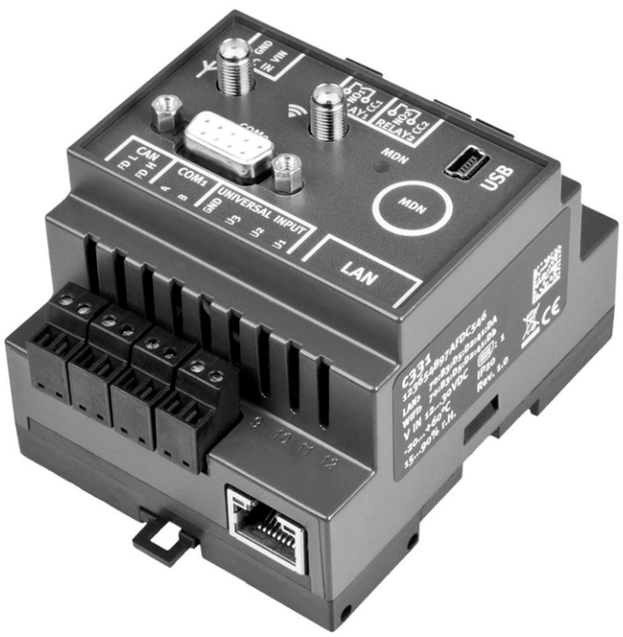
Operating manual myDatalogC32x

Valid from:

- **Firmware version: 02v008**
- **Server version: ---**
- **Hardware version: 1.7**

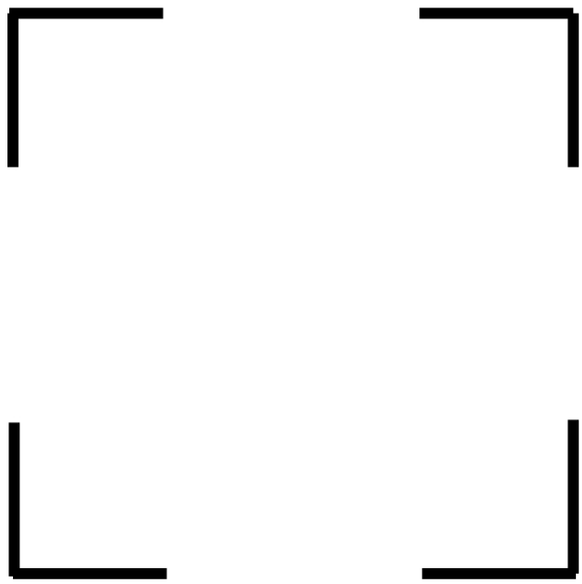


CE

Microtronics

Quick start guide

For quick instructions please scan QR-code or type link:



This operating manual is an abridged version. The information contained herein applies to all devices based on the hardware platform "myDatalogC32x ". The complete documentation for your device is provided in the online manual. It can be accessed via the QR code or the link above.

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Chapter 2 Declaration of Conformity

EU-Konformitätserklärung

EU Declaration of Conformity / Déclaration de conformité UE

Produktbezeichnung:
Product:
Désignation du produit:

Stationäres, kompaktes, frei programmierbares Gerät zur Erfassung, Verarbeitung und Übertragung von Signalen und Geräteinformationen

Type - Gültig ab:
Type code - Valid from:
Type - Valide à partir de:

myDatalogC32x 2G/4G World- Rev. 1.7

Microtronics

Hersteller:
Manufacturer :
Fabricant:

Microtronics Engineering GmbH
Hauptstrasse 7
A-3244 Ruprechtshofen

Das bezeichnete Produkt stimmt mit den folgenden Europäischen Richtlinien überein.
The designated product is in conformity with the following european directives.
Le produit décrit est conforme aux directives européennes suivantes.

		Europäische Norm	
(2014/30/EU)	**EMC Directive**		
		EN61000-4-3 (testlevel 3) EN55032 (class A) EN61326-1	
(2014/35/EU)	**LVD Directive**		
		EN61010-1	
(2014/53/EU)	**RED Directive**		
	Safety & Health 3.1a	ENIEC62311 ENIEC62368-1+A11:2020 EN50665	
	EMC 3.1b	EN301489-1 V2.2.3 EN301489-52 V1.2.1	
	Radio spectrum efficiency 3.2	EN301511 V12.5.1 EN301908-1 V15.2.1 EN301908-13 V13.2.1	
	Cybersecurity 3.3	EN18031-1	
(2015/863/EU)	**RoHS Directive**		
	Prevention 4.1	EN IEC 63000	

Klaus Potzmader, Director Product
Unterschrift
name and signature of authorised person
Nom et signature de la personne autorisée

Stefan Pfeffer, Managing Director Finance
Unterschrift
name and signature of authorised person
Nom et signature de la personne autorisée

Martin Mayer, General Managing Director
Unterschrift
name and signature of authorised person
Nom et signature de la personne autorisée

Ruprechtshofen, den 15.07.2025
Ort und Datum der Ausstellung
Place and date of issue
Lieu et date d'établissement

Chapter 3 Specifications

Voltage supply	9...32 VDC (+/-10 %) Additional information is provided in "Technical details about the energy supply" on page 43.
Power consumption	typ. 5 W (without sensors) max. 9 W (without sensors)
Integrated rechargeable buffer battery	Li-Po rechargeable battery with 500 mAh for: • Reaction by application to power supply failure • Disconnection from mobile network in the event of a power supply failure Additional information is provided in "Technical details about the integrated rechargeable buffer battery" on page 42.
Housing	Material: Lexan/Noryl Weight: 190 g Degree of protection: IP20 / IP40 (connection area/operating area) Dimensions (WHD): 70 x 92 x 63 mm (without antenna)
Operating temperature	-20...+60 °C
Air humidity	15...90 % RH non-condensing
Storage temperature	-40...+85 °C
Charging temperature (rechargeable buffer battery)	0 ...+45 °C
Display	RGB LED
Operation	MDN Button Button to trigger a reset
System time	Hardware real-time clock with its own buffer battery (service life >10 years) and automatic time synchronisation with the server. Additional information is provided in "Technical details about the system time" on page 44.
Antenna connector	1 x SMA-F for mobile network

Universal inputs [1)]	3 x analogue or digital Modes: • 0...20 mA: Resolution 6,36 µA, max. 23,96 mA, load 96 Ω • 4...20 mA: Resolution 6,36 µA, max. 23,96 mA, load 96 Ω • 0...2 V: Resolution 610 µV, max. 2,5 V, load 10k086 • 0...10 V: Resolution 7,97 mV , max. 32 V, load 4k7 • PWM: 1...99 %, max. 100 Hz, min. impulse length 1 ms, max. 32 V, load 4k7 • Frequency: 1...1000 Hz, max. 32 V, 4k7 • Digital: low <0,99 V, high >2,31 V, max. 32 V, load 4k7 • Counter: min. pulse length 1 ms, max. 32 V, load 4k7 Additional information is provided in "Technical details about the universal inputs" on page 37.

Serial interface [1)]	1 x RS485 (2-wire)
	• Baud rate: 2400-115200
	• Stop bits: 1, 2
	• Parity: N, E, O
	• Data bits: 7, 8
	• Load resistance: Off, 120 Ω
	• Pull up at RS485 B: Off, 390 Ω
	• Pull down at RS485 A: Off, 390 Ω
	
	1 x CAN / CAN FD
	• max. data transfer rate:
	  • CAN: 1 Mbit/s
	  • CAN FD: 8 Mbit/s
	• supported specification:
	  • CAN: V2.0B
	  • CAN-FD: V1.0
	• no galvanic isolation
	• Load resistance: Off, 120 Ω , 2 k
	
	1 x RS232 (4-wire)
	• Baud rate: 2400-115200
	• Stop bits: 1, 2
	• Parity: N, E, O
	• Data bits: 7, 8
	• Flow control: Off, RTS/CTS
	
	Additional information is provided in "Technical details about the RS485 interface" on page 38, "Technical details about the CAN interface" on page 39 and "Technical details about the RS232 interface" on page 40.

Outputs [1)]	2 x isolated switch contact • Galvanically isolated • Parallel connection of an optoswitch and relay Relay (high switching currents) • U_{max}: 32 V • I_{max}: 2 A Optoswitch (high switching frequencies) • I_{max}: 130 mA • U_{max}: 32 V • R_{on}: 35 Ω • f_{max}: 1000 Hz Additional information is provided in "Technical details about the outputs" on page 42.
USB interface	1 x mini-B USB 2.0 slave for the connection to a PC. The DeviceConfig configuration program must be installed on the PC to enable communication with the myDatalogC32x . Additional information is provided in "Technical details about the USB interface" on page 41.
Data memory	3 MB internal flash memory.
Data transmission	2G/4G World (myDatalogC32x 2G/4G World): • 2G GPRS 900MHz / 1800MHz • 2G GPRS 850MHz / 1900MHz • LTE FDD B1, B2, B3, B4, B5, B7, B8, B12, B13, B17, B18, B19, B20, B25, B26, B28, B66 • LTE TDD B34, B38, B39, B40, B41
SIM	The myDatalogC32x is equipped with an integrated SIM chip.

[1)] This function is not fully available for all devices based on the "myDatalogC32x " hardware platform. Please refer to the respective manual to find out whether the function is available and to what extent.

Chapter 4 General specifications

The information in this manual has been compiled with great care and to the best of our knowledge. The manufacturer, however, assumes no liability for any incorrect specifications that may be provided in this manual. The manufacturer is not responsible for direct, indirect, accidental or consequential damages which arise from errors or omissions in this manual even if advised of the possibility of such damages. In the interest of continuous product development, the manufacturer reserves the right to make improvements to this manual and the products described in it at any time and without prior notification or obligation.

> ***Tip:*** *The specifications in this manual are valid as of the versions listed on the front page. Revised versions of this manual are available via the manufacturer's website (see "Contact information" on page 53).*

4.1 Translation

For deliveries to countries in the European Economic Area, the manual must be translated into the language of the respective country. If there are any discrepancies in the translated text, the original manual (German) must be referenced or the manufacturer contacted for clarification.

4.2 Copyright

The copying and distribution of this document as well as the utilisation and communication of its contents to others without express authorisation is prohibited. Contraventions are liable to compensation. All rights reserved.

4.3 General descriptive names

The use of general descriptive names, trade names, trademarks and the like in this manual does not entitle the reader to assume they may be used freely by everyone. They are often protected registered trademarks even if not marked as such.

4.4 Safety instructions

For the connection, commissioning and operation of the myDatalogC32x , the following information and higher legal regulations of the country (e.g. ÖVE), such as valid EX regulations as well as the applicable safety and accident prevention regulations for the respective application case must be observed.

Read this manual completely before unpacking, setting up or operating this device. Observe all hazard, danger and warning information. Non-observance can lead to serious injuries to the operator and/or damage to the device.

Ensure that the safety equipment of this measurement instrument is not impaired. Install and use the measurement system only in the manner and method described in this manual. Do not make any changes to the measurement system under any circumstances.

> ***Important:*** *The product is not approved for use outdoors as it is not protected from penetrating moisture and only provides minimal protection against the ingression of dust.*

4.4.1 Use of the hazard warnings

Danger: Indicates a potential or threatening hazardous situation that will result in death or serious injuries if not avoided.

Attention: Indicates a potential or threatening hazardous situation that can result in death or serious injuries if not avoided.

Caution: Indicates a potential hazardous situation that can result in minor or moderate injuries or damage to this instrument.

Important: *Indicates a situation that can result in damages to this instrument if it is not avoided. Information that must be particularly emphasised.*

Note: *Indicates a situation that does not result in any injury to persons.*

Tip: *Information that supplements the specifications in the main text.*

4.4.2 Safety symbols on the device

	Devices marked with this symbol must be disposed of in accordance with the requirements of Directive 2012/19/EU on waste electrical and electronic equipment.
	This symbol on a device indicates the location of the earth connection.
	This symbol on a device indicates the location of a fuse or current limiting circuit.

4.4.3 General safety instructions

- This manual is intended to be used by qualified personnel (see "Personnel requirements" on page 25). Read this manual thoroughly before unpacking, setting up or operating the device..
- If you encounter difficulties in understanding the information contained in this manual (or parts thereof), please contact the manufacturer or authorised distributors (see "Contact information" on page 53).
- Keep this manual on hand so that you can refer to it whenever you need information.
- Before installation or commissioning, ensure that the device is in good condition. For this purpose, check for visible defects on all important components. Pay particular attention to fastenings, connections, cable connections, seals, moving parts (e.g. hinges or joints), battery packs, power supply units, etc., if present.
- If defects are found that jeopardise operational safety, all further work must be stopped immediately. This applies regardless of whether the defects are found before installation or commissioning, or during installation, commissioning or ongoing operation.
- Before carrying out maintenance and/or cleaning work, the device must be disconnected from the power supply.
- Do not attempt to repair the device yourself, either mechanically or electrically. In the event of damage, return the device to the manufacturer in its original packaging (see "Repair & return" on page 49).
- The device must not be disposed of with household waste under any circumstances. Information on correct disposal can be found in the chapter "Removal & disposal" on page 51.

4.4.4 Specific safety instructions



Attention: Hazardous electric voltage can cause electric shock or burns. Always switch off all of the used power supplies for the device before installing it, completing any maintenance work or resolving any faults.



Attention: Ensure that the device is fully deactivated and cannot activate automatically when sending/returning it as air freight. Information on this is provided in chapter "Storage of the product" on page 23. If you have any unanswered questions, contact the manufacturer (see "Contact information" on page 53).



Attention: Never use this device in areas where the use of wireless equipment is prohibited. The device must not be used in hospitals and/or in the vicinity of medical equipment, such as heart pacemakers or hearing aids, as their functionality could be compromised by the mobile network modem contained in the device.



Attention: Never use this device in potentially explosive atmospheres and in the vicinity of highly combustible areas (fuel stations, storage areas for combustible material, chemical plants and detonation sites) or in the vicinity of flammable gases, vapours or dust.

4.4.5 Safety and preventative measures for handling devices with mobile network modems

The following safety and preventative measures must be observed during all phases of installation, operation, maintenance or repair of a mobile network modem. The manufacturer is not liable if the customer disregards these preventative measures.



Caution: The mobile network connection must not be used in hazardous environments.

No guarantee of any kind, whether implicit or explicit, is given by the manufacturer and its suppliers for the use with high risk activities.

In addition to the following safety considerations, all directives of the country in which the device is installed must be complied with.

> ***Important:*** *No liability shall be assumed at any time and under no circumstances for connections via a mobile network modem for which wireless signals and networks are utilized. The mobile network modem must be switched on and operated in an area where sufficient signal strength is present.*

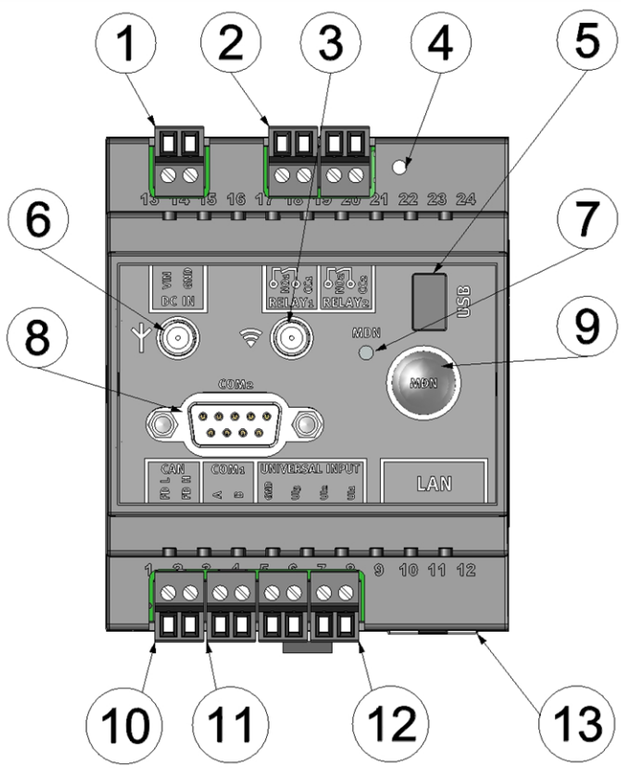
4.4.5.1 Safety and precautionary measures for devices with mobile network modem

- This device must only be installed by a trained technician who applies the recognised installation practices for a radio frequency transmitter including the correct grounding of external antennas.
- The device must not be operated in hospitals and/or in the vicinity of medical equipment such as heart pacemakers or hearing aids.
- The device must not be operated in highly flammable areas such as petrol filling stations, fuel storage sites, chemical factories and explosion sites.
- The device must not be operated in the vicinity of flammable gases, vapours or dusts.
- The device must not be subjected to strong vibrations or impacts.
- The mobile network modem can cause interferences if it is located in the vicinity of television sets, radios or computers.
- Do not open the mobile network modem. Any modification to the device is prohibited and will result in the operating licence being revoked.
- The use of mobile network services (text messages/data communication/GPRS, etc.) may incur additional costs. The user is solely responsible for any resulting damages and costs.
- Do not install the device in any other way to the one described in the operating instructions. Improper use will invalidate the warranty.

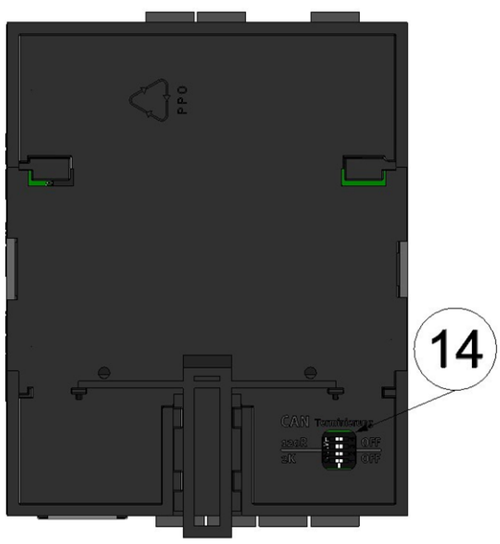
4.4.5.2 Safety measures for installing the antenna

- Only use antennas that are recommended or supplied by the manufacturer.
- The antenna must be installed at a distance of at least 20 cm from individuals.
- The antenna must not protrude beyond the lightning-protected area of buildings and must be protected against lightning strikes.
- The voltage supply must be switched off before replacing the antenna.

4.5 Overview



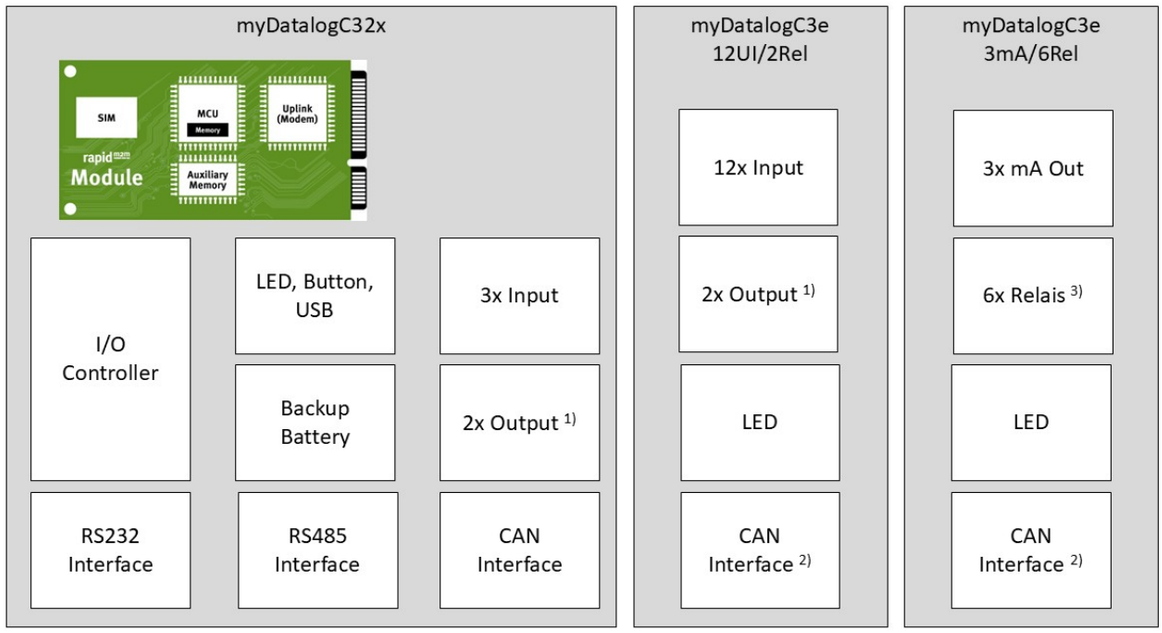
Front of the myDatalogC32x



Rear of the myDatalogC32x

1	Supply (V IN, GND)	**8**	Com2 (RS232)
2	Relay 1-2	**9**	MDN button
3	Reserved for extensions	**10**	CAN / CAN FD
4	Reset button	**11**	Com1 (RS485)
5	Mini-B USB (only for debugging)	**12**	Universal input 1-3 (incl. GND)
6	Connector for the mobile network antenna	**13**	Reserved for extensions
7	RGB LED	**14**	Dip switch for activating/deactivating the load resistances for the CAN interface

4.5.1 System architecture



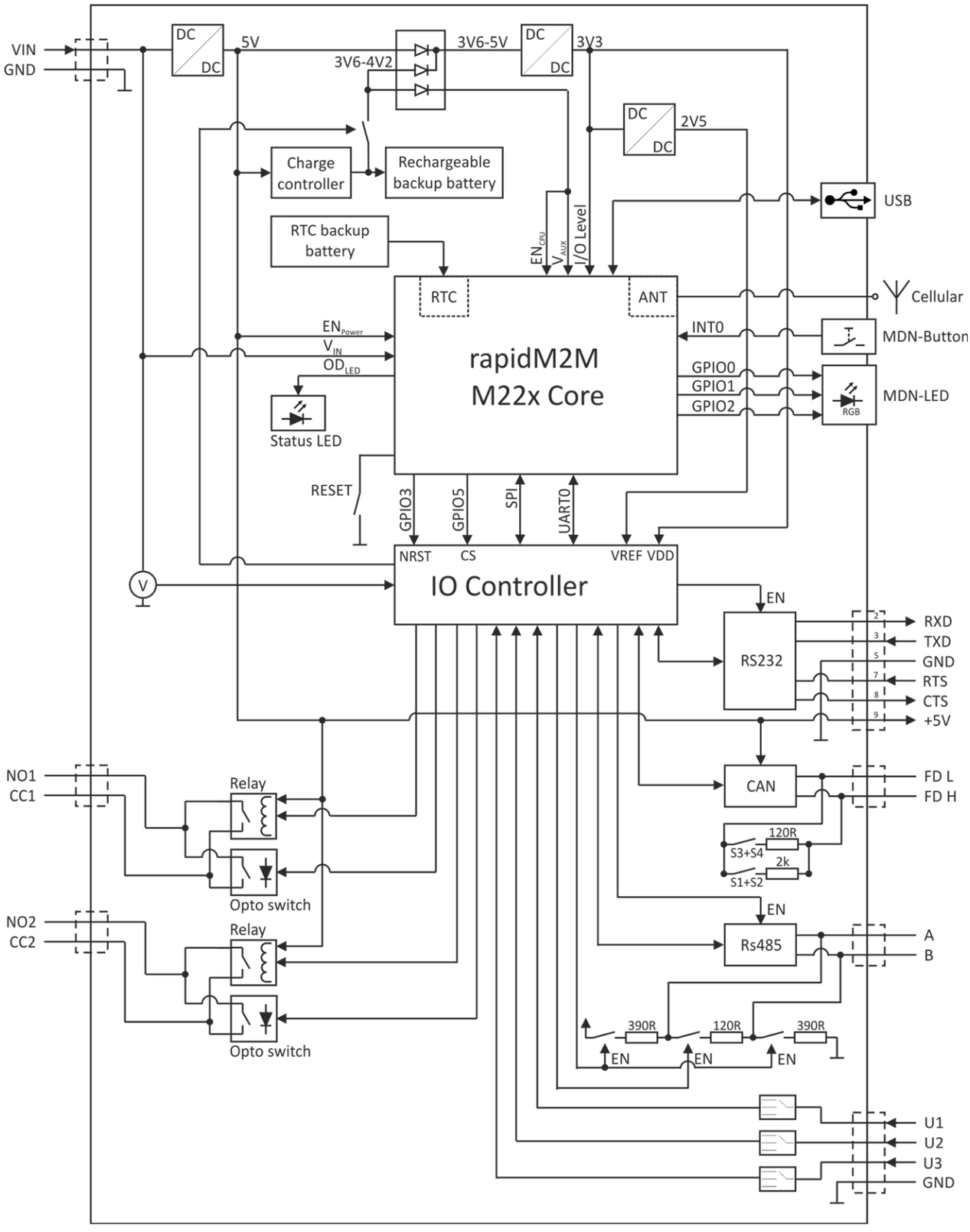
System architecture of the myDatalogC32x and the extension modules

1) Parallel connection of a relay (high switching currents) and an optoswitch (high switching frequencies)

2) Exclusively intended for communication with themyDatalogC32x

3) 3 of the relays are combined into a group with a common root

4.5.2 Block diagram



Block diagram of the myDatalogC32x

4.6 Limitations of use

The following chapters describe the limits within which use of the device is permitted. Reasonably foreseeable misuse is also listed and the use of the device in this way is explicitly excluded.

> ***Note:*** *Any use of the device that is not specified in chapters "Intended use" on page 21, "Type of use" on page 21 and "Field of application" on page 21 is not permitted. This also applies if the device is used in a way that is not explicitly excluded as unauthorised in the chapter "Unauthorised use" on page 22. The manufacturer is not liable for any damage or consequential damage resulting from unauthorised use. The risk is borne solely by the operator.*

4.6.1 Intended use

The stationary, compact measurement instrument is designed for determining, processing and transferring measurement data acquired via various industrial interfaces. The device requires a continuous power supply. The measured and recorded data is stored on a non-volatile memory medium. This stored data is sent via the mobile networkto a central server for further processing. The device is equipped with an integrated SIM chip for establishing a mobile connection. The device is intended for operation within the limits specified in chapter "Specifications" on page 11 only.

> ***Note:*** *This device is exclusively intended to be used for the purposes as described before. Any other use or use beyond what is specified or a modification of the device shall be deemed to be not for the intended purpose and is not permitted without the express written consent of the manufacturer. The manufacturer shall not be held liable for any damages that may result from such unauthorised use or modification. The operator alone bears the associated risk.*

> ***Note:*** *The manufacturer is not liable for data loss of any kind.*

> ***Note:*** *The integrated SIM chip provides a mobile communications connection to a variety of international service providers. In order to be able to utilise all functions of the device, you must ensure that the device is located in the service area of one of these service providers. A Managed Service contract with Microtronics Engineering GmbH is required for use of the mobile data transmission (see www.microtronics.com/managedservice). This includes the provisioning of the mobile communications connection via the network of the service provider included in the above-mentioned list.*

4.6.2 Type of use

Installation, commissioning and maintenance may only be completed by qualified personnel (see "Personnel requirements" on page 25). Das Gerät ist nur zur Nutzung in Bereichen ohne explosiver Atmosphäre freigegeben.

4.6.3 Field of application

It is only authorised for use in the industrial sector, business/commercial sector or in small businesses.

4.6.4 Unauthorised use

> ***Note:*** *The following describes the types of use of the device that are not permitted. This is not a complete list, but rather a list of reasonably foreseeable misuse. Only the use specified in chapters "Intended use" on page 21, "Type of use" on page 21 and "Field of application" on page 21 is permitted. The manufacturer is not liable for any damage or consequential damage resulting from unauthorised use. The risk is borne solely by the operator.*

- The device must not be exposed to direct sunlight or direct weather influences (rain, snow, ...).
- The device must not be operated outdoors without a suitable enclosure.
- The device must not be mounted hanging from the connection cables.
- The device must not be operated without antenna.
- When using antennas with a connection cable, neither the device nor the antenna may be mounted suspended from the antenna cable.
- Stranded wires must not be connected to the connection terminals of the device without crimped wire end sleeves.
- Only a single cable may be inserted into a connection terminal. However, two stranded cables may be combined using a twin wire end sleeve and connected together to the connection terminal.
- No traction may be exerted on the connection cables.
- The total length of the CAN bus must not exceed 20 m.
- Under no circumstances should 230 V be applied to the relays of the device. The relay contacts are not designed for this voltage.

4.7 General product information

The device is a compact, stationary device that can be used for a variety of control and regulating tasks in addition to determining, processing and transferring measurement data. The myDatalogC32x requires a continuous power supply. However it has an integrated rechargeable buffer battery which enables an appropriate response in the event of a power supply failure (e.g. sending a notification and/or correctly disconnecting from the mobile network, see "Technical details about the integrated rechargeable buffer battery" on page 42). Thanks to the hardware real-time clock with its own buffer battery, the system time continues to run even if the device is removed from the supply voltage. This means that following recommissioning, a valid time base is available immediately.

The following interfaces are available for recording measurement data:

- 3 x universal inputs that can be operated in various analogue and digital modes
- 1 x RS485 interface
- 1 x CAN / CAN FD interface (not galvanically isolated)
- 1 x RS232 interface

In addition, 2 isolated switch contacts are also available for the output of regulating and control commands. The isolated switch contacts are the parallel connection of a relay (high switching currents) and an optoswitch (high switching frequencies).

The determined measurement data is recorded in the internal 3 MB data memory and can be automatically transmitted to a central myDatanet server for further processing using the mobile network. For this purpose, the measurement system has an integrated SIM chip. The myDatanet server offers various possibilities to manage and display the transferred data. Further information is provded in the user manual of the server ("myDatanet Server Manual " 805002). The device is configured via the interface of the corresponding myDatanet server.

> ***Tip:*** *Not all functions described are always available on devices based on the "myDatalogC32x " hardware platform. Please refer to the relevant manual to find out which functions are available.*

4.8 Device labelling

The specifications in this user manual apply exclusively to the myDatalogC32x device type. The type plate is located on the right side of the device and contains the following specifications:

- Type designation
- Serial number
- Item number
- Voltage supply specifications
- Week and year of production
- Country list profile of the SIM chip
- Environmental conditions during operation
- Protection class
- Hardware revision
- Name and address of the manufacturer
- Logo for the EU WEEE Directive
- CE marking

The correct specification of the type designation and serial number is important for all queries and spare part orders. Only then can we process requests promptly and properly.



Type plate myDatalogC32x

Tip: *This symbol indicates the country list profile of the SIM chip installed in the device.*

Note: *These operating instructions are part of the device and must be available to the user at all times. The safety instructions contained therein must be observed.*

Attention: It is strictly prohibited to disable the safety equipment or modify its mode of operation.

4.9 Installation of spare and wear parts

Be advised that spare and accessory parts that have not been supplied by the manufacturer have also not been inspected or approved by the manufacturer. The installation and/or use of such products can possibly have a negative impact on the specified constructional properties of the device. The manufacturer shall not be liable for any damages that arise from the use of non-original parts and non-original accessory parts.

4.10 Storage of the product

To safeguard the myDatalogC32x , ensure that all relevant data was transferred to the myDatanet server. Then deactivate the device. If necessary, initiate a transmission directly on the device or wait until the next scheduled data transmission for all of the data to be sent to the myDatanet server.Once the mobile network connection has been disconnected, the device can be removed from the supply voltage. If possible, switch off the supply voltage before disconnecting the cables from the VIN and GND terminals (see "Connecting the sensors, actuators and power supply" on page 32). The remaining cables and the antenna can then be removed. Ensure that the myDatalogC32x is completely deactivated before you store it in the original packaging. To do so press the reset button directly on the device.

The configuration and most recently determined data are retained. The system time also continues to run thanks to the hardware real-time clock equipped with its own buffer battery. This means that a valid time basis is available immediately when recommissioning (see "Technical details about the system time" on page 44).

> ***Tip:*** *For information on how to deactivate the device, how to trigger a transmission and how to recognise that the mobile network connection has been terminated, please refer to the manual for the respective device.*

4.11 Warranty

The device has been functionally tested before delivery. If it is used as intended (see "Intended use" on page 21) and the operating instructions, the applicable documents and the safety notes and instructions contained therein, are observed, no functional restrictions are to be expected and perfect operation should be possible.

> ***Tip:*** *Please also note in this regard the next chapter "Disclaimer" on page 24.*
>
> ***Note: Limitation of warranty***
>
> *In the event of non-compliance with the safety instructions and instructions in this document, the manufacturer reserves the right to limit the warranty.*

4.12 Disclaimer

The manufacturer assumes no liability

- for damages owing to **a change** of this document. The manufacturer reserves the right to change the contents of this document and this disclaimer at any time and without any notice.
- for damages to persons or objects resulting from **failure to comply** with applicable **regulations**. For connection, commissioning and operation of the devices/sensors all available information and higher local legal regulations (e.g. in Austria ÖVE guidelines) such as applicable Ex regulations as well as safety requirements and regulations in order to avoid accidents shall be adhered to.
- for damages to persons or objects resulting from **improper use**. For safety and warranty reasons, all internal work on the instruments beyond from that involved in normal installation and connection, must be carried out only by qualified Microtronics personnel or persons or companies authorised by Microtronics .
- for damages to persons or objects resulting from the use of instruments in technically **imperfect** condition.
- for damages to persons or objects resulting from the use of instruments **not in accordance with the requirements**.
- for damages to persons or objects resulting from **failure to comply** with **safety information** contained within this instruction manual.
- for missing or incorrect measurement values or resulting consequential damages due to **improper installation** or **incorrect parameterisation/programming**.

4.13 Obligation of the operator

Attention: In the EEA (European Economic Area), the national implementation of the framework directive (89/391/EEC) as well as the associated specific directives and from these in particular, the directive (2009/104/EC) about the minimum safety and health requirements for use of work equipment by workers at work, each in their respective version are to be complied with.

The operator must obtain the local operating licence and the associated documents.

In addition, the operator must comply with the local legal requirements for

- the safety of the personnel (accident prevention measures),
- the safety of the equipment (protective equipment and maintenance),
- the product disposal (waste disposal law),
- the material disposal (waste disposal law),
- the cleaning (cleaning agents and disposal) and
- the environmental protection amendments.

Before commissioning, the operator must ensure that the installation and commissioning – provided these were performed by the operator himself – are in compliance with the local regulations.

4.14 Personnel requirements

Installation, commissioning and maintenance may only be completed by personnel who meet the following conditions:

- Qualified specialist personnel with the relevant training
- Authorised by the facility operator

Tip: Qualified personnel

In the context of these instructions and the warnings on the product itself, individuals responsible for the setup, installation, commissioning and operation of the product must have gained relevant qualifications relating to their activities, including, for example:

- *Training, instruction and authorisation to activate/deactivate, ground and label electric circuits and devices/systems in accordance with the standards of safety engineering.*
- *Training or instruction on the maintenance and use of suitable safety equipment in accordance with the standards of safety engineering.*
- *First aid training*

Chapter 5 Storage, delivery and transport

5.1 Inspection of incoming deliveries

Check the shipment immediately upon receipt to ensure it is complete and intact. Immediately report any discovered transport damages to the delivering carrier. Also notify Microtronics Engineering GmbHin writing about this without delay. Report any incompleteness of the delivery to the responsible representative or directly to the company headquarters of the manufacturer within two weeks (see "Contact information" on page 53).

Note: *Any claims received thereafter will not be accepted.*

5.2 Storage

The following storage conditions must be observed:

myDatalogC32x	Storage temperature	-40...+85 °C
	Humidity	15...90 % RH

Store the measurement technology so that it is protected against corrosive and organic solvent vapours, radioactive emissions and strong electromagnetic radiation.

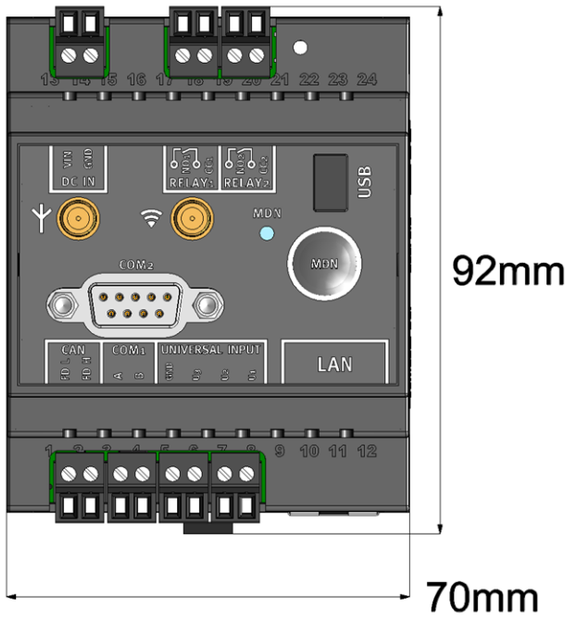
5.3 Transport

Protect the myDatalogC32x against heavy shocks, bumps, impacts or vibrations. The original packaging must always be used for transport.

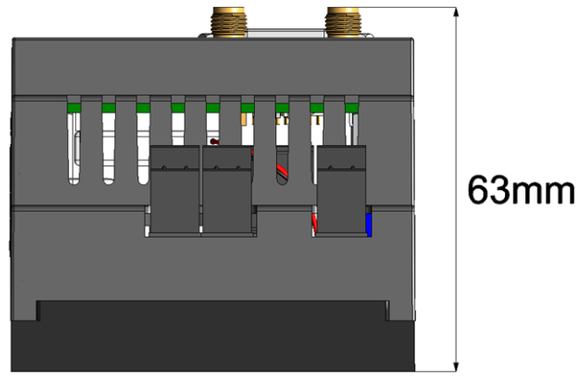
Chapter 6 Installation

Important: *To prevent any damage to the device, the work described in this section of the instructions must only be performed by qualified personnel.*

6.1 Dimensions



Dimensions: Width and height



Dimensions: Depth

6.2 Installing the myDatalogC32x

Important:

- *Ensure installation is completed correctly.*
- *Comply with existing legal and/or operational directives.*
- *Improper handling can cause injuries and/or damage to the devices.*
- *The myDatalogC32x is not approved for use in sewers.*
- *The myDatalogC32x is not suitable for outdoor use.*

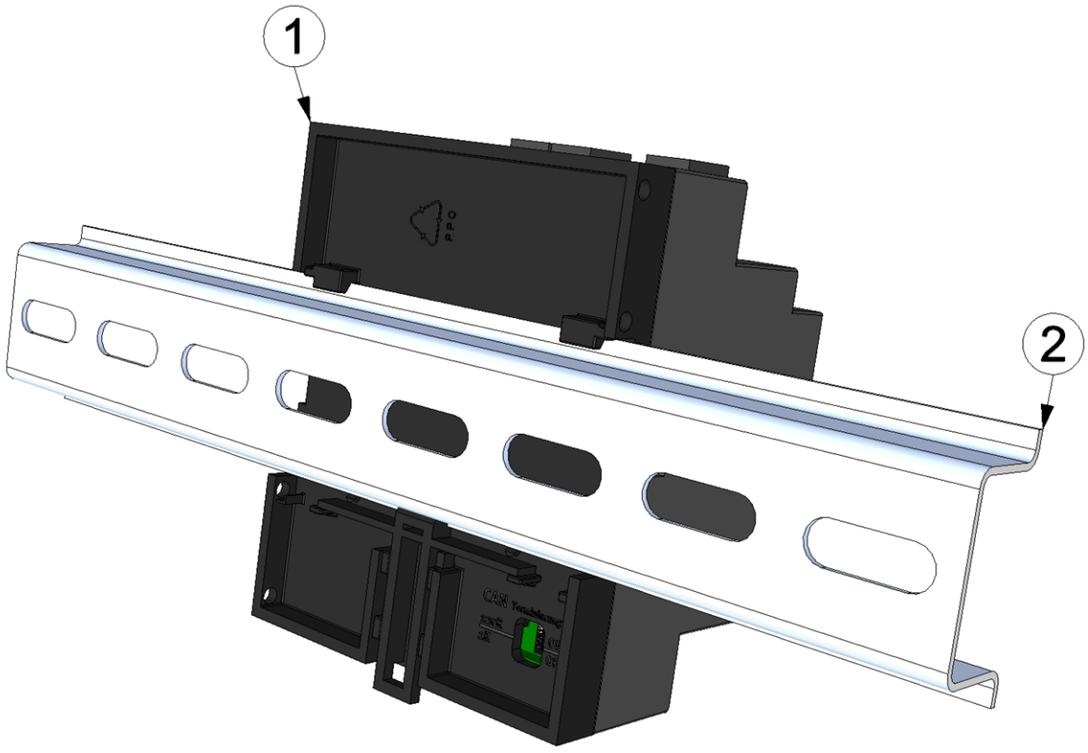
Note: *It is recommended that all metal mounting fixtures be properly earthed.*

The installation site must be selected according to specific criteria. The following conditions must be avoided in any case:

- Direct sunlight
- Direct weather exposure (rain, snow, etc.)
- Objects that radiate intense heat (maximum ambient temperature: -20...+60 °C)
- Objects with a strong electromagnetic field (frequency converter or similar)
- Corrosive chemicals or gases
- Mechanical impacts
- Direct installation on paths or roads
- Vibrations
- Radioactive emissions

Tip: *Approx. 2-5 cm of space must be left above and below the device for the cable connections. The antenna connections are located on the front of the device. The space required depends on the antennas used. Further information regarding the installation dimensions can be found in the relevant sub-chapter.*

6.2.1 Top-hat rail assembly

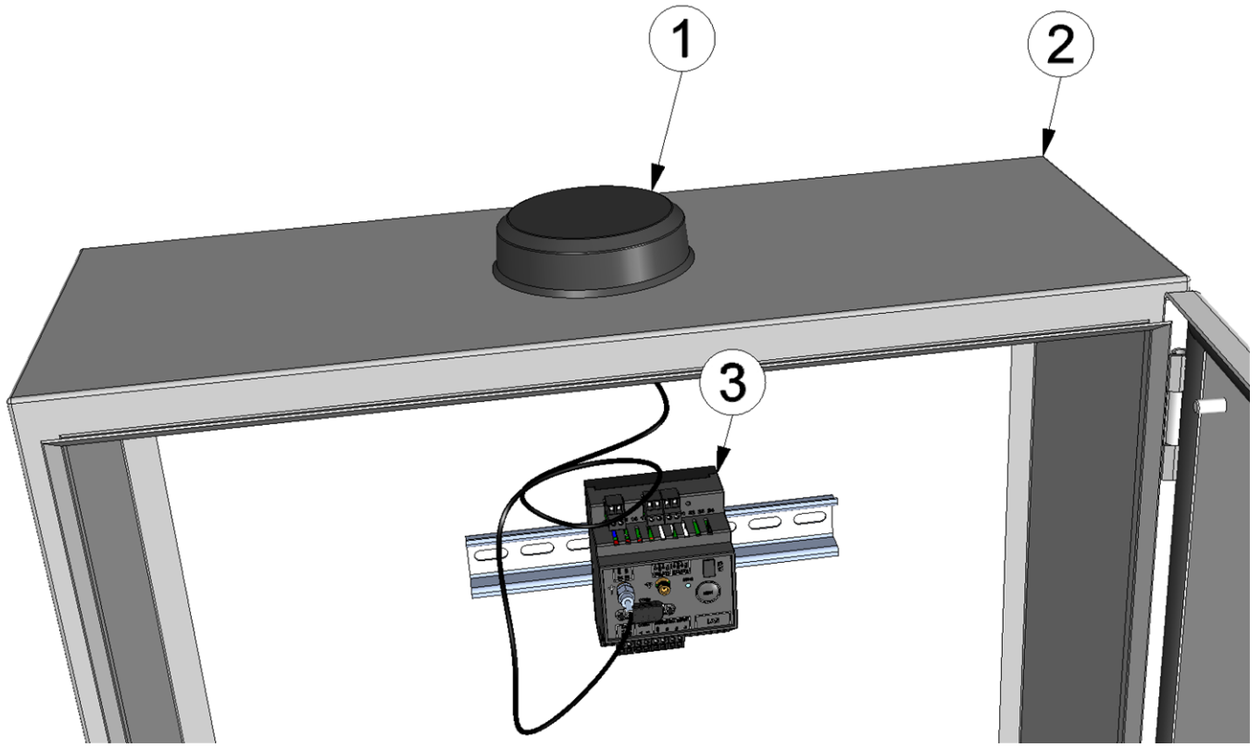


Top-hat rail assembly

1 myDatalogC32x	**2** Top-hat rail

6.2.2 Assembly in a control cabinet

Antennas mounted directly on the myDatalogC32x are not suitable for assembly within a control cabinet as the mobile network signal is shielded by the metal of the cabinet. In this case, the manufacturer recommends using the Flat antenna Disc Multi Band SMA-M 1,5m (301362) that are available as accessories.



Control cabinet with mountedFlat antenna Disc Multi Band SMA-M 1,5m (301362)

1 Flat antenna Disc Multi Band SMA-M 1,5m (301362)	**3** myDatalogC32x
2 Control cabinet	

6.3 Safety instructions for cabling

Important: *To avoid any damage, always switch off the voltage supply to the device when performing electrical connections.*

When connections are made to the myDatalogC32x , the following warnings and information must be observed, in addition to the warnings and information found in the individual chapters on the installation. Further safety information is included in "Safety instructions" on page 15.

6.3.1 Information on preventing electrostatic discharges (ESD)

Important: *Maintenance procedures that do not require the device to be connected to the power supply should only be performed once the device has been disconnected from the mains power supply to minimise hazards and ESD risks.*

The sensitive electronic components inside the device can be damaged by static electricity, which can impair the device performance or even cause the device to fail. The manufacturer recommends the following steps to prevent any damage to the device caused by electrostatic discharges:

- Discharge any static electricity present on your body before handling the electronic components of the device (such as circuit boards and components attached thereto). To do this, you can touch a grounded metallic surface such as the housing frame of a device or a metal pipe.
- Avoid any unnecessary movements to prevent the build-up of static charges.
- Use antistatic containers or packaging to transport components that are sensitive to static.
- Wear an antistatic wristband that is grounded via a cable to discharge your body and keep it free of static electricity.
- Only touch components that are sensitive to electric charges in an antistatic working area. If possible, use antistatic mats and work pads.

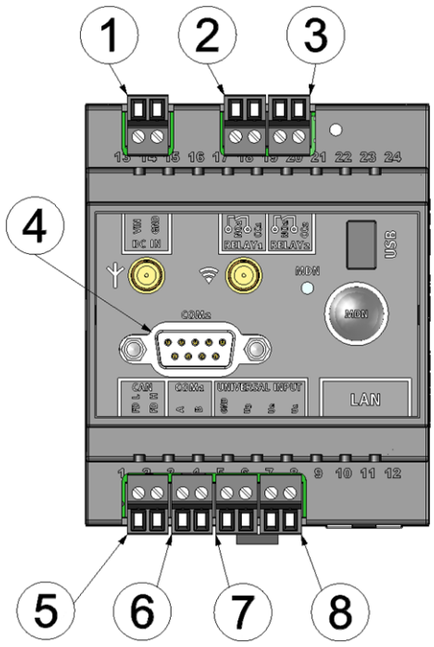
6.4 Electrical installation

Important: *Only qualified personnel should undertake the installation described in this chapter of the operating instructions to avoid any damage to the device.*

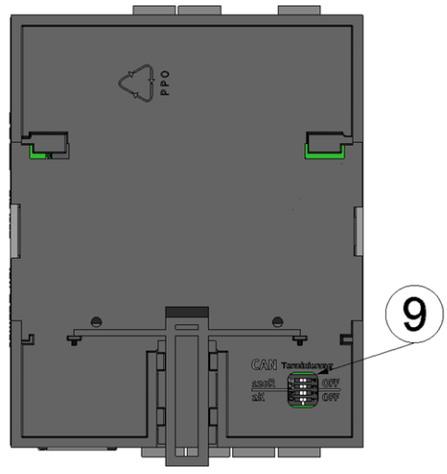
6.4.1 Connecting the sensors, actuators and power supply

Important:

- *All wiring work must be performed in the de-energised state.*
- *Ensure installation is completed correctly.*
- *Comply with existing legal and/or operational directives.*
- *Improper handling can cause injuries and/or damage to the instruments.*
- *Run all data and power cables so that they do not pose a trip hazard and ensure that cables do not have any sharp bends!*
- *The length of data and current cables must not exceed 30m !*



Connection of the sensors, actuators and power supply (front side)



Connection of the sensors, actuators and power supply (rear side)

1	Supply (V IN, GND)	**6**	Com1 (RS485)
2	Relay 1	**7**	Ground and universal input 1
3	Relay 2	**8**	Universal input 2-3
4	Com2 (RS232)	**9**	Dip switch for activating/deactivating the load resistances for the CAN interface
5	CAN / CAN FD		

DC IN

VIN	Supply voltage: 9...32 VDC (+/-10 %), max. 9 W
GND	Ground

RELAY1[1)]

NO1	Operating contact of the isolated switch contact 1 (normally open)
CC1	Root for the isolated switch contact 1

[1)] Parallel connection of a PhotoMOS relay (high switching frequencies) and a mechanical relay (high switching currents)

RELAY2[1)]

NO2	Operating contact of the isolated switch contact 2 (normally open)
CC2	Root for the isolated switch contact 2

[1)] Parallel connection of a PhotoMOS relay (high switching frequencies) and a mechanical relay (high switching currents)

COM2

1	NC
2	RXD line of the RS232 interface
3	TXD line of the RS232 interface
4	NC
5	Ground
6	NC
7	RTS line of the RS232 interface
8	CTS line of the RS232 interface
9	5 V [1], max. 750 mA

[1] Supply voltage (reserved for extensions)

CAN

FD L	CAN Low line of the CAN interface
FD H	CAN High line of the CAN interface

COM1

A	RS485 A
B	RS485 B

UNIVERSAL INPUT

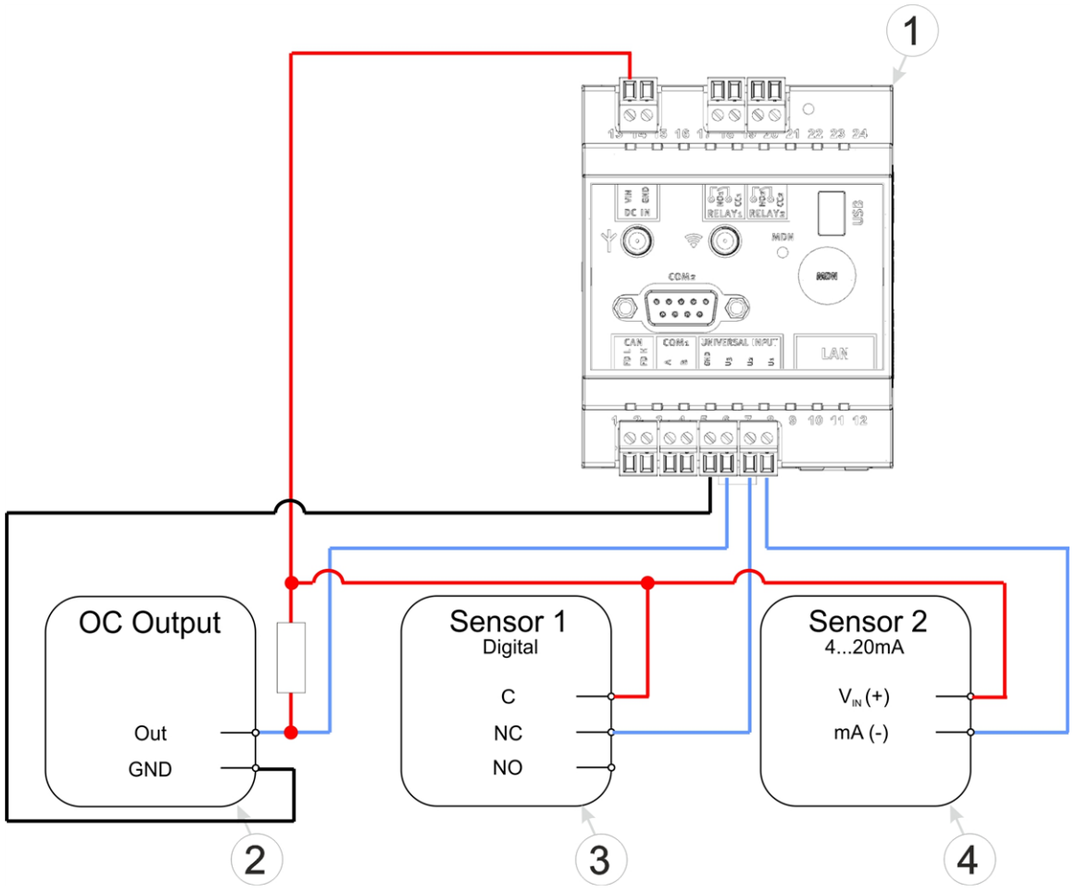
GND	Ground
UI3	Universal input 3
UI2	Universal input 2
UI1	Universal input 1

The following table contains the conditions to be observed when connecting cables to the terminals of the myDatalogC32x :

Nominal cross-section	1,5 mm²
Cross-section for solid wire	0,14...1,5 mm²
Cross-section for stranded wire	0,14...1,5 mm²
Length to be stripped	9 mm
Torque	0,22...0,25 Nm

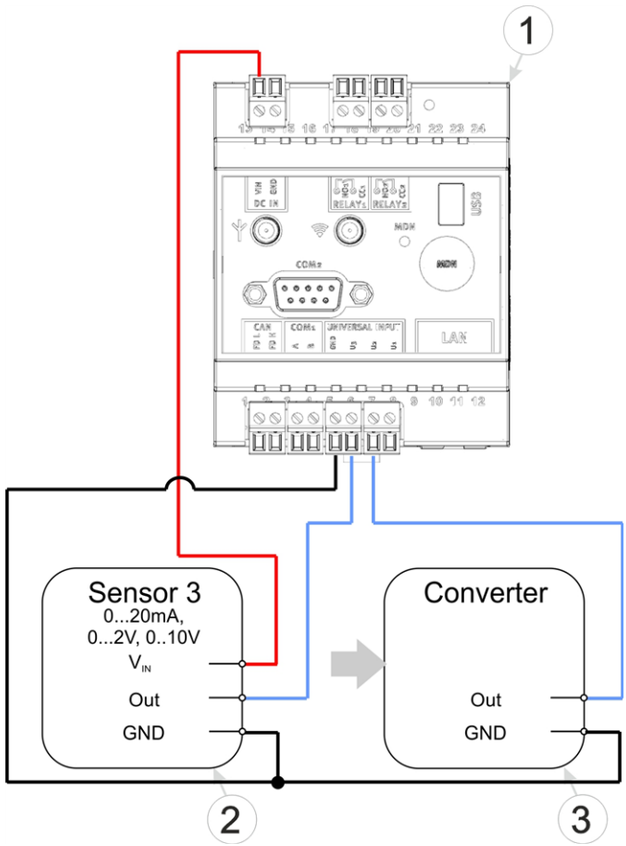
6.4.1.1 Connection examples

Note: *Since the universal inputs of the device are not galvanically isolated, it is not possible to add the myDatalogC32x to an existing 4-20 mA current loop (e.g. between sensor and SPS). Use a suitable isolation transformer in this case.*



Connection examples (OC output, digital, 4...20 mA)

1	myDatalogC32x	**4**	Isolated relay contact
2	Sensor with open collector output	**4**	2-wire mA sensor



Connection examples (0...20 mA, 0...2 V, 0...10 V, converter)

1 myDatalogC32x	**3** Signal converter, isolating transducer
2 3-wire mA sensor or 3-wire U-sensor	

6.4.2 Connection of the mobile network antenna

Important:

- *To ensure the correct functionality, only use antennas that are supplied by the manufacturer.*
- *When using extension cables, the total length of the cable connection to the antenna must not exceed 30 m.*

The standard antenna is directly attached to the antenna connector (see "Overview" on page 18) of the myDatalogC32x . In the event of a low radio signal strength, you can use the Dome antenna multi band SMA-M 3m (301212) or Flat antenna Disc Multi Band SMA-M 1,5m (301362).

If the distance between the antenna position and the myDatalogC32x is too great, you can use a 2.5 m Extension cable for antenna SMA-M/SMA-F 2,5m (206.807).

6.4.3 Connecting the extension modules

Important:

- *All wiring work must be performed in the de-energised state.*
- *Ensure installation is completed correctly.*
- *Comply with existing legal and/or operational directives.*
- *Improper handling can cause injuries and/or damage to the instruments.*
- *Run all data and power cables so that they do not pose a trip hazard and ensure that cables do not have any sharp bends!*
- *The length of data and current cables must not exceed 30m !*

It is possible to connect up to 10 extension modules to the myDatalogC32x via a CAN bus. The total length of the CAN bus must not exceed 20 m . If the CAN interface of the myDatalogC32x is used to connect extension modules, it is no longer available for measurement and control tasks (i.e. for the direct connection of sensors and actuators). In this type of application, no other bus participants except for the extension modules and the myDatalogC32x should be connected to the CAN bus (i.e. a separate, encapsulated CAN bus is required for the connection of extension modules).

6.4.4 Technical details about the universal inputs

Tip: *The universal inputs are not galvanically isolated.*

6.4.4.1 0/4...20 mA mode

Tip: *Above 23,96 mA, the relevant input becomes highly resistive (safety shutdown to prevent damage to the universal input).*

Resolution	6,36 µA
I_{max}	23,96 mA
Load	96 Ω

6.4.4.2 0...2 V mode

Resolution	610 µV
U_{max}	2,5 V
Load	10k086

6.4.4.3 0...10 V mode

Resolution	7,97 mV
U_{max}	32 V
Load	4k7

6.4.4.4 Standard digital modes (PWM, frequency, digital, counter)

General	U_{max}	32 V
	Low	<0,99 V
	High	>2,31 V
	Load	4k7
PWM	Measurement range	1...99 %
	f_{max}	100 Hz
	Minimum pulse length	1 ms
Frequency	Measurement range	1...1000 Hz
Counter	Minimum pulse length	1 ms

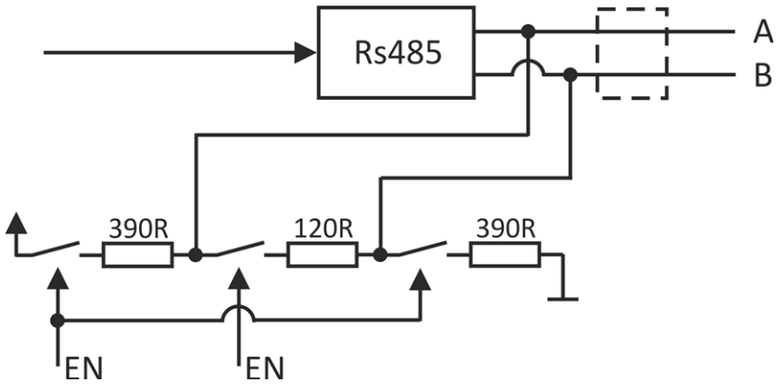
6.4.5 Technical details about the RS485 interface

Note: *The RS485 interface corresponds to standard EIA-485.*

The RS485 interface of the myDatalogC32x includes an input common mode range that covers the full area specified for RS485 (-7 V...+12 V). Higher voltages damage the interface. Differential signals of more than +/-200 mV within the specified input common mode range are detected correctly. In send mode, the output signal is in the range of 1,5...3,3 V .

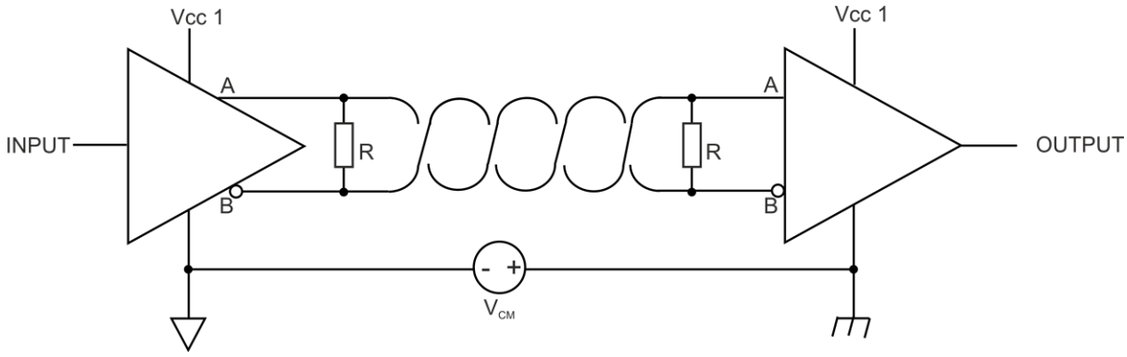
Baud rate	2400-115200
Stop bits	1, 2
Parity	N, E, O
Data bits	7, 8
Load resistance	Off 120 Ω
Terminal resistance	Off 390 Ω

The 120Ω load resistance between RS485 A and B can be activated via the software. The clamp resistances (pull up to RS485 A and pull down to RS485 B) can also be activated via the software.



Schematic diagram of the switchable load resistances

Tip: *Additional explanation regarding the connection of two RS485 bus participants*



Schematic diagram: Connection of two RS485 bus participants

A problem occurs if there is no connection between the GND potentials of the sender and recipient. A common mode voltage (V_{CM}) occurs in this case. The GND potential difference must not exceed max. +/- 7 V . Higher voltages will damage the interface. Temporary overvoltages (ESD, EFT and surge) are, however, absorbed by protective circuits.

Note: The common mode input voltage range of -7 V...+12 V specified for the RS485 is determined from the max. permissible GND potential difference (+/- 7 V) and the max. permissible output voltage range of 0...5 V for RS485.

6.4.6 Technical details about the CAN interface

Note: *The CAN interface of the myDatalogC32x is compatible with standard ISO-11898, including the requirements for 24 V.*

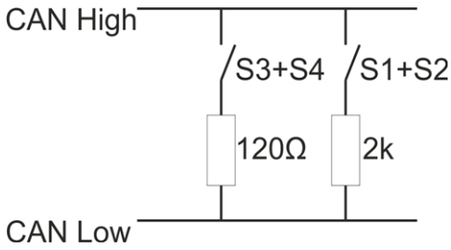
Supported CAN specification	CAN: V2.0B CAN FD: V1.0
Data transfer rate	CAN: max. 1 Mbit/s/ CAN FD: max. 8 Mbit/s

The CAN interface does not have any galvanic isolation between the CAN bus and CAN controller. However, the output drivers of the CAN interface are protected against overloading and are not damaged by a short circuit. It is possible to connect the myDatalogC32x to the CAN bus at the end as well as via the branch lines. If the myDatalogC32x is connected at the end of the bus instead of the prescribed 120 Ω load resistance, then the 120 Ω resistance integrated in the device must also be activated via S3 and S4 of the dip switch. When establishing a connection via the branch lines, it may be necessary to activate the 2 k resistance via S1 and S2 of the dip switch based on the length of the line and the selected data transfer

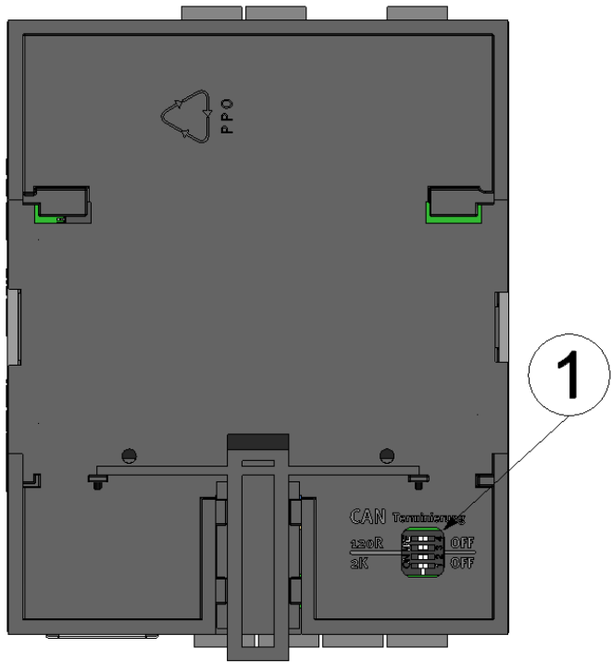
rate. Neither of the two resistances are active in the delivered condition. The dip switch to activate/deactivate the load resistances is located on the rear of the myDatalogC32x .

Dip switches SW1

S1 and S2	2 k load resistance between CAN high and CAN low
S3 and S4	120 Ω load resistance between CAN high and CAN low



Schematic diagram of the switchable load resistances



Position of the dip switch

1	Dip switch for activating/deactivating the load resistances for the CAN interface

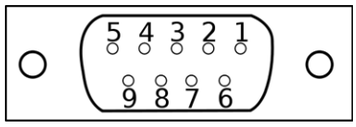
6.4.7 Technical details about the RS232 interface

Note: *The RS232 interface of the myDatalogC32x is compatible with standard TIA/EIA-232-F.*

The output drivers are protected against overloading and are not damaged by a short circuit to the GND or +/-15 V. The inputs are equipped with a 5 kΩ load resistance.

Baud rate	2400-115200
Stop bits	1, 2
Parity	N, E, O
Data bits	7, 8
Flow control	Off RTS/CTS

The direction of the signals corresponds to that of a DCE (e.g. modem).



9-pole Sub-D(f)

Assignment of the Sub-D connector

Pin	Signal	Type
1	NC	
2	RXD	O (low: -5,4 V ; high: 5,4 V)
3	TXD	I (low: <0,8 V; high: >2 V)
4	NC	
5	GND	
6	NC	
7	RTS	I (low: <0,8 V; high: >2 V)
8	CTS	O (low: -5,4 V ; high:5,4 V)
9	5 V [1)] max. 750 mA	

[1)] Supply voltage (reserved for extensions)

If your sensor also comprises a SUB-D(f) connector, you can use the Gender changer 9-pin D-Sub male/male (206.684) provided as an accessory. If the connection properties (transmission direction of the individual signal lines) of your sensor also correspond to that of a DCE (e.g. modem), you can use the Null modem adapter 9-pin D-Sub female/male (206.686) that is available as an accessory.

6.4.8 Technical details about the USB interface

Important: *The USB interface is a service interface that must be protected from contamination when not in use by the sealing plug included in the package.*

The connection to a PC is established via the USB slave interface. It is only designated for the communication with the DeviceConfig configuration program.

The DeviceConfig configuration program can be downloaded free of charge from the following website:

www.microtronics.com/deviceconfig

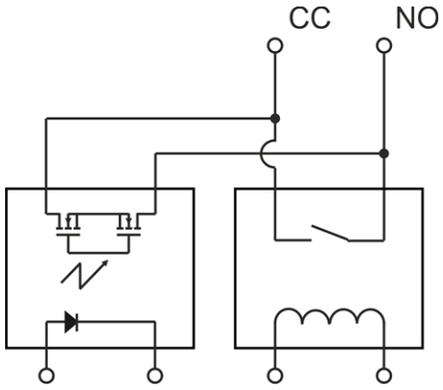
Important: *If the antenna of the device is earthed or connected to the ground potential of another object (e.g. installation on a control cabinet), remove the antennas before you connect the device with the USB interface of a PC. Otherwise, this can cause a potential displacement between the ground of the antenna and the ground of the PC, which could damage the USB interface of the device.*

6.4.9 Technical details about the outputs

6.4.9.1 Isolated switch contact (NO, CC)

> ***Important:*** *The user must ensure that the current on the isolated switch contact does not exceed 2 A (relay mode) or 130 mA (optoswitch mode).*

In idle state, the make contact of the relay or the optoswitch is open (normally open).



Equivalent circuit diagram for the isolated switch contact

General	Proof voltage (CC, NO)	32 V AC
	galv. separation	1,5 kV AC
Relay	U_{max}	32 V AC und DC
	I	max. 2 A
	P_{max}	64 VA , 60 W
Optoswitch	U_{max}	32 V AC und DC
	$I_{max\ cont.}$	130 mA
	$I_{max\ peak}$	400 mA (100 ms (1 shot), DC)
	P_{max}	500 mW
	R_{on}	35 Ω
	f_{max}	1000 Hz

6.4.10 Technical details about the integrated rechargeable buffer battery

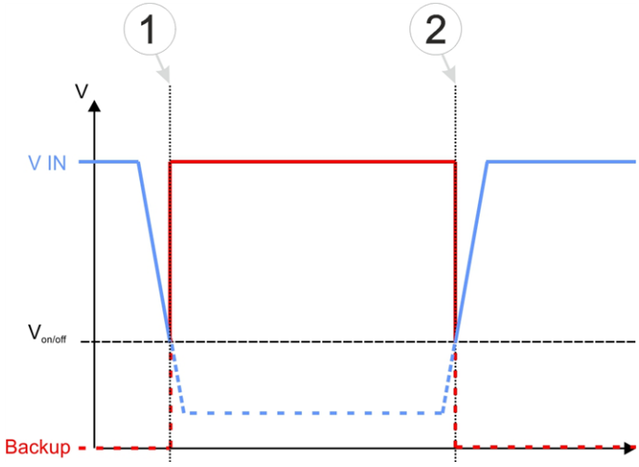
The integrated rechargeable buffer battery enables an application-specific reaction (e.g. issue a message and disconnection from mobile network) to the failure of the power supply. As soon as the supply voltage falls below 8,65 V , the power supply is switched to the rechargeable buffer battery. If the supply voltage increases to above 8,65 V again, the supply is switched from the rechargeable buffer battery back to the supply voltage.

The following components fail as soon as the myDatalogC32x is only supplied by the rechargeable buffer battery:

- CAN interface (communication with the extension modules is thus also no longer possible).
- Control of the relays (i.e. the closed-circuit contacts switch to "NO" idle mode). The control of the optoswitch is not affected by this.
- 5 V supply to COM2 (RS232 interface)

A hardware-regulated controller ensures that the rechargeable buffer battery is only charged when the ambient temperature is in the permitted range (0 ...+45 °C).

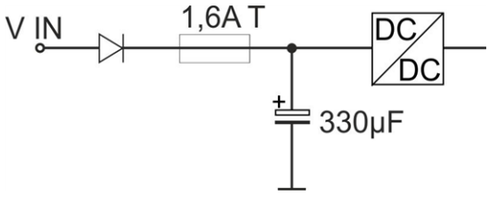
V IN	Supply voltage: 9...32 VDC (+/-10 %)
$V_{on/off}$	Threshold for switching between normal operation and the rechargeable buffer battery supply: 8,65 V
Backup	Voltage of the rechargeable buffer battery



Supply of the myDatalogC32x

1	• The power supply is switched to the rechargeable buffer battery. • The device continues to operate normally (except for the components that fail when supplied by the rechargeable buffer battery).
2	• The supply voltage exceeds the threshold for switching to normal operation again. • The myDatalogC32x resumes normal operation again.

6.4.11 Technical details about the energy supply



Schematic diagram of the energy supply

V IN	9...32 VDC (+/-10 %)
Power consumption [1)] (without sensors)	typ. 5 W max. 9 W
Input capacity	330 µF
Fuse	1,6 A T
Reverse voltage protection	Yes

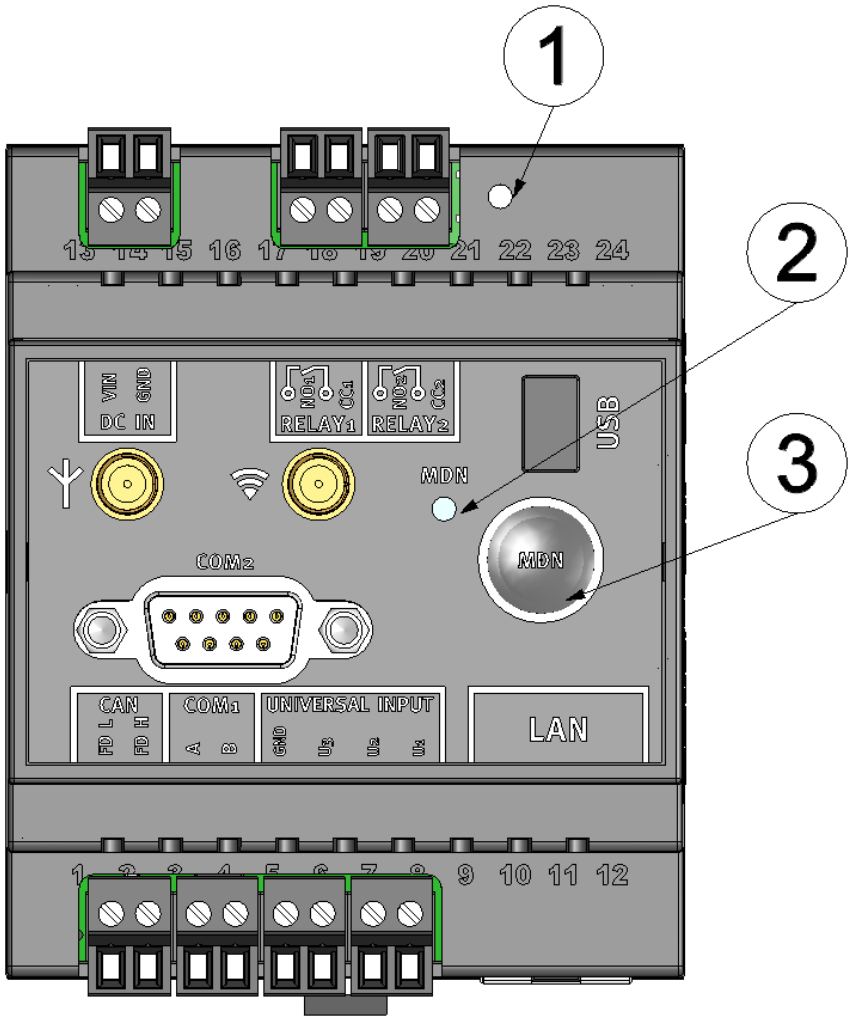
[1)] applies to ongoing operation. A current peak is caused by the input capacity at the time of activation.

The myDatalogC32x is equipped with a relatively large input capacity (330 µF) to ensure reliable switchover to the integrated rechargeable buffer battery in the event of a supply voltage failure. When selecting the power supply please ensure that it is able to supply the required initial current. The supply voltage input is also equipped with a diode to protect against polarity reversal and a 1,6 A T fuse.

6.4.12 Technical details about the system time

The myDatalogC32x is equipped with a hardware real-time clock that has its own buffer battery with an expected service life of >10 years. The system time continues to run even if the device is removed from the supply voltage. This means that following recommissioning, valid time stamps for the measurement and log data can be generated immediately. Additionally, the system time is synchronised with the server each time a connection to the myDatanet server is established.

Chapter 7 Operating elements



Operating elements

1 Reset button	**3** MDN button
2 RGB LED	

Chapter 8 Maintenance

Important: *To prevent any damage to the device, the work described in this section of the instructions must only be performed by qualified personnel.*

The device must be deenergised before any maintenance, cleaning and/or repair work.

8.1 General maintenance

- Regularly check the myDatalogC32x for mechanical damage.
- Check all cables for mechanical damage at regular intervals.
- Clean the myDatalogC32x with a soft, moist cloth. Use a mild cleaning agent, if necessary.

8.2 Fuse replacement



Danger: Risk of fire. An incorrect fuse can cause injuries, damages or emissions. The fuse is located inside the housing. The housing may only be opened by the manufacturer.

If you believe that the fuse of the myDatalogC32x is defective , the device must be sent back in its original packaging to the manufacturer (see "Repair & return" on page 49).

8.3 Services

Microtronics Engineering GmbH offers the following maintenance services for the myDatalogC32x :

Description	Order number
Inspection fee	206.395
Cleaning flat	206.355
Software Update	206.555

Chapter 9 Repair & return

Microtronics products are manufactured using quality-assured processes. The Microtronics Engineering GmbH production site is ISO 90001 certified. All products are tested and/or calibrated before being shipped to the customer. This ensures that Microtronics Engineering GmbH products perform to their full capacity upon delivery.

Despite Microtronics Engineering GmbH's most rigurous quality assurance measures, malfunctions may occur as well within as outside the warranty period. In some cases, however, it is not necessary to return the product. Some issues can be resolved remotely by the Support & Service Centre (e.g. via OTA firmware update). If your device shows unexpected behaviour or malfunctions, please proceed as follows:

1. Contact the support & service center (support.microtronics.com)

   In the Microtronics Help Center, select the category "Technical support (device)" to create a ticket. Please describe the problem in as much detail as possible to help our staff diagnose the issue. One of our staff members will then contact you and attempt to resolve the problem remotely with you.

2. Wait for the completed RMA form you will receive in response

   If it was not possible to resolve the problem remotely, you will receive a completed RMA form that you must enclose with the return shipment. At the bottom of the form, you will also find more detailed information on how to return the product.

3. Return the myDatalogC32x

   Do not dispatch the device until you have received the RMA form and the RMA number noted on it. Microtronics will not reject shipments that arrive without a clearly indicated RMA number or without the enclosed RMA form. However, processing will take significantly longer in such cases.

If you return the myDatalogC32x for repair under warranty or outside of warranty, check with your national customs/tax authorities for applicable regulations, procedures and necessary documentation for tax-free return of products. Special customs tariff numbers are usually available to confirm that the item is being returned for repair and has no commercial value.

The customs invoice/shipping documents should clearly state: "Goods being returned to manufacturer for repair – No commercial value". It is mandatory that any returned goods are accompanied by a commercial invoice on headed paper. Microtronics reserves the right to charge the customer for time spent rectifying incorrect customs documents.

> ***Note:*** *Ensure that the myDatalogC32x is packed carefully and securely. Damage incurred during transport is not covered by the warranty and may be subject to a charge.*

Chapter 10 Removal & disposal

Material separation only by qualified personnel!

- Be careful when disassembling the device, you may injure yourself.
- Take the separated components to the appropriate recycling.

Incorrect disposal can cause environmental hazards.

Dispose of the device components and packaging material in accordance with the locally valid environmental regulations for electronic products (e.g. according to European waste code 16 02 14).

1. Disconnect any charging voltage that has been used.
2. Disconnect any connected cables using a suitable tool.



Logo of the EU WEEE Directive

This symbol indicates that the requirements of Directive 2012/19/EU regarding the scrap disposal of waste from electric and electronic equipment must be observed. Microtronics Engineering GmbH supports and promotes recycling and environmentally friendly, separate collection/disposal of waste from electric and electronic equipment in order to protect the environment and human health. Observe the local laws and regulations on disposal of electronic waste at all times.

Microtronics Engineering GmbH releases goods brought onto the market in Austria from the obligations via ERA, which means that collection points that cooperate with ERA Elektro Recycling Austria GmbH (https://www.era-gmbh.at/) can be used for disposal in Austria.

The device contains a lithium button cell that has been soldered on. It must be removed before disposal or the disposal service must be informed that batteries are still located in the device.

The device includes a battery or rechargeable battery (lithium) that must be disposed of separately.

Chapter 11 Contact information

Support & Service:
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Certified by TÜV AUSTRIA: EN ISO 9001:2015, EN ISO 14001:2015, ISO/IEC 27001:2013, EN ISO 50001:2011 for myDatanet | TÜV SÜD: ATEX Directive 2014/34/EU

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