Dual Sensor for Brightness and Temperature **5WG1 254-3EY01**
AP 254

Product and Applications Description

Functional description

The Dual Sensor AP 254 provides ambient light level and outdoor temperature values. These values can be sent onto the bus.
Further the device controls load switches, dimmers and blinds / shutters based on threshold settings for ambient light level and outdoor temperature:
- Threshold setting for light level controls
- Threshold setting for temperature controls
- Threshold setting for shading controls (combination of light –level and temperature)

Additionally one or more thresholds can be temporarily deactivated via an interlocking object (1 Bit).

Application programs

12 S2 Brightness and Temperature 221C01
- Send temperature value / brightness value cyclically and / or on change
- Each threshold can be set separately
- Closed loop control of illumination light level to a pre-set value
- Up to two shading systems can be controlled based on combined temperature and light level values

Application examples

The Dual Sensor AP 254 is suitable for these applications:
- Multi-staged lighting controls
- Temperature controls e.g. control of electric band heaters for frost protection
- Awnings / blinds / shutter controls
- Glass house controls
- Systems with visualization of light level and outdoor temperature

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Technical Specifications

Power supply
Via bus line
Power consumption: < 150 mW

Measurement range:
- Light level: 1 ... 100 000 Lux, ± 5 Lux resp. ± 20%
- Temperature: -25 ... 55°C, ± 1 Grad resp. ± 5%

The higher value of tolerance is applicable.

Aperture
horizontal +/- 60°
vertical –35° ... + 66,5°

Control elements
1 learning button:
for switching between normal operating mode and addressing mode

Display elements
1 red LED:
for monitoring bus voltage and displaying mode selected with learning button

Connections
- Bus line: screwless bus connection block 0,6 ... 0,8 mm Ø single core

Physical specifications
- Polymer casing
- Dimensions: 110 x 72 x 54 mm (H x B x T)
- Weight: ca. 140 g
- Fire load: ca. 4100 KJ ± 10 %
- Installation: surface mounted

Electrical safety
- Fouling class (according to IEC 60664-1): 2
- Protection (according to DIN EN 60 529): IP 54
- Protection in mounted position: IP 54 with vertical mounting and applied protective cap
- Bus: safety extra low voltage SELV DC 24 V
- Device complies with: EN 50 090-2-2

Reliability
Failure rate: 441 fit at 40°C

Electromagnetic compatibility
Complies with EN 50081-1, EN 50082-1 and EN 50090-2-2

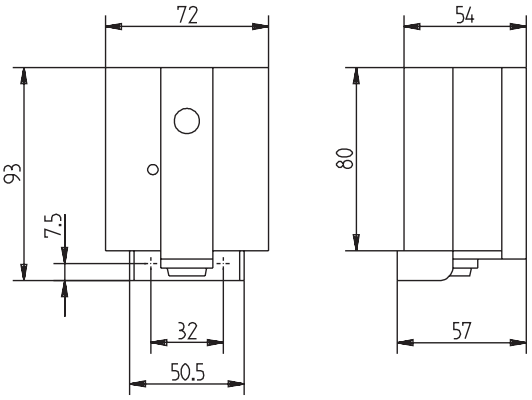
Environmental specifications
- Ambient temperature operating: -25°C ... +55°C
- Climatic conditions: EN 50090-2-2
- Ambient temperature non-operating: - 25°C ... +70° C
- rel. humidity (non-condensing): 5 % to 93 %

Certification
EIB certified

CE norm
Complies with EMC regulations (residential and functional buildings), and low voltage regulations

Dimension Diagram

Dimensions in mm



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Installation Instructions

When determining the installation location consider:
- protecting the dual sensor from dust and grime. A dirty sensor inhibits the light level measurement.
- direct exposure of the sensor to sun light which will impact the temperature measurement.

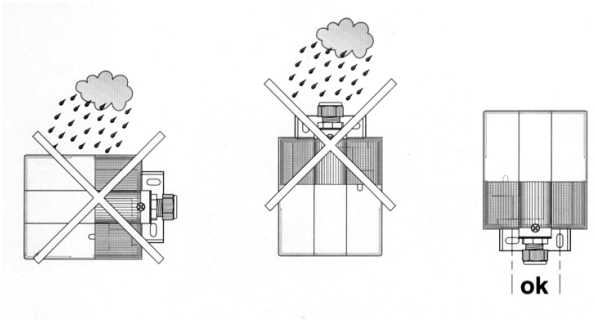
⚠ WARNING

- The device must be mounted and commissioned by an authorized electrician.
- The prevailing safety and installation rules must be heeded.
- The device must not be opened. A device suspected faulty should be returned to the local Siemens office.

Mounting and Wiring

Warning:

Mount the Dual Sensor in a vertical position only!



Consequences of false installation:
Moisture and/or dust can get into the device!
Device failure and short circuiting of the bus line are potential consequences.

Bus connection
- Untighten the screw for the protective cap.
- Remove the protective cap.
- Push the bus wire through the bushing into the bus connection block space.
- Watch the polarity (black on black; red on red) when connecting the bus wire to the bus connection block!
- Push the bus connection block fully down.
- The LED flashes.
  The LED on an operational device stops flashing 10 seconds after bus voltage has been applied or a valid application program was downloaded into the device. Otherwise an invalid application program was loaded.

Figure 1: Connection of bus line

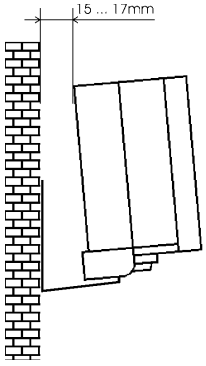
Mounting and maintenance of the protective cap

Mounting the protective cap
- Place the protective cap over the installed device
- Lock the cap by tightening the screw.

Maintenance of the protective cap
- Clean the protective cap regularly to avoid false readings of the light level due to dust and grime.
- Use a damp cloth.

Aperture and inclination of the sun

When installing the device south of the 47th latitude (Berne, Graz) it is beneficial to tilt the device upwards to compensate for the higher inclination of the sun.
During installation of the mounting bracket tilt the mounting bracket towards the mounting surface such that the distance between the upper edge of back of the device and the mounting surface (e.g. building wall) is 15 ... 17mm.



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Operator Elements

Assigning the Physical Address

- Press button (B1).
- LED (B2) flashes brighter.
- The Physical Address can now be assigned nun with the ETS and the application program can be loaded into the device.

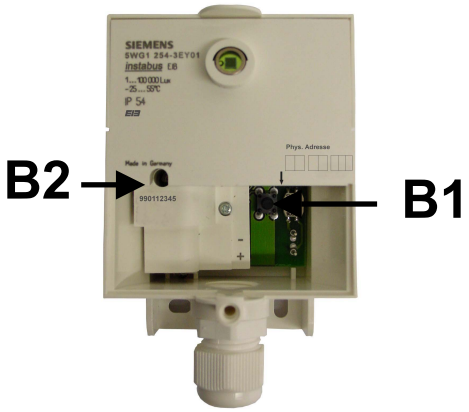

Figure 2: Location of display and operator elements

B1 Learning button for switching between normal mode and addressing mode.

B2 LED for indicating normal operating mode (LED off) and addressing mode (LED flashes); upon receiving the physical address the device automatically returns to normal mode and the LED is turned off.

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