



Light Intensity & Motion

PHOTASGARD® & KINASGARD®

Light and shade under control

Our light intensity sensors and motion sensors or presence detectors are the obvious choice when it comes to energy saving and security.

They keep the costs for lighting, shading, heating and cooling within the green range. By the way – our solutions are also ideally suited for presence detection in security zones.

Application Areas

- Heating, ventilation, air conditioning and lighting systems
- Greenhouses, shading and solar protection
- Production facilities and offices in line with occupational health and safety regulations
- Access control, protected areas and security zones
- Parking lots, courtyards and corridors





PHOTASGARD® & KINASGARD® LIGHT INTENSITY AND MOTION SENSORS



Light intensity sensors

AHKF	Outdoor light intensity sensor	553
FSHKM	In-wall light intensity sensor	NEW 551
RHKF	Room light intensity sensor	552
DHKF	In-ceiling light intensity sensor	555

Motion sensors

ABWF	Outdoor motion sensor	559
FSBWF-W	In-wall motion sensor with changeover contact	NEW 557
RBWF	Room motion sensor	558
DBWF	In-ceiling motion sensor	561
DBWF-C	In-ceiling motion sensor	561

Light intensity and motion sensors

ABWF/LF	Outdoor motion and light sensor	565
RBWF/LF	Room motion and light sensor	563
DBWF/LF/FTF	In-ceiling motion and light sensor with humidity and temperature sensor	567





Light Intensity & Motion

PHOTASGARD® & KINASGARD®

Sensor technology for twilight and presence

Broad Spectrum

Our active motion and light intensity sensors are designed to be multi-functional. This reduces the diversity of types and expands their possible applications. Thanks to microprocessor technology, almost any measuring range can be represented, including custom specifications. Multi-range switching is selectable via DIP switches.

Optimum Precision

The devices are tested according to the latest criteria. Each sensor is precisely re-adjustable using offset potentiometers. Take advantage of our experience, our development, manufacturing and product know-how and order these products directly from the manufacturer.

Approved Safety



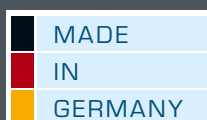
RoHS conforming materials



ESD compliant manufacturing



CE compliance tested
by external laboratories



Certified Quality



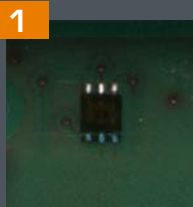
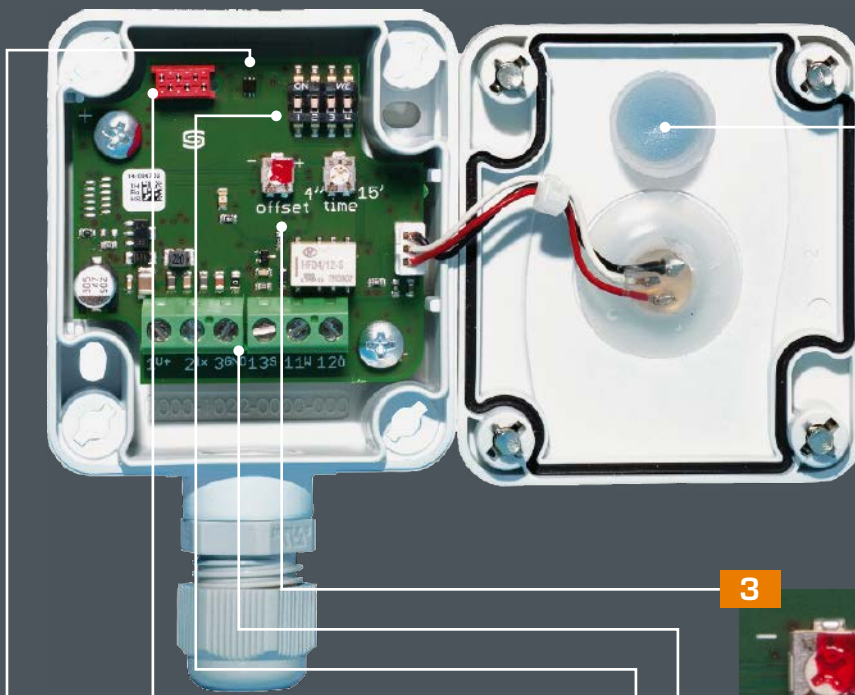
Our development and production in
Nuremberg/Germany is certified by TÜV
Thüringen according to DIN EN ISO 9001:2015.



GOST certified



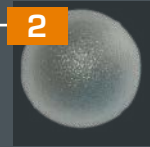
EAC certified



Digital Photo Sensor

With high resolution and resistance to ageing, for a wide linear brightness range of 0-120 kLux

- Special measuring ranges possible, e.g. for twilight
- High measuring accuracy with max. < 5% deviation



Diffusor

With diffusion and absorption rates specially matched to the light intensity sensor, extends the receiving characteristics over a wider angular range



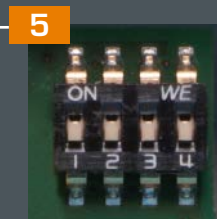
Offset Potentiometer

For fine adjustment (zero point offset) and readjustment upon recalibration



Screw Terminals

Active output signals 0-10V, 4...20 mA or switched output



DIP Switches

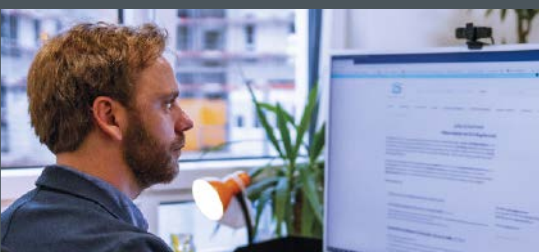
For multi-range toggling and setting of 4 measuring ranges:

RHKF 0.5/1/2/20 kLux
AHKF 0.5/1/20/60 kLux



Quality Assurance

Calibration and balancing are done by means of the bus system



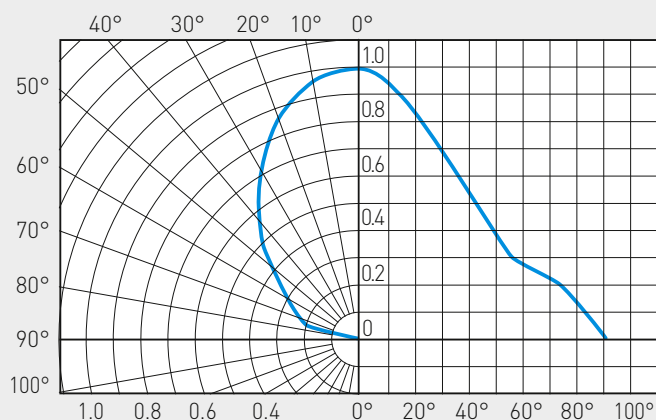
General information

Light sensor

S+S REGELTECHNIK

Light sensor (indoor areas)

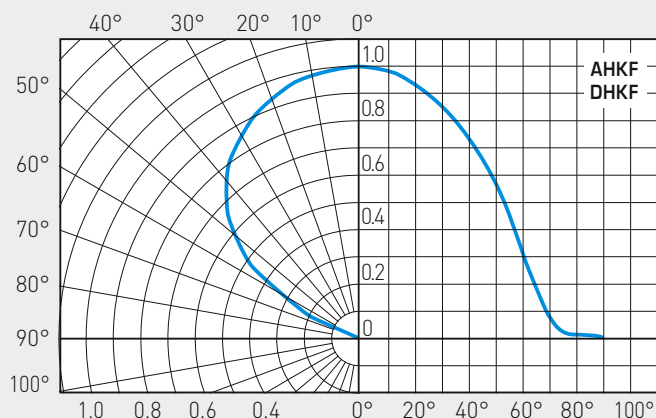
PHOTASGARD®



Characteristic curve showing the sensitivity of light sensor (indoor areas) relative to the angle of incidence of light.

Light sensor (outdoor areas)

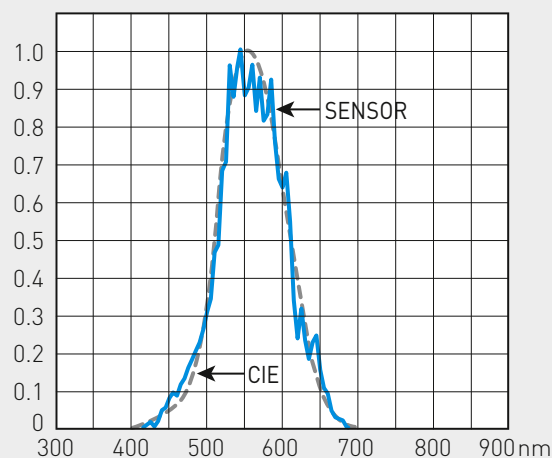
PHOTASGARD®



Characteristic curve showing the sensitivity of light sensor (outdoor areas) relative to the angle of incidence of light.

Light sensor
(indoor and outdoor areas)

PHOTASGARD®

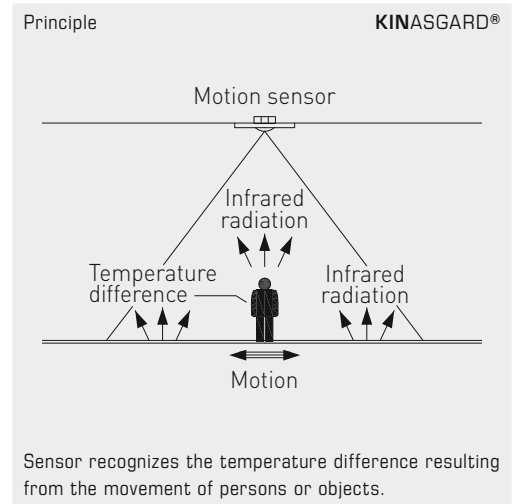
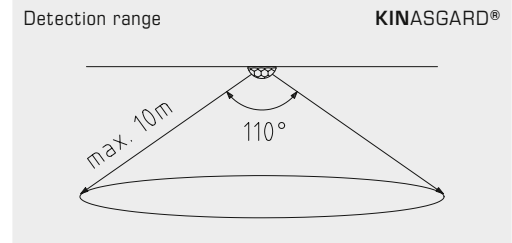
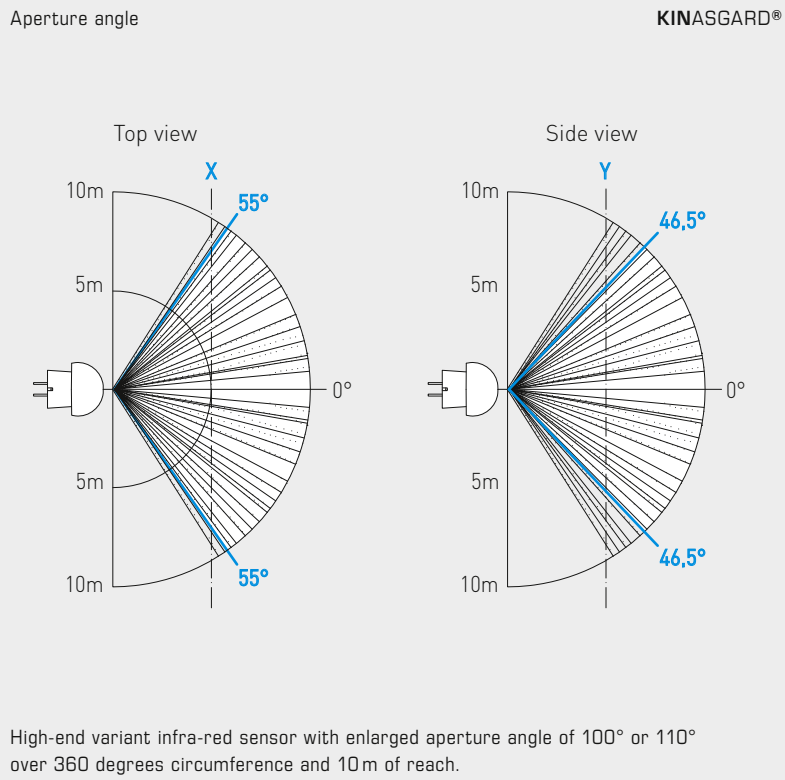


Characteristic curve showing the sensitivity of light sensor on the circuit board in respect of the wavelength of light.

The broken line represents the light perception of the human eye.

The light sensor used in **PHOTASGARD®** light intensity sensors was specifically adapted to the sensitivity of the human eye. Its greatest sensitivity is in the range of 400 nm to 700 nm.

With its special filter, the sensor is therefore ideally suited for measuring exposure to daylight and/or for measuring artificial light of high colour temperature (similar to sunlight).



In all KINASGARD® motion sensors and presence detectors, a high-end variant infra-red sensor with enlarged angle of aperture is exclusively used.

The patented lens system with 20 individual lenses results in only very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements.

The sensor recognizes changes in the infra-red radiation spectrum, meaning heat radiation, resulting from the movement of persons or objects.

Such movements generate a temporary change of the temperature gradient in the field.

Due to the constant presence of body (heat) radiation, this sensor is ideally suitable for detecting persons. The temperature difference between sensor and object must be >5 K.

**Room light intensity sensor and measuring transducer,
in-wall in the panel switch programme,
with active output**

Maintenance-free light intensity sensor **PHOTASGARD® FSHKM** with active output, in in-wall housing, to determine the illuminance (0...1kLux). The measuring transducer converts the measured variables into a standard signal of 0-10V. The in-wall sensor is mounted in high-quality panel switch programmes, ideally of the brands Gira, Berker, Merten, Jung, Siemens or Busch-Jaeger (using in-wall adapters) either individually or in combination with light switches, socket outlets, etc.

The sensor is used to control luminaires, lighting systems, Venetian blinds and canvas blinds and for monitoring the lighting conditions. It is used indoors at workplaces, in corridors, offices, residential and business premises as well as industrial and storage halls as daylight-dependent constant light control, as brightness or twilight sensor and to control sun protection hoods to avoid unnecessary room heating.

The **light sensor (photodiode)** was specifically adapted to the sensitivity of the human eye. It is most sensitive in the range of 350 nm to 820 nm. With its special filter, the sensor is therefore ideally suited to exposure measurement of daylight and/or for measuring artificial light of high colour temperature (similar to sunlight).

TECHNICAL DATA

Power supply:	24 V AC / DC ($\pm 10\%$)
Power consumption:	typically < 2.0 VA / 24 V AC; typically < 1.0 W / 24 V DC

BRIGHTNESS

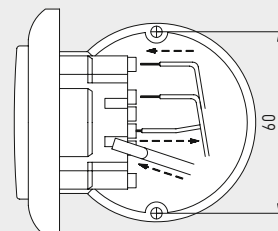
Sensor:	Light sensor (photo diode) (see beginning of this chapter)
Measuring range:	0...1 kLux (optionally other individual measuring ranges, e. g. 100 kLux)
Measuring accuracy:	typically $\pm 10\%$ final value
Output:	0 - 10 V (linearised)
Mounting:	in-wall flush box $\varnothing 55$ mm
Electrical connection:	max. 1.5 mm ² , via push-in terminals
Ambient temperature:	Storage $-20...+50\text{ }^{\circ}\text{C}$; Operation $0...+50\text{ }^{\circ}\text{C}$
Permitted humidity:	max. 95 % RH, non-condensing air
Protection class:	III (according to EN 60 730)
Protection type:	IP 20 (according to EN 60 529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU

SWITCH PROGRAMME

Manufacturer:	GIRA System 55 (other switch programmes, manufacturers, colours as well as prices available upon request)
Housing:	plastic, the standard colour is pure glossy white (similar to RAL 9010) (other colours are available upon request with colour variants depending on the respective light switch programme)

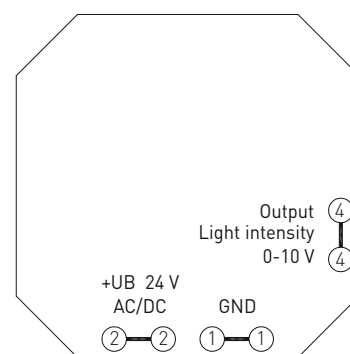
Mounting diagram
[mm]

In-wall



Schematic diagram

FSHKM-U





NEW

S+S REGELTECHNIK

PHOTASGARD® FSHKM

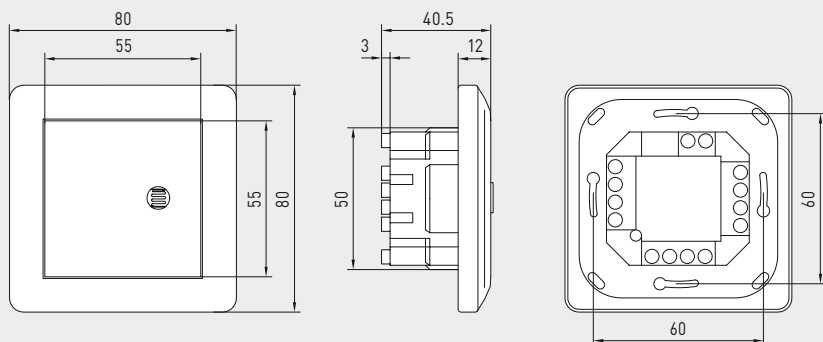
Room light intensity sensor and measuring transducer,
in-wall in the panel switch programme,
with active output



Dimensional drawing
[mm]

FSHKM

FSHKM



Light Intensity table

MB: 0...1000 lux

Light [lux]	U _A [V]
0	0.0
50	0.5
100	1.0
150	1.5
200	2.0
250	2.5
300	3.0
350	3.5
400	4.0
450	4.5
500	5.0
550	5.5
600	6.0
650	6.5
700	7.0
750	7.5
800	8.0
850	8.5
900	9.0
950	9.5
1000	10.0

PHOTASGARD®
FSHKM

Room light intensity sensor or measuring transducer,
in-wall

Type / WG02	Measuring range Light Intensity	Output Light Intensity	Item No.
FSHKM			
FSHKM-U 1K	0...1 kLux	0-10 V	1601-5121-7000-162
Extra charge:	optionally other individual measuring ranges, e. g. 100 kLux		on request

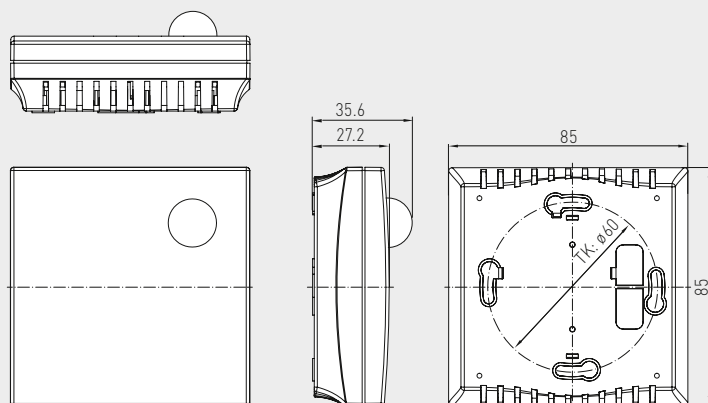
Room light intensity sensors with multi-range switching and active output

The room light intensity sensor **PHOTASGARD® RHKF** with four switchable measuring ranges (four devices in one) measures the luminous intensity with a diffuser and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc., to monitor lighting conditions at workplaces, in storage halls, workshops and corridors, in indoor areas, in industrial halls, in offices as well as in residential and business facilities, for daylight-dependant constant light control, as light intensity or twilight sensor and to control sunshade equipment avoiding unnecessary heating-up of rooms. Therefore it minimizes your variety of types and stock keeping while covering a greater range of universal applications. The sensor used in PHOTASGARD® light intensity sensors was specifically adapted to the sensitivity of the human eye. Its greatest sensitivity is in the range of 400 nm to 700 nm. With its special filter, the sensor is therefore ideally suited for measuring exposure to daylight and /or for measuring artificial light of high colour temperature (similar to sunlight).

TECHNICAL DATA

Power supply:	24 V AC (± 20 %); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_a \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	light sensor with diffuser (see beginning of this chapter)
Measuring ranges:	multi-range switching (via DIP switches) 0...500 Lux / 1 kLux / 5 kLux / 20 kLux (other individual ranges optional, e. g. 100 kLux)
Output:	4...20 mA or 0-10 V (2- or 3-wire connection)
Deviation:	typically < 5 % of final value
Ambient temperature:	0...+50 °C
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Housing:	plastic, material ABS, colour pure white (similar to RAL 9010)
Dimensions:	85 x 85 x 27 mm (Baldur 1)
Installation:	wall mounting or on in-wall flush box, Ø 55 mm, base with 4-hole for mounting on vertically or horizontally installed in-wall flush boxes for cable entry from the back, with predetermined breaking point for on-wall cable entry from top / bottom in case of plain on-wall installation
Protection class:	III (according to EN 60 730)
Protection type:	IP 30 (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

Dimensional drawing



Housing **Baldur 1**
RHKF

RHKF



Measuring ranges (selectable)	DIP 1	DIP 2	DIP 3	DIP 4
0...500 Lux	ON	OFF	OFF	OFF
0... 1 kLux (default)	OFF	ON	OFF	OFF
0... 5 kLux	OFF	OFF	ON	OFF
0... 20 kLux	OFF	OFF	OFF	ON

Connecting diagram

RHKF-U

- 1 UB+ supply voltage 24V AC/DC
- 2 Output light intensity 0-10V
- 3 UB- GND

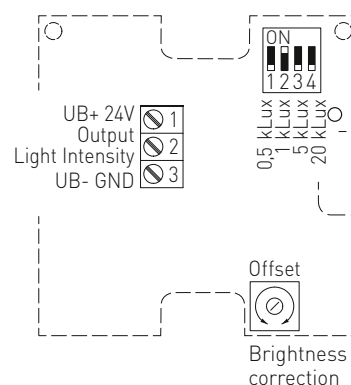
Connecting diagram

RHKF-I

- 1 UB+ supply voltage 24V DC
- 2 Output light intensity 4...20mA

Schematic diagram

RHKF



PHOTASGARD® RHKF Room light intensity sensors

Type / WG01	Measuring Range Light Intensity (adjustable)	Output Light Intensity	Item No.
RHKF			
RHKF-I	0...500 Lux / 1 kLux / 5 kLux / 20 kLux	4 ... 20 mA	1601-41A2-2000-000
RHKF-U	0...500 Lux / 1 kLux / 5 kLux / 20 kLux	0-10 V	1601-41A1-2000-000
Extra charge:	Other individual measuring ranges optional, e. g. 100 kLux		on request



S+S REGELTECHNIK

PHOTASGARD® AHKF

Outdoor light intensity sensors / twilight sensors
with multi-range switching
and active output

The light intensity sensor / twilight sensor **PHOTASGARD® AHKF** with six switchable measuring ranges (six devices in one) measures the luminous intensity and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc., to monitor lighting conditions at work-places, in greenhouses, storage halls, workshops, corridors, in outdoor areas, in industrial halls, in offices as well as in residential and business facilities, for daylight-dependant constant light control, as light intensity or twilight sensor and as sun protection control to avoid unnecessary room heating. Therefore it minimizes your variety of types and stock keeping while covering a greater range of universal applications. The sensor used was specifically adapted to the sensitivity of the human eye. Its greatest sensitivity is in the range of 400 nm to 700 nm. With its special filter, the sensor is therefore ideally suited for measuring exposure to daylight and / or for measuring artificial light of high colour temperature (similar to sunlight).

TECHNICAL DATA

Power supply:	24 V AC (±20%); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ±0.3 V
Working resistance:	$R_a(\text{ohm}) = (U_0 - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	light sensor (see beginning of this chapter)
Measuring ranges:	multi-range switching (via DIP switches) 0...500 Lux / 1 kLux / 2 kLux / 5 kLux / 20 kLux / 60 kLux (other individual ranges optional, e. g. 100 kLux)
Output:	4...20 mA or 0-10 V (2- or 3-wire connection)
Deviation:	typically < 5 % of final value
Ambient temperature:	-30...+70 °C
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL9016), Housing cover is transparent!
Housing dimensions:	72 x 64 x 43.3 mm (Tyr 1)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector (optional on request)
Installation:	on-wall
Protection class:	III (according to EN 60 730)
Protection type:	IP 67 (according to EN 60 529) housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU



AHKF

Measuring ranges (selectable)	DIP 1	DIP 2	DIP 3	DIP 4
0...500 Lux	OFF	OFF	OFF	—
0... 1 kLux	ON	OFF	OFF	—
0... 2 kLux	OFF	ON	OFF	—
0... 5 kLux	ON	ON	OFF	—
0... 20 kLux (default)	OFF	OFF	ON	—
0... 60 kLux	ON	OFF	ON	—

Connecting diagram

AHKF-U

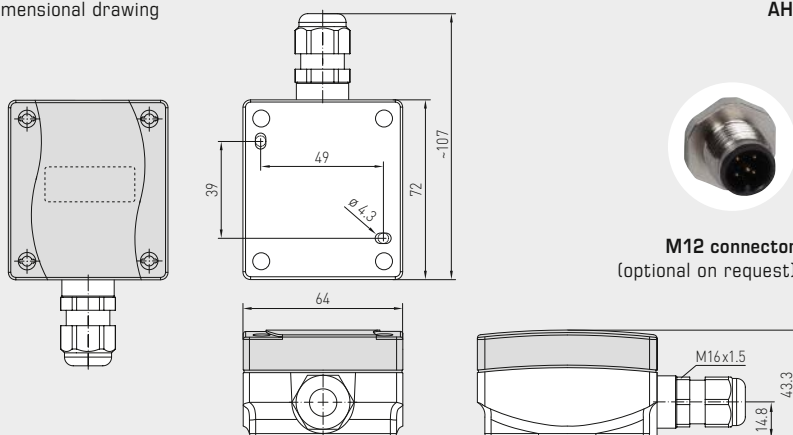
- 1 UB+ supply voltage 24V AC/DC
- 2 Output light intensity 0-10V
- 3 UB- GND

Connecting diagram

AHKF-I

- 1 UB+ supply voltage 24V DC
- 2 Output light intensity 4...20mA

Dimensional drawing

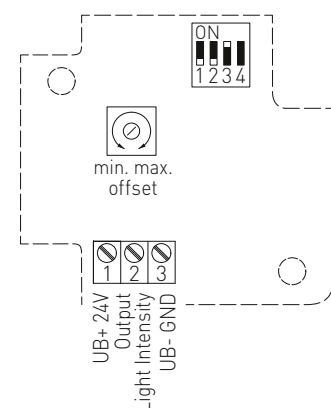


AHKF

M12 connector
(optional on request)

Schematic diagram

AHKF



PHOTASGARD® AHKF Outdoor light intensity sensors / twilight sensors

Type/WG01	Measuring Range Light Intensity (adjustable)	Output Light Intensity	Item No.
AHKF			
AHKF-I	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	4... 20 mA	1601-1112-1000-000
AHKF-U	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	0-10 V	1601-1111-1000-000
Extra charge:	Other individual measuring ranges optional, e. g. 100 kLux		on request

In-ceiling light intensity sensors, with multi-range switching and active output

The light-intensity sensor **PHOTASGARD® DHKF** with six switchable measuring ranges (six devices in one) for installation in suspended ceilings. The connecting head is pluggable for quick and easy mounting. The measuring transducer is accommodated in a separate housing.

The sensor used was specifically adapted to the sensitivity of the human eye. Its greatest sensitivity is in the range of 400 nm to 700 nm. With its special filter, the sensor is therefore ideally suited to exposure measurement of daylight and/or for measuring artificial light of high colour temperature (similar to sunlight).

It is used for daylight-dependent constant light control, to control luminaires, lighting systems, Venetian blinds and canvas blinds, and to control light intensity and sun protection hoods to avoid unnecessary heating-up of rooms. It is used in greenhouses, storage halls, industrial halls, workshops, corridors, residential and commercial buildings.

TECHNICAL DATA

Power supply:	24 V AC ($\pm 20\%$); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_a \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	$< 1 \text{ W}$ at 24 V DC; $< 2 \text{ VA}$ at 24 V AC
Sensor:	light sensor (see beginning of this chapter)
Measuring ranges:	multi-range switching (via DIP switches) 0...500 Lux / 1 kLux / 2 kLux / 5 kLux / 20 kLux / 60 kLux (optional other individual measuring ranges, e. g. 100 kLux)
Output:	4...20 mA or 0-10 V
Deviation:	typically $< 5\%$ of final value
Ambient temperature:	$-30...+70^\circ\text{C}$
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1)
Electrical connection:	2- or 3-wire (see connecting diagram), 0.14 - 1.5 mm ² , via terminal screws
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Connecting cable:	PVC, LiYY, 4 x 0.14 mm ² , cable length (KL) = approx. 2 m
Connecting head:	made of plastic, material polycarbonate (PC), colour white, pluggable , $\varnothing$ = approx. 35 mm, H = approx. 29 mm
Mounting (sensor):	in the suspended ceiling, ceiling cut-out $\varnothing = 30 \text{ mm}$, cover $\varnothing = < 35 \text{ mm}$
Protection type:	IP 67 (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) IP 30 (according to EN 60 529) Sensor in the built-in state
Protection class:	III (according to EN 60 730)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

DHKF

Connecting head,
pluggable



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
0...500 Lux	OFF	OFF	OFF
0... 1 kLux	ON	OFF	OFF
0... 2 kLux	OFF	ON	OFF
0... 5 kLux	ON	ON	OFF
0... 20 kLux (default)	OFF	OFF	ON
0... 60 kLux	ON	OFF	ON

Note: **DIP 4, 5, 6** are not assigned!

Connecting diagram

DHKF-U

1	UB+ supply voltage 24V AC/DC
2	Output light intensity 0-10V
3	free
4	UB- GND

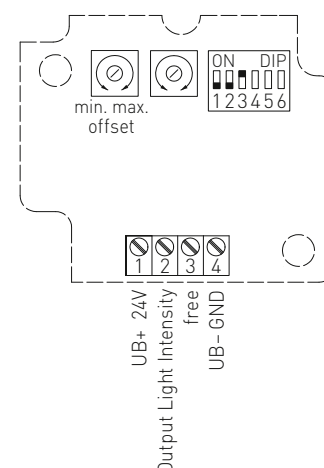
Connecting diagram

DHKF-I

1	UB+ supply voltage 24V DC
2	Output light intensity 4...20mA

Schematic diagram

DHKF





S+S REGELTECHNIK

PHOTASGARD® DHKF

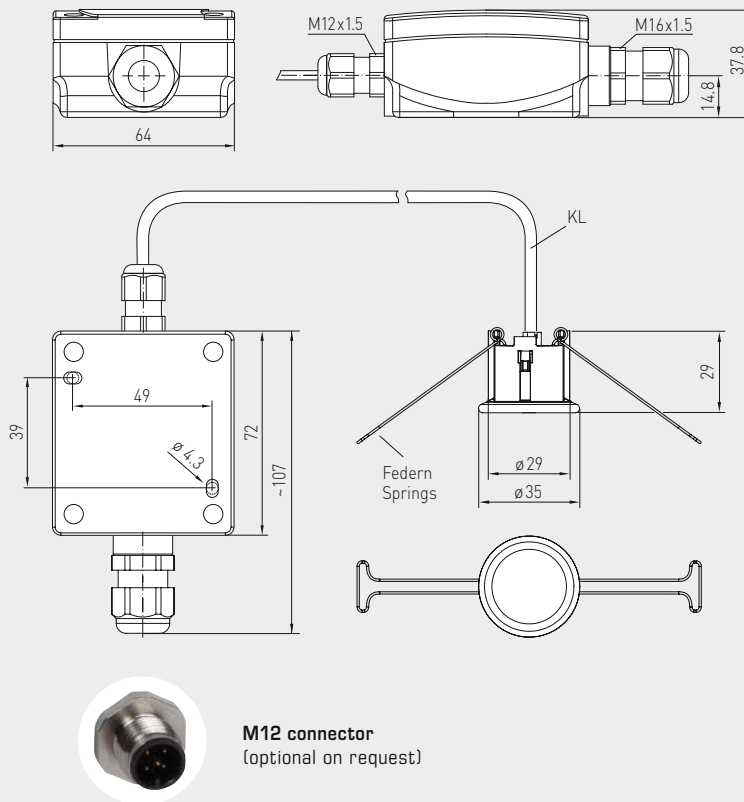
In-ceiling light intensity sensors,
with multi-range switching
and active output



Dimensional drawing

DHKF

DHKF



PHOTASGARD® DHKF In-ceiling light intensity sensors

Type/WG01	Measuring Range Light Intensity (adjustable)	Output Light Intensity	Item No.
DHKF			
DHKF I	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	4... 20 mA	1601-6122-1000-000
DHKF U	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	0-10 V	1601-6121-1000-000
Extra charge:	Other individual measuring ranges optional, e. g. 100 kLux		on request
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101		on request

**Room motion sensor or presence detector,
in-wall in the panel switch programme,
with switching output**

Maintenance-free motion sensor/presence detector **KINASREG® FSBWF-W** with switching output, in in-wall housing, to detect the presence of people and movements (360° / approx. 10 m). The in-wall sensor is mounted in high-quality panel switch programmes, ideally of the brands Gira, Berker, Merten, Jung, Siemens or Busch-Jaeger (using in-wall adapters) either individually or in combination with light switches, socket outlets, etc.

The sensor is used for monitoring and detecting statuses and for motion-dependent control of room functions, e.g. for lowering the temperature of unused rooms. It is used indoors in corridors, offices, residential and business premises as well as industrial and storage halls.

The **infrared motion sensor** detects movement over an aperture angle of 90°/110° and a perimeter of 360°. The patented lens system with 20 individual lenses results in very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements.

TECHNICAL DATA

Power supply:	24 V AC / DC ($\pm 10\%$),
Power consumption:	typically < 2.0 VA / 24 V AC; typically < 1.0 W / 24 V DC

MOTION

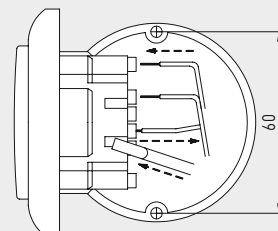
Sensor:	infra-red motion sensor (see beginning of this chapter)
Detection range:	360° perimeter, aperture angle 90°/110°, range approx. 10 m, circular
Motion detection:	of people and objects, necessary temperature difference between subject and surroundings $\geq 5\text{ K}$
Output:	without / with motion + presence, potential-free changeover contact (24 V), 1 A resistive load
After-running time:	adjustable from approx. 4 seconds to approx. 16 minutes
Mounting:	in-wall flush box $\varnothing 55\text{ mm}$
Electrical connection:	max. 1.5 mm ² , via push-in terminals
Ambient temperature:	Storage $-20\ldots+50\text{ }^{\circ}\text{C}$; Operation $0\ldots+50\text{ }^{\circ}\text{C}$
Permitted humidity:	max. 95 % RH, non-condensing air
Protection class:	III (according to EN 60 730)
Protection type:	IP 20 (according to EN 60 529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU

SWITCH PROGRAMME

Manufacturer:	GIRA System 55 (other switch programmes, manufacturers, colours as well as prices available upon request)
Housing:	plastic, the standard colour is pure glossy white (similar to RAL 9010) (other colours are available upon request with colour variants depending on the respective light switch programme)

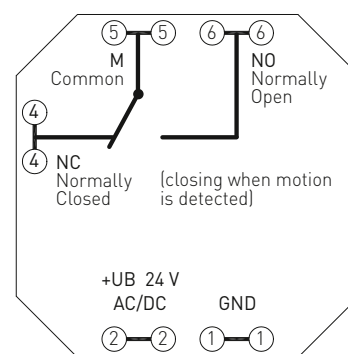
Mounting diagram
[mm]

In-wall



Schematic diagram

FSBWF-W



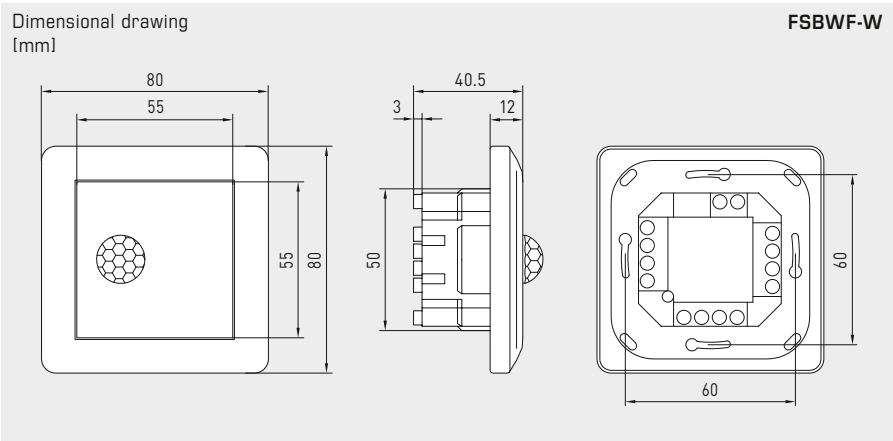


NEW

S+S REGELTECHNIK

KINASREG® FSBWF-W

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



KINASREG® FSBWF-W			
Room motion sensor or presence detector, in-wall			
Type / WG02	Detection of presence / motion	Output presence / motion	Item No.
FSBWF-W			
FSBWF-W	Yes / No	Changeover contact	1401-5120-3000-162

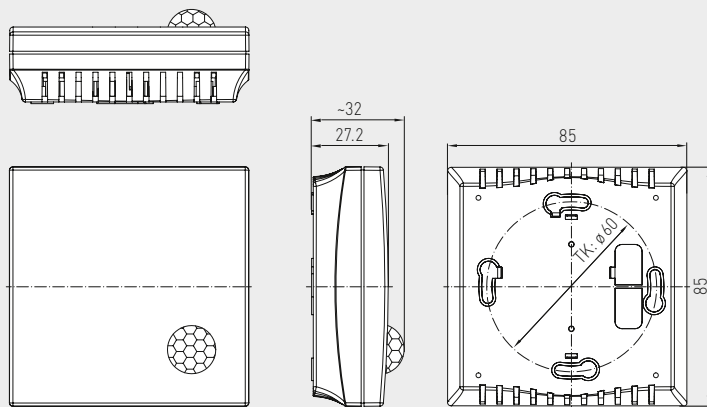
Room motion sensor with switching output

The motion sensor and presence detector **KINASGARD® RBWF** detects the presence of persons and motions and has a switching output (changeover contact). The sensor detects motions over an aperture angle of 110° and a perimeter of 360°. The patented lens system with 20 individual lenses results in only very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements. Elegant housing made of plastic with snap-on lid, base with 4-hole attachment for installation on vertically or horizontally installed in-wall flush boxes, with predetermined breaking point for on-wall cable entry in case of on-wall installation. The room motion sensor is used to monitor and recognise conditions and for the motion-dependent control of room functions, e.g. for lowering temperatures in unused rooms as a motion detector. This residential room motion detector is installed in corridors, in outdoor areas, in industrial halls, in offices, in residential rooms and business facilities.

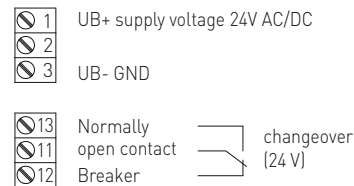
TECHNICAL DATA

Power supply:	24 V AC ($\pm 20\%$); 15...36 V DC
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	infra-red motion sensor (see beginning of this chapter)
Detection range:	perimeter 360°, aperture angle 90° / 110°, reach approx. 10 m, circular
Motion detection:	of persons and objects, necessary temperature difference between subject and surroundings ≥ 5 K
Output:	without / with motion + presence, potential-free changeover contact (24 V), 1 A ohmic load
After-running time:	adjustable from 4 s to 16 min
Ambient temperature:	0...+50 °C
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Housing:	plastic, material ABS, colour pure white (similar to RAL 9010)
Dimensions:	85 x 85 x 27 mm (Baldur 1)
Mounting:	wall mounting or on in-wall flush box, $\varnothing 55$ mm, base with 4-hole for mounting on vertically or horizontally installed in-wall flush boxes for cable entry from the back, with predetermined breaking point for on-wall cable entry from top / bottom in case of plain on-wall installation
Protection class:	III (according to EN 60 730)
Protection type:	IP 30 (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

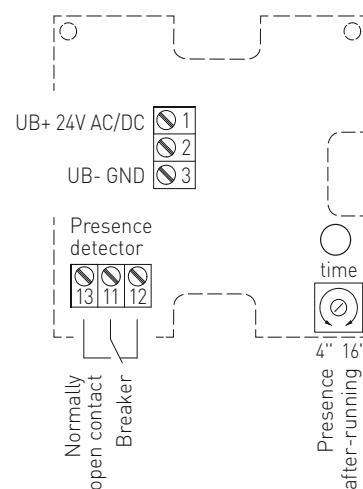
Dimensional drawing

Housing **Baldur 1**
RBWF**RBWF**

Connecting diagram

RBWF

Schematic diagram

RBWF

KINASGARD® RBWF Room motion sensor

Type / WG01	Detection	Output	Item No.
	Presence + Motion	Presence + Motion	
RBWF			
RBWF-W	Yes / No (relay on / off)	Changeover contact	1401-41A0-4000-000



S+S REGELTECHNIK

KINASGARD® ABWF

Outdoor motion sensor
with switching output

ABWF

The motion sensor and presence detector **KINASGARD® ABWF** detects the presence of persons and motions. It is used to observe and recognise conditions and for motion-dependent control of room functions, e.g. as a motion detector to lower temperatures in unused rooms. The motion sensor is used in corridors, in outdoor areas, in industrial halls, in offices, residential rooms and business facilities. The sensor detects motions over an aperture angle of 110° and a perimeter of 360°. The patented lens system with 20 individual lenses results in only very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements. The sensor recognizes changes in the infra-red radiation spectrum, so in heat radiation, resulting from the movement of persons or objects. Such movements generate a temporary change of the temperature gradient in the field. Due to the constant presence of body (heat) radiation, this sensor is ideally suitable for detecting persons. The temperature difference between sensor and object must be > 5 K.

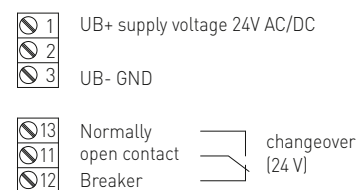
TECHNICAL DATA

Power supply:	24 V AC (± 20 %); 15...36 V DC
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	infra-red motion sensor (see beginning of this chapter)
Detection range:	perimeter 360°, aperture angle 90° / 110°, reach approx. 10 m, circular
Motion detection:	of persons and objects, required temperature difference between subject and surroundings ≥ 5 K
Output:	without / with motion + presence, potential-free changeover contact (24 V), 1 A ohmic load
After-running time:	adjustable from 4 s to 16 min
Ambient temperature:	-10...+50 °C
Electrical connection:	0.14 - 1.5 mm², via terminal screws
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted/Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector (optional on request)
Installation:	on-wall
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529) housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU



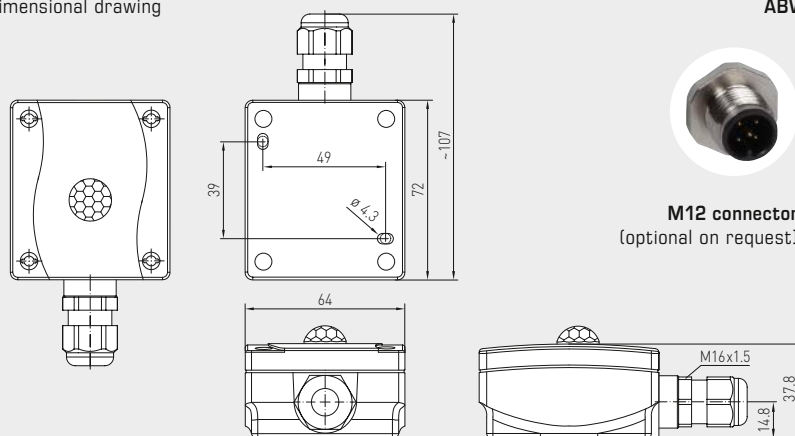
Connecting diagram

ABWF



Dimensional drawing

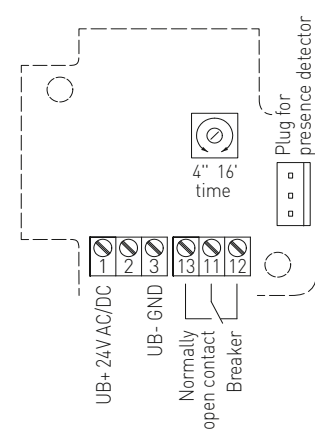
ABWF



M12 connector
(optional on request)

Schematic diagram

ABWF



KINASGARD® ABWF Outdoor motion sensor

Type / WG01	Detection	Output	Item No.
ABWF	Presence + Motion	Presence + Motion	
ABWF-W	Yes / No (relay on / off)	Changeover contact	1401-1110-4000-000

In-ceiling motion sensor with switching output

The in-ceiling motion sensor and presence detector **KINASGARD® DBWF / DBWF-C**

detects the presence of persons and movements and has a switching contact as an output. It has been designed for monitoring and detecting statuses and for motion-dependent control of room functions, e.g. for lowering the temperature of unused rooms.

The in-ceiling motion sensor is used for installation in suspended ceilings in corridors, offices, as well as in residential and business facilities. The connecting head is pluggable for quick, easy mounting. The measuring transducer is accommodated in a separate housing.

The sensor detects motions over an aperture angle of 110° and a perimeter of 360°. The patented lens system with 20 individual lenses results in only very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements.

TECHNICAL DATA

Power supply:	24 V AC ($\pm 20\%$); 15...36 V DC
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	infra-red motion sensor (see beginning of this chapter)
Detection range:	perimeter 360°, aperture angle 90° / 110°, reach approx. 10 m, circular, at an installation height of approx. 3 m the sensor covers a detection radius (r) of approx. 3.4 m
Motion detection:	of persons and objects, necessary temperature difference between subject and surroundings ≥ 5 K
After-running time:	adjustable from 4 seconds to 16 minutes
Ambient temperature:	-10...+50 °C
Connecting head:	plastic, material polycarbonate (PC), colour white, pluggable
Connecting cable:	PVC, LiYY, 4 x 0.14 mm ² , cable length (KL) = approx. 2 m
Electrical connection:	0.14 - 1.5 mm ² via terminal screws
Mounting (sensor):	in the suspended ceiling, ceiling cutout $\varnothing = 30$ mm, cover $\varnothing = < 35$ mm
Protection type (sensor):	IP 30 (according to EN 60 529) in the built-in state
Protection class (sensor):	III (according to EN 60 730)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU

DBWF measuring transducer

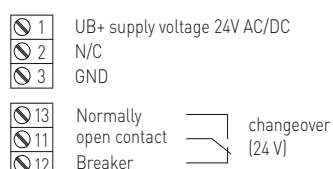
Output:	potential-free changeover contact (24 V), 1 A ohmic load
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Protection type (housing):	IP 67 (according to EN 60 529) housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)

DBWF-C measuring transducer

Output:	potential-free normally open contact , signal relay, max. 24 V / 0.5 A
Housing:	plastic, material PVC, colour black
Housing dimensions:	55 x 20 x 15 mm (compact form)
Protection type (housing):	IP 20 (according to EN 60 529) (compact form)

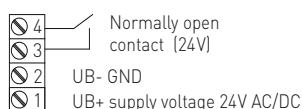
Connection diagram

DBWF



Connection diagram

DBWF-C



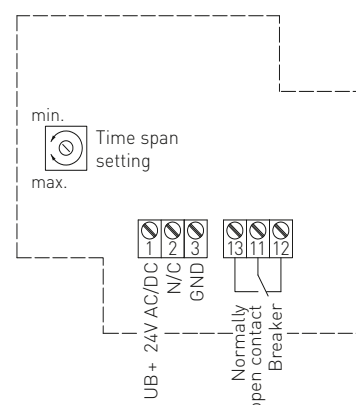
DBWF DBWF-C

connecting head,
pluggable



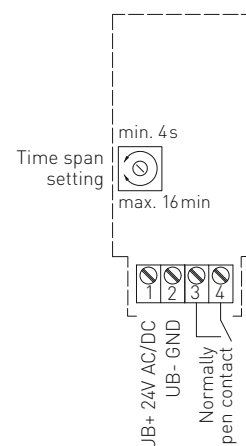
Schematic diagram

DBWF



Schematic diagram

DBWF-C





S+S REGELTECHNIK

KINASGARD® DBWF
KINASGARD® DBWF-C

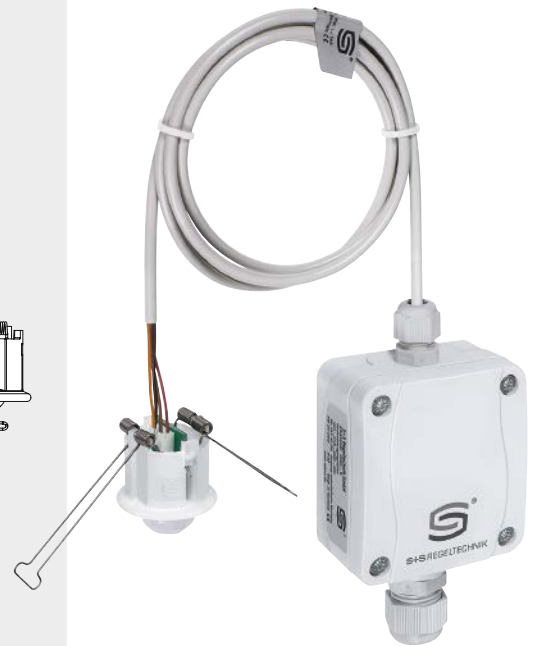
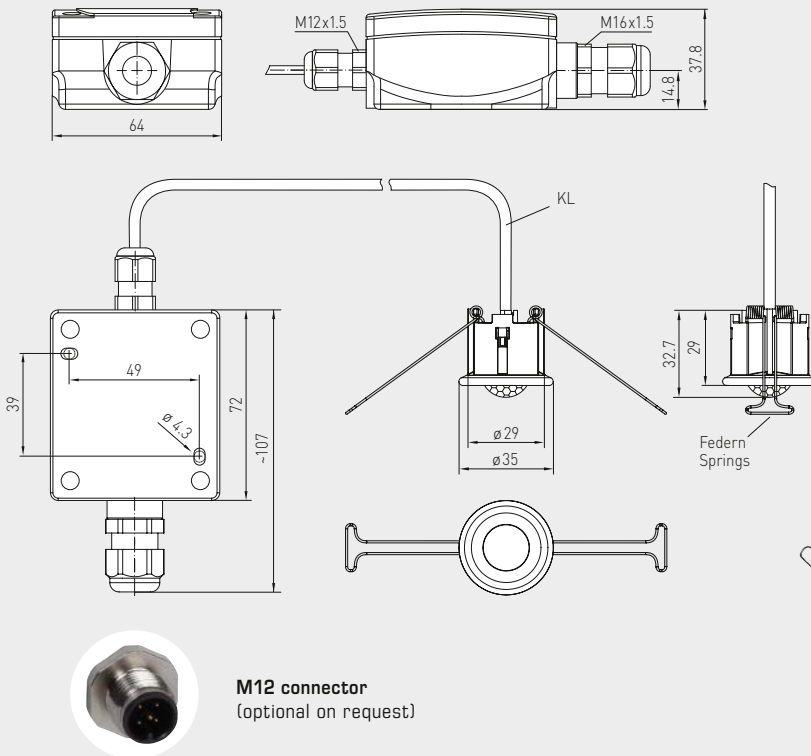
In-ceiling motion sensor
with switching output



Dimensional drawing

DBWF

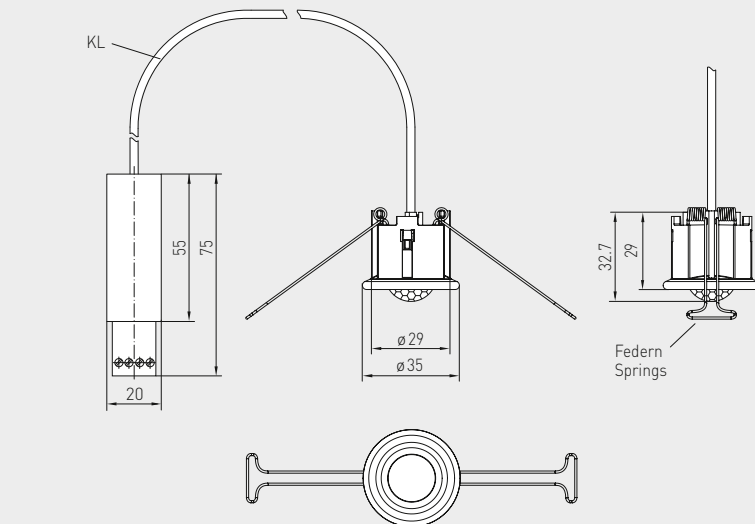
DBWF



Dimensional drawing

DBWF-C
compact form

DBWF-C
compact form



KINASGARD® DBWF In-ceiling motion sensor
KINASGARD® DBWF-C In-ceiling motion sensor, compact form

Type / WG01	Detection Presence + Movement	Output Presence + Movement	Item no.
DBWF			
DBWF-W	Yes / No (relay on / off)	Changeover contact	1401-6120-3000-000
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101		on request
DBWF-C			
DBWF-C	Yes / No (relay on / off)	Normally open contact	1401-6130-1000-006

Room motion sensor and light sensor, multisensors with active and switching output

The room motion and light sensor and presence detector **KINASGARD® RBWF-LF** is a combined instrument that detects motion and light intensity using a diffuser as well as the presence of persons and is used to recognize conditions. RBWF-LF issues a standard signal of 0-10 V or 4...20 mA for light intensity and has a switching (normally open contact) output for detecting motion.

This multi-sensor is used in building automation, in corridors, at workplaces, in industrial halls, in offices and business facilities for the control of lighting as needed, e.g. to control sunshade equipment, for daylight-dependant constant light control, for activating Venetian blinds or luminaries, for automatic energy conservation, and to avoid unnecessary heating-up or cooling of unoccupied rooms.

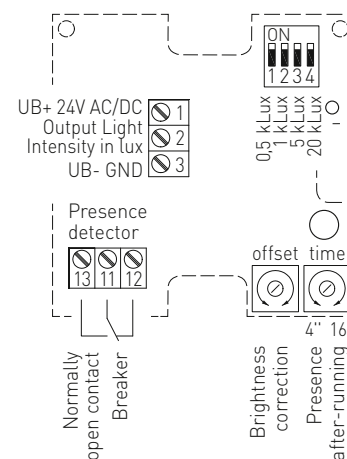
TECHNICAL DATA

Power supply:	24 V AC (±20 %); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ±0.3 V
Working resistance:	$R_a(\text{ohm}) = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	infra-red motion sensor and light sensor with diffuser (see beginning of this chapter)
Output, motion sensor:	without / with motion + presence, potential-free normally open contact (24 V), 1 A ohmic load
After-running time:	adjustable from 4 s to 16 min
Measuring ranges:	multi-range switching (via DIP switches) 0...500 Lux / 1 kLux / 5 kLux / 20 kLux (other individual ranges optional, e. g. 100 kLux)
Output, light sensor:	0-10 V (linearised, active, 3-wire connection) or 4...20 mA
Deviation, light sensor:	typically < 5 % of final value
Ambient temperature:	0...+50 °C
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Housing:	plastic, material ABS, colour pure white (similar to RAL 9010)
Dimensions:	85 x 85 x 27 mm (Baldur 1)
Installation:	wall mounting or on in-wall flush box, Ø 55 mm, base with 4-hole for mounting on vertically or horizontally installed in-wall flush boxes for cable entry from the back, with predetermined breaking point for on-wall cable entry from top / bottom in case of plain on-wall installation
Protection class:	III (according to EN 60 730)
Protection type:	IP 30 (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

Measuring ranges (selectable)	DIP 1	DIP 2	DIP 3	DIP 4
0...500 Lux	ON	OFF	OFF	OFF
0... 1 kLux (default)	OFF	ON	OFF	OFF
0... 5 kLux	OFF	OFF	ON	OFF
0... 20 kLux	OFF	OFF	OFF	ON

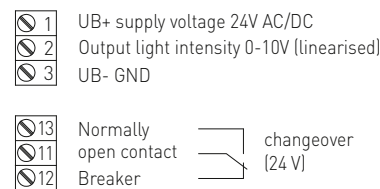
Schematic diagram

RBWF/LF



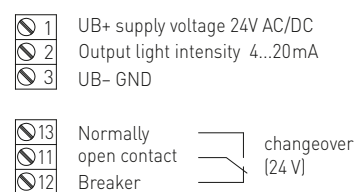
Connecting diagram

RBWF/LF-U



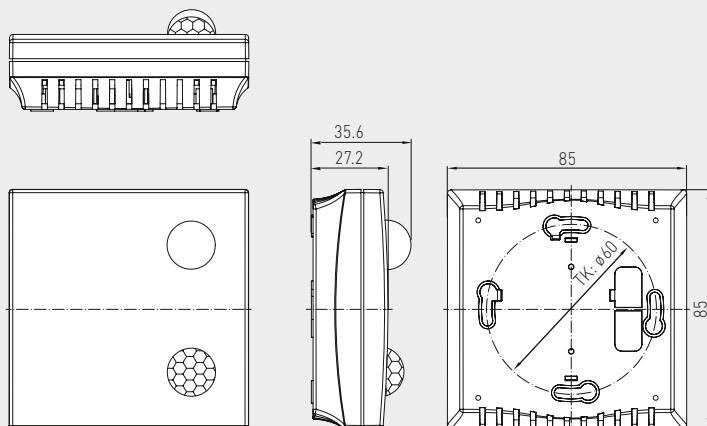
Connecting diagram

RBWF/LF-I





Dimensional drawing

Housing **Baldur 1**
RBWF/LF

RBWF/LF

**KINASGARD® RBWF/LF** Room motion sensor and light sensor

Type/WG01	Detection, Measuring Range	Output	Item No.
RBWF-LF-U			
1. Presence + Motion	Yes/No (relay on/off)	Changeover contact	1401-41A1-1100-000
2. Light Intensity	0...500 Lux / 1 kLux / 5 kLux / 20 kLux	0 -10 V (linearised)	
RBWF-LF-I			
1. Presence + Motion	Yes/No (relay on/off)	Changeover contact	1401-41A1-3200-000
2. Light Intensity	0...500 Lux / 1 kLux / 5 kLux / 20 kLux	4...20 mA	
Extra charge:	Other individual measuring ranges optional, e.g. 100 kLux		on request

Outdoor motion sensor and light sensor, multisensors with active and switching output

The room motion and light sensor and presence detector **KINASGARD® ABWF/LF** is a combined instrument that detects motions and light intensity as well as the presence of persons and is used to recognize conditions. ABWF/LF issues a standard signal of 0-10 V or 4...20 mA for light intensity and has a switching (changeover contact) output for the detection of motions.

The motion sensor / presence detector detects the presence of persons and motions. It is used to monitor and recognise conditions and for motion-dependent control of room functions, e.g. as a motion detector to lower temperatures in unused rooms. The motion sensor is used in corridors, in outdoor areas, in industrial halls, in offices, residential rooms and business facilities.

The light intensity sensor / twilight sensor with six switchable measuring ranges (six devices in one) measures the luminous intensity and is used to control luminaries, lighting systems, Venetian blinds and canvas blinds, etc., to monitor lighting conditions at workplaces, in greenhouses, storage halls, workshops, corridors, in outdoor areas, in industrial halls, in offices as well as in residential and business facilities, for daylight-dependant constant light control, as light intensity or twilight sensor and to control sunshade equipment avoiding unnecessary heating-up of rooms.

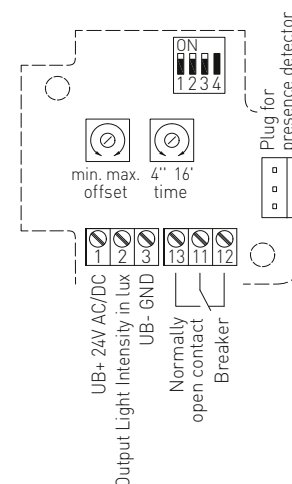
TECHNICAL DATA

Power supply:	24 V AC (±20 %); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ±0.3 V
Working resistance:	$R_a \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	< 1 W at 24 V DC; < 2 VA at 24 V AC
Sensor:	infra-red motion sensor and light sensor (see beginning of this chapter)
Output, motion sensor:	without / with motion + presence, potential-free normally open contact (24 V), 1 A ohmic load
After-running time:	adjustable from 4 s to 16 min
Measuring ranges:	multi-range switching (via DIP switches) 0...500 Lux / 1 kLux / 2 kLux / 5 kLux / 20 kLux / 60 kLux (other individual ranges optional, e. g. 100 kLux)
Output:	0-10 V (linearised, active, 3-wire connection) or 4...20 mA
Deviation, light sensor:	typically < 5 % of final value
Ambient temperature:	-10...+50 °C
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Installation:	on-wall
Protection class:	III (according to EN 60 730)
Protection type:	IP65 (according to EN 60 529) housing tested, TÜV SÜD, report no. 713139052 (Tyr 1)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

Measuring ranges (selectable)	DIP 1	DIP 2	DIP 3	DIP 4
0...500 Lux	OFF	OFF	OFF	—
0... 1 kLux	ON	OFF	OFF	—
0... 2 kLux	OFF	ON	OFF	—
0... 5 kLux	ON	ON	OFF	—
0... 20 kLux (default)	OFF	OFF	ON	—
0... 60 kLux	ON	OFF	ON	—

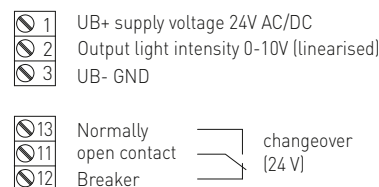
Schematic diagram

ABWF/LF



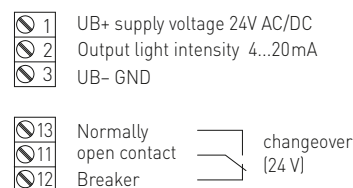
Connecting diagram

ABWF/LF-U



Connecting diagram

ABWF/LF-I





S+S REGELTECHNIK

KINASGARD® ABWF/LF

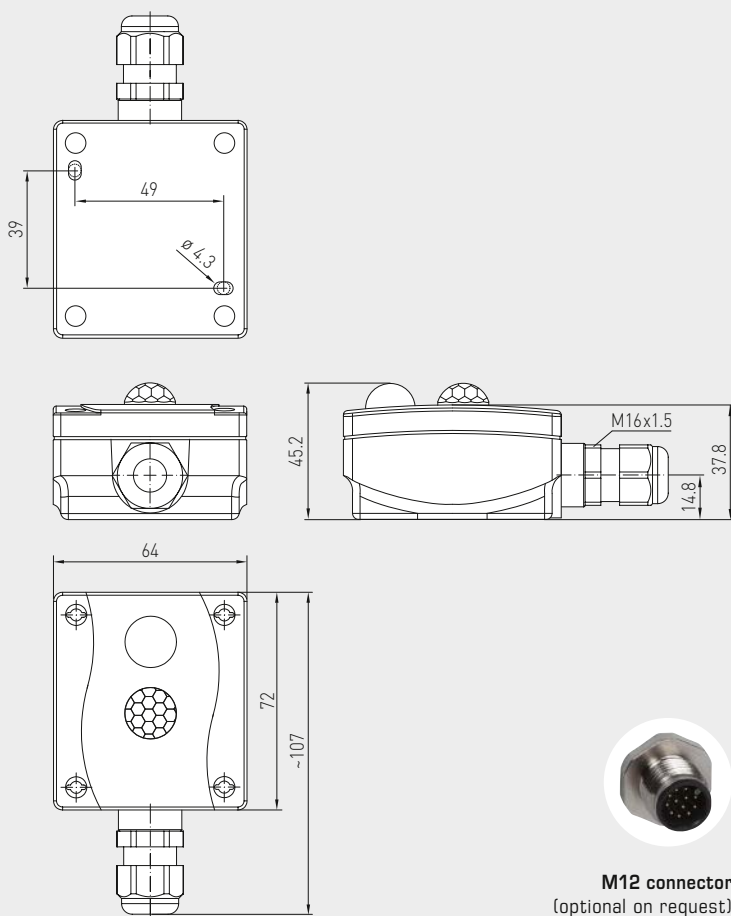
Outdoor motion sensor and light sensor,
multisensors with active and switching output



Dimensional drawing

ABWF/LF

ABWF/LF



M12 connector
(optional on request)



KINASGARD® ABWF/LF Outdoor motion sensor and light sensor			
Type / WG01	Detection, Measuring Range	Output	Item No.
ABWF-LF-U			
1. Presence + Motion	Yes / No (relay on / off)	Changeover contact	1401-1111-2100-000
2. Light Intensity	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	0 – 10V (linearised)	
ABWF-LF-I			
1. Presence + Motion	Yes / No (relay on / off)	Changeover contact	1401-1111-3200-000
2. Light Intensity	0...500 Lux / 1 / 2 / 5 / 20 / 60 kLux	4...20 mA (linearised)	
Extra charge:	Other individual measuring ranges optional, e. g. 100 kLux		on request
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101		on request

In-ceiling motion detector, light, humidity and temperature sensor, multisensors with switching output

The in-ceiling sensor **KINASGARD® DBWF/LF/FTF** is used to detect persons within a distance of up to 10 meters and to measure luminous intensity or brightness, relative humidity and temperature. It has been designed for installation in suspended ceilings.

The sensor detects **motion** over an aperture angle of 110° and a perimeter of 360°.

The patented lens system with 20 individual lenses results in only very small dark areas that are only a few centimetres wide even at a distance of 10 m, thereby reliably detecting small movements. If motion is detected, the potential-free relay output is switched. The hold time of the output, measured from the moment of the last detected movement, can be preset internally in the device via potentiometer within a range of 4 seconds to approx. 17 minutes.

For the **temperature and humidity**, an analogue output 0-10 V corresponding to 0...+50 °C or 0...100 % RH is available. Deviations due to the mounting position and location can be compensated internally using one offset regulator respectively.

For **luminous intensity or brightness** of 0...1000 lux or 0...5000 lux (selectable via DIP switches), an analogue output 0-10 V is also available. It is also possible to activate the motion output depending on brightness with the help of a jumper.

Fields of application for the DBWF/LF/FTF include residential room monitoring, automatic switching of lights, control technology, alarm technology, and motion-dependent control of room functions, e. g. for lowering the temperature in unused rooms.

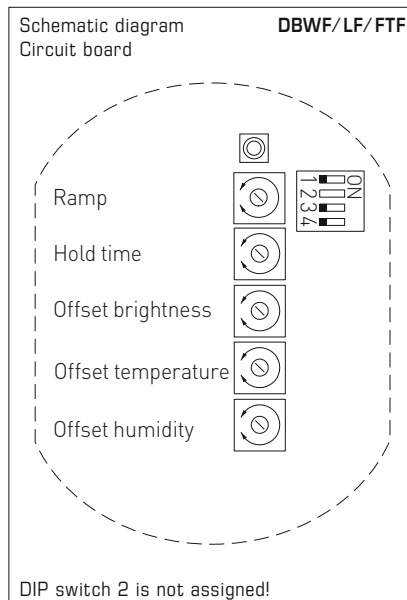
TECHNICAL DATA

Power supply:	24 V AC / DC (half-wave rectification, read the instructions!)
Power consumption:	< 3.6 VA at 24 V DC
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Outputs:	0-10 V or inverted 10-0 V (selectable via DIP switches)
MOTION	
Sensor:	infra-red motion sensor (see beginning of this chapter)
Detection range:	perimeter 360°, aperture angle 90° / 110°, reach approx. 10 m, circular, at an installation height of approx. 3 m the sensor covers a detection radius (r) of approx. 3.4 m
Motion detection:	of persons and objects, necessary temperature difference between subject and surroundings ≥ 5 K
Output, motion sensor:	potential-free changeover contact, for switching safety extra-low voltage only, up to 1 A
After-running time:	adjustable from 4 s to 17 min
LIGHT INTENSITY	
Sensor:	light sensor with diffusor (see beginning of this chapter)
Measuring range, light sensor:	0...1000 lux / 0...5000 lux (selectable via DIP switches)
Output, light sensor:	0-10 V
Deviation, light sensor:	typically < ± 10 % of final value (referred to calibration reference source, approx. 5700 K)
Temperature drift:	< ± 5 % of final value / 10 K at +20 °C
HUMIDITY	
Measuring range, humidity:	0...100 % RH (output corresponding to 0-10 V)
Operating range, humidity:	10...95 % RH (non-precipitating air)
Deviation, humidity:	typically ± 3 % RH (20...80 %); at +20 °C, otherwise ± 5 % RH
Output, humidity:	0-10 V
TEMPERATURE	
Measuring range, temperature:	0...+50 °C (output corresponding to 0-10 V) other measuring ranges on request!
Operating range, temperature:	0...+50 °C
Deviation, temperature:	typically ± 0.8 K at +20 °C, under standard conditions
Output, temperature:	0-10 V
Ambient temperature:	0...+50 °C
Storage temperature:	-20...+50 °C
Housing:	steel, white painted
Housing dimensions:	cover: Ø 96 mm, height of housing: 30 mm
Installation dimensions:	ceiling cutout: Ø 80 mm installation depth: < 45 mm (incl. connector system) on-wall protrusion: > 13 mm (motion sensor) > 20 mm (humidity sensor)
Sensor protection:	mounted inside ceiling installation housing
Protection class:	III (according to EN 60 730)
Protection type (housing):	IP 20 (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU

Function output (direction adjustable)	DIP 1
normal (default) 0 % = 0 V 100 % = 10 V	OFF
inverted 0 % = 10 V 100 % = 0 V	ON

Brightness (adjustable measuring range)	DIP 3
0... 1000 Lux (default)	OFF
0... 5000 Lux	ON

Motion (mode selectable)	DIP 4
Motion mode (default) Motion detector is independent of threshold value	OFF
Auto mode If the set threshold value is not reached, the motion detector is active	ON

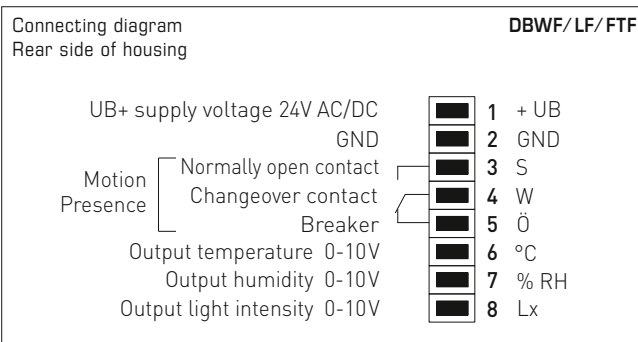
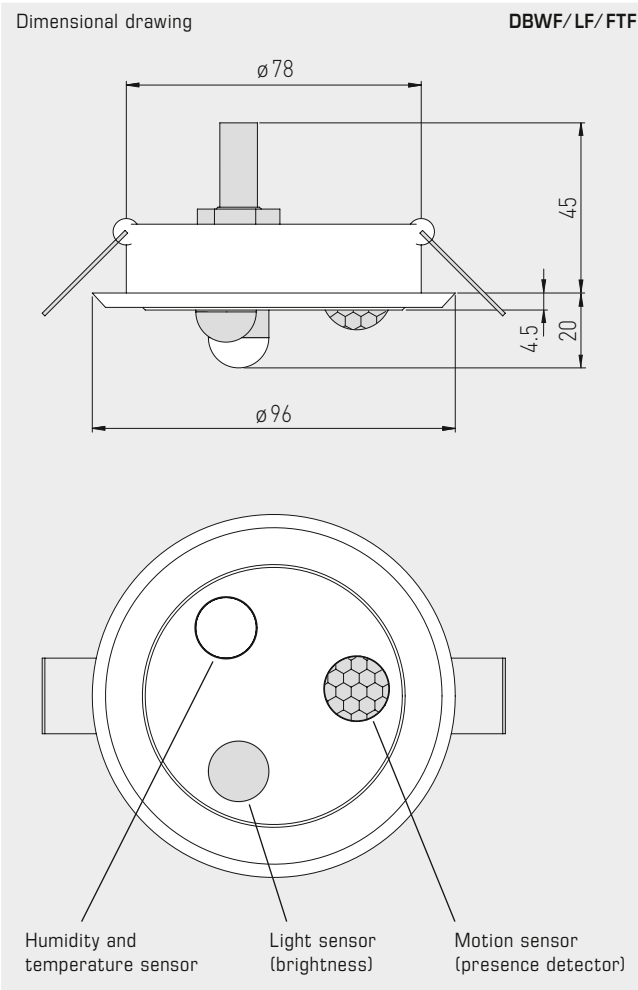




S+S REGELTECHNIK

KINASGARD® DBWF/LF/FTF

In-ceiling motion detector, light,
humidity and temperature sensor,
multisensors with switching output



KINASGARD® DBWF/LF/FTF In-ceiling motion, light, temperature and humidity sensor			
Type / WG02	Detection, Measuring Range	Output	Item No.
DBWF-LF-FTF-W			
1. Presence + Motion	yes / no (relay on / off)	Changeover contact	1401-6114-3100-000
2. Light Intensity	0...1000 lux / 0...5000 lux (DIP)	0-10 V (linearised)	
3. Temperature	0 ... 50 °C	0 - 10 V	
4. Humidity	0...100 % RH	0 - 10 V	
Outputs: 0-10V or inverted 10-0V (selectable via DIP switches)			