

# 4

Light intensity sensors

**PHOTASGARD®**

Motion sensors and presence detectors

**KINASGARD®**



## PHOTASGARD®

### PORTFOLIO

- Outdoor light intensity sensors and twilight sensors
- Room light intensity sensors
- Versions for on-wall, in-wall, or in-wall flush box installation

### FEATURES

- With active/switching output
- Measuring ranges from 0 to 100 kLux
- Protection type from IP20 to IP65
- Ambient temperature from -10°C to +50°C

## KINASGARD®

### PORTFOLIO

- Outdoor and room motion sensors
- Presence detectors
- As multi-sensors with integrated light sensor
- Versions for on-wall, in-wall, in-wall flush box, or ceiling built-in installation

### FEATURES

- With switching output
- Multi-sensors with active or switching output
- Detection range 360°
- Protection type IP20 to IP65
- Ambient temperature from -10°C to +50°C

### FIELDS OF APPLICATION

- Heating, ventilation, air conditioning, and lighting technology
- Shadowing and sunshade
- Access control, safety zones and security areas
- Production facilities and offices in line with occupational health and safety ordinance
- Greenhouses, parking lots, corridors, and courtyards

## Outdoor light intensity sensor/twilight sensor with active/switching output

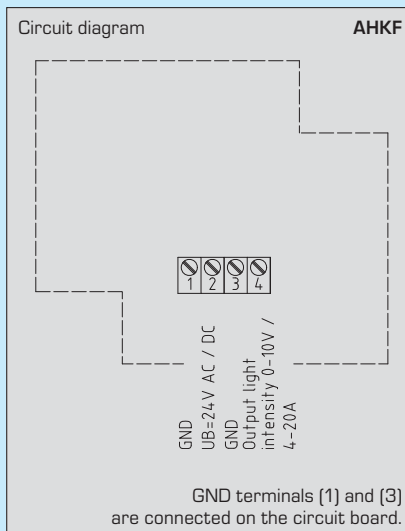
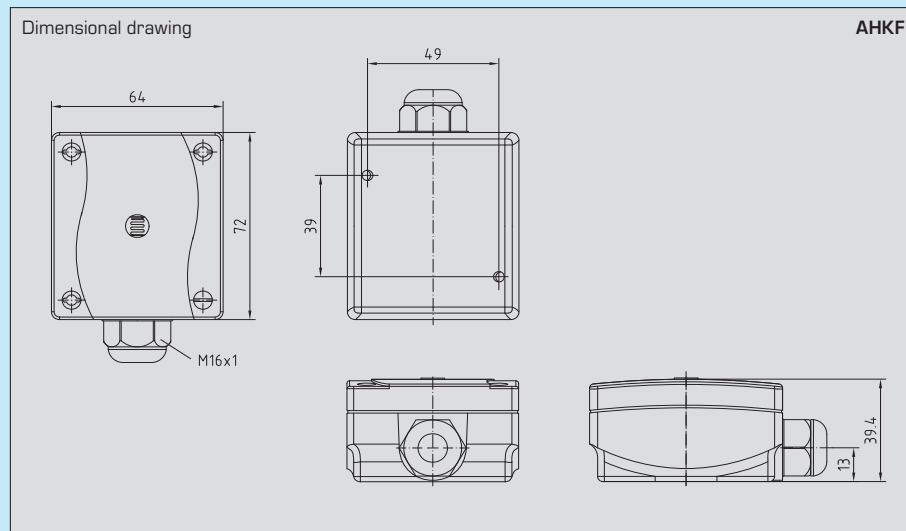
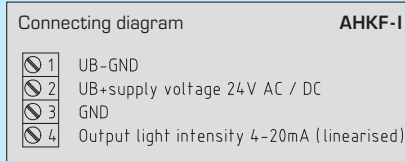
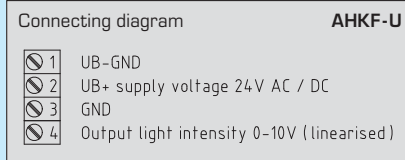
AHKF

### APPLICATION:

The light intensity sensor measures the luminous intensity and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc. Applications in monitoring lighting conditions at workplaces, in greenhouses, storage halls, workshops, and corridors, in outdoor areas, in industrial halls, in offices, in residential and in business facilities. It is used for daylight-dependant light-constant control, as light intensity or twilight sensor and for controlling sunshade equipment to avoid unnecessary heating-up of rooms.

### TECHNICAL DATA:

- Power supply: ..... 24V AC/DC,  
current consumption max. 10 mA at 24V DC
- Sensor: ..... photodiode
- Measuring ranges: ..... 0...500 Lux, 1 kLux, 20 kLux, 60 kLux,  
(other ranges optional, arbitrary, e.g. 100 kLux)
- Output: ..... 4...20mA (active) or 0-10V (linearised)  
or potential-free normally-open contact 230V/2A
- Ambient temperature: ..... -10...+50 °C
- Electrical connection: ..... 0.14 - 1.5 mm<sup>2</sup> via terminal screws on circuit board
- Measuring error: ..... < ± 10% of final value
- Temperature drift: ..... < ± 5% of final value/ 10K
- Enclosure: ..... plastic, material polyamide, 30% glass-globe-reinforced,  
with quick-locking screws,  
colour pure white (similar RAL9010)
- Dimensions: ..... 72 x 64 x 39.4 mm
- Installation: ..... on-wall
- Cable union: ..... M 16, including strain relief
- Protection class: ..... III (according to EN 60730)
- Protection type: ..... IP 65 (according to IEC 529)
- Standards: ..... CE conformity, electromagnetic compatibility  
according to EN 61326 + A1 + A2,  
EMC directive 89/336/EWG  
low-voltage directive 73/23/EWG



### Outdoor light intensity sensor AHKF:

Type/WG1	Measuring range Light intensity	Output Light intensity
AHKF-0.5 I	0 ... 500 Lux	4 ... 20 mA (linearised)
AHKF-0.5 U	0 ... 500 Lux	0 - 10V (linearised)
AHKF-20 I	0 ... 20.000 Lux	4 ... 20 mA (linearised)
AHKF-20 U	0 ... 20.000 Lux	0 - 10V (linearised)
AHKF-60 I	0 ... 60.000 Lux	4 ... 20 mA (linearised)
AHKF-60 U	0 ... 60.000 Lux	0 - 10V (linearised)

## Room light intensity sensor with active/switching output, series Odin I

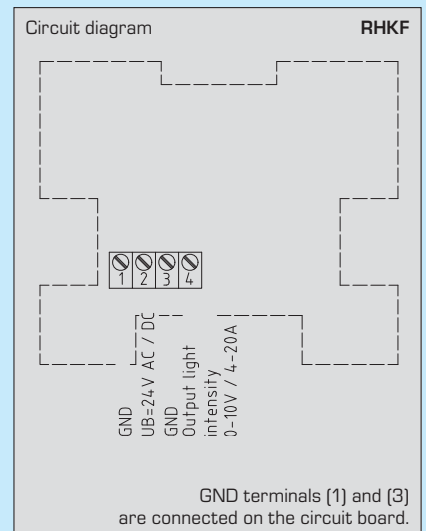
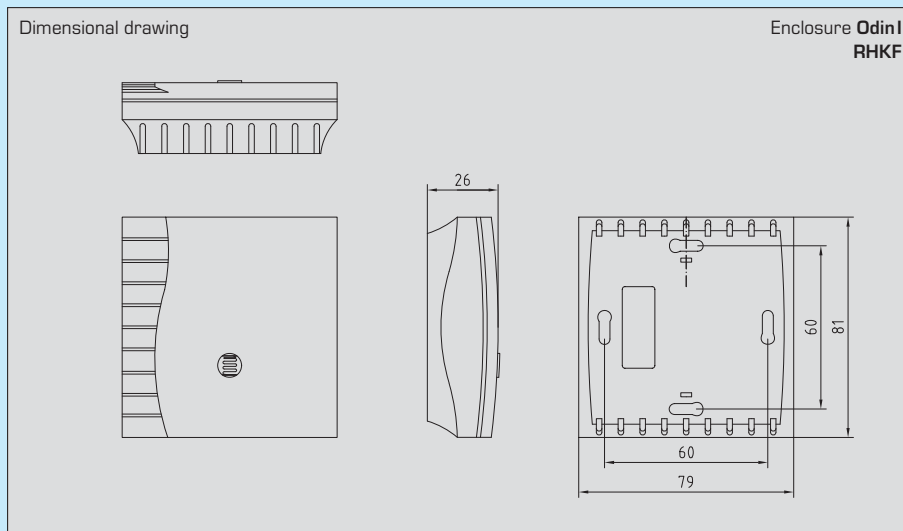
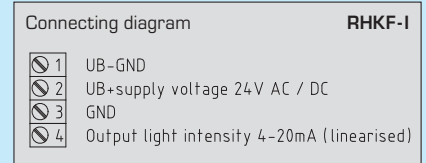
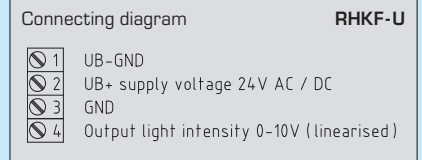
RHKF

### APPLICATION:

The light intensity sensor measures the luminous intensity and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc. Applications in monitoring lighting conditions at workplaces, in greenhouses, storage halls, workshops, and corridors, in industrial halls, in offices, in residential and in business facilities. It is used for daylight-dependant constant-light control, as light intensity or twilight sensor and for controlling sunshade equipment to avoid unnecessary heating-up of rooms.

### TECHNICAL DATA:

- Power supply: ..... 24V AC/DC,  
current consumption max. 10mA at 24V DC
- Sensor: ..... photodiode
- Measuring ranges: ..... 0...500 Lux, 1 kLux, 20 kLux, 60 kLux,  
(other ranges optional, arbitrary, e.g. 100 kLux)
- Output: ..... 4...20mA (active) or 0-10V (linearised)  
or potential-free normally-open contact 230V/2A
- Ambient temperature:..... 0...+50°C
- Electrical connection: ..... 0.14 - 1.5 mm<sup>2</sup> via terminal screws on circuit board
- Measuring error: ..... <math>\pm 10\%</math> of final value
- Temperature drift: ..... <math>\pm 5\%</math> of final value/10K
- Enclosure: ..... plastic, material ABS,  
colour pure white (similar RAL9010),  
(stainless steel optional)
- Dimensions: ..... 79 x 81 x 26 mm
- Installation:..... wall mounting or on in-wall flush box  $\varnothing$  55 mm,  
base with 4 holes for mounting on vertically or horizontally installed flush  
boxes, with predetermined breaking point for on-wall cable entry
- Protection class: ..... III (according to EN 60730)
- Protection type: ..... IP 30 (according to IEC 529)
- Standards: ..... CE conformity, electromagnetic compatibility  
according to EN 61326 + A1 + A2,  
EMC directive 89/336/EWG  
low-voltage directive 73/23/EWG



### Room light intensity sensor RHKF:

Type/WG1	Measuring range Light intensity	Output Light intensity
RHKF-0.5I	0...500 Lux	4...20mA (linearised)
RHKF-0.5U	0...500 Lux	0-10V (linearised)
RHKF-1I	0...1.000 Lux	4...20mA (linearised)
RHKF-1U	0...1.000 Lux	0-10V (linearised)
RHKF-20I	0...20.000 Lux	4...20mA (linearised)
RHKF-20U	0...20.000 Lux	0-10V (linearised)

# RHKF-UP

Room light intensity sensor with active output  
in-wall, panel switch programme



RHKF-UP

## APPLICATION:

The light intensity sensor measures the luminous intensity and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc. Applications in monitoring lighting conditions at workplaces, in corridors, in offices, in residential and in business facilities. It is used for daylight-dependant constant-light control and for controlling sunshade equipment to avoid unnecessary heating-up of rooms.

## TECHNICAL DATA:

Power supply: ..... 24V AC/DC,  
current consumption max. 10 mA at 24V DC

Sensor: ..... photodiode

Measuring ranges: ..... 0...500 Lux, 1 kLux, 20 kLux,  
(other ranges optional, arbitrary, e.g. 100 kLux)

Output: ..... 0-10V (linearised)  
or potential-free normally-open contact 230V/2A,  
with adjustable switching threshold

Ambient temperature: ..... 0...+50 °C

Measuring error: ..... < ± 10% of final value

Temperature drift: ..... < ± 5% of final value/10K

Enclosure: ..... plastic

Installation: ..... in in-wall flush box Ø 55 mm

Electrical connection: ..... 0.14 - 2.5 mm<sup>2</sup>,  
via plug terminals on circuit board

Protection class: ..... III (according to EN 60730)

Protection type: ..... IP20 (according to IEC 529)

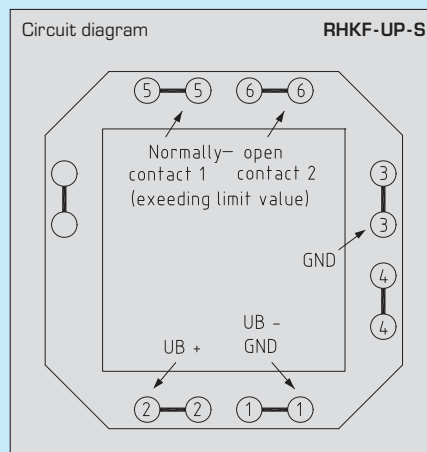
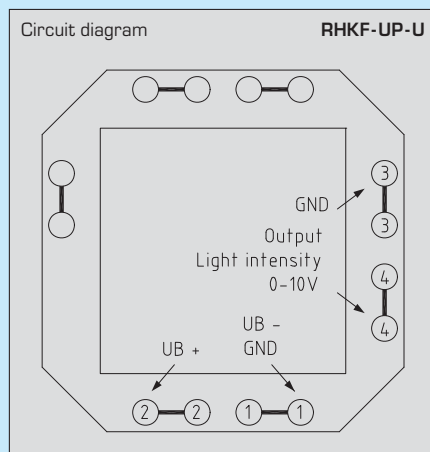
Standards: ..... CE conformity, electromagnetic compatibility  
according to EN 61326 + A1 + A2,  
EMC directive 89/336/EWG  
low-voltage directive 73/23/EWG



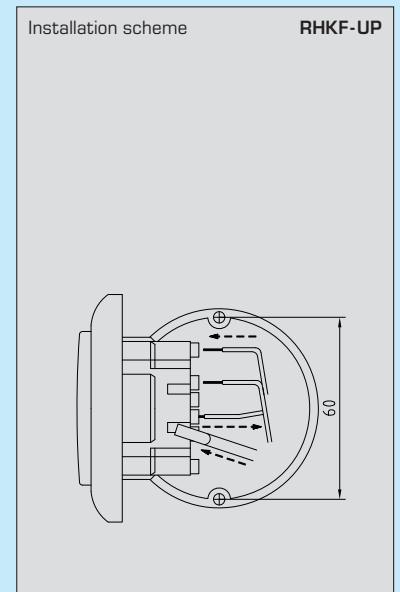
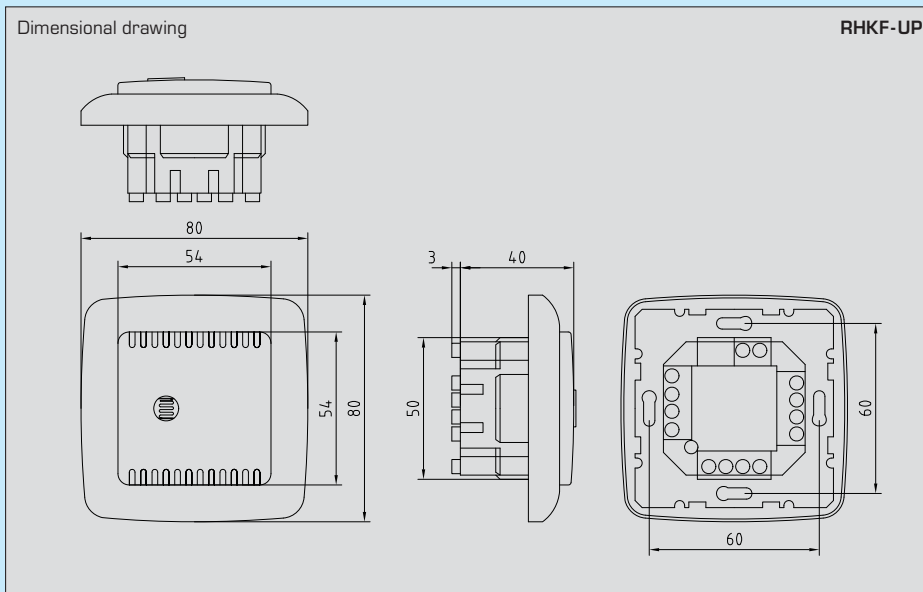
## SWITCH PROGRAMME:

Manufacturer: ..... Busch-Jaeger Reflex Si  
(other switch programmes, manufacturers, colours and prices upon request)

Enclosure: ..... plastic, standard colour alpine white (similar RAL9010)  
(other colours are possible upon request with colour variants depending on the respective light switch programme)



GND terminals [1] and [3] are connected on the circuit board.



Room light intensity sensor (in-wall) RHKF-UP:

Type/WG1	Measuring range Light intensity	Output Light intensity
RHKF-UP-1U	0 ... 1.000 Lux	0 -10V (linearised)
RHKF-UP-20U	0 ... 20.000 Lux	0 -10V (linearised)
RHKF-UP-1S	0 ... 1.000 Lux	0 -10V / Normally-open contact (linearised)
RHKF-UP-20S	0 ... 20.000 Lux	0 -10V / Normally-open contact (linearised)

## Outdoor motion sensor/presence detector with active output

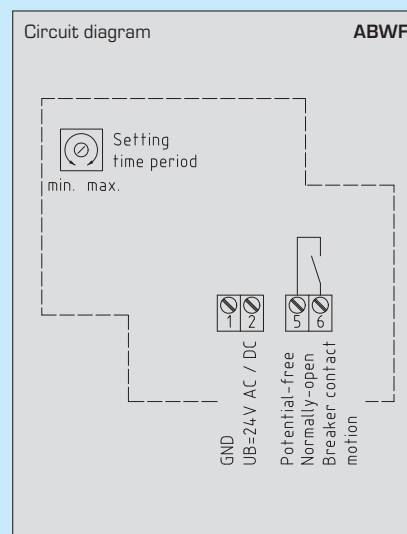
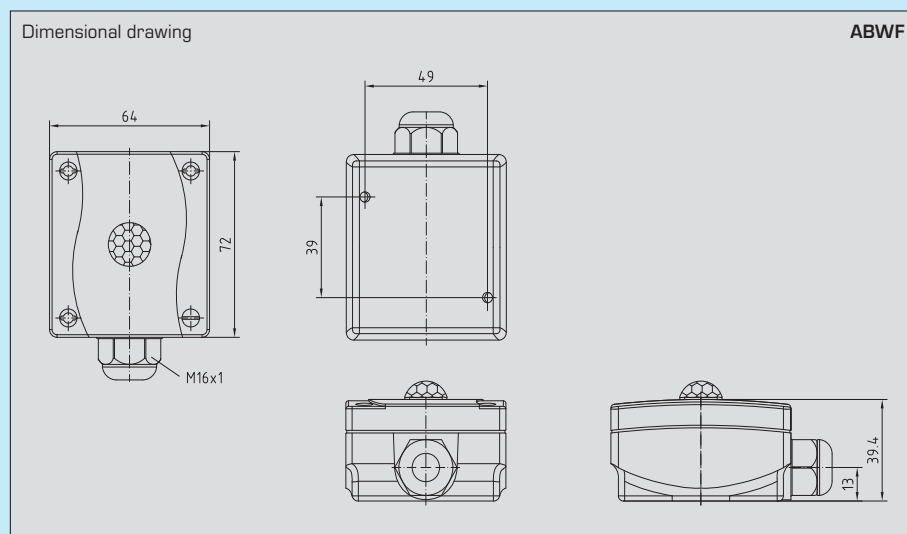
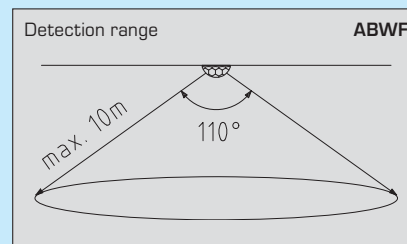
### APPLICATION:

The motion sensor/presence detector detects the presence of persons and motions. It is used in monitoring or recognizing conditions and for motion-dependent control of room functions, e.g. for lowering temperatures in unused rooms. It is applied in corridors, in outdoor areas, in industrial halls, in offices, residential and business facilities.

### TECHNICAL DATA:

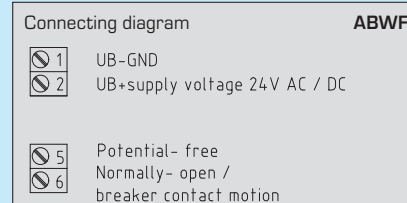
Power supply: ..... 24V AC/DC  
 Sensor: ..... infrared motion sensor  
 Detection range: ..... 360°, angle of beam 90°/110°, reach ca. 10 m  
 Motion detection: ..... of persons and objects, necessary temperature difference between subject and ambience  $\geq 5$  K  
 Output: ..... without/with motion, potential-free normally-open/breaker contact 230V/2 A  
 After-running time: ..... adjustable from 4 s to 16 min  
 Ambient temperature: ..... -10...+50 °C  
 Electrical connection: ..... 0.14 - 1.5 mm<sup>2</sup> via terminal screws on circuit board  
 Enclosure: ..... plastic, material polyamide, 30% glass-globe-reinforced, with quick-locking screws, colour pure white (similar RAL9010)  
 Dimensions: ..... 72 x 64 x 39.4 mm  
 Installation: ..... on-wall  
 Cable union: ..... M 16, including strain relief  
 Protection class: ..... III (according to EN 60730)  
 Protection type: ..... IP 65 (according to IEC 529)  
 Standards: ..... CE conformity, electromagnetic compatibility according to EN 61326 + A1 + A2, EMC directive 89/336/EWG low-voltage directive 73/23/EWG

ABWF



### Outdoor motion sensor ABWF:

Type/WG1	Detection Presence/motion	Output
ABWF-S	Yes/No	Normally-open contact
ABWF-Ö	Yes/No	Breaker contact



## Ceiling built-in motion sensor / presence detector with switching output

DBWF

### APPLICATION:

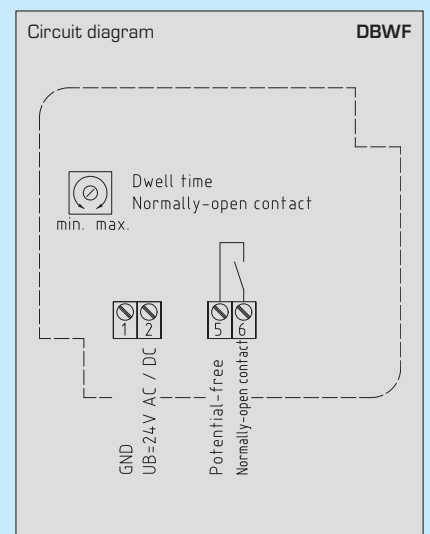
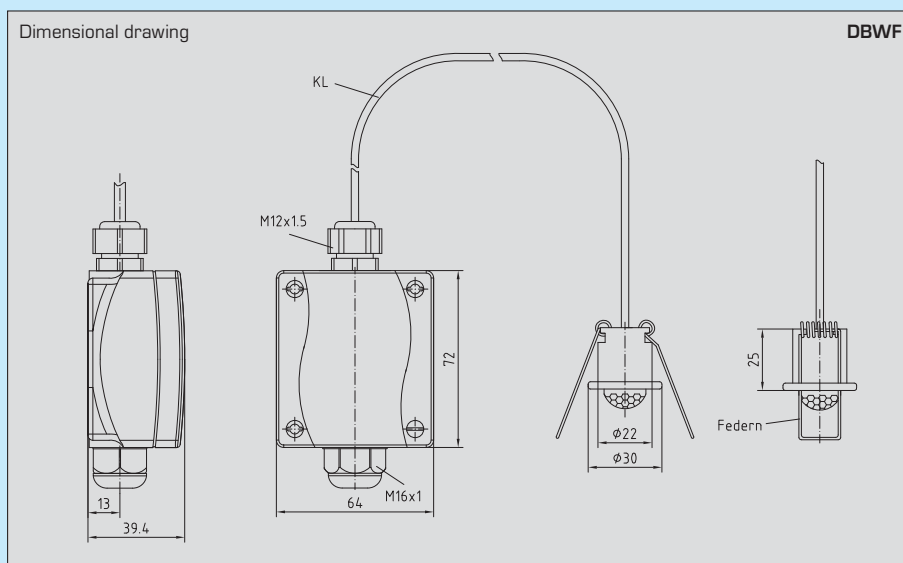
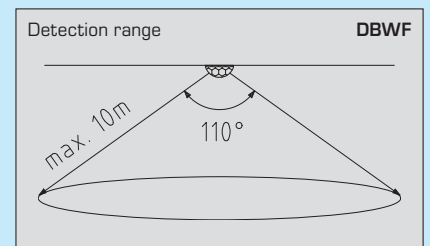
The motion sensor/presence detector detects the presence of persons and motions. It is used in monitoring or recognizing conditions and for motion-dependent control of room functions, e.g. for lowering temperatures in unused rooms. It is installed in suspended ceilings in corridors, offices, residential and business facilities. The measuring transducer is accommodated in a separate enclosure apart from the sensor.

### TECHNICAL DATA:

- Power supply: ..... 24V AC/DC
- Sensor: ..... infrared motion sensor
- Detection range: ..... 360°, angle of beam 90°/110°, reach ca. 10 m, circular, when installed at a height of 3 m, the sensor covers a radius (r) of ca. 3.4 m
- Motion detection: ..... of persons and objects, necessary temperature difference between subject and ambience  $\geq 5K$
- Output: ..... potential-free normally-open contact 230V/2A
- After-running time: ..... adjustable from 4 s to 16 min
- Ambient temperature: ..... 0...+50 °C
- Cable length: ..... 2 m, other lengths optional (connecting cables between sensor and electronics)
- Process connection: ..... in suspended ceiling, ceiling cutout  $\varnothing = 26$  mm, cover  $\varnothing = 30$  mm
- Connecting head: ..... aluminium, colour signal white (similar RAL 9003)
- Protection type (sensor): ..... IP 30 (according to IEC 529)

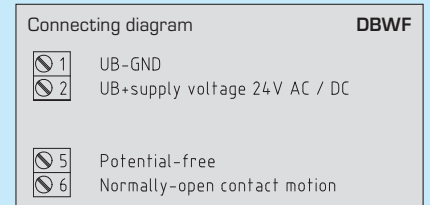
### Measuring transducer:

- Enclosure: ..... plastic, material polyamide, 30% glass-globe-reinforced, with quick-locking screws, colour pure white (similar RAL9010)
- Dimensions: ..... 72x64x39.4 mm
- Cable union: ..... M 16, including strain relief
- Electrical connection: ..... 0.14 - 1.5 mm<sup>2</sup> via terminal screws
- Protection class (enclosure): ..... III (according to EN 60730)
- Protection type: ..... IP 65 (according to IEC 529)
- Standards: ..... CE conformity, electromagnetic compatibility according to EN 61326 + A1 + A2, EMC directive 89/336/EWG low-voltage directive 73/23/EWG



### Ceiling built-in motion sensor DBWF:

Type/WG1	Detection Presence / motion	Output
DBWF-S	Yes/No	Normally-open contact



## Room motion sensor/presence detector with switching output, series Odin I

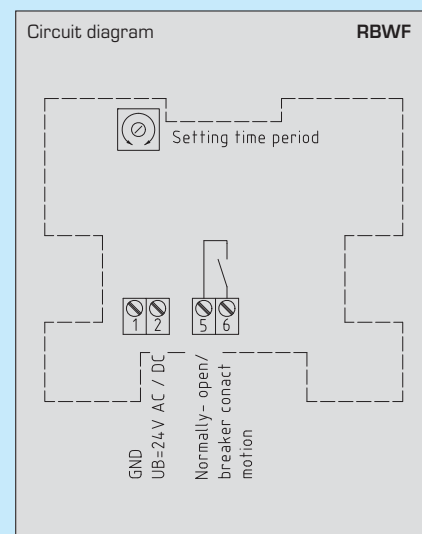
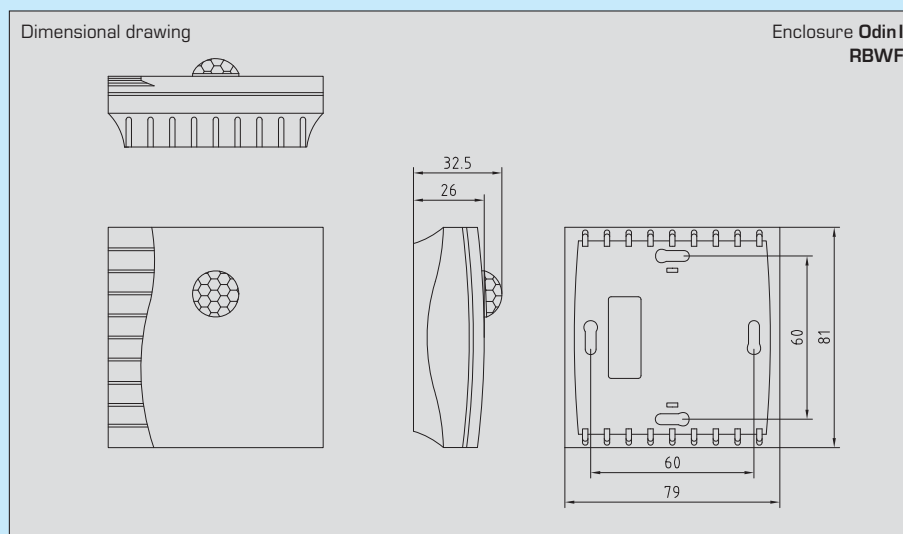
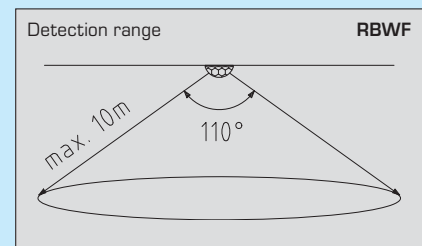
RBWF

### APPLICATION:

The motion sensor/presence detector detects the presence of persons and motions. It is used in monitoring or recognizing conditions and for motion-depending control of room functions, e.g. for lowering temperatures in unused rooms. It is applied in corridors, in industrial halls, in offices, residential and business facilities.

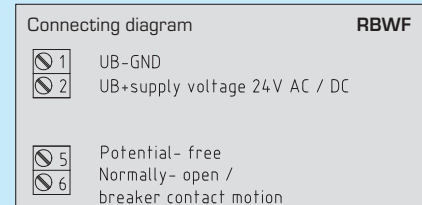
### TECHNICAL DATA:

Power supply:	24V AC/DC
Sensor:	infrared motion sensor
Detection range:	360°, angle of beam 90°/110°, reach ca. 10m
Motion detection:	of persons and objects, necessary temperature difference between subject and ambience ≥ 5K
Output:	without/with motion, potential-free normally-open/breaker contact 230V/2A
After-running time:	adjustable from 4s to 16min
Ambient temperature:	0...+50 °C
Electrical connection:	0.14 - 1.5 mm <sup>2</sup> via terminal screws on circuit board
Enclosure:	plastic, material ABS, colour pure white (similar RAL9010), (stainless steel optional)
Dimensions:	79 x 81 x 26 mm
Installation:	wall mounting or on in-wall flush box Ø 55 mm, base with 4 holes for mounting on vertically or horizontally installed flush boxes, with predetermined breaking point for on-wall cable entry
Protection class:	III (according to EN 60730)
Protection type:	IP 30 (according to IEC 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326 + A1 + A2, EMC directive 89/336/EWG low-voltage directive 73/23/EWG



### Room motion sensor RBWF:

Type/WG1	Detection Presence/motion	Output
RBWF-S	Yes/No	Normally-open contact
RBWF-Ö	Yes/No	Breaker contact



# RBWF-UP

Room motion sensor/presence detector  
with switching output,  
in-wall, panel switch programme



RBWF-UP

## APPLICATION:

The motion sensor/presence detector detects the presence of persons and motions. It is used in monitoring or recognizing conditions and for motion-depending control of room functions, e.g. for lowering temperatures in unused rooms. It is applied in corridors, , in offices, in residential and business facilities.

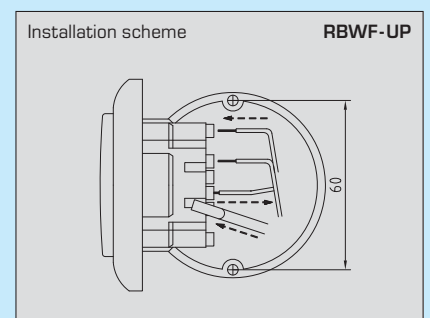
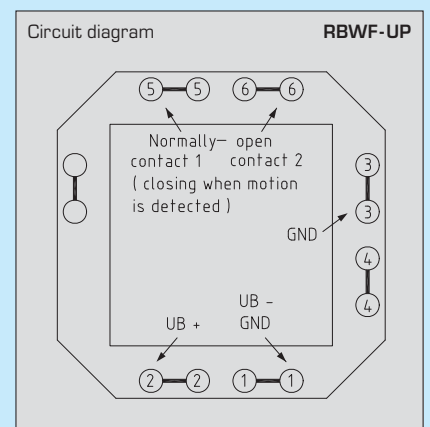
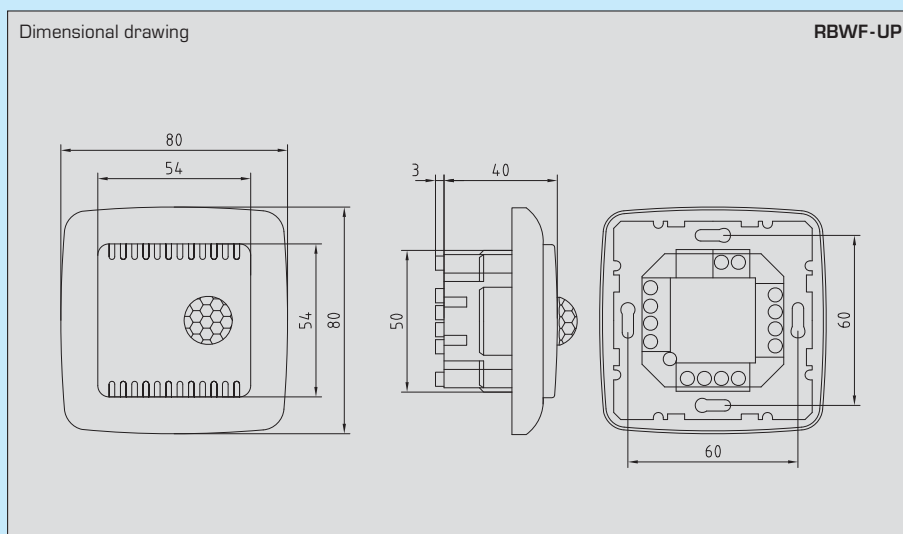
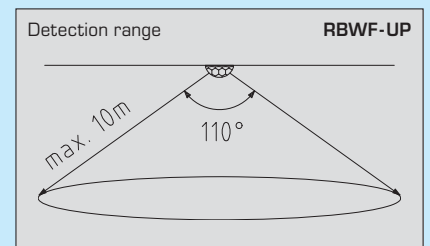
## TECHNICAL DATA:

- Spannungversorgung: ..... 24V AC/DC
- Sensor: ..... infrared motion sensor
- Detection range: ..... 360°, angle of beam 90°/110°,  
reach ca. 10m
- Motion detection: ..... of persons and objects, necessary temperature difference  
between subject and ambience  $\geq 5K$
- Output: ..... without/with motion,  
potential-free normally-open/breaker contact 230V/2A
- After-running time: ..... adjustable from 4s to 16min
- Ambient temperature: ..... 0...+50 °C
- Enclosure: ..... plastic
- Installation: ..... in in-wall flush box  $\varnothing$  55 mm
- Electrical connection: ..... 0.14 - 2.5 mm<sup>2</sup>, via plug terminals on circuit board
- Protection class: ..... III (according to EN 60730)
- Protection type: ..... IP20 (according to IEC 529)
- Standards: ..... CE conformity, electromagnetic compatibility  
according to EN 61326 + A1 + A2,  
EMC directive 89/336/EWG  
low-voltage directive 73/23/EWG



## SWITCH PROGRAMME:

- Manufacturer: ..... Busch-Jaeger Reflex Si  
(other switch programmes, manufacturers, colours and prices  
upon request)
- Enclosure: ..... plastic, standard colour alpine white (similar RAL9010)  
(other colours are possible upon request with colour variants depending  
on the respective light switch programme)



## Room motion sensor (in-wall) RBWF-UP:

Type/WG1	Detection Presence/ motion	Output
RBWF-UP-S	Yes/No	Normally-open contact

1

2

3

4

5

6

KINASGARD®

## Room motion sensor / presence detector and light sensor Multi-sensors with active or switching output, series Odin I

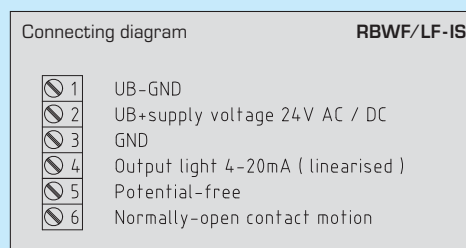
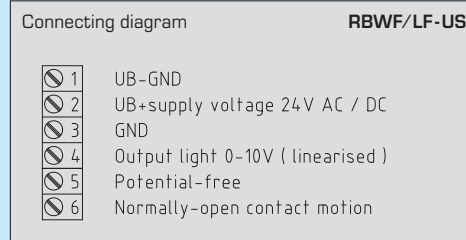
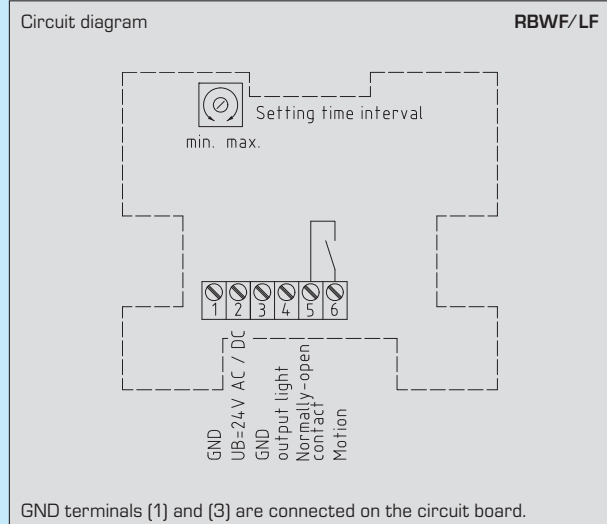
RBWF/LF

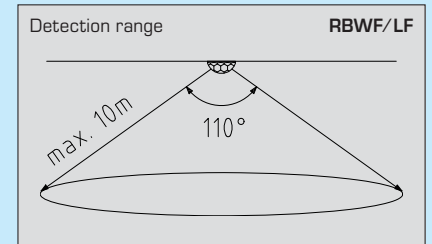
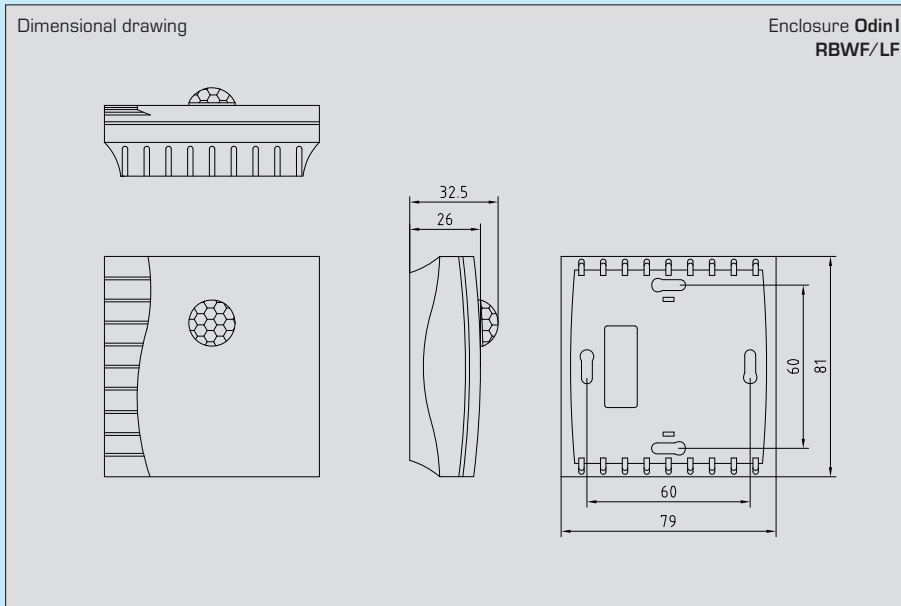
### APPLICATION:

The motion and light sensor detects motions and light intensity as well as the presence of persons and is used to recognize conditions. Applications are in facility automation, in corridors, at workplaces, in industrial halls, in offices and business facilities for the control of lighting, heating and ventilation on an as-needed basis.

### TECHNICAL DATA:

- Power supply: ..... 24V AC/DC
- Sensor: ..... infrared motion sensor, light sensor photodiode
- Detection range: ..... 360°, angle of beam 90°/110°, reach ca. 10m
- Motion detection: ..... of persons and objects, necessary temperature difference between subject and ambience  $\geq 5K$
- Output, motion sensor: ..... without/with motion, potentialfreier Normally-open contact 230V/2A
- After-running time: ..... adjustable from 4 s to 16 min
- Measuring range, light sensor: .. 0...1.000 lux, other ranges optional
- Output, light sensor: ..... 4...20mA (active) or 0-10V (linearised)
- Measuring error: .....  $< \pm 10\%$  of final value
- Ambient temperature: ..... 0...+50°C
- Electrical connection: ..... 0.14 - 1.5 mm<sup>2</sup> via terminal screws on circuit board
- Enclosure: ..... plastic, material ABS, colour pure white (similar RAL9010), [stainless steel optional]
- Dimensions: ..... 79 x 81 x 26 mm
- Installation: ..... wall mounting or on in-wall flush box  $\varnothing 55$  mm, base with 4 holes for mounting on vertically or horizontally installed flush boxes, with predetermined breaking point for on-wall cable entry
- Protection class: ..... III (according to EN 60730)
- Protection type: ..... IP 30 (according to IEC 529)
- Standards: ..... CE conformity, electromagnetic compatibility according to EN 61326 + A1 + A2, EMC directive 89/336/EWG low-voltage directive 73/23/EWG





Room motion and light sensor **RBWF/LF**:

Type/WG1	1. Measuring range Detection Presence/motion	2. Measuring range Light intensity	1. Output Presence/motion	2. Output Light intensity
<b>RBWF/LF-IS</b>	Yes/No	0...1.000 Lux	Normally-open contact	4...20 mA
<b>RBWF/LF-US</b>	Yes/No	0...1.000 Lux	Normally-open contact	0-10V

# RBWF/LF-UP

Room motion sensor/presence detector and light sensor  
Multi-sensors with active or switching output,  
in-wall, panel switch programme



RBWF/LF-UP

## APPLICATION:

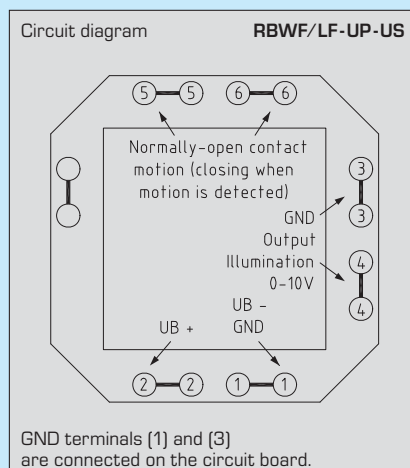
The motion and light sensor detects motions and light intensity as well as the presence of persons and is used to recognize conditions. Applications are in facility automation, in corridors, at workplaces, in offices and business facilities for the control of lighting, heating and ventilation on an as-needed basis.

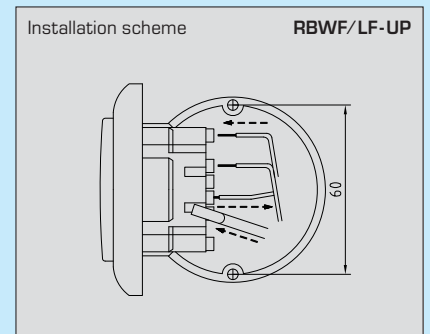
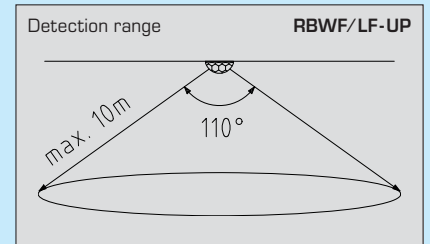
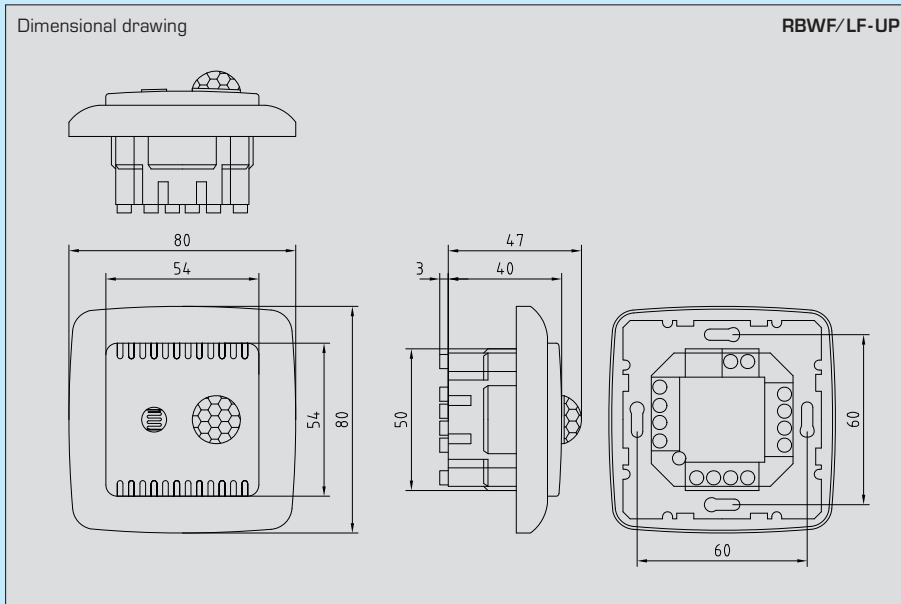
## TECHNICAL DATA:

Power supply: ..... 24V AC/DC  
Sensor: ..... infrared motion sensor, light sensor  
Detection range: ..... 360°, angle of beam 90°/110°,  
reach ca. 10 m  
Motion detection: ..... of persons and objects, necessary temperature difference  
between subject and ambience  $\geq 5$  K  
Output, motion sensor: ..... without./with motion,  
potential-free normally-open contact 230V/2A  
After-running time: ..... adjustable from 4 s to 16 min  
Measuring range, light sensor: .. 0...1.000 lux, other ranges optional  
Output, light sensor: ..... 0-10V (linearised)  
Measuring error: .....  $\leq \pm 10\%$  of final value  
Enclosure: ..... plastic  
Ambient temperature: ..... 0...+50 °C  
Installation: ..... in in-wall flush box  $\varnothing 55$  mm  
Electrical connection: ..... 0.14-1.5 mm<sup>2</sup>,  
via plug terminals on circuit board  
Protection class: ..... III (according to EN 60730)  
Protection type: ..... IP20 (according to IEC 529)  
Standards: ..... CE conformity, electromagnetic compatibility  
according to EN 61326 + A1 + A2,  
EMC directive 89/336/EWG  
low-voltage directive 73/23/EWG

## SWITCH PROGRAMME:

Manufacturer: ..... Busch-Jaeger Reflex Si  
[other switch programmes, manufacturers, colours and prices  
upon request]  
Enclosure: ..... plastic, standard colour alpine white (similar RAL9010)  
[other colours are possible upon request with colour variants  
depending on the respective light switch programme]





**Room motion and light sensor (for in-wall installation) RBWF/LF-UP:**

Type/WG1	1. Measuring range Detection Presence/motion	2. Measuring range Light intensity	1. Output Presence/motion	2. Output Light intensity
<b>RBWF/LF-UP-US</b>	Yes/No	0...1.000 Lux	Normally-open contact	0-10 V (linearised)