ABB

HS/S4.2.1
Brightness sensor
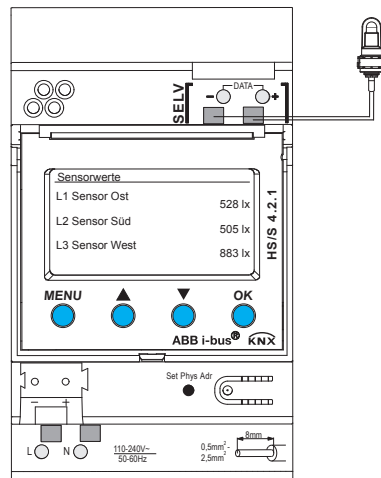
2CDG120044R0011

GB

Installation and operating instructions

D	GB	F
I	S	NL

SELV − ○ DATA ○ +

Sensorwerte

L1 Sensor Ost — 528 lx
L2 Sensor Süd — 505 lx
L3 Sensor West — 883 lx

HS/S 4.2.1

MENU ▲ ▼ OK

ABB i-bus® KNX

Set Phys Adr

L ○ N ○ 110-240V~ 50-60Hz 0,5mm²- 2,5mm² 8mm

HS/S4.2.1

Contents

Basic safety instructions

⚠ **WARNING**

Danger of death through electric shock or fire!

➢ Installation should only be carried out by a professional electrician!

- The device is designed for installation on DIN top hat rails (in accordance with EN 60715); device conforms with EN 60669-1
- Professional installation of bus lines and commissioning of devices requires compliance with the provisions of EN 50428 for switches or similar installation equipment for use in building systems technology. Tampering with, or making modifications to, the device will invalidate the guarantee.
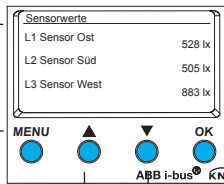
Designated use
- The device registers the brightness via up to 3 external brightness sensors; the measured values are transmitted via the bus.
- Only use the device in enclosed, dry spaces; brightness sensors are installed in the open-air.

Disposal

Dispose of device in environmentally sound manner

Screen and keys

Screen display,
e. g. sensor values

Sensorwerte	
L1 Sensor Ost	528 lx
L2 Sensor Süd	505 lx
L3 Sensor West	883 lx

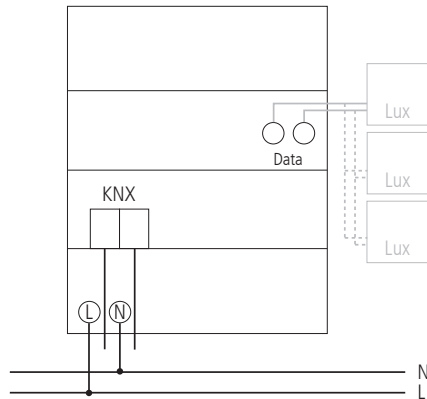**MENU** ▲ ▼ **OK**

ABB i-bus® KN

⌨ *MENU*

– Activate screen
– Open menu
– Cancel menu
– ESC (1 step back)

➢ ▲ ▼

Options
are displayed

⌨ *OK*

– Store selection
– Confirm selection

Connection/installation

Connection/installation

⚠ **WARNING**

Danger of death through electric shock!
➢ Must only be installed by professional electrician!
➢ Disconnect power source!
➢ Cover or shield any adjacent live components.
➢ Ensure device cannot be switched again!
➢ Check power supply is disconnected!
➢ Earth and bypass!
➢ Observe SELV on data bus.

Connect cable
➢ Strip cable by 8 mm (max. 9 mm).
➢ Insert cable at 45° in the open terminal
  (2 cables per terminal position possible).
➢ With flexible wires only: To open the spring terminal,
  press screwdriver downwards.

45° cable

Spring terminal

Spring
screwless
terminal
NC contact

Test connection

5
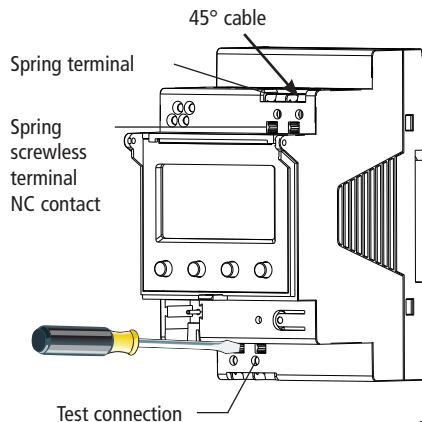
Bus connection

➤ Insert bus line in the front of the device.
➤ Ensure correct polarity.
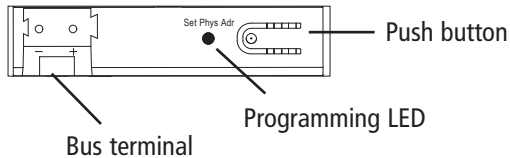
Program physical address

➤ Press button on front of the device.
  → The programming LED lights up.
  → Device is in program mode.

Start-up, diagnostics and configuration are handled by ETS 3 and 4 (KNX tool software).

Start-up

The pages displayed depends on the programming by the ETS. Please refer to the Product Handbook for detailed functional descriptions (at **www.abb.com/knx**).

```
┌─────────────────────────┐
│ Sensor values           │
│ ───────────             │
│        No sensors       │
│        allocated        │
│                         │
│                         │
│ MENU   ▲    ▼    OK      │
│  ○     ○    ○    ○       │
└─────────────────────────┘
```
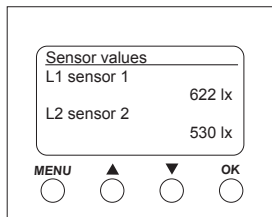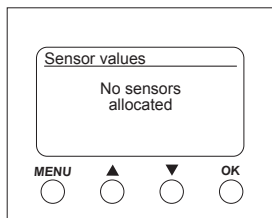
↓

```
┌─────────────────────────┐
│ Sensor values           │
│ ───────────             │
│ L1 sensor 1             │
│              622 lx      │
│ L2 sensor 2             │
│              530 lx      │
│ MENU   ▲    ▼    OK      │
│  ○     ○    ○    ○       │
└─────────────────────────┘
```
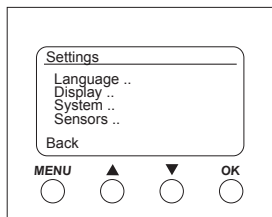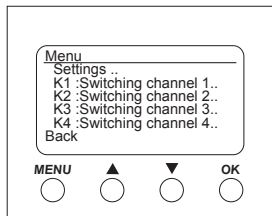
Home page – Sensor values

If an external sensor is connected, the sensor value (lux value) appears on screen. The sensor LED flashes.

Enter PIN

If **Access via PIN** is set on the ETS, the pin code (1000–9999) has to be entered before use.

➢ Enter the numbers with ▼ or ▲ and confirm with *OK*.

Menu – Settings..

```
Menu
  Settings ..
  K1 :Switching channel 1..
  K2 :Switching channel 2..
  K3 :Switching channel 3..
  K4 :Switching channel 4..
Back

MENU    ▲    ▼    OK
 ○      ○    ○    ○
```

⬇

The **Settings** menu item can be used for setting the language, screen lighting or information on the device and sensors.

```
Settings
  Language ..
  Display ..
  System ..
  Sensors ..
Back

MENU    ▲    ▼    OK
 ○      ○    ○    ○
```

➤ Press *MENU* button.
  This brings up **Settings.. .**
➤ Confirm **settings..** by pressing *OK*.
➤ Use ▼ or ▲ to select language, display etc.
➤ Press *OK* to confirm or use ▼ or ▲ to select **Back**.

```
Language
 Deutsch
 English
 Francais
 Espanol
 Italiano
 Nederlands

MENU    ▲      ▼      OK
 ○      ○      ○      ○
```
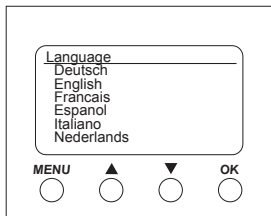
Settings– Set language

➢ Use ▼ or ▲ to select **language**.

➢ Press *OK* to confirm.

➢ Use ▼ or ▲ to select **desired language**.

```
Display
 Light          keypress


 Back

MENU    ▲      ▼      OK
 ○      ○      ○      ○
```
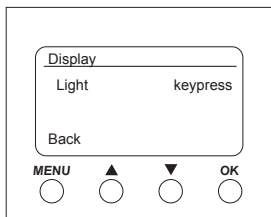
Settings– Set display

➢ Use ▼ or ▲ to select **display**.

➢ Press *OK* to confirm.

```
 System
 Prog. mode          Off
PA:          15.15.255
SW:                VI.0
SN: 0048112233445566
FD:          11.11.2011
HW:                  V0

MENU    ▲      ▼      OK
 ◯      ◯     ◯      ◯
```
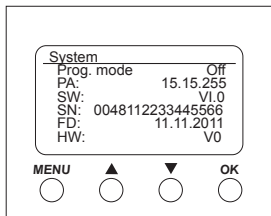
Settings – System..

➢ Use ▼ or ▲ to select **system**.

➢ Press *OK* to confirm.

The display shows

Prog. mode (Programming mode)

PA (Physical address)

SW (Software version)

SN (Serial number)

FD (Finishing date)

HW (Hardware)

```
 ┌──────────────────────────┐
 │                          │
 │  Process sensors         │
 │   L1 sensor 1            │
 │          SN: 123456789   │
 │   L2 sensor 2            │
 │               inactive   │
 │   L3 sensor 3            │
 │               Error      │
 │   Back                   │
 │                          │
 │  MENU   ▲    ▼    OK      │
 │   ◯    ◯    ◯    ◯       │
 └──────────────────────────┘
```
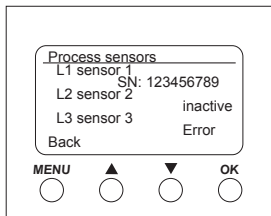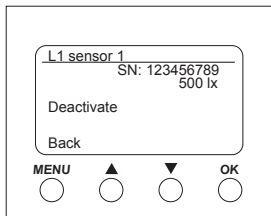
Settings – Sensors..
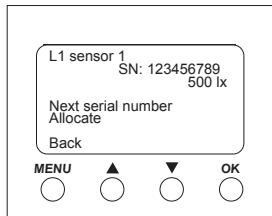➢ Use ▼ or ▲ to select **sensors**.
➢ Confirm by pressing *OK*.

The **Sensors** menu item can be used to display the lux values
for up to 3 connected sensors. The designation of the sensors
can be changed using the ETS:

– active (serial number is displayed)
– inactive (sensor is not required)
– Error (sensor does send)

```
 ┌──────────────────────────┐
 │                          │
 │  L1 sensor 1             │
 │          SN: 123456789   │
 │               500 lx     │
 │   Deactivate             │
 │                          │
 │   Back                   │
 │                          │
 │  MENU   ▲    ▼    OK      │
 │   ◯    ◯    ◯    ◯       │
 └──────────────────────────┘
```

Deactivate active sensor
➢ Use ▼ or ▲ to select the desired sensor.
➢ Confirm L1 sensor 1 (active) by pressing *OK*. This brings up
  serial numbers, lux value and **Deactivate**.
➢ Use ▼ or ▲ to select **Deactivate**.
➢ Confirm by pressing *OK*.

```
┌─────────────────────────────┐
│ ┌─────────────────────────┐ │
│ │ L1 sensor 1             │ │
│ │  inactive               │ │
│ │                         │ │
│ │  Next serial number     │ │
│ │  Allocate               │ │
│ │  Back                   │ │
│ │ MENU   ▲    ▼    OK      │ │
│ │  ◯    ◯    ◯    ◯       │ │
│ └─────────────────────────┘ │
└─────────────────────────────┘
```
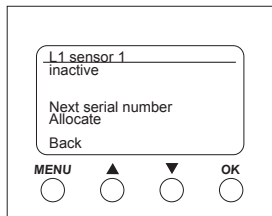
Allocate new serial number to inactive sensor

➤ Use ▼ or ▲ to select **Next serial number**.

➤ Press *OK* to confirm.

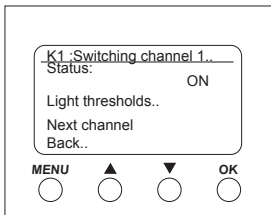The inactive sensor displays a new SN number.

➤ Use ▼ or ▲ to select **Allocate**.

➤ Press *OK* to confirm and, if reqd., select **Back** to leave menu.

```
┌─────────────────────────────┐
│ ┌─────────────────────────┐ │
│ │ L1 sensor 1             │ │
│ │        SN: 123456789    │ │
│ │               500 lx    │ │
│ │  Next serial number     │ │
│ │  Allocate               │ │
│ │  Back                   │ │
│ │ MENU   ▲    ▼    OK      │ │
│ │  ◯    ◯    ◯    ◯       │ │
│ └─────────────────────────┘ │
└─────────────────────────────┘
```

If you want continue searching rather than accepting the sensor..

➤ Select **Next serial number**.

➤Press *OK* to confirm.

```
 ┌─────────────────────────┐
 │ Menu                    │
 │  Settings ..            │
 │  K1 :Switching channel 1..│
 │  K2 :Switching channel 2..│
 │  K3 :Switching channel 3..│
 │  K4 :Switching channel 4..│
 │ Back                    │
 │ MENU    ▲    ▼    OK    │
 │  ◯     ◯    ◯    ◯     │
 └─────────────────────────┘
```
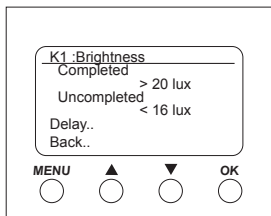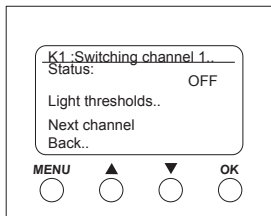
Menu – Switching channels..

The **Switching channels** menu item displays the status of the
channel (ON, OFF, disabled/invalid):

⬇

```
 ┌─────────────────────────┐
 │ K1 :Switching channel 1..│
 │ Status:                 │
 │                  ON     │
 │ Light thresholds..      │
 │ Next channel            │
 │ Back..                  │
 │ MENU    ▲    ▼    OK    │
 │  ◯     ◯    ◯    ◯     │
 └─────────────────────────┘
```
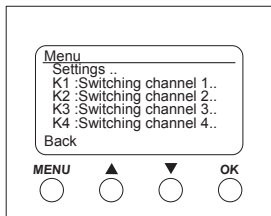
➢ Press *MENU* button.

  This brings up Settings.. and the **Switching channels..** etc.
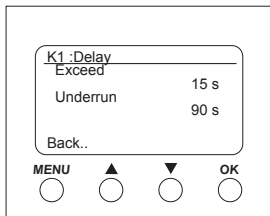➢ Use ▼ or ▲ **K1: to select** Switching channel 1.
➢ Press *OK* to confirm. It brings up **Status** (ON, OFF), **Light
  thresholds..** and **Next channel..**..

```
 K1 :Switching channel 1..
Status:
                    OFF
Light thresholds..
Next channel
Back..

MENU    ▲      ▼      OK
 ◯      ◯      ◯      ◯
```

↓

```
 K1 :Brightness
 Completed
            > 20 lux
 Uncompleted
            < 16 lux
Delay..
Back..

MENU    ▲      ▼      OK
 ◯      ◯      ◯      ◯
```

↓

Select light thresholds (brightness)

The **Light thresholds** menu item can be used to set of the brightness of the relevant channel:

➢ Use ▼ or ▲ to select **Light thresholds**.
➢ Press *OK* to confirm.
➢ Use ▼ or ▲ to select lux value.
➢ Press *OK* to confirm.
➢ Use ▼ or ▲ to change lux value.
➢ Press *OK* to confirm desired lux value.

```
K1 :Delay
 Exceed
                    15 s
 Underrun
                    90 s

 Back..
MENU    ▲      ▼      OK
 ◯      ◯      ◯      ◯
```

Select delay

The **Delay** menu item can be used to set the delay time:

➢ Use ▼ or ▲ to select **Delay**.
➢ Press *OK* to confirm.
➢ Use ▼ or ▲ to select **Exceed** or **Underrun**.
➢ Press *OK* to confirm selection.
➢ Use ▼ or ▲ to change the delay values.
➢ Press *OK* to select desired delay value.

Technical data

- Operating voltage: 110–240 V~, +10 %/-15 %
- Frequency: 50–60 Hz
- Power consumption: typically 1 W
- Standby min.: 0.8 W
- Data output: Safety Extra Low Voltage (SELV)
- Permissible ambient temperature:
  −5 °C ... +45 °C
  −40 °C ... +70 °C (sensor)
- On/Off switching delay: 0–20 min
- Brightness measuring range: 1–100000
- Protection class: II subject to correct installation
- Protection rating: IP 20 in accordance with EN 60529
- Pollution level: 2

- Max. cable cross section: 2.5 mm²
- Operating voltage KNX: bus voltage ≤10 mA
- Cable length: 100 m (YCYM 2 x 2 x 0.8 mm 2 pairs for DATA bus)
  50 m (YCYM 2 x 2 x 0.8 mm 1 pair each for KNX and DATA bus)
- Max. number of connectable brightness sensors for HS/S4.2.1 at DATA bus: 3

Service address

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