	Value	Avg.
L5	0.11kW	0.11kW
L6	0.11kW	0.11kW
L7	0.11kW	0.11kW
Σ	0.34kW	0.34kW

ESC

Display, Active power 5-8 for L5, L6, L7 with average values and sums.

Submenu (Reactive power)

Power	
Power summary	>
Active power	>
Reactive power	>
Apparent power	>
Power factor	>
ESC	▲ ▼ ▾

Reactive power	
Reactive power 1-4	
Reactive power 5-8	
Reactive power Mod. 1 1-4	
Reactive power Mod. 1 5-8	
ESC	▲ ▼ ▾

Reactive power Mod. 1 1-4		
	Value	Avg.
L1	-0.02kvar	-0.01kvar
L2	-0.02kvar	-0.01kvar
L3	-0.02kvar	-0.01kvar
Σ	-0.06kvar	-0.02kvar
ESC	▲ ▼ ▾	▶

Display, Reactive power 1-4 for L1, L2, L3 with average values and sums.

Reactive power	
Reactive power 1-4	
Reactive power 5-8	
Reactive power Mod. 1 1-4	
Reactive power Mod. 1 5-8	
ESC	▲ ▼ ▾

Reactive power Mod. 1 5-8		
	Value	Avg.
L5	-0.02kvar	-0.01kvar
L6	-0.02kvar	-0.01kvar
L7	-0.02kvar	-0.01kvar
Σ	-0.06kvar	-0.03kvar
ESC	◀ ▲ ▼ ▾	▶

Display, Reactive power 5-8 for L5, L6, L7 with average values and sums.

Submenu (Apparent power)

Power	
Power summary	>
Active power	>
Reactive power	>
Apparent power	>
Power factor	>
ESC	▲ ▼ ▾

Apparent power	
Apparent power 1-4	
Apparent power 5-8	
Apparent power Mod. 1 1-4	
Apparent power Mod. 1 5-8	
ESC	▲ ▼ ▾

Apparent power Mod. 1 1-4		
	Value	Avg.
L1	0.19kVA	0.16kVA
L2	0.19kVA	0.16kVA
L3	0.19kVA	0.16kVA
Σ	0.58kVA	0.48kVA
ESC	▲ ▼ ▾	▶

Display, Apparent power 1-4 for L1, L2, L3 with average values and totals.

Apparent power	
Apparent power 1-4	
Apparent power 5-8	
Apparent power Mod. 1 1-4	
Apparent power Mod. 1 5-8	
ESC	▲ ▼ ▾

Apparent power Mod. 1 5-8		
	Value	Avg.
L5	0.20kVA	0.17kVA
L6	0.20kVA	0.17kVA
L7	0.20kVA	0.17kVA
Σ	0.61kVA	0.50kVA
ESC	◀ ▲ ▼ ▾	▶

Display, Apparent power 5-8 for L5, L6, L7 with average values and sums.

Submenu (Power factor)

Power	
Power summary	>
Active power	>
Reactive power	>
Apparent power	>
Power factor	>
ESC	▲ ▼ ▾ ▹

Power factor		
Power factor 1-4		
Power factor 5-8		
Power factor Mod. 1 1-4		
Power factor Mod. 1 5-8		
ESC ▲ ▼ ▾ ▹		

Power factor Mod. 1 1-4		
	cos(phi)	Power factor
L1	0.984	0.513
L2	0.985	0.513
L3	0.985	0.513
Σ	0.985	0.981
ESC ▲ ▼ ▾ ▹		

Display, Power factor 1-4 for L1, L2, L3 with cos(phi) and sums.

Power factor		
Power factor 1-4		
Power factor 5-8		
Power factor Mod. 1 1-4		
Power factor Mod. 1 5-8		
ESC ▲ ▼ ▾ ▹		

Power factor Mod. 1 5-8		
	cos(phi)	Power factor
L5	0.985	0.513
L6	0.985	0.513
L7	0.985	0.513
Σ	0.985	0.981
ESC ◀ ▲ ▼ ▾ ▹ ▶		

Display, Power factor 5-8 for L5, L6, L7 with cos(phi) and sums.

Menu (Energy)

Menu	
Power	>
Energy	>
Multifunctional channels	>
Configuration	>
System information	>
ESC ▲ ▼ ▾ ▹	

Submenu (Active energy)

Energy	
Active energy	>
Reactive energy	>
Apparent energy	>
ESC ▲ ▼ ▾ ▹	

Active energy		
Active energy 1-4		
Active energy 5-8		
Active energy Mod. 1 1-4		
Active energy Mod. 1 5-8		
ESC ▲ ▼ ▾ ▹		

Active energy Mod. 1 1-4		
Sum L1..L3		
Consumed	1.0kWh	
Delivered	1.0kWh	
ESC ▲ ▼ ▾ ▹		

Display, Active energy 1-4, sum L1..L3, applied and delivered.

Active energy		
Active energy 1-4		
Active energy 5-8		
Active energy Mod. 1 1-4		
Active energy Mod. 1 5-8		
ESC ▲ ▼ ▾ ▹		

Active energy Mod. 1 5-8		
Sum L1..L3		
Consumed	0.8kWh	
Delivered	0.8kWh	
ESC ◀ ▲ ▼ ▾ ▹ ▶		

Display, Active power 5-8, sum L1..L3, applied and delivered.

Submenu (Reactive energy)

Energy	>
Active energy	>
Reactive energy	>
Apparent energy	>
ESC	▲ ▼ ▾

Submenu (Apparent energy)

Energy	>
Active energy	>
Reactive energy	>
Apparent energy	>
ESC	▲ ▼ ▾

Reactive energy		Reactive energy Mod. 1 1-4
Reactive energy 1-4		Sum L1..L3
Reactive energy 5-8		Inductive 0.9kvarh
Reactive energy Mod. 1 1-4		Capacitive 0.9kvarh
Reactive energy Mod. 1 5-8		ESC ▲ ▼ ▾
ESC ▲ ▼ ▾		

Display, Reactive energy 1-4, sum L1..L3, inductive and capacitive.

Reactive energy		Reactive energy Mod. 1 5-8
Reactive energy 1-4		Sum L1..L3
Reactive energy 5-8		Inductive 0.4kvarh
Reactive energy Mod. 1 1-4		Capacitive 0.4kvarh
Reactive energy Mod. 1 5-8		ESC ▲ ▼ ▾
ESC ▲ ▼ ▾		

Display, Reactive energy 5-8, sum L1..L3, inductive and capacitive.

Apparent energy		Apparent energy Mod. 1 1-4
Apparent energy 1-4		Sum L1..L3
Apparent energy 5-8		Total 2.7kVAh
Apparent energy Mod. 1 1-4		ESC ▲ ▼ ▾
Apparent energy Mod. 1 5-8		
ESC ▲ ▼ ▾		

Display, Apparent energy 1-4, sum L1..L3, total.

Apparent energy		Apparent energy Mod. 1 5-8
Apparent energy 1-4		Sum L1..L3
Apparent energy 5-8		Total 0.1kVAh
Apparent energy Mod. 1 1-4		ESC ▲ ▼ ▾
Apparent energy Mod. 1 5-8		
ESC ▲ ▼ ▾		

Display, Apparent energy 5-8, sum L1..L3, total.

Menu (Configuration)

Menu	>
Power	>
Energy	>
Multifunctional channels	>
Configuration	>
System informationen	>
ESC	▲ ▼ ▾

ⓘ INFORMATION

The description of the current transformer configuration of the modules can be found in chapter 8.1 on page 36.

Menu (System information)

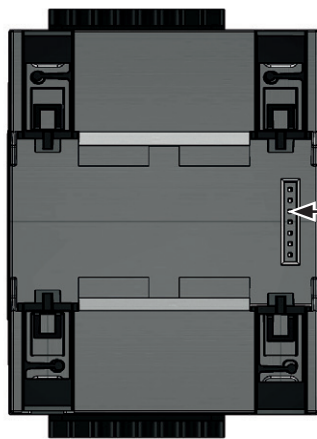
Menu	
Power	>
Energy	>
Multifunctional channels	>
Configuration	>
System informationen	>
ESC	▲ ▼ ↵



10. Device views - 800-CT8-A current measuring module

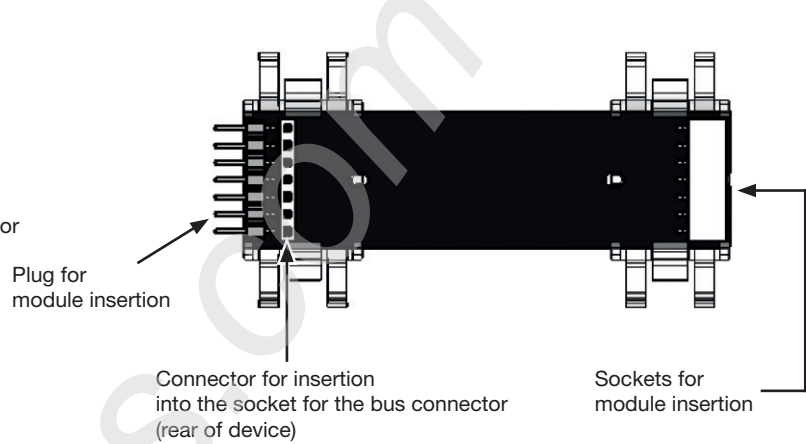
- The figures are for illustration purposes only and are not to scale.
- Dimensions in mm.

Rear view



Socket for bus connector

Bus connector for transfer module - Output

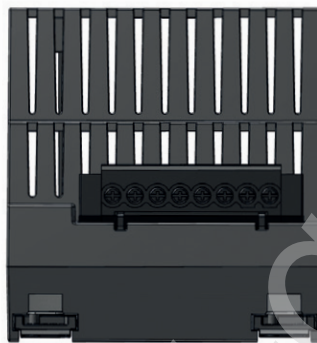


Plug for module insertion

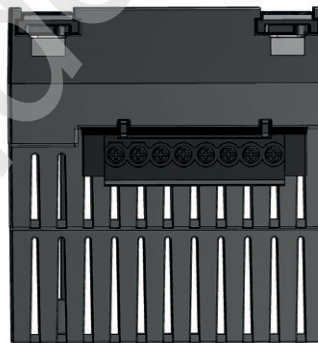
Connector for insertion into the socket for the bus connector (rear of device)

Sockets for module insertion

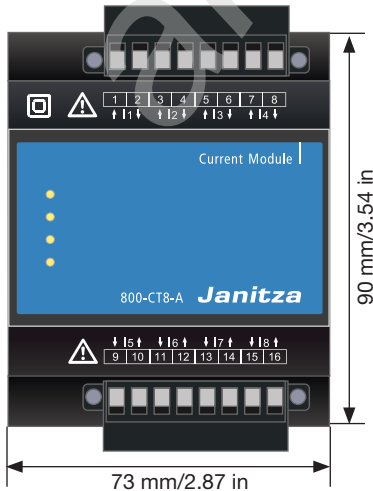
Bottom view



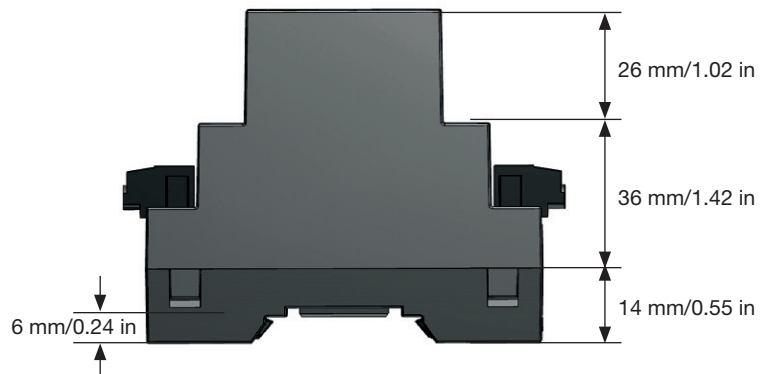
Top view



Front view



View from left



11. Technical data - 800-CT8-A current measuring module

General	
Net weight	Approx. 220 g (0.49 lbs)
Device dimensions	Approx. W = 73 mm (2.87 in), H = 90 mm (3.54 in), D = 76 mm (2.99 in)
Mounting orientation	As desired
Fastening/mounting - Suitable DIN rails - (35 mm / 1.38 in)	<ul style="list-style-type: none"> · TS 35/7.5 according to EN 60715 · TS 35/10 · TS 35/15 x 1.5
Impact resistance	IK07 according to IEC 62262

Transport and storage	
The following specifications apply for devices transported and stored in the original packaging.	
Free fall	1 m (39.37 in)
Temperature	K55: -25 °C (-13 °F) to +70 °C (158 °F)
Relative humidity	5 to 95% at 25 °C (77 °F), no condensation

Environmental conditions during operation	
The device: <ul style="list-style-type: none"> · Is for weather-protected and stationary use. · Fulfills 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! 	
Rated temperature range	-10 °C (14 °F) to +55 °C (131 °F)
Relative humidity	5 to 95% at 25 °C (77 °F), no condensation
Pollution degree	2
Ventilation	No forced ventilation required
Protection against foreign matter and water	IP20 according to EN60529

Interface and energy supply	
JanBus (proprietary)	<ul style="list-style-type: none"> · Via bus connector · The maximum bus length of the JanBus is 100 m.

Current measuring module 800-CT8-A	
Nominal current	5 A
Channels	· 2 systems (L1, L2, L3, N) · Single channels
Measurement range	0.005 .. 6 A
Crest factor	2 (relative to 6 A _{eff})
Overload for 1 s	120 A (sinusoidal)
Resolution	0.1 mA (color graphic display 0.01 A)
Overvoltage category	300 V CATII
Rated surge voltage	2.5 kV
Power consumption	Approx. 0.2 VA (R _i = 5 mΩ)
Sampling frequency	8.3 kHz
Frequency of the fundamental oscillation	40 Hz .. 70 Hz
Harmonics	1 .. 9 (odd only)

Connecting capacity of the terminals - 800-CT8-A module	
Connectible conductors Only connect one conductor per terminal point!	
Single core, multi-core, fine-stranded	0.2 - 4 mm ² , AWG 24-12
Wire ferrules (non-insulated)	0.2 - 4 mm ² , AWG 24-12
Wire ferrules (insulated)	0.2 - 2.5 mm ² , AWG 26-14
Tightening torque	0.4 - 0.5 Nm (3.54 - 4.43 lbf in)
Strip length	7 mm (0.2756 in)

11.1 Functional performance characteristics of 800-CT8-A current measuring module (only valid in conjunction with UMG 801!)

Function	Symbol	Accuracy class - 5 A nominal current	Measurement range	Display range
Total active power	P	0.5 (IEC61557-12)	0 .. 12.6 kW	0 .. 999 GW
Total reactive power	QA, Qv	1 (IEC61557-12)	0..16.6 kvar	0 .. 999 Gvar
Total apparent power	SA, Sv	0.5 (IEC61557-12)	0 .. 12.6kVA	0 .. 999 GVA
Total active energy	Ea	0.5 (IEC61557-12) 0.5S (IEC62053-22)	0 .. 999 GWh	0 .. 999 GWh
Total reactive energy	ErA, ErV	1 (IEC61557-12)	0 .. 999 Gvarh	0 .. 999 Gvarh
Total apparent energy	EapA, EapV	0.5 (IEC61557-12)	0 .. 999 GVAh	0 .. 999 GVAh
Phase current	I	0.5 (IEC61557-12)	0 .. 7 Aeff	0 .. 999 kA
Neutral conductor current calculated	INc	1.0 (IEC61557-12)	0.03 .. 25 A	0.03 .. 999 kA
Power factor	PFA, PFV	1 (IEC61557-12)	0.00 .. 1.00	0.00 .. 1.00
Current harmonics	Ih	Cl. 1 (IEC61000-4-7)	1 .. 9 (odd only)	0 A .. 999 kA
THD of the current	THD _I	1.0 (IEC61557-12)	0 .. 999%	0 .. 999%

ⓘ INFORMATION

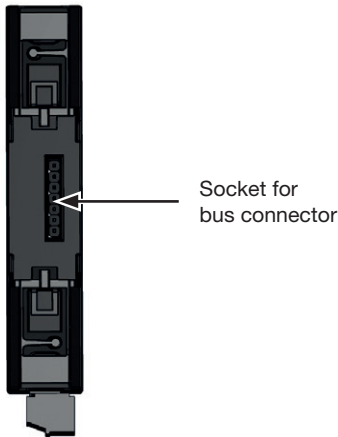
Detailed information on the device functions and data can be found in the usage information enclosed with the device or is available for download at www.janitza.de.

12. Device views - 800-CON transfer module

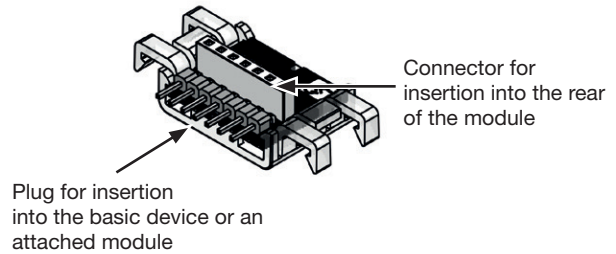
- The figures are for illustration purposes only and are not to scale.
- Dimensions in mm (in).

The **set of 2** delivered transfer modules (800-CON) can be used for output or input.

Rear view



Bus connector for the output transfer module



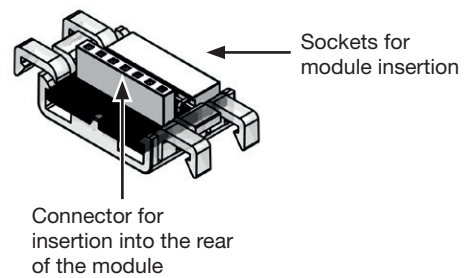
Bottom view



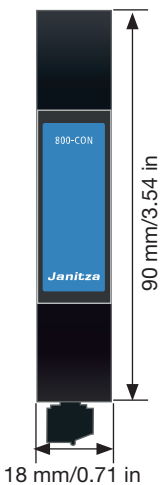
Top view



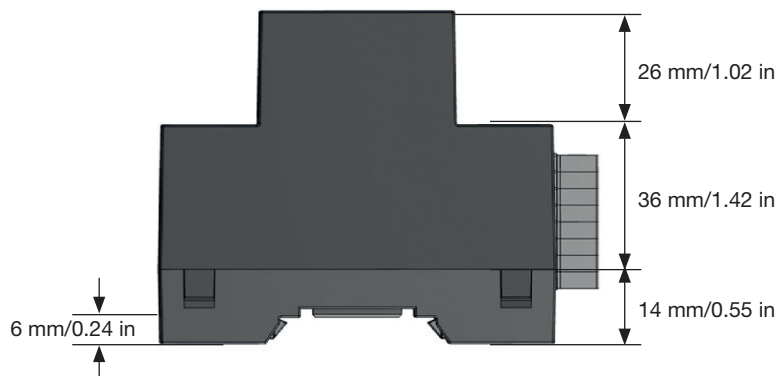
Bus connector for the input transfer module



Front view



View from left



13. Technical data - 800-CON transfer module

General	
Net weight (with plug-in terminals)	Approx. 55 g (0.12 lb) - 1 device
Device dimensions	Approx. B = 18 mm (0.71 in), H = 90 mm (3.54 in), D = 76 mm (2.99 in)
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
Impact resistance	IK07 according to IEC 62262

Transport and storage	
The following specifications apply for devices transported and stored in the original packaging.	
Free fall	1 m (39.37 in)
Temperature	K55: -25° C (-13 °F) to +70° C (158 °F)
Relative humidity	5 to 95% at 25 °C (77 °F), no condensation

Environmental conditions during operation	
The device: <ul style="list-style-type: none"> · Is for weather-protected and stationary use. · Fulfills 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! 	
Rated temperature range	-10 °C (14 °F) to +55 °C (131 °F)
Relative humidity	5 to 95% at 25 °C (77 °F), no condensation
Pollution degree	2
Ventilation	No forced ventilation required.
Protection against foreign matter and water	IP20 according to EN60529

Interface	
JanBus (proprietary) NOTE! To connect the transfer modules, use a twisted pair, stranded, shielded data cable (cable connection 1:1)!	<ul style="list-style-type: none"> · Via bus connector to device and module series · Via shield clamps between the transfer modules with twisted pair, shielded data cable (cable connection 1:1) - see section „5.4 Data cable for connecting the 800-CON transfer modules“ on page 31. · The maximum bus length of the JanBus is 100 m.

Terminal connection capacity	
Connectible conductors Only connect one conductor per terminal point!	
Single core, multi-core, fine-stranded	0.2 - 1.5 mm ² , AWG 24-16
Wire ferrules (non-insulated)	0.2 - 1.5 mm ² , AWG 26-16
Wire ferrules (insulated)	0.2 - 1 mm ² , AWG 26-18
Tightening torque	0.2 - 0.25 Nm (1.77 - 2.21 lbf in)
Strip length	7 mm (0.2756 in)

14. 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 dismantling 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 dismantling or disconnecting the module! 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!**

14.1 Dismounting the 800-CT8-A module

1. 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!
2. Disconnect the wiring of your module.
3. Decouple the bus connectors (JanBus interface) of your module from the basic device and/or the connected modules by pulling out your module.
4. Unlock all bottom bolts of your module
Recommendation: Use a screwdriver (be careful!).
5. Remove your module from the DIN rail without touching or damaging the bus connector contacts.

i INFORMATION

Observe the following:

After dismantling the 800-CT8-A module, the GridVis® software deactivates the corresponding module! Information on this and further procedures can be found in the online help for the GridVis® software.

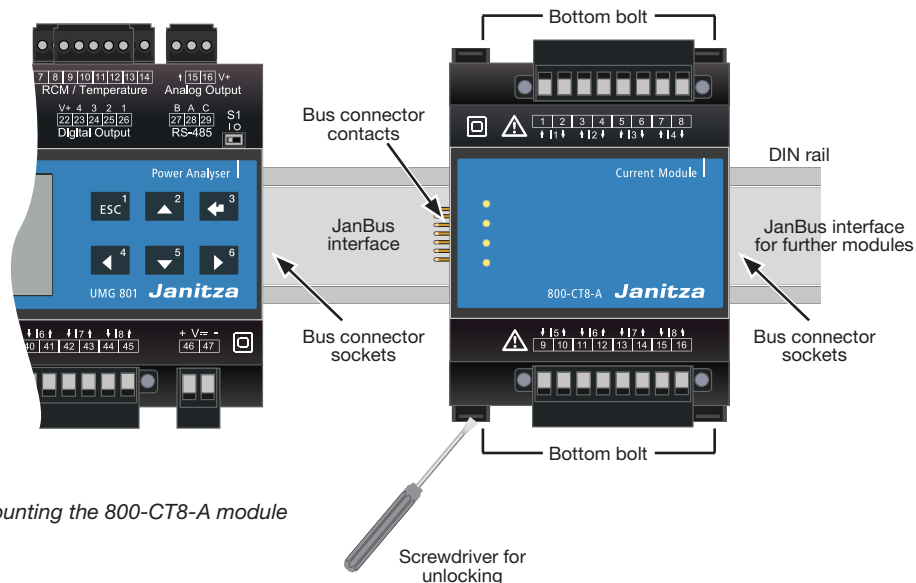


Fig. Dismounting the 800-CT8-A module

14.2 Exchanging an 800-CT8-A module

A module must be exchanged, for example to replace a defective module with an intact module in your meter and module topology. The module exchange of a 800-CT8-A is carried out in the GridVis® software.

On the basic device (UMG 801), you can detect a defective module of your meter and module topology in the "Configuration" display. The defective module is **missing** in the "Configuration" display.

To exchange a module, proceed as follows:

1. Proceed with a module exchange as described in chapter „14. Dismounting“ on page 52.
2. Replace a defective module with an intact one, for example (see chapter „4. Mounting“ on page 18).
3. Supply your meter and module topology (your system) with voltage.
4. Use the GridVis® software (“Module exchange” function) to transfer data from a defective module (stored in the UMG 801 basic device) to the intact module.

INFORMATION

Before exchanging a module, note that the "Module exchange" function in the GridVis® software overwrites data records of exchanged modules in the memory of the UMG 801 basic device!

A description of the module exchange in the GridVis® software can be found in the online help or the tutorials for the software.

Instead of the GridVis® software, you can also use a generic OPC UA client to exchange modules.

14.3 Dismounting the 800-CON module

1. 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!
2. Disconnect the wiring and the connection terminal.
3. Remove or shift the shield terminal and end bracket of your device and module series (if necessary, loosen the strain relief).
4. Disconnect the bus connectors (JanBus interface) of the transfer module from the basic device and/or the connected module by pulling them out.
5. Unlock the bottom bolts of the transfer module.
Recommendation: Use a screwdriver (be careful!).
6. Remove the transfer module from the DIN rail without touching or damaging the bus connector contacts.

i INFORMATION

For trouble-free operation of your module series with transfer modules, please refer to chapter "5.3 Data transfer with 800-CON module" on page 30.

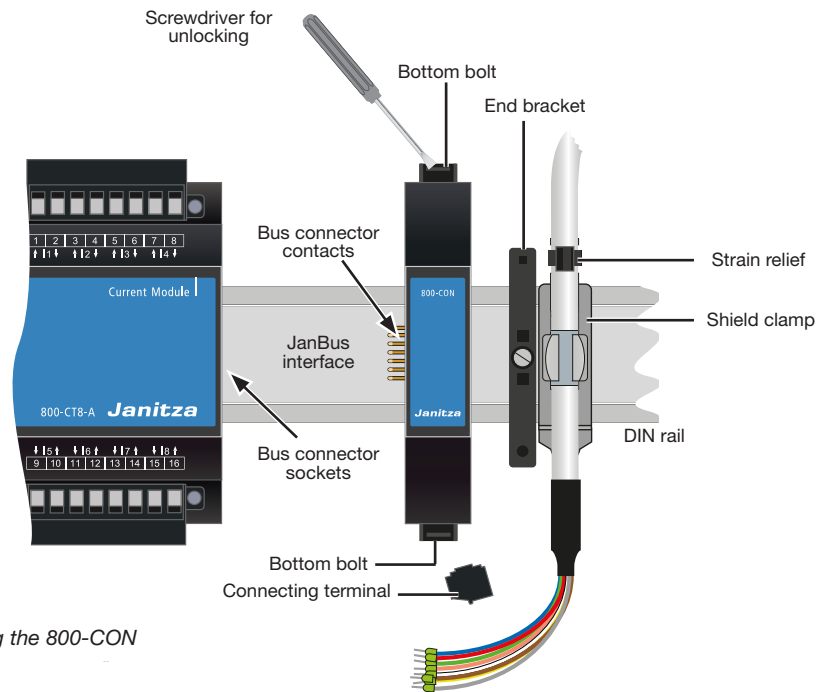


Fig. Dismounting the 800-CON module

15. Service and maintenance

Prior to outbound delivery, your device (component/module) is subjected to various safety tests and is marked with a seal. If the device (component/module) is opened, the safety tests must be repeated. The warranty is only valid for unopened devices (components/modules).

15.1 Repair

Repairs can only be carried out by the manufacturer.

15.2 Service

If questions arise which are not described in this user manual, please contact the manufacturer.

To answer your questions, it is essential that you provide the following information:

- Device designation (see rating plate).
- Serial number (see rating plate).
- Hardware version (see system display).
- Software release (see system display).
- Measured voltage and supply voltage.
- An exact error description.

15.3 Device adjustment

Devices (components/modules) are adjusted by the manufacturer prior to outbound delivery. No readjustment is required when the environmental conditions are complied with.

15.4 Calibration interval

A recalibration is recommended after about 5 years. Contact the manufacturer or an accredited laboratory for calibration.

15.5 Firmware update

To carry out a firmware update, connect the basic device with module to your computer with the **GridVis®** software installed:

- Open the Firmware Update Assistant in the GridVis® software by clicking “Update device” in the “Extras” menu.
- Select a corresponding update file and carry out the update.

INFORMATION

This user manual describes the modules and provides information on the operation of the modules via the basic device.

In addition to this user manual, refer to the usage information of your basic device, such as:

- User manual
- Installation instructions
- Safety information
- Data sheet

Moreover, the **GridVis®** software has an “online help” feature.

15.6 Procedure in the event of a malfunction

ATTENTION

An error in the communication with the basic device leads to a device fault!

If communication from the basic device to the modules is lacking or faulty during operation, a warning signal will appear on the display of the basic device.

Disconnect the basic device (system) from the power supply prior to

- **dismounting or disconnecting the module! 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!**
- **Prior to remounting, it may be necessary to restart the basic device.**
- **Also take note of the chapter “Procedure in the event of a malfunction” in the documentation of your basic device.**
- **If the measures indicated here are unsuccessful, please contact our support team (www.janitza.de).**
- **If there is discernible damage, send the device, component or module back to the manufacturer in compliance with proper transport conditions.**

15.7 Resetting the module to the standard factory settings

“Reset to standard factory settings” can be carried out for the module via your basic device. A description of this can be found in the user manual of your basic device.

15.8 Information on saving measured values and configuration data

INFORMATION

The basic device stores the following measured values every 5 minutes at the latest:

- SO meter readings
- Min. / max. / average values
- Energy values (work values)

The basic device saves configuration data immediately!

Janitza electronics GmbH
Vor dem Polstück 6
D-35633 Lahnau

Support tel. +49 6441 9642-22
Email: info@janitza.de
www.janitza.de

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