

KSB Guard

For Use in Potentially Explosive Atmospheres

Installation/Operating Manual



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Installation/Operating Manual KSB Guard

Original operating manual

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Glossary

Mat. No.

This identification number is composed of an 8-digit numerical code that uniquely identifies a product entered in SAP.

1 General

1.1 Principles

This operating manual is valid for the type series and variants indicated on the front cover.

The operating manual describes the proper and safe use of this equipment in all phases of operation.

The name plate indicates the type series, the main operating data and the serial number. The serial number uniquely describes the product and is used as identification in all further business processes.

In the event of damage, immediately contact your nearest KSB service facility to maintain the right to claim under warranty.

1.2 Target group

This operating manual is aimed at the target group of trained and qualified specialist technical personnel.

1.3 Other applicable documents

Table 1: Overview of other applicable documents

Document	Contents
Operating manual of the pump (set)	Description/operation of the pump (set)
Supplementary operating manual of explosion protection measures	Special information on installation in a potentially explosive atmosphere

For accessories and/or integrated machinery components, observe the relevant manufacturer's product literature.

1.4 Symbols

Table 2: Symbols used in this manual

Symbol	Description
✓	Conditions which need to be fulfilled before proceeding with the step-by-step instructions
▷	Safety instructions
→	Result of an action
⇔	Cross-references
1. 2.	Step-by-step instructions
	Note Recommendations and important information on how to handle the product

1.5 Key to safety symbols/markings

Table 3: Definition of safety symbols/markings

Symbol	Description
 DANGER	DANGER This signal word indicates a high-risk hazard which, if not avoided, will result in death or serious injury.
 WARNING	WARNING This signal word indicates a medium-risk hazard which, if not avoided, could result in death or serious injury.

Symbol	Description
	CAUTION This signal word indicates a hazard which, if not avoided, could result in damage to the machine and its functions.
	Explosion protection This symbol identifies information about avoiding explosions in potentially explosive atmospheres in accordance with EU Directive 2014/34/EU (ATEX).
	General hazard In conjunction with one of the signal words this symbol indicates a hazard which will or could result in death or serious injury.
	Electrical hazard In conjunction with one of the signal words this symbol indicates a hazard involving electrical voltage and identifies information about protection against electrical voltage.
	Machine damage In conjunction with the signal word CAUTION this symbol indicates a hazard for the machine and its functions.



2 Safety

All the information contained in this section refers to hazardous situations.

In addition to the present general safety information the action-related safety information given in the other sections must be observed.

2.1 General

- This operating manual contains general installation, operating and maintenance instructions that must be observed to ensure safe operation of the system and prevent personal injury and damage to property.
- Comply with all the safety instructions given in the individual sections of this operating manual.
- The operating manual must be read and understood by the responsible specialist personnel/operators prior to installation and commissioning.
- The contents of this operating manual must be available to the specialist personnel at the site at all times.
- Information and markings attached directly to the product must always be complied with and kept in a perfectly legible condition at all times. This applies to, for example:
 - Markings for connections
 - Name plate
- The operator is responsible for ensuring compliance with all local regulations not taken into account.

2.2 Intended use

- The values specified in the technical product literature for the mains voltage and ambient temperature must not be exceeded. The device must only be operated in accordance with the instructions provided in the operating manual and other applicable documents.

2.3 Personnel qualification and personnel training

All personnel involved must be fully qualified to install, operate, maintain and inspect the equipment this manual refers to. The responsibilities, competence and supervision of all personnel involved in transport, installation, operation, maintenance and inspection must be clearly defined by the operator.

Deficits in knowledge must be rectified by means of training and instruction provided by sufficiently trained specialist personnel. If required, the operator can commission the manufacturer/supplier to train the personnel.

Training on the device must always be supervised by specialist technical personnel.

2.4 Consequences and risks caused by non-compliance with this operating manual

- Non-compliance with this operating manual will lead to forfeiture of warranty cover and of any and all rights to claims for damages.
- Non-compliance can, for example, have the following consequences:
 - Hazards to persons due to electrical, thermal, mechanical and chemical effects and explosions
 - Failure of important product functions
 - Failure of prescribed maintenance and servicing practices

2.5 Safety awareness

In addition to the safety information contained in this operating manual and the intended use, the following safety regulations shall be complied with:

- Accident prevention, health regulations and safety regulations
- Safety regulations for handling hazardous substances
- Applicable standards, directives and laws

2.6 Safety information for the user/operator

- Make sure KSB Guard Gateway cannot be accessed by unauthorised persons (e.g. children).

2.7 Software changes

The software has been specially created for this product and thoroughly tested. Making changes or additions to the software or parts of the software is prohibited. In irregular intervals updates will be made to KSB Guard Gateway and to the Transmission and battery units. These updates will run automatically in the background and serve to enhance the product performance.

2.8 Explosion protection

Always observe the information on explosion protection given in this section when operating the product in potentially explosive atmospheres.

Only devices marked as explosion-proof may be used in potentially explosive atmospheres.

Special conditions apply to the operation of explosion-proof devices to EU Directive 2014/34/EU (ATEX).

Especially adhere to the sections in this manual marked with the Ex symbol and the following sections, (⇒ Section 2.8.1, Page 9) to (⇒ Section 2.8.2, Page 9)

The explosion-proof status is only assured if the product is used in accordance with its intended use.

Never operate the product outside the limits stated on the name plate. Prevent impermissible modes of operation at all times.

2.8.1 Marking

The individual devices are marked as follows in accordance with Directive 2014/34/EU:

- Sensor unit: Ⓜ II 2G Ex ib IIC T4 Gb
- Transmission and battery unit: Ⓜ II 2G Ex ib IIC T4 Gb
- KSB Guard Gateway: Ⓜ II 2(1) G Ex db eb mb [ia Ga] IIC T4 Gb

2.8.2 Installation, commissioning and maintenance

Special regulations apply to the installation, commissioning and maintenance of explosion-proof devices. Modifications or alterations can affect explosion protection and are only permitted after consultation with the manufacturer. Installation, commissioning and maintenance must only be performed in accordance with the manufacturer's instructions.

The personnel employed to install, commission and maintain the device has to be familiar with the corresponding ATEX standards (DIN EN 60079-14 and -17) as well as with the details of the explosion protection regulations applicable to the system.



3 Transport/Storage/Disposal

3.1 Checking the condition upon delivery

1. On transfer of goods, check each packaging unit for damage.
2. In the event of in-transit damage, assess the exact damage, document it and notify KSB or the supplying dealer and the insurer about the damage in writing immediately.

3.2 Transport

	CAUTION
	<p>Improper transport Damage to the device!</p> <ul style="list-style-type: none"> ▷ Always transport the device properly and in its original packaging. ▷ For transport, observe the transport instructions on the original packaging. ▷ Do not throw the device.

1. Upon receipt, unpack the device and check for in-transit damage.
2. Report any in-transit damage to the manufacturer immediately.
3. Dispose of packaging material in accordance with local regulations.

3.3 Storage

If the ambient conditions for storage are met, the function of the device will be ensured even after a prolonged period of storage.

	CAUTION
	<p>Damage during storage due to humidity, dirt or vermin Corrosion/contamination of the device!</p> <ul style="list-style-type: none"> ▷ For outdoor storage cover the (packed or unpacked) device and accessories with water-proof material.

Table 4: Ambient conditions for storage

Ambient condition	Value
Relative humidity	85 % max. (non-condensing)
Ambient temperature	-40 °C to +70 °C

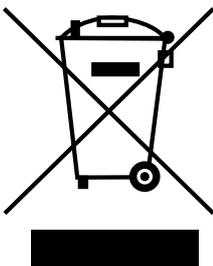
1. Store the device in dry conditions and in its original packaging.
2. Store the device in a dry room in which the atmospheric humidity is maintained at a constant level (as far as this is possible).
3. Prevent excessive fluctuations in atmospheric humidity.

3.4 Disposal

Electrical or electronic equipment marked with the adjacent symbol must not be disposed of in household waste at the end of its service life.

Contact your local waste disposal partner for returns.

If the used electrical or electronic equipment contains personal data, the operator is responsible for deleting it before the equipment is returned.





NOTE

Due to certain components it contains, the device is classified as special waste and meets RoHs 2011/65/EC requirements.
Once decommissioned, the device must be properly disposed of in accordance with local regulations.

4 Description

4.1 General description

Monitoring device for monitoring vibrations and temperatures of pump sets.

4.2 Product information

4.2.1 Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see <https://www.ksb.com/ksb-en/About-KSB/Corporate-responsibility/reach/>.

4.3 Name plates

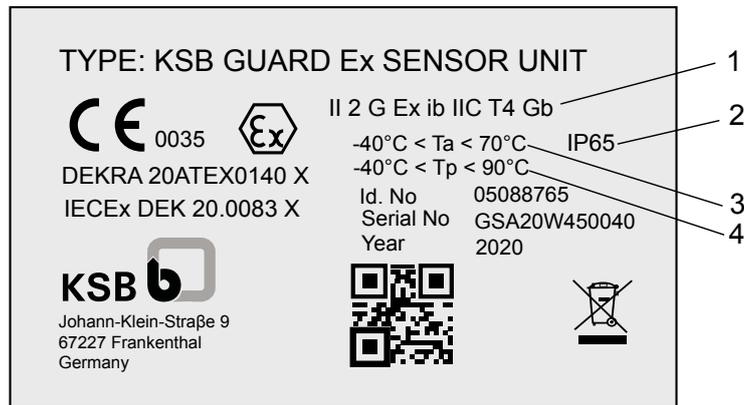


Fig. 1: Name plate of sensor unit (example)

1	ATEX marking	2	Enclosure
3	Ambient temperature	4	Surface temperature of mounting position

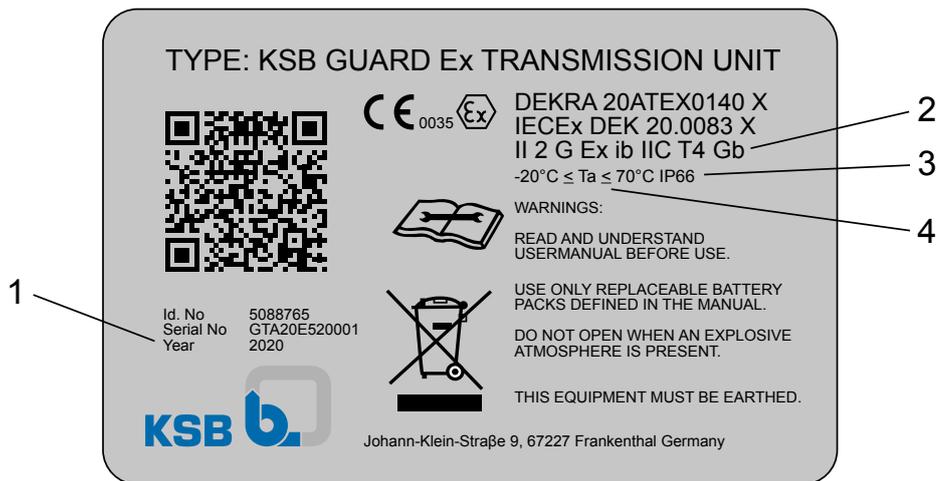


Fig. 2: Name plate of transmission and battery unit (example)

1	Year of construction	2	ATEX marking
3	Enclosure	4	Ambient temperature

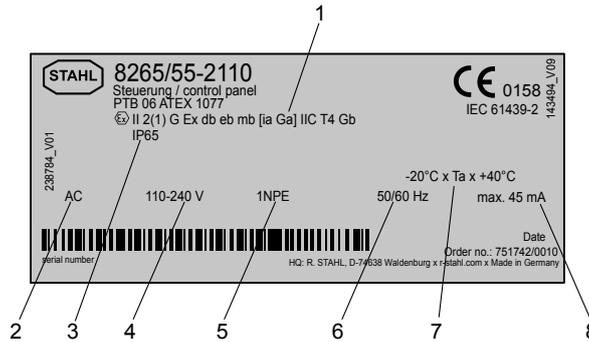


Fig. 3: Name plate of KSB Guard Gateway (example)

1	ATEX marking	2	Type of power supply: AC voltage
3	Enclosure	4	Supply voltage range
5	Connection with 3-core cable (L1 / N / PE)	6	Frequency of mains voltage
7	Ambient temperature	8	Supply current

4.4 Technical data

Sensor unit Table 5: Technical data of sensor unit

Characteristic	Value
Material	Aluminium
Dimensions (LxWxH) [mm]	50 x 45 x 30
Enclosure	IP65
Cable type	1.5 m, PUR, 6-core
Permissible surface temperature of the pump (process temperature)	-40 to 90 °C
Ambient temperature	-20 to +70 °C

Transmission and battery unit Table 6: Technical data of transmission and battery unit

Characteristic	Value
Material	Glass fibre reinforced polyester
Dimensions (LxWxH) [mm]	110 x 75 x 75
Enclosure	IP66
Permissible surface temperature	-20 to +70 °C
Power supply	Battery pack with lithium thionyl chloride battery (max. 17 Ah, not rechargeable)
Wireless module	ISM band, 2.4 GHz
Connection	M8, 6-pin

KSB Guard Gateway Table 7: Technical data of KSB Guard Gateway

Characteristic	Value
Supply voltage	110 - 240 V, AC voltage
Mains frequency	50/60 Hz
Power input	< 5 W
In-service ambient temperature	-20 to 40 °C
Weight	Approx. 25 kg
Dimensions	Approx. 500 x 300 x 230
Type N connector, connection A	Antenna for 2.4 GHz (WLAN / Bluetooth)

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Characteristic	Value
Type N connector, connection B	Antenna for 2G/3G/4G mobile network, included in standard accessories ¹⁾
Internal SIM card ²⁾	Pre-configured

4.5 Function

- Sensor unit** The sensor unit is preferably installed at the pump’s bearing bracket or drive lantern, where it measures the pump’s vibrations and temperature trends using built-in sensors. This data is sent to the transmission and battery unit.
- Transmission and battery unit** The sensor unit is connected to the transmission and battery unit with a connecting cable.
The transmission and battery unit sends the measured data to KSB Guard Gateway via a radio signal.
- KSB Guard Gateway** KSB Guard Gateway collects the data of the sensor unit and transfers it to the KSB Cloud in encrypted format. The data can be accessed via the KSB Guard app or the ksbguard.net web portal.
One KSB Guard Gateway can process the data of up to 40 transmission and battery units, if they send data once an hour. If data transmission is more frequent, the number of units per gateway is reduced.

4.6 Measured values

- Temperature** The temperature is measured inside the sensor unit. The values can therefore differ from the actual surface temperature of the pump set.
- Vibrations** The vibration values are measured in three axes and usually output as RMS values.

4.7 KSB Guard Gateway

KSB Guard Gateway cannot be accessed; it is located in a flameproof enclosure. All connections (antennas, power supply) are located outside the flameproof enclosure.

¹ Extension cable available from KSB
² The SIM card is pre-installed and cannot be replaced.

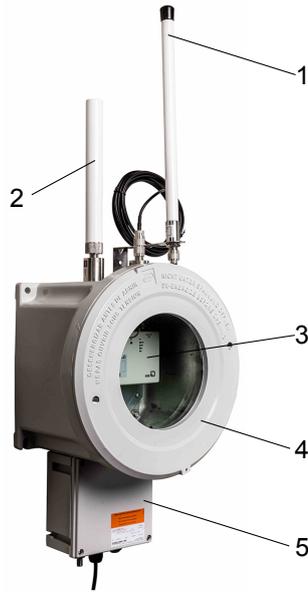


Fig. 4: KSB Guard Gateway in flameproof enclosure

1	Antenna connection for mobile data (LTE)	2	Sensor network antenna connection
3	KSB Guard Gateway	4	Flameproof enclosure
5	Terminal box		

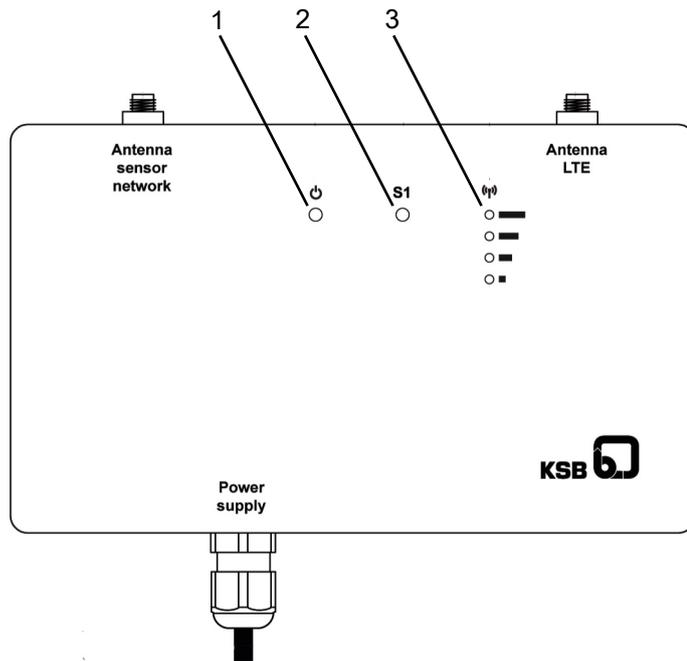


Fig. 5: KSB Guard Gateway

1	Status LED for supply voltage	2	Status LED S1 for connection status
3	Level LEDs for mobile network signal strength		

Table 8: Description of LED indicators

No.	LED	Status	Description
1	Supply voltage	OFF	Device is out of operation or in the initialisation phase.
		Green	Device is in operation. No faults present.
		Red or flashing red	Device is in operation. Faults are present.

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No.	LED	Status	Description
2	Connection status S1	OFF	Device waiting for mobile data connection
		Flashing in yellow, double pulse signal (approx. 3 min after switch-on)	Problems with Internet connection
		Green	Mobile network and Internet accessible
		Green, flashing slowly	New firmware found. Internal firmware update started.
3	Mobile network signal strength	4th LED green	Signal strength > -75 dBm
		3rd LED green	Signal strength > -85 dBm
		2nd LED green	Signal strength > -95 dBm
		1st LED green	Signal strength < -95 dBm

4.8 Sensor unit

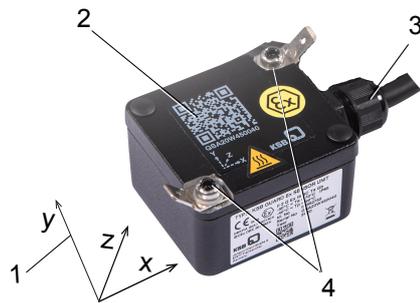


Fig. 6: Sensor unit with coordinate system

1	Coordinate system (for vibration measurement)	2	QR code
3	Connecting cable to transmission and battery unit	4	Earthing connections

4.9 Transmission and battery unit



Fig. 7: Transmission and battery unit

1	Position of internal antenna	2	Status LED A (red)
3	Status LED B (green)	4	Pushbutton

5	Level LEDs for indicating the signal strength of the KSB Guard Gateway connection	6	Earthing connection
7	Connection for the connecting cable to the sensor unit		

Table 9: Description / function of control elements and LED indicators

Control element / LED indicator	Description
Pushbutton	Commissioning, status check, manual measurement
Status LED A	Status LEDs for indicating the operating status and for coded output of fault messages
Status LED B	
Level LEDs	Signal strength of KSB Guard Gateway connection

5 Installation / Commissioning

5.1 Setting up access to the KSB Guard system

Send the following information to this e-mail address:

- E-mail: ksbguard-support@ksb.com

Table 10: Required data

Required data	Notes
Organisation's name (e.g. company name, such as <i>XY Industrial Estate, Exampleville Waterworks.</i>)	
Company's post / zip code	
Company's city	
Company's country	
Company's customer number (at KSB if applicable)	
Administrator's name (the first company employee who is to have access to / use the KSB Guard. This person can then add further users.)	
Administrator's e-mail address	

A customer account will be created with this data.

A system-generated welcome e-mail will be sent to the e-mail address entered. This e-mail will also contain a prompt to change the initial password.

5.2 Installation

	NOTE
	For all queries relating to the actual installation (e.g. positioning of components, reception quality, etc.) KSB Guard Support will be available. (⇒ Section 9, Page 38)

5.2.1 Fitting KSB Guard Gateway

	DANGER
	<p>Sparks produced during installation work or servicing work Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Observe the safety regulations in force at the place of installation. ▷ Always perform installation work or maintenance work on explosion-proof devices outside of potentially explosive atmospheres.

	DANGER
	<p>Risk of falling when working at a great height Danger to life by falling from a great height!</p> <ul style="list-style-type: none"> ▷ Do not step onto the pump (set) during installation work or dismantling work. ▷ Pay attention to safety equipment, such as railings, covers, barriers, etc. ▷ Observe the applicable local health and occupational safety regulations and accident prevention regulations.

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	<p>! WARNING</p>
	<p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▷ Always have this work performed by trained personnel. ▷ Take particular caution when performing this work.
	<p>CAUTION</p>
	<p>Incorrect installation No data transmission!</p> <ul style="list-style-type: none"> ▷ Never connect more than 40 transmission and battery units to a KSB Guard Gateway.

One KSB Guard Gateway can process the data of up to 40 transmission and battery units, if they send data once an hour. If data transmission is more frequent, the number of units per gateway is reduced.

Multi-gateway operation

If more than 40 transmission and battery units are to be connected to a KSB Guard Gateway, multi-gateway operation is recommended. For this purpose, a second KSB Guard Gateway has to be fitted within 50 m of the first KSB Guard Gateway. Multi-gateway operation is also recommended in the case of poor wireless connection of individual transmission and battery units.

In general, several KSB Guard Gateways can be installed in one area.

Data can be transmitted by Modbus transmission units and by transmission and battery units in the same network (i.e. to the same KSB Guard Gateway).

5.2.1.1 Checking the place of installation of KSB Guard Gateway

The place of installation of KSB Guard Gateway has to meet the following requirements:

- Sufficient clearance for dismantling
- The power supply can be switched off via an external isolating switch.
- Flood-proof
- The IP enclosure and the temperature range at the place of installation match the data on the name plate.
- Maximum distance between KSB Guard Gateway and transmission and battery unit: 50 m (direct line of sight between the transmission and battery unit and the KSB Guard Gateway antenna)
- Area between KSB Guard Gateway and the transmission and battery unit with as few obstacles as possible (e.g. concrete walls and steel elements, pipelines).
 If possible: Installation with direct line of sight between the transmission and battery unit and KSB Guard Gateway

5.2.1.2 Fastening KSB Guard Gateway

	<p>NOTE</p>
	<p>Fastening KSB Guard Gateway at a height of approx. 2 to 3 m above the floor is recommended.</p>

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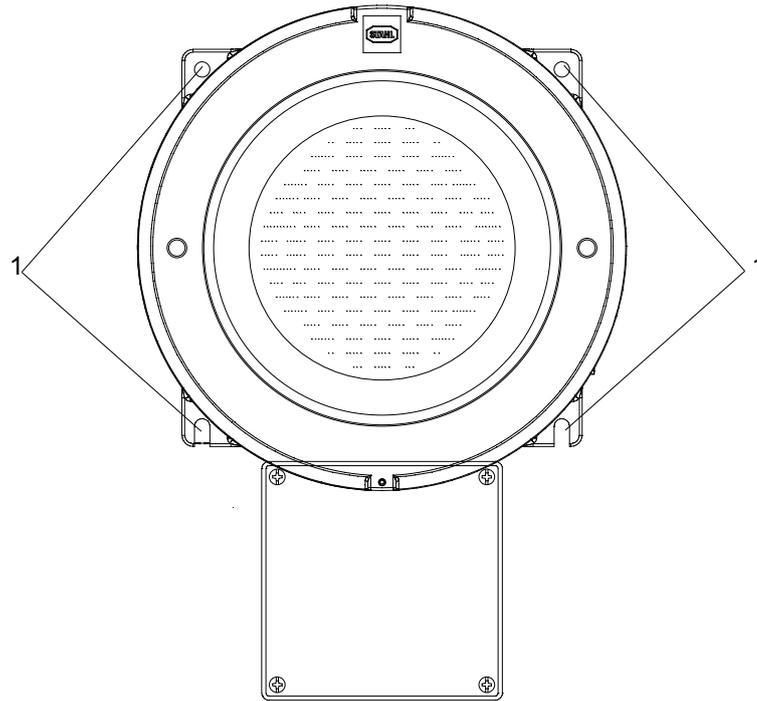


Fig. 8: Fastening the flameproof enclosure

1	Holes for wall mounting
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1. Fasten the flameproof enclosure to a suitable wall with four screws (M10).

5.2.1.3 Connecting KSB Guard Gateway to the power supply

	DANGER
	<p>Opening the flameproof enclosure Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Never open the flameproof enclosure of KSB Guard Gateway. ▷ Electrical work in the terminal box may only be carried out by a qualified electrical technician.

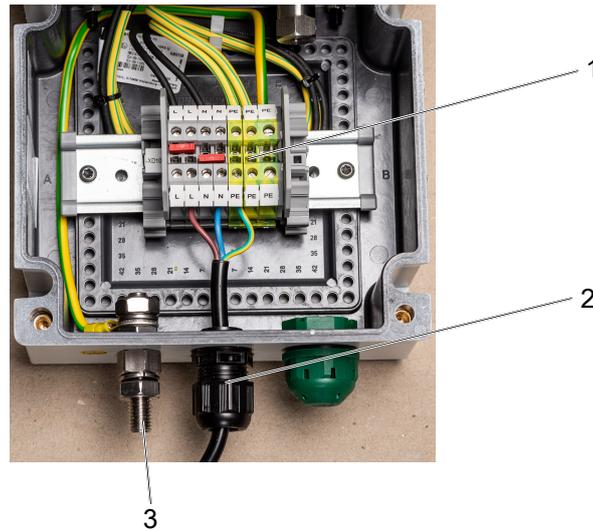


Fig. 9: Internal view of the terminal box

1	Terminal strip	2	Cable gland
3	Connection for potential equalisation		

1. Insert the power cable into the terminal box through the cable gland (2).
 2. Optionally, connect the earth conductor (10 ... 25 mm²) for potential equalisation.
 3. Connect the power cable to the screw terminals on the terminal strip as indicated (⇒ Fig. 9) .
 4. Check the status LED.
 Make sure that at least 2 LEDs are lit. This indicates that the connection to the mobile network is sufficiently strong.
 If the signal strength of the mobile network at the place of installation of KSB Guard Gateway is insufficient, the LTE antenna has to be fitted in a more suitable place, using the mounting angle provided.
 (⇒ Section 5.2.1.4, Page 21)
- ⇒ When the power cable is connected, KSB Guard Gateway starts automatically and is ready for use.

5.2.1.4 Fitting the KSB Guard Gateway antennas

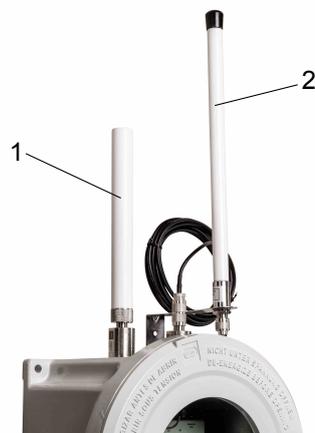


Fig. 10: Fitting the antennas

1	Sensor network antenna	2	LTE antenna
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	NOTE
	<p>The LTE antenna is the larger of the two antennas. The sensor network antenna is noticeably shorter and slightly thicker.</p>

- ✓ The signal strength of the mobile network at the place of installation of KSB Guard Gateway is sufficient.
 1. Screw the sensor network antenna to the connection on the left-hand side.
 2. Screw the LTE antenna to the connection on the right-hand side.

	NOTE
	<p>If the signal strength of the mobile network at the place of installation of KSB Guard Gateway is insufficient, the LTE antenna can be fitted in a more suitable place, using the mounting angle provided. In this case, the antenna has to be connected to KSB Guard Gateway with a commercially available antenna extension cable with Type N connector. The maximum permissible length of the antenna extension cable is 20 m.</p>

5.2.1.5 Checking the signal strength of KSB Guard Gateway

- Minimum sufficient signal strength is indicated by 2 level LEDs lighting up.
 - Good signal strength is indicated by 3 level LEDs lighting up.
 - Maximum signal strength is indicated by 4 level LEDs lighting up.
1. Check the level LEDs for mobile network signal strength.
 2. If necessary, change the position of the sensor network antenna. Check the signal strength again. If the signal strength is sufficient, fasten the antenna in this position with a mounting angle.

The antenna cable should not exceed 20 m in length.

	NOTE
	<p>The KSB Guard Gateway antenna acts in the plane perpendicular to the antenna's axis. The transmission and battery unit should be approximately in the same plane as the antenna.</p>

5.2.1.6 Commissioning KSB Guard Gateway

The device is delivered fully configured and is ready for operation after the power supply has been connected. The current operating status is indicated by the LED for the supply voltage.

After KSB Guard Gateway has been energised, observe the LED S1 at KSB Guard Gateway. The following operating statuses may occur:

- LED S1 green, flashing evenly
Firmware update running automatically, duration approx. 10 to 15 min.
- LED S1 green, permanently lit
Device ready for operation.

5.2.2 Positioning the transmission and battery unit

Set-up mode The Set-up mode helps find a suitable position for the Transmission and battery unit.

The Set-up mode can be repeated any number of times.

- ✓ KSB Guard Gateway has been fitted and the indicated signal strength for mobile reception at KSB Guard Gateway is sufficient.
- 1. Press the pushbutton (1) at the Transmission and battery unit for 2 - 3 seconds. Release the pushbutton as soon as the status LEDs A and B of the Transmission and battery unit light up simultaneously.
- 2. Watch the signal strength of the KSB Guard Gateway connection (see level LEDs) in order to find a suitable position near the pump set.
 - ⇒ After the Set-up mode has been activated, it remains active for 10 minutes and then stops automatically. The Set-up mode can be stopped at any time by briefly pressing the pushbutton (<1 s).

When a sensor unit is connected, the device changes to the *Automatic Measuring Operation* operating mode. (⇒ Section 6.1, Page 31)

If no sensor unit has been connected, the device reverts to its as-supplied condition. (⇒ Section 6.1, Page 31)

5.2.3 Establishing a connection between the sensor unit and the transmission and battery unit

1. Connect the connecting cable of the sensor unit to the transmission and battery unit.

If the wireless connection between the transmission and battery unit and KSB Guard Gateway is poor, check the position of the transmission and battery unit. Change its position if necessary. If required, use an extension cable. (⇒ Section 5.2.4, Page 23)

5.2.4 Using an extension cable

	⚠ DANGER
	<p>Improper installation of extension cables Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Use original KSB extension cables only. ▷ Never use extension cables longer than 10 m.

A heat shrink tube is supplied with every sensor unit and every extension cable. It has to be used to insulate the connection between two cables. Only use heat shrink tubes supplied by KSB. Insulate the connection as shown in (⇒ Fig. 11) .



Fig. 11: Fitting the heat shrink tube

1	Without heat shrink tube
2	With heat shrink tube



Fig. 12: Heating up the heat shrink tube

1. Slide the supplied heat shrink tube onto one of the cable ends.
2. Connect the cable ends with each other.
3. Slide the heat shrink tube over the cable connection.
4. Evenly heat up the heat shrink tube with a stream of hot air, e.g. with a hot air gun.

5.2.5 Installing the sensor unit

	<p>⚠ DANGER</p>
	<p>Strong magnetic field Danger of death for persons with pacemaker! Interference with magnetic data carriers, electronic devices, components and instruments! Uncontrolled magnetic attraction forces between magnet-equipped components, tools or similar!</p> <p>▷ Keep a safety distance of at least 0.3 m.</p>
	<p>⚠ WARNING</p>
	<p>Hot surfaces of pump set Risk of burns!</p> <p>▷ Observe the manufacturer's safety instructions for fastening the sensor unit and using the adhesive.</p>
	<p>⚠ WARNING</p>
	<p>Sensor unit takes on temperature of bearing bracket or drive lantern Risk of burns!</p> <p>▷ Observe the operating manual of the pump set.</p> <p>▷ When the pump set is being operated, only touch the sensor unit using suitable protective gloves.</p>

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	 WARNING
	<p>Work in the immediate vicinity of rotating parts</p> <p>Risk of hand injury!</p> <ul style="list-style-type: none"> ▸ Always have this work performed by trained personnel. ▸ Take particular caution when performing this work.

Positioning the sensor unit Observe the following information when positioning and fastening the sensor unit:

- Mount the sensor unit at a suitable location on the bearing bracket or drive lantern up to a maximum height of 2 m.
Recommended mounting position (⇒ Section 10.1, Page 40)
- Preferably affix the sensor unit to magnetic material.
- The location on the bearing bracket or drive lantern where the sensor unit is mounted should be level. Use the adhesive to compensate for minor uneven spots or curvatures.
- The sensor unit must also be glued in addition to the magnetic holders. The adhesive surface should not be on top (with the unit upside down).
- The adhesive should be processed at room temperature (18 - 25 °C).
- ✓ The operating manual for the pump set is accessible and has been observed.
- ✓ All safety instructions for the adhesive have been read and observed.
 1. Remove any coarse dirt from the mounting area.
 2. Clean the back of the sensor unit using the supplied cleaning pad.
 3. Clean the mounting area using the supplied cleaning pad.
 4. Spread the supplied adhesive over the back of the sensor unit.
 5. Position the sensor unit on the cleaned area of the bearing bracket or drive lantern. The sensor unit is optimally aligned when the x-axis of the sensor unit is parallel to the shaft and the y-axis of the sensor unit is horizontal.
 6. Firmly press down the sensor unit.
 7. Allow the sensor unit to dry on the bearing bracket or drive lantern to ensure that the position of the sensor unit is not unintentionally changed during the following assembly steps. The adhesive bond must be able to withstand slight vibrations at the sensor unit. The waiting time strongly depends on ambient conditions.

	NOTE
	<p>At an ambient temperature between +25 °C and +30 °C, the supplied adhesive will have sufficiently cured after approximately 24 hours. After 3 days, the adhesive will have fully cured. Increased temperatures (e.g. +60 °C to +90 °C) accelerate the curing process.</p>

8. Check that the sensor unit is firmly positioned on the bearing bracket or drive lantern; re-glue the sensor unit if necessary.



Fig. 13: Earthing connections of the sensor unit

9. Connect both earthing connections to an earthing point in the system with a suitable cable and the supplied flat connector, type: TE 2178301-1 (cable cross-section 4 mm²) (⇒ Fig. 13).

5.2.6 Installing the transmission and battery unit

	<p>⚠ WARNING</p>
	<p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▷ Always have this work performed by trained personnel. ▷ Take particular caution when performing this work.

The area selected should have the following properties:

- Ambient temperature ≤ 70 °C
 - Position protected
 - Level
 - Maximum distance from the floor 2 m
 - ✓ The electrical connection between the sensor unit and the Transmission and battery unit has been established.
 - ✓ The batteries have been inserted (as-supplied condition).
 - ✓ The signal strength of the KSB Guard Gateway connection at the place of installation is sufficient.
 - ✓ Check the signal strength of the connection to the Transmission and battery unit in Set-up mode.
1. Preferably position the Transmission and battery unit in such a way that a line of sight is provided to KSB Guard Gateway. In the process, ensure that the connecting point of the connecting cable can be easily accessed.
 2. Clean the surface of the Transmission and battery unit and the surface of the place of installation using the supplied alcohol pads.
 3. Securely attach the Transmission and battery unit with the supplied fastening material.

5.2.7 Routing the connecting cable

	<p style="text-align: center;">⚠ WARNING</p> <p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▸ Always have this work performed by trained personnel. ▸ Take particular caution when performing this work.
	<p style="text-align: center;">⚠ WARNING</p> <p>Hot surfaces (pump and piping take on the temperature of the fluid handled). Risk of burns!</p> <ul style="list-style-type: none"> ▸ Do not touch hot surfaces.
	<p style="text-align: center;">CAUTION</p> <p>Improper routing Damage to the connecting cable!</p> <ul style="list-style-type: none"> ▸ Never kink or crush the connecting cable.



Fig. 14: Routing the connecting cable in a meander pattern

1. Secure the connecting cable between the sensor unit and the battery and transmission unit in such a way that no hazard (tripping, entrapment) can arise from it.
2. Route the excess length of the connecting cable in a meander pattern (⇒ Fig. 14) and fasten it with the supplied fastening elements.

5.3 Assigning and setting up

	NOTE
	<p>The sensor unit must be initially assigned to a pump set. This assignment cannot be subsequently undone and remains valid for the service life of the sensor unit. Correct assignment is key to ensuring proper functionality of the device. Measurement data can only be saved after the assignment has been made. You can make the assignment on the KSB Guard web portal (www.ksbguard.net) or in the KSB Guard app (available for iOS and Android).</p>

5.3.1 Data required for adding a pump set

To add a pump, further pump set data is required. We recommend that you collect the data in advance so that it is readily available when you need it. The following data is required:

Table 11: Data required for adding a pump set

Required data	Example	Notes
Serial number of the sensor unit	GS118W220071	
Designation of the pump set	Pump 123	
Location of the pump set	Hall 2	
Functional location of the pump set	B2411	
Optional: Photo of the pump (set)		
Data from the pump name plate		
Manufacturer	KSB	
Year of construction	2018	
Serial number ³⁾	997123456700010000	
Type series	Etanorm	
Size	050-032-161	
Nominal head	25 m	
Nominal flow rate	50 m ³ /h	
Nominal speed	1450 rpm	
Number of stages	1	
Operating hours of the pump set to date (initial value for the operating hours counter)	1000 h	
Data from the motor name plate		
Nominal power	15 kW	
Nominal speed	1450 rpm	
Power factor (cos φ)	0,86	
Other details		
Variable speed system (yes or no)	No	
Application of the pump	Heat supply system	
Fluid temperature	+20 °C to +30 °C	
Density of the fluid handled	997 kg/m ³	
Bearing type and, if applicable, operating hours since most recent bearing lubrication / bearing replacement	Grease, re-lubrication, 1000 h	

³⁾ With a pump set from KSB, data on the pump can be accessed when necessary. To do so, enter the KSB serial number in the corresponding field of the app / web portal. If data is available, it will be displayed in the app or on the web portal and must be checked to ensure that it is accurate and up to date.

Required data	Example	Notes
Optional: Optimum flow rate	50 m ³ /h	
Optional: Specification of 7 reference points on the characteristic curve	25 kW, 25 m ³ /h, 25 m; 20 kW...	

5.3.2 Adding the pump

- ✓ Access to the KSB Guard system has been set up. (⇒ Section 5.1, Page 18)
 - ✓ The data indicated in (⇒ Table 11) is available.
1. Start the KSB Guard app or open the KSB Guard web portal (www.ksbguard.net).
 2. Select the *Add Pump* function in the app menu or on the web portal.
 3. Follow the instructions in the app dialogue or on the web portal and enter the requested information.
 4. Save the assignment.

	<p>NOTE</p> <p>The limit values for the pump set are set automatically. Default values can be checked and, if necessary, changed in the individual view screen of the pump.</p>
	<p>NOTE</p> <p>After the assignment, it takes three measuring cycles until the data transferred from the pump set can be viewed on the web portal or in the app. Initial data can be seen after approx. 15 minutes if the assignment took place within 120 minutes after commissioning. If this is not the case, it can take up to three hours from the time of assignment until the first data is displayed.</p>

5.4 Commissioning / start-up

As-supplied condition The Transmission and battery unit is supplied in *Deep Sleep* mode (⇒ Section 6.1, Page 31) . This operating mode remains active until commissioning has been completed successfully.

During commissioning, a sensor unit must be detected and a functioning KSB Guard Gateway found within wireless range.

If commissioning is not successful, the device remains in *Deep Sleep* mode until it is woken up by pressing and holding down the pushbutton.

In the first two hours following commissioning the device frequently (every five minutes) checks if a pump set has been assigned to the sensor unit in the KSB Cloud. After a successful assignment, five measurements are automatically conducted in shortened intervals.

Performing the commissioning procedure



Fig. 15: Transmission and battery unit

1	Position of internal antenna	2	Status LED A (red)
3	Status LED B (green)	4	Pushbutton
5	Level LEDs for indicating the signal strength of the KSB Guard Gateway connection	6	Earthing connection
7	Connection for the connecting cable to the sensor unit		

- ✓ KSB Guard Gateway has been installed and the signal strength indicated is sufficient.
- ✓ The system has been energised.
- 1. Press and hold the pushbutton (2) on the transmission and battery unit for 2 - 3 seconds. Release the pushbutton as soon as status LEDs A and B of the transmission and battery unit briefly light up simultaneously.
 - ⇒ This activates the Set-up mode. (⇒ Section 5.2.2, Page 22)
 - ⇒ If commissioning was successful, status LED B lights up in green (for approx. 10 seconds) approx. 40 seconds after the Set-up mode has stopped.
 - ⇒ If a different light signal or no flashing signal is displayed, try to identify the source of error.

The device switches to Automatic Measuring Operation operating mode.

6 Operation

6.1 Operating modes of transmission and battery unit

- **Deep Sleep**
The transmission and battery unit is delivered in Deep Sleep mode. The device is in this mode prior to commissioning, after it is switched off, and if the battery is removed for more than 10 seconds. (⇒ Section 6.2, Page 31)
- **Set-up mode**
The Set-up mode helps find a suitable position for the transmission and battery unit.
- **Automatic Measuring Operation**
After successful commissioning and when a sensor unit and pump set have been assigned in the KSB Cloud, the device automatically switches to Stand-by mode following each measuring cycle and transfer cycle in order to save energy. In this status, all LEDs are off. The device wakes up cyclically (default setting: every hour) and takes an automatic measurement.

6.2 Checking that the transmission and battery unit is in Deep Sleep mode

1. Briefly press the pushbutton.
 - ⇒ The red LED briefly flashes once (for approx. 0.2 seconds) in this operating mode. The red LED then has to extinguish immediately and no further LED must light up. (⇒ Section 6.1, Page 31)

6.3 Taking manual measurement and displaying signal strength

	! WARNING
	<p>Hot surfaces (pump and piping take on the temperature of the fluid handled). Risk of burns!</p> <ul style="list-style-type: none"> ▸ Do not touch hot surfaces.
	! WARNING
	<p>Sensor unit takes on temperature of bearing bracket or drive lantern Risk of burns!</p> <ul style="list-style-type: none"> ▸ Observe the operating manual of the pump set. ▸ When the pump set is being operated, only touch the sensor unit using suitable protective gloves.
	! WARNING
	<p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▸ Always have this work performed by trained personnel. ▸ Take particular caution when performing this work.

- ✓ Commissioning was completed successfully.
 1. Briefly press the pushbutton at the Transmission and battery unit once (<1 second).
 - ⇒ The current status of the device is displayed. The green LED flashes when the device is ready for a manual event. If this is not the case, the device is busy (with an automatic measurement, update, etc).
 2. When the device is ready for a manual event, once again briefly press the pushbutton at the Transmission and battery unit.

- ⇒ The sensor data is measured, the signal strength is displayed and the data is transmitted (total duration approx. 20 - 40 seconds).
Status LED B statically lights up in green for 10 seconds.

After the measurement is taken, the device automatically switches to *Automatic Measuring Operation* and all LEDs extinguish.

6.4 Turning off the transmission and battery unit

	 DANGER
	<p>Sparks produced during installation work or servicing work Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Observe the safety regulations in force at the place of installation. ▷ Always perform installation work or maintenance work on explosion-proof devices outside of potentially explosive atmospheres.

There are two options of turning off the Transmission and battery unit. The Transmission and battery unit is always reset to its as-supplied condition in this process.

- Removing the batteries
- Manually switching off the device

Manually switching off the device

1. If a sensor unit is connected, disconnect its connecting cable.
2. Press the pushbutton at the Transmission and battery unit until both LEDs extinguish after a flashing pattern.
 - ⇒ The two status LEDs will flash again after 10 to 15 seconds. Then, the Transmission and battery unit reverts to its as-supplied condition.
(⇒ Section 6.2, Page 31)

7 Servicing/Maintenance

7.1 Replacing the battery pack

	⚠ DANGER
	<p>Sparks produced during installation work or servicing work Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Observe the safety regulations in force at the place of installation. ▷ Always perform installation work or maintenance work on explosion-proof devices outside of potentially explosive atmospheres.

	⚠ DANGER
	<p>Using different batteries Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Only replace the battery pack by the battery pack available from KSB.

The transmission and battery unit is powered by a lithium thionyl chloride battery. Only the battery pack available from KSB containing a lithium thionyl chloride battery may be used. (⇒ Section 11.2, Page 44)

	CAUTION
	<p>Electrical connection work by unqualified personnel Damage to the device!</p> <ul style="list-style-type: none"> ▷ Only trained personnel may open the Transmission and battery unit and change the batteries.

	NOTE
	<p>During battery replacement, take care not to damage the foamed-in housing gasket.</p>



Fig. 16: Cover for housing screws

1	Fastening screws	2	Upper part of the housing
---	------------------	---	---------------------------

	CAUTION
	<p>Incorrect replacing of batteries</p> <p>Damage to the connecting cable between the upper and the lower housing section!</p> <p>▷ Never allow the upper section to hang from the connecting cable or suspend it from the connecting cable for transport.</p>

1. Unscrew and remove the four fastening screws (1) from the corners.
2. Pull off the upper part of the housing (2).

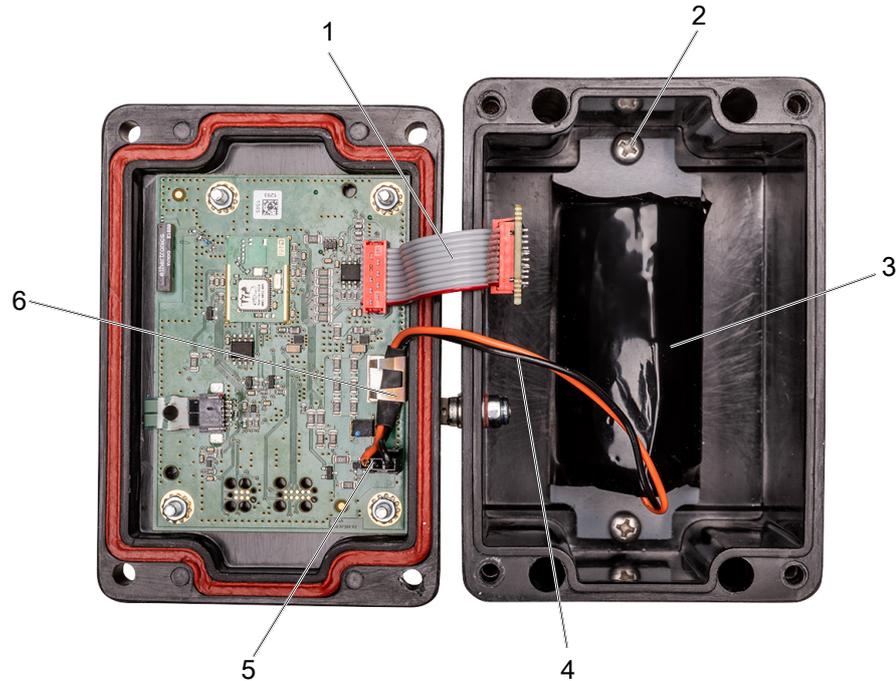


Fig. 17: b

1	Connecting cable between the upper part and lower part of the housing	2	Battery retaining screws
3	Battery pack	4	Battery cables
5	Plug	6	Clip on printed circuit board

3. Remove the battery cables (4) from the clip on the printed circuit board (6).
4. Disconnect the plug (5) from the printed circuit board.
5. Undo and remove the two battery retaining screws (2).
6. Remove the battery pack (3).
7. Insert a new battery pack (3). Fasten it with the two battery retaining screws (2).
8. Connect the plug (5) to the printed circuit board. Observe the correct plug orientation.
9. Briefly press the pushbutton on the top of the housing and check whether red status LED A lights up briefly. If status LED A does not light up, check the plug.
10. Fit a black protective sleeve around the battery cables (4) in the area of the printed circuit board. Insert the protected part underneath the clip on the printed circuit board (6) to fasten the cables.
11. Place the upper part of the housing back on the lower part of the housing.
12. Screw the four fastening screws back in at the corners.
13. Restart the transmission and battery unit. (⇒ Section 5.4, Page 29)

7.2 Replacing the sensor unit

	 DANGER
	<p>Improper replacement / use of devices in potentially explosive atmospheres Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Only use devices designed for use in potentially explosive atmospheres. ▷ When replacing a device, verify that the new device has got the same explosion protection marking as the old one.

1. Shut down the Transmission and battery unit (⇒ Section 6.4, Page 32)
2. Disconnect the connecting cable between the sensor unit and the Transmission and battery unit. (⇒ Section 5.2, Page 18)
3. Remove the sensor unit.
4. Install a new sensor unit. (⇒ Section 5.2.5, Page 24)
5. Connect the connecting cable between the sensor unit and the Transmission and battery unit.
6. Restart Transmission and battery unit (⇒ Section 5.4, Page 29)
7. Have the pump set with new Sensor ID assigned by the KSB Guard Customer Service. (⇒ Section 9, Page 38)

7.3 Replacing the transmission and battery unit

	 DANGER
	<p>Improper replacement / use of devices in potentially explosive atmospheres Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Only use devices designed for use in potentially explosive atmospheres. ▷ When replacing a device, verify that the new device has got the same explosion protection marking as the old one.

1. Shut down the Transmission and battery unit (⇒ Section 6.4, Page 32)
2. Disconnect the connecting cable between the sensor unit and the Transmission and battery unit.
3. Remove the Transmission and battery unit from the place of installation.
To remove the adhesive pad from the pump set, slide a thin wire underneath the Transmission and battery unit or use a lever tool.
4. Fit a new Transmission and battery unit. (⇒ Section 5.2.5, Page 24)
5. Start up the Transmission and battery unit (⇒ Section 5.4, Page 29)

7.4 Replacing KSB Guard Gateway

	 DANGER
	<p>Improper replacement / use of devices in potentially explosive atmospheres Explosion hazard!</p> <ul style="list-style-type: none"> ▷ Only use devices designed for use in potentially explosive atmospheres. ▷ When replacing a device, verify that the new device has got the same explosion protection marking as the old one.

1. Disconnect KSB Guard Gateway from the power supply.
2. Remove KSB Guard Gateway from the place of installation.
3. Fit a new KSB Guard Gateway.
4. Connect the power supply.

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8 Dismantling

	 WARNING
	<p>Incorrect dismantling Crushing, impact injuries, cuts!</p> <ul style="list-style-type: none"> ▷ Use suitable tools only. ▷ Wear suitable protective equipment.

8.1 Removing KSB Guard Gateway

	 DANGER
	<p>Risk of falling when working at a great height Danger to life by falling from a great height!</p> <ul style="list-style-type: none"> ▷ Do not step onto the pump (set) during installation work or dismantling work. ▷ Pay attention to safety equipment, such as railings, covers, barriers, etc. ▷ Observe the applicable local health and occupational safety regulations and accident prevention regulations.

	 DANGER
	<p>Improper work on electrical connection Electric shock!</p> <ul style="list-style-type: none"> ▷ KSB Guard Gateway may only be opened by a qualified electrical technician. ▷ Electrical work may only be carried out by a qualified electrical technician.

1. Disconnect the equipment from the power supply.
2. Detach the rear adapter of KSB Guard Gateway from the wall bracket.
3. Remove the wall-mounting bracket from the wall.

8.2 Dismantling the transmission and battery unit

	 WARNING
	<p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▷ Always have this work performed by trained personnel. ▷ Take particular caution when performing this work.

	 WARNING
	<p>Hot surfaces (pump and piping take on the temperature of the fluid handled). Risk of burns!</p> <ul style="list-style-type: none"> ▷ Do not touch hot surfaces.

1. Disconnect the connecting cable of the sensor unit.
2. Remove the Transmission and battery unit from the place of installation. To remove the adhesive pad from the pump set, slide a thin wire underneath the Transmission and battery unit or use a lever tool.

8.3 Dismantling the sensor unit

	<p>⚠ DANGER</p> <p>Strong magnetic field Danger of death for persons with pacemaker! Interference with magnetic data carriers, electronic devices, components and instruments! Uncontrolled magnetic attraction forces between magnet-equipped components, tools or similar!</p> <ul style="list-style-type: none"> ▷ Keep a safety distance of at least 0.3 m.
	<p>⚠ WARNING</p> <p>Work in the immediate vicinity of rotating parts Risk of hand injury!</p> <ul style="list-style-type: none"> ▷ Always have this work performed by trained personnel. ▷ Take particular caution when performing this work.
	<p>⚠ WARNING</p> <p>Hot surfaces (pump and piping take on the temperature of the fluid handled). Risk of burns!</p> <ul style="list-style-type: none"> ▷ Do not touch hot surfaces.

✓ The connecting cable leading to the Transmission and battery unit has been removed.

1. Carefully remove the sensor unit from the installation location. To do so use a soft-face mallet or plier wrench, for example.

9 Trouble-shooting

If problems occur that are not described in the following tables, consultation with KSB Guard Customer Service is required:

- **24-h hotline** : +49 6233 86 6400
- **E-mail**: ksbguard-support@ksb.com

	NOTE
To ensure quick assistance, have the serial number of the sensor unit readily available.	

9.1 Trouble-shooting KSB Guard Gateway

Table 12: Trouble-shooting KSB Guard Gateway

Error / defect description	Possible cause	Remedy
No LED is lit.	<ul style="list-style-type: none"> ▪ No connection to mains power supply 	<ul style="list-style-type: none"> ▪ Plug in the mains plug or connect the power cable inside the device.
Only one or no green level LED is lit at KSB Guard Gateway, but status LED S1 is lit green.	<ul style="list-style-type: none"> ▪ Solid exterior walls ▪ Large amounts of metal in the surrounding area ▪ Unfavourable position in the basement of the building ▪ Poor mobile data connection at the location 	<ul style="list-style-type: none"> ▪ Change the position of the supplied LTE antenna until 3 or 4 level LEDs light up. ▪ If necessary, install a different LTE antenna with a longer cable to achieve a more favourable position. ▪ Install an outdoor LTE antenna outside the building.
Status LED S1 remains off or is lit yellow after the power supply has been established.	<ul style="list-style-type: none"> ▪ Internal fault 	<ul style="list-style-type: none"> ▪ KSB Contact KSB Guard Customer Service.
LED S1 is flashing in green	<ul style="list-style-type: none"> ▪ Device is conducting firmware update. 	<ul style="list-style-type: none"> ▪ Wait until firmware update has been completed.

9.2 Trouble-shooting the transmission and battery unit / sensor unit

Table 13: Trouble-shooting during commissioning

Error / defect description	Possible cause	Remedy
There is no response to a brief press of the pushbutton.	<ul style="list-style-type: none"> ▪ The battery is missing or is discharged. ▪ System error 	<ul style="list-style-type: none"> ▪ Change the batteries. ▪ Remove the batteries for 10 seconds. Then reinsert them. ▪ KSB Contact KSB Guard Customer Service.
A brief press of the button produces a longer flashing sequence (last transmission status displayed).	<ul style="list-style-type: none"> ▪ The system has already been commissioned. 	<ul style="list-style-type: none"> ▪ The device may have been inadvertently commissioned. Remove the batteries for 10 seconds. Then reinsert them. Then perform commissioning.
After an extended press of the button, none of the red level LEDs for the Transmission and battery unit to light up.	<ul style="list-style-type: none"> ▪ KSB Guard Gateway has been shut down. 	<ul style="list-style-type: none"> ▪ Start up KSB Guard Gateway.
	<ul style="list-style-type: none"> ▪ KSB Guard Gateway is out of range. 	<ul style="list-style-type: none"> ▪ If possible, place the Transmission and battery unit within the range of KSB Guard Gateway and test it.
	<ul style="list-style-type: none"> ▪ Sensor unit has not yet been connected or is defective. 	<ul style="list-style-type: none"> ▪ Check the connection between the Transmission and battery unit and the sensor unit, and replace the sensor if required.

Error / defect description	Possible cause	Remedy
After a manual measurement only 1 - 2 LEDs of the level LEDs at KSB Guard Gateway light up.	<ul style="list-style-type: none"> Incorrect installation 	<ul style="list-style-type: none"> Establish line of sight between the transmission unit and the entire antenna of KSB Guard Gateway. Remove / avoid any obstacles (especially metal ones) between KSB Guard Gateway and the transmission unit. The direct line between the Transmission and battery unit and KSB Guard Gateway should be perpendicular to the KSB Guard Gateway antenna as the antenna radiates most effectively perpendicular to its axis. The internal antenna of the Transmission and battery unit is located opposite the level LEDs on the left-hand side wall of the unit. Position the unit so this side wall faces KSB Guard Gateway. If necessary, mount the unit to the wall with one of its side surfaces. Only mount KSB Guard Gateway slightly higher than the Transmission and battery units. To allow for better positioning of the Transmission and battery unit use an extension cable between the sensor unit and the Transmission and battery unit.
Status LED A flashes several times in red after a brief press of the pushbutton.	<ul style="list-style-type: none"> No assignment of sensor unit and pump in the KSB Cloud. 	Assign and set up the pump set. (⇒ Section 5.3, Page 28)
KSG Guard does not send any data to the KSB Cloud or does not yet appear there.	<ul style="list-style-type: none"> KSB Guard has not been assigned to a pump set. 	<ul style="list-style-type: none"> Assign KSB Guard to a pump set (⇒ Section 5.3, Page 28) .

Table 14: Trouble-shooting during operation

Error / defect description	Possible cause	Remedy
KSB Guard does not provide any data following successful assignment.	<ul style="list-style-type: none"> Problem in the KSB Cloud Hardware is defective. 	<ul style="list-style-type: none"> KSB Contact KSB Guard Customer Service.
Data is suddenly no longer transmitted during operation, or there are frequently large time gaps between 2 transfer cycles.	<ul style="list-style-type: none"> Poor mobile data connection 	<ul style="list-style-type: none"> (⇒ Section 9.1, Page 38)
	<ul style="list-style-type: none"> The wireless connection between the Transmission and battery unit and KSB Guard Gateway is too weak or unstable (local interference). 	<ul style="list-style-type: none"> Start manual measurement and check result. If fewer than 2 red level LEDs on the Transmission and battery unit light up, change the position of the transmission and battery unit and/or KSB Guard Gateway.

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10 Related Documents

10.1 Recommended mounting position for sensor unit

	<p>NOTE</p>
<p>Do not install the sensor unit facing downwards as glue will be used during the installation.</p>	

The position of the sensor unit as shown in the illustrations is recommended, depending on the type series.

If installation location A is accessible and not otherwise used, fasten the sensor unit to this location.

If installation location A is used or inaccessible, use installation locations B, C or D.

Etanorm

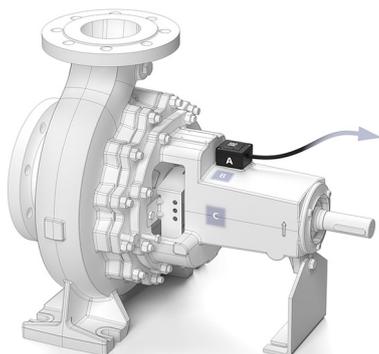


Fig. 18: Etanorm with sensor unit

Etabloc

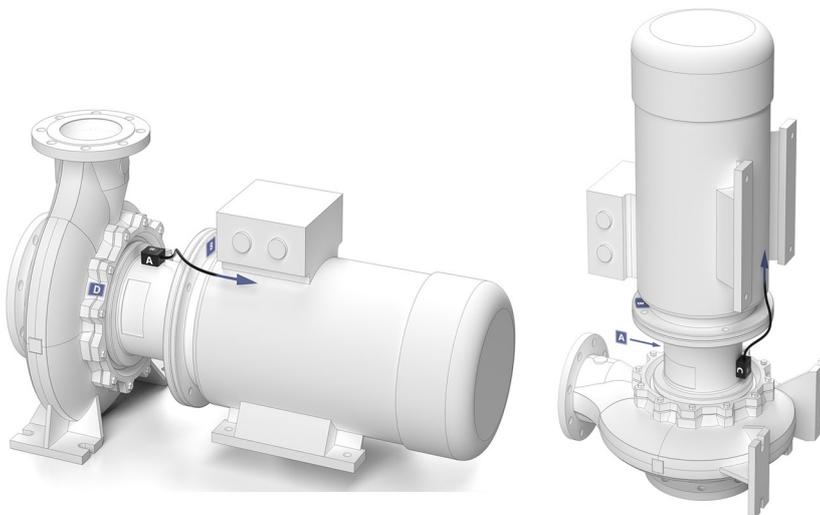


Fig. 19: Sensor unit mounted on horizontally and vertically installed Etabloc pumps

Etaline R

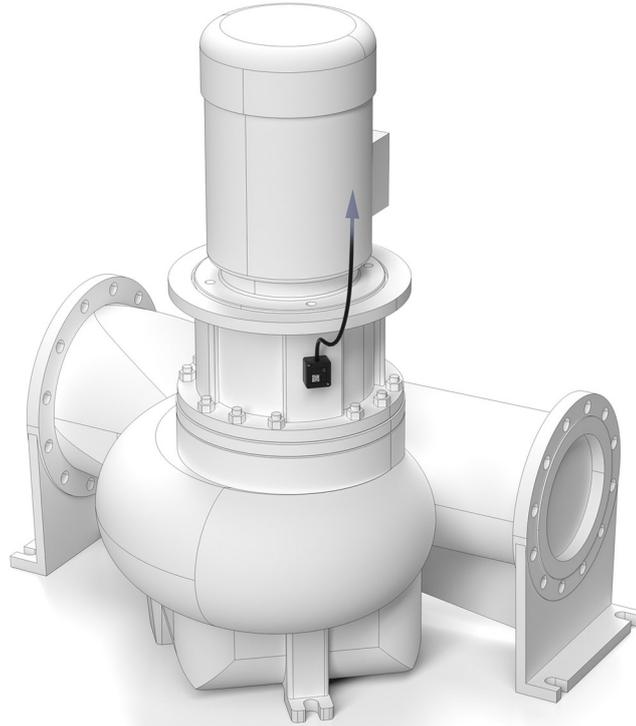


Fig. 20: Etaline R with sensor unit

MegaCPK

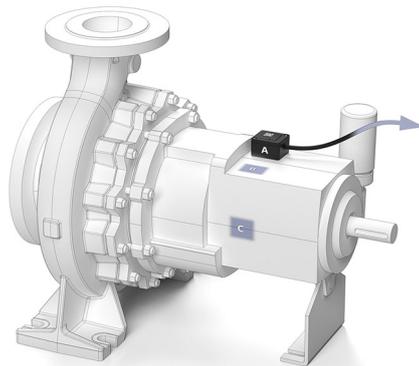


Fig. 21: MegaCPK with sensor unit

Movitec



Fig. 22: Movitec with sensor unit

Multitec

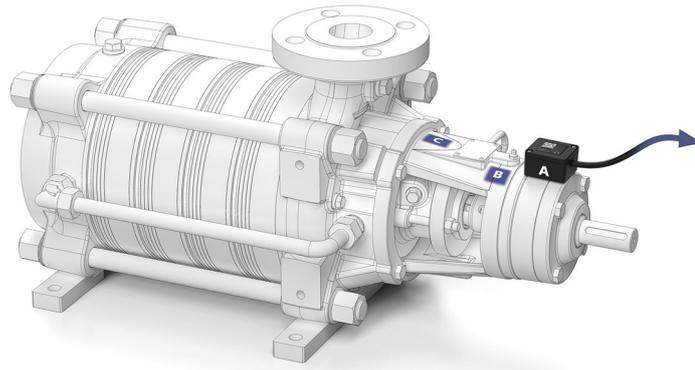


Fig. 23: Multitec with sensor unit

Omega

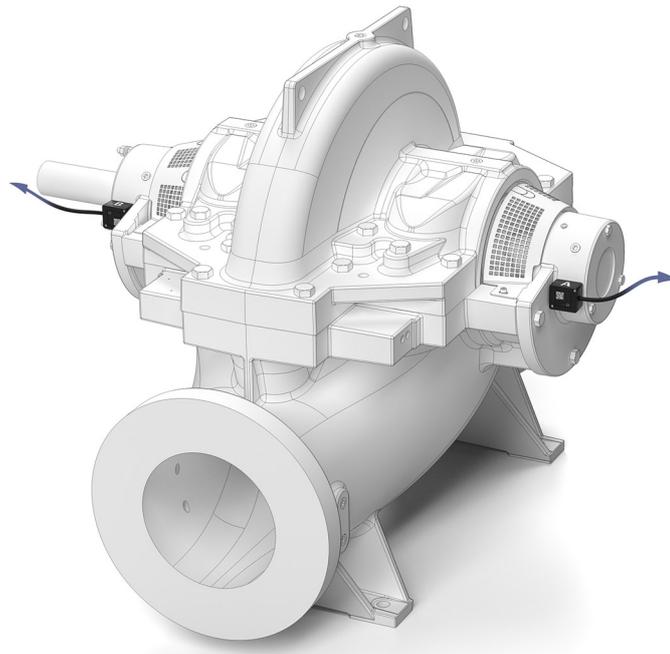


Fig. 24: Omega with sensor unit

Sewatec

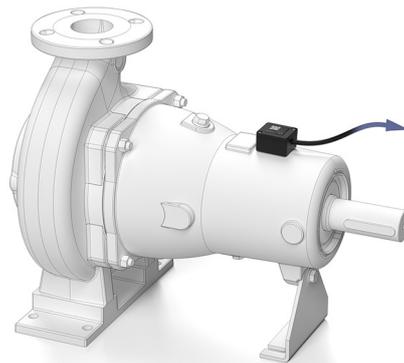


Fig. 25: Sewatec with sensor unit

Sewabloc

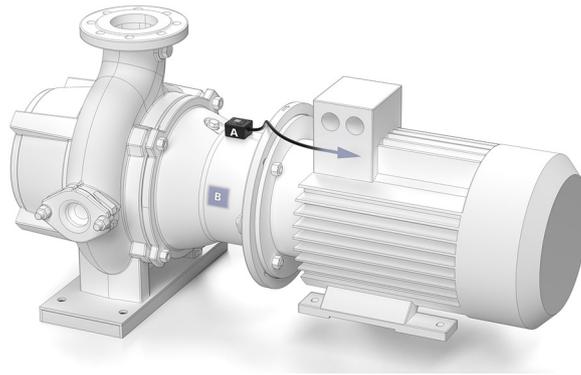


Fig. 26: Sewabloc with sensor unit

11 Purchase Order Specifications

11.1 Ordering spare parts

Always quote the following data when ordering replacement or spare parts:

- Order number
- Order item number
- Consecutive number
- Type series
- Size
- Material variant
- Seal code
- Year of construction

Refer to the name plate for all data.

Also specify the following data:

- Part number and description
- Quantity of spare parts
- Shipping address
- Mode of dispatch (freight, mail, express freight, air freight)

11.2 Accessories

Table 15: Accessories

	Description	Length	Mat. No.	[kg]
		[m]		
	Extension cable between transmission and battery unit and sensor unit, with heat shrink tube	3	01922262	0.159
		5	01922263	0.256
		10	01922264	0.5
	Battery pack S1P1/SL-2880/290/EDA Lithium thionyl chloride battery as a replacement for the battery in the ATEX-compliant transmission and battery unit, including installation elements	-	05116249	0.25

12 EC Declarations of Conformity

12.1 EU Declaration of Conformity

Manufacturer:

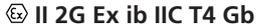
KSB SE & Co. KGaA
Johann-Klein-Straße 9
67227 Frankenthal (Germany)

This EU Declaration of Conformity is issued under the sole responsibility of the manufacturer.

The manufacturer herewith declares that **the products**:

KSB Guard ATEX sensor unit:	Ident. number 05088764
KSB Guard ATEX transmission and battery unit:	Ident. number 05088765
KSB Guard ATEX kit:	Ident. number 05088763

- are in conformity with the provisions of the following Directives as amended from time to time:
 - 2014/34/EU: Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)
 - 2014/53/EU: Radio Equipment Directive (RED)
 - 2011/65/EU: Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)
- the following harmonised international standards have been applied:
 - EN IEC 60079-0:2018
 - EN 60079-11:2012
 - ETSI EN 301 489-17 V3.2.4
 - ETSI EN 301 489-1 V2.2.3
 - ETSI EN 300 328 V2.2.2
 - EN 61000-6-3:2007 + A1:2011
 - EN 61000-6-2:2005
 - EN 61000-6-2:2019
 - EN 62311:2020

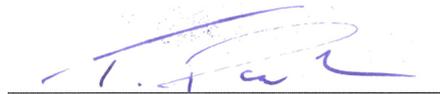
In compliance with Directive 2014/34/EU, the product is marked as follows: 

The EU type test certificate DEKRA 20ATEX0140X is available for this device.

The manufacturer's quality assurance system is monitored by 0035 TÜV Rheinland Industrie Service GmbH.

The EU Declaration of Conformity was issued in/on:

Frankenthal, 1 March 2021



Thomas Paulus
Corporate Function Digital Global Executive Officer - CDO
KSB SE & Co. KGaA
Johann-Klein-Straße 9
67227 Frankenthal

EU-Konformitätserklärung
EU Declaration of Conformity
Déclaration de Conformité UE



R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
 erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt: **Steuerung**
that the product: *Control unit*
que le produit: *Coffret de commande*

Typ(en), type(s), type(s): **8265/5**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / Directive(s) / Directive(s)		Norm(en) / Standard(s) / Norme(s)
2014/34/EU 2014/34/EU 2014/34/UE	ATEX-Richtlinie <i>ATEX Directive</i> <i>Directive ATEX</i>	EN 60079-0:2012+A11:2013 EN 60079-1:2014 EN 60079-7:2015+A1:2018 EN 60079-11:2012 EN 60079-18:2015+ A1:2017 EN 60079-31:2014
Kennzeichnung, marking, marquage:		II 2 G Ex db eb ia [ia Ga] ib [ib] mb op pr [op is] IIC T6...T4 Gb II 2 D Ex tb [ia Da] [ib] mb [op is] IIIC T80 °C...T95 °C Db CE0158
EG/EU-Baumusterprüfbescheinigung: <i>EC/EU Type Examination Certificate:</i> <i>Attestation d'examen CE/UE de type:</i>		PTB 06 ATEX 1077 (Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany, NB0102)
Produktnormen nach Niederspannungsrichtlinie: <i>Product standards according to Low Voltage Directive:</i> <i>Normes des produit pour la Directive Basse Tension:</i>		EN 61439-1:2011 EN 61439-2:2011
2014/30/EU 2014/30/EU 2014/30/UE	EMV-Richtlinie <i>EMC Directive</i> <i>Directive CEM</i>	EN 61439-1:2011 EN 61439-2:2011
2011/65/EU 2011/65/EU 2011/65/UE	RoHS-Richtlinie <i>RoHS Directive</i> <i>Directive RoHS</i>	EN 50581:2012

Waldenburg, 2019-06-25

Ort und Datum
Place and date
Lieu et date

i.V.

Holger Semrau
Leiter Entwicklung Schaltgeräte
Director R&D Switchgear
Directeur R&D Appareillage

i.V.

Jürgen Freimüller
Leiter Qualitätsmanagement
Director Quality Management
Directeur Assurance de Qualité

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