Light and Energy Management

Smart design when managing energy and resources in residential and commercial buildings must encompass flexibility in order to realise genuine efficiencies over the true lifetime of a building. Our light and energy solutions offer you long-term cost saving benefits and helps meet your energy efficiency target.

07

Page

Analogue time switches

							
EH010	**EH011**	**EH110**	**EH111**	**EH710**	**EH711**	**EH171**	**EH771**
Without reserve	Reserve 200 h	Without reserve	Reserve 200 h	Without reserve	Reserve 200 h	Reserve 200 h	Reserve 200 h
230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V
1 channel	1 channel	1 channel	1 channel	1 channel	1 channel	1 channel	1 channel
daily	daily	daily	daily	daily	daily	weekly	weekly
1 module	1 module	3 modules	3 modules	72x72	72x72	3 modules	72x72
Min. switching 15min	Min. switching 15min	Min. switching 15min	Min. switching 15min	Min. switching 2hrs	Min. switching 20min	Min. switching 20min	Min. switching 2hrs
Manual override auto/on	Manual override auto/on	Manual override auto/on/off	Manual override auto/on/off	Manual override auto/on/off	Manual override on/off	Manual override on/off	Manual override on/off

Recommendation
Hager strongly recommend the installation of modular contactors with all time switches

Description
Electromechanical 1 channel time switches, with daily or weekly programming. For control of lighting, heating, household appliances, shop windows etc, to improve comfort and save energy.

Applications
- Domestic and commercial premises.

Connection capacity:
- 1 to 4mm²

Modular technical data
- Complies with EN60730
- Programming by captive segments.
- Manual override
  - On 1 module devices: Auto, Perm ON
  - On 3 module devices: Auto, Perm ON, Perm OFF

Minimum switching time:
- 15min for daily versions
- 2hrs for weekly versions
- 15min and 2hrs on the daily and weekly version

72 x 72 technical data
- Suitable for surface, flush or DIN rail mounting
- Programming by captive segments
- Manual override with automatic return to programmed
- Operating reserve: 200hrs after connection for 120hrs
- Output: voltage free changeover contact 16A/250V

Hager strongly recommend the installation of modular contactors with all time switches.

Technical information: Page 333

Analogue Time Switches - DIN Mount

Description	Characteristic	Width	Cat ref.
Compact versions - Supply: 230V 50Hz - 1NO changeover - 16A AC1 contact rating	24hr Without battery reserve	1 mod	**EH010**
	24hr With battery reserve	1 mod	**EH011**
Standard versions - Supply: 230V 50Hz - 1NO changeover - 16A AC1 contact rating	24hr Without battery reserve	3 mod	**EH110**
	24hr With battery reserve	3 mod	**EH111**
	7 day With battery reserve	3 mod	**EH171**


EH010

Analogue Time Switches - Panel Mount

Description	Characteristic	Cat ref.
Daily cycle versions - Supply: 230V 50Hz - 16A AC1 contact rating - Programming in steps of 10mins - Minimum time between 2 switching intervals: 20min	24hr Manual override Without battery reserve	**EH710**
	24hr Manual override With battery reserve	**EH711**
Weekly cycle version - Supply: 230V 50Hz - 16A AC1 contact rating - Programming in steps of 1hr - Minimum time between 2 switching intervals: 2hrs - Switching accuracy: 10min	7 day Manual override With battery reserve	**EH771**


EH711


EH771

Digital time switches

	EG010 (1)	EG071 (1)	EG103E	EG203E	EG293B (2)	EG403E	EG493E	EGN100AU	EGN103 (3)	EGN200AU	EGN400AU
											
	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V
	1 channel	1 channel	1 channel	2 channels	2 channels	4 channels	4 channels	1 channel	1 channel	2 channels	4 channels
	Daily	Weekly	Weekly	Weekly	Yearly	Weekly	Yearly	Daily/ Weekly/ Annual	Daily/ Weekly	Daily/ Weekly/ Annual	Daily/ Weekly/ Annual
	1 mod	1 mod	2 mod	2 mod	4 mod	4 mod	4 mod	1 mod	2 mod	2 mod	4 mod
	5 prog.	Free prog.	Enhanced	Enhanced	Standard	Enhanced	Enhanced	Enhanced	Standard	Enhanced	Enhanced

Functions

Program steps	6	20	56	56	300	300	300	100	56	200	400
LED Display	•	•	•	•	•	•	•		•	•	•
Program key			•	•		•	•		•		
Pulse			•	•	•	•	•	•		•	•
Cycle					•	•	•	•	•	•	•
Day-light saving			•	•	•	•	•		•		
Astro Mode								•		•	•
External input					•	•	•	•		•	•
Overrides	•	•	•	•	•	•	•	•		•	•
Keyboard locking			•	•	•	•	•	•	•	•	•
Holiday			•	•	•	•	•	•		•	•
Bluetooth								•	•	•	•

Accessories

Programming key EG005

Programming key EG005

Programming key EG007

Programming key EG007

Programming key EG005

Locking key EG004

Range module EG006

Interface and software with USB EG003

Locking key EG004

Bluetooth key EGN003

(1) No key
(2) Key optional
(3) Optional bluetooth key

Recommendation
Hager strongly recommend the installation of modular contactors with all time switches

Description
For the control of lighting, school bells, pumps, etc. in domestic and commercial premises, schools, irrigation.

1 module time switch
- 1 channel cycle
- Manual override
- Operating reserve 3 years
- 5 pre-recorded (adjustable) programs (EG010)
- 20 program steps (EG071)

2 module time switch
- Ability to download program to multiple time switches via EG003U
- Keypad locking key EG004
- Permanent and temporary override and pulse
- Operating reserve 5 years
- 56 Program steps
- Software programming option
- Bar graph for quick program overview
- Programmable holiday mode
- Programmable summer/winter mode

4 module time switch
- Ability to download program onto multiple time switches via EG003U
- Impulse control
- Manual override and pulse
- Programmable without mains supply
- Operating reserve 10 years
- 300 program steps
- Programmable summer/ winter adjustment
- 240V input for remote operation

Hager strongly recommend the installation of modular contactors with all time switches.

Technical information: Page 334

24 Hour Time Switch

Description	Characteristics	Width	Cat ref.
1 channel - 5 adjustable pre-recorded programs: 6 commutations max per day (3 ON and 3 OFF)	24hr Voltage rating: 230V AC 50Hz	1 mod	**EG010**


EG010

7 Day Time Switches

Description	Characteristics	Width	Cat ref.
1 channel - Capacity: 20 program steps	7 day Voltage rating: 230V AC 50Hz	1 mod	**EG071**
1 channel - Capacity: 56 program steps - Delivered with key EG005	7 day Voltage rating: 230V AC 50Hz	2 mod	**EG103E**
2 channel - Capacity: 56 program steps - Delivered with key EG005	7 day Voltage rating: 230V AC 50Hz	2 mod	**EG203E**
4 channel - Delivered with key EG007	7day Voltage rating: 230V AC 50Hz Output: 3 changeover contacts	4 mod	**EG403E**


EG203E

Yearly Time Switches

Description	Characteristics	Width	Cat ref.
2 channel - Programming key facility	365 day Voltage rating: 230V AC 50Hz Output: 2 changeover contacts	4 mod	**EG293B**
4 channel - Delivered with key EG007	365 day Voltage rating: 230V AC 50Hz Output: 3 changeover contacts	4 mod	**EG493E**


EG493E

Accessories

Description	Characteristics	Cat ref.
Programming key	For EG403E, EG493E, EG293B	**EG007**
	For EG103E, EG203E	**EG005**
Keypad locking key	For EG103E, EG203E	**EG004**
USB interface Software available to download from www.hagerelectro.com.au	Minimum PC configuration: Windows XP, vista, 7, 8, 8.1	**EG003G**


EG003G

Description
Digital Time Switches that are easily programmed from a mobile device via Bluetooth technology.

Digital weekly switch, 1 channel
- programmable with Bluetooth key EGN003. Key not supplied.
- potential-free switching contact
- button lock using lock key EG004
- programming without voltage supply possible
- compatible with programming key EG005

- automatic summer/winter time change (Daylight savings)
- program cycles: 1 x 7 days
- with screw terminals
- for mounting on DIN top-hat rail
- 5 years power reserve

Digital multifunctional time switch, 1 channel
- integrated Bluetooth connection
- program cycles: daily, weekly, yearly
- with pulse function
- wired input
- button lock
- automatic summer/winter time change (astro mode)
- screw terminals
- for mounting on DIN top-hat rail
- 10 years power reserve

Digital multifunctional time switch, 2 & 4 channels
- integrated Bluetooth connection
- program cycles: daily, weekly, yearly
- with pulse function
- programming without voltage supply possible
- button lock
- LC display with lighting
- automatic summer/winter time change (astro mode)
- screw terminals
- for mounting on DIN top-hat rail
- 10 years power reserve

Hager strongly recommend the installation of modular contactors with all time switches.

Technical information:
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EGN103

Digital Weekly Time Switch

Description	Characteristics	Width	Cat ref.
1 channel - Bluetooth via Key (EGN003), not supplied - Capacity: 56 program steps	Daily, weekly Voltage rating: 230V AC 50/60Hz Output: 1 changeover and 1 NO contact No pulse function	2 mod	★ EGN103
1 channel - Bluetooth via Key (EGN003), supplied in kit - Capacity: 56 program steps	Daily, weekly Voltage rating: 230V AC 50/60Hz Output: 1 changeover and 1 NO contact	2 mod	★ EGK103


EGN100AU


EGN200AU


EGN400AU

Digital Multifunctional Time Switch

Description	Characteristics	Width	Cat ref.
1 channel - Integrated bluetooth - Capacity: 100 program steps	Daily, weekly, annual Voltage rating: 230V AC 50/60Hz Output: 1 changeover and 1 NO contact	1 mod	★ EGN100AU
2 channels - Integrated bluetooth - Capacity: 200 program steps	Daily, weekly, annual Voltage rating: 230V AC 50/60Hz Output: 2 changeover and 2 NO contacts	2 mod	★ EGN200AU
4 channels - Integrated bluetooth - Capacity: 400 program steps	Daily, weekly, annual Voltage rating: 230V AC 50/60Hz Output: 4 changeover and 4 NO contacts	4 mod	★ EGN400AU


EEN002

Accessories

Description	Characteristics	Cat ref.
Twilight switches	Flush-mounted sensor with connection cable	EEN002
	Separate wall-mounted sensor	EEN003
Locking key	For EGN103	EG004
Programming key	For EGN103	EG005
Bluetooth key	For EGN103	★ EGN003

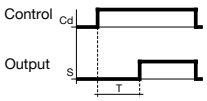
Description
To provide all types of automatic control i.e. lighting, ventilation, watering, machine preheating, automatic door and visual audible indication, cycle control etc.
For timing and automation in residential and commercial premises. The input signal can be via various switching devices (push button, latching switch, time clock etc.) and the timed output used to control the application.

Connection capacity
- Rigid capacity: 1.5 to 10mm²
- Flexible capacity: 1 to 6mm²

Technical data
- Voltage range:
  12 & 24 to 48V DC
  12 & 24 to 230V AC
- Adjustable time delay from 0.1s to 10 hours.
- LED indicator complies with EN60669-2-1

Technical information: Page 345

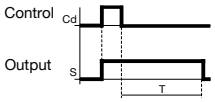
Delay ON



Characteristics	Width	Cat ref.
1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN001**


EZN001

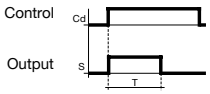
1 Delay OFF



Characteristics	Width	Cat ref.
1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN002**


EZN002

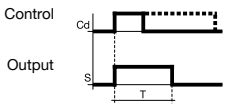
Adjustable time ON



Characteristics	Width	Cat ref.
1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN003**


EZN003

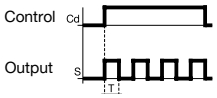
Timer



Characteristics	Width	Cat ref.
1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN004**


EZN004

Symmetrical flasher



Characteristics	Width	Cat ref.
1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN005**


EZN005

Multifunction

Description	Characteristics	Width	Cat ref.
6 individual functions including: D - delay on C - delay off E - adjustable time ON B - adjustable time OFF A - timer F - symmetrical flasher - ON - OFF	1 c/o contact 8A AC1 contact rating Time delay T: 0.1s to 10hr	1 mod	**EZN006**


EZN006

Time Lag Switch
Provides control of lighting circuits with automatic switch-off after a preset time. (e.g. for staircase, corridors lighting). Compact design with a two position switch permanent/timed lighting implementation facility.

Technical information: Page 346

Universal Dimmer
- Soft start (progressive start) to increase the working life of lamps
- Last dimming level memorised
- Protection against overheating
- Control possible by illuminated push button up to 5mA.

Dimmer 1000W features
- Universal products with automatic recognition of the load type (inductive/capacitive)
- Electronic protection against overheating and overload.

Technical information: Page 347


EMN001

Standard Staircase Time Lag Switch

Description	Characteristics	Width	Cat ref.
- Adjustable time delay setting: 30s until 10min - Retrigger	- Supply voltage: 230V 50/60Hz - 16A - 250V AC1 - 2300W incandescent halogen and fluorescent	1 mod	**EMN001**


EVN002

Universal Dimmer 500W

Description	Characteristics	Width	Cat ref.
Functional mode selection: - Control via push button (local) or control via push buttons connected to the product	230V AC / 50Hz Load type: - Incandescent - 230V halogen lamps - ELV halogen lamps with ferromagnetic transformer (inductive) - ELV halogen lamps with electronic transformer (capacitive)	2 mod	**EVN002**


EV100

Universal Dimmer 1000W

Description	Characteristics	Width	Cat ref.
Functional mode selection: - Control via push button (local) - Remote control via 1/10V (slave) Min/Max setting via potentiometer LED indication: - 230V power supply/load error - Overload / overheating	230V AC / 50Hz 20 - 1000W 1/10V input Load type: - Incandescent - 230V halogen lamps - ELV halogen lamps with ferromagnetic transformer (inductive) - ELV halogen lamps with electronic transformer (capacitive)	5 mod	**EV100**


LZ060

Heat dissipation insert

Description	Width	Cat ref.
To help minimise heat transfer between devices	0.5 mod	**LZ060**

Light Sensitive Switches
Using light sensitive switches can prevent the unnecessary use of lighting circuits where sufficient daylight exists.

A photo electric cell measures the light level and in conjunction with the relay, provides ON/OFF control of a circuit.

Applications
Street lighting, display lighting, illuminated signs etc....

Features
- Front cover sealability
- Protective cable clamps
- LED shows status of changeover contact.
- 4 position override switch:
  Auto: normal operating mode
  On: permanently on
  Off: permanently off
  Test: mode for easy adjustment

Technical data
- Output: 1 changeover AC1
- Contact:
  16A AC1 230V (EE702)
- Rigid capacity: 1.5 to 10mm^2
- Flexible capacity: 1 to 6mm^2
- Maximum distance between photocell and controller: 50m

Should be used in conjunction with a suitably rated contactor.

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Light Sensitive Switch

Description	Characteristics	Width	Cat ref.
Delivered with a separate surface photo electric cell EEN003	- Voltage rating: 230V AC +10-15% 50Hz - Output: 1 changeover 16A AC1 contact rating - Sensitivity: 2 ranges - 5 to 100 lux - 50 to 2000 lux	3 mod	**EEN100**


EEN100

Compact Light Sensitive Switch

Description	Characteristics	Width	Cat ref.
IP55 / integrated cell	- Normally open contact 16A AC1 contact rating - 2300W incandescent switching - Delay either fixed or adjustable (1s - 120s)	-	**EE702**


EE702

Photo Electric Cell for Light Switch

Description	Cat ref.
Surface cell IP54 for EEN100	**EEN003**


EEN003

Motion Detectors				**Motion and Presence Detectors**		**Presence Detectors**			**Light with PIR**
Wall mounted	Wall mounted	Wall mounted	Wall mounted	Ceiling	Ceiling	Ceiling	Ceiling	Ceiling	Wall mounted with LED
Outdoor IP55 Standard	Outdoor IP55 Standard	Outdoor IP55 Enhanced	Outdoor IP55 Enhanced	Flush	Surface	Surface	Flush	Half flush	Flood light 60W
140°	360°	220°	220/360°	360°	360°	360°	360°	360°	220/360°
EE820 white	**EE840** white	**EE860** white	**EE870** white	**EE805A*** white	**EE804A*** white	**EE883** white IP54	**EE816** DALI/DSI	**EE810** 1 channel	**EE600** white
									
			EE871 charcoal					**EE811** 2 channels	
									
								EE812 1/10 V	
									

Accessories

Ceiling mount **EE827** white		Remote control **EE806** installer and user	Remote control **EE806** installer and user				Remote control **EE807** installer		Remote control **EE806** installer and user
									
Corner mounting **EE825** white	Corner mounting **EE855** white	Corner mounting **EE855** white	Corner mounting **EE855** white				Remote control **E808** user		
									
	Corner mounting **EE856** charcoal	Corner mounting **EE856** charcoal	Corner mounting **EE856** charcoal						
									

***Recommended for commercial applications**

Motion Detectors
Our motion detectors are made for automatic control of lighting in both the residential and private/ public industry sectors.

- Large range from 140° basic to 220/360°
- IP55 reinforced waterproofing
- Detection head with overmoulded fresnel lenses and pyro detectors

Features
- 140/220/360° frontal detection zone
- Twin 220°/360° to detect in a frontal and downwards zone.
- Time, lux and sensitivity are achieved locally, via potentiometers.
- The enhanced range and LED lights can be set with an IR remote control which provides speed and convenience when setting final adjustments.
- Detectors can be mounted in corners or to ceilings utilising the relevant mounting accessory.

Power supply
Basic detector
- 230V AC + 10% / -15% (50/60Hz)
- Output: 10A AC1 relay and cut phase

Enhanced detector
- 230V AC + 10%/ -15%
- Output: 16A AC1 relay potential free

LED lights description
LED lights with an infrared sensor to easily replace any existing lighting

fixture, to ensure automatic operation of lighting from the approach of a person. Integrated detector sensitive to infrared radiation for operation during the day and night or only at night.

Features
- Architectural design
- LED energy saving technology
- 140° or 220/360° detection up to 12m
- IP55
- Settings can be adjusted with the EE806 IR remote control

Technical information:
Motion detectors Page 351
Motion detectors w. LED Page 356

Basic Range

Description	Cat ref.
Detector 140° White	**EE820**
Detector 360° White	**EE840**


EE820

Enhanced Range

Description	Cat ref.
Detector 220° White	**EE860**
Detector Twin 220/360° White	**EE870**
Detector Twin 220/360° Charcoal Grey	**EE871**


EE860

Accessories

Description	Characteristics	Cat ref.
IR remote control compatible with EE86x /EE87x / EE6xx	Sets time, sensitivity, lux, detection angle used (for Twin model), lock/unlock, test and override ON/OFF	**EE806**
Ceiling mount accessory	Suits 140° White	**EE827**
Corner mount accessory	Suits 140° White	**EE825**
	Suits 220°/360°/Twin White	**EE855**
	Suits 220°/360°/Twin Charcoal Grey	**EE856**


EE806

Motion Detectors with LED lights

Description	Characteristics	Cat ref.
Floodlight with Twin 220°/360° detector	60W (eq. to 300W halogen)	**EE600**


EE600

Hyper Frequency Detector
Our hyper frequency EE883 motion detector is applicable for wall and ceiling installations because of its practical two-screw mounting system and it allows for a detection coverage of 360° without any dead angles. The detection range diameter is adjustable within 1 to 8 metres. The hyper frequency (HF) detection is independent of the temperature detection, which can detect light through partitions (drywall, wood, glass).

Features
- 230V AC
- IP54
- Detection zone of 8m
- Detection area 360°

Corridor Detector
Our corridor detectors don't miss a thing. Thanks to their 360° all-round vision, these detectors are perfect for covering large areas of up to 4m wide x 20m long. The high quality Fresnel precision lenses react sensitively to infrared light, e.g. to the body heat of people veering into the detection area. Their motion is detected quickly and reliably via a heat sensor underneath the lens. They automatically switch on lighting when movement is detected and light is needed. They turn off the light after a preset duration.

Features
- 230V AC
- IP54
- Detection zone of 4mW x 20mL
- Detection area 360°

Technical information:
Hyper frequency Page 358
Corridor Page 358

EE883

Hyper Frequency Detector

Description	Characteristics	Cat ref.
Hyper frequency detector	Surface mount	**EE883**

EE880

Corridor Detector

Description	Characteristics	Cat ref.
Corridor motion detector	Surface mount	**EE880**

High Performance Detectors
Used in premises or in passage areas, where they increase comfort and reduce the energy costs drastically.

EE810
- 1 channel detector Direct control of a light load or used as a slave for detection area enlargement.
- Lux level and ON delay setting via potentiometers.
- Test mode in order to set lux level and the detection pattern.

EE811
- 2 channels detector
- Light relay output for direct control of a light load.
- Presence output potential free relay.
- Lux level, ON delay setting for light channel and presence channel via potentiometers.
- Input for slave (EE810) and/or remote push button.

EE812
- Light regulator 1/10V Light regulator with 1/10V output in order to control electronic ballasts and/or Hager dimmers EV100/EV102. Detector especially dedicated for energy saving and comfort purposes.
- Input for slave (EE810) and/or dimming push button in order to modify the setpoints.
- Lux level, ON delay for light channel and min. level via potentiometers.
- 3 functional modes: no regulation, regulation with local setpoint, regulation with remote setpoint.

EE813
- surface mounting accessory

Technical information: Page 359

High Performance Detector - Semi Recess Mount

Description	Characteristics	Cat ref.
1 channel Relay output light channel - Lux level and ON delay (duration or pulse) defined via potentiometers Slave output for association with EE811/EE812 Lux OFF	Power supply: 230V AC 50Hz Relay output: 16A AC1 contact rating Master/slave output 0.8A (triac)	**EE810**
2 channels Relay output light channel - Lux level and ON delay defined via potentiometers - Input slave - 230V input used with push button to toggle the light channel state or with slave to enlarge the detection area Relay output presence channel - ON delay presence defined via potentiometer	Power supply: 230V AC 50Hz Light relay output: 16A AC1 contact rating Presence relay output: 2A AC1 contact rating Slave input: 230V input 50Hz	**EE811**
1/10V Relay output ON/OFF - used to switch electronic ballast 1/10V output used to dim an electronic ballast or Hager dimmers EV100/EV102 230V input used with push button to toggle the channel or change the dimmed level or with slave to enlarge the detection area.	Power supply: 230V AC 50Hz Relay output: 10A AC1 contact rating 1/10V 50mA Slave input: 230V input 50Hz	**EE812**

EE810

EE812

Installation boxes

Description	Cat ref.
Surface mount housing for the installation of presence detector EE810/EE811/EE812. For use in applications requiring mounting to the underside of concrete slabs or steel beams e.g. carparks and utility rooms.	**EE813**
Flush mount housing for the installation of presence detector EE810/EE811/EE812. For use in plasterboard or timber ceiling.	**EEBOX**

EE813

EEBOX

High Performance Detector
Our high performance flush mounted presence detector is suitable for use in residential and commercial premises where energy control and/or reduction is required.

EE816
- detector for light regulation
- 3 functional modes.
- Lux level and ON delay setting via potentiometers or EE807 remote control.
- DALI/DSI bus output accommodates up to 24 ballasts.

EE807
- IR remote control
- Installer remote control to commission settings.

EE808
- IR remote control
- Customer remote control for override operation.

Technical information:
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EE816

High Performance Detector - Flush Mount

Description	Characteristics	Cat ref.
DALI/DSI 360° – For light regulation (switching and dimming) – 3 functional Lux modes available – Lux level and ON delay defined via potentiometers or with EE807 IR remote control – Accommodates a maximum of 24 DALI/DSI ballasts	Power supply: 230V AC 50Hz DALI/DSI bus: up to 24 ballasts	**EE816**


EE807

Remote Controls

Description	Cat ref.
Infrared commissioning remote control – For EE816 presence detectors – For commissioning	**EE807**
Infrared user remote control – For EE816 presence detectors – For local lighting control through the detector	**EE808**


EE808

Motion and Presence Detectors
Our motion and presence detectors are made for the automatic control of lighting in indoor circulating zones throughout the residential and private/ public commercial sectors. They automatically switch on lighting when movement is detected and light is needed. They turn off the light after a preset duration.

Features:
- Discrete design aesthetics
- 'Zero crossing' technology can limit LED inrush current to a minimum.
- Surface mounted (EE804A) or flush fitting (EE805A).
- Mounting of EE805A connection system conform to false ceiling installation standards (cable clamp, fixing spring and protection cover).

Setting:
The timer and the lux level are defined via potentiometers
Output: Potential free relay contact 10A AC1, 1000W

Technical information:
Indoor motion & presence detectors Page 357

Motion & Presence Detectors - 360°

Description	Characteristics	Cat ref.
White surface mount	10A AC1 contact rating	★ EE804A
White flush mount	10A AC1 contact rating	★ EE805A


EE804A


EE805A

Analogue ammeters
For domestic and commercial installations - AC only
- Single phase: direct connection
- Three phase: use of a voltmeter selector switch SK602
- Frequency 50/60Hz
- Direct reading up to 30A
- Indirect reading via current transformers: 50, 100, 150, 250, 400, 600A

Connection capacity
- 10mm2 rigid
- 6mm2 flexible

Digital voltmeter
SM501
For domestic and commercial installations - AC only
- Three phase: use of a voltmeter selector switch SK602

Digital ammeters
From SM020 to SM601
- SM020: direct reading
- SM151 to SM601:reading via a current transformer (see below)

Technical information: Page 365

*Please check availability with the Hager sales office at time of order


SM500

Analogue Voltmeter

Description	Width	Cat ref.
Accuracy: 2% Consumption: 2.5VA, 0 - 500V	4 mod	**SM500**


SM030

Analogue Ammeters

Description	Characteristics	Width	Cat ref.
Direct	0 - 5A	4 mod	**SM005***
	0 - 15A	4 mod	**SM015**
	0 - 30A	4 mod	**SM030**
Current transformer operated	Accuracy: 1.5% (full scale)		
- Reading via CT SRA00505	Scale: 0 - 50A	4 mod	**SM050***
- Reading via CT SRA01005	Scale: 0 - 100A	4 mod	**SM100***
- Reading via CT SRA01505	Scale: 0 - 150A	4 mod	**SM150**
- Reading via CT SRA02505	Scale: 0 - 250A	4 mod	**SM250**
- Reading via CT SRA04005	Scale: 0 - 400A	4 mod	**SM400**
- Reading via CT SRA06005	Scale: 0 - 600A	4 mod	**SM600**


SM501

Digital Voltmeter

Description	Width	Cat ref.
Voltage: 220/230V, 50/60Hz Accuracy: ±1% Consumption: 4VA Scale: 0-500V	4 mod	**SM501**


SM020

Digital Ammeters

Description		Width	Cat ref.
Voltage: 220/230V, 50/60Hz Accuracy: ±1% Consumption: 4VA			
- Direct	Scale: 0-20A	4 mod	**SM020***
- Reading via CT SRA01505	Scale: 0-150A	4 mod	**SM151***
- Reading via CT SRA04005	Scale: 0-400A	4 mod	**SM401**
- Reading via CT SRA06005	Scale: 0-600A	4 mod	**SM601**

Description
Energy meters measure the active energy used in an electric installation. They can monitor the detailed consumption within an installation to provide the consumption data between different appliances and circuits.
Not suitable for billing.
Not approved with NMI.

Technical data
- Fully compliant with EN50470-3
- Class B
- Accuracy 1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total/partial counter
- Measures Active/Reactive/ Apparent power, voltage, current and power factor
- Unlimited saving of measurements
- LED flashing according to consumption
- Display indication in case of incorrect wiring
- Will not reset if power is turned off. The device will hold its memory.
- Pulse and Modbus communication

Technical information: Page 367

*Please check availability with the Hager sales office at time of order

Single Phase

Description	Characteristics	Width	Cat ref.
- Direct reading 40A	Voltage: 230V AC 45/65Hz Starting current: 20mA Base current: 5A Maximum current: 40A	1 mod	★ ECN140D
- Direct reading 40A - Pulsed output	Voltage: 230V AC 45/65Hz Starting current: 20mA Base current: 5A Maximum current: 40A	1 mod	★ ECP140D
- Direct reading 80A - Pulsed output	Voltage: 230V AC 92/276Hz Starting current: 15mA Base current: 5A Maximum current: 80A	2 mod	★ ECP180D
- Direct reading 80A (x3 measurement points) - Pulsed output	Voltage: 230V AC 184/276Hz Starting current: 15mA Base current: 5A Maximum current: 80A	4 mod	★ ECP180T
- Direct reading 40A - Modbus output	Voltage: 230V AC 45/65Hz Starting current: 20mA Base current: 5A Maximum current: 40A	1 mod	★ ECR140D
- Direct reading 80A - Modbus output	Voltage: 230V AC 92/276Hz Starting current: 15mA Base current: 5A Maximum current: 80A	2 mod	★ ECR180D
- Direct reading 80A (x3 measurement points) - Modbus output	Voltage: 230V AC 184/276Hz Starting current: 15mA Base current: 5A Maximum current: 80A	4 mod	★ ECR180T


ECN140D


ECR180T

Accessories

Description		Cat ref.
End resistor	120 Ohm end resistor for MODBUS RTU *Not required for ECR3xxD or ECR180T	★ SMC120R


SMC120R

KNX Meter Interface

Description	Cat ref.
KNX interface for energy meter - Compatible with the energy meters above (excluding ECR140D)	★ TXF121


TXF121

Description
Energy meters measure the active energy used in an electric installation. They can monitor the detailed consumption within an installation to provide the consumption data between different appliances and circuits.
Not suitable for billing.
Not approved with NMI.

Technical data
- Fully compliant with EN50470-3
- Class B
- Accuracy 1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total/partial counter
- Measures Active/Reactive/ Apparent power, voltage, current and power factor
- Unlimited saving of measurements
- LED flashing according to consumption
- Display indication in case of incorrect wiring
- Will not reset if power is turned off. The device will hold its memory.
- Pulse and Modbus communication

Technical information: Page 367


ECP310D

Three Phase

Description	Characteristics	Width	Cat ref.
- Indirect reading 1/5 A - Pulsed output	Voltage: 400V AC 45/65Hz Starting current: 1mA Base current: 1(6) A Maximum current: 6A	4 mod	★ ECP300C
- Direct reading 125A - Pulsed output	Voltage: 400V AC 45/65Hz Starting current: 20mA Base current: 5A Maximum current: 125A	6 mod	★ ECP310D
- Direct reading 80A - Pulsed output	Voltage: 400V AC 45/65Hz Starting current: 15mA Base current: 5A Maximum current: 80A	4 mod	★ ECP380D
- Indirect reading 1/5A - Modbus output	Voltage: 400V AC 45/65Hz Starting current: 1mA Base current: 1(6) A Maximum current: 6A	4 mod	★ ECR300C
- Direct reading 125A - Modbus output	Voltage: 400V AC 45/65Hz Starting current: 20mA Base current: 5A Maximum current: 125A	6 mod	★ ECR310D
- Direct reading 80A - Modbus output	Voltage: 400V AC 45/65Hz Starting current: 15mA Base current: 5A Maximum current: 80A	4 mod	★ ECR380D


EC700

Pulse Concentrator

Description	Width	Cat ref.
- Up to 7 separate pulse inputs - Total/partial energy (daily, weekly, monthly, yearly) - Direct reading on display - RS485 Jbus/modbus communication	4 mod	EC700


TXF121

KNX Meter Interface

Description	Cat ref.
KNX interface for energy meter - Compatible with the energy meters above	★ TXF121

SM101C Multimeter
For monitoring the electrical network: single, two or three phases (with or without neutral). Current transformers are not provided and are sold separately. This DIN mount device enables the display of electrical values as instantaneous, average or maximum (voltage and intensity per phase in RMS value). When monitoring of a power generator, it measures the frequency and working time.
The SM101C digital multimeter displays the following instantaneous and max. values:
I, U, V, F, P, PF, H, THD, E
It has a pulsed output and an RS485 Jbus/Modbus communications capability.

SM10xE Multimeters
SM102E & SM103E are panel mount digital multifunction energy meters suitable for electrical measurement in low voltage networks.

SM102E
Provides instantaneous true RMS measurement
- Current (Instantaneous & maximum) via CT
- Power EP, EQ, ES and per phase
- Frequency
- Harmonics (THD up to 31)

Add on module
- RS485 Jbus/modbus RTU

SM103E
Provides instantaneous true RMS measurement
- Current (Instantaneous & maximum) via CT
- Power EP, EQ, ES and per phase
- Frequency
- Harmonics (THD up to 51)
- Embedded webserver on TCP/IP add on module

Add on module
- RS485 Jbus/modbus RTU
- Memory card
- Ethernet

Technical information: Page 368

SM101C Multimeter

Description	Width	Cat ref.
Voltage supply: 230/400V 50/60hz	4 mod	**SM101C**
Display voltage: 35-480V		
Accuracy ± 0.5%		
Consumption: <0.5VA		
Display current: Via CT		
Primary 5-8000A		
Secondary 0.1-6A		
Accuracy: ± 0.5%		
Consumption: <0.5VA		
Display frequency		
Range 40-80hz		
Accuracy: ± 2hz		
Display hour counter:		
7 digits 999999.9		


SM101C

SM102E Multimeter and Add On Module

Description	Characteristics	Cat ref.
Multifunction meter	Panel mount	**SM102E**
Add on modules	RS485 JBus/Modbus	**SM210**


SM102E

SM103E Multimeter and Add On Modules

Description	Characteristics	Cat ref.
Multifunction meter	Panel mount	**SM103E**
Add on modules	Memory module	**SM204**
	RS485 JBus/Modbus	**SM211**
	Ethernet	**SM213**
	Ethernet + RS485 Jbus/Modbus	**SM214**


SM103E + SM211

Description
Current transformers are used to feed analogue and digital ammeters, as well as kWh meters. Their current on secondary circuit (0-5A) is proportional to the current on primary circuit class: 1

Specifications
- Can be mounted on copper busbar or on cable
- Can be mounted on DIN rail with adaptors
- Frequency: 50/60Hz

Technical information: Page 370


SRA00505


SRI03005


SRC06005

Current Transformers (CT)

Ratio	Cat ref.
50/5	**SRA00505**
100/5	**SRA01005**
150/5	**SRA01505**
200/5	**SRA02005**
250/5	**SRA02505**
300/5	**SRI03005**
400/5	**SRC04005**
600/5	**SRC06005**
800/5	**SRD08005**
1000/5	**SRD10005**
1250/5	**SRE12505**
1600/5	**SRE16005**

DIN Rail Meters
- 4 Module DIN rail mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built-in energy pulse output and RS485 MODBUS communication
- High quality backlit LCD display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- THD up to 31st harmonic for voltage and current
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- Self supplied auxiliary
- Programmable CT ratio 5…10,000A
- Programmable VT ratio
- Frequency 45/65Hz
- Selectable CT phase correction allows reversal of L1 and L3

Plug-In CTs
The CT uses plug-in technology allowing much faster installation saving you time and money. Additionally, all our three phase current transformers have been designed with hole centres and apertures to fit most standard industrial circuit breakers.

- Accuracy Class 1
- Housing Material Self extinguishing Nylon IEC185 classification VO according to UL-94
- Compliant to EN60044-8

Technical information: Page 371

DIN Rail Meters

Description	Cat ref.
Multi-Function Meter Pulsed/Modbus Single Input	★ JKM01
Multi-Function Meter Pulsed/Modbus Dual Input For supply cable, see JF130VMF Note: No cables are supplied with these meters	★ JKM02

JKM01

Plug-in CTs
No leads supplied with these CTs (RJ45 connection cable)

Description	Cat ref.
125A Frame Size 60A 3 Phase CT	★ EC1260CT
125A Frame Size 100A 3 Phase CT	★ EC12100CT
125A Frame Size 125A 3 Phase CT	★ EC12125CT
125A Frame Size 160A 3 Phase CT	★ EC12160CT
250A Frame Size 60A 3 Phase CT	★ EC2560CT
250A Frame Size 100A 3 Phase CT	★ EC25100CT
250A Frame Size 125A 3 Phase CT	★ EC25125CT
250A Frame Size 160A 3 Phase CT	★ EC25160CT
250A Frame Size 200A 3 Phase CT	★ EC25200CT
250A Frame Size 250A 3 Phase CT	★ EC25250CT
400A Frame Size 250A 3 Phase CT	★ EC40250CT
400A Frame Size 400A 3 Phase CT	★ EC40400CT
400A Frame Size 630A 3 Phase CT	★ EC40630CT
800A Frame Size 800A 3 Phase CT	★ EC80800CT


EC25250CT

Meter Voltage Supply Cable
Our high quality Meter Voltage Supply Cables are fitted with a connector at one end and insulated bootlace ferrules at the other and provide power to the plug-in meter from your mains supply.

Meter to Meter Supply Cable
Our high quality Meter to Meter Voltage Supply Cables are fitted with a male connector at one end and female connector at the other. This allows multiple plug-in meters to be energised from a common supply. Up to 32 meters can be powered in a 'daisy chain' arrangement using this method. Two type of cable material are available:- LSZH (Low Smoke Zero Halogen).

RJ45 Connection Cable
The high quality low loss Category 5e RJ45 Connection Cable provides secondary connection between the plug-in current transformer and meter.

PGMF500

Meter Voltage Supply Cable - PVC - 1mm

Description	Cat ref.
0.30m - Hi Flex Voltage Supply Cable	**PGMF300**
0.50m - HHi Flex Voltage Supply Cable	**PGMF500**
1.00m - Hi Flex Voltage Supply Cable	**PGMF1000**
1.30m - Hi Flex Voltage Supply Cable	**PGMF1300**
2.00m - Hi Flex Voltage Supply Cable	**PGMF2000**

PGMFT500

Meter to Meter Supply Cable - PVC - 1mm

Description	Cat ref.
0.30m - Hi Flex Meter to Meter Supply Cable	**PGMFT300**
0.50m - Hi Flex Meter to Meter Supply Cable	**PGMFT500**
1.00m - Hi Flex Meter to Meter Supply Cable	**PGMFT1000**
1.30m - Hi Flex Meter to Meter Supply Cable	**PGMFT1300**
2.00m - Hi Flex Meter to Meter Supply Cable	**PGMFT2000**

PGRJ1000

RJ45 Connection Cable

Description	Cat ref.
0.30m - RJ45 Connector Cable 67 7003	**PGRJ300**
0.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ500**
1.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1000**
1.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1500**
2.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ2000**

PG9522FEMALE

PG9523MALE

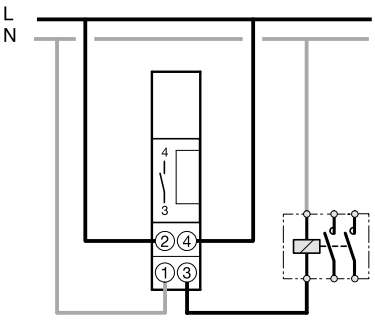
Supply Voltage Connector Plugs
For those who want to make up their own power cable looms

Description	Cat ref.
Voltage IN (Male) Connector	**PG9523MALE**
Voltage OUT (Female) Connector	**PG9522FEMALE**

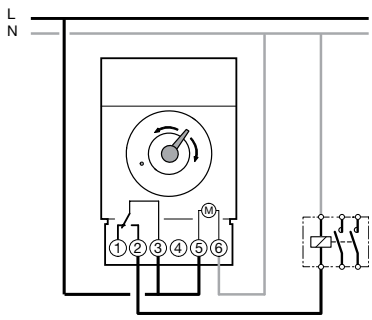
Technical specifications	EH010	EH011	EH110	EH111	EH171	EH710	EH711	EH771
Version	Daily	Daily	Daily	Daily	Weekly	Daily	Daily	Weekly
Voltage supply	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz
Consumption	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA
Output	1 NO Contact Volt Free	1 NO Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free
Switching capacity								
AC 1	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V
Incandescent lamp	900W	900W	900W	900W	900W	1000W	1000W	1000W
Compact fluorescent tube	100W	100W	200W	200W	200W	-	-	-
Characteristics								
Technology	Quartz	Quartz	Quartz	Quartz	Quartz	Quartz	Quartz	Quartz
Dial	24hrs	24hrs	24hrs	24hrs	7 days	24hrs	24hrs	7 days
Minimum switching	15min	15min	15min	5min	2hrs	10min	10min	60min
Programming capacity	96 steps	96 steps	96 steps	96 steps	84 steps	72 steps	72 steps	84 steps
Working accuracy	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day
Supply failure reserve	No	200hrs	No	200hrs	200hrs	No	200hrs	200hrs
Reached in	120h	120h	120h	120h	120h	-	-	-
Manual switch type	Auto On	Auto On	Auto On Off	Auto On Off	Auto On Off	On Off	On Off	On Off
Protection degree	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Environment								
Working temp	-10ºC to +55ºC	-10ºC to +55ºC	-10ºC to +55ºC	-10ºC to +55ºC	-10ºC to +55ºC	-10ºC to +50ºC	-10ºC to +50ºC	-10ºC to +50ºC
Storage temp	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-10ºC to +60ºC	-10ºC to +60ºC	-10ºC to +60ºC
Connection								
Flexible	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²
Rigid	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 4mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²
Dimensions								
Height	80mm	80mm	90mm	90mm	90mm	72mm	72mm	72mm
Width	18mm	18mm	54mm	54mm	54mm	72mm	72mm	72mm
Depth	60mm	60mm	60mm	60mm	60mm	48.5mm	48.5mm	48.5mm

Wiring diagrams

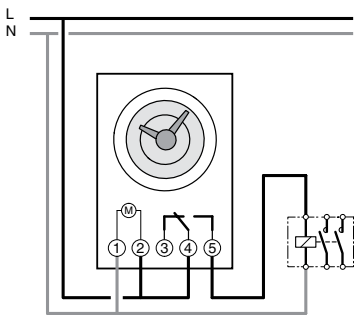
EH010 / EH011
230 V~ ± 10% 50/60Hz



EH110 / EH111 / EH171
230 V~ ± 10% 50/60Hz



EH710 / EH711 / EH771
230 V~ ± 10% 50/60Hz



Technical specifications	EG010	EG071	EG103E	EG203E	EG403E	EG293B	EG493E	EGN100AU	EGN103	EGN200AU	EGN400AU
Version	Daily	Weekly	Weekly	Weekly	Weekly	Annual	Annual	Daily/ Weekly/ Annual	Daily/ Weekly	Daily/ Weekly/ Annual	Daily/ Weekly/ Annual
Modules	1mod	1mod	2mod	2mod	4mod	4mod	4mod	1mod	2mod	2mod	4mod
Channels	1ch	1ch	1ch	2ch	4ch	2ch	4ch	1ch	1ch	2ch	4ch
Voltage Supply	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz	230V 50/60Hz	230V 50/60Hz	230V 50Hz	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz
Consumption	1VA	1VA	6VA	6VA	2VA	2VA	2VA	0.28VA	0.39VA	0.6VA	0.71VA
Output	1 volt free changeover contact	1 volt free changeover contact	1 volt free changeover contact	2 volt free changeover contacts	2 volt free changeover and 2 NO contacts	2 volt free changeover and 2 NO contacts	2 volt free changeover and 2 NO contacts	1 changeover and 1 NO contact	1 changeover and 1 NO contact	2 changeover and 2 NO contacts	4 changeover and 4 NO contacts
Bluetooth								Bluetooth	Bluetooth	Bluetooth	Bluetooth
Switching Capacity											
AC 1	16A / 250V	16A / 250V	16A / 250V	16A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V	16A / 250V	16A / 250V	16A / 250V
Incandescent lamp	1000W	1000W	2300W	2300W	1500W	1500W	1500W	2300W	2300W	2300W	2300W
LED lamp								20x20W LED	20x20W LED	20x20W LED	20x20W LED
Characteristics											
Technology	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital
Minimum switching	1min	1min	1min	1min	1min	1min	1min	1min	1min	1min	1min
Programming capacity	6 steps	20 steps	56 steps	56 steps	300 steps	300 steps	300 steps	100 steps	56 steps	200 steps	400 steps
Working accuracy	±1sec / 24h*	±1sec / 24h*	±1.5sec / 24h*	±1.5sec / 24h*	±0.2sec / 24h*	±0.2sec / 24h*	±0.2sec / 24h*	±0.25sec / 24h	±1.5sec / 24h	±0.25sec / 24h	±0.25sec / 24h
Supply failure reserve	3 years	3 years	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 years lithium battery	10 years lithium battery	5 years lithium battery	10 years lithium battery	10 years lithium battery
Protection degree	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Environment											
Working temp	-10ºC to +50ºC	-10ºC to +50ºC	-5ºC to +45ºC	-5ºC to +45ºC	-10ºC to +50ºC	-10ºC to +50ºC	-10ºC to +45ºC	-5ºC to +45ºC	-5ºC to +45ºC	-5ºC to +45ºC	-5ºC to +45ºC
Storage temp	-10ºC to +60ºC	-10ºC to +60ºC	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC	-25ºC to +70ºC	-25ºC to +70ºC	-25ºC to +70ºC	-25ºC to +70ºC
Connection											
Flexible	1 to 4mm²	1 to 4mm²	1.5 to 10mm²	1.5 to 10mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.2 to 2.5mm²	1 to 6mm²	0.2 to 2.5mm²	0.2 to 2.5mm²
Rigid	1 to 4mm²	1 to 4mm²	1 to 6mm²	1 to 6mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.2 to 4mm²	1.5 to 10mm²	0.2 to 4mm²	0.2 to 4mm²
Dimensions											
Height	92mm	92mm	85mm	85mm	90mm	90mm	90mm	90mm	90mm	90mm	90mm
Width	18mm	18mm	35mm	35mm	71mm	70mm	70mm	18mm	36mm	36mm	36mm
Depth	64mm	64mm	64mm	64mm	69mm	69mm	65mm	63mm	62mm	62mm	62mm

EG010

Electrical characteristics

Supply voltage	230V ±10% 50/60Hz
Consumption	1VA
Output	1 changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W incandescent lighting

Functional characteristics

Number of programs	5 adjustable pre-recorded programs
Accuracy	±6min per year
Supply failure reserve	Total of 3 years

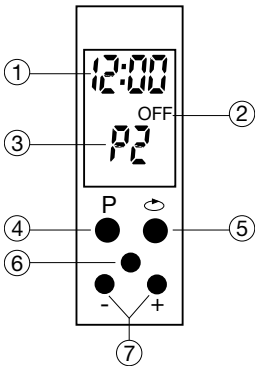
Environment

Working temperature	-10°C to +50°C
Storage temperature	-10°C to +60°C
Cable capacity	1 to 4mm²
Main characteristics	Easy to program: 5 programs are pre-recorded. The user just has to select the program which corresponds to its use and modify time switches if necessary.

The 5 pre-recorded programs are as follows:

P	Prog
P0	OFF
P1	ON
P2	6.00 23.00
P3	6.00 8.00 17.00 23.00
P4	6.00 8.00 11.00 13.00 17.00 23.00

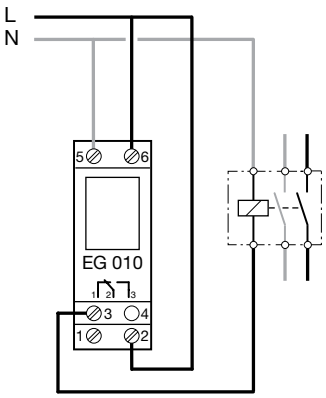
Product presentation



Display
1. Time
2. Circuit status
3. Program selection

Buttons
4. P to select the program to apply
5. Reset
6. ⟲ to scroll the programming steps
7. + and - to input the time

Wiring diagram



EG071

Electrical characteristics

Supply voltage	230V ±10% 50/60Hz
Consumption	1VA
Output	1 changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W incandescent lighting

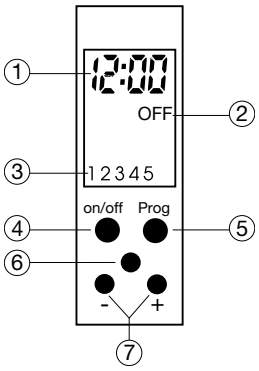
Functional characteristics

Number of programs	20 program steps (each program step can be applied to one of several days)
Accuracy	±6min per year
Supply failure reserve	Total of 3 years

Environment

Working temperature	-10°C to +50°C
Storage temperature	-10°C to +60°C
Cable capacity	1 to 4mm²

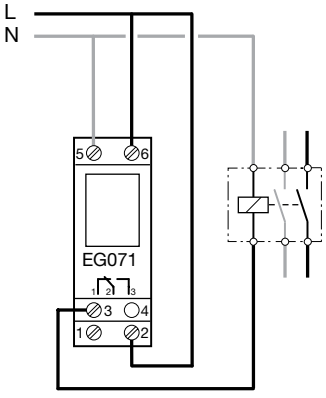
Product presentation



Display
1. Time
2. Circuit status
3. Program selection

Buttons
4. ON/OFF: to select the circuit status
5. Reset
6. Prog: to program the device and scroll the program steps
7. + and - to input the time and day

Wiring diagram



Electrical characteristics

Supply voltage	230V ±15% 50/60Hz
Consumption	6VA
Output	1 changeover contact 16A - 250V AC 1 10A - 250V cosw = 0.6
Lighting	
Incandescent lighting	2300W
Halogen lighting 230V	2300W
Compensated fluoro tubes	400W
Non-compensated fluoro tubes in series	1000W
Compact fluoro lamps	500W
Minimum current	100mA 250V~
Galvanic insulation between power supply and output	= 4kV
Rated impulse voltage	4kV

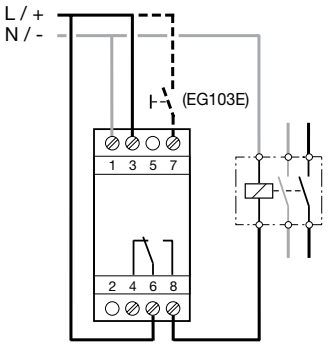
Functional characteristics

Number of programs	56 program steps
Minimu time between 2 steps	1min
Accuracy	±1.5sec per day
Supply failure reserve	Total of 5 years - lithium battery
Protection degree	IP20

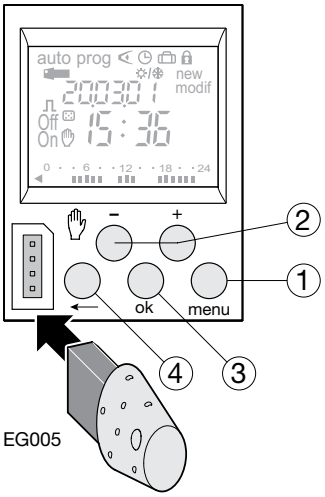
Environment

Working temperature		-5°C to +45°C
Storage temperature		-20°C to +70°C
Cable capacity	**Flexible**	1 to 6mm²
	Rigid	1.5 to 10mm²

Wiring diagram



Product presentation



EG005

Keys

1. menu — Selection of operating mode
   - Auto — Mode of running according to the program selected
   - Prog — new - for new program
   - Prog — modif - to modify an existing program
   - Check the program
   - Modification of time, date and selection of the winter/ summer time change mode
   - Holiday mode
2. +/- — Navigation or setting values
   - In auto mode, selection of overrides, waivers or random operation
3. OK — To validate flashing information on display
4. ← — To return to the previous step

You may return to auto mode at any moment by pushing the menu button.
If no action is taken for 1 min, the switch returns to auto mode.

Major characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time
- Programming key
  - For permanent waivers
  - For program copy or save
- Programming for day or group of days
- 56 program steps On, Off
- Impulses (1 sec to 30 min)
- Permanent overrides On or Off (permanent light on)
- Temporary overrides On or Off (flashing)
- Holiday mode : overrides On or Off between two dates
- Simulation of presence
- Display bar graph of daily profile
- Keyboard locking possible
- Programmable with power off
- Back lit display

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50/60Hz
Consumption	6VA
Output	2 changeover volt free contacts 16A - 230V AC 1 10A - 230V cosw = 0.6
Lighting	
Incandescent lighting	2300W
Halogen lighting 230V	2300W
Compensated fluoro tubes	400W
Non-compensated fluoro tubes in series	1000W
Compact fluoro lamps	500W
Minimum current	100mA 230V~
Galvanic insulation between power supply and output	< 4kV
Rated impulse voltage	4kV

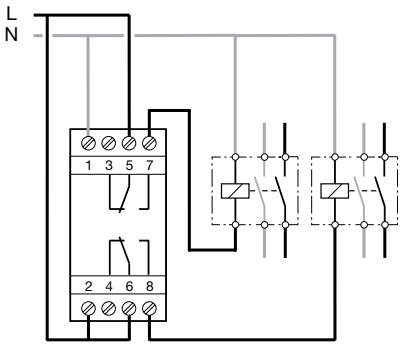
Functional characteristics

Number of programs	56 program steps
Minimu time between 2 steps	1min
Accuracy	±1.5sec per day
Supply failure reserve	Total of 5 years - lithium battery
Protection degree	IP20

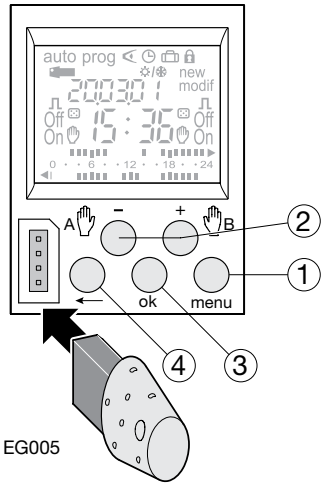
Environment

Working temperature		-5°C to +45°C
Storage temperature		-20°C to +70°C
Cable capacity	**Flexible**	1 to 6mm²
	Rigid	1.5 to 10mm²

Wiring diagram



Product presentation



EG005

Keys

1. menu — Selection of operating mode
   - Auto — Mode of running according to the program selected
   - Prog — new - for new program
   - Prog — modif - to modify an existing program
   - Check the program
   - Modification of time, date and selection of the winter/ summer time change mode
   - Holiday mode
2. +/- — Navigation or setting values
   - A/B — In auto mode, selection of overrides, waivers or random operation
3. OK — To validate flashing information on display
4. ← — To return to the previous step

You may return to auto mode at any moment by pushing the menu button.
If no action is taken for 1 min, the switch returns to auto mode.

Major characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time
- Programming key
  - For permanent waivers
  - For program copy or save
- Programming for day or group of days
- 56 program steps On, Off
- Impulses (1 sec to 30 min)
- Permanent overrides On or Off (permanent light on)
- Temporary overrides On or Off (flashing)
- Holiday mode : overrides On or Off between two dates
- Simulation of presence
- Display bar graph of daily profile
- Keyboard locking possible
- Programmable with power off
- Back lit display

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50/60Hz
Consumption	< 2VA
Output	2 changeover + 2 NO contacts 10A - 250V AC 1 8A - 250V cos = 0.6
Lighting	
Incandescent lighting	1500W
Halogen lighting 230V	1500W
Compensated fluoro tubes	400W
Non-compensated fluoro tubes in series	1000W
Compact fluoro lamps	400W
Minimum current	100mA 250V~
Galvanic insulation between power supply and output	< 4kV

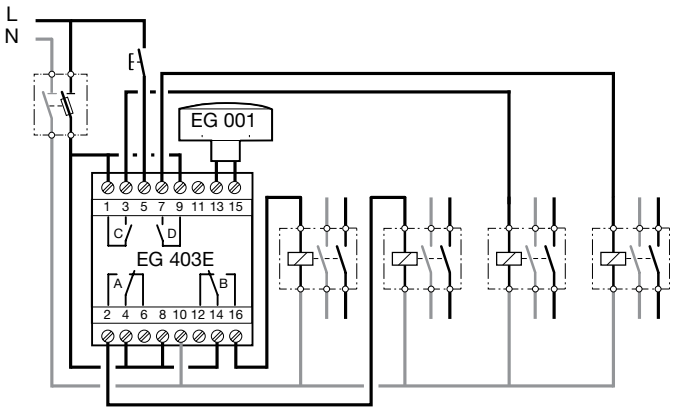
Functional characteristics

Number of programs	300 program steps
Minimu time between 2 steps	1min
Accuracy	±0.2sec per day
Supply failure reserve	Total of 10 years - lithium battery
Protection degree	IP20 / IK04

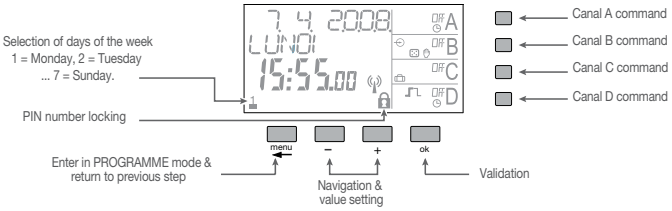
Environment

Working temperature	-10°C to +50°C
Storage temperature	-20°C to +70°C
Cable capacity	0.75 to 2.5mm²

Wiring diagram



Product presentation



Major characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time
- Programming key
  - For permanent overrides
  - For program copy or save
- Programming for day or group of days
- 300 program steps; On, Off, pulses ⎍ or ⎍⎍
- Permanent overrides On or Off (permanent light on)
- Temporary overrides On or Off (flashing)
- Overrides (temporary, permanent or time delayed) remote activation possible
- Holiday mode : overrides On or Off between two dates
- Simulation of presence
- Keyboard locking possible
- Counter of operating time on every output
- Programmable with power off
- Back lit display

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50/60Hz
Consumption	< 2VA
Output	2 changeover contacts 10A - 250V AC 1
Lighting	
Incandescent lighting	1500W
Halogen lighting 230V	1500W
Compensated fluoro tubes	400W
Non-compensated fluoro tubes in series	1000W
Compact fluoro lamps	400W
Minimum current	100mA 250V~
Galvanic insulation between power supply and output	< 4kV

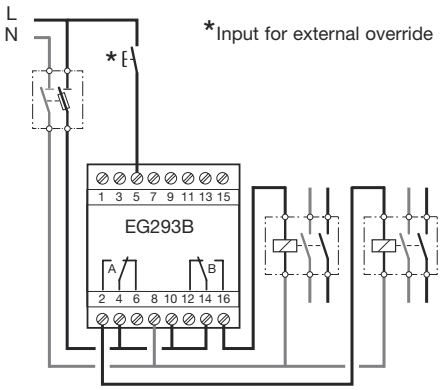
Functional characteristics

Number of programs	300 program steps
Minimu time between 2 steps	1min
Accuracy	±0.2sec per day
Supply failure reserve	Total of 5 years - lithium battery
Protection degree	IP20 / IK04

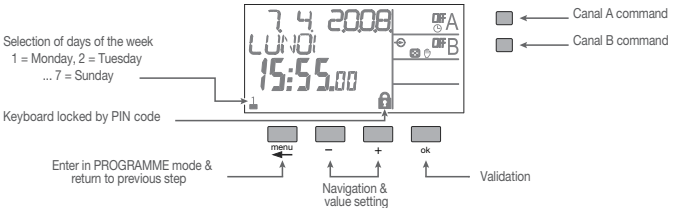
Environment

Working temperature	-10°C to +50°C
Storage temperature	-20°C to +70°C
Cable capacity	0.75 to 2.5mm²

Wiring diagram



Product presentation



Major characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time
- Programming key
  - For permanent overrides
  - For program copy or save
- Programming for day or group of days
- 300 program steps; On, Off, pulses ⎍ or ⎍⎍
- Permanent overrides On or Off (permanent light on)
- Temporary overrides On or Off (flashing)
- Overrides (temporary, permanent or time delayed) remote activation possible
- Simulation of presence
- Keyboard locking possible
- Counter of operating time on every output
- Programmable with power off
- Back lit display

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50/60Hz
Consumption	< 2VA
Output	2 changeover + 2 NO contacts 10A - 250V AC 1
Lighting	
Incandescent lighting	1500W
Halogen lighting 230V	1500W
Compensated fluoro tubes	400W
Non-compensated fluoro tubes in series	1000W
Compact fluoro lamps	400W
Minimum current	100mA 250V~
Galvanic insulation between power supply and output	< 4kV

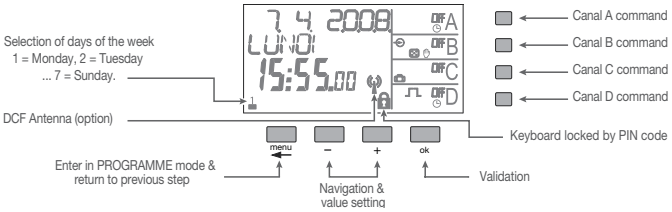
Functional characteristics

Number of programs	300 program steps
Minimu time between 2 steps	1min
Accuracy	±0.2sec per day
Supply failure reserve	Total of 5 years - lithium battery
Protection degree	IP20 / IK04

Environment

Working temperature	-10°C to +50°C
Storage temperature	-20°C to +70°C
Cable capacity	0.75 to 2.5mm²

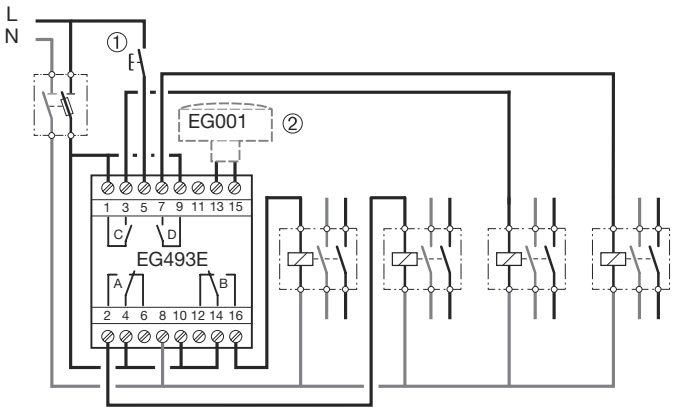
Product presentation



Major characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time
- Programming key
  - For permanent overrides
  - For program copy or save
- 300 program steps; On, Off, pulses ⎍ or ⎍⎍
- Permanent overrides On or Off (permanent light on)
- Temporary overrides On or Off (flashing)
- Overrides (temporary, permanent or time delayed) remote activation possible
- Simulation of presence
- Keyboard locking possible
- Counter of operating time on every output
- Programmable with power off
- Back lit display

Wiring diagram

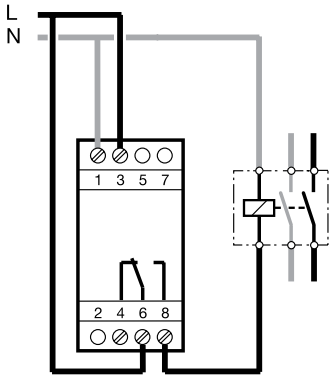


① Input for external override
② Option

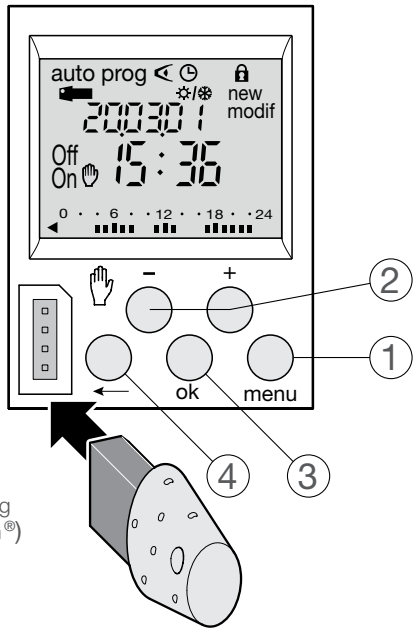
Electrical characteristics

Operating voltage	230V (+10% / -15%)
Frequency	50/60 Hz
Contact rating	AC1 µ 16A 230 V~
Power input	0.25VA
Switching current at cos ϕ = 0.6	
Power loss at full load	
230 V incandescent and halogen lamps	max. 2300 W
LED lamps	400 W
Fluorescent tubes, compensated // (max. 45 µ F)	400 W
Fluorescent tubes, uncompensated, series compensated	1000 W
Compact fluorescent lamps	400 W
Number of function channels	1
Number of contacts per channel	2
Shortest switching time	1 min
Number of switching times for On/Off	56
Power reserve (years)	≈ 5 a
Accuracy rate	± 1.5 s/day
Operating temperature	- 5 … 45 °C
Conductor cross-section (flexible)	1 … 6 mm^2
Conductor cross-section (rigid)	1.5 … 10 mm^2
Rail-mounted device (RMD) width	2 units

Wiring diagram



Product presentation



EGN003 (programming via Bluetooth®) or EG004 (locking) or EG005 (programming)

Keys

1.	menu	Selection of operating mode
	new prog.	For programming
	change prog.	To change an existing program
	◁	Program verification
	◷	Change of time, date and mode choice switch to or from daylight savings time
2.	+/-	Navigation or setting values
	☝	In auto mode, selection of overrides or exceptions
3.	OK	To validate flashing information on display
4.	←	To return to the previous step

You can return to auto mode at any time with the menu.

If no action is taken for 1 minute, the switch returns to auto mode.

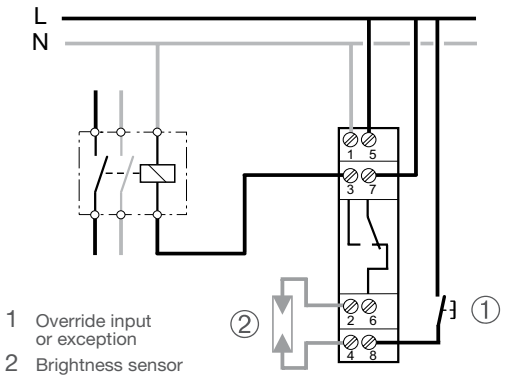
Major characteristics

- programmable with Bluetooth (with EGN003)
- changeover
- with potential-free switching contact
- button lock using lock key
- programming without voltage supply possible
- with programming key
- with automatic summer/winter time change
- program cycles: 1 x 7 days
- with screw terminals
- for mounting on DIN top-hat rail
- 5 years power reserve

Electrical characteristics

Operating voltage	230V (+10% / -15%)
Frequency	50/60 Hz
Contact rating	AC1 µ 10A 230 V~
Power input	0.17VA
Switching current at cos ϕ = 0.6	
Power loss at full load	
230 V incandescent and halogen lamps	max. 2300 W
LED lamps	400 W
Fluorescent tubes, compensated // (max. 45 µ F)	400 W
Fluorescent tubes, uncompensated, series compensated	1000 W
Compact fluorescent lamps	400 W
Number of function channels	1
Number of contacts per channel	2
Shortest switching time	1 min
Number of switching times for On/Off	100
Power reserve (years)	≈ 10 a
Accuracy rate	± 90 s/year
Operating temperature	- 5 … 45 °C
Conductor cross-section (flexible)	0.2 … 2.5 mm^2
Conductor cross-section (rigid)	0.2 … 4 mm^2
Rail-mounted device (RMD) width	1 unit

Wiring diagram



1 Override input or exception
2 Brightness sensor

Product presentation

C1/FCT (key and LED) used for:
- output control;
- Bluetooth® reset.

BLE/CFG (key and LED) used for:
- Bluetooth® activation and deactivation (BLE),
- Resetting parameters.

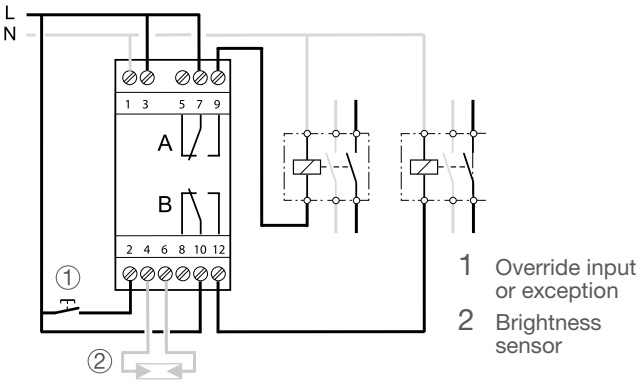
Major characteristics

- integrated Bluetooth connection
- program cycles: daily, weekly, yearly
- 1 changeover output
- with pulse function
- wired input
- with radio input connection: Quicklink configuration
- button lock
- with automatic summer/winter time change
- with screw terminals
- for mounting on DIN top-hat rail
- 10 years power reserve

Electrical characteristics

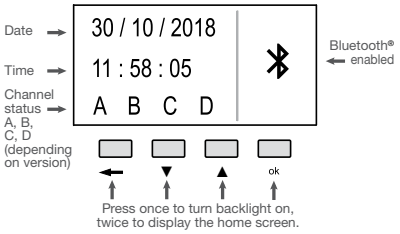
Operating voltage	230V (+10% / -15%)
Frequency	50/60 Hz
Contact rating	AC1 µ 16A 230 V~
Power input	0.3VA
Switching current at cos ϕ = 0.6	
Power loss at full load	
230 V incandescent and halogen lamps	max. 2300 W
LED lamps	400 W
Fluorescent tubes, compensated // (max. 45 µ F)	400 W
Fluorescent tubes, uncompensated, series compensated	1000 W
Compact fluorescent lamps	400 W
Number of function channels	2
Number of contacts per channel	2
Shortest switching time	1 min
Number of switching times for On/Off	200
Power reserve [years]	≈ 10 a
Accuracy rate	± 90 s/year
Operating temperature	- 5 … 45 °C
Conductor cross-section (flexible)	0.2 … 2.5 mm²
Conductor cross-section (rigid)	0.2 … 4 mm²
Rail-mounted device (RMD) width	2 units

Wiring diagram

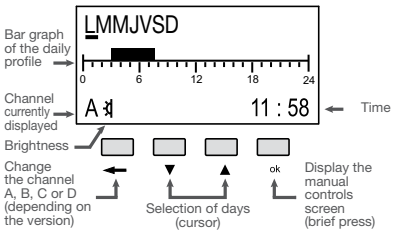


Product presentation

Screensaver



Home screen



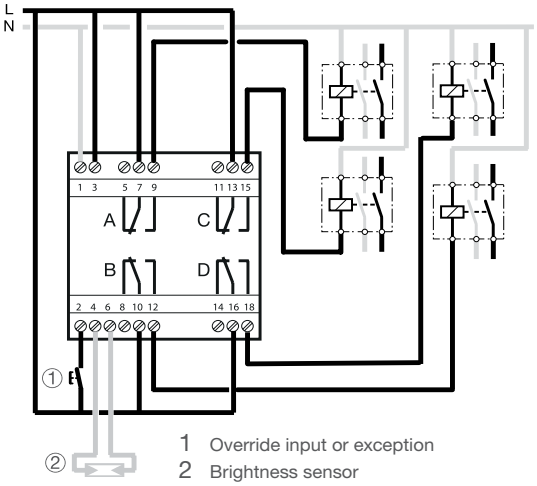
Major characteristics

- integrated Bluetooth connection
- program cycles: daily, weekly, yearly
- 2 changeovers output
- with pulse function
- with radio input connection: Quicklink configuration
- programming without voltage supply possible
- button lock
- LC display with lighting
- with automatic summer/winter time change
- with screw terminals
- for mounting on DIN top-hat rail
- 10 years power reserve

Electrical characteristics

Operating voltage	230V (+10% / -15%)
Frequency	50/60 Hz
Contact rating	AC1 µ 16A 230 V~
Power input	0.45VA
Switching current at cos ϕ = 0.6	
Power loss at full load	
230 V incandescent and halogen lamps	max. 2300 W
LED lamps	400 W
Fluorescent tubes, compensated // (max. 45 µ F)	400 W
Fluorescent tubes, uncompensated, series compensated	1000 W
Compact fluorescent lamps	400 W
Number of function channels	4
Number of contacts per channel	2
Shortest switching time	1 min
Number of switching times for On/Off	400
Power reserve (years)	≈ 10 a
Accuracy rate	± 90 s/year
Operating temperature	- 5 … 45 °C
Conductor cross-section (flexible)	0.2 … 2.5 mm²
Conductor cross-section (rigid)	0.2 … 4 mm²
Rail-mounted device (RMD) width	4 units

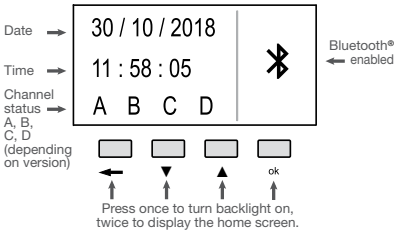
Wiring diagram



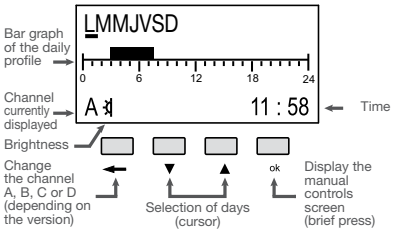
1 Override input or exception
2 Brightness sensor

Product presentation

Screensaver



Home screen



Major characteristics

- integrated Bluetooth connection
- program cycles: daily, weekly, yearly
- 2 changeovers output
- with pulse function
- with radio input connection: Quicklink configuration
- programming without voltage supply possible
- button lock
- LC display with lighting
- with automatic summer/winter time change
- with screw terminals
- for mounting on DIN top-hat rail
- 10 years power reserve

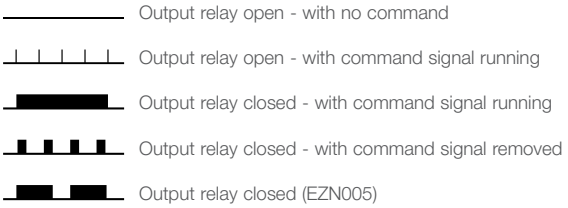
Delay timers

Delay timer devices are used to control a variety of processes where the requirement is for switching circuits on, off or delaying the on or off switching for a pre-set period of time. Typical device types are:

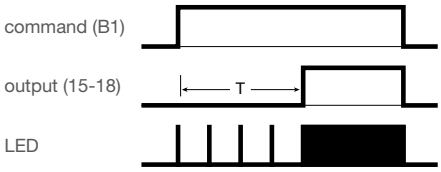
- Delay ON: Intended to delay the starting or switching of a circuit for a set period of time following the command signal e.g. to delay the starting of motor loads where a large number of motors are to be started by the same switch to reduce the effects of the starting currents.
- Delay OFF: Intended to delay the stopping or switching off of a circuit for a set period of time following the removal of the command signal e.g. to overrun an extractor following the switching off of a process that creates fumes.
- Adjustable time ON: Intended to switch on for a set period, the command must remain on throughout the set period e.g. to switch on two sets of heaters with one set (the boost) switching off after the set period.
- Impulse timer: Intended to switch on for a set period, the command signal length is not important e.g. to boost a time clock controlled circuit such as water storage heater.
- Symmetrical timer: Intended to toggle a circuit on and off in regular time patterns e.g. to run an extractor intermittently.

Multifunction timer - 8 individual functions

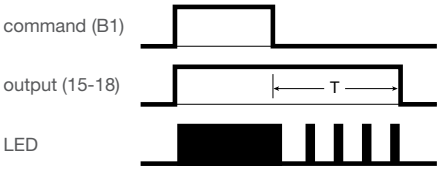
A = timer.
B = delay off (output relay opens either at end of command or after set time period - whichever is shorter).
C = delay off.
D = delay on.
E = delay on (output relay closes either at end of command or after set time period - which ever is shorter).
F = symmetrical timer.
On selection - contact permanently closed.
Off selection - contact permanently open.



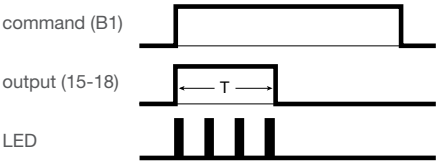
Delay On
EZN001 & EZN006 Function D



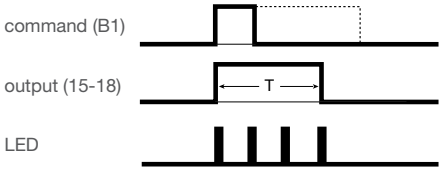
Delay Off
EZN002 & EZN006 Function C



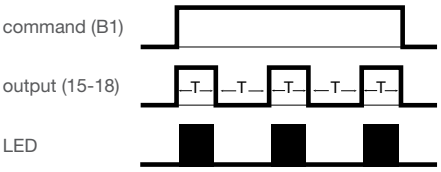
Adjustable Time On
EZN003 & EZN006 Function E



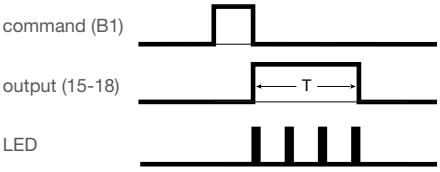
Impulse Timer
EZN004 & EZN006 Function A



Symmetrical Timer
EZN005 & EZN006 Function F



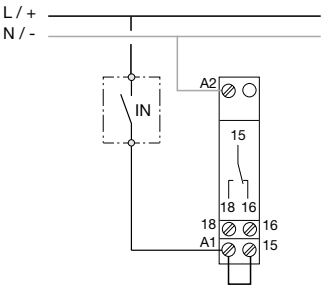
Multifunction Timer
EZN006 Function B



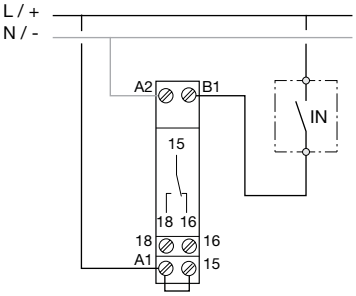
EZN001 - EZN002 - EZN003 - EZN004 - EZN005 - EZN006
Electrical characteristics

Supply voltage AC	12 - 230 V AC (±10%), 50/60Hz
Supply voltage DC	12 - 48 V DC (±10%)
Output	1 volt free C/O contact
Max load AC1	8A / 230V~ 50,000 cycles
Incandescent	450W~ 50,000 cycles
Fluorescent non comp.	600W~ 50,000 cycles
Inductive load 0.6pf	5A~ 100,000 cycles
Min power AC	100mA at 230 V
Min power DC	100mA at 12 V
Galvanic isolation	2kV
Standard / norm	EN60669-2-1
Timer range	0.1 seconds to 10 hours
Min. command period AC	50ms
Min. command period DC	30ms
Working temperature	-10°C to +50°C
Storage temperature	-40°C to +50°C
Connection capacity - flexible	1 - 6mm²
Connection capacity - rigid	1.5 - 100mm²

Wiring diagrams
EZN001, EZN003, EZN005, EZN006 (functions D,E,F)



EZN002, EZN004, EZN006 (functions A,B,C)



Time lag switches

A common area where time delay devices are used is stairways and corridors in multi occupancy buildings where they provide a level of energy efficiency. The EMN001 device provides basic time lag control.

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50/60Hz
Consumption	1VA
Size	1 module
Output	16A - 230V AC1
Lighting	
Incandescent lighting	2300W
Halogen lighting 230V	2300W
Ferro-magnetic transformer	1600W
Parallel compensated	Capacitor 112F
Fluoro lamps	1000W
Series compensated	3600W
Electronic transformer	2300W
Compact fluoro lamps with electronic ballast	60 x 7W or 40 x 11w or 32 x 15W or 20 x 23W
with conventional ballast	2300W

Functional characteristics

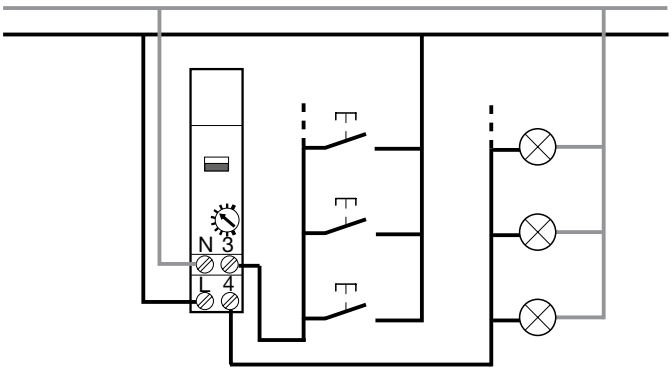
Time delay		30s to 10min
Retrigger		Yes
Maximum current in rest position		100mA
Automatic 3/4 recognition		Yes
Local command		Automatic / override On

Environment

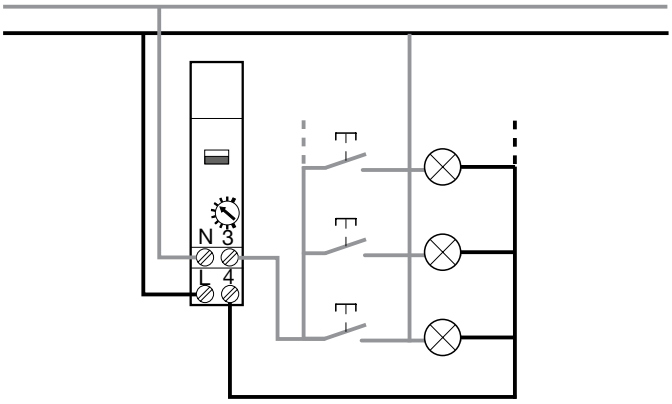
Working temperature		-10°C to +55°C
Storage temperature		-20°C to +60°C
Cable capacity	**Flexible**	1 to 6mm²
	Rigid	1.5 to 10mm²

Wiring diagrams

4 wire

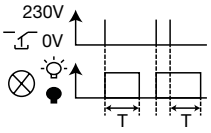


3 wire



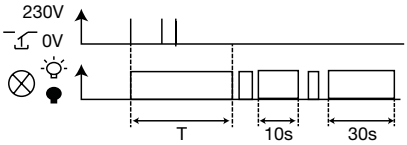
A: Basic mode

Press push button to switch ON the light. After a set time (Adjustable "T", the light will switch OFF automatically.



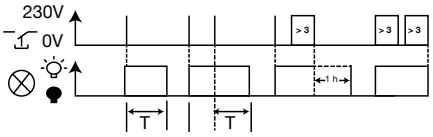
B: Prewarning mode

A signal (blink) will appear before the end of the lighting period.



C: Double delay mode

Press push button to switch light ON. After a set time (Adjustable "T", the light will switch OFF automatically. If you press the buton for more than 3 seconds, a time lag of one hour begin.



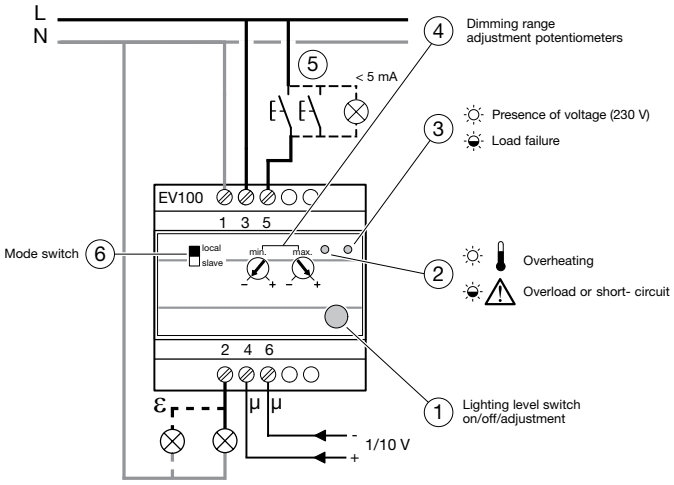
Electrical characteristics	EV100	EVN002
Supply voltage	230V AC 50Hz	230V AC 50Hz
Consumption	3W	0.2W
Dissipation	15W	4.5W

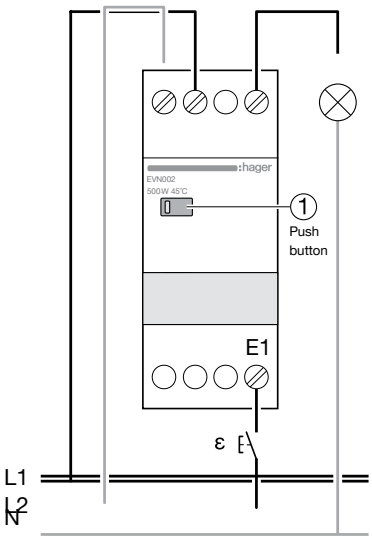
Lighting		
Incandescent lighting	1000W	500W
Halogen lighting 230V	1000W	500W
Lamps with ELV Halogen via ferro-magnetic transformer	1000VA	500VA
The transformer must not be used below 75% of its nominal load		
Lamps with ELV halogen via electronic transformer	1000VA	500VA
The maximum number of lamps permitted shall be calculated according to the efficiency of transformers.		

Functional characteristics			
Input 1/10V		1.5mA	-
1/10V control		1 input	-
1/10V control status		slave	-
Max. PB - dimmers distance for 1-10V control		50m	-
Dim PB and ON/OFF module		Yes	Yes
Min. and max. dim lighting setting		Yes	Yes
IP Rating		IP20	1P20
Potentiometer		100k Ω, 200mW logarithim	-

Environment			
Working temperature		-10°C to +45°C	-10°C to +45°C
Storage temperature		-20°C to +60°C	-25°C to +70°C
Cable capacity	**Flexible**	1 to 6mm²	1.5 to 6mm²
	Rigid	1.5 to 10mm²	1.5 to 6mm²

Wiring diagram





Light sensitive switches

Using light sensitive switches can prevent the unnecessary use of lighting circuits where sufficient daylight exists. The benefit of modular devices is the facility to set the ambient lighting level at which the device will operate, and as the device is fitted at the distribution point prevent unauthorised tampering. The remote photocell unit can be mounted up to a distance of 50 metres from the device. Devices available is the standard EEN100 light sensitive swich.

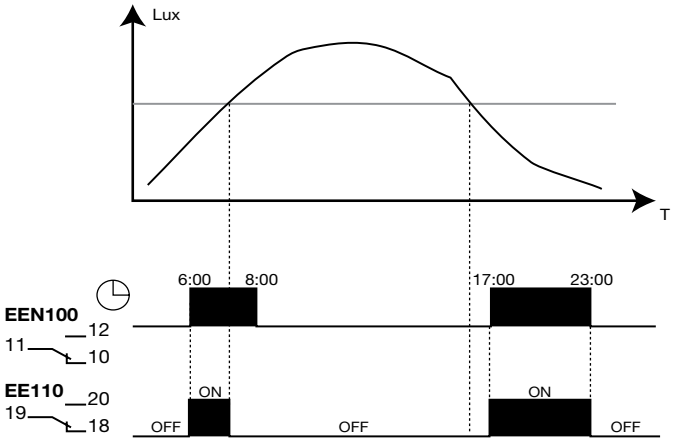
Principle of operation

Both devices control lighting systems according to natural illumination;
- The user sets the working level
- The photo cell measures the external light level

The output of the EEN100 is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

Built in time delay

The light sensitive switches include a built in time delay which avoids unnecessary switching due to temporary factors such as car headlight beams etc...



Adjustment of the Working Level

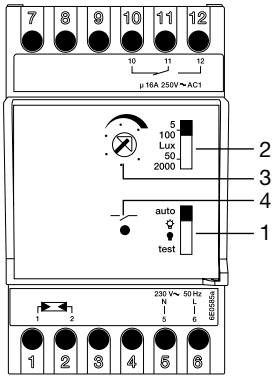
The test position of the override selector 1 makes setting the preset level easier by removing the ON and OFF delay.
Select the sensitivity range which suits your application (selector 1)

5 to 100 lux (low light level) application examples; public lighting, shop windows, signals...

50 to 2000 lux (high light level) application examples; controls of shades

At the appropriate moment of the day, put the selector 1 in test position; turn the potentiometer 2 up to the switching point (the indicator 4 lights); put the selector back to position ‘auto’ the normal operating mode of the device.

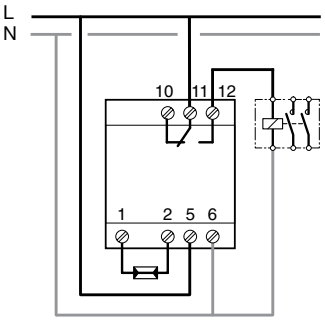
Description - EEN100



The programmable light sensitive switch EEN100 has one main function:
- Light sensitive switch comprising:

1 Override selector switch to allow permanent ON or OFF, auto or test mode
2 Lighting range selector
3 Potentiometer to set light level
4 Indicator to show output switching status

Wiring diagram - EEN100



Mounting the cell

To ensure correct operation of the light sensitive switch, the cell must not be influenced by artificial light or direct solar radiation and should be sheltered from dust and humidity. In case of disconnection of the link between the cell and the light sensitive switch, the output of the device will be switched on. Make sure the light sensitive switch is unplugged before connecting the cell.

Electrical characteristics

Supply voltage	230V~ +10%/-15% 50Hz
Consumption	1.5VA max.
Output	1 voltage free changeover contact
Breaking capacity	16A 250V AC1

Lighting

Incandescent lighting	2000W
Halogen lighting 230V	1000W
Uncompensated fluoro lamp	1000W
Compensated fluoro lamp in series (10µF)	1000W
Parallel fluoro lamps (15µF)	200W
Compensated duo fluoro lamps in series	1000W

Functional characteristics

2 sensitivity ranges	5 to 100 lux and 50 to 2000 lux
ON and OFF delay	15 to 60s
Protection class (cell)	IP54
Insulation class (cell)	II

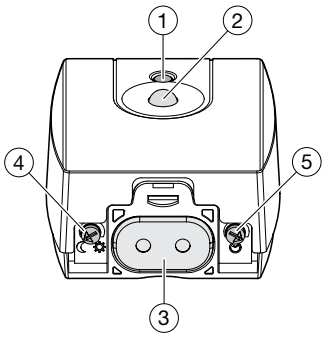
Environment

Working temperature	**Cell**	-30°C to +60°C
	Modular device	-10°C to +50°C
Storage temperature		-20°C to +60°C
Cable capacity	**Cell**	0.75 to 2.5mm^2
	Modular device	0.5 to 4mm^2
Max. length between cell and modular device		50m
Mounting of the cell with 2 screws		2.5mm Ø

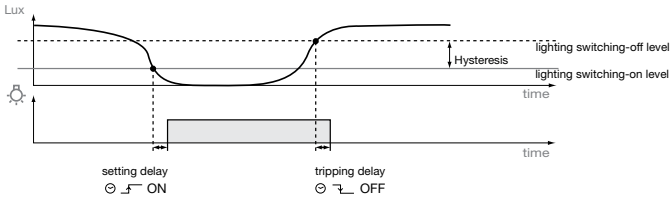
Compact light sensitive switch

The compact light-sensitive switch EE702 measures the natural light level and switches the lighting system according to the light-switching level and the programmed setting and tripping delay. Intended for applications such as street lighting, illumination signs, outside building access, windows… Mounting arrangements include fixing on wall, on round box or on pole using provided accessory and standard clamp.

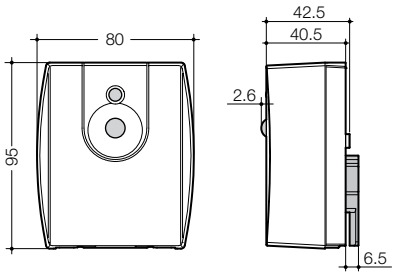
Product description



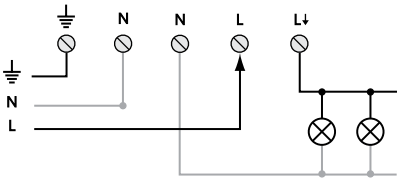
1. Indicator light
2. Brightness level sensor
3. Cable input & output
4. Potentiometer for adjustment of lighting level (2 to 1000lux)
5. Potentiometer for adjustment of setting and tripping delay (1 to 120sec)



Dimensions



Wiring diagram



Electrical characteristics

Supply voltage	230V~ +10%/-15% 50Hz
Cut phase output	Relay 16A AC1 2300W incandescent

Lighting

Incandescent lighting	2300W
Halogen ELV via ferromagnetic or electronic transformer	1500W
Uncompensated fluoro lamp	2 x 20W
Compact fluorescents	2000W
Electronic ballast	16 x 58W

Functional characteristics

Lighting switching-on level	Setting by potentiometer from 2 to 1 000 lux hysteresis 10%
Setting and tripping delay	Setting by potentiometer from 1 to 120 seconds
Class of isolation	II
IK	IK03
Protection index	IP55
Mounting	Surface, on round box or pole

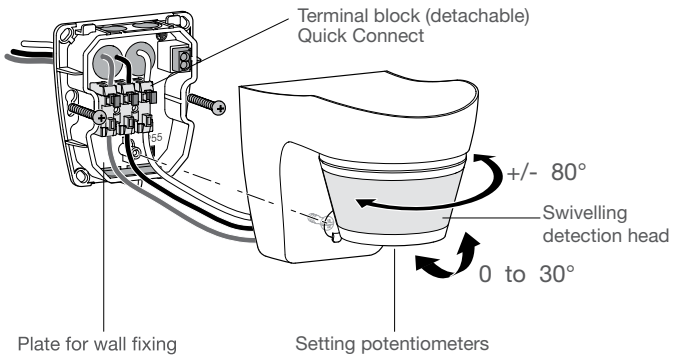
Environment

Working temperature	-25°C to +45°C
Storage temperature	-30°C to +60°C
Cable capacity	1 to 4mm^2

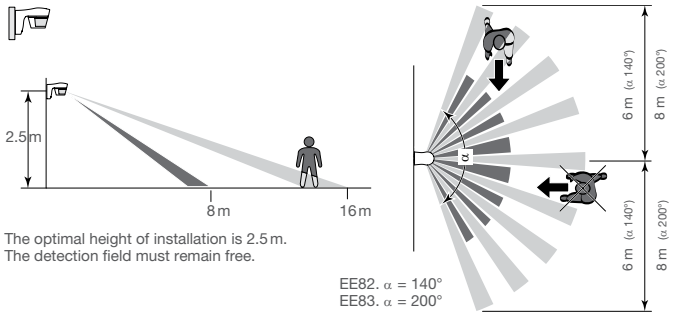
Electrical characteristics	Basic motion detector 140° White	Basic motion detector 360° White	Enhanced motion detector 220° White	Enhanced motion detector 220/360° White and Charcoal Grey
	EE820	**EE840**	**EE860**	**EE870/EE871**
Supply voltage	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz
Detection (Length)	16m	12m	16m	16m
Detection (Width)	12m	12m	16m	16m
Detection angle	140°	360°	220°	220/360°
Standby consumption	1.2W	1.2W	1.2W	1.2W
Duration of lighting output operation (S1)	5sec to 15min	5sec to 15min	5sec to 30min	5sec to 30min
Luminosity threshold	5 to 1000lux	5 to 1000lux	5 to 1000lux	5 to 1000lux
Recommended installation height	2.5m (2m-4m)	2.5m (2m-4m)	2.5m (2m-4m)	2.5m (2m-4m)
Ceiling mounting	EE827	EE827	White = EE827 Charcoal Grey = EE828	White = EE827 Charcoal Grey = EE828
Wall mounting	Direct	Direct	Direct	Direct
Corner mounting (inside/outside corner)	EE825	EE825	White = EE825 Charcoal Grey = EE826	White = EE825 Charcoal Grey = EE826
Operating temperature	20°C to +55°C	20°C to +55°C	20°C to +55°C	20°C to +55°C
Storage temperature	20°C to +60°C	20°C to +60°C	20°C to +60°C	20°C to +60°C
Insulation class	II	II	II	II
Protection rating	IP55	IP55	IP55	IP55
Standards	EN 60669-1 EN 60669-2-1	EN 60669-1 EN 60669-2-1	EN 60669-1 EN 60669-2-1	EN 60669-1 EN 60669-2-1
Pollution degree	2	2	2	2
Connection flexible	Max 1.5mm^2	Max 1.5mm^2	Max 1.5mm^2	Max 1.5mm^2
Connection rigid	Max 1.5mm^2	Max 1.5mm^2	Max 1.5mm^2	Max 1.5mm^2
Switching channel	1	1	1	1
Lighting loads 230V~ AC1	10A	10A	10A	10A
Switching capacity (incandescent)	1500W	2300W	2300W	2300W
Halogen ELV (12 or 24V) via ferromagnetic or electronic transformer	1500VA	1500VA	1500VA	1500VA
Compact fluorescent	10 x 20W	20 x 20W	20 x 20W	20 x 20W
LED		20 x 20W	20 x 20W	20 x 20W
Parallel compensated Fluorescent tubes	290W/C=32µf	400W/C=45µf	400W/C=45µf	400W/C=45µf
Electronic ballast	580W	580W	580W	580W
Remote programming	N/A	N/A	EE806	EE806
Adjustable shutters	Yes	No	Yes	Yes
Dimensions (L x W x H)	127 x 83 x 97mm	127 x 83 x 97mm	127 x 83 x 97mm	127 x 83 x 97mm

EE820

Description



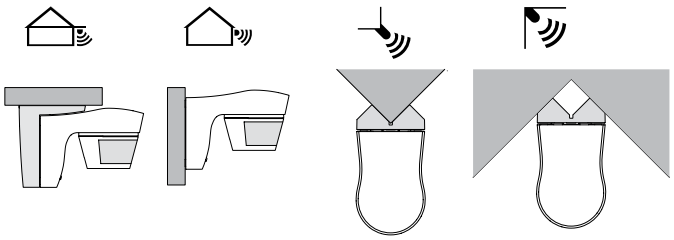
Detection area



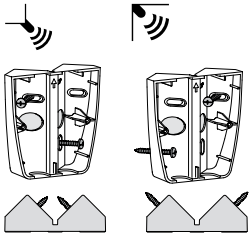
The optimal height of installation is 2.5 m.
The detection field must remain free.

EE82. α = 140°
EE83. α = 200°

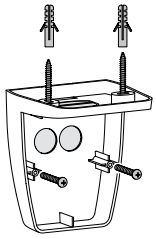
Installation



Corner mount

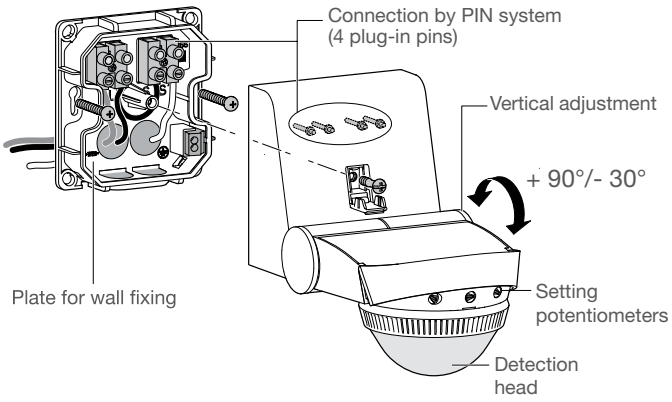


Ceiling

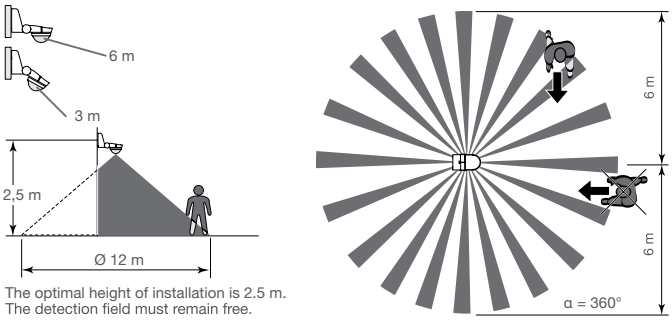


EE840

Description

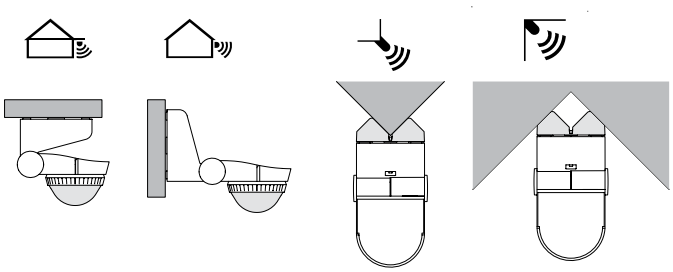


Detection area

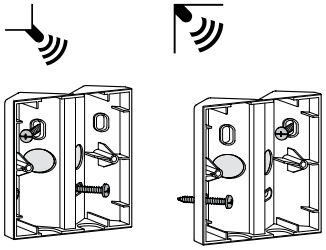


The optimal height of installation is 2.5 m.
The detection field must remain free.

Installation

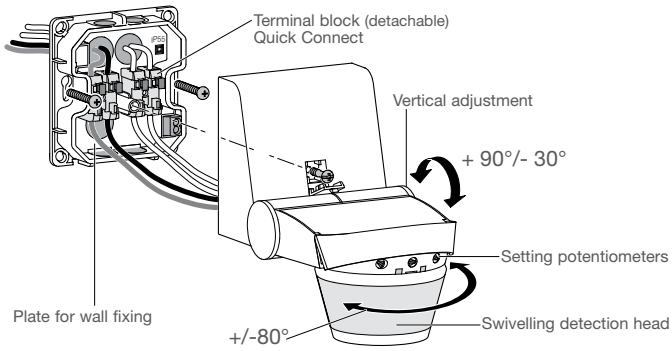


Corner mount

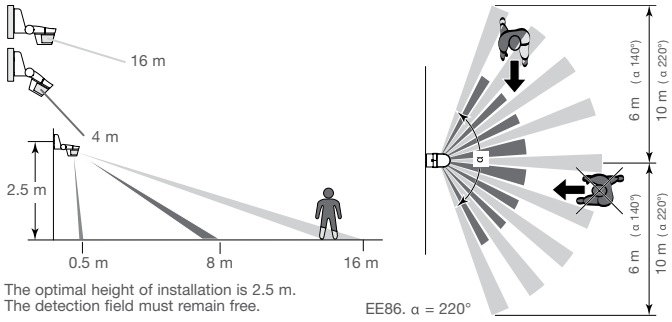


EE860

Description

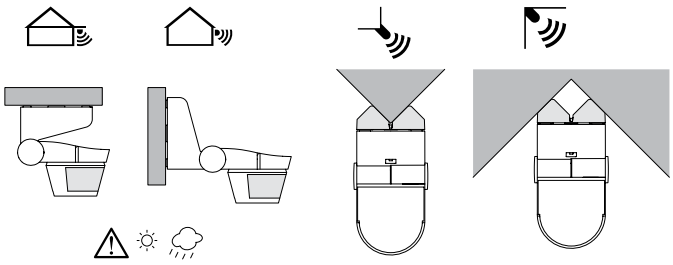


Detection area

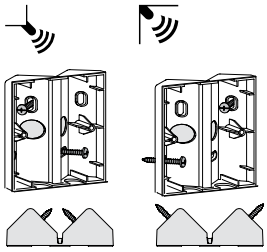


The optimal height of installation is 2.5 m.
The detection field must remain free.

Installation

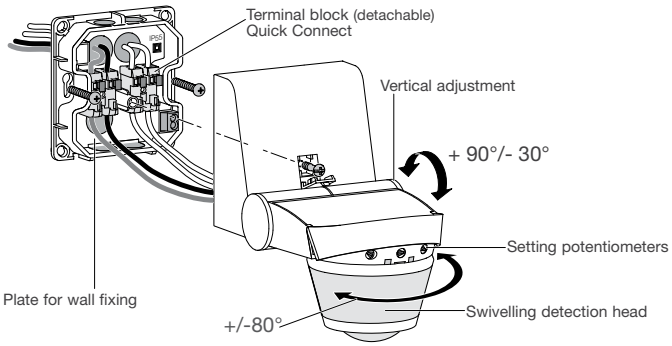


Corner mount

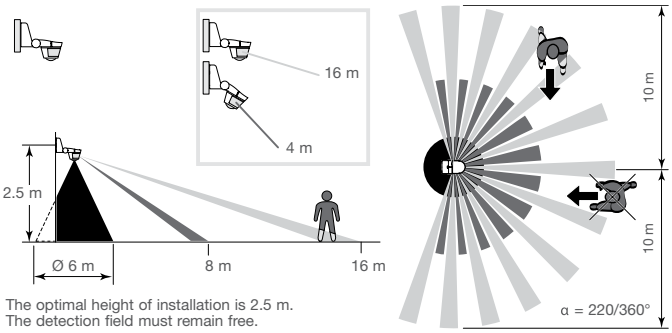


EE870/EE871

Description

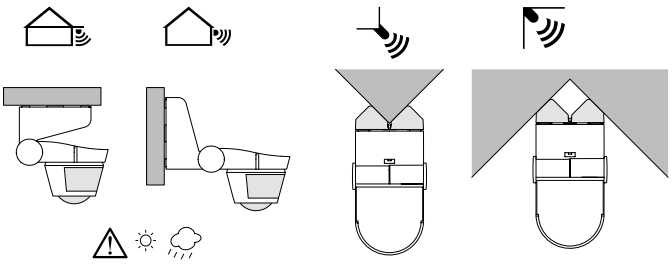


Detection area

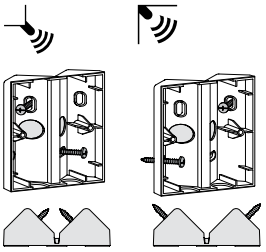


The optimal height of installation is 2.5 m.
The detection field must remain free.

Installation

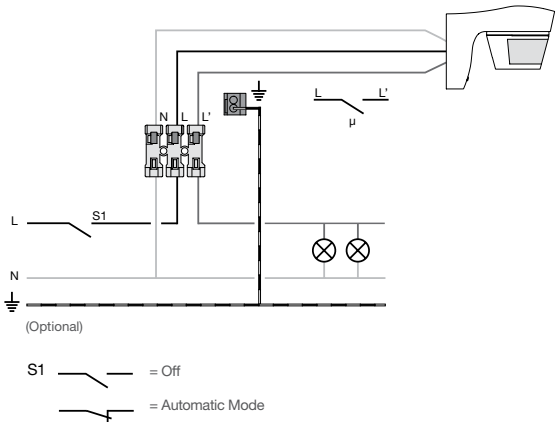


Corner mount

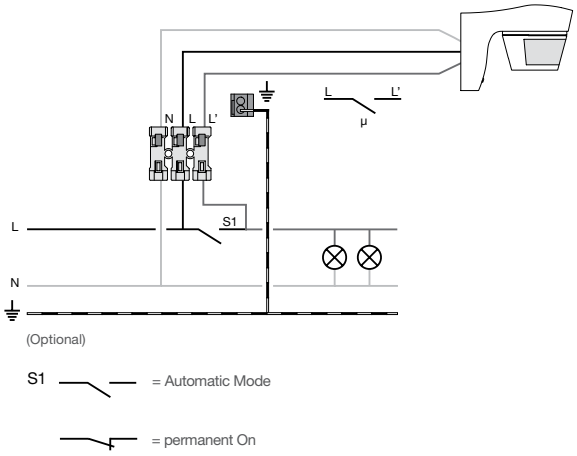


EE820

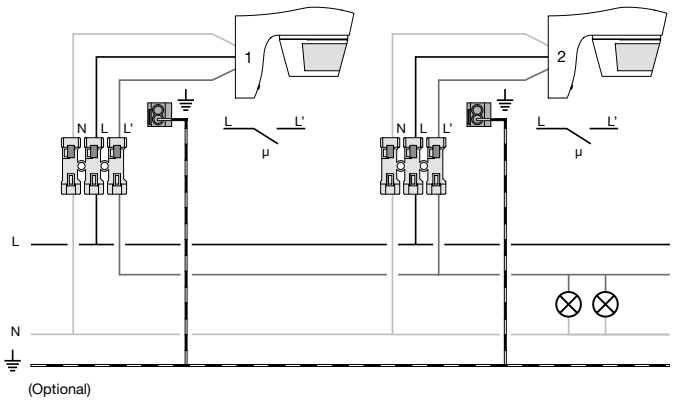
Auto/Off connection



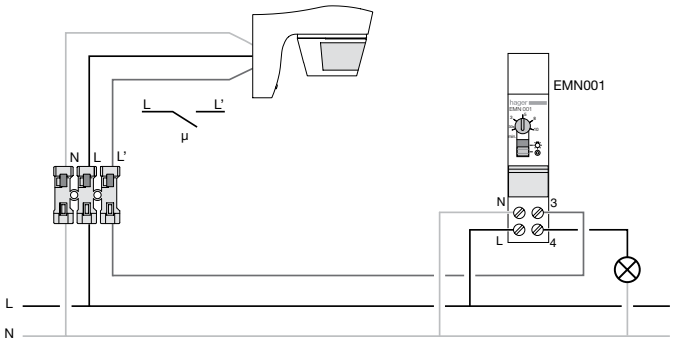
Auto/On connection



Parallel connection

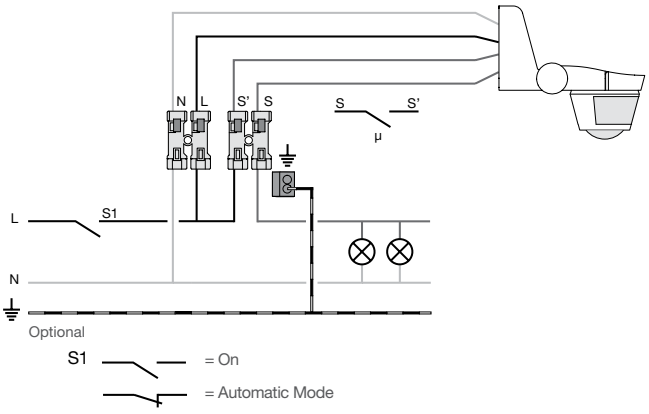


Connection with Timer

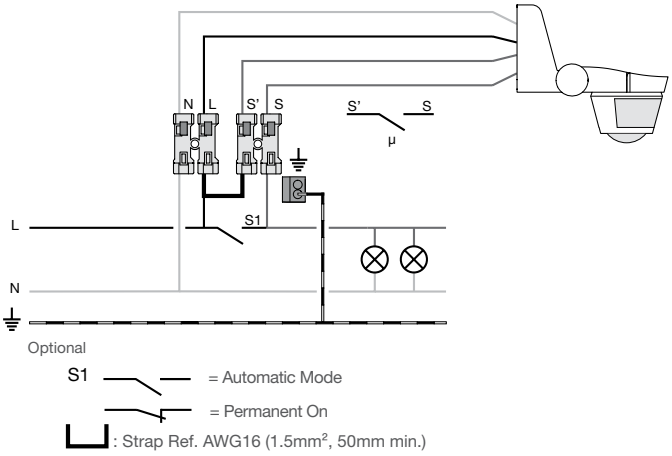


EE840/EE860/EE870/EE871

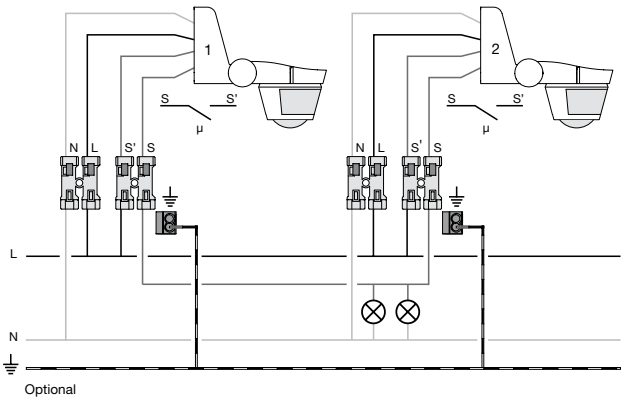
Auto/Off connection



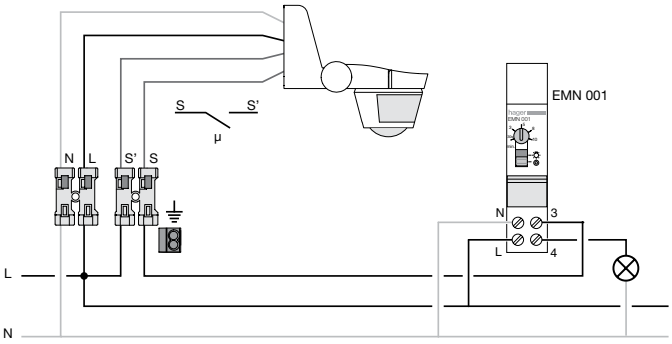
Auto/On connection



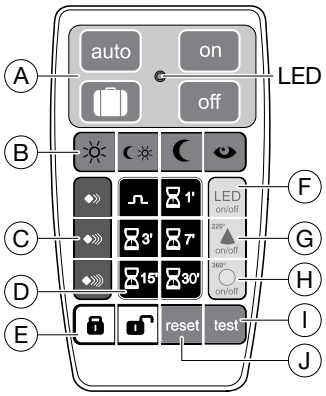
Parallel connection

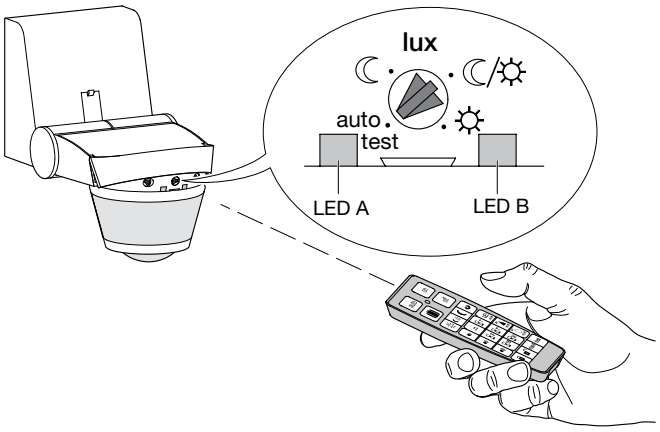


Connection with Timer



Description EE806





Use
The remote control allows you to set or modify settings on the comfort movement detectors, ref. EE860, EE870, EE871. Every button corresponds to a command. The LED flashes every time a button is pressed. The 4 buttons at the top can be accessed even when the remote control is locked. To lock/unlock the remote control and the settings, just press and for 1 sec.

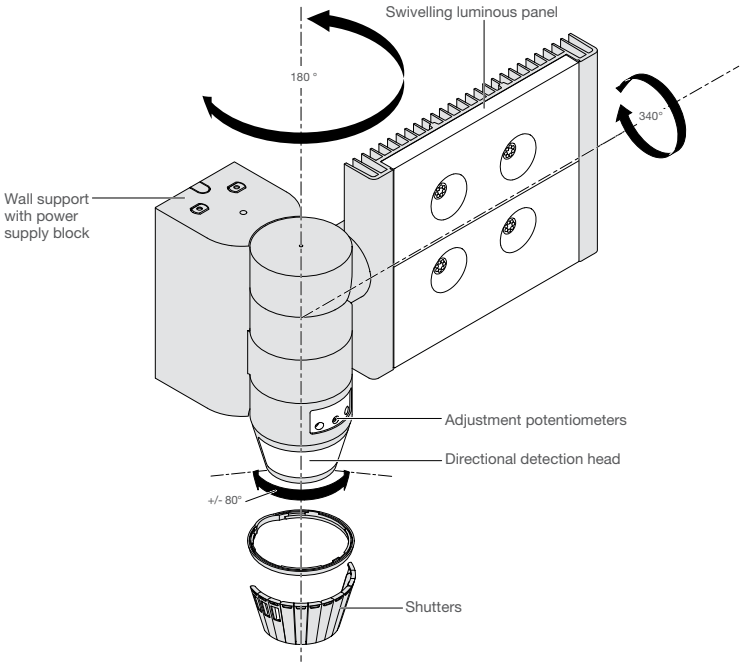
Key
A User commands: mode Auto, holidays (simulation of presence) presetting ON, presetting OFF
B Setting Lux (day, twilight, night, ambient lighting learning)
C Sensitivity settings
D Fixed time settings
E To lock/unlock the settings of the detector
F ON/OFF of the LED A (detection) of the detector
G ON/OFF of the 220° detection of the EE87x detectors
H ON/OFF of the 360° detection of the EE87x detectors
I Test
J Reset, return to manufacturer's settings

Technical specifications
- Power supply : 1x 3V CR2032
- Shelf life of battery : 5 years
- Protection index : IP30

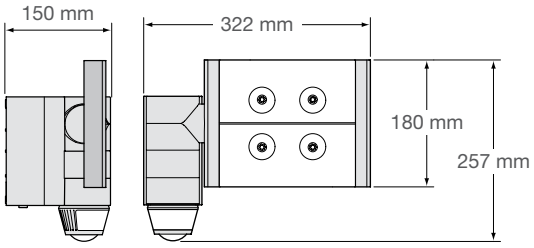
Electrical characteristics	EE600
Type	LED floodlight
Power	Around 60W (300W luminous energy)
Colour of light	5700 Kelvin
Luminous flux	3400 lumen
Power supply	230V~ +10/-15% 50/60Hz 240V~ +/-6% 50/60Hz
Compulsory protection	10A gG/gI fuse or 16A C curve circuit breaker
Insulation class	II
Recommended cable	U1000R02V3G1.5
Connection using screw free terminals	1 to 1.5mm²
Protection class	IP55
Working temperature	-20°C to +45°C
Storage temperature	-20°C to +60°C
Detection angle	220/360°
Forward detection distance	12m
Twilight threshold setting	5 to 1000lux
Operating duration setting	5sec to 15min
Accessories	Adjustable shutters supplied

EE600

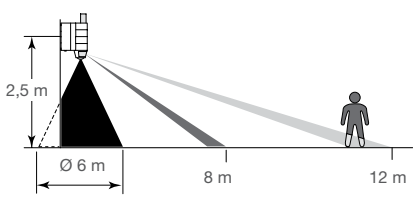
Description



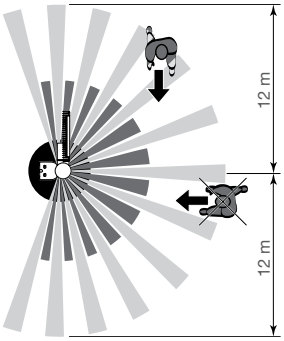
Dimensions



Detection area



Optimal installation height is 2.5m.
The detection zone shall remain free of obstacle.



Product description and working principle

Detectors EE804A and EE805A are 360° movement detectors with a built-in light-sensitive switch function. They are particularly intended for use in interior traffic areas such as corridors, entrance halls etc. These devices detect infrared radiation associated with heat emitted by moving bodies. Detection is by a pyro-electric sensor located under lens. These devices are response brightness adjustable and delay time adjustable.

Lighting output control

On power-on, the detector switches its circuit on for 30 seconds. The lighting output is switched on when the brightness level set by potentiometer **1** is considered too low and a movement is detected. After detection, the light remains on for the time set by potentiometer **2**. The delay is reset after each movement detection occurrence.

Potentiometers

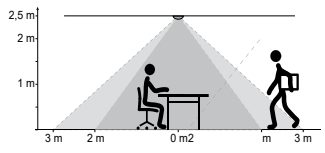
1 Brightness level setting
2 Operating time setting

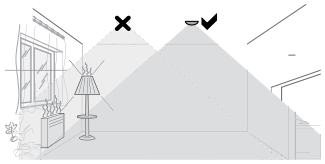
Settings

It is possible to set potentiometers **1** and **2**, the operating time and the brightness level.In order to facilitate set-up by the user, detectors are pre-set with a default setting suitable for standard installation: traffic area, corridor etc.

- Brightness level: from 5 to 1000 Lux. Potentiometer **1** is pre-set to a default value of approximately 200 Lux.
- Operating Time: from 5 seconds to 15 minutes. Potentiometer **2** is pre-set to a default value of approximately 3 min .

NOTE: These values can be changed using a screwdriver.





Installation

For optimum detection, it is desirable to follow these recommendations:

- Recommended height of installation: from 2.5 to 3.5m.
- Prevent disturbances from the environment (source of heat, ventilation, houseplant...).
- Provide a minimum distance of about 1m between the detector & its controlled lighting.

Electrical characteristics

Supply voltage	230V~ 50Hz
Consumption with no load	1.2W

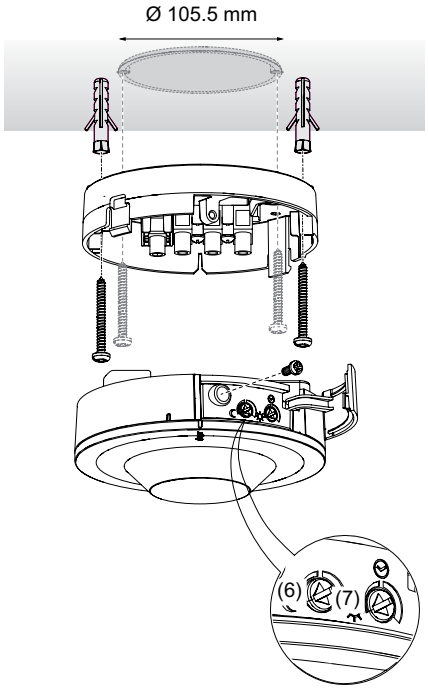
Lighting	**10A AC1 230V~**
Incandescent and halogen lamps	23 00W
LED lamps/ Compact fluorescent lamps	20 x 20 W (400 W)
Ferromagnetic transformers	1500 VA
Electronic transformers	1500 W
Fluorescent lamps **- parallel compensated** **- with electronic ballast**	 1000W 1000W

NOTE: When using with unspecified loads, it is imperative to relay.

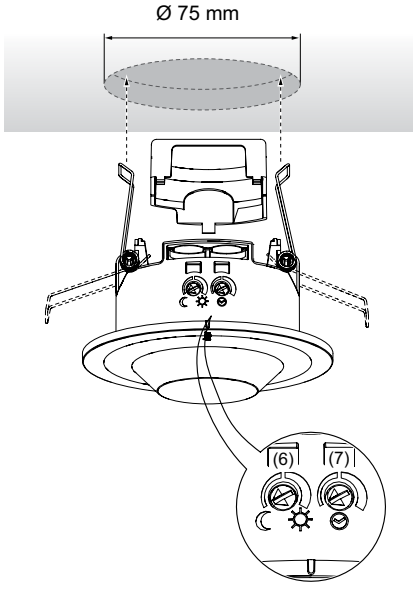
Functional characteristics	
Lighting output operating time	5sec to 15min
Brightness level	5 to 1000lux
Reccomended installation height	2.5 to 3.5m
Detection range Ø motion	3m approximately (installed product height 2.5m)
Detection range Ø presence	4m approximately (installed product height 2.5)
Upstream circuit breaker	10A
Fixing accessories	Screws (Ø4mm), pegs, protecting cover / connector block
Products in parallel	Yes

Environment	
Working temperature	-5°C to +45°C
Storage temperature	-25°C to +70°C
Class of isolation	II
IK	IK04
Protection index	IP21
Relative humidity (no condensation)	30°C, 95%
Connection cross section **- EE804A, screw terminals** **- EE805A, plug-in terminals**	 1 to 2.5mm² 1 to 2.5mm²

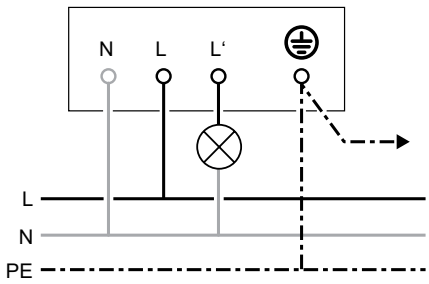
EE804A Description



EE805A Description



Wiring Diagram



Electrical characteristics

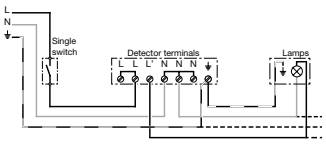
Power supply		230V~ 50/60Hz
Detection Area	**EE880**	20m x 4m
	EE883	360°
Standby consumption		1W
Operating duration setting		5sec to 15min
Luminosity threshold setting		2 to 2000lux
Recommended installation height	**EE880**	3m
	EE883	2.5m
Fixing accessories		2 screws Ø4.5mm and length 50mm
Products in parallel		Yes
Working temperature		-20°C to +50°C
Storage temperature		-35°C to +70°C
Insulation class		II
Protection class		IP54
Standards		EN 60669-2-1
Upstream protection		10A (T ≤ +35°C) 6A (+35°C < T < +50°C)
Maximum istallation altitude		2000m
Pollution degree		2
Connection		Max 1.5mm²

Lighting

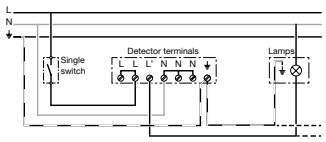
	T ≤ +35°C 10A AC1 230V~	**+35°C < T ≤ +50°C 6A AC1 230V~**
Incandescent lighting	2300W	1300W
Halogen ELV via ferromagnetic or electronic transformer	2300W	1300W
Uncompensated fluoro lamp	1200W	1200W
Fluoro lamps in parallel	1000W / 110µF	1000W / 110µF
Compact fluorescents	20 x 20W	20 x 20W
LED	20 x 20W	20 x 20W
Halogen lamps VLV with Ferromagnetic or electronic ballasts	1500VA	1300VA
Fluoro tubes with ferromagnetic or electronic ballasts	580W	580W
NOTE: When using with unspecified loads, it is imperative to relay.		

Connections

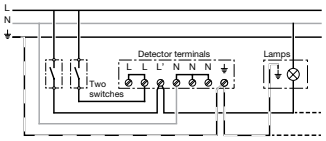
Lamp connection without neutral conductor
Auto operation by detection or Forced switch off.



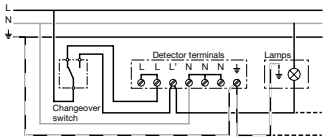
Lamp connection with neutral conductor
Auto operation by detection or Forced switch off.



Connection using two switches for manual or automatic control (possibility of simultaneous switch off of the lamp AND the detector)
Auto operation by detection or Forced switch-off or Forced switch-on of the lamp.



Connection using a change over switch to operate either the lamp or the detector
Auto operation by detection or Forced switch-on of the lamp.

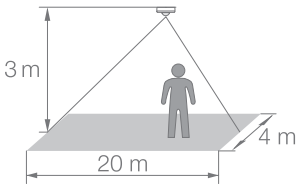


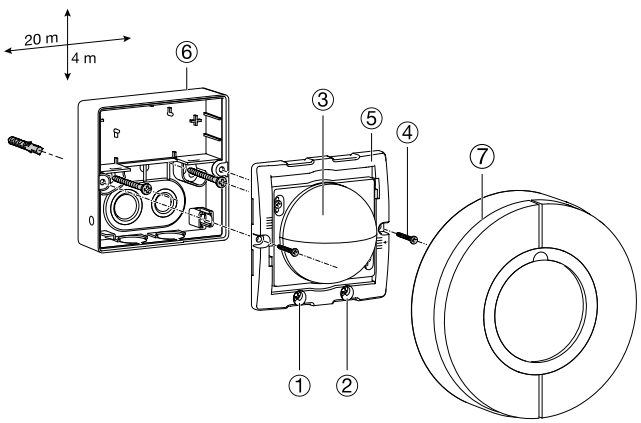
EE880

Description

The EE880 motion detector is sensitive to infrared radiation emitted as heat from a moving body. The detector switches on the load connected to it when a heat-emitting body moves within in its detection area. The load remains lit for the period of time to which the detector has been set and until it no longer detects movement in its surveillance area. This detector has been specially designed to meet the needs of corridors.

Detection area



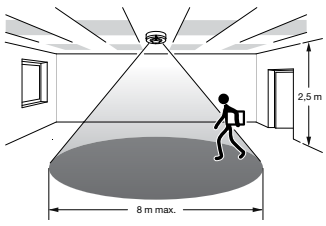


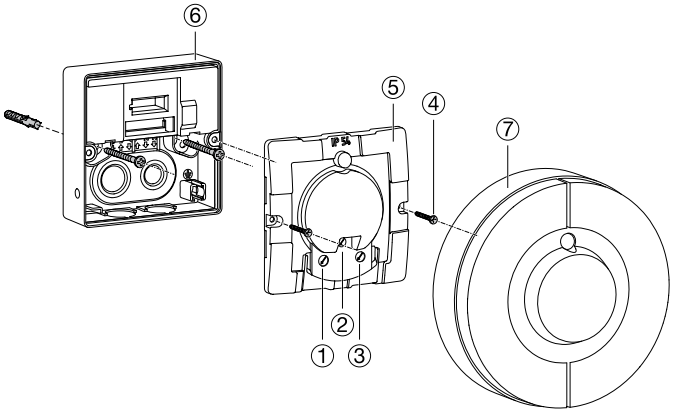
EE883

Description

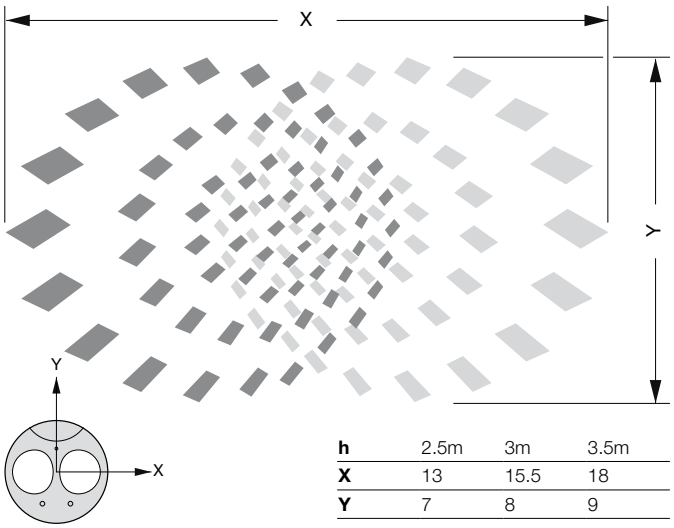
The EE883 is a ceiling-mounted motion detector, active over 360°. The detector employs Hyper Frequency technology and reacts to movements regardless of the temperature. It can detect movements through doors, windows and even non-metallic low-thickness partitions.

Detection area

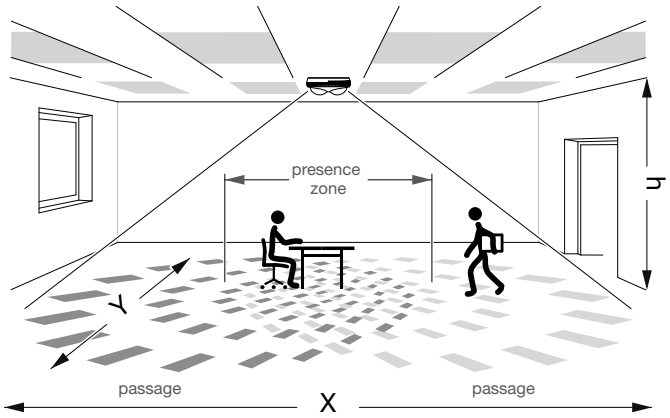




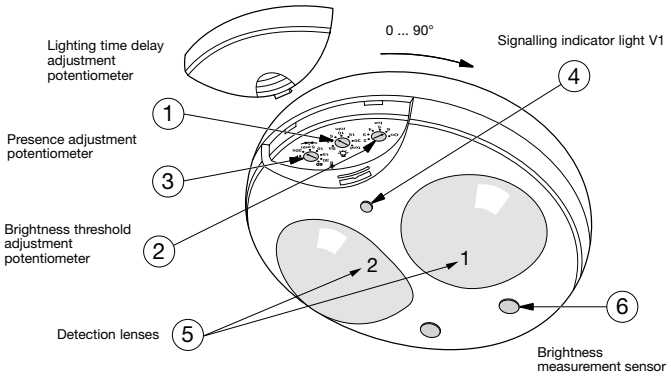
EE810/EE811/EE812
Detection zones



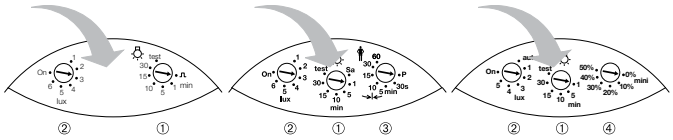
h	2.5m	3m	3.5m
X	13	15.5	18
Y	7	8	9



Description



Potentiometer adjustments



① **off delay**
② **brightness adjustment**
③ **basic light level**
④ **on delay (output 2)**

Mode 1: Potentiometer greater than 10' = ON delay **15 minutes**
(Application: set-point adjustment, heating, etc.).
Mode 2: Potentiometer smaller or equal to 10' = ON delay **15 seconds**
(Application: setting ventilation, lighting indication).

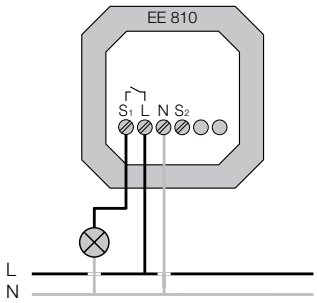
Technical data

Ref. No.	EE810		EE811		EE812	
Type	1 channel		2 channel		1/10V	
Electrical specifications						
Supply voltage	230V ~ 50Hz		230V ~ 50Hz		230V ~ 50Hz	
Power consumption	1.2W		1.2W		1.2W	
Master/Slave & override input:	-		230V ~ 50Hz		230V ~ 50Hz	
1/10V output	-		-		EE810 / 50mA max.	
Maximum cable length	-		50m		50m	
Electrical connection	1mm² to 4mm²		1mm² to 4mm²		1mm² to 4mm²	
Entering instructions						
Lighting output time delay	1 to 30min		1 to 30min		1 to 30min	
Presence output time delay	-		30s to 60min		-	
Brightness threshold	5 - 1200 lux		5 - 1200 lux		5 - 1200 lux	
Minimum adjustment range	-		-		0% to 50%	
Presence level adjustment	-		-		mini to 100%	
Recomm. height from ground	2.5m to 3.5m		2.5m to 3.5m		2.5m to 3.5m	
Lighting loads	S1 AC1 16A 230V~	S2 AC1 10A 230V~	S1 AC1 16A 230V~	S2 AC1 2A 230V~	S1 AC1 10A 230V~	1/10V
Incandescent halogen 230V	2300W	-	2300W	-	-	-
Halogen ELV (12 or 24V) via ferromagnetic or electronic transformer	1500W	-	1500W	-	-	-
Parallel compensated fluorescent tubes	290W/ C = 32µf	-	290W/ C = 32µf	-	-	-
Electronic ballast	580W	-	1000W	-	580W	50mA max.

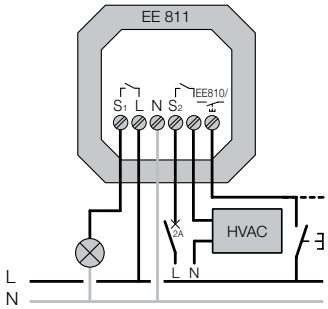
Test mode:
This mode makes it possible to validate the detection area. To select this mode, set the potentiometer ① to the position "test". Indicator V1 ④ will indicate any detection by lighting for one second if the level of illumination is lower than the preset threshold. The lighting outputs S1 and S2 are not controlled in this mode, the time settings will remain ignored.

Position of potentiometer	Lux value	Application
Auto	400	Default
1	5	—
2	100	Corridor
3	200	Corridor, WC
4	300	VDU work
5	500	Offices
6	800	Lab, classroom
On	Measurement of brightness inhibited	

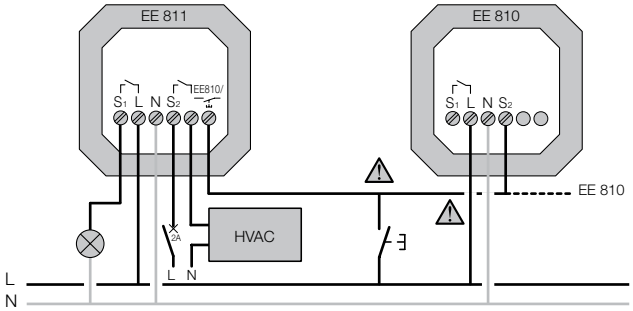
EE810



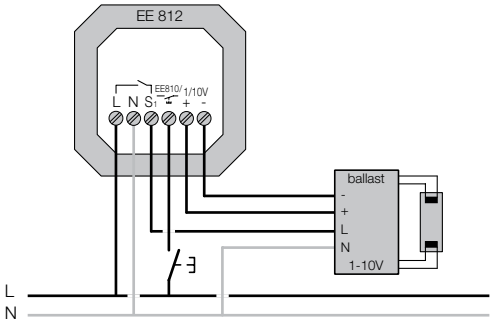
EE811



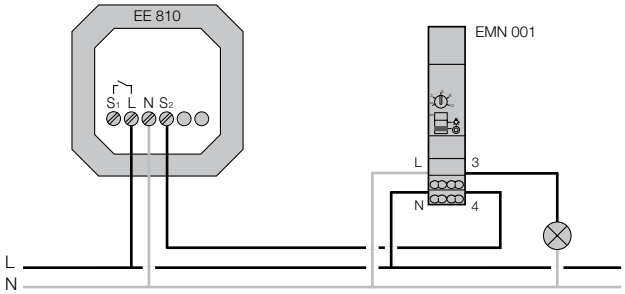
EE811 Master + EE810 Slave



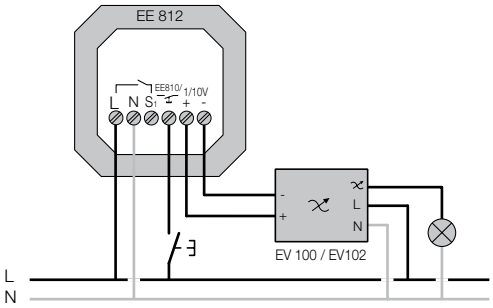
EE812 + Ballast



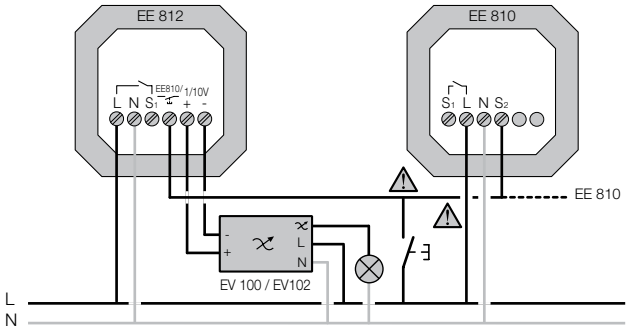
EE810 + EMN001



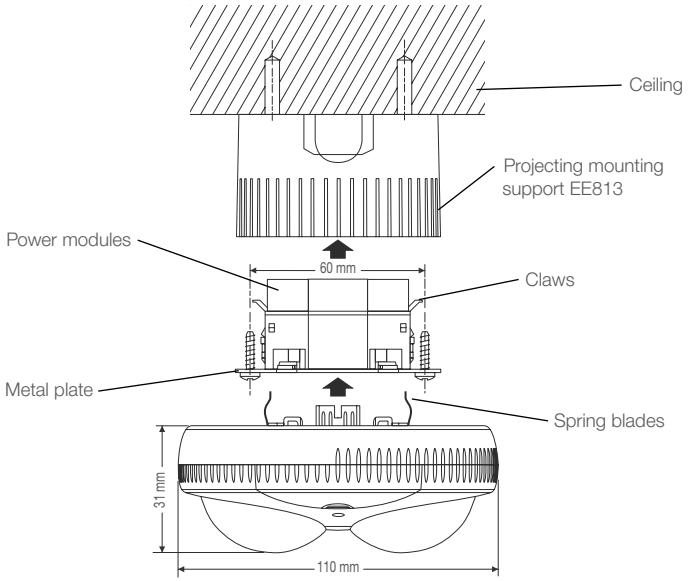
EE812 + EV100/EV102



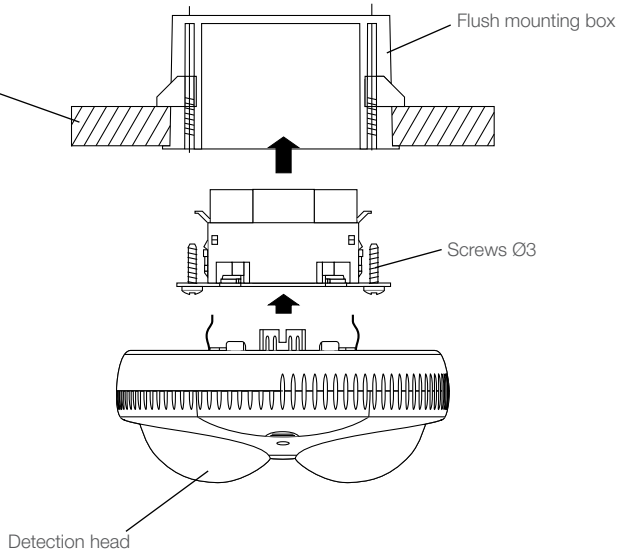
EE812 Master + EE810 Slave



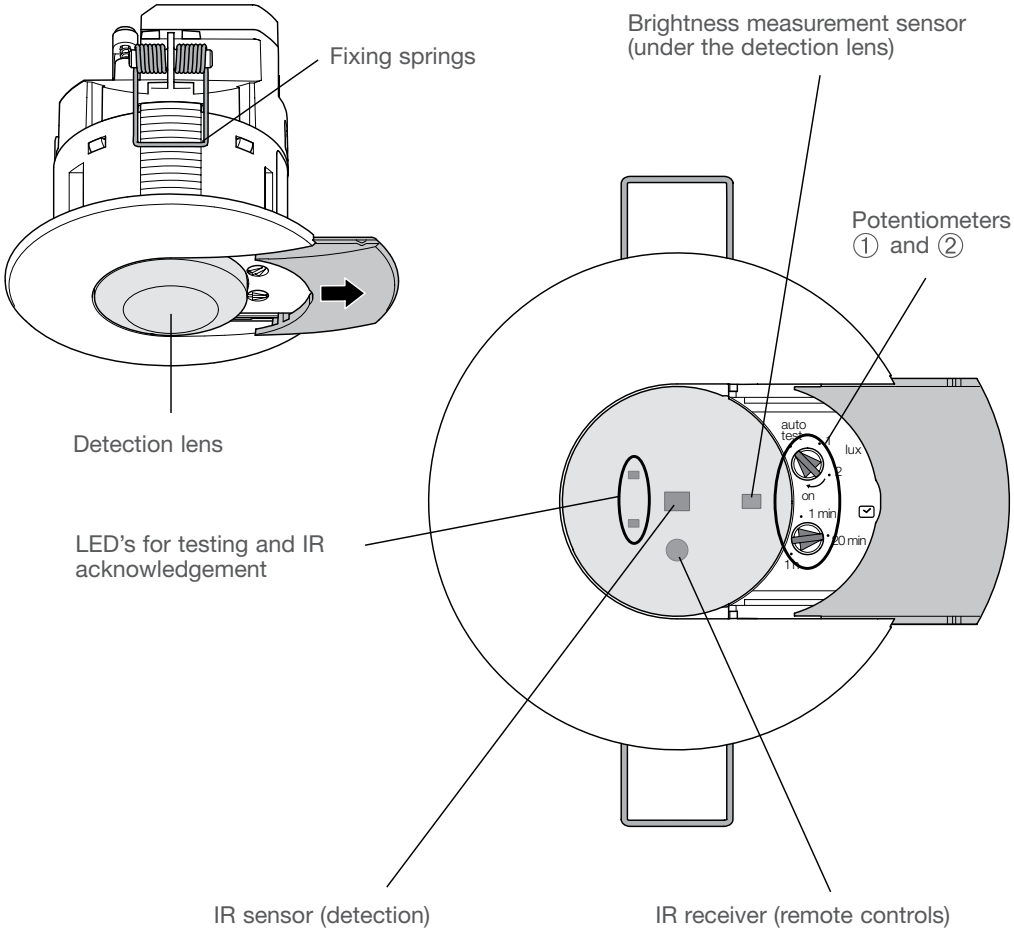
Projecting mounting



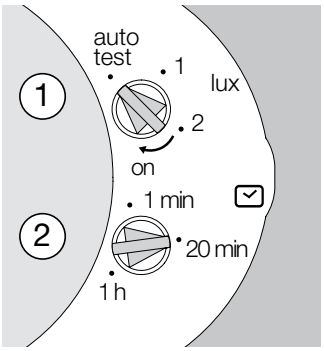
Semi-recessed mounting



Description EE816



Settings



Instances of lighting levels

Position of potentiometer	Approximate Lux value
Auto test	preset
1	200
1 to 2	200 to 400
2	400
2 to On	400 to 1000
On	1000

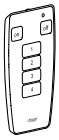
* The light measurement accuracy (Lux) is affected by the environment (furniture, ground...). If necessary, the level has to be adjusted by potentiometer or remote control.

Remote control for settings

The installer remote control EE807 can be used to set the following features if the potentiometer is set on"auto test" :

- Lux levels (☼ 👁 🚶 🚶‍♂️ - +)
- Time (⧖)
- Absence/presence detection
- Power up behaviour
- Active/passive cell

Override remote control



The user remote control EE808 allows operators to:

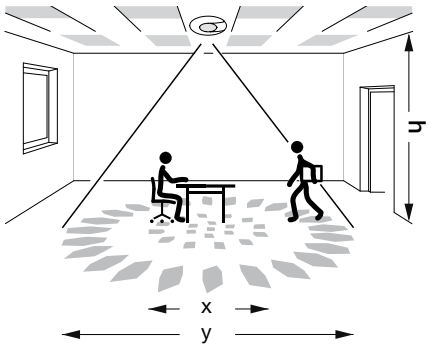
EE816:

- Switch on/off the light (short press),(**ON OFF**)

EE816 only:

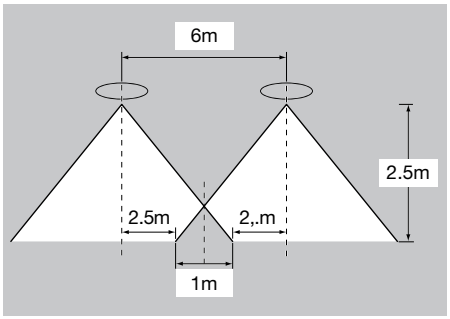
- Dim up/down the light (long press 0.5s.)
- To control scenes **1, 2, 3, 4** A short push recalls a luminosity level and a long push (0.5s.) memorizes a new level.

Detection areas



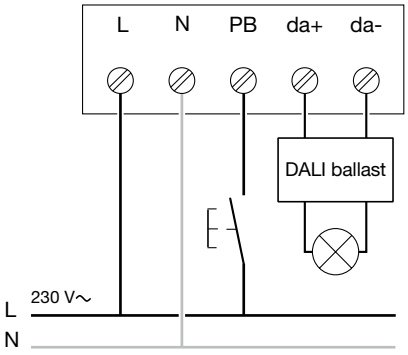
h	2.5m	3m	3.5m
x	5m	5m	5m
y	7m	8m	9m

Overlap



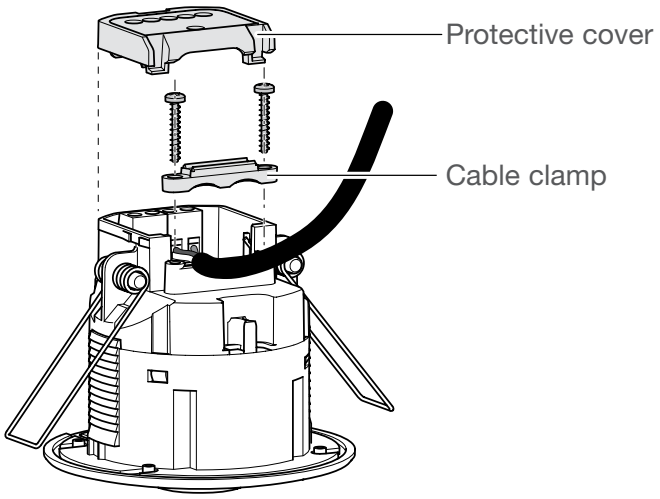
⚠ The "y" values are given for lateral range.
The range may be reduced if walking towards the sensor.

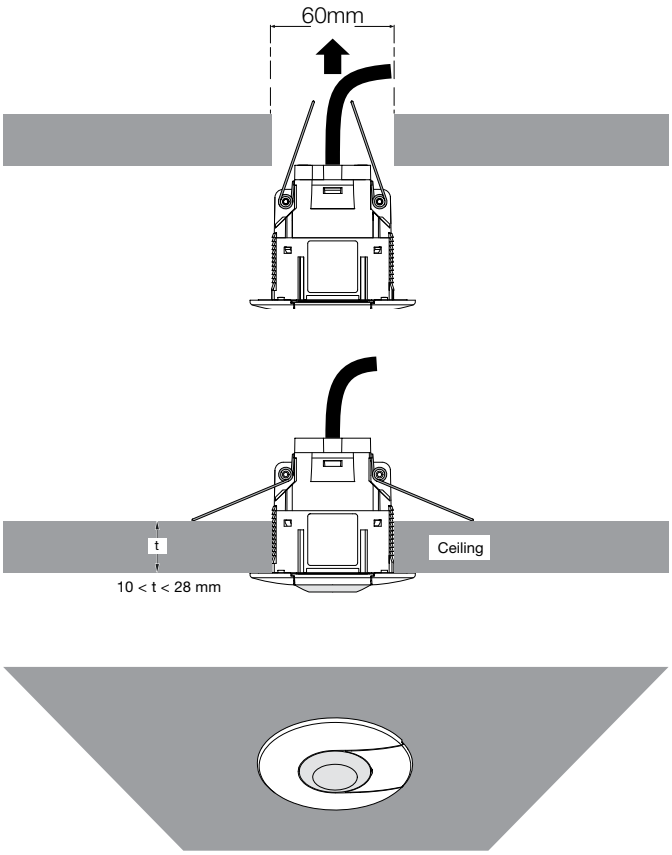
Connection EE816



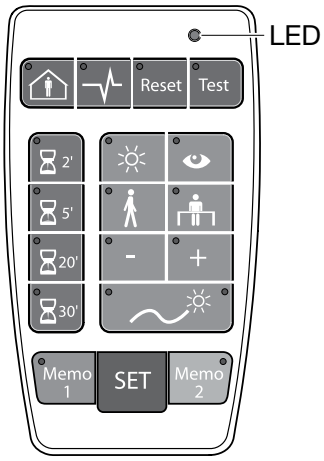
Technical data

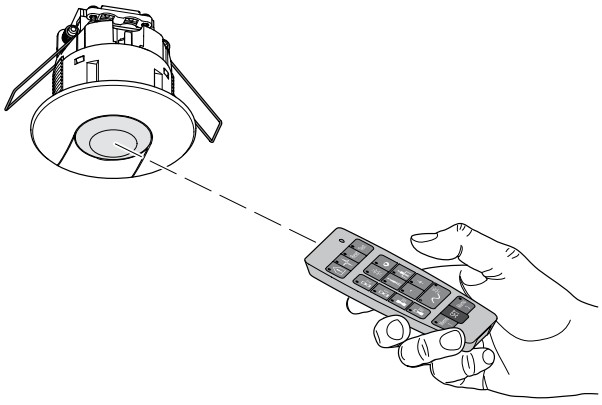
Ref. No.	EE816
Detection range (Product installed at 2.5m height)	Movement area- Diameter 7m Presence area- Diameter 5m
Supply voltage	230V AC +10% - 15%
Frequency	50/60Hz
Local Lux threshold setting	3 modes available
Local time setting	1min. to 1hr
Commissioning via installer remote control	EE807 for power up, absence/presence mode, timer, active/passive cell.
Control with IR user remote control	EE808 for ON/OFF override & dimming up/down
Output	14V / 50mA (for a DALI bus with 24 ballasts)
2300W Incandescent or 230V halogen	No isolation between the mains & the DALI bus!!
1500W VLV halogen lamps with ferromagnetic or electronic transformer	
1000W fluorescent via electronic ballast	
23 x 23W fluoro-compact with electronic ballast	
Push button input	To dim up/down & absence/presence detection (semi-automatic/automatic mode) Same phase as power supply.
Terminals	For 1.5mm² rigid/flexible wires
Power dissipation	60mW
Isolation class	II
Protection	IP41/IK03
Operating temperature	-10°C to +45°C
Storage temperature	-20°C to +60°C
Standards	IEC 60669-1, IEC 60669-2-1, CE C tick

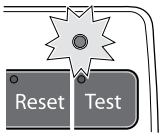




Description EE807







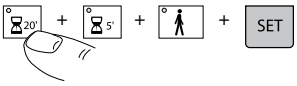
The acknowledgment LED blinks during the sending of the IR message.

Technical specifications
Power supply: 1x 3V CR2032
Shelf life of battery: 2.5 yrs
Protection index: IP30

Use
The remote control allows the user to set or modify settings on the presence detector EE816 when the potentiometer is on "auto test". It allows single and multiple settings. The SET key is used to send the IR messages to the occupancy sensors. Multiple settings can be stored in Memo 1 and Memo 2 and recalled to set several devices.

Single setting
Example: do a reset.

Multiple settings
Define the parameters to be changed and press SET to send. Example: for 25min. & corridor use, press 20', 5' and corridor.



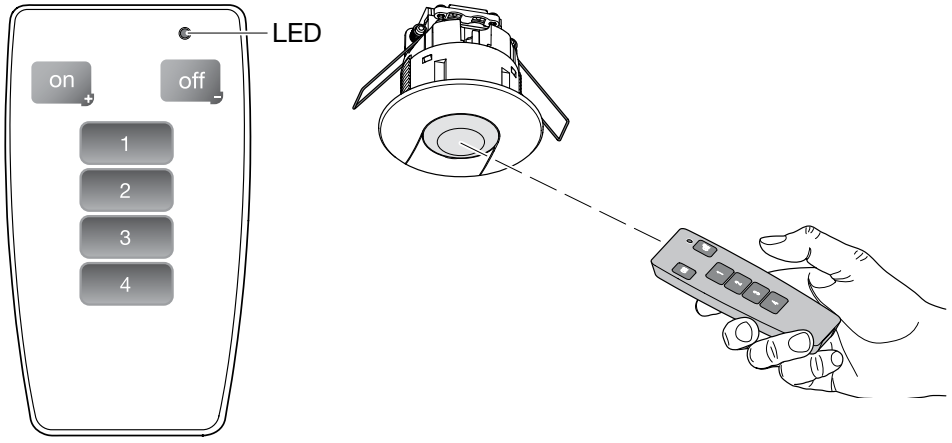
In the case of 2 opposite states the green LED denotes ON and the red LED denotes OFF (except presence/ absence).When no function is selected all LED's are OFF.

Settings available

Key	Meaning	Indication	Function
	Presence	Green LED on	Presence on (auto mode)
	Absence	Red LED on	Absence on (semi-auto mode)
	Power up	Green LED on	The light is automatically switched ON for 30s after power up.
		Red LED on	During warm up phase, the light output is off
Reset	Reset	LED on	To return to factory settings (Lux = 400, time = 20min., presence on, power up off & cell active)
Test	Test	LED on	To validate the detection area
	Time	LED on	To set the time. It is possible to add times e.g. press 2' & 5', time value is 7'
	Day level 1000 Lux	LED on	To set the value on 1000 Lux
	Learn	LED on	To learn the current Lux level
	Corridor 200 Lux	LED on	To set the value on 200 Lux
	Office 400 Lux	LED on	To set the value on 400 Lux
-	Lux +	LED on	To increase the Lux level (+100)
+	Lux -	LED on	To decrease the Lux level (-100)
	Active cell	Green LED on	The light is continuously measured
	Passive cell	Red LED on	The product doesn't switch the light off even if the ambient luminosity is sufficient

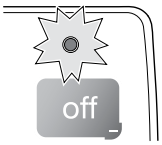
Memo & set keys	Meaning	Indication	Function
Memo 1	Press	LED is on until a setting is changed	To load/unload Memo 1
	Long press	LED is on for 5s., then blinks until release press. After release, the LED goes off in case of setting change	To save the current setting as Memo 1
Memo 2	Press	LED is on until a setting is changed	To load/unload Memo 1
	Long press	LED is on for 5s., then blinks until release press. After release, the LED goes off in case of setting change	To save the current setting as Memo 1
SET	Short press	LED flashes	To send an IR message of the current setting

Description EE808



Use
The remote control allows the user to set or modify settings on the presence detector EE816. Each button corresponds to a command.

Technical specifications
Power supply: 1x 3V CR2032
Shelf life of battery: 3.5 yrs
Protection index: IP30



The acknowledgment LED blinks during the sending of the IR message.

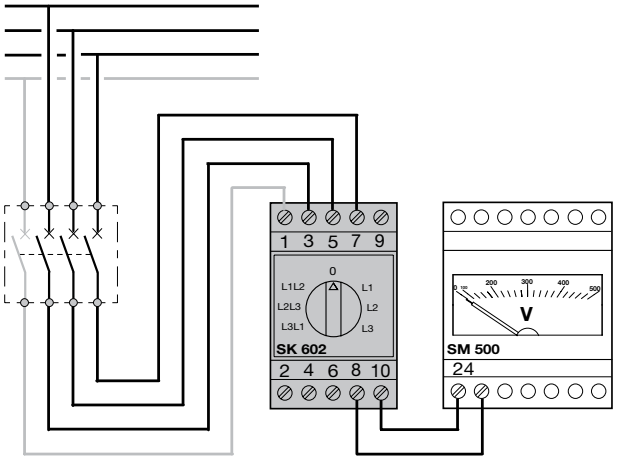
Settings available

Key	Action	Function	Product type
on	Short press (<0.5s)	On	EE816 DALI/DSI presence detectors
	Long press (>0.5s)	Dim up	
off	Short press	Off	
	Long press (>0.5s)	Dim down	
1	Short press	To start scene 1	Only for EE816 DALI/DSI presence detectors
	Long press (>0.5s)	To learn scene 1	
2	Short press	To start scene 2	
	Long press (>0.5s)	To learn scene 2	
3	Short press	To start scene 3	
	Long press (>0.5s)	To learn scene 3	
4	Short press	To start scene 4	
	Long press (>0.5s)	To learn scene 4	

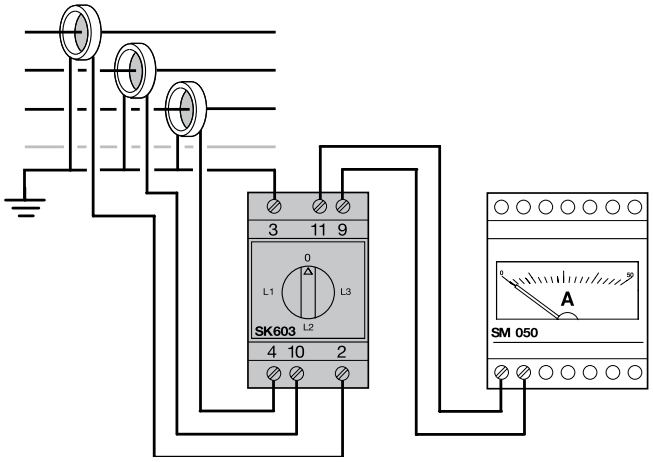
Electrical characteristics

	SM500	SM050	SM015	SM030	SM050	SM100	SM150	SM250	SM400	SM600
Product	Voltmeter	Ammeter	Ammeter	Ammeter	Ammeter with CT	Ammeter with CT	Ammeter with CT	Ammeter with CT	Ammeter with CT	Ammeter with CT
Range	500V	0-5A	0-15A	0-30A	0-50A	0-100A	0-150A	0-250A	0-400A	0-600A
Consumption	≤3 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA	≤1.1 VA
Accuracy %	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Ref temp °C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C	23 ±2°C
Accuracy variation °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C
Maximum continuous	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un	1.2Un
Momentary maximum	2Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec	10Un / 5sec
Frequency Hz	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65
Isolating voltage	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min
Operating temperature	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C	-25°C to +50°C
Storage temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
IP rating	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Connection flexible	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²
Connection rigid	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²

Electrical connection (voltmeter)



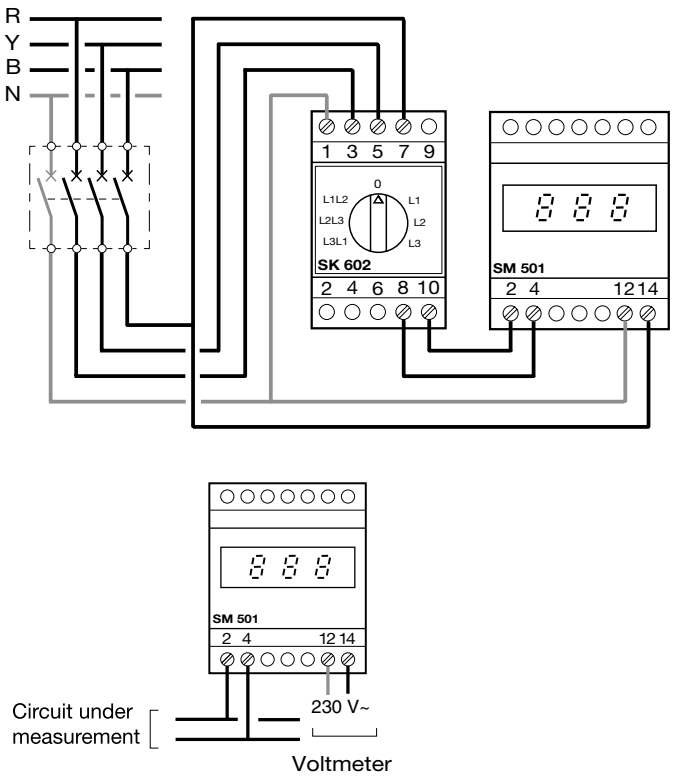
Electrical connection (ammeter)



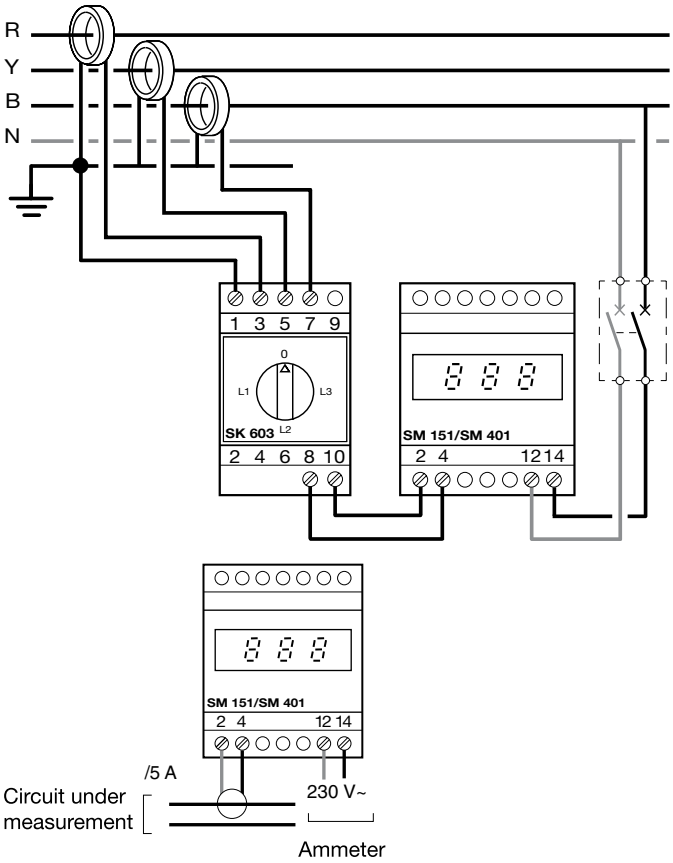
Electrical characteristics

	SM501	SM020	SM151	SM401	SM601
Product	Voltmeter	Ammeter	Ammeter with CT	Ammeter with CT	Ammeter with CT
Range	500V	0-20A	0-150A	0-400A	0-600A
Consumption	≤4.5 VA	≤1 VA	≤1 VA	≤1 VA	≤1 VA
Working voltage	230V~ 50/60Hz	230V~ 50/60Hz	230V~ 50/60Hz	230V~ 50/60Hz	230V~ 50/60Hz
Update of the display	3sec	3sec	3sec	3sec	3sec
Input impedance	>1MV	-	-	-	-
Isolating resistance	10MV	10MV	10MV	10MV	10MV
Maximum voltage	660V	660V	660V	660V	660V
Accuracy %	±1	±1	±1	±1	±1
Ref temp °C	23 ±1°C	23 ±1°C	23 ±1°C	23 ±1°C	23 ±1°C
Accuracy variation °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C	±0.03% / °C
Maximum continuous	1.2Un	2In	2In	2In	2In
Momentary maximum	2Un / 5sec	10In / 5sec	10In / 5sec	10In / 5sec	10In / 5sec
Frequency Hz	45 - 65	45 - 65	45 - 65	45 - 65	45 - 65
Isolating voltage	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min	2kV / 50Hz - 1min
Operating temperature	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
IP rating	IP20	IP20	IP20	IP20	IP20
Connection flexible	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²
Connection rigid	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²

Electrical connection (voltmeter)



Electrical connection (ammeter)



Electrical characteristics	ECx140D 1Ph - 40A	ECx180D 1Ph - 80A	ECx180T 1Ph - 80A (3 track)	ECx380D 3Ph - 80A	ECx310D 3Ph - 125A	ECx300C 3Ph - A via CT
Supply voltage	230V AC	230V AC	230V AC	400V AC	400V AC	400V AC
Frequency	45/65hz	92/276Hz	184/276Hz	45/65Hz	45/65Hz	45/65Hz
Starting current	20mA	15mA	15mA	15mA	20mA	1mA
Base current	5A	5A	5A	5A	5A	1(6) A
Max current	40A	80A	80A	80A	125A	6A
Consumption on voltage circuit	<2<1	<2/<1	<2/<1	<2/<0.6	<2/<0.6	<2/<0.6
Consumption on current circuit	<1	<1	<1	<0.7	<0.7	<0.7
Accuracy	Class 1 (1%) in accordance with IEC 62053 and IEC 61557	Class 1 (1%) in accordance with IEC 62053 and IEC 61557	Class 1 (1%) in accordance with IEC 62053 and IEC 61557	Class 1 (1%) in accordance with IEC 62053 and IEC 61557	Class 1 (1%) in accordance with IEC 62053 and IEC 61557	Class 1 (1%) in accordance with IEC 62053 and IEC 61557
Connection	Direct	Direct	Direct	Direct	Direct	Via CT
Display	Digital 5+2 Digit	Digital 7+2 Digit	Digital 7+2 Digit	Digital 7+2 Digit	Digital 7+2 Digit	Digital 7+2 Digit
Metrological LED	Blinking = 5wh/impulse	Blinking = 1wh/impulse	Blinking = 2wh/impulse	Blinking = 1wh/impulse	Blinking = 1wph/impulse	Blinking = 1wph/impulse
Pulse output (Except ECRxxxx)	At 100wh load 1 pulse = 100ms 3 - 27 VAC 5 - 39 VDC	At 100wh load 1 pulse = 30ms -100ms	At 100wh load 1 pulse = 30ms -100ms	At 100wh load 1 pulse = 30ms -100ms	At 100wh load 1 pulse = 30ms -100ms	At 100wh load 1 pulse = 30ms -100ms
Modbus (Only ECR140D)	RS-485 3 wire 120 Ohm resistor required (Only ECR140R)	RS-485 3 wire 120 Ohm resistor required (Only ECR180D)	RS-485 3 wire 120 Ohm resistor required (Only ECR180T)	Built in 120 Ohm resistor (Only ECR380D)	Built in 120 Ohm resistor (Only ECR310D)	Built in 120 Ohm resistor (Only ECR300C)
Width	1 module	2 modules	4 modules	4 modules	6 modules	4 modules
Connection capacity of digital input	0.5 to 2.5mm^2	0.8 to 2.5mm^2	0.8 to 2.5mm^2	0.8 to 2.5mm^2	0.8 to 2.5mm^2	0.8 to 2.5mm^2
Connection capacity of power supply	0 to 16mm^2	0 to 33mm^2	0 to 33mm^2	0 to 33mm^2	0 to 50mm^2	0 to 4mm^2
Protection degree	IP20 / IK03	IP20 / IK03	IP20 / IK03	IP20 / IK03	IP20 / IK03	IP20 / IK03
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
Storage temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C

Description - SM102E

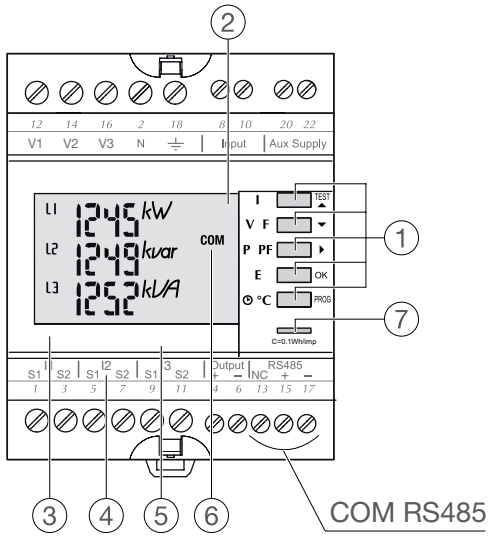
1 Key-pad with 4 dual-function keys (display or programming)
2 Backlighted LCD display
3 Phase
4 Values
5 Unit
6 Energy metering indication

Description - SM103E

1 Key-pad with 6 dual-function keys (display or programming)
2 Backlighted LCD display
3 Phase
4 Values
5 Unit
6 Energy metering indication
7 Hour meter and energy display
8 Alarm relay 1
9 Alarm relay 2

Description - SM101C

1 Key-pad with 4 dual-function keys (display or programming)
2 Backlighted LCD display
3 Phase
4 Values
5 Unit
6 Activity indicator on the communication bus
7 Energy metering indication



Electrical characteristics

Current (TRMS)	SM102E	SM103E	SM101C
I (1st CT)	up to 9,999A	up to 9,995A	5A to 9,999A
I (2nd CT)	5A	1 or 5A	5A
In	0.5% (from 10 to 110% to In)	0.2% (from 10 to 110% to In)	Calculated
Minimum measuring current (2nd CT)	5mA	10mA	5mA
Input consumption	<0.6 VA	<0.3 VA	<0.6VA per phase
Permanent overload (2nd CT)	6A	10A	6A
Accuracy	±0.2%	±0.2%	±0.2%
THD	±1%	±1%	±1%
Update period	1sec	1sec	1sec
Voltage (TRMS)			
U	50V AC to 500V AC (Ph-Ph)	17V AC to 700V AC (Ph-Ph)	50V AC to 520V AC (Ph-Ph)
	28V AC to 289V AC (Ph-N)	11V AC to 404V AC (Ph-N)	28V AC to 300V AC (Ph-N)
Input consumption	-	-	<0.1VA per phase
Permanent overload (2nd CT)	800V AC	760V AC	760V AC
Accuracy	±0.2%	±0.2%	±0.2%
THD	±1%	±1%	±1%
Update period	1sec	1sec	1sec
Power			
Accuracy (P,Q)	±0.5 to ±2% (from -90° to +90°)	±0.5 to ±2% (from -90° to +90°)	±0.5%
Accuracy (S)	±1%	±1%	±1%
Accuracy (PF)	±0.5% (for 0.5<PF<1)	±0.5% (for 0.6<PF<1)	±0.02%
Update period	1sec	1sec	1sec
Energy			
Accuracy (Ea)	Class 0.5s	Class 0.5s	Class 0.5s
Accuracy (Er)	Class 2	Class 1	Class 2
Update period	1sec	1sec	1sec
Frequency			
F	45Hz to 65Hz	45Hz to 65Hz	45Hz to 65Hz
Accuracy	±0.1%	±0.02%	±0.1%
Update period	1sec	1sec	1sec
Supply			
Voltage	110V AC to 400V AC ±10%	110V AC to 400V AC ±10%	200V AC to 277V AC ±15%
Frequency	50/60Hz	50/60Hz	50/60Hz
Consumption	<10VA	<10VA	<5VA
Environment			
Protection degree	IP52 (front panel)	IP52 (front panel)	IP51 (front panel)
	IP30 (case)	IP30 (case)	IP20 (case)
Operating temperature	-10ºC to +55ºC	-10ºC to +55ºC	-10ºC to +55ºC
Storage temperature	-20ºC to +85ºC	-20ºC to +85ºC	-20ºC to +70ºC
Insulation category	III (480Vac Ph-Ph)	III (480Vac Ph-Ph)	III (300Vac Ph-Ph)
Degree of pollution	PD2	PD2	PD2
Communication			
Metrological LED	-	-	0.1Wh/pulse
Pulse output	-	-	30Vdc/27mA Max
Communication	Three phase (3 or 4 wires), two phase (2 wire) and single phase networks	Three phase (3 or 4 wires), two phase (2 wire) and single phase networks	RS485 2/3 wires half duplex Jbus/Modbus 2,400bds to 38,400bds Parity (no,odd,even) 1 or 2 Stop bytes
Shape			
Weight	400g	400g	215g
Size	96mm x 96mm x 60mm or 96mm x 96mm x 80mm with all optional modules	96mm x 96mm x 60mm or 96mm x 96mm x 80mm with all optional modules	4 mod, 73mm x 90mm x 67mm

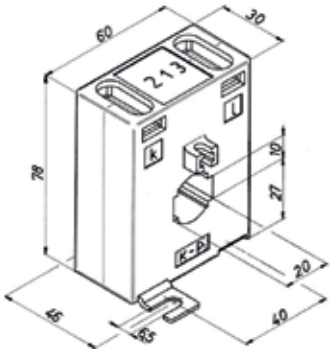
Electrical characteristics	
Primary rated current	50A - 2,000A
Rated secondary current	5A
Rated frequency	50 - 60Hz
Highest voltage for equipment Um	720V
Rated power-frequency withstand voltage (r.m.s.)	3kV
Instrument security factor	FS 5
Rated continuous thermal current	1.2 x In
Current rating	120%
Rated short time thermal current	Ith = 60 x In (max 50kA)
Rated dynamic current	Idyn = 2.5 x Ith (max 120kA)
Permissable ambient temperature	-40°C to +40°C
Class of insulation in accordance with IEC 60085	E
Protection rating	IP20
Tightening torque	1.5 - 2Nm

	Prim. (A)	Sec. (A)	Power (VA)	Accuracy class	Dims (mm)	Max. busbar and cable size (mm)
SRA01005	100	5	2.5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRA01505	150	5	2.5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRA02005	200	5	2.5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRA02505	250	5	2.5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRC04005	400	5	5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRC06005	600	5	5	1	70 x 49.5 x 30	30 x 10 25 x 15 20 x 20
SRA00505	50	5	1.5	1	78 x 60 x 30	20 x 10 15 x 15 Ø 20
SRI03005	300	5	5	1	78 x 60 x 30	40 x 12 Ø 28
SRD08005	800	5	5	1	108 x 85 x 30	60 x 10 50 x 30 Ø 45
SRE12505	1250	5	1.5	1	122 x 100 x 40	80 x 10 60 x 30 Ø 60
SRE16005	1600	5	1.5	1	122 x 100 x 48	80 x 10 60 x 30 Ø 60

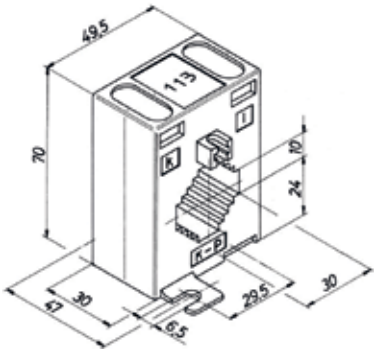
Electrical characteristics

- Primary current: 50 to 600A (depending on model). Secondary current: 5A
- Frequency: 50/60Hz

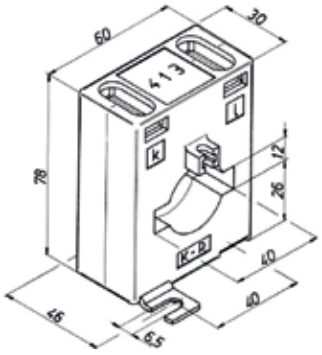
SRA00505: 50/5A



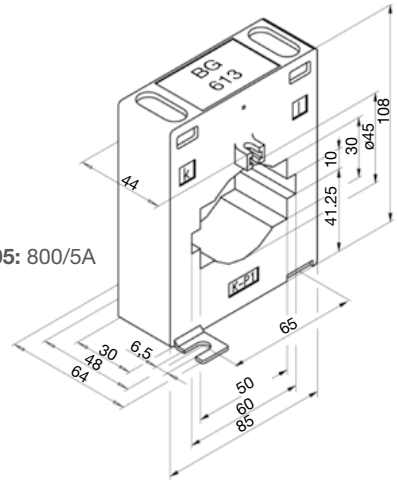
SRA01005: 100/5A **SRA02505:** 250/5A
SRA01505: 150/5A **SRC04005:** 150/5A
SRA02005: 200/5A **SRC06005:** 250/5A



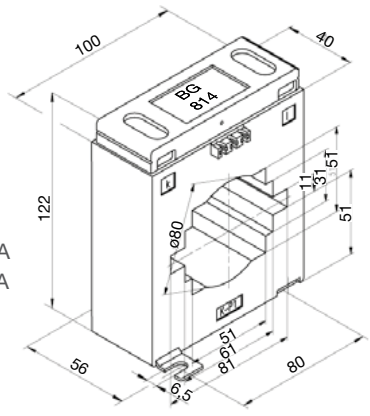
SRI03005: 300/5A



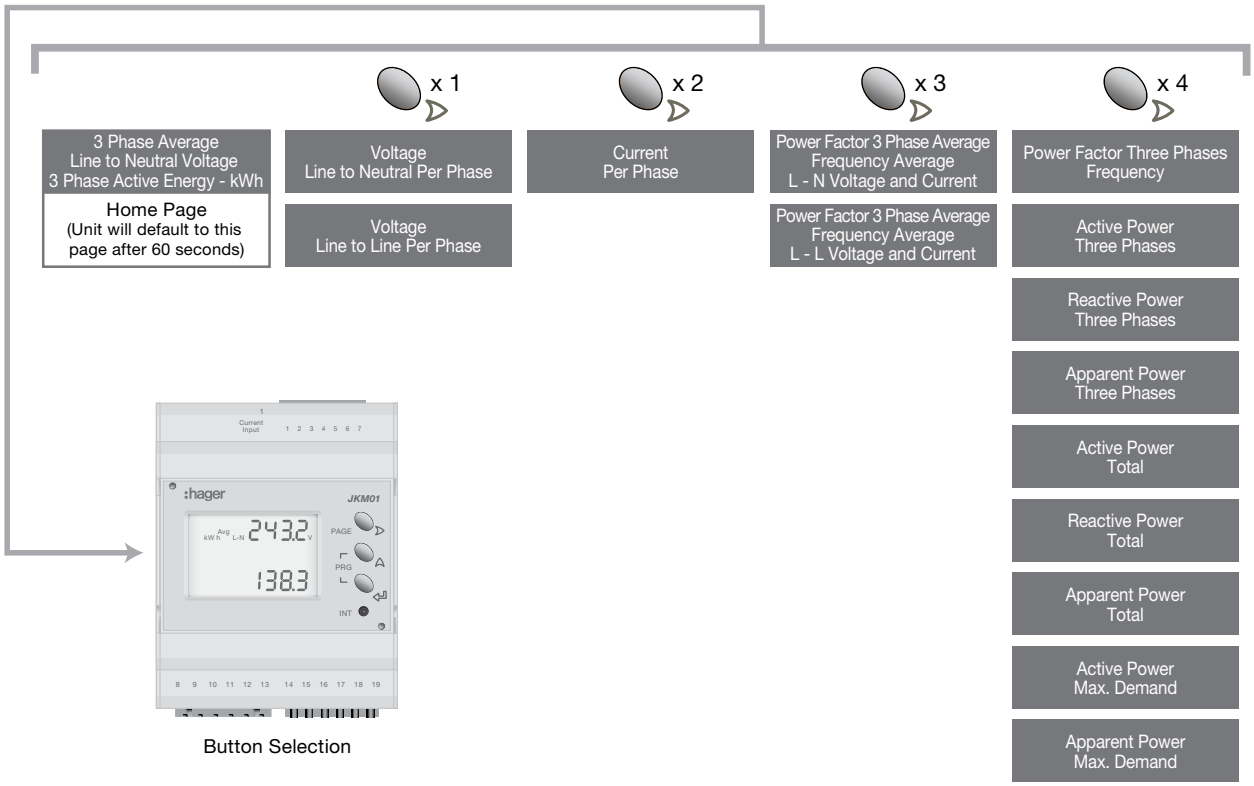
SRD08005: 800/5A



SRE12505: 1250/5A
SRE16005: 1600/5A

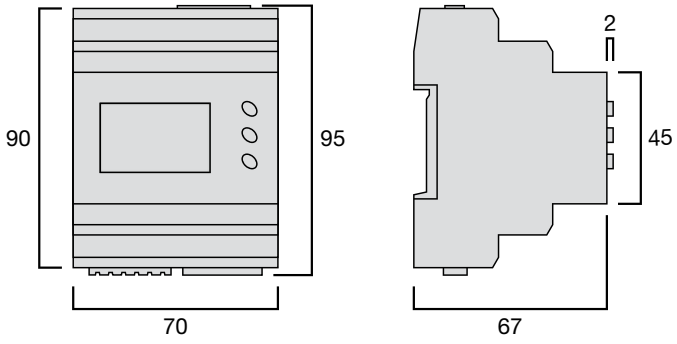


JKM01
Function Diagram

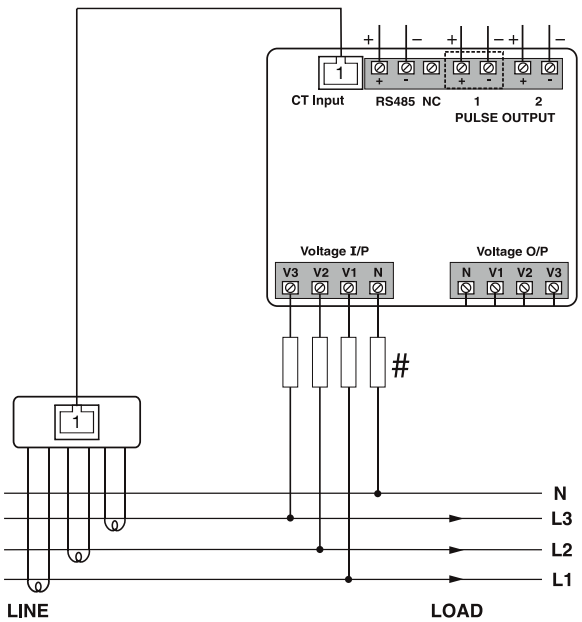


Button Selection

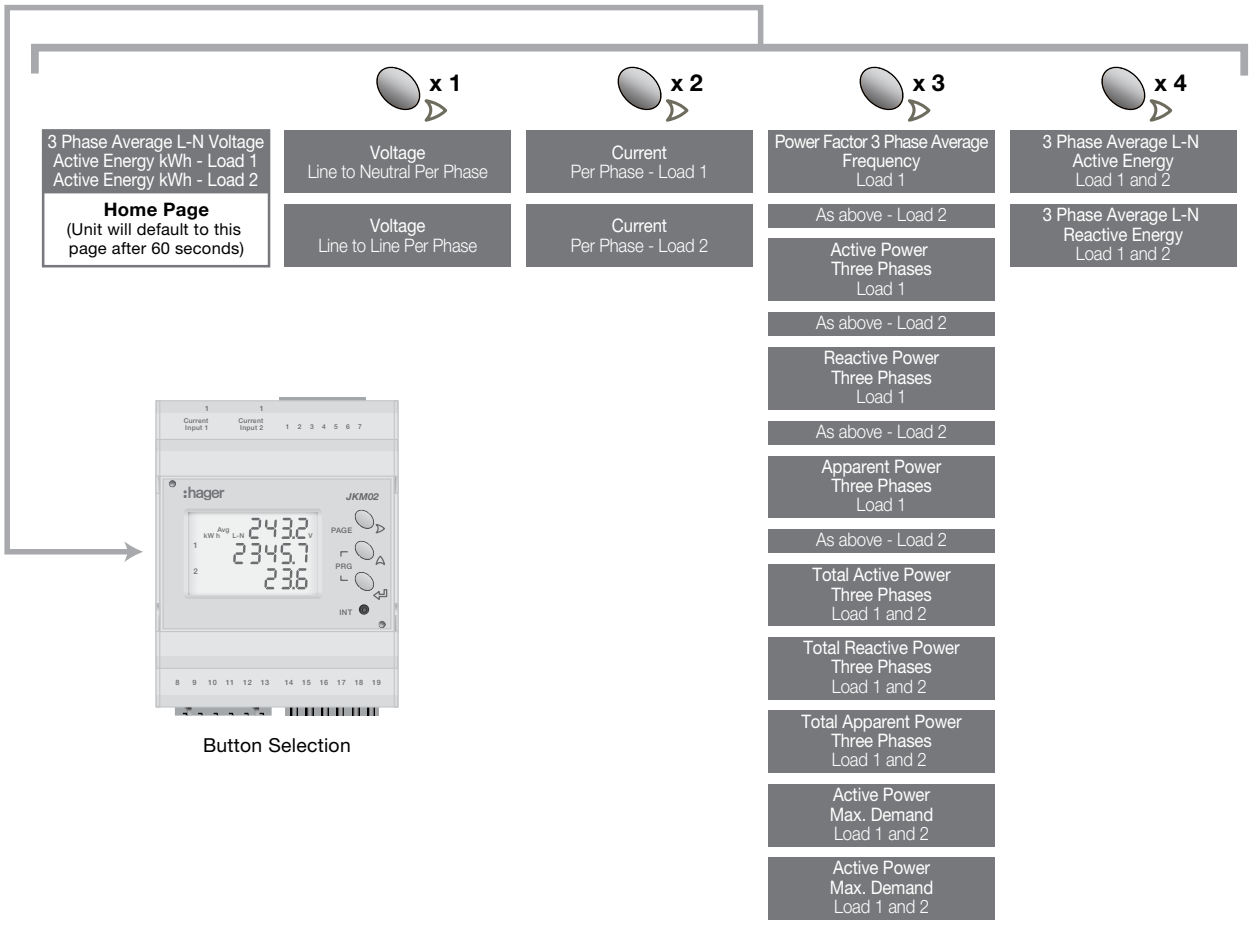
Dimension Diagrams (mm)



Please allow space above and below the meter for cable connections.

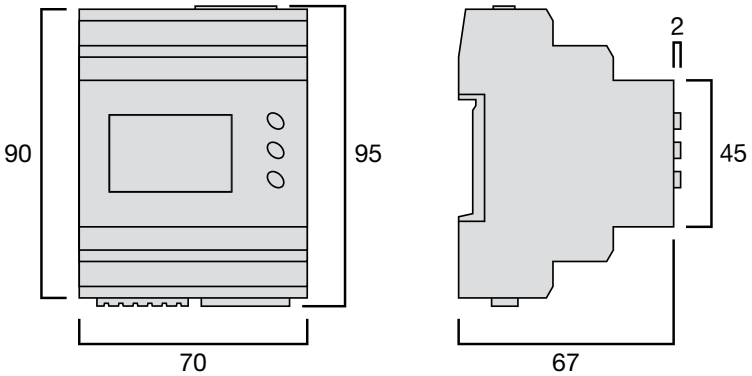


JKM02
Function Diagram

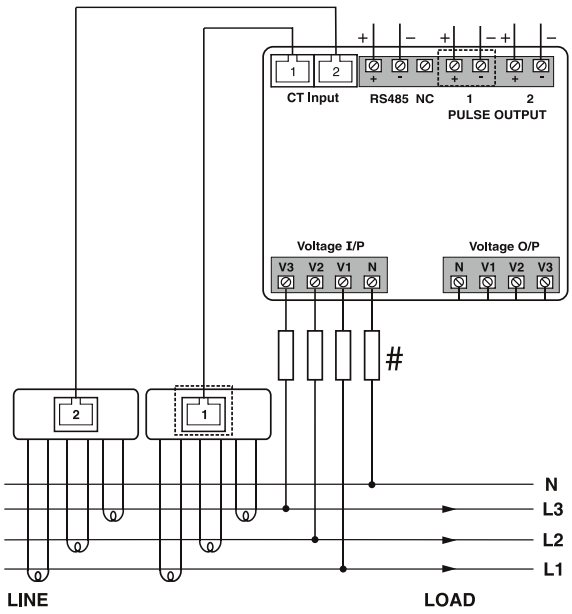


Button Selection

Dimension Diagrams (mm)



Please allow space above and below the meter for cable connections.

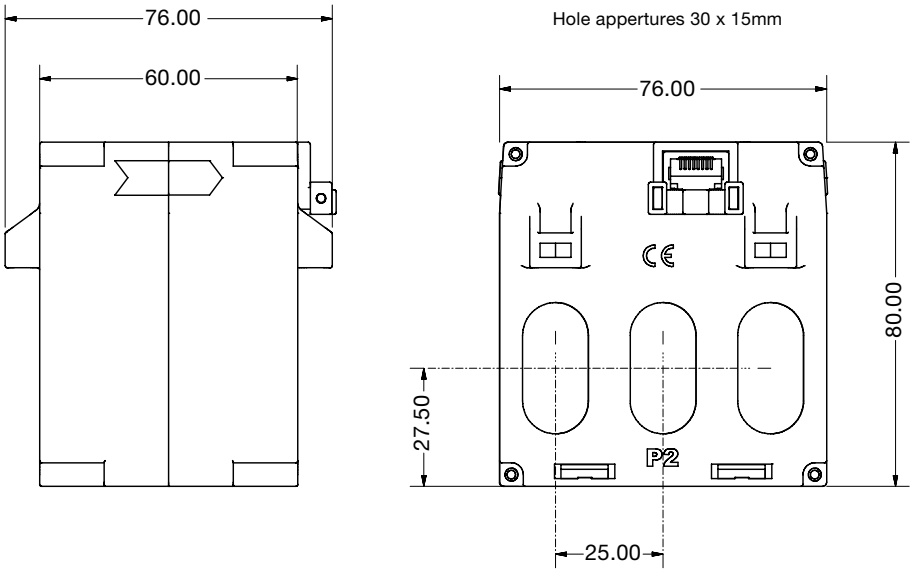


Description
140mm wide three phase measuring current transformer designed for use with the plug-in multifunction power meters.

This current transformer has three 31 x 31mm holes and is available with primary currents from 250 to 630A. (h630 frame)

Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Dimensions diagram (mm)



Description
215mm wide three phase measuring current transformer designed for use with the plug-in multifunction power meters.

This current transformer has three 54 x 50mm holes and is available with primary currents from 800.

Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Dimensions diagram (mm)