

smartSWITCH HF 12DP MB S f

Automatic switching based on motion and light level

Product description

- Motion detector for luminaire installation
- Motion detection through glass and thin materials (except metal)
- For automatic on/off switching of electronic ballasts and LED Drivers
- Bright-out function: luminaire is not switched on if there is adequate brightness
- Delay time, detection range and light value for the bright-out function can be set via 9 dip switches
- Max. installation height 12 m
- Two housing options allowing flexible installation
- Variable detection area (100 – 10 %)
- Zero cross switching supported
- 5-year guarantee



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Wiring diagrams and installation examples, page 4



smartSWITCH HF 12DP MB f



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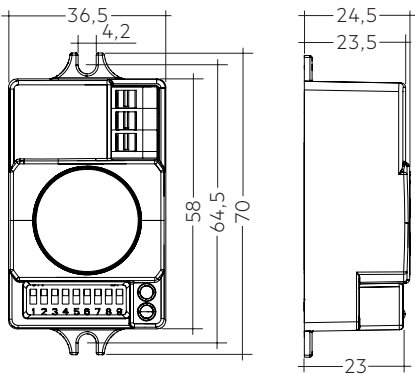


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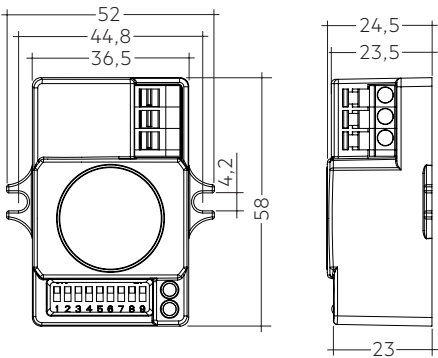
Automatic switching based on motion and light level

Technical data

Rated supply voltage	220 – 240 V
Mains frequency	50 Hz
Power	< 0.6 W
Frequency	5.8 GHz (± 75 MHz)
Transmission power	< 0.1 mW
Load resistive	800 W
Load capacitive	400 VA
Detection angle	30 – 150°
Max. detection area	ø 10 m
Max. mounting height	12 m
tc	85 °C
Ambient temperature ta	-20 ... +70 °C
Storage temperature ts	-20 ... +70 °C
Humidity	min. 5 % ... max. 85 % at 30 °C
Type of protection	IP20
Protection class	Reinforced insulation
Casing material	PC, halogen-free
Casing colour	RAL 9016 (white)



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Ordering data

Type	Article number	Dimensions L x W x H	Packaging, carton	Weight per pc.
smartSWITCH HF 12DP MB f	28003498	70 x 36.5 x 24.5 mm	5 pc(s).	0.040 kg
smartSWITCH HF 12DP MB S f	28003499	58 x 52 x 24.5 mm	5 pc(s).	0.040 kg

1. Standards

IEC 61347-1
IEC 61347-2-11
IEC 300 440-2
IEC 301 489-3
IEC 62479
IEC 55015
IEC 61000-3-2
IEC 61000-3-3
IEC 61547

1.1 Glow-wire test according to IEC 60598-1

850 °C passed

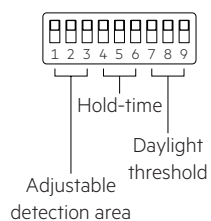
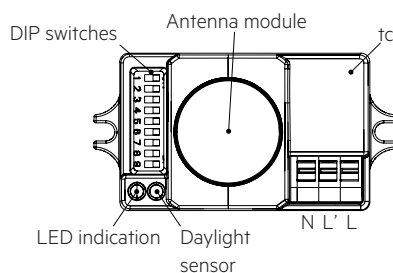
2. Common

smartSWITCH HF 12DP f and S f provides simple cost-effective motion detection in combination with the corridorFUNCTION offered by Tridonic electronic control gear.

When the sensor detects movement it triggers a predefined motion detection profile in the control gear.

If the user-definable light value at the integrated light sensor is exceeded the control gear remains switched off.

High-frequency technology enables the sensor to be installed in completely enclosed luminaires.

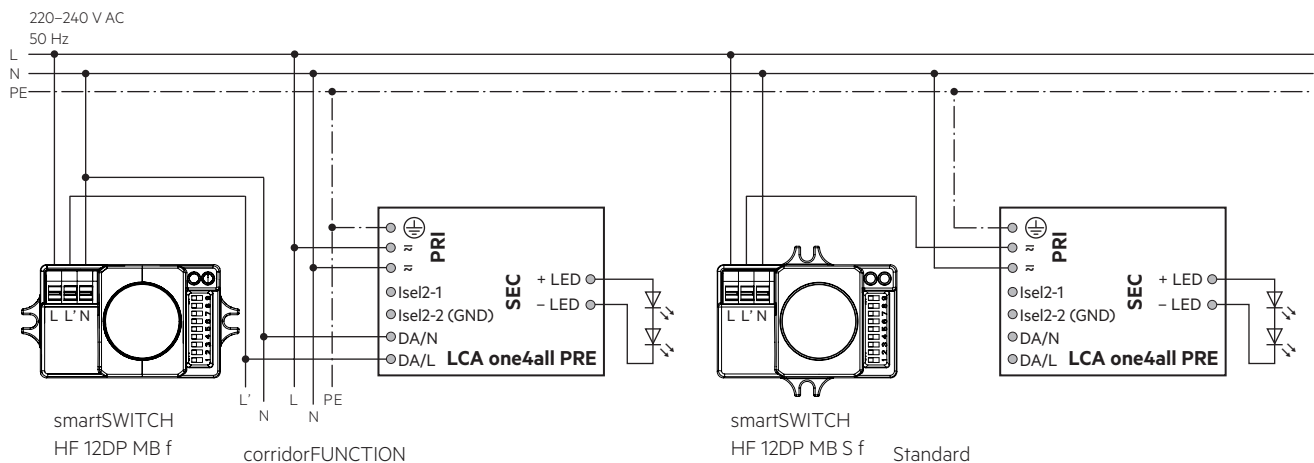


3. Installation



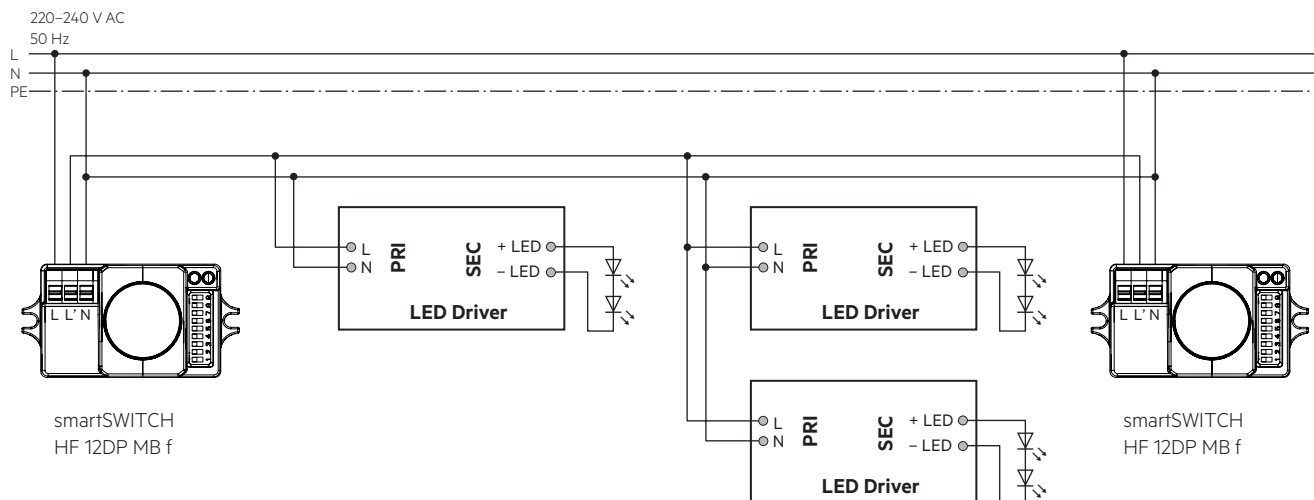
- Not for use with phase cut dimmers.
- The power supply must be disconnected before installation.
- Suitable for installation only in indoor luminaires (e.g. corridors and closed parking garage) without vibration.
- Motion detection: only possible through thin housing material (e.g. plastic or glass), do not use metal housing.
- The sensor must protrude over the light sources if you use the integrated light sensor.
- Light sensor: must be able to detect reflected artificial light and reflected daylight.
- Reflected HF waves (e.g. of walls, floors, ceilings or furniture) from other transmitters affect motion detection.

3.1 Wiring diagram



3.2 Combination multiple sensors and drivers

Maximum load (capacitive): 400 VA

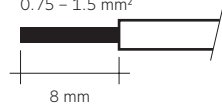


3.3 Wiring type and cross section

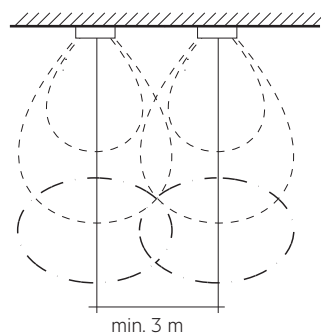
Stranded wire with ferrule or solid wire from 0.75 to 1.5 mm² may be used for wiring. Strip 8 mm of insulation from the cables to ensure perfect operation of the push-in terminals.

Use one wire for each terminal connector only.

wire preparation:
0.75 – 1.5 mm²



3.4 Minimum spacing for further sensors



4. Functions

4.1 Setting up

Setting the detection area

The detection area can be restricted to prevent the lighting system being switched on unnecessarily, as would be the case if the area was too large. The detection area indicates the diameter within which motion is detected.

	1	2	3	Sensitivity
I	●	●	●	100 % (default)
II	○	●	●	75 %
III	○	●	○	50 %
IV	○	○	●	30 %
V	○	○	○	10 %



Setting the switch-off delay

To prevent the lighting system being switched on and off unnecessarily you can set a switch-off delay. The delay starts after the last motion in the detection area. If a further motion is detected in the detection area during this delay then the delay is retriggered. At the end of the delay the light will be switched off or the corridorFUNCTION is started.

	4	5	6	Hold time
I	●	●	●	5 s (default)
II	●	○	●	30 s
III	●	○	○	1 min
IV	○	●	●	5 min
V	○	●	○	10 min
VI	○	○	●	20 min
VII	○	○	○	30 min



Setting the daylight threshold value

A threshold value can be set to prevent the lighting system from being switched on when there is already adequate illuminance. The threshold value indicates the illuminance value below which detected motion causes the lighting system to be switched on.

	7	8	9	Daylight sensor
I	●	●	●	Disable (default)
II	○	●	●	50 Lux
III	○	●	○	20 Lux
IV	○	○	●	5 Lux
V	○	○	○	2 Lux



Note:

To ensure the sensor switches on in conjunction with the corridorFUNCTION you should set the threshold value to I = Disable. If the threshold value disabled the sensor will always switch on.

4.2 corridorFUNCTION

The corridorFUNCTION can be activated by applying a voltage of 230 V for 5 minutes at the switchDIM connection of the control gear or via corridorFUNCTION Plug.

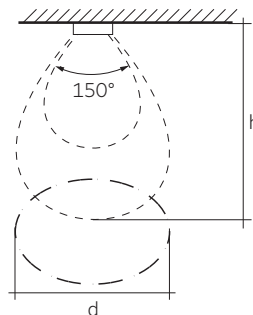
Note: To apply a voltage of 230 V for 5 minutes at the switchDIM input of the control gear the sensor must detect motion for more than 5 minutes or a switch-off delay longer than 5 minutes must be set.

4.3 Start up behaviour

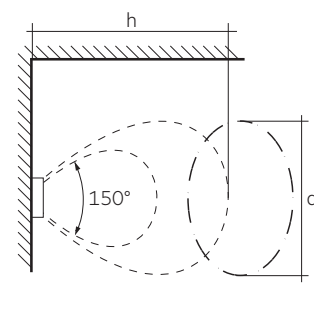
20 seconds after mains is connected, the sensor is ready and indicates this by switching on the green LED.

4.4 Motion detection

Ceiling mounted:



Wall mounted:



Sensibility

h	100 %	75 %	50 %	30 %	10 %
5 m	12 m	9 m	6 m	3 m	1 m
6 m	12 m	8 m	3 m	1 m	–
7 m	12 m	6 m	3 m	–	–
8 m	12 m	5 m	2 m	–	–
9 m	12 m	4 m	1 m	–	–
10 m	12 m	3 m	–	–	–
11 m	10 m	2 m	–	–	–
12 m	10 m	1 m	–	–	–

Diameter of the detection cone as a function of height at maximum detection area without taking objects in the room into consideration. Stationary objects (walls, tables, floor-standing luminaires, etc.) located in the direct view of the sensor change the characteristics of the detection area.

The mentioned values are typical minimum values depending on the environment and application the detection area may increase.

4.5 Detection sensibility

Optimized for detection of pedestrians with a speed of 0.5 – 1.5 m/s corresponds to 1.8 – 5.4 km/h.

Depending on the application and environmental conditions the maximum detectable speed of object may vary.

5. Miscellaneous

5.1 Disposal of equipment



Return old devices in accordance with the WEEE directive to suitable recycling facilities.

5.2 Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.