



PIR movement detectors for internal or external installations - wall mounting

Type 18.01

- Internal installation
- Surface mounting

Type 18.11

- External installation (IP54)
- Surface mounting

Type 18.A1

- External mounting (IP55)
- Terminal for PE connection
- Push-in terminals

- Output contact connected to supply live
- Small size
- Adjustable ambient light intervention threshold
- Adjustable Light ON Time
- Universal mounting position - permits the selection of any area for survey
- Wide angle of survey

18.01/18.11

Screw terminal



18.A1

Push-in terminal



NOTE: with 110...125 V AC supply, the Ratings (AC1, AC15 and lamp loads) specified in pages 1 to 4 must be reduced by 50 % (e.g. 500 W instead of 1000 W)
For outline drawings see page 11

Contact specification

Number of contacts		1 NO (SPST-NO)	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)
Rated voltage/Maximum switching voltage	V AC	230/230	230/230	230/230
Rated load AC1	VA	2300	2300	2300
Rated load AC15	(230 V) VA	450	450	450
Nominal lamp rating 230 V:				
incandescent/halogen W		1000	1000	1000
fluorescent lamp with electronic ballast W		500	500	500
fluorescent lamp with electromechanical ballast W		350	350	350
CFL W		300	300	300
LED 230 V W		300	300	300
halogen or LV LED with electronic ballast W		300	300	300
halogen or LV LED with electromechanical ballast W		500	500	500
Standard contact material		AgSnO ₂	AgSnO ₂	AgSnO ₂

Supply specification

Coil specification	V AC (50/60 Hz)	120...230	120...230	110...230
	DC	—	—	—
Rated power AC/DC	VA (50 Hz)/W	2.5/—	2.5/—	2/0.8
Operating range	V AC (50/60 Hz)	96...253	96...253	96...253
	DC	—	—	—

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³	100 · 10 ³
Ambient light intervention threshold	lx	5...350	5...350	5...1000
Light ON time after last detection		10 s...12 min	10 s...12 min	10 s...20 min
Sensing area diameter		See diagram page 9	See diagram page 9	See diagram page 9
Ambient temperature range	°C	-10...+50	-30...+50	-30...+50
Protection category		IP 40	IP 54	IP 55

Approvals (according to type)




PIR movement detectors for internal installations - ceiling mount
Type 18.21

- Surface mounting

Type 18.31

- Recess mounting

Type 18.31-0031

- High ceiling type (6 meter max.)
- Surface or recess mounting

- Output contact connected to supply live
- Small size
- Adjustable ambient light intervention threshold
- Adjustable Light ON Time
- Wide angle of survey

18.21/18.31/18.31...0031

Screw terminal



NOTE: with 110...125 V AC supply, the Ratings (AC1, AC15 and lamp loads) specified in pages 1 to 4 must be reduced by 50 % (e.g. 500 W instead of 1000 W)

For outline drawings see page 10

Contact specification

Contact specification		18.21	18.31	18.31-0031
Number of contacts		1 NO (SPST-NO)	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)
Rated voltage/Maximum switching voltage	V AC	230/230	230/230	230/230
Rated load AC1	VA	2300	2300	2300
Rated load AC15	(230 V) VA	450	450	450
Nominal lamp rating 230 V:				
incandescent/halogen W		1000	1000	1000
fluorescent lamp with electronic ballast W		500	500	500
fluorescent lamp with electromechanical ballast W		350	350	350
CFL W		300	300	300
LED 230 V W		300	300	300
halogen or LV LED with electronic ballast W		300	300	300
halogen or LV LED with electromechanical ballast W		500	500	500
Standard contact material		AgSnO ₂	AgSnO ₂	AgSnO ₂

Supply specification

Coil specification	V AC (50/60 Hz)	120...230	120...230	120...230
	DC	—	—	—
Rated power AC/DC	VA (50 Hz)/W	2/1	2/1	2/1
Operating range	V AC (50/60 Hz)	96...253	96...253	96...253
	DC	—	—	—

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³	100 · 10 ³
Ambient light intervention threshold	lx	5...350	5...350	5...350
Light ON time after last detection		10 s...12 min	10 s...12 min	30 s...35 min
Sensing area diameter		See diagram page 9	See diagram page 9	See diagram page 9
Ambient temperature range	°C	-10...+50	-10...+50	-10...+50
Protection category		IP 40	IP 40	IP 40

Approvals (according to type)




PIR movement detectors for internal installations, with volt-free output contact

Type 18.21-0300

- Surface mounting

Type 18.31-0300

- Recess mounting

- Applications where interface to PLC or BMS is required
- Ceiling mounting
- Small size
- Adjustable ambient light intervention threshold
- Adjustable Light ON Time
- Wide angle of survey

18.21...0300/18.31...0300

Screw terminal



NOTE: with 110...125 V AC supply, the Ratings (AC1, AC15 and lamp loads) specified in pages 1 to 4 must be reduced by 50 % (e.g. 500 W instead of 1000 W)

For outline drawings see page 10

Contact specification

Number of contacts		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2500	2500
Rated load AC15	(230 V) VA	450	450
Nominal lamp rating 230 V:			
incandescent/halogen W		1000	1000
fluorescent lamp with electronic ballast W		500	500
fluorescent lamp with electromechanical ballast W		350	350
CFL W		300	300
LED 230 V W		300	300
halogen or LV LED with electronic ballast W		300	300
halogen or LV LED with electromechanical ballast W		500	500
Standard contact material		AgSnO ₂	AgSnO ₂

Supply specification

Coil specification	V AC (50/60 Hz)	120...230	120...230
	V AC (50/60 Hz)/DC	24	24
Rated power AC/DC	VA (50 Hz)/W	2/1	2/1
Operating range	V AC (50/60 Hz)	96...253	96...253
	V AC (50/60 Hz)/DC	19.2...26.4	19.2...26.4

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient light intervention threshold	lx	5...350	5...350
Light ON time after last detection		10 s...12 min	10 s...12 min
Sensing area diameter		See diagram page 9	See diagram page 9
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 40	IP 40

Approvals (according to type)



18.21-0300



- 1 NO 10 A
- Surface mounting

18.31-0300



- 1 NO 10 A
- Recess mounting

**Movement and presence detectors with
Push-in terminals
For internal installation**
Type 18.51

- Standard version
- Volt-free output contact

Type 18.51-0040

- Possibility to connect external push-button to force the output state
- Dynamic light compensation
- Output contact connected to supply live
- Extensive sensing area up to 120 m²
- Two sensing areas:
"presence" suitable for zones of low activity,
and "movement" suitable for transit areas or
zones of high activity
- Modern design
- Quick installation thanks to push-in terminals
- 1 NO contact 10 A, with "zero crossing"
switching
- Wall mounting compatible with 60 mm box
and 2 or 3 module box
- Double terminals for easy "looping" in and out

18.51/18.51...0040

Push-in terminal



NOTE: with 110...125 V AC supply, the Ratings
(AC1, AC15 and lamp loads) specified in pages
1 to 4 must be reduced by 50 %
(e.g. 500 W instead of 1000 W)
For outline drawings see page 10

Contact specification

		18.51	NEW 18.51...0040
Number of contacts		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)
Rated voltage/ Maximum switching voltage	V AC	250/400	230/230
Rated load AC1	VA	2500	2300
Rated load AC15	(230 V) VA	450	450
Nominal lamp rating 230 V:			
incandescent/halogen W		1000	1000
fluorescent lamp with electronic ballast W		500	500
fluorescent lamp with electromechanical ballast W		350	350
CFL W		300	300
LED 230 V W		300	300
halogen or LV LED with electronic ballast W		300	300
halogen or LV LED with electromechanical ballast W		500	500
Standard contact material		AgSnO ₂	AgSnO ₂

Supply specification

Coil specification	V AC (50/60 Hz)	110...230	110...230
Rated power	VA (50 Hz)/W	1.5/1	1.5/1
Operating range	V AC (50/60 Hz)	96...253	96...253

Technical data

Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient light intervention threshold	lx	1...500	1...500
Light ON time after last detection		12 s...35 min	12 s...35 min
Sensing area diameter		See diagram page 9	See diagram page 9
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 40	IP 40

Approvals (according to type)


Movement detectors with Push-in terminals
For internal installation - with volt-free output contact

Type 18.41

- Corridor (ceiling) installation

Type 18.61

- Wall mount installation

- Extensive sensing area up to 120 m²
- Modern design
- Quick installation thanks to push-in terminals
- 1 NO contact 10 A, with "zero crossing" switching
- Wall mounting compatible with 60 mm box and 2 or 3 module box
- Double terminals for easy "looping" in and out

18.41/18.61

Push-in terminal



NOTE: with 110...125 V AC supply, the Ratings (AC1, AC15 and lamp loads) specified in pages 1 to 4 must be reduced by 50 % (e.g. 500 W instead of 1000 W)

For outline drawings see page 10

Contact specification		18.41	18.61
Number of contacts		1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/20 (100 A - 5 ms)	10/20 (100 A - 5 ms)
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2500	2500
Rated load AC15	VA	450	450
Nominal lamp rating 230 V:			
incandescent/halogen W		1000	1000
fluorescent lamp with electronic ballast W		500	500
fluorescent lamp with electromechanical ballast W		350	350
CFL W		300	300
LED 230 V W		300	300
halogen or LV LED with electronic ballast W		300	300
halogen or LV LED with electromechanical ballast W		500	500
Standard contact material		AgSnO ₂	AgSnO ₂
Supply specification		18.41	18.61
Coil specification	V AC (50/60 Hz)	110...230	110...230
Rated power	VA (50 Hz)/W	1.5/1	1.5/1
Operating range	V AC (50/60 Hz)	96...253	96...253
Technical data		18.41	18.61
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient light intervention threshold	lx	1...500	1...500
Light on time after last detection		12 s...35 min	12 s...35 min
Sensing area diameter		See diagram page 9	See diagram page 9
Ambient temperature range	°C	-10...+50	-10...+50
Protection category		IP 40	IP 40
Approvals (according to type)		CE ENEC	CE ENEC

Ordering information

Example: 18 series, PIR movement detector for internal installations, wall mounting, 1 NO 10 A contact, 120...230 V AC supply.

1 8 . 0		1 . 8 .		2 3 0 .		0 0		0 0	
Series		Type		Contact circuit		Supply voltage		Special version	
0 = Internal installation - wall mounting		0 = Voltage output		024 = 24 V AC/DC for types 18.21/31-0300 only		31 = High ceilings, (30 s...35 min)			
1 = External installations		3 = Volt-free output contact		230 = 120...230 V for types 18.01, 18.11, 18.21, 18.31		40 = Push-button connection (18.51)			
2 = Internal ceiling installation - surface mounting		Supply version		230 = 110...230 V for type 18.A1, 18.41, 18.51, 18.61					
3 = Internal ceiling installation - recessed mounting		0 = AC (50/60 Hz)/DC (24 V only)							
4 = PIR movement detector for corridors		8 = AC (50/60 Hz)							
5 = PIR Movement and presence detector		No. of poles		1 = Single pole switching 1 NO (SPST-NO), 10 A					
6 = PIR movement detector wall mounting		Codes							
A = External installations IP 55, push-in terminals		18.01.8.230.0000		18.31.0.024.0300		18.41.8.230.0300			
		18.11.8.230.0000		18.31.8.230.0000		18.51.8.230.0300			
		18.21.0.024.0300		18.31.8.230.0300		18.51.8.230.0040			
		18.21.8.230.0000		18.31.8.230.0031		18.61.8.230.0300			
		18.21.8.230.0300				18.A1.8.230.0000			

Technical data

Insulation

Type		18.01, 18.11, 18.21, 18.31	18.41, 18.51, 18.61, 18.A1
Dielectric strength between open contacts	V AC	1000	1000
Between supply and contact	V AC	1500 (types 18.21...0300, 18.31...0300)	1500

EMC specifications

Type of test		Reference standard	
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV
	air discharge	EN 61000-4-2	8 kV
Radiated electromagnetic field (80...2000 MHz)		EN 61000-4-3	3 V/m
Fast transients (burst 5/50 ns, 5 and 100 kHz)	on supply terminals	EN 61000-4-4	1 kV
Voltage pulses on supply terminals (surge 1.2/50 µs)	common mode	EN 61000-4-5	4 kV
	differential mode	EN 61000-4-5	4 kV (2.5 kV for 18.01/11)
Radiofrequency common mode voltage (0.15...230 MHz)	on supply terminals	EN 61000-4-6	3 V
Voltage dips	70% U _N , 40% U _N	EN 61000-4-11	10 cycles
Short interruptions		EN 61000-4-11	10 cycles
Radiofrequency conducted emissions	(0.15...30) MHz	EN 55014	class B
Radiated emissions	(30...1000) MHz	EN 55014	class B

Terminals

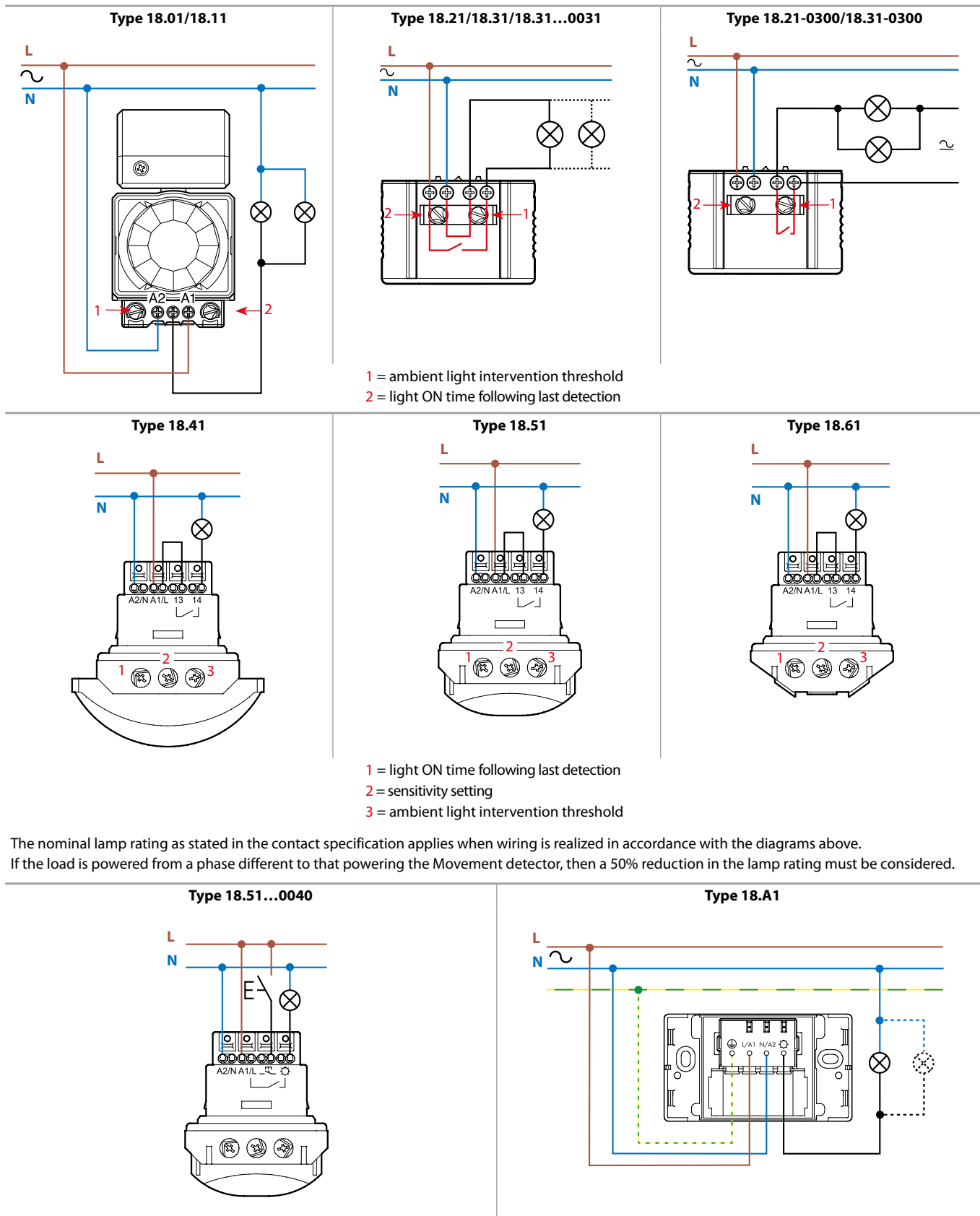
Type		Screw terminal		Push-in (see pag. 12)	
Screw torque	Nm	0.5		—	
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1 x 6 / 2 x 4	1 x 4 / 2 x 2.5	2.5	2.5
	AWG	1 x 10 / 2 x 12	1 x 12 / 2 x 14	14	14
Wire strip length	mm	9	9	8	8

Other data

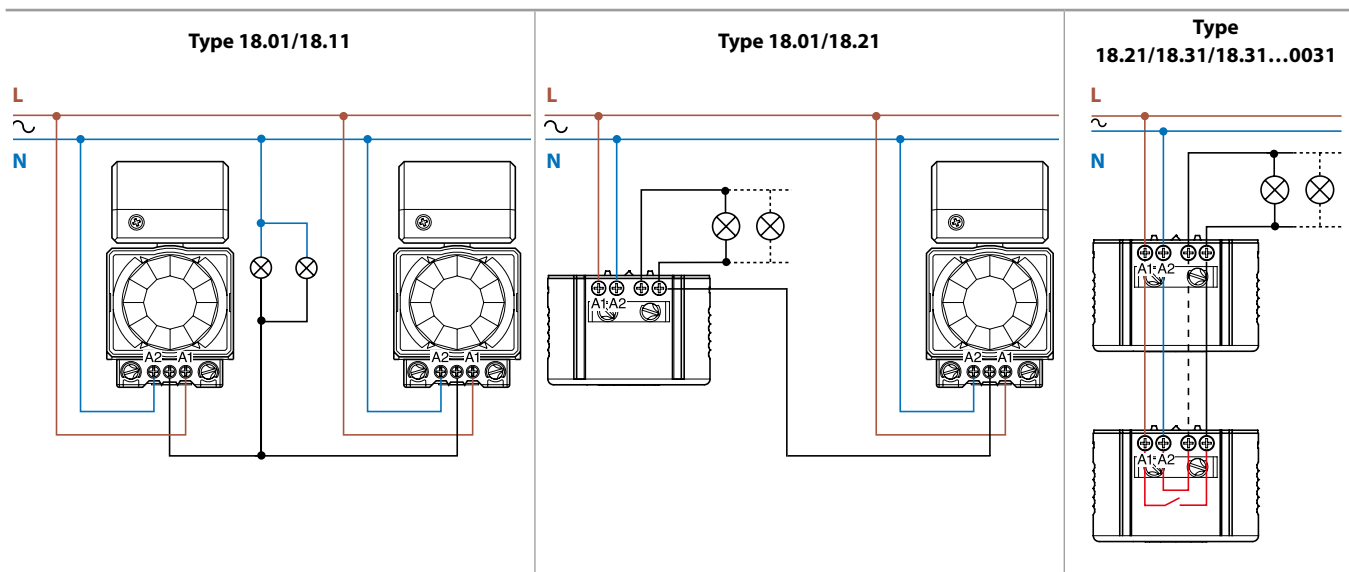
Power lost to the environment	without output current	W	0.3
	with rated output current	W	1.4

- Following the initial power-on, and power-on following a power interruption, the detector makes a hardware-software initialisation for approximately 30 seconds. However, the behavior of the output during this 30 seconds will depend on certain circumstances:
 - If the detector was in the On state before the power interruption, and if the lighting level is (currently) below the pre-set threshold, then the output contact will immediately close when the power is re-applied, for the time delay set by the potentiometer (irrespective of whether movement is being detected).
 - If the detector was in the Off state before the power interruption, or if the ambient light is currently over the pre-set threshold, then the detector will not switch-on until the end of the initialisation phase (assuming movement is then detected).

Wiring diagram



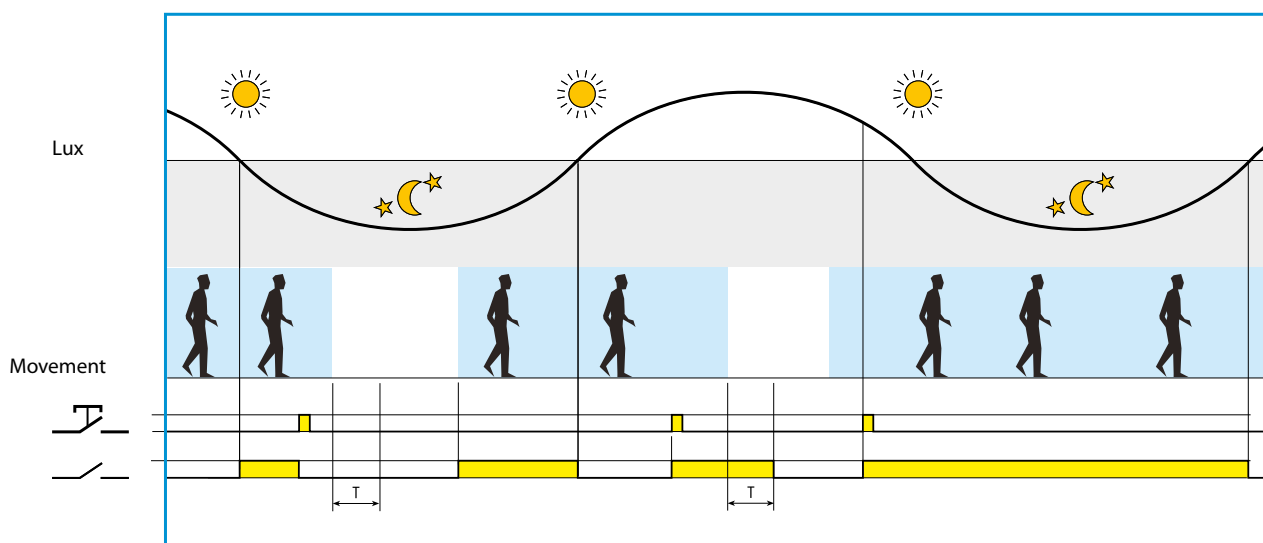
Wiring diagram



Note: Observe the polarity indicated for Phase and Neutral

Special functions (18.51...0040)

External push-button



J A control pulse on the push-button inverts the status of the output relay, until the timing after the last movement detected is elapsed.

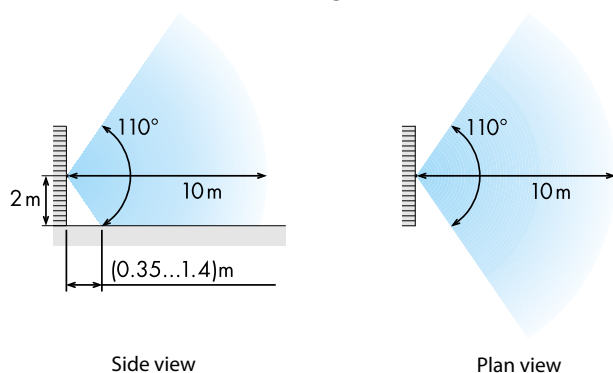
Dynamic Light Compensation

By incorporating Finder's Patented "light feedback compensation" principle, the 18.51...0040 is able to calculate the artificial light contributed by the lamps controlled by the output relay. In effect, this means the 18.51...0040 is able to continuously monitor the natural ambient light level, even when the output is On. As a consequence, whenever the natural light level exceeds the threshold setting the output is forced Off.

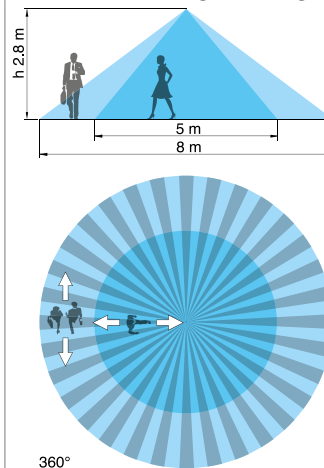
This can significantly minimise the time the lighting is On, particularly where there is a high level of traffic - and cost savings can be considerable. This is an advance over other types of movement detectors, which are unable to identify the natural ambient light level when the output is On and so can only turn Off after the time delay that follows the last detected movement. In busy areas this may mean that the movement detector is being continuously re-triggered and maintained in the On state, even though the natural light level has long risen above the threshold.

Sensing area

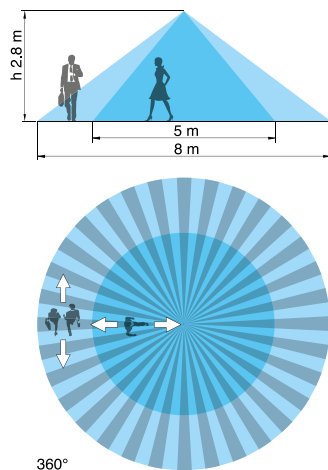
18.01, 18.11, 18.A1 - Wall mounting



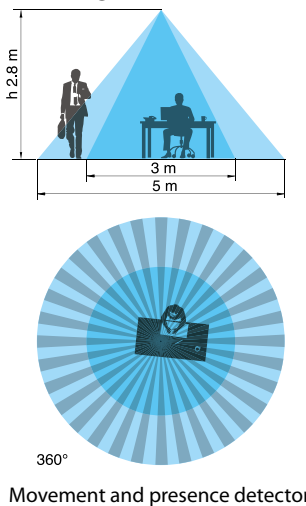
18.01, 18.11 - Ceiling mounting



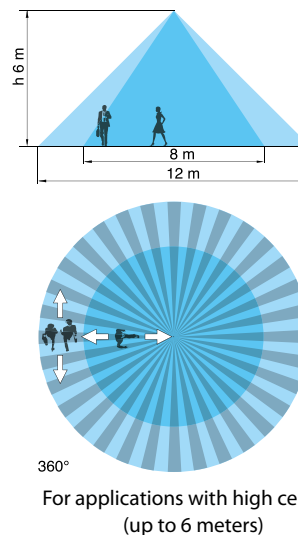
18.21, 18.31 - Ceiling mounting



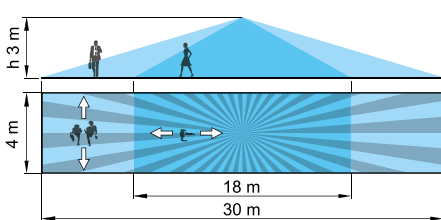
18.31...0031 - Internal ceiling installation, surface mounting



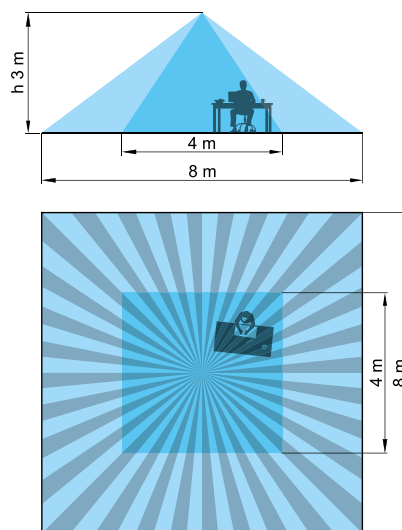
18.31...0031 - High ceilings installations



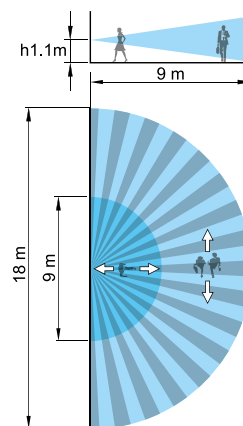
18.41



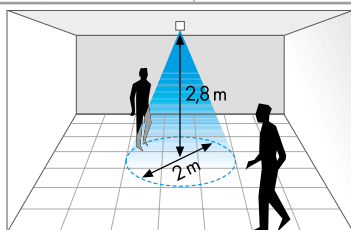
18.51



18.61



Accessories

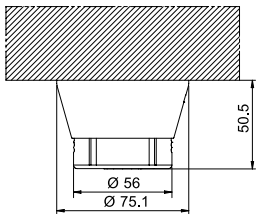
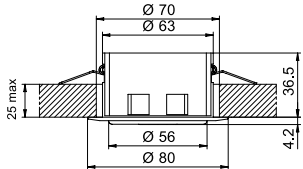
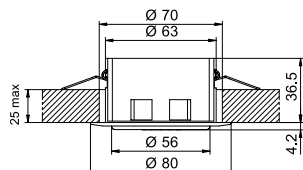
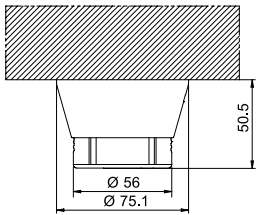
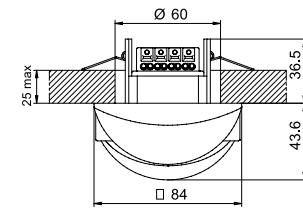
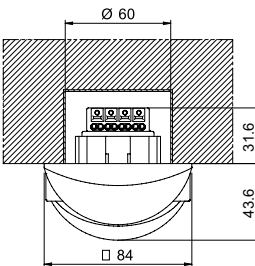
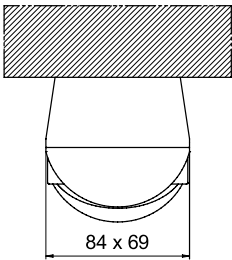
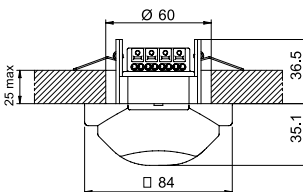
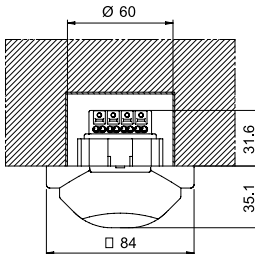
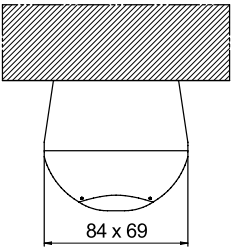
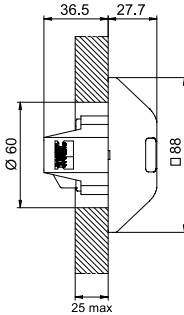
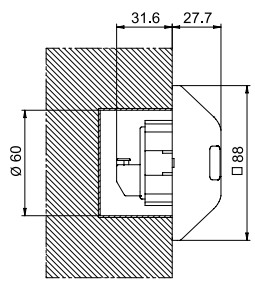


Example: 18.21/18.31 with Beam limiter

Beam limiter (supplied with the type 18.21/31/41/51)

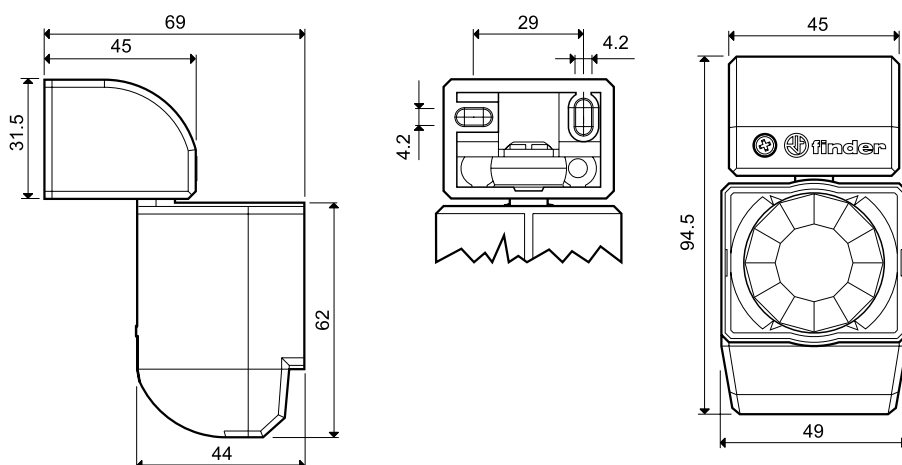
At an installation height of 2.8 meters the area of survey will reduce at:
18.21/18.31: diameter 2 meters
18.41: 2.5 x 6 meters
18.51: 2 x 2 meters

Outline drawings

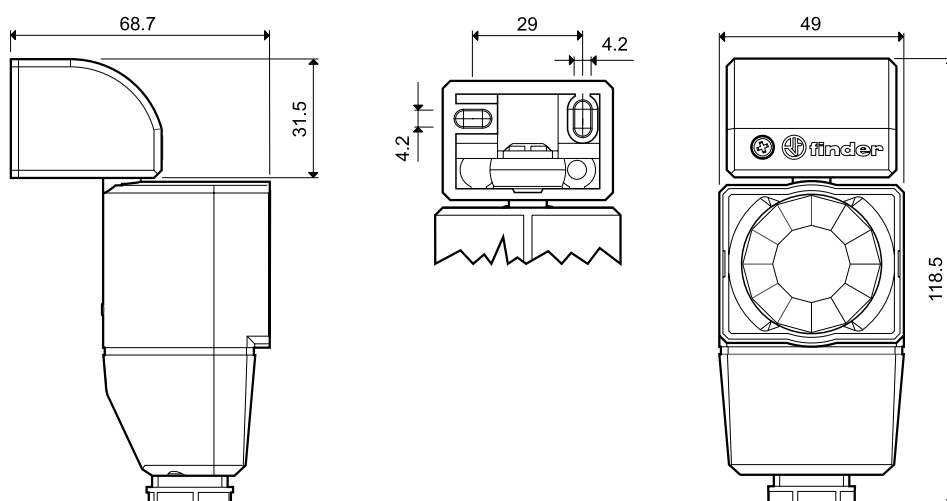
Type	Suspended ceiling mounting	Recess mounting	Surface mounting
18.21			
18.31			
18.31...0031			
18.41			
18.51			
18.61			

Outline drawings

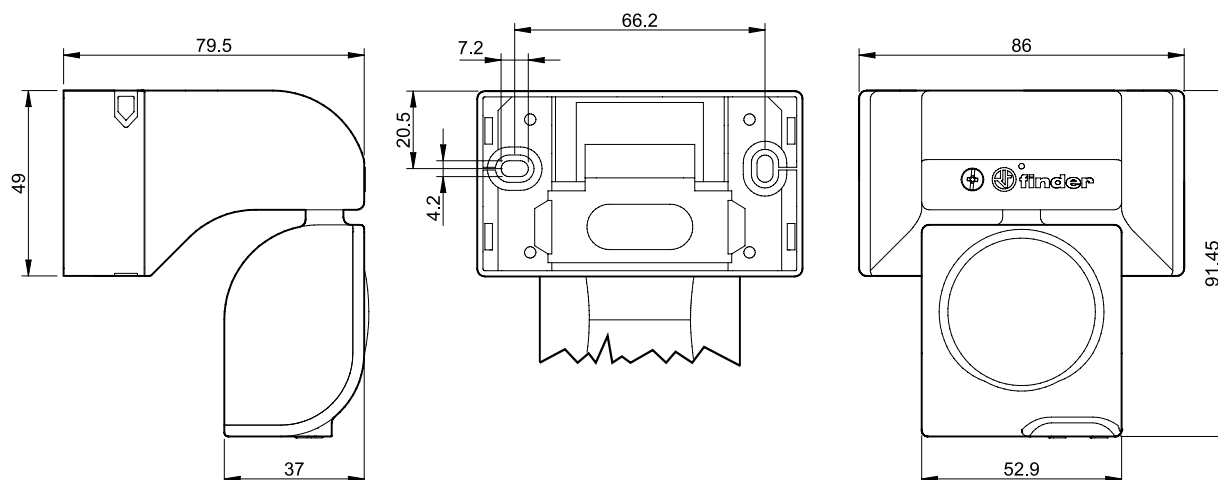
Type 18.01



Type 18.11



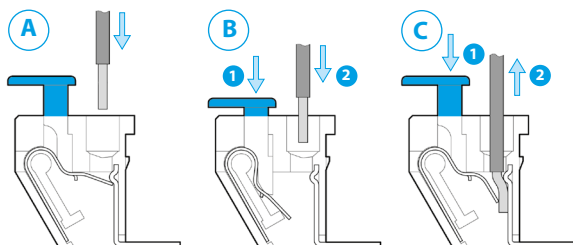
Type 18.A1



Main features for 18.41, 18.51, 18.61 and 18.A1

Push-in terminals

The push-in terminals permit the quick connection of solid wires or ferrules by their simple insertion into the terminal (A). It is possible to open the terminal to extract the wire by first pushing down on the push-button using a screwdriver or fingers (C). For stranded cable it is necessary first to open the terminal using the push button, both for the extraction (C) and insertion (B).



Double terminals for the easy "looping" between multiple 18 Series.
The Max. wire size for each terminal is 2.5 mm².

The terminals are equipped with a test hole to take a test probe.

Settings

The **ambient light intervention threshold** can be set from the lowest value (about 1 lx) to the optimal value for offices and working area (about 500 lx), with the possibility to exclude totally the intervention of the light sensor (set to ∞ lx).

To optimize energy saving, it is suggested to set the intervention threshold after consideration of the minimum natural light levels appropriate to the safety and comfort of the application.

Lux (3):

- I. Min. level (about 1 lx)
- II. Transit area (> 10 lux)
- III. Offices - work area (about 500 lx)
- IV. Always ON (∞ lx)

The **sensitivity control (2)** - (not for 18.A1) is pre-set at maximum sensitivity, and this will be suitable for most applications. Setting a lower level of sensitivity will have the effect of reducing the sensing area and ignoring smaller movements - which might be necessary depending on the application.

The **Light ON time (1)** following last detection can be regulated between 12 seconds to 35 minutes.

Time:

- I. 12 seconds
- II. 3 minutes
- III. 15 minutes
- IV. 35 minutes

