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User Manual for the stationary device myDatalogRSS



Rev. 01 valid from:

- Firmware version: 02v009
- Modem version: 02v003 respectively 03v006
- Server version: 39.20
- Hardware version: 1.3

CE

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Chapter 2 Declaration of conformity

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Konformitätserklärung
Declaration of Conformity
Déclaration de conformité

Microtronics at

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Hauptstrasse 7
A-3244 Ruprechtshofen
www.microtronics.at

erklärt in alleiniger Verantwortung, dass das Produkt /
declare under our sole responsibility that our product /
déclare sous sa seule responsabilité que le produit

myDatalogRSS

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt /
to which this declaration relates is in comformity with the following standards /
auquel se réfère cette déclaration est conforme aux normes

ÖVE/ÖNORM EN61326-1:2013-08-01
ÖVE/ÖNORM EN61010-1:2011-08-01
ETSI EN301489-1 V1.9.2:2011-09; ETSI EN301489-7 V1.3.1:2005-11;
ETSI EN301511 V9.0.2 :2003-03

gemäß den Bestimmungen der Richtlinien /
following the provision of Directives /
conformément aux dispositions des directives

2004/108/EG EMC Directive
2006/95/EG LVD Directive
1999/5/EG RTTE Directive
2011/65/EU RoHS

Ruprechtshofen, 11.11.2014

Buber Hans-Peter, Managing Director

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Chapter 3 Technical data

Voltage supply	10W solar panel and rechargeable buffer battery
Rechargeable buffer battery	AP413D+ rechargeable battery : 2 x Li-Ion - Rechargeable battery cell fully fabricated with 13,6Ah ***Note:*** *The capacity of the rechargeable buffer battery can be doubled with a second rechargeable battery pack (Extension Battery for myDatalogRSS xx 206.726), available as an optional accessory.*
Charging voltage (optional)	7...30VDC (typ. 170mA@12V) ***Note:*** *The solar panel can be supported by means of an external charging voltage when the rechargeable buffer battery is being charged.*
Housing	Material: Aluminum, ESD Glass Weight: 10kg (incl. rechargeable buffer battery) Degree of protection: IP68 Dimensions (WHD): 308 x 520 x 81mm (incl. antenna)
Operating temperature	-40...+60°C, 15...90%rH non-condensing
Storage temperature	-40...+60°C
Display	LED to signal the operating state and error codes (only visible when the housing compartment cover is open)
Operation	Solenoid switch (only accessible when the housing compartment cover is open) to trigger ALOHA transmission mode
Antenna	Fixed dome antenna
Universal inputs	4 x analogue or digital Modes: • 0...20mA: Resolution 6µA, max. 22,5mA, load 100Ω • 4...20mA: Resolution 6µA, max. 22,5mA, load 100Ω • 0...2V: Resolution 610µV, max. 2,5V, load 220k1 • 0...10V: Resolution 8,3mV, max. 32V, load 8k9 • PWM: 1...99%, max. 100Hz, min. pulse length 1ms, max. 32V, load 8k9 • Frequency: 1...1000Hz, max. 32V, 8k9 • Digital: low ‹1,36V, high ›2,73V, max. 32V, load 8k9 • LP digital: low ‹100mV, high ›200mV, max. V_{Batt}, load 220k1 • Day counter: min. pulse length 20ms, max. 32V, load 8k9 • Interval counter: min. pulse length 20ms, max. 32V, load 8k9 Additional information is provided in "Technical details about the universal inputs" on page 55.

External temperature sensor	1 x Cable temperatur sensor for myDatalogS3 20m (206.300 optional equipment)
Outputs	1 x switchable sensor supply • myDatalogRSS (206.265 , standard): 15...19,5VDC, max. 66mA • myDatalogRSS 24V(206.276 , optional): 24...31VDC, max. 41mA 1 x isolated switch contact • I_{max}: 130mA • U_{max}: 32V • R_{on}: 35Ω • f_{max}: 500Hz 1 x 3,1...4,2V battery voltage output Additional information is provided in "Technical details about the outputs" on page 57.
Data memory	Internal flash memory for up to 25.588 measurement cycles Additional information is provided in "Functionality of the internal data memory" on page 36.
Data type	f32 (32 Bit floating point)
Data transmission	By means of GSM/GPRS quad-band modem to the respective myDataweb server
SIM	The myDatalogRSS is equipped with an integrated SIM chip.
Monthly data volume	‹4MB at two-minute measurement cycle and 120-minute transmission cycle

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, as well as software and driver updates are available in the service area of the myDataweb server.*

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 myDatalogRSS , 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.

Please 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 device is not impaired. Install and use the measuring system only in the manner and method described in this manual.

Important note: *The manufacturer's products that are designed for use outdoors include extensive protection against penetrating moisture and dust. If these products are connected to the power supply or sensors by cables with connectors rather than permanently installed cables, the susceptibility of the connector and socket to moisture and dust penetration is significantly higher. The operator is responsible for protecting the connector and socket 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 injury.

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

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

4.4.2 General safety instructions



WARNING:
Never use this device in areas where the use of radio equipment is prohibited. This device must not be used in hospitals and/or in the vicinity of medical equipment, such as pacemakers or hearing aids, as their functionality could be compromised by the GSM/GPRS modem contained in the device.

4.4.3 Safety and preventative measures for handling GSM/GPRS modems

Observe the following safety and preventative measures during all phases of installation, operation, maintenance or repair of a GSM/GPRS modem. The manufacturer shall not be held liable if the customer disregards these preventative measures.



CAUTION:
The GSM/GPRS modem connection may 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 condition for the connection via a GSM/GPRS modem for whose use radio signals and networks are utilized, The GSM/GPRS modem must be switched on and be operated in an area where sufficient signal strength is present.*

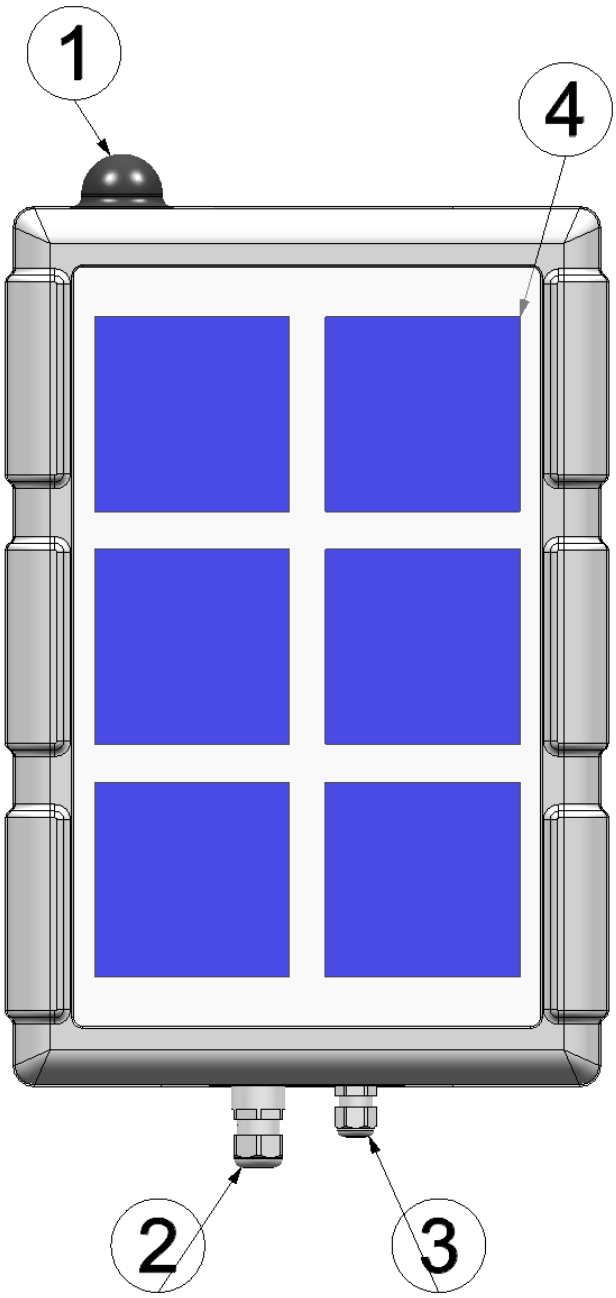
4.4.3.1 Safety and precautionary measures for the installation of the GSM/GPRS modem

- 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 GSM/GPRS modem can cause interferences if it is located in the vicinity of television sets, radios or computers.
- Do not open the GSM/GPRS modem. Any modification to the equipment is prohibited and will result in the operating licence being revoked.
- The use of GSM services (SMS 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.

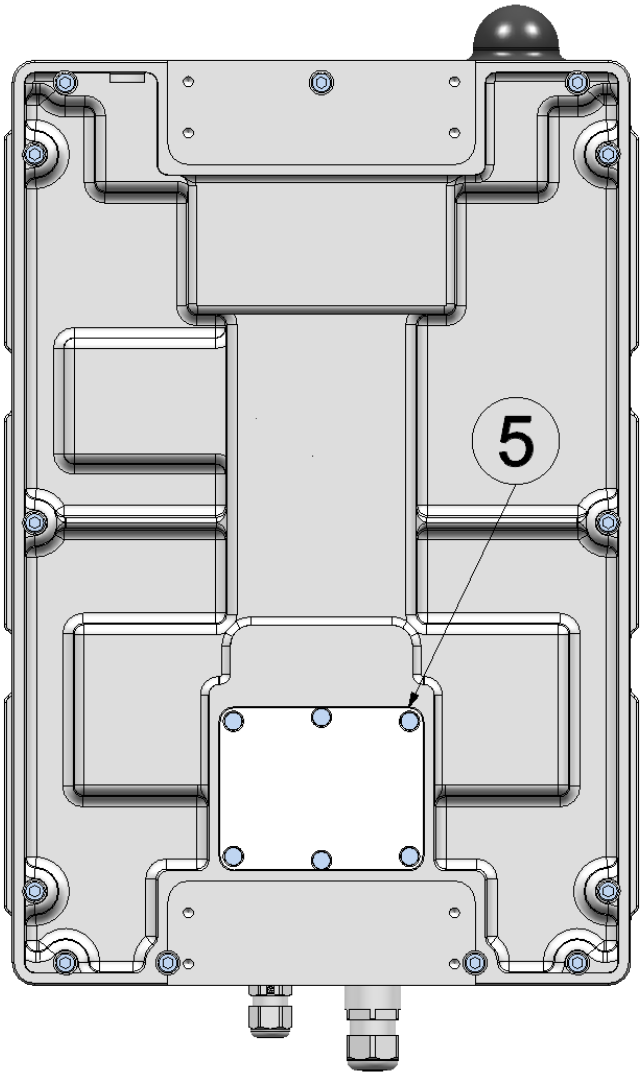
4.4.3.2 Safety measures for installing the antenna

- 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 be extended outside protected buildings and must be protected against lightning strikes.
- The voltage supply must be switched off before replacing the antenna.

4.5 Overview



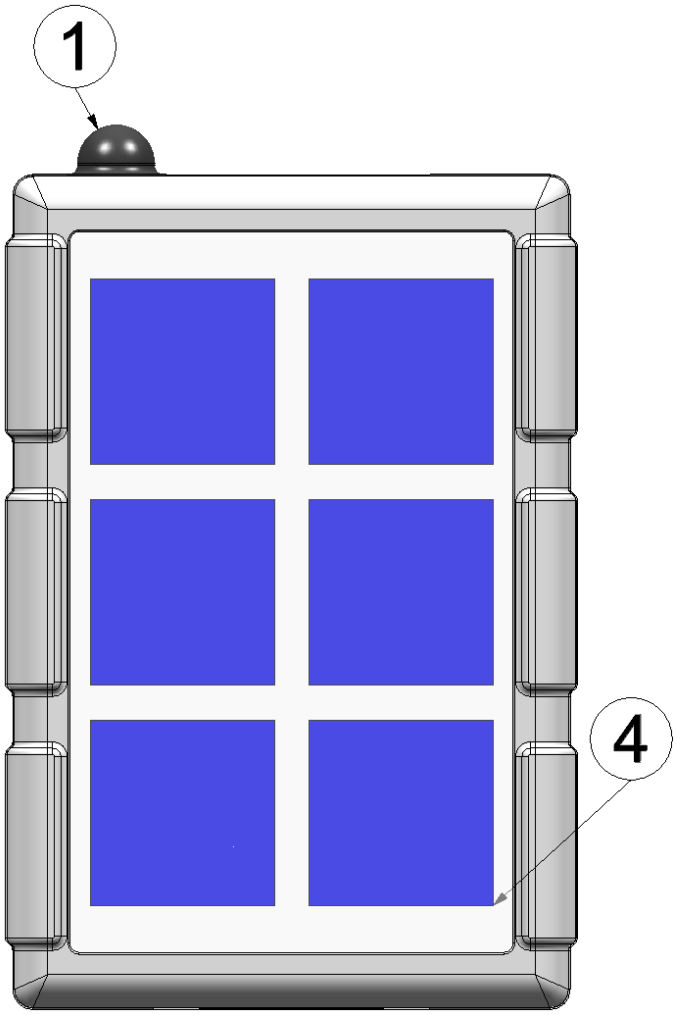
Front of the myDatalogRSS (standard design)



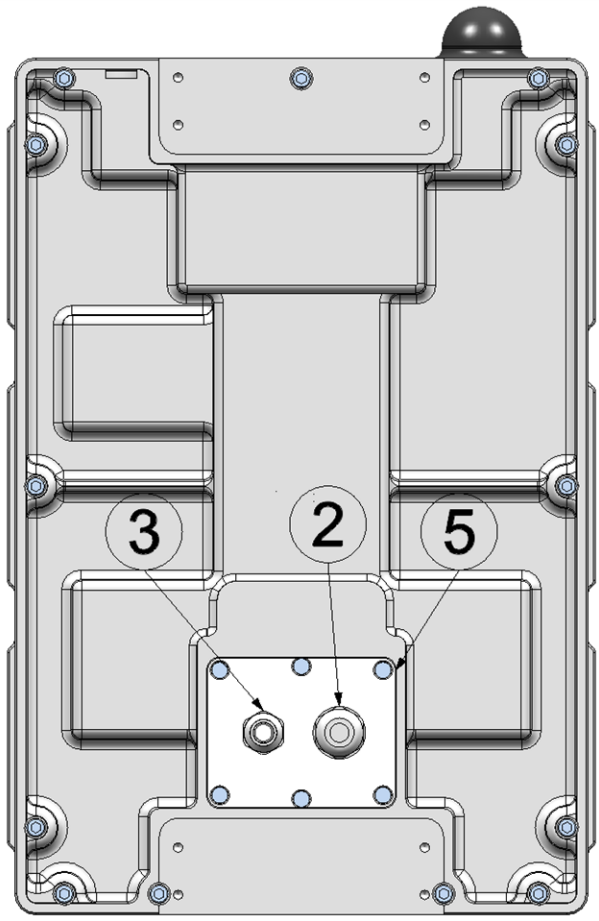
Rear of the myDatalogRSS (standard design)

1	Antenna	4	Solar panel
2	M20x1.5 cable screw connection with pressure compensation (cable diameter of 6-13 mm)	5	Housing compartment cover
3	M16x1.5 cable screw connection (cable diameter of 4.5-10 mm)		

An alternative version is also available, with the cable screw connections located on the rear. Please specify when placing the order if you require the alternative version. The "Mounting Bracket wasserstand.info for myDatalogRSS xx "(206.616) assembly set requires the version with the cable screw connections on the rear.



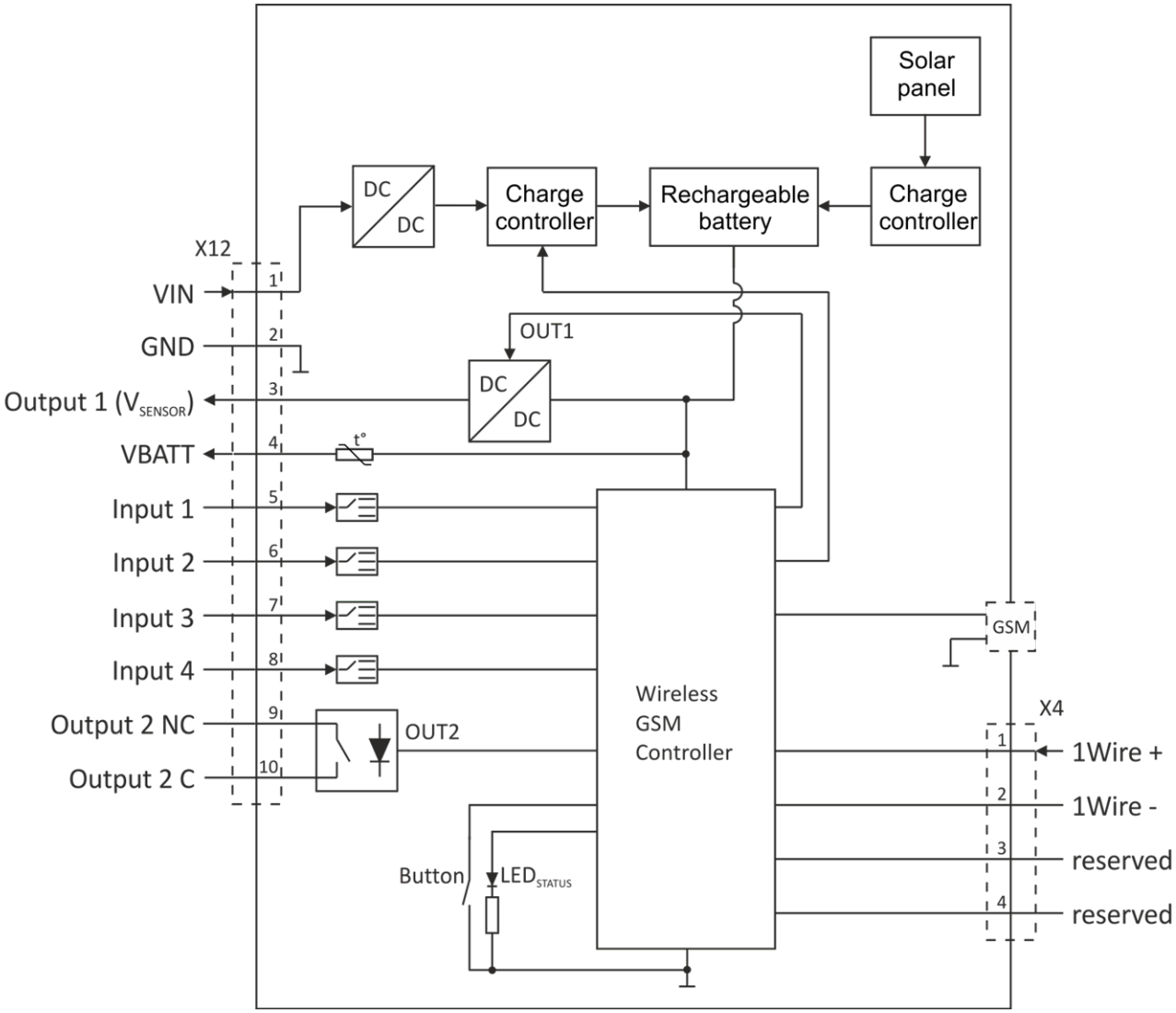
Front of the myDatalogRSS (alternative version)



Rear of the myDatalogRSS (alternative version)

1	Antenna	4	Solar panel
2	M20x1.5 cable screw connection with pressure compensation (cable diameter of 6-13 mm)	5	Housing compartment cover
3	M16x1.5 cable screw connection (cable diameter of 4.5-10 mm)		

4.5.1 Block diagram



Block diagram of the myDatalogRSS

4.6 Intended use

The stationary measurement instrument is used to record analogue and digital signals. The solar panel of the device ensures that it can be operated without mains power. The measured and recorded data is stored on a non-volatile memory 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 maximum permissible limit values specified in chapter "Technical data" on page 11 must be observed. The manufacturer shall not be liable for any operational cases that deviate from these limit values and have not been approved by the manufacturer in writing.

Note: This device is exclusively intended to be used for the purposes as described above. 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 if the device is damaged and data is not able to be stored correctly.

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. You can find a list of all supported countries and associated service providers under www.microtronics.at/footprint. A Managed Service contract with Microtronics Engineering GmbH is required for use of the mobile data transmission (see www.microtronics.at/managedservice). This includes the provisioning of the mobile communications connection via the network of the service provider included in the above-mentioned list.

4.7 General product information

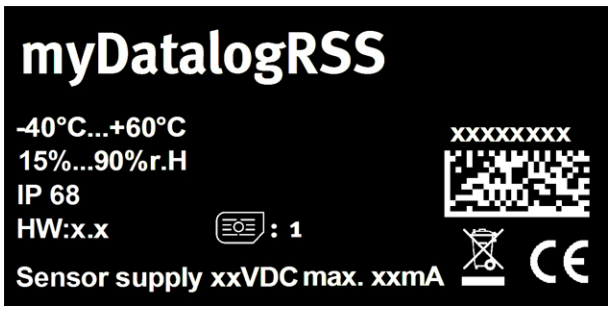
The device is a stationary instrument for recording and transmitting analogue and digital signals. There are 4 universal inputs available, which can be operated in various analogue and digital modes. Additionally, an one wire bus is available for connecting an external temperature sensor. 2 output channels are also available. One of the two directly switches the sensor supply. The other is a galvanised isolated switch contact. Both output channels can be configured independently so that they can each be switched by the device prior to a measurement (to supply the sensor) or they can be switched wirelessly from a central location. All of the input measurement data is temporarily saved to an internal data memory along with the output statuses and are then wirelessly transmitted to a central location at freely selected intervals. The device is also configured via this connection. The device is equipped with an integrated SIM chip.

4.8 Device labelling

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

- Name and address of the manufacturer
- Type designation
- Serial number
- Electrical parameters for the installed switchable sensor supply
- Environmental conditions during operation
- Degree of protection
- Hardware revision
- CE marking

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



Type plate myDatalogRSS

Note: This symbol indicates the country list profile (see www.microtronics.at/footprint) of the SIM chip installed in the device.

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

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

4.9 Installation of replacement and wear parts

Please be advised that replacement and accessory parts that have not been supplied by the manufacturer have also not been inspected or approved by it. Installing or using such products and similar can constructively modify the specified properties of the device in a negative way. 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 myDatalogRSS , activate the transport lock, by setting the "Operation mode" in the input screen of the myDataweb server for configuring the device (see "Device-specific settings" on page 99) to "OFF". Then activate ALOHA transmission mode (see "ALOHA transmission mode" on page 37) via the solenoid contact so that the amended configuration is transferred to the myDatalogRSS . During this process, all of the data that has not yet been transferred to the myDataweb server is transferred. Wait until the GPRS connection has been deactivated - indicated by the status LED going out (see "Status LED" on page 64). If you use an external charging voltage to help the solar panel charge the backup battery, disconnect it from the device now. The remaining cables can then be removed.

By activating the transport lock, the myDatalogRSS is in a very energy-saving mode. However, it may still occur that the buffer battery is fully discharged if the device is stored for very long periods. Although the configuration and the most recently determined data are always retained. The transport lock is deactivated again by re-initiating ALOHA transmission mode (see "ALOHA

transmission mode" on page 37) and the myDatalogRSS resumes operation according to the configuration.

4.11 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 (89/655/EEC) 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

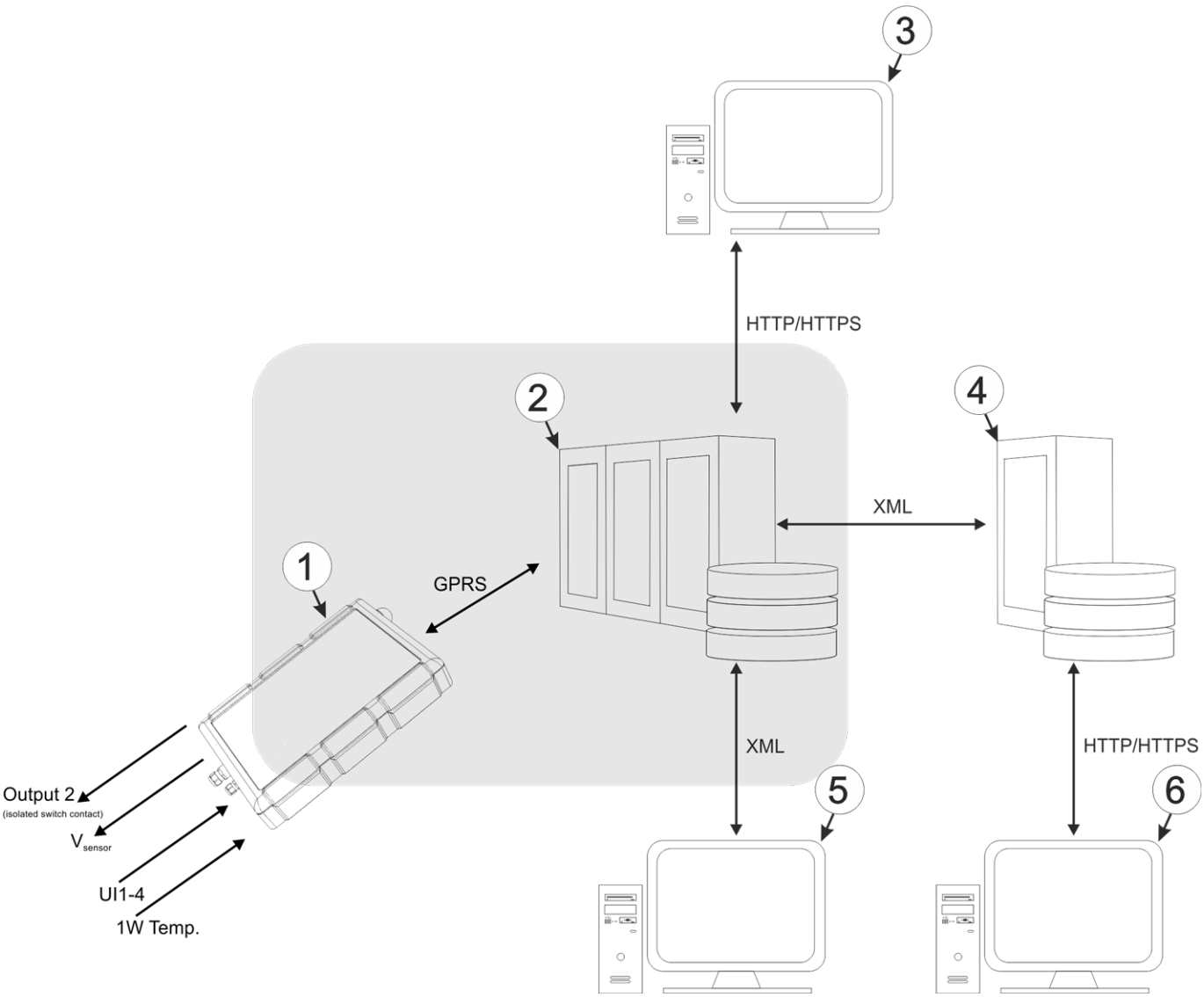
- the safety of the personnel (accident prevention measures)
- the safety of the equipment (protective equipment and maintenance)
- the product disposal (waste disposal law)
- the material disposal (waste disposal law)
- the cleaning (cleaning agents and disposal)
- and the environmental protection amendments.

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.

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Chapter 5 Functional principle

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



Functional principle

1	myDatalogRSS with integrated managed service SIM chip (including data transmission)
2	myDataweb server to which the data is transferred
3	Client that accesses the interface of the myDataweb 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 XML interface of the myDataweb server (see "XML interface" on page 109).
5	Client, on which a PC program is running, that obtains its data via the XML interface of the myDataweb server (see "XML interface" on page 109)
6	Client that accesses the interface of the customer-specific server via the web browser

Functions and components provided by myDatanet :

- myDatalogRSS

  The myDatalogRSS is a stationary device for connecting sensors (UI1-4) to the myDataweb server (GPRS).

- Managed Service

  Managed Service is the basis for operating your devices and provides you with 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.

- myDataweb server

  Database for saving the measurement data and configurations. Data is either accessed via the XML interface of the server (see "XML interface" on page 109) or web interface of the server.

Functions and components provided by the customer

- Sensors

  Sensor with interfaces that are compatible with the specifications listed in the chapter "Technical details about the universal inputs" (see "Technical details about the universal inputs" on page 55).

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

  It is therefore possible to create an individual web interface for the clients. Using this method, the data is read out of the myDataweb server via the XML interface (see "XML interface" on page 109) by the customer-specific server.

5.1 Internal processing of the measurement values

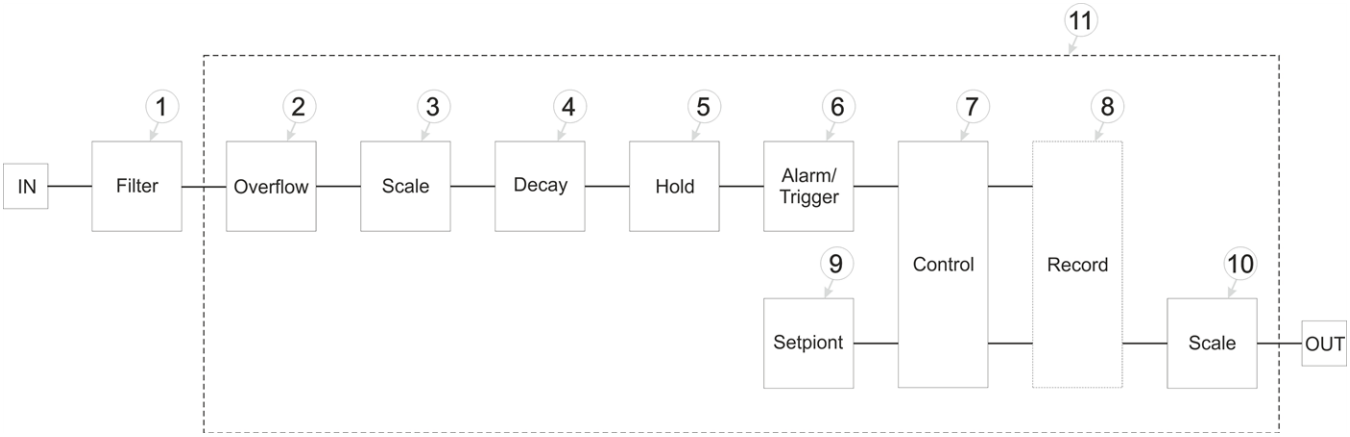


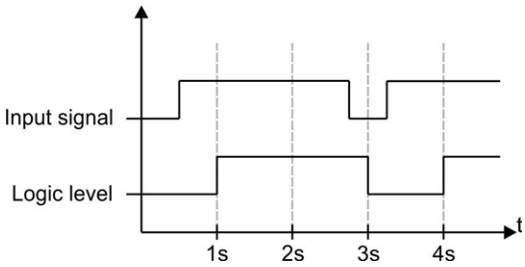
Diagram of the internal processing of the measurement values

1 Filter to compensate for brief signal fluctuations (see "Filter module" on page 27). The filter module is operated permanently.	**7** Determination of the setpoints, (see "Control module" on page 31)
2 Monitoring of the measurement range limits (see "Overflow module" on page 28)	**8** As the record interval and measurement cycle can be selected individually, the measurement values and setpoints are not recorded at the time of every measurement (see "Record module" on page 33).
3 Rescaling from the raw value to the measurement value (see "Scale module (inputs)" on page 29)	**9** Specification of the setpoints for the outputs (see "Setpoint module" on page 35)
4 Decay module to summarise several measurement values (see "Decay module" on page 30)	**10** Rescaling from the setpoint to the physical size for the output (see "Scale module (outputs)" on page 36)
5 Module to maintain the last valid value in the event of invalid measurement values (see "Hold module" on page 31)	**11** This module chain is started at the time of every measurement and is completed once. For universal inputs that are operated in digital or digital LP mode, this module chain (with exception of the control module) is also executed at second intervals to be able to react to level changes as quickly as possible.
6 Monitoring of the alarm limits and trigger levels (see "Alarm/trigger module" on page 31)	

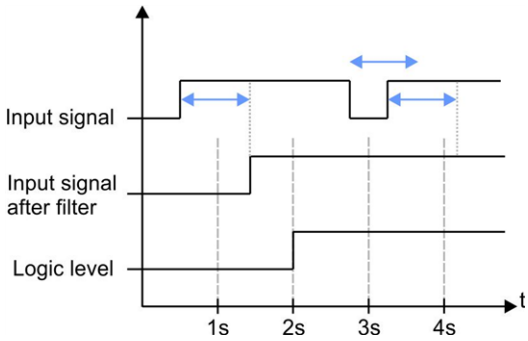
Note: *Additional explanation on universal inputs that are operated in digital or digital LP mode.*

Measurement channels -> Basis		*Mode*	*digital*
Measurement channels -> Config.	⟷	*Filter time*	*800ms*

Input signal	*Input signal at the universal input*
Input signal after filter	*Input signal taking the "filter time" into consideration*
Logic level	*The input signal at the universal input is analysed once per second.*



Filter module to compensate for brief signal fluctuations disabled ("filter time" = 0)



Filter module to compensate for brief signal fluctuations active ("filter time" not equal to 0)

Explanation: *To react to a level change at the universal inputs as quickly as possible, the module chain detailed in "Diagram of the internal processing of the measurement values" on page 25 (with exception of the control module) for the relevant universal input is operated once per second in digital or digital LP operating mode. This ensures that alarms and triggers are detected asynchronously to the measurement cycle. The signal must be present for at least 1 second to definitely detect a pulse safely. Additionally, any brief faults can be eliminated with the help of the "filter time".*

5.1.1 Filter module

The filter module is designed to compensate for brief fluctuations to the input signal. This module is only available for the 4 universal inputs.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement channels -›Config.	digital	Filter time	Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).
	digital LP		
	Cnt.Day		
	Cnt.Intervl.		
	Freq		
	PWM		
	4-20mA	Filter time	Time during which the analogue signal is averaged for signal smoothing. Used to suppress signal noise (also see "Output channels" on page 88).
	0-20mA		
	0-2V		
	0-10V		

5.1.2 Overflow module

This module monitors the measurement range limits of the raw value. If a universal input was, for example, switched to "4-20 mA" mode, a raw value of 2 mA will violate the measurement range. The overflow module is only available for the 4 universal inputs in "Freq", "PWM", "4-20mA", "0-20mA", "0-2V" and "0-10V" channel modes.

The following table specifies the relevant parameters for the module:

Configuration section	Modus/interface	Parameter	Explanation
Measurement channels ->Config.	digital	---	---
	digital LP		
	Cnt.Day		
	Cnt.Intervl.		
	Freq	Out of range	Procedure in the event of measurement range violations
	PWM		
	4-20mA		
	0-20mA		
	0-2V		
	0-10V		

5.1.3 Scale module (inputs)

This module rescales the raw value (e.g. mA) to the required measurement value (e.g. mm). The scale module is only available for the 4 universal inputs.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement channels -› Basis	digital	Invert	Inverts the input signal
	digital LP		
	Cnt.Day	Pulse	Metered measurand of a pulse in the measurement unit
	Cnt.Intervl.		
	Freq	Factor	Factor by which the input signal is multiplied
	PWM 4-20 mA 0-20 mA 0-2 V 0-10 V	0%	Start of the measurement range in the measurement unit
		100%	End of the measurement range in the measurement unit

5.1.4 Decay module

The decay module is designed to summarise several measurement values. The average value over a required time frame or the minimum value within a required time frame can be determined, for example. The decay module is only available for the 4 universal inputs, with the exception of "Cnt.Day" channel mode.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement channels - ›Config.	Digital LP digital	Decay	Temporal function in the measurement cycle
		Time	Time x, that is used for decay modes "up", "down" and "up & down"
	Cnt.Day	---	---
	Cnt.Intervl. Freq PWM 4-20 mA 0-20 mA 0-2 V 0-10 V	Decay	Temporal function in the measurement cycle
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.

5.1.5 Hold module

With the help of the hold module, it can be determined how to proceed in the event of invalid measurement values. It ensures the last valid measurement value is retained until a new valid measurement value is available or passes the error on after a certain number of invalid measurements. The hold module is only available for universal inputs in "Freq", "PWM", "4-20mA", "0-20mA", "0-2V" and "0-10V" channel modes.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement channels - ›Config.	digital	---	---
	digital LP		
	Cnt.Day		
	Cnt.Intervl.		
	Freq	Hold	Hold the last valid measurement value for x measurement cycles
	PWM		
	4-20mA		
	0-20mA		
	0-2V		
	0-10V		

5.1.6 Alarm/trigger module

This module monitors the alarm limits and trigger levels and creates an entry in the alarm list if necessary. The global triggers are also set (see "Alarm flags" on page 34 or "Trigger flags" on page 34). The alarm/trigger module is available for inputs (universal inputs and internal channels).

All of the parameters of the "Alarms" and "Trigger" tabs of the "Measurement channels" (see "Measurement channels" on page 66) and "Internal channels" (see "Internal channels" on page 93) configuration sections are relevant to this module. Additionally, the parameters in the following tables are also relevant:

Configuration section	Parameter		Explanation
Alarm settings	On alarm On warning On fault alarm On fault warning	A	The alarm is recorded in the alarm list.

5.1.7 Control module

The control module determines the setpoints for the outputs.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Output channels	Off	---	---
	Ext warmup time	Ext warmup time	Indicates the amount of time that an output channel is switched on in "Ext warmup time" mode before the measurement
	Digital	---	---
	Freq		
	PWM		
	Pulse		

5.1.8 Record module

The record module records the measurement values. As the record interval and measurement cycle can be selected individually, a record is not completed at the time of every measurement. Depending on the global triggers set by the alarm/trigger module (see "Alarm flags" on page 34 or "Trigger flags" on page 34), the record interval is modified, the transmission is initiated or a new measurement is triggered, if necessary.

The following tables specify the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Measurement channels -> Trigger	Digital LP digital	QU	Fastrecording (record interval = record interval / factor)
		SL	Slow recording (record interval = record interval * factor)
		MS	Start measurement cycle immediately
		XM	Initiate transmission
		ON	Activate online mode
	Cnt.Day Cnt.Intervl. Freq PWM 0-20 mA 4-20 mA 0-2 V 0-10 V	QU	Fastrecording (record interval = record interval / factor)
		SL	Slow recording (record interval = record interval * factor)
		RO	Switch on recording
		RF	Switch off recording
		XM	Initiate transmission
		ON	Activate online mode
Internal channels -> Trigger	---	QU	Fastrecording (record interval = record interval / factor)
		SL	Slow recording (record interval = record interval * factor)
		RO	Switch on recording
		RF	Switch off recording
		XM	Initiate transmission
		ON	Activate online mode

Configuration section	Parameter		Explanation
Alarm settings	On alarm On warning On fault alarm On fault warning	Ü	An immediate transmission is initiated.

Configuration section	Parameter	Explanation
Basic settings	Record interval	Time between measurement data recordings

5.1.8.1 Alarm flags

```
const
{
  MDN_FLG_WARNING   = 0b00000001,     // Warning
  MDN_FLG_ALARM     = 0b00000010,     // Alarm
  MDN_FLG_FAULTLOW  = 0b00000100,     // Technical error of low priority
  MDN_FLG_FAULTHIGH = 0b00001000,     // Technical error of high priority
  MDN_FLG_UNDERFLOW = 0b10000000,     // Shortfall of the alarm level
};                                    /* Must be set if the value is
                                        below the threshold.
                                        If this flag is not set, it
                                        is assumed that the threshold has been
                                        exceeded */
```

5.1.8.2 Trigger flags

```
const
{
  // Request fast recording
  MDN_TRG_RECQUICK   = 0b0000000100000000,
  // Request slow recording
  MDN_TRG_RECSLOW    = 0b0000001000000000,
  // Start recording the current measurement
  MDN_TRG_RECORD_ON  = 0b0000100000000000,
  // Prevent current measurement from being recorded
  MDN_TRG_RECORD_OFF = 0b0001000000000000,
  // Request a single connection to the server
  MDN_TRG_TXSTART    = 0b0010000000000000,
  // Request an online connection to the server
  MDN_TRG_CONTINOUS  = 0b1000000000000000,
};
```

5.1.9 Setpoint module

This module uses the setpoints for the outputs entered via the configuration interface of the myDataweb server.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Output channels -› Basis	Off	---	--
	Ext warmup time[1)]		
	Digital	Setpoint	Setpoint (on/off) that should be issued
	Freq	Setpoint	The setpoint multiplied by the factor equals the frequency in Hertz.
	PWM	Setpoint	Output value in the measurement unit
	Pulse	Setpoint	The setpoint multiplied by the factor equals the pulse/min.

[1)] In "Ext warmup time" mode, the output is actuated by the device itself to activate the sensor supply for the measurement (see "Output channels" on page 88).

5.1.10 Scale module (outputs)

This module rescales the setpoint (e.g. mm) into the desired physical size (e.g. frequency) for the output.

The following table specifies the relevant parameters for the module:

Configuration section	Mode	Parameter	Explanation
Output channels	Off	---	---
	Ext warmup time[1)]		
	Digital	Basis -› Invert	Inverts the level issued on the device (see "Supplementary explanation regarding "Digital" mode" on page 90).
	Freq	Basis -› Factor	The setpoint multiplied by the factor equals the frequency in Hertz.
	PWM	Basis -› 0%	Start of the output range in the measurement unit
		Basis -› 100%	End of the output range in the measurement unit
	Pulse	Basis -› Factor	The setpoint multiplied by the factor equals the pulse/min.
		Config -› Duration	Duration of an output pulse

[1)] In "Ext warmup time" mode, the output is actuated by the device itself to activate the sensor supply for the measurement (see "Output channels" on page 88).

5.2 Functionality of the internal data memory

Structure	Circular buffer
Total size	25.588 measurement cycles
Number of sectors	4
Sector size	6397 measurement cycles

The internal data memory of the myDatalogRSS is designed as a circular buffer with 4 sectors. If the maximum number of data records (25.588) 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

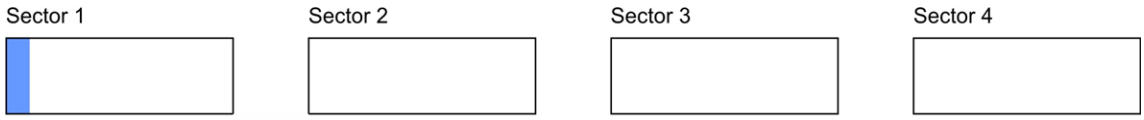
the very least contains the measurement values of the last 19191 cycles, however at most the measurement values of the last 25.588 cycles.

For this reason, it is recommended to coordinate the transmission cycle and record interval in such a way that a maximum of 19191 measurement cycles have to be recorded between two transmissions. Please note, that if the measurement cycle is shorter than the record interval, the record interval still has to be used for the calculation. In this case, the reason for this is that although the measurement is completed in the measurement cycle, the determined data is saved in the data memory in the record interval. If it can be expected that individual transmissions fail due to poor network coverage or the measure quick divisor is activated via the trigger, this must also be taken into consideration when calculating the measurement cycles that are to be saved.

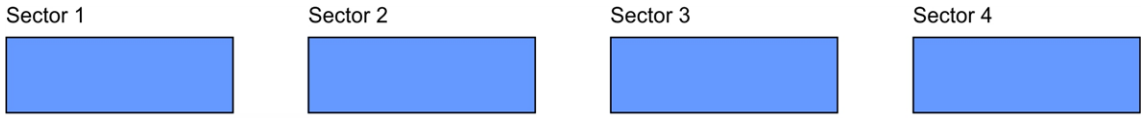
Note:

Additional explanation regarding the functionality of the circular buffer

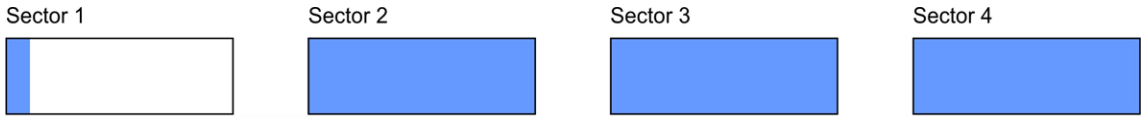
Data memory after the first measurement cycle:



Data memory after 25.588 measurement cycles:



Data memory after 25.588 +1 measurement cycles:



5.3 Procedure in case of connection aborts

If the connection is terminated, another attempt to establish a connection is made after 2min for all connections, except for ones that were established by initiating ALOHA transmission mode. The connection is attempted up to 3 times, as long as the previous attempt to establish a connection was successful. This means that if the connection fails and it is not possible to re-establish the connection during the first retry after 2min , a further retry will not be completed after 2min .

This process also applies if the connection is terminated during online mode.

5.4 ALOHA transmission mode

ALOHA transmission mode is a special connection mode whereby the myDatalogRSS establishes a connection to the myDataweb server for a period of time configured via the "Basic settings" configuration section (see "Aloha/wakeup duration" in chapter "Basic settings" on page 96).

There are two options for initiating the ALOHA transmission mode:

- Directly on the device by means of the solenoid switch (see "Solenoid switch" on page 65). The GSM network is re-selected during this process. This means that a list of all of the GSM networks in the receiving range of the device is created from which the strongest GSM network is then selected that is not on the "Ban list" (see "Ban list" on page 39) and that is part of one of the service providers supported by the integrated SIM chip (see www.microtronics.at/footprint). The internal fault counter is pre-initialised in such a way that if it was not possible to log into the selected GSM network, it is immediately added to the "Ban list". In this case, the next GSM network from the previously created list is used immediately. If the connection with all of the available GSM networks fails, the ban list is deleted and the connection attempt is aborted. If ALOHA transmission mode is then initiated again, the ban list is empty and all of the GSM networks in the receiving range, that are part of one of the service providers supported by the integrated SIM chip, are taken into consideration when selecting the network. The network selection also takes into consideration whether GPRS is available on the selected GSM network.
- Via the myDataweb server if the "Interval & wakeup" connection type has been selected (see "Basic settings" on page 96).



A speech bubble in the measurement instrument list (see "myDatanet Server Manual " 805002) with the title "Aloha" indicates that a device is in ALOHA transmission mode.



Clicking on the speech bubble with the "Aloha" title opens the ALOHA data window (see "myDatanet Server Manual " 805002), which comprises the internal "voltage", "GSM level" and "battery" measurement values, as well as the measurement values of the 4 universal inputs. The measurement values for the last thirty minutes are always shown in the ALOHA data window, which means that data from a previous ALOHA transmission may be included. The ALOHA data is generated every three seconds independently of the normal measurement value and is thus not saved with the standard measurement data.

If a measurement dataset is recorded during ALOHA transmission mode, it is immediately transferred to the myDataweb server and saved in the standard measurement data.

5.5 Automatic selection of the GSM network

The GSM network to which the device should register must be selected, as the myDatalogRSS is equipped with a SIM chip that provides a mobile connection via a variety of international service providers (see www.microtronics.at/footprint). This is completed automatically by the device. During this process it is taken into consideration if a connection to a certain GSM network is possible although the use of this GSM network repeatedly causes transmission errors. Such a GSM network is added to a ban list and is ignored during the next login attempt.

The following conditions ensure that the myDatalogRSS logs itself into a GSM network:

- PowerOn
- Expiry of the transmission cycle if the "Interval" connection type was selected (see "Basic settings" on page 96)
- Activation of the "Interval & wakeup" or "Online" connection type (see "Basic settings" on page 96)
- Initiation of ALOHA transmission mode (see "ALOHA transmission mode" on page 37)

1. The myDatalogRSS checks whether any errors occurred during the last login attempt.

   No errors:

   The myDatalogRSS logs into the same GSM network that was also used during the last attempt.

   Error:

   Continue with step 2

   > ***Note:*** *A transmission error is not the same as an error that occurs when logging into the GSM network. It is possible for the login to the GSM network to work correctly but that a transmission error still occurs.*

The following steps are only completed if an error was detected during step 1:

2. The device searches for GSM networks within its receiving range and creates a list of available GSM networks.
3. A search of the list of available GSM networks is completed and the strongest GSM network is selected that is not on the "ban list" and is assigned to one of the service providers supported by the integrated SIM chip (see www.microtronics.at/footprint).

   > ***Note:*** *An explanation detailing the conditions when a GSM network is added to the "ban list" is provided in "Ban list" on page 39.*

5.5.1 Ban list

The ban list provides space for 5 entries and is not saved in a volatile memory. This means that it is also still available following a PowerOn.

If there is a GPRS error (see error codes -975 to -993 in chapter "Modem error" on page 122), then an internal counter is increased by 2 . If a transmission was completed without errors, i.e. all of the data was transferred, this internal counter is reduced by 1 . The current GSM network is added to the ban list if the internal counter reaches the value 6 . The relevant GSM network is automatically added to the ban list, if the "MODEM CMME ERROR" error occurs (see "Modem error" on page 122) with parameter 32 (NETWORK NOT ALLOWED) or 529 (MODEM CMME ERROR). The ban list is deleted if no GSM network can be selected from the list of available GSM networks in the receiving range taking the ban list into consideration. Another search for GSM networks in the receiving range is completed once the ban list is deleted and the network selection is completed with the ban list that is now empty (see step 3 in chapter"Automatic selection of the GSM network" on page 39).

The quality of the data transfer is monitored in addition to the establishment of the GPRS connection. If the data transmission fails 10 times in succession despite an existing GPRS connection, the currently selected GSM network is also added to the ban list. The same applies in this case, which means that if, when taking the ban list into consideration, there is no further GSM network available, the ban list is deleted and selection of the strongest GSM network is restarted.

Chapter 6 Storage, delivery and transport

6.1 Inspection of incoming deliveries

Please check the shipment immediately after receiving for completeness and intactness. Immediately report any discovered transport damages to the delivering carrier. Also notify the manufacturer in writing about this without delay. Report any incompleteness in the delivery to the responsible representative or directly to the company headquarters of the manufacturer within 2 weeks (see "Contact information" on page 131).

> ***Note:*** *Any claims received thereafter will not be acknowledged!*

6.2 Scope of supply

> ***Note:*** *On standard devices, the cable screw connections are located on the bottom. An alternative version is also available, on which the cable screw connections are located on the rear (see "Overview" on page 16). Please specify when placing the order if you require the alternative version. The "Mounting Bracket wasserstand.info for myDatalogRSS xx "(206.616) assembly set requires the version with the cable screw connections on the rear.*

The standard scope of supply of the myDatalogRSS (206.265) includes:

- myDatalogRSS
- 10-pin connector plug
- 4-pin connector plug
- Quick guide

Additional accessories such as internal expansions, assembly sets, antennas, rechargeable battery or battery pack, sensors, power supply, charging devices, etc., depending on the order. Please check these against the delivery slip.

6.3 Storage

The following storage conditions must be observed:

myDatalogRSS	Storage temperature	-30...+85°C
	Humidity	15...90%rH

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

6.4 Transportation

The myDatalogRSS is designed for rough industrial applications. Nevertheless, it should not be subjected to heavy shocks, bumps, impacts or vibrations. The original packaging must always be used for transport.

6.5 Return

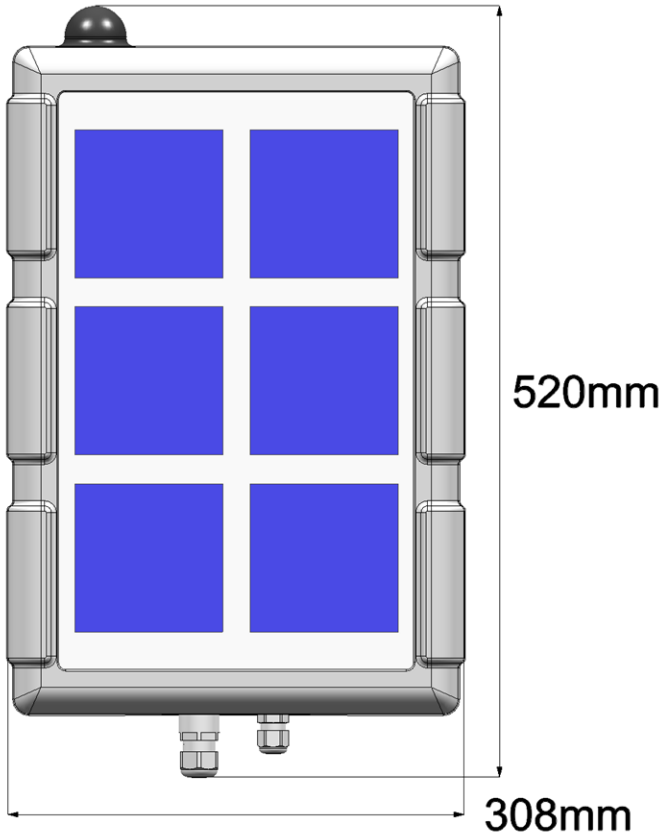
Every return must be accompanied by a fully field-out return form. This return form is available in the service area of the myDataweb-Server. An RMA number is mandatory for any returns and can be obtained from the Support & Service Centre (see "Contact information" on page 131). The return shipment of the myDatalogRSS must occur in the original packaging and with freight and insurance paid to Microtronics Engineering GmbH (see "Contact information" on page 131). Insufficiently cleared return shipments will otherwise not be accepted!

Chapter 7 Installation

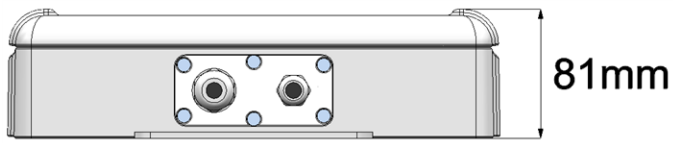
Important note: *To prevent any damage to the device, the work described in this section of the instructions must only be performed by qualified personnel.*

7.1 Dimensions

7.1.1 Standard version (cable screw connections on the bottom)

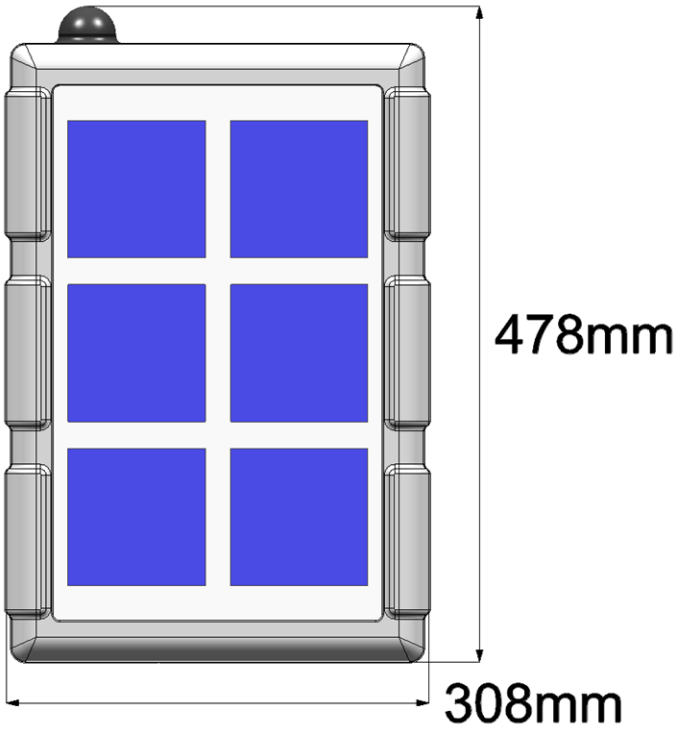


Dimensions: width and height

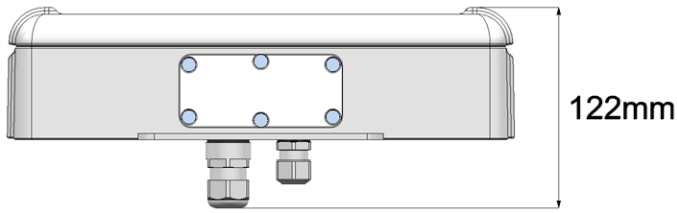


Dimensions: depth

7.1.2 Alternative version (cable screw connections on the rear)



Dimensions: width and height



Dimensions: depth

7.2 Installing the myDatalogRSS

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 instruments!*

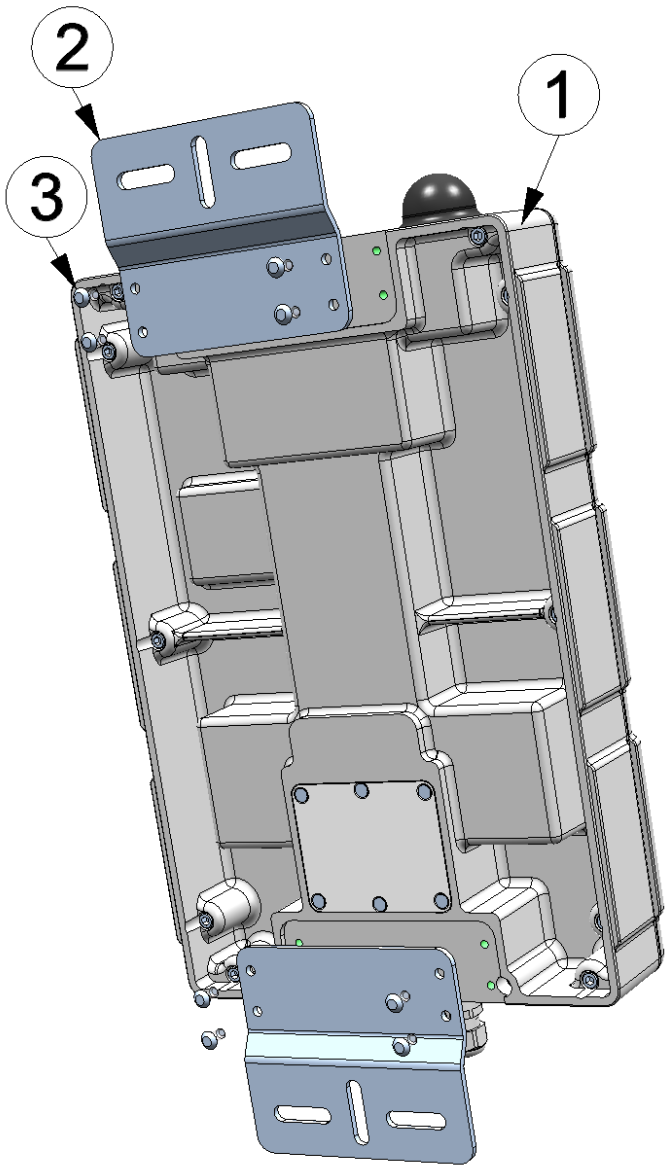
The installation site must be selected according to specific criteria. The following conditions must be avoided in any case:

- Objects that radiate intense heat (maximum ambient temperature: -40...+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

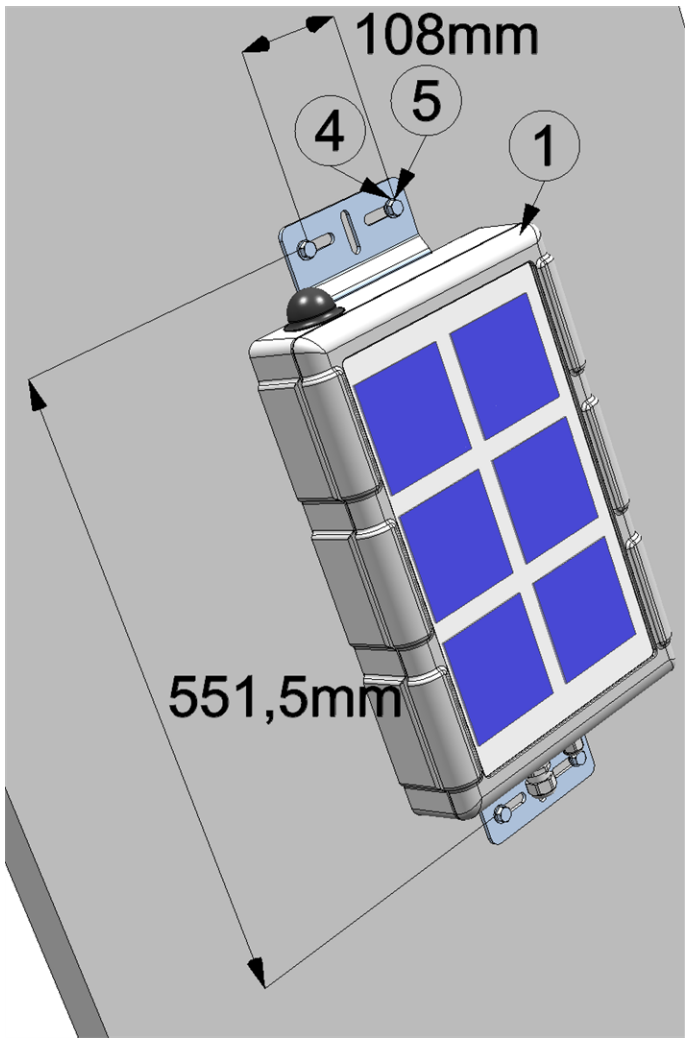
Note: *A gap of approx. 15 cm for the cable connections should be provided below the standard version of the device (cable screw connections on the bottom). A gap of approx. 15 cm for the cable connections should be provided at the rear of the alternative version of the device (cable screw connections on the rear). Further information regarding the installation dimensions can be found in the relevant sub-chapter.*

7.2.1 Wall mounting

The optional "Wall Mounting Set for myDatalogRSS xx (206.649)" equipment is required for wall mounting.



Wall mounting - step 1



Wall mounting - step 2

1	myDatalogRSS	4	8.4 lining disc (included in the scope of delivery of 206.649)
2	Assembly loop (included in the scope of delivery of 206.649)	5	8x80 SW 13 hexagon bolt (included in the scope of delivery of 206.649)
3	M6x12 imbus HX4 rounded head screw (included in the scope of delivery of 206.649)		

1. First attach the assembly loop (2) using the rounded head screws (3) included in the "Wall Mounting Set for myDatalogRSS xx (206.649)" equipment set to the myDatalogRSS (see "Wall mounting - step 1" on page 45).
2. Drilling the holes for the assembly:

   If you want to use the hexagon bolts (5) included in the equipment set to secure the assembly loop (2) to the wall, drill four 12-mm holes in the wall in accordance with the dimensions in the diagram "Wall mounting - step 2" on page 45.

   If you want to use your own fastening screws, use the slotted holes in the assembly loop (2) to determine the position of the holes. The diameters are then determined by the screws that are being used and any wall plugs that may be required.
3. Securing the myDatalogRSS to the wall:

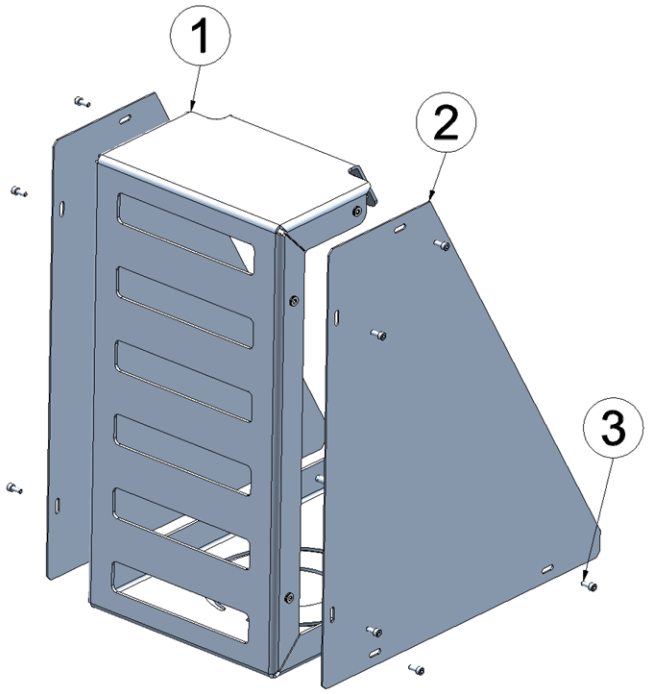
   If you want to use the hexagon bolts (5) included in the equipment set, first of all insert the supplied wall plugs into each of the four drill holes before screwing the myDatalogRSS with the attached assembly loop (2) to the wall (see "Wall mounting - step 2" on page 45).

   If you are using your own screws, you must also insert the wall plugs into the holes before mounting the myDatalogRSS with the attached assembly loop (2) to the wall (see "Wall mounting - step 2" on page 45).

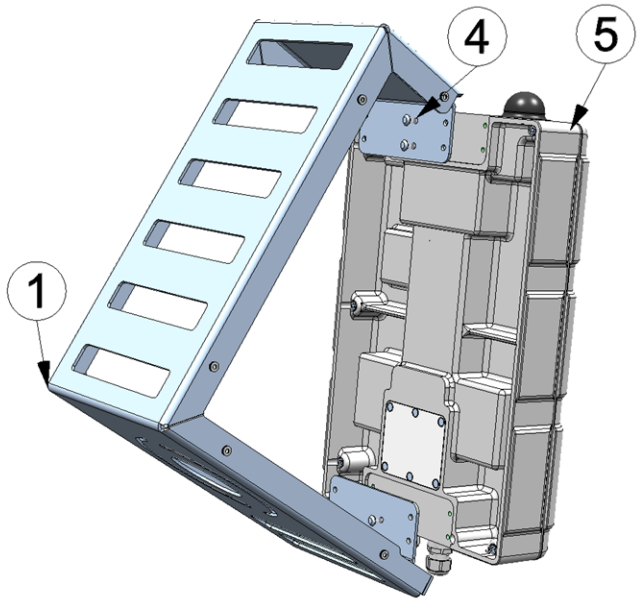
7.2.2 Installation on a bridge

> ***Note:*** *Seek approval from the responsible authority before installing on public facilities such as bridges.*

The optional "Mounting Bracket wasserstand.info for myDatalogRSS xx (206.616)" accessories are required for assembly on a bridge.

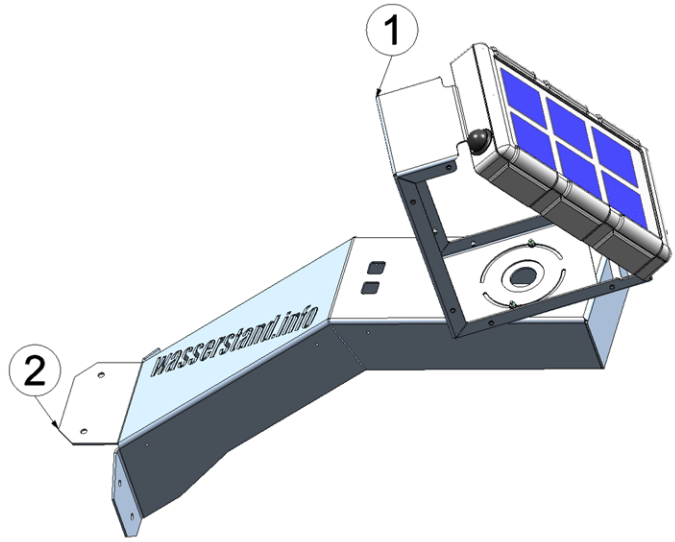


Installation on a bridge - step 1

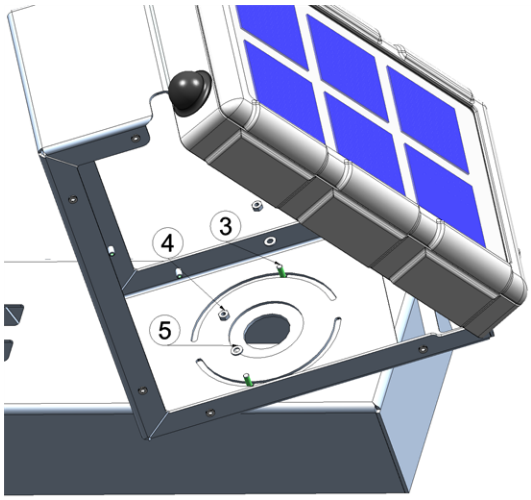


Installation on a bridge - step 2

1	Retaining bracket for myDatalogRSS (included in the scope of delivery of 206.616)	4	M6x12 imbus HX4 rounded head screw (included in the scope of delivery of 206.616)
2	Side panel (included in the scope of delivery of 206.616)	5	myDatalogRSS
3	M4x10 hex socket screw (included in the scope of delivery of 206.616)		

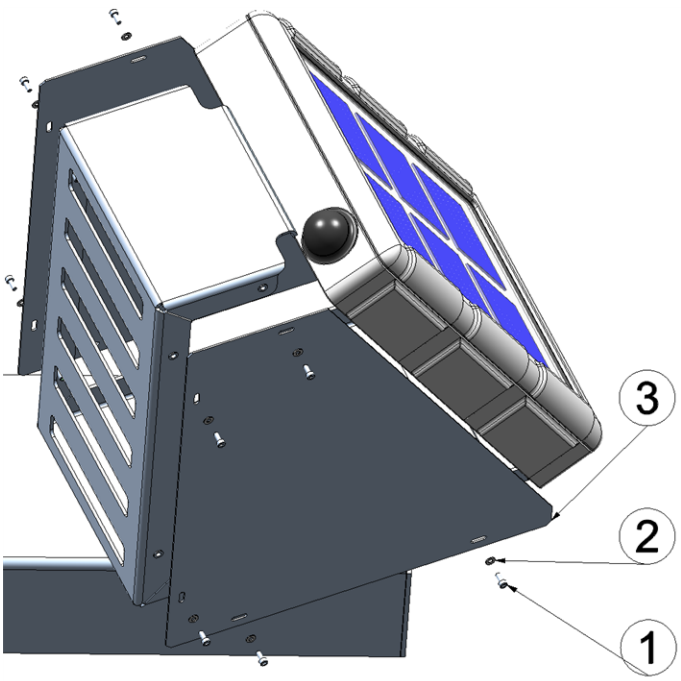


Assembly on a bridge - step 3

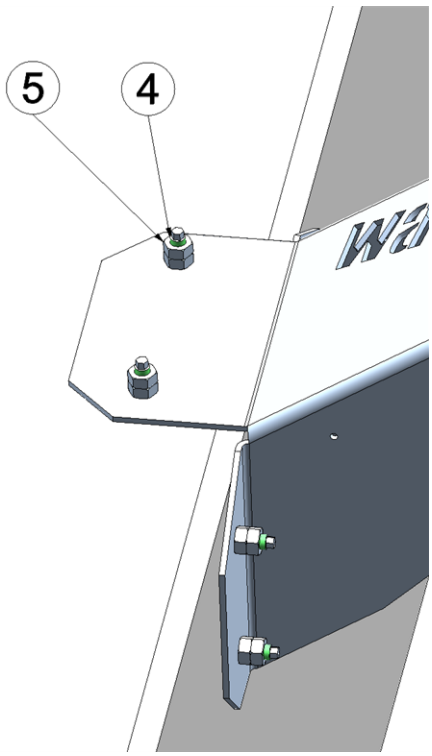


Assembly on a bridge - step 4

1	Retaining bracket with attached myDatalogRSS (included in the scope of delivery of 206.616)	4	6.4 lining disc (included in the scope of delivery of 206.616)
2	Console mount (included in the scope of delivery of 206.616)	5	M6 hexagonal nut (included in the scope of delivery of 206.616)
3	M6x16 truss-head screw (included in the scope of delivery of 206.616)		



Installation on a bridge - step 5



Installation on a bridge - step 6

1	M4x10 hex socket screw (included in the scope of delivery of 206.616)	4	M10x130 armature bar (included in the scope of delivery of 206.616)
2	4.3 lining disc (included in the scope of delivery of 206.616)	5	M10 hexagonal nut (included in the scope of delivery of 206.616)
3	Side panel (included in the scope of delivery of 206.616)		

1. When the "Mounting Bracket wasserstand.info for myDatalogRSS xx (206.616)" assembly set is supplied, the side panels are mounted on the retaining bracket for the myDatalogRSS . Loosen the M4 hex socket screws to remove the side panels (see "Installation on a bridge - step 1" on page 47).
2. Then fasten the retaining bracket on the myDatalogRSS using the M6x12 rounded head screw included in the equipment set (see "Installation on a bridge - step 2" on page 47).
3. Connect the retaining bracket including the attached myDatalogRSS to the console mount. For this purpose, use the M6x16 truss-head screws, 6.4 lining disc and M6 hexagonal nuts included in the equipment set (see "Assembly on a bridge - step 3" on page 48 and "Assembly on a bridge - step 4" on page 48).

   Note: *When installing the retaining bracket on the console mount, ensure that the solar panel is facing towards the south when the console mount is installed on the bridge.*

4. The retaining bracket and console mount have an opening to hold an ultrasonic or radar sensor (see "Assembly on a bridge - step 4" on page 48). If you want to use a corresponding sensor, insert it in the opening before you assemble the side panels again (see "Installation on a bridge - step 5" on page 48).
5. Installing the console mount on a bridge:

   Note: *The console mount has two openings (see "Assembly on a bridge - step 3" on page 48) so that it can be held in place with tension belts during assembly on the bridge.*

   1. Place the console mount into position.
   2. Drill six holes with a diameter of 12 mm for the armature bars.
   3. Clean the drill holes.
   4. Insert the resin capsules included in the equipment set in to the drill holes.
   5. Insert the armature bars using an impact drill or hammer drill until there is a slight discharge of the resin capsule liquid at the sides of the drill hole.

6. Wait for the curing time to pass

Temperature in the anchoring base	Curing time
- 5°C...0°C	240 min.
0°C...+10°C	45 min.
+10°C...+20°C	20 min.
>= +20°C	10 min.

> ***Note:*** *The curing times must be doubled in wet concrete. Any stagnant water must be removed from drill holes.*

7. Attach the console mount with the M10 hexagonal nuts (see "Installation on a bridge - step 6" on page 48).

7.3 Safety instructions for the cabling

When connections are made to the myDatalogRSS , the following warnings and information must be observed, in addition to the warnings and information found in the individual chapters on the installation. Further safety information is included in "Safety instructions" on page 13.

7.3.1 Information on preventing electrostatic discharges (ESD)

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

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

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

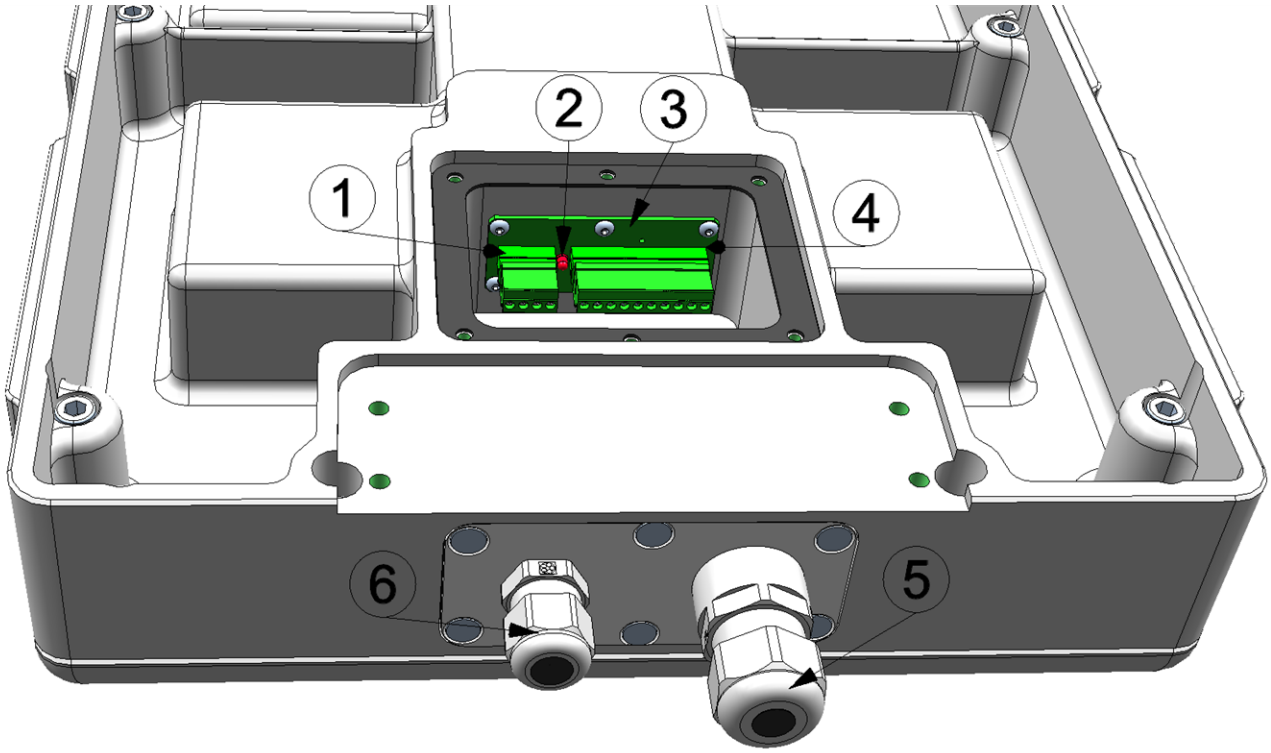
7.4 Electrical installation

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

7.4.1 Connecting the sensors, actuators and power supply

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 instruments!*
- *Run all data and power cables so that they do not pose a trip hazard and ensure that cables do not have any sharp bends.*
- *The myDatalogRSS must not be operated in the field with the housing compartment cover open.*
- *To ensure the housing is properly sealed, each of the two cable screw connections must only hold a single cable.*



Connection of the sensors and power supply (standard design)

1	Terminal strip X4	4	Main terminal block X12
2	Status LED	5	M20x1.5 cable screw connection with pressure compensation (cable diameter of 6-13 mm)
3	Solenoid switch	6	M16x1.5 cable screw connection (cable diameter of 4.5-10 mm)

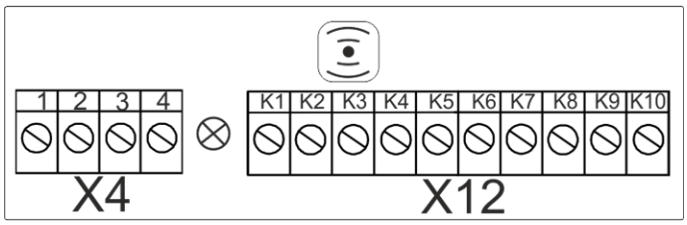


Diagram of the terminal strip

Assignment of terminal strip X4

1	1Wire+	Data line for the external temperature sensor
2	1Wire-	Ground
3	reserved	Reserved for extensions
4	reserved	Reserved for extensions

Assignment of the main terminal block X12

K1	V_{in}	External charging voltage
K2	GND	Ground
K3	Output 1	Output 1: switchable sensor supply for analogue sensors
K4	V_{batt}	Direct rechargeable battery or battery voltage output
K5	Input 1	Universal input 1
K6	Input 2	Universal input 2
K7	Input 3	Universal input 3
K8	Input 4	Universal input 4
K9	Output 2	Output 2: Isolated switch contact
K10	Output 2	

1. Remove the six screws that secure the housing compartment cover. Now open the myDatalogRSS .

   Important note: *In the event of adverse weather conditions including rain or in a location where water can penetrate from above, suitable measures must be implemented to protect the device from penetrating moisture when the housing compartment cover is open.*

2. Connecting the optional, external temperature sensor (206.300):
    1. From the outside, thread the sensor cable through one of the cable screw connections.
    2. Connect the connection cables of the external temperature sensor to terminal strip X4 in accordance with the connection plan.

    Connection plan for the external temperature sensor (206.300)

X4	Signal	Cable temperatur sensor for myDatalogS3 20m (206.300)
1	1Wire+	White
2	1Wire-	Brown

    3. Tighten the cable screw connection to secure the sensor cable.

3. Then connect your sensors and actuators with the universal inputs and outputs. If the solar panel is going to be supported by an external charging voltage when the backup battery is being charged, connect the external charging voltage to V_{in} and GND. Ensure that no current is present!

    Important note: *Only a single cable must be threaded through the cable screw connections to ensure the seal of the housing is not jeopardised.*

4. Tighten the cable screw connections to secure the cables.

5. Affix blind plugs to all of the cable screw connections that are not required.

    Important note: *All unused cable screw connections on the myDatalogRSS must be sealed watertightly using the blind plugs supplied. Otherwise the degree of protection for the entire device is not guaranteed and the manufacturer's warranty is void.*

6. Initiate ALOHA transmission mode (see "ALOHA transmission mode" on page 37). The status LED should then start to flicker (see "Status LED" on page 64), indicating that a connection is being established.

    Note: *If the myDatalogRSS is still in transport mode, the transport lock is deactivated by the initiation of ALOHA transmission mode and the device starts to operate in accordance with the configuration.*

The following step is not mandatory.

7. Check whether the connection to the myDataweb has worked correctly (see "Testing communication with the device" on page 60).

8. Close the housing cover. The best option is to tighten all six of the screws crosswise so that the housing compartment cover is positioned evenly.

    Important note: *Ensure that the seals are clean and intact before closing the housing compartment cover. Remove any impurities and/or dirt. The manufacturer shall not be liable for any damage to the device caused by leaky or faulty seals.*

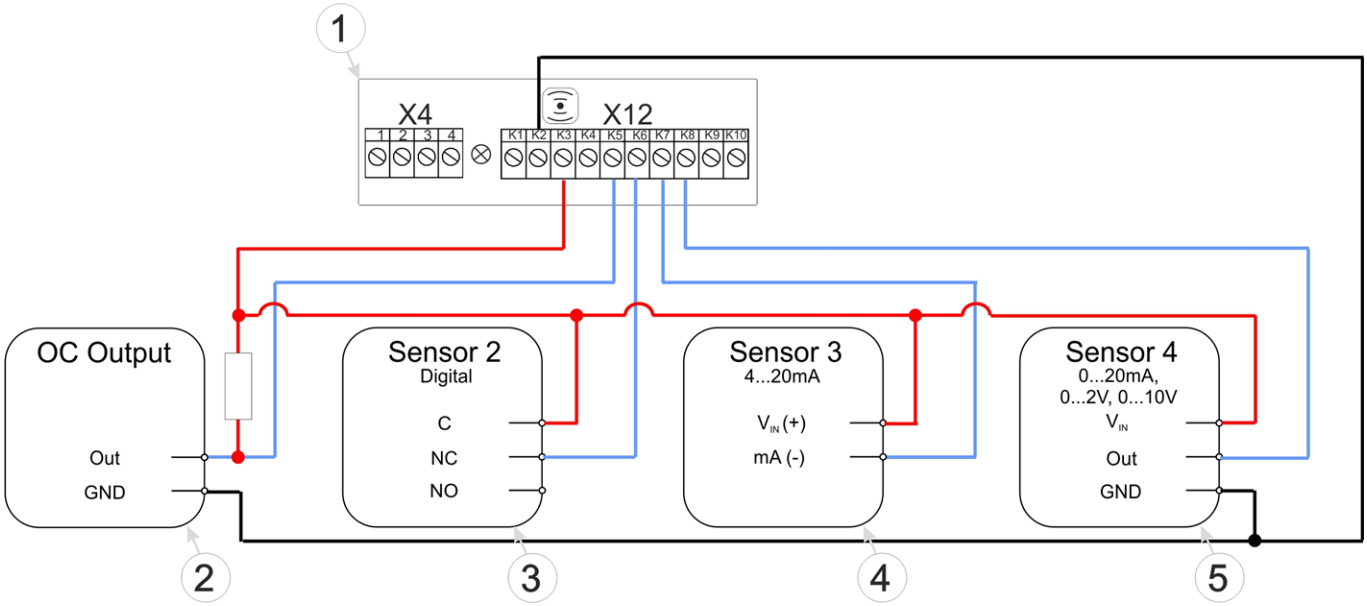
The following step is only necessary if you are using an external charging voltage to support the solar panel when charging the backup battery:

9. Now switch on the external charging voltage.

7.4.1.1 Connection examples

7.4.1.1.1 Use of the switchable sensor supply (standard: 15...19,5VDC, optional: 24...31VDC) K3

Important note: *If a universal input is in "LP digital" mode, a switch contact must only be supplied by V_{batt}. Attaching an external voltage will cause damage to the universal input.*

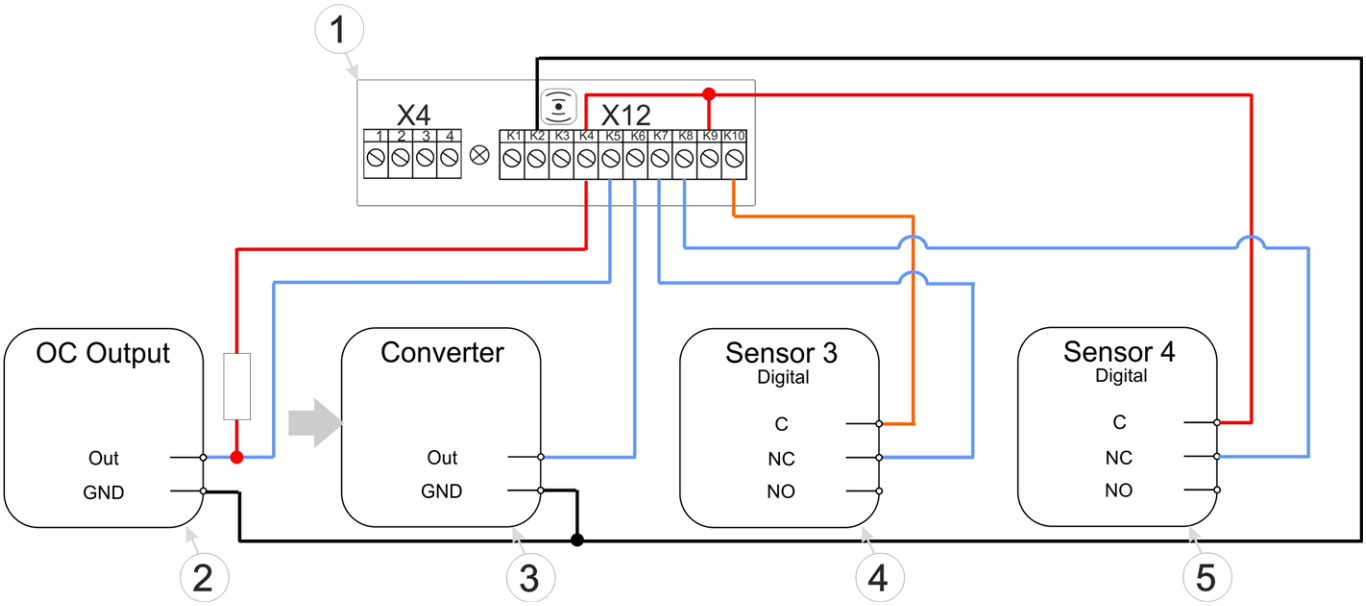


Connection examples: Use of the switchable sensor supply

1	Terminal strips of the myDatalogRSS	4	2-wire mA sensor
2	Sensor with open collector output	5	3-wire mA sensor or 3-wire U-sensor
3	Isolated relay contact		

Note: *The "Cnt.Day", "Cnt.Intervl.", "Freq" and "PWM" operating modes require a permanent supply of the sensors. Inputs that are operated in "Digital" mode and that are to be used to initiate a trigger event also require a permanent supply of the sensors. This can be achieved by setting the ext. warmup time in the "Output channels" configuration section (see "Output channels" on page 88) to a higher value than the measurement cycle (see "Basic settings" on page 96). However, this greatly increases the energy requirements and thus significantly shortens the operating time of the device. The use of the direct rechargeable battery or battery voltage output (K4) is more suitable for this operation mode (see "Use of the direct rechargeable battery or battery voltage output (3,1...4,2V) K4" on page 55).*

7.4.1.1.2 Use of the direct rechargeable battery or battery voltage output (3,1...4,2V) K4



Connection examples: Use of the direct rechargeable battery or battery voltage output (K4)

1	Terminal strips of the myDatalogRSS	4	Isolated relay contact
2	Sensor with open collector output	5	Isolated relay contact (directly on V_{batt})
3	Signal converter, isolating transducer		

Note: *In the connection example above, "Sensor 3" is not directly connected to the battery voltage output (K4) but is conducted via the isolated switch contact (K9, K10). This ensures that the supply of "Sensor 3" (provided the isolated switch contact is operated in "Ext. warmup time" mode) is switched in accordance with the "Ext. warmup time" (see "Output channels" on page 88). This means that even when the switch contact is closed, a permanent power consumption of up to 471µA (19µA in LP digital mode) due to a load of 8k9 (220k1 in LP digital mode) can be prevented. However, this method is not suitable for the "Cnt.Day", "Cnt.Intervl.", "Freq" and "PWM" operating modes as these modes require a permanent supply of the sensors. This method is not suitable even if an input operated in "Digital" or "LP digital" mode is to be used to initiate a trigger event.*

7.4.2 Technical details about the universal inputs

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

7.4.2.1 0/4 to 20mA mode

Note: *Above 22,5mA, the relevant input becomes highly resistive (safety shutdown to prevent damage to the universal input).*

Resolution	6µA
I_{max}	22,5mA
Load	100Ω

7.4.2.2 0 to 2V mode

Resolution	610µV
U_{max}	2,5V
Load	220k1

7.4.2.3 0 to 10V mode

Resolution	8,3mV
U_{max}	32V
Load	8k9

7.4.2.4 Standard digital modes (PWM, frequency, digital, day counter, impulse counter)

General	U_{max}	32V
	Low	‹1,36V
	High	›2,73V
	Load	8k9
PWM	Measurement range	1...99%
	f_{max}	100Hz
	Minimum impulse length	1ms
Frequency	Measurement range	1...1000Hz
Day and impulse counter	Minimum impulse length	20ms

7.4.2.5 Low power digital mode (LP digital)

Important note: *If a universal input is in "LP digital" mode, a switch contact must only be supplied by V_{batt}. Attaching an external voltage will cause damage to the universal input. In comparison to "digital" mode, the energy consumption during "LP digital" mode with a closed switch contact is thus reduced by a factor of 13.*

U_{max}	V_{batt}
Low	‹100mV
High	›200mV
Load	220k1

7.4.3 Technical details about the outputs

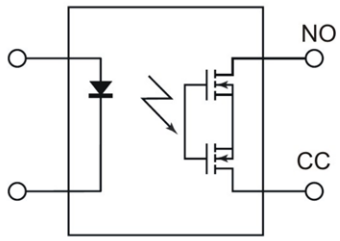
7.4.3.1 Output 1: Switchable sensor supply (V_{out})

Note: *The switchable sensor supply output is short-circuit-proof.*

P_{max}	1W
I_{max}	66mA@15V 41mA@24V

7.4.3.2 Output 2: Isolated switch contact (NO, CC)

Important note: *The user must ensure that the current on the isolated switch contact does not exceed 130mA .*



Equivalent circuit diagram for the isolated switch contact

I_{max}	130mA
U_{max}	32V
R_{on}	35Ω
f_{max}	500Hz

7.4.3.3 Direct rechargeable battery or battery voltage output (V_{batt})

The rechargeable battery or battery voltage is supplied directly to the voltage output V_{batt} protected by a PTC (I_{max} 200mA). The voltage available at this output is therefore directly dependent on the charge state of the rechargeable battery or battery pack.

7.4.4 Technical details about energy management

The myDatalogRSS is equipped with one charge controller that monitors the charge via the solar panel and one that controls the charge via the external charging voltage (V_{in}). They operate completely independently. If the myDatalogRSS is operated without an external charging voltage (V_{in}) to support the solar panel, the device will operate until 3,1V if there is insufficient sunshine. It then switches to energy-saving mode in which only the charge controllers are active. If there is sufficient sunshine, the solar panel will immediately start charging the backup battery again. If an external charging voltage (V_{in}) is supplied in energy saving mode, the backup battery can be charged up again. However, if the backup battery is not recharged by the solar panel or by an external power

supply, the myDatalogRSS remains in energy-saving mode until the backup battery is fully discharged.

The charge controller of the solar panel tries to maintain the voltage of the backup battery at a constant of 3,9V . This value was selected, as a permanent charge at this level will not have a negative impact on the service life of the backup battery.

When an external charging voltage (V_{in}) is used to support the solar panel, the charge controller for the external charging voltage also ensures that the rechargeable battery pack is charged. It is therefore necessary to select the "AP413D+" type of rechargeable battery in the input screen of the device configuration (see "Device-specific settings" on page 99). If this setting is selected, the backup battery is charged to the maximum voltage. The charge is then deactivated and only activated again when V_{low} (3,7V) is reached. This is designed to optimise the service life of the backup battery. If the "AP413D+ Solar" type of rechargeable battery was selected, the backup battery is always charged (recommended if an additional external solar panel is used to charge the backup battery).

In both settings, recharging is only completed if the permissible range of the charging temperature (-40°C...+60°C) is not exceeded by the ambient temperature.

Chapter 8 Initial Start-Up

8.1 User information

Before you connect the myDatalogRSS 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 myDatalogRSS .

Please contact our technical department if anything is unclear or if you encounter difficulties with regard to installation, connection or configuration (see "Contact information" on page 131).

If necessary, please also refer to the manuals of the accessory parts when commissioning the complete system. These manuals are included in the scope of delivery of the accessory parts.

8.2 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 myDatalogRSS and the input screens of the myDataweb-Server before you begin with the configuration.

8.3 Placing the system into operation

> ***Note:*** *It is recommended that the myDatalogRSS is first placed into operation in the office before mounting the device permanently at the place of use. During this process, you should set a site for the later operation on the myDataweb server (see "myDatanet Server Manual " 805002) and determine a site setting (see "Site configuration" on page 65). 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 sensors to establish the optimum configuration of the myDatalogRSS prior to its actual first use. This reduces the amount of time required for on-site installation to a minimum.*

1. Once you have completed all the steps described in the chapter "Connecting the sensors, actuators and power supply" on page 51, the myDatalogRSS is ready for operation and should have made its first connection to the myDataweb server.

   > ***Note:*** *The myDatalogRSS is supplied with the transport lock activated (measurement and transmission "OFF") and should also always be stored in this state (see "Storage of the product" on page 20). The transport lock is deallocated by initiating ALOHAtransmission mode (see "ALOHA transmission mode" on*

page 37), whereby a connection to the myDataweb server is established.

2. Create a site for operation on the myDataweb server (see "Creating the site" on page 104).

   Note: *A "myDatalogEASYplus " type site must be created to operate the myDatalogRSS .*

3. Configure the created site according to your requirements (see "Site configuration" on page 65).
4. Link the myDatalogRSS with the created site (see "Site" on page 65 or "Creating the site" on page 104).

The following step is only necessary if you are using an external charging voltage (V_{in}) to support the solar panel:

5. Check the settings for the battery type (see "Device-specific settings" on page 99). The "AP413D+ Solar" battery type should only be selected if you are using an additional external solar panel as a source for the external charging voltage (V_{in}). The "AP413D+" setting is recommended for all other cases.
6. Activate the ALOHA transmission mode (see "ALOHA transmission mode" on page 37) so that the site configuration is transferred to the myDatalogRSS .

8.4 Testing communication with the device

1. Create a site for operation on the myDataweb server (see "Creating the site" on page 104).

   Note: *A "myDatalogEASYplus " type site must be created to operate the myDatalogRSS .*

2. Configure the created site according to your requirements (see "Site configuration" on page 65).
3. Link the myDatalogRSS with the created site (see "Site" on page 65 or "Creating the site" on page 104).
4. Initiate the ALOHA transmission mode (see "ALOHA transmission mode" on page 37) so that the configuration of the site is transferred to the myDatalogRSS .
5. Wait until it is indicated in the list of measurement instruments that the device is in ALOHA transmission mode. This is indicated by a speech bubble with the "Aloha" inscription.



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

6. Stop the ALOHA transmission mode by clicking the cross in the speech bubble with the "Aloha" inscription or wait for the duration of the ALOHA transmission mode. This period can be determined in the basic settings (see "Basic settings" on page 96) of the site configuration. The default setting is 10 minutes.

7. Then wire up the sensors (see "Connecting the sensors, actuators and power supply" on page 51) and restart the ALOHA transmission mode.

   Important note: *All wiring work must be performed in the de-energised state!*

8. Check the incoming data in the ALOHA data window of the myDataweb server, which can be accessed by clicking on the speech bubble with the "Aloha" inscription (see "myDatanet Server Manual " 805002). Particular attention must be paid to the internal"GSM level" and "Battery" measurement values.



Note: *Additional explanation about evaluating the "GSM level":*

"GSM level"	
›-64dBm	
-64 to -73dBm	
-74 to -83dBm	
-84 to -93dBm	
-94 to -107dBm	
‹= -108dBm	

Note: *Additional explanation about evaluating the "Battery":*

"Battery"	
› 3,82V	
3,82V...3,73V	
3,72V...3,66V	
3,65V...3,62V	
3,61V...3,21V	
‹= 3,2V or invalid value	

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Chapter 9 User interfaces

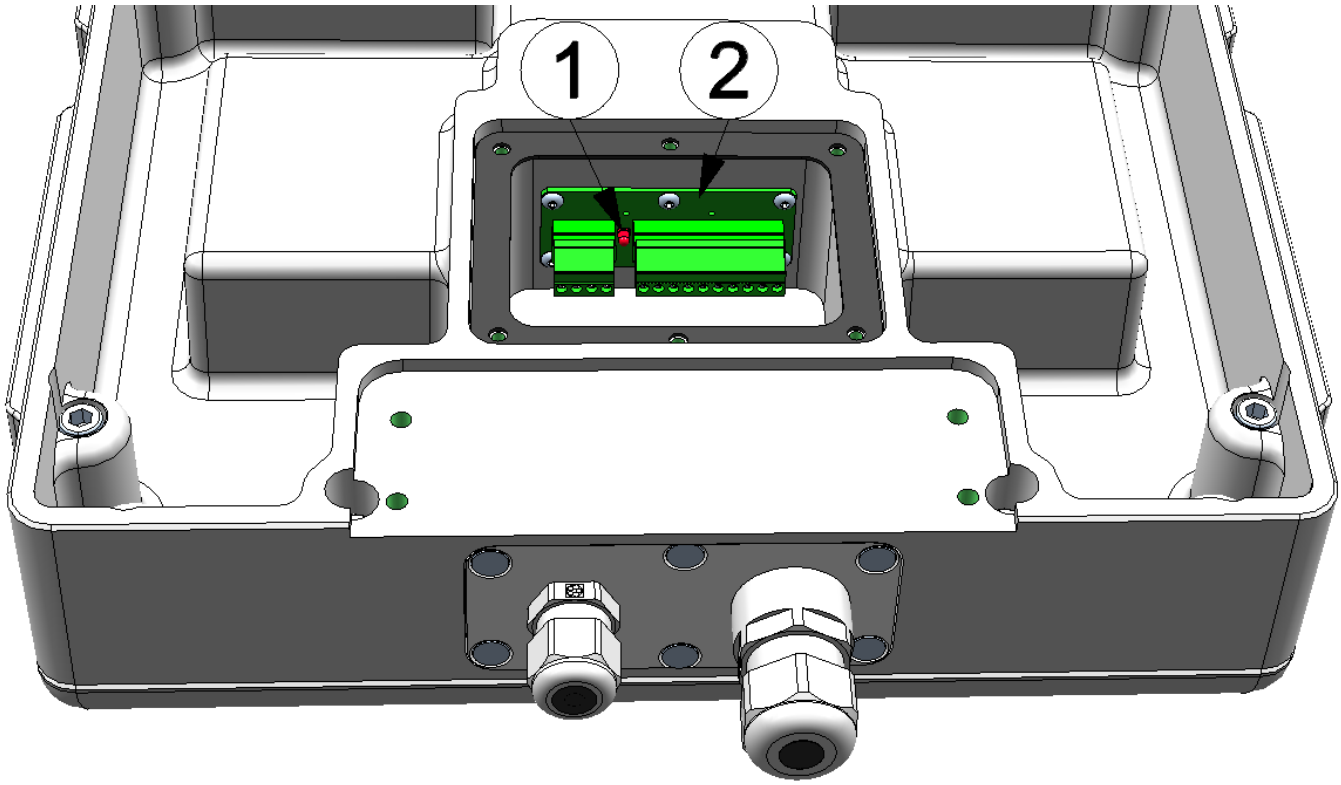
The configuration of the myDatalogRSS is carried out via the web interface on the myDataweb server (see "User interface on the myDataweb-Server" on page 65), which your responsible sales partner will provide to you.

9.1 User interface on the myDatalogRSS

9.1.1 Operating elements

The operating elements of the myDatalogRSS can only be operated when the housing compartment cover is open.

> ***Important note:*** *In the event of adverse weather conditions including rain or in a location where water can penetrate from above, suitable measures must be implemented to protect the device from penetrating moisture when the housing compartment cover is open.*



Operating elements that are accessible when the housing compartment cover is open

1 Status LED	**2** Solenoid switch

9.1.1.1 Status LED

The status LED is used both to display the error/status codes and to indicate the current operating state. If the ALOHA transmission mode was activated or the power supply was provided (PowerOn), the status LED shows the current operating state for 10 minutes. During these 10 minutes, the error/status codes are issued every 3 seconds as long as there is no GPRS connection.

Error/status codes

Flashing code	Description	Solution/cause
0x	Transport lock (GPRS OFF, measurement OFF)	If the ALOHA transmission mode is initiated by solenoid switch, the myDatalogRSS switches back into "RUN" mode (GPRS ON, measurement ON).
1x	Last connection OK	---
2x	Last transmission faulty	Try again later
4x	Standby (GPRS ON, measurement OFF)	see "transport lock"
6x	Offline (GPRS OFF, measurement ON)	see "transport lock"
7x	Network block/no matching provider	• Improve the position of the antenna • Check whether the device is located in the coverage area of one of the service providers supported by the integrated SIM chip (www.microtronics.at/footprint)
8x	No GSM network	• Try again later • Improve the position of the antenna
10x	No GPRS connection	Improve the position of the antenna
11x	No myDataweb server available	• Check whether port 51241 is enabled on the myDataweb server • Try again later
12x	Faulty SIM chip	Contact support

Operating states

Status LED	Description
Flickering	Establishing connection
Lights up	GPRS connection established or solenoid switchactuated
Off	Normal measuring operation according to configuration until the next transmission

9.1.1.2 Solenoid switch

The solenoid switch can be used to initiate ALOHA transmission mode or to instruct the myDatalogRSS to immediately issue the error/status code. It is operated using the MDN Magnet (206.803) included in the scope of supply.

User action	Device response	Operation after releasing the button
Press briefly for approx. one second	Status LED illuminates	Error/status code is issued (see "Status LED" on page 64)
Press and hold for five seconds	Status LED flashes three times and then remains on	ALOHA transmission mode

9.2 User interface on the myDataweb-Server

9.2.1 Site 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, please contact the myDataweb-Server administrator.*

Click on the name of the site in the list of sites to get to the input screen for configuring the site (see "myDatanet Server Manual " 805002).

9.2.1.1 Site

Customer
Specifies to which customer the site is assigned.

 **icon**
Assign site to another customer

Name
Site designation (not relevant for the device or data assignment)[2-50 characters]

Instrument S/N
Serial number of the device that is linked to the site (device assignment!)

9.2.1.2 Comments

Comments
Free comment field (is also displayed below the device type in the site list)

9.2.1.3 Measurement channels

9.2.1.3.1 Basis

Title 1-4

Freely selectable channel title for the universal inputs

Title 1Wire

Freely selectable channel title for the external temperature sensor

Mode

Basic settings for the measurement channel

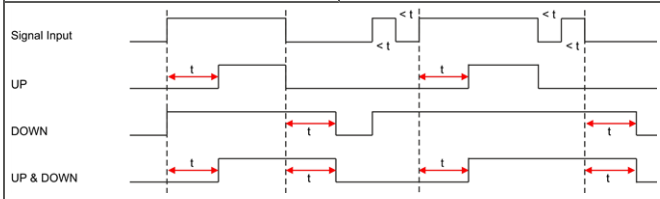
Universal inputs *(Digital modes 1/2)*	*Off*	*---*	*Measurement channel deactivated*
	digital	*Invert*	*Inverts the input signal*
	digital LP	*Invert*	*Inverts the input signal*
	Cnt.Day	*Impulse*	*Metered measurand of a pulse in the measurement unit*
		Max	*Defines the upper scale end of the pointer instruments*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
	Cnt.Intervl.	*Impulse*	*Metered measurand of a pulse in the measurement unit*
		Max	*Defines the upper scale end of the pointer instruments*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*

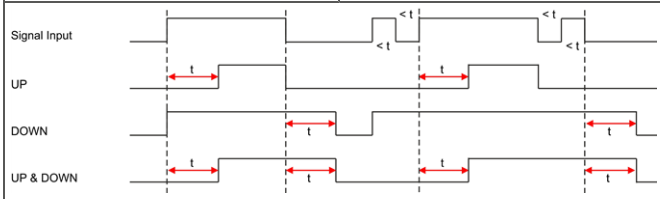
Universal inputs *(Digital modes 2/2)*	*Freq*	*Factor*	*Factor by which the input signal is multiplied*
		Min	*Defines the lower scale end of the pointer instruments*
		Max	*Defines the upper scale end of the pointer instruments*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
	PWM	*0%*	*Start of the measurement range in the measurement unit*
		100%	*End of the measurement range in the measurement unit*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*

Universal inputs *(analogue modes)*	*0-20mA*	*0%*	*Start of the measurement range in the measurement unit*
		100%	*End of the measurement range in the measurement unit*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
	4-20mA	*0%*	*Start of the measurement range in the measurement unit*
		100%	*End of the measurement range in the measurement unit*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
	0-2V	*0%*	*Start of the measurement range in the measurement unit*
		100%	*End of the measurement range in the measurement unit*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
	0-10V	*0%*	*Start of the measurement range in the measurement unit*
		100%	*End of the measurement range in the measurement unit*
		Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
		Decimal places	*Number of decimal places that are used by all of the server display elements*
Ext. temperature sensor	*Off*	*---*	*Measurement channel deactivated*
	On	*Min*	*Defines the lower scale end of the pointer instruments*
		Max	*Defines the upper scale end of the pointer instruments*
		Unit	*Selection of the temperature unit used by all of the server display elements*
		Decimal places	*Number of decimal places that are used by all of the server display elements*

9.2.1.3.2 Config

<table>
<tr><td rowspan="9">Universal inputs

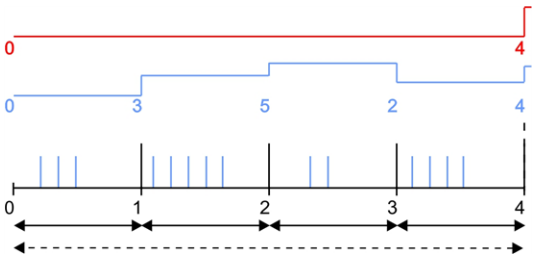
(Digital modes 1/2)</td><td>Off</td><td>---</td><td colspan="2">---</td></tr>
<tr><td rowspan="8">Digital</td><td>Filter time</td><td colspan="2">Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).</td></tr>
<tr><td rowspan="5">Decay</td><td colspan="2">Temporal function in the measurement cycle</td></tr>
<tr><td>off</td><td>Decay deactivated</td></tr>
<tr><td>up</td><td>Minimum signal length for x seconds with a rising edge</td></tr>
<tr><td>down</td><td>Minimum signal length for x seconds with a falling edge</td></tr>
<tr><td>up&down</td><td>Minimum signal length for x seconds on both edges</td></tr>
<tr><td colspan="2">
</td></tr>
<tr><td>Time</td><td colspan="2">Time x, that is used for decay modes "up", "down" and "up & down"</td></tr>
<tr><td rowspan="9">Universal inputs

(Digital modes 2/2)</td><td rowspan="9">digital LP</td><td>Filter time</td><td colspan="2">Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).</td></tr>
<tr><td rowspan="5">Decay</td><td colspan="2">Temporal function in the measurement cycle</td></tr>
<tr><td>off</td><td>Decay deactivated</td></tr>
<tr><td>up</td><td>Minimum signal length for x seconds with a rising edge</td></tr>
<tr><td>down</td><td>Minimum signal length for x seconds with a falling edge</td></tr>
<tr><td>up&down</td><td>Minimum signal length for x seconds on both edges</td></tr>
<tr><td colspan="2">
</td></tr>
<tr><td>Time</td><td colspan="2">Time x, that is used for decay modes "up", "down" and "up & down"</td></tr>
</table>

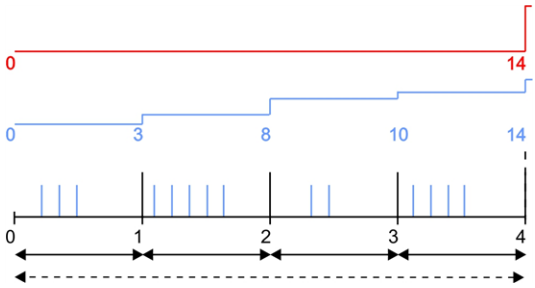
Universal inputs (Counter modes)	Cnt.Day	Filter time	Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).	
		Reset at	Reset time of the day counter	
	Cnt.Intervl.	Filter time	Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	

Note: *Additional explanation regarding the difference between "Cnt.Day" and "Cnt.Intervl."*

Basic setting	◄- - - - - -►	*Record interval*	*4 min.*	*Recorded value*	*red line*
	◄——►	*Measurement cycle*	*1 min.*	*Measurement value*	*blue line*



"Cnt.Intervl." mode: The pulses are added up and reset every time a measurement value is generated.



"Cnt.Day" mode: All of the pulses up to the reset time are added up.

Note on "Cnt.Intervl." mode: *If the record interval is larger than the measurement cycle, only the number of pulses registered the last time the measurement value was generated is recorded. In this case, the individual measurement values can be summarised by means of the decay.*

Universal inputs (Frequency mode 1/2)	Freq (1/2)	Filter time	Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (Frequency mode 2/2)	Freq (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	• If the measurement value is below 1Hz, the error value "UF" (underflow) is issued. • The error value "OF" (overflow) is issued, if the measurement value is above 1000Hz.
			NAMUR borders	• If the measurement value is below 1Hz, the error value "UF" (underflow) is issued. • The error value "OF" (overflow) is issued, if the measurement value is above 1000Hz.

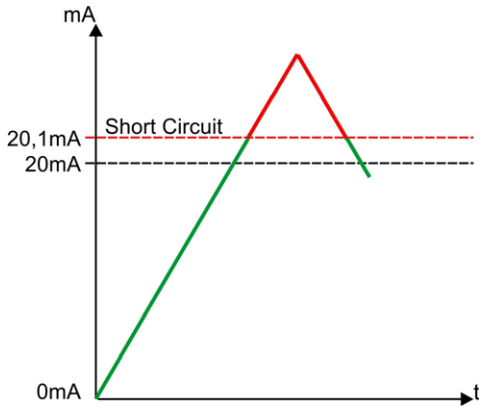
Universal inputs (PWM mode 1/2)	PWM (1/2)	Filter time	Time during which the signal must remain constant to initiate a level change. Used to suppress brief faults (debouncing).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			on	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (PWM mode 2/2)	PWM (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	• If the measurement value is below 1%, the error value "UF" (underflow) is issued. • The error value "OF" (overflow) is issued, if the measurement value is above 99%.
			NAMUR borders	• If the measurement value is below 1%, the error value "UF" (underflow) is issued. • The error value "OF" (overflow) is issued, if the measurement value is above 99%.

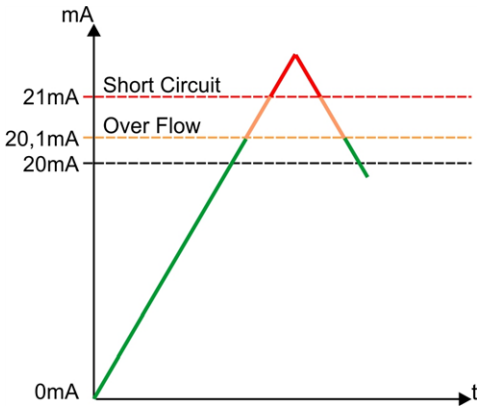
Universal inputs (0-20mA mode 1/2)	0-20mA (1/2)	Filter time	Time during which the analogue signal is averaged for signal smoothing. Used to suppress signal noise (also see "Output channels" on page 88).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (0-20mA mode 2/2)	0-20mA (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	• The error value "SC" (short cut) is issued, if the measurement value is above 20.1mA.
			NAMUR borders	• The error value "OF" (overflow) is issued, if the measurement value is above 20.1mA. • The error value "SC" (short cut) is issued, if the measurement value is above 21mA.

Note: *Additional explanation regarding the "Out of range" and "Namur borders" modes.*



"Out of range" mode

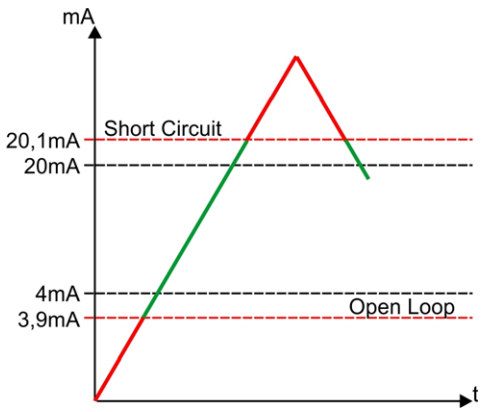


"Namur borders" mode

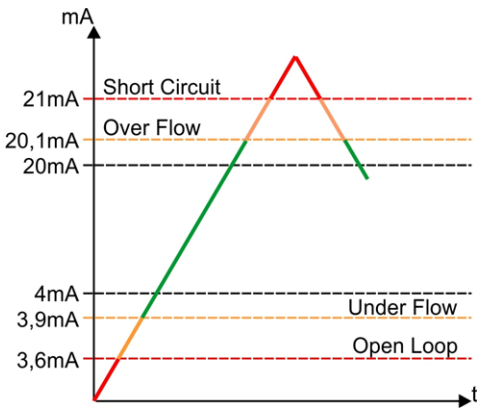
Universal inputs (4-20mA mode 1/2)	4-20mA (1/2)	Filter time	Time during which the analogue signal is averaged for signal smoothing. Used to suppress signal noise (also see "Output channels" on page 88).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (4-20mA mode 2/2)	4-20mA (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	• The error value "OL" (open loop) is issued, if the measurement value is below 3.9mA. • If the measurement value is above 20.1 mA, the error value "SC" (short circuit) is issued.
			NAMUR borders	• The error value "OL" (open loop) is issued, if the measurement value is below 3.6mA. • The error value "UF" (underflow) is issued, if the measurement value is below 3.9 mA. • The error value "OF" (overflow) is issued, if the measurement value is above 20.1mA. • If the measurement value is above 21mA, the error value "SC" (short circuit) is issued.

Note: *Additional explanation regarding the "Out of range" and "Namur borders" modes.*



"Out of range" mode

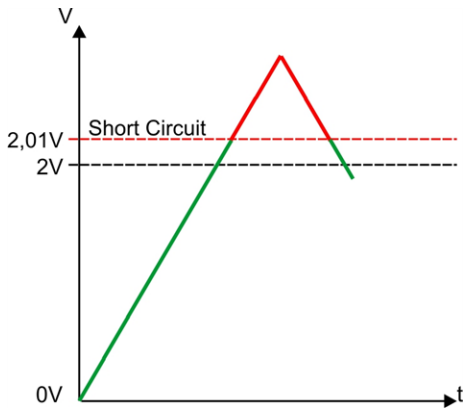


"Namur borders" mode

Universal inputs (0-2V mode 1/2)	0-2V (1/2)	Filter time	Time during which the analogue signal is averaged for signal smoothing. Used to suppress signal noise (also see "Output channels" on page 88).	
		Decay	Temporal function in the measurement cycle	
			Off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (0-2V mode 2/2)	0-2V (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	The error value "OF" (overflow) is issued, if the measurement value is above 2.01V.
			NAMUR borders	The error value "OF" (overflow) is issued, if the measurement value is above 2.01V.

Note: *Additional explanation regarding the "Out of range" and "Namur borders" modes.*

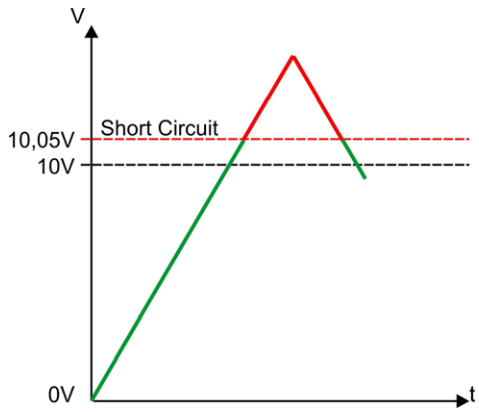


"Out of range" or "Namur borders" mode

Universal inputs (0-10V mode 1/2)	0-10V (1/2)	Filter time	Time during which the analogue signal is averaged for signal smoothing. Used to suppress signal noise (also see "Output channels" on page 88).	
		Decay	Temporal function in the measurement cycle	
			off	Decay deactivated
			min	The minimum of the last x measurement values is recorded.
			max	The maximum of the last x measurement values is recorded.
			avg	The arithmetic mean of the last x measurement values is recorded.
			med	The median of the last x measurement values is recorded.
			rms	The root mean square of the last x measurement values is recorded.
		Time	Decay period. Up to a maximum of 60 measurement valuescan be used for the calculation (e.g. 1 channel: 60 measurement values; ... 4 channels: 15 measurement values each). To calculate the number of measurement values that are taken into account, refer to "Example to clarify the record interval, measurement cycle and burst interval in conjunction with the decay" in chapter "Basic settings" on page 96.	
		Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

Universal inputs (0-10V mode 2/2)	0-10V (2/2)	Overflow	Procedure in the event of measurement range violations	
			Ignore	The measurement value is calculated beyond the range limits.
			Silent cutoff	The measurement value is truncated at the range limits.
			Out of range	The error value "OF" (overflow) is issued, if the measurement value is above 10.05V.
			NAMUR borders	The error value "OF" (overflow) is issued, if the measurement value is above 10.05V.

Note: *Additional explanation regarding the "Out of range" and "Namur borders" modes.*



"Out of range" or "Namur borders" mode

Ext. temperature sensor	Off	---	Measurement channel deactivated	
	On	Hold	Hold the last valid measurement value for x measurement cycles	
			Off	Function deactivated
			1-5	Number of measurement cycles for which the measurement value is held until the error value is issued
			On	In the event of an error, the last valid measurement value is held until a new valid measurement value is present.

9.2.1.3.3 Alarms

"Digital" or "digital LP" mode	WA	A "high" at the universal input triggers a "warning".	
	AL	A "high" at the universal input triggers an "alarm".	
	SW	A "high" at the universal input triggers a "fault warning".	
	SA	A "high" at the universal input triggers a "fault alarm".	
All other modes	Warning	Value low	A warning is triggered, if the measurement value drops to or below this value.
		Value high	A warning is triggered, if the measurement value meets or exceeds this value.
	Alarm	Value low	An alarm is triggered, if the measurement value drops to or below this value.
		Value high	An alarm is triggered, if the measurement value meets or exceeds this value.
	Hyst %	Hysteresis for the all-clear in the event of an alarm/warning (e.g. Hyst=5%, alarm or warning at 100 -› all-clear at 95) or reset the trigger (e.g. Hyst=5%, level = greater or equal, trigger at 100 -› reset at 95)	

9.2.1.3.4 Trigger

If an universal input is operated in digital mode , there are two different types of triggers:

- Event trigger (MS, XM)

  In contrast to the level triggers, the relevant operation (e.g. start measurement) is only executed once when the trigger event occurs. With the help of the "Edge" configuration parameter, it is specified whether the rising, falling or both edges initiate the trigger event.

- Level trigger (QU, SL, ON)

  A "high" at the universal input initiates the trigger. A "low" at the universal input resets the trigger. The relevant operation (e.g. fast recording) is executed as long as the trigger is active. The option selected via the "Edge" configuration parameter is not relevant to the level trigger. If it is necessary for the trigger to be initiated by a "low" at the universal input and for it to be reset by a "high", the input signal must then be inverted using the "Invert" configuration parameter located in the "Basis" tab.

"Digital" or "digital LP" mode	Event trigger	MS	Start measurement cycle immediately	
		XM	Initiate transmission	
		Edges	Selection of the edge at which the trigger should be initiated	
			rising	Rising edge initiates the trigger.
			falling	Falling edge initiates the trigger.
			both	Both edges initiate the trigger.
	Level trigger	QU	Fastrecording (record interval = record interval / factor)	
		SL	Slow recording (record interval = record interval * factor)	
		ON	Activate online mode	
		Edges	not relevant for the level triggers	
All other modes		QU	Fastrecording (record interval = record interval / factor)	
		SL	Slow recording (record interval = record interval * factor)	
		RO	Switch on recording	
		RF	Switch off recording	
		XM	Initiate transmission	
		ON	Activate online mode	
		Level	Levels for initiating the trigger. The hysteresis from the "Alarm" tab is used to determine the level to reset the trigger.	
			Greater or equal	The measurement value must be greater or equal to the level to initiate the trigger.
			Less or equal	The measurement value must be less or equal to the level to initiate the trigger.

9.2.1.4 Calculated channels

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

9.2.1.4.1 Basis

Title 1-5

Freely selectable channel title for the calculated channels [0-16 characters]

Mode

Possible calculation modes for the calculated channels

Off	*---*	*Calculated channel deactivated*
Table	*Min*	*Defines the lower scale end of the pointer instruments*
	Max	*Defines the upper scale end of the pointer instruments*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*
Digital	*Invert*	*Inverts the input signal*
+, -, x, /	*Min*	*Defines the lower scale end of the pointer instruments*
	Max	*Defines the upper scale end of the pointer instruments*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*
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 the meter reading (m^3) of the source in to a flow rate (m^3/min.) (see "Additional explanation: Delta mode" on page 87).*	
	Min	*Defines the lower scale end of the pointer instruments*
	Max	*Defines the upper scale end of the pointer instruments*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*



Shift element down



Shift element up

9.2.1.4.2 Calculation

Off	---	Calculated channel deactivated
Table	Source	Selection of the channel from which the input data is used
		Opens the screen for entering the values table (the table rows are interpolated linearly, values outside of the defined table are extrapolated linearly.)
Digital	Source	Selection of the channel from which the input data is used
	High level	Signal recognition level
+, -, x, /	Source	Selection of the channel from which the input data is used
	+, -, x, /	
	Source	Selection of the channel from which the input data is used
Delta	Source	Selection of the channel from which the input data is used
	Time basis	Specifies the desired time unit (value/sec., value/min., ...) for the result
	Offset	Offset that is added following multiplication with the "Factor" parameter. The result is converted in to the desired time unit before the multiplication with the "Factor" parameter.
	Factor	Factor with which the result is multiplied once it has been converted into the desired time unit. The "Offset" parameter is then added.

Note:

Additional explanation: Delta mode

Assumption: *The source channel contains the meter reading of an infinite counter in m^3. The calculated channel 1 should contain the flow rate in m^3/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 [m³]*	*Flow rate [m³/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 channel as there is no previous value and the different between the meter readings cannot be determined. For the measurement at 12:51, the difference to the meter reading is 60m³ and the time difference is 60sec.*

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

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

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

9.2.1.4.3 Alarms

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

Alarm low	An alarm is triggered, if the measurement value drops to or below this value.
Alarm high	An alarm is triggered, if the measurement value meets or exceeds this value.
Hyst %	Hysteresis for the all-clear in the event of an alarm/warning (e.g. Hyst=5%, alarm or warning at 100 -› all-clear at 95) or reset the trigger (e.g. Hyst=5%, level = greater or equal, trigger at 100 -› reset at 95)

9.2.1.5 Output channels

9.2.1.5.1 Basis

Ext warmup time

Indicates the amount of time that an output channel is switched on in "Ext warmup time" mode before the measurement

Title 1

Freely selectable channel title for the switchable sensor supply

Title 2

Freely selectable channel title for the isolated switch contact

Mode

Basic setting for the output channel

Off	*---*	*Output channel deactivated*
Ext warmup time	*The output channel is switched on "ext warmup time" seconds prior to the measurement. If the value is "0", the output channel is not switched on at all.*	
Digital	*Invert*	*Inverts the level issued on the device (see "Supplementary explanation regarding "Digital" mode" on page 90).*
	Setpoint	*Setpoint (on/off) that should be issued*
Freq	*Factor*	*The setpoint multiplied by the factor equals the frequency in Hertz.*
	Min	*Defines the lower scale end of the pointer instruments*
	Max	*Defines the upper scale end of the pointer instruments*
	Setpoint	*The setpoint multiplied by the factor equals the frequency in Hertz.*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*
PWM	*0%*	*Start of the output range in the measurement unit*
	100%	*End of the output range in the measurement unit*
	Setpoint	*Output value in the measurement unit*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*
Pulse	*Factor*	*The setpoint multiplied by the factor equals the pulse/min.*
	Min	*Defines the lower scale end of the pointer instruments*
	Max	*Defines the upper scale end of the pointer instruments*
	Setpoint	*The setpoint multiplied by the factor equals the pulse/min.*
	Unit	*String that is used as a measurement unit by all of the server display elements [0-16 characters]*
	Decimal places	*Number of decimal places that are used by all of the server display elements*

Note:

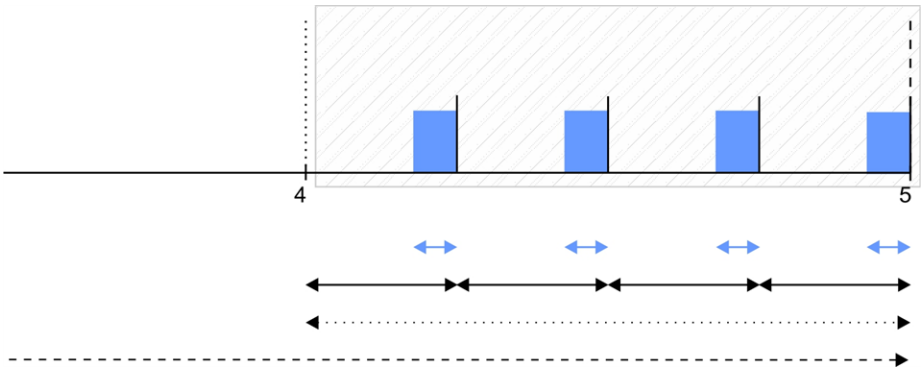
Supplementary explanation regarding "Digital" mode

Invert	*Setpoint*		*Output on the device*
Off	*Off*	=	*Off (low)*
Off	*On*	=	*On (high)*
On	*Off*	=	*On (high)*
On	*On*	=	*Off (low)*

Note:

Example to explain the burst interval in conjunction with the ext. warmup time (ext. warmup time < measurement cycle):

Basic setting		*Record interval*	*5min.*
		Burst interval	*60 sec.*
		Measurement cycle	*15 sec.*
Output channels		*Ext warmup time*	*5 sec.*
Measurement channels - >Config.		*Decay*	*med*
		Time	*60 sec.*
Output on the device		*Sensor supply*	

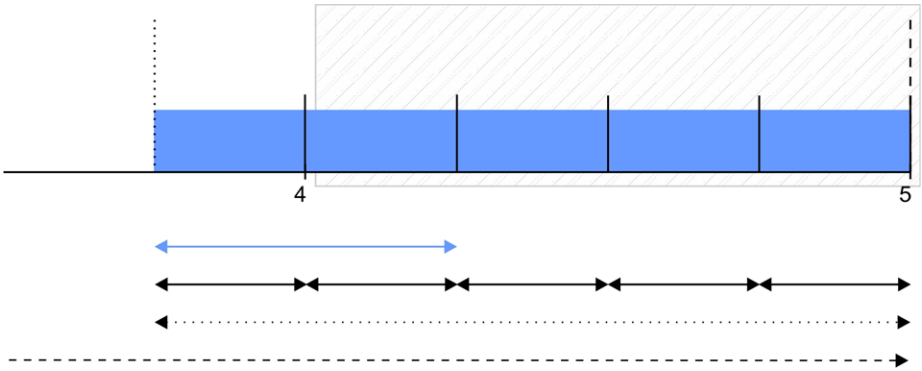


Formation of the measurement value: *In each case, the sensor supply is activated 5 sec before expiry of the measurement cycle. This results in four valid measurements that are used to determine a median and are recorded as the measurement value.*

Note:

Example to explain the burst interval in conjunction with the ext. warmup time (ext. warmup time › measurement cycle):

Basic setting		*Record interval*	*5min.*
		Burst interval	*75 sec.*
		Measurement cycle	*15 sec.*
Output channels		*Ext warmup time*	*30 sec.*
Measurement channels - ›Config.		*Decay*	*med*
		Time	*60 sec.*
Output on the device		*Sensor supply*	



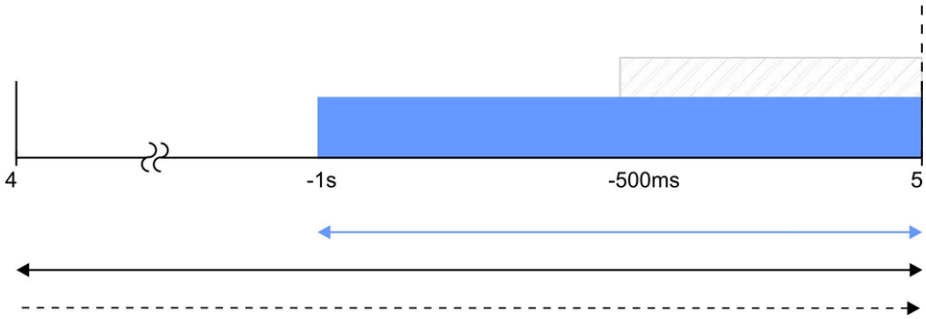
Explanation: *As the ext. warmup time is greater than the measurement cycle in this example, the sensor supply is activated right at the start of the burst interval and is only deactivated again when the recording starts. The first measurement is completed 15 sec. (measurement cycle) after the burst interval has started. At this time, the sensor supply had not yet been active for the duration of the ext. warmup time. This means that the measurement value of the connected sensor is probably not stable yet and the measurement is thus invalid. In this example, only the second measurement after the start of the burst interval is valid. To exclude the invalid measurements during the formation of the measurement value, the selected decay period must be appropriately smaller than the burst interval. The burst interval has to be increased from 60 sec. to 75 sec. to receive four valid measurements in exactly the same way as in the previous example (ext warmup time ‹ measurement cycle).*

Formation of the measurement value: *The sensor supply is activated at the start of the burst interval. The first measurement is completed 15 sec. later. Five measurements are thus generated. The first measurement is invalid (ext. warmup time has not expired yet). As the decay period only lasts 60 sec., only the second to fifth measurement are used to determine the median and are recorded as the measurement value. The first invalid measurement is thus ignored.*

Note:

Example to explain the filter time in conjunction with the ext. warmup time

Basic setting		*Record interval*	*5min.*
		Measurement cycle	*1min.*
Output channels		*Ext warmup time*	*1sec.*
Measurement channels -›Config.		*Filter time*	*500ms*
Output on the device		*Sensor supply*	



Explanation: *The sensor supply is always activated 1 sec before expiry of the measurement cycle. The filter time starts 500ms before expiry of the measurement cycle, which ensures that a valid value is available at the time of a measurement. However, this also means that the filter time must be taken into consideration when selecting the ext warmup time. In the current example, the sensor connected to the input must at the latest supply stable values 500ms following activation of the sensor supply. Otherwise, invalid values would be taken into consideration while averaging during the filter time resulting in the measurement value being distorted.*

9.2.1.5.2 Config

Off	---	
Ext warmup time	---	
Freq	---	
PWM	---	
Pulse	Duration	Duration of an output pulse

9.2.1.6 Internal channels

9.2.1.6.1 Basis

Voltage title	Freely selectable channel title for V_{in} (external charging voltage)	
	Unit	String that is used as a measurement unit by all of the server display elements [0-16 characters]
Battery title	Freely selectable channel title for the internal battery or accu voltage	
	Unit	String that is used as a measurement unit by all of the server display elements [0-16 characters]
GSM level title	Freely selectable channel title for the GSM level	
	Unit	String that is used as a measurement unit by all of the server display elements [0-16 characters]
Int. temperature title	Freely selectable channel title for the internal device temperature	
	Unit	Selection of the temperature unit used by all of the server display elements

9.2.1.6.2 Alarms

Warning	Value low	A warning is triggered, if the measurement value drops to or below this value.
	Value high	A warning is triggered, if the measurement value meets or exceeds this value.
Alarm	Value low	An alarm is triggered, if the measurement value drops to or below this value.
	Value high	An alarm is triggered, if the measurement value meets or exceeds this value.
Hyst %	Hysteresis for the all-clear in the event of an alarm/warning (e.g. Hyst=5%, alarm or warning at 100 -› all-clear at 95) or reset the trigger (e.g. Hyst=5%, level = greater or equal, trigger at 100 -› reset at 95)	

9.2.1.6.3 Trigger

QU	Fastrecording (record interval = record interval / factor)	
SL	Slow recording (record interval = record interval * factor)	
RO	Switch on recording	
RF	Switch off recording	
XM	Initiate transmission	
ON	Activate online mode	
Level	Levels for initiating the trigger. The hysteresis from the "Alarm" tab is used to determine the level to reset the trigger.	
	Greater or equal	The measurement value must be greater or equal to the level to initiate the trigger.
	Less or equal	The measurement value must be less or equal to the level to initiate the trigger.

9.2.1.7 Alarm settings

Acknowledgement	Standard	The global server setting is used to determine whether alarms must be acknowledged automatically or manually. (see "myDatanet Server Manual " 805002).
	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.
Offline alarm	Alarm in case the device does not respond for longer than the set number of transmission cycles	
Transfer volume	Standard	The setting for the transfer volume alarm is taken from the global server settings. (see "myDatanet Server Manual " 805002).
	Off	The transfer volume alarm is deactivated.
	Individual	The level at which the transfer volume alarm should be triggered can be entered in the adjacent field in KB.
On alarm	A	The alarm is recorded in the alarm list.
	Ü	An immediate transmission is initiated.
On warning	A	The warning is recorded in the alarm list.
	Ü	An immediate transmission is initiated.
On fault alarm [1)]	A	The fault alarm is recorded in the alarm list.
	Ü	An immediate transmission is initiated.
On fault warning [2)]	A	The fault warning is recorded in the alarm list.
	Ü	An immediate transmission is initiated.

[1)] A "fault alarm" is triggered if a measurement channel is configured in such a way that one of the error values NAN, OL (open loop), UF (underflow), OF (overflow) or SC (short circuit) is issued if the measurement range is breached and maintaining the last measurement value is not activated or the maximum number for holding the last valid measurement value has been reached.

[2)] A "fault warning" is triggered if a measurement channel is configured in such a way that one of the error values NAN, OL (open loop), UF (underflow), OF (overflow) or SC (short circuit) is issued if the measurement range is breached and the maximum number for holding the last valid measurement value has not yet been reached.

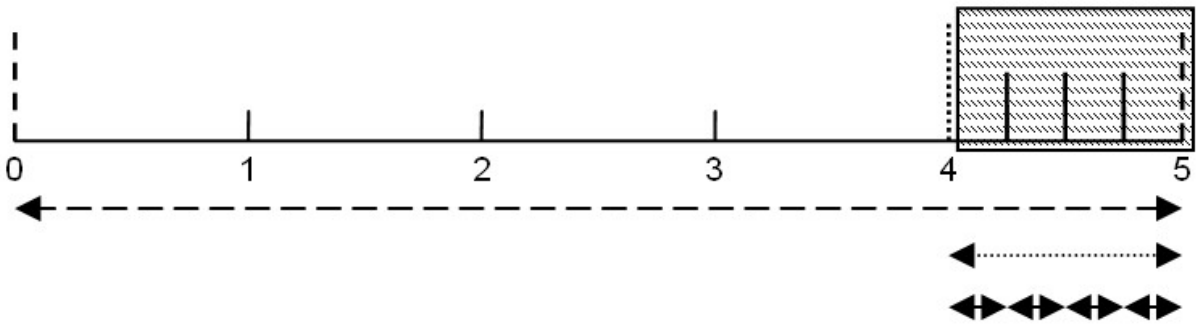
9.2.1.8 Basic settings

Connection type	Interval	The device registers in the transmission cycle.
	Interval & wakeup	The device connects to the server in the transfer interval and can be placed into the ALOHA transmission mode via the server. 
	online	The device does not separate the connection and continuously transmits the measurement data.
Aloha/Wakeup duration	Duration of the Aloha/wakeup connection	
Transmission cycle	Time between transmissions	
Record interval	Time between measurement data recordings	
Measure quick divisor	record interval = record interval / factor (from triggering)	
Measure slow factor	record interval = record interval * factor (from triggering)	
Measurement cycle	Time between measurements (00:00 same as record interval)	
Burst interval	Period of time, during which measurement intervals are used for measuring, before recording begins (00:00 measurement cycle is permanently activated)	
Time zone	Regional settings (not relevant for raw measurement data as this is stored in the UTC)	
Daylight saving time	Configuration for automatic time adjustment	
	Standard	The configuration for the time adjustment is adopted by the global server setting(see "myDatanet Server Manual " 805002).
	Off	Automatic time adjustment deactivated
	USA	Predefined setting for the American area
	EU	Predefined setting for the European area
Position cycle	Position update interval	
Default report	Selection of the report that is loaded by clicking on the device link in the maps	
	Off	The default graphic is loaded.
	"Name of a report"	The selected report is loaded.

Note:

Example to clarify the record interval, measurement cycle and burst interval (in conjunction with the decay)

Basic setting		*Record interval*	*5 min.*
		Burst interval	*1 min.*
		Measurement cycle	*15 sec.*
Measurement channels - ›Config.		*Decay*	*med*
		Time	*60 sec.*



Formation of the measurement value: The last four measurement values are used to determine the median and recorded as the measurement value.

Note: *Additional explanation about the connection types*

Connection type	*Energy consumption*	*Data volumes*	*Response time*
Online			
Interval & wakeup			
Interval			

9.2.1.9 FTP export settings

Note: *This configuration section is only visible if the "FTP Agent Extended" licence for the myDataweb-Server has been enabled.*

FTP export profile	off	FTP export deactivated
	"Name of an FTP export profile"	List with the FTP export profiles that were created on the myDataweb server (for creating an FTP export profile, see "myDatanet Server Manual " 805002).
Settings of the selected profile	shows an overview of the most important parameters of the selected FTP export profile	
FTP directory	makes overwriting the standard directory of the selected FTP export profile possible [0-100 characters]	

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, please contact the myDataweb-Server administrator.*

You can reach the input screen for configuring the device by clicking on the serial number in the site list (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 measurement instrument list)

9.2.2.2 Measurement instrument

Customer	Name of the customer to whom the measurement instrument is assigned
Serial number	Serial number of the instrument
Instrument class	The instrument class of the site and instrument must match for an instrument to be able to be connected to a site.
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
Modem version	Current software version installed on the modem controller
OS version	OS version of the modem
Last connection	In each case, the last time stamp of the affected operation
Last wakeup	
Last disconnection	
Last transmission error	
Last Aloha connection	

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).
Hardware version	Reserved for extensions	

9.2.2.3 Device-specific settings

Operating mode	HOLD	Measurement: OFF, transmission: ON
	RUN	Measurement: ON, transmission: ON
	OFF	Measurement: OFF, transmission: OFF
	OFFLINE	Measurement: ON, transmission: OFF
	Aloha	Reserved for internal use
Accu type[1)]	Charging rule for the rechargeable battery pack used (temp...charging conditions, V_{low}... charge level)	
	AP413D+	Temp.:-30°C to +60°C, V_{low}:3,7V
	AP413D+ solar	Temp.:-30°C to +60°C, always charging

[1)] Selecting battery types other than the ones indicated here is not permissible.

9.2.2.4 GPRS

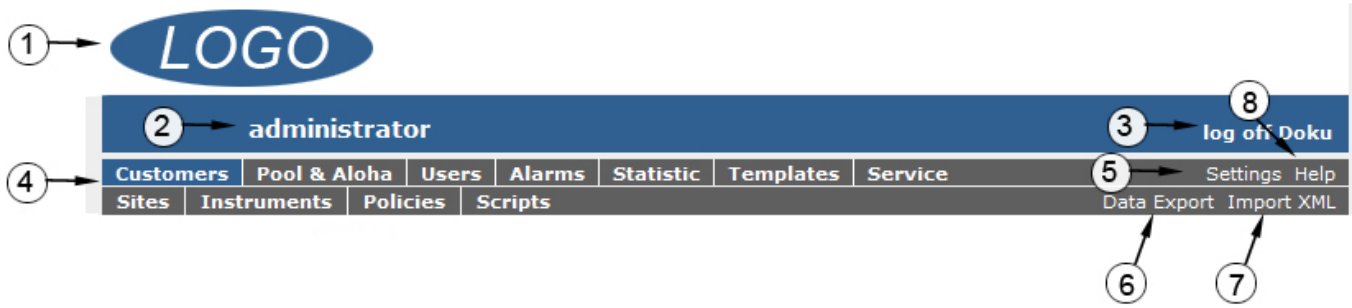
SIM tariff

Selected SIM tariff

Chapter 10 myDataweb server

Note: All of the screenshots show version 39.20 of the myDataweb server using the standard colour scheme. Newer versions may include minor changes to the appearance of the server.

10.1 Overview



Overview of the myDataweb server

1	Freely selectable logo	5	Opens the screen to input the global settings for the server
2	User group to which the user who is currently logged in is assigned	6	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.
3	Logout the active user	7	Opens the input screen to upload a XML file. This tab is only visible if the licence for the XML import is available.
4	Tabs to switch between the individual server areas	8	Call up the help menu

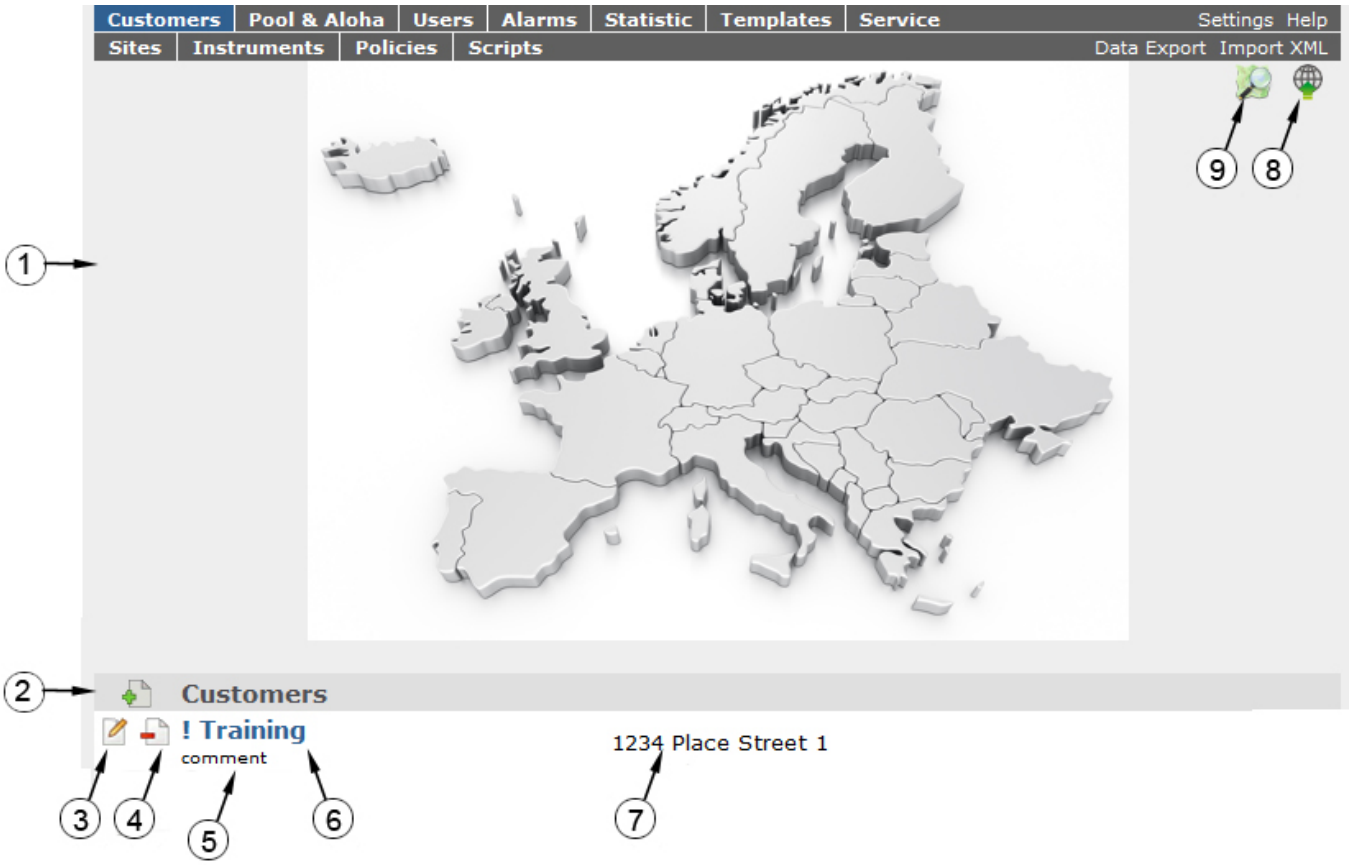
10.1.1 Explanation of the symbols

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

Deletes the adjacent element (reports, sites, users, etc.) from the list.

Calls up the input screen to edit the adjacent element (reports, sites, users, etc.).

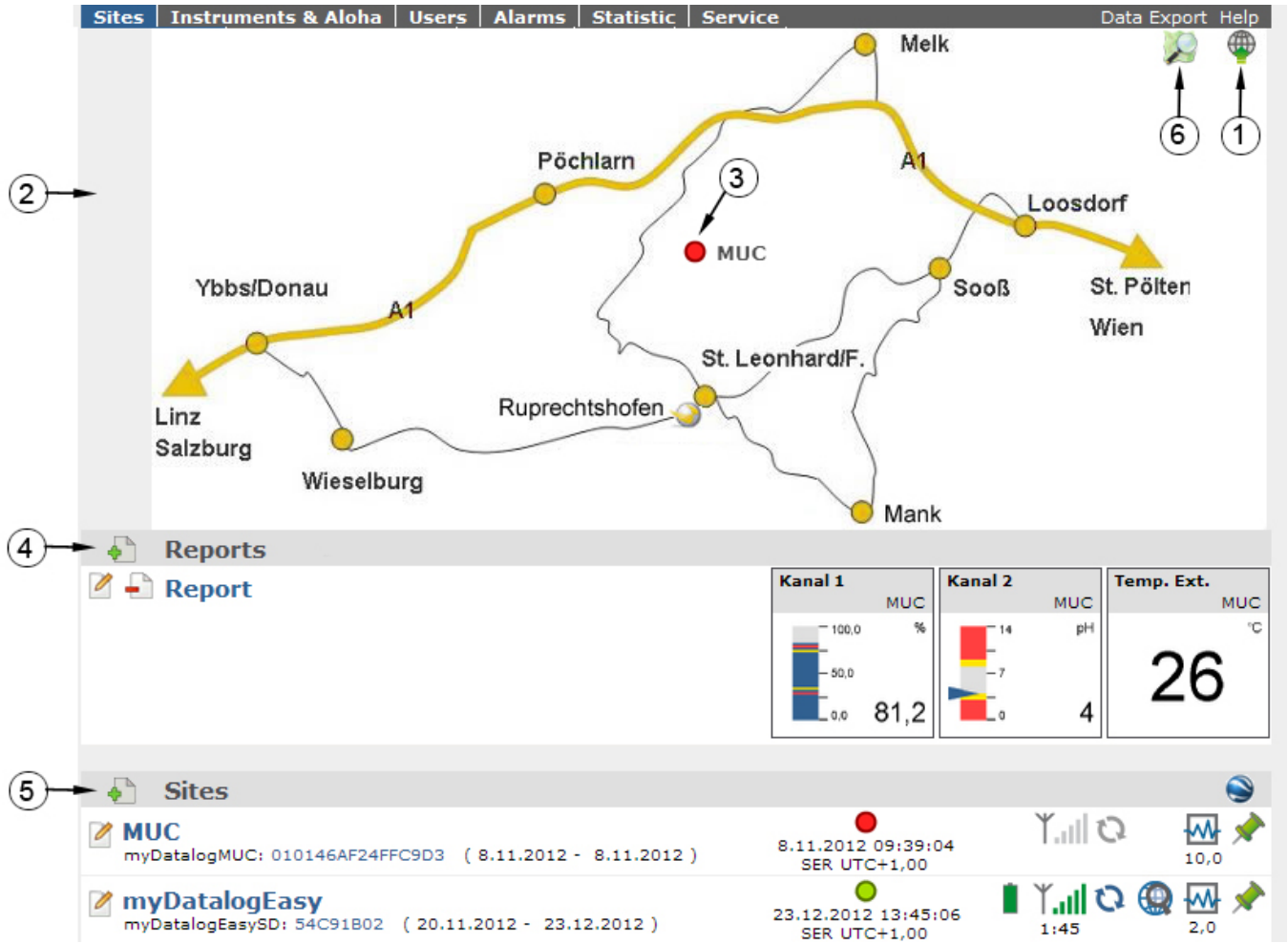
10.2 "Customer" area



Overview of the "Customer" area

1	Current "Overview map" on which the sites can be placed
2	Adds a new customer
3	Opens the input screen for configuring the customer
4	Deletes the customer
5	Comment that can be entered in the configuration of the customer
6	If a default report was defined, the default report is accessed by clicking on the name of the customer. Otherwise the "Sites" area at customer level is opened by clicking on the name of the customer (see ""Site" area at customer level" on page 103 or "Reports" on page 104).
7	Customer's address that can be entered via the input screen for configuring the customer
8	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.
9	Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 104)

10.3 "Site" area at customer level



Overview of the "Sites" area at customer level

1	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.
2	Current "Map" on which the sites can be placed
3	Symbol that represents a site on the "Map"
4	List of reports (see "Reports" on page 104)
5	List of sites / applications (see "Site" on page 65)
6	Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 104)

10.3.1 Reports

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

10.3.2 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).

10.4 Recommended procedure

10.4.1 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 myDataweb server.*

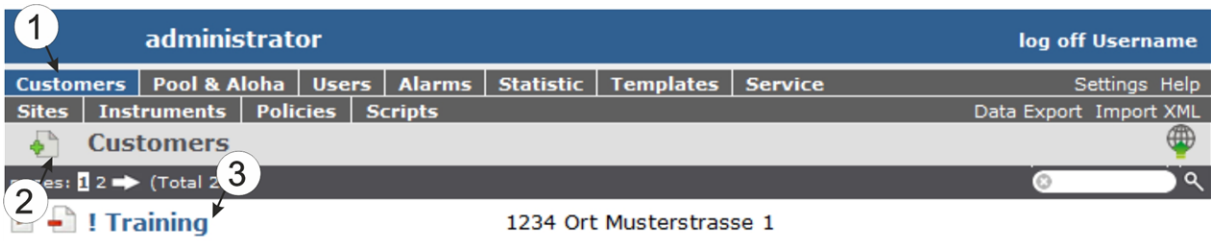
Detailed instructions on creating a new site are included in myDatanet Server Manual (805002).

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



Login form of the myDataweb server

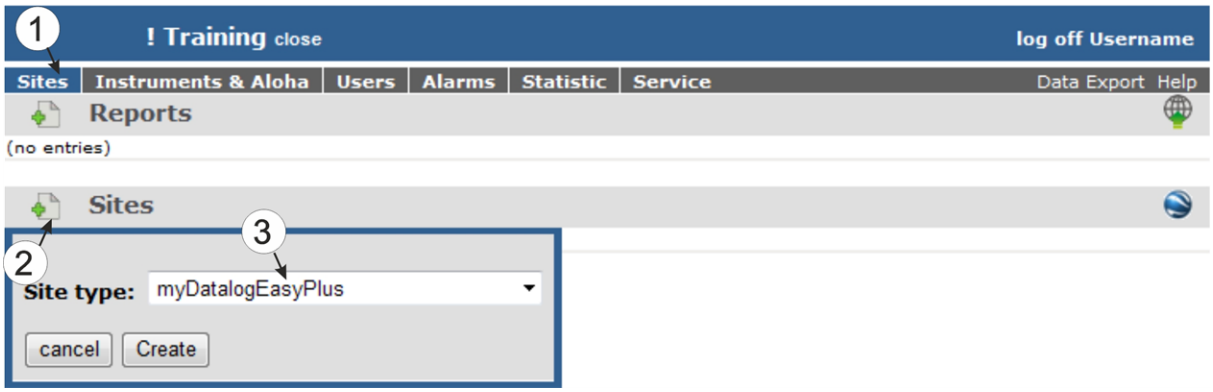
2. Click on the "Customer" menu item of the myDataweb server to call up the list of available customers. Select an existing customer or create a new customer.



Selecting the customer

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

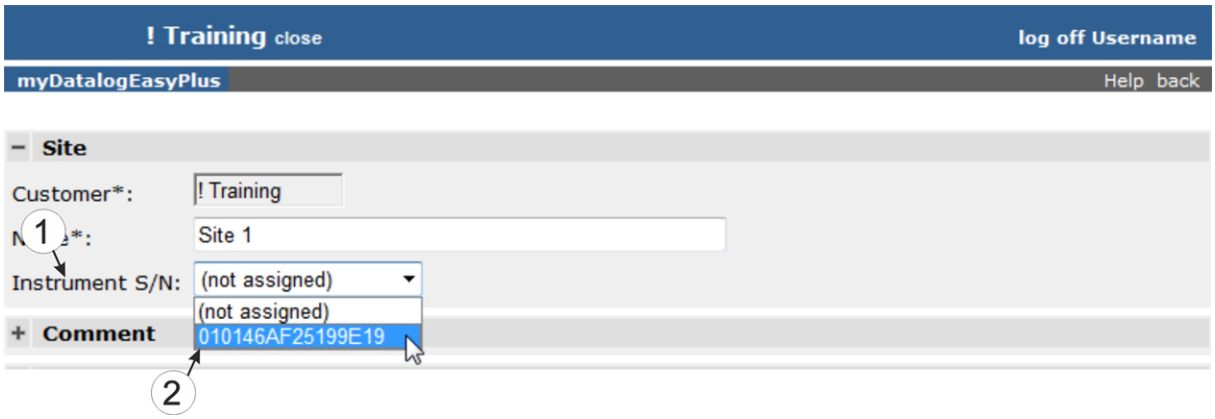
3. Click on the "Sites" menu item of the myDataweb server to call up the list of available sites. Create a new "myDatalogRSS " type site.



Creating the site

1 Menu item to call up the list of sites	3 Selection of the type of site
2 Creating a new site	

4. Link the site with the myDatalogRSS by selecting the serial number. If the serial number of your device is not included in the list, you must first of all assign the device to the customer (see "Assigning a device to the customer" on page 105) or the device is already assigned to a different site. More detailed information on this is provided in myDatanet Server Manual (805002).



Linking the device and site

1 Device assignment	2 List of devices that have not yet been linked with a site

10.4.2 Assigning a device to the customer

> ***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 myDataweb server.*

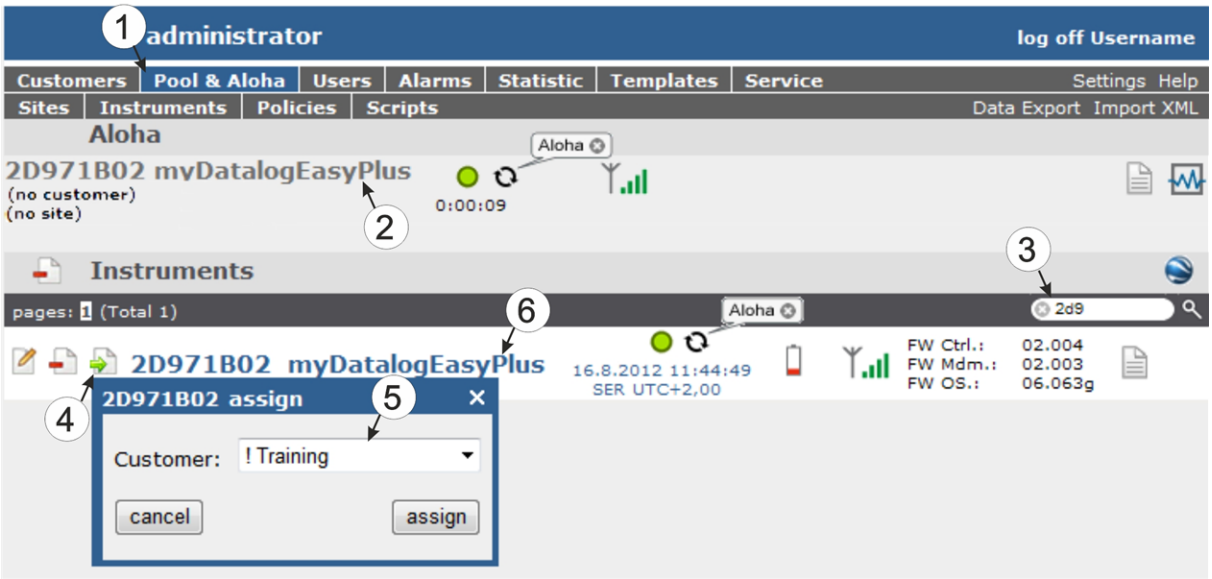
Detailed instructions on shifting the devices are provided in myDatanet Server Manual (805002).

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



Login form of the myDataweb server

2. Click on the "Pool and Aloha" menu item of the myDataweb server to access the list of devices that are in ALOHA transmission mode.



Assigning a device to the customer

1	Menu item to call up the list of devices that are in ALOHA transmission mode	4	Opens the dialogue to select the customer to whom the device should be assigned
2	List of devices in ALOHA transmission mode	5	Selection of the customer to whom the device should be assigned
3	Filter for the list of measurement instruments	6	List of measurement instruments

3. Initiate ALOHA transmission mode on the device. Instructions for this are provided in "ALOHA transmission mode" on page 37.

4. Use the filter to find the required device in the list of measurement instruments. Click on the symbol to open the dialogue to select the customer (see "Assigning a device to the customer" on page 106) and assign the device to the selected customer.

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6872
6872

Chapter 11 XML interface

Important note: The relevant licences are required on the myDataweb server to use the XML interface. If the licence is not available for the XML export, the following message is displayed for every request: "`-ERR: XML agent is not active on this server!`". Likewise, if the licence is missing for the XML import, the following message is returned for each import attempt: "`-ERR: XML upload is not active on this server!`". In this case, contact your responsible sales partner.

11.1 General

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

A detailed description of the XML interface is provided in the Programming User Manual for the stationary device myDatalogRSS (300499).

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Chapter 12 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.

12.1 General maintenance

- Regularly check the myDatalogRSS 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 myDatalogRSS with a soft, moist cloth. Use a mild cleaning agent, if necessary.

12.2 Charging the rechargeable battery pack

The myDatalogRSS is supplied with the transport lock activated (measurement and transmission "OFF") and a fully charged backup battery. If you use an external charging voltage (V_{in}) during operating to support the solar panel, the backup battery is also continuously charged by the charge controller for the external charging voltage.

If no external charging voltage (V_{in}) is available during operation, it is recommended to recharge the backup battery prior to first use for reasons of operational safety.

Note: Rechargeable battery packs are wear parts that lose capacity over time. The capacity is also reduced at high or low ambient temperatures and under intensive use.

Recharging the backup battery using an external charging voltage (V_{in}):

2. Connect the external charging voltage to V_{in} and GND (see "Connecting the sensors, actuators and power supply" on page 51). Ensure that no current is present! You can use any source of power (7...30VDC , typ. 170mA@12V) or Power supply 12V 500mA (206.623) (see "Other accessories" on page 127) for this purpose.
3. Now switch on the external charging voltage.
4. Select "AP413D+ Solar" as the setting for the battery type (see "Device-specific settings" on page 99). The charge controller for the external charging voltage then starts to immediately charge the backup battery (see "Technical details about energy management " on page 57).
5. Activate ALOHA transmission mode (see "ALOHA transmission mode" on page 37) so that the battery type setting is transferred to the myDatalogRSS .

6. Check the charge state of the backup battery at regular intervals (see "Internal channels" on page 93) using the measurement value graphic (see "myDatanet Server Manual " 805002) of the myDataweb server. The backup battery is fully charged when it reaches 4,2V.

   Note: *Please note that the maximum voltage may not be achieved depending on the age of the battery.*

   Note: *Additional explanation about evaluating the "Battery":*

"Battery"	
› 3,82V	
3,82V...3,73V	
3,72V...3,66V	
3,65V...3,62V	
3,61V...3,21V	
‹= 3,2V or invalid value	

7. Now switch off the external charging voltage and remove the cables.
8. Reset the battery type setting to "AP413D+" (see "Device-specific settings" on page 99).
9. Activate ALOHA transmission mode (see "ALOHA transmission mode" on page 37) so that the battery type setting is transferred to the myDatalogRSS .

Chapter 13 Removal/disposal

Dispose of the device in accordance with the locally valid environmental regulations for electronic products.

Rechargeable batteries and/or battery packs may not remain in the myDatalogRSS after discharging. Ensure that the used rechargeable batteries and/or battery packs are disposed of in an environmentally proper way.

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Chapter 14 Troubleshooting and repair

14.1 General problems

Problem	Cause/solution
Device does not respond (status LED always off).	• Check the cable connections (see "Connecting the sensors, actuators and power supply" on page 51) • Capacity of the backup battery is depleted
Communication problems	• Evaluate the blink code of the status LED (see "Status LED" on page 64). • Load the device log from the myDataweb server and use myDatanetDeviceConfig for the evaluation (see "Evaluating the device log" on page 125). • The capacity of the backup battery is virtually depleted.
Not all or no data is available on the server.	• The connection was interrupted during transmission, which is indicated by a time-out entry in the connection list (see "myDatanet Server Manual " 805002). Solution: Initiate a ALOHA transmission or wait for the next cyclical transfer. • The assignment of the device and site is not correct (see "Site" on page 65).
Data at universal input is not plausible.	• Check whether the universal input configuration matches the sensor output signal (see "Measurement channels" on page 66). • Check the filter settings of the universal input (see "Measurement channels" on page 66) • Check the cable connections (see "Connecting the sensors, actuators and power supply" on page 51)
Alarm state of an analogue channel was not identified.	Increase the measurement cycle
Alarm state was not transferred although the data is present.	• Check the alarm settings of the measurement channel • The connection was interrupted during transmission, which is indicated by a time-out entry in the connection list (see "myDatanet Server Manual " 805002). Solution: Initiate a ALOHA transmission or wait for the next cyclical transfer.
Alarm message was not sent although the alarm was signalled.	• Check the settings of the alarm schedule (see "myDatanet Server Manual " 805002) • Check the address data of the alarm schedule (see "myDatanet Server Manual " 805002)
The value set via the input screen on the myDataweb server is not issued at the output channel.	The site settings were overwritten by a server-PLC.

14.2 Log entries and error codes

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1020	ERROR SOD	##	---	Internal system error There may be a hardware problem if this error is contained in the device log several times with the same parameter code. Contact the manufacturer in this case (see "Contact information" on page 131).
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 either achieved by replacing the rechargeable battery or battery pack or by ensuring that the charge controller has charged the battery sufficiently. The device resumes normal operation in accordance with the configuration.
1033	MODEM_UPDATE	##	---	Update of the firmware for the modem controller 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).
1034	CONTROLLER_ UPDATE	##	---	Update of the firmware for the measurement controller 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).

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1111	ALOHA STOP	0	---	End of ALOHA transmission mode
		##	---	ALOHA transmission mode was stopped unexpectedly. The parameter specifies how many more seconds ALOHA transmission mode should have lasted.
1114	BACKUP SUPPLY	1	---	The power supply was switched to the rechargeable buffer battery.
		0	---	The power supply was switched back to V IN.
1200	MODEM ERROR			Modem error (see "Modem error" on page 122)
1202	MODEM CMME ERROR	##	---	The GPRS modem indicates a +CME error. The parameter specifies the type of error.
1203	SELECTED NETWORK	##	---	A new GSM network was selected. This entry is always duplicated in the device log. In the first entry, the parameter specifies the MCC (Mobile Country Code), while in the second entry it specifies the MNC (Mobile Network Code) of the selected GSM network.
1204	BANNED NETWORK	##		A GSM network was added to the ban list. This entry is always duplicated in the device log. In the first entry, the parameter specifies the MCC (Mobile Country Code), while in the second entry it specifies the MNC (Mobile Network Code) of the selected GSM network.
1205	BAN LIST CLEARED	---	---	The ban list was deleted as there were no GSM networks in the receiving range that have not been placed on the ban list.
1212	ERROR MODEM IRREGULAR OFF	##	---	Indicates a faulty connection. The parameter includes a counter that indicates how many consecutive connections have not worked.
1252	MODEM TO CON	##	---	Timeout while a connection is being established. The parameter contains a counter that indicates how many consecutive connection attempts have not worked.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1281	ZLIB STREAMPROCESS ERR	##	---	Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 131).
1282	ZLIB STREAMFINISH ERR	##	---	Internal error Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 131).
1320	LAN	0	LAN LINKUP	LAN cable was connected.
		1	LAN LINKDOWN	LAN cable was disconnected.
		2	LAN TIMEOUT	Timeout when establishing a connection to the server or when transferring data
		3	LAN OPEN SOCKET FAILED	No socket could be opened. TCP/IP connection could not be established.
		4	LAN DISCONNECT	LAN connection was disconnected.
		5	LAN NO IP	The LAN interface has not been assigned an IP address or an invalid one. No LAN cable is connected.
		6	LAN DHCP DISCOVER	"DHCP discover" was sent to determine whether a DHCP server is available.
		7	LAN DHCP REQ	An IP address was requested from the DHCP server.
		8	LAN DHCP REREQ	Request to continue to use the IP address received during the "DHCP request".
		9	LAN DHCP NEW IP	A new IP address was received from the DHCP server.
		10	LAN DHCP ABORT	Timeout during communication with the DHCP server.

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1321	LAN_SOCK_STATE	23	LAN SOCK ESTABLISHED	Socket connection disconnected.
		24	LAN SOCK FIN WAIT	
		26	LAN SOCK CLOSING	
		27	LAN SOCK TIME WAIT	
		28	LAN SOCK CLOSE WAIT	
		29	LAN SOCK LAST ACT	
1440	DECAY MEM ERR	---	---	Reserved for extensions

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1600 (1/2)	STATE (1/2)	1	OK	Last connection OK
		2	TRANSMISSION ERROR	Last transmission faulty Try again later
		3	MEASUREMENT ERROR	Last measurement faulty • Check the configuration. • Check the connection between the device and sensor.
		4	HOLD	Standby (GPRS ON, measurement OFF) If ALOHA transmission mode is initiated on the device, the myDatalogRSS switches back into "RUN" mode (GPRS ON, measurement ON).
		5	TRANSPORT	Transport lock (GPRS OFF, measurement OFF) see "Standby"
		6	OFFLINE	Offline (GPRS OFF, measurement ON) see "Standby"
		7	NO NET (NET LOCK)	Netlock/no matching provider • Try to improve the position of the antenna. • Check whether the device is in the coverage area (www.microtronics.at/footprint).
		8	NO NET	No GSM network • Improve the position of the antenna • Try again later

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1600 (2/2)	STATE (2/2)	10	GPRS ERROR	No GPRS connection Try to improve the position of the antenna.
		11	IP ERROR	No myDataweb server available • Check whether port 51241 is enabled on the myDataweb server. • Try again later
		12	SIM CARD ERROR	Faulty SIM chip Contact support.
2000 - 2999	MODULE ERR			Reserved for extensions
3000 - 3099				Reserved for extensions

14.2.1 Modem error

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
GPRS error (1/2)				
1200	BEARER LINE BUSY	-993	---	Line busy Try again later
	BEARER NO ANSWER	-992	---	No answer • Try again later • Check whether the device is in the coverage area (www.microtronics.at/footprint).
	BEARER NO CARRIER	-991	---	No carrier • Try again later • Check whether the device is in the coverage area (www.microtronics.at/footprint).
	BEARER GPRS FAILED	-988	---	GPRS setup failure • Try to improve the position of the antenna • Check whether the device is in the coverage area (www.microtronics.at/footprint).
	BEARER PPP LCP FAILED	-987	---	Error when negotiating the LCP Internal error
	BEARER PPP AUTH FAILED	-986	---	Error occurred during PPP authentication Internal error
	BEARER PPP IPCP FAILED	-985	---	Error when negotiating the IPCP Internal error
	BEARER PPP LINK FAILED	-984	---	PPP receiver does not react to echo request Internal error
	BEARER PPP TERM REQ	-983	---	PPP session terminated by the receiver. Internal error

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
GPRS error (2/2)				
	BEARER CALL REFUSED	-982	---	Incoming call refused Try again later
	BEARER UNKNOWN	-981	---	Try again later
Error when establishing the GPRS connection				
1200	BEARER BAD HDL	-980	---	Invalid handling Internal error
	BEARER BAD STATE	-979	---	The carrier was not stopped. Internal error
	BEARER DEV	-978	---	Error occurred during link layer initialisation Internal error
	BEARER GPRS START UNKNOWN	-977	---	Internal error
Error when disconnecting the GPRS connection				
1200	BEARER GPRS STOP BAD HDL	-976	---	Invalid handling Internal error
	BEARER GPRS STOP UNKNOWN	-975	---	Internal error
1200	NETLOCK FAILURE	-970	---	Error when selecting the network • Check whether the device is in the coverage area (www.microtronics.at/footprint).

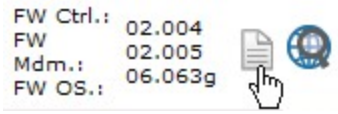
Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
1200	BAND SEL FAILED	-969	---	A network could not be found on the GSM900/1800 or on the GSM85071900 band. • Try to improve the position of the antenna. • Check whether the device is in the coverage area (www.microtronics.at/footprint).
TCP channel error (1/2)				
1200	CHANNEL ABORTED	-965	---	An attempt is being made to write to/read a TCP client that is no longer available. Try again later
	CHANNEL CSTATE	-964	---	The channel is not in the "WIP_CSTATE_ READY" state. Try again later
	CHANNEL NOT SUPPORTED	-963	---	The option is not supported by the channel. Try again later
	CHANNEL OUT OF RANGE	-962	---	The optional value is outside the permissible range. Try again later
	CHANNEL MEMORY	-961	---	Internal error
	CHANNEL INTERNAL	-960	---	Internal error
	CHANNEL INVALID	-959	---	Invalid option or parameter Internal error
	TCP DNS FAILURE	-958	---	The name could not be resolved in an IP address. Internal error
	CHANNEL RESOURCES	-957	---	There are no further TCP buffers available. Try again later
	CHANNEL PORT IN USE	-956	---	TCP server port is already being used. Try again later

Log entry		Parameter		Description
Code	Plain text	Code	Plain text	
TCP channel error (2/2)				
1200	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
	CHANNEL UNKNOWN	-950	---	Internal error

14.3 Evaluating the device log

14.3.1 Evaluating the device log on the myDataweb server

The last 300 log entries on the myDataweb 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 ("myDatanet Server Manual " 805002) includes a detailed description of the evaluation of the device log on the myDatawebserver.

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Chapter 15 Spare parts and accessories

15.1 Internal expansions

Note: The following components are order options. They cannot be ordered separately or installed by the customer.

Description	Quantity	Order number
Extension Battery for myDatalogRSS xx (Li-Ion ; 13,6Ah; -50...+60°C operating, -20...+60°C charging temperature)	1	206.726

15.2 Assembly sets

Description	Quantity	Order no.
Wall Mounting Set for myDatalogRSS xx	1	206.649
Pole Mounting Kit for myDatalogRSS xx	1	206.689
Mounting Bracket wasserstand.info for myDatalogRSS xx	1	206.616

15.3 Sensors

Description	Quantity	Order no.
Cable temperatur sensor for myDatalogS3 20m	1	206.300

15.4 Other accessories

Description	Quantity	Order no.
myDatanet Tool Pen	1	206.646
MDN Magnet	1	206.803
Terminal box	1	206.622
Power supply 12V 500mA	1	206.623
Power supply 24V 2,5A for top-hat rail mounting	1	206.667
Power supply 24V 1A	1	213.814

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Chapter 16 Document history

Rev.	Date	Changes
01	16.09.2014	First version

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Chapter 17 Contact information

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