

PRODUCT MANUAL

# ABB i-bus<sup>®</sup> KNX

## SU/S 30.640.2

### Uninterruptible KNX Power Supply, 640 mA





<b>Content</b>		<b>Page</b>
<b>1</b>	<b>General .....</b>	<b>5</b>
1.1	Using the product manual.....	5
1.2	Legal disclaimer.....	5
1.3	Explanation of symbols.....	5
<b>2</b>	<b>Safety .....</b>	<b>7</b>
2.1	General safety instructions.....	7
2.2	Proper use.....	7
<b>3</b>	<b>Product overview .....</b>	<b>9</b>
3.1	Device description.....	9
3.2	Product name description.....	9
3.3	Ordering details.....	9
3.4	Connections.....	9
3.4.1	Inputs.....	9
3.4.2	Outputs.....	9
3.5	Uninterruptible KNX Power Supply, 640 mA SU/S 30.640.2, MDRC.....	10
3.5.1	Dimension drawing.....	10
3.5.2	Connection diagram.....	11
3.5.3	Operating and display elements.....	12
3.5.4	Technical data.....	13
<b>4</b>	<b>Function.....</b>	<b>15</b>
4.1	Device functions.....	15
4.2	Monitoring and fault messages.....	16
4.2.1	Bus line monitoring.....	16
4.2.2	Mains voltage monitoring.....	16
4.2.3	Battery voltage monitoring.....	16
4.2.4	Diagnostic table.....	17
<b>5</b>	<b>Mounting and installation .....</b>	<b>19</b>
5.1	Information about mounting.....	19
5.2	Mounting on DIN rail.....	19
5.3	Connecting the floating changeover contact.....	19
5.4	Connecting the Sealed Lead Acid Batteries SAK X.....	20
5.5	Mounting and connecting the battery module AM/S 12.1.....	22
<b>6</b>	<b>Commissioning.....</b>	<b>25</b>
<b>7</b>	<b>Parameters .....</b>	<b>27</b>
<b>8</b>	<b>Group objects .....</b>	<b>29</b>

# ABB i-bus® KNX

## Content

<b>9</b>	<b>Operation .....</b>	<b>31</b>
9.1	Resetting the saved overload indication .....	31
<b>10</b>	<b>Maintenance and cleaning.....</b>	<b>33</b>
10.1	Maintenance .....	33
10.2	Cleaning.....	33
<b>11</b>	<b>Removal and disposal .....</b>	<b>35</b>
11.1	Removal.....	35
11.2	Environment.....	35
<b>12</b>	<b>Planning and application.....</b>	<b>37</b>
12.1	Device application.....	37
12.2	Back-up supply .....	37
12.3	Battery service life .....	38
<b>13</b>	<b>Appendix.....</b>	<b>39</b>
13.1	Scope of delivery .....	39
13.2	Accessories .....	39
13.2.1	Technical data of Cable Set, Basic KS/K 4.1 (GHQ6301910R0001).....	39
13.2.2	Technical data of Cable Set, Extension KS/K 2.1 (GHQ6301910R0011).....	39
13.2.3	Technical data of SAK2 (GHV9240001V0010).....	40
13.2.4	Technical data of SAK7 (GHV9240001V0011).....	40
13.2.5	Technical data of SAK12 (GHV9240001V0012).....	40
13.2.6	Technical data of SAK17 (GHV9240001V0013).....	41
13.2.7	Technical data of AM/S 12.1 (GHQ6310062R0111).....	41
13.3	Notes .....	42

### 1 General

#### 1.1 Using the product manual

This manual provides detailed technical information relating to the function, installation and programming of the ABB i-bus<sup>®</sup> KNX device.

#### 1.2 Legal disclaimer

We reserve the right to make technical changes to the products as well as amendments to the content of this document at any time without advance notice.

In the case of orders, the respective agreed conditions shall be decisive. ABB AG accepts no responsibility whatsoever for potential errors or possible lack of information in this document.

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#### 1.3 Explanation of symbols

1.	Instructions in specified sequence
2.	
▶	Individual actions
a)	Priorities
1)	Processes run by the device in a specific sequence
•	List level 1
○	List level 2

*Tab.1: Explanation of symbols*

Notes and warnings are represented as follows in this manual:



**DANGER –**

This symbol is a warning about electrical voltage and indicates high-risk hazards that will definitely result in death or serious injury unless avoided.



**DANGER –**

Indicates high-risk hazards that will definitely result in death or serious injury unless avoided.



**WARNING –**

Indicates medium-risk hazards that could result in death or serious injury unless avoided.



**CAUTION –**

Indicates low-risk hazards that could result in slight or moderate injury unless avoided.



**ATTENTION –**

Indicates a risk of malfunctions or damage to property and equipment, but with no risk to life and limb.

**Example:**

For use in application, installation and programming examples

**Note**

For use in tips on usage and operation

## 2 Safety

### 2.1 General safety instructions

- ▶ Protect the device from moisture, dirt and damage during transport, storage and operation.
- ▶ Operate the device only within the specified technical data.
- ▶ Operate the device only in a closed housing (distribution board).
- ▶ Mounting and installation must be carried out only by qualified electricians.
- ▶ Disconnect the device from the supply of electrical power before mounting.

### 2.2 Proper use

The product must be installed centrally in an electrical distribution board.

The device is a modular installation device for quick installation in distribution boards on 35 mm mounting rails according to EN 60715.





# ABB i-bus<sup>®</sup> KNX

## Product overview

### 3 Product overview

#### 3.1 Device description

The KNX Power Supply SU/S 30.640.2 provides the system voltage (SELV) for KNX components.

ABB offers a range of matching KNX power supplies. In addition to the standard devices, devices with diagnostic or bus-monitoring functions are available for more complex applications. The SU/S 30.640.2 is the uninterruptible battery backed-up KNX power supply.

All ABB KNX power supplies have an integrated choke.

The device is a modular installation device (MDRC) in pro *M* design. With a module width of 8 division units (DU), the device is designed for installation in distribution boards on a 35 mm mounting rail.

The connection to the ABB i-bus<sup>®</sup> KNX is established via a bus connecting terminal on the front.

After connecting the mains voltage, the unit is ready for operation.

#### 3.2 Product name description

Abbreviation	Description
S	Power Supply
U	Uninterruptible
/S	MDRC
X	30 = Bus voltage (V)
X	640 = Bus current (mA)
X	2 = Version number (x = 1, 2, etc.)

Tab. 2: Product name description

#### 3.3 Ordering details

Description	MW	Type	Order no.	Packaging unit [pcs.]	Weight 1 pc. [kg]
Uninterruptible KNX Power Supply, 640 mA	8	SU/S 30.640.2	2CDG110275R0011	1	0.398

Tab. 3: Ordering details

#### 3.4 Connections

##### 3.4.1 Inputs

- Mains connection
- Battery connection including temperature sensor

##### 3.4.2 Outputs

- Floating changeover contact
- Bus connection

3.5 Uninterruptible KNX Power Supply, 640 mA SU/S 30.640.2, MDRC



Fig. 1: Device illustration – SU/S 30.640.2

9PAA00000059996

3.5.1 Dimension drawing

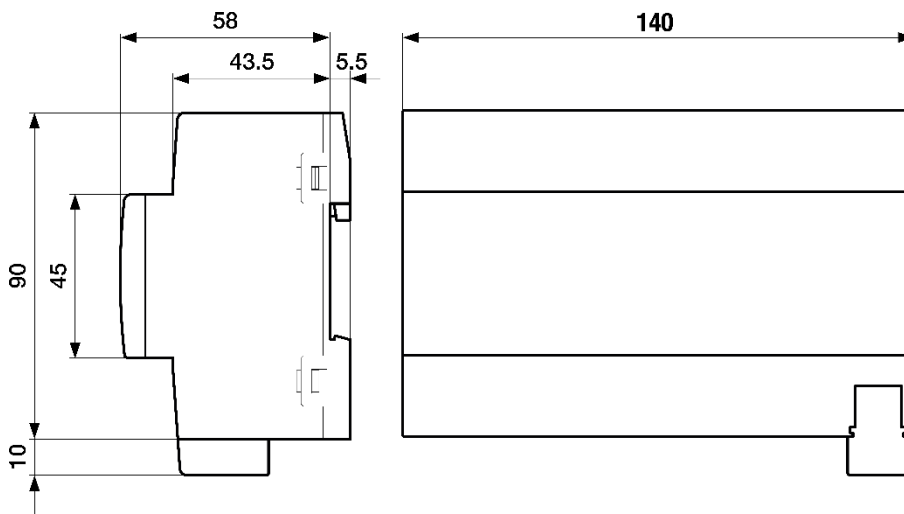


Fig. 2: Dimension drawing

2CDC072027F0017

# ABB i-bus<sup>®</sup> KNX

## Product overview

### 3.5.2

#### Connection diagram

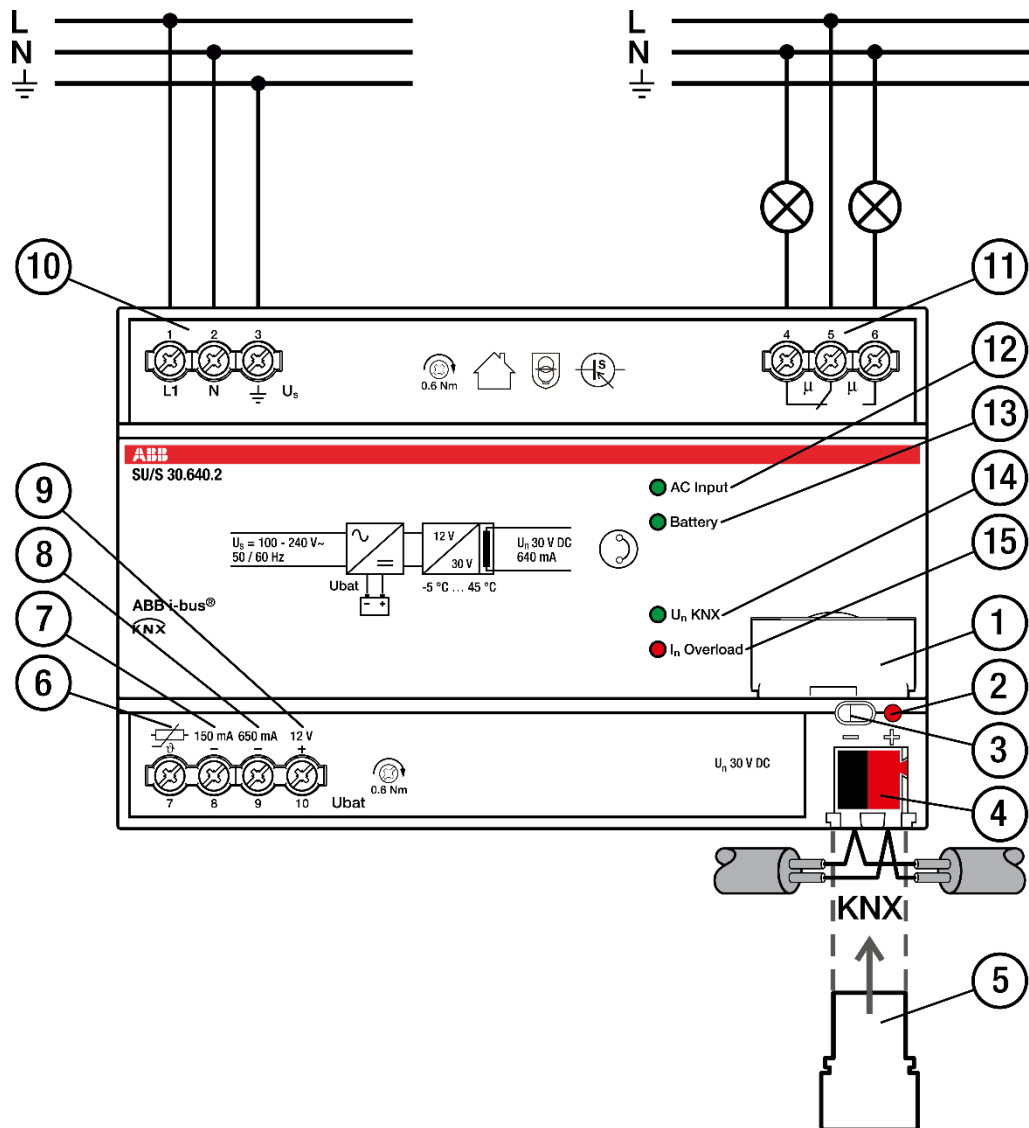


Fig. 3: Connection diagram SU/S 30.640.2

#### Legend






- |   |                                   |    |  |
|---|-----------------------------------|----|--|
| 1 | Label carriers                    | 8  | Code/650 mA and temperature sensor (-) |
| 2 | LED without function              | 9  | Battery connection (+)                 |
| 3 | Reset button                      | 10 | Mains connection                       |
| 4 | KNX connection                    | 11 | Floating changeover contact            |
| 5 | Cover cap                         | 12 | AC Input LED (green)                   |
| 6 | Temperature sensor connection (+) | 13 | Battery LED (green)                    |
| 7 | 150 mA and temperature sensor (-) | 14 | U <sub>n</sub> KNX LED (green)         |
|   |                                   | 15 | I <sub>n</sub> Overload LED (red)      |

# ABB i-bus<sup>®</sup> KNX

## Product overview

### 3.5.3

#### Operating and display elements

Button/LED	Description	LED indicator
	Reset	With reset, the overload display and the fault signal relay are reset, there is no reset of the KNX bus. If the fault has not been rectified before pressing the reset button, the fault is still present, the potential-free changeover contact and the LED remain in the fault position.
	AC Input	Off: No mains voltage On: Mains voltage OK
	Battery	Off: No battery connected or battery fault On: Battery OK
	$U_n$ KNX	Off: Overload/bus line short circuit On: Bus line OK
	$I_n$ Overload	Off: Bus line OK On: Overload/bus line short circuit

Tab. 4: Operating and display elements

# ABB i-bus<sup>®</sup> KNX

## Product overview

### 3.5.4

#### Technical data

Supply	Mains voltage $U_s$	100 – 240 V AC, 50/60 Hz (85...265 V AC)	
	Power consumption	< 60 VA	
	Power loss	< 10 W	
	Battery backup $U_{bat}$		
	Battery type	Sealed Lead Acid Battery	
	Quantity	Max. 2 in parallel (with the same capacity)	
	Rated voltage	12 V DC	
	Battery capacity	1 Ah – 2 x 17 Ah	
	Mains voltage failure bridging time	depending on battery capacity	
	Nominal battery charging current	600 mA, with battery connection via KS/K cable set 150 mA with battery module AM/S12.	
Connections	Charging voltage control	Charging voltage controlled via temperature sensor	
	Connection type, bus	Plug-in terminal	
	Cable diameter, bus	0.6 ... 0.8 mm, solid	
	Connection type, mains voltage $U_s$	3 screw terminals	
	Connection type, battery connection $U_{bat}$ incl. temperature sensor	4 screw terminals	
	Connection type, changeover contact	3 screw terminals	
	Connection type, load circuit	Screw terminal with universal head (PZ 1)	
	Pitch	6.35 mm	
	Tightening torque, screw terminals	≤ 0.6 Nm	
	Conductor cross section, fine stranded	All screw terminals: (0.75 – 2.5 mm <sup>2</sup> )	
	Conductor cross section, single core	All screw terminals: (0.2 – 4.0 mm <sup>2</sup> )	
	Outputs	KNX Power Supply $U_n$	1 line with integrated choke
		Rated voltage	30 V DC
Voltage range, bus		21 ... 31 V DC	
Rated bus current		640 mA, continuous short-circuit proof	
Bus overload current		900 mA	
Bus continuous short circuit current		1.3 A – 1.5 A	
Mains power failure backup time (without connected battery)		100 ms	
KNX safety extra low voltage		SELV	
Floating changeover contact $\mu$			
Rated voltage		100-240 V AC – 12/24 V DC	
Max. switching current		6 A AC or 4 A DC	
Mains connection	3 screw terminals		
Floating changeover contact $\mu$			

# ABB i-bus® KNX

## Product overview

Degree of protection and protection class	Degree of protection	IP 20 (according to EN 60529)
	Protection class	II (according to EN 61140)
Isolation category	Overvoltage category	III (according to EN 60664-1)
	Pollution degree	2 (according to EN 60664-1)
SELV	KNX safety extra low voltage	SELV 24 V DC
Temperature range	Operation	-5 ... +45 °C
	Transport	-25 ... +70 °C
	Storage	-25 ... +55 °C
Ambient conditions	Humidity	≤ 95 %
	Atmospheric pressure	Atmosphere up to 2,000 m
Design	Modular installation device (MDRC)	Modular installation device
	Design	pro <i>M</i>
	Housing/color	Polycarbonate, Makrolon FR6002, halogen free
Dimensions	Dimensions	90 × 140 × 63.5 mm (H x W x D)
	Mounting width in space units	8 modules, 17.5 mm each
	Mounting depth	68 mm
Mounting	35 mm mounting rail	According to EN 60715
	Mounting position	Any
	Weight	0.398 kg
Approvals	KNX certification	According to EN 50491
Declaration of conformity		CE

Tab. 5: Technical data

### 4 Function

#### 4.1 Device functions

The uninterruptible KNX power supply generates and monitors the KNX system voltage. The integrated choke decouples the bus line from the power supply.

The power supply is connected to the bus line with a bus connecting terminal.

When the reset button is pressed, the overload indicator and the fault signal relay are reset. If the fault was not corrected before the reset button was pressed, the fault is still present, the floating changeover contact and the LED remain in the fault position. When the reset button is pressed, the bus line is not de-energized. To de-energize the bus line, the bus connecting terminal must be disconnected from the power supply.

Up to two 12 V lead gel accumulators can be connected to buffer the KNX system voltage in the event of mains voltage failures. The batteries are charged via the SU/S 30.640.2. A temperature sensor is used to control the charging voltage. In the event of a mains voltage failure, the SU/S 30.640.2 is powered by the batteries.



#### **ATTENTION –**

The temperature sensor must be connected in any case so that the battery can be charged properly.

The fault of the device can be reported via a potential-free changeover contact. The potential-free changeover contact is closed between terminals 6 and 5 in the normal state, and between terminals 5 and 4 in the event of a fault.

The following faults will cause the changeover contact to switch:

- Mains voltage failure
- Battery fault
- Overvoltage and overload or short circuit of the bus line

### 4.2 Monitoring and fault messages

The device continuously monitors the bus current, the mains voltage and the battery voltage. Faults are indicated by LEDs directly on the device and reported via the floating changeover contact.

If an overload is present for more than 10 seconds, the fault message is logged, i.e., the potential-free changeover contact and the corresponding LEDs remain in the fault position, even if the cause of the fault message is no longer present and the KNX line is back in normal operation.

Once the fault has been corrected, the saved alarm can be acknowledged and deleted by pressing the Reset button once. The potential-free contact switches to its idle position and the LED assumes the state of normal operation.

If the fault has not been rectified before the reset button is pressed, the fault remains logged, the floating changeover contact and the LED remain in the fault position.

#### 4.2.1 Bus line monitoring

Overload/short circuit: The "I<sub>n</sub> Overload" LED illuminates red if the bus line overloads. If the overload causes bus currents of more than 1.2 A (e.g. in the event of a short circuit), the output voltage is automatically switched off and the green "U<sub>n</sub> KNX" LED extinguishes. If the bus line is overloaded or short-circuited for longer than 10 seconds, the floating changeover contact switches to the fault position.

#### 4.2.2 Mains voltage monitoring

In the event of a mains voltage failure, the bus line is supplied from the connected accumulator. No faults will occur in the system. If the mains voltage fails, the potential-free changeover contact switches to the fault position and the "AC Input" LED extinguishes. When the mains power is restored, the floating changeover contact will return to its idle position and the LED will illuminate green. A fault message is not logged.

#### 4.2.3 Battery voltage monitoring

A battery test is automatically performed at intervals of approx. 15 minutes. A manual battery test can be triggered by pressing the Reset button. If there is a battery fault (battery voltage low V<sub>bat</sub> < 10.6 V), the potential-free changeover contact switches to the fault position and the "Battery" LED extinguishes. The "Battery" LED will flash if a faulty battery or a battery with reversed polarity is connected. When the cause for the battery fault is remedied, the floating changeover contact will return to its idle position and the LED will illuminate green. The fault message is not saved.

The "Battery" LED is off if no battery is connected.

#### Note

In the worst case, it can take up to 15 minutes after the fault has occurred for the battery fault to be displayed. Likewise, after the cause of the fault has been rectified, it may take 15 minutes for the floating changeover contact to return to its idle position and for the LED to extinguish.



# ABB i-bus<sup>®</sup> KNX Function

## 4.2.4

### Diagnostic table

The status of the device can be determined by means of the LEDs and the potential-free changeover contact. The table below shows the device state and what must be done to restore normal operation.

AC Input	Battery	U <sub>n</sub> KNX	I <sub>n</sub> Overload	Change-over contact	State of the device	What to do
Green	Green	Green	Off	Idle	Normal operation	
Off	Green	Green	Off	Fault	Mains voltage failure, battery operation	Connect mains supply
Green	Off	Green	Off	Fault	No battery, battery error or battery discharged	Check battery connection, possibly replace battery fuse or battery
Off	Off	Off	Off	Fault	Mains voltage failure and no battery, battery fault or battery empty	Connect mains voltage, charge battery (possibly check connection or replace battery)
Green	Green	-	Red	Fault	Overload or short circuit	In the event of a short circuit, eliminate the cause of the short circuit, in the event of an overload, reduce the number of devices, acknowledge the fault, perform a reset.
Off	Green	-	Red	Fault	Overload or short circuit and mains power failure, battery operation	In the event of a short circuit, eliminate the cause of the short circuit, reduce the number of devices in the event of an overload, switch on the mains voltage supply, acknowledge the fault, perform a reset
Green	Off	-	Red	Fault	Overload or short circuit, no battery, battery error or battery discharged	In the event of a short circuit, eliminate the cause of the short circuit, reduce the number of devices in the event of an overload, acknowledge the fault, perform a reset, check the battery connection, replace the battery fuse or battery if necessary
Green	Green	-	Red	Fault	Overload, output voltage OK	Reduce number of devices, acknowledge fault, perform reset
Off	Green	Green	Red	Fault	Overload, output voltage OK, mains voltage failure, battery operation	Reduce the number of stations, connect the mains power supply, acknowledge the fault, perform a reset
Green	Off	Green	Red	Fault	Overload, output voltage OK, mains operation, no battery, battery fault or battery empty	Reduce number of devices, check battery connection, possibly replace battery fuse or battery, acknowledge fault, perform reset
-	Flashing green	-	-	Fault	Battery faulty or battery connection polarity reversed	Check battery connection, possibly replace battery, perform reset

Tab 7.: Diagnostic table



# ABB i-bus<sup>®</sup> KNX

## Mounting and installation

### 5 Mounting and installation

#### 5.1 Information about mounting

The mounting position for the device can be selected as required.

The electrical connection is made via screw terminals. The connection to the bus is made via the supplied bus connecting terminal. The terminal designation is located on the housing.

After connecting the supply voltage, the unit is ready for operation.



#### **DANGER – Severe injuries due to touch voltage**

Electric feedback from different phase conductors can cause contact voltages and lead to serious injuries.

Operate the device only in a closed housing (distribution board).  
Disconnect all phases before working on the electrical connection.

#### 5.2 Mounting on DIN rail

The device is fitted and removed without auxiliary tools.

Make sure the device is accessible for operation, testing, visual inspection, maintenance and repair.

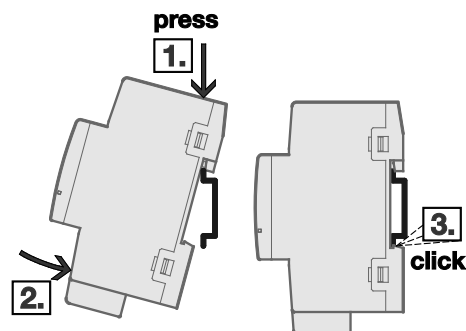


Fig. 4: Mounting on DIN rail

1. Place the DIN rail holder on the upper edge of the DIN rail and push down.
2. Push the lower part of the device toward the DIN rail until the DIN rail holder engages.  
⇒ The device is now mounted on the DIN rail.
- ▶ Relieve the pressure on the top of the housing.

#### 5.3 Connecting the floating changeover contact

To monitor fault messages, either the normally closed contact or the normally open contact of the floating changeover contact or both can be used. In doing so, you can, for example, use an LED to indicate whether the line is working properly or whether there is a malfunction.

# ABB i-bus® KNX

## Mounting and installation

### 5.4 Connecting the Sealed Lead Acid Batteries SAK X

The Sealed Lead Acid Batteries SAK2, SAK7, SAK12 and SAK17 are used to back up the KNX system voltage in combination with the Uninterruptible KNX Power Supply SU/S 30.640.X. The service life of the Sealed Lead Acid Batteries is 5 years.

Up to two Sealed Lead Acid Batteries can be connected in parallel to the SU/S 30.640.X. Two identical Sealed Lead Acid Batteries must be used in this case. Cable Set KS/K 4.1 must be used when connecting a single Sealed Lead Acid Battery to the SU/S 30.640.X. When two Sealed Lead Acid Batteries are connected, use Cable Set KS/K 4.1 for one battery and Cable Set S/K 2.1 for the other battery.

#### **Note**

Cable Sets KS/K 4.1 and KS/K 2.1 are not supplied with the device.

- Order number for KS/K 4.1: GHQ6301910R0001
- Order number for KS/K 2.1: GHQ6301910R0011

Cable Set KS/K 4.1 includes a replaceable fuse and a temperature sensor for temperature-controlled charging voltage adjustment; Cable Set KS/K 2.1 includes a replaceable fuse.



#### **ATTENTION –**

When connecting one or two batteries connected in parallel, the temperature sensor must always be connected.

When connecting the SAK2, SAK7, SAK12 and SAK17 batteries with the Cable Sets KS/K 4.1 and KS/K 2.1, make sure that the colored cable cores are wired correctly.

#### Connecting the KS/K 4.1 to the Power Supply SU/S 30.640.X

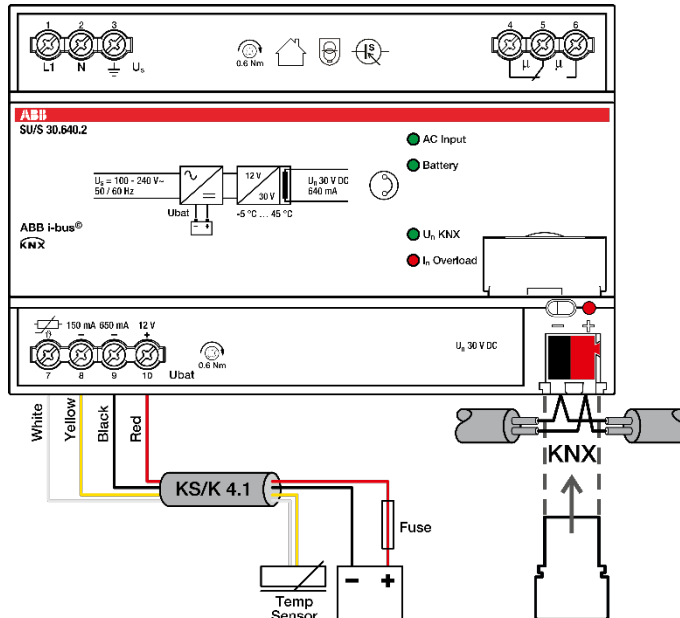


Fig. 4: Connecting the KS/K 4.1 to the Power Supply SU/S 30.640.X

	Terminal 7 (Temp)	Terminal 8 (150 mA)	Terminal 9 (Code 650 mA)	Terminal 10 (12 V)
KS/K 4.1 (1st battery)	White (+) Temp. sensor	Yellow (-) Temp. sensor	Black (-) Battery GND	Red (+) Battery 12 V

Tab. 6: Connecting the KS/K 4.1 to the Power Supply SU/S 30.640.X

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# ABB i-bus<sup>®</sup> KNX Mounting and installation

Connecting the KS/K 4.1 and KS/K 2.1 to the Power Supply SU/S 30.640.X

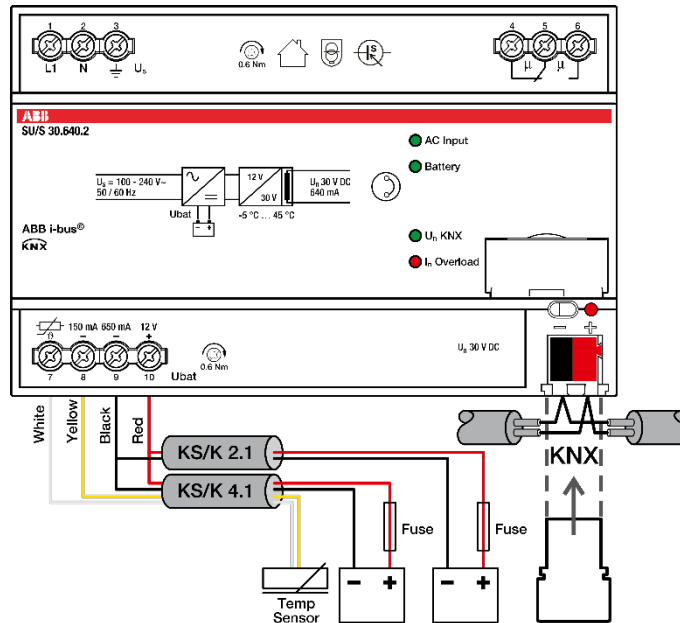


Fig. 5: Connecting the KS/K 4.1 and KS/K 2.1 to the Power Supply SU/S 30.640.X

	Terminal 7 (Temp)	Terminal 8 (150 mA)	Terminal 9 (Code 650 mA)	Terminal 10 (12 V)
KS/K 4.1 (1st battery)	White (+) Temp. sensor	Yellow (-) Temp. sensor	Black (-) Battery GND	Red (+) Battery 12 V
KS/K 2.1 (2nd battery)	-	-	Black (-) Battery GND	Red (+) Battery 12 V

Tab. 7: Connecting the KS/K 4.1 and KS/K 2.1 to the Power Supply SU/S 30.640.X

The maximum charging time of the Sealed Lead Acid Batteries is:

SAK7: 16 h (1 x SAK7) or 32 h (2 x SAK7 parallel)

SAK12: 28 h (1 x SAK12) or 56 h (2 x SAK12 parallel)

SAK17: 39 h (1 x SAK17) or 78 h (2 x SAK17 parallel)

The max. backup time will be available only after the max. charging time has elapsed.

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# ABB i-bus® KNX

## Mounting and installation

### 5.5 Mounting and connecting the battery module AM/S 12.1

The battery module is a Sealed Lead Acid Battery for backing up the ABB i-bus® KNX system voltage to bridge mains power failures. The battery module can only be used in combination with the uninterruptible KNX Power Supply SU/S 30.640.X.

The battery module is a rail-mounted device and can simply be latched onto the mounting rail in the distribution board below the SU/S 30.640.X. The backup time depends on the bus load, and it is at least 10 minutes with an KNX line at full capacity (64 devices). It is not possible to connect several battery modules to the SU/S 30.640.X in parallel or to connect the battery module together with other batteries. The battery module features an integrated temperature sensor for temperature-controlled charging current adjustment. An integrated fuse protects the battery module from short-circuiting.

The battery module is connected to the SU/S 30.640.2 using a standard cable (solid or fine stranded, recommended connection cross-section: 0.75 – 1.5 mm<sup>2</sup>). A four-core cable is required – two cores for charging/discharging and two cores for temperature-controlled charging current adjustment (the temperature sensor is integrated in the AM/S 12.1).



#### ATTENTION –

The temperature sensor must be connected in any case so that the battery is charged properly and does not overheat during charging.

Observe the following guidelines when using the battery module AM/S 12.1:

- The battery module may only be connected to the uninterruptible KNX power supply SU/S 30.640.X.
- The battery module must only be used in wall-mounted distribution boards with a horizontal mounting rail (35 mm, EN 50 022).
- The battery module must not be connected in series or parallel with other battery modules or other Sealed Lead Acid Batteries.
- The battery module is fully or partially charged when delivered. The battery module must not be stored discharged. If the battery module is stored for an extended period without being connected to the SU/S 30.640.X, it must be fully charged at least every 6 months. The battery can be stored for up to 2 years at a storage temperature of 20 °C.
- After discharging the battery module during normal operation, the battery module must be recharged.
- Based on the service life of the Sealed Lead Acid Battery, it is recommended to replace the battery module with a new one around every four years. Old battery modules are taken back by ABB for environmentally friendly disposal.

The maximum battery module charging time is 10 hours. The max. backup time will be available only after the max. charging time has elapsed.

# ABB i-bus® KNX

## Mounting and installation

Connecting the AM/S 12.1 to the Power Supply SU/S 30.640.X

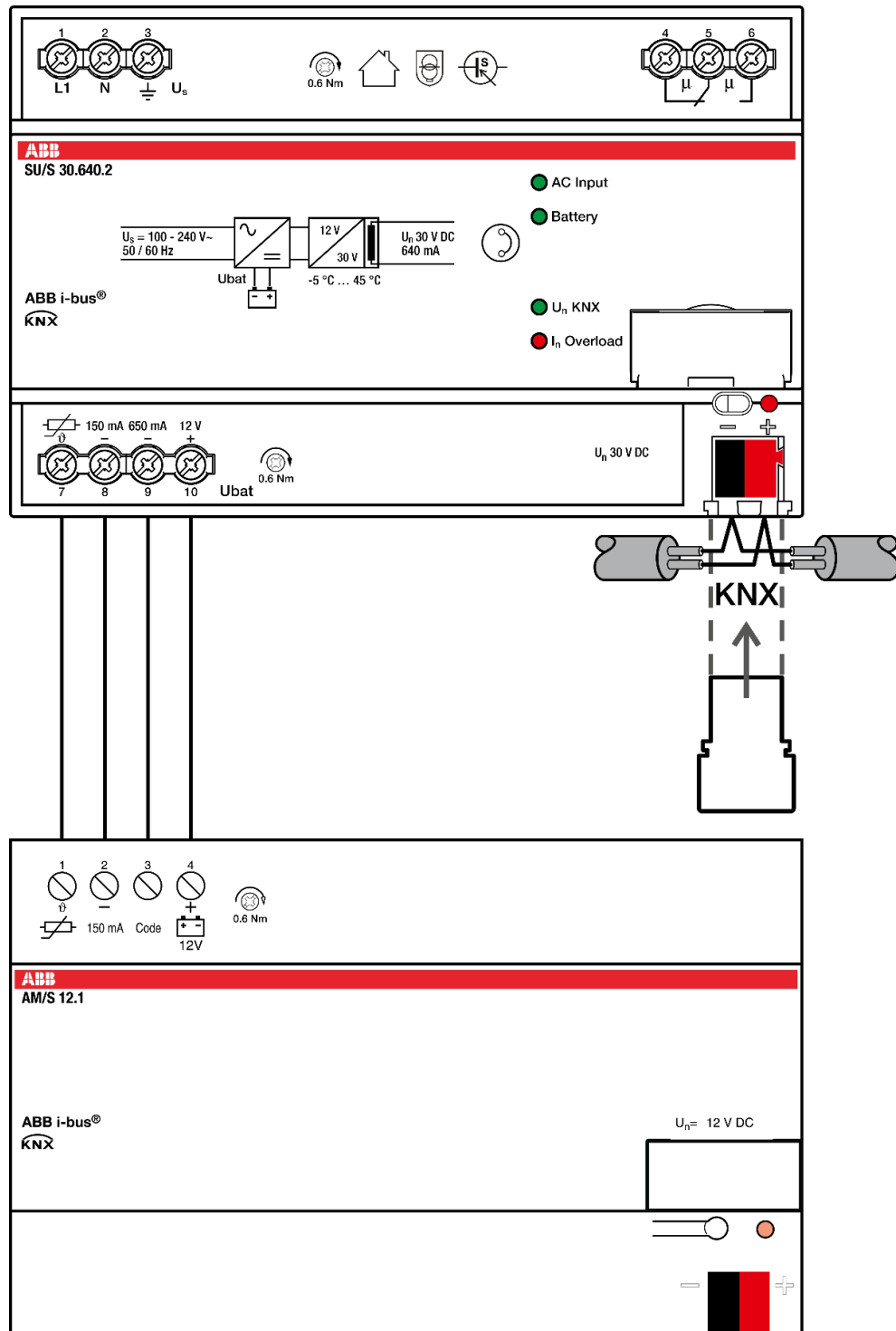


Fig. 6: Connecting the AM/S 12.1 to the Power Supply SU/S 30.640.X

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### 6 Commissioning

Switch on the mains voltage after connecting the device. The green "U<sub>n</sub> KNX" LED and the green "AC Input" LED illuminate. If a battery is connected, the green "Battery" LED illuminates as well. The device is operating properly.

An automatic battery test is performed every 15 minutes. In the most unfavorable case, it can take up to 15 minutes after connection before a possible battery fault is indicated or reset. Likewise, it can take up to 15 minutes for the "Battery" LED to illuminate after the cause for a fault is corrected.

Pressing the Reset button can trigger a manual battery test. If an "overload" fault is logged but is no longer active, this fault is also reset. The green "Battery" LED will flash if a faulty battery is connected or if the battery connection polarity is reversed.



# ABB i-bus<sup>®</sup> KNX Parameters

## **7**            **Parameters**

This section is not relevant for this device.



## 8 **Group objects**

This section is not relevant for this device.



## 9 Operation

### 9.1 Resetting the saved overload indication

Press the Reset button to perform a reset. The overload indication and the fault signaling relay will be reset. The bus connection terminal must be disconnected from the Power Supply to de-energize the bus line.

For more information, see [chapter 4.3](#).





# ABB i-bus<sup>®</sup> KNX

## Maintenance and cleaning

### **10 Maintenance and cleaning**

#### **10.1 Maintenance**

The device is maintenance-free. Any damage due to transport or storage, for example, must not be repaired.

#### **10.2 Cleaning**

Disconnect the device from mains voltage before cleaning. Dirty devices can be cleaned with a dry cloth or a cloth slightly moistened with soapy water. Never use corrosive agents or solutions.



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## Removal and disposal

### 11 Removal and disposal

#### 11.1 Removal

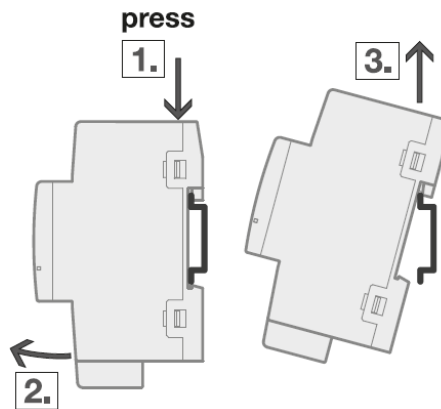


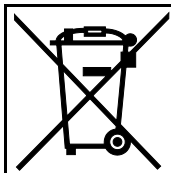
Fig. 7: Removal

1. Press on the top of the device.
2. Release the bottom of the device from the DIN rail.
3. Lift the device up and off the DIN rail.

#### 11.2 Environment

Consider environmental protection.

Used electrical and electronic devices must not be disposed of as domestic waste.



The device contains valuable resources that can be recycled. Therefore, please take the device to a suitable recycling center. All packaging materials and devices are provided with markings and test seals for proper disposal. Always dispose of packaging material and electrical devices or their components at collection points or disposal companies authorized for this purpose. The products comply with the statutory requirements, particularly the law on electrical and electronic equipment and the REACH regulation. (EU directive 2012/19/EU WEEE and 2011/65/EU RoHS) (EU REACH regulation and the law implementing the regulation (EC) no.1907/2006)



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## Planning and application

## 12 Planning and application

### 12.1 Device application

The Uninterruptible KNX Power Supply SU/S 30.640.2 is particularly suitable for powering:

- Systems requiring a highly failsafe KNX system (e.g. for safety applications or fault messages)
- Systems with KNX voltage backup for up to 16 hours
- Systems with fault indication and logging of fault messages in case of mains failure, battery fault, overload / short circuit

### 12.2 Back-up supply

To bridge longer mains voltage failures, the SU/S 30.640.2 can be buffered with a 12 V lead accumulator. The mains voltage failure backup time depends on the load connected to the KNX line and the battery capacity.

ABB offers four different batteries with various battery capacities. The AM/S 12.1 accumulator module is a rail-mounted unit; the SAK 7, SAK 12 and SAK 17 lead-gel accumulators can be installed in a separate distribution board.

When the uninterruptible KNX power supply SU/S 30.640.2 (KNX bus = 640 mA) is used at full capacity, the lead gel accumulators buffer the KNX system voltage for the following mains voltage failure bridging times:

#### **Battery module, 12 V DC, MDRC, AM/S 12.1**

- Battery capacity: 1 Ah
- Mains power failure backup time: 10 min.\*

#### **Sealed Lead Acid Battery SAK2**

- Battery capacity: 2 Ah
- Mains power failure backup time: up to 0.5 h\* (one SAK 2), up to 1 h\* (two SAK 2 in parallel)

#### **Sealed Lead Acid Battery SAK7**

- Battery capacity: 7 Ah
- Mains power failure backup time: up to 2.5 h\* (one SAK 7), up to 5 h\* (two SAK 7 in parallel)

#### **Sealed Lead Acid Battery SAK12**

- Battery capacity: 12 Ah
- Mains power failure backup time: up to 5.5 h\* (one SAK 12), up to 11 h\* (two SAK 12 in parallel)

#### **Sealed Lead Acid Battery SAK17**

- Battery capacity: 17 Ah
- Mains power failure backup time: up to 8 h\* (one SAK 17), up to 16 h\* (two SAK 17 in parallel)

\* The times are based on a battery in new condition under nominal load

### 12.3 Battery service life

Due to the durability of the accumulators, accumulators should be replaced approx. every four years to ensure the maximum mains voltage failure bridging time.

The following diagrams show the backup times depending on the number of powered KNX devices. The top diagram shows the backup times at a larger scale (backup for up to 50 hours). The bottom diagram shows the backup times at a smaller scale (backup times up to 20 hours).

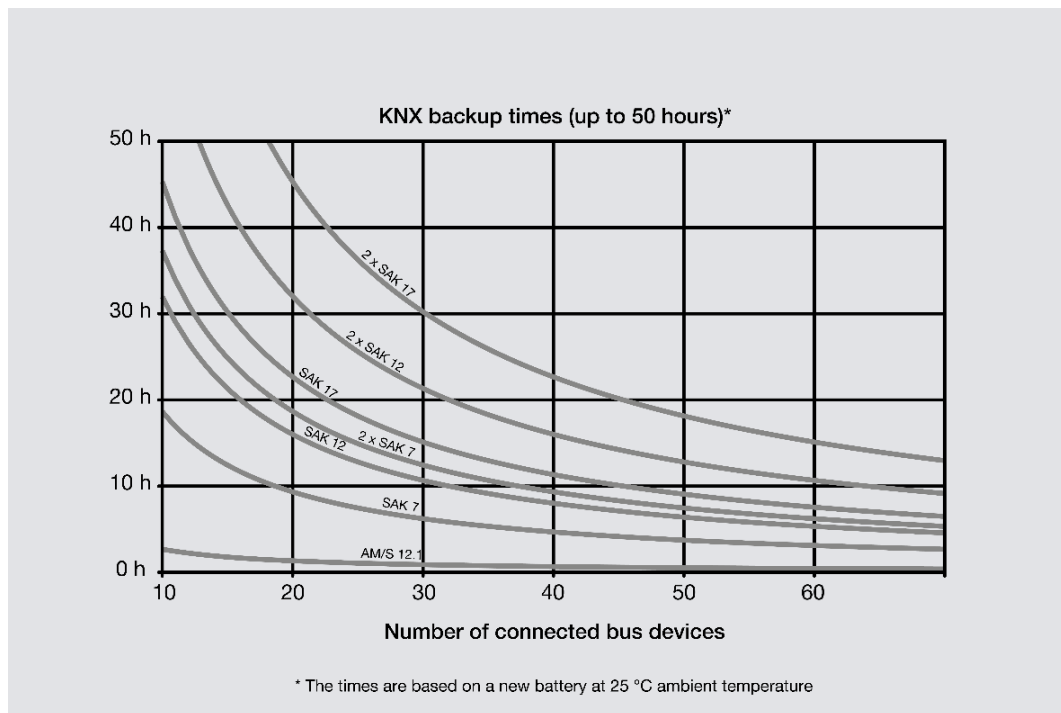


Fig. 8: KNX backup times up to 50 hours

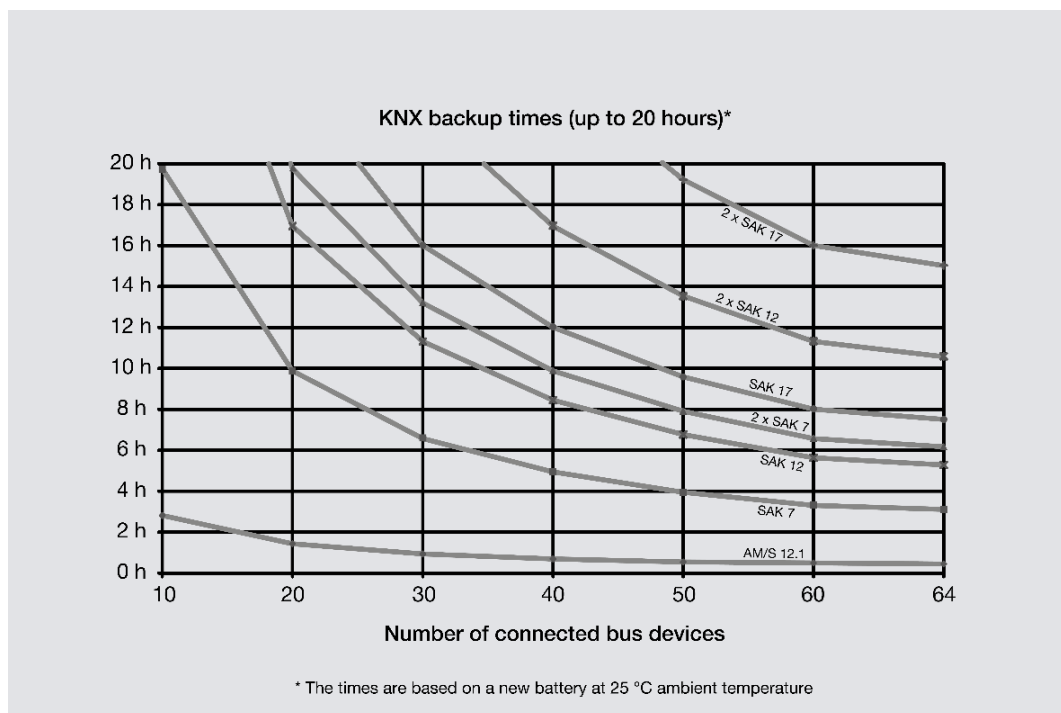


Fig. 9: KNX backup times up to 20 hours

### 13 Appendix

#### 13.1 Scope of delivery

The Power Supply SU/S 30.640.2 is supplied with the following items: The items delivered should be checked against the list below

- 1 x Power Supply SU/S 30.640.2
- 1 x installation and operating instructions
- 1 x bus connection terminal (red/black)
- 1 x KNX connection cover cap

#### 13.2 Accessories

##### 13.2.1 Technical data of Cable Set, Basic KS/K 4.1 (GHQ6301910R0001)

Cables/wires	Cables	4-core cable
	Cross-section	0.75 mm <sup>2</sup>
	Length	2 m
Color	Battery connection	Red: "+" (battery 12 V) Black: "-" (battery GND)
	Temperature sensor	White: "+" (temp. sensor 12 V) Yellow: "-" (temp. sensor GND)
Connections	Battery connection	For connection to SU/S 30.640.X: wire-end ferrules For connection to the battery: Faston sockets and pole shoes
	Temperature sensor	Wire-end ferrules
Fuse	Class	User-replaceable fuse with in-line fuse holder with bayonet lock
	Type	5 x 20 mm slow-blow; T 6.3 H 250 V, breaking capacity: 1,500 A
Weight		0.1 kg

Tab. 8: Technical data of KS/K 4.1

##### 13.2.2 Technical data of Cable Set, Extension KS/K 2.1 (GHQ6301910R0011)

Cables/wires	Cables	2-core cable
	Cross-section	0.75 mm <sup>2</sup>
	Length	2 m
Color	Battery connection	Red: "+" (battery 12 V) Black: "-" (battery GND)
	Connections	For connection to SU/S 30.640.X: wire-end ferrules For connection to the battery: Faston sockets and pole shoes
Fuse	Class	User-replaceable fuse with in-line fuse holder with bayonet lock
	Type	5 x 20 mm slow-blow; T 6.3 H 250 V, breaking capacity: 1,500 A
Weight		0.1 kg

Tab. 9: Technical data of KS/K 2.1

### 13.2.3 Technical data of SAK2 (GHV9240001V0010)

Supply	Rated voltage	12 V DC
	Battery capacity	2 Ah
Temperature range	Operation	-20 ... +50 °C
	Transport	-20 ... +50 °C
	Storage	-20 ... +20 °C
Dimensions		64 × 178 × 34 mm (H x W x D)
Weight		0.94 kg
Service life		5 years

Tab. 10: Technical data of SAK2

### 13.2.4 Technical data of SAK7 (GHV9240001V0011)

Supply	Rated voltage	12 V DC
	Battery capacity	7 Ah
Temperature range	Operation	-20 ... +50 °C
	Transport	-20 ... +50 °C
	Storage	-20 ... +20 °C
Dimensions		94 × 151 × 65 mm (H x W x D)
Weight		2.6 kg
Service life		5 years

Tab. 11: Technical data of SAK7

### 13.2.5 Technical data of SAK12 (GHV9240001V0012)

Supply	Rated voltage	12 V DC
	Battery capacity	12 Ah
Temperature range	Operation	-20 ... +50 °C
	Transport	-20 ... +50 °C
	Storage	-20 ... +20 °C
Dimensions		94 × 151 × 98 mm (H x W x D)
Weight		4.2 kg
Service life		5 years

Tab. 12: Technical data of SAK12



### 13.2.6 Technical data of SAK17 (GHV9240001V0013)

Supply	Rated voltage	12 V DC
	Battery capacity	17 Ah
Temperature range	Operation	-20 ... +50 °C
	Transport	-20 ... +50 °C
	Storage	-20 ... +20 °C
Dimensions		167 × 181 × 76 mm (H x W x D)
Weight		6.8 kg
Service life		5 years

Tab. 13: Technical data of SAK17

### 13.2.7 Technical data of AM/S 12.1 (GHQ6310062R0111)

Supply	Power Supply	May be connected only to the Uninterruptible KNX Power Supply SU/S 30.640.X
	Rated voltage	12 V DC
	Battery capacity	1 Ah
	Charging current	150 mA
	Charging time	Max. 10 h
	Mains power failure backup time	10 minutes (depending on the bus load; the mains power failure backup time decreases as the battery module ages)
Safety	Temperature sensor	Integrated
	Fuse	Self-healing (integrated)
Connections	Power Supply	2 screw terminals
	Temperature sensor	2 screw terminals
	Connection cross section	Fine stranded: 0.2 – 2.5 mm <sup>2</sup> Solid: 0.2 – 4 mm <sup>2</sup>
Degree of protection		IP 20, EN 60 529
Temperature range	Operation	+5 ... +45 °C
	Transport	-25 ... +50 °C
	Storage	-25 ... +20 °C
Design	Modular installation device (MDRC)	Modular installation device
	Design	pro M
	Housing/color	Plastic, gray
Dimensions	Dimensions	90 × 144 × 64.5 mm (H x W x D)
	Mounting width in space units	8 modules, 18 mm each
	Mounting depth	68 mm
Mounting	35 mm mounting rail	According to EN 60715
	Mounting position	Horizontal
	Weight	0.72 kg
Declaration of conformity		CE according to EMC Directive and Low-Voltage Directive

Tab. 14: Technical data of AM/S 12.1

# ABB i-bus<sup>®</sup> KNX

## Appendix

### 13.3 Notes

# ABB i-bus<sup>®</sup> KNX

## Appendix



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