

User manual

Jellox Pulse Pro / Jellox Pulse Elite

Valid from:

- Firmware version: 01v011
- App. version: 16.14.2
- Server version: 54v00x
- Hardware version: 3.0 (Pro) / 2.0 (Elite)



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Chapter 2 Declaration of conformity

EU-Konformitätserklärung

EU Declaration of Conformity / Déclaration de conformité UE

Type: D022-4Z001200D05
Type code : D022-4Z00121L905
Type:



Hersteller: Microtronics Engineering GmbH
Manufacturer : Hauptstrasse 7
Fabricant: 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		
		EN61326-1	
(2014/35/EU)	LVD Directive		
		EN61010-1	
(2014/53/EU)	RED Directive		
	Safety & Health 3.1a	EN62368-1 EN62368-1+A11:2017 EN62311	
	EMC 3.1b	EN301489-1 V2.2.3 EN301489-19 V2.2.1 EN301489-52 V1.1.0 EN301489-1 V2.1.1 EN301489-17 V3.2.4	
	Radio spectrum efficiency 3.2	EN301908-1 V15.2.1 EN301908-13 V13.2.1 EN303413 V1.2.1 EN300328 V2.2.2	
	Cybersecurity 3.3	EN18031-1	
(2015/863/EU)	RoHS Directive		
	Prevention 4.1	EN IEC 63000	

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Ruprechtshofen, den 22.06.2026

Ort und Datum der Ausstellung
Place and date of issue
Lieu et date d'établissement

Chapter 3 Specifications

Voltage supply	Battery: Li-MnO ₂ battery pack with a capacity of 10,6 Ah	
Housing	Material:	Noryl GTX 973 / PC (housing/cover)
	Weight:	340 g (incl. battery)
	Dimensions (WHD):	91 x 129 x 46 mm
	Protection class:	IP66 / IP68 : • 105 days at an immersion depth of 1 m • 35 days at an immersion depth of 4 m
Operating temperature (standard)	-10...+60 °C	
Operating temperature (extended)	-20...+60 °C Operation with possible deterioration of the connection stability (especially when the signal strength is low and/or the capacity of the battery is virtually depleted) outside the standard operating temperature range.	
Air humidity	15...90 % RH non-condensing	
Max. operating altitude	≤ 2000 m	
Pollution degree	PD2	
Storage and transport temperature	-30...+85 °C	
Display	12 individual symbols illuminated via LED for signalling the operating state	
Operation	Reed switch for activating the display and triggering a transmission	
Antenna connector	Type key D022-4Z0012 1L9 05: internal antenna Type key D022-4Z0012 00D 05: FME-M	
Inputs	4 x counter or digital Minimum pulse length: >1 ms Additional information is provided in "Technical details about the inputs" on page 59.	
Remote measurement channels	Jellox Pulse Pro : remote measurement channels are not available Jellox Pulse Elite : 4 x sensor module (connection via local radio) The sensor modules are not included in the standard scope of supply. You will find the specifications for the sensor modules in the relevant manual. A list of compatible sensor modules is provided in chapter "Sensor modules" on page 160.	
Data memory	Jellox Pulse Pro : Internal flash memory for up to 131.068 measurement cycles Jellox Pulse Elite : Internal flash memory for up to 57.610 measurement cycles Additional information is provided in "Functionality of the internal data memory" on page 34.	

Data type	<u>Inputs:</u> Meter reading: s64 (64 Bit signed) Amount per recording: f32 (32 Bit floating point) Flow rate per recording: f32 (32 Bit floating point) Digital (contact position and actuation state): u8 (8 Bit unsigned) <u>Remote measurement channels:</u> Primary measurement value: f32 (32 Bit floating point) Secondary measurement value: f32 (32 Bit floating point) Battery voltage: f32 (32 Bit floating point) Days until battery replacement: f32 (32 Bit floating point) Flags: u32 (32 Bit unsigned) Local radio signal strength: s8 (8 Bit signed)
Data transmission	Local radio connection: Range: up to 20 m ¹⁾ LTE-M/NB-IoT modem (world): M1: LTE B1, B2, B3, B4, B5, B8, B12, B13, B14, B18, B19, B20, B25, B26, B28, B66 NB1/NB2: LTE B1, B2, B3, B4, B5, B8, B12, B13, B17, B19, B20, B25, B26, B28, B66
SIM	Integrated SIM chip

¹⁾ Depending on ambient and structural conditions

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.

Note: *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 173).*

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 Jellox Pulse , 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 note: *The manufacturer's products that are designed for use outdoors include extensive protection against penetrating moisture and dust. The operator is responsible for protecting the joint between the product's sensor cable and the sensor against penetrating moisture and dust in a suitable way and complying with local safety regulations.*

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.



WARNING:

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 note: *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.*

Note: *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 26). 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 173).
- 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.
- 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 141).
- 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 143.

4.4.4 Specific safety instructions

**WARNING:**

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.

**WARNING:**

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 note: *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.*

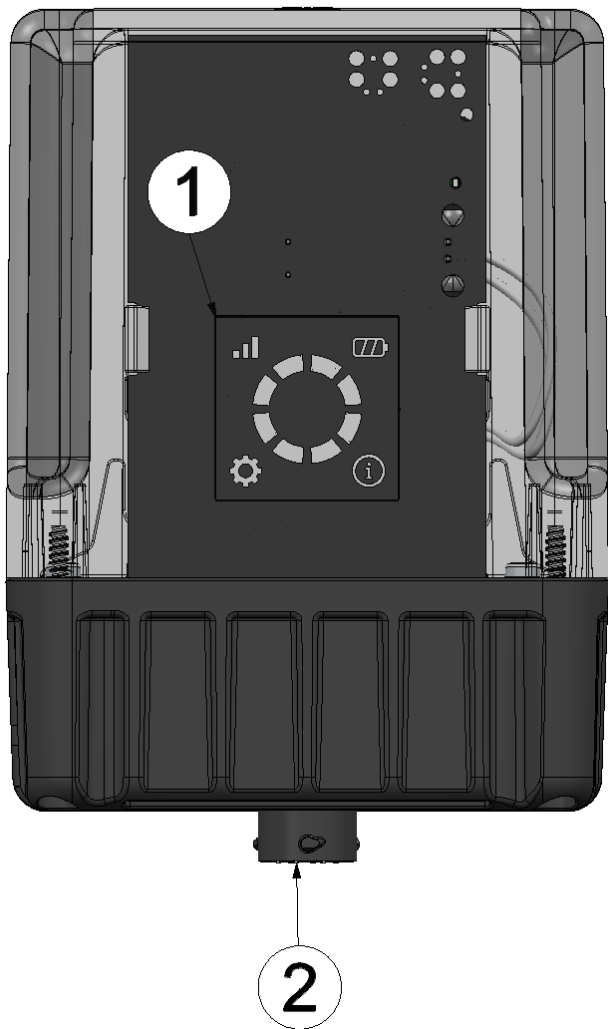
4.4.5.1 Safety and precautionary measures for devices with mobile network modem

- 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.

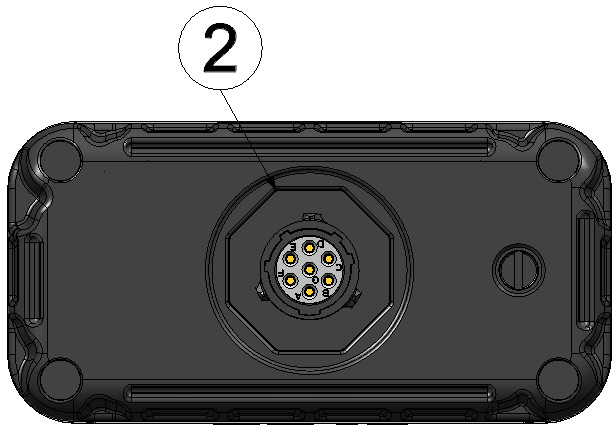
4.4.5.2 Safety measures for installing the antenna

- 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.

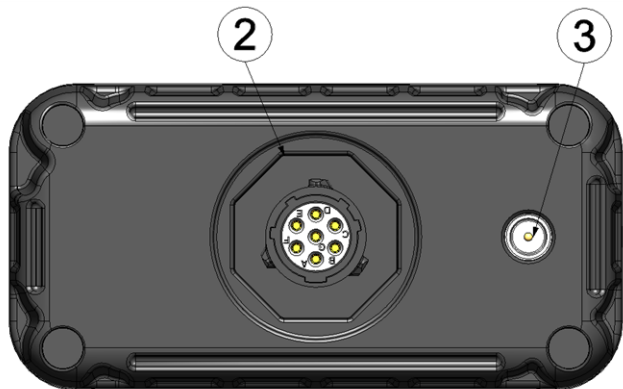
4.5 Overview



Front of the Jellox Pulse



Bottom of the Jellox Pulse (Type key D022-4Z00121L905)

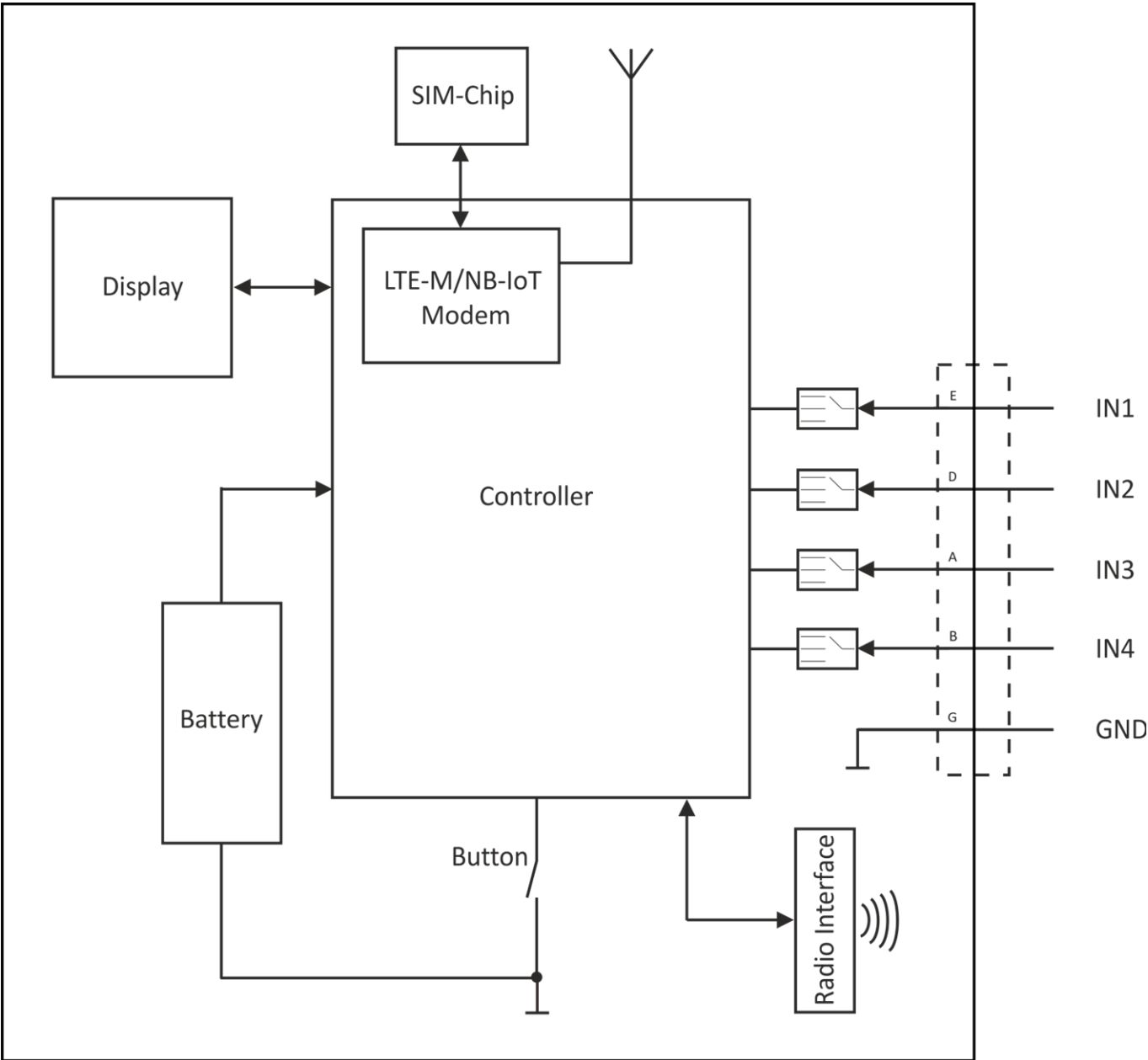


Bottom of the Jellox Pulse (Type key D022-4Z001200D05)

1 Display	3 Antenna connector (only with D022-4Z001200D05)
2 Sensor connector	

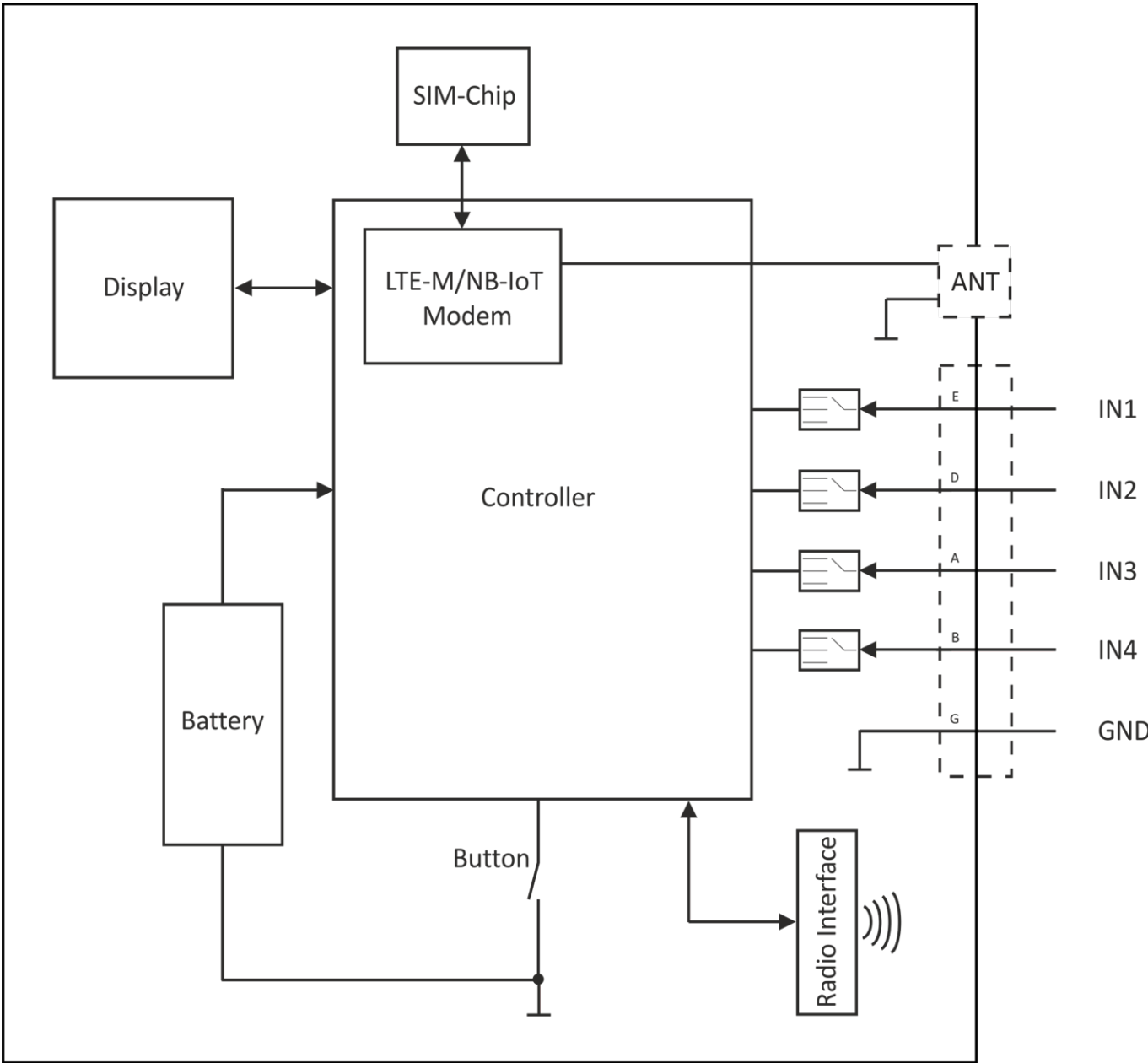
4.5.1 Block diagram

4.5.1.1 Variant with internal antenna



Block diagram of the Jellox Pulse (Type key D022-4Z00121L905)

4.5.1.2 Variant with external antenna connector



Block diagram of the Jellox Pulse (Type key D022-4Z001200D05)

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 20, "Type of use" on page 20 and "Field of application" on page 20 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 21. 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 measurement device is designed for use in the water distribution environment (i.e. transport of water to consumers via a network of pipes, pumps and storage facilities). It is used to record pulses from water meters and the switching state of digital contacts. These can be the output signals of bulk water meters or MID-compliant meters, as well as the switching states of gate valves, floats or door/shaft/lid opening contacts. The device is therefore suitable for meter monitoring, quantity recording and the detection of pipe bursts (via flow rate), of access to the infrastructure (via door, manhole or cover contact), of valve positions or water ingress (via float contact). In the "Elite" variant, measurement data provided by remote sensor modules can additionally be recorded and processed. A list of compatible sensor modules is provided in chapter "Sensor modules" on page 160. It can operate independently of the mains and was designed for use in shafts without explosive atmospheres. The measured and recorded data is stored on a non-volatile storage medium. This stored data is sent via the mobile network to a central server for further processing. The device is equipped with an integrated SIM chip for this purpose. The device is designed exclusively for operation within the limits specified in chapter "Specifications" on page 11.

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 26). The device is only approved for use in shafts without an explosive atmosphere.

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 20, "Type of use" on page 20 and "Field of application" on page 20 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, etc.).
- The device must not be installed in locations that are permanently flooded.
- The device must not be mounted hanging from the connection cable.
- No traction may be exerted on the connection cables (sensors and supply). Straining clamps must be used to secure the cables in a suitable manner.
- The device is not authorised for use in sewers.
- The device is not authorised for recording pulses from electricity or gas meters.

The following aspects must also be observed for the variant with external antenna connector:

- The device must not be operated without antenna.
- A rod antenna must not be connected directly to the antenna connector. Use the "Multiband antenna with bracket" or another antenna with connection cable.
- When using antennas with a connection cable, neither the device nor the antenna may be suspended from the antenna cable.

4.7 General product information

The device is a compact, battery-powered, stationary data logger designed for operation in inspection chambers. It is used to determine, record and transmit pulses of water meters and of the switching state of digital contacts. To do so, the Jellox Pulse is equipped with 4 inputs that can either be configured as meter inputs or as digital inputs. A meter contact or digital contact can be connected to the inputs without an additional energy supply (see "Technical details about the inputs" on page 59). Thanks to the integrated battery, the Jellox Pulse operates without mains power. Depending on the selected mode, related measurement values are recorded for each input (see "Determining the measurement values" on page 29). For inputs in "digital" mode, the "contact position" (i.e. whether or not current flows via the input) and the actuation state (i.e. whether the contact is in idle state or has been actuated) are determined. For inputs in "Counter" mode, the amount per record (i.e. the sum of pulses between two records multiplied by the pulse valence) and the flow rate per record (i.e. "amount per record" divided by the time difference between the recordings) and the meter reading calculated based on the pulses are recorded. For the "Flow rate" and "Actuation state" measurement values, actions (e.g. trigger alarm or warning) can be defined that are triggered depending on the current measurement value. These are referred to as "Smart Actions" in the following (see "Smart Actions" on page 91). In addition to the measurement data of the inputs, the internal measurement values "RSSI" (signal strength of the mobile radio signal) and "Battery" are recorded. In the variant "Elite", up to 4 remote sensor modules can be connected in addition to the available inputs on the device. Information on the measurement values provided by the sensor module, as well as details regarding the measurement range, resolution, accuracy, measurement method and battery capacity, are provided in the manual for the relevant sensor module. The sensor modules and the Jellox Pulse communicate via a local radio connection. Depending on the environmental conditions, the distance covered can be up to 20 m. For the sensor modules, in addition to the primary measurement value (e.g. pressure), up to three secondary measurement values (e.g. medium temperature, maximum pressure during a pressure surge and minimum pressure during a pressure surge) and the internal measurement values "Battery", "Runtime" (days

remaining until the next battery replacement), "Flags" (status) and "RSSI" (field strength of the radio connection). "Smart Actions" can only be created for the primary measured values of the sensor modules.

The measurement data of the remote sensor modules are determined in a 10 sec. interval (to monitor the conditions under which a "Smart Action" is triggered) and can be stored in an adjustable record interval (see "Device settings" on page 84) in the internal data memory. The same record interval is used for recording the measurement data from the inputs. The measurement interval for the inputs on the Jellox Pulse corresponds to the record interval. It is also during this record interval that the conditions under which a "Smart Action" is triggered are monitored.

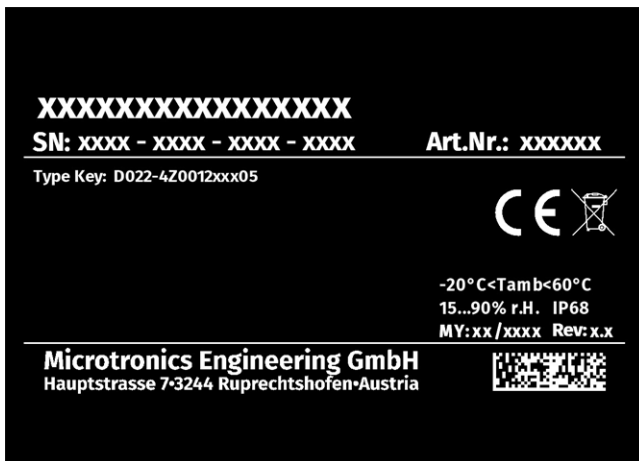
The recorded data can be read out using the local radio connection or it can be automatically transferred to a central myDatenet server using the mobile network connection. The device is equipped with an integrated SIM chip for this purpose. In addition, a time can be set at which the Jellox Pulse connects to the server, regardless of the transmission interval. To read out the data locally via radio connection and to simultaneously forward it to a central myDatenet server, the "OnSite Companion" smartphone app (see "OnSite Companion" on page 123) can be used. The myDatenet server provides a variety of options for managing and displaying the data. More information is provided in the server manual ("myDatenet Server Manual " 805002). The device is configured via the interface of the relevant myDatenet server. Using "Smart Actions", if a measurement value exceeds or falls below a defined threshold (applies both to the measurement values "flow" and "actuator status" recorded via the inputs and to the primary measurement values supplied by the remote sensor modules), the following actions can be triggered regardless of the currently set transmission interval: an immediate transmission can be initiated, immediate recording can be started, the connection type can be changed, a warning or alarm can be triggered, the system can be switched to an alternative record interval, or an alternative transmission interval can be activated (see "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103).

The Jellox Pulse features 12 LED-illuminated symbols to display the current operating status (see "Display" on page 71). The magnetic switch can be used to activate the display, initiate a transmission or temporarily enable the local radio interface for connecting to the "OnSite Companion" smartphone app (see "Reed switch" on page 70).

4.8 Device labelling

The information in this user manual applies exclusively to the Jellox Pulse device type. The type plate is located on the rear of the device and contains the following information::

- Product designation
- Serial number
- Item number
- Type Key
- CE marking
- Logo for the EU WEEE Directive
- Environmental conditions during operation
- Protection class
- Week and year of production
- Product revision
- Name and address of the manufacturer



Type plate Jellox Pulse

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

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..*



WARNING:

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 store the Jellox Pulse , deactivate the measurement system via the title bar of the configuration section "Measurement system" (see "Measurement system" on page 78). Then trigger a transmission using the reed switch (see "Reed switch" on page 70) to synchronise the altered configuration between device and server. This way any data that has not yet been transferred to the myDatenet server at this point in time is also transmitted. The data transmission and measurement are then deactivated. The sensor cable or, for the variant with external antenna connector (Type key D022-4Z0012**00D**05), the antenna can be removed as soon as the mobile network connection has been disconnected - indicated by "transport mode" being shown on the display (see "Display" on page 71). If necessary, you can reactivate the display by shortly (approx. 1 sec.) pressing the reed switch (see "Reed switch" on page 70). Store the Jellox Pulse in the original packaging.

Important note: *When storing the Jellox Pulse , ensure that theMDN Magnet is not positioned in the vicinity of the reed switch as this could accidentally trigger transmissions.*

When deactivating the measurement system, the Jellox Pulse is placed in a very in a very energy-saving mode. However, it may still occur that the batteries are fully discharged if the device is stored for very long periods. The configuration and the most recently recorded data are thereby retained in any case. To resume operation of the Jellox Pulse , activate the measurement system via the title bar of the configuration section "Measurement system". Then trigger a transmission using the reed switch to synchronise device and server. The Jellox Pulse will then resume operation according to the configuration.

4.11 Warranty

The device has been functionally tested before delivery. If it is used as intended (see "Intended use" on page 20) and the operating instructions, the applicable documents (see "Applicable documents " on page 61) and the safety notes and instructions contained therein, are observed, no functional restrictions are to be expected and perfect operation should be possible.

Note: *Please also note in this regard the next chapter "Disclaimer" on page 25.*

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



WARNING:

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

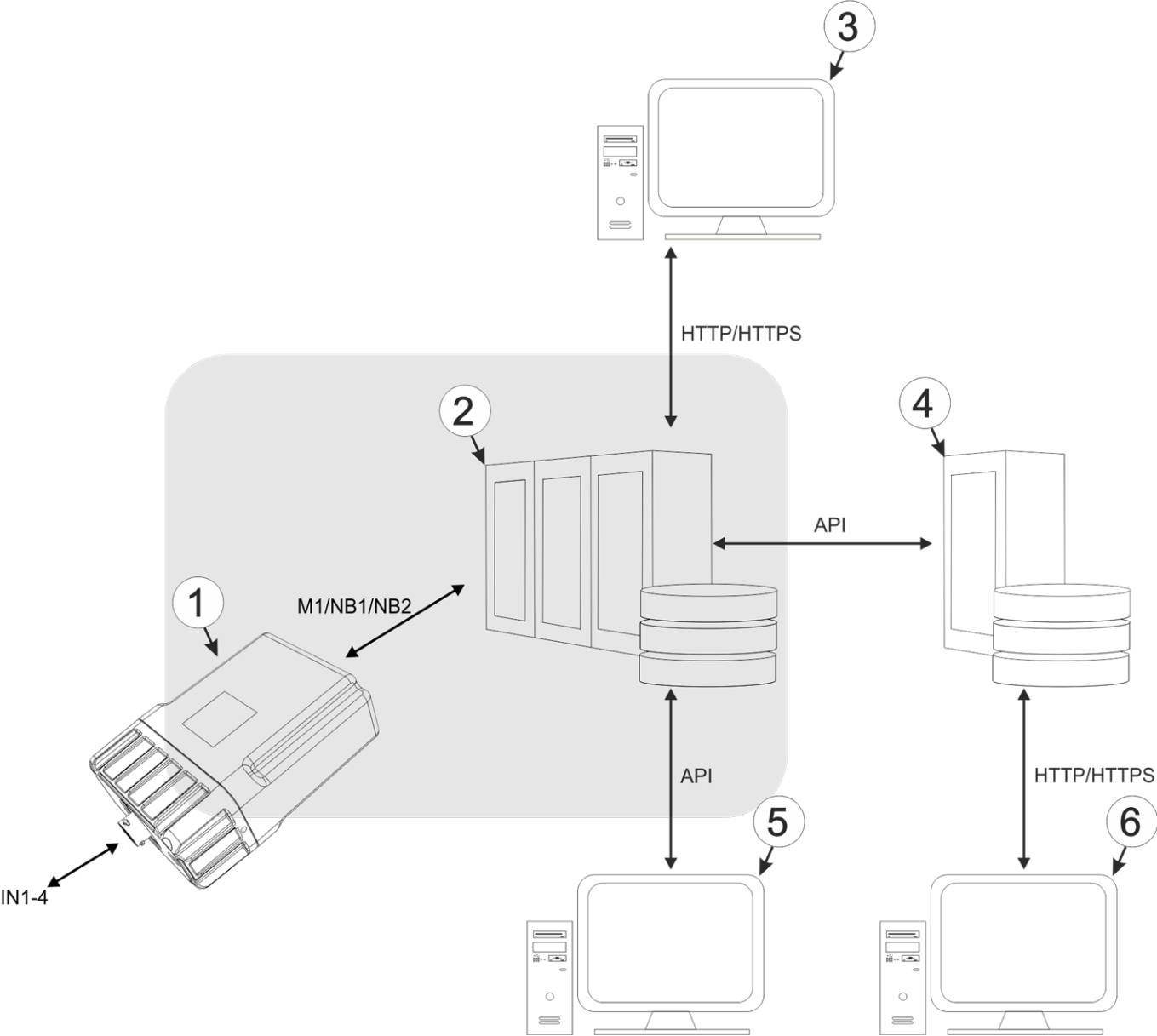
Note: Qualified personnel

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 Functional principle

In the graphic below, all of the components that are part of the myDatenet illustrated in grey. All other components must be provided/created by the customer.



Functional principle

1	Jellox Pulse with integrated managed service SIM chip
2	myDatenet server the data is transferred to
3	Client that accesses the interface of the myDatenet server via the web browser
4	Customer-specific server that provides clients with their own interface. The customer-specific server obtains the data via the API interface of the myDatenet server (see "API" on page 137).
5	Client, on which a PC program is running, that obtains its data via the API interface of the myDatenet server (see "API" on page 137)
6	Client that accesses the interface of the customer-specific server via the web browser

Functions and components provided by myDatenet :

- Jellox Pulse

It is a compact device used for connecting water or energy meters as well as digital contacts (IN1-4) to the myDatenet server (M1/NB1/NB2).

- Managed Service

Managed Service is the basis for operating the devices and provides a wide range of services.

Managed Service includes updates for device firmware, mobile data transmission on a global scale and free support - providing you with one contact person for the entire solution.

- myDatenet server

Database for saving the measurement data and configurations. Data is either accessed via the API (see "API" on page 137) or the web interface of the server.

Functions and components provided by the customer:

- Water meter with pulse output as well as digital contacts

Counter that has a switching contact compatible with the specifications listed in chapter "Technical details about the inputs" (see "Technical details about the inputs" on page 59)

Digital switching contact compatible with the specifications listed in chapter "Technical details about the inputs" (see "Technical details about the inputs" on page 59)

- Customer-specific server with web interface for the clients (optional)

It can be used to create an individual web interface for the clients. In this case the data is read from the customer specific server via the API interface (see "API" on page 137) on the myDatenet server.

5.1 List of determined measurement values

5.1.1 Inputs

For each input of the Jellox Pulse, the following measurement values are determined. Which of these measurement values contain valid data depends on the "mode" selected for the input. If the input is deactivated (mode "off"), all measurement values are set to "NaN". If the input is operated in "Digital" mode, only the measurement values for "Actuation state" and "Contact position" contain valid data. The remaining measurement values are set to "NaN". If, by contrast, the "Counter" mode is selected, only the measurement values "Meter reading", "Quantity" and "Flow rate" contain valid values. The remaining measurement values are again set to "NaN".

Actuation state []

*Indicates whether the contact is idle state or has been actuated
(0 = idle state, 1 = actuated)*

Type of contact []

*Indicates whether current is flowing through the input
(0 = no current flows 1 = current flows through the contact)*

Counter value ["Meter reading unit"¹]

Meter reading calculated based on the pulses (i.e. sum of pulses × pulse value × scaling factor from the "pulse unit" to the "meter reading unit")

Quantity ["Pulse unit"¹]

Quantity per recording (i.e. sum of pulses between two recordings multiplied by the pulse value)

Flow rate ["Pulse unit"¹]/s]

Flow rate per recording (i.e. "Quantity per recording" divided by the time difference between the recordings)

¹) configurable via the input window "Channel settings" (see "Inputs in "Counter" mode" on page 87)

5.1.2 Remote measurement channels

For each of the sensor modules linked to one of the remote measurement channels of the Jellox Pulse the following measurement values are determined:

Primary measurement value

E.g. pressure for sensor modules of type "PRE-PT-D30"

Secondary measurement values 1 - 3

E.g. "Temperature of the medium", "max. pressure during a pressure surge" and "min. pressure during a pressure surge" for sensor modules of type "PRE-PT-D30"

Battery [mV]

Current voltage of the battery installed in the sensor module

Runtime [days]

Remaining time until the next sensor battery replacement

Flags []

E.g. "Status of the system" for sensor modules of type "PRE-PT-D30"

RSSI [dBm]

Radio signal strength between the sensor module and the Jellox Pulse

5.1.3 Internal measurement values

In addition to the measurement values provided by the external sensors, the following internal measurement values are determined:

RSSI [dBm]

Mobile network signal strength

Battery [V]

Current voltage of the internal battery of the Jellox Pulse

5.2 Determining the measurement values

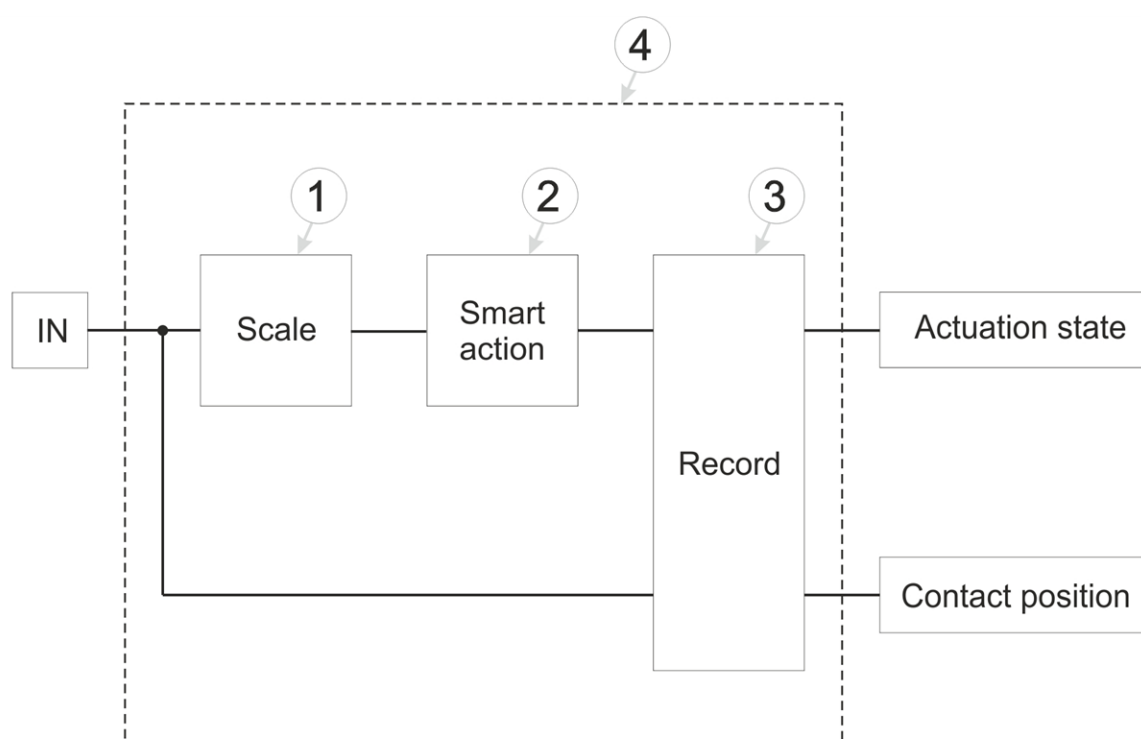
5.2.1 Determining the measurement values for inputs in "Digital" mode

The module chain described in the following is started every second and executed once, in order to be able to react as quickly as possible to level changes on inputs operated in "Digital" mode. Two measurement values are determined for these inputs. The "contact position" indicates whether current is flowing via the input. The "Actuation state" shows whether the contact is in idle state or has been actuated. The conditions under which a "Smart Action" (see "Smart Actions" on page 91) is triggered are also checked at one-second intervals, but are only available for the "Actuation state". If a level change is detected, an immediate recording is made. The currently valid values of all other inputs (including those operated in "Counter" mode) are also recorded.

Regardless of this, all values are also recorded cyclically. The interval for this can be selected via the parameter "Record interval" (see "Device settings" on page 84).

The following table shows which value is recorded depending on the signal at the input. For the "Actuation state", it should be noted that the definition of the idle state depends on the type of contact connected to the input. With a "normally closed contact", the contact is closed in the idle state (i.e. current flows). With a "normally open contact", on the other hand, the contact is open in the idle state (i.e. no current flows). The type of contact can be selected via the "Contact type" parameter (see "Input in "Digital" mode" on page 86).

	0	1
Contact position	No current flow	Current flows
Actuation state	Idle state	Contact actuated



Schematic diagram of how measurement values for inputs in "Digital" mode are generated

1 Conversion from "Contact position" to "Actuation state" (see "Scale module" on page 30)	3 Executes a recording when a level change is detected or the interval expires (see "Record module" on page 34)
2 Monitoring the conditions under which a "Smart Action" is triggered (see "Smart Action module" on page 31)	4 This module chain is started every second and run through once.

5.2.1.1 Scale module

This module rescales the "Contact position" (e.g. current flows) to the "Actuation state" (e.g. idle state).

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement system -> Channel settings	Digital	Type of contact	Type of contact connected to the input

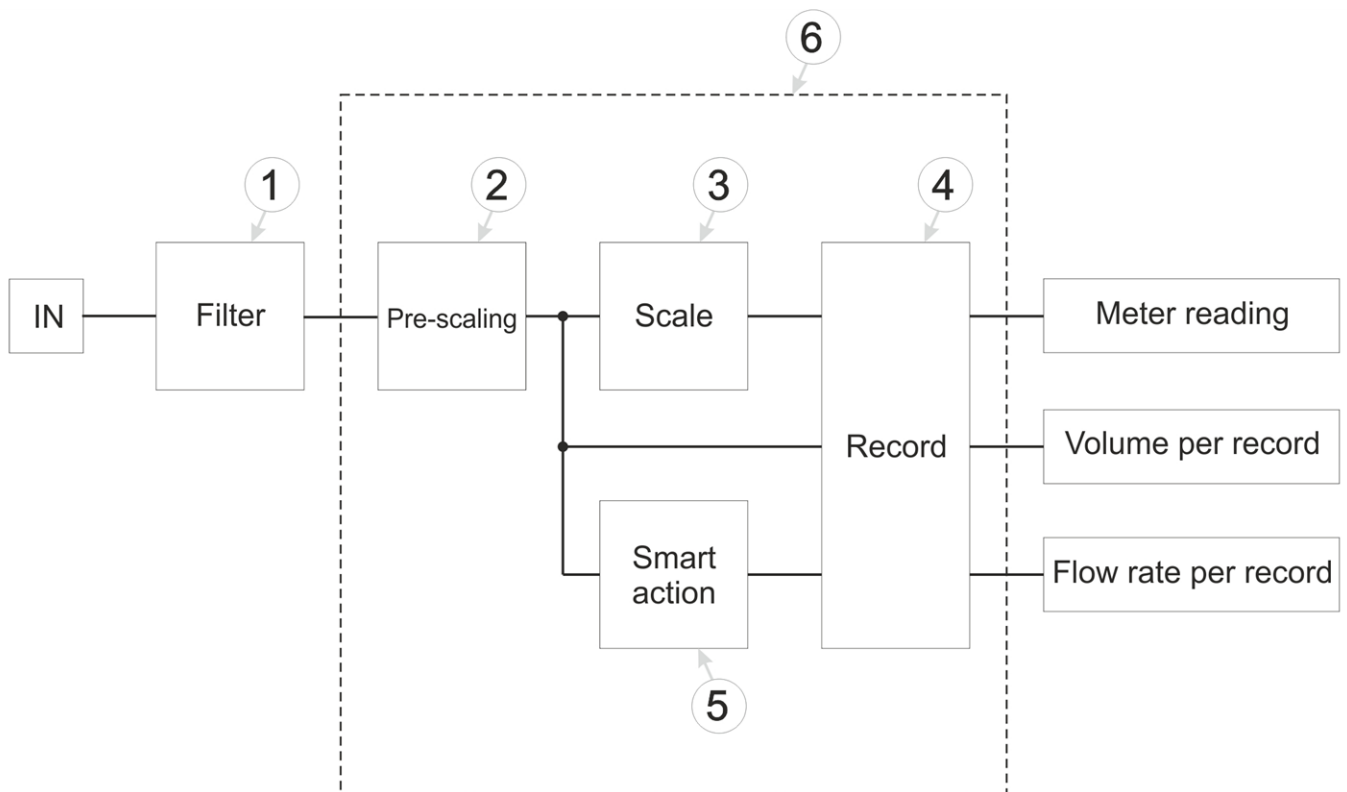
5.2.1.2 Smart Action module

This module monitors the conditions under which a "Smart Action" is triggered. However, the Smart Action module is only available for the actuation state.

All parameters in the "Smart Actions" configuration section (see "Smart Actions" on page 91) are relevant for this module.

5.2.2 Determining the measurement values for inputs in "Counter" mode

The module chain described in the following, except the filter module, is started in the configurable record interval and executed once. The interval can be adjusted via the parameter "Record interval" (see "Device settings" on page 84). For inputs operated in "Counter" mode, two measurement values are determined and recorded, which are the amount per record (i.e. the sum of pulses between two recordings multiplied by the pulse valence), the flow rate per record (i.e. the "amount per record" divided by the time difference between the recordings) and the meter reading calculated based on the pulses.



Schematic diagram of how measurement values for inputs in "Counter" mode are generated

1 Filter to compensate for brief signal fluctuations (see "Filter module" on page 32). The filter module is operated permanently.	4 Executes the recording (see "Record module" on page 34)
2 Multiplies the number of pulses by the pulse valence (see "Pre-scaling module" on page 32)	5 Monitoring the conditions under which a "Smart Action" is triggered (see "Smart Action module" on page 32)
3 Multiplies the result from the pre-scaling by a factor in order to convert liters to m ³ for instance (see "Scale module" on page 32)	6 This part of the module chain is started at the time of recording and is executed once.

5.2.2.1 Filter module

The filter module is designed to compensate for brief fluctuations of the input signal, i.e. to suppress interference (debouncing). It is not configurable. To trigger a level change, the signal must be constantly present for at least 1 ms .

5.2.2.2 Pre-scaling module

This module multiplies the number of pulses by the pulse valence.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement system -> Channel settings	Counter	Pulse valence	Quantity (e.g. litres) that corresponds to a pulse of a connected meter.

5.2.2.3 Scale module

This module multiplies the result of pre-scaling by a factor in order to convert liters to m³ for instance.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement system -> Channel settings	Counter	Impulse scale	Factor for the conversion of "Pulse unit" to "Unit of the meter reading" (example: factor 0,001 for litre -> m ³) See also "Inputs in "Counter" mode" on page 87

5.2.2.4 Smart Action module

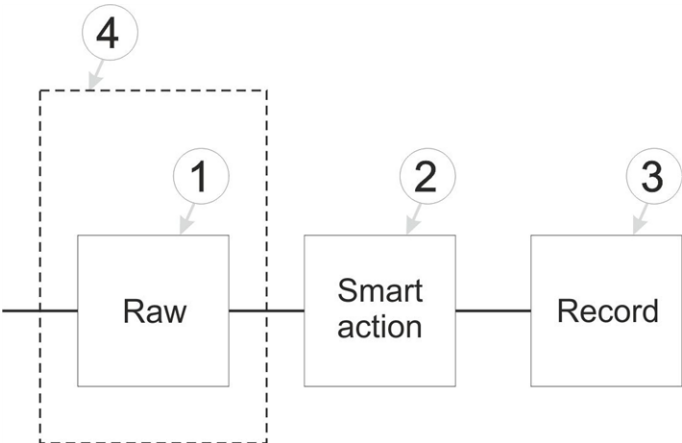
This module monitors the conditions under which a "Smart Action" is triggered. However, the Smart Action module is only available for the flow rate.

All parameters in the "Smart Actions" configuration section (see "Smart Actions" on page 91) are relevant for this module.

5.2.3 Determining the pressure

The "PRE-PT-D30 " sensor module supported by the Jellox Pulse uses a piezoresistive sensor to measure pressure. The sensor's diaphragm is in direct contact with the medium being measured..

The module chain described in the following is started every 10 sec. (i.e. with the measurement interval) and executed once. The first stage ("Raw") is already completed in the sensor module. I.e. the measurement value provided by the sensor module is already the the temperature compensated pressure value. The measurement interval is independent from the record interval and cannot be altered. It is used to monitor the conditions under which a "Smart Action" is triggered. It is the currently valid measurement value generated in the measurement interval that is recorded. The measurements executed since the last recording are not consolidated (e.g. average determination). The interval for the recordings can be selected via the "Record interval" parameter (see "Device settings" on page 84). The "Smart Actions" can, however, be used to switch to an alternative record interval (see "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103).



Schematic diagram of how the measurement value for the "Remote measurement channel" is generated

1 Generating the raw value (see "Determining the raw value" on page 33)	3 As the record interval can be selected differently from the non-changable measurement interval, the measurement values are not recorded every time a measurement takes place. (see "Record module" on page 34)
2 Monitoring of the conditions under which a "Smart Action" is triggered (see"Smart Action module" on page 34)	4 This part of the module chain is already completed in the sensor module.

5.2.3.1 Determining the raw value

The raw value is the measurement value generated directly from the sensor module. The PRE-PT-D30 uses a piezoresistive sensor with integrated temperature measurement for pressure measurement. The medium temperature determined is used to compensate for temperature-related effects on the pressure measurement. The pressure value provided by the sensor module therefore already corresponds to the temperature-compensated pressure.

5.2.3.2 Smart Action module

This module is used to monitor the conditions under which a "Smart Action" is triggered. However, the Smart Action module is only available for the primary measurement value of the sensor module.

All parameters of the configuration section "Smart Actions" (see "Smart Actions" on page 91) are relevant for this module.

5.2.4 Record module

The measurement values are recorded using the record module. The currently valid values of all inputs are always recorded, regardless of the mode set. A recording is triggered either by the expiry of the recording interval or by a recognised level change at an input operated in "Digital" mode. The level of inputs operated in "Digital" mode is checked once per second. I.e. the shortest possible time difference between two recordings is one second.

The following table specifies the relevant parameters for the module:

Configuration section	Parameter	Explanation
Measurement system -> Device settings	Record interval	Time between measurement data recordings

5.3 Functionality of the internal data memory

	Jellox Pulse Pro	Jellox Pulse Elite
Structure	Circular buffer	Circular buffer
Total size	131.068 measurement cycles	57.610 measurement cycles
Number of sectors	14	14
Sector size	9.362 measurement cycles	4.115 measurement cycles

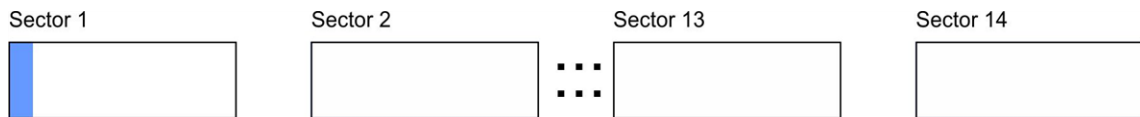
The internal data memory of the Jellox Pulse is designed as a circular buffer with 14 sectors. If the maximum number of data records (131.068 or 57.610) is achieved, the sector with the oldest data is deleted fully before new data can be saved in this sector again. This means that the internal data memory at the very least contains the measurement values of the last 121.706 (Jellox Pulse Pro) or 53.495 (Jellox Pulse Elite) cycles, however at most the measurement values of the last 131.068 or 57.610 cycles.

For this reason, it is recommended to coordinate the transmission cycle and record interval in such a way that a maximum of 121.706 or 53.495 measurement cycles have to be recorded between two transmissions. If it can be expected that individual transmissions fail due to poor network coverage or an alternative record interval is activated, this must also be taken into consideration when calculating the measurement cycles that are to be saved

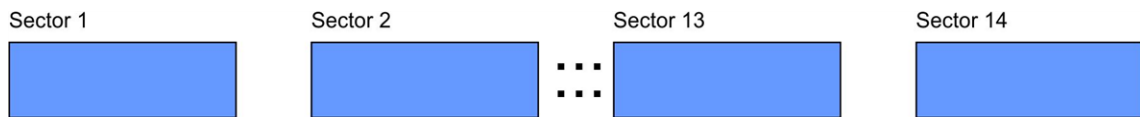
Note:

Additional explanation regarding the functionality of the circular buffer using the Jellox Pulse Pro as an example

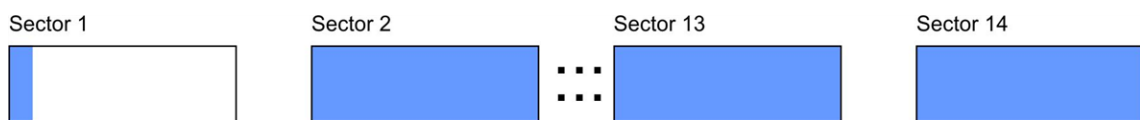
Data memory after the first measurement cycle:



Data memory after 131.068 measurement cycles:



Data memory after 131.068 +1 measurement cycles:



5.4 Procedure in case of connection aborts

If the connection is aborted, another attempt to establish a connection is made after 2min. . The connection is attempted up to 2 times.

5.5 Automatic selection of the mobile network

The mobile network to which the device should register must be selected, as the Jellox Pulse is equipped with a SIM chip that provides a mobile connection via a variety of international service providers. This is completed automatically by the device.

5.6 Determining the strength of the mobile network signal

The strength of the mobile network signal is only updated during the connection establishment. However, the value of the mobile network signal strength is copied in the measurement data for every record.

5.7 Automatic switching between the mobile network technologies "LTE-M" and "NB-IoT"

The Jellox Pulse is equipped with a modem supporting the mobile network technologies "LTE-M" and "NB-IoT". The modem automatically selects the most suitable mobile network technology for the respective situation.

Chapter 6 Storage, delivery and transport

6.1 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 GmbH in 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 173).

Note: Any claims received thereafter will not be accepted.

6.2 Scope of supply

Note: A connection cable (see "Cable" on page 159) is required for operation but is not included in the scope of supply and must be ordered separately.

Note: The Jellox Pulse is available in different sets. The sets are composed of different components. The scope of supply of some of these sets are listed below.



How-To-Video: [Unpacking the Jellox Pulse](#)

The standard scope of supply of the "Jellox Pulse Pro " (400158) includes:

- Jellox Pulse (Type key D022-4Z0012**1L905**)
- BP311 Battery (301774)¹⁾
- MDN Magnet (206.803)

The standard scope of supply of the "Jellox Pulse Pro with ext. antenna connector " (400159) includes:

- Jellox Pulse (Type key D022-4Z0012**00D05**)²⁾
- BP311 Battery (301774)¹⁾
- MDN Magnet (206.803)

The standard scope of supply of the "Jellox Pulse Elite " (400162) includes:

- Jellox Pulse (Type key D022-4Z0012**1L905**)
- BP311 Battery (301774)¹⁾
- MDN Magnet (206.803)

The standard scope of supply of the "Jellox Pulse Elite with ext. antenna connector " (400163) includes:

- Jellox Pulse (Type key D022-4Z0012**00D05**)²⁾
- BP311 Battery (301774)¹⁾
- MDN Magnet (206.803)

¹⁾ The battery (BP311 Battery) is already implemented in the Jellox Pulse during production.

²⁾ An antenna is required for operation and is not included in the scope of supply. It must be ordered separately.

Check additional accessories depending on the order and against the delivery slip.

6.3 Storage

The following storage conditions must be observed:

Jellox Pulse	Storage temperature	-30...+85 °C
	Humidity	15...90 % RH

Note: *The battery pack remains in the Jellox Pulse during storage.*

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

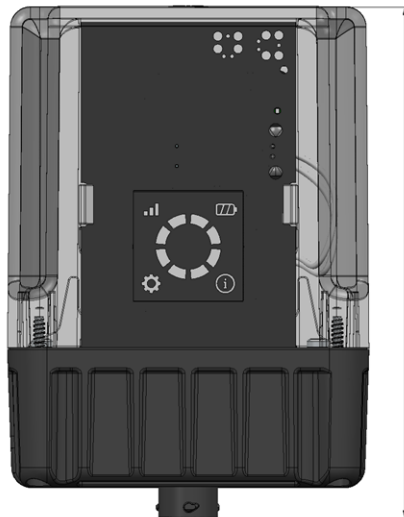
6.4 Transport

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

Chapter 7 Installation

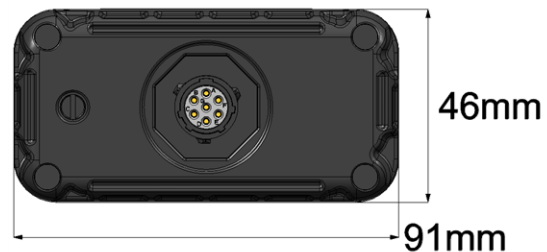
Important note: To prevent any damage to the device, the work described in this section of the instructions must only be performed by qualified personnel.

7.1 Dimensions



129mm

Dimensions: height



46mm

91mm

Dimensions: width and depth

7.2 Installing the Jellox Pulse

Important note:

- 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 Jellox Pulse is not approved for use in closed drains.

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

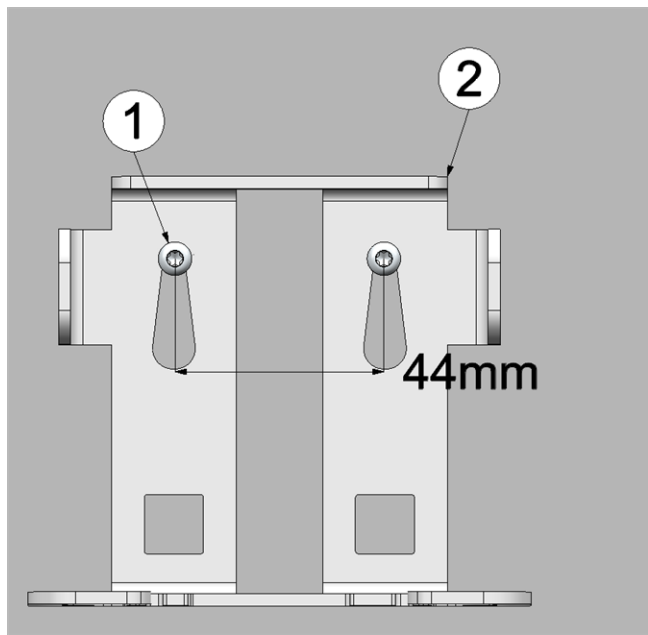
The installation site must be selected according to specific criteria. The following conditions must be avoided in any case:

- Direct sunlight
- Direct influence of weather (rain, snow, ...)
- 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

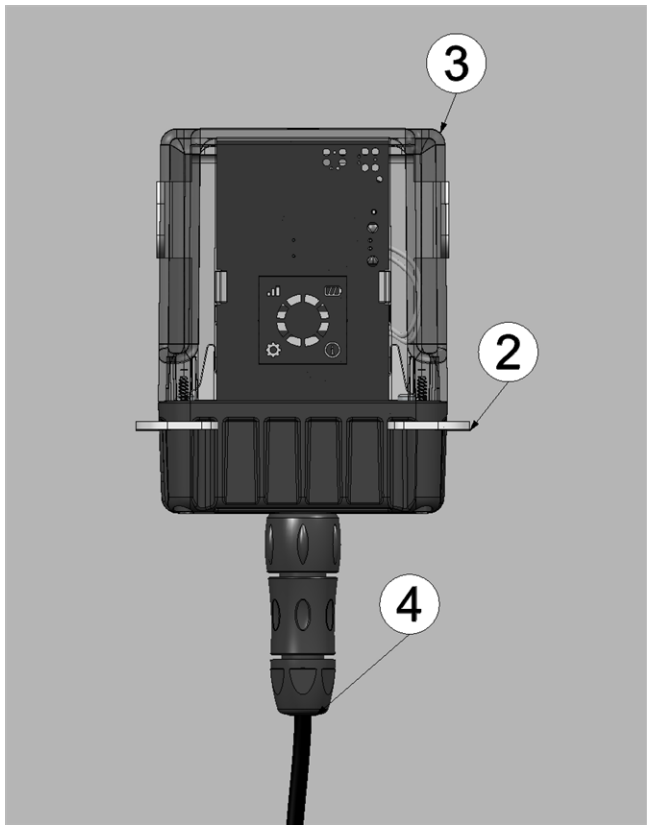
Note: Approx. 15 cm of space should be left beneath the device for the cable connections. Further information about the installation dimensions can be found in the relevant sub-chapter.

7.2.1 Wall mounting

For wall mounting, the optional accessory "Wall bracket (301435)" is required.



Wall mounting step 1

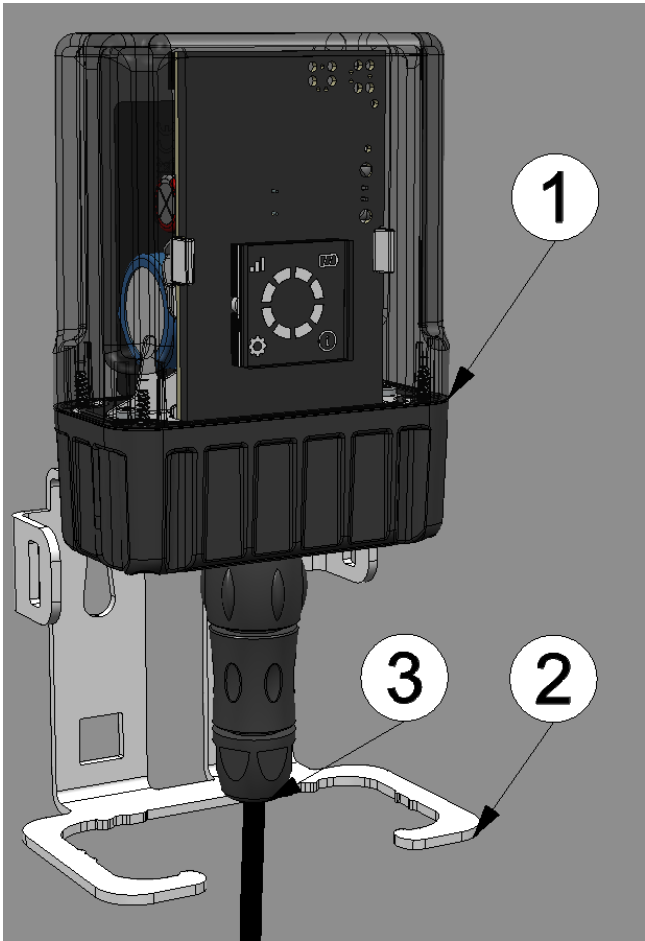


Wall mounting step 2

1 Lens head screw with tapping screw thread ST3,5x32 Torx 15 (included in the scope of supply of 301435)	3 Jellox Pulse
2 Retaining bracket (included in the scope of supply of 301435)	4 Connection cable

1. Drill two holes with a diameter of 6 mm in accordance with the dimensions specified in figure "Wall mounting step 1" on page 40 for the plugs (6x30) included in the mounting kit.
2. Insert a plug from the mounting kit in each of the holes drilled before screwing the retaining bracket (2) to the wall.

3. Insert the Jellox Pulse into the retaining bracket (2) from above, bottom side first. It is recommended to connect the connection cable to the sensor connector of the Jellox Pulse first.



Inserting the Jellox Pulse

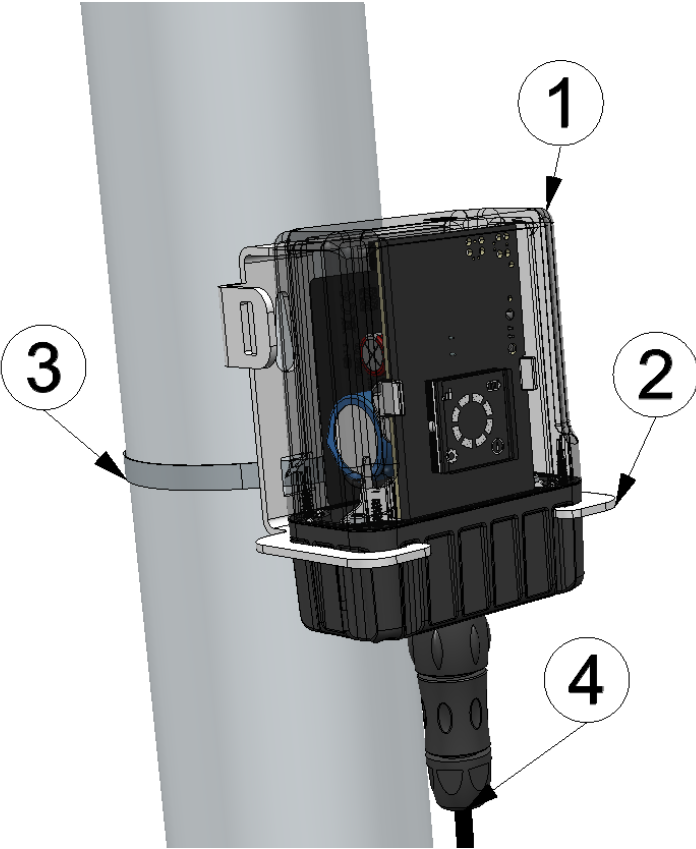
1 Jellox Pulse	3 Connection cable
2 Retaining bracket	

7.2.2 Pipe mounting

For the installation on a pipe the optional accessory "Pipe holder (301437)" is required.



How-To-Video: [Pipe mounting](#)

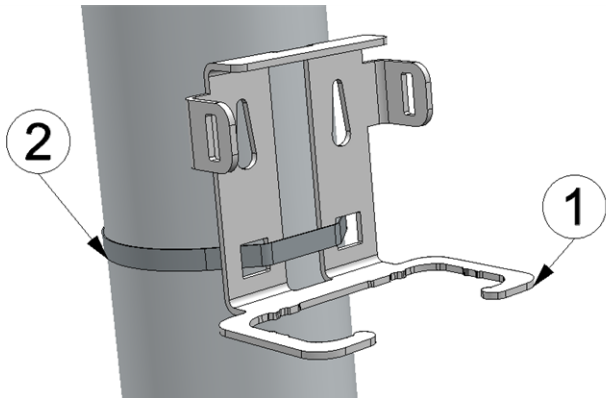


Pipe mounting

1 Jellox Pulse	3 Tightening strap (for pipe diameter 38-120 mm; included in the scope of supply of 301437)
2 Retaining bracket (included in the scope of supply of 301437)	4 Connection cable

1. Thread the tightening strap through the corresponding opening in the retaining bracket (see "Attaching the retaining bracket to the pipe" on page 43). If you already know the diameter of the pipe to which the retaining bracket should be attached, you can cut the tightening strap to the required length using tin snips.

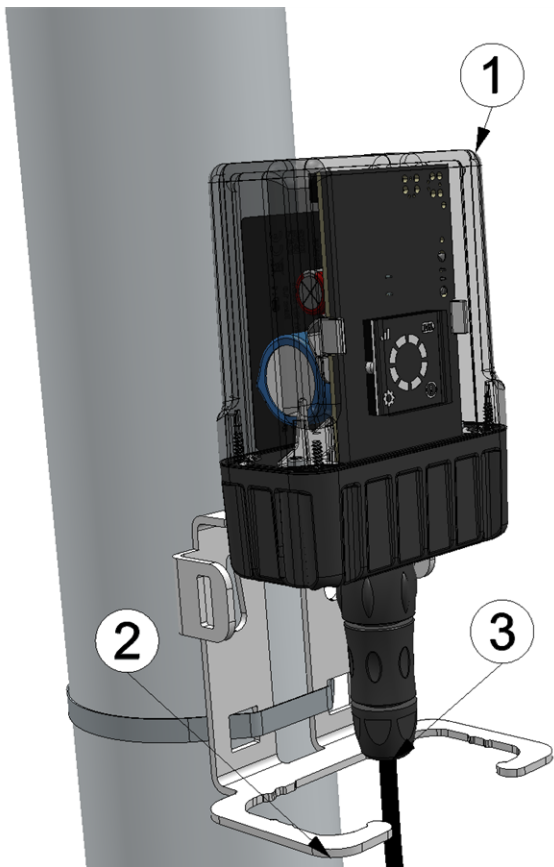
2. Position the retaining bracket on the pipe and use the tightening strap provided to fasten the retaining bracket.



Attaching the retaining bracket to the pipe

1 Retaining bracket	2 Tightening strap
---------------------	--------------------

3. Insert the Jellox Pulse into the retaining bracket from above, bottom side first. It is recommended to connect the connection cable to the sensor connector of the Jellox Pulse first.



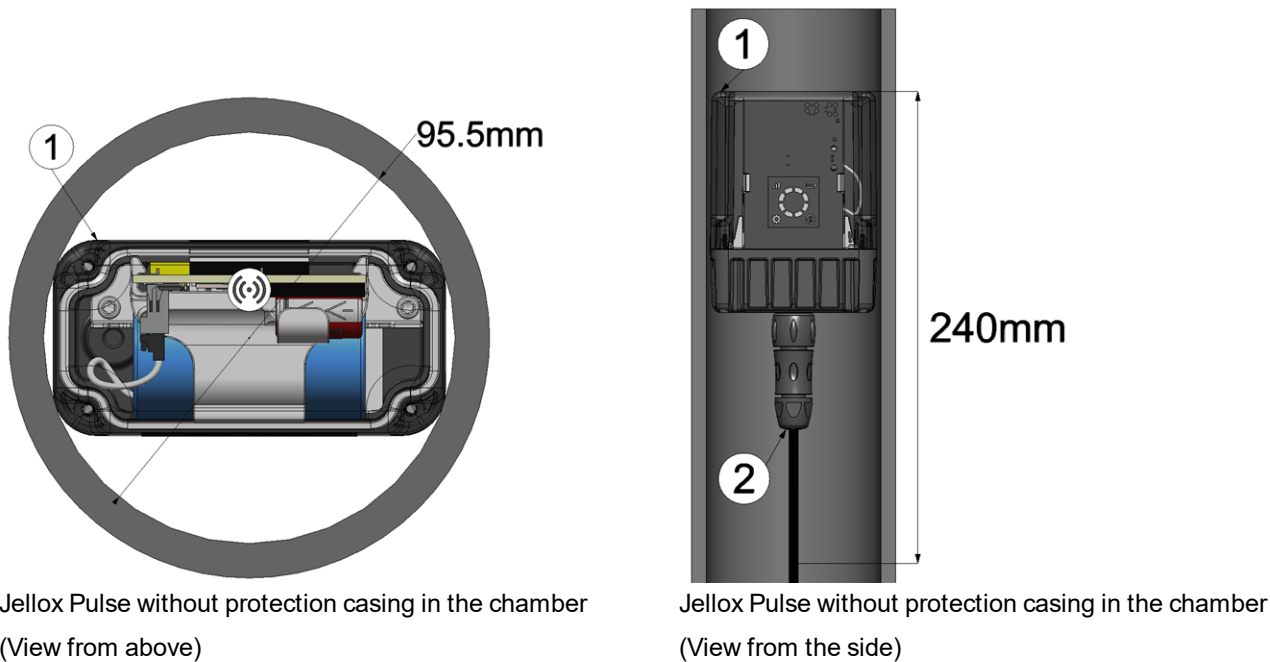
Inserting the Jellox Pulse

1 Jellox Pulse	3 Connection cable
2 Retaining bracket	

7.2.3 Installation in an inspection chamber

The Jellox Pulse can be installed in round inspection chambers from a diameter of 95,5 mm and a depth of at least 240 mm .

The Protection casing (300662) , available as an optional accessory, provides the Jellox Pulse with additional protection against impact and mechanical stress and is recommended for installation in an inspection chamber. The Protection casing increases the diameter of the shaft required for installing the Jellox Pulse to 114 mm . The minimum depth is also increased to 280 mm .



1 Jellox Pulse	2 Connection cable
----------------	--------------------

The first step is only required, if you want to use the optional Protection casing .

1. Install the protection casing (see "Installing the protection casing" on page 45)



How-To-Video: [Installing the protection casing](#)

2. Connect your meter with the connection cable (see "Connecting the meters and the digital contacts" on page 55).

Important note: Protect the connection point between the connection cable and the meter in a suitable manner against penetrating moisture and dust.

3. Connect the connection cable to the sensor connection of the Jellox Pulse .

4. Insert the Jellox Pulse completely into the shaft and secure it in a suitable manner.

Important note: The minimum bending radius of 5,1 cm must not be exceeded when laying the connection cable. This applies both to any required cable loops and to the point at which the connection cable exits the plug.

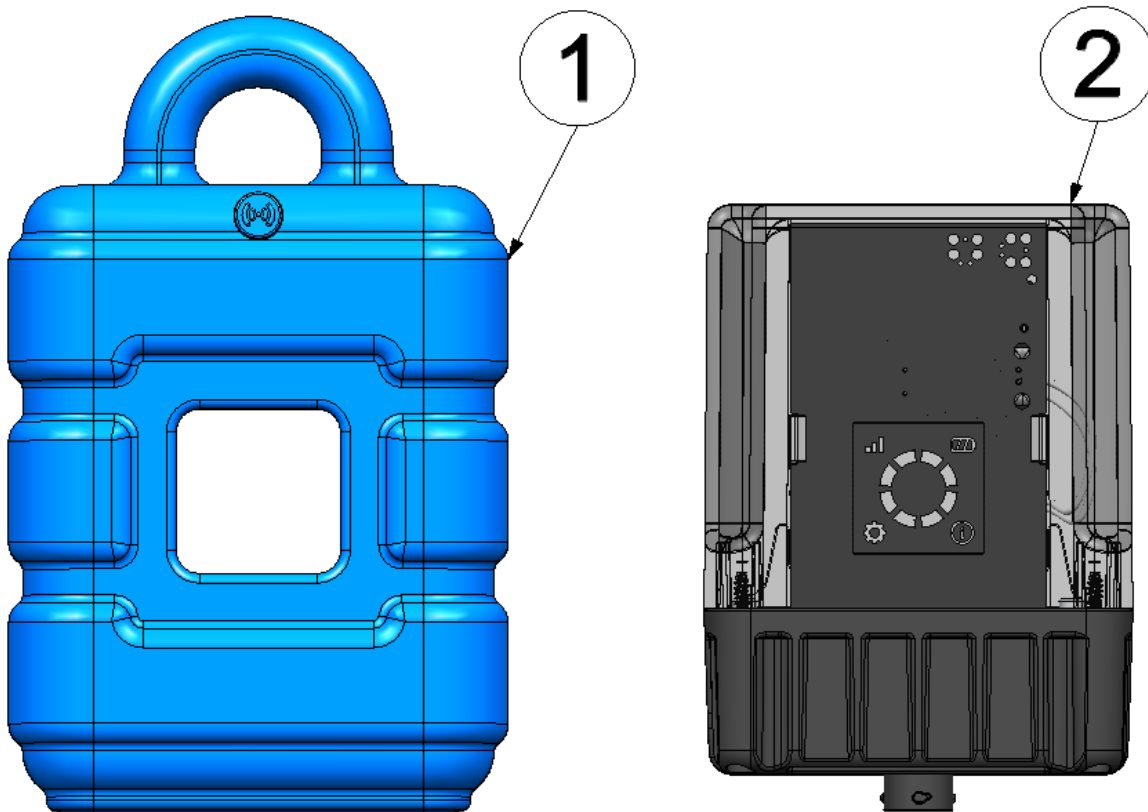
Important note: The Jellox Pulse must not rest directly on the ground with the plug of the connection cable.

7.2.4 Installing the protection casing

The Protection casing (300662) is available as an optional accessory. It protects the device against impacts and has a retaining bracket.



How-To-Video: [Installing the protection casing](#)



Installing the protection casing

1 Protection casing (300662)	2 Jellox Pulse
------------------------------	----------------

-
1. Insert the Jellox Pulse as far as possible in the protection casing

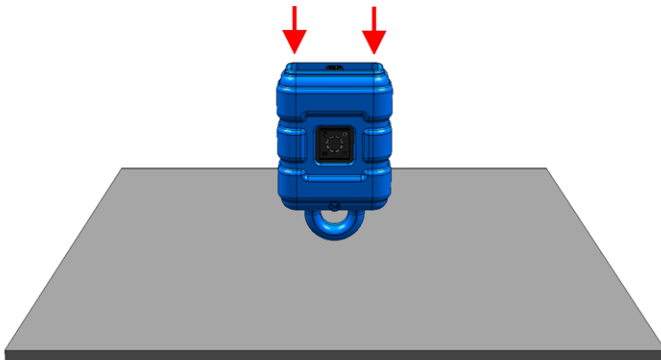
Note: Mind the alignment of the device to the protection casing. The smaller, square opening of the protective armour is meant for the display. The longer one is for the type plate at the rear.



Step 1

2. Use your thumbs to press against the bottom of the device until it is completely inserted in the protection casing. If needed, you can use the openings for the display and the type plate to increase the pressure used.

Note: The Jellox Pulse is inserted in the protection casing correctly if the display is located in the center of the corresponding opening in the protection casing.

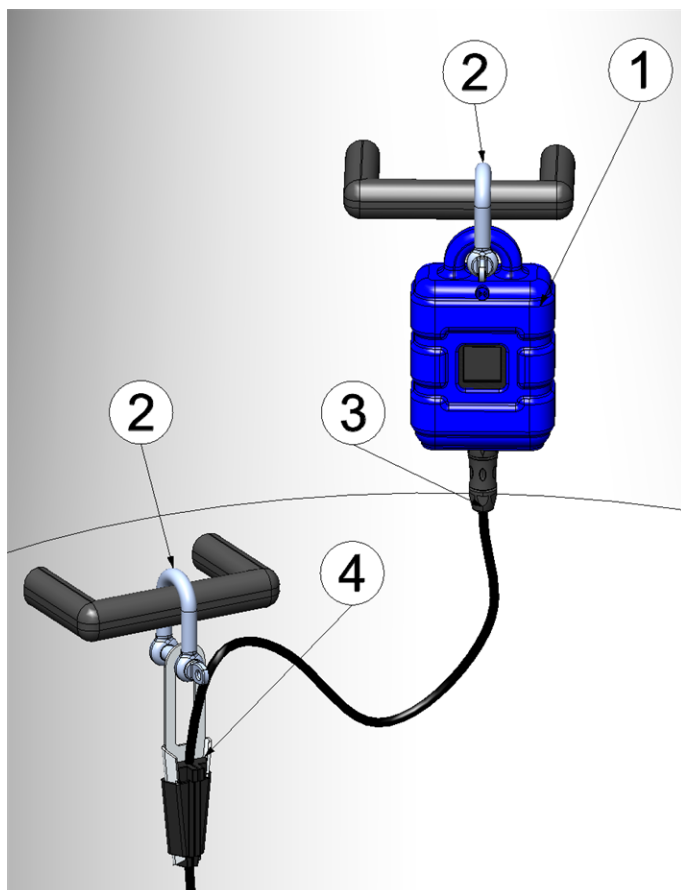


Step 2

7.2.5 Suspended installation

The following optional accessory sets are required for suspended installations:

- 2 x Niro shackle (206.330)
- 1 x Anchor clamp 5,5 - 10,5 mm (301017)
- 1 x Connection cable 7pin 8 m (301689)
- 1 x Protection casing (300662)



Suspended installation

1 Jellox Pulse with installed Protection casing (300662)	3 Connection cable 7pin 8 m (301689)
2 Niro shackle (206.330)	4 Anchor clamp 5,5 - 10,5 mm (301017)

1. Install the protection casing (see "Installing the protection casing" on page 45)



How-To-Video: [Installing the protection casing](#)

2. Use the Niro shackle (206.330) to attach the Jellox Pulse with installed Protection casing (300662) in accordance with the figure "Suspended installation" on page 47 to a suitable attachment point.

-
3. Use the Niro shackle (206.330) and the Anchor clamp 5,5 - 10,5 mm (301017) to attach the connection cable in accordance with the figure "Suspended installation" on page 47 to a suitable attachment point.

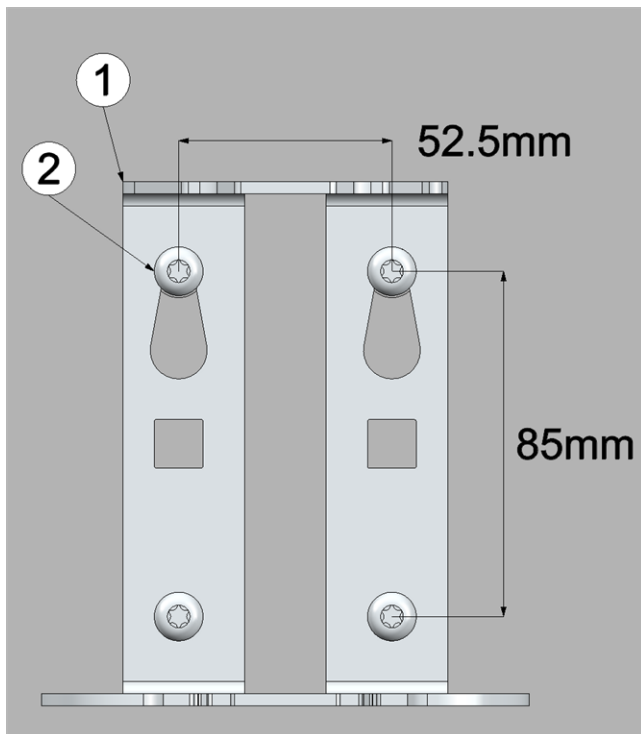
Important note: *The sensor connection of the Jellox Pulse is not designed to carry heavy loads. For this reason, a clamp must be used in order to fasten the sensor cable in a suitable manner.*

4. Connect the connection cable with the sensor connection of the Jellox Pulse .

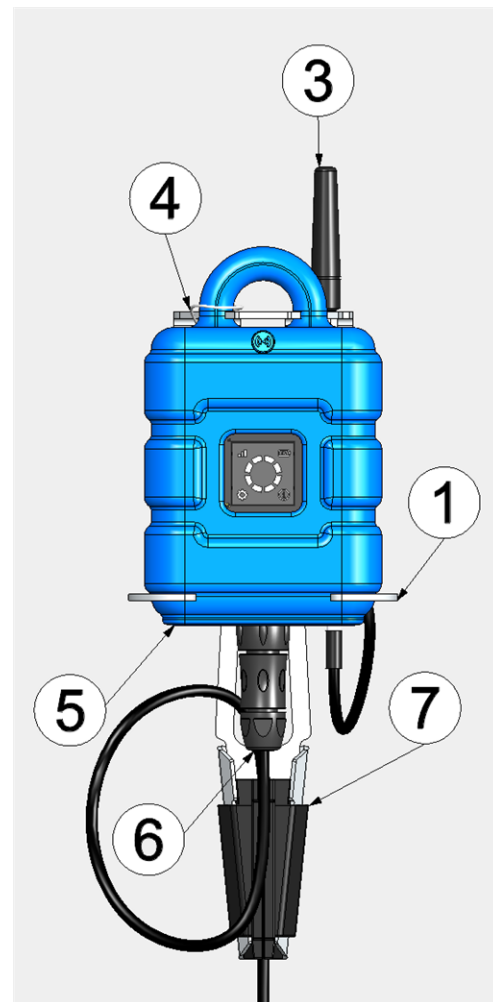
7.2.6 Wall mounting with mounted protection casing

The following optional accessory sets are required for wall mounting:

- 1 x Protection casing (300662)
- 1 x Wall bracket for Jellox with protection casing (400109)
- 1 x Multi band rod antenna with connection cable 250 mm (400110)
- 1 x Anchor clamp 5,5 - 10,5 mm (301017)
- 1 x Connection cable 7pin 8 m (301689)



Wall mounting step 1



Wall mounting step 2

1	Mounting bracket (included in the scope of supply of 400109)
2	Pan head screw with sheet metal screw thread ST6,3x60 Torx 30 (included in the scope of supply of 400109)
3	Multi band rod antenna with connection cable 250 mm (400110)
4	Seal for detecting tampering (optional)
5	Jellox Pulse with mounted Protection casing (300662)
6	Connection cable 7pin 8 m (301689)
7	Anchor clamp 5,5 - 10,5 mm (301017)

1. Drill the four holes with a diameter of 10 mm and a minimum depth of 60 mm in accordance with the dimensions specified in figure "Wall mounting step 1" on page 49 for the wall plugs (10x50) that are included in the scope of supply of the mounting kit.
2. Insert a wall plug (included in the scope of supply) into each of the four drilled holes before you screw the mounting bracket (1) to the wall.
3. Mount the protection casing (see "Installing the protection casing" on page 45)

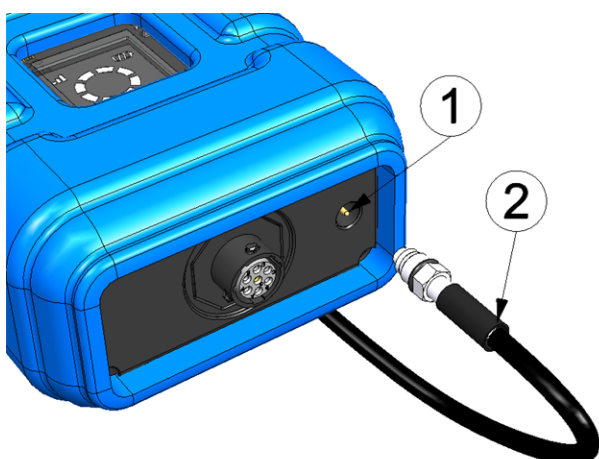


How-To-Video: [Installing the protection casing](#)

The following step is only required for Jellox Pulse with ext. antenna connector (Type key D022-4Z0012**00D**05).

4. Connect the Multi band rod antenna with connection cable 250 mm to the antenna connector of the Jellox Pulse .

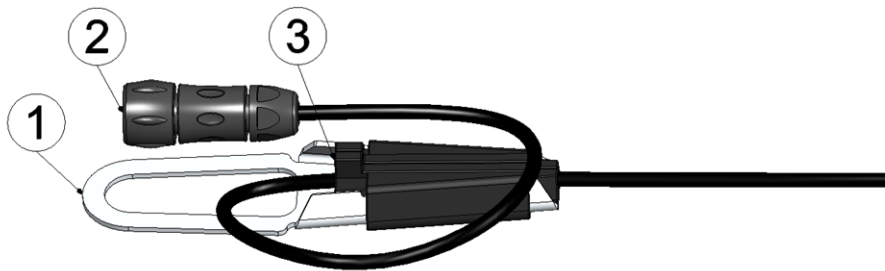
Note: Depending on the installation situation, it may be more practical to connect the Multi band rod antenna with connection cable 250 mm after inserting the Jellox Pulse into the mounting bracket.



Connecting the mobile network antenna

1 Antenna connector	2 Multi band rod antenna with connection cable 250 mm
---------------------	---

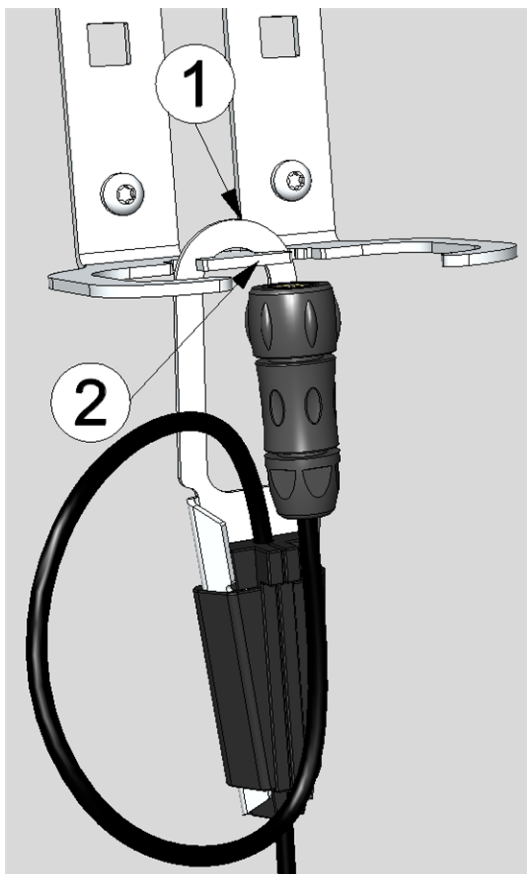
5. Push the plastic clamping jaws of the grounding clamp upwards until the resulting gap is large enough to insert the connection cable. Insert the cable and secure it by pushing the plastic clamping jaws back down. On the end of the connector, the cable should protrude at least 40 cm from the plastic clamping jaws to enable convenient connection of the Jellox Pulse later on.



Inserting the connection cable into the straining clamp

1 Anchor clamp 5,5 - 10,5 mm	3 Plastic clamping jaws
2 Connection cable 7pin 8 m	

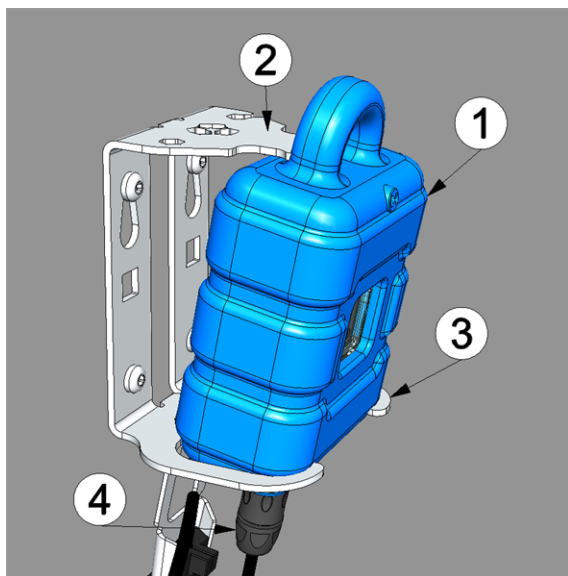
6. Attach the straining clamp to the designated holder on the mounting bracket.



Attaching the straining clamp

1 Anchor clamp 5,5 - 10,5 mm	2 Fitting for the straining clamp
-------------------------------------	--

7. Insert the Jellox Pulse into the mounting bracket bottom first. Tilt the Jellox Pulse forward (i.e. away from the wall) to position the top of the Jellox Pulse underneath the upper brace of the mounting bracket.

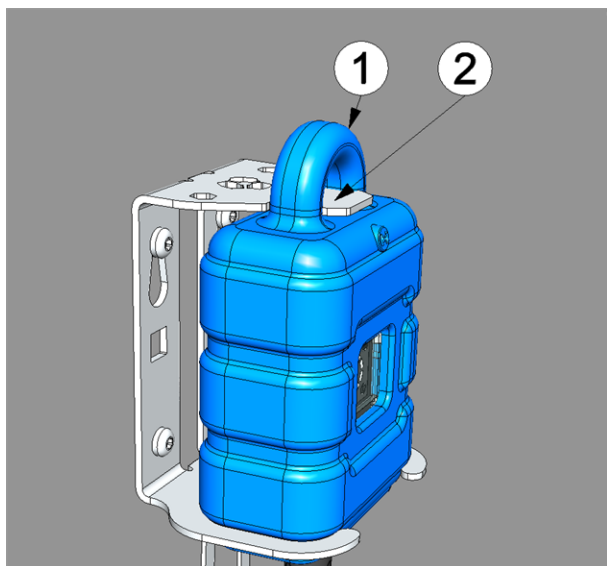


Inserting the Jellox Pulse

1 Jellox Pulse	3 Mounting bracket
2 Upper brace of the mounting bracket	4 Connection cable 7pin 8 m

8. Press the top of the Jellox Pulse towards the wall until the lug of the protective armour is fully engaged in the upper brace of the mounting bracket.

Note: If the connection cable becomes taut when inserting the Jellox Pulse into the mounting bracket, briefly loosen the plastic clamping jaws of the anchor clamp to correct this problem. Ensure that the bending radius of the cable loop above the strain relief clamp is no less than 2,04 cm .

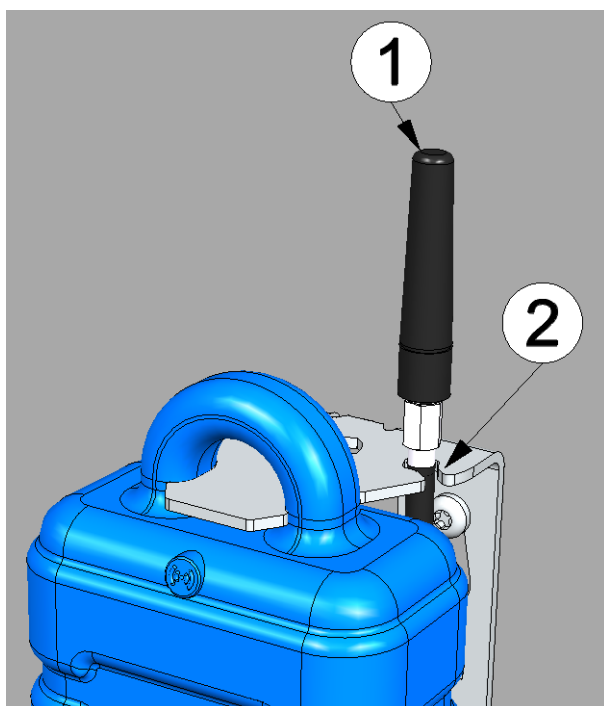


Locking the Jellox Pulse in place

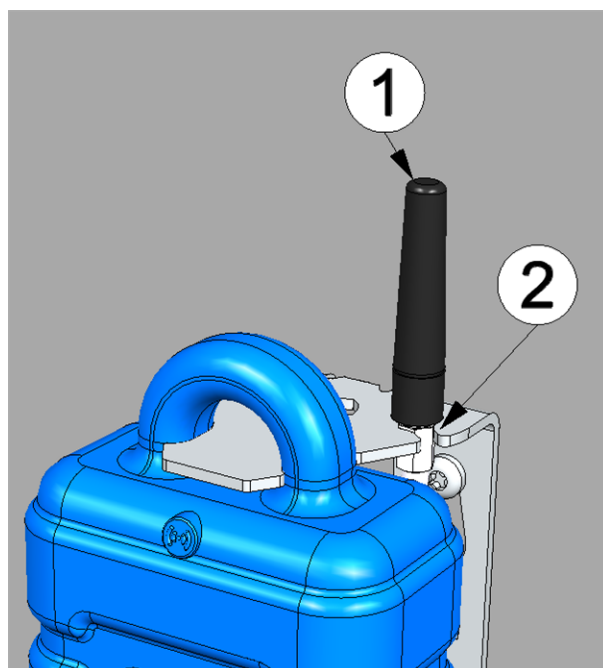
1 Lug of the protective armour	2 Upper brace of the mounting bracket
--------------------------------	---------------------------------------

The following step is only required for Jellox Pulse with ext. antenna connector (type key D022-4Z001200D05)

9. Insert the Multi band rod antenna with connection cable 250 mm into the designated slot in the upper brace of the mounting bracket.



Inserting antenna step 1



Inserting antenna step 2

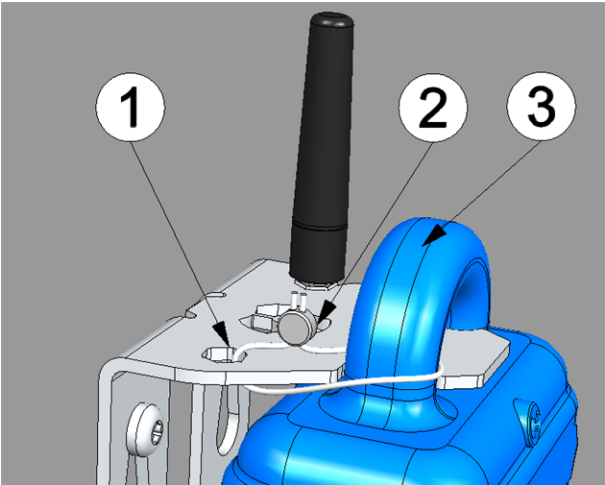
1 Multi band rod antenna with connection cable 250 mm

2 Antenna slot

The following step is only required if you want to add an anti-tamper seal.

- 10. Pass the sealing wire through the opening in the upper brace of the mounting bracket and through the retaining lug of the protective armour. Form a closed loop and insert both ends of the sealing wire through the seal. Ensure that the sealing wire is tight but not under tension. Secure the seal by pressing it together with sealing pliers. If necessary, document the process in accordance with internal company guidelines.

 **CAUTION:**
Cut the wire ends cleanly to prevent injury.



Installing the security seal

1 Opening for security seal or anti-theft device	3 Lug of the protective armour
2 Security seal	

7.2.7 Installing the sensor module

Tips and information on the installation of the sensor module are provided in the user manual of the relevant sensor module.

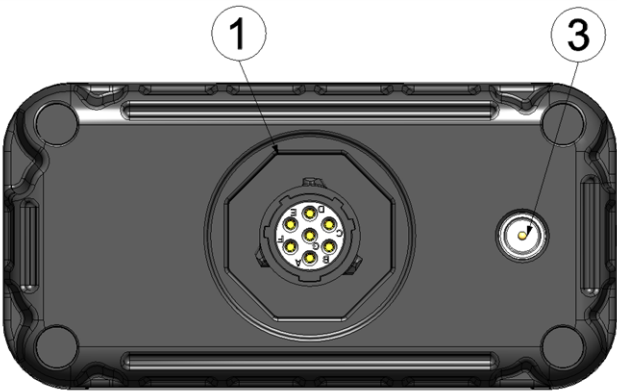
7.3 Electrical installation

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

7.3.1 Connecting the meters and the digital contacts

Important note:

- Ensure installation is completed correctly.
- Comply with existing legal and/or operational directives.
- Improper handling can cause injuries and/or damage to the devices.
- Run all data cables so that they do not pose a trip hazard and ensure that cables do not have any sharp bends.
- Data cables must not exceed a length of 30m.



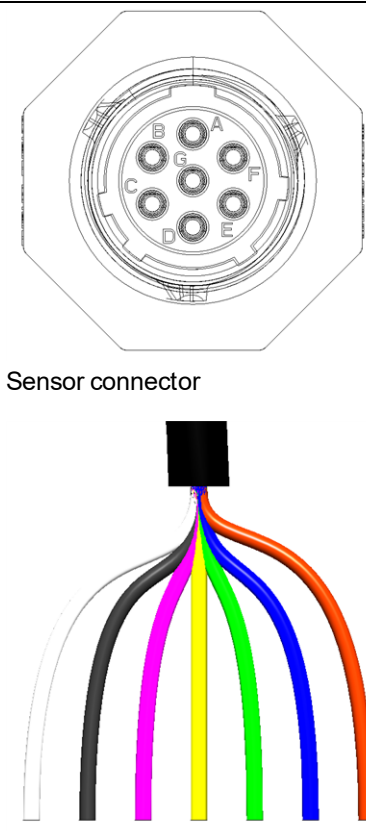
Sensor connector on the Jellox Pulse



Jellox Pulse with connection cable

1 Sensor connector (7-pin MIL connector)	3 Antenna connector (only with D022-4Z001200D05)
2 Connection cable	

Sensor connector

	Sensor connector (7-pin MIL connector)	Connection cable	Signal
 Sensor connector Connection cable	A	White	Input 3
	B	Gray	Input 4
	C	Pink	Reserved for extensions
	D	Yellow	Input 2
	E	Green	Input 1
	F	Blau	Reserved for extensions
	G	Brown	Ground

1. Activate the according mode for each input via the input screen "Channel settings". The mode is depending on whether you want to connect a meter or a digital contact with the input (see "Input in "Digital" mode" on page 86 and "Inputs in "Counter" mode" on page 87).
2. Connect your meters and digital contacts to the sensor connector. You can use the Connection cable 7pin 8 m (301689), the Connection cable 7pin 0,5 m (400442) or the Cable connector 7-pins (206.654) for this purpose. Further accessories are detailed in chapter "Spare parts and accessories" on page 159.

Important note: If you use the Connection cable 7pin 8 m (301689) or the Connection cable 7pin 0,5 m (400442), the joint between sensor cable and meter or digital contact must be suitably protected against the penetration of moisture and dust.

The following step is only required for the variant with external antenna connector (Type key D022-4Z001200D05).

3. Connect the antenna (see "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57).
4. Ensure that the setting "Active" is selected in the title bar of the configuration section "Measurement system" of the site, the device is linked with (see "Measurement system" on page 78).

5. Trigger a connection using the reed switch (see "Reed switch" on page 70). On the display the symbol for the "state of the mobile network connection" should then start flickering to indicate the connection establishment (see "Display" on page 71).

Note: *If the Jellox Pulse is in "Deactivated" mode, it switches to "Active" mode as soon as a connection has been established to the myDatanet server and will then resume operation according to the configuration settings.*



How-To-Video: [Triggering a connection](#)

The following step is not mandatory:

6. Check whether the connection to the myDatanet server has worked correctly (see "Testing communication between device and server (mobile network connection)" on page 66).

7.3.1.1 Compatible sensors

Microtronics Engineering GmbH is constantly testing various sensors with pulse output or switch contact for compatibility with the Jellox Pulse . A list of compatible sensors is available at the following address:

<https://support.microtronics.com/jellox-pulse/compatible-sensors>

The list contains recommendations on how the Jellox Pulse should be configured.

7.3.2 Connecting the mobile network antenna (only with D022-4Z001200D05)

Important note:

- *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 for the antenna must not exceed 30 m.*

The standard antenna is directly connected to the antenna connector (see "Overview" on page 17) of the Jellox Pulse .

1. Connect the connection cable of the antenna directly to the antenna connector of the Jellox Pulse (see "Overview" on page 17).

The following step is not mandatory.

2. Check whether the connection to the myDatanet has worked correctly (see "Testing communication between device and server (mobile network connection)" on page 66).

7.3.2.1 Optimum antenna positioning for assembly in a shaft

7.3.2.1.1 Typical influences on the signal quality

Signal losses compared to the reference measurement

Steel cover	up to -30 dB
Concrete cover	approx. -10 dB
Environmental influences	up to -15 dB
Installation height of the antenna	approx. -5 dB / 15 cm depth
Vertical/horizontal alignment	approx. -10 dB
Horizontal alignment	up to -15 dB
Centre/edge of the shaft	approx. -10 dB
Other influences	Transmission power of the network operator

Note: Practical example:

	Mobile signal level	Position
	-67 dBm	Reference measurement outside the shaft
	-103 dBm	Measurement at a depth of 1.20 m
	-95 dBm	Vertically on the edge of the shaft at a depth of approx. 15 cm
	-83 dBm	Centre of the shaft, horizontal on the steel fitting
	-89 dBm	Antenna turned by 90°
	-78 dBm	Centre of the shaft, vertical
	-75 dBm	Plastic pipe used instead of steel fitting

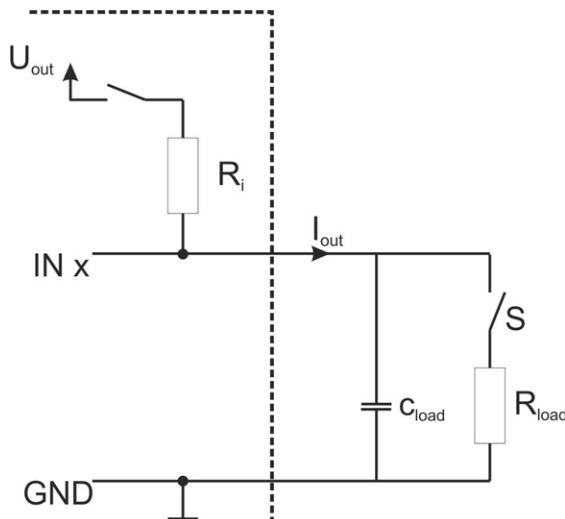
7.3.2.1.2 Possibilities for improving the signal quality

- Drill a duct for the connection cable of the antenna into the concrete ring on the shaft to avoid the steel cover
- Insert the connection cable of the antenna in an existing ventilation or supply pipe
- Use special types of antennas

7.3.3 Technical details about the inputs

4 inputs are available to which a meter contact can be connected without an additional energy supply.

Important note: The Jellox Pulse has only one common grounding connection for all inputs. If multiple counter or digital contacts are connected to the Jellox Pulse and these are not potential free contacts (i.e. open collector or open drain output for example), the earth potentials are joined.



Schematic diagram of an input

$U_{out\ max}$	3,3 V
$I_{out\ max}$	317 μ A
R_i	10k5
$R_{load\ max}$	6 k
$C_{load\ max}$	10 nF

The following conditions must be observed for the pulses to be detected correctly:

Low	< 1,2 V
High	> 1,9 V
Pulse length	> 1 ms

7.3.3.1 Inputs in "digital" mode

The signal at the input is checked once per second so that the system can react to level changes as quickly as possible. To save energy, the output voltage U_{out} is only ever applied to the internal resistor R_i for 1 ms.

7.3.3.2 Inputs in "Counter" mode

To ensure that the pulses can be detected at all times, the output voltage U_{out} is continuously applied to the internal resistor R_i . However, reliable detection of the pulses requires a pulse length of > 1 ms. If a counter output is closed for more than 2 sec., it is assumed that the output is blocked. In this case, to save energy, the output voltage U_{out} is no longer applied to the internal resistor R_i continuously, but only every second for 1 ms. The system then checks whether the meter output is still blocked.

7.3.4 Technical details about the local radio interface

Note: *The local radio interface is deactivated by default. It can be activated by briefly (approx. 1 sec.) pressing the reed switch and will then remain active for 10 min. (see "Reed switch" on page 70).*

The connection to a compatible smartphone is established via the local radio interface. Communication is only possible via the "OnSite Companion" smartphone app. However, the application can also be accessed as a progressive web app at the following address:

<https://companion.microtronics.com/>

In chapter "OnSite Companion" on page 123, a detailed description of the smartphone app "OnSite Companion" is provided. It is available for both Android and iOS and can be downloaded free of charge from "Google Play" (Android) or the Apple "App Store" (iOS) respectively.

Chapter 8 Initial Start-Up

8.1 User information

Before you connect the Jellox Pulse and place it into operation, you must observe and comply with the following user information!

This manual contains all information that is required for using the device.

Is intended for technically qualified personnel who have the relevant knowledge and experience in the area of measurement technology.

Read this manual carefully and completely in order to ensure the proper functioning of the Jellox Pulse

Contact Microtronics Engineering GmbH(see "Contact information" on page 173) if anything is unclear or if you encounter difficulties with regard to installation, connection or configuration.

8.2 Applicable documents

In addition to this operating instructions, additional instructions or technical descriptions may be required for the installation, commissioning and operation of the entire system.

These instructions are enclosed to the respective additional devices or sensors or are available for download on the Microtronics website.

8.3 General principles

The entire measurement system may only be placed into operation after completion and inspection of the installation. Study the manual thoroughly before placing into operation to prevent faulty or incorrect configuration.

Utilise the manual to familiarise yourself with the operation of the Jellox Pulse and the input screens of the myDatenet server before you begin with the configuration.

8.4 Commissioning the system

8.4.1 Using the mobile network connection and the server

Note: It is recommended that the Jellox Pulse is first placed into operation in the office before mounting the device permanently at the place of use. During this process, you should create a site for the later operation on the myDatenet server (see "Creating the site" on page 133) and determine a site configuration (see "Site configuration" on page 78). Take the opportunity to get to know the functions of the device in a stable environment. You can also use suitable test signals to simulate the meters and digital contacts to establish the optimum configuration of the Jellox Pulse prior to its actual first use. This reduces the amount of time required for on-site installation to a minimum.



How-To-Video: [Commissioning the system](#)

The following work should be completed in the office before you go to the future location of the device:

1. If necessary, create a customer on the myDatenet server (see "myDatenet Server Manual " 805002).
2. Within the selected customer, create a site/application for operation of the Jellox Pulse on the myDatenet server (see "Creating the site" on page 133).
3. Configure the created site/application according to your requirements (see "Site configuration" on page 78).

The following step is only required for the variant with external antenna connector (Type key D022-4Z001200D05):

4. Connect the antenna (see "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57). The antenna is not included in the scope of supply and must be ordered separately.

Note: You can also skip this and the following three steps as a transmission must also be triggered during installation on site, which transfers the configuration settings to the Jellox Pulse at that time.

5. If the Jellox Pulse should remain deactivated up to the installation on the operation site, select "Deactivated" in the title bar of the configuration section "Measurement system" (see "Measurement system" on page 78).

6. Trigger a connection using the reed switch (see "Reed switch" on page 70). On the display the symbol for the "state of the mobile network connection" should then start flickering to indicate the connection establishment (see "Display" on page 71). During this connection, the configuration of the site is transmitted to the Jellox Pulse .

Note: If "Active" is selected in the title bar of the configuration section "Measurement system", the Jellox Pulse switches to active mode as soon as a connection to the myDatenet server has been established. The Jellox Pulse will then resume operation according to the configuration settings.

Note: You can also skip this step, as a transmission must also be triggered during installation on site, which transfers the configuration settings to the Jellox Pulse at that time.



How-To-Video: [Triggering a connection](#)

The following step is only required for the variant with external antenna connector (Type key D022-4Z001200D05).

7. Remove the antenna again.

The following tasks are to be completed directly at the deployment site of the device:

8. Complete all of the steps detailed in the chapter "Connecting the meters and the digital contacts" on page 55. For the variant with the external antenna connector (Type key D022-4Z001200D05), you also need to connect the antenna (see "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57).

Important note: Initiating a transmission is one of the last steps in chapter "Connecting the meters and the digital contacts" on page 55. If you intend to install the Jellox Pulse in an inspection chamber, the transmission should be triggered when the device is still located outside the inspection chamber.

9. Ensure that "Active" is selected in the title bar of the configuration section "Measurement system" (see "Measurement system" on page 78).
10. Configure the basic settings via the "Channel settings" input screen (see "Inputs in "Counter" mode" on page 87) and adjust the meter reading via the wizard "set meter reading" (see "Set meter reading" on page 88) for all measurement channels operated in "Counter" mode suitably for the meter connected to the respective measurement channel.

Note: An active connection between the Jellox Pulse and the myDatenet server is required to set the meter readings.

11. Initiate a connection using the reed switch to transmit the configuration of the site to the Jellox Pulse (see "Reed switch" on page 70).
12. If you intend to install the Jellox Pulse in an inspection chamber, please ensure that the device can establish a mobile network connection in its final mounting position with the inspection chamber closed before leaving the installation site. The wizard to complete the "Guided commissioning" can be used for this purpose (see ""Guided commissioning" input screen" on page 119). It carries out several measurements of mobile signal strength and, based on the results, provides an assessment of signal quality.

8.4.2 Using the local radio connection and the server

You will need the "OnSite Companion" smartphone app to commission the Jellox Pulse . It is available for both Android and iOS. However, the application can also be accessed as a progressive web app at the following address:

<https://companion.microtronics.com/>

Detailed instructions on using the "OnSite Companion" smartphone app are provided in chapter "OnSite Companion" on page 123.

***Note:** It is recommended that the Jellox Pulse is first commissioned in the office before moving the measurement system to the operation site. During this process, you should set a site for subsequent operation on the myDatanet server (see "Creating the site" on page 133) and determine a site setting (see "Site configuration" on page 78). Take the opportunity to get to know the functions of the device in a stable environment. You can also use suitable test signals to simulate the counters and digital contacts, enabling you to optimise the configuration of the Jellox Pulse before the actual commissioning takes place. This reduces the time required for on-site installation to a minimum.*

The following work should be completed in the office before you go to the operation site of the device:

1. If necessary, create a customer on the myDatanet server (see "myDatanet Server Manual " 805002).
2. Within the desired customer, create a new site/application for operation of the Jellox Pulse on the myDatanet server (see "Creating the site" on page 133).
3. Use the "OnSite Companion" smartphone app to synchronise the Jellox Pulse and the myDatanet server (see "Synchronisation with the myDatanet server" on page 126). Select "Synchronise device", use the magnifying glass icon to search for compatible devices and click on the desired device in the list displayed.

The application can also be accessed as a progressive web app at the following address (<https://companion.microtronics.com/>). This means that a PC or laptop can also be used instead of a smartphone. However, in this case, the search for devices within range is not available. The serial number must be entered manually or scanned using the camera icon.

4. Configure the created site/application according to your requirements (see "Site configuration" on page 78).
5. If the Jellox Pulse should remain deactivated up to the installation on the operation site, select "Deactivated" in the title bar of the configuration section "Measurement system" (see "Measurement system" on page 78).
6. Trigger a synchronisation between the Jellox Pulse and the myDatanet server again to transmit the configuration of the site to the Jellox Pulse .

The following tasks are to be completed directly at the operation site of the device:

7. Complete all steps described in chapter "Connecting the meters and the digital contacts" on page 55. For the variant with the external antenna connector (Type key D022-4Z001200D05), you also need to connect the antenna (see "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57).
8. Ensure that "Active" is selected in the title bar of the configuration section "Measurement system" (see "Measurement system" on page 78).

9. Configure the basic settings for the measurement channels via the "Channel settings" input screen (siehe "Inputs in "Counter" mode" on page 87).

Note: *An active mobile connection between the Jellox Pulse and the myDatenet server is required to set the meter readings (see "Set meter reading" on page 88).*

10. Use the "OnSite Companion" smartphone app to synchronise the Jellox Pulse and the myDatenet server (see "Synchronisation with the myDatenet server" on page 126). Select "Synchronise device", use the magnifying glass icon to search for compatible devices and click on the desired device in the list displayed.

The application can also be accessed as a progressive web app (<https://companion.microtronics.com/>). This means that a PC or laptop can also be used instead of a smartphone. However, in this case, the search for devices within range is not available. The serial number must be entered manually or scanned using the camera icon.

11. If you intend to install the Jellox Pulse in an inspection chamber, please ensure that the device can establish a mobile network connection in its final mounting position with the inspection chamber closed before leaving the installation site. The wizard to complete the "Guided commissioning" can be used for this purpose (see ""Guided commissioning" input screen" on page 119). It carries out several measurements of mobile signal strength and, based on the results, provides an assessment of signal quality.

8.5 Testing communication with the device

8.5.1 Testing communication between device and server (mobile network connection)

1. Within the desired customer, create a new site/application for operation of the Jellox Pulse on the myDatanet server (see "Creating the site" on page 133).
2. Configure the created site/application according to your requirements (see "Site configuration" on page 78).

The following step is only required for the variant with external antenna connector (Type key D022-4Z001200D05).

3. Connect the antenna (see "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57).

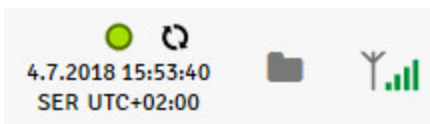
The following steps are only necessary if you also want to test the measurement value acquisition and the data transmission at this time:

4. Complete all steps described in chapter "Connecting the meters and the digital contacts" on page 55.
5. Trigger a connection using the reed switch (see "Reed switch" on page 70). The configuration of the site will also be transmitted to the Jellox Pulse .



How-To-Video: [Triggering a connection](#)

6. Wait until it is indicated in the list of sites/applications that the device is connected to the server (rotating arrows).



The Jellox Pulse is only connected to the server for a very short time. You can therefore check if the time stamp of the last connection (under the green status symbol) has been updated. If the device does not connect to the server within 5 minutes, activate the display by briefly pressing (for approx. 1 sec.) the reed switch (see "Reed switch" on page 70) and evaluate the error code shown on the display (see "Display" on page 71).

The following steps are only required if you also want to test the measurement value acquisition and the data transmission at the same time.

7. Wait until several measurement values have been recorded. The waiting time depends on the configured record interval (see "Device settings" on page 84).
8. Trigger a transmission again to transmit the recorded measurement values to the myDatanet server.

- Click on the "Direct report" symbol in the list of sites / applications to display the data that is saved on the myDatenet server.



- Check whether all of the data up to the point of the synchronisation is present and plausible. Pay particular attention to the mobile network signal strength.

Note: Additional explanation on the assessment of the "Mobile radio field strength":

"RSSI"	
> -70 dBm	
-70...-99 dBm	
-100...-109 dBm	
-110...-124 dBm	
-125...-130 dBm	
<= -131 dBm	

8.5.2 Testing communication between device and server (local radio connection)

- Within the desired customer, create a new site/application for operation of the Jellox Pulse on the myDatenet server (see "Creating the site" on page 133).
- Use the "OnSite Companion" smartphone app to synchronise the Jellox Pulse and the myDatenet server (see "Synchronisation with the myDatenet server" on page 126). Select "Synchronise device", use the magnifying glass icon to search for compatible devices and click on the desired device in the list displayed.

The application can also be accessed as a progressive web app at the following address (<https://companion.microtronics.com/>). This means that a PC or laptop can also be used instead of a smartphone. However, in this case, the search for devices within range is not available. The serial number must be entered manually or scanned using the camera icon.

- Configure the created site/application according to your requirements (see "Site configuration" on page 78).

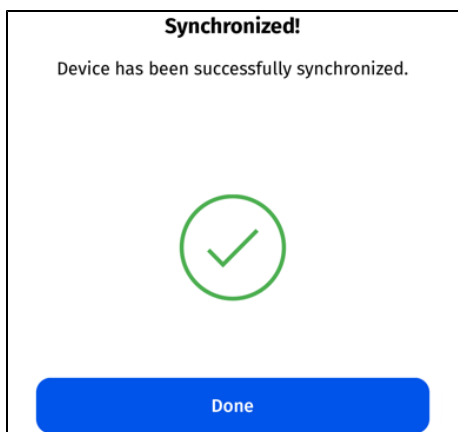
The following steps are only necessary if you also want to test the measurement value acquisition and the data transmission at this time:

- Complete all steps described in chapter "Connecting the meters and the digital contacts" on page 55.
- Trigger the synchronisation between the Jellox Pulse and the myDatenet server again to transmit the configurations of the site to the Jellox Pulse.

The following steps are only required if you also want to test the measurement value acquisition and the data transmission at the same time.

- Wait until some measurement values have been recorded. The waiting time depends on the configured record interval (see "Device settings" on page 84)

7. Trigger the synchronisation between the Jellox Pulse and the myDatenet server again to transmit the recorded measurement values to the myDatenet server.
8. Wait until the "OnSite Companion" smartphone app indicates that the synchronisation process is completed.



Synchronisation completed

9. Click on the "Direct Report" symbol in the list of sites/applications to display the data saved on the myDatenet server.



10. Check whether all of the data up to the point of the synchronisation is present and plausible. Pay particular attention to the mobile network signal strength.

Note: Additional explanation on the assessment of the "Mobile radio field strength":

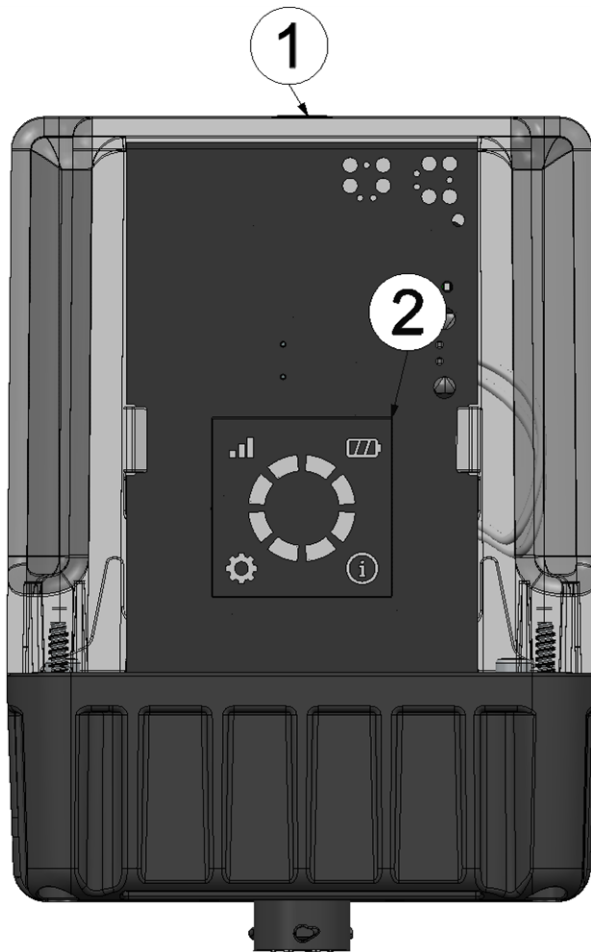
"RSSI"	
> -70 dBm	
-70...-99 dBm	
-100...-109 dBm	
-110...-124 dBm	
-125...-130 dBm	
<= -131 dBm	

Chapter 9 User interfaces

The configuration of the Jellox Pulse is carried out via the web interface on the myDatenet server (see "User interface on the myDatenet server" on page 75), which your responsible sales partner will provide to you.

9.1 User interface on the Jellox Pulse

9.1.1 Operating elements

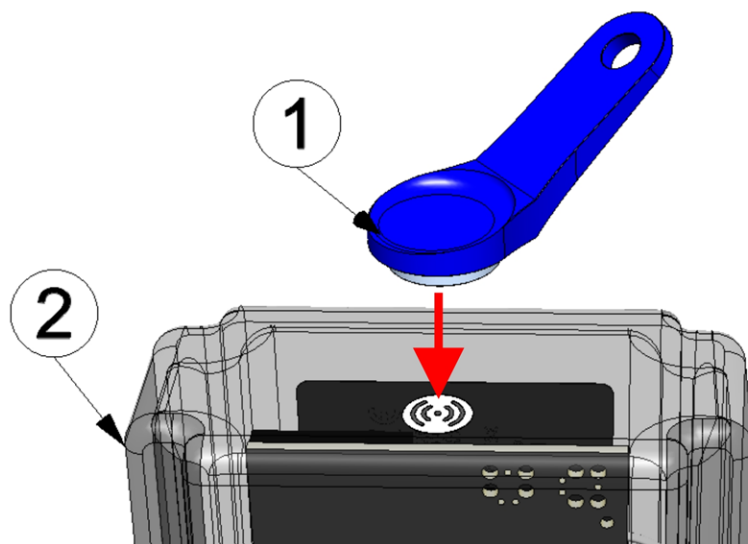


Operating elements

1 Reed switch	2 Display
---------------	-----------

9.1.1.1 Reed switch

The MDN Magnet (206.803) included in the scope of delivery is required for operating the reed switch.



Operating the reed switch

1 MDN Magnet (206.803)	2 Jellox Pulse
------------------------	----------------

The reed switch can be used to initiate a connection, to switch on the display of the Jellox Pulse for 30 sec. or to switch between the tabs on the screen (error codes and current operating state) if the display is switched on. Regardless of whether the display is switched on or off, briefly (approx. 1 sec.) pressing the reed switch also always activates the local radio interface for 10 min. . Any further actuation of the reed switch will reset the time for which the local radio interface remains active to 10 min. . If an active radio connection to a PC or smartphone is established during these 10 min. , the local radio interface remains active and will only be deactivated with the disconnection of the local radio connection.

If the local radio interface between the Jellox Pulse Elite and one of the sensor modules has been interrupted (see "Error codes" on page 75), shortly (approx. 1 sec.) pressing the reed switch also initiates the search for remote sensors.

Display	Operation	Device response	Operation after releasing the reed switch
Off	Press briefly (approx. 1 sec.)	Display is activated for 30 sec. and the local radio interface for 10 min.	Alternating display of the error codes (provided there are active errors) and the current operating state (see "Display" on page 71)
Off	Press and hold for 3 sec.	Connection is being established (incl. verification of server allocation)	---
On	Press briefly (approx. 1 sec.)	Display switches to the next tab on the screen	When pressing briefly the first time after activating the display, automatic switching between the tabs is deactivated.
On	Press and hold for 3 sec.	Reset of the display	

The display of the Jellox Pulse is activated as soon as the reed switch is pressed. The time for which the reed switch was pressed is visualised by a circle in which the segments change from white to green. The connection will be established once all of the segments have switched from white to green, i.e. the reed switch has been pressed for at least 3 sec.



Visualisation of the time for which the reed switch has been pressed



How-To-Video: [Triggering a connection](#)

If the reed switch has been released before all segments of the info circle were green, the error codes (provided there are active errors) and the current operating state are displayed subsequently (see "Display" on page 71). In this case the screens are switching every 5 sec. . When pressing briefly the first time when the display is active, automatic switching between the tabs is deactivated. Then you can switch to the next screen using the reed switch. The remaining time the display is active for is reset to 30 sec. every time the reed switch is pressed.

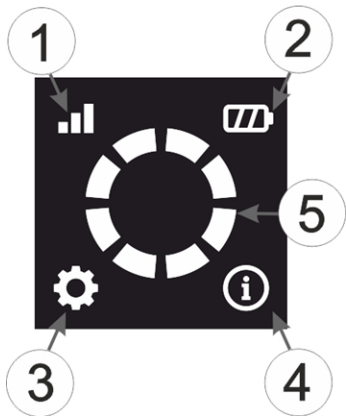
9.1.1.2 Display

Important note:

- *Do not touch the display with sharp objects, such as the tip of a pen.*
- *Do not stand or place any objects on the display as this could scratch it.*

9.1.1.2.1 General

The display of the Jellox Pulse is only designed to show the operating states and the error codes (see "Error codes" on page 75). The device cannot be operated via the display. It consists of 12 individual symbols lighted up by LED. The symbol for "operating state" can light up in different colours. All other symbols can only light up in green. The display is activated by briefly pressing the reed switch (approx. 1 sec.) (see "Reed switch" on page 70). The display then remains active for 30 sec. , showing subsequently the error codes (provided no active errors have occurred) and the current operating state. Using the reed switch you can disable automatic switching between the tabs and switch manually between the display screens (see "Reed switch" on page 70).



General structure of the display

1 Status of the mobile network connection	
Off	Mobile network connection disconnected; wait until the next connection is established
Blinking	Establishing connection
Lights up	Connection to the myDatenet server established
2 Reserved for extensions	
3 Reserved for extensions	
4 Operating state	
White	Transport mode activated (state upon delivery)
Green	Operation according to configuration
Red	Active error; error code is indicated using the info circle
5 Info circle	
Depending on the currently executed action or the status of the device, various information is displayed using the info circle:	
• Actuating the reed switch: visualising the time for which the reed switch has been actuated (see "Reed switch" on page 70) • Establishing connection: mobile radio signal strength as soon as it has been determined • Active connection to the server: mobile radio signal strength • Active error: Error code (see "Error codes" on page 75)	

Note: Additional explanation on the assessment of the mobile radio signal strength:

"RSSI"	
> -69 dBm	
-70...-99 dBm	
-100...-109 dBm	
-110...-124 dBm	
-125...-200 dBm	

The following table contains an overview of the display indications resulting from the previous explanation of the individual symbols:

Display	Explanation
	Transport mode activated (state upon delivery)
	Reed switch activated
	Operation according to configuration; no active connection to the server
	Display has been activated during connection establishment initiated by the device or a transmission has been triggered using the reed switch During connection establishment the symbol for the "status of the mobile network connection" is blinking. As soon as the connection has been established, it remains lit up.
	Error code (see "Error codes" on page 75)

9.1.1.2.2 Error codes

Error code displayed	Explanation
	last connection failed If this problem occurs when triggering a transmission using the reed switch, the retries will be attempted as described in chapter "Procedure in case of connection aborts" on page 35.
	Blocked meter output detected A meter output that is connected to an input operated in "Counter" mode has been closed for more than 2 sec. . Depending on the current operating state, the "status of the mobile network connection" symbole may also light up.
	Local radio connection to remote sensor not possible By briefly (approx. 1 sec.) pressing the reed switch (see "Reed switch" on page 70), the search for remote sensors can be initiated. Depending on the current operating state, the "status of the mobile network connection" symbole may also light up.

9.2 User interface on the myDatenet server

Note: Depending on the respective user level, some of the configuration fields mentioned in the following sub-chapters may be hidden. In this case, please contact the administrator of the myDatenet server.

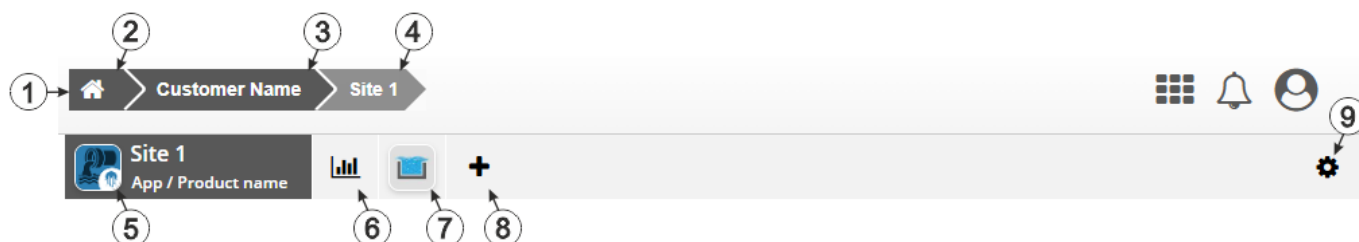
Configuration of the Jellox Pulse is done via the web interface on the myDatenet server. It is essentially divided into configuration of the site and configuration of the device. The corresponding input screens are opened via the list of sites / applications in the "Sites / Applications" area (see "'Sites / Applications" area at customer level" on page 132). The title bar displayed at the top of the input screen is always the same, regardless of whether

- the specific input screen for configuring the site (click on the name of the site or on the icon),
- the default input screen for configuring the site (click on the pencil symbol),
- the input screen for configuring the device (click on the serial number) or
- the report template for displaying the measurement data (click on the symbol for displaying the measurement data) has been opened.



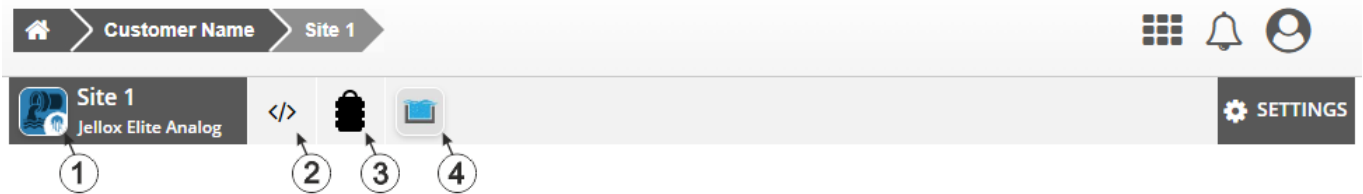
How-To-Video: [How to use the new title bar](#)

The title bar can be used to switch between the input screens of the site which are connected to the configuration of the site, without having to return to the list of sites first. Furthermore add-ons can be added to the site via the "+" symbol. Add-ons can be used to extend the functional scope of a site. The application-specific or generic input screens can be opened via the title bar. To switch between the buttons displaying the application specific or the generic input screens in the title bar, you can use the cogwheel symbol.



Title bar displaying the buttons to open the application specific input screens

1	Breadcrumb navigation; shows the path via which the current input screen was called up.
2	Closes the current input screen and returns to the main level (This segment is only available if you are authorised to manage multiple customers.) Depending how the customer displayed after the house symbol was reached, one of the following areas of the main level is opened: • Customers • Sites / Applications • Devices
3	Displays the name of the customer that is currently open. By clicking on the segment, the currently open input screen is closed and you return to the overview of the customers. Depending on the input screen that has been opened, one of the following areas of the customers level will then be displayed: • Sites / Applications • Devices
4	Depending on the input screen that is currently open, one of the following elements may be displayed: • Name of the site • Name of the report • Serial number of the device
5	Opens the specific input screen for configuring the site (see "Specific input screen for configuring the site" on page 78)
6	Opens the report template for displaying the measurement data
7	Opens the specific input screen for configuring an add-on that has been added to the site Multiple add-ons can be added to a site. A dedicated button is added to the title bar for each add-on.
8	Opens the wizard for adding new add-ons to the site that is currently open
9	Cogwheel symbol for selecting whether the buttons to open the application specific input screens or the buttons to open the generic input screens are displayed in the title bar.

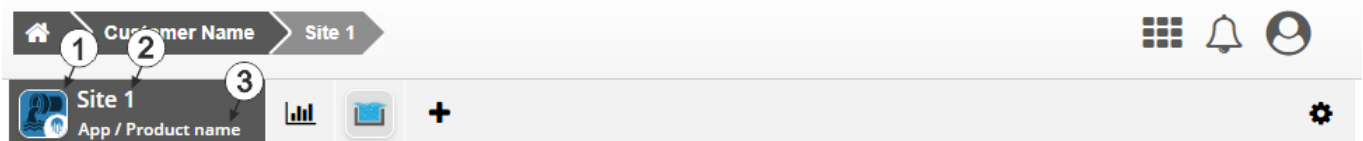


Title bar displaying the buttons to open the generic input screens

1	Opens the default input screen for configuring the site (see "Default input screen for configuring the site" on page 108)
2	Opens the default input screen for configuring the site in development mode (see "Default input screen for configuring the site in development mode" on page 118)
3	Opens the input screen for configuring the device connected to the site (see "Device configuration" on page 120)
4	Opens the default input screen for configuring the add-on

Buttons of the title bar in more detail

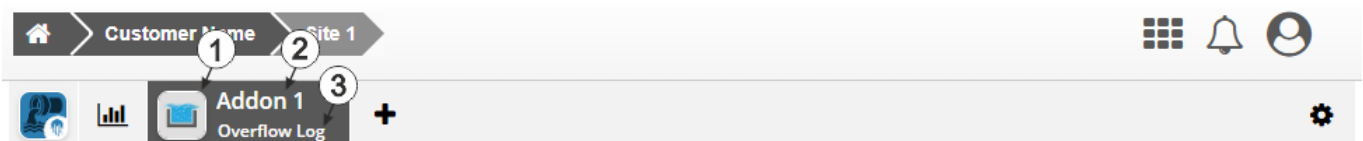
When clicking on the icon, the relevant button is expanded and shows additional information next to the icon. The following screen shot shows the expanded button for opening the application specific input screen for configuring the site. The expanded button for opening the default input screen for configuring the site contains the same information.



Button to open the input screen for configuring the site in detail

1	Icon of the IoT application based on which the site has been created
2	Name of the site
3	Name of the IoT application based on which the site has been created or product name as indicated on the type plate (if stored in the device)

The following screen shot shows the expanded button for opening the application specific input screen for configuring the add-on. The expanded button for opening the default input screen for configuring the add-on contains the same information.



Button to open the input screen for configuring the add-on in detail

1	Icon of the add-on that has been added to the site
2	Freely selectable name for the add-on that has been added (Allows to distinguish the add-ons in case several of the same type are added to a site)
3	Name of the add-on defined by the add-on developer

9.2.1 Site configuration

Click on the name of the site in the list of sites to open the specific input screen for configuring the site. Clicking on the symbol to edit the site will take you to the default input screen for configuring the site (see "myDatenet Server Manual " 805002).

9.2.1.1 Specific input screen for configuring the site

You can access the specific input mask for configuring the site by clicking on the name of the site in the list of sites. The configuration sections contained therein are specific to the IoT application on which the site was created and are explained in detail below.

9.2.1.1.1 Measurement system

In this configuration section, the basic settings for the device and the settings for the 4 inputs are made.

Measurement system Active

Transmission interval: 6 h 0 min
Record interval: 15 min

Channel Identifier	Mode	Type of Contact
Measurement channel 1	Off	
Measurement channel 2	Digital	Opening Contact (NCC)
Measurement channel 3	Digital	Closing Contact (NOC)
Measurement channel 4	Counter	Pulse value Puls Unit 5 l m3

Channel Identifier: Pressure 1
Type | SN: PRE-PT-D30 | MT05xxxx

Configuration section "Measurement system"

Information about the device

1 Current operating mode of the measurement system	
Activation waiting for device	The measurement system has been set to active but no device is linked to the site
Activation on device required	The measurement system has been set to active and is waiting for the device to establish a connection to the server. To proceed, please trigger a connection establishment using the reed switch on the device (see "Reed switch" on page 70).
Active	Operation in accordance with the configuration
Commissioning	Guided commissioning process has been initiated
Deactivation pending	The measurement system has been deactivated and is waiting for the device to confirm deactivation
Deactivated	The measurement system has been deactivated. All operations (measurement, recording, transmission, etc.) are suspended in order to minimise energy consumption during transport or storage. The local radio interface used by the device to communicate with the smartphone app is also deactivated.
Deactivation in process	The measurement system has been deactivated. An active device has then been assigned to the site. The measurement system is now awaiting confirmation of the activation from the newly assigned device.
2 Information about the Jellox Pulse currently linked to the site.	
The input window for the basic settings of the device is opened by clicking on this field (see "Device settings" on page 84).	
3 Time between transmissions	
4 Time between measurement data recordings	

Information about the inputs

5 Information about the first input.	
The input window for configuring the input is opened by clicking on this field (see "Input in "Digital" mode" on page 86 and "Inputs in "Counter" mode" on page 87).	
6 Colours of the pair of wires for the input; the brown wire is the common ground. <i>Note: Only applicable if the "Connection cable 7pin 8 m " (301689) or the Connection cable 7pin 0,5 m " (400442) is used.</i>	
7 Variable part of the Name for the measurement values	
Several measurement values are recorded for each input. Their name is made up of the variable part and a fixed part that depends on the selected mode (e.g. "myName - contact position" and "myName - actuation state" for inputs in "Digital" mode).	
8 Basic settings for the measurement channel	
Off	Measurement channel deactivated
Digital	Digital input (Detecting the switching state of a digital contact)
Counter	Infinite counter (Adding up the pulses of a water meter)

Information about an input in "digital" mode

9 Type of contact connected to the input

Note: The following applies to both types:

- If the contact is in idle state, the value "0" is recorded
- If the contact was actuated, the value "1" is recorded

Opening contact	The contact is closed in idle state (i.e. current is flowing). When actuated, the contact opens.
Closing contact	The contact is open in the idle state (i.e. no current flows). When actuated, the contact closes.

Note: It makes little difference to the power consumption whether the contact is closed or open in the idle state, as the Jellox Pulse only applies voltage to the contact for 1 ms every second to check its switching status. The maximum current consumption per switching contact is 317 μ A .

Information about an input in "counter" mode

10 Quantity (e.g. litres) that corresponds to a pulse of a connected meter.

11 Unit (e.g. m³) in which the meter reading is to be displayed on the server interface.

12 Opens the context menu for adapting the meter reading according to the meter connected to the input (see "Set meter reading" on page 88).

Note: The meter reading can only be set when the device is online.

Information about the remote sensor modules

13 Status information about the sensor module currently linked to the first measurement channel	
The input window for the configuration of the sensor module is opened by clicking on this section (see "Remote sensor module of type PRE-PT-D30" on page 90).	
14 Icon of the sensor module that is linked to the measurement channel	
15 Variable part of the name for the measurement values determined using the sensor module assigned to this measurement channel.	
Several measurement values are recorded for each of the remote measurement channels. Their name is made up of the variable part and a fixed part which depends on the type of sensor module it is assigned to (e.g. "myName - Meter reading", "myName - Quantity", etc. for sensor modules of the type "PRE-PT-D30").	
16 Type and serial number of the sensor module.	
When hovering over this section with the cursor, the version number of the firmware installed on the sensor module is displayed as tooltip.	
17 Status of the local radio connection between device and sensor module	
 (blinking)	• Device is searching for sensor module or • Device is establishing a connection to the sensor module • The firmware of the sensor module is being updated
	• Device and sensor module is correctly paired • Device and sensor module is correctly paired but last measurement could not be carried out (Error code E020 is additionally displayed).
	• Sensor module couldn't be found when trying to pair it. • Local radio connection between device and sensor module has been lost. • The measurement system has been deactivated.
18 When hovering over this symbol with the cursor, the remaining time until the next battery replacement of the sensor module is displayed as tooltip.	

9.2.1.1.1.1 Errors and notifications

If certain operating states or errors occur, corresponding messages are displayed in the areas with status information about the sensor modules. Notifications are always displayed in blue, while errors are displayed in red.

Firmware update

Measurement system

Active



Transmission interval

6 h 0 min

Record interval

15 min

Channel Identifier

Measurement channel 1

Mode

Off

Channel Identifier

Measurement channel 2

Mode

Digital

Type of Contact

Opening Contact (NCC)

Channel Identifier

Measurement channel 3

Mode

Digital

Type of Contact

Closing Contact (NOC)

Channel Identifier

Measurement channel 4

Mode

Counter

Pulse value | Puls Unit

5 l | m3

1

The sensor's firmware is currently being updated. Do not change the position of the device nor the sensor. Wait for the process to complete and this notice to disappear.

Channel Identifier

Pressure 1

Type | SN

PRE-PT-D30 | MT050334

Firmware of the sensor module is being updated

- 1 Firmware of the sensor module is being updated

If required, the update for all PRE-PT-D30 sensor modules assigned to a measurement channel of the Jellox Pulse is executed automatically. No user interaction is required. The update process may take several minutes. If the firmware of a PRE-PT-D30 sensor module is being updated, "NaN" is recorded for all measured values of all remote sensors because the update process blocks communication with the other sensor modules. If the myDatenet server interface is accessed during the update, the message shown in the figure above is displayed in the configuration section "Measurement system".

Error on the sensor module

The screenshot displays the 'Measurement system' interface. At the top right, there is a green 'Active' button with a dropdown arrow. Below this, the interface is divided into several sections. The first section shows 'Transmission interval' as 6 h 0 min and 'Record interval' as 15 min. The next three sections list measurement channels with their identifiers, modes, and contact types. The fourth section shows 'Measurement channel 4' with a mode of 'Counter' and a pulse value of 5 l | m3. Below these, a red error banner is displayed with a red 'X' icon and the text 'E003: Wireless connection to remote sensor/actuator not possible.' This banner is highlighted with a red vertical line and a circled '1' on the left. To the right of the error banner, there are three numbered callouts: '2' points to the error code 'E003', and '3' points to the error description 'Wireless connection to remote sensor/actuator not possible.' At the bottom, there is a section for 'Pressure 1' with a channel identifier, type 'PRE-PT-D30', and serial number 'MT050334'. To the right of this section are icons for a Bluetooth connection and a refresh/clear icon.

Error occurred on one of the sensor modules

1	Status information about the sensor module currently linked to the first measurement channel
2	Error code
	An exhaustive list of possible error codes is provided in "Error codes" at the end of this chapter.
3	Error description

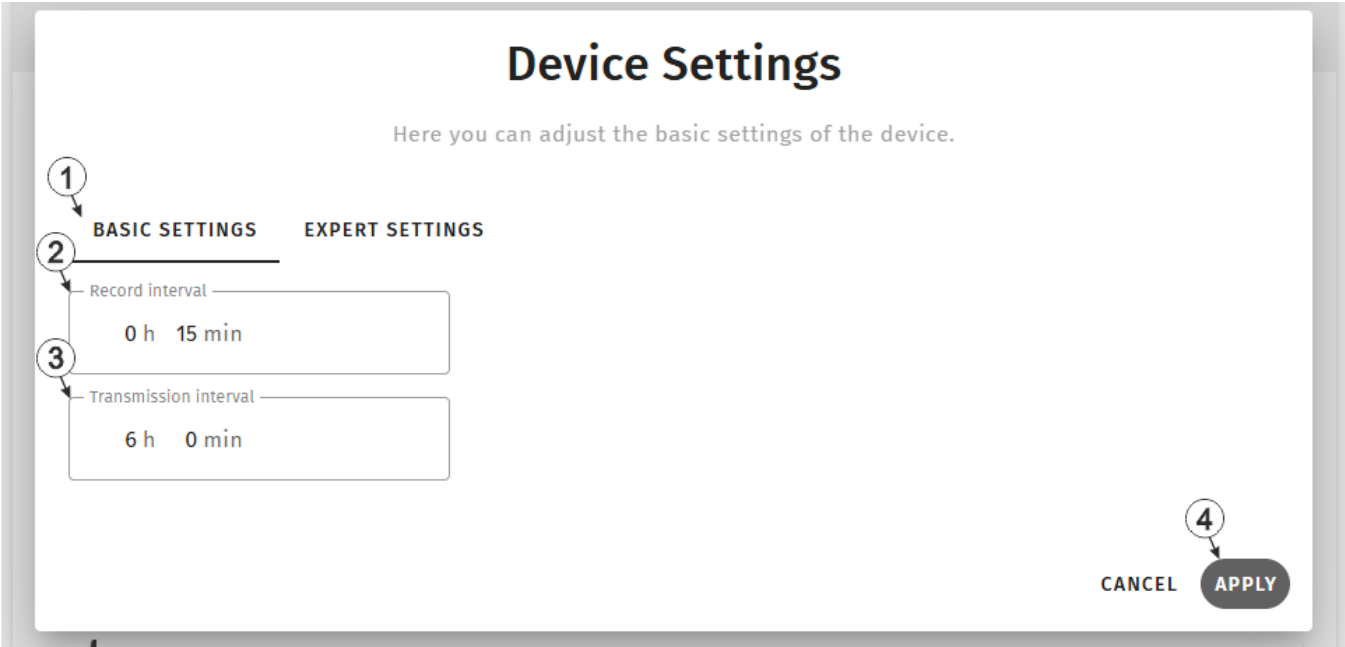
The error codes are displayed separately for each sensor module in the status information section of the respective sensor module.

Error codes

Error code	Description
E001	sensor configuration not permitted for this variant
E002	last mobile network connection failed
E003	radio connection to remote sensor/actuator not possible
E020	no valid measurement value
E150	hardware error (contact the manufacturer)

9.2.1.1.1.2 Device settings

Basic settings



Input window "Device settings", tab "Basic settings"

1	Buttons for switching between the individual tabs of the input window
2	Time between measurement data recordings
3	Time between transmissions
4	Button to apply the settings

Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.

Expert settings

The screenshot shows a 'Device Settings' dialog box with a title bar. Inside, the title 'Device Settings' is centered at the top. Below it is a subtitle: 'Here you can adjust the basic settings of the device.' There are two tabs: 'BASIC SETTINGS' and 'EXPERT SETTINGS'. The 'EXPERT SETTINGS' tab is selected and underlined. A circled number '1' with an arrow points to the 'Transmission time' input field. The input field contains '00:00' and a clock icon, with a placeholder 'hh:mm' to its right. At the bottom right of the dialog are two buttons: 'CANCEL' and 'APPLY'.

Input window "Device settings", tab "Expert settings"

- 1 Time when the device establishes a connection to the server, even if not in the transmission interval.

If an additional transmission has been initiated, the internal meter of the device, that determines the time of the transmission, is reset. This means that the next transmission is completed exactly after the time specified via the "transmission cycle" parameter.

9.2.1.1.1.3 Input in "Digital" mode

Channel Settings

Here you can adjust the settings of the measurement channel.

1

Name

Measurement channel 2

2

Mode

OFFDIGITALCOUNTER

3

BASIC SETTINGS

Type of Contact

Opening Contact (NCC)

4

CANCELAPPLY

Input window "Channel settings", "Digital" mode

1	freely selectable, variable part of the designation for the measurement values						
	For inputs in "Digital" mode, two measurement values are determined. Their name is composed of a variable part and a fixed part (e.g. "myName - contact position" and "myName - actutation state").						
2	Basic settings for the measurement channel						
	<table><tr><td>Off</td><td>Measurement channel deactivated</td></tr><tr><td>Digital</td><td>Digital input (Detecting the switching state of a digital contact)</td></tr><tr><td>Counter</td><td>Infinite counter (Adding up the pulses of a water meter)</td></tr></table>	Off	Measurement channel deactivated	Digital	Digital input (Detecting the switching state of a digital contact)	Counter	Infinite counter (Adding up the pulses of a water meter)
Off	Measurement channel deactivated						
Digital	Digital input (Detecting the switching state of a digital contact)						
Counter	Infinite counter (Adding up the pulses of a water meter)						
3	Type of contact connected to the input						
	Note: The following applies to both types: - If the contact is in idle state, the value "0" is recorded - If the contact was actuated, the value "1" is recorded						
	<table><tr><td>Opening contact</td><td>The contact is closed in idle state (i.e. current is flowing). When actuated, the contact opens.</td></tr><tr><td>Closing contact</td><td>The contact is open in the idle state (i.e. no current flows). When actuated, the contact closes.</td></tr></table>	Opening contact	The contact is closed in idle state (i.e. current is flowing). When actuated, the contact opens.	Closing contact	The contact is open in the idle state (i.e. no current flows). When actuated, the contact closes.		
Opening contact	The contact is closed in idle state (i.e. current is flowing). When actuated, the contact opens.						
Closing contact	The contact is open in the idle state (i.e. no current flows). When actuated, the contact closes.						
4	Button to apply the settings						
	Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.						

9.2.1.1.4 Inputs in "Counter" mode

Channel Settings

Here you can adjust the settings of the measurement channel.

1 Name
Measurement channel 4

2 Mode
OFF DIGITAL **COUNTER**

BASIC SETTINGS

QUANTITY RECORDING

3 Pulse value
5

4 Pulse Unit
l

COUNTER VALUE

5 Scaling factor meter reading
0.001

6 meter reading unit
m3

7 Decimal places
3

CANCEL **APPLY**

Input window "Channel settings", "Counter" mode

1 freely selectable, variable part of the designation for the measurement values

For inputs in "Counter" mode, three measurement values are determined. Their name is composed of the variable part and a fixed part (e.g. "myName - Meter reading", "myName - Quantity" and "myName - Flow rate").

2 Basic settings for the measurement channel

Off	Measurement channel deactivated
Digital	Digital input (Detecting the switching state of a digital contact)
Counter	Infinite counter (Adding up the pulses of a water meter)

3 Quantity (e.g. litres) that corresponds to a pulse of a connected meter.

4 Unit (e.g. litres) used to specify the valence of the pulses of the meter connected. It has no direct impact on the values. It is further used for the measurement value "Quantity per recording"¹⁾ by all of the server display elements. For the measurement value "Flow rate per recording"²⁾ this unit is used and "/s" is added.

5 Factor for the conversion of "Pulse unit" to "Unit of the meter reading" (example: factor 0,001 for litre -> m³)

6 Unit (e.g. m³) in which the meter reading is to be displayed on the server interface. It has no direct impact on the values.

7 Number of decimal places that are used by all of the server display elements

8 Button to apply the settings

Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.

1) Sum of the pulses between two recordings multiplied by the pulse valence entered in the corresponding field

2) "Quantity per recording" divided by the time difference between the recordings

Note:

Additional information on configuring a meter input:

Assumption: The meter provides one pulse per 5 l. The meter reading should be displayed in [m³] on the server interface

Required configuration

Parameter	Value
Pulse valence	5
Pulse unit	l
Conversion factor - meter reading	0,001
Unit of the meter reading	m ³

9.2.1.1.1.5 Set meter reading

An active connection between the Jellox Pulse and the myDatenet server is required to set the meter reading. The wizard first asks you to trigger a transmission by pressing the reed switch for at least 3 sec. (see "Reed switch" on page 70), before you can move on to the next step.

Once the wizard has been launched and the connection has been established, the Jellox Pulse remains connected to the myDatenet server for 10 min. . The details entered in the current step are saved immediately by clicking "Next". Once the timeout has expired, or when you click the "Done" button in the final step of the wizard, the online connection between the Jellox Pulse and the myDatenet server is disconnected.

1/4

Device Connection Required

Please ensure that the device has reception. Establish a connection using the magnet.

Waiting for connection...

< BACK

NEXT >

Wizard "Set meter reading" step 1

Meter reading could not be set

2/4

Enter the current meter reading

Transfer the value from the meter to the input mask.

Counter value
1

Failed! Error code: -2 (Configuration error)

1

< BACK

NEXT >

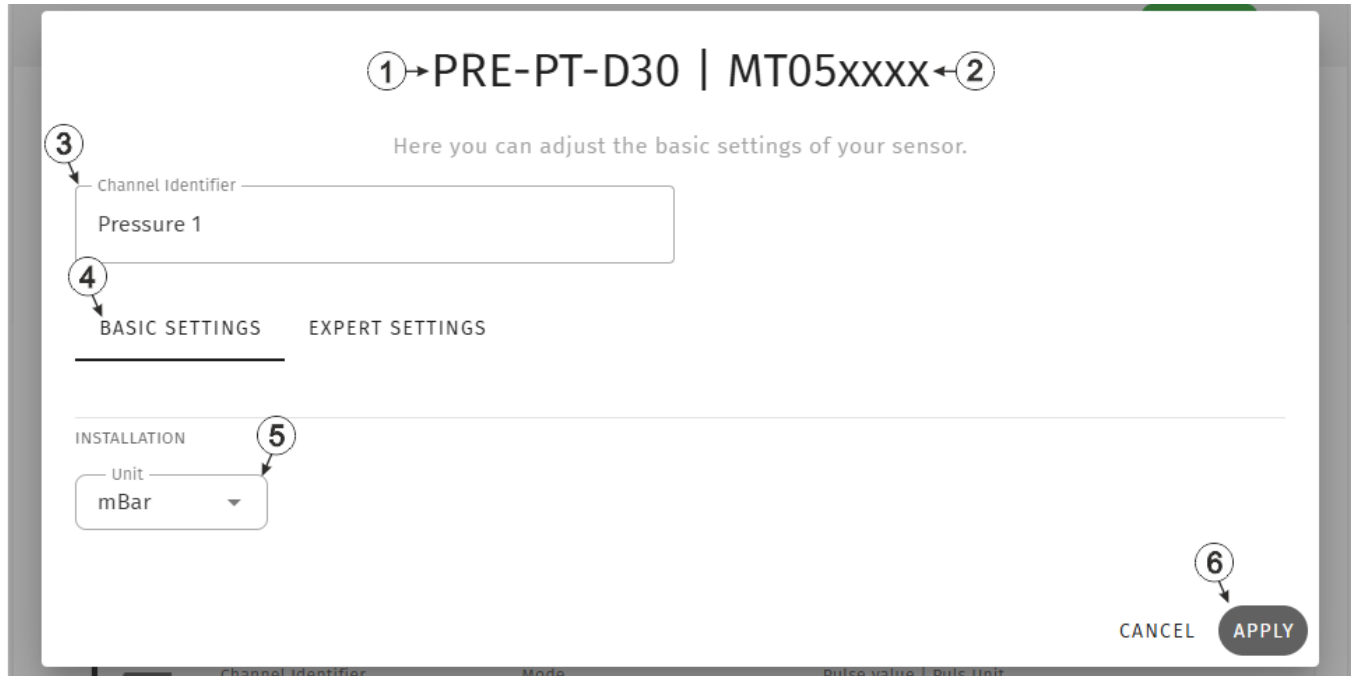
Wizard "Set meter reading" step 2, meter reading could not be set

1 Error code indicating why the meter reading could not be set

Error code	Explanation
-1 Internal error	If this error appears several times, contact the manufacturer (see "Contact information" on page 173)
-2 Configuration error	An attempt was made to set the meter reading although it has not yet been saved that the measurement channel has been switched to "Counter" mode. Cancel the process of setting the meter reading by clicking the "Back" button repeatedly until you return to the specific input screen for configuring the site. Then click the "Save" button below the "Smart Actions" configuration section to save the configuration. Afterwards, open the wizard for setting the meter reading again.
-3 Command expired	Within 20 sec. there was no response that the meter reading has been set successfully. The mobile network connection has been disconnected. Initiate another connection establishment by pressing the reed switch for at least 3 sec.
-99 Server error	If this error appears several times, contact the manufacturer (see "Contact information" on page 173)

9.2.1.1.6 Remote sensor module of type PRE-PT-D30

Basic settings



Input window "Remote sensor module of type PRE-PT-D30 ", tab "Basic settings"

1	Type of the sensor module used for determining the measurement value PRE-PT-D30 (400420): module for determining pressure and water temperature in water supply networks using a piezoresistive sensor.				
2	Serial number of the sensor module used for determining the measurement value				
3	Freely selectable, variable part of the designation for the measurement values recorded via the sensor module assigned to the measuring channel Several measurement values are recorded for each of the remote measurement channels. Their name is made up of the variable part and a fixed part which depends on the type of sensor module it is assigned to (e.g. "myName - Meter reading", "myName - Quantity", etc. for sensor modules of the type "PRE-PT-D30").				
4	Buttons for switching between the individual tabs of the input window				
5	Selection of the unit of pressure used by all of the server display elements. This setting affects only the display of measurement values. The measurement values are always stored in millibars (mbar), regardless of the selected unit of pressure. <table><tr><td>mBar</td><td>Millibar</td></tr><tr><td>Bar</td><td>Bar</td></tr></table>	mBar	Millibar	Bar	Bar
mBar	Millibar				
Bar	Bar				
6	Button to apply the settings Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.				

Expert settings

PRE-PT-D30 | MT05xxxx

Here you can adjust the basic settings of your sensor.

Channel Identifier
Pressure 1

BASIC SETTINGS **EXPERT SETTINGS**

PRESSURE SHOCK SENSITIVITY

Measurement ...
0 - 2g Threshold

PRESSURE SHOCK EVENT

Recording Durati...
10 s

☒ Record Event
Curve

CANCEL APPLY

Input window "Remote sensor module of type PRE-PT-D30 ", tab "Expert settings"

Note: The values of the parameters displayed in this input window have been optimised by the manufacturer to ensure that the PRE-PT-D30 delivers the best possible results in most operating situations. They should only be adjusted in consultation with the manufacturer.

9.2.1.1.2 Smart Actions

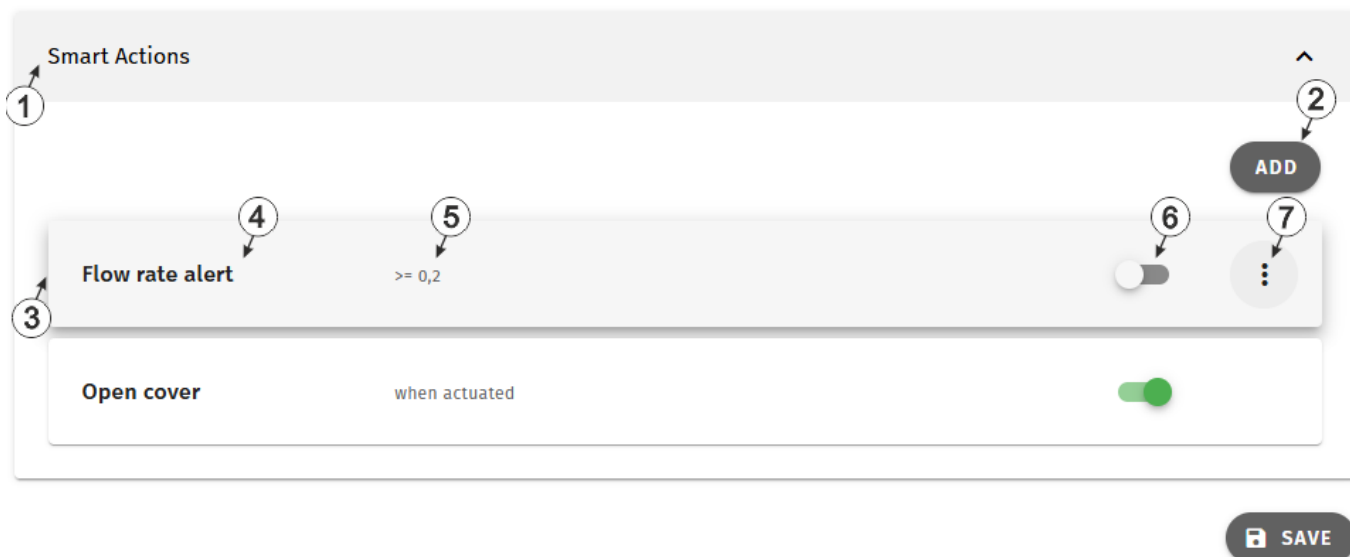
This configuration section can be used to manage the Smart Actions. This includes creating new Smart Actions and activating/deactivating, configuring or deleting existing Smart Actions.

Smart Actions can be used to automatically trigger certain actions or change the behaviour of the data logger depending on the current measurement value. This allows a response to events such as excessive flow rates. The actions to be carried out or the alternative behaviour can be defined individually. Actions, such as triggering a transmission, are carried out when the measurement value falls outside the normal range. An alternative behaviour, such as a shortened transmission interval or an active warning message, is retained as long as the measurement value is outside the normal range. To ensure fast response times, all operations required for Smart Actions are carried out directly on the data logger.

Smart actions are therefore rules that the user can create individually to define the data logger's reactions to specific events. These rules relate to the recording, transmission and creation of warning and alarm messages. Smart Actions can thus be used to improve the efficiency and safety of the water supply, for example by detecting leaks at an early stage.



How-To-Video: Introducing "Smart Actions"



Configuration section "Smart Actions"

1	List of Smart Actions
2	Button to add another Smart Action Note: Up to 25 Smart Actions can be created. Once the maximum has been reached, the button is greyed out.
3	Information about a Smart Action By clicking on this field, the input window for editing the Smart Action is opened (see "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103).
4	Name of the Smart Action
5	Description of the Smart Action
6	Toggle to generally activate/deactivate the Smart Action. When a Smart Action is deactivated, all active actions are withdrawn (e.g. all-clear for alarm/warning). Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.
7	Opens the context menu where the Smart Action can be removed. If a Smart Action is removed, active actions are cancelled (e.g. all-clear for alarm/warning).

9.2.1.1.2.1 Creating new Smart Actions (Source is a counter or the measurement value of a sensor module)

Source

The screenshot shows a dialog box titled "Create new Smart Action". At the top, there is a progress bar with three steps: "1 Source", "2 Configuration", and "3 Summary". The "1 Source" step is currently active. Below the progress bar, there is a label "Source" followed by a text input field containing the text "Measurement channel 4 - Flow rate". A small circular icon with the number "1" and a downward arrow is positioned to the right of the input field, indicating a dropdown menu. At the bottom left, there is a "BACK" button. At the bottom right, there are "CANCEL" and "NEXT" buttons.

Input window "Create new Smart Action", Source

1 Selection of the measurement value the condition is to be applied to

Note: One measurement value can be used by a max. of 4 Smart Actions. If the max. number is reached, the measurement value in this drop down list is grayed out and a corresponding note is displayed under the designation of the measurement value.

Configuration

Create new Smart Action

✓ Source

2 Configuration

3 Summary

MEASUREMENT CHANNEL 4 - FLOW RATE

1

2 0.2 l/s

3 0.2

4

Threshold (l/s)
0,2

Direction
Above

Active weekdays
M D M D F S S

6 Whole day

Start time
00:00

End time: 01:00

Duration
1 h 0 min

DELAYING ACTIONS & BEHAVIOR

9 Delay

Delay
0 h 0 min 10 s

ACTION & BEHAVIOR

Actions

11 ✓ Trigger transmission

12 ✓ Trigger recording

Alternative behavior

13 Connection: Online

14 ✓ Alert level: Warning

15 Record: 0 h 0 m 0 s

16 Transmission: 0 h 0 m 0 s

BACK CANCEL NEXT

Input window "Create new Smart Action", Configuration

1	Section displaying the measuring curve of the measurement value to which the condition is to be applied. A course of two weeks is always displayed, whereby the period displayed always starts with the Monday of the previous week. This means that, depending on the current day of the week, no data is available for a certain area of the chart as this is in the future. However, the displayed period can be shifted by two weeks using the arrow symbols on the sides of the chart.	
2	Shifts the displayed period by two weeks into the past or future	
3	Thresholds for triggering the actions. The hysteresis for revoking the actions (e.g. all-clear for alarm/warning) is 5% and cannot be changed (e.g. trigger action at 100 -> all clear at 95). The threshold is displayed as a red, dashed line in the section showing the measuring curve of the measurement value.	
4	Condition under which the selected actions are triggered.	
	Below	If the measurement value meets or falls below the threshold for triggering the action, the actions are triggered.
	Above	If the measurement value meets or exceeds the threshold for triggering the action, the actions are triggered.
5	Selection of the weekdays the Smart Action should be active on Green: Smart Action is active on that day Grey: Smart Action is inactive	
6	Selection of whether the Smart Action should be active all day (on the days selected under "Active weekdays")	
7	Selection of the time from which the Smart Action should be active (on the days selected under "Active weekdays") ¹⁾ . The end time ("Start time" + "Duration") is displayed below the input field.	
8	Selection of the duration for which the Smart Action should be active, starting from the "Start time" (on the days selected under "Active weekdays") ¹⁾	
9	Selection of whether the action should only be triggered once the condition is fulfilled for a certain period of time.	
10	The actions are only triggered if the condition is fulfilled for longer than the time selected here. (Only visible if "Delay" is set to "on")	
11	Selection of whether a transmission is to be triggered at the time the condition is fulfilled for the first time. A transmission is then also triggered at the time the condition is no longer fulfilled for the first time.	
12	Selection of whether a recording is to be triggered at the time the condition is fulfilled for the first time. A recording is then also triggered at the time the condition is no longer fulfilled for the first time.	
13	Selection whether an alternative connection type should be used for as long as the conditions are met. The alternative connection type can be selected via the dropdown list.	

14 Selection of whether an alarm or a warning is to be signalled as long as the condition is fulfilled. You can use the drop-down list to choose between "Alarm" and "Warning".

When signalling is activated, suitable actions are also activated automatically. If a warning is to be signalled when a condition is fulfilled, the "Trigger recording" action is activated. If an alarm is to be signalled when a condition is fulfilled, the "Trigger transmission" and "Trigger recording" actions are activated. Actions that have already been activated are not deactivated when the signalling is changed or deactivated.

15 Selection if instead of the record interval determined in the "Device settings" (see "Device settings" on page 84) an alternative record interval is to be used. This alternative record interval can be set via the input fields next to the checkbox.

Note:

If several Smart Actions have been created for which the same measurement value but different thresholds are used, the alternative record interval of the Smart Action with the highest exceeded threshold (for "Direction" "Above") or the lowest value below the threshold (for "Direction" "Below") is used.

If an alternative record interval has been defined for several Smart Actions that use different measurement values, the shortest of the intervals is used. For the Smart Actions using the same measurement value, a valid alternative record interval is first determined in the manner described above before the other Smart Actions are considered.

16 Selection if instead of the transmission interval determined in the "Device settings" (see "Device settings" on page 84) an alternative transmission interval is to be used. This alternative transmission interval can be set via the input fields next to the checkbox.

Note: Which of the alternative transmission intervals defined via the Smart Action is ultimately used is determined in the same way as for the record interval.

¹⁾ Only visible if the Smart Action should not be active all day

Summary

Create new Smart Action

✓ Source — Configuration — **3 Summary**

1 Name
Flow rate alert

2 Description
≥ 0,2

3

Threshold 0.2 l/s	Direction Above	Active weekdays Mo, Tu, We, Th, Fr, Sa, Su	Start-/Endtime 00:00 - 01:00
Delay 00:00:10	Actions Trigger transmission	Alternative behavior Alert level alarm	

BACK CANCEL **4 CREATE**

Input window "Create new Smart Action", Summary

1 Freely selectable name for the Smart Action

2 Freely selectable description for the Smart Action.

Note: The description is displayed in the list of Smart Actions. It should clearly explain the purpose or function of the Smart Action.

3 Section in which the most important settings defined in step "Configuration" are summed up.

4 Button to create the Smart Action

Note: To save the Smart Action, the "Save" button underneath the configuration section "Smart Actions" also has to be clicked.

9.2.1.1.2.2 Creating new Smart Actions (Source is a digital value)

Source

The screenshot shows a dialog box titled "Create new Smart Action". At the top, there is a progress bar with three steps: "1 Source", "2 Configuration", and "3 Summary". The "Source" step is currently active. Below the progress bar, there is a label "Source" followed by a text input field containing the text "Measurement channel 2 - Actuation status". To the right of the input field, there is a circular icon with the number "1" and a downward arrow, indicating a dropdown menu. At the bottom of the dialog, there are three buttons: "BACK", "CANCEL", and "NEXT". The "NEXT" button is highlighted with a dark background.

Input window "Create new Smart Action", Source

1 Selection of the measurement value the condition is to be applied to

Note: One measurement value can be used by a max. of 4 Smart Actions. If the max. number is reached, the measurement value in this drop down list is grayed out and a corresponding note is displayed under the designation of the measurement value.

Configuration

Create new Smart Action

✓ Source
2 Configuration
3 Summary

MEASUREMENT CHANNEL 2 - ACTUATION STATUS

1

2

Condition: Pressed

Active weekdays: M D M D F S S

5

☐ Whole day

4

Start time: 00:00 🕒 hh:mm

End time: 01:00

6

Duration: 1 h 0 min

DELAYING ACTIONS & BEHAVIOR

8

☒ Delay

9

Delay: 0 h 0 min 10 s

ACTION & BEHAVIOR

Actions

10 ☒ Trigger transmission

11 ☒ Trigger recording

Alternative behavior

12 ☐ Connection: Online

13 ☒ Alert level: Warning

14 ☐ Record: 0 h 0 m 0 s

15 ☐ Transmission: 0 h 0 m 0 s

BACK
CANCEL
NEXT

Input window "Create new Smart Action", Configuration

1	Section displaying the measuring curve of the measurement value to which the condition is to be applied. A course of two weeks is always displayed, whereby the period displayed always starts with the Monday of the previous week. This means that, depending on the current day of the week, no data is available for a certain area of the chart as this is in the future. However, the displayed period can be shifted by two weeks using the arrow symbols on the sides of the chart.				
2	Shifts the displayed period by two weeks into the past or future				
3	Selection of the actuation state (Idle state / contact actuated) which triggers the actions The threshold is displayed as a red, dashed line in the section showing the measuring curve of the measurement value. <table border="1"> <tr> <td>Actuated</td><td>If the contact has been actuated, the actions are triggered.</td></tr> <tr> <td>Not actuated</td><td>If the contact switches to the idle state, the actions are triggered.</td></tr> </table>	Actuated	If the contact has been actuated, the actions are triggered.	Not actuated	If the contact switches to the idle state, the actions are triggered.
Actuated	If the contact has been actuated, the actions are triggered.				
Not actuated	If the contact switches to the idle state, the actions are triggered.				
4	Selection of the weekdays the Smart Action should be active on Green: Smart Action is active on that day Grey: Smart Action is inactive				
5	Selection of whether the Smart Action should be active all day (on the days selected under "Active weekdays")				
6	Selection of the time from which the Smart Action should be active (on the days selected under "Active weekdays") ¹⁾ . The end time ("Start time" + "Duration") is displayed below the input field.				
7	Selection of the duration for which the Smart Action should be active, starting from the "Start time" (on the days selected under "Active weekdays") ¹⁾				
8	Selection of whether the action should only be triggered once the condition is fulfilled for a certain period of time.				
9	The actions are only triggered if the condition is fulfilled for longer than the time selected here. (Only visible if "Delay" is set to "on")				
10	Selection of whether a transmission is to be triggered at the time the condition is fulfilled for the first time. A transmission is then also triggered at the time the condition is no longer fulfilled for the first time.				
11	Selection of whether a recording is to be triggered at the time the condition is fulfilled for the first time. A recording is then also triggered at the time the condition is no longer fulfilled for the first time.				
12	Selection whether an alternative connection type should be used for as long as the conditions are met. The alternative connection type can be selected via the dropdown list.				
13	Selection of whether an alarm or a warning is to be signalled as long as the condition is fulfilled. You can use the drop-down list to choose between "Alarm" and "Warning". When signalling is activated, suitable actions are also activated automatically. If a warning is to be signalled when a condition is fulfilled, the "Trigger recording" action is activated. If an alarm is to be signalled when a condition is fulfilled, the "Trigger transmission" and "Trigger recording" actions are activated. Actions that have already been activated are not deactivated when the signalling is changed or deactivated.				

- 14** Selection if instead of the record interval determined in the "Device settings" (see "Device settings" on page 84) an alternative record interval is to be used. This alternative record interval can be set via the input fields next to the checkbox.

Note:

If several Smart Actions have been created for which the same measurement value but different thresholds are used, the alternative record interval of the Smart Action with the highest exceeded threshold (for "Direction" "Above") or the lowest value below the threshold (for "Direction" "Below") is used.

If an alternative record interval has been defined for several Smart Actions that use different measurement values, the shortest of the intervals is used. For the Smart Actions using the same measurement value, a valid alternative record interval is first determined in the manner described above before the other Smart Actions are considered.

- 15** Selection if instead of the transmission interval determined in the "Device settings" (see "Device settings" on page 84) an alternative transmission interval is to be used. This alternative transmission interval can be set via the input fields next to the checkbox.

Note: *Which of the alternative transmission intervals defined via the Smart Action is ultimately used is determined in the same way as for the record interval.*

¹⁾ Only visible if the Smart Action should not be active all day

Summary

Create new Smart Action

✓ Source

✓ Configuration

3 Summary

1

Name

Open door

2

Description

when actuated

3

Condition

Pressed

Active weekdays

Mo, Tu, We, Th, Fr, Sa, Su

Start-/Endtime

00:00 - 01:00

Delay

00:00:10

Actions

Trigger transmission

Alternative behavior

Alert level alarm

4

BACK

CANCEL

CREATE

Input window "Create new Smart Action", summary

1	Freely selectable name for the Smart Action
2	Freely selectable description for the Smart Action. Note: The description is displayed in the list of Smart Actions. It should clearly explain the purpose or function of the Smart Action.
3	Section in which the most important settings defined in step "Configuration" are summed up.
4	Button to create the Smart Action Note: To save the Smart Action, the "Save" button underneath the configuration section "Smart Actions" also has to be clicked.

9.2.1.1.2.3 Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)

Edit Smart Action

1

Name

Flow rate alert

2

Description

>= 0,2

3

MEASUREMENT CHANNEL 4 - FLOW RATE

0.3 l/s

0.2 l/s

0.1 l/s

0.1 l/s

0.1 l/s

0.0 l/s

18.2

20.2

22.2

24.2

26.2

28.2

2.3

4

<

>

5

Threshold (l/s)

0,2

6

Direction

Above

7

Active weekdays

M

D

M

D

F

S

S

8

Whole day

00:00

hh:mm

End time: 01:00

9

Duration

1 h

0 min

10

11

DELAYING ACTIONS & BEHAVIOR

Delay

0 h

0 min

10 s

12

13

Actions

Trigger transmission

14

Trigger recording

15

Alternative behavior

Connection:

Online

16

Alert level:

Warning

17

Record:

0 h

0 m

0 s

18

Transmission:

0 h

0 m

0 s

19

CANCEL

APPLY

BACK

Input window "Edit Smart Action", (Source is a meter reading)

1 Freely selectable name for the Smart Action	
2 Freely selectable description for the Smart Action. <i>Note: The description is displayed in the list of Smart Actions. It should clearly explain the purpose or function of the Smart Action.</i>	
3 Section displaying the measuring curve of the measurement value to which the condition is to be applied. A course of two weeks is always displayed, whereby the period displayed always starts with the Monday of the previous week. This means that, depending on the current day of the week, no data is available for a certain area of the chart as this is in the future. However, the displayed period can be shifted by two weeks using the arrow symbols on the sides of the chart.	
4 Shifts the displayed period by two weeks into the past or future	
5 Thresholds for triggering the actions. The hysteresis for revoking the actions (e.g. all-clear for alarm/warning) is 5% and cannot be changed (e.g. trigger action at 100 -> all clear at 95). The threshold is displayed as a red, dashed line in the section showing the measuring curve of the measurement value.	
6 Condition under which the selected actions are triggered.	
Below	If the measurement value meets or falls below the threshold for triggering the action, the actions are triggered.
Above	If the measurement value meets or exceeds the threshold for triggering the action, the actions are triggered.
7 Selection of the weekdays the Smart Action should be active on Green: Smart Action is active on that day Grey: Smart Action is inactive	
8 Selection of whether the Smart Action should be active all day (on the days selected under "Active weekdays")	
9 Selection of the time from which the Smart Action should be active (on the days selected under "Active weekdays") ¹⁾ . The end time ("Start time" + "Duration") is displayed below the input field.	
10 Selection of the duration for which the Smart Action should be active, starting from the "Start time" (on the days selected under "Active weekdays") ¹⁾	
11 Selection of whether the action should only be triggered once the condition is fulfilled for a certain period of time.	
12 The actions are only triggered if the condition is fulfilled for longer than the time selected here. (Only visible if "Delay" is set to "on")	
13 Selection of whether a transmission is to be triggered at the time the condition is fulfilled for the first time. A transmission is then also triggered at the time the condition is no longer fulfilled for the first time.	
14 Selection of whether a recording is to be triggered at the time the condition is fulfilled for the first time. A recording is then also triggered at the time the condition is no longer fulfilled for the first time.	
15 Selection whether an alternative connection type should be used for as long as the conditions are met. The alternative connection type can be selected via the dropdown list.	

- 16** Selection of whether an alarm or a warning is to be signalled as long as the condition is fulfilled. You can use the drop-down list to choose between "Alarm" and "Warning".

When signalling is activated, suitable actions are also activated automatically. If a warning is to be signalled when a condition is fulfilled, the "Trigger recording" action is activated. If an alarm is to be signalled when a condition is fulfilled, the "Trigger transmission" and "Trigger recording" actions are activated. Actions that have already been activated are not deactivated when the signalling is changed or deactivated.

- 17** Selection if instead of the record interval determined in the "Device settings" (see "Device settings" on page 84) an alternative record interval is to be used. This alternative record interval can be set via the input fields next to the checkbox.

Note:

If several Smart Actions have been created for which the same measurement value but different thresholds are used, the alternative record interval of the Smart Action with the highest exceeded threshold (for "Direction" "Above") or the lowest value below the threshold (for "Direction" "Below") is used.

If an alternative record interval has been defined for several Smart Actions that use different measurement values, the shortest of the intervals is used. For the Smart Actions using the same measurement value, a valid alternative record interval is first determined in the manner described above before the other Smart Actions are considered.

- 18** Selection if instead of the transmission interval determined in the "Device settings" (see "Device settings" on page 84) an alternative transmission interval is to be used. This alternative transmission interval can be set via the input fields next to the checkbox.

Note: Which of the alternative transmission intervals defined via the Smart Action is ultimately used is determined in the same way as for the record interval.

- 19** Button to apply the settings

Note: To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.

¹⁾ Only visible if the Smart Action should not be active all day

9.2.1.1.2.4 Edit Smart Action (Source is a digital value)

Edit Smart Action

1

Name

Open cover

2

Description

when actuated

3

MEASUREMENT CHANNEL 2 - ACTUATION STATUS

4

Pressed

5

Not pressed

18.2.

20.2.

22.2.

24.2.

26.2.

28.2.

2.3.

Condition

Pressed

6

Active weekdays

M

D

M

D

F

S

S

8

Start time

00:00

⌚

hh:mm

End time: 01:00

Duration

1 h

0 min

9

7

Whole day

DELAYING ACTIONS & BEHAVIOR

10

Delay

Delay

0 h

0 min

10 s

11

ACTION & BEHAVIOR

Actions

12

☒

Trigger transmission

13

☒

Trigger recording

Alternative behavior

14

☐

Connection:

Online

▼

15

☒

Alert level:

Warning

▼

16

☐

Record:

0 h

0 m

0 s

17

☐

Transmission:

0 h

0 m

0 s

BACK

CANCEL

18

APPLY

Input window "Edit Smart Action", Source is a digital value

1 Freely selectable name for the Smart Action

2 Freely selectable description for the Smart Action.

Note: The description is displayed in the list of Smart Actions. It should clearly explain the purpose or function of the Smart Action.

3 Section displaying the measuring curve of the measurement value to which the condition is to be applied.

A course of two weeks is always displayed, whereby the period displayed always starts with the Monday of the previous week. This means that, depending on the current day of the week, no data is available for a certain area of the chart as this is in the future. However, the displayed period can be shifted by two weeks using the arrow symbols on the sides of the chart.

4 Shifts the displayed period by two weeks into the past or future**6** Selection of the actuation state (Idle state / contact actuated) which triggers the actions

The threshold is displayed as a red, dashed line in the section showing the measuring curve of the measurement value.

Actuated	If the contact has been actuated, the actions are triggered.
Not actuated	If the contact switches to the idle state, the actions are triggered.

7 Selection of the weekdays the Smart Action should be active on

Green: Smart Action is active on that day

Grey: Smart Action is inactive

8 Selection of whether the Smart Action should be active all day (on the days selected under "Active weekdays")**9** Selection of the time from which the Smart Action should be active (on the days selected under "Active weekdays")¹⁾. The end time ("Start time" + "Duration") is displayed below the input field.**10** Selection of the duration for which the Smart Action should be active, starting from the "Start time" (on the days selected under "Active weekdays")¹⁾**11** Selection of whether the action should only be triggered once the condition is fulfilled for a certain period of time.**12** The actions are only triggered if the condition is fulfilled for longer than the time selected here. (Only visible if "Delay" is set to "on")**13** Selection of whether a transmission is to be triggered at the time the condition is fulfilled for the first time.

A transmission is then also triggered at the time the condition is no longer fulfilled for the first time.

14 Selection whether an alternative connection type should be used for as long as the conditions are met. The alternative connection type can be selected via the dropdown list.**15** Selection of whether a recording is to be triggered at the time the condition is fulfilled for the first time.

A recording is then also triggered at the time the condition is no longer fulfilled for the first time.

16	Selection of whether an alarm or a warning is to be signalled as long as the condition is fulfilled. You can use the drop-down list to choose between "Alarm" and "Warning". When signalling is activated, suitable actions are also activated automatically. If a warning is to be signalled when a condition is fulfilled, the "Trigger recording" action is activated. If an alarm is to be signalled when a condition is fulfilled, the "Trigger transmission" and "Trigger recording" actions are activated. Actions that have already been activated are not deactivated when the signalling is changed or deactivated.
17	Selection if instead of the record interval determined in the "Device settings" (see "Device settings" on page 84) an alternative record interval is to be used. This alternative record interval can be set via the input fields next to the checkbox. Note: <i>If several Smart Actions have been created for which the same measurement value but different thresholds are used, the alternative record interval of the Smart Action with the highest exceeded threshold (for "Direction" "Above") or the lowest value below the threshold (for "Direction" "Below") is used.</i> <i>If an alternative record interval has been defined for several Smart Actions that use different measurement values, the shortest of the intervals is used. For the Smart Actions using the same measurement value, a valid alternative record interval is first determined in the manner described above before the other Smart Actions are considered.</i>
18	Selection if instead of the transmission interval determined in the "Device settings" (see "Device settings" on page 84) an alternative transmission interval is to be used. This alternative transmission interval can be set via the input fields next to the checkbox. Note: <i>Which of the alternative transmission intervals defined via the Smart Action is ultimately used is determined in the same way as for the record interval.</i>
19	Button to apply the settings Note: <i>To save the settings, the "Save" button below the "Smart Actions" configuration section must also be clicked.</i>

¹⁾ Only visible if the Smart Action should not be active all day

9.2.1.2 Default input screen for configuring the site

The default input mask for configuring the site is opened by clicking on the pencil icon in the list of sites. The configuration sections contained therein are identical for all rapidM2M -based devices and are explained in detail below.

9.2.1.2.1 Site

Site

Customer:

1

Customer 1

2

Name:

3

Site 1

Site ID:

4

4E409FAD77xxxxxx

5

Device S/N:

6

01013F8F19xxxxxx

7

Application:

8

App name

Application Phase:

9

RELEASE

Application Version:

10

10

Tags:

12

+

Austria

✕

2024

✕

11

Configuration section "Site"

1	Specifies to which customer the site is assigned	
2	Assign site to another customer	
3	Site designation (not relevant for the device or data assignment) [2-50 characters]	
4	Unique ID of the site. It is required to access the site via REST API or OPC UA.	
5	Copies the unique ID of the site to the clipboard	
6	Serial number of the device that is linked to the site (device assignment!)	
7	Opens the input screen to edit the link. It can be used to assign another device or generally cancel the assignment (i.e. the site is then no longer linked to any device) The measurement data is assigned to the site and not to the linked device. If a device is replaced, all data (measurement values and configurations) are retained. The site is only assigned a different device by changing the serial number. From this moment on, the site receives the measurement data from the newly assigned device.	
8	Name of the IoT application based on which the site was created	
9	Release process phase of the currently used version of the IoT application	
	RELEASE	The version is released for all customers.
	RC	All internal tests have been successfully completed. However, the version is only released for selected test customers.
10	Version number of the IoT application that is currently installed on the site. If the version number of the site is not the same as the version number of the device logic installed on the device then the version number of the device logic installed on the device is displayed in addition to the version number of the site.	
11	List of tags already assigned to the site. The assignment can be cancelled by clicking on the cross next to the name of the tag.	
12	Opens the input screen for assigning tags	

9.2.1.2.2 Comments

1

Comment

Sans SerifNormalNormalB I U S

Configuration section "Comments"

- 1 Free comment field (is also displayed below the device type in the site/application list)

9.2.1.2.3 Alarm settings

▼

Alarm settings

Acknowledgement:

1

→

standard (server: automatic) ▼

Transfer volume:

2

→

default (server: off) ▼

Offline alarm after:

3

→

00:00

hh:mm

user alarm 1:

4

→

user alarm 1

user alarm 2:

5

→

user alarm 2

user alarm 3:

6

→

user alarm 3

Configuration section "Alarms"

1 Selection of how the alarms should be acknowledged	
Standard	The global server setting is used to determine whether alarms must be acknowledged automatically or manually
automatic	Alarms are acknowledged automatically as soon as all of the messages have been sent. If SMS that have a tariff with a delivery confirmation function have also been sent, acknowledgement is provided after delivery confirmation.
manual	Alarms must be acknowledged by the user.
2 Selection of how the alarm for the transfer volume should be handled	
Standard	The setting for the transfer volume alarm is taken from the global server settings
off	The transfer volume alarm is deactivated.
individuell	The level at which the transfer volume alarm should be triggered can be entered in the adjacent field in KiB.
3 alarm in the event that the device does not report for longer than the set time (00:00 alarm deactivated).	
4 Freely selectable title for user-defined alarm 1. If the user-defined alarm 1 is triggered by a device connected to the site, the server will use this text to signal the alarm. The same applies to user-defined alarm 2 and 3.	
5 Freely selectable title for user-defined alarm 2	
6 Freely selectable title for user-defined alarm 3	

9.2.1.2.4 Calculated channels

In the "Basic" tab, the basic settings are configured and in the "Calculation" tab the advanced configurations are set, whereas the parameters to configure depend on the "mode" selected in the "Basic" tab.

Note: The values of the calculated channels are directly calculated for every data output (display on the server or download from the server). They are not saved in the server database.

9.2.1.2.4.1 Basic

Calculated channels configuration section, "Basic" tab

Title	Mode	Min	Max	Unit	Decimal pl.
Calculated 1	table	0	100	%	standard
Calculated 2	digital	Invert: off			
Calculated 3	+	0	100	%	standard
Calculated 4	delta	0	100	%	standard
Calculated 5	clone	0	100	%	standard

"Calculated channels" configuration section, "Basic" tab

1 Freely selectable channel title for the calculated channels [0-16 characters]	
2 Possible calculation modes for the calculated channels	
Off	Calculated channel deactivated
Table	Determines the value for the calculated channel by searching for the row corresponding to the value of a measurement channel in the reference point table. Such a row is made up of the "Measurement channel value" and "Output value for calculated channel" pair of values. Linear interpolation is carried out between the table rows; linear extrapolation is used for values outside the defined table.
Digital	Converts an analogue value into a digital value. The threshold from which an analogue value is interpreted as "high" can be selected via the "High level" parameter in the "Calculation" tab. In addition the determined digital value can be inverted via the "Invert" parameter.
+, -, x, /	Links the values of two measurement channels using a mathematic operation (addition, subtraction, multiplication or division)
Delta	Determines the difference between two measurement values and divides the result by the time difference between the time stamps of the measurement values. The time unit (value/sec., value/min., ...) for the result can be selected via the "Time basis" parameter located in the "Calculation" tab. It is thus possible to convert counter readings (m ³) of the source into a flow rate (m ³ /min.) (see "Additional explanation: Delta mode" on page 114).
clone	Creates a clone of a measurement channel. This ensures it is possible to rename channels, to select different ends of the scale for the pointer instruments, to determine a new string as a measurement unit and to adjust the number of decimal places. The measurement values (numerical value without unit) correspond exactly to those of the source.
3 Defines the lower scale end of the pointer instruments	
4 Defines the upper scale end of the pointer instruments in reports	
5 String that is used as a measurement unit by all of the server display elements [0-16 characters]. It has no direct influence on the values	
6 Number of decimal places that are used by all of the server display elements	

- | | |
|---|--|
| 7 | Inverts the input signal (only for calculated channels in "Digital" mode) |
| 8 | Buttons to switch between the individual tabs of the configuration section |

9.2.1.2.4.2 Calculation

Calculated channels configuration section, "Calculation" tab

"Calculated channels" configuration section, "Calculation" tab

"Table" calculation mode

- | | |
|---|--|
| 1 | Selection of the channel from which the input data is used |
| 2 | Opens the screen for entering the reference point table (the table rows are interpolated linearly, values outside of the defined table are extrapolated linearly.) |

"Digital" calculation mode

- | | |
|---|--|
| 1 | Selection of the channel from which the input data is used |
| 3 | Signal recognition level |

Calculation mode "+", "-", "x" or "/"

- | | |
|---|--|
| 1 | Selection of the channel from which the input data is used |
| 4 | Selection of the second channel from which the input data is used |
| 6 | Offset that is added following multiplication with the "Factor" parameter |
| 7 | Factor with which the result of the mathematical operation (+, -, x, /) is multiplied. The "Offset" parameter is then added. |

"Delta" calculation mode

- | | |
|---|---|
| 1 | Selection of the channel from which the input data is used |
| 5 | Specifies the desired time unit (value/sec., value/min., ...) for the result |
| 6 | Offset that is added following multiplication with the "Factor" parameter. The result is converted in to the desired time unit before multiplication with the "Factor" parameter. |
| 7 | Factor with which the result is multiplied once it has been converted into the desired time unit. The "Offset" parameter is then added. |

"Clone" calculation mode

1	Selection of the channel from which the input data is used
6	Offset that is added following multiplication with the "Factor" parameter
7	Factor with which the value of the measurement channel to be cloned is multiplied. The "Offset" parameter is then added.

Note:

Additional explanation: Delta mode

Assumption: The source channel contains the counter reading of an infinite counter in m³. The calculated channel 1 should contain the flow rate in m³/s and calculated channel 2 should contain the flow rate in l/h.

Required configuration

Parameter	Value channel 1	Value channel 2
Basis -> mode	Delta	Delta
Basis -> unit	m ³ /s	l/h
Calculation -> time basis	Seconds	Hours
Calculation -> offset	0	0
Calculation -> factor	1	1000

Source		Calculated channel 1	Calculated channel 2
Date/time	Infinite counter [m ³]	Flow rate [m ³ /s]	Flow rate [l/h]
26.03.2013 12:50	900	0 ¹⁾	0 ¹⁾
26.03.2013 12:51	960	1	3,600,000
26.03.2013 12:52	990	0.5	1,800,000
26.03.2013 12:53	1005	0.25	900,000
26.03.2013 12:54	1065	1	3,600,000

¹⁾ Calculation not possible as there is no measurement value before 12:50.

Explanation: No values can be determined for the measurement at 12:50 for the calculated channels as there is no previous value and the difference between the counter readings cannot be determined. For the measurement at 12:51, the difference to the counter reading is 60 m³ and the time difference is 60 sec.

Result = { (value difference / time difference [sec.]) * time basis [sec] * factor } + offset

The result for calculated channel 1 (time basis "Seconds", offset "0" and factor "1") is calculated as follows:

Channel 1 = { (60 m³ / 60 sec.) * 1 * 1 } + 0 = 1 m³/s

The result for calculated channel 2 (time basis "Hours", offset "0" and factor "1000") is calculated as follows:

Channel 2 = { (60 m³ / 60 sec.) * 3600 * 1000 } + 0 = 3,600,000 l/h

9.2.1.2.4.3 Alarms

Note: The evaluation of the alarm thresholds for calculated channels can only occur if the device has transferred the measurement data to the myDatenet server.

Calculated channels

Basic Calculation **Alarms**

Title	Alarm low	Alarm high	Hyst %
Calculated 1			5
Calculated 2			5
Calculated 3			5
Calculated 4			5
Calculated 5			5

"Calculated channels" configuration section, "Alarms" tab

- | | |
|----------|---|
| 1 | An alarm is triggered, if the measurement value drops to or below this value. |
| 2 | An alarm is triggered, if the measurement value meets or exceeds this value. |
| 3 | Hysteresis for all-clear in event of alarm/warning (e.g. Hyst = 5 %, alarm at 100 -> all-clear at 95) |

9.2.1.2.5 Basic settings

Basic settings

Time zone:

1

UTC +1:00 (Paris, Frankfurt, Zurich, Vienna)

Daylight saving time:

2

standard (server: EU)

Default report:

3

off

Report template:

4

Report

Bidirectional alive pings:

5

standard (server: off)

Log changes of config-containers:

6

standard (server: made by web api device)

Transmission profile:

7

normal

Lifecycle flags:

8

Configuration section "Basic settings"

1 Regional settings (not relevant for raw measurement data as this is stored in UTC)	
2 Configuration for automatic time adjustment (only displayed if a time zone other than "Standard" has been selected)	
Standard	The configuration for the time adjustment is adopted by the global server setting.
Off	Automatic time adjustment deactivated
USA	Predefined setting for the American area
EU	Predefined setting for the European area
3 Selection of the report that is loaded by clicking on the device link in the maps	
Off	No report is loaded.
"Name of a report"	The selected report is loaded.
4 Selection of the report template used to display the data when clicking on the symbol to display the measurement data, which is located in the list of sites/applications. Only the report templates in which the site/application type of the first wild card is compatible with the site/application that is currently being edited are displayed in the dropdown list. The symbol to display the measurement data is only displayed in the list of sites/applications if a report template has been selected.	
(not assigned)	The symbol to display the measurement data is not displayed in the list of sites/applications.
"Name of a report template"	Name of the report template used to display the measurement data

5 Using "Bidirectional alive ping", both the device and the server can easily recognise whether the online connection is still active.	
standard	The configuration for the bidirectional alive ping is adopted from the global server settings
off	"Bidirectional alive ping" is deactivated
on	"Bidirectional alive ping" is activated. I.e. the server responds correspondingly to each keep alive ping of the device.
6 Selection of which changes to the configurations should be logged	
web api	Changes that were implemented via the server interface or REST-API are logged.
web device api	Changes that were implemented via the server interface, by the device itself or the REST-API are logged.
7 The site can be customised to specific requirements (energy consumption, error diagnosis, connection stability) via the transmission profiles. In addition to operations carried out purely by the server (e.g. requesting the device log during synchronisation), the setting also affects procedures stored in the device firmware (e.g. retry behaviour in the event of connection interruptions). The procedures in the firmware that are affected by the selected transmission profile depend on the device type and the respective firmware version.	
Normal	Operation by default
ECO	Low energy consumption, low data volume
Diagnosis	Extended logging for troubleshooting
Adaptive	Stable connection even at the expense of energy consumption
8 Lifecycle flags that are currently set.	
The input window for setting or deleting the lifecycle flags is opened via the pencil symbol.	

9.2.1.2.6 FTP export settings

Note: This configuration section is only visible if the "FTP Agent Extended" licence for the myDatenet server has been enabled.

▼ FTP export settings

FTP export profile:

① → off ▼

Settings of the selected profile:

② → (no profile selected)

FTP directory:

③ → (overrides FTP standard directory)

Last export:

④ →

Configuration section "FTP-export settings"

1 Selection of the profile that is used for the measurement data transmission to the FTP server.	
off	FTP export deactivated
"Name of an FTP export profile"	List with the FTP export profiles that were created on the myDatenet server (for creating an FTP export profile, see "myDatenet Server Manual " 805002).
2 Shows an overview of the most important parameters of the selected FTP export profile	
3 Makes overwriting the standard directory of the selected FTP export profile possible [0-100 characters]	
4 Time stamp of the last FTP export	

9.2.1.3 Default input screen for configuring the site in development mode

This input screen can only be accessed via the "settings" submenu of the title bar of the input screen for configuring the site. Furthermore it is not available for all user levels. The functionality of the contained configuration sections "Site", "Comment", "Alarms", "Calculated channels", "Basic settings" and "FTP-Export settings" corresponds to the functionality of the default input screen for configuring the site (see "Default input screen for configuring the site" on page 108). The difference is that additional configuration sections are displayed between the "Comment" and "Alarm" configuration sections, which can be used to edit the application-specific parameters directly without using the specific input screen for configuring the site. The name and number of configuration sections and the parameters they contain depend on the respective IoT application.

Note: Direct editing of the application-specific parameters via this input screen is not recommended, as there may be dependencies between the parameters depending on the IoT application. This could result in invalid configurations, which could make the application unstable or lead to unexpected behaviour.

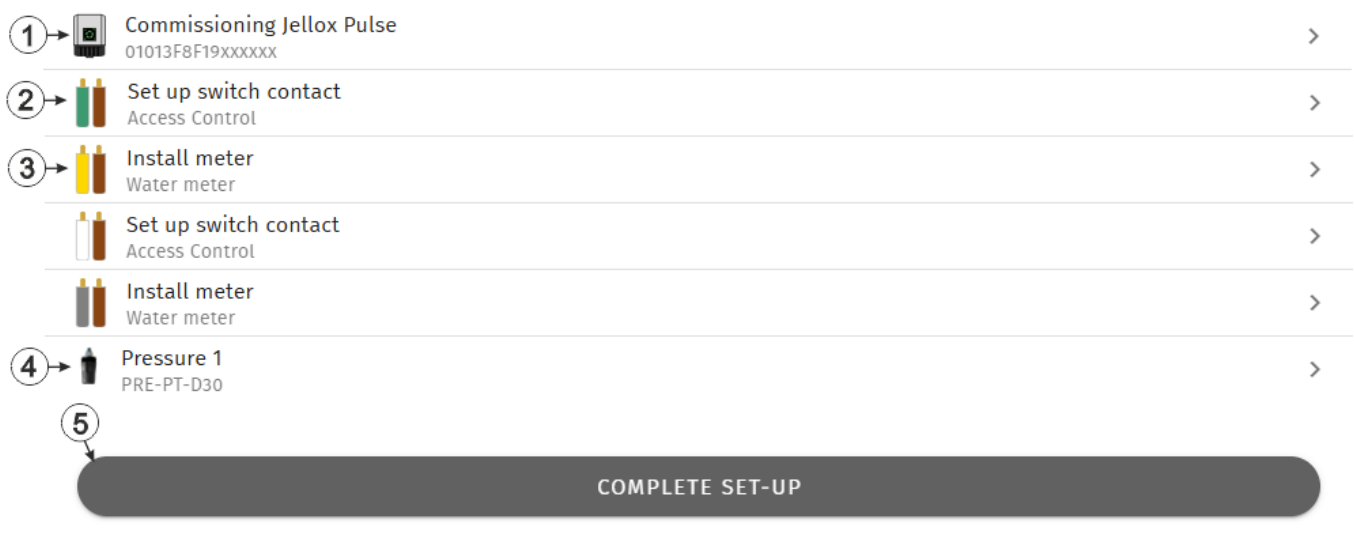
9.2.1.4 "Guided commissioning" input screen

This input screen is opened by clicking on the button that indicates the current status of the measurement system. The button is located on the right side of the title bar in the "Measurement System" configuration section of the site.

For the guided commissioning process an active connection between the Jellox Pulse and the myDatenet server is required. Therefore, you are first prompted to initiate a transfer by pressing the magnetic switch for at least 3 seconds (see "Reed switch" on page 70). After that, the list of components to be configured is displayed. Should an update be required for the firmware or the IoT application, this will be carried out immediately after the connection has been established. In this case, the input screen displays a corresponding message until the update is complete. Only then will the list of components that need to be configured be displayed. This list contains one entry for the measurement system and one entry for each remote sensor module linked to a measurement channel.

Once the guided commissioning process has been initiated and the connection has been established, the Jellox Pulse will remain connected to the myDatenet server for 10 minutes. Once the timeout has expired or when the commissioning process is complete, the online connection between the Jellox Pulse and the myDatenet server is terminated.

Note: Only active inputs are displayed in the list of components to be configured. The inputs can be activated by selecting the "Mode" via the input window "Channel settings" (see "Input in "Digital" mode" on page 86 or "Inputs in "Counter" mode" on page 87).



List of components to be configured

1	Opens the wizard for the basic configuration of the measurement system
2	Opens the wizard to configure an input operated in "Digital" mode
3	Opens the wizard to configure an input operated in "Counter" mode
4	Opens the wizard to configure a remote sensor module of type PRE-PT-D30
5	Opens the wizard to complete the commissioning process

9.2.1.4.1 Recommended procedure

Note: Not every component needs to be configured immediately. For example, if you do not wish to use one of the inputs at this time, you can configure it later via the "Input in "Digital" mode" (see "Input in "Digital" mode" on page 86) or "Input in "Counter" mode" (see "Inputs in "Counter" mode" on page 87) input window or restart the guided commissioning process.

1. To configure the individual components, open the relevant wizards one by one.
2. Follow the instructions in the wizards.

When clicking on "Next", the entries made in the current step are saved immediately.

3. Open the wizard to complete the commissioning process.

9.2.2 Device configuration

Note: Several of the configuration fields in the following sub chapters may possibly be hidden depending on the respective user level. In this case, contact the myDatanet server administrator.

You can reach the input screen for configuring the device by clicking on the serial number in the list of sites/applications (see "myDatanet Server Manual " 805002) or by clicking on the device name in the device name list (see "myDatanet Server Manual " 805002).

9.2.2.1 Comments

Comments

Free comment field (is also displayed below the site name in the site/application list)

9.2.2.2 Measurement instrument

Customer	Name of the customer to whom the measurement instrument is assigned
Tags	List of the tags that are already assigned to the measurement instrument. This assignment can be cancelled by clicking on the cross next to the title of the tag. The input screen for assigning the tags is opened by clicking on the plus symbol. This enables existing tags to be assigned and new tags to be created.
Serial number	Serial number of the instrument
Device class	The instrument class of the site and instrument must match for an instrument to be able to be connected to a site. Once the instrument has been created via the server interface, the instrument class can only be changed up until the first connection of the instrument to the server. If an instrument class, that does not match the actual class of the instrument, is selected when the instrument is created it is automatically corrected during the first connection.

Lifecycle state:	Phase of the lifecycle the device is currently in	
	In order to meet the requirements of RED Article 3.3 regarding cybersecurity of radio equipment, the device must at least be in the "provisioned" phase. The device can be moved to this state using the "Provision" button. To ensure compliance, the function of the local interfaces is restricted from this phase onwards. The button is only displayed if the device is in the " " (not set) or "preprovisioned" phase. Devices that were delivered prior to the enforcement of RED Article 3.3 on 1 August 2025 are not automatically transitioned to the "provisioned" phase.	
	not supported	Display of life cycle phases is not supported
	" "	Lifecycle state not set
	preprovisioned	Device ready for handover to partner (firmware installed)
	provisioned	Device ready for handover to end customer (firmware and application installed)
	claimed	Device assigned to a server
	fielded	Device assigned to a server and linked to a site
	decomissioned	Device was defective and was decommissioned
Lifecycle flags:	Lifecycle flags that are currently set	
	The lifecycle flags that will be transferred to the device during the next synchronisation are displayed to the left of the arrow symbol. A plus sign in front of the name indicates that the lifecycle flag will be set. A minus sign indicates that it will be deleted. The arrow symbol is only displayed if the state of at least one lifecycle flag is to be changed. The pencil icon opens the input window for setting or deleting lifecycle flags.	
Telephone number	Telephone number of the SIM card. The control SMS messages (e.g. wakeup) are sent to this number. Format: +43555837465	
Instrument flags	Additional information regarding the instrument class (for internal use)	
Firmware version	Current software version installed on the measurement controller	
Last connection	In each case, the last time stamp of the affected operation	
Last wakeup		
Last disconnection		
Last transmission error		
Last Aloha connection		
Wakeup SMS count	Number of wakeup SMS sent to this device since the last connection. This counter is reset at/during each successfully established connection.	

Device Logic sync	Productive	If the Device Logic installed on the device and saved on the server do not match, the Device Logic saved on the server is loaded in to the device.
	Development (sync)	The Device Logic on the device and server are synchronised. The one with the latest time stamp is transferred to the other one.
	Development (no sync)	The Device Logic on the device and server are not synchronised.
Firmware update	Off	Firmware update is deactivated.
	On	As soon as a new version of the selected firmware type is available, this is installed immediately.
	Even if tag is missing	Firmware is also transferred to the device if the device has not transmitted the current firmware version to the server (NOT RECOMMENDED!).
	Allow downgrade	Facilitates the installation of an older firmware version than the one on the device (NOT RECOMMENDED!)
	Once	Performs a single firmware update. If no new firmware is available or the firmware was installed successfully, the firmware update is automatically switched to "OFF".
	Ignore	The firmware update is deactivated and no information is provided about available firmware updates.
Firmware type	Released	Only firmware versions that have successfully undergone internal and field testing are installed (this practically eliminates malfunctions).
	Release candidate	Only firmware versions that have successfully undergone internal testing are installed (malfunctions cannot be excluded).
	Beta release	Even firmware versions that have not successfully undergone all of the internal tests are installed (malfunctions may occur).
Identification	String specifying the hardware platform implemented in the device and the corresponding hardware version (i.e. the rapidM2M module identification).	
Prod. rev.	Product rev. of the Jellox Pulse	
Article Id	Product ID, which consists of the type key specified on the type plate and the product specification stored in the device	
Article revision	Product revision of the Jellox Pulse	
Article name	Product name as specified on the type plate of the device	

9.2.2.3 GPRS

SIM tariff

Selected SIM tariff

9.2.2.4 Features

Features

List of activated chargeable features.

Chapter 10 OnSite Companion

10.1 General

The smartphone app "OnSite Companion" is available both for Android and iOS and can be downloaded free of charge via "Google Play" (Android) or Apple "App Store" (iOS). In addition, the application can be called up as a progressive web app via the following address:

<https://companion.microtronics.com/>

This is a tool for data synchronisation and commissioning. The application is compatible with all versions of Jellox Pulse .

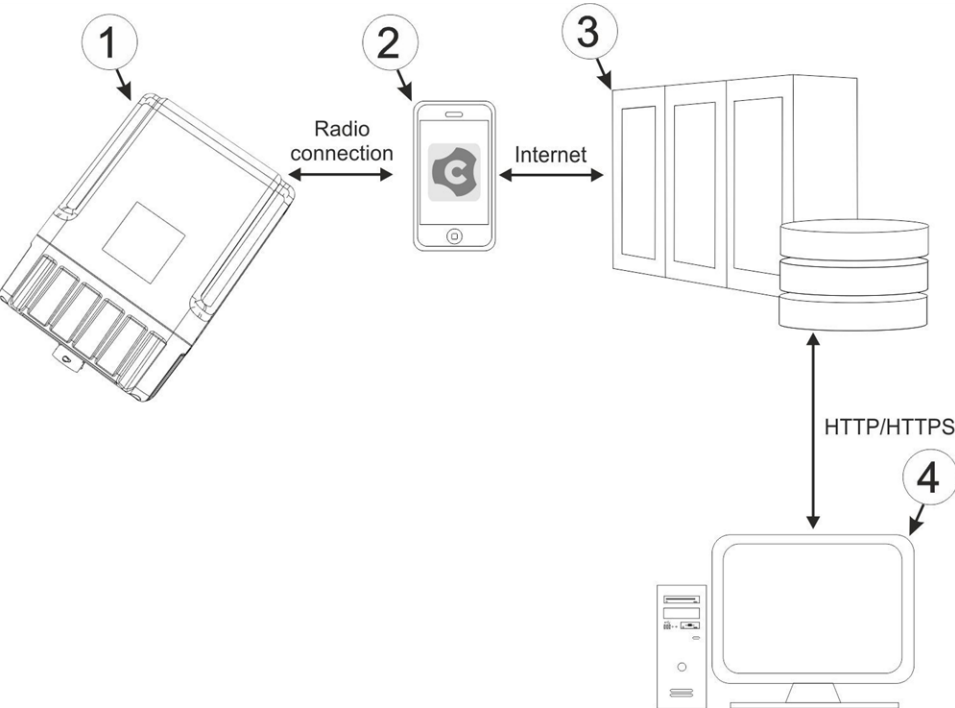
The application "OnSite Companion" enables you to perform the following tasks:

- Scan for compatible devices within range
- Commission compatible devices
- Synchronise measurement data and configuration between device and Server

10.2 Prerequisites

Operating system	Apple iOS 14.0 or higher Android 8.0 or higher
Internet connection	required
Required disc space	approx. 20 MB (iOS) approx. 20 MB (Android)

10.3 Functional principle



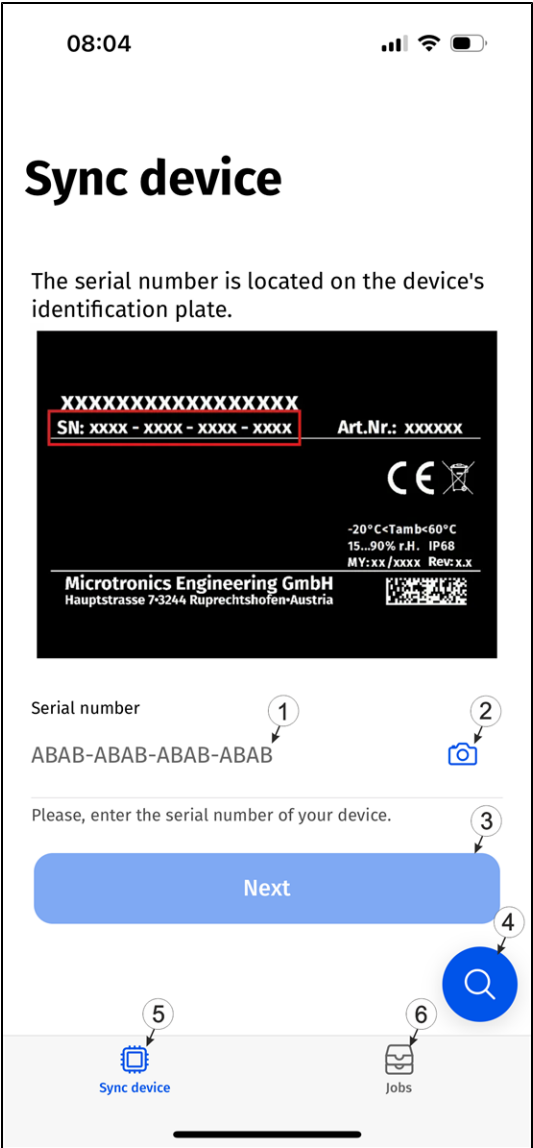
Use in conjunction with a Jellox Pulse

1 Jellox Pulse	3 myDatanet server
2 Smartphone with installed smartphone app "OnSite Companion"	4 Client that accesses the interface of the myDatanet server via the web browser

Communication between the "OnSite Companion" smartphone app and the Jellox Pulse is realised wirelessly via local radio connection. One of the main functions is to synchronise measurement data and configuration between the device and the server (see "Synchronisation with the myDatanet server" on page 126). As soon as the data has been transferred to the myDatanet server, it is available in the same way as the data from all other myDatanet devices via all interfaces of the server (e.g. HTTP/HTTPS as shown in the functional principle above).

10.4 Overview

The "OnSite Companion" smartphone app enables communication with all variants of the Jellox Pulse .



Home screen

1	Field to enter the serial number manually
2	Activates the camera and enables scanning the serial number
3	Button to start synchronising
4	Scan for compatible devices within range
5	Opens the screen for synchronising device and server
6	Opens the screen for managing

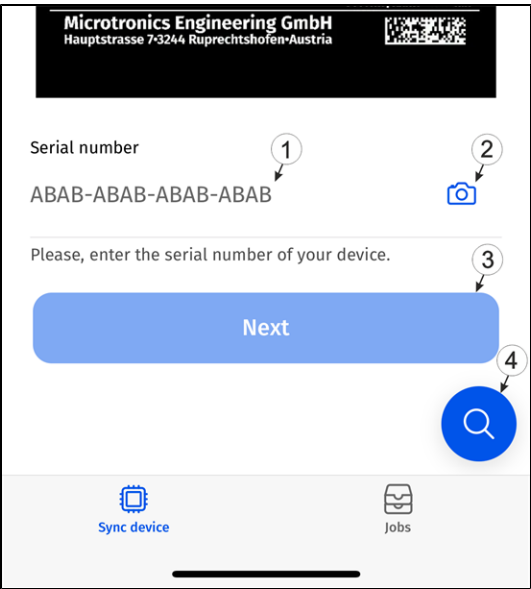
10.5 Synchronisation with the myDatenet server

Using the "OnSite Companion" smartphone app, the measruement data and configuration can be synchronised between the Jellox Pulse and the myDatenet server. It is read out via a local radio connection and forwarded to the myDatenet server via the smartphone's Internet connection. The server allocation is also checked as part of this process. The smartphone app does not offer the option of temporarily storing the data, i.e. the smartphone used must have an active Internet connection while the data is being read out at the measurement site.

1. Open the "OnSite Companion" smartphone app.
2. Click on the magnifying glass icon to search for compatible devices within range.

Alternatively you can manually enter the serial number of the device or use the camera to scan it.

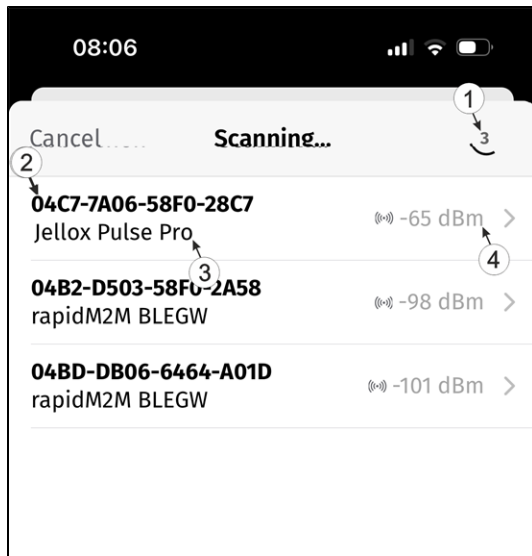
Note: If you have accessed the application as a progressive web app via your browser, the search for devices within range is not available.



1	Field to enter the serial number manually
2	Activates the camera and enables scanning the serial number
3	Button to start synchronising
4	Scan for compatible devices within range

Display for synchronising device and server

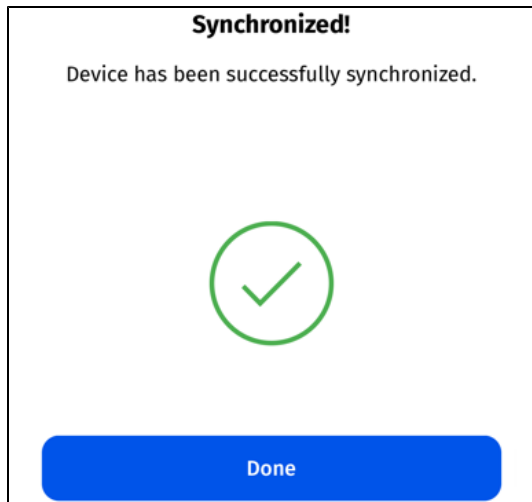
3. Click on the desired device in the list of devices within range to start synchronisation. If you have entered the device's serial number manually or scanned it using the camera, click on the "Continue" button to start synchronisation.



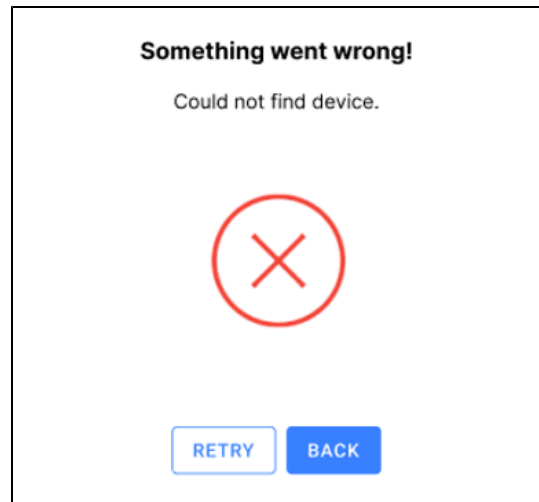
List of devices within range

1	Number of devices found
2	hardware platform installed in the device or product designation as indicated on the type plate of the device (if stored in the device)
3	Serial number
4	Radio signal strength between smartphone and Jellox Pulse

4. Wait until the smartphone app indicates that the synchronisation process has been completed. An active synchronisation process is indicated by an animation that shows the transfer of information from the device to the cloud. If the process was completed successfully, this is indicated by a tick. If an error occurs, a cross is displayed. In this case, restart the synchronisation process.



Synchronisation completed successfully

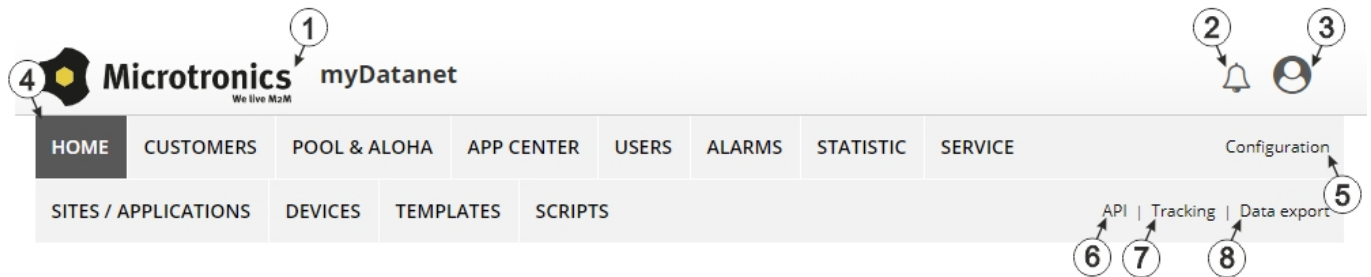


Error during synchronisation

Chapter 11 myDatanet server

Note: All of the screenshots show version 54v00x of the myDatanet server using the standard colour scheme. Newer versions may include minor changes to the appearance of the server.

11.1 Overview



Overview of the myDatanet server

1 Freely selectable logo	5 Opens the screen to input the global settings for the server
2 Opens the window in which the notifications created by the system and intended for the currently logged-in user are summarized	6 Opens the rapidM2M Playground
3 Displays the menu for adjusting the user settings and for logging out the currently active user	7 Switches to the "Data exports" area to configure the data export. This tab is only visible if at least the licence for one export variant is available.
4 Tabs to switch between the individual server areas	8 Opens the input screen to upload a XML file. This tab is only visible if the licence for the XML import is available.

11.1.1 Explanation of the symbols



Adds a new entry to the current list (reports, sites, users, etc.).



Deletes the adjacent element (report, site, user, etc.) from the list.



Calls up the input screen to edit the adjacent element (report, site, user, etc.).

11.2 "Customer" area

HOMEHEALTHCUSTOMERSPOOL & ALOHAAPP CENTERUSERSALARMSSTATISTICSERVICEConfiguration

SITES / APPLICATIONSDEVICESTEMPLATESSCRIPTSAPI | Tracking | Data export

1 Overview

2+ Customers3

2015Training8

Pages: 1 (Total 1)

456791011

!! Training Comment1234 CityStreet 1

Overview of the "Customer" area

- 1Area where an image file can be displayed as a "Map" and/or the OpenStreetMaps map can be displayed

The sites can be manually placed on the image file used as a "map".

In the OpenStreetMaps map, the sites are only displayed once GPS coordinates have been assigned to the site.
- 2Adds a new customer

3	List of tags that are assigned to at least one of the customers displayed in the list of customers. If the list of customers was limited by the search field or selection of a tag, this is taken into consideration when creating the list of tags. A cross is added to the end of the list of tags as soon as the list of customers is limited by the selection of a tag. Clicking on this cross will reset the selection of all tags and the restriction is cancelled. By clicking on one of the tags with the left mouse button only those customers who have been assigned the corresponding tag are displayed in the list of customers and the selected tag is highlighted in colour. By clicking on one of the tags with the right mouse button all of the customers who have been assigned the corresponding tag are hidden, the selected tag is highlighted in colour and the title of the tag is crossed out. Clicking the same mouse button again will remove the restriction.
4	Opens the input screen for configuring the customer
5	Deletes the customer
6	Comment that can be entered in the configuration of the customer
7	If a default report was defined, the default report is accessed by clicking on the name of the customer. Otherwise the "Sites / Applications" area at customer level is opened by clicking on the name of the customer (see ""Sites / Applications" area at customer level" on page 132 or "Reports" on page 133).
8	Search field to filter the customer list
9	Customer's address that can be entered via the input screen for configuring the customer
10	Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 133)
11	Symbol via which an image file can be loaded on to the server as an "Overview map" To remove the "Map" again, open the upload dialogue again and click on "Submit" without selecting an image file beforehand.

11.3 "Sites / Applications" area at customer level

SITES / APPLICATIONS

DEVICES & ALOHA

USERS

ALARMS

STATISTIC

SERVICE

SITES / APPLICATIONS TAGS

DEVICES TAGS

API | Data export

1

Overview

2

Reports

Report 1

Pages: 1 (Total 1)

Channel 1 Site 1

Channel 2 Site 1

Int. Temp Site 1

100,0

50,0

0,0

-0,3

100,0

50,0

0,0

-0,3

22,7 °C

3

Sites / Applications

CONNECTION APPLICATION

Filter: off + off Order: Name Page Length: 12

Austria

Site

Pages: 1 (Total 2)

Site 1 4-Channel Data Logger: 047394065Dxxxxxx (9.9.2020 - 1.9.2022)	1.9.2022 09:45:48 SER UTC+02:00	01:49	
Site 2 4-Channel Data Logger: 048A880857xxxxxx (9.9.2020 - 1.9.2022)	1.9.2022 09:42:01 SER UTC+02:00	01:45	

Overview of the "Sites / Applications" area at customer level

- Area where an image file can be displayed as a "Map" and/or the OpenStreetMaps map can be displayed
The sites can be manually placed on the image file used as a "map".
In the OpenStreetMaps map, the sites are only displayed once GPS coordinates have been assigned to the site.

2	List of reports (see "Reports" on page 133)
3	List of sites/applications
4	Symbol that represents a site on the "Map"
5	Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 133)
6	Symbol via which an image file can be loaded on to the server as a "Map" To remove the "Map" again, open the upload dialogue again and click on "Submit" without selecting an image file beforehand.

11.3.1 Reports

The reports provide a variety of options to display graphs of the data on the web interface of the myDatanet server or to download the data from the myDatanet server. Detailed instructions on creating and handling the reports is provided in myDatanet Server Manual (805002).

11.3.2 Map view

The map view provides an overview of the geographic position of the sites. Detailed instructions on operating and configuring map view are provided in myDatanet Server Manual (805002).

11.4 Recommended procedure

11.4.1 Creating the site

Note: Some of the fields mentioned in the following chapters may be hidden depending on the respective user level. In this case, please contact the administrator of the myDatanet server.

Detailed instructions on creating a new site are provided in myDatanet Server Manual (805002).

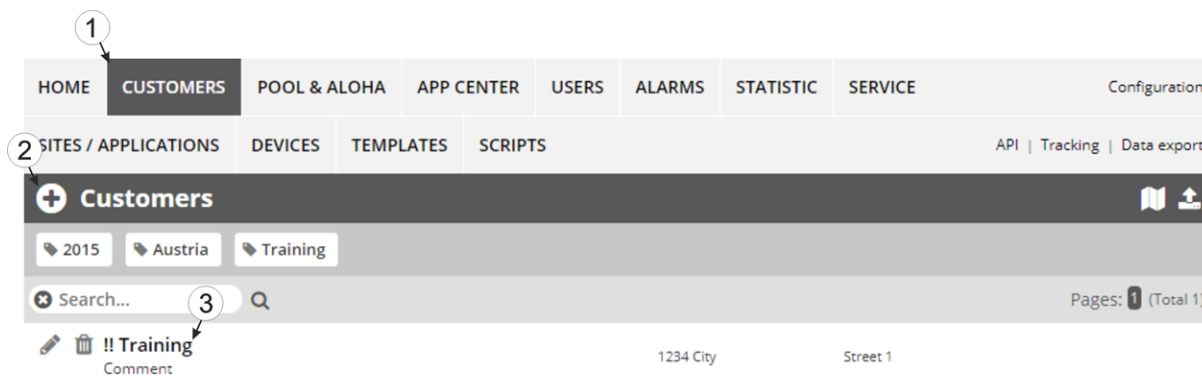
1. Log in via the web interface on the myDatanet server. You will receive the web address from your responsible sales partner.



user name
password
LOG IN

Login form of the myDatanet server

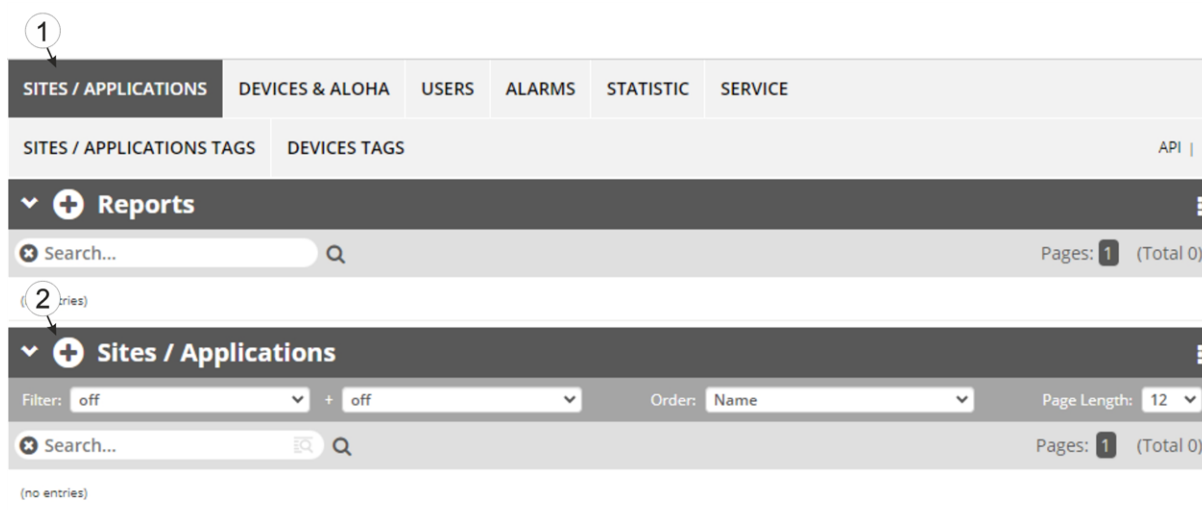
- Click on the "Customer" menu item of the myDatenet server to call up the list of available customers. Select an existing customer or create a new customer.



Selecting the customer

1 Menu item to call up the list of customers	3 List of available customers
2 Creating a new customer	

- Click on the "Sites / Applications" menu item of the myDatenet server to call up the list of existing sites / applications. Then open the wizard for creating a new site by clicking the "Add new site / application" symbol.

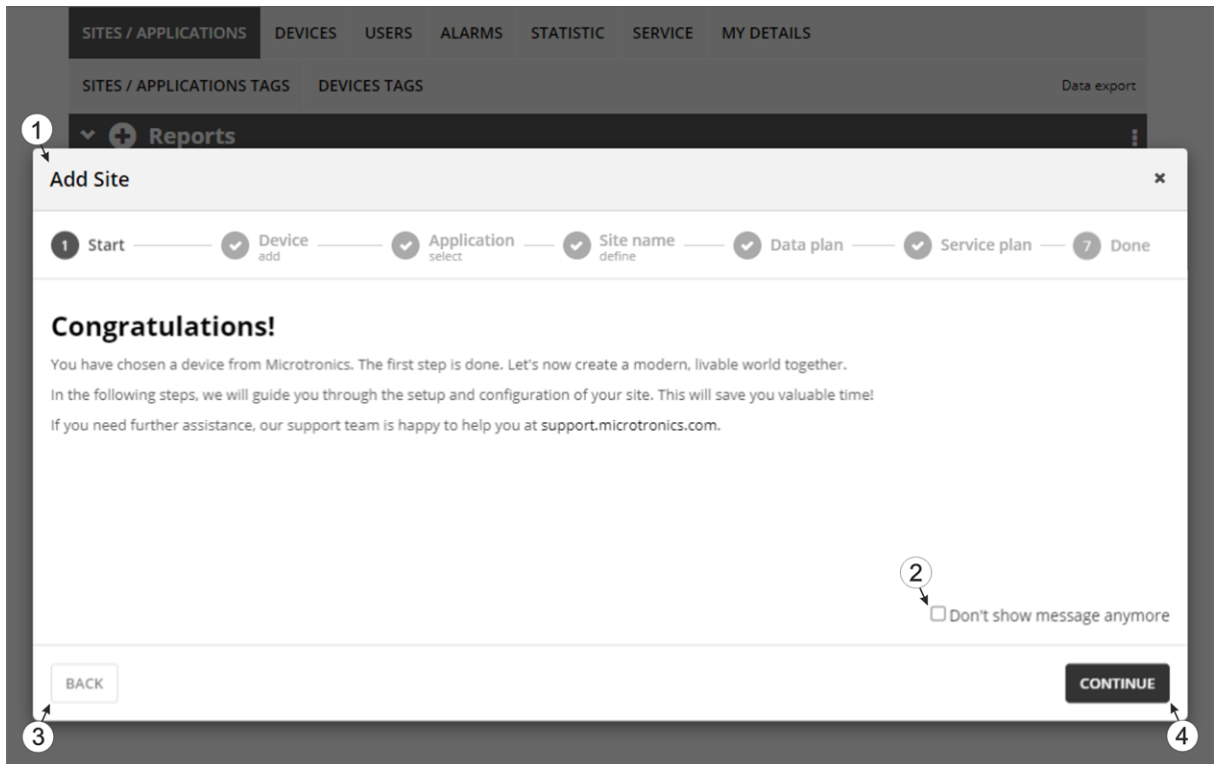


Opening the wizard for creating a site

1 Menu item to call up the list of existing sites / applications	2 "Add new site / application" symbol
--	---------------------------------------

4. Follow the instructions of the wizard until you can see the button "create site". By clicking the button "back" you can always return to the previous step and modify the your chosen settings.

Note: Depending on the functions activated on the myDatanet server, some of the steps in the following illustration may not be required and are therefore not displayed.



Create site using the wizard

1 Wizard for creating a new site	3 "Back" button (return to previous step of wizard)
2 Do not display welcome message again next time the wizard is run	4 "Continue" button (continue to next step of wizard)

5. Verify the information in the summary, read the general terms and conditions and tick the checkbox to accept the general terms and conditions. Then click on the "Create site" button to finalise the process.

Completing site creation

- | | |
|----|---|
| 1 | This amount is debited from the customer's account for this site immediately upon creation and subsequently on a monthly basis. (Only displayed if the account module or the billing module is activated on the server) |
| 2 | Name defined for the site, which is then also displayed in the list of sites |
| 3 | Application selected |
| 4 | Data plan selected (Only displayed if the account module is activated on the server) |
| 5 | Checked: After clicking "create site", the specific input mask for configuring the site is opened.
Not checked: After clicking "create site", you return to the list of sites. |
| 6 | Checkbox to accept the general terms and conditions |
| 7 | Link to the general terms and conditions |
| 8 | "Back" button (Allows for modifying the chosen settings) |
| 9 | Serial number of the device connected to the site |
| 10 | Product name as specified on the type plate of the device (Only displayed if the information is stored in the device) |
| 11 | Service plan selected (Only displayed, if the billing module is activated on the server) |
| 12 | "Create site" button |

Chapter 12 API

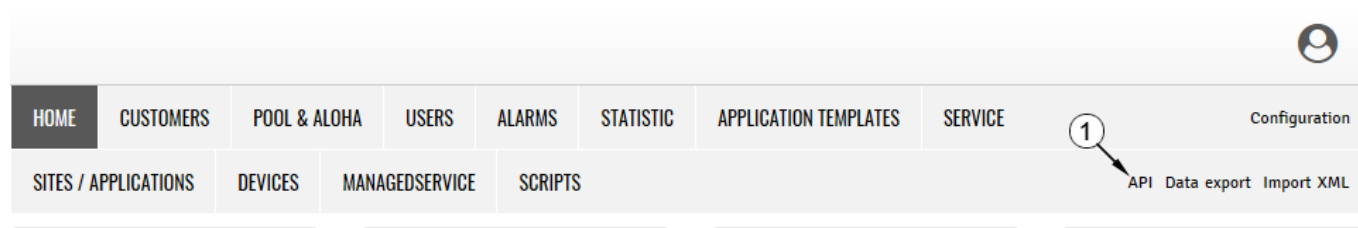
Important note: The relevant licences are required on the myDatanet server to use the API (Application Programming Interface). For future information contact your responsible sales partner.

12.1 Backend API

The API is provided to export data from and import data to the myDatanet server. However, this is not just limited to the pure measurement data but includes all of the data provided by myDatanet server (e.g. configurations). It is therefore possible for the customer to completely dispense with the interface of the myDatanet server and to create his own user interface. A specially developed PC program or web interface can, for example, be used for this purpose.

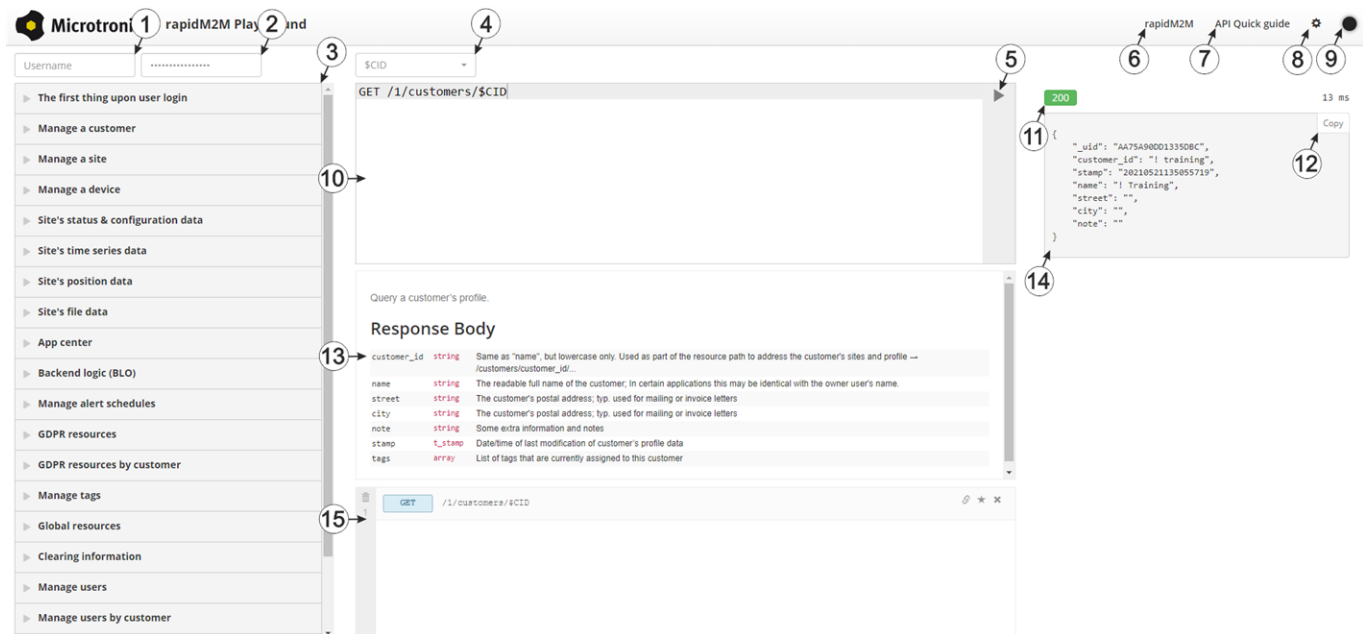
12.2 rapidM2M Playground

The rapidM2M Playground enables you to familiarise yourself with the API of the myDatanet server and to test the provided functions. One click on the "API" button will take you to rapidM2M Playground .



1 Opens the rapidM2M Playground

12.2.1 Overview



rapidM2M Playground

1	Input field for the user name
2	Input field for the password
3	List of the available HTTP commands. The HTTP commands are grouped according to their fields of application.
4	Depending on the selected HTTP command, the drop down lists for selecting the customer, user and site that should replace the corresponding wild cards (" \$CID "...customer , " \$UID "...user, " \$SID "...site) in the resource path of the HTTP command are displayed.
5	Button to execute the HTTP command
6	Opens the website "http://rapidm2m.com/" that includes additional information for developers
7	Opens the quick guide for the API
8	Button for displaying the menu that contains the global settings
9	Button to change the colour scheme of the rapidM2M Playground
10	Window displaying the selected HTTP command
11	Response code sent by the myDatenet server as an answer to the HTTP command
12	Copies the JSON object generated as a response to the HTTP command on to the clipboard
13	Window displaying the documentation for the selected HTTP command. Depending on the selected command, this includes a description of the action being executed, information that must be observed and a description of the request body and response body.
14	Window displaying the JSON object that is generated as a response to the HTTP command
15	Window displaying the last executed HTTP commands

Chapter 13 Maintenance

Important note: 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.

13.1 General maintenance

- Regularly check the Jellox Pulse for mechanical damage.
- Check all of the connections for leaks or corrosion on a regular basis.
- Check all of the cables for mechanical damage at regular intervals.
- Clean the Jellox Pulse with a soft, moist cloth. Use a mild cleaning agent, if necessary.

13.2 Replacing the battery

The batteries must only be replaced by the manufacturer (see "Contact information" on page 173) or a certified service partner. The device must be returned in its original packaging for this purpose.

13.3 Services

Microtronics Engineering GmbH offers the following maintenance services for the Jellox Pulse :

Description	Order number
Inspection fee	206.395
Cleaning flat	206.355
Software Update	206.555
Battery replacement	301630

Chapter 14 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 rigorous 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 Jellox Pulse

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 Jellox Pulse 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 Jellox Pulse is packed carefully and securely. Damage incurred during transport is not covered by the warranty and may be subject to a charge.*

Chapter 15 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 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 includes a battery or rechargeable battery (lithium) that must be disposed of separately.

Chapter 16 Troubleshooting and repair

16.1 General problems

Problem	Cause/solution
Device does not respond (all display LEDs always off)	Battery pack is completely discharged. The batteries must only be replaced by the manufacturer (see "Contact information" on page 173) or a certified service partner.
Communication problems (between Jellox Pulse and myDatenet server)	- Evaluate the error code shown on the display (see "Display" on page 71). - Use the "OnSite Companion" smartphone app to synchronise the device log with the myDatenet server and open the device log on the myDatenet server. - The capacity of the battery pack is virtually.
Unable to synchronise device and server using the "OnSite Companion" smartphone app	- Reduce the distance between the Jellox Pulse and the smartphone or try to avoid obstacles such as walls and similar. - Check the smartphone's internet connection - Check whether the latest version of the "OnSite Companion" app is installed on the smartphone - The capacity of the battery pack is virtually depleted.
Transmission cannot be triggered using the reed switch	- Evaluate the error code shown on the display (see "Display" on page 71). - Use the "OnSite Companion" smartphone app to synchronise the device log with the myDatenet server and open the device log on the myDatenet server. - The capacity of the battery pack is virtually depleted. The batteries must only be replaced by the manufacturer (see "Contact information" on page 173) or a certified service partner.
Status information of the sensor modules is not displayed	When creating the site, the myDatenet server was unable to determine which sensors are assigned to the remote measurement channels. Solution: Trigger a transmission or wait for the next cyclical transmission.
Not all or no data is available on the server	- The connection was aborted during the transmission, which is indicated by a time-out entry in the connection list (see "myDatenet Server Manual " 805002). Solution: Trigger a transmission or wait for the next cyclical transmission. - The assignment of the device and site is not correct (see "Site" on page 109 or "Creating the site" on page 133). - The measurement data and configurations have not been synchronised between the Jellox Pulse and the myDatenet server using the "OnSite Companion" smartphone app (only relevant, if no suitable mobile network coverage is available at the operating site of the Jellox Pulse).

Problem	Cause/solution
The data on the counter input is not plausible	• Check the cable connections (see "Connecting the meters and the digital contacts" on page 55). • Check whether the output signal of the meter used is compatible with the electrical characteristics of the inputs (see "Technical details about the inputs" on page 59). • Check whether the mode "Counter" has been selected correctly for the input (see "Inputs in "Counter" mode" on page 87). • Check whether the values for "pulse" (meter value of a pulse) and "pulse factor" (Factor by which the meter value of a pulse is multiplied) have been chosen appropriately (see "Inputs in "Counter" mode" on page 87).
The transferred state of a digital contact ist not plausible	• Check the cable connections (see "Connecting the meters and the digital contacts" on page 55). • Check whether the output signal of the digital contact used is compatible with the electrical characteristics of the inputs (see "Technical details about the inputs" on page 59). • Check whether the mode "digital." has been selected correctly for the input (see "Input in "Digital" mode" on page 86). • Check the selected "contact type" (see "Input in "Digital" mode" on page 86). For inputs in "digital" mode, the "contact position" ("0" for no current, "1" for current flowing on the contact) as well as the "actuation state" (depending on the contact type selected) are recorded.
Communication problems (between Jellox Pulse and Sensor module)	• Reduce the distance between the Jellox Pulse and the sensor module or try to avoid obstacles such as walls and similar. • The capacity of the battery of the sensor module is virtually depleted. • The Jellox Pulse has lost the connection to the sensor module and was unable to re-establish it immediately. Solution: • Wait until the Jellox Pulse attempts to re-establish the connection. To minimise energy consumption, the waiting time after each unsuccessful attempt is increased before the next attempt is made, in accordance with the following scheme: 5 min. -> 10 min. -> 30 min. -> 2 h -> 2h -> • Press the reed switch briefly (approx. 1 sec., see "Reed switch" on page 70) to manually initiate the search for remote sensors.
Pressure value and/or temperature of the medium ist not plausible	• The capacity of the battery of the sensor module is virtually depleted. • Information on other possible causes of errors and corresponding possible solutions can be found in the "Troubleshooting and repair" section of the manual for the relevant sensor module.
Alarm state was not detected (digital contact)	• Check whether the "contact type" (i.e. "normally open contact") in the channel settings (see "Input in "Digital" mode" on page 86) and the configuration of the "Smart Action" (see "Edit Smart Action (Source is a digital value)" on page 106) have been chosen according to the installation situation.

Problem	Cause/solution
Alarm state was not detected (Flow rate)	• Increase the record interval (see "Device settings" on page 84). Note: Only the interval for determining the measurement values on the inputs operated in "Counter" mode and on the internal measurement values can be adjusted. The record interval for determining the measurement values of the remote sensor modules is 10 sec. and can not be changed. • Check the configuration of the "Smart Action" (see "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103)
Alarm state was not transferred although the data is present	• Check the configuration of the "Smart Actions" (see "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103 and "Edit Smart Action (Source is a digital value)" on page 106). • The connection was aborted during the transmission, which is indicated by a time-out entry in the connection list (see "myDatenet Server Manual " 805002). Solution: Trigger a transmission or wait for the next cyclical transmission.
Alarm message was not sent although the alarm was signalled	• Check the settings of the alarm schedule (see "myDatenet Server Manual " 805002). • Check the address data of the alarm schedule (see "myDatenet Server Manual " 805002).

16.2 App log entries

The app log is opened via the context menu, which is displayed by clicking on the three-dot symbol in the list of sites.

Code	Plain text	Description								
amr.cnt	cmd:10, in:<#>, old:<Cnt old>, new:<Cnt new>	The meter reading of input <#> has been changed from <Cnt old> to <Cnt new> by the user. ¹⁾								
amr.cnt	Counter [<#>]: read error (<result>)!	Error when determining the measurement values for the input operated in "Counter" mode <#> . ¹⁾ If this error appears several times, contact the manufacturer (see "Contact information" on page 173)								
amr.cnt	Counter [<#>]: close error (<result>)!									
amr.cnt	Counter [<#>]: reinit error (<result>)!									
amr.ok	cmd success: <cmd> = <parameter>	The meter reading could be set successfully.								
amr.warn	Stuck detected on IN<#>	Blocked meter output at input <#> detected The meter output has been closed for more than 2 sec. .								
amr.warn	cmd error: <cmd> = <result>	The meter reading could not be set.								
		<table><tr><th><result></th><th>Explanation</th></tr><tr><td>-1</td><td>If this error appears several times, contact the manufacturer (see "Contact information" on page 173)</td></tr><tr><td>-2</td><td>An attempt was made to set the counter reading although the measurement channel was not switched to "Counter" mode.</td></tr><tr><td>-3</td><td>By the time the command was received, its validity had already expired.</td></tr></table>	<result>	Explanation	-1	If this error appears several times, contact the manufacturer (see "Contact information" on page 173)	-2	An attempt was made to set the counter reading although the measurement channel was not switched to "Counter" mode.	-3	By the time the command was received, its validity had already expired.
		<result>	Explanation							
		-1	If this error appears several times, contact the manufacturer (see "Contact information" on page 173)							
		-2	An attempt was made to set the counter reading although the measurement channel was not switched to "Counter" mode.							
-3	By the time the command was received, its validity had already expired.									

¹⁾ The numbering of the inputs starts at "0".

16.3 Log entries and error codes

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1000	POWER ON	0	---	Restart following a power failure
		4	---	Watchdog reset (e.g. because of an exception)
		6	---	Reset was initiated by the device itself (e.g. in event of firmware update)
		##	--	Restart for another reason. There may be a hardware problem if the "POWER ON" log entry with a parameter code that is not equal to 0 or 6 is contained in the device log several times. Contact the manufacturer in this case (see "Contact information" on page 173).
1030	UV LOCKOUT	---	---	The device switches to energy saving mode and terminates all of the operations as the rechargeable battery or battery voltage is too low. Only the charge controller, if present, remains active.
1031	UV RECOVER	---	---	The rechargeable battery or battery voltage once again suffices to guarantee reliable operation. This is achieved by replacing the rechargeable battery or battery pack. The device resumes normal operation in accordance with the configuration.
1034	CONTROLLER UPDATE	##	---	Controller firmware update was completed successfully This entry is always duplicated in the device log. In the first entry, the parameter specifies the major version number (e.g. 3 for 03v011), while in the second entry it specifies the minor version number (e.g. 11 for 03v011).
1035	EXCEPTION	##	---	An internal system error was detected that caused the device to restart. The parameter specifies the type of system error. Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 173).
1036	EXCEPTION ADDR 1	##	---	This log entry may be shown in the device log together with the log entry "EXCEPTION" in the event of an internal system error. The parameter provides additional information for analysing the cause of the system error.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1037	EXCEPTION ADDR 2	##	---	This log entry may be shown in the device log together with the log entry "EXCEPTION" in the event of an internal system error. The parameter provides additional information for analysing the cause of the system error.
1038	UV MODEM LOCKOUT	---	---	The device deactivates the modem because the rechargeable battery or battery voltage is too low. A connection cannot be established now.
1039	UV MODEM RECOVER	---	---	The rechargeable battery or battery voltage once again suffices to guarantee a stable connection. This is achieved by replacing the rechargeable battery or battery pack.
1046	CONTROLLER UPDATE ERROR	##	---	Error updating the firmware of the controller
		0	CRC	The CRC of the firmware pack couldn't be verified
		1	SIGNATURE	The signature of the firmware pack couldn't be verified
		2	TLV	The data structure of the firmware pack is invalid
		3	FW INFO	The firmware pack is not suitable for this device
		4	MIN VERSION	The version of the firmware package is below the minimum version stored in the firmware currently installed on the device.
1126	MODEM COPS MODE	---	---	The modem has changed the mode for the operator selection. Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1161	LOG REFORMATFILE	##	---	Errors in file system have been resolved. This can result in data being lost (data and/or log entries). The parameter contains more information on the problem. Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 173).
1192	FUTURE TIMESTAMP	##	---	Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1194	RTC TIME SET BY DLO	---	---	The system time has been set manually via the device logic.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1195	RTC TIME SET BY SERVER	---	---	A manually set system time has been overwritten during the sync with the server with the time received from the server.
1196	RTC TIME INVALID	---	---	When starting the module, it was recognised that the system time is invalid.
1200	MODEM ERROR			Modem error (see "Modem error" on page 156)
1201	MODEM NOT FOUND	---		Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1202	MODEM CMME ERROR	##	---	The mobile network modem indicates a +CME error. The parameter specifies the type of error.
1203	SELECTED NETWORK	##	---	A new mobile network was selected. The parameter specifies the MCC (Mobile Country Code) and the MNC (Mobile Network Code) of the selected mobile network.
1207	GSM NETWORK REGISTRATION	0	NOT REGISTERED	Not registered, modem is currently not looking for any new operators to register
		1	HOME	Registered, home network
		2	SEARCHING	Not registered, but the modem is currently looking for a new operator with which it can register
		3	DENIED	Registration denied
		4	UNKNOWN	Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover)
		5	ROAMING	Registered, roaming
1208	GPRS NETWORK REGISTRATION	0	NOT REGISTERED	Not registered, modem is currently not looking for any new operators to register
		1	HOME	Registered, home network
		2	SEARCHING	Not registered, but the modem is currently looking for a new operator with which it can register
		3	DENIED	Registration denied
		4	UNKNOWN	Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover)
		5	ROAMING	Registered, roaming
1212	ERROR MODEM IRREGULAR OFF	##	---	Indicates a faulty connection. The parameter includes a counter that indicates how many consecutive connections have not worked.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1219	LTE NETWORK REGISTRATION	0	NOT REGISTERED	Not registered, modem is currently not looking for any new operators to register
		1	HOME	Registered, home network
		2	SEARCHING	Not registered, but the modem is currently looking for a new operator with which it can register
		3	DENIED	Registration denied
		4	UNKNOWN	Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover)
		5	ROAMING	Registered, roaming
1227	WC NWREG PAUSED	0	---	A corresponding log entry is generated again for each change of state of the network registration.
		1	---	The limit for the log entries for the changes of state of the network registrations has been reached. From this point onward, a maximum of one log entry per hour is generated.
1228	EMM REJECT CAUSE	##	---	Device has been rejected by the network. The parameter indicates the reason for the rejection.
1252	MODEM TO CON	##	---	Timeout while a connection is being established. The parameter specifies the reason for the timeout. Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 173).
1255	MODEM TO EVAL	---	---	Timeout evaluating the connection quality
1281	ZLIB STREAMPROCESS ERR	##	---	Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1282	ZLIB STREAMFINISH ERR	##	---	Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1284	BYTE STUFF PENDING	---	---	internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1317	RADIO CONNECTED	---	---	Radio connection to a PC or smartphone established

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1318	RADIO DISCONNECTED	---	---	Radio connection was terminated
1325	RADIO ADVERTISING	0	RADIO ADVERTISING OFF	Advertising deactivated
		1	RADIO ADVERTISING ON	Advertising has been activated
1328	RADIO POWER ON	---	---	Supply of the radio module (local radio interface) has been activated.
1329	RADIO POWER OFF	---	---	Supply of the radio module (local radio interface) has been deactivated.
1335	LOG_SHT2X_STATE	0	SHT2X SENSOR OK	The internal temperature and air humidity sensor is returning valid values again
		1	SHT2X RH ERROR	A communication error occurred when reading the air humidity value from the internal temperature and air humidity sensor.
		2	SHT2X TEMP ERROR	A communication error occurred when reading the temperature value from the internal temperature and air humidity sensor.
		3	SHT2X RH+TEMP ERROR	A communication error occurred when reading the measurement value from the internal temperature and air humidity sensor.
		4	SHT2X PLAUSIBILITY ERROR	The values received from the internal temperature and air humidity sensor are not plausible (rH <0% rH or >100% rH or temperature <-40°C or >125°C)
1336	SHT2X COM ERR	---	---	Communication with the internal temperature and air humidity sensor is not possible (sensor not present or faulty)
1337	SHT2X COM ERR1	---	---	Starting the internal temperature measurement failed
1338	SHT2X COM ERR2	---	---	Starting the internal air humidity measurement failed
1339	SHT2X TEMP RAW	##	---	Temperature raw value (register value from the internal temperature and air humidity sensor) if a plausibility error (SHT2X PLAUSIBILITY ERROR) was detected
1340	SHT2X RH RAW	##	---	Air humidity raw value (register value from the internal temperature and air humidity sensor) if a plausibility error (SHT2X PLAUSIBILITY ERROR) was detected

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1601	SIM_STATE	0	NONE	SIM state was changed to "NONE" (initial state).
		1	PRODUCTION	SIM state was changed to "PRODUCTION" (a new device is in stock).
		2	HOT	SIM state was changed to "HOT" (valid contract).
		3	COLD	SIM state was changed to "COLD" (end of contract or fair use policy violated).
		4	DISCARDED	SIM state was changed to "DISCARDED" (device has been decommissioned).
1620	TRANSMISSION PROFILE	##	---	Transmission profile has been changed.
		0	NORMAL	Operation by default has been activated.
		1	ECO	Operation with low energy and data consumption has been activated.
		2	DIAGNOSTIC	Extended logging for troubleshooting has been activated.
		3	ADAPTIVE	Adaptive operation has been activated. It enables stable data transmission, even at the expense of energy consumption.
1630	NEW LIFECYCLE STATE	##	---	The Lifecycle state has been changed.
		0	PREPROVISIONED	Device ready for handover to partner (firmware installed)
		10	PROVISIONED	Device ready for handover to end customer (firmware and application installed)
		20	CLAIMED	Device assigned to a server
		30	FIELDDED	Device assigned to a server and linked to a site
		100	DECOMMISSIONED	Device was defective and was decommissioned
1631	NEW LIFECYCLE FLAGS	##	---	One of the Lifecycle flags has been set or deleted. This entry always appears twice in the device log. In the first entry, the parameter indicates the current status of the application-specific lifecycle flags, while in the second entry it indicates the status of the system-specific lifecycle flags.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1640	DEGRADED MODE	##	---	Degraded mode has been changed.
		0	NONE	Normal operation
		1	MINOR	Minor limitation (e.g. connectivity)
		2	RECOVERY	Recovery mode (connectivity, measurement etc. restricted)
		3	SAFE	Safe mode (only BLE , USB, LED, Button available)
		4	LOCKOUT	Only functions relevant to security are active
1910	ACCU 0 E2PROM ERROR	0	---	Rechargeable battery not available
		1	---	Invalid length of the data structure in the EEPROM of the rechargeable battery
		2	---	No charging profile available in the EEPROM (only with Li-ion rechargeable batteries)
		3	---	Error when reading the SoC-value
		4	---	Error when writing the SoC-value
		5	---	The charging profiles of the rechargeable batteries inserted do not match (only with devices that support the simultaneous use of multiple rechargeable batteries)
		6	---	• Permissible charging time exceeded • When restarting the device, it was recognised that the rechargeable battery currently in use has already exceeded the permissible charging time once. The battery is probably defective and should be checked by the manufacturer.
1950	CHARGE START	---	---	Charging has been started.
1951	CHARGE STOP	0	---	Charging has been stopped.
		1	---	The maximum permissible charging time has been exceeded. Charging has been stopped for safety reasons.
1960	SOC	##	---	State of charge in [0.00 %]
1961	VBATT	##	---	Internal battery or rechargeable battery voltage in [mV]
1962	VIN	##	---	External supply or charging voltage in [mV]
1963	IACCU	##	---	Charging or discharging current in [mA]
1964	TEMP	##	---	Temperature in [0.00°C]
1965	RH	##	---	Air humidity in [0.0 %]

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1966	VDD	##	---	stabilised internal system voltage in [mV]
1967	SYS BUTTON INTERRUPTS	##	---	Number of interrupts registered as a result of the magnetic switch or button being actuated (before debouncing)..
3000 - 3099	SCRIPT ERROR	##	--	Internal system error If these errors appear several times with the same parameter code in the device log, contact the manufacturer (see "Contact information" on page 173).

16.3.1 Modem error

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
GPRS error				
1200	BEARER GPRS FAILED	-988	---	GPRS setup error • Try to improve the position of the antenna. • Check whether the device is in the coverage area.
1200	BAND SEL FAILED	-969	---	A network could not be found on the GSM900/1800 or on the GSM850/1900 band. • Try to improve the position of the antenna. • Check whether the device is in the coverage area.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1200	NETLOCK ERROR	-966		Error when selecting the network. Check whether the device is in the coverage area.
TCP channel error				
1200	CHANNEL ABORTED	-965	---	An attempt is being made to write to/read a TCP client that is no longer available. Try again later
	TCP DNS FAILURE	-958	---	The name could not be resolved in an IP address. Internal error
	CHANNEL REFUSED	-955	---	The TCP connection has been refused by the server. Try again later
	CHANNEL HOST UNREACHABLE	-954	---	No route to the host. Try again later
	CHANNEL NETWORK UNREACHABLE	-953	---	No network available Try again later
	CHANNEL PIPE BROKEN	-952	---	TCP connection interrupted Try again later
	CHANNEL TIMEOUT	-951	---	Timeout (DNS request, TCP connection, ping response, etc.) Try again later
1200	MODEM POSITION UPDATE ERROR	-943	---	Timeout during determination of the GSM position data
1200	MODEM NETINFO STALL	-941	---	Error detected during online connection Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1200	MODEM RESETLOOP	-940	---	Restart loop on modem detected. Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 173).
1200	MODEM UNDERVOLTAGE	-939	---	Undervoltage on the modem detected. The power supply should be checked.
1200	MODEM OVERHEAT	-938	---	Overheating of the modem detected.

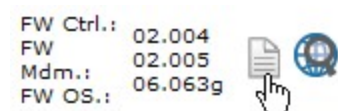
16.3.2 Module-specific information about the current operating status

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
2410	MODULE INFO (410)	0	---	Reed switch has been released after pressing
		1	---	Reed switch pressed

16.4 Evaluating the device log

16.4.1 Evaluating the device log on the myDatenet server

The last 300 log entries on the myDatenet server can be called up via the button shown below that is located in the measurement device list. As the log entries are sent to the server in the transmission cycle in the same way as the measurement data, only the log entries up to the last server connection are available.



The manual for the server ("myDatenet Server Manual " 805002) includes a detailed description of the evaluation of the device log on the myDatenet server.

Chapter 17 Spare parts and accessories

Use only original spare parts and accessories of the Jellox Pulse to avoid negative effects on safety and performance.

17.1 Assembly sets

Description	Quantity	Order number
<u>Niro shackle</u> ¹⁾	1	206.330
<u>Anchor clamp 5,5 - 10,5 mm</u>	1	301017
<u>Protection casing</u>	1	300662
<u>Wall bracket</u> ²⁾	1	301435
<u>Pipe holder</u> ²⁾	1	301437
<u>Wall bracket for Jellox with protection casing</u> ¹⁾	1	400109
<u>Wall Mount bracket for dome antenna multi band FME-F 3m</u>	1	400409
<u>Pole mount bracket for dome antenna multi band FME-F 3m</u>	1	400410

¹⁾ recommended when using the Protection casing

²⁾ cannot be used in connection with the Protection casing

17.2 Antennas

Description	Quantity	Order number
<u>Multi band antenna with bracket</u>	1	300787
<u>Dome antenna multi band FME-F 3m</u>	1	301211
<u>Multi band rod antenna with connection cable 250 mm</u>	1	400110

17.3 Cable

Description	Quantity	Order number
<u>Cable connector 7-pins</u>	1	206.654
<u>Connection cable 7pin 8 m</u>	1	301689
<u>Connection cable 7pin 0,5 m</u>	1	400442

17.4 Sensors with a pulse output or a switch contact

Microtronics Engineering GmbH is constantly testing various sensors with pulse output or switch contact for compatibility with the Jellox Pulse. A list of compatible sensors is available at the following address:

<https://support.microtronics.com/jellox-pulse/compatible-sensors>

17.5 Sensor modules

Note: The required sensor modules must be specified when ordering the Jellox Pulse as they have to be paired with the "remote measurement channels" of the Jellox Pulse during production. The sensor module cannot be replaced by the user.

Description	Measurement range	Quantity	Order number
Pressure sensors			
<u>PRE-PT-D30</u>	0...30 bar	1	400420

17.6 Other accessories

Description	Quantity	Order number
<u>MDN Magnet</u>	1	206.803
<u>OnSite Companion App</u>	1	---

Chapter 18 Document history

Rev.	Date	Changes
01	29.04.2024	First version
02	11.09.2024	Chapter "Specifications" on page 11 <i>Specification of the duration of the immersion for protection class IP68 adapted from 5 h to 105 days.</i> Chapter "General product information" on page 21 <i>Description adapted to the fact that the myDatalogMINIamr was primarily designed for water management.</i> Chapter "Functional principle" on page 27 <i>Description adapted to the fact that the myDatalogMINIamr was primarily designed for water management.</i> Chapter "Automatic switching between the mobile network technologies "LTE-M" and "NB-IoT"" on page 35 <i>Description adapted to account for the fact that the modem now automatically switches between mobile network technologies.</i> Chapter "Installation in an inspection chamber" on page 44 <i>Chapter added</i> Chapter "Reed switch" on page 70 <i>Illustration added showing how the reed switch of the myDatalogMINIamr is operated using the MDN Magnet .</i> Chapter "Measurement channels" <i>Illustration and explanation of the tab "Alarms" extended to include the description of the checkboxes "WA" and "AL".</i> Chapter "Creating the site" on page 133 <i>Explanation and illustrations adapted to account for the new wizard for creating new sites. The wizard replaces the previous procedure and supports the customer to correctly set up sites.</i> Chapter "Services" on page 139 <i>Chapter added</i>
03 (1/3)	13.11.2024 (1/3)	Various chapters of the user manual <i>Connection cable for myDatalogMINI 1,5 m replaced by connection cable for myDatalogMINI 8 m</i> <i>References and links adapted to the new configuration sections "Measurement system" and "Smart actions".</i> Chapter "Specifications" on page 11 <i>Specification of the immersion depth and duration for protection class IP68 has been extended by the additional specification of 4m/35 days.</i> <i>Specification of the size of the data memory adjusted to 5.760 measuring cycles.</i> <i>Names of the recorded measurement values adjusted.</i> <i>Explanation extended to include the newly added measurement value "Flow rate".</i> Chapter "Limitations of use" on page 20 <i>Chapter added</i>

Rev.	Date	Changes
03 (2/3)	13.11.2024 (2/3)	Chapter "Intended use" on page 20 <i>Purpose for which the device was designed described in more detail.</i> Chapter "General product information" on page 21 <i>Names of the recorded measurement values adjusted.</i> <i>Explanation extended to include the newly added measurement value "Flow rate".</i> <i>Explanation adapted to include the fact that Smart Actions can be defined for the "Flow rate" and "Actuation status" measurement values.</i> Chapter "Determining the measurement values for inputs in "Digital" mode" on page 29 <i>names of the recorded measurement values adjusted.</i> <i>Explanation and illustration adapted to the fact that Smart Actions can be defined for the "actuation state".</i> Chapter "Alarm module" <i>Chapter removed</i> Chapter "Smart Action module" on page 31 <i>Chapter added</i> Chapter "Determining the measurement values for inputs in "Counter" mode" on page 31 <i>Explanation and illustration extended to include the description of the newly added measurement value "Flow rate".</i> <i>Explanation and illustration adapted to the fact that Smart Actions can be defined for the "flow rate"</i> Chapter "Smart Action module" on page 32 <i>Chapter added</i> Chapter "Aloha transmission mode" <i>The Aloha data contains the measurement values "Actuation state" and "Meter reading" for each of the inputs. The explanation has been adapted so that, depending on the mode, only one of these measurement values contains data and the other is set to "NaN".</i> Chapter "Scope of supply" on page 37 <i>Description of the set "myDatalogMINlamr " (301476) removed</i> <i>Standard scope of supply of the set "myDatalogMINlamr " (400154) added</i> Chapter "User interface on the myDatenet server" on page 75 <i>Note added indicating that, depending on the respective user level, some of the configuration fields may not be displayed.</i> <i>Explanation of the title bar displayed at the top of the input screen added.</i> Chapter "Specific input screen for configuring the site" on page 78 <i>Chapter revised</i> Chapter "Default input screen for configuring the site" on page 108 <i>Screenshots of the user interface of the myDatenet server added.</i> Chapter "Default input screen for configuring the site in development mode" on page 118 <i>Chapter added</i>

Rev.	Date	Changes
03 (3/3)	13.11.2024 (3/3)	Chapter "Site" on page 109 <i>Explanation of the parameter containing the unique ID of the site added.</i> Chapter "Basic settings" on page 116 <i>Explanation of the parameter for selecting the transmission profile added. The transmission profiles can be used to customise the site to specific requirements (energy consumption, fault diagnosis, connection stability).</i> Chapter "Spare parts and accessories" on page 159 <i>Note added indicating that only original spare parts and accessories should be used.</i>
04	06.12.2024	Various sections of the user manual <i>The "Jellox Pulse " is the successor to the "myDatalogMINIamr", with operation and functionality largely identical to that of the "myDatalogMINIamr". The changes to various sections of the user manual are therefore limited to changing the product name from "myDatalogMINIamr" to "Jellox Pulse ". The designations for services, spare parts and accessories have also been adapted due to the new product name.</i> Capter "Declaration of conformity" on page 9 <i>Declaration of conformity updated</i> Chapter "Device labelling" on page 23 <i>Type plate updated</i>
05	28.02.2025	Chapter "Specific input screen for configuring the site" on page 78 <i>Description adapted to the new design of the interface.</i> Chapter "Troubleshooting and repair" on page 145 <i>Proposed solution for problems with the recognition of the alarm state revised. Proposed solution for problems transferring the alarm state adapted to the fact that alarms can now be configured via the "Smart Actions".</i> Chapter "App log entries" on page 148 <i>Explanation of the app log entries "amr.ok, Stuck resolved on IN<#>" and "amr.ok, Stuck resolved on IN<#> because of reconfig" removed.</i> Chapter "Log entries and error codes" on page 149 <i>Explanation of the log entries "EMM REJECT CAUSE ", "MODEM TO EVAL ", "CHARGE START", "CHARGE STOP", "SOC", "VBATT" and "VIN" added.</i>
06 (1/2)	07.03.2025 (1/2)	Hardware version 2.0 <i>The device is now also available in a version with antenna connector. The internal antenna cannot be used with these devices. This means that an external antenna must be connected.</i> Various sections of the user manual <i>Connection cable 8 m replaced by Connection cable 7pin 8 m .</i> Chapter "Declaration of conformity" on page 9 <i>Declaration of conformity updated</i> Chapter "Specifications" on page 11 <i>Description adapted to the fact that a variant with external antenna connector is now also available.</i>

Rev.	Date	Changes
06 (2/2)	07.03.2025 (2/2)	Chapter "Safety measures for installing the antenna" on page 16 <i>Chapter added</i> Chapter "Overview" on page 17 <i>Illustrations and description adapted to the fact that a variant with external antenna connector is now also available.</i> Chapter "Block diagram" on page 18 <i>Block diagram of the variant with external antenna connector added.</i> Chapter "Unauthorised use" on page 21 <i>Description adapted to the fact that a variant with external antenna connector is now also available.</i> Chapter "Device labelling" on page 23 <i>Type plate updated</i> Chapter "Storage of the product" on page 24 <i>Description adapted to the fact that a variant with external antenna connector is now also available.</i> Chapter "Scope of supply" on page 37 <i>Description of the set "Jellox Pulse Pro with ext. antenna connector " (400159) added.</i> Chapter "Connecting the meters and the digital contacts" on page 55 <i>Illustrations and description adapted to the fact that a variant with external antenna connector is now also available.</i> <i>Illustration and description adapted to the Connection cable 7pin 8 m .</i> Chapter "Connecting the mobile network antenna (only with D022-4Z001200D05)" on page 57 <i>Chapter added</i> Chapter "Using the mobile network connection and the server" on page 62 <i>Description adapted to the fact that a variant with external antenna connector is now also available.</i> Chapter "Testing communication between device and server (mobile network connection)" on page 66 <i>Description adapted to the fact that a variant with external antenna connector is now also available.</i> Chapter "Assembly sets" on page 159 <i>Wall Mount bracket for dome antenna multi band FME-F 3m (400409) and Pole mount bracket for dome antenna multi band FME-F 3m (400410) added</i> Chapter "Antennas" on page 159 <i>Chapter added</i>
07 (1/2)	22.05.2025 (1/2)	Chapter "Compatible sensors" on page 57 <i>Chapter added</i> Chapter "Technical details about the inputs" on page 59 <i>Note added indicating that the Jellox Pulse has only one common earth connection for all inputs and that the earth potentials are joined if the connected contact is not potential-free.</i>

Rev.	Date	Changes
07 (2/2)	22.05.2025 (2/2)	Chapter "User interface on the myDatenet server" on page 75 Screenshots and description of the title bar adapted to the new design of the server interface. Chapter "Sensors with a pulse output or a switch contact" on page 159 Chapter added
08	20.01.2026	Chapter "Declaration of conformity" on page 9 Declaration of conformity updated Chapter "Safety instructions" on page 14 Note added that modifications to the device must not be made under any circumstances Explanation of safety symbols on the device added Chapter "General safety instructions" on page 15 Chapter added Chapter "Specific safety instructions" on page 15 Chapter added Chapter "Installing the Jellox Pulse " on page 39 Note added indicating that it is recommended that all metal mounting fixtures be properly earthed. Chapter "Specific input screen for configuring the site" on page 78 Note added indicating how the specific input screen for configuring the site is opened and that the configuration sections contained therein are specific to the IoT application based on which the site was created. Chapter "Default input screen for configuring the site" on page 108 Note added indicating how the default input screen for configuring the site is opened and that the configuration sections contained therein are identical for all rapidM2M -based devices. Chapter "Site" on page 109 Note added indicating that the measurement data is assigned to the site and is retained when the device is replaced. Explanation of the "Application phase" added. It indicates the phase of the release process that the currently used version of the IoT application is in. Chapter "Measurement instrument" on page 120 Explanation of the fields "Lifecycle state", "Lifecycle flags", "Article Id", "Article revision" and "Article name" added. Chapter "Repair & return" on page 141 Chapter revised Chapter "Log entries and error codes" on page 149 Explanation of the log entries "EXCEPTION ADDR 1", "EXCEPTION ADDR 2", "NEW LIFECYCLE STATE", "NEW LIFECYCLE FLAGS", "IACCU", "TEMP" and "RH" added Chapter "Assembly sets" on page 159 Wall bracket for Jellox with protection casing added Item number of the Niro shackle changed to 206.330 Chapter "Antennas" on page 159 Multi band rod antenna with connection cable 250 mm added

Rev.	Date	Changes
09	27.02.2026	Chapter "Scope of supply" on page 37 <i>Note added indicating that a connection cable is required for operation but is not included in the scope of supply.</i> <i>Connection cable 7pin 8 m removed from the standard scope of supply of the "Jellox Pulse Pro " (400158)</i> <i>Connection cable 7pin 8 m removed from the standard scope of supply of the "Jellox Pulse Pro with ext. antenna connector " (400159)</i> Chapter "Installing the Jellox Pulse " on page 39 <i>Order of the subchapters revised</i> Chapter "Wall mounting" on page 40 <i>In the description, "connection cable" is now used as both the Connection cable 7pin 8 m and the Connection cable 7pin 0,5 m can be used</i> Chapter "Pipe mounting" on page 42 <i>In the description, "connection cable" is now used as both the Connection cable 7pin 8 m and the Connection cable 7pin 0,5 m can be used</i> Chapter "Installation in an inspection chamber" on page 44 <i>In the description, "connection cable" is now used as both the Connection cable 7pin 8 m and the Connection cable 7pin 0,5 m can be used</i> <i>The min. bending radius when installing the connection cable has been corrected from 5,5 cm to 5,1 cm .</i> Chapter "Suspended installation" on page 47 <i>Connection cable 7pin 8 m added to the list of optional accessory sets required for suspended installations</i> Chapter "Wall mounting with mounted protection casing" on page 49 <i>Chapter added</i> Chapter "Connecting the meters and the digital contacts" on page 55 <i>Connection cable 7pin 0,5 m added as an option for connection cables</i> Chapter "Testing communication between device and server (mobile network connection)" on page 66 <i>Description extended to indicate that the display has to be activated and the error code read out if the Aloha speech bubble does not appear within 5 min.</i> Chapter "Display" on page 71 <i>Illustration of the displayed error codes "last connection failed" and "Blocked meter output detected" corrected</i> Chapter "Measurement system" on page 78 <i>The colours of the pair of wires displayed on the configuration platform also apply to the Connection cable 7pin 0,5 m . This note has been adapted accordingly.</i> Chapter "Cable" on page 159 <i>Connection cable 7pin 0,5 m (400442) added</i>

Rev.	Date	Changes
10 (1/3)	17.08.2026 (1/3)	Hardware version 2.1 <i>The Jellox Pulse Pro is no longer based on hardware "D022-2Z0012xxx05" but on hardware "D022-3Z0012xxx05".</i> Hardware version 1.1 <i>The Jellox Pulse Elite is no longer based on hardware "D022-2Z0012xxx05" but on hardware "D022-3Z0012xxx05".</i> Chapter "Declaration of conformity" on page 9 <i>Declaration of conformity updated</i> Chapter "Specifications" on page 11 <i>Protection class IP66 added to the specification of protection</i> <i>Specification of the maximum permissible operating altitude and the permissible pollution degree added</i> <i>Explanation adapted to the fact that the device is now also available in the variant "Elite". The "Elite" variant can be connected to up to 4 remote sensor modules.</i> <i>Specification of the data memory size adapted to 5.760 measurement cycles.</i> <i>Specification of the data types that are used for the remote measurement channels added</i> <i>Specifications of the local radio interface added</i> <i>Explanation adapted to the fact that aloha mode is no longer available</i> Chapter "General product information" on page 21 <i>Explanation adapted to the fact that the device is now also available in the variant "Elite". The "Elite" variant can be connected to up to 4 remote sensor modules.</i> Chapter "Block diagram" on page 18 <i>Local radio interface added to the block diagram</i> Chapter "Intended use" on page 20 <i>Explanation adapted to the fact that the device is now also available in the variant "Elite". The "Elite" variant can be connected to up to 4 remote sensor modules.</i> Chapter "Unauthorised use" on page 21 <i>Note added indicating that no traction may be exerted on the connection cable.</i> Chapter "General product information" on page 21 <i>Description revised.</i> <i>Information on the variant "Elite" added to the description</i> Chapter "Device labelling" on page 23 <i>Type key on the type plate updated</i> Chapter "Storage of the product" on page 24 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation adapted to the fact that the measurement system can now be deactivated via a button in the title bar of the configuration section "Measurement system" of the site</i> Chapter "List of determined measurement values" on page 28 <i>Chapter added</i> Chapter "Determining the pressure" on page 33 <i>Chapter added</i> Chapter "Aloha transmission mode" <i>Chapter removed</i>

Rev.	Date	Changes
10 (2/3)	17.08.2026 (2/3)	Chapter "Installing the sensor module" on page 54 <i>Chapter added</i> Chapter "Connecting the meters and the digital contacts" on page 55 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation adapted to the fact that the measurement system can now be activated via a button in the title bar of the configuration section "Measurement system " of the site</i> Chapter "Technical details about the local radio interface" on page 60 <i>Chapter added</i> Chapter "Using the mobile network connection and the server" on page 62 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation adapted to the fact that the measurement system can now be activated/deactivated via a button in the title bar of the configuration section "Measurement system " of the site</i> Chapter "Using the local radio connection and the server" on page 64 <i>Chapter added</i> Chapter "Testing communication between device and server (mobile network connection)" on page 66 <i>Explanation adapted to the fact that aloha mode is no longer available</i> Chapter "Testing communication between device and server (local radio connection) " on page 67 <i>Chapter added</i> Chapter "Reed switch" on page 70 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation added on how the local radio interface is activated via reed switch</i> Chapter "Display" on page 71 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation of the error code "Radio connection to remote sensor not possible" added</i> <i>Information on the variat "Elite" added to the description</i> Chapter "Measurement system" on page 78 <i>Explanation of the button that indicates the current status of the measurement system added</i> <i>Explanation of the section with information about a remote sensor module added</i> Chapter "Errors and notifications" on page 82 <i>Chapter added</i> Chapter "Set meter reading" on page 88 <i>Explanation adapted to the fact that aloha mode is no longer available</i> <i>Explanation adapted to the fact that the meter reading is now set using a wizard</i> Chapter "Remote sensor module of type PRE-PT-D30" on page 90 <i>Chapter added</i> Chapter "Creating new Smart Actions (Source is a counter or the measurement value of a sensor module)" on page 93 <i>"Change connection type as long as condition is met" is now also available as alternative behaviour</i>

Rev.	Date	Changes
10 (3/3)	17.08.2026 (3/3)	Chapter "Creating new Smart Actions (Source is a digital value)" on page 98 <i>"Change connection type as long as condition is met" is now also available as alternative behaviour</i> Chapter "Edit Smart Action (Source is a meter reading or the measurement value of a sensor module)" on page 103 <i>"Change connection type as long as condition is met" is now also available as alternative behaviour</i> Chapter "Edit Smart Action (Source is a digital value)" on page 106 <i>"Change connection type as long as condition is met" is now also available as alternative behaviour</i> Chapter "Basic settings" on page 116 <i>Explanation of the section for indicating and selecting the lifecycle flags added</i> Chapter ""Guided commissioning" input screen" on page 119 <i>Chapter added</i> Chapter "OnSite Companion" on page 123 <i>Chapter added</i> Chapter "Troubleshooting and repair" on page 145 <i>Solution approaches adapted to the fact that aloha mode is no longer available and a regular transmission must be triggered instead</i> <i>Solution approaches adapted to account for the fact that the DeviceConfig configuration program is no longer supported and that the "OnSite Companion" smartphone app can now be used as an alternative</i> <i>Solution approaches for problems when synchronising device and server using the "OnSite Companion" smartphone app added</i> <i>Solution approaches for problems in connection with the remote sensor modules added</i> Chapter "App log entries" on page 148 <i>Explanation of the app log entries "amr.cnt" added</i> Chapter "Log entries and error codes" on page 149 <i>Explanation of the log entries "RADIO POWER ON", "RADIO POWER OFF", "DEGRADED MODE", "VDD" and "SYS BUTTON INTERRUPTS" added</i> Chapter "Module-specific information about the current operating status" on page 158 <i>Chapter added</i> Chapter "Sensor modules" on page 160 <i>Chapter added</i>

Rev.	Date	Changes
11	24.09.2026	Hardware version 3.0 <i>The Jellox Pulse Pro is no longer based on hardware "D022-3Z0012xxx05" but on hardware "D022-4Z0012xxx05".</i> Hardware version 2.0 <i>The Jellox Pulse Elite is no longer based on hardware "D022-3Z0012xxx05" but on hardware "D022-4Z0012xxx05".</i> Chapter "Specifications" on page 11 <i>The number of measurement cycles that can be stored in the internal flash memory is now specified separately for Jellox Pulse Pro and Jellox Pulse Elite .</i> Chapter "Storage of the product" on page 24 <i>Note regarding battery deactivation due to low power consumption removed</i> Chapter "Functionality of the internal data memory" on page 34 <i>Description and illustration adapted to the fact that the number of measurement cycles that can be stored in the internal flash memory differs for Jellox Pulse Pro and Jellox Pulse Elite .</i> Chapter "Scope of supply" on page 37 <i>Battery that is included in the scope of supply adapted to hardware "D022-4Z0012xxx05"</i> Chapter "Antennas" on page 159 <i>Multi band antenna with bracket (300787) added</i> Chapter "Other accessories" on page 160 <i>OnSite Companion App added</i> Chapter "Glossary" on page 171 <i>Explanation of the term "Footprint" removed</i>

Chapter 19 Glossary

App centre

Area of the myDatenet server for the installation and management of the IoT apps. The app models that serve as a basis for the IoT apps are obtained via the rapidM2M Store . When installing an IoT app on the myDatenet server the default settings defined when developing the app models are initially applied. These default settings can then be adjusted. Any number of IoT apps can be created based on a single app model by setting the appropriate default settings.

App model

An app model is developed in the rapidM2M Studio and forms the basis for creating IoT apps. It essentially contains the executable program files (device logic, backend logic, portal view, etc.) from which an IoT is created by adding the default settings. Distribution to the individual myDatenet servers is carried out via the rapidM2M Store . The available app models are displayed in the app centre of the respective myDatenet server.

Device logic

The device logic is the intelligence installed on the device that determines the local functionality of the device. The device logic is part of the app model and is created in a C-like scripting language built on "PAWN".

Hardware ID string

Specifies the hardware platform installed in the device and its hardware version (e.g. rapidM2M M2 HW1.4). The part of the hardware ID string, that specifies the hardware version, is only increased if changes relevant to the rapidM2M firmware have been made to the hardware platform. When developing an app model, it can be specified on which hardware platform the app model can be installed and which version of the hardware platform is required as a minimum. The hardware ID string is displayed in the TESTbed of the rapidM2M Studio or in the "Identification" field of the input screen for configuring the device.

IoT app

IoT apps form the basis for creating sites. They consist of an app model and corresponding default settings that are applied as default values for the site when the site is created. The app centre can be used to create any number of IoT apps based on a single app model by setting the appropriate default settings. This makes sense if several use cases need to be covered by a single app model and they each require a different default site configuration (e.g. if a data logger with different external sensors is to be sold as a package).

NaN value

The myDatenet uses special encoding to display different error statuses in the measurement values, for example. By setting a measurement value to "NaN", it is clearly marked as invalid and is thus not used for any further calculations. In the measurement value graphs, a measurement value that has been set to "NaN" is indicated by an interruption in the graph. When downloading the data, a measurement value set to "NaN" is indicated by an empty data field.

Product revision

Specifies the revision of the product. The revision is increased every time the product is modified (i.e. electronic system, mechanics, etc.) and is marked on the type plate of the product.

rapidM2M Store

Is responsible for distributing the app models to the individual myDatenet servers. When installing and updating IoT apps the myDatenet server access the app models provided in the rapidM2M Store . The developer of the respective app model defines which myDatenet servers are allowed to access an app model via the rapidM2M Studio .

rapidM2M timestamp

Depending on the required accuracy, one of two special encodings can be used for the time stamp in rapidM2M. If the accuracy requirements are moderate, the "stamp32" data type (seconds since 1999-12-31 00:00:00 UTC) can be used. If a higher accuracy is required, the "stamp40" data type (1/256 seconds since 1999-12-31 00:00:00 UTC) can be used. Converting the "stamp32" data type into the UNIX timestamp (seconds since 1970-01-01 00:00:00 UTC) can be achieved by adding 946598400.

Chapter 20 Contact information

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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 myDatenet | TÜV SÜD: ATEX Directive 2014/34/EU

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