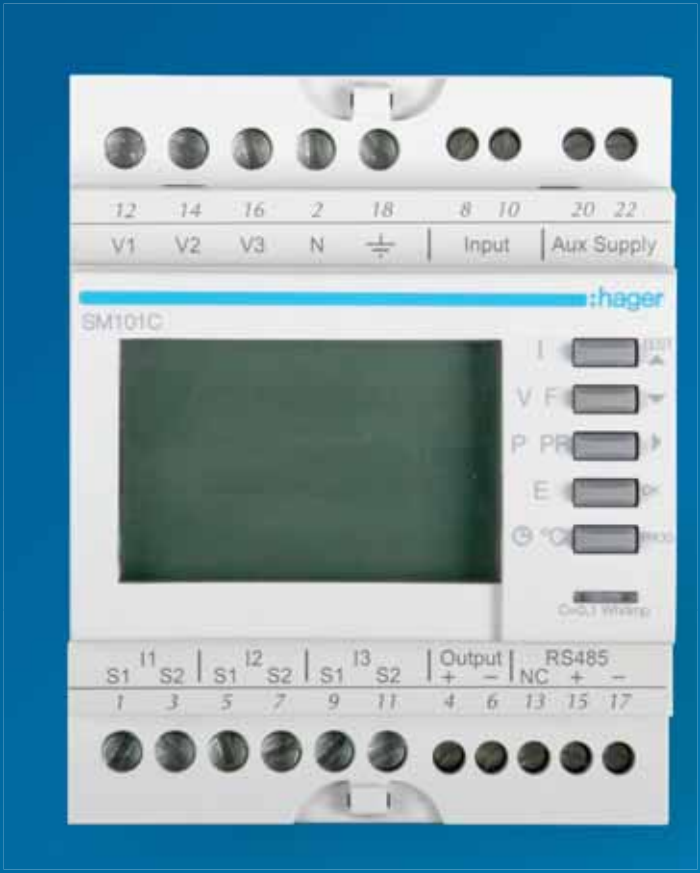
Modular Devices & Connection

Dimmers, time switches, meters and thermostats are among our varied range of devices, and they can all be perfectly housed in our expansive range of enclosures to tailor a building's energy to an individual's style. It's just like a home, miniaturised.



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Page

The relevant part of the BS EN 61439 series applies to the integration of mechanical and electrical components (switching devices, control devices, busbars, functional units, etc.), into an enclosure. Hager systems such as consumer unit, distribution board and panel board ranges are certified to the appropriate part of the BS EN 61439 series. When selecting other device / enclosure arrangements, please contact Hager technical support for guidance - 01 8835844.

ECN140D

Single Phase kWh Meters

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand the real cost of an installation and to identify the consumption between the different loads.

Characteristics:
- Complies with EN 50470-3.
- Class B
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter.
- Storage of energy values.
- LED flashes according to consumption.
- Display indication in case of incorrect wiring.
- Voltage 230V a.c. 50Hz.
- Direct connection.
- Current = 40A.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Total counter, non resettable counter	1 Mod	**ECN140D**

ECP140D

SMC120R

Single Phase kWh Meters - Direct 40A & 80A

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different loads.

Characteristics:
- Fully compliant with the European standard EN 50470-3.
- Class B
- Accuracy ±1%.
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter.
- Unlimited saving of measurements.
- LED flashes according to consumption.
- Tariff 1/ tariff 2 options.
- Display indication in case of incorrect wiring.
- Voltage 230V a.c. 50/60Hz.
- Max cable size = 16mm.
- MID approved.
- Pulsed output/modbus available.
- Sealable terminal cover.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Single phase kWh meter direct 40A MID SO	1 Mod	**ECP140D**
Single phase kWh meter direct 40A MID Modbus	1 Mod	**ECR140D**
Single phase kWh meter direct 80A MID SO	2 Mod	**ECP180D**
Single phase kWh meter direct 80A MID Modbus	2 Mod	**ECR180D**
120 Ohm end resistor for Modbus RTU	-	**SMC120R**

ECP180T

Single Phase kWh Meters - Multi Tarriff

Description	Width (1 Mod =17.5mm)	Cat ref.
Single phase kWh meter direct 3 x 80A SO	4 Mod	**ECP180T**
Single phase kWh meter direct 3 x 80A Modbus	4 Mod	**ECR180T**
120 Ohm end resistor for Modbus RTU	-	**SMC120R**

Three Phase kWh Meters - Direct

ECP380D

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different loads.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy ±1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- MID approved
- Pulsed output/modbus available
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2
- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring
- Voltage 230/400V a.c. 50/60Hz
- Operating Current: 250mA to 125A
- Max cable size = 16mm
- Sealable terminal cover.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Three phase kWh meter direct 80A MID SO	4 Mod	**ECP380D**
Three phase kWh meter direct 80A MID Modbus	4 Mod	**ECR380D**
Three phase kWh meter direct 125A MID SO	6 Mod	**ECP310D**
Three phase kWh meter direct 125A MID Modbus	6 Mod	**ECR310D**
120 Ohm end resistor for Modbus RTU	-	**SMC120R**

ECP300C

Three Phase kWh Meters - Connection via Current Transformers

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different loads.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy ±1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- MID approved
- Pulsed output/modbus available
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2
- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring
- To be connected to CT with 5A on the secondary
- Voltage 230/400V a.c. 50/60Hz
- Starting current = 1mA
- Max current on CT secondary = 6A
- Sealable terminal cover

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Three phase kWh meter via CT, 1A or 5A, MID SO	4 Mod	**ECP300C**
Three phase kWh meter via CT, 1A or 5A, MID Modbus	4 Mod	**ECR300C**
120 Ohm end resistor for Modbus RTU	-	**SMC120R**

TXF121

KNX Interface for Energy Meters

Description:
- The KNX interface for TXF121 energy meters allows remote reading of data and values from single phase and three phase hager energy meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
KNX Interface for Energy Meter	1 Mod	**TXF121**

Current Transformers (CT)

SRA00505

Characteristics:
- Current transformers are used to feed analogue and digital ammeters and kilowatt hour meters.
- The current on the secondary circuit (0 - 5A) is proportional to the current on primary circuit class: 1.
- Suitable for use with copper bar or cable.
- Can be mounted on a DIN rail (up to 600A CT).
- For complete list of dimensions see page 2.44.

Description	Ratio	Cat ref.
DIN Rail Mountable CT, 50A	50:5	**SRA00505**
DIN Rail Mountable CT, 100A	100:5	**SRA01005**
DIN Rail Mountable CT, 150A	150:5	**SRA01505**
DIN Rail Mountable CT, 200A	200:5	**SRA02005**
DIN Rail Mountable CT, 250A	250:5	**SRA02505**
DIN Rail Mountable CT, 300A	300:5	**SRI03005**
DIN Rail Mountable CT, 400A	400:5	**SRC04005**
DIN Rail Mountable CT, 600A	600:5	**SRC06005**
CT, 800A	800:5	**SRD08005**
CT, 1000A	1000:5	**SRD10005**
CT, 1500A	1500:5	**SRD15005**
CT, 2000A	2000:5	**SRE20005**
DIN Rail Mounting for CTs up to 600A.	-	**SRZH01**

SBN140

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Features
- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data
- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1. Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2. Connection capacity: 25mm² - rigid conductor, 16mm² - flexible conductor
- In: 63A to 125A frame size 3. Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors				
1 x 16A - 230V AC	1	1	12	**SBN116**
1 x 25A - 230V AC	1	1	12	**SBN125**
1 x 32A - 230V AC	1	1	12	**SBN132**
1 x 32A* - 230V AC	2	1	12	**SBN133**
1 x 40A - 230V AC	2	1	12	**SBN140**
1 x 63A - 230V AC	2	1	12	**SBN163**
1 x 63A* - 230V AC	3	1	12	**SBN164**
1 x 80A - 230V AC	3	1	12	**SBN180**
1 x 100A - 230V AC	3	1	12	**SBN190**
1 x 125A - 230V AC	3	1	12	**SBN199**

SBN240

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors				
2 x 16A - 230V AC	1	1	12	**SBN216**
2 x 25A - 230V AC	1	1	12	**SBN225**
2 x 32A - 230V AC	1	1	12	**SBN232**
2 x 32A* - 230V AC	2	2	6	**SBN233**
2 x 40A - 400V AC	2	2	6	**SBN240**
2 x 63A - 400V AC	2	2	6	**SBN263**
2 x 63A* - 400V AC	3	2	6	**SBN264**
2 x 80A - 400V AC	3	2	6	**SBN280**
x 2 x 100A - 400V AC	3	2	6	**SBN290**
2 x 125A - 400V AC	3	2	6	**SBN299**

SBN340

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Three pole switch disconnectors				
3 x 16A - 400V AC	1	2	6	**SBN316**
3 x 25A - 400V AC	1	2	6	**SBN325**
3 x 32A - 400V AC	1	2	6	**SBN332**
3 x 32A* - 400V AC	2	3	4	**SBN333**
3 x 40A - 400V AC	2	3	4	**SBN340**
3 x 63A - 400V AC	2	3	4	**SBN363**
3 x 63A* - 400V AC	3	3	4	**SBN364**
3 x 80A - 400V AC	3	3	4	**SBN380**
3 x 100A - 400V AC	3	3	4	**SBN390**
3 x 125A - 400V AC	3	3	4	**SBN399**

SBN440

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Four pole switch disconnectors				
4 x 16A - 400V AC	1	2	6	**SBN416**
4 x 25A - 400V AC	1	2	6	**SBN425**
4 x 32A - 400V AC	1	2	6	**SBN432**
4 x 32A* - 400V AC	2	4	3	**SBN433**
4 x 40A - 400V AC	2	4	3	**SBN440**
4 x 63A - 400V AC	2	4	3	**SBN463**
4 x 63A* - 400V AC	3	4	3	**SBN464**
4 x 80A - 400V AC	3	4	3	**SBN480**
4 x 100A - 400V AC	3	4	3	**SBN490**
4 x 125A - 400V AC	3	4	3	**SBN499**

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A.

Features
- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data
- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2.
- In: 80A to 125A frame size 3.
- Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor

SBR163

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors				
1 x 40A - 230V AC	2	1	12	**SBR140**
1 x 63A - 230V AC	2	1	12	**SBR163**
1 x 80A - 230V AC	3	1	12	**SBR180**
1 x 100A - 230V AC	3	1	12	**SBR190**
1 x 125A - 230V AC	3	1	12	**SBR199**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors				
2 x 40A - 400V AC	2	2	6	**SBR240**
2 x 63A - 400V AC	3	2	6	**SBR263**
2 x 80A - 400V AC	3	2	6	**SBR280**
2 x 100A - 400V AC	3	2	6	**SBR290**
2 x 125A - 400V AC	3	2	6	**SBR299**

SBR263

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Three pole switch disconnectors				
3 x 40A - 400V AC	2	3	4	**SBR340**
3 x 63A - 400V AC	2	3	4	**SBR363**
3 x 80A - 400V AC	3	3	4	**SBR380**
3 x 100A - 400V AC	3	3	4	**SBR390**
3 x 125A - 400V AC	3	3	4	**SBR399**

SBR399

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Four pole switch disconnectors				
4 x 63A - 400V AC	2	4	3	**SBR463**
4 x 100A - 400V AC	3	4	3	**SBR490**
4 x 125A - 400V AC	3	4	3	**SBR499**

SBR499

SBT116

Switch Disconnectors with Indicator Light

- For use as a switch disconnector in all types of circuits.
- Complies with:
- IEC 60947-3 and EN60669

Features
- Orange LED indicator light.
- LED life time: 100 000 h.
- All switches have a green / red indication on the toggle giving positive contact indication

Technical data
- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors with indicator light top				
1 x 16A - 230V AC	1	1	12	**SBT116**
1 x 25A - 230V AC	1	1	12	**SBT125**
1 x 32A - 230V AC	1	1	12	**SBT132**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors with indicator light bottom				
1 x 16A - 230V AC	1	1	12	**SBB116**
1 x 25A - 230V AC	1	1	12	**SBB125**
1 x 32A - 230V AC	1	1	12	**SBB132**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light top				
2 x 16A - 230V AC	1	1	12	**SBT216**
2 x 25A - 230V AC	1	1	12	**SBT225**
2 x 32A - 230V AC	1	1	12	**SBT232**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light bottom				
2 x 16A - 230V AC	1	1	12	**SBB216**
2 x 25A - 230V AC	1	1	12	**SBB225**
2 x 32A - 230V AC	1	1	12	**SBB232**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light top & bottom				
2 x 16A - 230V AC	1	1	12	**SBM216**
2 x 25A - 230V AC	1	1	12	**SBM225**
2 x 32A - 230V AC	1	1	12	**SBM232**

Auxiliaries & Accessories

Auxiliary contact
- The auxiliary contact is common to the whole range of switch disconnectors from 16A to 125A with or without indicator light

Features
- The auxiliary contact have a mechanical indicator to show the position of the contact

Technical data
- Utilisation category AC12A 230V / 400V
- Connection capacity: 10mm² - rigid conductor, 6mm² - flexible conductor

Sealable terminal shrouds
- The sealable terminal shroud is compatible with switch disconnectors ratings from 32A to 63A frame size 2.
- For ratings from 63A to 125A frame size 3 switch disconnector, only the disible part is compatible to protect the front screw heads.

Phase barrier shield
- The phase barrier shield is compatible with switch disconnectors ratings ratings from 32A to 125A frame size 2&3.

Padlocking kit
- Allows to lock the device in the OFF and ON positions.
- Will accept two padlocks with hasps of 4.75mm diameter max. (supplied without padlock).

ESC080

Description	Mod. width	Pack qty.	Cat ref.
Auxiliary contact 1NO + 1NC			
Compatible with disconnector switches from 16 to 125A	0.5	1	**ESC080**

Description	Pack qty.	Cat ref.
Terminal shroud Compatible with switch disconnector from 32A to 63A frame size 2		
To shroud the connection terminal and screws. The screw cover can be sealed.	4	**MZN120**

MZN120

Description	Pack qty.	Cat ref.
Phase barrier shield		
Phase barrier shield	3	**MZN121**

MZN121

Description	Pack qty.	Cat ref.
Padlocking kit		
Padlocking kit	2	**MZN175**

MZN175

SFT232

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 40A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on top				
1 x 25A - 230V AC	1	1	12	**SFT125**
1 x 32A - 230V AC	1	1	12	**SFT132**
1 x 40A - 230V AC	1	1	12	**SFT140**
2 x 25A - 230V AC	1	2	6	**SFT225**
2 x 32A - 230V AC	1	2	6	**SFT232**
2 x 40A - 230V AC	1	2	6	**SFT240**
3 x 40A - 400V AC	1	3	4	**SFT340**
4 x 40A - 230V AC	1	4	3	**SFT440**

SFB125

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	**SFB116**
1 x 25A - 230V AC	1	1	12	**SFB125**
1 x 32A - 230V AC	1	1	12	**SFB132**
2 x 16A - 230V AC	1	2	6	**SFB216**
2 x 25A - 230V AC	1	2	6	**SFB225**
2 x 32A - 230V AC	1	2	6	**SFB232**

SFH125

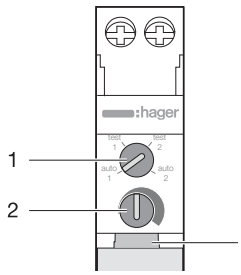
Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II and common point on top				
1 x 25A - 230V AC	1	1	12	**SFH125**
1 x 32A - 230V AC	1	1	12	**SFH132**
2 x 25A - 230V AC	1	2	6	**SFH225**
2 x 32A - 230V AC	1	2	6	**SFH232**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	**SFL116**
1 x 25A - 230V AC	1	1	12	**SFL125**
1 x 32A - 230V AC	1	1	12	**SFL132**
2 x 16A - 230V AC	1	2	6	**SFL216**
2 x 25A - 230V AC	1	2	6	**SFL225**
2 x 32A - 230V AC	1	1	6	**SFL232**

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II				
1 x 25A - 230V AC	1	1	12	**SFM125**
1 x 32A - 230V AC	1	1	12	**SFM132**

Description	Cat ref.
Centre-off changeover double pole	
2 pole changeover switch 63A I-0-II	**SF263**

Light Sensitive Switch



EEN100

Characteristics
- A photo-electric cell measures the light level and in conjunction with the relay provides on/off control of a circuit.
- This device controls lighting circuits in relation to ambient light, based on user settings.
- Sealable front cover.
- Outputs: 1 changeover AC1 contact 16A - 230V a.c.
- Maximum distance: 50m between photocell and controller

Application Example:
- Street lighting, display lighting, illuminated signs etc.

Connection
- Capacity: Rigid: 1.5 to 10mm², Flexible: 1 to 6mm².
- On board LED shows status of changeover contact.

Technical Data
- 4 position override switch allowing: auto, on, off, test
- 2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux.
- Supplied with a separate surface-mounted photo-electric cell **EE003.**
- Must be used in conjunction with a suitably rated contactor where load conditions demand.
- For technical data, see page 2.47.

Description	Width (1 Mod =17.5mm)	Cat ref.
Light Sensitive Switch - delivered with: a separate surface photo electric cell EEN003	1 Mod	**EEN100**
Light Sensitive Switch - delivered with: a separate flush photo electric cell EEN002	1 Mod	**EEN101**
Two Channels Light Sensitive Switch		**EE200**
Two Channels Light Sensitive Switch EE200 delivered with surface cell EE003		**EE201**
Two Channels Light Sensitive Switch for Cascading		**EE202**
Two Chnls. Light Sens. Sw. for Cascading EE202 delivered with surface cell EEN003		**EE203**
Compact light switch IP 55 / integrated cell, basic 8A (without settings)		**EE701**
Compact light switch IP 55 / integrated cell, enhanced 16A (with settings)		**EE702**

Light Sensitive Programmer


EE171

Characteristics
- To control the lighting installation in relation to time and ambient light.
- A weekly programmer associated with a light sensitive switch.
- Outputs: 1 changeover AC1 contact 16A - 230V a.c.
- Maximum distance: 50m between photocell and controller.

Working Principle
- The user programmes both on/off periods and a desired light level. The cell measures the light level within the on period. Depending on the light level (below or above the programmed threshold) the output will be switched on/off.
- 20 program steps, 1 minute switching increments.

Programming Function
- Programming by keys and display on LCD screen.
- On/off override facility, permanent working.
- Display and control of the programme.
- Test setting for easy adjustment.
- 2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux.
- Supplied with a separate surface-mounted photo-electric cell **EE003**.
- Must be used in conjunction with a suitably rated contactor where load conditions demand.
- For technical data, see page 2.47.

Description	Width	Cat ref.
Light Sensitive Programmer with Surface Cell	3 Mod	**EE110**
Light Sensitive Programmer	3 Mod	**EE171**

Astronomical Time Switch


EE180

Characteristics
- Astronomical time switches must be used in conjunction with a suitable rated contactor. Weekly cycle. Delivered with key EG005. Protected cable clamps capacity: rigid : 1.5 to 10mm², flexible : 1 to 6mm²

Description	Cat ref.
1 Channel 230V~50 Hz, Changeover Contact 16A AC1, Operating Reserve Lithium Battery 5 years	**EE180**
2 Channels 230V~50 Hz, 2 Changeover Contacts 16A AC, Operating Reserve Lithium Battery 5 years	**EE181**

Replacement Photo Electric Cell

Description	For Cat ref.	Pack qty.	Cat ref.
Flush-mounted Photo Electric Cell	**EEN100**, **EE171**	1	**EE002**
Surface-mounted Photo Electric Cell	**EEN100**, **EE171**	1	**EE003**

EVN011

EVN004

EV100

EV108

LZ060

Universal Dimmers

	EVN011	EVN012	EVN002	EVN004	EV100	EV102	EV106	EV108
Supply voltage	230 V +/- 10 %							
Frequency	50/60 Hz				50 Hz			
Load consumption	0,2 W				3 W			
Load control type	direct						through dimmer	
Remote power	300 W		500 W		20 to 1000 W		contact 10A - 230V	
Compatible load types : - Incandescent 230 V - Halogen 230 V - VLV halogen with transformer - Dimmable fluocompact - Fluocompact & LED not dimmable - Dimmable LED 230 V	 300 W 300 W 300 VA 60 W - 60 W		 500 W 500 W 500 VA 100 W - 100 W		 1000 W 1000 W 1000 VA - - -		 - - - - - -	
1/10 V control	-				1 input	1 input/ output	1 output	
1/10 V control status	-				slave	slav./mast.	master	
I max. authorized for PB light	5 mA		-	5 mA	-			
max. PB-dimmers distance or 1-10 V control	50 m							
dim PB and ON/OFF on module	no		yes					
Number of preset lighting levels	-			1	-	2	-	3
Preset lighting levels control entry	-			1	-	2	-	2
Min. and max. dim lighting setting	-				yes			
On/Off status indication output	-					1 contact O	-	
Values digital display	-					yes		
Max. power dissipation	2,1 W		4,5 W		15 W		6 W	
IP	IP 20							
Operating temperature	- 10°C to + 45°C							
Storage temperature	- 25°C to + 70°C				- 20°C to + 60°C			
Rigid connection	1,5 to 6 mm2				1,5 to 10 mm2			
Flexible connection	1 to 6 mm2				1 to 6 mm2			

Characteristics

- Controls the lighting level of all types of light source: incandescent, LV halogen, ELV halogen with electronic or ferromagnetic transformer, LED lamps, ELV LED lamps with electronic transformer, fluorescent with electronic ballast.
- The EVN 300W and 500W dimmers also allow lighting level adjustment for dimmable CFL and dimmable LED lamps.
- Dimming controlled by push button: start / stop by short press, increasing / decreasing by maintaining pressure.
- Automatic load recognition.
- Soft start (progressive start) to increase the working life of lamps.
- Remembers previous dimming level.
- Protection against overheating.
- 3 modes for load learning: auto, advanced, expert (comfort version).
- Can replace a latching relay, with light level function.
- Push button (line or neutral).
- Comfort version includes scene setting by two short presses on the push button, progressive switch-off & night light.

Description	Width (1 Mod =17.5mm)	Pack qty.	Cat ref.
300W Standard Version	1 Mod	1	**EVN011**
300W Comfort Version	1 Mod	1	**EVN012**
500W Standard Version	2 Mod	1	**EVN002**
500W Comfort Version	2 Mod	1	**EVN004**
1000W Standard Version	5 Mod	1	**EV100**
1000W Advanced Version	5 Mod	1	**EV102**
1/10V Pilot Dimmer Standard Version	4 Mod	1	**EV106**
1/10V Pilot Dimmer Advanced Version	4 Mod	1	**EV108**
Heat Dissipation Insert	0.5 Mod	12	**LZ060**

Description	230V		110/127V
	Standard Contactors	Hum-free Contactors	Standard Contactors
1 Normally Open	ESC125 (25A-250V)		
1 Normally Closed	ESC126 (25A-250V)		
2 Normally Open	ESC225 (25A-250V) ESC240 (40A-440V) ESC263 (63A-440V)	ESC225S (25A-250V) ESC240S (40A-440V) ESC263S (63A-440V)	ESM225 (25A-250V)
2 Normally Closed	ESC226 (25A-250V) ESC241 (40A-440V) ESC264 (63A-440V)		
1 NO & 1 NC	ESC227 (25A-250V)		ESM227 (25A-250V)
3 Normally Open	ESC325 (25A-440V) ESC340 (40A-440V) ESC363 (63A-440V)	ESC325S (25A-440V) ESC340S (40A-440V) ESC363S (63A-440V)	
4 Normally Open	ESC425 (25A-440V) ESC440 (40A-440V) ESC463 (63A-440V)	ESC425S (25A-440V) ESC440S (40A-440V) ESC463S (63A-440V)	ESM440 (40A-440V)
4 Normally Closed	ESC426 (25A-440V) ESC441 (40A-440V) ESC464 (63A-250V)	ESC426S (25A-440V)	
2 NO & 2 NC	ESC427 (25A-440V) ESC442 (40A-250V) ESC465 (63A-440V)	ESC427S (25A-440V)	
3 NO & 1 NC	ESC428 (25A-440V) ESC443 (40A-440V) ESC466 (63A-440V)	ESC428S (25A-440V)	

Description	24V		12V		8/12V
	Standard Contactors	Hum-free Contactors	Standard Contactors	Hum-free Contactors	Standard Contactors
1 Normally Open	ESD125 (25A-250V)				ESL125 (25A-250V)
1 Normally Closed					
2 Normally Open	ESD225 (25A-250V) ESD240 (40A-440V) ESD263 (63A-440V)	ESD225S (25A-250V) ESD240S (40A-440V) ESD263S (63A-440V)	ESL240 (40A-440V) ESL263 (63A-440V)	ESL225S (25A-250V) ESL240S (40A-440V) ESL263S (63A-440V)	ESL225 (25A-250V)
2 Normally Closed	ESD226 (25A-250V) ESD241 (40A-440V) ESD264 (63A-440V)		ESL241 (40A-440V) ESL264 (63A-440V)		ESL226 (25A-250V)
1 NO & 1 NC	ESD227 (25A-250V)				ESL227 (25A-250V)
3 Normally Open		ESD325S (25A-440V)			
4 Normally Open	ESD425 (25A-440V) ESD440 (40A-440V) ESD463 (63A-440V)	ESD425S (25A-440V) ESD440S (40A-440V) ESD463S (63A-440V)	ESL425 (25A-440V) ESL440 (40A-440V) ESL463 (63A-440V)	ESL425S (25A-440V) ESL440S (40A-440V) ESL463S (63A-440V)	
4 Normally Closed	ESD426 (25A-250V) ESD464 (63A-250V)	ESD426S (25A-440V)	ESL426 (25A-440V)	ESL426S (25A-440V)	
2 NO & 2 NC	ESD427 (25A-440V)	ESD427S (25A-440V)	ESL427 (25A-440V)	ESL427S (25A-440V)	
3 NO & 1 NC	ESD428 (25A-440V)	ESD428S (25A-440V)	ESL428 (25A-440V)	ESL428S (25A-440V)	

ESC225

ESD263

ESC325

ESC425

ESC463

Contactors

- Contactors are essential powerdevices to control heating, lighting or ventilation systems.
- They are recommended in association with control and energy management devices (thermostats, delay timers, programmers...)
- Standard 1 module and 2 module versions are recommended for applications where a reduced consumption and heating dissipation are needed.
- Complies to IEC 61095.
- The contactors can be associated with the auxiliary contact ESC080 for remote signalling.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Contactor	1NO	230 V	25A-250V	1 Mod	12	**ESC125**
		24V	25A-250V	1 Mod	1	**ESD125**
		8/12V	25A-250V	1 Mod	1	**ESL125**
	1NC	230V	25A-250V	1 Mod	1	**ESC126**
	2NO	230V	25A-250V	1 Mod	12	**ESC225**
			40A-440V	3 Mod	1	**ESC240**
			63A-440V	3 Mod	1	**ESC263**
	2NO	24V	25A-250V	1 Mod	12	**ESD225**
			40A-440V	3 Mod	1	**ESD240**
			63A-440V	3 Mod	1	**ESD263**
	2NO	12V	40A-440V	3 Mod	1	**ESL240**
			63A-440V	3 Mod	1	**ESL263**
	2NO	8/12V	25A-250V	1 Mod	1	**ESL225**
	2NO	110/127V	25A-250V	1 Mod	1	**ESM225**
	2NC	230V	25A-250V	1 Mod	12	**ESC226**
			40A-440V	3 Mod	1	**ESC241**
			63A-440V	3 Mod	1	**ESC264**
	2NC	24V	25A-250V	1 Mod	1	**ESD226**
			40A-440V	3 Mod	1	**ESD241**
			63A-440V	3 Mod	1	**ESD264**
	2NC	12V	40A-440V	3 Mod	1	**ESL241**
			63A-440V	3 Mod	1	**ESL264**
	2NC	8/12V	25A-250V	1 Mod	1	**ESL226**
	1NO+1NC	230V	25A-250V	1 Mod	12	**ESC227**
		24V	25A-250V	1 Mod	1	**ESD227**
		8/12V	25A-250V	1 Mod	1	**ESL227**
		110/127V	25A-250V	1 Mod	1	**ESM227**
	3NO		25A-440V	2 Mod	6	**ESC325**
			40A-440V	3 Mod	4	**ESC340**
			63A-440V	3 Mod	1	**ESC363**
	4NO	230 V	25A-440V	2 Mod	6	**ESC425**
			40A-440V	3 Mod	4	**ESC440**
			63A-440V	3 Mod	4	**ESC463**
	4NO	24V	25A-440V	2 Mod	2	**ESD425**
			40A-440V	3 Mod	3	**ESD440**
			63A-440V	3 Mod	3	**ESD463**

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Contactor	4NO	12 V	25A-250V	2 Mod	1	**ESL425**
			40A-440V	3 Mod	1	**ESL440**
			63A-440V	3 Mod	1	**ESL463**
	4NO	110/127V	40A-440V	3 Mod	1	**ESM440**
	4NC	230V	25A-440V	2 Mod	1	**ESC426**
			40A-440V	3 Mod	1	**ESC441**
			63A-250V	3 Mod	1	**ESC464**
	4NC	24V	25A-250V	2 Mod	1	**ESD426**
			63A-250V	3 Mod	1	**ESD464**
	4NC	12V	25A-440V	2 Mod	1	**ESL426**
	2NO+2NC	230V	25A-440V	2 Mod	1	**ESC427**
			40A-440V	3 Mod	1	**ESC442**
			63A-440V	3 Mod	4	**ESC465**
	2NO+2NC	24V	25A-440V	2 Mod	1	**ESD427**
	2NO+2NC	12V	25A-440V	2 Mod	1	**ESL427**
	3NO+1NC	230V	25A-440V	2 Mod	6	**ESC428**
			40A-440V	3 Mod	4	**ESC443**
			63A-440V	3 Mod	1	**ESC466**
	3NO+1NC	24V	25A-440V	2 Mod	1	**ESD428**
	3NO+1NC	12V	25A-440V	2 Mod	1	**ESL428**

ESC225S

ESC425S

ESC463S

Hum-free Contactors

- Contactors are essential power devices to control heating, lighting or ventilation systems.
- They are recommended in association with other control and energy management devices (thermostats, delay timers,
- programmers...)
- The hum-free versions are recommended for housing applications where silent operating is requested.
- Complies to IEC 61095.
- The contactors can be associated with the auxiliaries contact ESC080 for remote signaling, except the ESx225S.
- It is recommended to use a heat dissipation insert LZ060 between each product.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Hum-free contactor	2NO	230 V 50/60 Hz 220V DC	25A-250V	1 Mod	12	**ESC225S**
			40A-440V	3 Mod	4	**ESC240S**
			63A-440V	3 Mod	4	**ESC263S**
	2NO	24V 50Hz 24V DC	25A-250V	1 Mod	1	**ESD225S**
			40A-440V	3 Mod	1	**ESD240S**
			63A-440V	3 Mod	1	**ESD263S**
	2NO	12V 50Hz 12V DC	25A-250V	1 Mod	1	**ESL225S**
			40A-440V	3 Mod	1	**ESL240S**
			63A-440V	3 Mod	1	**ESL263S**
	3NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	**ESC325S**
			40A-440V	3 Mod	1	**ESC340S**
			63A-440V	3 Mod	1	**ESC363S**
	3NO	24V 50Hz 24V DC	25A-440V	2 Mod	1	**ESD325S**
	4NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	**ESC425S**
			40A-440V	3 Mod	1	**ESC440S**
			63A-440V	3 Mod	1	**ESC463S**
	4NO	24V 50Hz 24V DC	25A-440V	2 Mod		**ESD425S**
			40A-440V	3 Mod		**ESD440S**
			63A-440V	3 Mod		**ESD463S**
	4NO	12V 50Hz 12V DC	25A-440V	2 Mod	1	**ESL425S**
			40A-440V	3 Mod	1	**ESL440S**
			63A-440V	3 Mod	1	**ESL463S**
	4NC	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	**ESC426S**
		24V 50 Hz 24V DC	25A-440V	2 Mod	1	**ESD426S**
		12V 50Hz 12V DC	25A-440V	2 Mod	1	**ESL426S**
	2NO+2NC	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	**ESC427S**
		24V 50Hz 24V DC	25A-440V	2 Mod	1	**ESD427S**
		12V 50 Hz 12V DC	25A-440V	2 Mod	1	**ESL427S**
	3NO+1NF	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	**ESC428S**
		24V 50Hz 24V DC	25A-440V	2 Mod	1	**ESD428S**
		12V 50 Hz 12V DC	25A-440V	2 Mod	1	**ESL428S**

Override Contactors

ERC225

- For the remote switching and control of power circuits.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- Can be associated with the auxiliary contact ESC080 for remote signaling.
- Complies to IEC 61095.
- Auxiliary contact
- Associated with a contactor, it allows remote signaling.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Override contactor	1NO	230V	25A-250V	1 Mod	12	**ERC125**
	2NO	230V	25A-250V	1 Mod	12	**ERC225**
			40A-440V	3 Mod	4	**ESC240**
			63A-440V	3 Mod	1	**ERC263**
	2NO	24V	25A-250V	1 Mod	1	**ERD225**
			40A-440V	3 Mod	1	**ERD240**
			63A-440V	3 Mod	1	**ERD263**
		8/12V	25A-250V	3 Mod	1	**ERL225**
			40A-440V	3 Mod	1	**ERL240**
			63A-440V	3 Mod	6	**ERL263**
	2NC	230V	25A-250V	1 Mod	12	**ERC226**
	3NO	230V	25A-440V	2 Mod	6	**ERC325**
	4NO	230V	25A-440V	2 Mod	6	**ERC425**
		24V	25A-440V	2 Mod	6	**ERD425**
		12V	25A-440V	2 Mod	1	**ERL425**
	4NC	230V	25A-440V	2 Mod	1	**ERC426**
	2NO+2NC	230V	25A-440V	2 Mod	1	**ERC427**
	3NO+1NC	230V	25A-440V	2 Mod	1	**ERC428**

ERC425

Night & Day Contactors

ETC225

- Night & day contactors allows the functioning of electrical devices during off-peak hours, especially storage heaters andwater-heaters.
- The manual override allows: temporary override with automatic return at next coil energization, permanent switch-off in case of long leave.
- Standard 1z and 2z versions are recommended for applications where a reduced consumption and heating dissipation are needed.
- The hum-free versions ETCx25S are recommended for housing applications where silent operating is requested.
- Hum-free operating is guaranteed in time, switching noise is reduced.
- Complies to NF EN 61095

Description	Type	Coil AC	In power circuit AC7-a / AC1	Mod Width 17,5 mm	Pack qty.	Cat ref.
Night & Day Contactors	2NO	230V 50Hz	25A-250V	1	1	**ETC225**
	2NC	230V 50Hz	25A-250V	1	1	**ETC226**
	1NO+1NC	230V 50Hz	25A-400V	1	1	**ETC227**
	3NO	230V 50Hz	25A-440V	2	1	**ETC325**
		230V 50Hz	40A-440V	3	1	**ETC340**
		230V 50Hz	63A-440V	3	1	**ETC363**
	4NO	230V 50Hz	25A-440V	2	1	**ETC425**
		230V 50Hz	40A-440V	3	1	**ETC440**
		230V 50Hz	63A-440V	3	1	**ETC463**
Hum-free Night & Day Contactors	2NO	230V 0/60Hz 220V DC	25A-250V	1	1	**ETC225S**
	3NO	230V 0/60Hz 220V DC	25A-250V	2	1	**ETC325S**
	4NO	230V 50/60 Hz 220V DC	25A-250V	2	1	**ETC425S**

ETC425S

ERC225S

ERC425S

Hum-free Override Contactors

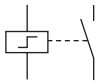
- For the remote switching and control of power circuits.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- The hum-free versions are recommended for housing applications where silent operating is requested.
- Complies to IEC 61095.
- Can be associated with the auxiliary contact ESC080, except 1 module hum-free contactors (ERC225S).
- It is recommended to use a heat dissipation insert LZ060 between each product.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Hum-free override contactor	2NO	230V 50/60 Hz 220V DC	25A-250V	1 Mod	1	**ERC225S**
			40A-440V	3 Mod	1	**ESC240S**
		24V 50Hz 24V DC	40A-440V	3 Mod	1	**ERD240S**
			63A-440V	3 Mod	1	**ERD263S**
		12V 50Hz 12V DC	40A-440V	3 Mod	1	**ERL240S**
			63A-440V	3 Mod	1	**ERL263S**
	3NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	**ERC325S**
	4NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	**ERC425S**
		24V 50Hz 24V DC	25A-440V	2 Mod	1	**ERD425S**
		12V 50Hz 12V DC	25A-440V	2 Mod	1	**ERL425S**

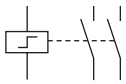
Latching Relays

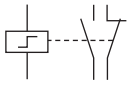
- Latching relays - operate when impulsed by a signal voltage.
- The impulse can be provided via a pushbutton or pushswitch. The first pulse operates the relay and
- latches it to its set (opposite) state, the next operation of the pushbutton returns the relay to its reset (original) state.
- Auxiliary Contacts (EPN050, EPN051)
- Are available for remote signalling and centralised control applications and can be easily combined with the latching relays.
- Connection: 10mm2 flexible, 6mm2 rigid
- 1 Mod = 17.5mm, 2 Mod = 35mm, 3 Mod = 52.5mm, 4 Mod = 70mm

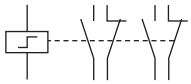
Description	Coil	Power circuit AC1	Mod. Width	Cat ref.
Latching Relay 1 NO	230V 50Hz	16A - 250V~	1	**EPN510**
	24V 50Hz	16A - 250V~	1	**EPN513**
Latching Relay 2 NO	230V 50Hz	16A - 250V~	1	**EPN520**
	24V 50Hz	16A - 250V~	1	**EPN524**
	12V 50Hz	16A - 250V~	1	**EPN521**
Latching Relay 1 NC + 1NO	230V 50Hz	16A - 250V~	1	**EPN515**
	24V 50Hz	16A - 250V~	1	**EPN518**
	12V 50Hz	16A - 250V~	1	**EPN519**
Latching Relay 2 NC + 2 NO	230V 50Hz	16A - 250V~	2	**EPN525**
	24V 50Hz	16A - 250V~	2	**EPN528**
	12V 50Hz	16A - 250V~	2	**EPN529**
Latching Relay 4 NO	230V 50Hz	16A - 400V~	2	**EPN540**
	24V 50Hz	16A - 400V~	2	**EPN541**

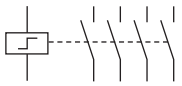


EPN510









EPN540

Auxiliary Contacts

Description	Power circuit	Mod. Width 8.75mm	Cat ref.
Auxiliary Contact	2A - 250V~	0.5	**EPN051**
Auxliary Contacts for Centralised Control	24A - 230V~	0.5	**EPN050**

ERD218

ERC418

EN145

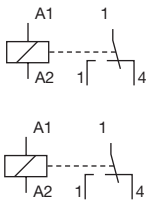
Relays, Hum-free, Interface

Relays
- To provide remote control of low power circuits max.16A.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- Complies to IEC 61095.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Auxiliary contact
- Associated with a relay, it allows remote signaling.
- Mechanical status indicator

Interface relays
- Power contacts adapted to very low voltage circuits. It is operating silently.
- A signal indicates when the coil is under voltage.
- These relays ensure a galvanic isolation between LV and VLV up to 4kV.

Description	Type	Coil AC 50 Hz	Power circuit AC7-a / AC1	Mod. Width 17,5 mm	Pack qty.	Cat ref.
Relays	2NO	230V	16A - 250V~	1	1	**ERC216**
		24V	16A - 250V~	1	1	**ERD216**
		8/12V	16A - 250V~	1	1	**ERL216**
	2NC	230V	16A - 250V~	1	1	**ERC217**
		24V	16A - 250V~	1	1	**ERD217**
		8/12V	16A - 250V~	1	1	**ERL217**
	1NO+1NC	230V	16A - 250V~	1	12	**ERC218**
		24V	16A - 250V~	1	1	**ERD218**
		8/12V	16A - 250V~	1	1	**ERL218**
	3NO	230V	16A-440V	2	1	**ERC316**
	4NO	230V	16A-440V	2	1	**ERC416**
	2NO+2NC	230V	16A-440V	2	1	**ERC418**
		24V	16A-440V	2	1	**ERD418**
		12V	16A-440V	2	1	**ERL418**
Hum-free Relays	2NO+2NC	24V AC/DC	16A-440V	2	1	**ERD418S**
		12V AC/DC	16A-440V	2	1	**ERL418S**



Interface relays VLV/LV	coil voltage: 10 to 26V AC/DC output: 1 changeover contact max. 5A 230V AC min. 10mA - 12V DC		**EN145**
Interface relays LV/VLV	coil voltage: 230V AC output: 1 changeover contact max. 5A 230V AC min. 10mA - 12V DC		**EN146**

Auxiliaries for Contactors and Relays

Auxiliary contact
- Associated with a relay or a contactor, it allows to show the product status or remote signaling.
- Not compatible with 1 module hum-free contactors and EN145 / EN146.

Heat dissipation insert
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Sealing covers
- Not compatible with EN145 / EN146.

Description			Mod. Width 17.5mm	Pack qty.	Cat ref.
Auxiliary contact In power circuit AC7-a / AC1	1NO+1NF	6A-250V	0.5	1	**ESC080**
Sealing cover	for 1 module contactors		1	10	**ESC001**
	for 2 module contactors		2	10	**ESC002**
	for 3 module contactors		3	10	**ESC003**
Heat dissipation insert			0.5	12	**LZ060**

ESC080

ESC002

LZ060

SVN311

SVN411

SVN312

SVN413

Impulse & Latching

Description
- Modular pushbuttons to actuate loads either directly or via contactors etc.

Terminal Capacity
- 10mm² rigid conductor.
- 6mm² flexible conductor.
- BS EN 60947-5-1

Characteristics	Width (1 Mod =17.5mm)	Cat ref.
Pushbuttons (Impulse) 16A - 250V a.c. Without Indicator Light		
Contacts: 1 NO	1 Mod	**SVN311**
Contacts: 2 NO	1 Mod	**SVN331**
Contacts: 2 NO, Double Pushbutton	1 Mod	**SVN371**
Contacts: 1 NC	1 Mod	**SVN321**
Contacts: 2 NC	1 Mod	**SVN341**
Contacts: 1 NO + 1 NC	1 Mod	**SVN351**
Contacts: 1 NO + 1 NC, Double Pushbutton	1 Mod	**SVN391**
Contacts: 2 NO	1 Mod	**SVN371**
Contacts: 2NO + Green Push Button	1 Mod	**SVN373**
Pushbuttons (Impulse) 16A - 250V a.c. With Indicator Light		
Contacts: 1 NO : Green	1 Mod	**SVN411**
Contacts: 2 NO : Red	1 Mod	**SVN432**
Contacts: 1 NC : Red	1 Mod	**SVN422**
Contacts: 2 NC : Green	1 Mod	**SVN441**
Contacts: 1 NO + 1 NC	1 Mod	**SVN452**
Contacts: 2 NO : Green	1 Mod	**SVN461**
Contacts: 2 NO : Red	1 Mod	**SVN462**
Pushbuttons (Latching) 16A - 250V a.c. Without Indicator Light		
Contacts: 1 NO	1 Mod	**SVN312**
Contacts:1NC	1 Mod	**SVN321**
Contacts: 2 NO	1 Mod	**SVN332**
Contacts: 1 NC	1 Mod	**SVN322**
Contacts: 2 NC	1 Mod	**SVN342**
Contacts: 1 NO + 1 NC	1 Mod	**SVN352**
Pushbuttons (Latching) 16A - 250V a.c. With Indicator Light		
Contacts: 1 NO : Green	1 Mod	**SVN413**
Contacts: 2 NO : Green	1 Mod	**SVN433**
Contacts: 2 NO : Green	1 Mod	**SVN463**
Contacts: 2 NO : Red	1 Mod	**SVN464**

Indicator Lights

Characteristics
- Available with red, green, orange, blue & transparent lens.

Light Technology
- LED.

Options
- DIN rail mountable.

Connection
- Cage terminals.

Capacity
- 10mm² rigid conductor, 6mm² flexible conductor, BS EN 62094-1.

SVN121

Description	Width (1 Mod =17.5mm)	Cat ref.
Indicator Lights 230V a.c.		
Indicator Colour: Green	1 Mod	**SVN121**
Indicator Colour: Red	1 Mod	**SVN122**
Indicator Colour: Orange	1 Mod	**SVN123**
Indicator Colour: Blue	1 Mod	**SVN124**
Indicator Colour: Transparent	1 Mod	**SVN125**
Indicator Colour: Red & Green (Double Indicator)	1 Mod	**SVN126**
Indicator Colour: Red x3 (Triple Indicator)	1 Mod	**SVN127**
Indicator Colour: Clear (Double Indicator)	1 Mod	**SVN128**
Indicator Colour: Red/Orange/Green (Triple Indicator)	1 Mod	**SVN129**
Indicator Colour: Green (Triple Indicator)	1 Mod	**SVN221**
Indicator Colour: Red/Orange/Blue (Triple Indicator)	1 Mod	**SVN222**
Indicator Lights 12/48V		
Indicator Colour: Green	1 Mod	**SVN131**
Indicator Colour: Red	1 Mod	**SVN132**
Indicator Colour: Orange	1 Mod	**SVN133**
Indicator Colour: Blue	1 Mod	**SVN134**
Indicator Colour: Clear	1 Mod	**SVN135**
Indicator Colour: Green/Red	1 Mod	**SVN136**

SVN127

Safety Transformers

Characteristics
- Provide Separated Extra Low Voltage (SELV) 8, 12, 24V a.c.

Technical Data
- Secondary voltages: 8V, 12V, 24V a.c.
- Cable capacities: 6mm²

Note: The transformers have a higher no load voltage. The stated voltages correspond to the voltages on nominal load.

ST313

Description	Width (1 Mod =17.5mm)	Cat ref.
230V/12V a.c. 50Hz, 20VA 50/60 Hz	4 Mod	**ST309**
230V/24V a.c. 50Hz, 20VA 50/60 Hz	4 Mod	**ST310**
230V/12-24V a.c. 50Hz, 25VA 50/60 Hz	4 Mod	**ST312**
230V/12-24V a.c. 50Hz, 16VA 50/60 Hz	4 Mod	**ST313**
230V/12-24V a.c. 50Hz, 40VA 50/60 Hz	4 Mod	**ST314**
230V/12-24V a.c. 50Hz, 63VA 50/60 Hz	6 Mod	**ST315**

Bell Transformers

Characteristics
- Provide Separated Extra Low Voltage (SELV) 8, 12, 24V a.c.

Technical Data
- Secondary voltages: 8V, 12V, 24V a.c.
- Cable capacities: 6mm².
- Bell transformers are short-circuit protected.

Note: When a bell transformer is installed in an enclosure with mains voltage equipment, 230V cable should be used on the secondary side of the transformer or extra low voltage cable should be sheathed within the enclosure.

ST301

Description	Width (1 Mod =17.5mm)	Cat ref.
230V/8V a.c. 50/60 Hz, 8-12V, 4VA	2	**ST301**
230V/8-12V a.c. 50/60 Hz, 8-12V, 8VA	2	**ST303**
230V/8-12V a.c. 50/60 Hz, 8-12V, 16VA	3	**ST305**

SU212

Bells

Technical Data
- Cable capacities: 6mm²
- Bells: Max. continuous duty ≤ 30 minutes.

Output
- Bells: 85 dBA.

Description	Width (1 Mod =17.5mm)	Cat ref.
8/12V a.c., 5VA - 0.33A	1 Mod	**SU212**
230V a.c., 6.5VA - 0.03A	1 Mod	**SU213**

SU214

Buzzers

Technical Data
- Cable capacities: 6mm².
- Buzzers: Max. continuous duty ≤ 30 minutes.

Output
- Buzzers: 78dBA.

Description	Width (1 Mod =17.5mm)	Cat ref.
8/12V a.c., 4VA - 0.33A	1 Mod	**SU214**
230V a.c., 6.5VA - 0.03A	1 Mod	**SU215**

Electromechanical Time Switches

Characteristics
- For hourly, daily or weekly programming.
- To control lighting, heating, ventilation, household appliances etc. to save energy and to improve comfort.

Technical Data
- Programming by captive segments.
- Manual override for 1 module products: Automatic, Permanent ON, Permanent OFF.
- Manual override for 3 module products: Automatic, Permanent ON, Permanent OFF.
- Minimum Switching Time: 15 min for daily dial, 2h for weekly dial.
- Supply failure reserve where applicable 120 hours.
- For a selection chart see page 2.56, for technical data see page 2.55.

Connection
- 1-6mm².

EHN010

EHN171

Description	Voltage Supply	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Time Switches without Supply Failure Reserve			
Daily Dial, 1 NO Changeover Contact, 16A 250V AC1	230V a.c. 50Hz	1 Mod	**EHN010**
Daily Dial, 1 NO Contact, 16A 250V a.c. AC1	230V a.c. 50Hz	3 Mod	**EHN110**
1 Channel Time Switches with Supply Failure Reserve			
Daily Dial, 1 Changeover Contact, 16A 250V AC1	230V a.c. 50/60Hz	1 Mod	**EHN011**
Daily Dial, 1 NO Contact, 16A 250V AC1	230V a.c. 50/60Hz	3 Mod	**EHN111**
Weekly Dial, 1 NO Contact, 16A 250V AC1	230V a.c. 50/60Hz	3 Mod	**EHN171**

EG071

EG103

EG203

Digital Time Switches

Characteristics
- For the control of lighting, heating, household appliances, shop windows, signage etc. to improve comfort and to save energy.

EG103 and **EG203** (Basic Version)
- Automatic change of summer / winter time.

EG103E/V and **EG203E** (Advanced Version)
- Automatic change of summer / winter time.
- Holiday mode: forcing ON or OFF between two dates, presence simulation with random switching.
- Backlit screen.
- Impulse programming capability (1s to 30 min).

Programming Key
- To allow easy back up and re-installation of the program to allow permanent program overrides.
- Programming per day or group of days.
- 56 ON / OFF programme steps.
- Permanent ON/OFF overrides.
- Temporary ON/OFF overrides bar graph indication showing the daily profile.
- Ability to disable device button controls with **EG004**.
- Programming can be completed without the need to be energised.

Connection
- **EG010** / **EG071**: 0.5 to 4mm².
- **EG103** and **EG203/E**: 1 to 6mm² Flexible, 1.5 to 10mm² Rigid.

Operating Voltage
- 230 a.c. 50/60 Hz (except **EG103V** - 12/24V AC/DC).

Description	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Digital Time Switch (not compatible with program key)		
Daily Cycle, 5 Adjustable pre-recorded programs 6 Switchings per day (3 on and 3 off), Output: 1 changeover contact 16A - 250V AC 1, 3 year reserve	1 Mod	**EG010**
Weekly Cycle, Capacity 20 program steps, 230V 50/60 Hz	1 Mod	**EG170**
Weekly Cycle, Capacity 20 program steps Output: 1 changeover contact 16A - 250V AC 1, 3 year reserve	1 Mod	**EG071**
1 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 1 changeover contact 16A - 250V AC 1, Delivered with key **EG005**	2 Mod	**EG103**
Weekly Cycle (Advanced Version), Output: 1 changeover contact 16A - 250V AC 1, Delivered with key **EG005**	2 Mod	**EG103E**
Capacity : 56 program steps, Output: 1 changeover contact, µ 16A - 250V~ AC1	2 Mod	**EG103B**
Capacity: 56 program step, Output: 1 changeover contact, µ 16A - AC1 - 12/24 V AC/DC, 50/60 Hz	2 Mod	**EG103V**
2 Channel Digital Time Switch (not compatible with program key)		
Capacity : 20 program steps to be divided between the 2 channels 230V 50/60 Hz	3 Mod	**EG210**
2 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 2 changeover contact 16A - 250V AC 1, Delivered with key **EG005**	2 Mod	**EG203**
Weekly Cycle (Advanced Version), Output: 2 changeover contact 16A - 250V AC 1, Delivered with key **EG005**	2 Mod	**EG203E**
Capacity: 56 program steps, Output: 2 changeover contacts, µ 16A - 250V~ AC1	2 Mod	**EG203B**
Capacity: 20 program steps to be divided between the 2 channels 230v 50/60 Hz	3 Mod	**EG270**
2 Channels Yearly Time Switch. Voltage Rating: 230V~ 50/60 Hz. Output: 2 changeover contacts, 10A - 250V~ AC1	4 Mod	**EG293B**

4 Channel Digital Time Switches

EG493E

Weekly and Annual Cycle
- In commercial premises timed programming often requires the use of multi-circuit equipment with large programming capacities for a weekly or annual cycle.

Applications
- Command of lighting circuits, control of heating, ventilation control, bells, alarms.

Functions
- Summer/winter time pre-programmed.
- External input for override (permanent, temporary, timed)
- The output can be defined as ON/OFF, impulse or cycle.
- 4 different cycles can be defined.
- Calculates automatically all dates linked with Easter.
- Programming for holiday period, including random mode.
- 10 specific weekly programs.
- Hour counter on each channel.
- Ability to disable device button controls with PIN code.

Connection
- Quick connect terminals.
- Capacity: 0.75 to 2.5mm².
- For a selection chart see page 2.56.

Description	Width (1 Mod =17.5mm)	Cat ref.
4 Channel Yearly Time Switch	4 Mod	**EG493E**
Spare grey programming key for timers **EG493E**		**EG007**
Interface between PC & key interface module, with software on CD		**EG003**
Interface between PC & key interface module, with USB		**EG003U**
4 Channel Weekly Time Switch. Voltage Rating: 230V~ 50/60 Hz, Output: 4 changeover contacts, 16A - 230V~ AC1	4 Mod	**EG470**
4 Channel Weekly Time Switch. Output: 2 changeover contacts + 2NO contacts, 10A - 250V ~ AC1. Delivered with programming key.	4 Mod	**EG403E**

Astronomical Time Switches

EE180

Characteristics
- Programming of lighting loads, with automatic change of winter / summer time.
- Expert program with individual astronomical program steps.
- Programming for day or group of days.
- Weekly programming.
- Permanent or temporary override.
- Programming for holiday period.
- Can be programmed via the PC software and the associated interface (**EG003**).
- For technical information see page 2.59.

Description	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Astronomical Time Switch		
Weekly Cycle, 230V a.c., 50Hz Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key **EG005**	2 Mod	**EE180**
2 Channel Astronomical Time Switch		
Weekly Cycle, 230V a.c., 50Hz 2 Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key **EG005**	2 Mod	**EE181**

EE181

PC Interface & Software Tools

EG003U

Description	Pack qty.	Cat ref.
Interface between PC & key interface module, with software on CD		**EG003**
Interface between PC & key interface module, with USB	1	**EG003U**
Yellow locking key to prevent unauthorised re-programming of all EG time clocks (except **EG010**, **EG071**)	1	**EG004**
Spare grey programming key for timers **EG103**, **EG103V**,**EG203**, **EG103E**, **EG203E**	1	**EG005**
DIN rail storage module for **EG004** or **EG005**	1	**EG006**

EMN001

EMN005

Time Lag Switches

Characteristics
- Provides control of lighting circuits with automatic switch-off after a pre-set time.
- Compact design with a 2 position switch, permanent / timed lighting control facility.

Basic Staircase Time Lag Switches
- Adjustable time delay setting 30 sec. to 10 minutes.

Multifunction Staircase Time Lag Switches
- Incorporates a pre-warning of switch OFF improving safety.
- Double delay function: 30 sec. to 10 min. 1 hour on override by pressing the push-button for more than 3 seconds. Double delay with pre-warning mode.
- For technical data see page 2.60.

Description	Pack qty.	Cat ref.
Basic Staircase Time Lag Switches		
Supply voltage 230V a.c. 50/60Hz 16A - 250V AC1 2300W incandescent halogen and fluorescent	1 Mod	**EMN001**
Multifunction Staircase Time Lag Switches		
Supply voltage 230V a.c. 50/60Hz 16A - 250V AC1 2300W incandescent halogen and fluorescent	1 Mod	**EMN005**

EZN001

EZN002

EZN004

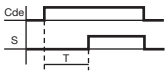
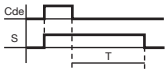
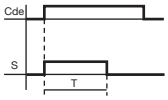
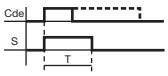
Delay Timers

Characteristics
- For timing and automation in domestic and commercial premises. The input signal can be via various switching devices (pushbutton, latching switch, timeclock etc.) and the timed output used to control the application.

Applications
- To provide all types of automatic control i.e. lighting, ventilation, watering, machine pre-heating, cycle control etc. with automatic switch off / on after preset time.

Terminal Capacity
- 6mm² max flexible.
- 1.5 - 10mm² rigid.

Technical Data
- Voltage range: 12 to 48V DC, 12 to 230V AC.
- Adjustable: Time delay from 0.1s to 10hrs.
- Complies with BS EN 60669-2-1.
- For technical data see page 2.61.

	Description	Pack qty.	Cat ref.
	**Delay On** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN001**
	**Delay Off** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN002**
	**Adjustable Time On** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN003**
	**Timer** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN004**
	**Symmetrical Flasher** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN005**
	Delay On / Off, Adjustable Time On / Off, Timer, Symmetrical Flasher 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN006**

Connection
Of Devices

Insulated busbars, junction blocks, distribution blocks, terminals… all that is needed to quickly and efficiently mount devices in enclosures and distribution boards.


KB163P


KB163N


KB190C


KB263A


KB363C


KB463A

Prong Insulated Busbars

Characteristics
- Brown or blue insulated busbars
- For MCBs Ph+N and fuse carriers 1 module spacing.
- Single, double, three and four pole busbars
  for multipolar MCB from 0,5 to 63A
  for multipolar, single pole fuse carriers and SB switches.

Description	Section	In	Width	Cat ref.
Single pole 63A to be equipped with protection profiles brown (phase)	10 mm²	63A	13 modules	**KB163P**
Single pole 63A to be equipped with protection profiles blue (neutral)	10 mm²	63A	13 modules	**KB163N**
Single pole 100A	20 mm²	100A	24 mod.	**KB190C**
	20 mm²	100A	57 mod. (1m)	**KB190B**
Double pole	10 mm²	63A	12 mod.	**KB263A**
	10 mm²	63A	24 mod.	**KB263C**
	16 mm²	80A	56 mod. (1m)	**KB280B**
Three pole	10 mm²	63A	12 mod.	**KB363A**
	10 mm²	63A	24 mod.	**KB363C**
	16 mm²	80A	57 mod. (1m)	**KB380B**
Four pole to be equipped with busbar ends	10 mm²	63A	12 mod.	**KB463A**
	10 mm²	63A	24 mod.	**KB463C**
	16 mm²	80A	56 mod. (1m)	**KB480B**


KZ021

End Caps (to insulate ends of the busbars)

Description	Cat ref.
End caps for single busbars	**KZ021**
End caps for double busbars KB263A, KB263C	**KZ022**
End caps for double/three pole busbars for KB280B, KB363A, KDN263B, KB363C, KB380B, KDN363B	**KZ023A**
End caps for four pole busbars KB463A, KB463C, KB480B, KDN463B	**KZ024**


KZ059

Protection profiles

Description	Width	Cat ref.
Protection profiles to insulate the spare prongs	5 modules	**KZ059**


KD190B


KDN263B


KDN363B


KDN463B


KF84A


KF82A

Insulated Busbars & Accessories

Characteristics
Fork insulated busbars
- For modular devices equipped with biconnect terminals; multipolar MCBs from 0,5 to 63A (without Ph+N), RCCBs
- Connection terminals KF83A, KF83C and KF83D are compatible with aluminium and copper conductors.

Description	Section	In	Width	Cat ref.
Fork insulated busbars single pole, 1 mod. step, insulated	20 mm²	100A	57 mod.(1m)	**KD190B**
Fork insulated busbars double pole, 2 mod. step, insulated	10mm²	63A	56 mod.(1m)	**KDN263B**
Fork insulated busbars three pole, 3 mod. step, insulated	10 mm²	63A	57 mod.(1m)	**KDN363B**
Fork insulated busbars 4 pole, 1 mod. step, insulated (L1,L2,L3,N …)	10 mm²	63A	56 mod.(1m)	**KDN463B**
Fork insulated busbars 3 x (P + N) (L1 N,L2 N,L3 N,L1 N,L2 N,L3 N …)	16 mm²	80A	12 mod.	**KDN451D**
Fork insulated busbars 3 x (P + N) (L1 N,L2 N,L3 N,L1 N,L2 N,L3 N …)	16 mm²	80A	57 mod. (1m)	**KDN451E**
Fork connection terminals for fork busbars terminals cable incoming : lateral connection, capacity: 1 x 25 mm², cable tightening with 2 screws				**KF84A**
Prong connection terminals for devices with screw terminal cable incoming : top connection, capacity: 2 x 16 mm² cable tightening with 2 screws				**KF82A**
Connection terminals for KB163P and KB83B cable incoming : lateral, connection capacity: 1 x 25 mm², cable tightening with 1 screw				**KF83A**
Connection terminals for KB163P and KB83B cable incoming : lateral, connection capacity: 2 x 25 mm², cable tightening with 1 screw				**KF83B**
Connection terminals for busbars KB190B for KB263 to KB463 cable incoming : lateral or top,connection capacity: 1 x 25 mm²,(35 mm² rigid)				**KF83C**
Connection terminals for KBN663A to KBN663C cable incoming : lateral or top,connection capacity: 2 x 25 mm² flexible, (35 mm² rigid)				**KF83D**

Distribution Blocks

Characteristics

Single Pole Distribution Blocks
- Monoblocs, insulated for copper conductor
- Ui: 500V
- Fixing on DIN rail, mounting plate and main devices plate kits.

Stepped Distribution Blocks
- Modular, monobloc for copper conductors
- Removable front cover
- Ui: 500V
- Fixing on DIN rail

- Equipped with an insulated rear plate
- Complies with IEC 60 998-1 and IEC 60947-7-1.

Description		Width mm	Cat ref.
Single pole distribution blocks	125A, Isc peak: 30kA, incoming: 1 x 35 + 1 x 16 mm², outgoing: 6 x 16 mm²	27 mm	**KJ02D**
	160A, Isc peak: 50kA incoming: 1 x 70 mm², outgoing: 6 x 16 mm²	35 mm	**KJ02C**
	250A, Isc peak: 50kA, incoming: 1 x 95 mm², outgoing: 2 x 25 + 5 x 16 + 4 x 10 mm²	45 mm	**KJ02A**
	400A, Isc peak: 50kA, incoming: 1 x 150 mm² outgoing: 2 x 25 + 5 x 16 + 4 x 10 mm²	45 mm	**KJ02B**
Modular distribution monobloc fixing on DIN rail, on mounting plate	100A - four pole, Isc peak: 20kA - Ui: 500V phase: 1 x 25 + 2 x 10 + 5 x 6 mm2 flexible neutral: 1 x 25 + 6 x 10 + 4 x 6 mm2 flexible h. 74,5 x d. 45 mm	98 mm, (5.5 mod.)	**KJ02E**
Modular distribution blocks fixing on DIN rail, on mounting plate	Brass busbar terminal 4P 100A		**KJ100A**
	Brass busbar terminal 4P 125A		**KJ125B**
	Brass busbar terminal 4P 160A		**KJ160A**
	Supplementary Neutral Bar 100A, 7 connections		**KJ07NB**
	Supplementary Neutral Bar 125A, 12 connections		**KJ12NB**
	Supplementary Neutral Bar 125A, 15 connections		**KJ15NB**

4 x KJ02A

KJ02E

KJ100A

KJ125B

Multi-Connection Distribution Blocks

Characteristics

Four Pole Multi-Connection System 250A
- To supply 2, 3 and 4 pole devices.
- For Quadro enclosures 620 or 700 mm wide.
- Incoming connection with 4 screw lugs.
- Outcoming connection with insulated flexible connectors.

Delivered with
- 6 insulated blue cables (6 x 6 mm2),
- 12 insulated brown cables (12 x 6 mm2),
- 2 fixation lugs for Quadro system.

Description			Cat ref.
Four pole multi-connection system 250A	60 outgoing connections: - 25 neutral outgoings - 12 outgoings per phase section: 6 and 10 mm² withstand current under 40°C: - per pole: 250A - 40A with connector 6 mm² -63A with connector 10mm² Isc peak: 60kA, Un: 500 V AC - 50Hz	without connectors	**KJ03A**
		with connectors	**KJ03B**
Connector terminals	to crimp flexible wire of 6 mm²		**KZ007**

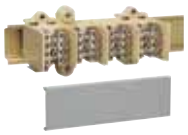
		Blue Cat ref.	Brown Cat ref.
Cables with connector for KJ03A	40A, 6 mm²	**KZ001**	**KZ002**
	40A, 6 mm²	**KZ051**	**KZ052**
	63A, 10 mm²	**KZ004**	**KZ005**
	63A, 10 mm²	**KZ074**	**KZ075**

KJ03A

KZ007

KZ001 / KZ002

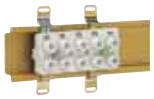
K018



K024

K037

KR95P / KR15P



K010

Junction Blocks

Characteristics
- For 16 to 35 mm² copper conductors.
- In max: 125A
- To facilitate incoming cables connection and deviations in distribution boards and enclosures:
  fixing on DIN rail
  for K024 and K025 blocks, the mounting can be horizontal or vertical.

Junction terminals
- For 25 to 150 mm² copper or aluminium conductors.

Description		Width	Cat ref.
Junction blocks, connection per pole: incoming: 2 x 25 mm², outgoing: 4 x 16 mm² delivered with front protection covers	1 pole, w. 40 x h. 55 x d. 40 mm	2.5 mod.	**K018**
	2 pole, w. 65 x h. 55 x d. 35 mm	4 modules	**K023**
	4 pole, w. 120 x h. 55 x d. 45 mm	7 modules	**K024**
	5 pole,w. 150 x h. 55 x d. 45 mm	8.5 mod.	**K025**
Junction blocks, connection per pole: incoming: 2 x 35 mm², outgoing: 4 x 16 mm²	1 pole, w. 41 x h. 55 x d. 53 mm	2.5 mod.	**K037**
Junction terminals fixing on DIN rails can be mounted in Univers and Quadro enclosures	tighten by hexagonal wrench 25 to 95mm²	25 mm	**KR95P**
	tighten by hexagonal wrench 35 to 50mm²	31 mm	**KR15P**
Connecting bars fixing on DIN rails	2 x 5 connecting for 2,5 mm² cables		**K010**
Grounding connection separate wedges	section 50 mm², delivered with 2 plates equipped with 70 mm² cable clamps		**K085**

Screw Terminals

KXA10LH

Characteristics
- Screw terminals
- Tracking resistance KC > 600
- Temperature range 120°C
- For all rail dimensions according to DIN 50022
- Secure fit on all non-standardised, commercially available support profiles 35mm in width
- Mounting or removing transverse to rail possible in both directions
- Uniform dimensions reduce the required accessories
- Built-in, self-loosening protection; vibration and vibration proof
- Large clamping range; suitable for two conductors of the same cross section (for PE only 1 conductor)
- Guided control of conductor in the open terminals by conical insertion funnel
- Screwdriver guidance by arranged sunk clamping screws
- Retained screws when loosening, particularly important for mechanical screwdrivers
- All parts contained in terminal support
- Compact design with side wire entry
- Takes flexible conductors with ferrule to rated cross section
- Low contact resistance due to high contact forces

Phase Feed Through Terminals

Characteristics
- 400V or 800V
- Colour beige
- The following can be used with 1000V photovoltaic applications: KXA06LH, KXA10LH, KXA16LH, KXB35LH, KXB70LH, and KXB150LH. A rated current of 1000V applies as long as the stripping length, the clearance and creepage distance comply with VDE0110/01.89.

Description	Dimensions	Pack qty.	Cat ref.
2.5² Through phase 800V/24A	w. 5 x d. 48.5 x h. 44.5 mm	100	**KXA02LH**
4² Through phase 800V/32A	w. 6 x d. 48.5 x h. 44.5 mm	100	**KXA04LH**
6² Through phase 1000V/41A	w. 8 x d. 53.5 x h. 48 mm	100	**KXA06LH**
10² Through phase 400V/57A	w. 10 x d. 51.5 x h. 58 mm	50	**KXA10L**
10² Through phase 800V/24A	w. 10 x d. 55 x h. 53.8 mm	50	**KXA10LH**
16² Through phase 400V/76A	w. 12 x d. 51.5 x h. 58 mm	50	**KXA16L**
16² Through phase 1000V/71A	w. 12 x d. 57.5 x h. 59.3 mm	50	**KXA16LH**
35² Through phase 400V/125A	w. 16 x d. 51.5 x h. 58 mm	20	**KXA35L**
35² Through phase 1000V/125A	w. 16 x d. 67.6 x h. 70.6 mm	20	**KXB35LH**
70² Through phase 1000V/192A	w. 24 x d. 81.2 x h. 76.8 mm	20	**KXB70LH**
150² Through phase 1000V/309A	w. 28 x d. 98.6 x h. 96 mm	10	**KXB150LH**

Phase Terminal Blocks

Description	Dimensions	Pack qty.	Cat ref.
2.5² Tiered phase 500V/24A	w. 5 x d. 63.9 x h.65.8 mm	100	**KXA02LX**
4² Tiered phase 400V/32A	w. 6 x d. 63 x h. 61.6 mm	100	**KXA04LX**
4² Earth tiered	w. 6.2 x d. 63.2 x h. 59 mm	100	**KXB04EX**

Neutral Terminals

KXA10NH

Characteristics
- 400V or 800V
- Colour blue
- Cross sectional area for solid conductors
- The following can be used with 1000V photovoltaic applications: KXA06NH, KXA10NH, KXA16NH, KXB35NH, KXB70NH, and KXB150LH. A rated current of 1000V applies as long as the stripping length, the clearance and creepage distance comply with VDE0110/01.89.

Description	Dimensions	Pack qty.	Cat ref.
2.5² Through neutral 800V/24A	w. 5 x d. 48.5 x h. 44.5 mm	100	**KXA02NH**
4² Through neutral 800V/32A	w. 6 x d. 48.5 x h. 44.5 mm	100	**KXA04NH**
6² Through neutral 1000V/41A	w. 8 x d. 53.5 x h. 48 mm	100	**KXA06NH**
10² Through neutral 400V/57A	w. 10 x d. 51.5 x h. 58 mm	50	**KXA10N**
10² Through neutral 1000V/57A	w. 10 x d. 55 x h. 53.8 mm	50	**KXA10NH**
16² Through neutral 400V/76A	w. 12 x d. 51.5 x h. 58 mm	50	**KXA16N**
16² Through neutral 1000V/71A	w. 12 x d. 57.5 x h. 59.3 mm	50	**KXA16NH**
35² Through neutral 400V/125A	w. 16 x d. 51.5 x h. 58 mm	20	**KXA35N**
35² Through neutral 1000V/125A	w. 16 x d. 67.6 x h. 70.6 mm	20	**KXB35NH**
70² Through neutral 1000V/192A	w. 24 x d. 98.6 x h. 96 mm	20	**KXB70NH**
150² Through neutral 1000V/309A	w. 28 x d. 98.6 x h. 96 mm	10	**KXB150NH**

KXA10E

Earth Terminals

Characteristics
- Colour yellow/green
- Cross sectional area for solid conductors

Description	Dimensions	Pack qty.	Cat ref.
2.5² Protective conductor	w. 5 x d. 48.5 x h. 48.6 mm	100	**KXA02E**
4² Protective conductor	w. 6 x d. 48.5 x h. 51 mm	100	**KXB04E**
6² Protective conductor	w. 8 x d. 53.5 x h. 54 mm	100	**KXB06E**
10² Protective conductor	w. 10 x d. 51.5 x h. 58 mm	50	**KXA10E**
10² Protective conductor	w. 10 x d. 55 x h. 54 mm	50	**KXB10E**
16² Protective conductor	w. 12 x d. 57.5 x h. 57.5 mm	50	**KXB16E**
16² Protective conductor	w. 12 x d. 51.5 x h. 58 mm	50	**KXA16E**
35² Protective conductor	w. 16 x d. 67.6 x h. 63 mm	20	**KXB35E1**
35² Protective conductor	w. 16 x d. 51.5 x h. 58 mm	20	**KXB35E**

Neutral Terminals

Characteristics
- Neutral separation 400V
- Colour blue
- The N disconnect terminal blocks can be used in cases with a degree of protection of at least IP54 according to IEC 60529 for photovoltaic applications 1000V can be used. It then applies 1000V/6kV/2

Description	Dimensions	Pack qty.	Cat ref.
4² Neutral terminal 400V/25A	w. 6 x d. 48.5 x h. 53.5 mm	100	**KXA04ND**
10² Neutral terminal 400V/45A	w. 10 x d. 51.5 x h. 58 mm	50	**KXA10ND**
16² Neutral terminal 400V/62A	w. 12 x d. 51.5 x h. 58 mm	50	**KXA16ND**

Three Conductor Terminal Blocks with Disconnect Slide

Characteristics
- 400V / 6kV / 3
- For phase-, N-, and PE
- With disconnect slide to neutral separation on busbars 10 x 3 mm

Description	Dimensions	Pack qty.	Cat ref.
4²/1 x N- Disconnect L/ 1 x Through/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I3**

Three Conductor Terminal Blocks

Characteristics
- N- isolation switching over separation
- For phase-, N-, and PE
- 400V/6kV/3
- Cannot be used with busbar
- Connect at either end of group of terminals

Description	Dimensions	Pack qty.	Cat ref.
4²/1 x N Disconnect L/ 1 x Through/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I1**

Three Wire Terminals without N- Separation

Characteristics
- Without neutral separation
- For phase-, N-, and PE
- 400V/6kV/3

Description	Dimensions	Pack qty.	Cat ref.
4²/1 x Through N/1 x Through L/ 1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I2**

Supplementary Terminals

Characteristics
- Cannot be used with busbar
- Connect at either end of group of terminals

Description	Dimensions	Pack qty.	Cat ref.
4²/2 x Through L	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I4**
4²/1 x Through L	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I5**
4²/2 x Through L/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I6**
4²/1 x Plug fuse/1 x Through L/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	**KXA04I7**


KXA04I5

Knife Disconnect Terminal Block

Characteristics
- Open or closed, sealed
- Colour of release lever signals the open state
- 800V/8kV/3

Description	Dimensions	Pack qty.	Cat ref.
4² Knife disconnect terminal block, 800V/20A	w. 8 x d. 49.5 x h. 48 mm	50	**KXA04KD**


KXA04KD

Fuse Terminals

Characteristics
- Open or closed, sealed
- Storage space for a spare fuse
- 800V/8kV/3

Description	Dimensions	Pack qty.	Cat ref.
4² G Fuse terminals (5 x 30) Max. 63A	w. 8 x d. 54.5 x h. 77.2 mm	50	**KXB04F5**
4² G Fuse terminals (6.3 x 32) Max. 10A	w. 10 x d. 54.5 x h. 77.2 mm	50	**KXB04F6**


KXB04F5

Through Terminals, Vertically Bridged

Characteristics
- 400V/5kV/3
- Colour black
- Internal vertical bridged

Description	Dimensions	Pack qty.	Cat ref.
2.5² Tiered internal bridged 500V/24A	w. 5 x d. 63.9 x h. 65.8 mm	100	**KXA02VB**
4² Tiered internal bridged 400V/32A	w. 6 x d. 70.5 x h. 61.6 mm	100	**KXA04VB**


KXA02VB

KWE01B

Endplates Through Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA02LH, KXA04LH	10	**KWE01G**
Endplate for KXA02NH, KXA04NH	10	**KWE01B**
Endplate for KXA02E	10	**KWE01GR**
Endplate for KXA06NH	10	**KWE02B**
Endplate for KXA10L, KXA16L	10	**KWE04G**
Endplate for KXA10N, KXA16N	10	**KWE04B**
Endplate for KXA10LH	10	**KWE05G**
Endplate for KXA10NH	10	**KWE05B**
Endplate for KXA10E, KXA16E	10	**KWE04GR**
Endplate for KXA16LH	10	**KWE06G**
Endplate for KXA16NH	10	**KWE06B**
Endplate for KXA35L	10	**KWE03G**
Endplate for KXA35N	10	**KWE03B**

Endplates Three Wire Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA04I1 I2 I3 I4 I5 I6	10	**KWE21G**
Endplate for KXA04I7	10	**KWE22G**

Endplates N Disconnect Terminal Blocks

Description	Pack qty.	Cat ref.
Endplate for KXA16ND, KXA10ND	10	**KWE17B**
Endplate for KXA04ND	10	**KWE24B**

Endplate Tiered and Vertically Bridged Through Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA02VB, KXA02LX	10	**KWE25G**
Endplate for KXA04VB, KXA04LX	10	**KWE26G**

KWE27G

Endplate Knife Disconnect Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA04D	10	**KWE27G**

KWJ150C3

Non Insulated Cross Connector

Description	Pack qty.	Cat ref.
Connecting link 70mm², 2 fold	10	**KWJ70C2**
Connecting link 70mm², 3 fold	10	**KWJ70C3**
Connecting link 150mm², 2 fold	10	**KWJ150C2**
Connecting link 150mm², 3 fold	10	**KWJ150C3**

KWL001

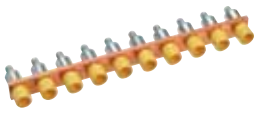
Marking Tags

Characteristics

- KW001: Box of 10 digits 0-9 to 50 individual labeling strips, KW002/03/04: numbered sequentially per 25 strips, KW002: numbers 1-100, KW003: numbers 101-200, KW004: L1, L2, L3, N, PE

Description	Pack qty.	Cat ref.
Designation clips box (0-9)	1	**KWL001**
Designation clips 0-100 (25 strips)	1	**KWL002**
Designation clips 101-200 (25 strips)	1	**KWL003**
Designation clips L1, L2, L3, N, PE (25 strips)	1	**KWL004**

Insulated Cross Connector



KWJ35A10

Description	Pack qty.	Cat ref.
Insulated jumper bar 2.5², 2 fold	10	**KWJ02B2**
Insulated jumper bar 2.5², 3 fold	10	**KWJ02B3**
Insulated jumper bar 2.5², 4 fold	10	**KWJ02B4**
Insulated jumper bar 2.5², 5 fold	10	**KWJ02B5**
Insulated jumper bar 2.5², 10 fold	10	**KWJ02B10**
Insulated jumper bar 4mm², 2 fold	10	**KWJ04A2**
Insulated jumper bar 4mm², 3 fold	10	**KWJ04A3**
Insulated jumper bar 4mm², 4 fold	10	**KWJ04A4**
Insulated jumper bar 4mm², 5 fold	10	**KWJ04A5**
Insulated jumper bar 4², 10 fold	10	**KWJ04A10**
Insulated jumper bar 4², 12 fold	10	**KWJ04A12**
Insulated jumper bar 4², 2 fold	10	**KWJ04B2**
Insulated jumper bar 4², 3 fold	10	**KWJ04B3**
Insulated jumper bar 4², 4 fold	10	**KWJ04B4**
Insulated jumper bar 4², 5 fold	10	**KWJ04B5**
Insulated jumper bar 4², 10 fold	10	**KWJ04B10**
Insulated jumper bar 6², 2 fold	10	**KWJ06B2**
Insulated jumper bar 6², 3 fold	10	**KWJ06B3**
Insulated jumper bar 6², 4 fold	10	**KWJ06B4**
Insulated jumper bar 6², 5 fold	10	**KWJ06B5**
Insulated jumper bar 6², 10 fold	10	**KWJ06B10**
Insulated jumper bar 10², 2 fold	10	**KWJ10B2**
Insulated jumper bar 10², 3 fold	10	**KWJ10B3**
Insulated jumper bar 10², 10 fold	10	**KWJ10B10**
Insulated jumper bar 16², 2 fold	10	**KWJ16A2**
Insulated jumper bar 16², 3 fold	10	**KWJ16A3**
Insulated jumper bar 16², 10 fold	10	**KWJ16A10**
Insulated jumper bar 35², 2 fold	10	**KWJ35A2**
Insulated jumper bar 35², 3 fold	10	**KWJ35A3**
Insulated jumper bar 35², 10 fold	10	**KWJ35A10**

Non Insulated Cross Connector

KWJ150C3

Description	Pack qty.	Cat ref.
Connecting link 70mm², 2 fold	10	**KWJ70C2**
Connecting link 70mm², 3 fold	10	**KWJ70C3**
Connecting link 150mm², 2 fold	10	**KWJ150C2**
Connecting link 150mm², 3 fold	10	**KWJ150C3**

Busbar for N Disconnect Terminal Blocks

Description	Pack qty.	Cat ref.
N Busbar	1	**KW1NBB**

Busbar Terminals for Busbar 10 x 3mm

KW16ST

Description	Pack qty.	Cat ref.
Busbar terminal 16²	50	**KW16ST**
Busbar terminal 16² - 35²	20	**KW35ST**

End Clamp (material: plastic)

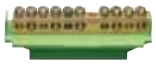
KWB01

Description	Pack qty.	Cat ref.
End clamp 35mm²	100	**KWB01**
End clamp 150mm²	100	**KWB02**


KM04L


KM08L


KM07N


KM10B


KM10E


KM13N


KM11B


K151


KM25N


K158

K159

Brass Terminals

Characteristics
- Brass terminals
- For earth, neutral, phase copper conductors.
- In max: 60A

Version without base:
- Can be mounted using KZ bases or rail. Delivered with screws.

Version with base:
- To be clipped on 12 x 2 mm rails.

- Earth: green/yellow base
- Neutral: blue base
- Phase: beige base

Description	Connection Section	With base neutral Cat ref.	With base earth Cat ref.	With base phase Cat ref.	Without base Cat ref.
Brass terminals with base	2x 6 + 2x10mm² 4 connections plot length 30mm	-	-	**KM04L**	**K140**
	4x16 + 4x10mm² 8 connections 2 plot length 30mm	-	-	**KM08L**	-
	3x16 + 4x10mm² 7 connections plot length 49mm	**KM07N**	**KM07E**	**KM07L**	**K142**
	5x16 + 5x10mm² 10 connections plot length 67mm	**KM10A**	**KM10B**	**KM10C**	**K143**
	5x16 + 6x10mm² 11 connections plot length 73mm	**KM11N**	**KM11E**	**KM11L**	**K144**
	2x16 (dbl. drive)+ 8x10 mm² 10 connections plot length 69mm	**KM10N**	**KM10E**	**KM10L**	**K145**
	6x16 + 7x10mm² 13 connections plot length 85mm	**KM13N**	**KM13E**	-	**K148**
	1x25+5x16 + 5x10mm² 11 connections plot length 85mm	-	**KM11B**	-	**K151**
	1x25 + 8x16 + 8x10mm² 17 connections plot length 121mm	**KM17N**	**KM17E**	-	**K156**
	1x25+11x16+13x10mm² 25 connections plot length 169mm	**KM25N**	**KM25E**	-	**K158**
Brs. terminals without base	1x25 + 8x16 + 29x10 mm2, length 242mm				**K159**
	1x25 + 16x16 + 61x10 mm2, length 482mm				**K160**
	1x25 + 33x16 + 129x10 mm2,length 992mm				**K162**


KZ012


KZ014

Bases

Characteristics
- Bases for brass terminals K140 to K162
- Insulated material
- M4 x 8 fixing screws

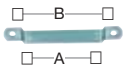
Description		Cat ref.
Bases for brass terminals K140 to K162 insulated material M4 x 8 fixing screws	blue base, for neutral	**KZ012**
	green/yellow base, for earth	**KZ013**
	beige base, for phase	**KZ014**

Bases & Rails for Terminals & Blocks

Characteristics

Bases for Brass Terminals
- For the mounting of the KM brass terminals without base.
- Material: flat bar 12 x 2 mm.

Mounting Rails
- For the mounting of junction blocks and terminals into enclosures.
- Electro-zinc coated and bichromated.
- Length: 2m



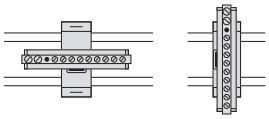
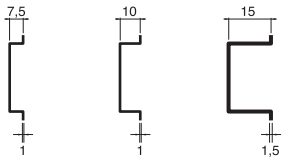
A089

UT91A

A090


KZ060F


A099

Description		Dimensions.	Cat ref.
Flat bar supports for terminal strips for brass terminals with base	for one brass terminal	A = 55 mm B = 74 mm	**A089**
Pinch carriers UT91A for brass terminals with base	1 span (250 mm)	A = 205 mm	**UT91A**
Brass terminals supports for brass terminals with base	for mounting in all boards	length: 2 m	**A090**
Rail fixing clips KZ060F to fix brass terminals on DIN rails with bases KZ012, KZ013 and KZ014	mounting on DIN rail  horizontally vertically	width 20 mm	**KZ060F**
Symmetrical rails, DIN 46277/3, width: 35 mm	1 span (250 mm)  A088 A098 A099	depth 7.5 mm	**A088**
		depth 10 mm	**A098**
		depth 15 mm	**A099**
Asymmetrical rails, DIN 46277/1	1 span (250 mm) 	depth 7.5 mm	**A050**

Insulated Brass Terminals

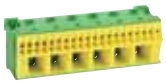

KM07EF


KM12NF

Description		Pack qty.	Cat ref.
Brass terminals insulated green, earth, IP20	7 x 16mm²	1	**KM07EF**
Brass terminals insulated blue, neutral, IP20	7 x 16mm²	1	**KM07NF**
Brass terminals insulated green, earth, IP20	12 x 16mm²	1	**KM12EF**
Brass terminals insulated blue, neutral, IP20	12 x 16mm²	1	**KM12NF**

KN06P

KN22N



KN26E

Quick Connect & Cage Terminals

Characteristics
- For earth, neutral, phase copper conductors.
- The terminals are equipped with direct plug-in quickconnect terminals for 1,5 to 4 mm² plug-in wires and cage terminals for 1,5 to 25 mm² standard wires.
- Can be clipped on premounted bases for volta, vector, vega D, gala and gamma enclosures.
- Available as accessories.
- Complies with EN 60998. For technical information see page 2.59.

Description	Terminal qty. quick connect 1.5 to 4mm²	Cage 1.5 to 25mm²	Blue neutral Cat ref.	Brown phase Cat ref.	Green/yellow earth Cat ref.
Quickconnect and cage	5	1	**KN06N**	**KN06P**	**KN06E**
	8	2	**KN10N**	**KN10P**	**KN10E**
	11	3	**KN14N**	**KN14P**	**KN14E**
	14	4	**KN18N**	**KN18P**	**KN18E**
	17	5	**KN22N**	**KN22P**	**KN22E**
	20	6	**KN26N**	**KN26P**	**KN26E**

KN99P/N/E

VZ710

VZ711

GZ30A

KN00A

KN07N

KN04P

Accessories

Description		Cat ref.
Equipotential bridgings to connect 2 quickconnect terminals	for neutral terminals (pack of 10)	**KN99N**
	for phase terminals (pack of 10)	**KN99P**
	for earth terminals (pack of 10)	**KN99E**
Bases for quickconnect terminals	for volta, vector	**VZ711**
	vega 18 surface	**VZ710**
	gamma	**GZ30A**
	FW enclosure	**UZ00K1**
Universal bases for terminals to be fixed on 12 x 2 mm flat bars of DIN rails in Quadro and Univers enclosures	length: 105 mm pre-cut base to fit with the terminals dimensions	**KN00A**
Incoming cage terminals allow the connection of cables up to 25 mm² Ui = 630V, 90A, can be clipped on quickconnect bases	neutral terminals: 4 x 25 mm²	**KN04N**
	neutral terminals: 7 x 25 mm²	**KN07N**
	phase terminals: 4 x 25 mm²	**KN04P**
	phase terminals: 7 x 25 mm²	**KN07P**

Engineered solutions.

From pre-assembled standard distribution units to bespoke composite TP&N boards and plug in distribution boards, we can provide the solution.

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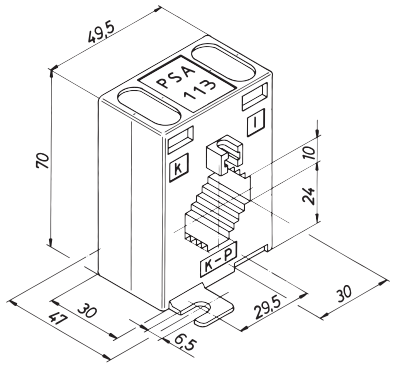
	EC150	EC152	EC154M	EC350	EC352	EC360	EC362	EC364M	EC365B	TE360	EC370	EC372	TE370
Electrical Characteristics													
Voltage	230V~ ±15%			230V~ ±15% 400V~ ±15%									
Frequency	50/60Hz			50/60Hz									
Consumption	< 10VA and 1W			< 10 VA and 3W									
Data													
Connection	Direct										Via current transformer		
Display	Digital - 7 digits												
Accuracy	± 1% - Class B according to EN 50470-3												
I_{max}	63A					100A					6A on CT secondary		
$I_{starting}$	40mA					80mA					10mA on CT secondary		
Base current	10A					20A					5A		
LED													
	1000 blinking per kWh					500 blinking per kWh					1000 blinking per kWh		
Pulsed Ouput													
	1 pulse = 100Wh / 100ms / 27V DC max (excepted on KNX meters)												
Tariff													
	1	2	2	1	2	1	2	2	1	2	1	2	2
Mechanical Characteristics													
Width	3 Modules			4 Modules		7 Modules					4 Modules		
Protection degree	IP20 - IP51 (front part)												
Temperature	Storage temperature: -20°C to +70°C, Operating temperature: -10°C to +55°C												
Connection capacity	Rigid: 1.5 to 16mm² Flexible: 1 to 16mm²					Rigid: 1.5 to 35mm² Flexible: 1 to 35mm²					Rigid: 1.5 to 10mm² Flexible: 1 to 6mm²		

Technical Data (to EN/IEC60044-1)

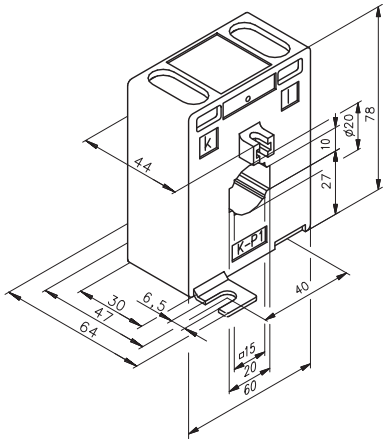
Primary rated current	50 A - 2000 A
Rated secondary current	5 A
Rated frequency	50 - 60 Hz
Highest voltage for equipment U_m	720 V
Rated power-frequency withstand voltage (r.m.s.)	3 kV
Instrument security factor (FS)	FS 5
Rated continuous thermal current	1,2 x I_n
current rating	120 %
Rated short time thermal current	I_{th} = 60 x I_n (max 50 kA)
Rated dynamic current:	I_{dyn} = 2,5 x I_{th} (max 120 kA)
Permissible ambient temperature	-40 °C to + 40 °C
Class of insulation in accordance with IEC 60085	E
Degree of protection DIN/EN 60529 / VDE 0470 T1	IP 20
Recommended tightening torque secondary terminals	1,5 - 2 Nm

	Prim. [A]	Sec. [A]	Power [VA]	Accuracy class	Dimensions	Max. Busbar and cable Size
SRA01005	100	5	2.5	1	70 x 49,5 x 30 mm	30 x 10 mm 25 x 15 mm 20 x 20 mm
SRA01505	150	5	2.5	1		
SRA02005	200	5	2.5	1		
SRA02505	250	5	2.5	1		
SRC04005	400	5	5	1		
SRC06005	600	5	5	1		
SRA00505	50	5	1.5	1	78 x 60 x 30 mm	20 x 10 mm 15 x 15 mm Ø 20 mm
SRI03005	300	5	5	1	78 x 60 x 30 mm	40 x 12 mm Ø 28 mm
SRD08005	800	5	5	1	108 x 85 x 30 mm	60 x 10 mm 50 x 30 mm Ø 45 mm
SRD10005	1000	5	5	1		
SRD15005	1500	5	5	1		
SRE20005	2000	5	15	1	122 x 100 x 40 mm	80 x 10 mm 60 x 30 mm Ø 60 mm

SRA01005, SRA01505, SRA02005, SRA02505, SRC04005, SRC06005



SRA00505



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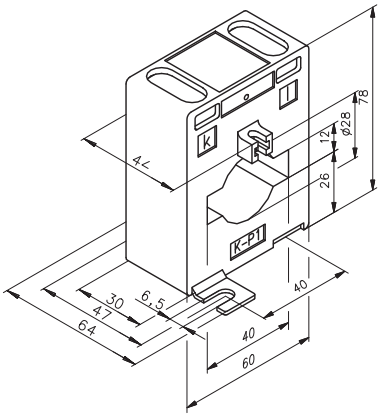
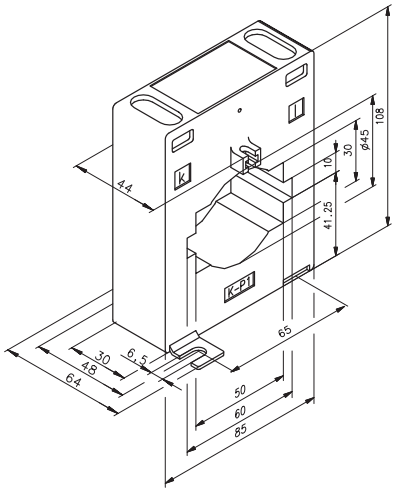


SRD08005, SRD10005, SRD15005



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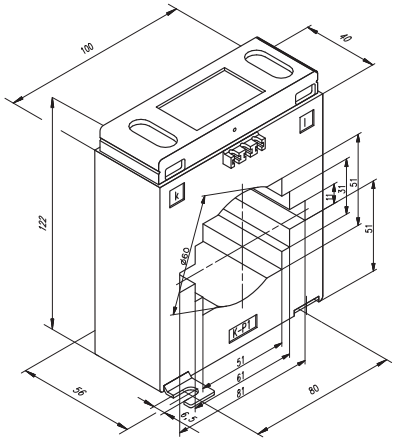


Electrical Characteristics Changeover Switches

Family		SF						
Modular size		1 module			2 module			4 module
Cat ref.		**SFH125**	**SFM125**	**SFT125**	**SFH225**	**SFT225**	**SFT240**	**SF263**
Thermal current Ith (40°C)		25A	25A	25A	25A	25A	40A	63A
Operational frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated operation voltage in AC		230V						
Rated insulation voltage (U_i)		440V	440V	440V	440V	440V	440V	500V
Rated impulse withstand voltage U_{imp}		4 KV	4 KV	3 KV	6 KV	6 KV	6 KV	4 KV
Protection degree		2	2	2	3	2	2	2
Working temperature		-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C
Storage temperature		-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Operational Currents I_e								
Rated voltage	Load duty category							
400V AC	AC 22A	25A	25A	25A	25A	25A	40A	63A
400V AC	AC 22B	25A	25A	25A	25A	25A	40A	63A
Short circuit characteristic								
Rated short time withstand current 1s Icw (rms)	IEC 60947-3	375A / 1sec					600A / 1sec	4.5kA cond.
Prospective short circuit current (rms)	EN 60669	3kA	3kA	3kA	6kA	6kA	n/a	n/a
Mechanical characteristic								
Rigid cable section		35 mm²	35 mm²	35mm²	25 mm²	25 mm²	25 mm²	25 mm²
flexible cable section		10 mm²	10 mm²	10 mm²	16 mm²	16 mm²	16 mm²	16 mm²
Tightening torque		1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm
IP protection degree		20	20	20	20	20	20	20
Mechanical endurance (number of cycle)		200,000	200,000	200,000	200,000	200,000	200,000	100,000
Electrical endurance @ AC22 (number of cyles)		25,000	25,000	25,000	5,000	5,000	2,500	5,000
Overall dimension								
Width (mm)		17.5	17.5	17.5	35	35	35	71.5
Height (mm)		83	83	83	83	83	83	90
Depth (mm)		68	68	68	68	68	70	68

Electrical Characteristics Switch Disconnectors

Family		**SBx / SFx**			**SBx**			**SBx**			
Number of pole		1P - 2P - 3P - 4P									
Frame size		frame size 1			frame size 2			frame size 3			
Comply to standard	IEC 60947-3	ok			ok			ok			
	IEC 60669-2-4	ok			ok			-			
Thermal current Ith (40°C)		16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
Operational frequency		50/60 Hz			50/60 Hz			50/60 Hz			
Rated insulation voltage (Ui)		440V			440V			440V			
Rated impulse withstand voltage Uimp		3kV			6 kV			6 kV			
Protection degree		3 (SB) / 2 (SF)			3			3			
Working temperature		-20 to 50°C									
Storage temperature		-40 to 80°C									
Operational Currents I_e											
Rated voltage	load duty category										
400V AC	AC 21-A[1]		16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
	AC 22-A[1]		16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
	AC 23-A[1]		10A	10A	10A	32A	40A	40A	40A	40A	40A	40A
Short circuit characteristics											
Rated short time withstand current 1s Icw (rms)	IEC 60947-3		240A	375A	480A	480A	600A	945A	945A	960A	1200A	1500A
Prospective short circuit current (rms)	EN 60669-2-4		3kA			6kA			n/a			
Mechanical characteristics												
Rigid cable section			16 mm²			25 mm²			50 mm²			
Flexible cable section			10 mm²			16 mm²			35 mm²			
Tightening torque			1.8 Nm			2.8 Nm			3.6 Nm			
Busbar thickness			n/a			1 to 1.5 mm			1.5 to 2 mm			
IP protection degree			20									
Mechanical endurance (number of cycles)			100000			30000			20000			
Electrical endurance @ AC22 (number of cycles)			25000			5000			2500			

[1] A category: frequent operation

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. Two devices are available the standard **EEN100** light sensitive switch and an enhanced programmable version the **EE171** that also allows time clock control.

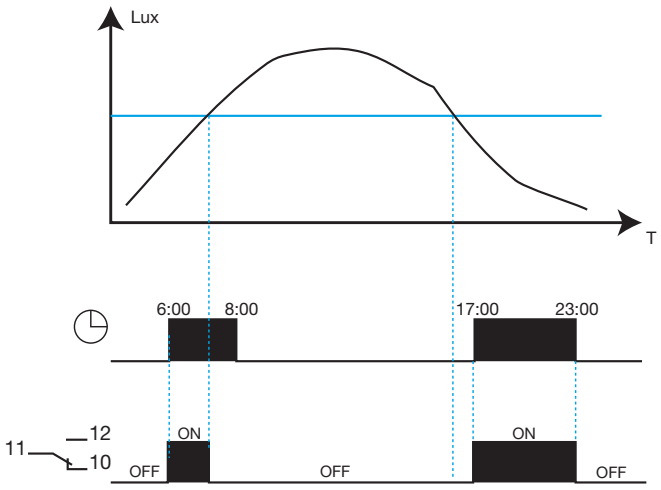
Principle of Operation
Both devices control lighting systems according to natural illumination;
- The user sets the working level:
- The photo cell measures the external light level

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

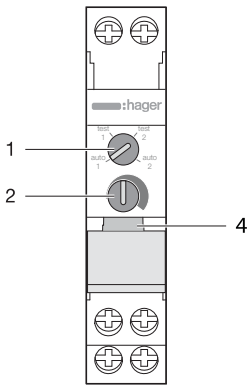
The output of the **EE171** during the programmed ON time period is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

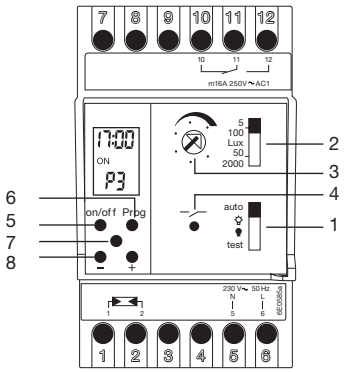
The output of the **EE171** during the programmed off time period is:
- OFF, regardless of the lighting level

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



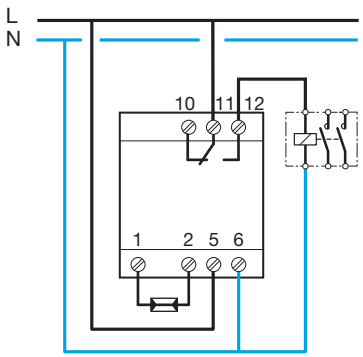
Description





The programmable light sensitive switch **EE171** has two main functions:
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

A programmer to establish the automatic operating cycle
The programmer comprises 4 keys:
5. **ON / OFF** to choose whether the circuit is on or off.
6. **Prog** to set the program and scroll program steps
7. **Reset**
8. **+** and **-** to change settings



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.

	EE002	**EE003**
Type	Flush Mounting	Surface Mounting
Dimensions (mm)	89 x 48 x 32	25 x 25 x 20 Hole 25mm
Connection	Cable 1m 2 x 0.75mm²	0.75 to 4mm²
Protection Class	IP54	IP54
Working & Storage Temperature	-30°C to +60°C	-30°C to +60°C

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.

Technical Specification

Electrical Specification	
Voltage Rating	230V +10 -15% 50Hz
Consumption	1.5VA Max
Output	1 Voltage Free Changeover Contact
Max Breaking Capacity	AC1 16A 250V~
Incandescent Lamp	2000W 230V~
Halogen Lamp	1000W 230V~
Fluorescent Lamp Uncompensated	1000W 230V~
Compensated in Series (10µF)	1000W 230V~
// Compensated (15µF)	200W 230V~
Duo	1000W 230V~
Functional Characteristics	
Sensitivity Range	5 to 100 lux, 50 to 2000 lux
Cycle	Weekly
Programs	8 Pre-defined Program
Program Setting	1 Minute Increments*
Accuracy	+6min / annum*
Operating Reserve	Lithium Battery Total of 3 Years Supply Failure*
On and Off Delay	15 to 60s
Working Temperature	-30°C to +60°C (cell) -10°C to +50°C (modular device)
Storage Temperature	-20°C to +60°C
Protection Class (cell)	IP54
Insulation Class	II
Connection Capacity	
Modular Device	0.5 to 4mm²
Cell	0.75 to 2.5mm²
Max Length between Cell and Modular Device	50m
Mounting of the Cell with 2 Screws	2.5mm

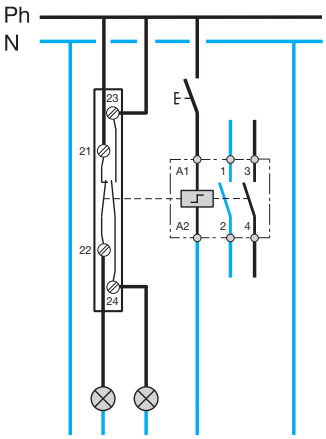
* **EE171** only

Technical Characteristics

	EPN510 EPN515 EPN520	EPN513 EPN518 EPN524	EPN519 EPN521	EPN525 EPN540	EPN528 EPN541	EPN529
Voltage	230V	24V	12V	230V	24V	12V
Start Consumption	24VA	24VA	24VA	48VA	47VA	TBC
Contact Rating AC1	-	-	16A 250V~[1]	-	-	-
Electrical Endurace AC1 - 16A	150,000 Operations					
Mechanical Endurance	500,000 Operations					
Current in Open Position	8 mA					
Max Duration of Voltage Supply to Coil	1h					
Min Duration of Current Supply to Coil	0.1s					
Working Temperature	-5 to +40°C					
Storage Temperature	-40 to +80°C					
Connections						
Coil: Flexible Rigid	0.5 to 4mm² 1 to 6mm²					
Power: Flexible Rigid	1 to 6mm² 1.5 to 10mm²					

[1] 400~ for **EPN540** and **EPN541**.

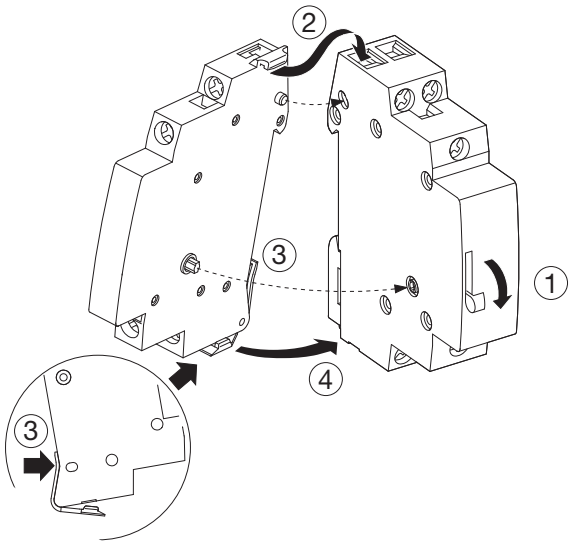
Auxiliary Contacts (EPN051)
The range of latching relays have been designed for use with an auxiliary contact. The devices simply clip on the side of the relay.



Technical Characteristics

	EPN051
Voltage	-
Contact Rating	2A / 250V
Imin / 230V	15mA

[1] Voltage dependant on associated relay



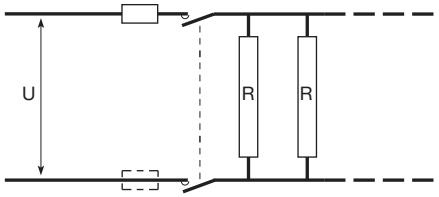
Heating
The choice of the contactor depends on the mechanical endurance (number of operations) and on the electrical heating load
i.e. resistive elements, infra-red element, convectors.

Choice of Contactors
The choice of contactor is dependant upon many parameters
i.e. operating voltage, size of contacts, number of operations, ambient temperature, type of load supplied etc.

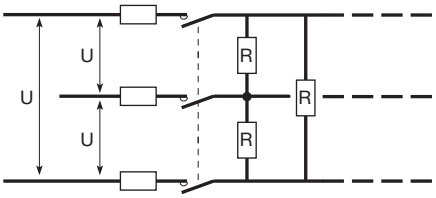
Type of Load
Loads are categorised into various AC ratings, (AC1, AC2, AC3 etc.) and the higher the AC rating the more inductive the load becomes.
All Hager contactor ratings are given at AC1, therefore they must be de-rated if used on other types of AC load.

Heat Dissipation Inserts
The ambient temperature around a contactor can affect its life expectancy, therefore, we strongly recommend that heat dissipation inserts (**LZ060**) are fitted between all contactors and adjacent devices.

Single Phase



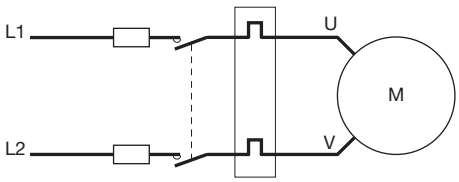
Three Phase



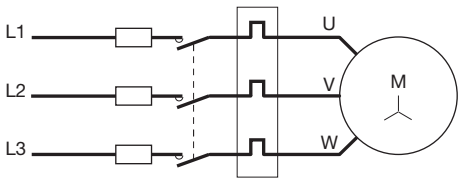
			Number of operations				
			100,000	**150,000**	**200,000**	**500,000**	**1,000,000**
Max. load in kW	230V	16A	3	2.5	1.9	0.85	0.7
		25A	4.6	4	3	1.35	1
		40A	7.3	6.3	4.7	2.2	1.6
		63A	11.6	10	7.5	3.5	2.5
	400V	16A	8.9	8	5.8	2.8	2
		25A	13.8	12	8.6	4.3	3
		40A	22	18.5	14.385	6.3	5
		63A	35	30	22.6	10.2	7.6

Contactor selection when using with motors

Single Phase 230V (AC3 or AC7b)



Three Phase 400V (AC3 or AC7b)



			Choice of Contactor According to control diagram	
	Single Phase with Capacitor 230V	**Three Phase (AC3 or AC7) 400V**	**2 Wires**	**3 Wires**
Maximum load in kW	0.88		2 pole 25A	
	2.6		2 pole 40A	
		2.6		3 pole 25A
		7.8		3 pole 40A
		10		3 pole 63A

Requirements of Use
Influence of Working Temperature
Derating factor between 40°C and 50°C : 0.9
Example: Heating with convector
The maximum load of **ESC225** is 4.6kW for 50,000 operations and for a temperature <40°C.
between 40°C and 50°C, the load is 4.6 x 0.9 i.e. 4.14kW

Close Fitting
It is necessary to put a heat dissipation insert (reference **LZ060**) between each contactor.

Description			Modular contact						Auxiliary contact
Standard conformity			EN 61095						
Approvals			NF - VDE- IMQ - KEMA - RMC / CCC						
			Relay	Contactor	Relay	Contactor	Contactor	Contactor	Contactor
Number of modules			1		2		3		½
Thermal current Ith (40°C)			16A	25A	16A	25A	40A	63A	6A
Rated frequency			50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Rated insulation voltage (U_i)			250V	250V	440V	440V	440V	440V	250V
Rated impulse withstand voltage (U_{imp})			4kV	4kV	4kV	4kV	4kV	4kV	4kV
Protection Degree			2	2	2	2	2	2	2
Rated Operating currents and power ratings in AC									
AC-1 / AC-7a	Rated operational currents Ie		16A	16A	16A	25A	40A	63A	-
	Rated operational power	230V	3kW	4.6kW	3kW	4.6kW	7.3kW	11.6kW	-
		400V	-	-	8.9kW	13.8kW	22kW	35kW	-
AC-3 / AC-7b	Rated operational currents Ie		5.5A	8.5A	5.5A	8.5A	25A	32A	-
	Rated operational power	230V	570W	880W	570W	880W	2.6kW	3.3kW	-
		400V	-	-	1.7kW	2.6kW	7.8kW	10kW	-
AC-12	Rated operational currents i.e. @ 230V		-	-	-	-	-	-	6A
AC-15	Rated operational currents i.e. @ 230V		-	-	-	-	-	-	2A
Mechanical and Electrical Endurances									
Mechanical endurance		Number of operations	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Electrical endurance @ Ie AC7a (AC12 for aux contact)		Number of operations	60,000	60,000	60,000	60,000	60,000	60,000	60,000
MCB Protected short-circuit withstand									
Prospected short-circuit current		rms	1kA	3kA	1kA	3kA	3kA	3kA	1kA
Associated protection			MCB C16-6kA	MCB C25-6kA	MCB C16-6kA	MCB C25-6kA	MCB C40-10kA	MCB C63-10kA	6A 10x38 gG Fuse
Power dissipation									
Power dissipation per current path			1W	1.5W	1W	1.5W	3.2W	5W	0.4W
Magnetic system for Eco and standard contactor									
Pick-up			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Coil consumption			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Closing delay			25ms	25ms	25ms	25ms	25ms	25ms	-
Opering delay			15ms	15ms	15ms	15ms	20ms	20ms	-
Connection									
Main contact cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	4...25mm²	4...25mm²	1...6mm²
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	4...16mm²	4...16mm²	1...6mm²
Main contact connection screw		Type	M3.4	M3.4	M3.4	M3.4	M5	M5	M3.4
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	2Nm	2Nm	1.2Nm
Coil connection cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	-
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	-
Coil connection screw		Type	M3.5	M3.5	M3.5	M3.5	M4	M4	-
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	-
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	1.5Nm	1.5Nm	-
Working temperature									
			-10°C to +50°C						
Storage temperature									
			-40°C to +80°C						

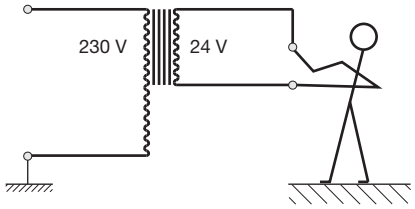
Lighting systems with electronic ballasts cause inrush current peaks. Therefore we recommend you use the chart below to determinate the maximum amount of lamps that can be connected to a Hager contactor: The chart gives the maximum amount of lamps per contact. In 2014 the performances of the contactors in combination with lights increased. The products identified on the front face with the '+' can accept a higher number of lamps. For these products, see the figures in the column with the '+' in the header.

	Lamp Power	16A	25A	16A +	25A +	40A	63A
Compact fluo lamps							
Compact fluo lamp with external electronic ballast	5W	11	15	17	27	49	76
	7W	11	15	17	27	49	76
	9W	9	13	16	26	40	63
	11W	9	13	16	26	40	63
	15W	7	11	14	22	36	57
	18W	7	11	14	22	36	57
	20W	7	11	14	22	36	57
	23W	7	11	14	22	36	57
	26W	7	11	14	22	36	57
Compact fluo lamp with integrated electronic ballast	5W	17	27	34	54	86	135
	7W	17	27	34	54	86	135
	9W	17	27	34	54	86	135
	11W	17	27	34	54	86	135
	15W	17	27	34	54	86	135
	18W	13	20	25	40	63	100
	20W	13	20	25	40	63	100
	23W	13	20	25	40	63	100
	26W	13	20	25	40	63	100
Incandescent lamps							
Tungsten & halogen lamps 230V	40W	32	50	36	57	76	120
	60W	21	33	28	45	67	105
	75W	17	27	24	38	63	100
	100W	13	20	17	28	41	65
	150W	8	13	11	18	29	45
	200W	6	9	8	14	22	35
	300W	4	7	6	10	15	23
	500W	2	3	3	6	9	14
	1000W	0	0	1	2	4	7
Tungsten & halogen lamps 12 ou 24V	20W	13	20	25	40	139	218
	35W	8	13	16	26	82	129
	50W	6	9	11	18	60	94
	75W	4	6	7	12	52	82
	100W	2	3	3	6	35	55
	150W	1	2	2	4	20	31
LED							
LED 230V with integrated electronic ballast - non dimmable	4W	17	27	34	54	86	135
	4.5W	17	27	34	54	86	135
	6W	17	27	34	54	86	135
	7W	17	27	34	54	86	135
	8W	17	27	34	54	86	135
	12W	17	27	34	54	86	135
	17W	13	20	25	40	63	101
	18W	13	20	25	40	63	101
	22W	13	20	25	40	63	101
	30W	9	14	17	28	44	70
	34W	9	14	17	28	44	70
	40W	9	14	17	28	44	70
	50W	7	11	14	22	35	55
LED 230V with integrated electronic ballast - dimmable	4W	38	60	76	120	159	250
	5.5W	38	60	76	120	159	250
	6W	38	60	76	120	159	250
	7W	38	60	76	120	159	250
	8W	38	60	76	120	159	250
	12W	38	60	76	120	159	250
	17W	28	44	56	88	118	185
	18W	28	44	56	88	118	185
	22W	28	44	56	88	118	185
	30W	20	31	39	62	82	130
	34W	20	31	39	62	82	130
	40W	20	31	39	62	82	130
	50W	16	24	30	48	65	102
LED 230V headlight with integrated electronic ballast	100W	-	-	3	5	6	9
	150W	-	-	1	3	4	6
	200W	-	-	1	2	4	6
LED 12V with separated transformer - dimmable	1W	38	60	76	120	180	220
	2.5W	38	60	76	120	180	220
	4W	38	60	76	120	180	220
	5W	38	60	76	120	180	220
	7W	38	60	76	120	160	200
	10W	38	60	76	120	160	200
	15W	28	44	56	88	160	200

	Lamp Power	16A	25A	16A +	25A +	40A	63A
Fluorescent tubes							
T5 double - uncompensated	2 x 18W	13	20	25	40	50	78
	2 x 20W	12	19	24	38	50	78
	2 x 36W	12	15	19	30	44	69
	2 x 40W	10	13	16	26	40	63
	2 x 42W	9	12	15	24	40	63
	2 x 58W	7	9	11	18	27	42
	2 x 65W	6	8	10	16	27	42
	2 x 80W	5	7	8	14	22	35
	2 x 115W	4	5	6	10	16	25
T5 double - serie compensation	2 x 18W	7	11	14	22	34	53
	2 x 20W	7	11	14	22	29	45
	2 x 36W	6	10	12	20	27	42
	2 x 40W	6	10	12	20	27	42
	2 x 42W	6	10	12	20	27	42
	2 x 58W	6	10	12	20	25	39
	2 x 65W	5	7	8	14	23	36
	2 x 80W	5	7	8	14	20	31
	2 x 115W	4	5	6	10	17	25
T5 single - electronic ballast	15W	7	11	14	22	36	57
	18W	7	11	14	22	36	57
	20W	7	11	14	22	36	57
	36W	7	11	14	22	34	53
	40W	7	11	14	22	29	45
	42W	7	11	14	22	29	45
	58W	6	10	12	20	27	42
	65W	6	10	12	20	27	42
	80W	6	10	12	20	27	42
	115W	6	10	12	20	25	39
T5 double - electronic ballast	2 x 18W	7	11	14	22	34	53
	2 x 20W	7	11	14	22	29	45
	2 x 36W	6	10	12	20	27	42
	2 x 40W	6	10	12	20	27	42
	2 x 42W	6	10	12	20	27	42
	2 x 58W	6	10	12	20	25	39
	2 x 65W	5	7	8	14	23	36
	2 x 80W	5	7	8	14	20	31
	2 x 115W	4	5	6	10	17	25
Fluorescent tubes							
T5 single - uncompensated	15W	13	20	19	30	70	100
	18W	13	20	19	30	70	100
	20W	12	19	19	30	70	100
	36W	12	15	17	28	60	90
	40W	10	13	16	26	60	90
	42W	9	12	15	24	55	83
	58W	7	9	10	17	35	56
	65W	6	8	10	17	35	56
	80W	5	7	9	15	30	48
	115W	4	5	6	10	20	32
	140W	3	5	6	10	16	26
T5 single - paralell compensation	15W	7	11	12	20	36	57
	18W	7	11	12	20	36	57
	20W	7	11	12	20	36	57
	36W	7	11	12	20	34	53
	40W	7	11	12	20	29	45
	42W	7	11	12	20	29	45
	58W	6	10	9	15	27	42
	65W	6	10	9	15	27	42
	80W	6	10	9	15	27	42
	115W	6	10	9	15	25	39

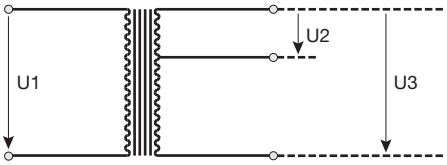
	Lamp Power	16A	25A	16A +	25A +	40A	63A
Discharge lamps							
High-pressure mercury-vapor lamps - without compensation	50W	9	14	17	28	32	50
	80W	6	9	11	18	24	37
	125W	3	5	6	10	18	28
	250W	2	3	3	6	10	15
	400W	1	1	1	2	6	9
	700W	0	0	0	0	4	5
High-pressure mercury-vapor lamps - paralell compensation	50W	7	11	14	22	26	40
	80W	5	8	10	16	22	34
	125W	3	5	6	10	15	23
	250W	2	3	3	6	9	14
	400W	1	1	1	2	5	8
	700W	0	0	0	0	3	5
	1000W	0	0	0	0	2	3
Low pressure sodium lamps - without compensation	18W	8	10	8	12	17	23
	35W	4	6	7	9	14	20
	55W	3	6	7	9	14	20
	90W	2	4	5	6	9	14
	135W	1	3	3	4	6	8
	180W	1	2	2	4	6	8
Low pressure sodium lamps - paralell compensation	18W	5	7	5	8	12	24
	35W	4	6	4	7	10	23
	55W	3	5	3	5	10	19
	90W	2	3	3	4	8	16
	135W	1	2	1	2	5	7
	180W	1	2	1	2	5	6
High pressure sodium lamps - without compensation	35W	11	14	15	24	30	50
	50W	9	12	10	15	22	34
	70W	8	9	8	12	18	28
	110W	6	8	6	10	14	22
	150W	4	7	5	8	10	16
	250W	2	4	3	5	6	10
	400W	0	1	1	2	4	6
	1000W	0	1	1	1	2	3
High pressure sodium-vapour lamps - electronic ballast or parallel compensation	35W	6	9	11	18	31	50
	50W	6	9	11	18	22	35
	70W	4	6	7	12	16	25
	110W	3	5	6	8	13	21
	150W	3	5	4	6	8	13
	250W	2	3	3	4	7	11
	400W	1	1	1	2	5	8
	1000W	0	0	0	1	2	3
Metal halide lamps - without compensation	35W	12	24	19	30	42	55
	70W	10	15	12	17	26	36
	150W	6	7	8	12	14	20
	250W	3	5	5	8	9	14
	400W	1	2	2	4	6	9
	1000W	0	0	0	0	3	5
Metal halide lamps - electronic ballast or parallel compensation	35W	6	10	12	18	22	39
	70W	5	8	10	13	22	39
	150W	3	5	6	8	12	22
	250W	3	5	6	7	9	16
	400W	1	1	1	2	5	7
	1000W	0	0	0	1	2	3

Safety Transformers
These transformers are designed to ensure personal safety, their primary winding are electrically separated from their secondary windings and they are intended to feed separated extra low voltage circuits U ≤ 50V. A thermal overload, in the primary windings, ensures that if a short circuit or an overload occurs in the output it will not damage the device.



Bell Transformers
Bell transformers are similar to safety transformers but the secondary voltages do not exceed 24 volts, they are also similarly protected against short circuits and overloads, by thermal protection in the primary winding.

Compliance with the Standards
The bell and safety transformers conform with BS EN 61558.
Where transformers are to be used in a common enclosure with other devices heat dissipation inserts LZ060 should be used.



Recommendation of Use
- To link only one secondary (never link both simultaneously)
- Do not connect (in series or in parallel) secondaries of different transformers

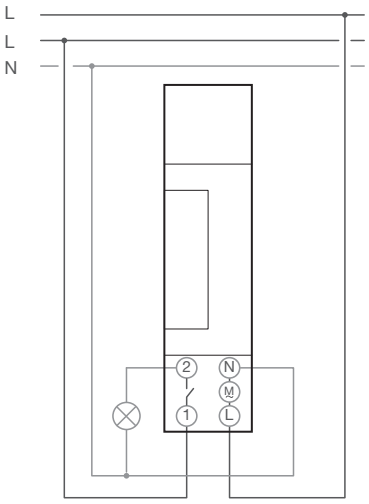
Technical Specification

		ST301	ST303	ST305	ST312	ST313	ST314	ST315
Nominal Power		4VA	8VA	16VA	25VA	16VA	40VA	63VA
Designation		Bell	Bell	Bell	Safety	Safety	Safety	Safety
Primary Voltage		230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts
Secondary Voltage	U2	8 Volts	8 Volts	8 Volts	12 Volts	12 Volts	12 Volts	12 Volts
		I_n = 0.5A	I_n =1A	I_n = 2A	I_n = 2.08A	I_n = 1.33A	I_n = 3.33A	I_n = 5.25A
	U3	12 Volts	12 Volts	12 Volts	24 Volts	24 Volts	24 Volts	24 Volts
		I_n = 0.33A	I_n = 0.67A	I_n = 1.33A	I_n = 1.04A	I_n = 0.67A	I_n = 1.67A	I_n = 2.63A
No Load	U2	12 Volts	15 Volts	12 Volts	14 Volts	16 Volts	14 Volts	14 Volts
Secondary Voltage	U3	18 Volts	22 Volts	19 Volts	29 Volts	30 Volts	27Volts	27 Volts
Galvanic Insulation		4kV	4kV	4kV	4kV	4kV	4kV	4kV
Max Functional Temperature		35ºC	35ºC	35ºC	35ºC	35ºC	35ºC	35ºC
Overload and S/C Protection		Thermal cut out in the primary winding						
Insulation Class		H	H	B	B	B	B	H

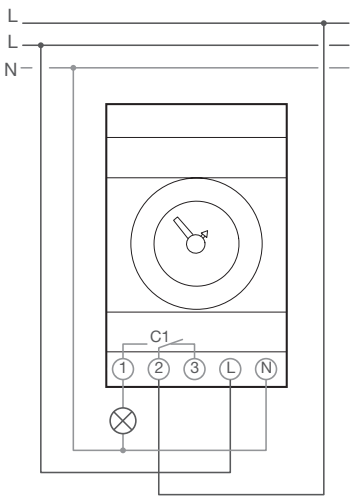
Technical Specifications

	EHN011	EHN010	EHN110	EHN111	EHN171	EG103E	EG203E	EG493E
Version	Daily				Weekly			Weekly & Annual
Voltage Supply	230V 50/60Hz	230V 50Hz	230V 50Hz	230V 50/60Hz	230V 50/60Hz	230VAC 50/60Hz	230VAC 50/60Hz	230VAC 50/60Hz
Consumption	0.5W	1W	0.9W	0.5W	0.5W	6VA	6VA	6VA
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 Volt Free Change-over Contact	2 Volt Free Change-over Con-tacts	2 Volt Free 2 NO Changeover Contact Contacts
Switching Capacity								
AC 1	16A/250V	16A/250V	16A/250V	16A/250V	16A/250V	16A AC1 /250V 4A DC 1 /12V	16A AC1 /250V 4A DC 1 /12V	10A AC1 /250V
Inductive Load cos 0.6	4A / 250V	4A / 250V	4A / 250V	4A / 250V	2.5A / 250V	10A / 250V	10A / 250V	10A / 250V
Incandescent Lamp	1000W	1000W	1100W	900W	900W	2300W	2300W	1500W
LED Lamp ≤2W >2W	30W (15x2W) 300W (20x15W)	30W (15x2W) 300W (20x15W)	20W 180W	20W 180W	20W 180W	-	-	-
Halogen Lighting	1000W	1000W	1100W	1100W	1100W	2300W	2300W	1500W
Fluorescent lamps (electronic ballast)	600W (10x58W)	600W (10x58W)	-	-	-	-	-	-
Fluorescent lamps With ballast Without ballast	600VA(max 70µF) 1000VA	600VA(max 70µF) 1000VA	-	-	-	-	-	-
Compensated Fluorescent Tubes (max 45µF)	-	-	400VA	400VA	400VA	400W	400W	400W
Non Compensated Fluorescent Tubes Compensated in Series	-	-	1100VA	1100VA	1100VA	1000W	1000W	800W
Compact Fluorescent Tubes	150W	150W	90W	90W	90W	500W	500W	400W
Minimum Current AC 1	-	-	-	-	-	100mA / 250V	100mA / 250V	100mA / 250V
Minimum Current DC 1	-	-	-	-	-	-	-	-
Galvanic Insulation Between Power Supply and Output	-	-	-	-	-	< 4 kV	< 4 kV	< 4 kV
Characteristics								
Technology	Quartz	Quartz	Quartz	Quartz	Quartz	-	-	-
Dial	24hrs	24hrs	24hrs	24hrs	7 days	-	-	-
Minimum Switching	15min	15min	15min	15min	2h	-	-	-
Programming Capacity	-	-	-	-	-	56 Steps	56 Steps	300 Steps
Minimum Time Between 2 Steps	-	-	-	-	-	1min	1min	1min
Working Accuracy	1sec per day	1sec per day	Network synchronous	1sec per day	1sec per day	±1.5sec / 24h	±1.5sec / 24h	±0.2sec / 24h
Supply Failure Reserve	120hrs	No	No	120hrs	120hrs	5 Yrs lithium battery	5 Yrs lithium battery	5 Yrs Lithium Battery
Manual Switch Type	Off Auto On	Off Auto On	Off Auto On	Off Auto On	Off Auto On	-	-	-
Protection Degree	-	-	-	-	-	IP20	IP20	IP20
Environment								
Working Temperature	-10ºC to +50ºC	-20ºC to +50ºC	-20°C to +55°C	-10°C to +55°C	-10°C to +55°C	-5ºC to +45ºC	-5ºC to +45ºC	-10ºC to +45ºC
Storage Temperature	-25°C to +70°C	-25°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20ºC to +70ºC	-20ºC to +70ºC
Connection								
Flexible	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1.5 to 10mm²	1.5 to 10mm²	1 to 4mm²
Rigid	-	-	-	-	-	1 to 6mm²	1 to 6mm²	1.5 to 6mm²

EHN010 / EHN011
230 VM ±10% 50/60Hz



EHN110 / EHN111 / EHN171
230 VM ±10% 50/60Hz



Time Clocks/Switches Selection Chart

	Electromechanical Time Clocks		**Digital Time Clocks**			
	1 Channel		**1 Channel**		**2 Channels**	**4 Channels**
						
	1 Modules	3 Modules	1 Modules	2 Modules	2 Modules	4 Modules
	EHN010 **EHN011**	**EHN110** **EHN111** **EHN171**	**EG071** **EG010**	**EG103** **EG103E**	**EG203** **EG203E**	**EG493E**

Programming Cycle	Electromechanical		Digital			
	1 Channel **1 Module**	**3 Modules**	**1 Channel** **1 Modules**	**2 Modules**	**2 Channels** **2 Modules**	**4 Channels** **4 Modules**
24 Hours	**EHN010** **EHN011**	**EHN110** **EHN111**	**EG010**			
7 Days		**EHN171**	**EG071**	**EG103** **EG103E**	**EG203** **EG203E**	
Annual						**EG493E**

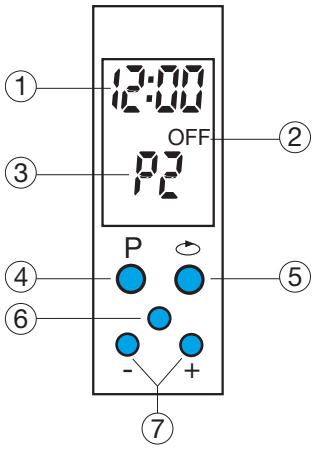
Technical Characteristics - EG010

Electrical Characteristics	
Voltage Supply	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-registered 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

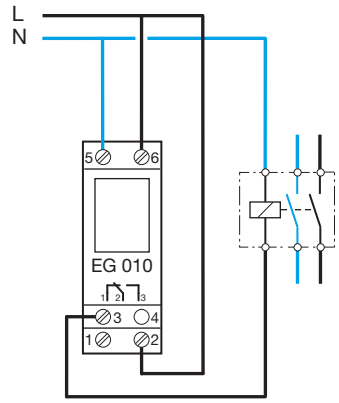
Product Presentation



Display
1. Time
2. Circuit Status
3. Program Selection

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

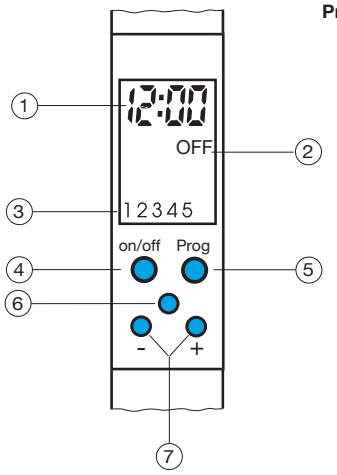
Electrical Connection



Technical Characteristics - EG071

Electrical Characteristics	
Voltage Supply	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

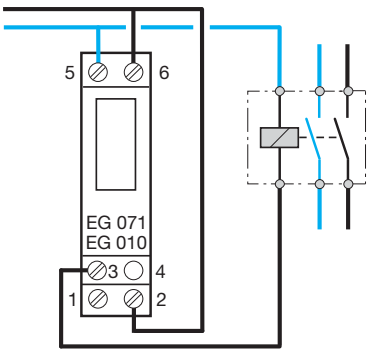
Product Presentation

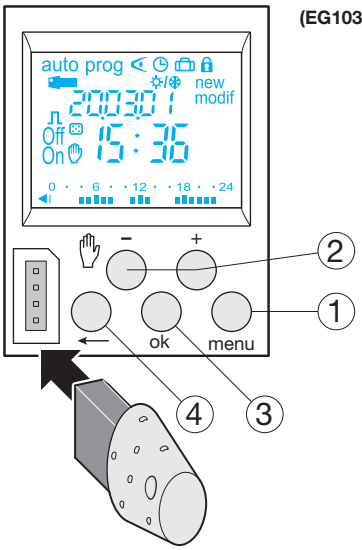


Display
1. Time
2. Circuit Status
3. Days of the week

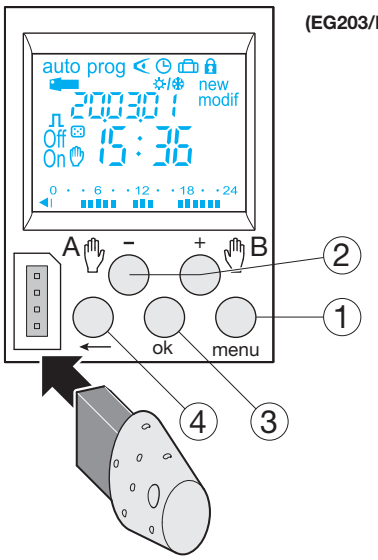
Buttons
4. ON / OFF : to select the circuit status
5. Reset
6. Prog: to program the device and scroll program steps
7. To input time and day

Electrical Connection





(EG103/EG103E)



(EG203/EG203E)

Keys

1.	Menu	Selection of operating mode
	Auto	Mode of running according to the program selected
	Prog	New for programming mode
	Prog	To modify an existing program
	◀	Checking of the program
	◷	Modification of time, date and selection of the winter/summer time change mode.
	🧳	Holidays
2.	+ / -	Navigation or setting of 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

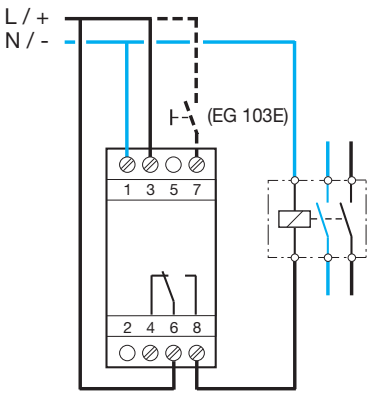
You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

Major Characteristics

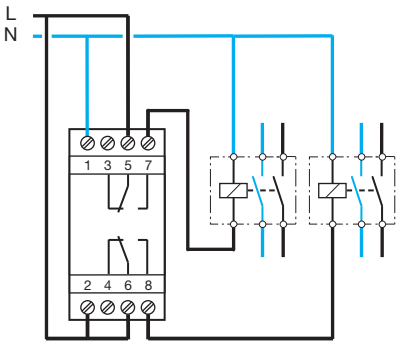
- Product delivered with current time and date set
- Automatic change of winter / summer time ☼/❄
- Programming key
  - For permanent waivers
  - For program copy or save
- Programming for day or group of days
- 56 program steps On, Off
- Impulses ⎍ (1 sec to 30 min)*
- Permanent overrides On or Off (✋ 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*

* Evolution models E or V only

Connection Diagram EG103*



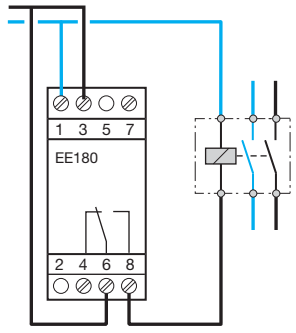
Connection Diagram EG203*



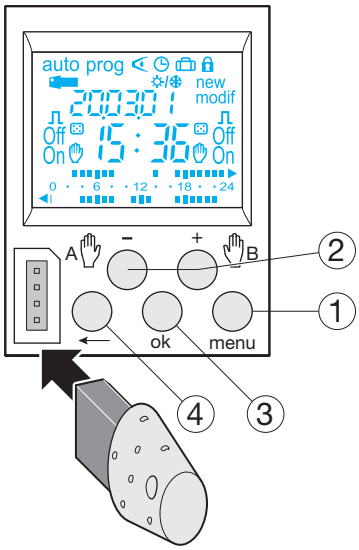
Technical Characteristics

	EE180 (1 Channel)	EE181 (2 Channel)
Width in 17.5mm Modules	2	2
Supply Voltage	230V AC (+10 % / -15%, 50/60Hz	
Number of Outputs	1	2
Characterisitics of Relay	Change over contact 16A C 1 250V /10A cos phi = 0.6	
Incandescent	2300W	
230V Halogen	2300W	
Standards	CE + CTICK and CEI 60-669	
Connection		
Flexible	1 to 6mm²	
Rigid	1.5 to 10mm²	
Environment		
Storage Temperature	-20°C to +60°C	
Working Temperature	-10°C to +55°C	
IP	IP20	
Functional Characteristics		
Display LCD	Without backlight screen	
Operating reserve	Lithium battery 5 years	
Precision	+/- 1.5s/day	
Programming Key	Yes	
Automatic change of winter / summer time	Yes	
Functions available in free programming	Weekly programming / permanent override / temporary override	
Astro Functions		
Astro mode	Yes	Independent programming for each channel
Programming of the lighting interrution	Yes (if channel Astro)	
Temporary override	15 / 30 / 60min	
Maintained ON	Adjustment common to the 2 channels	
Anticipation ON	Adjustment common to the 2 channels	

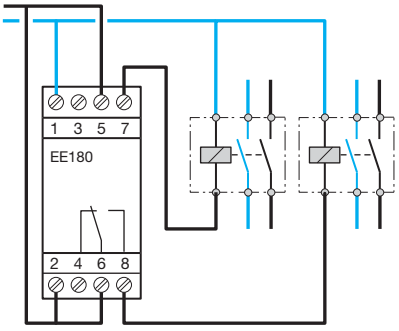
Electrical Connection
EE180 : 1 Channel



Product Presentation



EE181 : 2 Channels



Keys

1.	Menu	Selection of operating mode
	Auto	Mode of running according to the program selected
	Prog	New for programming mode
	Prog	To modify an existing program
	◁	Checking of the program
	🕒	Modification of time, date and selection of the winter/ summer time change mode
	Astro	Astronomical mode
	★	Indicated that the channel is in astronomical mode
2.	+ / -	Navigation or setting of values
A	✋	In auto, mode, selection of overrides, waiver or random operation
B	✋	
3.	OK	To validate flashing information on display
4.	←	To return to the previous step

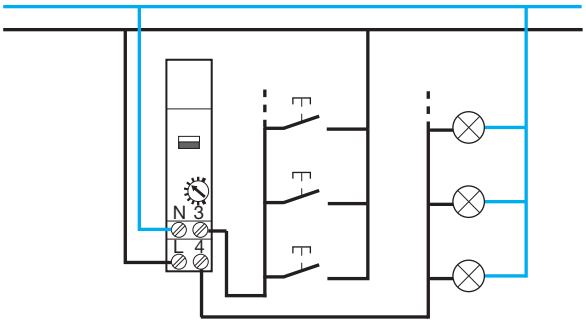
You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

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.

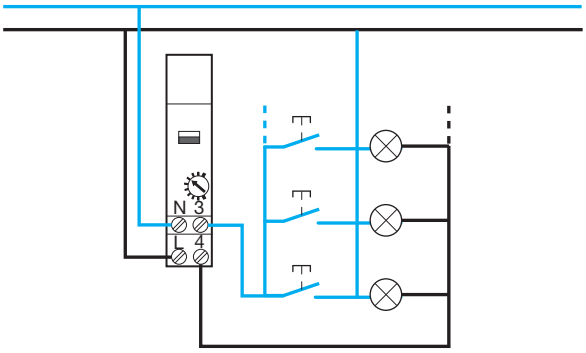
Technical Specification

	EMN001	EMN002	EMN005
Electrical Characteristics			
Supply voltage	230V +10 -15% 50/60Hz	230V +10 -15% 50/60Hz	230V +10 -15% 50/60Hz
Consumption	1VA	0.5W Permanent 8W Max.	1VA
Size (Module)	1	-	1
Breaking Capacity			
AC1	16A 230V AC	4A 230V~	16A
Incandescent	2300W	1000W	2300W
Halogen 230V	2300W	1000W	2300W
Ferro Magnetic Transformer	1600W	-	-
Parallel Compensated	Capacitor 112µF	-	-
Fluorescent Lamps	1000W		1000W
Series Compensated	3600W	-	1000W
Electronic Transformer	2300W	-	-
Compact Fluorescent Lamps with Electronic Ballast with Conventional Ballast	60 x 7W or 40 x 11W or 32 x 15W or 20 x 23W 23000W	- -	- -
Functional Characteristics			
Time Delay	30s to 10min	24s	30s to 10min
Retrigger	Yes	-	-
Max. Current in Rest Position	100mA	-	-
Automatic 3/4 Recognition	Yes	-	-
Local Command	Automatic / Override On	-	Automatic / Override On
Environment			
Working Temperature	-10 to +55°C	-15 to +55°C	-10 to +55°C
Storage Temperature	-20 to +60°C	-25 to +70°C	-20 to +60°C
Connection			
Flexible	1 to 6mm²	1 to 6mm²	1 to 6mm²
Rigid	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²
Connection **EM001/EM002**	-	2 wires 1.5	-

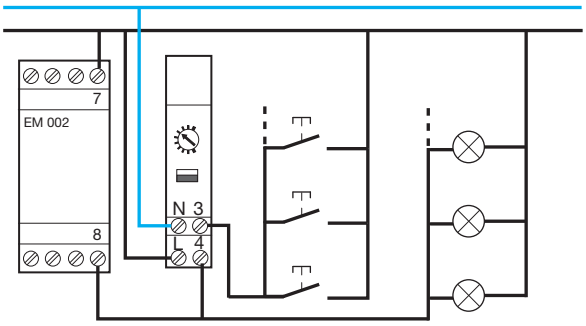
Wiring Diagrams
4-Wire



3-Wire



Combination EMN002 with EMN001

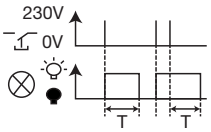


A: Basic Mode
Press push button to switch ON the light. After a set time (Adjustable “T”, the light will switch OFF automatically.

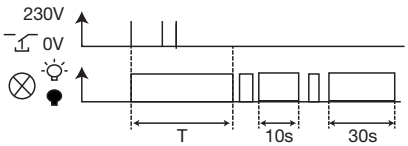
B: Prewarning Mode
A signal (blink) will appear before the end of the lighting period.

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.

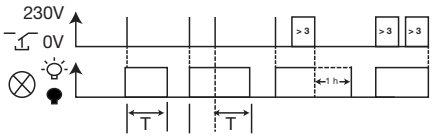
A



B



C



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 signal 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 a 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 - 6 Individual Functions
A = Timer.
B = Delay off (output relay opens either at end of command or after set time period - which ever 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

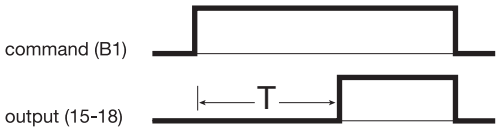
Output relay open - with no command

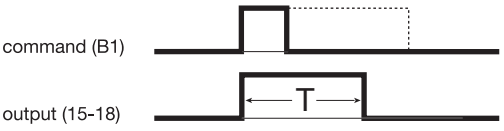
Output relay open - with command signal running

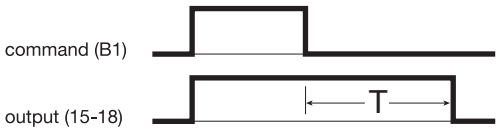
Output relay closed - with command signal running

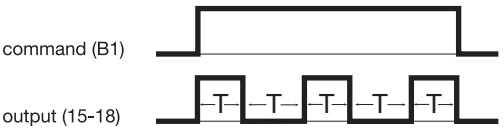
Output relay close - with command signal removed

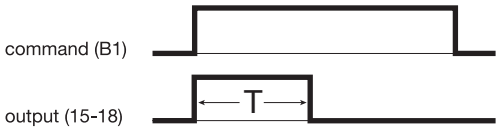
Output relay closed (**EZN005**)







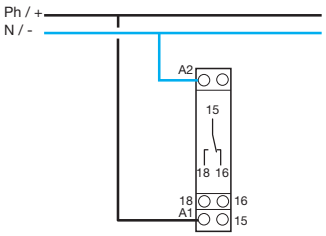




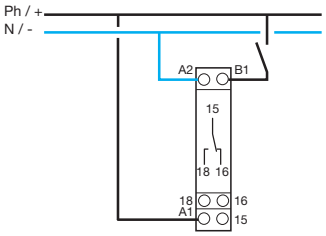
Technical Specifications

	EZN001, EZN002, EZN003, EZN004, EZN005, EZN006
Electrical Characteristics	
Supply Voltage	24-28 Vdc 12-48 Vdc (+10%) Terminals A1 & A2 12-230 Vac (+10%) Terminals A3 & A2
Output	1 Volt Free C/O Contact
Life Expectancy	
Max Load AC 1	8A / 230V~ 50,000 Cycles
Incandescent	450W~ 500,000 Cycles
Fluorescent Non Comp.	600W~ 50,000 Cycles
Inductive Load 0.6pf	5A / 230V~ 100,000 Cyles
Min Power	
AC	100mA at 230V
DC	100mA at 12V
Galvanic Isolation	2kV
Standard / Norm	BS EN 60669-2-1
Functional Characteristics	
Timer Range	0.1s - 10 hours
Min. Command Period	
AC	50ms
DC	30ms
Operating Temperature	
Working	-20°C to +50°C
Storage	-40°C to +50°C
Connection Capacity	
Flexible	1 to 6mm^2
Rigid	1.5 to 10mm^2

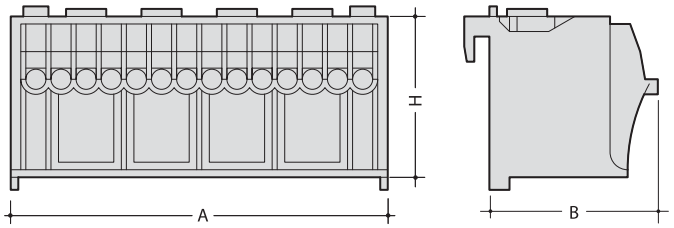
Functional characteristics
EZN001, EZN003, EZN005, EZ006 (functions D,E,F)
CD : Command.
O : Output.
T : Time delay.



EZN002, EZN004, EZN006 (functions A,B,C)
indicator light (for versions with NO contact).
ON
OFF

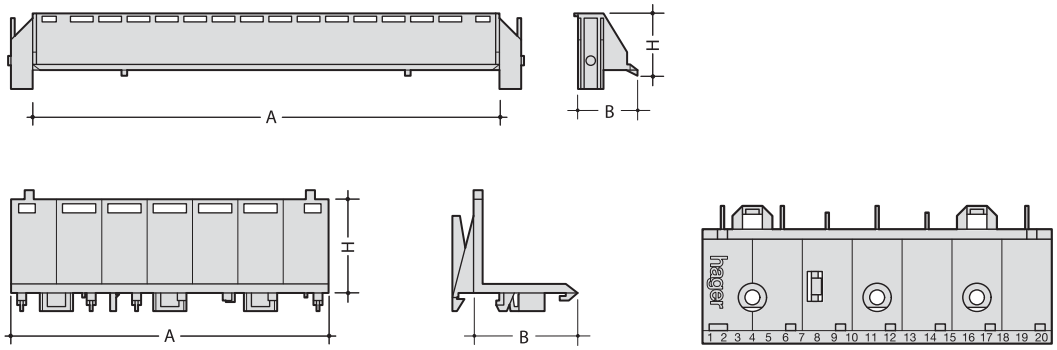


Neutral, earth and phase terminals



	Quick Connect Terminals						Cage Terminals	
	KN06N KN06P KN06E	KN10N KN10P KN10E	KN14N KN14P KN14E	KN18N KN18P KN18E	KN22N KN22P KN22E	KN26N KN26P KN26E	KN04N KN04P	KN07N KN07P
H	33	33	33	33	33	33	33	33
A	30	45	60	75	90	105	45	75
B	34	34	34	34	34	34	18	18

Terminal Supports

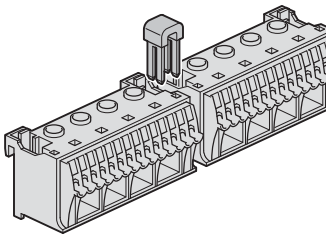


	VZ711 volta, vector	VZ710 vega, vega D	GZ30A gamma	KN00A universal supports
H	32	35	30	35
A	240	315	195	105
B	42	42	42	42
Number	47	62	38	20

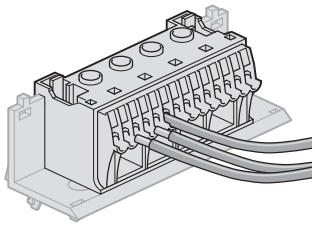
The number indicates the quantity of quickconnect terminals on the support.

Connection

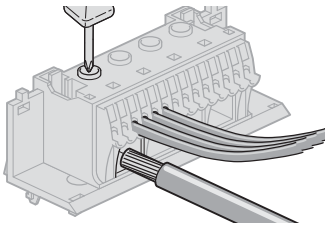
Bridge for 2 terminals



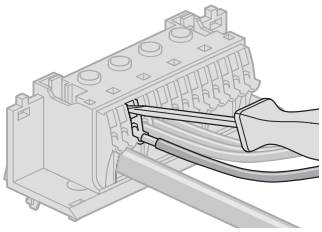
Quick Connect 1.5 to 4 mm² wires



Max. 25 mm² wires in a cage terminal

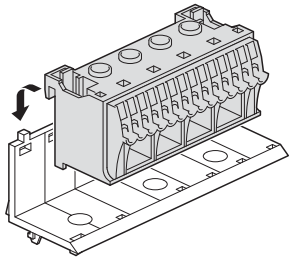


Disconnecting with screwdriver

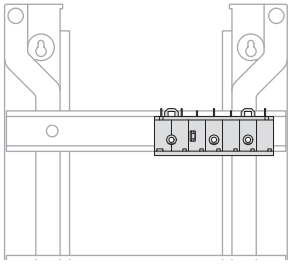


Mounting

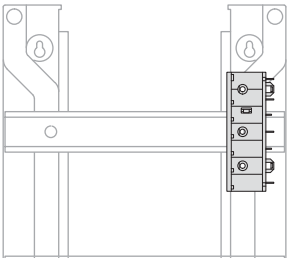
Clipping on terminal bases and universal bases



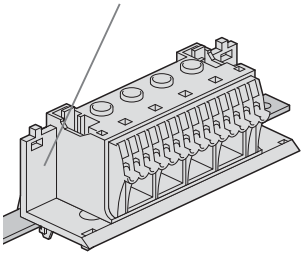
Universal support : Horizontal mounting on DIN rail



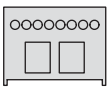
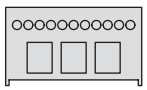
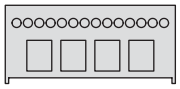
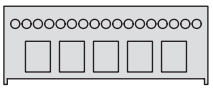
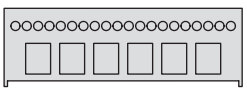
Vertical mounting on DIN rail

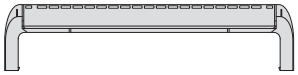
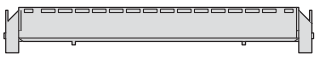
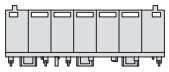


Divisible universal support



Combinations: quantity of Quick Connect terminals on the bases

Quick Connect terminals	KN06N/P/E	KN10N/P/E KN04N/P	KN14N/P/E	KN18N/P/E KN07N/P	KN22N/P/E	KN26N/P/E
						
Number of blocks	1	1.5	2	2.5	3	3.5

Quick Connect terminals bases	VZ710 Vega 18 surface, Vega D	GZ30A Gamma	VZ711 vector, volta, Gala, Vega 18 flush	KN00A universal support
				
number of blocks	10.5	6.5	8	3.5

The bases above accept blocks combinations (neutral, phase and earth).
Connection between same terminals is done using equipotential bridgings (KN99x).