# User manual

## myDatasensH2S1000 BLE

**Valid from:**

- **Firmware version: 01v019**
- **App. version: 07v000**
- **Server version: 49v011**
- **Hardware version: 3.0**

Microtronics

# Chapter 1 Table of contents

# Chapter 2 Declaration of conformity

## 2.1 BLE Gateway ATEX

### EU-Konformitätserklärung
EU Declaration of Conformity / Déclaration de conformité UE

| | |
|---|---|
| **Produktbezeichnung:**<br>Product:<br>Désignation du produit: | Frei programmierbares (PAWN) Instrument zum Übertragen von<br>Messdaten mittels Bluetooth Smart (BLE) |

| **Type :**<br>Type code:<br>Type: | **BLE Gateway ATEX** | **Gültig ab:**<br>Valid from:<br>Valide à partir de: | **Rev. 3.0** |
|---|---|---|---|

**Microtronics**
We live M2M

| **Hersteller:**<br>Manufacturer :<br>Fabricant: | **Microtronics Engineering GmbH**<br>Hauptstrasse 7<br>A-3244 Ruprechtshofen |
|---|---|

**Das bezeichnete Produkt stimmt mit den folgenden Europäischen Richtlinien überein. Eine oder mehrere der in der zugehörigen Baumusterprüfbescheinigung SIQ 16 ATEX 009 X genannten Normen wurden durch neue Ausgaben ersetzt. Der Hersteller erklärt für das vorstehend genannte Produkt auch die Übereinstimmung mit den Anforderungen der neuen Normenausgaben."**
The designated product is in conformity with the following european directives. One or more of the associated listed in the Type Examination Certificate SIQ 16 ATEX 009 X standards have been replaced by new editions. The manufacturer for the above product also compliance with the requirements of the new standard editions.
Le produit décrit est conforme aux directives européennes suivantes. Une ou plusieurs des normes énumérées dans l'attestation de type concernant SIQ 16 ATEX 009 X étaient replacées par des nouvelles éditions. Le producteur déclare pour le produit décrit ci-dessus la conformité aux exigences des nouvelles éditions des normes.

| | | **Europäische Norm** | |
|---|---|---|---|
| **(2014/30/EU)** | **EMC Directive** | | |
| | | EN61326-1 | |
| **(2014/35/EU)** | **LVD Directive** | | |
| | | EN61010-1 | |
| **(2014/53/EU)** | **RED Directive** | | |
| | Safety & Health 3.1a | EN62368-1+A11:2017 | |
| | EMC 3.1b | EN301489-1 V2.1.1<br>EN301489-17 V3.2.0 | |
| | Radio spectrum efficiency 3.2 | EN300328 V2.2.2 | |
| **(2014/34/EU)** | **ATEX Directive** | | |
| | | EN IEC 60079-0<br>EN 60079-11 | |
| **(2015/863/EU)** | **RoHS Directive** | | |
| | Prevention 4.1 | EN IEC 63000 | |
| | Kennzeichnung/ Markings/ Marquage | | |
| | $C\epsilon_{0123}$ ⟨Ex⟩ II 2G Ex ib IIB T3 Gb | | |

Ruprechtshofen, den 11.11.2021

| | | |
|---|---|---|
| Ort und Datum der Ausstellung<br>Place and date of issue<br>Lieu et date d'établissement | Andreas Zuser , Ex-Schutzbeauftragter<br>Unterschrift<br>name and signature of authorised person<br>Nom et signature de la personne autorisée | Hans-Peter Buber, Managing Director<br>Unterschrift<br>name and signature of authorised person<br>Nom et signature de la personne autorisée |

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# 2.2 H2S 7H Sensor module

## EU-Konformitätserklärung
### EU Declaration of Conformity / Déclaration de conformité UE

**Produktbezeichnung:**
Product:
Désignation du produit:

BLE Sensormodul zum Einsatz in einem BLE Gateway

**Type :**
Type code:
Type:

**H2S 7H, H2S C50, H2S BH, H2S B1, H2S BE,**
**H2O2 CB100,**
**CL2 7CLH**

**Microtronics**
We live M2M

**Hersteller:**
Manufacturer :
Fabricant:

**Microtronics Engineering GmbH**
Hauptstrasse 7
A-3244 Ruprechtshofen

**Das bezeichnete Produkt stimmt mit den folgenden Europäischen Richtlinien überein. Eine oder mehrere der in der zugehörigen Baumusterprüfbescheinigung SIQ 17 ATEX 008 X genannten Normen wurden durch neue Ausgaben ersetzt. Der Hersteller erklärt für das vorstehend genannte Produkt auch die Übereinstimmung mit den Anforderungen der neuen Normenausgaben."**
The designated product is in conformity with the following european directives. One or more of the associated listed in the Type Examination Certificate SIQ 17 ATEX 008 X standards have been replaced by new editions. The manufacturer for the above product also compliance with the requirements of the new standard editions.
Le produit décrit est conforme aux directives européennes suivantes. Une ou plusieurs des normes énumérées dans l'attestation de type concernant SIQ 17 ATEX 008 X étaient replacées par des nouvelles éditions. Le producteur déclare pour le produit décrit ci-dessus la conformité aux exigences des nouvelles éditions des normes.
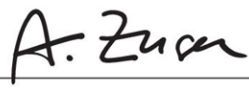
|  |  | Europäische Norm |  |
|---|---|---|---|
| (2014/30/EU) | EMC Directive |  |  |
|  |  | EN61326-1 |  |
| (2014/35/EU) | LVD Directive |  |  |
|  |  | EN61010-1 |  |
| (2014/53/EU) | RED Directive |  |  |
|  | Safety & Health 3.1a | EN62368-1 EN62479 |  |
|  | EMC 3.1b | EN301489-1 V1.9.2 EN301489-17 V2.1.1 |  |
|  | Radio spectrum efficiency 3.2 | EN300328 V2.1.1 |  |
| (2014/34/EU) | ATEX Directive |  |  |
|  |  | EN IEC 60079-0 EN 60079-11 |  |
| (2015/863/EU) | RoHS Directive |  |  |
|  | Prevention 4.1 | EN IEC 63000 |  |
| Reg. (EG) 1907/2006 | REACH Regulation |  |  |
|  | **Die Produkte enthalten grundsätzlich keine gefährlichen Stoffe nach REACH und entsprechen der Verordnung (EG) Nr. 1907/2006.** The products do not contain any hazardous substances according to REACH and comply with Regulation (EC) No 1907/2006. Les produits ne contiennent aucune substance dangereuse selon REACH et sont conformes au Règlement (CE) No 1907/2006. |  |  |

Seite 1 von 2

| Kennzeichnung/ Markings/ Marquage |
|---|
| $C\,E_{0123}$ $\langle Ex \rangle$ II 2 G Ex ib IIB T4 Gb |

Ruprechtshofen, den 18.01.2021

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

Andreas Zuser , Ex-Schutzbeauftragter
Unterschrift
name and signature of authorised person
Nom et signature de la personne autorisée

Hans-Peter Buber, Managing Director
Unterschrift
name and signature of authorised person
Nom et signature de la personne autorisée

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# Chapter 3 Ex certification

## 3.1 BLE Gateway ATEX

**SIQ**

(1)          **EU-TYPE EXAMINATION CERTIFICATE**

(2)    Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres –
       **Directive 2014/34/EU**

(3)    EU-Type Examination Certificate Number:

**SIQ 17 ATEX 009 X**          **Issue: 0**

(Ex)

(4)    Product:          BLE gateway, types BLE & 3G Gateway ATEX and BLE Gateway ATEX

(5)    Manufacturer:     Microtronics Engineering GmbH

(6)    Address:          Hauptstrasse 7, 3244 Ruprechtshofen, Austria

(7)    This product and any acceptable variation thereto are specified in the schedule to this certificate and
       the documents therein referred to.

(8)    SIQ Ljubljana, Notified body number 1304 in accordance with Article 17 of Directive 2014/34/EU of the
       European Parliament and of the Council, dated 26 February 2014, certifies that this product has been
       found to comply with the Essential Health and Safety Requirements relating to the design and
       construction of products intended for use in potentially explosive atmospheres given in Annex II to the
       Directive.

       The examination and test results are recorded in the confidential test report TEx009.2/17.

(9)    Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

       **EN 60079-0 : 2012 / A11 : 2013**                    **EN 60079-11 : 2012**

(10)   If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific
       conditions of use specified in the schedule to this certificate.

(11)   This EU-Type Examination Certificate relates only to the design and construction of the specified
       product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the
       manufacturing process and supply of this product. These are not covered by this certificate.

(12)   The marking of the product shall include the following:

       (Ex) II 2 G Ex ib IIB T3 Gb

Certification body                                          Ljubljana, 6 September 2017

Igor Likar

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The EU-Type Examination Certificate is valid only if signed. The certificate may be reproduced only in full and without changes.
Any extracts and changes shall be approved by SIQ Ljubljana.

SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana, +386 1 4778 221, ex@siq.si

# SIQ

(13) **SCHEDULE**

(14) **EU-Type Examination Certificate Number SIQ 17 ATEX 009 X, Issue: 0**

(15) Description of Product

BLE gateway, types BLE & 3G Gateway ATEX and BLE Gateway ATEX, is a communication unit for recording of the measured gas concentration from BLE sensor unit via Bluetooth connection and sending received data to central server via GSM network or to other device via Bluetooth connection. It is designed in type of protection intrinsic safety 'ib'. Power is assured by internal batteries which are not intended to be replaced by user. Enclosure is made from plastic material with plastic protective armor. Unit has an external connector for connection of the antenna. At the bottom of the BLE gateway is a place for installation of the BLE sensor unit, which is attached to the BLE gateway by magnet. BLE sensor unit is not covered by this Certificate.

Type key:

| Type: | Description: |
|---|---|
| BLE & 3G Gateway ATEX | BLE gateway with BLE and GSM 2G/3G module |
| BLE Gateway ATEX | BLE gateway with BLE module only |

Specifications:

| Ambient temperature range: | From -20°C to +50°C |
|---|---|
| Power supply: | Two batteries Tadiran type SL-2880 and hybrid layer capacitor Tadiran type HLC-1530 |
| Material of the enclosure: | Lexan 161R, GTX973, silicone gasket S35WX04 SIL35 SHORE A WHITE and protective armor TC4GPN |
| Data transmission: | Bluetooth Low Energy: Range: 20 m (depending on the environmental conditions) Transmission rate: 120 data records/sec. 2G/3G modem (Europe): 2G GPRS 900MHz / 1800MHz UMTS B1, B8 |

(16) Test Report

TEx009.2/17 dated 6 September 2017.

(17) Specific Conditions of Use

- Ambient temperature range -20°C ≤ $T_{amb}$ ≤ +50°C.
- Potential electrostatic charging hazard – Clean the device with moist or electrostatically dissipative cloth.
- The device shall be protected against UV radiation.
- Only certified BLE sensor unit shall be used.
- The measuring function for explosion protection is not a subject of this Certificate.

# 3.1.1 Issue one

**SIQ**

(1) **EU-TYPE EXAMINATION CERTIFICATE**

(2) Product Intended for use in Potentially Explosive Atmospheres – Directive 2014/34/EU

(3) EU-Type Examination Certificate Number:

**SIQ 17 ATEX 009 X**        **Issue: 1**

(4) Product: BLE gateway, types BLE & 3G Gateway ATEX and BLE Gateway ATEX

(5) Manufacturer: Microtronics Engineering GmbH

(6) Address: Hauptstrasse 7, 3244 Ruprechtshofen, Austria

(7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) SIQ Ljubljana, Notified body number 1304 in accordance with Article 17 and Article 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report TEx412/21.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018+AC:2020**        **EN 60079-11:2012**

Where additional criteria beyond those given here have been used, they are listed at item (18) in the schedule to this certificate.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

⟨Ex⟩ II 2 G Ex ib IIB T3 Gb

Certification body                                                  Ljubljana, 27 October 2021

Bojan Pečavar

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SIQ Ljubljana, Mašera-Spasićeva ulica 10, SI-1000 Ljubljana, +386 1 4778 221, ex@siq.si

**SIQ**

## SCHEDULE

(14) **EU-Type Examination Certificate Number SIQ 17 ATEX 009 X, Issue: 1**

(15) Description of Product

BLE gateway, types BLE & 3G Gateway ATEX and BLE Gateway ATEX, is a communication unit for recording of the measured gas concentration from BLE sensor unit via Bluetooth connection and sending received data to central server via GSM network or to other device via Bluetooth connection. It is designed in type of protection intrinsic safety 'ib'. Power is assured by internal batteries which are not intended to be replaced by user. Enclosure is made from plastic material with plastic protective armour. Unit has an external connector for connection of the antenna. At the bottom of the BLE gateway is a place for installation of the BLE sensor unit, which is attached to the BLE gateway by magnet. BLE sensor unit is not covered by this Certificate.

Type key:

| Type: | Description: |
|---|---|
| BLE & 3G Gateway ATEX | BLE gateway with BLE and GSM 2G/3G module |
| BLE Gateway ATEX | BLE gateway with BLE module only |

Specifications:

| Ambient temperature range: | From -20°C to +50°C |
|---|---|
| Data transmission: | Bluetooth Low Energy:<br>Range: 100 m (depending on the environmental conditions)<br>Transmission rate: 120 data records/sec.<br><br>2G/3G modem (World):<br>2G GPRS 850/900MHz & 1800/1900MHz<br>UMTS B1, B2, B5, B8, B19 |

(16) Test Report

TEx412/21 dated 27 October 2021.

(17) Specific Conditions of Use

- Ambient temperature range -20°C ≤ $T_{amb}$ ≤ +50°C.
- Potential electrostatic charging hazard – Clean the device with moist or electrostatically dissipative cloth.
- The device shall be protected against UV radiation.
- Batteries must be replaced only by manufacturer or authorized service.
- Only certified BLE sensor unit shall be used.
- The measuring function for explosion protection is not a subject of this Certificate.

(18) Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements has been assured by compliance with the requirements of the standards listed under item (9).

SIQ 17 ATEX 009 X, Issue: 1                                                                                                    Page 2/4

## 3.1.2 Issue two

**SIQ**

(1)    **EU-TYPE EXAMINATION CERTIFICATE**

(2)    Product Intended for use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3)    EU-Type Examination Certificate Number:

**SIQ 17 ATEX 009 X**          **Issue: 2**

**Ex**

(4)    Product:          BLE gateway, types: BLE & 3G Gateway ATEX, BLE Gateway ATEX and BLE & LTE-M Gateway ATEX

(5)    Manufacturer:    Microtronics Engineering GmbH

(6)    Address:         Hauptstrasse 7, 3244 Ruprechtshofen, Austria

(7)    This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8)    SIQ Ljubljana, Notified body number 1304 in accordance with Article 17 and Article 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report TEx152/23.

(9)    Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018 + AC:2020-02**          **EN 60079-11:2012**

Where additional criteria beyond those given here have been used, they are listed at item (18) in the schedule to this certificate.

(10)   If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11)   This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12)   The marking of the product shall include the following:

⟨Ex⟩ **II 2 G Ex ib IIB T3 Gb**

Certification body                                              Ljubljana, 21 July 2023

Bojan Pečavar

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The EU-Type Examination Certificate is valid only if signed. The certificate may be reproduced only in full and without changes. Any extracts and changes shall be approved by SIQ Ljubljana.

SIQ Ljubljana is accredited by Slovenian Accreditation with accreditation number CP-001 in the field of certification of products, processes and services (SIST EN ISO/IEC 17065).

SIQ Ljubljana, Mašera-Spasićeva ulica 10, SI-1000 Ljubljana, +386 1 4778 221, ex@siq.si

# SCHEDULE

**(14)** **EU-Type Examination Certificate Number SIQ 17 ATEX 009 X, Issue: 2**

(15) <u>Description of Product</u>

BLE gateway, types BLE & 3G Gateway ATEX, BLE Gateway ATEX and BLE & LTE-M Gateway ATEX, is a communication unit for recording of the measured gas concentration from BLE sensor unit via Bluetooth connection and sending received data to central server via GSM/LTE-M network or to other device via Bluetooth connection. It is designed in type of protection intrinsic safety 'ib'. Power is assured by internal batteries which are not intended to be replaced by user. Enclosure is made from plastic material with plastic protective armour. Unit has an external connector for connection of the antenna. At the bottom of the BLE gateway is a place for installation of the BLE sensor unit, which is attached to the BLE gateway by magnet. BLE sensor unit is not covered by this Certificate.

Type key:

| Type: | Description: |
|---|---|
| BLE & 3G Gateway ATEX | BLE gateway with BLE and GSM 2G/3G world module |
| BLE Gateway ATEX | BLE gateway with BLE module only |
| BLE & LTE-M Gateway ATEX | BLE gateway with BLE and LTE-M module |

Specifications:

| Ambient temperature range: | From -20°C to +50°C |
|---|---|
| Data transmission: | - Bluetooth Low Energy:<br>Range: 100 m (depending on the environmental conditions)<br>Transmission rate: 120 data records/sec.<br>- 2G/3G modem (World):<br>2G GPRS 850/900MHz & 1800/1900MHz<br>UMTS B1, B2, B5, B8, B19<br>- LTE-M module:<br>B1, B2, B3, B4, B5, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B66 |

(16) <u>Test Report</u>

TEx152/23 dated 21 July 2023.

(17) <u>Specific Conditions of Use</u>

- Ambient temperature range: -20°C ≤ $T_{amb}$ ≤ +50°C.
- Potential electrostatic charging hazard – Clean the device with moist or electrostatically dissipative cloth.
- The device shall be protected against UV radiation.
- Batteries must be replaced only by manufacturer or authorized service.
- Only certified BLE sensor unit shall be used.
- The measuring function for explosion protection is not a subject of this Certificate.

# 3.2 H2S 7H Sensor module

**SIQ**

(1)     **EU-TYPE EXAMINATION CERTIFICATE**

(2)     Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3)     EU-Type Examination Certificate Number:

**SIQ 17 ATEX 008 X**          **Issue: 0**

(4)     Product:          BLE sensor module, type *** *** (#)

(#) See item (15) for type identification.

(5)     Manufacturer:          Microtronics Engineering GmbH

(6)     Address:          Hauptstrasse 7, 3244 Ruprechtshofen, Austria

(7)     This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8)     SIQ Ljubljana, Notified body number 1304 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report TEx008/17.

(9)     Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2012          EN 60079-11 : 2012

(10)    If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

(11)    This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12)    The marking of the product shall include the following:

⟨Ex⟩ II 2 G Ex ib IIB T4 Gb

Certification body          Ljubljana, 3 March 2017

Igor Likar

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SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana

# Chapter 4 Technical data

| | | |
|---|---|---|
| Voltage supply | Battery: 2 x Li-SOCl2 cells with a total of 25,74Ah | |
| Housing | Material: | Noryl GTX 973 / PC |
| | | (housing/lid and H2S 7H Sensor module ) |
| | Weight: | 760g  (incl. H2S 7H Sensor module and protective armour) |
| | Dimensions (WHD): | 106 x 169 x 61mm (with protective armour) |
| | Degree of protection: | |
| | Complete system: | |
| | Gateway: | IP66 |
| | | IP66 / IP68 / IP69 |
| | Sensor: | (IP68: max. immersion depth 1m for max. 5h ) |
| | | IP66 |
| Ex certification | ⟨Ex⟩  II 2G Ex ib IIB T3 Gb | |
| Operating temperature | -20...+50°C | |
| Air humidity | 15...90%rH  non-condensing | |
| Storage and transport temperature | Complete system: | -20...+50°C |
| | Gateway: | -20...+70°C |
| | Sensor: | -20...+50°C |
| Display | 1,5" OLED display with a resolution of 128 x 128 pixels and the ability to display 262.144 different colours | |
| Operation | Solenoid switch for activating the display and triggering setup mode | |
| H2S sensor | Measurement range: | 0-200ppm |
| | Max. overflow: | 1000ppm |
| | Resolution: | 0,25ppm |
| | Pressure range: | Atmospheric +/-10% |
| | $T_{90}$ response time: | <=35s |
| | Calibration cycle: | 6 months |
| | Max. service life: | 2 years |
| | Repeat accuracy: | 1% |
| Temperature sensor | Measurement range: | -20...+50°C |
| | Resolution: | 0,1°C |
| Data memory | Internal flash memory for up to 82.776 measurement cycles | |
| Data type | H2S concentration: | s32 (32Bit signed) |
| | Temperature: | s16 (16Bit signed) |
| Data transmission | Bluetooth Low Energy: | |
| | Range: | 20m (depending on the environmental conditions) |
| | Transmission rate: | 120 data records/sec. |
| Device operating time | Approx. 10 years at one-minute measurement cycle | |

# Chapter 5 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 myDatanet server.*

## 5.1 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.

## 5.2 Copyright

## 5.3 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.

## 5.4 Ex protection

The measurement instrument myDatasensH2S1000 BLE is designed for use in areas with a zone 1 explosive atmosphere.

The following conditions must be observed:

- Only the manufacturer is permitted to open the housing to carry out maintenance work, which must only be completed outside the Ex area.
- Only the manufacturer's original spare parts must be used.
- The battery must only be replaced with certified identical products.
- Possible danger of electrostatic discharge build-up - clean the device with a moist or electrostatically dissipative cloth.
- A mounting distance of min. 50 mm must be maintained on all sides to prevent any impurities.
- The device must be protected from UV radiation.

**II 2G Ex ib IIB T3 Gb**

*Important note: The Ex approval is only valid if the corresponding marking is provided on the type plate of the measurement instruments .*

*Important note: The certificates of conformity and any relevant test certificates from the respective authorities must be carefully observed during installation and commissioning.*

| 1 | myDatasensH2S1000 BLE | |
|---|---|---|

## 5.5 Safety instructions

For the connection, commissioning and operation of the myDatasensH2S1000 BLE , the following information and higher legal regulations of the country (e.g. ÖVE), such as valid EX regulations as well as the applicable safety and accident prevention regulations for the respective application case must be observed.

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

Ensure that the safety equipment of this measurement instrument is not impaired. Install and use the measurement system only in the manner and method described in this manual.

*Important note:* *The manufacturer's products that are designed for use outdoors include extensive protection against penetrating moisture and dust.*

## 5.5.1 Use of the hazard warnings

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

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

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

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

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

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

## 5.5.2 General safety instructions

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

## 5.5.3 Safety and preventative measures for handling Bluetooth modules

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

*CAUTION:*
*The Bluetooth connection must not be used in hazardous environments.*

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

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

### 5.5.3.1 Safety and precautionary measures for the Bluetooth module installation

- 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 subjected to strong vibrations or impacts.
- The can cause interferences if it is located in the vicinity of television sets, radios or computers.
- Do not open the Bluetooth module. Any modification to the device is prohibited and will result in the operating licence being revoked.
- Do not install the device in any other way to the one described in the operating instructions. Improper use will invalidate the warranty.

# 5.6 Overview
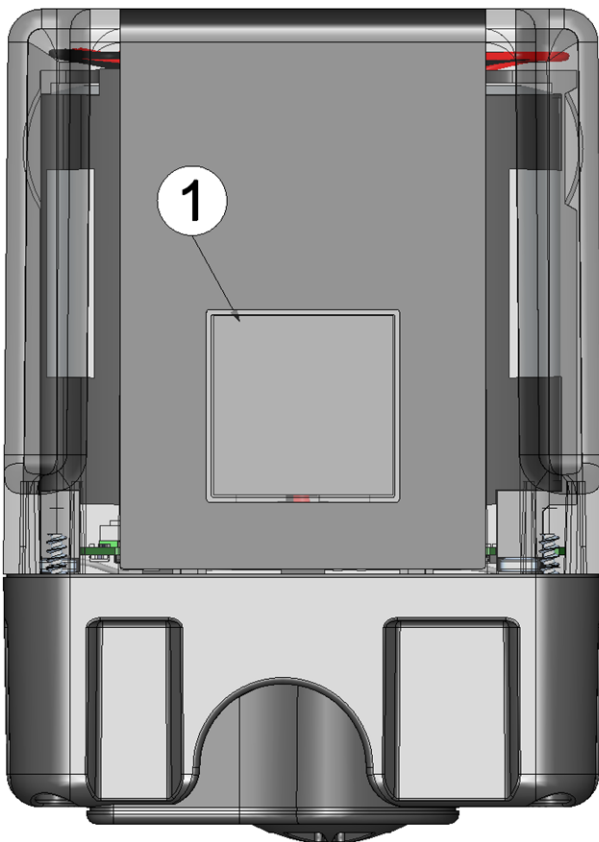


Front of the myDatasensH2S1000 BLE
(view without protective armour)
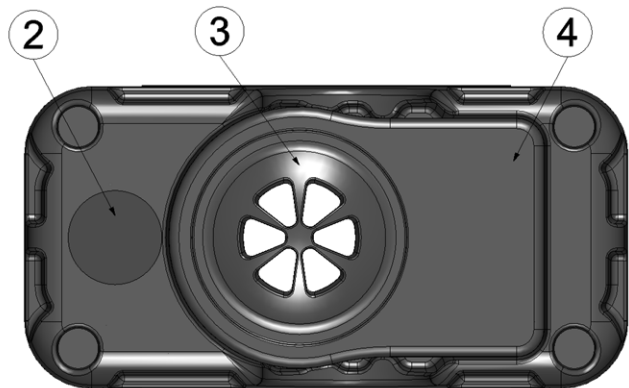
Bottom of the myDatasensH2S1000 BLE
(view without protective armour)

| **1** | Display | **3** | H2S sensor |
|---|---|---|---|
| **2** | Sealing plugs to protect the antenna connector provided for extensions | **4** | Replaceable H2S 7H Sensor module |

## 5.6.1 Block diagram
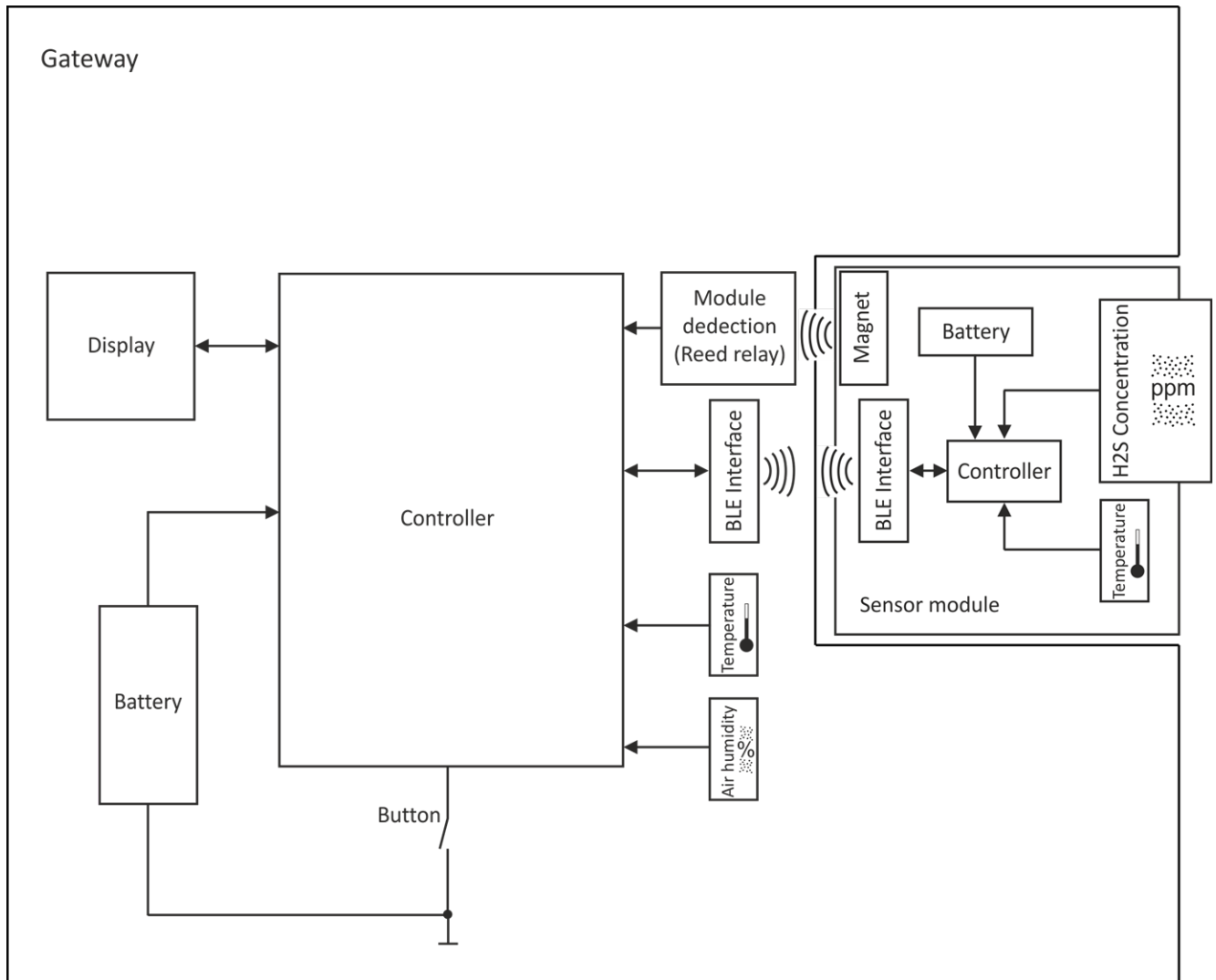


Block diagram of the myDatasensH2S1000 BLE

# 5.7 Intended use

The measurement instrument is used to record H2S concentrations. The device is battery-operated. The measured and recorded data is stored on a non-volatile memory medium. The saved data can transferred to a PC via a Bluetooth connection (Bluetooth Low Energy). Using the software provided by the manufacturer, the data can then be transferred from the PC to a central server. The maximum permissible limit values (specified in chapter "Technical data" on page 21) 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 before. Any other use or use beyond what is specified or a modification of the device shall be deemed to be not for the intended purpose and is not permitted without the express written consent of the manufacturer. The manufacturer shall not be held liable for any damages that may result from such unauthorised use or modification. The operator alone bears the associated risk.*

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

# 5.8 General product information

The compact, battery powered, stationary device is designed to be operated in wastewater systems to record and transfer H2S concentrations. For this purpose, the myDatasensH2S1000 BLE is equipped with a replaceable sensor module in which an electrochemical sensor is integrated. The sensor is subject to wear and must therefore be calibrated every 6 months. Depending on the application, the service life of the sensor can be up to 2 years. In addition to the H2S concentration, the internal measurement values "SOC" (state of charge), "Battery", "Int. Temp", "rH" (air humidity in the housing), "GSM" (GSM level), "Abrasion" (sensor wear), "PowerOn Flag" (sensor status), "Battery Sensor", "Sensor Temp." "Runtime Service", "Runtime Calib" and "Runtime mA Link" are determined (see "Internal Channels" on page 66). The measurement data is recorded at an adjustable interval (see "Basic settings" on page 69) and is temporarily saved in an internal data memory. The recorded data can be read out locally via a Bluetooth connection (Bluetooth Low Energy) . The DeviceConfig configuration program (see "DeviceConfig " on page 79) provided by the manufacturer and the USB BLE-Adapter (300685) included in the scope of delivery or a Bluetooth Low Energy compatible smartphone and the "GasBuster" smartphone app are required for this purpose. In addition to local processing of the data on the PC, the DeviceConfig configuration program also provides the option of transmitting the data to a central myDatanet server. This server provides a variety of options for managing and displaying the data. In addition to displaying the current measurement values, the "GasBuster" smartphone app also provides the option of transmitting the data to a central myDatanet server. The device is configured via the interface of the relevant myDatanet server. More information is provided in the server manual ("myDatanet Server Manual " 805002).

The myDatasensH2S1000 BLE has a 1,5" OLED display to show the current measurement values (H2S concentration and temperature) and a variety of status information (e.g. remaining time until the next calibration, remaining time until the next general overhaul, etc.). The display is either activated via the solenoid switch or by inserting the sensor module. Detailed information on this is provided in chapter "Display" on page 58.

## 5.9 Device labelling

The information in this user manual applies exclusively to the myDatasensH2S1000 BLE  that is made up of the following components:

- IoT app "myDatasens"
- H2S 7H Sensor module

> *Important note: Please note that when it comes to the protection class for the complete system, the lower one of the two components is decisive, i.e. the one for the H2S 7H Sensor module (IP66 ).*

The type plate of the BLE Gateway is located on the rear side of the device and contains the following information:

- Name and address of the manufacturer
- Type designation
- Item number
- Ex protection designation as specified in chapter
- Hardware revision
- Week and year of production
- Serial number
- Protection class
- Environmental conditions during operation
- Hazard note regarding electrostatic charge
- CE marking
- Logo for the EU WEEE Directive
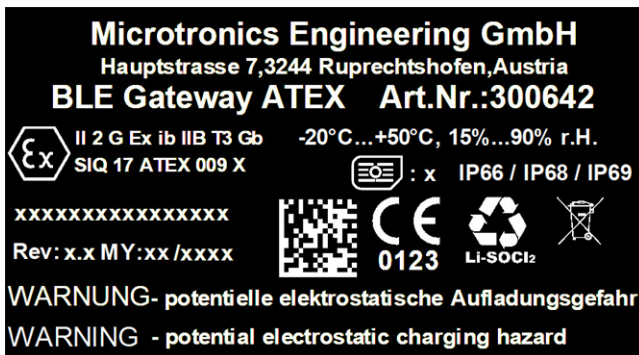


Type plate BLE Gateway

The type plate of the H2S 7H Sensor module is located on the bottom of the module and contains the following specifications:

- Type designation
- Serial number
- Week and year of production
- Hardware revision
- Item number
- Ex protection designation as specified in chapter
- Environmental conditions during operation
- Protection class
- Chemical composition of the installed batteries
- Logo for the EU WEEE Directive
- CE marking
- Name and address of the manufacturer



Type plate H2S 7H Sensor module

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.

*Note: This symbol indicates the country list profile (see www.microtronics.com/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.**

## 5.10 Installation of spare and wear parts

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

> *Note: The use of spare and wear parts that are not approved by the manufacturer shall void the Ex approval.*

## 5.11 Storage of the product

If necessary, before storing the device, download the data generated up to the current point in time from the device using the DeviceConfig configuration program (see "DeviceConfig " on page 79) or use the "GasBuster" smartphone app to transmit the data to a central myDatanet server. To store the myDatasensH2S1000 BLE , activate transport mode by removing the sensor module from the sensor recess in the device. The measurement is deactivated during this process.Store the myDatasensH2S1000 BLE and the sensor module in the original packaging. Do not remove the protective armour during this process.

The myDatasensH2S1000 BLE is placed in a very energy-saving mode by activating transport mode. However, it may still occur that the batteries are fully discharged if the device is stored for very long periods. Although the configuration and the most recently recorded data are always retained. Transport mode is deactivated again by re-inserting the sensor module and the myDatasensH2S1000 BLE resumes operation according to the configuration.

## 5.12 Warranty

The device has been functionally tested before delivery. If it is used as intended (see "Intended use" on page 27) and the operating instructions, the applicable documents(see "Applicable documents " on page 51) and the safety notes and instructions contained therein, are observed, no functional restrictions are to be expected and perfect operation should be possible.

> *Note: Please also note in this regard the next chapter "Disclaimer" on page 32.*

> *Note: Limitation of warranty*

> *In the event of non-compliance with the safety instructions and instructions in this document, the manufacturer reserves the right to limit the warranty.*

## 5.13 Disclaimer

The manufacturer assumes no liability

- for damages owing to **a change** of this document. The manufacturer reserves the right to change the contents of this document and this disclaimer at any time and without any notice.

- for damages to persons or objects resulting from **failure to comply** with applicable **regulations**. For connection, commissioning and operation of the devices/sensors all available information and higher local legal regulations (e.g. in Austria ÖVE guidelines) such as applicable Ex regulations as well as safety requirements and regulations in order to avoid accidents shall be adhered to.

- for damages to persons or objects resulting from **improper use**. For safety and warranty reasons, all internal work on the instruments beyond from that involved in normal installation and connection, must be carried out only by qualified Microtronics personnel or persons or companies authorised by Microtronics .

- for damages to persons or objects resulting from the use of instruments in technically **imperfect** condition.

- for damages to persons or objects resulting from the use of instruments **not in accordance with the requirements**.

- for damages to persons or objects resulting from **failure to comply** with **safety information** contained within this instruction manual.

- for missing or incorrect measurement values or resulting consequential damages due to **improper installation**.

## 5.14 Obligation of the operator

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

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

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

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

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

# 5.15 Personnel requirements

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

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

*Note: Qualified personnel*

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

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

# Chapter 6 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.
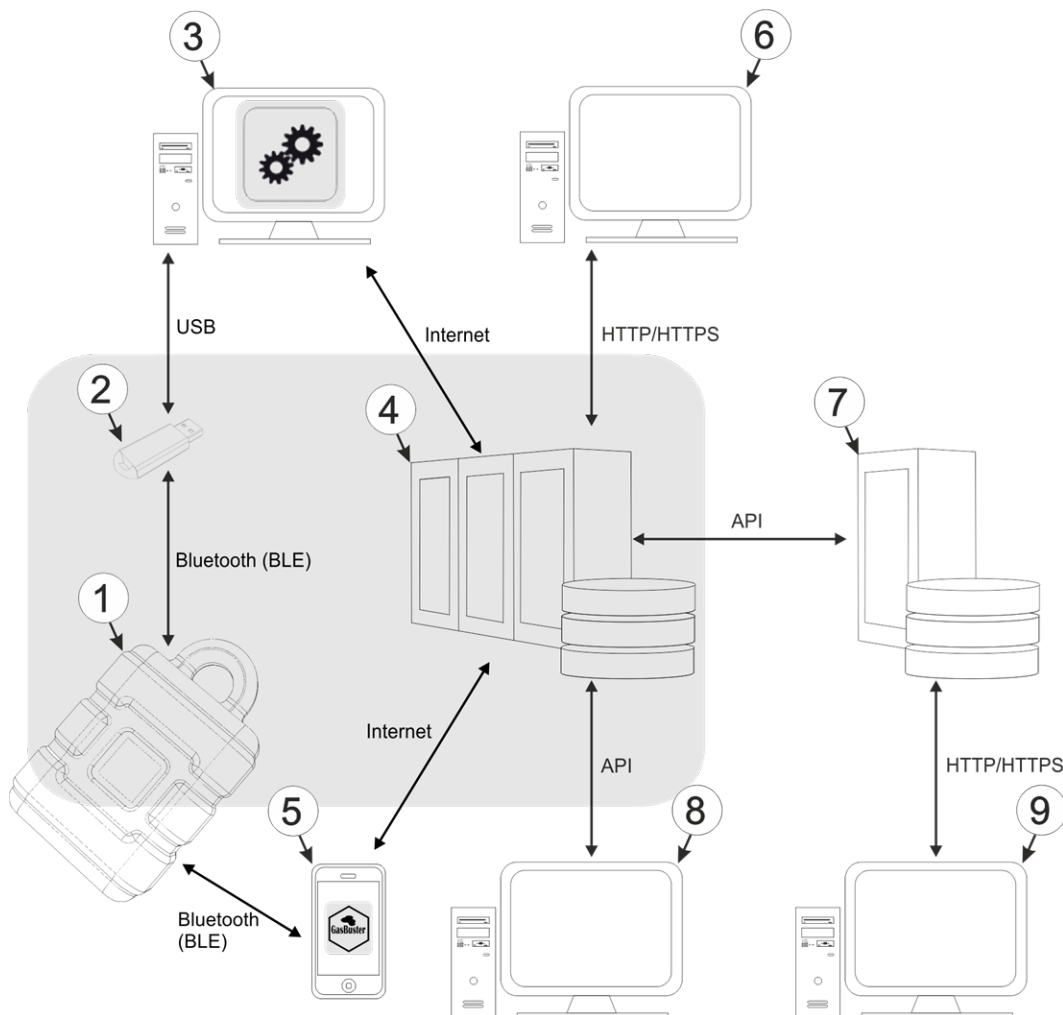
Functional principle

| | |
|---|---|
| 1 | myDatasensH2S1000 BLE |
| 2 | USB BLE-Adapter (Bluetooth Low Energy to USB converter) |
| 3 | PC with the DeviceConfig configuration program installed |
| 4 | myDatanet server to which the data is transferred |
| 5 | Smartphone with "GasBuster" smartphone app installed |
| 6 | Client that accesses the interface of the myDatanet server via the web browser |
| 7 | Customer-specific server that provides clients with their own interface. The customer-specific server obtains the data via the API interface of the myDatanet server (see "API" on page 129). |
| 8 | Client, on which a PC program is running, that obtains its data via the API interface of the myDatanet server (see "API" on page 129) |
| 9 | Client that accesses the interface of the customer-specific server via the web browser |

As illustrated in the previous figures (see "Functional principle" on page 35), there are 2options for transferring the data from myDatasensH2S1000 BLE to the myDatanet server:

- Indirectly, by initially reading the data from the device via the DeviceConfig configuration program using the Bluetooth connection (BLE) and then using the PC's Internet connection to transfer the data to the server
- Indirectly, by reading the data from the device via the "GasBuster" smartphone app using the Bluetooth connection (BLE) and using the smartphone's Internet connection to transfer the data to the myDatanet server

Functions and components provided by myDatanet :

- myDatasensH2S1000 BLE

  The device is a measurement instrument approved for Ex zone 1 for recording H2S concentrations. The saved data can transferred to a PC via a Bluetooth connection (Bluetooth Low Energy).

- USB BLE-Adapter ( included in the scope of delivery of the myDatasensH2S1000 BLE )

  This hardware module is connected directly to the USB interface of the PC. The required drivers are included in the installation package of the DeviceConfig configuration program. Detailed information on this is provided in chapter "Installing USB BLE-Adapter driver" on page 83.

- DeviceConfig configuration program

  The DeviceConfig configuration program is required to read out the data from the myDatasensH2S1000 BLE via the Bluetooth connection (Bluetooth Low Energy). In addition to local processing, the configuration program also provides the option of transferring the data to a central myDatanet server. An Internet connection is required for this purpose. The DeviceConfig configuration program uses port 51241 to transfer data.

- "GasBuster" smartphone app

  When combined with a Bluetooth Low Energy compatible smartphone, the "GasBuster" smartphone app provides the option of reading the data from the myDatasensH2S1000 BLE via the Bluetooth connection (Bluetooth Low Energy) and transferring it to the central myDatanet server in addition to displaying the current measurement values.

- myDatanet server

  Database for saving the measurement data and configurations. Data is either accessed via the API of the server (see "API" on page 129) or web interface of the server.

Functions and components provided by the customer:

- 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 myDatanet server via the API interface (see "API" on page 129) by the customer-specific server.

## 6.1 Determining the H2S concentration
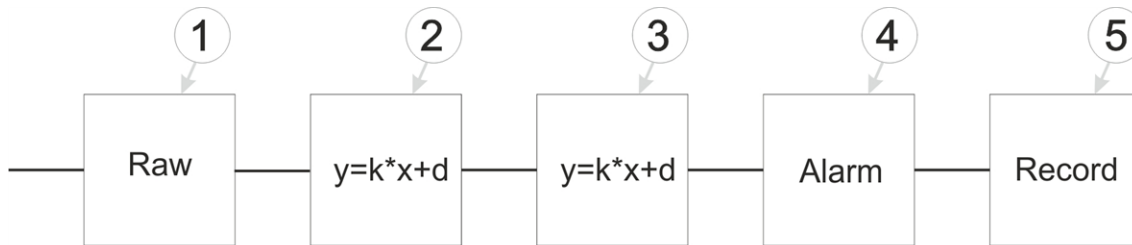


Diagram of how the "Gas" measurement value is generated (see "Measurement channels " on page 64)

| | | | |
|---|---|---|---|
| **1** | Determining the raw value (see "Determining the raw value" on page 37) | **4** | Monitoring of the alarm limits (see "Alarm module" on page 39) |
| **2** | Conversion of the raw value to the calibrated H2S measurement value (see "Calculation of the calibrated H2S measurement value" on page 38) | **5** | Recording of the measurement values (see "Record module" on page 40) |
| **3** | Conversion of the calibrated H2S measurement value to the trimmed H2S measurement value (see "Calculation of the trimmed H2S measurement value" on page 39) | | |

### 6.1.1 Determining the raw value

The following table specifies the relevant parameter for the module:

| Configuration section | Parameter | Explanation |
|---|---|---|
| Basic setting | Record interval | Time between measurement data recordings |

*Note: The record interval cannot be adjusted if you want to operate the device without a server, i.e. only process the measurement data locally on the PC using the DeviceConfig configuration program. In this case, the standard record interval of 1min. is used.*

## 6.1.2 Calculation of the calibrated H2S measurement value

The raw value determined during the previous step is converted into the H2S measurement value by means of the slope and offset determined during the calibration (see "Calibration process" on page 136).

| | |
|---|---|
| Min. raw value | A |
| Max. raw value | B |
| End of the measuring range | C |
| Start of the measuring range | D |
| Raw value | E |
| Corresponding H2S measurement value for the raw value | F |

| | |
|---|---|
| Slope determined during the calibration (see "Calibration process" on page 136) | $k_{Calib}$ |
| Offset determined during the calibration (see "Calibration process" on page 136) | $d_{Calib}$ |

C   1000 ppm

F   ?

D   0 ppm

A          E          B
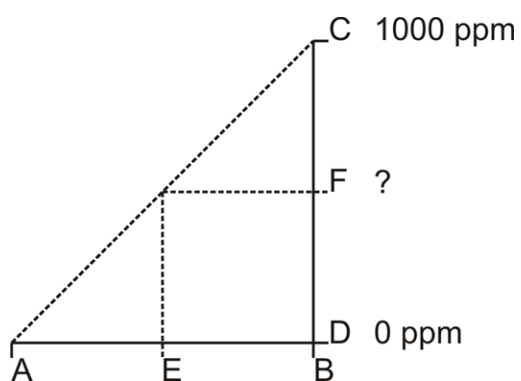
$$F = k_{Calib} * E + d_{Calib}$$

## 6.1.3 Calculation of the trimmed H2S measurement value

The calibrated H2S measurement value determined during the previous step can also be slightly adjusted (trimmed) during this step. For this purpose, the determined slope and offset are used for the trimming process (see "Trimming" on page 141). This step can be deactivated via DeviceConfig . The zero-point alignment does not change the slope (see "Zero point adjustment" on page 146), although the offset is set. In any case, this slope and offset are independent of those determined during the calibration. The basic calibration of the device is not changed by the trimming process or zero-point alignment.

| | |
|---|---|
| Min. calibrated H2S measurement value | A |
| Max. calibrated H2S measurement value | B |
| Min. trimmed H2S measurement value | C |
| Max. trimmed H2S measurement value | D |
| Calibrated H2S measurement value | E |
| Calibrated H2S measurement value assigned to the trimmed H2S measurement value | F |

| | |
|---|---|
| Slope determined during trimming process (see "Trimming" on page 141) | $k_{Trim}$ |
| Offset determined during trimming process (see "Trimming" on page 141) | $d_{Trim}$ |
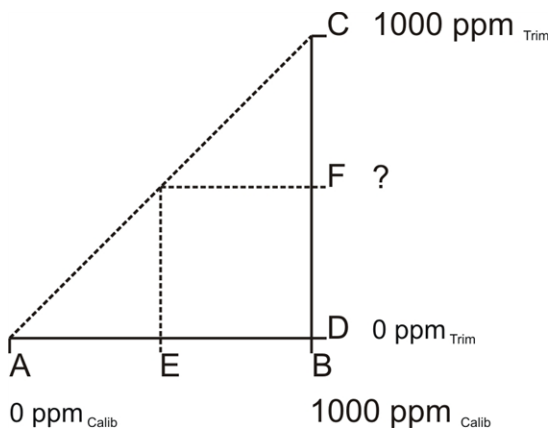
$$F = k_{Trim} * E + d_{Trim}$$

## 6.1.4 Alarm module

This module monitors the alarm limits and creates an entry in the alarm list if necessary.

> *Note: On devices without a mobile network modem, the alarms or warnings can only be signalled once the data has been read out via a Bluetooth connection (Bluetooth Low Energy) and has been transferred to a central myDatanet  server via the DeviceConfig configuration program or the "GasBuster" smartphone app.*

The following table specifies the relevant parameters for the module:

| Configuration section | Parameter | | Explanation |
|---|---|---|---|
| Measurement channels ->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 all-clear in event of alarm/warning (e.g. hyst = 5%, alarm or warning at 100 -> all-clear at 95) |

*Note: The alarm limits cannot be configured and the alarm module is therefore not active, if you want to operate the device without a server, i.e. only process the measurement data locally on the PC using the DeviceConfig configuration program.*

### 6.1.5 Record module

The record module records the measurement values.

The following table specifies the relevant parameter for the module:

| Configuration section | Parameter | Explanation |
|---|---|---|
| Basic setting | Record interval | Time between measurement data recordings |

*Note: The record interval cannot be adjusted if you want to operate the device without a server, i.e. only process the measurement data locally on the PC using the DeviceConfig configuration program. In this case, the standard record interval of 1min. is used.*

## 6.2 Functionality of the internal data memory

| Structure | Circular buffer |
|---|---|
| Total size | 82.776 measurement cycles |
| Number of sectors | 8 |
| Sector size | 10.347 measurement cycles |

The internal data memory of the myDatasensH2S1000 BLE is designed as a circular buffer with 8 sectors. If the maximum number of data records (82.776 ) 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 72.429 cycles, however at most the measurement values of the last 82.776 cycles.

For this reason, it is recommended to coordinate the transmission cycle and record interval in such a way that a maximum of 72.429 measurement cycles have to be recorded between two transmissions. 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, 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:*

Sector 1     Sector 2     Sector 7     Sector 8
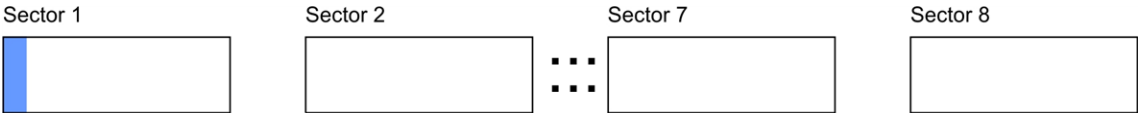
*Data memory after 82.776 measurement cycles:*

Sector 1     Sector 2     Sector 7     Sector 8

*Data memory after 82.776 +1 measurement cycles:*

Sector 1     Sector 2     Sector 7     Sector 8
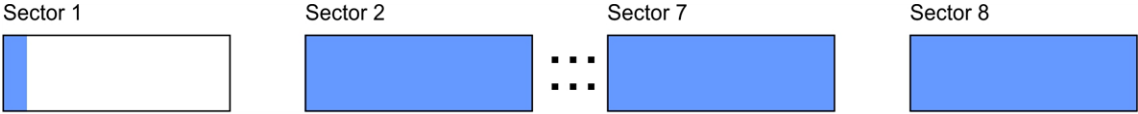
# Chapter 7 Storage, delivery and transport

## 7.1 Inspection of incoming deliveries

Check the shipment immediately upon receipt to ensure it is complete and intact. Immediately report any discovered transport damages to the delivering carrier. Also notify Microtronics Engineering GmbHin writing about this without delay. Report any incompleteness of the delivery to the responsible representative or directly to the company headquarters of the manufacturer within two weeks (see "Contact information" on page 171).
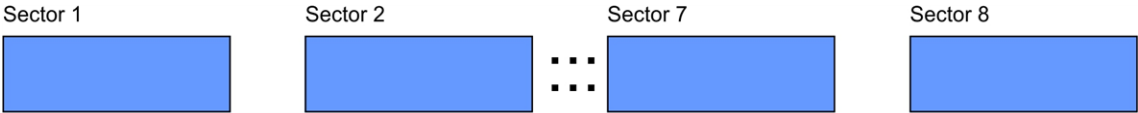
> *Note: Any claims received thereafter will not be accepted.*

## 7.2 Scope of delivery

The standard scope of delivery of the myDatasensH2S1000 BLE (300654 ) includes:

- myDatasensH2S1000 BLE with pre-installed "myDatasens" IoT app
- H2S 7H Sensor module (300644)
- BLE Gateway MDN Protection casing (300662 )
- USB BLE-Adapter (300685)
- MDN Magnet  (206.803)
- Quick Guide

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

## 7.3 Storage

The following storage conditions must be adhered to:

| myDatasensH2S1000 BLE | Storage temperature | -20...+70°C |
|---|---|---|
|  | Humidity | 15...90%rH |
| H2S 7H Sensor module | Storage temperature | -20...+50°C |
|  | Humidity | 15...90%rH |

> *Note:  The batteries remain in the myDatasensH2S1000 BLE  during storage.*

> *Important note: The storage conditions listed in the table only apply when the myDatasensH2S1000 BLE  and H2S 7H Sensor module are stored separately.*

Store the device so that it is protected against corrosive or organic solvent vapours, radioactive emissions as well as strong electromagnetic radiation.

## 7.4 Transport

Protect the myDatasensH2S1000 BLE against heavy shocks, bumps, impacts or vibrations. The original packaging must always be used for transport.

## 7.5 Return

Every return must be accompanied by a fully field-out return form. This return form is available in the service area of the myDatanet  server. An RMA number is mandatory for any returns and can be obtained from the Support & Service Centre (see "Contact information" on page 171). The return shipment of the myDatasensH2S1000 BLE must occur in the original packaging and with freight and insurance paid to Microtronics Engineering GmbH (see "Contact information" on page 171). Insufficiently cleared return shipments will otherwise not be accepted!

# Chapter 8 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.

## 8.1 Dimensions
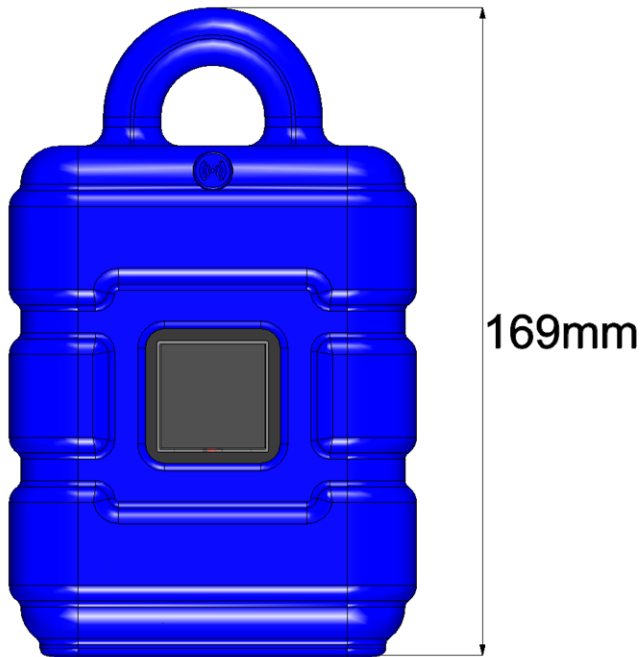


Dimensions: Height
(view with protective armour)
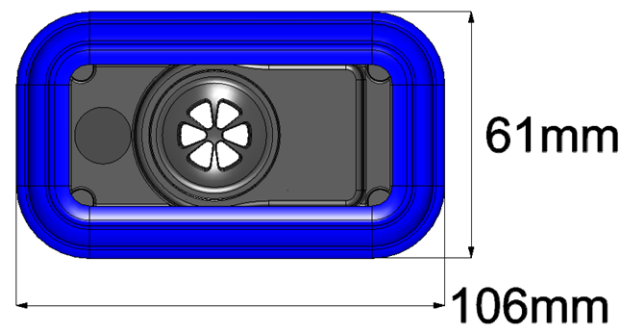


Dimensions: Width and depth
(view with protective armour)

## 8.2 Installing the myDatasensH2S1000 BLE

*Important note:*

- *Ensure installation is completed correctly.*
- *Comply with existing legal and/or operational directives.*
- *Improper handling can cause injuries and/or damage to the devices.*
- *The myDatasensH2S1000 BLE must not be operated in the field without a protective armour.*
- *Due to the electrostatic effects, the protective armour must not be rubbed with cloths in the Ex zone.*
- *The device must not be operated in the field without a sealing plug to protect the antenna connector provided for extensions.*
- *When using metallic mounting fixtures, these have to be integrated in the grounding concept in a suitable manner.*

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

- Direct sunlight
- Direct influence of weather (rain, snow, ...)
- Objects that radiate intense heat (maximum ambient temperature: -20...+50°C )
- Objects with a strong electromagnetic field (frequency converter or similar)
- Corrosive chemicals or gases (with the exception of H2S that is to be measured)
- Mechanical impacts
- Direct installation on paths or roads
- Vibrations
- Radioactive emissions

### 8.2.1 Suspended installation of the myDatasensH2S1000 BLE

The optional "Niro shackle  (206.325)" equipment is required for suspended installations.
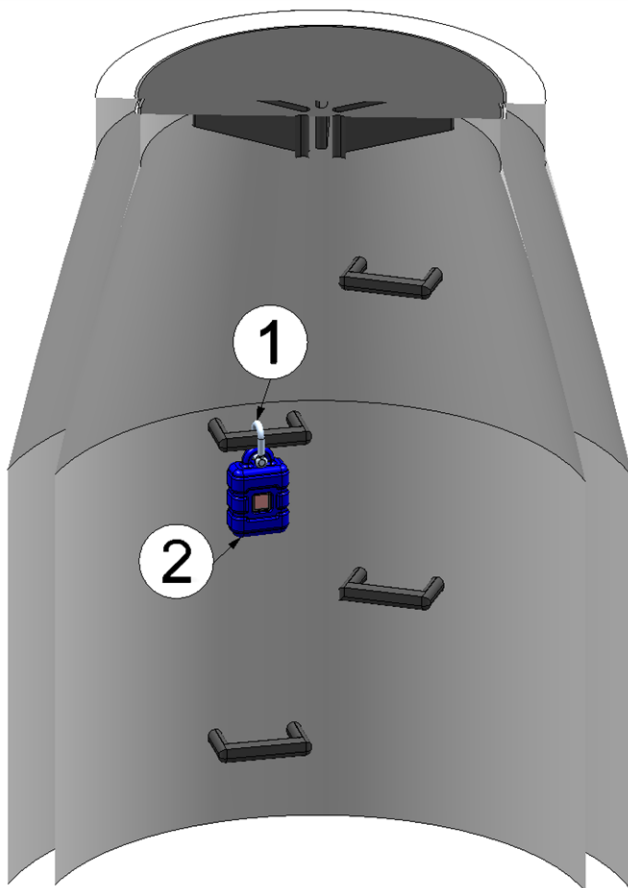


Suspended installation
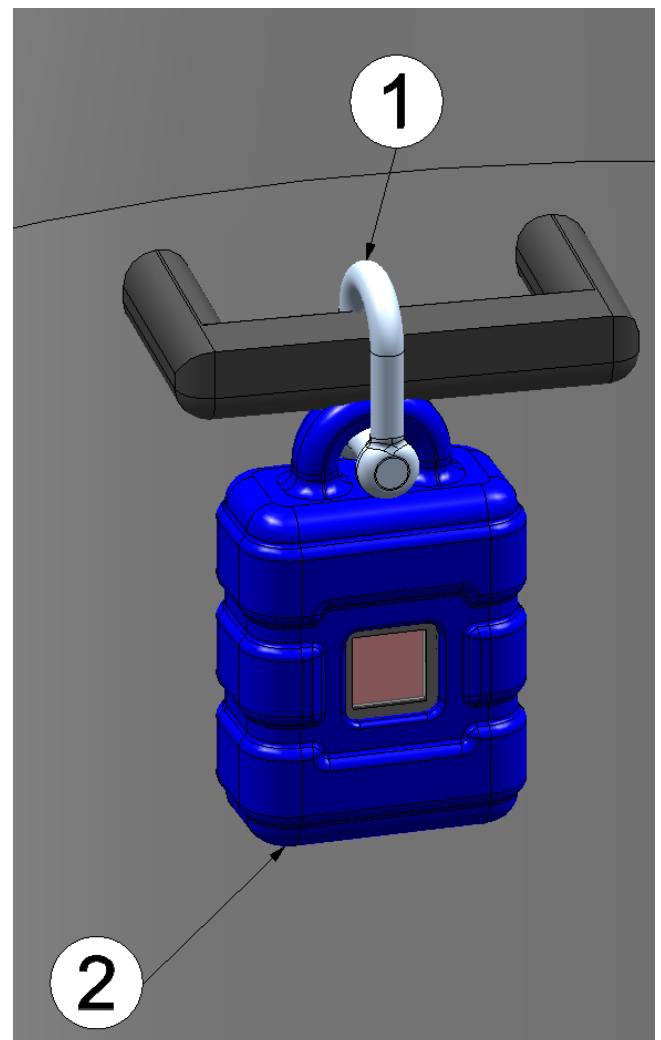


Detailed view of a suspended installation

| 1 Niro shackle (206.325) | 2 myDatasensH2S1000 BLE |
| --- | --- |

1.  Use the Niro shackle (206.325), to attach the myDatasensH2S1000 BLE  to a rung of the channel ladder or a similar fastening point in accordance with the figure "Detailed view of a suspended installation " on page 47.

## 8.3 Electrical installation

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

## 8.3.1 Inserting the sensor module

*Note: Transport mode is terminated when inserting the sensor module, i.e. the measurement is activated. It is therefore recommended that the sensor module is only permanently inserted as part of the commissioning process (see "Placing the system into operation" on page 51). However, briefly inserting the sensor module in the office, to check its functionality, is still advisable. Storage with the sensor module inserted is not recommended due to the significantly increased power consumption when transport mode is deactivated.*

The sensor module is inserted in the sensor recess of the myDatasensH2S1000 BLE , as illustrated in the following figure. It is designed in such a way that it cannot be inserted incorrectly.



How-To-Video: Inserting the sensor module
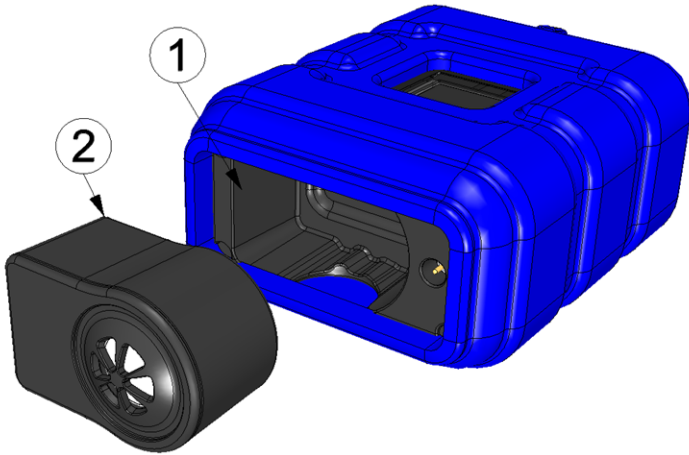


Inserting the sensor module

| 1 | Sensor module | 2 | Sensor holding fixture of the myDatasensH2S1000 BLE |
|---|---------------|---|-----------------------------------------------------|

When inserting the sensor module, transport mode is terminated, the display is activated and the following action is executed:

*Note: To check the current operating state, you may need to activate the display again by briefly pressing (approx. 1 sec.) the solenoid switch (see "Reed switch" on page 57).*

1. The BLE connection between the sensor module and the myDatasensH2S1000 BLE is established.
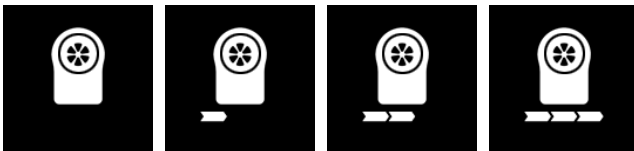
## 8.3.2 Technical details about the Bluetooth Low Energy interface

The connection to a PC or a Bluetooth Low Energy (5.0 ) compatible Smartphone is established via the Bluetooth Low Energy interface. It is only designated for the communication with the DeviceConfig configuration program or the "GasBuster" smartphone app. A detailed description of the DeviceConfig configuration program is provided in chapter "DeviceConfig " on page 79. It can be downloaded free of charge from the following website:

# www.microtronics.com/deviceconfig

Chapter "GasBuster" on page 115 provides a detailed explanation of the "GasBuster" smartphone app. It is available for Android and iOS devices and can be downloaded free of charge from "Google Play" (Android) or the Apple "App Store" (iOS).

# Chapter 9 Initial Start-Up

## 9.1 User information

Before you connect the myDatasensH2S1000 BLE 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 myDatasensH2S1000 BLE .

Contact Microtronics Engineering GmbH(see "Contact information" on page 171) if anything is unclear or if you encounter difficulties with regard to installation, connection or configuration.

## 9.2 Applicable documents

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

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

## 9.3 General principles

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

Utilise the manual to familiarise yourself with the operation of the myDatasensH2S1000 BLE and the input screens of the myDatanet server before you begin with the configuration.

## 9.4 Placing the system into operation

### 9.4.1 Using the Bluetooth connection (BLE) and the myDatanet server

> *Important note: Check the time and date settings (incl. time zone setting) on your PC, as these are used to synchronise the system time of the myDatasensH2S1000 BLE .*

You will need the myDatasensH2S1000 BLE configuration program (minimum version DeviceConfig ) to commission the 4.16.51 . It can be downloaded free of charge from the following website:

### www.microtronics.com/deviceconfig

Detailed instructions on using the DeviceConfig configuration program are provided in the chapter "DeviceConfig " on page 79 and in "myDatanetDeviceConfig Manual " 805004.

*Note: It is recommended that the myDatasensH2S1000 BLE is first placed into operation in the office before moving the device to the place of use. If you are considering transferring the data to a central myDatanet server in addition to processing data locally on your PC, you should create a site on the myDatanet server (see "myDatanet Server Manual " 805002) and determine the site settings (see "Site configuration" on page 61). Take the opportunity to get to know the functions of the device in a stable environment.*

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

1. If necessary, create a customer on the myDatanet server (see "myDatanet Server Manual " 805002).

2. Within the selected customer create a new site/application (based on the "myDatasens" application) for the operation on the myDatanet server (see "Creating the site" on page 125).

3. Configure the created site/application according to your requirements (see "Site configuration" on page 61).

4. Use the DeviceConfig configuration program to establish a Bluetooth connection (Bluetooth Low Energy) between the myDatasensH2S1000 BLE and your PC (see "Connecting a Device via Bluetooth Low Energy" on page 85).

The following step is only necessary if you do not require the data generated up to the current point in time.

5. Delete the data generated up to the current point in time by pressing the "Delete Measurement Data" button that is located on the "Data" tab of the DeviceConfig configuration program (see ""Data" tab" on page 93).

> *Important note: By clicking on the "Delete Measurement Data" button, all of the data in the device memory and the measurement data assigned to the device on the PC are deleted.*

6. Activate the synchronisation between the myDatasensH2S1000 BLE , DeviceConfig and the myDatanet server. To do so, initially select the "Sync with server" checkbox and then click on the button illustrated below. The checkbox and button are both located on the "Sync" tab of the DeviceConfig configuration program (see ""Sync" tab" on page 91).

> *Note: The "Sync with server" checkbox is only displayed if your PC is already connected to the Internet.*



The following work is completed directly at the location of the device:

7. Insert the sensor module in the sensor recess of the myDatasensH2S1000 BLE (see "Inserting the sensor module" on page 48).

## 9.4.2 Using the Bluetooth connection (BLE) and the DeviceConfig configuration program

*Important note: Check the time and date settings (incl. time zone setting) on your PC, as these are used to synchronise the system time of the myDatasensH2S1000 BLE .*

You will need the DeviceConfig configuration program (minimum version 4.16.51 ) to commission the myDatasensH2S1000 BLE . It can be downloaded free of charge from the following website:

# www.microtronics.com/deviceconfig

Detailed instructions on using the DeviceConfig configuration program are provided in the chapter "DeviceConfig " on page 79 and in "myDatanetDeviceConfig Manual " 805004).

*Note: It is recommended that the myDatasensH2S1000 BLE is first placed into operation in the office before moving the device to the place of use. Take the opportunity to get to know the functions of the device in a stable environment.*

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

1. Use the DeviceConfig configuration program to establish a Bluetooth connection (Bluetooth Low Energy) between the myDatasensH2S1000 BLE and your PC (see "Connecting a Device via Bluetooth Low Energy" on page 85).

The following step is only necessary if you do not require the data generated up to the current point in time.

2. Delete the data generated up to the current point in time by pressing the "Delete Measurement Data" button that is located on the "Data" tab of the DeviceConfig configuration program (see ""Data" tab" on page 93).

*Important note: By clicking on the "Delete Measurement Data" button, all of the data in the device memory and the measurement data assigned to the device on the PC are deleted.*

3. Activate the synchronisation between the myDatasensH2S1000 BLE  and the DeviceConfig configuration program. To do so, initially deselect the "Sync with server" checkbox and then click on the button illustrated below. The checkbox and button are both located on the "Sync" tab of the DeviceConfig configuration program (see ""Sync" tab" on page 91).

*Note: The "Sync with server" checkbox is only displayed if your PC is already connected to the Internet.*

The following work is completed directly at the location of the device:

4. Insert the sensor module in the sensor recess of the myDatasensH2S1000 BLE  (see "Inserting the sensor module" on page 48).

# 9.5 Testing communication with the device

## 9.5.1 Testing communication between the myDatasensH2S1000 BLE and the myDatanet server (Bluetooth connection)

1.  Within the selected customer, create a new site/application for operation on the myDatanet server based on the application "myDatasens" (see "Creating the site" on page 125).

2.  Configure the created site/application according to your requirements (see "Site configuration" on page 61).

3.  Insert the sensor module in the sensor recess of the myDatasensH2S1000 BLE (see "Inserting the sensor module" on page 48).



How-To-Video: Inserting the sensor module

4.  Wait approx. five minutes so the device can complete some measurements.

5.  Use the configuration program DeviceConfig to establish a Bluetooth connection (Bluetooth Low Energy) between the myDatasensH2S1000 BLE and your PC (see "Connecting a Device via Bluetooth Low Energy" on page 85).

6.  Activate the synchronisation between the myDatasensH2S1000 BLE , DeviceConfig and the myDatanet server. To do so, initially select the "Sync with server" checkbox and then click on the button illustrated below. The checkbox and button are both located on the "Sync" tab of the DeviceConfig configuration program (see ""Sync" tab" on page 91).

    > *Note: The "Sync with server" checkbox is only displayed if your PC is already connected to the Internet.*



7.  Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.



Synchronisation completed

8. Click on the "Direct Report" symbol in the measurement instrument list to display the data saved on the myDatanet server.



9. Check whether all of the data up to the point of the synchronisation is present and plausible (especially the "Sensor Temp" measurement value).

## 9.5.2 Testing communication between myDatasensH2S1000 BLE and DeviceConfig

1. Insert the sensor module in the sensor recess of the myDatasensH2S1000 BLE (see "Inserting the sensor module" on page 48).
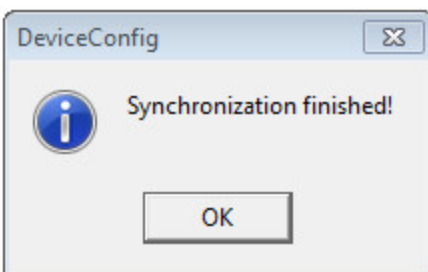


How-To-Video: <u>Inserting the sensor module</u>

2. Wait approx. five minutes so the device can complete some measurements.

3. Use the configuration program DeviceConfig to establish a Bluetooth connection (Bluetooth Low Energy) between the myDatasensH2S1000 BLE and your PC (see "Connecting a Device via Bluetooth Low Energy" on page 85).

4. Activate the synchronisation between the myDatasensH2S1000 BLE and the DeviceConfig configuration program. To do so, initially deselect the "Sync with server" checkbox and then click on the button illustrated below. The checkbox and button are both located on the "Sync" tab of the DeviceConfig configuration program (see ""Sync" tab" on page 91).

> *Note: The "Sync with server" checkbox is only displayed if your PC is already connected to the Internet.*



5. Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.



Synchronisation completed

6.  Click on the measurement value graphic symbol located in the "Data" tab of the DeviceConfig configuration program to display the data saved locally on your PC.
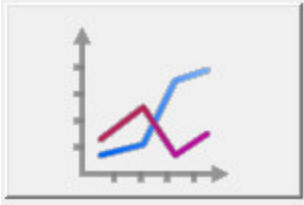


7.  Check whether all of the data up to the point of the synchronisation is present and plausible (especially the "Temp." measurement value).

# Chapter 10 User interfaces

The configuration of the myDatasensH2S1000 BLE is carried out via the web interface on the myDatanet server (see "User interface on the myDatanet server" on page 61); for which the web address is available from your responsible sales partner.

## 10.1 User interface on the myDatasensH2S1000 BLE

### 10.1.1 Operating elements
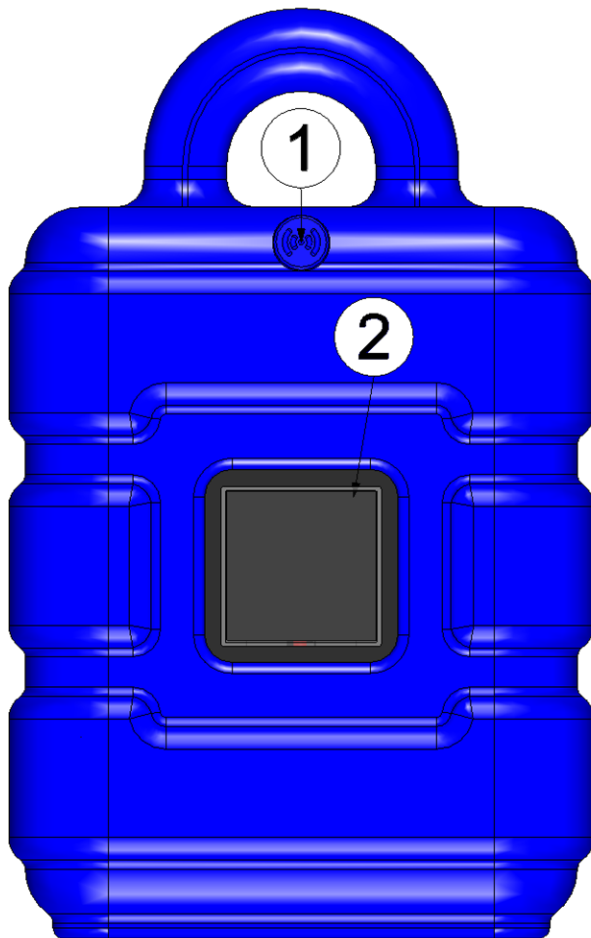


Operating elements

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

#### 10.1.1.1 Reed switch

The MDN Magnet (206.803) included in the scope of delivery is required for operating the reed switch. The reed switch can be used to switch on the display of the myDatasensH2S1000 BLE for 20sec. .

| Operation by the user | Device response | Operation after releasing the reed switch |
|---|---|---|
| Press briefly (approx. one second) | Display is activated for 20sec. | Displaying of the information about the installed software followed by displaying the current operating state (see "Display" on page 58) |
| Press and hold for three seconds | --- | --- |

The display of the myDatasensH2S1000 BLE is activated as soon as the reed switch is pressed. The time for which the reed switch was pressed is visualised by a circle in which the segments change from white to green. On devices without a mobile network modem, no action is initiated when all of the segments have changed from white to green, i.e. the reed switch has been pressed for at least three seconds.



Visualisation of the time for which the reed switch was pressed

### 10.1.1.2 Display

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

The display of the myDatasensH2S1000 BLE is only designed to show the current measurement values (H2S concentration and temperature) and various status information. The device cannot be operated via the display. The display is activated by briefly pressing (approx. 1 sec.) the solenoid switch (see "Reed switch" on page 57) or by inserting the sensor module. The display then remains active for 20sec. and shows the current operating state.
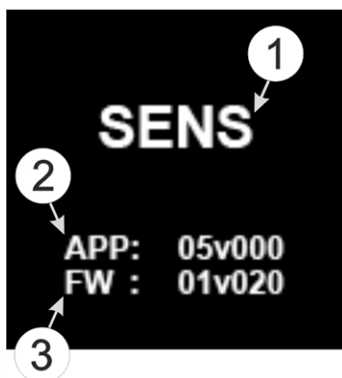


Display of the information regarding the installed software

| 1 | Brief designation of the IoT application installed on the device | 3 | Current software version installed on the measurement controller |
|---|---|---|---|
| 2 | Version number of the IoT application that is currently installed on the device | | |
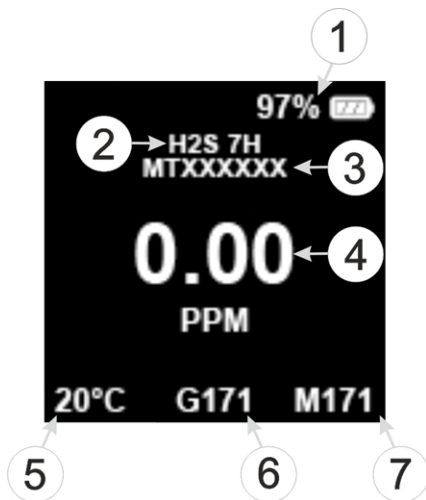
Status indication during normal operation
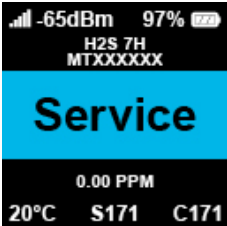
| | | | |
|---|---|---|---|
| **1** | Current state of charge in % (SOC) | **5** | Temperature in °C |
| **2** | Type designation of inserted sensor module | **6** | Remaining days until the batteries for the device need to be replaced |
| **3** | Serial number of the inserted sensor module | **7** | Remaining days until the next calibration of the sensor module |
| **4** | H2S concentration in ppm | | |

**Note:** Additional explanation on the display of the current state of charge

- If SOC >= 90% the battery icon is displayed as fully charged.
- If SOC 89 - 40% the battery icon is displayed 2/3 full.
- If SOC 39 - 10% the battery icon is displayed 1/3 full.
- If SOC  9 -  5 % the battery icon is displayed as depleted.
- If SOC < 5% the battery icon is displayed as depleted and is displayed in red.

In addition to the display of the information about the installed software and the status indication during normal operation, as described in detail above, the following operating states are also shown on the display:

| Display | Explanation |
|---|---|
|  | Transport mode, no sensor module inserted |
|  | Reed switch activated |
|  | Establishing BLE connection between sensor module and myDatasensH2S1000 BLE |

| Display | Explanation |
|---|---|
|  | Result of the setup mode (i.e. the determined values of the GSM level) which is displayed for a period of 5min. . |
|  | Calibration of the sensor module is due |
|  | Error<br><br>• E03 ... last measurement failed<br>   • BLE-Pairing of sensor module and myDatasensH2S1000 BLE faulty<br>   • Sensor module battery is depleted (check "PowerOn Flag")<br>• E13 ... Unambiguous selection of the sensor module for BLE pairing not possible (several sensors in range)<br>• E15 ... The BLE mA Link did not confirm the receipt of the new setpoint. I.e. it can not be ensured that the new setpoint is output correctly.<br>• E16 ... The firmware installed on the myDatasensH2S1000 BLE does not meet the minimum requirements of the device logic.<br>• E17 ... The BLE-Scanner App installed on the myDatasensH2S1000 BLE does not meet the minimum requirements of the device logic.<br>• E18 ... BLE-Pairing of BLE mA Link and myDatasensH2S1000 BLE is faulty<br>• E32 ... Setpoint via BLE mA Link not possible, since the 4-20mA current loop is interrupted |
|  | Batteries of the myDatasensH2S1000 BLE need to be replaced |

# 10.2 User interface on the myDatanet server

## 10.2.1 Site configuration

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

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

### 10.2.1.1 Specific input screen for configuring the site

#### 10.2.1.1.1 Site



"Site" configuration section during normal operation

| 1 | Specifies to which customer the site is assigned |
|---|---|
| 2 | Assign site to another customer |
| 3 | Site designation (not relevant for the device or data assignment) [2-50 characters] |
| 4 | Serial number of the device that is linked to the site (device assignment!) |
| 5 | Name of the IoT application based on which the site was created |
| 6 | Version number of the IoT application that is currently installed on the site. If the version number of the site is not the same as the version number of the device logic installed on the device then the version number of the device logic installed on the device is displayed in addition to the version number of the site. |
| 7 | Date when the batteries of the data logger (BLE Gateway ATEX ) are likely to need replacing and remaining days until this date |
| 8 | Type designation of the myDatasensH2S1000 BLE module currently assigned |

| | |
|---|---|
| **9** | Serial number of the myDatasensH2S1000 BLE module currently assigned |
| **10** | Date when the next calibration of the sensor module is likely to need replacing and remaining days until this date |
| **11** | Type designation of the BLE module currently assigned to the output channel and used for the output of the setpoint |
| **12** | Serial number of the BLE module currently assigned to the output channel and used for the output of the setpoint |
| **13** | Date when the batteries of the BLE module currently assigned to the output channel are likely to need replacing and remaining days until this date |
| **14** | List of tags that are already assigned to the site. This assignment can be cancelled by clicking on the cross next to the title of the tag. The input screen for assigning tags can be opened by clicking on the plus symbol. |



"Site" configuration section when transport mode is activated

| | |
|---|---|
| **1** | Transport mode activated. This means that all of the operations (measurement, recording, transmission, etc.) are stopped to minimise energy consumption during transport or storage. |
| | *Note: During normal operation, information on the sensor module inserted in the myDatasensH2S1000 BLE and on the BLE module assigned to the output channel are displayed.* |

## 10.2.1.1.2 Setup data
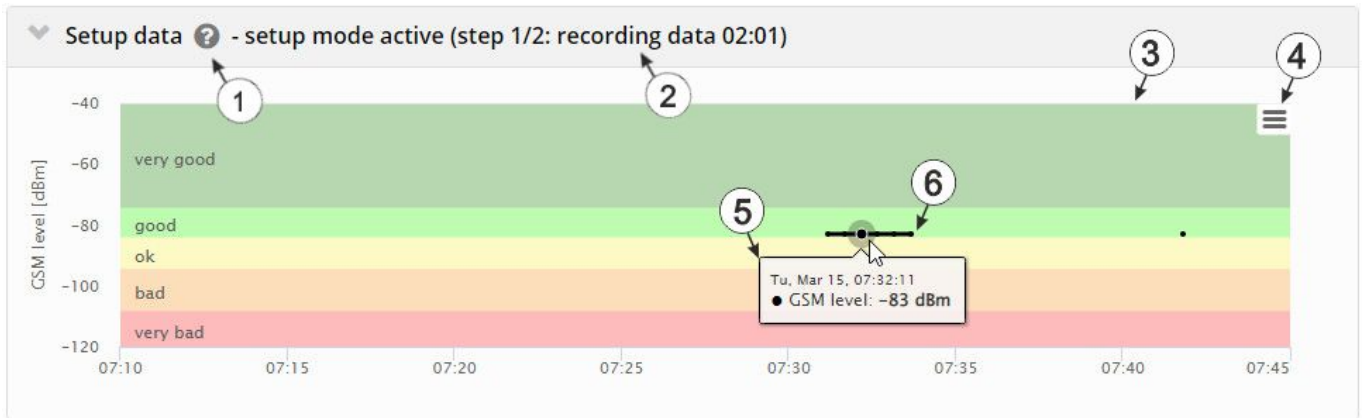


"Setup data" configuration section

| | |
|---|---|
| **1** | Opens an illustration to explain the progress of setup mode |
| **2** | Status information on the currently active or last executed setup mode |
| **3** | Visualisation of the GSM level values measured in the last 35 minutes. The graph may therefore contain the results of several executed setup modes. |
| **4** | Opens the context menu of the graphic to visualise the GSM level values measured in the last 35 minutes. |
| **5** | Tool tip that specifies the GSM level at a certain time |
| **6** | Visualisation of the GSM level values measured during a single setup mode |

## 10.2.1.1.3 Comments



"Comments" configuration section

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

### 10.2.1.1.4 Measurement channels

### 10.2.1.1.4.1 Basis



Configuration section "Measurement channels", Tab "Basis"

| 1 | Freely selectable channel title for the measurement value of the H2S concentration |
|---|---|
| 2 | String that is used as a measurement unit by all of the server display elements [0-16 characters]. It has no direct influence on the values  (Read Only) |
| 3 | Buttons to switch between the individual tabs of the configuration section |

> *Note: The H2S sensor used indicates a certain cross sensitivity to other gases(see "Cross sensitivity of the H2S sensor" on page 65).*

### 10.2.1.1.4.2 Alarms



Configuration section "Measurement channels", Tab "Alarms"

| 1 | A warning is triggered, if the measurement value drops to or below this value. |
|---|---|
| 2 | A warning is triggered, if the measurement value meets or exceeds this value. |
| 3 | An alarm is triggered, if the measurement value drops to or below this value. |
| 4 | An alarm is triggered, if the measurement value meets or exceeds this value. |
| 5 | Hysteresis for all-clear in event of alarm/warning (e.g. hyst = 5%, alarm or warning at 100 -> all-clear at 95) |

### 10.2.1.1.4.3 Cross sensitivity of the H2S sensor

| Gas | Concentration | Measurement value on the H2S sensor |
|---|---|---|
| Carbon monoxide | 300ppm | 6ppm |
| Hydrogen | 10,000ppm | <15ppm |
| Sulphur dioxide | 5ppm | <1ppm |
| Hydrogen cyanide | 10ppm | -1.4ppm to -0.5ppm |
| Nitric oxide | 35ppm | 0ppm |
| Hydrochloric acid | 5ppm | 0ppm |
| Nitrogen dioxide | 5ppm | -1ppm |
| Chlorine | 1ppm | -0.05ppm to +0.04ppm |
| Ethylene | 100ppm | 0ppm |

### 10.2.1.1.5 Trim



Configuration section "Trim"

| | |
|---|---|
| 1 | Trim offset ($d_{Trim}$) in ppm (see "Calculation of the trimmed H2S measurement value" on page 39) |
| 2 | Selection of the percentage that the trim scale $k_{Trim}$ deviate from the value 1 ($k_{Trim}$ = (100 + trimscale [%] ) /100) |
| | $k_{Trim}$ is the trim scale for the adjustment of the slope that is determined during calibration. It is used for the conversion from the raw value to the measured value in ppm (see "Calculation of the trimmed H2S measurement value" on page 39). |

### 10.2.1.1.6 Output channels



Configuration section "Output channels"

| | | |
|---|---|---|
| 1 | Designation of the output channel (Read Only) | |
| 2 | Drop down list for activating the setpoint output via the BLE mA Link | |
| | On | Setpoint output deactivated |
| | Off | Setpoint output activated |
| 3 | Serial number of the BLE mA Link  that should be used for the setpoint output | |

### 10.2.1.1.7 Internal Channels

### 10.2.1.1.7.1 Basis



Configuration section "Internal Channels ", Tab "Basis"

| **1** | Freely selectable channel title for: | |
|---|---|---|
| | SOC | State of Charge of the internal Battery of the myDatasensH2S1000 BLE |
| | Battery | Internal battery voltage of the myDatasensH2S1000 BLE |
| | Int. Temp | Internal device temperature of the myDatasensH2S1000 BLE |
| | rH | Humidity in the housing of the myDatasensH2S1000 BLE |
| | GSM | GSM level |
| | | |
| | Abrasion | Channel title for the sensor wear (Read Only) |
| | PowerOn Flag | Sensor status |
| | Battery Sensor | Internal battery voltage of the sensor module |
| | Sensor Temp. | Internal device temperature of the sensor module |
| | | |
| | Runtime Service | Remaining days until the batteries for the device need to be replaced |
| | Runtime Calib | Remaining days until the next calibration of the sensor module |
| | Runtime mA Link | Remaining days until the batteries for the BLE module assigned to the output channel need to be replaced |
| **2** | String that is used as a measurement unit by all of the server display elements | |
| **3** | Buttons to switch between the individual tabs of the configuration section | |

## 10.2.1.1.7.2 Alarms



Configuration section "Internal channels", Tab "Alarms"

| 1 | A warning is triggered, if the measurement value drops to or below this value. |
|---|---|
| 2 | A warning is triggered, if the measurement value meets or exceeds this value. |
| 3 | An alarm is triggered, if the measurement value drops to or below this value. |
| 4 | An alarm is triggered, if the measurement value meets or exceeds this value. |
| 5 | Hysteresis for all-clear in event of alarm/warning (e.g. hyst = 5%, alarm or warning at 100 -> all-clear at 95) |
| 6 | A warning is triggered, if the battery of the sensor module is depleted. |

### 10.2.1.1.8 Alarm settings



"Alarm settings" configuration section

| 1 | Selection of how alarms should be acknowledged | |
|---|---|---|
| | 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. |
| 2 | Alarm in case the device does not respond for longer than the set number of transmission cycles. An additional tolerance of 10 min. is granted per transmission cycle to take any retries when establishing a connection into consideration.<br><br>Example: Transmission cycle: 60 min; 3x transmission cycles -> Alarm after > 03:30 | |
| 3 | Selection of the how the transfer volume alarm should be handled | |
| | 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 KiB. |

### 10.2.1.1.9 Basic settings



Configuration section "Basic settings"

| 1 | Time between transmissions | |
|---|---|---|
| 2 | Time between measurement data recordings | |
| 3 | Regional settings (not relevant for raw measurement data as this is stored in UTC) | |
| 4 | Configuration for automatic time adjustment | |
| | Standard | The configuration for the time adjustment is adopted by the global server setting (siehe "myDatanet Server Manual " 805002). |
| | Off | Automatic time adjustment deactivated |
| | USA | Predefined setting for the American area |
| | EU | Predefined setting for the European area |
| 5 | Position update interval (00:00 positioning is completed with every connection) | |
| 6 | Selection of the report that is loaded by clicking on the device link in the maps | |
| | Off | No report is loaded. |
| | "Name of a report" | The selected report is loaded. |
| 7 | Selection of the report template used to display the data when clicking on the symbol to display the measurement data, which is located in the list of sites/applications. Only the report templates in which the site/application type of the first wild card is compatible with the site/application that is currently being edited are displayed in the dropdown list. The symbol to display the measurement data is only displayed in the list of sites/applications if a report template has been selected. | |
| | (not assigned) | The symbol to display the measurement data is not displayed in the list of sites/applications. |
| | "Name of a report template" | Name of the report template used to display the measurement data |

### 10.2.1.2 Default input screen for configuring the site

### 10.2.1.2.1 Site

**Customer**
*Specifies to which customer the site is assigned*

**⊙ symbol**
*Assign site to another customer*

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

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

**Application**
*Name of the IoT application based on which the site was created*

**Application version**
*Version number of the IoT application that is currently installed on the site. If the version number of the site is not the same as the version number of the device logic installed on the device then the version number of the device logic installed on the device is displayed in addition to the version number of the site.*

**Tags**
*List of tags that are already assigned to the site. This assignment can be cancelled by clicking on the cross next to the title of the tag. The input screen for assigning tags can be opened by clicking on the plus symbol.*

### 10.2.1.2.2 Comments

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

### 10.2.1.2.3 Alarm settings

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

### 10.2.1.2.4 Calculated channels

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

### 10.2.1.2.4.1 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]. It has no direct influence on the values* |
| | *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]. It has no direct influence on the values* |
| | *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 counter reading ($m^3$) of the source in to a flow rate ($m^3$/min.) (see "Additional explanation: Delta mode" on page 74).* | |
| | *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]. It has no direct influence on the values* |
| | *Decimal places* | *Number of decimal places that are used by all of the server display elements* |
| Clone | *Creates a clone of a measurement channel. This ensures it is possible to rename channels, to select different ends of the scale for the pointer instruments, to determine a new string as a measurement unit and to adjust the number of decimal places. The measurement values (numerical value without unit) correspond exactly to those of the source.* | |
| | *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]. It has no direct influence on the values* |
| | *Decimal places* | *Number of decimal places that are used by all of the server display elements* |

▼

*Shift element down*

▲

*Shift element up*

### 10.2.1.2.4.2 Calculation

| Off | --- | Calculated channel deactivated |
|---|---|---|
| Table | Source | Selection of the channel from which the input data is used |
| | ✏ | Opens the screen for entering the reference point 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 second channel from which the input data is used |
| | Offset | Offset that is added following multiplication with the "Factor" parameter. |
| | Factor | Factor with which the result of the mathematical operation (+, -, x, / ) is multiplied. The "Offset" parameter is then added. |
| 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 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. |
| Clone | Source | Selection of the channel that should be cloned |
| | Offset | Offset that is added following multiplication with the "Factor" parameter. |
| | Factor | Factor with which the value of the measurement channel to be cloned is multiplied. The "Offset" parameter is then added. |

*Note:*

*Additional explanation: Delta mode*

**Assumption:** *The source channel contains the counter reading of an infinite counter in $m^3$. 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 [$m^3$]* | *Flow rate [$m^3$/s]* | *Flow rate [l/h]* |
| *26.03.2013 12:50* | *900* | *0 [1]* | *0 [1]* |
| *26.03.2013 12:51* | *960* | *1* | *3,600,000* |
| *26.03.2013 12:52* | *990* | *0.5* | *1,800,000* |
| *26.03.2013 12:53* | *1005* | *0.25* | *900,000* |
| *26.03.2013 12:54* | *1065* | *1* | *3,600,000* |

[1]*Calculation not possible as there is no measurement value before 12:50.*

**Explanation:** *No values can be determined for the measurement at 12:50 for the calculated channels as there is no previous value and the difference between the counter readings cannot be determined. For the measurement at 12:51, the difference to the counter reading is 60$m^3$ 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 = { (60$m^3$ / 60sec.) * 1 * 1 } + 0 = 1$m^3$/s**

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

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

### 10.2.1.2.4.3 Alarms

**Note:** *The evaluation of the alarm thresholds for calculated channels can only occur if the device has transferred the measurement data to the myDatanet 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 all-clear in event of alarm/warning (e.g. Hyst = 5%, alarm or warning at 100 -> all-clear at 95) |

## 10.2.1.2.5 Basic settings

| | | |
|---|---|---|
| Time zone | Regional settings (not relevant for raw measurement data as this is stored in UTC) | |
| Daylight saving time | Configuration for automatic time adjustment | |
| | Standard | The configuration for the time adjustment is adopted by the global server setting. |
| | Off | Automatic time adjustment deactivated |
| | USA | Predefined setting for the American area |
| | EU | Predefined setting for the European area |
| Default report | Selection of the report that is loaded by clicking on the device link in the maps | |
| | Off | No report is loaded. |
| | "Name of a report" | The selected report is loaded. |
| Report template | Selection of the report template used to display the data when clicking on the symbol to display the measurement data, which is located in the list of sites/applications. Only the report templates in which the site/application type of the first wild card is compatible with the site/application that is currently being edited are displayed in the dropdown list. The symbol to display the measurement data is only displayed in the list of sites/applications if a report template has been selected. | |
| | (not assigned) | The symbol to display the measurement data is not displayed in the list of sites/applications. |
| | "Name of a report template" | Name of the report template used to display the measurement data |
| Change log configuration | Selection of which changes to the configurations should be logged | |
| | web api | Changes that were implemented via the server interface or REST-API are logged. |
| | web device api | Changes that were implemented via the server interface, by the device itself or the REST-API are logged. |

## 10.2.1.2.6 FTP export settings

*Note: This configuration section is only visible if the "FTP Agent Extended" licence for the myDatanet 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 myDatanet 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] | |
| Last export | Time stamp of the last FTP export | |

## 10.2.2 Device configuration

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

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

### 10.2.2.1 Comments

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

### 10.2.2.2 Measurement instrument

| | |
|---|---|
| Customer | Name of the customer to whom the measurement instrument is assigned |
| Tags | List of the tags that are already assigned to the measurement instrument. This assignment can be cancelled by clicking on the cross next to the title of the tag. The input screen for assigning the tags is opened by clicking on the plus symbol. This enables existing tags to be assigned and new tags to be created. |
| Serial number | Serial number of the instrument |
| Instrument class | The instrument class of the site and instrument must match for an instrument to be able to be connected to a site. Once the instrument has been created via the server interface, the instrument class can only be changed up until the first connection of the instrument to the server. If an instrument class, that does not match the actual class of the instrument, is selected when the instrument is created it is automatically corrected during the first connection. |
| Telephone number | Telephone number of the SIM card. The control SMS messages (e.g. wakeup) are sent to this number. Format:  +43555837465 |
| Instrument flags | Additional information regarding the instrument class (for internal use) |
| Firmware version | Current software version installed on the measurement controller |
| Last connection | In each case, the last time stamp of the affected operation |
| Last wakeup | |
| Last disconnection | |
| Last transmission error | |
| Last Aloha connection | |
| Wakeup SMS count | Number of wakeup SMS sent to this device since the last connection. This counter is reset at/during each successfully established connection. |

| Device Logic sync | Productive | If the Device Logic installed on the device and saved on the server do not match, the Device Logic saved on the server is loaded in to the device. |
| | Development (sync) | The Device Logic on the device and server are synchronised. The one with the latest time stamp is transferred to the other one. |
| | Development (no sync) | The Device Logic on the device and server are not synchronised. |
| Firmware update | Off | Firmware update is deactivated. |
| | On | As soon as a new version of the selected firmware type is available, this is installed immediately. |
| | Even if tag is missing | Firmware is also transferred to the device if the device has not transmitted the current firmware version to the server (NOT RECOMMENDED!). |
| | Allow downgrade | Facilitates the installation of an older firmware version than the one on the device (NOT RECOMMENDED!) |
| | Once | Performs a single firmware update. If no new firmware is available or the firmware was installed successfully, the firmware update is automatically switched to "OFF". |
| | Ignore | The firmware update is deactivated and no information is provided about available firmware updates. |
| Firmware type | Released | Only firmware versions that have successfully undergone internal and field testing are installed (this practically eliminates malfunctions). |
| | Release candidate | Only firmware versions that have successfully undergone internal testing are installed (malfunctions cannot be excluded). |
| | Beta release | Even firmware versions that have not successfully undergone all of the internal tests are installed (malfunctions may occur). |
| Identification | String specifying the hardware platform implemented in the device and the corresponding hardware version (i.e. the rapidM2M module identification). | |
| Hardware version | Hardware version of the myDatasensH2S1000 BLE | |

### 10.2.2.3 GPRS

**SIM tariff**
*Selected SIM tariff*

# Chapter 11 DeviceConfig

## 11.1 General

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

## www.microtronics.com/deviceconfig

The tool is used for configuration, maintenance, fault analysis and synchronisation purposes. It is compatible with all myDatanet devices equipped with a USB interface, wireless M-bus interface or Bluetooth Low Energy.

The requirements regarding configuration and maintenance vary depending on the type of device. To ensure simple and intuitive operation, the user interface of the DeviceConfig therefore automatically adjusts to the relevant device that is connected. In addition to the standard functions, the tool also supports device-specific processes (e.g. calibration, zero point adjustment).
The DeviceConfig enables you to complete the following tasks:

- Synchronisation of measurement data and configuration between device and server (specifically for devices without GSM/GPRS modem)
- Basic configuration of the device (e.g. measurement and transmission cycle)
- Read out and analysis of the device log
- Calibration, trimming and zero point adjustment (special knowledge and password required)
- Update the firmware

## 11.2 Prerequisites

| Interfaces | 1 x USB |
|---|---|
| Operating system | Win XP |
| | Windows Vista |
| | Windows 7 |
| | Windows 8 |
| | Windwos 10 |
| Internet connection | Recommended |
| Required disk space | approx. 50 MB |

## 11.3 Functional principle (communication with a myDatasensH2S1000 BLE )

The following description particularly relates to the use of the DeviceConfig configuration program in conjunction with the myDatasensH2S1000 BLE .
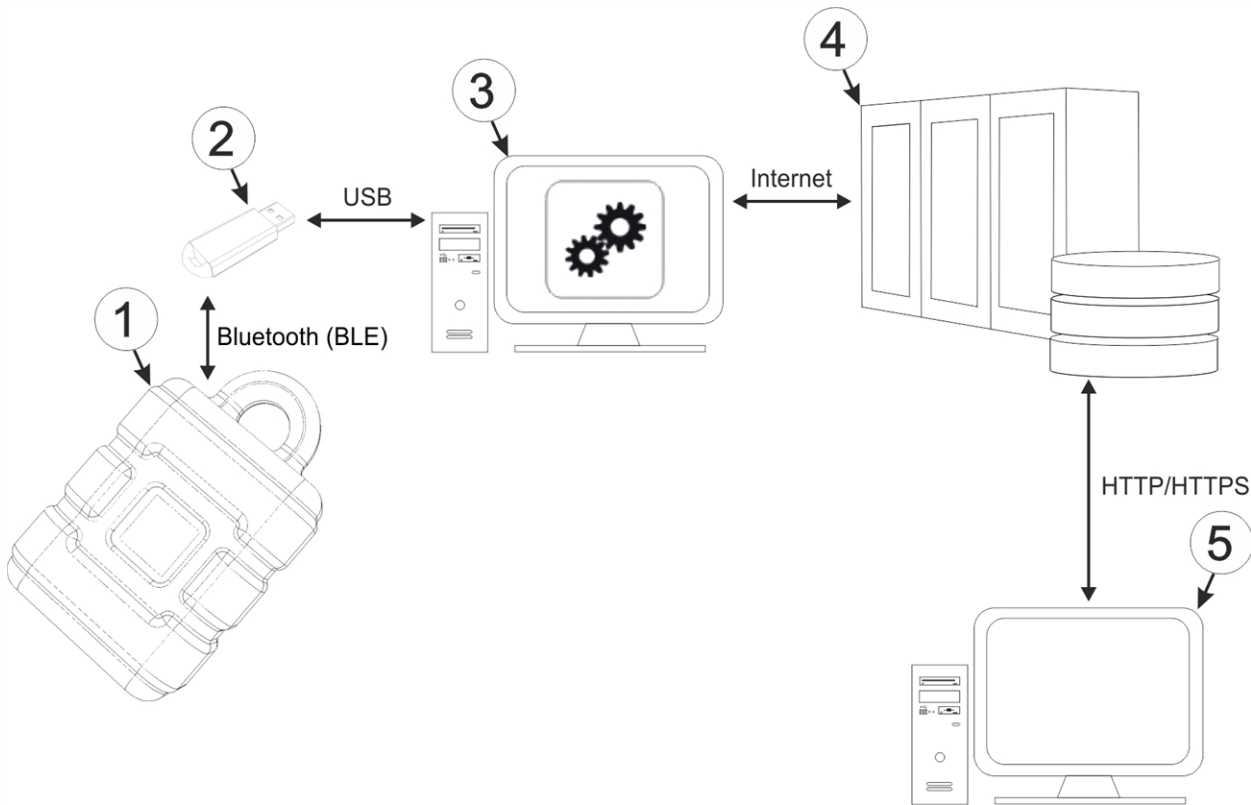


Functional principle

| 1 | myDatasensH2S1000 BLE | 4 | myDatanet server |
|---|---|---|---|
| 2 | USB BLE-Adapter | 5 | Client that accesses the interface of the myDatanet server via the web browser |
| 3 | PC with the DeviceConfig configuration program installed | | |

The DeviceConfig configuration program communicates wirelessly (Bluetooth Low Energy) with the myDatasensH2S1000 BLE  using the USB BLE-Adapter (300685). The functions provided with the DeviceConfig configuration program include:

- Synchronisation of measurement data and configuration between device and server (see ""Sync" tab" on page 91)
- Configuration of the record interval (see ""Instrument" tab" on page 87)
- Zero point adjustment (see ""Zero" tab" on page 90)
- Rudimentary graphic display of the measurement values (see ""Data" tab" on page 93)
- Export of the locally saved data as a *.tsv file (see ""Data" tab" on page 93)

As soon as the data has been transferred to the myDatanet  server, it is available via all of the server's interfaces (e.g. HTTP/HTTPS, as illustrated in the functional principle above) in the same way as the data from all of the other myDatanet devices.

### 11.3.1 USB BLE-Adapter

The USB BLE-Adapter (300685) is included in the scope of delivery of the myDatasensH2S1000 BLE . It is required because standard PCs and laptops often do not have a Bluetooth Low Energy interface that is necessary for communication with the myDatasensH2S1000 BLE .
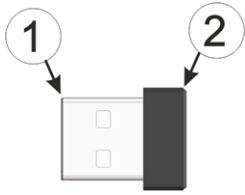


USB BLE-Adapter

| **1** USB connector (type A) | **2** Antenna |
|---|---|

The use of USB extension cables of up to 180 cm is possible without any problems.

# 11.4 Installation

The following chapter describes the installation process in Windows 7.

1. Execute the *"InstDeviceConfig.exe"* file to start the installation process.

    *Note: Only connect the device or USB BLE-Adapter (300685) to your PC once the installation process has completed as the required drivers are only installed during this process.*
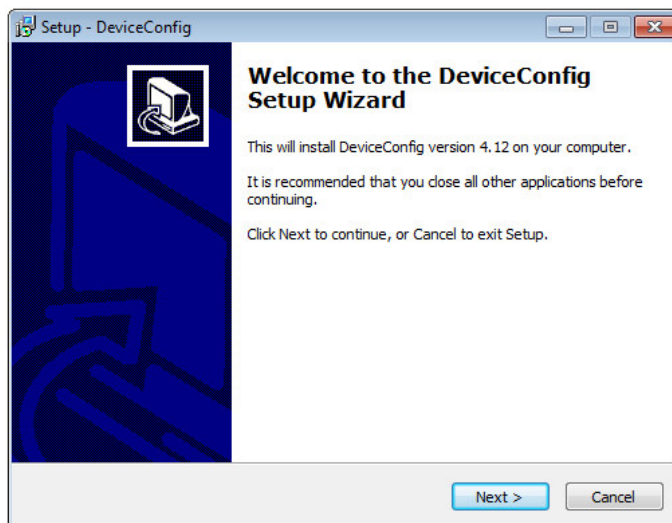


DeviceConfig setup wizard

2. Follow the instructions of the setup wizard until the following screen is displayed. The following drivers must be installed to ensure correct operation.



Installation of the USB drivers for the devices



Installation of the drivers for the USB BLE-Adapter



Installation of the USB drivers for the devices on a M1 basis



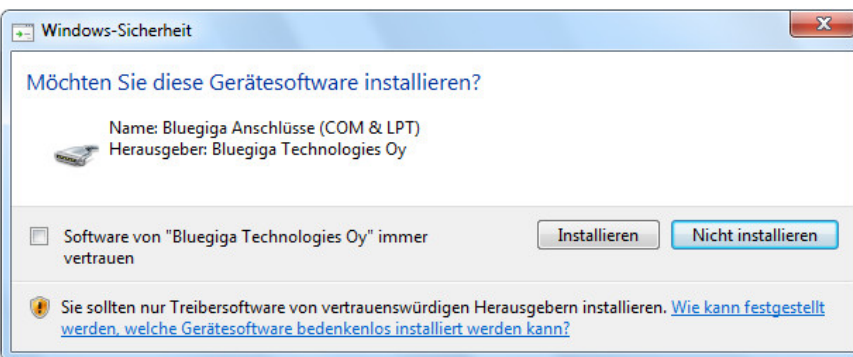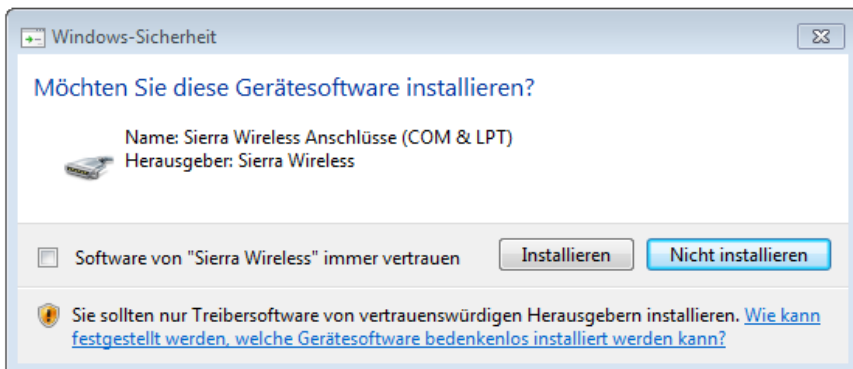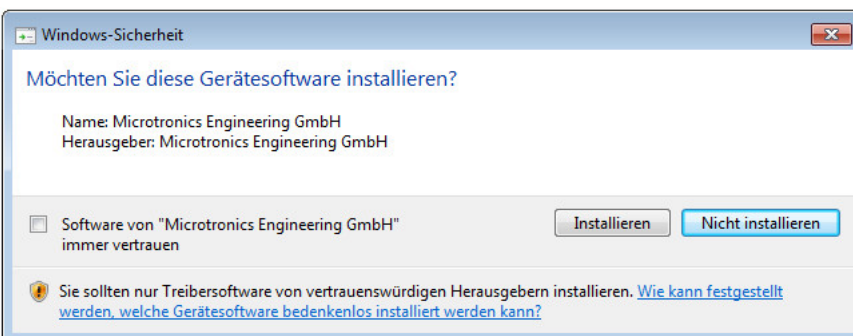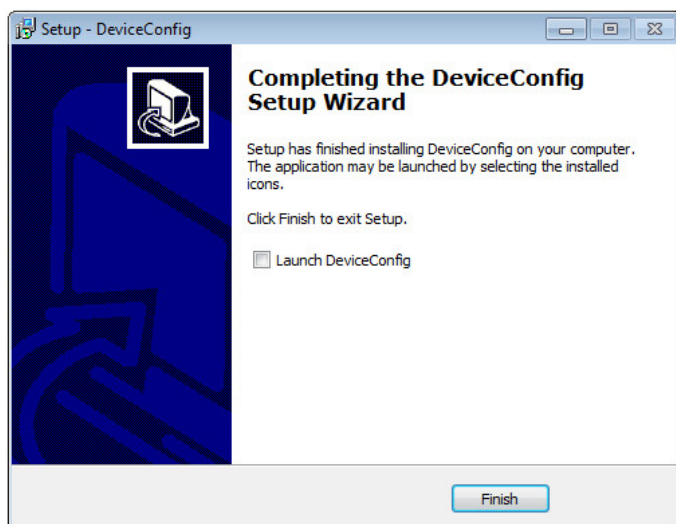Installation of the USB drivers for the devices on a M2/M3 basis

3. Once the following screen is displayed, close the installation process by clicking on the *"Finish"* button.



Complete the setup

## 11.4.1 Installing USB BLE-Adapter driver

> *Note: Information on the USB BLE-Adapter (300685) is provided in chapter "USB BLE-Adapter " on page 81.*

The following chapter describes the installation process in Windows 7.

1. Complete all of the steps described in chapter "Installation" on page 81.

2. Close the DeviceConfig  configuration program, if, when completing the installation, you selected the option for the program to be started following completion of the installation process.

3. Connect the USB BLE-Adapter (300685) to a free USB port on your PC. From Windows Vista onwards, the driver will be installed automatically. Instructions on installing the driver on older versions of Windows are included in the user manual for the DeviceConfig  ("myDatanetDeviceConfig Manual " 805004).

> *Note: If possible, always use the same USB port, as the driver will have to be installed for every USB port used to connect the USB BLE-Adapter (300685) to the PC for the first time.*

4. Wait until the driver installation process is complete. This can take several minutes depending on the performance of your PC.

# 11.5 Menu of the DeviceConfig

## 11.5.1 Settings
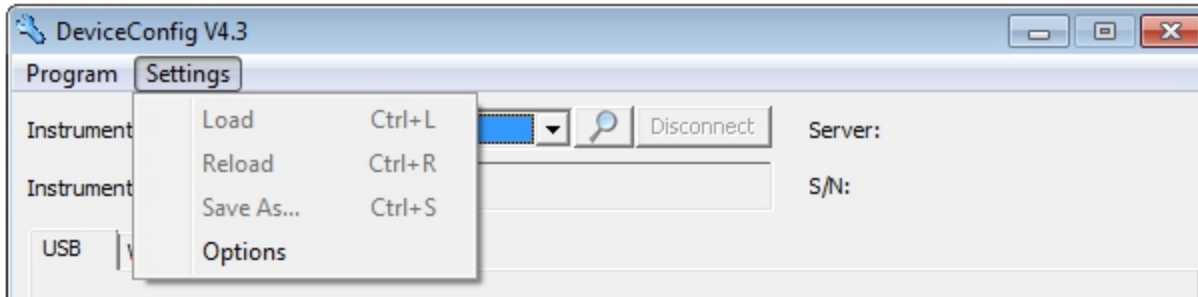


"Settings" menu item

### 11.5.1.1 Options

The settings for the COM ports to which the USB radio transmitter (206.657) or the USB BLE-Adapter (300685) are connected can be specified and the automatic search for the available firmware versions can be activated or deactivated via the "Settings -> Options" menu item.

The USB radio transmitter (206.657) is required for myDatanet devices that are connected to the PC via a wireless M-bus, while the USB BLE-Adapter (300685) is required for devices that are connected to the PC via Bluetooth Low Energy. Information on whether your device supports one of these connection methods is provided in the user manual for the respective device.
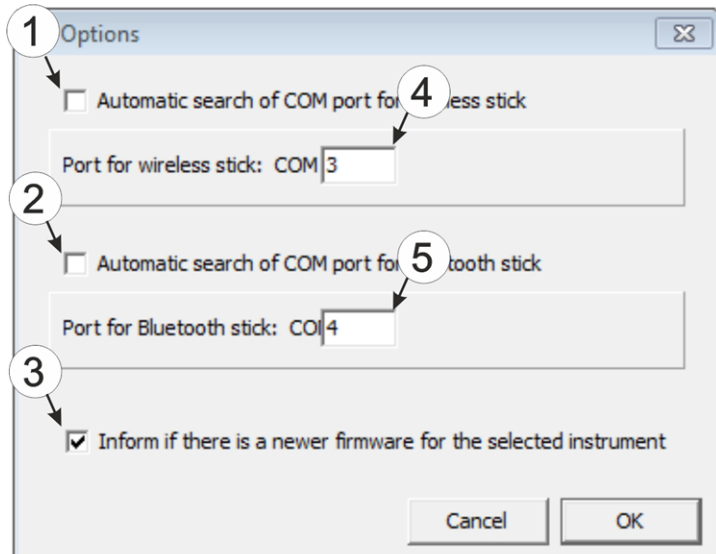


"Settings -> Options" menu item

| 1 | Activates/deactivates the automatic search for the USB radio transmitter (206.657) on all of the available COM ports | 4 | COM port that is connected with the USB radio transmitter (206.657) (only visible when the automatic search is deactivated) |
|---|---|---|---|
| 2 | Activates/deactivates the automatic search for the USB BLE-Adapter (300685) on all of the available COM ports | 5 | COM port that is connected with the USB BLE-Adapter (300685) (only visible when the automatic search is deactivated) |
| 3 | Activates/deactivates the automatic search for available firmware versions | | |

## 11.6 Connecting a Device via Bluetooth Low Energy

> *Important note: Please check the time and date settings (incl. time zone setting) on your PC, as these are used to synchronise the system time of the myDatasensH2S1000 BLE .*

The USB BLE-Adapter (300685) is required to establish a connection to a device with a Bluetooth Low Energy interface. First of all complete the steps described in chapter "Installing USB BLE-Adapter driver" on page 83 to install the drivers required to operate the USB BLE-Adapter .

1. Connect the USB radio transmitter (206.657) to the USB interface of your PC.

2. Start the DeviceConfig  configuration program.
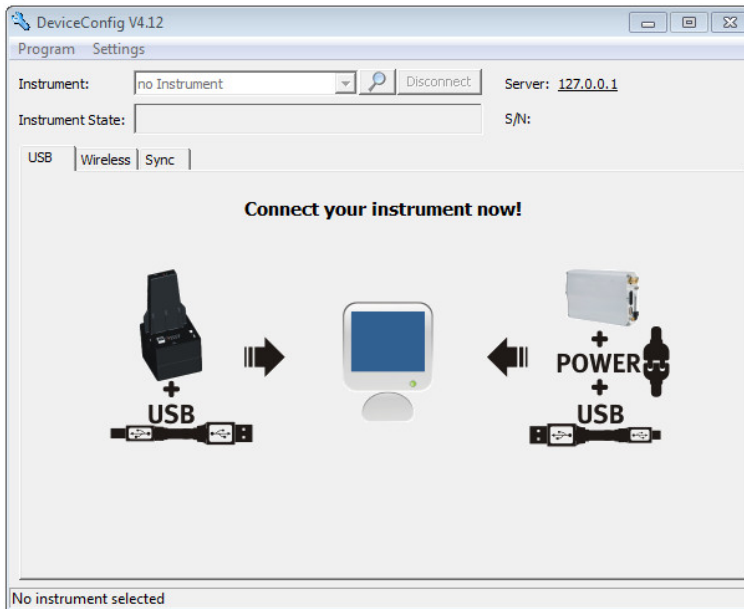


DeviceConfig

3. Select your device based on the serial number from the list of devices found.

> *Important note: Please note that, depending on the environmental conditions, the range of the radio transmitter of the myDatasensH2S1000 BLE  is max. 20m .*
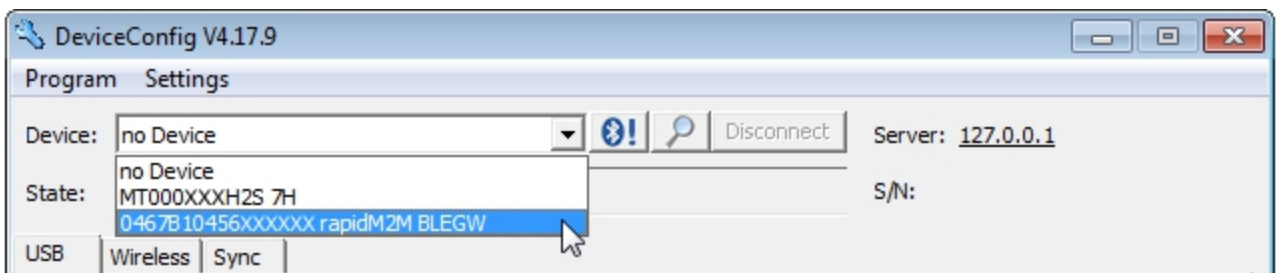


List of devices found

4. Wait until the DeviceConfig has received the configuration of the device. Depending on the device, additional tabs may be displayed.
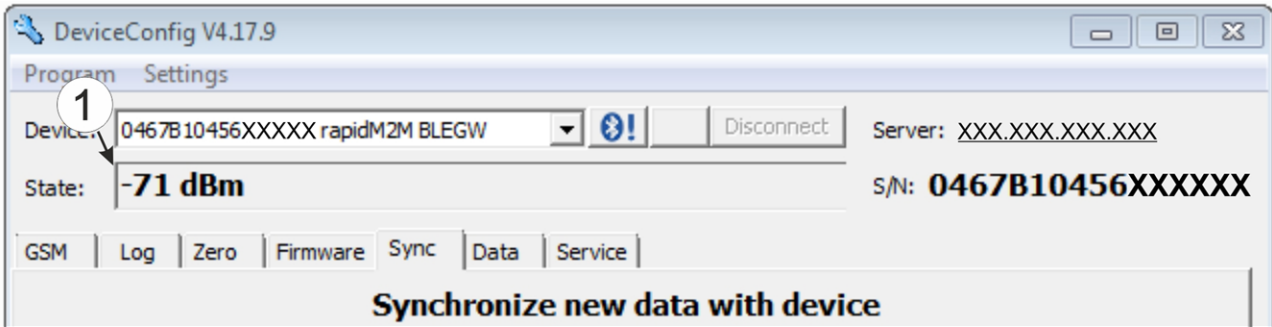


"Sync" tab when actively connected to the myDatasensH2S1000 BLE

| 1 | Wireless signal level [dBm] | |
|---|---|---|

> *Note:* To ensure a stable connection, the wireless signal level should be higher than -90dBm , i.e. for example -85dBm . This is achieved by reducing the distance between the myDatasensH2S1000 BLE and USB BLE-Adapter , and avoiding obstacles such as walls and similar.

# 11.7 "Instrument" tab

The myDatasensH2S1000 BLE is configured via this tab.
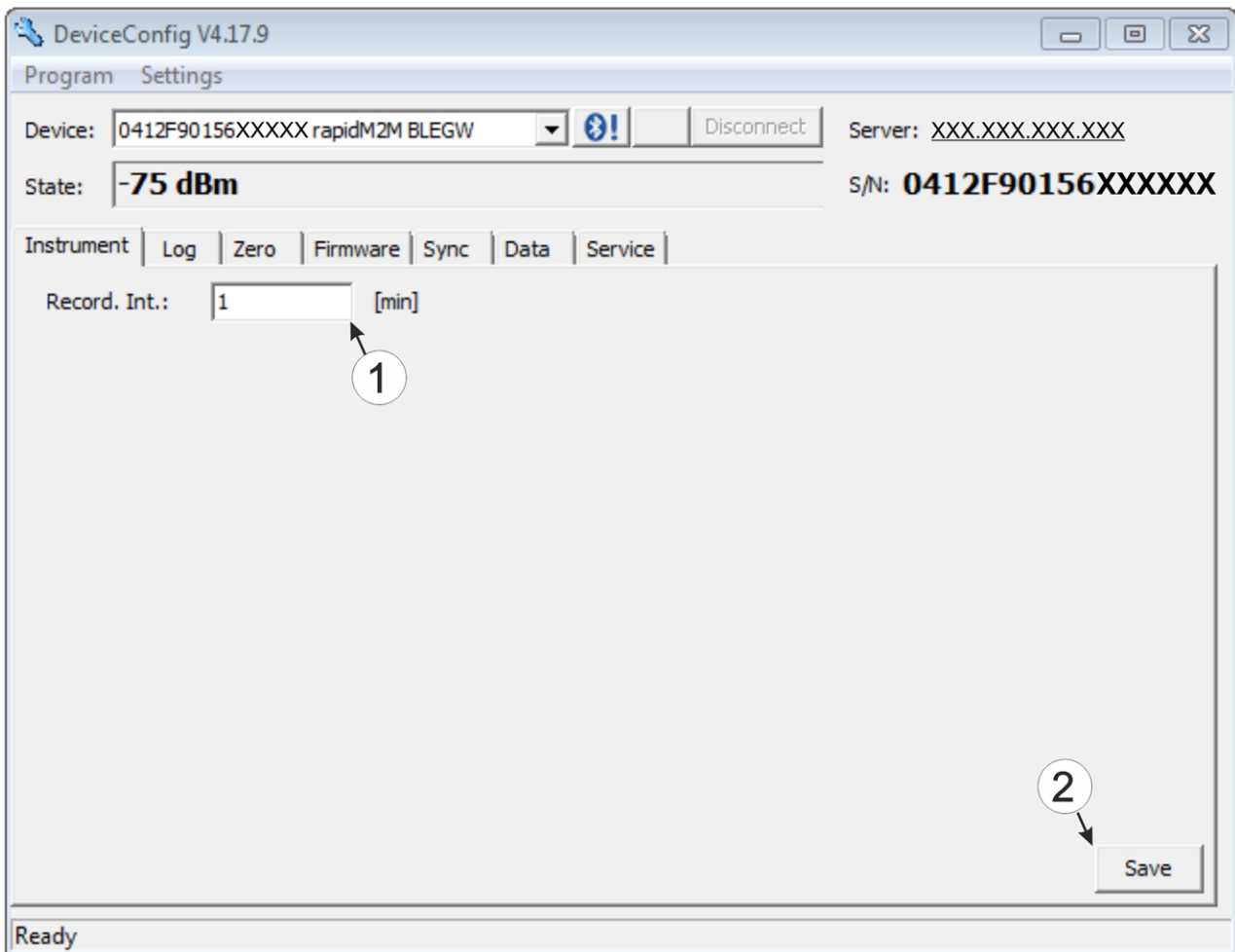


"Instrument" tab

| 1 | Time between measurement data recordings | 2 | Button for transferring the changed configuration to the myDatasensH2S1000 BLE |
|---|---|---|---|

## 11.8 "Log" tab

This tab is designed to manage log entries. It enables the entries to be loaded from the myDatasensH2S1000 BLE , to be saved as a *.tsv file and entries to be deleted from the memory of the myDatasensH2S1000 BLE .
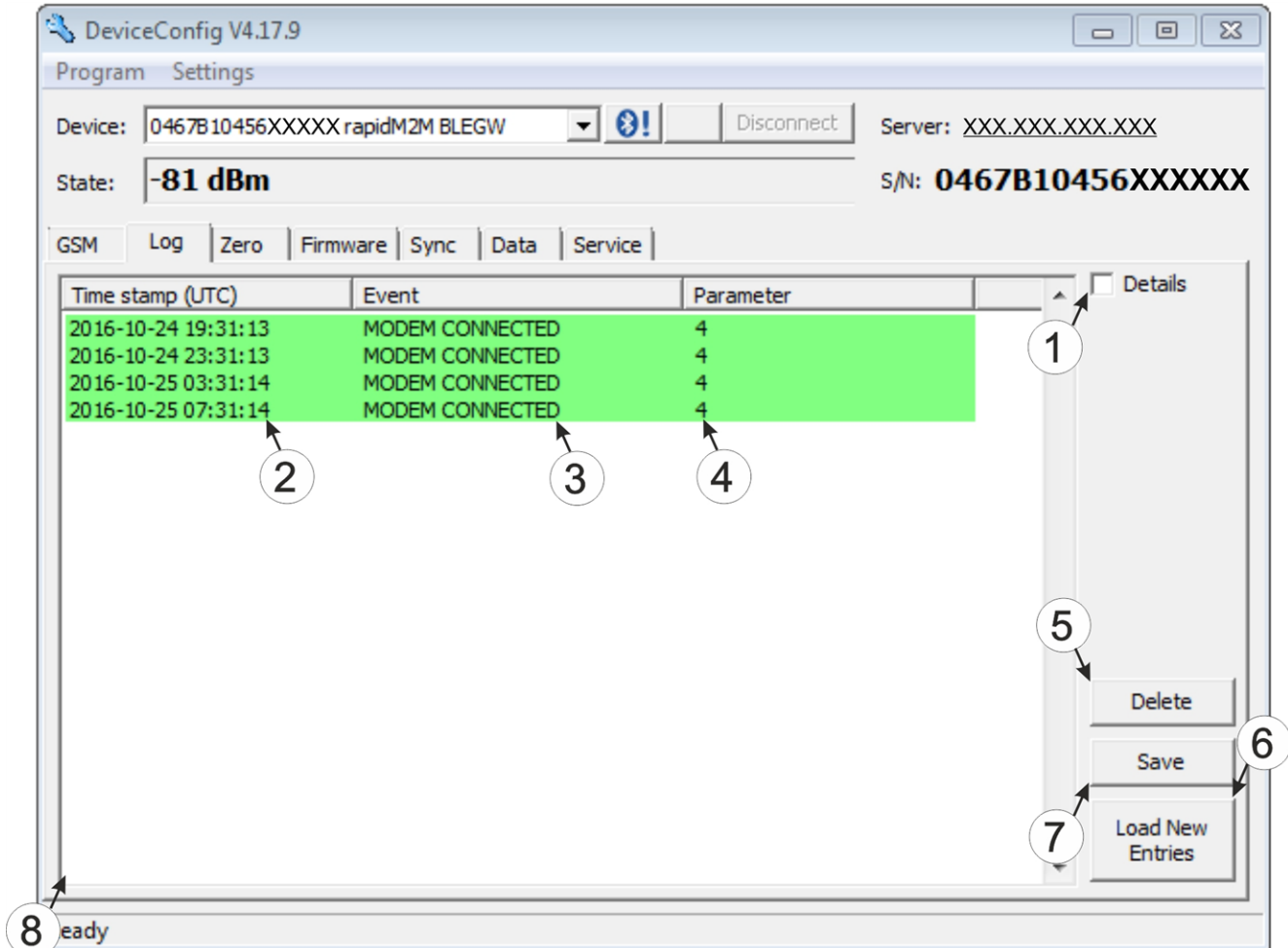


"Log" tab

| | | | |
|---|---|---|---|
| 1 | Activates the detailed display of the log entries | 5 | Deletes the log entries from the memory of the device |
| 2 | Time stamp of the log entry | 6 | Loads the log entries from the device |
| 3 | Log entry | 7 | Saves the loaded log entries as a tsv file |
| 4 | Parameter of the log entry | 8 | Window to display the loaded log entries |

The coloured highlighting indicates how crucial the log entry is. The white, informative log entries are only displayed when the detailed display of the log entries is activated (see ""Log" tab with detailed view activated" on page 89).

| Colour | Evaluation |
|---|---|
| White | Information regarding the current operating state |
| Green | |
| Light blue | |
| Blue | |
| Purple | |
| Grey | |
| Yellow | Uncritical error |
| Red | Critical error |
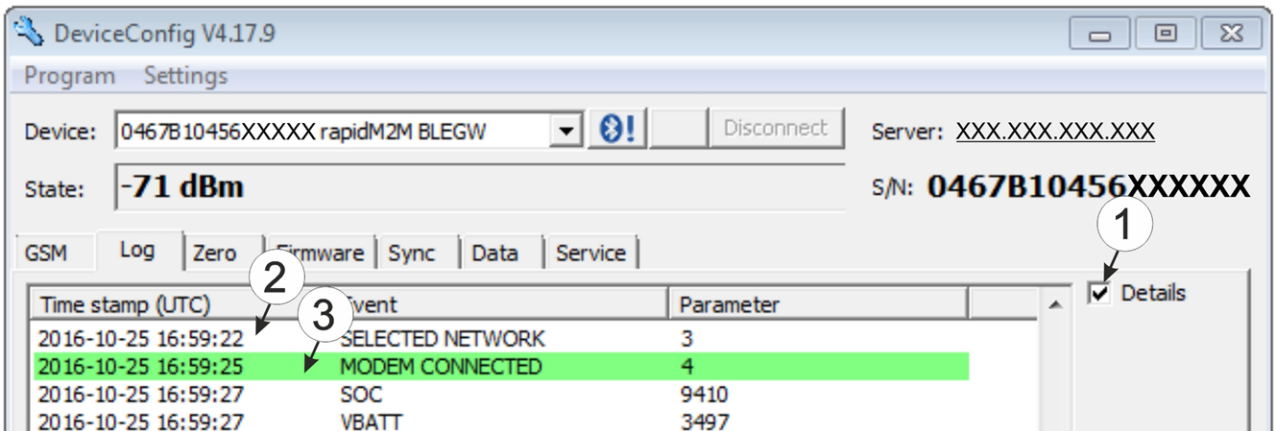


"Log" tab with detailed view activated

| | | | |
|---|---|---|---|
| 1 | Activates the detailed display of the log entries | 3 | Log entry that is always displayed |
| 2 | Informative log entry that is only visible if the detailed display is activated | | |

## 11.9 "Zero" tab

This tab enables you to compensate for offsets of the zero point. The basic calibration of the sensor is not changed by the zero point adjustment.

Detailed instructions on completing the zero point adjustment are provided in chapter "Zero point adjustment" on page 146.
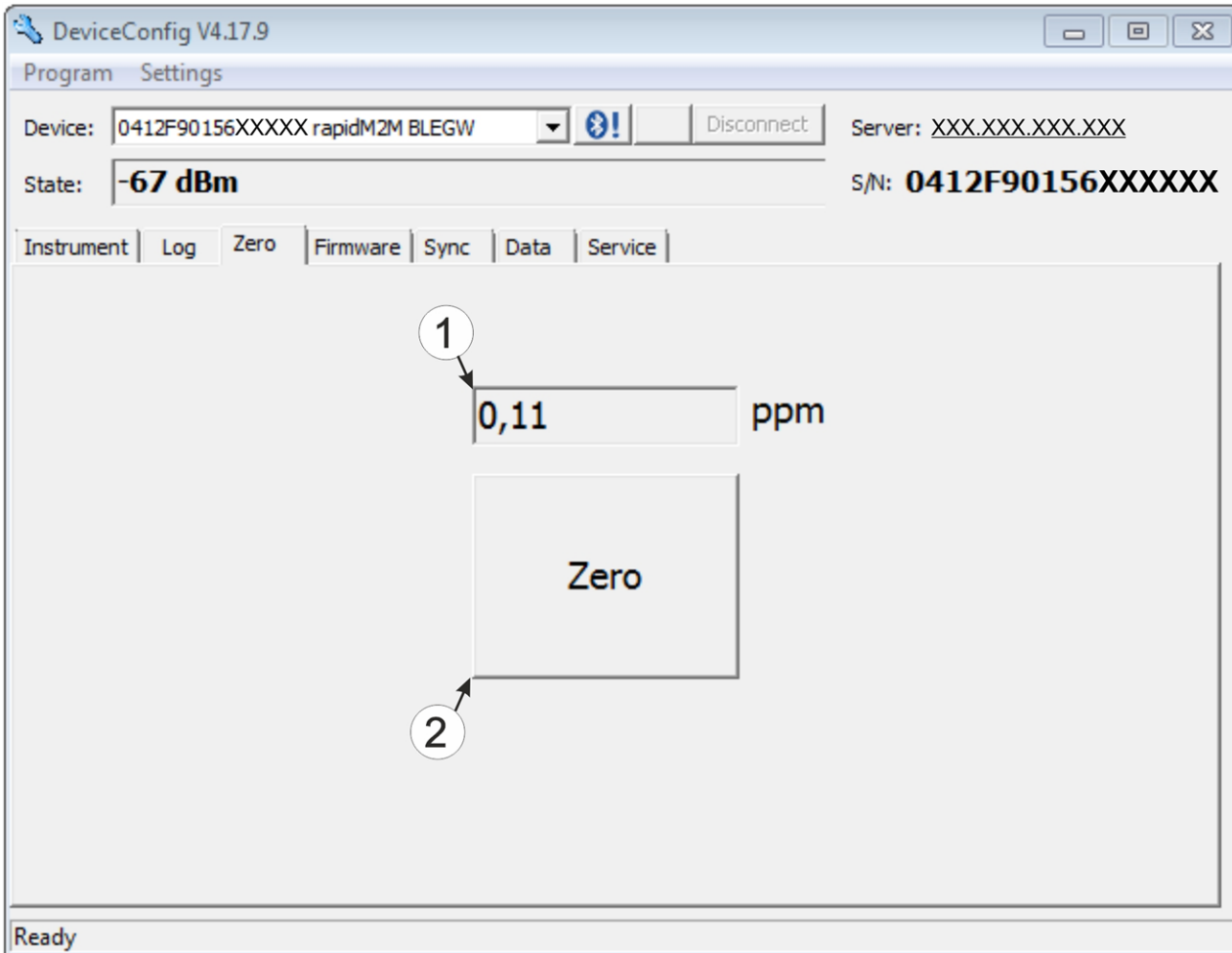


"Zero" tab

| 1 H2S concentration in ppm<br><br>In contrast to what is shown on the display and measurement value graphics, negative values are not cut off. | 2 Button to complete the zero point adjustment |
| --- | --- |

## 11.10 "Firmware" tab

This tab enables firmware to be installed directly via the USB interface or the Bluetooth Low Energy interface. There are two available ways to update the firmware:

- Using a previously downloaded firmware package
- By directly loading from the myDatanet server
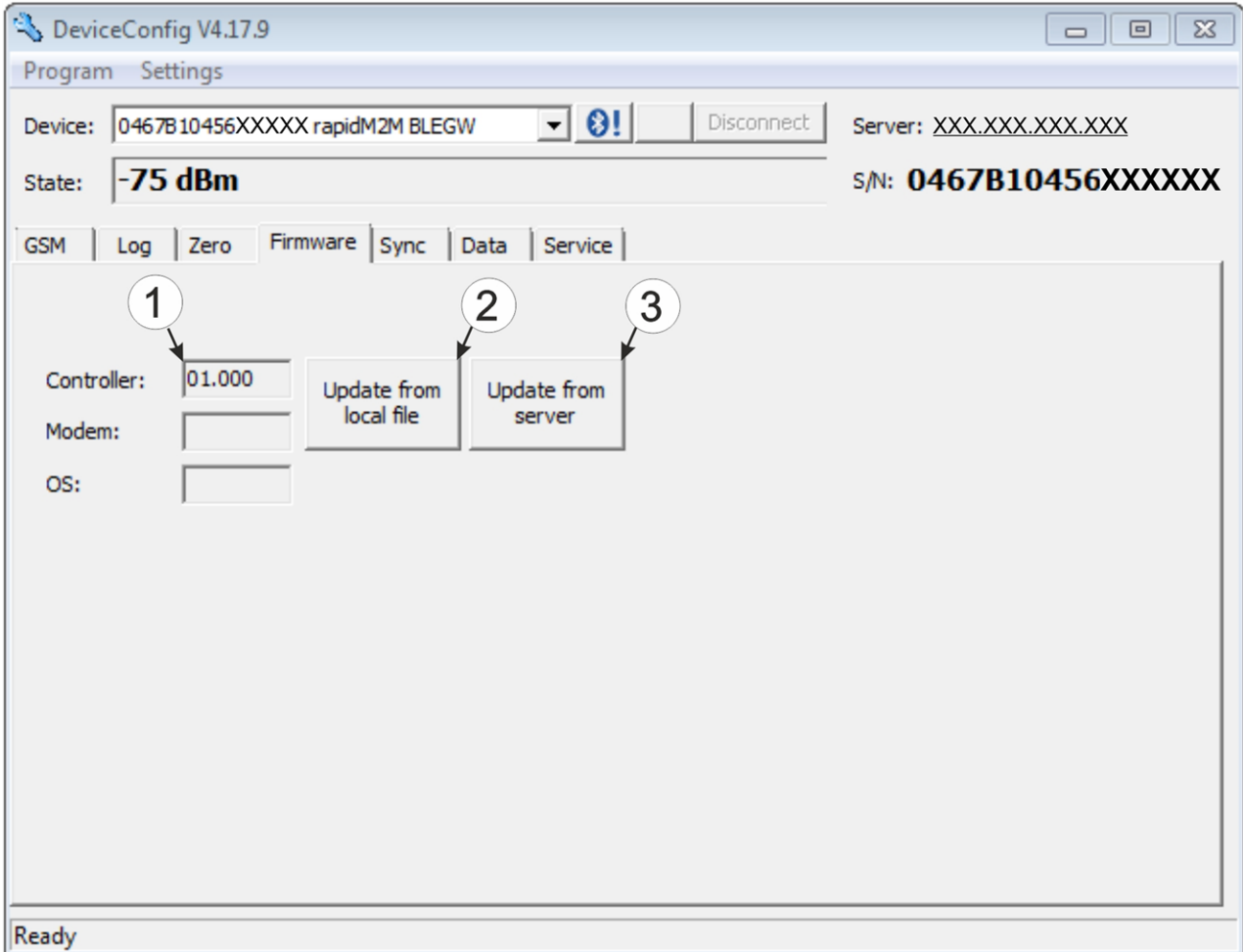


"Firmware" tab

| 1 | Currently installed software version | 3 | The firmware is loaded directly from the server and installed on the device. |
|---|---|---|---|
| 2 | Button to install a previously downloaded firmware package | | |

## 11.11 "Sync" tab

This area is designed to synchronise measurement data and configurations between myDatasensH2S1000 BLE , DeviceConfig and myDatanet server. The "Sync" tab is also available if there is no connection (USB, wireless M-bus or Bluetooth) to a device.

Detailed instructions on completing the synchronisation is provided in chapter "Synchronisation with the DeviceConfig configuration program" on page 97 and chapter "Synchronisation with the myDatanet server" on page 99.

## 11.11.1 Existing connection to the myDatasensH2S1000 BLE

If there is an existing connection to the myDatasensH2S1000 BLE , there is an option to only synchronise the measurement data and configurations with the DeviceConfig configuration program for local processing or to transfer them to the myDatanet server. In the event that your PC is not connected to the Internet when reading out the data, you can initially synchronise the measurement data and configurations of the myDatasensH2S1000 BLE with the DeviceConfig configuration program. As soon as your PC establishes a connection to the Internet, for example when you return to the office, you can then complete the synchronisations between the DeviceConfig and myDatanet server (see "No connection to a device" on page 93).



"Sync" tab when connected to the myDatasensH2S1000 BLE

| 1 | Checkbox to determine whether the measurement data and configurations should also be synchronised with the server when clicking on the Sync button. |
|---|---|
| | *Note: This checkbox is only displayed if your PC is already connected to the Internet.* |
| 2 | Button to trigger synchronisation |

### 11.11.2 No connection to a device

This option can be used to complete the synchronisation retrospectively, if no connection to the Internet was possible while reading out the measurement data and configurations from the myDatasensH2S1000 BLE .
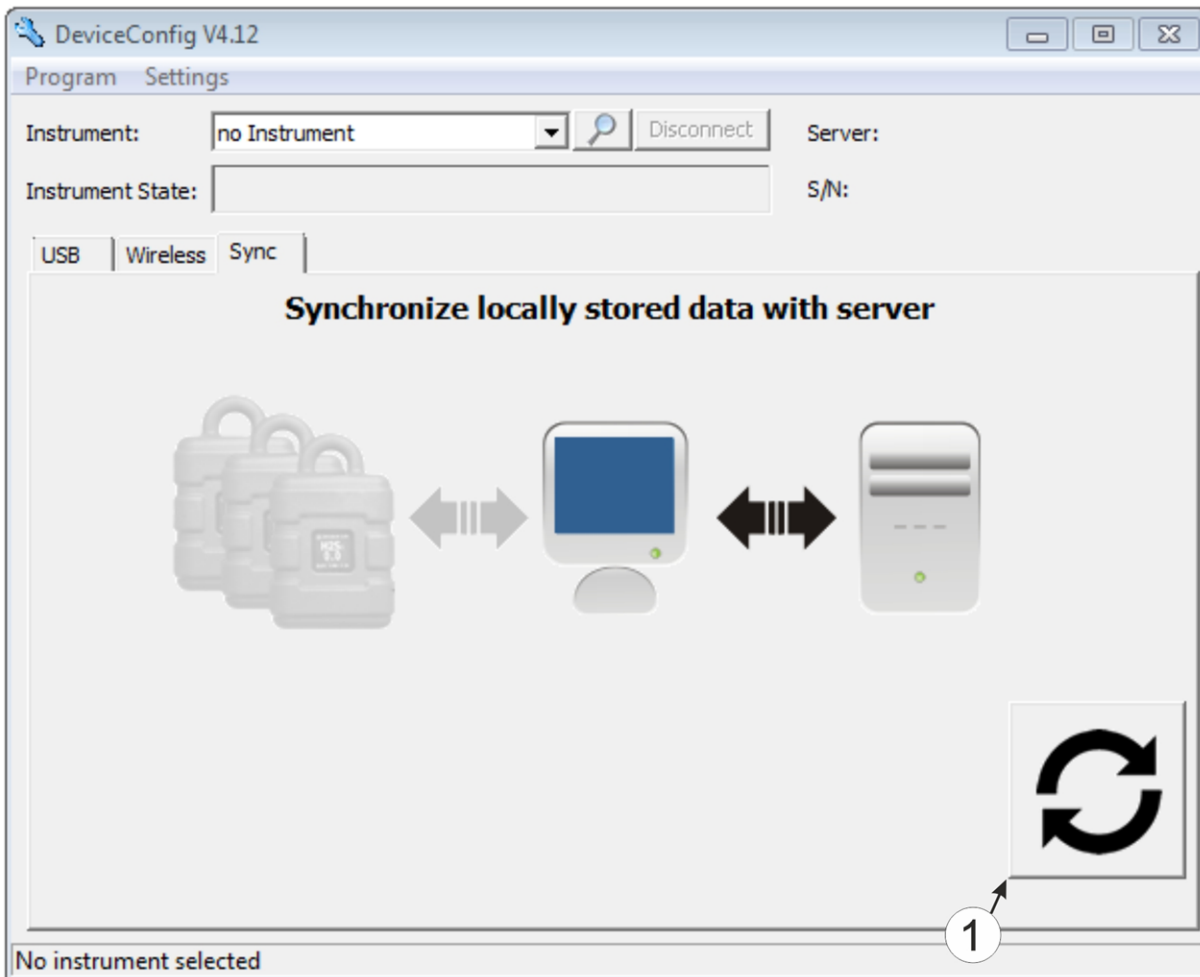


"Sync" tab without connection to a device

| 1 | Button to trigger synchronisation During this process, the measurement data and configurations for all of the devices that the DeviceConfig configuration program has saved locally are synchronised with the myDatanet server. |
|---|---|

## 11.12 "Data" tab

This area is designed to evaluate the measurement data and export the measurement data as a *.tsv file for further processing by a customer-specific system. It also enables the measurement data generated up to this point in time to be deleted from the database of the DeviceConfig configuration program and the internal memory of the myDatasensH2S1000 BLE . Only all of the data can be deleted. Selective deletion of individual data is not possible.
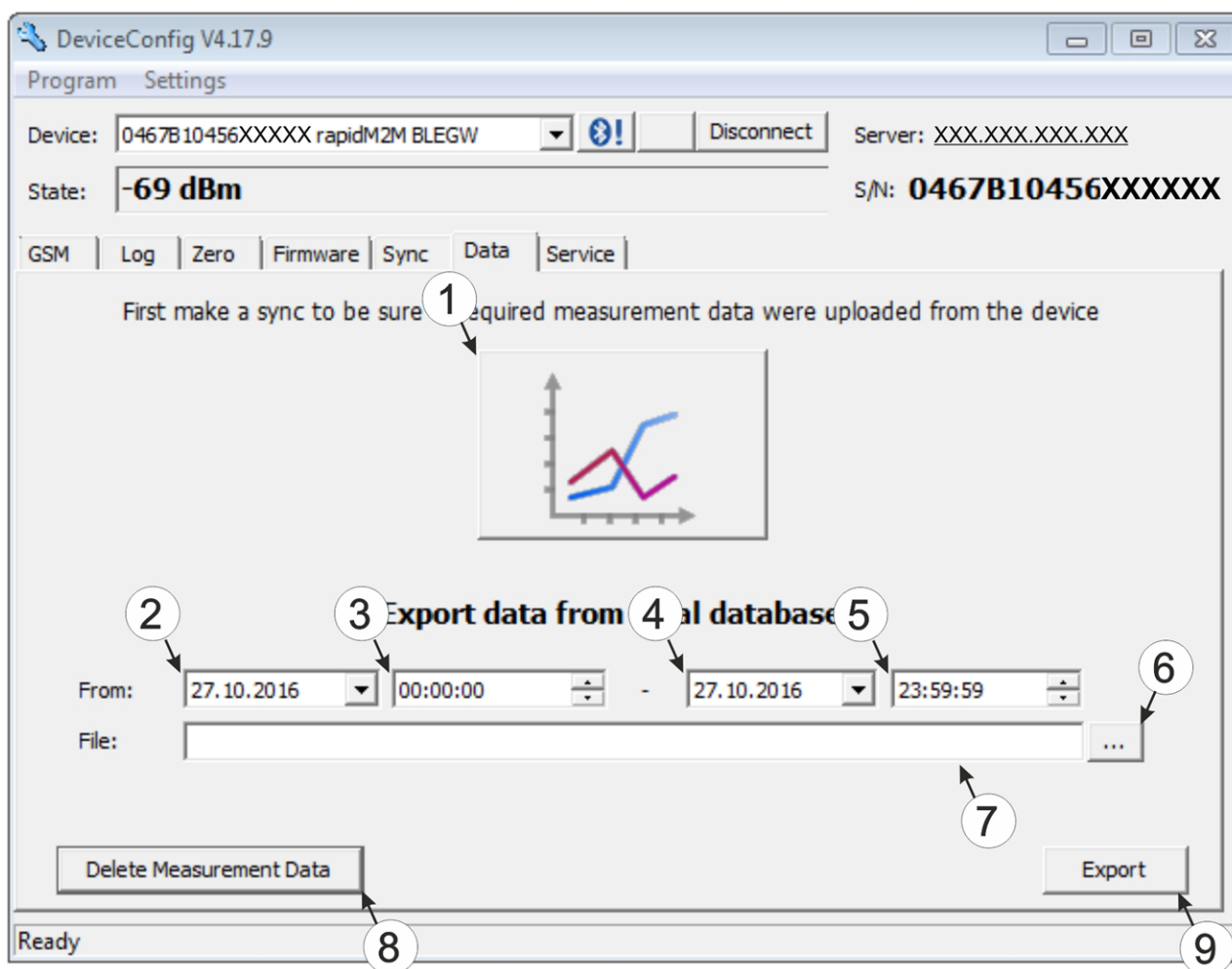
"Data" tab

| | | | |
|---|---|---|---|
| **1** | Button to open the window to display/evaluate the data saved locally on your PC | **6** | Opens the dialogue to select the file in which the measurement data should be saved |
| **2** | Start date for the data export | **7** | Path of the file in which the measurement data should be saved |
| **3** | Start time for the data export | **8** | Button to delete the measurement data generated up to this point in time from the database of the DeviceConfig configuration program and the internal memory of the myDatasensH2S1000 BLE . |
| **4** | End time for the data export | **9** | Button to start the data export |
| **5** | End date for the data export | | |

## 11.12.1 "Measurement Data" program window

This program window is designed to display/evaluate the data stored locally on your PC. Operation is similar to that of the measurement value graphic displays of the myDatanet server. Although only two measurement channels can be displayed simultaneously. The "Measurement Data" program window enables you to export the visible measurement data as a *.tsv file and save the illustrated measurement value graphic as a *.png file.

You can use the "Reports" of the myDatanet server to create a more comprehensive report of the recorded measurement data (see "myDatanet Server Manual " 805002). However, this requires the measurement data and configurations to be synchronised between DeviceConfig and the myDatanet server (see "Synchronisation with the myDatanet server" on page 99).
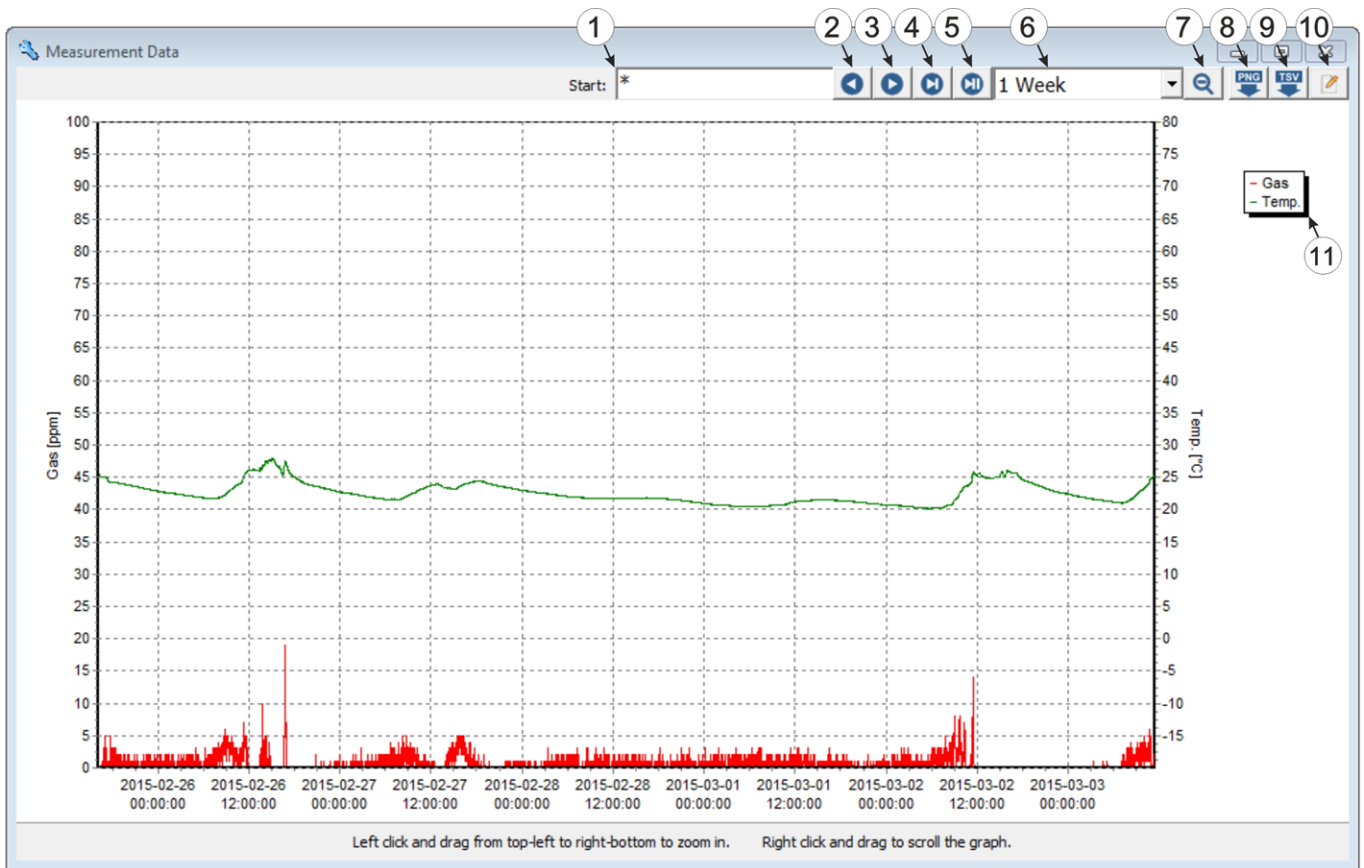


"Measurement Data" program window

| 1 | Date/time from when the data should be displayed | 7 | Reduce in size or zoom out; increase the period |
|---|---|---|---|
| 2 | Move a period/page into the past | 8 | Save the measurement value graphic as a *.png file |
| 3 | Move a period/page into the future | 9 | Save the visible measurement data as a *.tsv file |
| 4 | Jump to the latest data record or to the end of the measurement data | 10 | Opens the program window to select the measurement channel that should be displayed (see ""Chart Configuration" program window" on page 95) |
| 5 | Jump to the current time | 11 | Legend of the titles of the displayed measurement channels |
| 6 | Duration of a period; duration that is displayed on one page | | |

### 11.12.1.1 "Chart Configuration" program window

This program window is used to select the two measurement channels for which the data should be displayed in the "Measurement Data" program window. It is not possible to change the title of the measurement channels, the measurement value unit or the minimum and maximum value for the x-axis of the diagram.
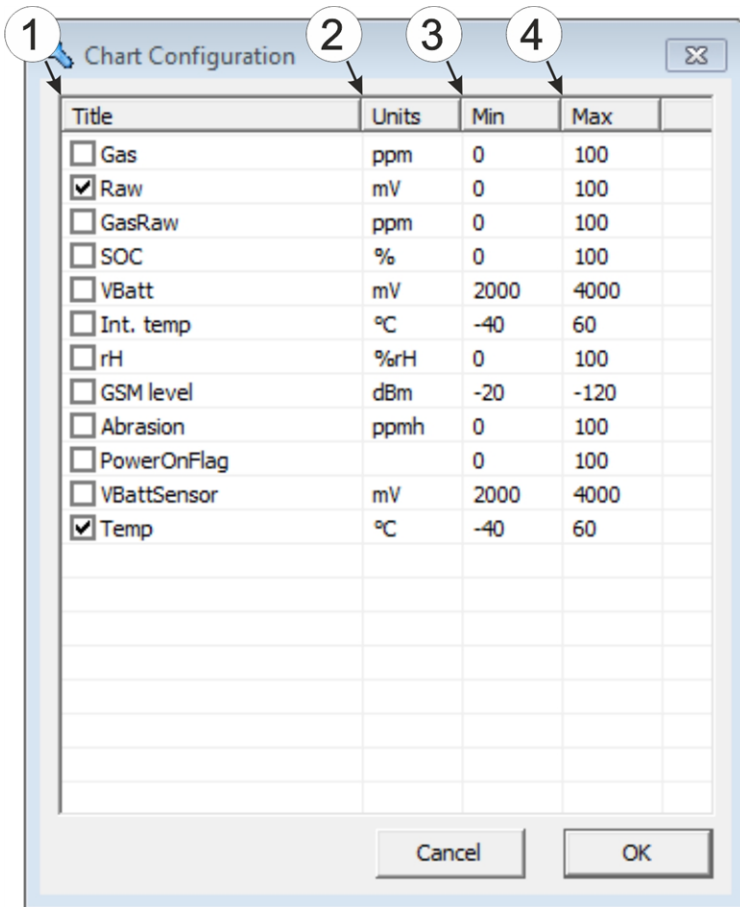
"Chart Configuration" program window

| 1 | Titles of the measurement channel available for selection | 3 | Minimum value for the x-axis of the diagram |
|---|---|---|---|
| 2 | Measurement value unit of the channel | 4 | Maximum value for the x-axis of the diagram |

## 11.13 Recommended procedure

### 11.13.1 Synchronisation with the DeviceConfig  configuration program

The following process describes how you can read out the data from the myDatasensH2S1000 BLE using the DeviceConfig configuration program so that it can be processed locally. If you wish to synchronise the data with the myDatanet  server at a later date, this is possible at any time (see "No connection to a device" on page 93).

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig configuration program.
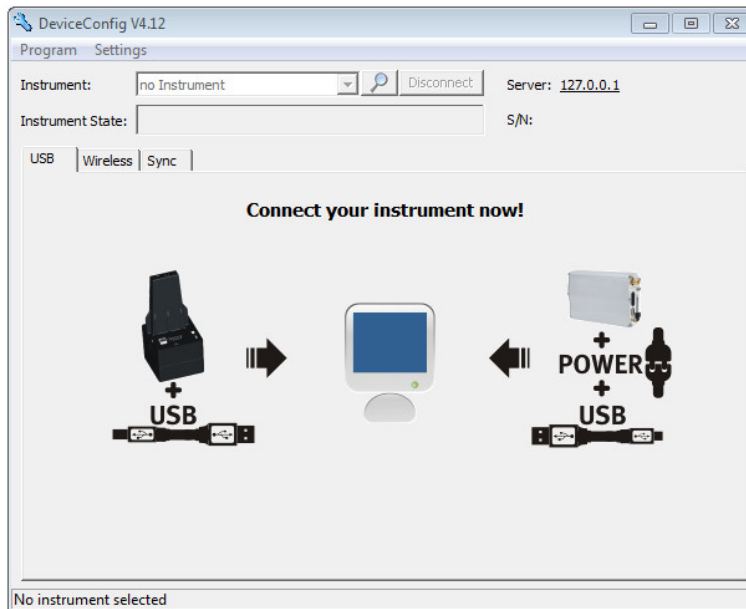


DeviceConfig

3. Connect the myDatasensH2S1000 BLE to the PC using the USB BLE-Adapter (300685) supplied (see "Connecting a Device via Bluetooth Low Energy" on page 85).

4. Additional tabs are displayed if the connection was established successfully. Now select the "Sync" tab.
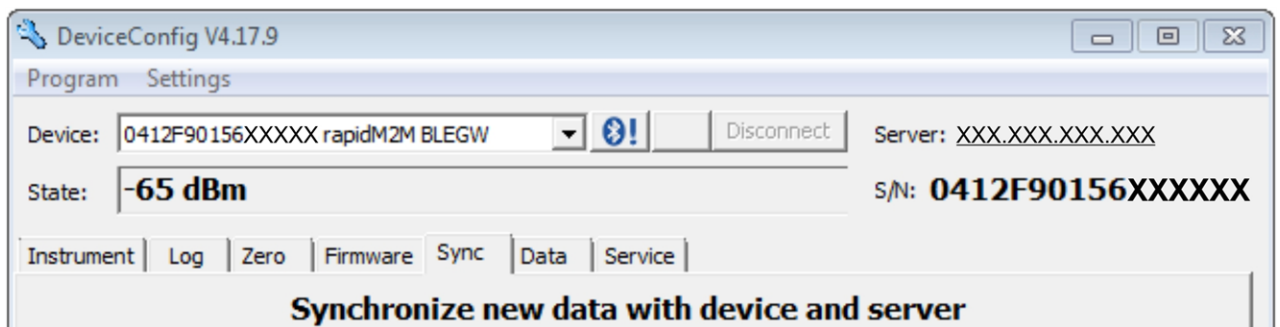


myDatasensH2S1000 BLE specific tab

5. Remove the tick in the "Sync with server" checkbox. This checkbox is only visible if your PC is currently connected to the Internet.



"Sync" tab when connected to the myDatasensH2S1000 BLE

| | |
|---|---|
| **1** | Checkbox to determine whether the measurement data and configurations should also be synchronised with the server when clicking on the Sync button. |
| | *Note: This checkbox is only displayed if your PC is already connected to the Internet.* |
| **2** | Button to trigger synchronisation |

6. Click on the button to trigger synchronisation (see ""Sync" tab when connected to the myDatasensH2S1000 BLE " on page 98).

When you read out the data for the first time from a myDatasensH2S1000 BLE , you can choose whether all of the saved data or only the data up to a certain date are read out from the myDatasensH2S1000 BLE . During the following synchronisation processes, the DeviceConfig configuration program always reads out the data from the last synchronised measurement data record.



Selecting the time period for which the data should be read out (only during first synchronisation)

| 1 | Read out all of the saved data |
|---|---|
|   | *Note: Reading out all of the saved data can take several hours depending on the number of saved measurement data records.* |
| 2 | Only read out the data from the selected date onwards. The data is always read out from 00:00 am of the selected day. |
|   | *Important note: Following completion of the synchronisation it is no longer possible to read out data before the selected date.* |

7. Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.



Synchronisation completed

### 11.13.2 Synchronisation with the myDatanet server

To ensure a more comprehensive management and display of the data, the DeviceConfig configuration program also provides the option of forwarding the measurement data and configurations to a central myDatanet server. The next two chapters describe the possible scenarios when reading out the data from the myDatasensH2S1000 BLE .

More information on the functions of the server is provided in the server manual ("myDatanet Server Manual " 805002).

### 11.13.2.1 Internet connection available when reading out the data

The following process describes how you can not only synchronise the data with the DeviceConfig configuration program but also with the myDatanet  server. A site must already be assigned to the myDatasensH2S1000 BLE on the myDatanet  server for this purpose. Detailed instructions are provided in chapter "Creating the site" on page 125. Another prerequisite for this is that your PC is connected to the Internet while reading out the data from the myDatasensH2S1000 BLE . If this is not possible, follow the procedure described in chapter "No Internet connection when reading out the data" on page 104.

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig configuration program.
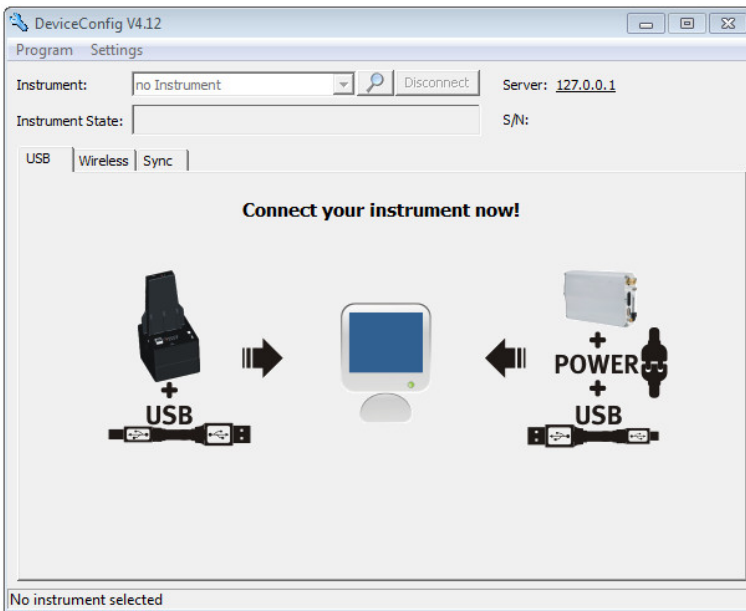


DeviceConfig

3. Connect the myDatasensH2S1000 BLE to the PC using the USB BLE-Adapter (300685) supplied (see "Connecting a Device via Bluetooth Low Energy" on page 85).

4. Additional tabs are displayed if the connection was established successfully. Now select the "Sync" tab.
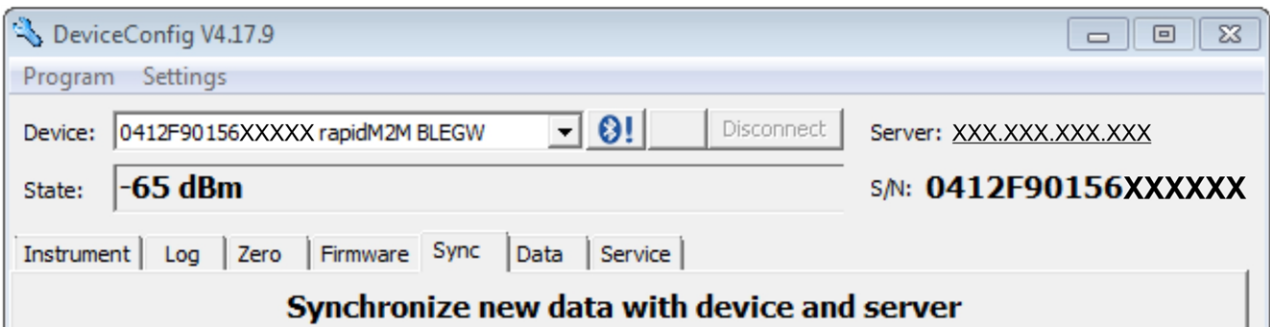


myDatasensH2S1000 BLE specific tab

5. Place a tick in the "Sync with server" checkbox. This checkbox is only visible if your PC is currently connected to the Internet.
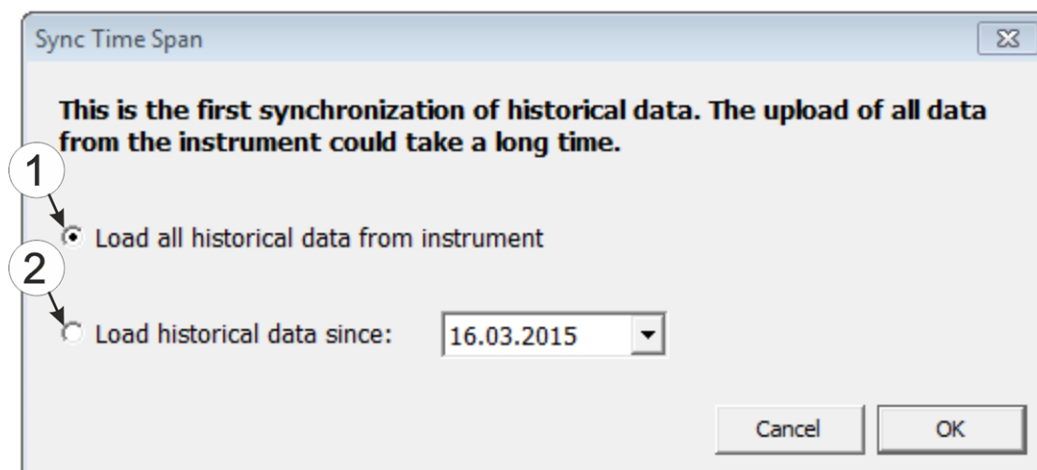


"Sync" tab when connected to the myDatasensH2S1000 BLE

| 1 | Checkbox to determine whether the measurement data and configurations should also be synchronised with the server when clicking on the Sync button. |
|---|---|
| | *Note: This checkbox is only displayed if your PC is already connected to the Internet.* |
| 2 | Button to trigger synchronisation |

6. Click on the button to trigger the synchronisation (see ""Sync" tab when connected to the myDatasensH2S1000 BLE " on page 101).

When you read out the data for the first time from a myDatasensH2S1000 BLE , you can choose whether all of the saved data or only the data from a certain date onwards are read out from the myDatasensH2S1000 BLE . During the following synchronisation processes, the DeviceConfig configuration program always reads out the data from the last synchronised measurement data record onwards.
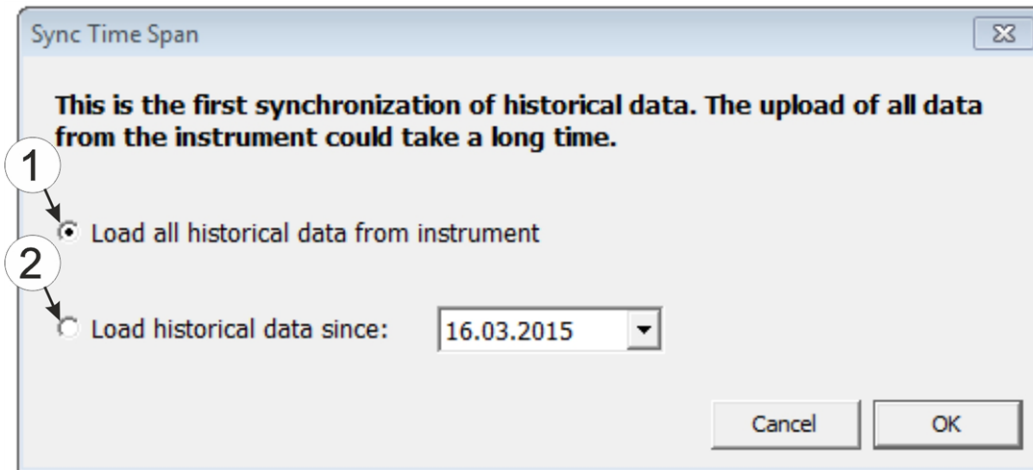


Selecting the time period for which the data should be read out (only during first synchronisation)

| 1 | Read out all of the saved data |
|---|---|
| | *Note: Reading out all of the saved data can take several hours depending on the number of saved measurement data records.* |
| 2 | Only read out the data from the selected date onwards. The data is always read out from 00:00 am of the selected day. |
| | *Important note: Following completion of the synchronisation it is no longer possible to read out data before the selected date.* |

If the DeviceConfig configuration program determines that the myDatasensH2S1000 BLE has been assigned to a new or different site on the myDatanet  server, you can decide what you would like to do with the data that is already saved locally. The following screenshot provides an overview of the available options that can be selected.

> *Important note: If a site already contains data, then only the measurement data that is newer than the current measurement data record for the site is synchronised.*
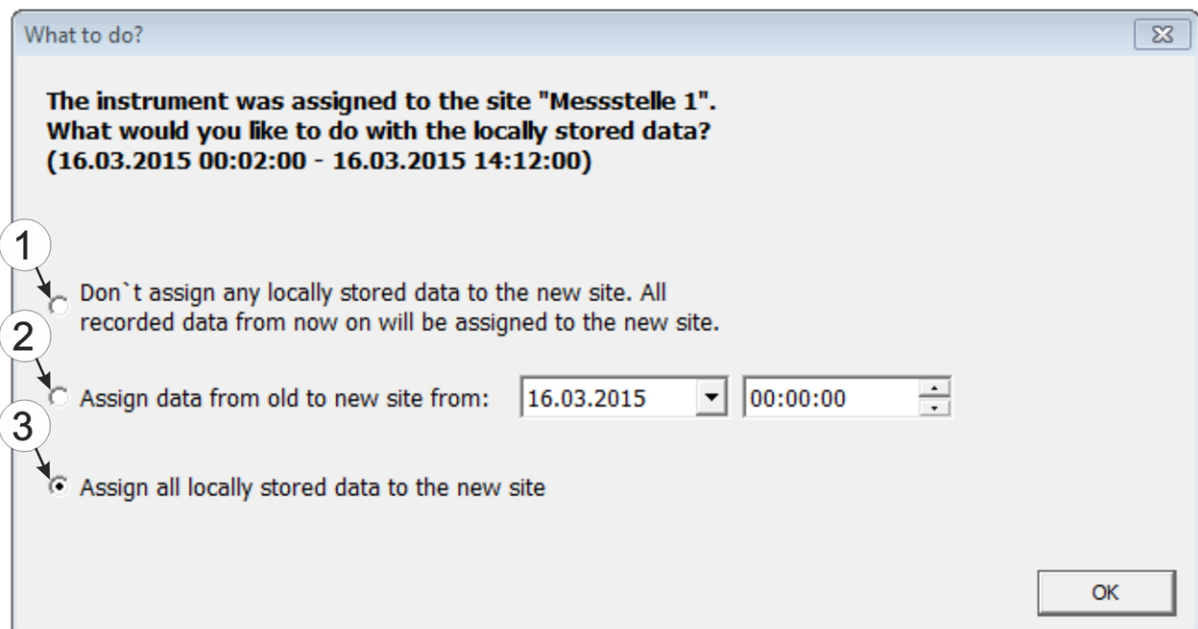
Selecting how to proceed with the locally saved data (only if the device has been assigned a new or different site)

| 1 | The locally saved data is not assigned to the new site. Only the measurement data that is read out from the current point in time is assigned to the new site. |
|---|---|
| | After clicking on "OK", the option to select from which time period onwards the data should be read out opens. The measurement data is read out from the myDatasensH2S1000 BLE in accordance with the selection and assigned to the new site. |
| 2 | The locally saved data is assigned to the new site from the selected point in time onwards. |
| 3 | All locally saved data is assigned to the new site. |

7. Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.
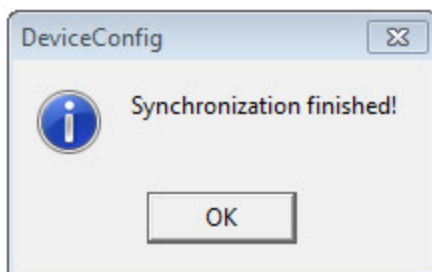


Synchronisation completed

### 11.13.2.2 No Internet connection when reading out the data

*Important note:* *The method described in the following requires that the myDatasensH2S1000 BLE myDatanet has already been assigned a site on the myDatanet server. Detailed instructions are provided in chapter "Creating the site" on page 125.Additionally, a synchronisation must already have been completed during which the DeviceConfig configuration program simultaneously established a connection to the myDatasensH2S1000 BLE and the myDatanet server (see "Internet connection available when reading out the data" on page 100).*

This procedure is recommended, if an Internet connection cannot be established on the site while reading out the data from the myDatasensH2S1000 BLE . During this procedure, the data on the site is initially only synchronised with the DeviceConfig configuration program. The data is then transferred to the myDatanet server at a later date when your PC has re-established a connection to the Internet.

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig configuration program.
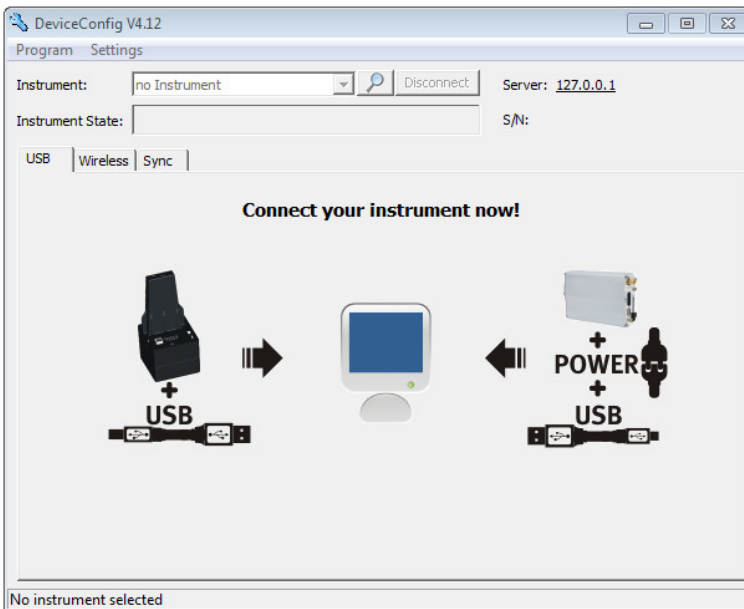


DeviceConfig

3. Connect the myDatasensH2S1000 BLE to the PC using the USB BLE-Adapter (300685) supplied (see "Connecting a Device via Bluetooth Low Energy" on page 85).

4. Additional tabs are displayed if the connection was established successfully. Now select the "Sync" tab.
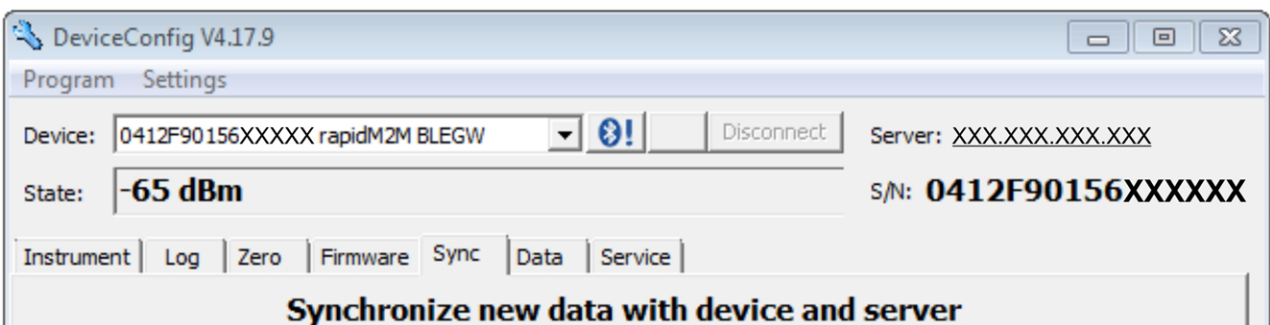


myDatasensH2S1000 BLE specific tab

5. Click on the button to trigger synchronisation.
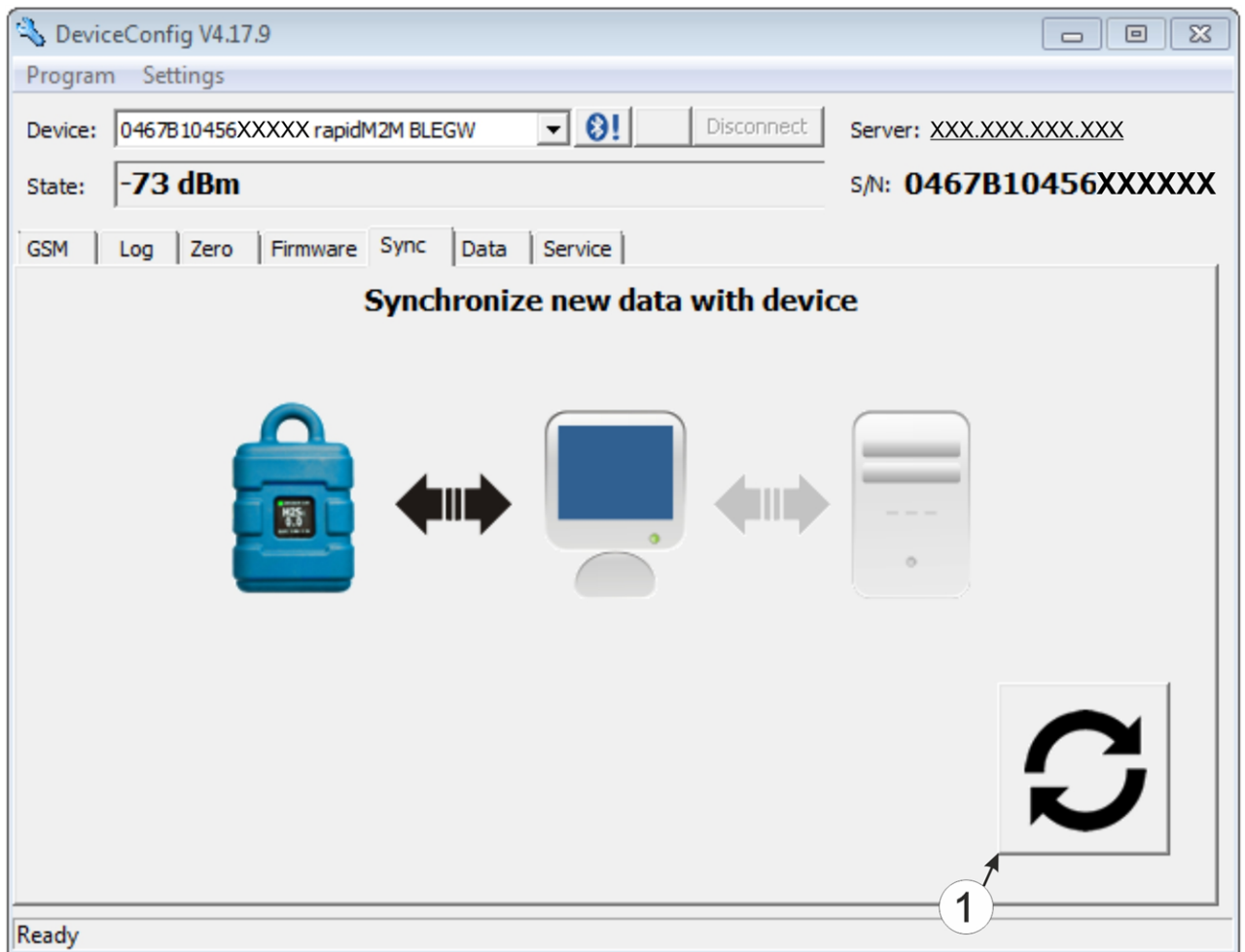


"Sync" tab when connected to the myDatasensH2S1000 BLE although there is no connection to the myDatanet server

| | |
|---|---|
| **1** | Button to trigger synchronisation |

When you read out the data for the first time from a myDatasensH2S1000 BLE , you can choose whether all of the saved data or only the data up to a certain date are read out from the myDatasensH2S1000 BLE . During the following synchronisation processes, the DeviceConfig configuration program always reads out the data from the last synchronised measurement data record.

Selecting the time period for which the data should be read out (only during first synchronisation)

| 1 | Read out all of the saved data |
|---|---|
| | *Note: Reading out all of the saved data can take several hours depending on the number of saved measurement data records.* |
| 2 | Only read out the data from the selected date onwards. The data is always read out from 00:00 am of the selected day. |
| | *Important note: Following completion of the synchronisation it is no longer possible to read out data before the selected date.* |

6. Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.
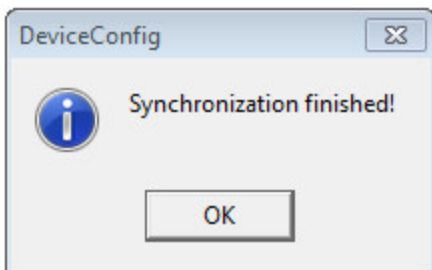


Synchronisation completed

7. Close the DeviceConfig configuration program.

8. Re-open the DeviceConfig configuration program as soon as your PC is connected to the Internet.

9.  Select the "Sync" tab and click on the button to trigger synchronisation.
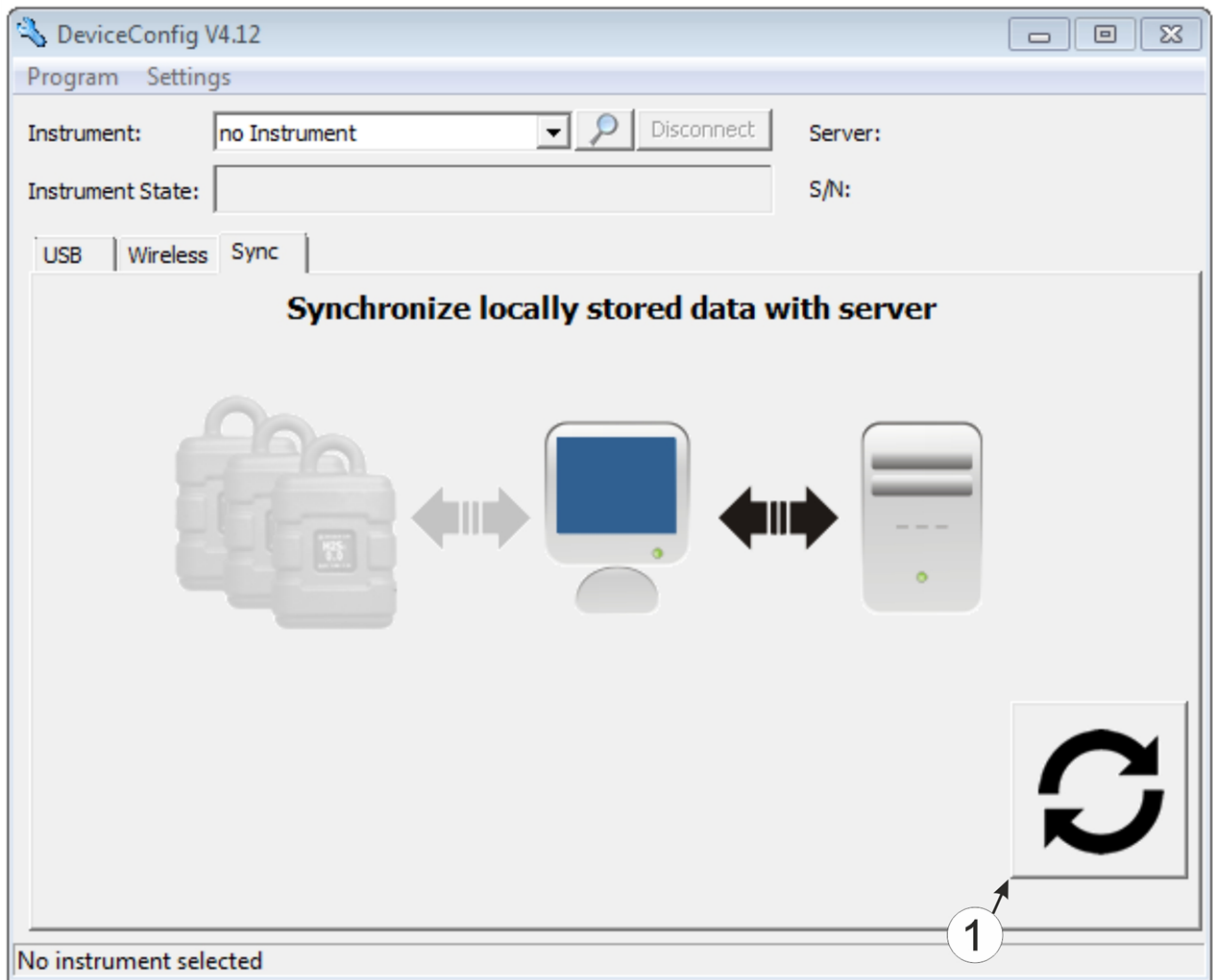


"Sync" tab without connection to a device

| 1 | Button to trigger synchronisation During this process, the measurement data and configurations of all of the devices that the DeviceConfig configuration program has saved locally are synchronised with the myDatanet server. |
|---|---|

10. Wait until the DeviceConfig configuration program indicates that the synchronisation process is complete.
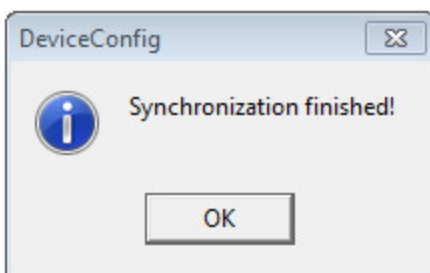


Synchronisation completed

## 11.14 Functional principle (communication with a sensor module)

The following description particularly relates to the use of the DeviceConfig configuration program in conjunction with a sensor module (e.g. H2S 7H Sensor module ).
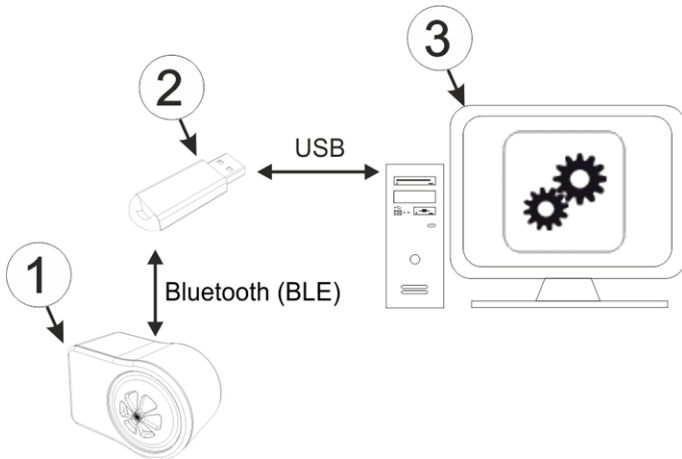


Functional principle

| 1 | Sensor module | 3 | PC with the DeviceConfig configuration program installed |
|---|---|---|---|
| 2 | USB BLE-Adapter | | |

The DeviceConfig configuration program communicates wirelessly (Bluetooth Low Energy) with the sensor module using the USB BLE-Adapter (300685). The functions provided with the DeviceConfig configuration program include:

- Trimming (special knowledge and password required, see "Trimming" on page 141)
- Calibration (special knowledge and password required, see "Calibration" on page 134)

## 11.15 Establishing a connection to a sensor module with Bluetooth Low Energy interface

The USB BLE-Adapter (300685) is required to establish a connection to a sensor module with a Bluetooth Low Energy interface. First of all complete the steps described in chapter "Installing USB BLE-Adapter driver" on page 83 to install the drivers required to operate the USB BLE-Adapter .

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig  configuration program.
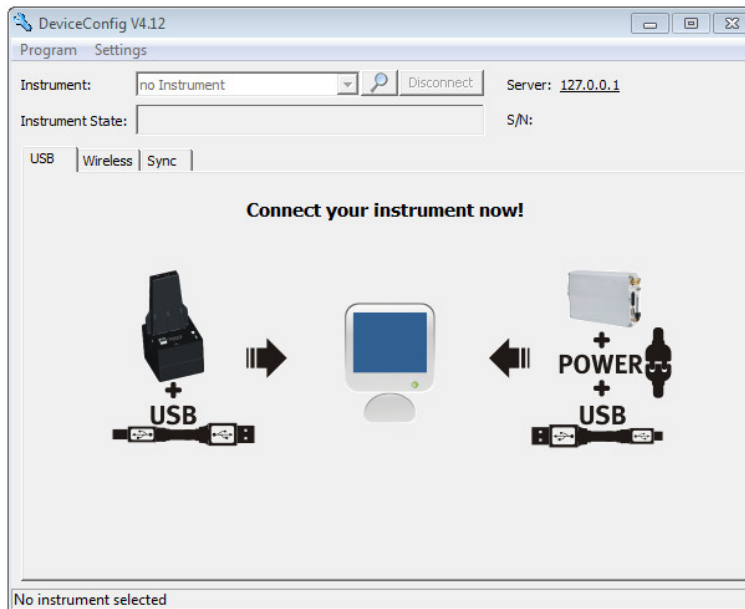


DeviceConfig

3. Select your sensor module based on the serial number from the list of devices found.

> *Important note: Sensor modules that are successfully coupled with a myDatasensH2S1000 BLE are not displayed by the DeviceConfig . Remove the sensor module from the sensor recess of the myDatasensH2S1000 BLE to disconnect an existing coupling.*
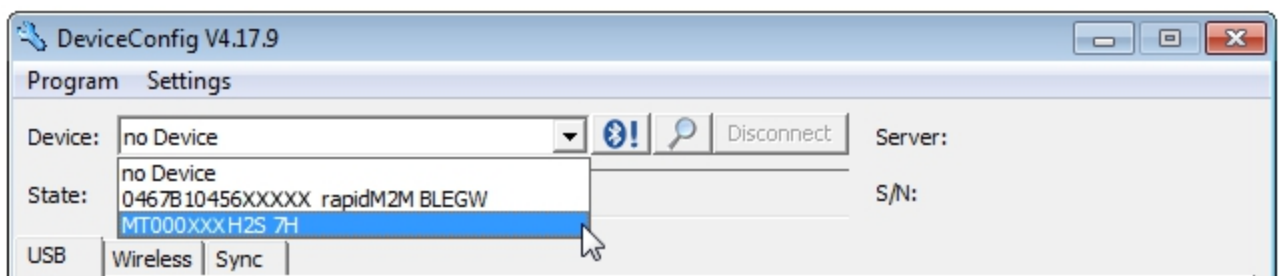


List of devices found

4. Wait until the DeviceConfig has received the configuration of the sensor module. Depending on the sensor module, additional tabs may be displayed.
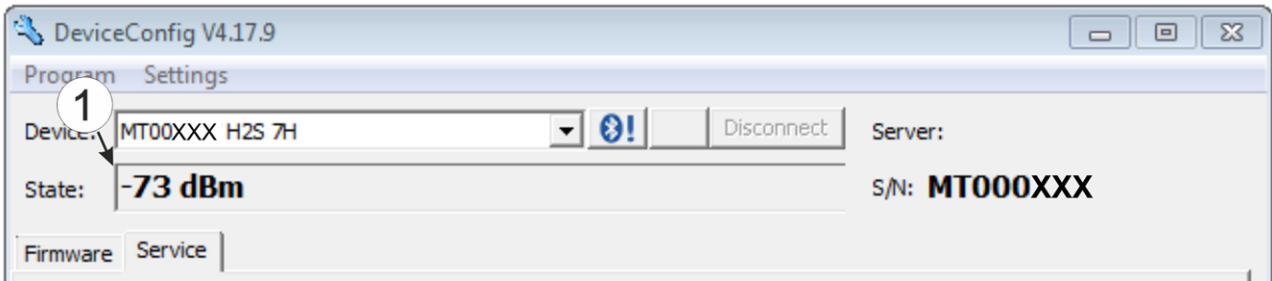


"Instrument" tab when actively connected to the sensor module

| 1 | Radio signal strength [dBm] | |
|---|---|---|

*Note: To ensure a stable connection, the wireless signal level should be higher than -90dBm , i.e. for example -85dBm . This is achieved by reducing the distance between the sensor module and the USB BLE-Adapter , and avoiding obstacles such as walls and similar.*

## 11.16 "Firmware" tab

This tab enables firmware to be installed directly via the Bluetooth Low Energy interface.
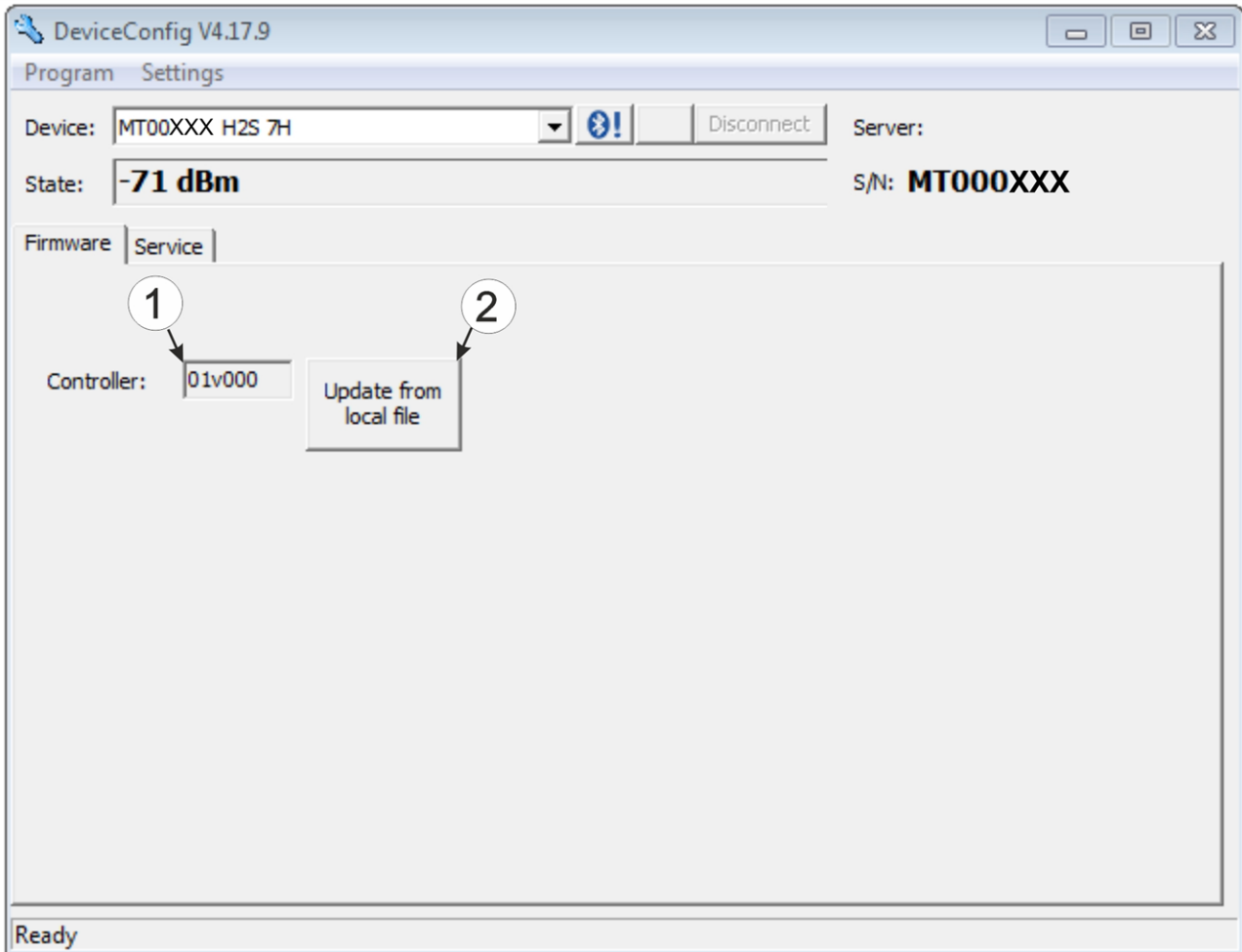


"Firmware" tab

| 1 | Currently installed software version | 2 | Button to install a previously downloaded firmware package |
|---|---|---|---|

## 11.17 "Trim" tab

⚠️ *DANGER:*

*Extreme caution is required when handling calibration gases!*

*Hydrogen sulphide is a neurotoxic substance that can cause poisoning and even death depending on the concentration.*

The optional "Calibration set H2S 30ppm (206.810)" and "Calibration adapter for BLE sensor module (300665)" accessories are recommended for implementing the trimming process. If you are under the impression that based on the operational demands, the calibration of the sensor is no longer entirely correct, this can be compensated by the trimming process. This means that the time until the next scheduled calibration can be bypassed. The trim can then be removed again during the next calibration. The basic

calibration of the device is not changed by the trimming process. The trim can be removed again at any time by clicking on the "Reset" button.

> *Note: The trimming process can only be completed by a restricted group of people. A password is therefore required to access this tab.*

Detailed instructions on executing the trim are provided in chapter "Trimming" on page 141.



"Trim" tab

| | | | |
|---|---|---|---|
| **1** | H2Smeasurement value (calculated with the currently valid values for the offset and slope) | **7** | Detected slope |
| **2** | Upper reference point (target value in ppm) | **8** | Checkbox to display the input fields for the manual input of the trim |
| **3** | Lower reference point (target value in ppm) | **9** | Button to remove the trim |
| **4** | Button for adopting the lower reference point | **10** | Input field for the manual entry of the offset |
| **5** | Button for adopting the upper reference point | **11** | Input field for the manual entry of the slope |
| **6** | Detected offset | **12** | Button to transfer the manually entered values for the offset and slope to the sensor module |

## 11.18 "Calibration" tab

⚠️ *DANGER:*

*Extreme caution is required when handling calibration gases!*

*Hydrogen sulphide is a neurotoxic substance that can cause poisoning and even death depending on the concentration.*

The "Calibration" tab enables the calibration of the sensor module that must be completed every 6 months at the latest. The display of the myDatasensH2S1000 BLE indicates the remaining days until the next calibration of the inserted sensor module is due.

*Note: The calibration must only be completed by a restricted group of people. A password is therefore required to access this tab.*

Detailed instructions on completing the calibration are provided in chapter "Calibration process" on page 136.

"Calibration" tab

| 1 | Lower reference point (target value in ppm) | 8 | Button for adopting the upper reference point (H2S) |
|---|---|---|---|
| 2 | Upper reference point (target value in ppm) | 9 | Raw value (temperature) |
| 3 | Raw value (H2S) | 10 | Temperature measurement value (calculated with the currently valid values for the offset) |
| 4 | H2S measurement value (calculated with the currently valid values for the offset and slope) | 11 | Offset for calculating the temperature |
| 5 | Determined offset (H2S) | 12 | Timer to determine the remaining delay |
| 6 | Determined slope (H2S) | 13 | Starts/stops the timer [1] |
| 7 | Button for adopting the lower reference point (H2S) | 14 | Button to transfer the values determined for the offset and slope to the sensor module |

[1] After a restart, the timer is automatically reset to the value set via the two dropdown fields.

# Chapter 12 GasBuster

## 12.1 General

The "GasBuster" smartphone app is available for Android and iOS devices and can be downloaded free of charge from "Google Play" (Android) or the Apple "App Store" (iOS).

The tool is designed for the synchronisation of data and to display the current values. The "GasBuster" smartphone app is compatible with all variants of the myDatasensH2S1000 BLE and any sensor modules that can be combined with it (see "Sensor modules" on page 161).

The "GasBuster" smartphone app enables you to complete the following tasks:

- Synchronisation of measurement data and configuration between device and server (specifically for devices without cellular modem)
- Display of the current measurement values (gas concentration and temperature)
- Scanning for compatible devices and sensor modules within range

## 12.2 Prerequisites

| Interfaces | Bluetooth Low Energy |
|---|---|
| Operating system | Apple iOS 9.0 or higher |
|  | Android 4.0.3 or higher |
| Internet connection | Recommended |
| Required disk space | approx. 50 MB (iOs) |
|  | approx. 25 MB (Android) |

## 12.3 Functional principle

### 12.3.1 Use in conjunction with a myDatasensH2S1000 BLE
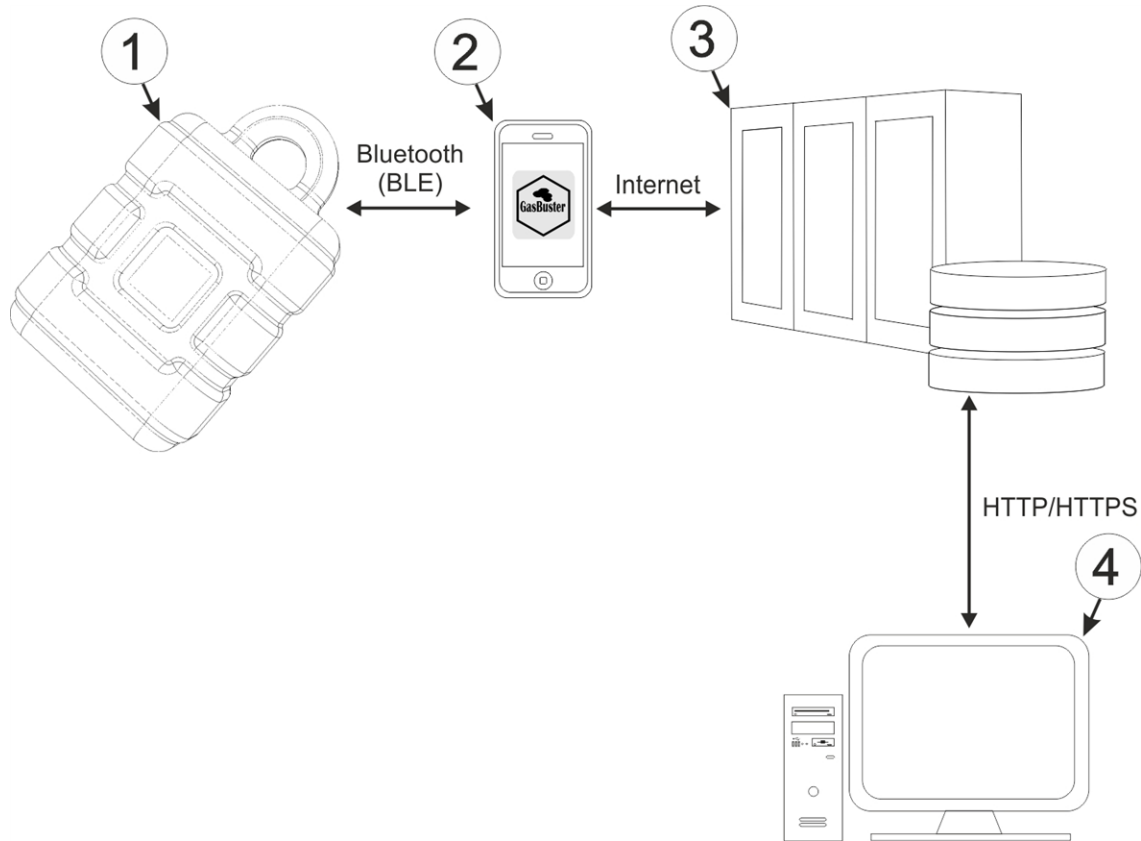


Use in conjunction with a myDatasensH2S1000 BLE

| 1 | myDatasensH2S1000 BLE | 3 | myDatanet server |
|---|---|---|---|
| 2 | Smartphone with "GasBuster" smartphone app installed | 4 | Client that accesses the interface of the myDatanet server via the web browser |

The "GasBuster" smartphone app communicates wirelessly (Bluetooth Low Energy) with the myDatasensH2S1000 BLE . The provided functions include:

- Display of the current measurement values (gas concentration and temperature)
- Synchronisation of measurement data and configuration between device and server (see "Synchronisation with the myDatanet server" on page 119)
- Scanning for compatible devices within range

As soon as the data has been transferred to the myDatanet server, it is available via all of the server's interfaces (e.g. HTTP/HTTPS, as illustrated in the functional principle above) in the same way as the data from all of the other myDatanet devices.

### 12.3.2 Use in conjunction with a sensor module
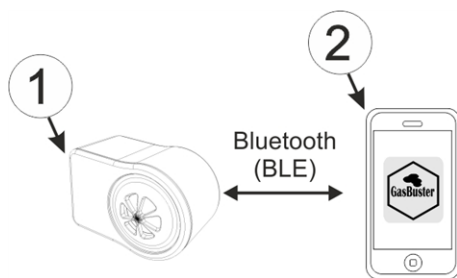


Use in conjunction with a sensor module

| 1 | Sensor module (e.g. H2S 7H Sensor module ) | 2 | Smartphone with "GasBuster" smartphone app installed |
|---|---|---|---|

The "GasBuster" smartphone app communicates wirelessly (Bluetooth Low Energy) with the sensor module. The provided functions include:

- Display of the current measurement values (gas concentration and temperature)
- Scanning for compatible sensor modules within range

# 12.4 Overview



Start screen

The "GasBuster" smartphone app can be used to communicate with all variants of the myDatasensH2S1000 BLE and with their compatible sensor modules (see "Sensor modules" on page 161). "Swipe" horizontally to switch between the identified devices and sensor modules. If the connection to the currently selected device or sensor module is interrupted, the next detected device or sensor module is selected after 15 seconds. The start screen (see "Start screen" on page 117) is displayed if no other devices or sensor modules are available.

> *Note: Sensor modules that are successfully coupled with a myDatasensH2S1000 BLE are no longer displayed by the smartphone app.*

Sensor module detected

myDatasensH2S1000 BLE detected

| 1 | Indicates an active Bluetooth connection | 5 | Current temperature |
|---|---|---|---|
| | Blue: active connection | | |
| | Black: no connection | | |
| 2 | Type designation of the sensor module or "BLEGW" if it is a variant of a myDatasensH2S1000 BLE | 6 | Each point symbolises a detected device or sensor module. The current selection is represented by the dark point. |
| 3 | Serial number of the detected sensor module | 7 | Button to trigger the synchronisation of the measurement data and the configuration between the device and server [1] |
| 4 | Current measurement value of the gas concentration | 8 | Serial number of the detected device |

[1]To be able to complete a synchronisation, a site must first be created on the myDatanet server (see "Creating the site" on page 125).

## 12.5 Synchronisation with the myDatanet server

*Important note: The following procedure requires that the myDatasensH2S1000 BLE has already been assigned a site on the myDatanet server. Detailed instructions are provided in chapter "Creating the site" on page 125.*

The measurement data and configuration can be synchronised between the myDatasensH2S1000 BLE and the myDatanet server using the "GasBuster" smartphone app. In contrast to the DeviceConfig configuration program, the smartphone app does not provide the option of saving the data temporarily, i.e. the smartphone that is used requires an active Internet connection when reading out the data on the site.

1.  Open the "GasBuster" Smartphone app.

2.  If several devices or sensor modules are within range, "swipe" horizontally to select the desired myDatasensH2S1000 BLE based on the displayed serial number.

    *Note: "BLEGW" is displayed as the type designation for all variants of a myDatasensH2S1000 BLE .*



| | |
|---|---|
| **1** | The text "BLEGW" indicates that the current selection is a variant of a myDatasensH2S1000 BLE . |
| **2** | Display of the serial number for the currently selected myDatasensH2S1000 BLE |
| **3** | Button to trigger the synchronisation of the measurement data and the configuration between the device and server |

Select myDatasensH2S1000 BLE

3.  Click on the "Synchronisation" button (see "Select myDatasensH2S1000 BLE " on page 119).

4. Wait until the smartphone app indicates that the synchronisation process is complete. An active synchronisation process is indicated by the "Synchronisation" button pulsating. If the process could be completed successfully, this is indicated by a checkmark. An exclamation mark is displayed in the event of an error. In this case, restart the synchronisation process.



Synchronisation successful



Error during the synchronisation

# Chapter 13 myDatanet server

*Note: All of the screenshots show version 49v011 of the myDatanet server using the standard colour scheme. Newer versions may include minor changes to the appearance of the server.*

## 13.1 Overview
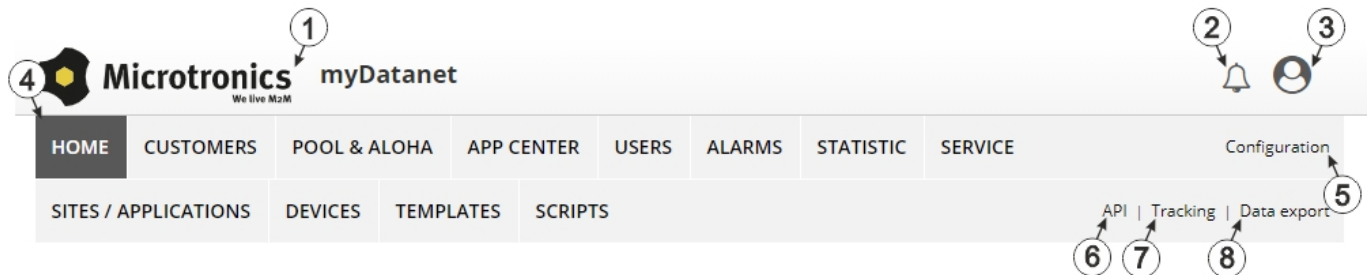


Overview of the myDatanet server

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

### 13.1.1 Explanation of the symbols

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

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

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

## 13.2 "Customer" area



Overview of the "Customer" area

| | |
|---|---|
| **1** | Area where an image file can be displayed as a "Map" and/or the OpenStreetMaps map can be displayed<br><br>The sites can be manually placed on the image file used as a "map".<br><br>In the OpenStreetMaps map, the sites are only displayed once GPS coordinates have been assigned to the site. |
| **2** | Adds a new customer |

| | |
|---|---|
| **3** | List of tags that are assigned to at least one of the customers displayed in the list of customers. If the list of customers was limited by the search field or selection of a tag, this is taken into consideration when creating the list of tags. A cross is added to the end of the list of tags as soon as the list of customers is limited by the selection of a tag. Clicking on this cross will reset the selection of all tags and the restriction is cancelled. |
| | By clicking on one of the tags with the left mouse button only those customers who have been assigned the corresponding tag are displayed in the list of customers and the selected tag is highlighted in colour. |
| | By clicking on one of the tags with the right mouse button all of the customers who have been assigned the corresponding tag are hidden, the selected tag is highlighted in colour and the title of the tag is crossed out. |
| | Clicking the same mouse button again will remove the restriction. |
| **4** | Opens the input screen for configuring the customer |
| **5** | Deletes the customer |
| **6** | Comment that can be entered in the configuration of the customer |
| **7** | If a default report was defined, the default report is accessed by clicking on the name of the customer. Otherwise the "Sites / Applications" area at customer level is opened by clicking on the name of the customer (see ""Sites / Applications" area at customer level" on page 124 or "Reports" on page 125). |
| **8** | Search field to filter the customer list |
| **9** | Customer's address that can be entered via the input screen for configuring the customer |
| **10** | Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 125) |
| **11** | Symbol via which an image file can be loaded on to the server as an "Overview map" |
| | To remove the "Map" again, open the upload dialogue again and click on "Submit" without selecting an image file beforehand. |

## 13.3 "Sites / Applications" area at customer level



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

| 1 | Area where an image file can be displayed as a "Map" and/or the OpenStreetMaps map can be displayed |
|---|---|
| | The sites can be manually placed on the image file used as a "map". |
| | In the OpenStreetMaps map, the sites are only displayed once GPS coordinates have been assigned to the site. |

| 2 | List of reports (see "Reports" on page 125) |
|---|---|
| 3 | List of sites/applications (see "Site" on page 70) |
| 4 | Symbol that represents a site on the "Map" |
| 5 | Symbol via which a OpenStreetMaps map, on which the sites are displayed, can be loaded. (see "Map view" on page 125) |
| 6 | Symbol via which an image file can be loaded on to the server as a "Map" <br><br> To remove the "Map" again, open the upload dialogue again and click on "Submit" without selecting an image file beforehand. |

### 13.3.1 Reports

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

### 13.3.2 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).

## 13.4 Recommended procedure

### 13.4.1 Creating the site

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

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

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

Login form of the myDatanet server

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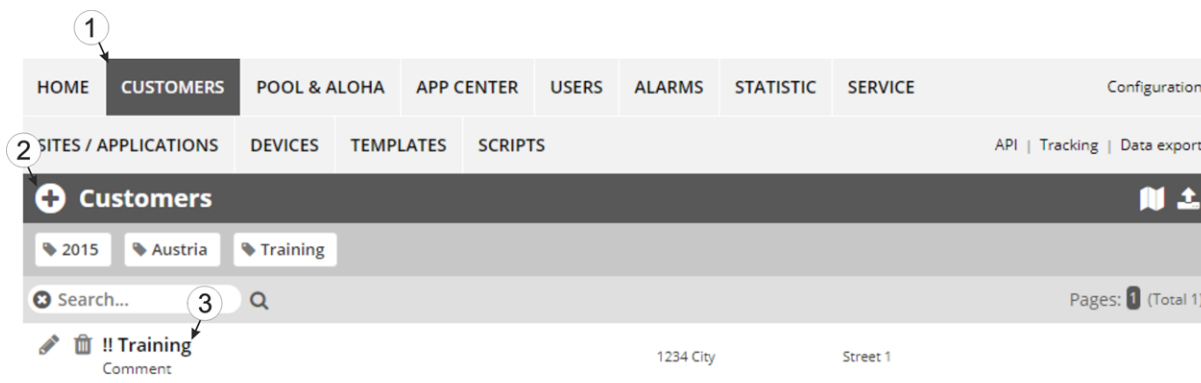


Selecting the customer

| 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 / Applications" menu item of the myDatanet server to call up the list of existing sites / applications. Open the input window for creating a new site by clicking the "Add new site / application" symbol, enter the serial number of your device in the appropriate field and then click the "Continue" button.

*Note: The serial number is on the type plate of the device (see "Device labelling" on page 29)*
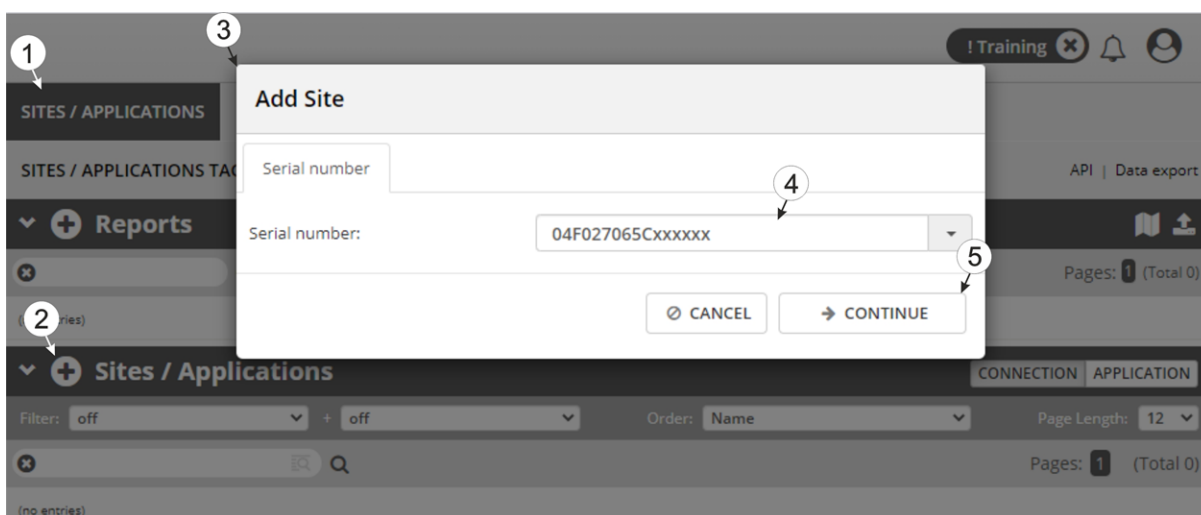


Creating the site

| 1 | Menu item to call up the list of existing sites / applications | 4 | Field for entering the serial number |
|---|---|---|---|
| 2 | "Add new site / application" symbol | 5 | "Continue" button |
| 3 | Input window for creating a new site | | |

4. If necessary, change the suggested name of the site, select the desired site type or the desired application from the drop-down list and then click the "Add" button.
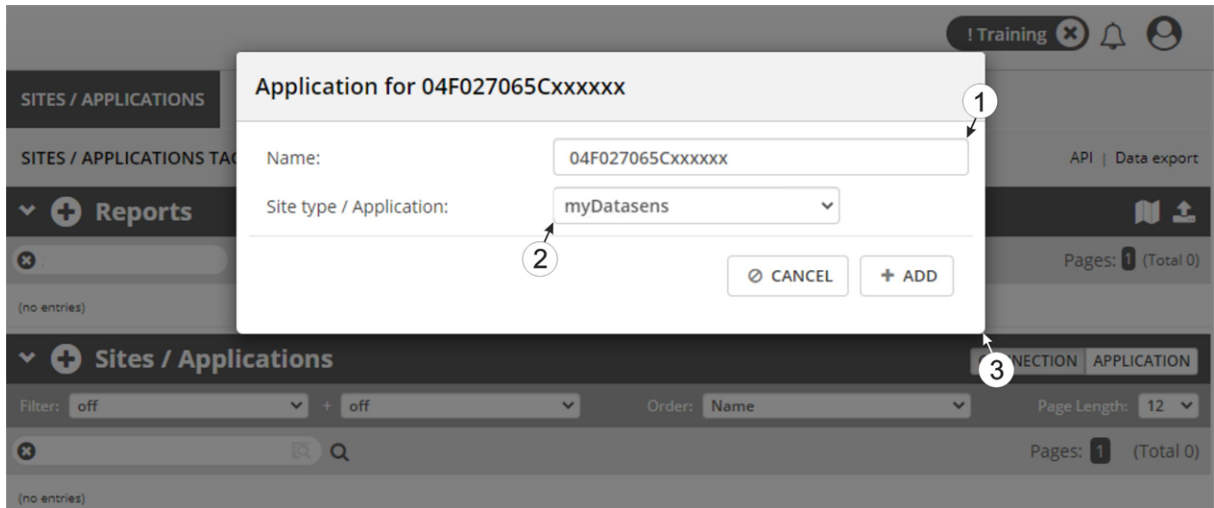


Completing site creation

| **1** | Name of the site (freely selectable) | **3** | "Add" button |
|---|---|---|---|
| **2** | Drop-down list of available applications, templates and site types | | |

# Chapter 14 API

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

## 14.1 Backend API

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

## 14.2 rapidM2M Playground

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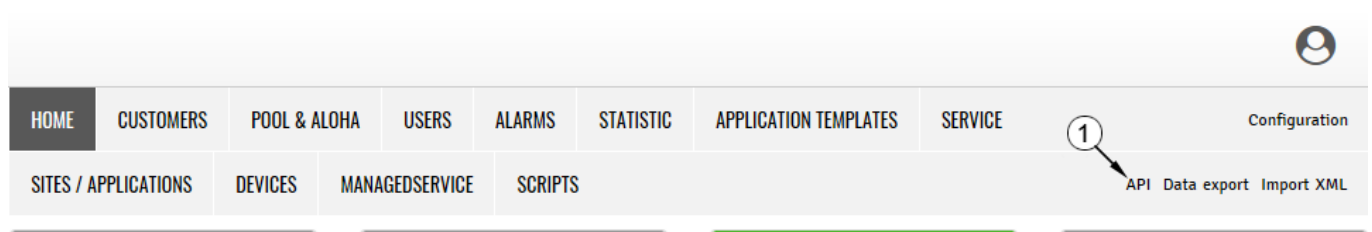


| 1 | Opens the rapidM2M Playground |
|---|---|

## 14.2.1 Overview



rapidM2M Playground

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

# Chapter 15 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.*

## 15.1 General maintenance

- Regularly check the myDatasensH2S1000 BLE for mechanical damage.
- Clean the myDatasensH2S1000 BLE with a soft, moist cloth. Use a mild cleaning agent, if necessary.

*Important note: Due to the electrostatic effects, the protective armour must not be rubbed with cloths in the Ex zone.*

## 15.2 Maintenance of the myDatasensH2S1000 BLE

As the sensor unit is designed as a separate module, the myDatasensH2S1000 BLE itself does not require any cyclic maintenance work other than the actions listed in chapter "General maintenance" on page 131 and replacement of the batteries after max. 10 years. The remaining days until the next time the batteries need to be replaced are shown on the display of the myDatasensH2S1000 BLE  (see "Display" on page 58). The batteries must only be replaced by the manufacturer (see "Contact information" on page 171) or a certified service partner. The device must be returned in its original packaging for this purpose.

## 15.3 Replacing the sensor module

The site settings do not need to be modified when replacing the sensor module. Leaving the device at the place of use and simply replacing the sensor module also ensures that the recording is not interrupted.

1. Remove the depleted sensor module from the sensor recess of the myDatasensH2S1000 BLE .



How-To-Video: Removing the sensor module
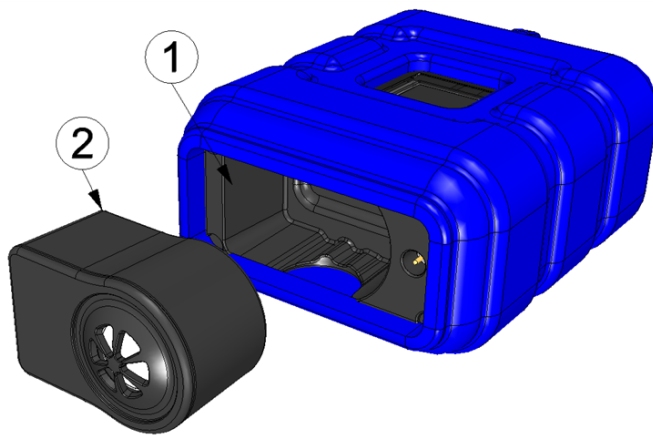


Removing the sensor module

| **1** Sensor module | **2** Sensor recess of the myDatasensH2S1000 BLE |
| --- | --- |

The display and transport mode are activated when the sensor module is removed (i.e. the measurement is deactivated).



2. Before inserting the new sensor module, ensure that the sensor recess in the myDatasensH2S1000 BLE  is clean. Remove any impurities and/or dirt.

3. Insert the new sensor module (see "Inserting the sensor module" on page 48). It is designed in such a way that it cannot be inserted incorrectly.

> ***Important note:*** *During the BLE pairing between the new sensor module and the myDatasensH2S1000 BLE , ensure that there are no other sensor modules within a radius of 1 m.*



How-To-Video: Inserting the sensor module

When inserting the new sensor module, transport mode is terminated again, the display is activated and the following action is executed:

> ***Note:*** *To check the current operating state, you may need to activate the display again by briefly pressing (approx. 1 sec.) the solenoid switch (see "Reed switch" on page 57).*

1. The BLE connection between the sensor module and the myDatasensH2S1000 BLE is established.



The following step is not mandatory.

4. Check whether the coupling with the desired sensor module was established as part of the BLE pairing. To do so, compare the serial number (see "Display" on page 58) shown on the display of the myDatasensH2S1000 BLE with the one on the type plate of the sensor module.

5. Send the depleted sensor module to the manufacturer or a certified service partner in the original packaging to be calibrated (see "Return" on page 44).

## 15.4 Maintenance of the H2S sensor

The H2S sensor of the sensor module is an electrochemical gas sensor that is used up over time. It must therefore be recalibrated at regular intervals (at the latest every 6 months). The display of the myDatasensH2S1000 BLE indicates the remaining days until the next calibration of the sensor module inserted in the sensor recess is due (see "Display" on page 58). The load from the gas (ppm/s), in addition to the running time since the last calibration, is relevant to the wear of the H2S sensor. For the calibration, the sensor module must be sent back to the manufacturer or a certified service partner in the original packaging (see "Return" on page 44). The maximum service life of the used H2S sensor is 2 years, although, it may be shortened due to loads during operation. During the calibration process, the manufacturer or certified service partner will evaluate the wear of the sensor and inform the customer about the required replacement of the sensor, if necessary.

## 15.4.1 Calibration, trimming and zero-point alignment

**CAUTION:**

**To prevent any damage to the device, the work described in this section of these instructions must only be performed by qualified personnel trained to handle H2S calibration gas.**

*Note:* Additional explanations on the difference between calibration, trimming and zero-point alignment

| Action | Amount of time | Required tools | Accuracy |
|---|---|---|---|
| Calibration<br><br>(see "Calibration" on page 134) | ⏳⏳⏳⏳ | 🔧🔧🔧🔧 | ★★★★ |
| Trimming<br><br>(see "Trimming" on page 141) | ⏳⏳ | 🔧 | ★★ |
| Zero-point alignment<br><br>(see "Zero point adjustment" on page 146) | ⏳ | | ★ |

### 15.4.1.1 Safety instructions for handling H2S gas

**DANGER:**

**Extreme caution is required when handling calibration gases!**

**Hydrogen sulphide is a neurotoxic substance that can cause poisoning and even death depending on the concentration.**

It has the following effects on humans:

- ~ 0.1ppm: Odour threshold
- from 20ppm: Corneal damage following prolonged exposure
- approx. 100ppm: Irritation of the mucous membranes in the eyes and respiratory system, salivation, irritation of the throat
- > 200ppm: Headache, breathing difficulties
- > 250ppm: Impairment of the olfactory receptors
- > 300ppm: Nausea
- approx. 500ppm: Weakness, drowsiness, dizziness (life threatening within a few minutes)
- > 500 ppm: Seizures, unconsciousness (fatal within a few seconds)

Long-term effects following exposure to low doses include tiredness, loss of appetite, headaches, irritability, poor memory and a lack of concentration.

The greatest caution must therefore be exercised depending on the calibration gas used.

The maximum admissible concentration (MAC value) at the workplace for H2S gas is 10ppm.

### 15.4.1.2 Calibration

*Note:* The calibration of a sensor module must only be completed in a specially equipped calibration room.

### 15.4.1.2.1 Calibration specifications

*Important note:*

- *No one is allowed to enter the calibration room without training.*
- *Employees must only use those gases or gas concentrations that they are trained to use according to the relevant risk potential.*
- *Alcohol-based cleaning agents must not be used.*
- *Before entering the calibration room, the employee must have been in an environment free of alcoholic vapours for at least 30 minutes.*
- *The ESD safety guidelines must be observed in the calibration room.*

### 15.4.1.2.2 Calibration room equipment

The following basic equipment must be available in the calibration room:

- Ensure sufficient ventilation is provided.
- Gas cylinders must be assembled and stored properly.
- The fittings on the gas discharge station must correspond to the working pressure.
- A computer is required for the DeviceConfig configuration program.
- An extraction device that is in permanent operation during the calibration process must be provided.

More detailed provisions must be taken from the applicable standards on installing a gas storage centre for the relevant country.

Normally, gas storage centres must be approved and accepted by the legislative authorities.

The gas storage centre must be designed for the respective gas used and up to the concentration needed for the calibration.

### 15.4.1.2.3 Calibration process

> *Important note: The sensor module must be stored in an environment that is free of H2S and alcoholic vapours for twelve hours before the calibration.*

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig configuration program. It is available for download in the service area of your myDatanet server (see "myDatanet Server Manual " 805002). Installation instructions are provided in the chapter "Installation" on page 81.



DeviceConfig

3. Connect the sensor module to the PC using the USB BLE-Adapter (300685) supplied (see "Establishing a connection to a sensor module with Bluetooth Low Energy interface" on page 109).

4. The calibration must only be completed by a restricted group of people. A password is therefore required. For this purpose, select "Program -> Activate Superuser Features" and enter the password provided by the administrator of your myDatanet server in the dialogue window that appears.

> *Note: Additional tabs will be displayed within the configuration program depending on the level of the password.*



Display following input of the password including additional tabs

5. Select the "Calibration" tab (see "Display following input of the password including additional tabs" on page 137).

6.  Ensure that 0 ppm is selected for the lower reference point. Wait one minute before pressing the button to set the lower reference point. You can use the timer integrated in the interface to determine the amount of delay that remains. An acoustic signal is issued once the timer has elapsed. During this one-minute delay, it must be ensured that the H2S concentration in the calibration room is 0 ppm (extraction active and all of the valves on the gas cylinders are closed).



"Calibration" tab

| 1 | Lower reference point (target value in ppm) | 8 | Button for adopting the upper reference point (H2S) |
|---|---|---|---|
| 2 | Upper reference point (target value in ppm) | 9 | Raw value (temperature) |
| 3 | Raw value (H2S) | 10 | Temperature measurement value (calculated with the currently valid values for the offset) |
| 4 | H2S measurement value (calculated with the currently valid values for the offset and slope) | 11 | Offset for calculating the temperature |
| 5 | Determined offset (H2S) | 12 | Timer to determine the remaining delay |
| 6 | Determined slope (H2S) | 13 | Starts/stops the timer [1] |
| 7 | Button for adopting the lower reference point (H2S) | 14 | Button to transfer the values determined for the offset and slope to the sensor module |

[1] After a restart, the timer is automatically reset to the value set via the two dropdown fields.

7. Place the sensor module in the Calibration adapter for BLE sensor module (300665), which should already be connected to the gas extraction station.



Inserting the sensor module in the calibration adapter

| 1 | Hose to the gas extraction station | 3 | Calibration adapter for BLE sensor module (300665) |
|---|---|---|---|
| 2 | Sensor module | | |

8. Ensure that the concentration value of the gas that you are using for the calibration is entered for the upper reference value (recommendation: 30-150ppm). Set the flow controller for the calibration gas to 0.5 l/min. and gas the device for five minutes. Then press the button to adopt the upper reference point (see ""Calibration" tab " on page 138).

> ***Note:*** *If the determined calibration values are outside the valid range, this is indicated by a corresponding message by the DeviceConfig . In this case, the calibration protocol is marked as invalid by means of a watermark with the text "FAILED". It can be assumed that the H2S sensor is defective. In this case, contact the manufacturer (see "Contact information" on page 171).*

9. Press the "Save" button to transfer the determined offset and slope values to the sensor module (see ""Calibration" tab " on page 138). A calibration protocol to ensure traceability is also created during this process, whereby a dialogue window, in which additional information can be added, will initially appear. The protocol is printed once this window is closed by selecting "OK". The standard printer is always used for this purpose without any additional prompt. A PDF writer can also be used.

Dialogue window to enter additional information

---

**Device type**
*Not required for this device class*

**Customer**
*Name of the customer*

| **Customer no. (ERP)** | **AB/RMA no.** |
|---|---|
| *ERP number of the customer* | *Order number or RMA number that the device is assigned to* |

**Gauger**
*Name of the gauger who completed the calibration. The folder specified in the "Path for signatures" must contain a PDF file with the digitised signature of the gauger. The file name of the PDF must correspond exactly with the name of the gauger entered in the "gauger" field.*

**Path for signatures**                                           ...
  *Folder where the PDFs with the digitised signatures of the*   *Opens a dialogue window*
  *gaugers are located.*                                          *to select the folder*

**Last cal:**
  *Time of the last calibration (set automatically, although it can be edited)*

**Next cal:**
  *Time when the next calibration should be completed (suggested automatically, although it can be edited)*

| **Temp** | **rH** | **Pressure** |
|---|---|---|
| *Temperature in the calibration room during the calibration* | *Air humidity in the calibration room during the calibration* | *Air pressure in the calibration room during the calibration* |

**Conditions**
  *Not required for this device class*

| **Gas concentration** | **Precision** | **Expiry** |
|---|---|---|
| *Concentration in ppm of the gas used for the upper reference point* | *Precision in % specified by the manufacturer of the gas used* | *Expiry date of the gas used* |

| **Cal. instrument** | | **Last cal.** |
|---|---|---|
| *Not required for this device class* | | *Not required for this device class* |

| | **Range** | **Precision** |
|---|---|---|
| | *Not required for this device class* | *Not required for this device class* |

**Responsible**
  *Name and address of the company responsible for the calibration*

**Path for PDF**                                                  ...
  *Folder in which the calibration protocols should be saved as*  *Opens a dialogue window*
  *PDFs*                                                          *to select the folder*

                                  **Open protocol after creation**
                                    *Checkbox for selecting whether the calibration protocol*
                                    *should be opened after creation*

### 15.4.1.3 Trimming

*Important note:*

- *Employees must only use those gases or gas concentrations that they are trained to use according to the relevant risk potential.*
- *Alcohol-based cleaning agents must not be used.*

The optional "Calibration set H2S 30ppm  (206.810)" and "Calibration adapter for BLE sensor module (300665)" accessories are recommended for executing the trimming process. If you are under the impression that based on the operational demands, the calibration of the sensor is no longer entirely correct, this can be compensated by the trimming process. This means that the time until the next scheduled calibration can be bypassed. The trim can then be removed again during the next calibration. The basic calibration of the device is not changed by the trimming process. The trim can be removed again at any time by clicking on the "Reset" button (see ""Trim" tab " on page 144).

1. Connect the USB BLE-Adapter (300685) to the USB interface of your PC.

2. Start the DeviceConfig configuration program. It is available for download in the service area of your myDatanet server (see "myDatanet Server Manual " 805002). Installation instructions are provided in the chapter "Installation" on page 81.
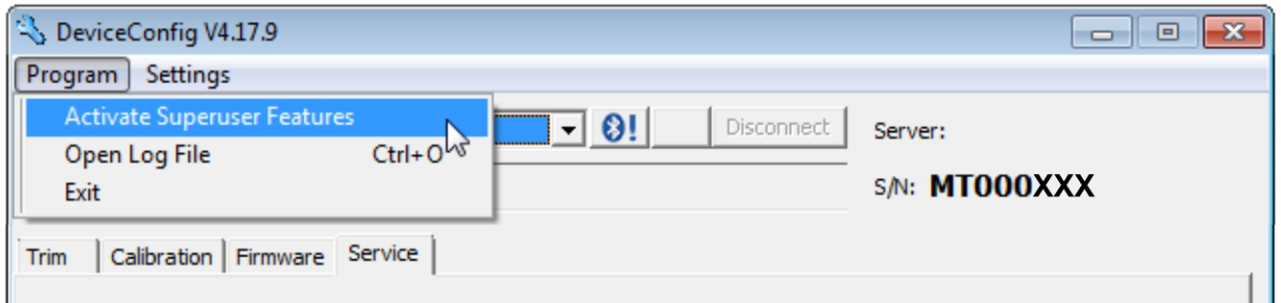


DeviceConfig

3. Connect the sensor module to the PC using the USB BLE-Adapter (300685) supplied (see "Establishing a connection to a sensor module with Bluetooth Low Energy interface" on page 109).

4.  The trimming process can only be completed by a restricted group of people. A password is therefore required. For this purpose, select "Program -> Activate Superuser Features" and enter the password provided by the administrator of your myDatanet server in the dialogue window that appears.

    > *Note: Additional tabs will be displayed within the configuration program depending on the level of the password.*



Display following input of the password including additional tabs

5.  Select the "Trim" tab (see "Display following input of the password including additional tabs" on page 143).

6. Ensure that 0 ppm is selected for the lower reference point. Wait one minute before pressing the button to set the lower reference point. During this one minute, it must be ensured that no H2S gas reaches the sensor.



"Trim" tab

| 1 | H2Smeasurement value (calculated with the currently valid values for the offset and slope) | 7 | Detected slope |
|---|---|---|---|
| 2 | Upper reference point (target value in ppm) | 8 | Checkbox to display the input fields for the manual input of the trim |
| 3 | Lower reference point (target value in ppm) | 9 | Button to remove the trim |
| 4 | Button for adopting the lower reference point | 10 | Input field for the manual entry of the offset |
| 5 | Button for adopting the upper reference point | 11 | Input field for the manual entry of the slope |
| 6 | Detected offset | 12 | Button to transfer the manually entered values for the offset and slope to the sensor module |

7.  Place the sensor module in the Calibration adapter for BLE sensor module (300665), which should already be connected to the source of the calibration gas.



Inserting the sensor module in the calibration adapter

| 1 | Hose to the source of the calibration gas | 3 | Calibration adapter for BLE sensor module (300665) |
|---|---|---|---|
| 2 | Sensor module | | |

8.  Ensure that the concentration value of the gas that you are using for trimming is entered for the upper reference value (30 ppm when using the "Calibration set H2S 30ppm (206.810)" ). Set the flow controller for the calibration gas to 0.5 l/min. and gas the device for five minutes. Then press the button to adopt the upper reference point (see ""Trim" tab " on page 144). During this process the values determined for the offset and slope are also transferred to the sensor module.

> *Note: There is also an option to display the input fields for manually entering the offset and slope by selecting the checkbox "More Settings" (see ""Trim" tab " on page 144). By clicking on the "Save" button, the manually entered values for the offset and slope are transferred to the sensor module.*

### 15.4.1.4 Zero point adjustment

The zero point adjustment is used to compensate for adjustments of the zero point. The basic calibration of the device is not changed by the zero point adjustment.

1. Connect the USB radio transmitter (206.657) to the USB interface of your PC.

2. Start the DeviceConfig configuration program. It is available for download in the service area of your myDatanet server (see "myDatanet Server Manual " 805002). Installation instructions are provided in the chapter "Installation" on page 81.
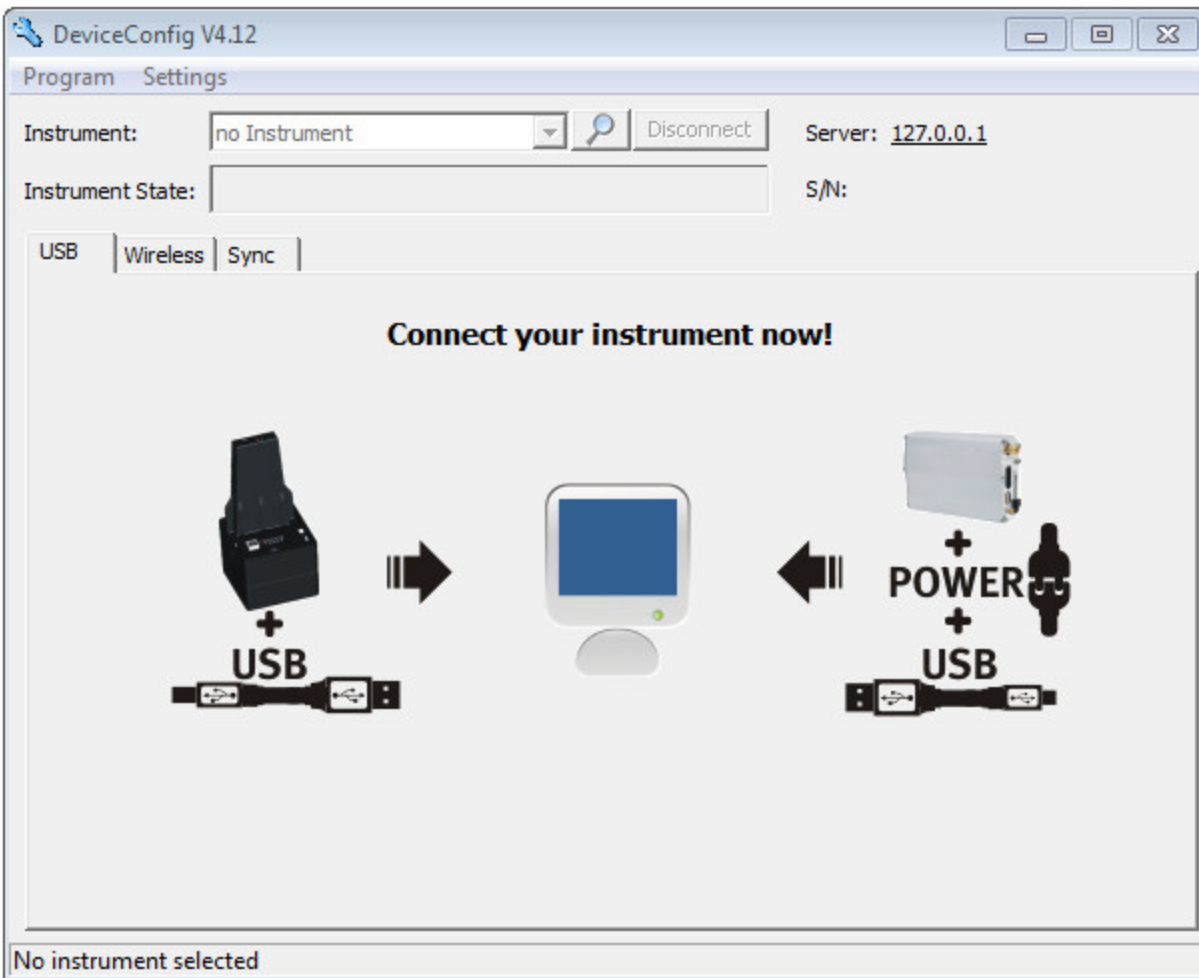


DeviceConfig

3. Connect the myDatasensH2S1000 BLE to the PC using the USB BLE-Adapter (300685) supplied (see "Connecting a Device via Bluetooth Low Energy" on page 85).

4. Select the "Zero" tab (see ""Zero" tab " on page 147).

5. Ensure that no H2S gas reaches the sensor. Wait until the displayed ppm value is stable and then click on "Zero".



"Zero" tab

| **1** H2S concentration in ppm | **2** Button to complete the zero point adjustment |
|---|---|
| In contrast to what is shown on the display and measurement value graphics, negative values are not cut off. | |

# Chapter 16 Removal/disposal

**Incorrect disposal can cause environmental hazards.**

Dispose of the device components and packaging material in accordance with the locally valid environmental regulations for electronic products.

1. Remove the rechargeable battery or battery pack and dispose of it separately.

**Logo of the EU WEEE Directive**

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

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

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

# Chapter 17 Troubleshooting and repair

## 17.1 General problems

| Problem | Cause/solution |
|---|---|
| Device does not respond (nothing appears on the display). | • Batteries are completely discharged |
| Communication problems (between myDatasensH2S1000 BLE and PC) | • Reduce the distance between the myDatasensH2S1000 BLE and USB BLE-Adapter , and try to avoid obstacles such as walls and similar.<br>• Check the value displayed by the DeviceConfig for the wireless signal level [dBm]. To ensure a stable connection, this value should be higher than -90dBm , for example -85dBm (see "Connecting a Device via Bluetooth Low Energy" on page 85).<br>• The capacity of the battery pack is virtually depleted. |
| Not all or no data is available on the server. | • The measurement data and configurations have not been synchronised between the DeviceConfig configuration program and the myDatanet server.<br>• The assignment of the device and site is not correct (see "Site" on page 70 or "Creating the site" on page 125). |
| H2S measurement value is not plausible. | • Check the display for the number of remaining days until the next calibration or next service is due (see "Display" on page 58). |

## 17.2 Log entries and error codes

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 1000 | POWER ON | 0 | --- | Restart following a power failure |
| | | 4 | --- | Watchdog reset (e.g. because of an exception) |
| | | 6 | --- | Reset was initiated by the device itself (e.g. in event of firmware update) |
| | | ## | -- | Restart for another reason. There may be a hardware problem if the "POWER ON" log entry with a parameter code that is not equal to 0 or 6 is contained in the device log several times. Contact the manufacturer in this case (see "Contact information" on page 171). |
| 1030 | UV LOCKOUT | --- | --- | The device switches to energy saving mode and terminates all of the operations as the rechargeable battery or battery voltage is too low. Only the charge controller, if present, remains active. |
| 1031 | UV RECOVER | --- | --- | The rechargeable battery or battery voltage once again suffices to guarantee reliable operation. This is achieved by replacing the rechargeable battery or battery pack.The device resumes normal operation in accordance with the configuration. |
| 1034 | CONTROLLER UPDATE | ## | --- | Controller firmware update was completed successfully<br><br>This entry is always duplicated in the device log. In the first entry, the parameter specifies the major version number (e.g. 3 for 03v011), while in the second entry it specifies the minor version number (e.g. 11 for 03v011). |
| 1035 | EXCEPTION | ## | --- | An internal system error was detected that caused the device to restart. The parameter specifies the type of system error. Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 171). |
| 1161 | LOG REFORMATFILE | ## | --- | Errors in file system have been resolved. This can result in data being lost (data and/or log entries). The parameter contains more information on the problem. Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 171). |

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| **Code** | **Plain text** | **Code** | **Plain text** | |
| 1192 | FUTURE TIMESTAMP | ## | --- | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |
| 1201 | MODEM NOT FOUND | --- | | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |
| 1207 | GSM NETWORK REGISTRATION | 0 | NOT REGISTERED | Not registered, modem is currently not looking for any new operators to register |
| | | 1 | HOME | Registered, home network |
| | | 2 | SEARCHING | Not registered, but the modem is currently looking for a new operator with which it can register |
| | | 3 | DENIED | Registration denied |
| | | 4 | UNKNOWN | Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover) |
| | | 5 | ROAMING | Registered, roaming |
| 1208 | GPRS NETWORK REGISTRATION | 0 | NOT REGISTERED | Not registered, modem is currently not looking for any new operators to register |
| | | 1 | HOME | Registered, home network |
| | | 2 | SEARCHING | Not registered, but the modem is currently looking for a new operator with which it can register |
| | | 3 | DENIED | Registration denied |
| | | 4 | UNKNOWN | Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover) |
| | | 5 | ROAMING | Registered, roaming |
| 1219 | LTE NETWORK REGISTRATION | 0 | NOT REGISTERED | Not registered, modem is currently not looking for any new operators to register |
| | | 1 | HOME | Registered, home network |
| | | 2 | SEARCHING | Not registered, but the modem is currently looking for a new operator with which it can register |
| | | 3 | DENIED | Registration denied |
| | | 4 | UNKNOWN | Unknown (e.g. outside the GERAN/UTRAN/E-UTRAN cover) |
| | | 5 | ROAMING | Registered, roaming |

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 1281 | ZLIB STREAMPROCESS ERR | ## | --- | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |
| 1282 | ZLIB STREAMFINISH ERR | ## | --- | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |
| 1317 | BLE CONNECTED | --- | --- | Bluetooth connection to a PC established |
| 1318 | BLE DISCONNECTED | --- | --- | Bluetooth connection was terminated |
| 1335 | LOG_SHT2X_STATE | 0 | SHT2X SENSOR OK | The internal temperature and air humidity sensor is returning valid values again |
| | | 1 | SHT2X RH ERROR | A communication error occured when reading the air humidity value from the internal temperature and air humidity sensor. |
| | | 2 | SHT2X TEMP ERROR | A communication error occured when reading the temperature value from the internal temperature and air humidity sensor. |
| | | 3 | SHT2X RH+TEMP ERROR | A communication error occured when reading the measurement value from the internal temperature and air humidity sensor. |
| | | 4 | SHT2X PLAUSIBILITY ERROR | The values received from the internal temperature and air humidity sensor are not plausible (rH <0% rH or >100% rH or temperature <-40°C or >125°C) |
| 1336 | SHT2X COM ERR | --- | --- | Communication with the internal temperature and air humidity sensor is not possible (sensor not present or faulty) |
| 1337 | SHT2X COM ERR1 | --- | --- | Starting the internal temperature measurement failed |
| 1338 | SHT2X COM ERR2 | --- | --- | Starting the internal air humidity measurement failed |
| 1339 | SHT2X TEMP RAW | ## | --- | Temperature raw value (register value from the internal temperature and air humidity sensor) if a plausibility error (SHT2X PLAUSIBILITY ERROR) was detected |
| 1340 | SHT2X RH RAW | ## | --- | Air humidity raw value (register value from the internal temperature and air humidity sensor) if a plausibility error (SHT2X PLAUSIBILITY ERROR) was detected |

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 1910 | ACCU 0 E2PROM ERROR | 0 | --- | Rechargeable battery not available |
| | | 1 | --- | Invalid length of the data structure in the EEPROM of the rechargeable battery |
| | | 2 | --- | No charging profile available in the EEPROM (only with Li-ion rechargeable batteries) |
| | | 3 | --- | Error when reading the SoC-value |
| | | 4 | --- | Error when writing the SoC-value |
| | | 5 | --- | The charging profiles of the rechargeable batteries inserted do not match (only with devices that support the simultaneous use of multiple rechargeable batteries) |
| | | 6 | --- | • Permissible charging time exceeded<br>• When restarting the device, it was recognised that the rechargeable battery currently in use has already exceeded the permissible charging time once.<br><br>The battery is probably defective and should be checked by the manufacturer. |
| 2000 - 2199 | MODULE ERR | ## | --- | Reserved for extensions |
| 2200 - 2399 | MODULE WARNING | ## | --- | Module-specific uncritical error (see "Module-specific uncritical error " on page 157) |
| 2400 - 2599 | MODULE INFO | ## | --- | Module-specific information about the current operating state (see "Module-specific information regarding the current operating state" on page 158) |
| 2600 - 2799 | MODULE DEBUG | ## | --- | Reserved for extensions |
| 3000 - 3099 | SCRIPT ERROR | ## | -- | Internal system error<br><br>Contact the manufacturer if the device log contains this error with the same parameter code several times (see "Contact information" on page 171). |

## 17.2.1 Module-specific critical errors

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 2003 | Measurement OK | 0 | --- | The measurement can be completed correctly again. |
| | Measurement error | 1 | --- | E03 ... last measurement failed<br><br>• BLE pairing of sensor module and myDatasensH2S1000 BLE faulty<br>• Sensor module battery is depleted (check "PowerOn Flag") |
| 2013 | BLE found too many sensors | 1 | --- | E13 ... Unambiguous selection of the sensor module for BLE pairing not possible (several sensors in range) |
| 2015 | mA link output faulty | 0 | --- | E15 ... The BLE mA Link has not confirmed receipt of the new setpoint. This means, it is not ensured that the new setpoint will also be issued correctly. |
| 2016 | Gateway FW not applicable | 0 | --- | E16 ... The firmware installed in myDatasensH2S1000 BLE does not meet the minimum requirements of the device logic |
| 2017 | BLE FW not applicable | 0 | --- | E17 ... The BLE scanner app installed in myDatasensH2S1000 BLE does not meet the minimum requirements of the device logic |
| 2018 | mA link not connected | 0 | --- | E18 ... BLE pairing of BLE mA Link and myDatasensH2S1000 BLE faulty |
| 2032 | mA link loop re-established | 0 | --- | It is possible to issue setpoints again via BLE mA Link . The 4-20 mA current loop is intact again. |
| | mA link loop open | 1 | --- | E32 ... Not possible to issue setpoints via BLE mA Link , as the 4-20 mA current loop is interrupted. |
| 2090 | Record list out of range | ## | --- | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |

## 17.2.2 Module-specific uncritical error

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 2200 | Service required | 0 | --- | The batteries of the myDatasensH2S1000 BLE need to be replaced |
| 2201 | Calibration required | 0 | --- | Calibration of the sensor module is due |
| 2210 | BLE reset | 0 | --- | Reset of the BLE chip after three unsuccessful scan attempts for sensor modules |
| | | 1 | --- | Reset of the BLE chip after a communication timeout during an existing connection. The timeout occurred during the communication with a sensor module. |
| | | 16 | --- | Reset of the BLE chip after three unsuccessful scan attempts for BLE mA Link output modules |
| | | 17 | --- | Reset of the BLE chip after a communication timeout during an existing connection. The timeout occurred during the communication with a BLE mA Link output module. |
| | | 18 | --- | Reset of the BLE chip following a problem when disconnecting the connection to the BLE mA Link output module. |
| 2220 | Configuration faulty | 1 | --- | The transmission cycle is less than 10 min. |
| | | 2 | --- | Internal error<br><br>Contact the manufacturer if the device log includes this error several times (see "Contact information" on page 171). |
| | | 3 | --- | The record interval is less than 30 sec. |

## 17.2.3 Module-specific information regarding the current operating state

| Log entry | | Parameter | | Description |
|---|---|---|---|---|
| Code | Plain text | Code | Plain text | |
| 2400 | Sensor module has been removed | 0 | --- | The sensor module has been removed from the sensor recess of the myDatasensH2S1000 BLE . |
| | Sensor module has been inserted | 1 | --- | The sensor module has been inserted in the sensor recess of the myDatasensH2S1000 BLE . |
| 2401 | Serial number of the inserted sensor module | ##/## | --- | The serial number of the inserted sensor module is displayed in the following format in the parameter field:<br><br>Higher 16 bit of the serial number / lower 16 bit of the serial number |
| 2402 | Serial number of the connected mA link | ##/## | --- | The serial number of the connected BLE mA Link is displayed in the following format in the parameter field:<br><br>Higher 16 bit of the serial number / lower 16 bit of the serial number |
| 2410 | Solenoid switch | 0 | Released | Solenoid switch was released again after being pressed |
| | | 1 | Pressed | Solenoid switch pressed |
| 2420 | Start BLE scan | 0 | Sensor | The scan for sensor modules has been started |
| | | 1 | mA link | The scan for BLE mA Link output modules has been started |
| 2421 | BLE (recognised devices) | ## | --- | BLE devices were found. Depending on whether the previously started scan was for sensor modules or BLE mA Link output modules, the parameter specifies the number of found sensor modules or BLE mA Link output modules. |
| 2422 | BLE (rescan) | 0 | Sensor | The search for the sensor module was started again as the cyclic check determined that the connection to the sensor module is no longer available. During the first rescan, an attempt is made to re-establish the connection with the last known sensor module. If further rescans are required, all of the sensor modules, that are in range, are taken into consideration and the connection is established with the module with the strongest Bluetooth signal. |
| | | 1 | mA link | The search for the BLE mA Link output module, that is used to output the setpoint, was started again as the cyclic check determined that the connection to the BLE mA Link output module is no longer available. |

# 17.3 Evaluating the device log

## 17.3.1 Evaluating the device log on the myDatanet server

The last 300 log entries on the myDatanet 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.
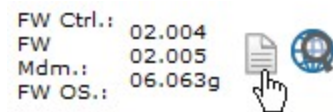


The manual for the server ("myDatanet Server Manual " 805002) includes a detailed description of the evaluation of the device log on the myDatanet server.

## 17.3.2 Evaluating the device log using DeviceConfig

The DeviceConfig program can be used to read all of the stored log entries, including those that have not yet been transferred to the myDatanet server, directly from the myDatasensH2S1000 BLE via the Bluetooth interface.

A more detailed description about the evaluation of the device log using DeviceConfig is included in the user manual for the DeviceConfig ("myDatanetDeviceConfig Manual " 805004).

# Chapter 18 Spare parts and accessories

## 18.1 Assembly sets

| Description | Quantity | Order number |
|---|---|---|
| Niro shackle | 1 | 206.325 |

## 18.2 Sensor modules

| Description | Quantity | Order number |
|---|---|---|
| H2S 7H Sensor module | 1 | 300644 |
| H2S C50 Sensor module | 1 | 300692 |
| H2S BH Sensor module | 1 | 300693 |
| H2S B1 Sensor module | 1 | 300694 |
| H2S BE Sensor module | 1 | 300695 |
| NH3 CR50 Sensor module | 1 | 300700 |
| H2O2 CB100 Sensor module | 1 | 300701 |

## 18.3 Output modules

| Description | Quantity | Order number |
|---|---|---|
| BLE mA Link | 1 | 300870 |

## 18.4 Other accessories

| Description | Quantity | Order number |
|---|---|---|
| MDN Magnet | 1 | 206.803 |
| Calibration set H2S 30ppm | 1 | 206.810 |
| Caliration gas H2S 30ppm | 1 | 206.812 |
| USB extension cable USB-A/USB-A 1,8m | 1 | 206.664 |
| DeviceConfig | 1 | 300264 |
| BLE Gateway MDN Protection casing | 1 | 300662 |

# Chapter 19 Document history

| Rev. | Date | Changes |
|---|---|---|
| 01 | 18.11.2016 | **First version** |
| 02 | 20.12.2016 | **Chapter "Device labelling" on page 29**<br>*Protection class in illustration of the type plate corrected* |
| 03 | 04.04.2017 | **Chapter "Declaration of conformity" on page 9**<br>*Declaration of Conformity of the H2S 7H Sensor module updated* |
| 04 | 04.09.2017 | **Hardware version 2.0**<br>*The device now has an ATEX zone 1 approval.*<br><br>**Chapter "Declaration of conformity" on page 9**<br>*Declaration of Conformity updated*<br><br>**Chapter "Device labelling" on page 29**<br>*Type plate updated*<br><br>**Chapter "Contact information" on page 171**<br>*Web address changed to www.microtronics.com* |
| 05<br><br>(1/4) | 30.11.2021<br><br>(1/4) | **Hardware version 3.0**<br>*The electronic system has been modified to meet the requirements for the certification in accordance with ATEX Zone 1.*<br>*The Bluetooth module has been replaced with a new module that support the "Bluetooth 5.0 Low Energy" standard.*<br>*The size of the installed flash memory has been increased to 64 MBit. This is designed to improve the internal firmware update routines.*<br><br>**Chapter "Declaration of conformity" on page 9**<br>*Declaration of Conformity updated*<br><br>**Chapter "BLE Gateway ATEX " on page 13**<br>*1. Amendment to the EU Type Examination Certificates added*<br><br>**Chapter "H2S 7H Sensor module " on page 19**<br>*EU Type Examination Certificates added for sensor modules*<br><br>**Chapter "Technical data" on page 21**<br>*IP protection class for the complete system, sensor and gateway listed separately*<br><br>**Chapter "Intended use" on page 27**<br>*Information on the manufacturer's liability disclaimer regarding the loss of data has been updated.*<br><br>**Chapter "Device labelling" on page 29**<br>*Type plate updated*<br><br>**Chapter "Warranty" on page 31**<br>*Chapter added* |

| Rev. | Date | Changes |
|------|------|---------|
| 05 (2/4) | 30.11.2021 (2/4) | **Chapter "Disclaimer" on page 32**<br>*Chapter added*<br><br>**Chapter "Obligation of the operator" on page 32**<br>*Reference to the guideline about the minimum health and safety requirements for use of work equipment by workers at work, has been updated.*<br><br>**Chapter "Personnel requirements" on page 33**<br>*Chapter added*<br><br>**Chapter "Technical details about the Bluetooth Low Energy interface" on page 49**<br>*The Bluetooth modul has been replaced by a newer model supporting the "Bluetooth 5.0 Low Energy" standard.*<br><br>**Chapter "Applicable documents " on page 51**<br>*Chapter added*<br><br>**Chapter "Using the Bluetooth connection (BLE) and the myDatanet server" on page 51**<br>*Explanation adapted to version 49v011 of the myDatanet server*<br><br>**Chapter "Reed switch" on page 57**<br>*Explanation adapted for the fact that upon pressing the reed switch briefly, information about the installed software is shown at first, only then the current operating state is shown.*<br><br>**Chapter "Display" on page 58**<br>*Explanation of the information on the display regarding the installed software added*<br>*Explanation of the display of the current state of charge added*<br><br>**Chapter "Specific input screen for configuring the site" on page 61**<br>*Chapter added*<br><br>**Chapter "Setup data" on page 63**<br>*Explanation of the context menu and the tooltip added to the description of the visualisation of the data that is recorded during the setup mode.*<br><br>**Chapter "Default input screen for configuring the site" on page 70**<br>*Chapter added*<br><br>**Chapter "Site" on page 70**<br>*The field "application template" has been replaced by the field "application". It contains the name of the IoT application that serves as basis of the site. The application templates will no longer be developped but replaced by the IoT apps. Explanation of the field "application version" has been added, which indicates the version number of the IoT application that is currently installed on the site.*<br><br>**Chapter "Basic settings" on page 75**<br>*Explanation of the parameter for selecting the report template displaying the data used has been revised (If no report template has been selected, the symbol for the display of the measurement data in the dropdown list of the sites/applications does not show.*|

| Rev. | Date | Changes |
|---|---|---|
| 05<br><br>(3/4) | 30.11.2021<br><br>(3/4) | **Chapter "Basic settings" on page 75**<br>*Explanation of the parameter for selecting the report template used to display the data has been revised (if no report template has been selected, the symbol to display the measurement data is not displayed in the list of sites/applications.)*<br><br>**Chapter "Measurement instrument" on page 76**<br>*Explanation of the parameter "wakeup sms count" has been added.*<br>*Explanation of the field indicating the hardware platform implemented in the device has been added.*<br><br>**Chapter "DeviceConfig " on page 79**<br>*Information on the compatible versions of the operating system updated*<br><br>**Chapter "GasBuster" on page 115**<br>*Information on the required versions of the operating system and the required disk space updated*<br><br>**Chapter "Functional principle" on page 116**<br>*The display of the current measurement data is now also possible if the gas sensor is connected to the Gateway.*<br><br>**Chapter "Overview" on page 117**<br>*Screenshots updated*<br><br>**Chapter "Synchronisation with the myDatanet server" on page 119**<br>*Screenshots updated*<br><br>**Chapter "Overview" on page 121**<br>*Screenshot and description of the overview of the myDatanet servers have been updated (A button to open the notifications and a button to display the menu for the user settings have been added. The help button has been removed.)*<br><br>**Chapter ""Sites / Applications" area at customer level" on page 124**<br>*Explanation of the list of the groups has been removed*<br><br>**Chapter "Groups"**<br>*Chapter removed*<br><br>**Chapter "Creating the site" on page 125**<br>*Chapter revised*<br><br>**Chapter "Assigning a device to the customer"**<br>*Chapter removed*<br><br>**Chapter "rapidM2M Playground " on page 129**<br>*Screenshot and description of the rapidM2M Playgrounds updated (Button "System Console" has been removed, button for the Global Settings has been added)*<br><br>**Chapter "Calibration process" on page 136**<br>*Note added indicating that the DeviceConfig reports a faulty gas sensor (requires Device Config Version 4.19.20)*<br><br>**Chapter "Removal/disposal" on page 149**<br>*Reference to the guideline about waste electric and electronic equipment updated*<br>*Notes regarding recycling and environmentally friendly disposal of old electrical and electronic appliances added*<br><br>**Chapter "Log entries and error codes" on page 152**<br>*Explanation of the log entry "FUTURE TIMESTAMP" added* |

| Rev. | Date | Changes |
|---|---|---|
| 05 (4/4) | 30.11.2021 (4/4) | **Chapter "Sensor modules" on page 161**<br>*H2S C50 Sensor module (300692), H2S BH Sensor module (300693), H2S B1 Sensor module (300694), H2S BE Sensor module (300695), NH3 CR50 Sensor module (300700) and H2O2 CB100 Sensor module (300701) added*<br><br>**Chapter "Output modules" on page 161**<br>*Chapter added*<br><br>**Chapter "Glossary" on page 169**<br>*Explanation of the "App Center", "App Model", "Device Logic", "Hardware ID String", "IoT App", "Product revision", "rapidM2M Store" and "rapidM2M Timestamp" added* |
| 06 | 27.05.2022 | **Chapter "Display" on page 58**<br>*Explanation of the display of the setup mode result added*<br>*Explanation of the faults E15-E18 and E32 added*<br><br>**Chapter "Measurement instrument" on page 76**<br>*Chapter revised*<br><br>**Chapter "Module-specific critical errors" on page 156**<br>*Chapter added*<br><br>**Chapter "Module-specific uncritical error " on page 157**<br>*Explanation of the log entries revised and new log entries added*<br><br>**Chapter "Module-specific information regarding the current operating state" on page 158**<br>*Explanation of the log entries revised and new log entries added* |
| 07 (1/2) | 20.03.2023 (1/2) | **Hardware version 4.1**<br>*The internal current limitation has been modified to meet the requirements for a possible certification for ATEX zone 1.*<br><br>**Chapter "H2S 7H Sensor module " on page 19**<br>*Pages 2-4 of the EU Type Examination Certificates removed*<br><br>**Chapter "Technical data" on page 21**<br>*Max. device operation time adjusted from 2 to 10 years*<br><br>**Chapter "General product information" on page 28**<br>*Listing of the internal measurement values that are recorded in addition to the H2S concentration extended to include "Runtime Service", "Runtime Calib" and "Runtime mA Link".*<br><br>**Chapter "Inserting the sensor module" on page 48**<br>*Link and QR code referring to the How-To-Video "Inserting the sensor module" added.*<br><br>**Chapter "Testing communication between the myDatasensH2S1000 BLE and the myDatanet server (Bluetooth connection) " on page 54**<br>*Explanations adapted to account for the fact that sites are now created based on IoT apps and no longer based on application templates. The application templates are no longer developed but replaced by the IoT apps*<br>*Link and QR code referring to the How-To-Video "Inserting the sensor module" added.* |

| Rev. | Date | Changes |
|---|---|---|
| 07<br><br>(2/2) | 20.03.2023<br><br>(2/2) | **Chapter "Testing communication between myDatasensH2S1000 BLE and DeviceConfig " on page 55**<br>*Link and QR code referring to the How-To-Video "Inserting the sensor module" added.*<br><br>**Chapter ""Customer" area" on page 122**<br>*Screenshots of the user interface of the myDatanet servers adapted to version 50v007*<br><br>**Chapter ""Sites / Applications" area at customer level" on page 124**<br>*Screenshots of the user interface of the myDatanet servers adapted to version 50v007*<br><br>**Chapter "Replacing the sensor module " on page 132**<br>*Links and QR codes referring to the How-To-Videos added*<br><br>**Chapter "Log entries and error codes" on page 152**<br>*Explanation of the error codes "MODEM NOT FOUND"" and "ACCU 0 E2PROM ERROR" added* |
| 08<br><br>(1/2) | 27.06.2023<br><br>(1/2) | **Hardware version 5.0**<br>*The device now has an ATEX zone 1 approval.*<br><br>**Chapter "BLE Gateway ATEX " on page 13**<br>*$2^{nd}$ Amendment to the EU Type Examination Certificates added*<br><br>**Chapter "Technical data" on page 21**<br>*Specification of the weight corrected from 690g to 760g*<br>*Specification of the max. immersion depth and max. immersion duration for IP68 added.*<br>*Storage temperature for complete system, sensor and gateway listed separately*<br><br>**Chapter "Device labelling" on page 29**<br>*Type plate updated* |
| 08<br><br>(2/2) | 27.06.2023<br><br>(2/2) | **Chapter "Testing communication between myDatasensH2S1000 BLE and DeviceConfig " on page 55**<br>*Step added indicating that the configuration program DeviceConfig must be used to establish a Bluetooth connection between device and PC.*<br><br>**Chapter "Maintenance of the myDatasensH2S1000 BLE " on page 131**<br>*Maximum device operation time of the gateway adjusted from 2 to 10 years* |
| 09 | 25.07.2023 | **Kapitel "Ex protection" on page 24**<br>*Note with regards to cleaning the device adjusted. It is permitted to clean the product with a moist cloth.*<br>*Note added indicating that the device has to be protected from UV radiation.* |

# Chapter 20 Glossary

**App centre**

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

**App model**

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

**Device logic**

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

**Hardware ID string**

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

**IoT app**

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

**NaN value**

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

**Product revision**

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

**rapidM2M Store**

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

**rapidM2M timestamp**

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

# Chapter 21 Contact information

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