Intra-Sewi TWIN L-Pr and Intra-Sewi TWIN TH-L-Pr Brightness and Presence Detectors

Technical specifications and installation instructions

Item numbers
66111 Intra-Sewi TWIN L-Pr
66121 Intra-Sewi TWIN TH-L-Pr

1.   Description

The **Sensor Intra-Sewi TWIN L-Pr** for the TWIN building bus system captures brightness and motion in a room. Two **Intra-Sewi TWIN** can be connected at the same time to one controller.

The **Sensor Intra-Sewi TWIN TH-L-Pr** *additionally* measures the temperature and the air humidity.

Functions:
- **Brightness measurement** with **brightness control**
- **Motion detection**

Additional functions Intra-Sewi TWIN TH-L-Pr:
- Measuring the **temperature** and **air humidity** (relative, absolute)

1.0.1. Scope of delivery

- Sensor
- Pre-assembled clamps for false ceiling installation
- Support ring for connector socket installation

For socket installation you will need *in addition* (not supplied):
- Socket Ø 60 mm, 42 mm deep

1.1.   Technical data

Housing	Plastic, glass
Colour	similar to pure white RAL 9010
Assembly	built-in, in false ceiling or connector socket
Protection category	IP 30
Dimensions	Ø approx. 80 mm; height above wall approx. 5 mm height in wall (installation) approx. 31 mm (incl. clamps)
Total weight	approx. 50 g
Ambient temperature	Operation -20…+60°C, storage -20…+70°C
Ambient humidity	max. 95% RH, avoid condensation
Operating voltage	TWIN bus voltage
Bus current	max. 10 mA
Data output	TWIN +/- bus plug-in terminal
BCU type	Integrated microcontroller
PEI type	0
Brightness sensor:	
Measurement range	0 lux … 2,000 lux (higher values can be measured and output)
Resolution	1 lux at 0…2,000 lux
Accuracy	±15% of the measurement value at 30 lux … 2,000 lux
Motion sensor:	
Coverage angle	approx. 94° × 82° (see also *Coverage area of the motion detector*)
Range	approx. 5 m
Temperature sensor (only Intra-Sewi TWIN TH-L-Pr):	
Measurement range	-20°C … +60°C
Resolution	0.1°C
Accuracy*	±0.7°C at -20°C…-10°C ±0.5°C at -10°C…+60°C
Humidity sensor (only Intra-Sewi TWIN TH-L-Pr):	
Measurement range	0% rH … 100% rH
Resolution	0.1% rH
Accuracy	± 7.5% rH at 0% … 10% rH ± 4.5% rH at 10% … 90% rH ± 7.5% rH at 90% … 100% rH

The product is compliant with the provisions of the EU guidelines.

1.1.1. *Measuring accuracy

Deviations in measured values due to interfering sources (see chapter *installation location*) must be corrected in the MultiController TWIN application in order to achieve the specified accuracy of the sensor (offset).

During the **Temperature measurement**, the self-heating of the device is taken into consideration by the electronics. It is compensated by the software, therefore the displayed/output indoor temperature measuring value is correct.

2.   Installation and start-up

2.1.   Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

⚠ **CAUTION!**
Live voltage!
There are unprotected live components inside the device.
- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

function Technology AS is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2.   Installation location

Install and use only in dry interior rooms! Avoid condensation.

The Sensor is installed in a false ceiling or a standard connection socket (Ø 60 mm, 42 mm deep).

The device must be installed on the ceiling, so that the **movement capturing** takes place from above. Make sure that the desired area is covered by the sensor's coverage angle and that no obstacles obstruct the recording.

When selecting an installation location for **Intra-Sewi TWIN TH-L-Pr**, please ensure that the measurement results of **temperature and humidity** are affected as little as possible by external influences. Possible sources of interference include:
- Direct sunlight
- Draughts from windows and doors
- Draughts from ducts coming from other rooms or the outdoors
- Warming or cooling of the building structure on which the sensor is mounted, e.g. due to sunlight, heating or cold water pipes
- Connection lines and empty ducts which lead from warmer or colder areas to the sensor

Measurement variations from such sources of interference must be corrected in the application program for the MultiController in order to ensure the specified accuracy of the sensor (offset).
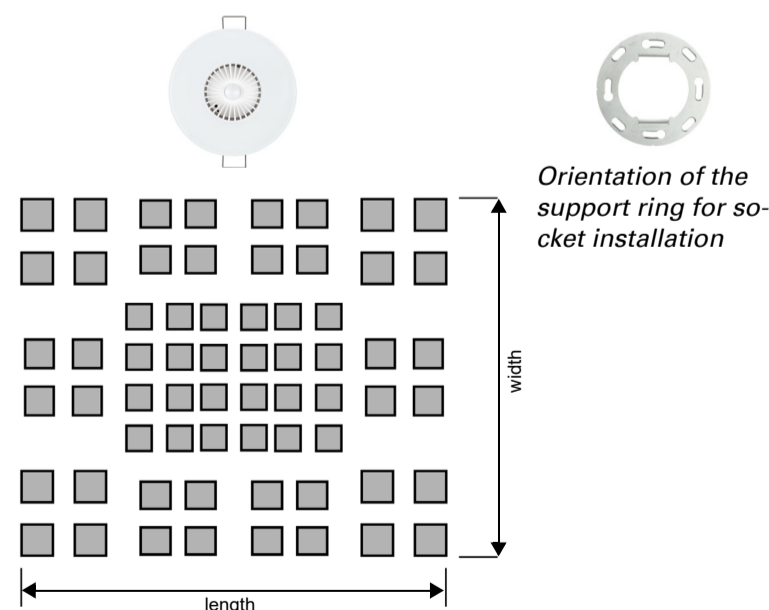
2.2.1. Coverage area of the motion detector

Angle of coverage: approx. 94° × 82°
Range: approx. 5 m

Segmentation of the coverage area

Fig. 1

Orientation of the support ring for socket installation

width

length

Size of the coverage area

Distance	Length	Width
2.50 m	approx. 5.40 m	approx. 4.30 m
3.50 m	approx. 7.50 m	approx. 6.10 m

2.3. Installation of the sensor
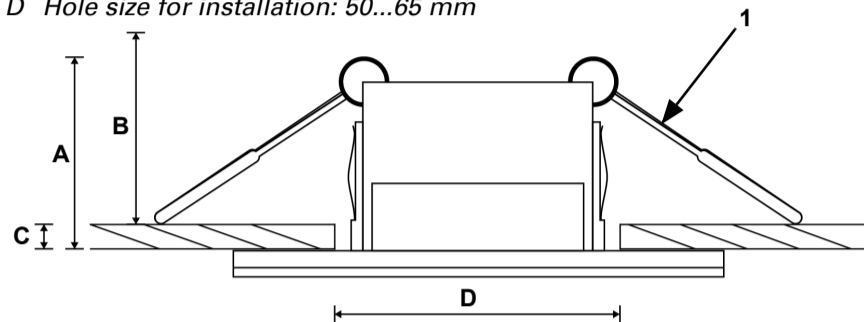
2.3.1. Installation in false ceiling

Connect the bus line to the TWIN terminal (blue/white).

Place the device in the installation opening in the ceiling. For this, fold the clamps upwards and guide the device through the installation opening with the clamps first.

The device is automatically fixed by the clamps.

Fig. 2
1 Clamps for installation in false ceiling
A Height in wall (built-in): approx. 31 mm
B Space behind the false ceiling, necessary for insertion (clear dimension): approx. 31 mm
C Maximum wall thickness: 20 mm
D Hole size for installation: 50...65 mm

2.3.2. Installation in connector socket

Before socket installation, remove the clamps for the false ceiling installation.

Screw the support ring onto the socket. Pay attention to the orientation as shown in the chapter *Coverage area of the motion detector*.

Connect the bus line to the TWIN terminal (blue/white).

Clamp the device in the support ring so that the springs on the device snap over the tabs of the support ring.
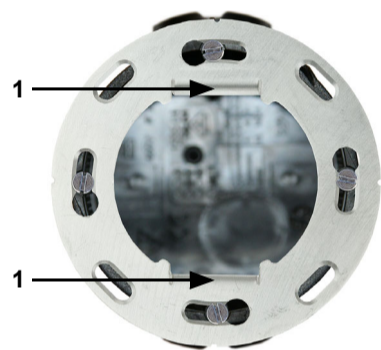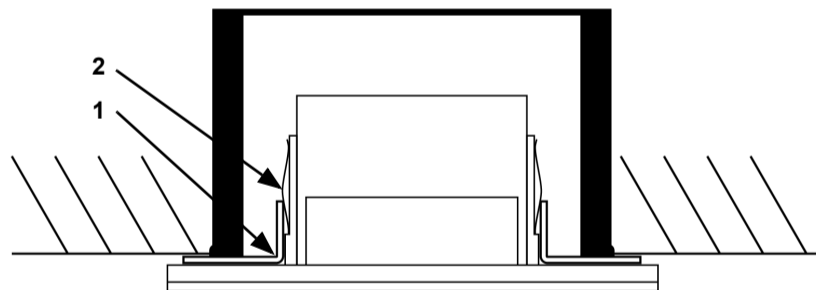
Fig. 3: Support ring
1 Tabs

Fig. 4
Connector socket with Ø 60 mm, 42 mm deep.
1 Support ring, screwed to the socket
2 Springs hold the device firmly on the support ring

2.3.3. Back view: connection

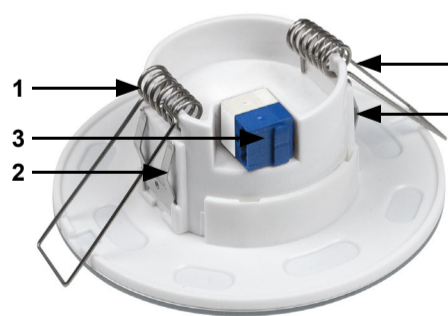The connection is made with the TWIN terminal (red/black) to TWIN TP.

Fig. 5
1 Clamps for installation in false ceiling
2 Springs for installation in support ring
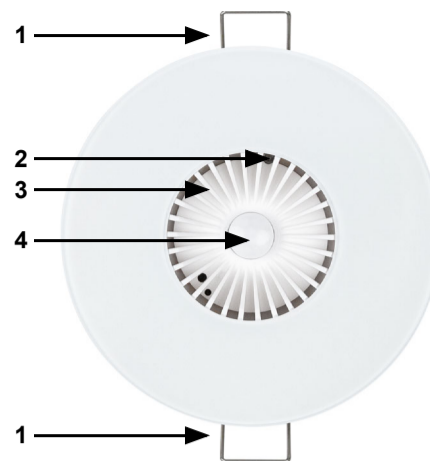3 TWIN terminal

2.3.4. Front view

Fig. 6
1 Clamps for installation in false ceiling
2 Brightness sensor
3 Airing lamella
4 Motion sensor

2.4. Notes on mounting and commissioning

Never expose the device to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative humidity of 95%. Avoid condensation.

The airing lamella must not be closed or covered. The device must not be painted over.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

The motion sensor has a start-up phase of approx. 15 seconds during which no motion detection takes place.

3. Maintenance

The brightness and movement sensor and the airing lamella must not get dirty or covered. As a rule, it is sufficient to wipe the device with a soft, dry cloth twice a year.