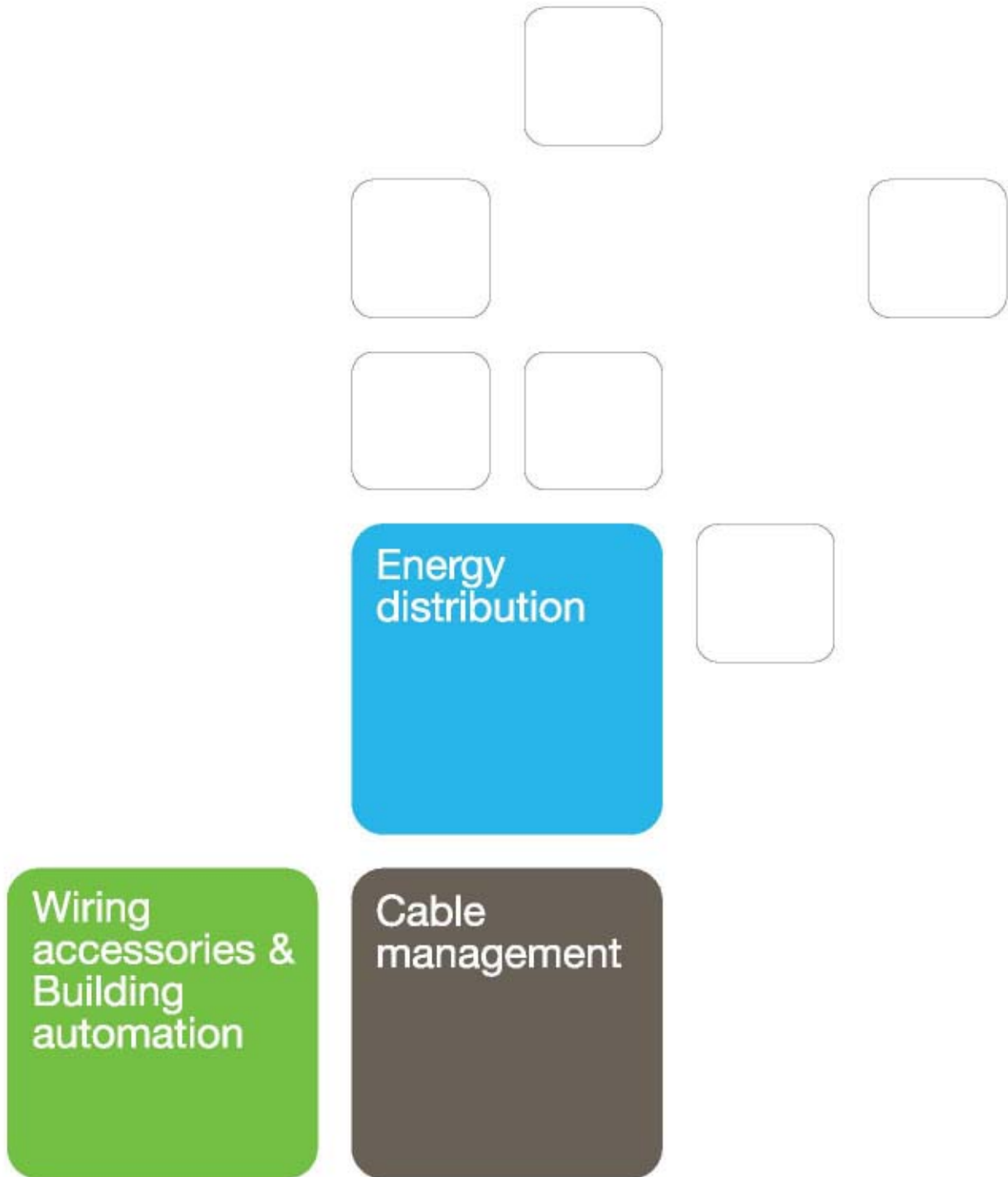




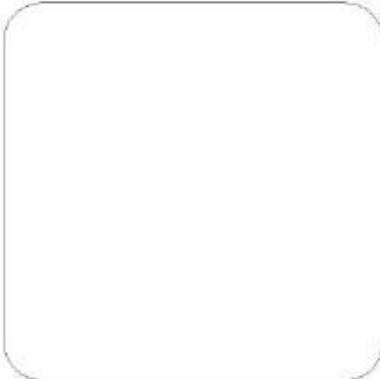


# 2014

The logo for Hager, featuring a blue square with two white dots to the left of the word "hager" in a blue, lowercase, sans-serif font.



Dear Friends and Partners,

We are pleased to present the Middle East Shortform catalogue 2014.

Hager stands for sustainability and our E3 Initiative is an excellent example of this. Fully aware of our responsibility to both society and the environment, we are proud to make a contribution to the better use of the limited available resources.

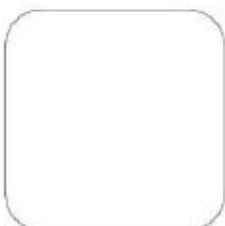
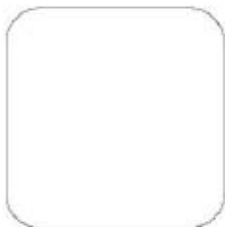
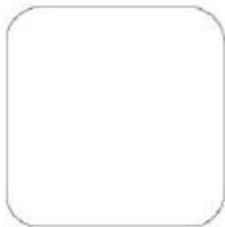
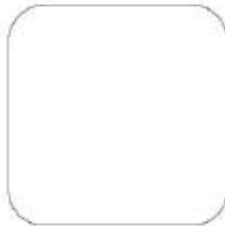
It is a belief that plays a vital role in all our new developments. The three Es, by the way, stand for the categories of "ethics, environment and eco-efficiency". And behind each category there is an actual catalogue of measures to which Hager is expressly committed, measures including: the United Nations Global Compact initiative, which the Hager Group joined in 2007; and the environmental standard ISO 14000, to which most of our sites are already certified to. In this respect, ecological development and production technologies are given as much careful consideration as to the products themselves that make a contribution to make better use of the resource electricity.

Innovation, customer proximity, simplicity and reliability are the very basis of the Hager brand. We keep in close contact with our customers, regularly surveying their wishes and needs before incorporating that feedback into the development of our new systems. The same applies to this brochure which we have designed for you as a practical tool.

Why not have a browse and find out for yourself?

**Best regards,  
Daniel Hager**





# The partner for smart solutions you can trust

Hager is a full range supplier of electrical installation systems for building, residential and commercial properties. For decades, Hager has been synonymous with an extensive and complete offering. Highest quality, cutting edge products, modularity, ease of installation, ease of use, excellent service and sophisticated design are the features that distinguish Hager.

## Hager: a brand meeting your expectations

As a specialist in

- energy distribution,
- cable management and room connection systems,
- wiring accessories and smart building automation
- safety technology such as alarm systems, smoke detectors and motion detectors.

Hager the supplier for professionals – is a synonym for top quality and innovative technology, as well as good customer relations and reliability. All of which make Hager the partner for smart solutions, you can trust.

## New ideas for the customers' benefit

Innovations and the systematic enhancement of the products and systems are key features of the Hager brand. It has always been our goal to use new designs and improvements to stay ahead of developments.

The use of innovations and new technologies at Hager is always customer driven. Every year, Hager evaluates thousands of customer contacts, resulting in detailed knowledge of its customers' needs in order to work efficiently and successfully. Based on this knowledge, Hager develops the innovative solutions that are so characteristic for the Hager brand. Ease of installation, ease of use, intuitive user interfaces, modularity and durability are brand values that guarantee highest quality throughout in Hager systems.

Our high degree of innovation enables the users to meet various new challenges effectively. The strong demand for innovations and enhancements is a good indicator for the customer-oriented policy of the Hager brand also resulting in a high turnover at wholesalers.

## A flourishing group

Hager belongs to the Hager Group, which is a family owned business with more than fifty year tradition. As a global player, the company has about 11,400 employees and a turnover of more than 1.62 billion Euro in 2013.

[www.hager.ae](http://www.hager.ae)



# Hager regional support Middle East operations

With an objective of offering technical and commercial support to our customers in the Middle East and Near East regions, Hager Group set up its 100% owned subsidiary, Hager Middle East FZE, at Jebel Ali Free Zone in 1997. To expand the operations in Middle East, Hager has opened new offices in Saudi Arabia and Qatar in 2012 and 2013 respectively.

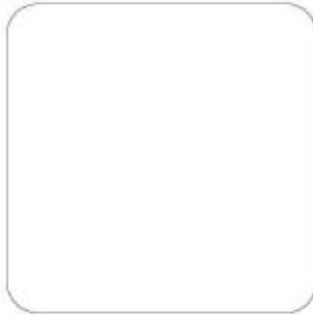
Today, Hager Middle East has a strong commercial team with expertise in sales & marketing, product management, logistics, customer service and finance. Hager Middle East has regional representation in Kuwait.



With an aim to provide the best solution for your distribution system, Hager Middle East has a dedicated team of qualified and professional engineers to provide advice on any design and technical application.

Hager Middle East gives special emphasis to training of customers and updation of new product launches. The training facility at Jebel Ali office stands testimony to this commitment.

Technical seminars are conducted at various locations to keep customer abreast of various product launches.

Courses are in modular format and are customized to meet individual market requirements. Hager Middle East also conducts special courses on request. These customer oriented programmes are instrumental in reinforcing the trust and quality in the Hager brand.



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# h3 Air circuit breakers

## High level safety

Hager h3 Air Circuit Breakers feature a high level of performance in a reduced volume. With a depth of 290mm (for fixed version) and 345 mm (for draw-out version), this range is one of the most compact in the market, but with the cutting edge technology of double break contacts, offer the highest performance. The versatile OCR trip units offer technical parameters for the user to choose and manage standard to critical applications.



## Your benefits

- 3 frames sizes.
- Compact size.
- Double break contact ensures fast interruption of short-circuit
- Accessibility of auxiliaries from the front.
- Easy maintenance.

## Technical characteristics

- Rating from 800 to 6300 A.
- Breaking capacity from 65 kA
- Fixed and draw-out type.
- Wide range of protection function Over Current Release.
- Comply with IEC 60947-2 category B.
- $I_{cu} = I_{cs} = I_{cw}$  (1 sec)

# Expert tips

1



## ON/OFF button cover

ON/OFF button cover prevents inadvertent or unauthorized operation.

2



## Position padlock lever

Position padlock prevents the breaker body from inadvertently being drawn-out. The lever locks the breaker body in the position:

- connected,
- test,
- isolated.

3



## Wide range of trip unit selection

4



## Main circuit terminals

3 types of main circuit terminal :

- vertical terminals
- horizontal terminals
- front connection

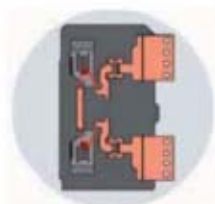
5



## Accessibility of auxiliaries

Connection to the control circuit is easy to access from the front.

6

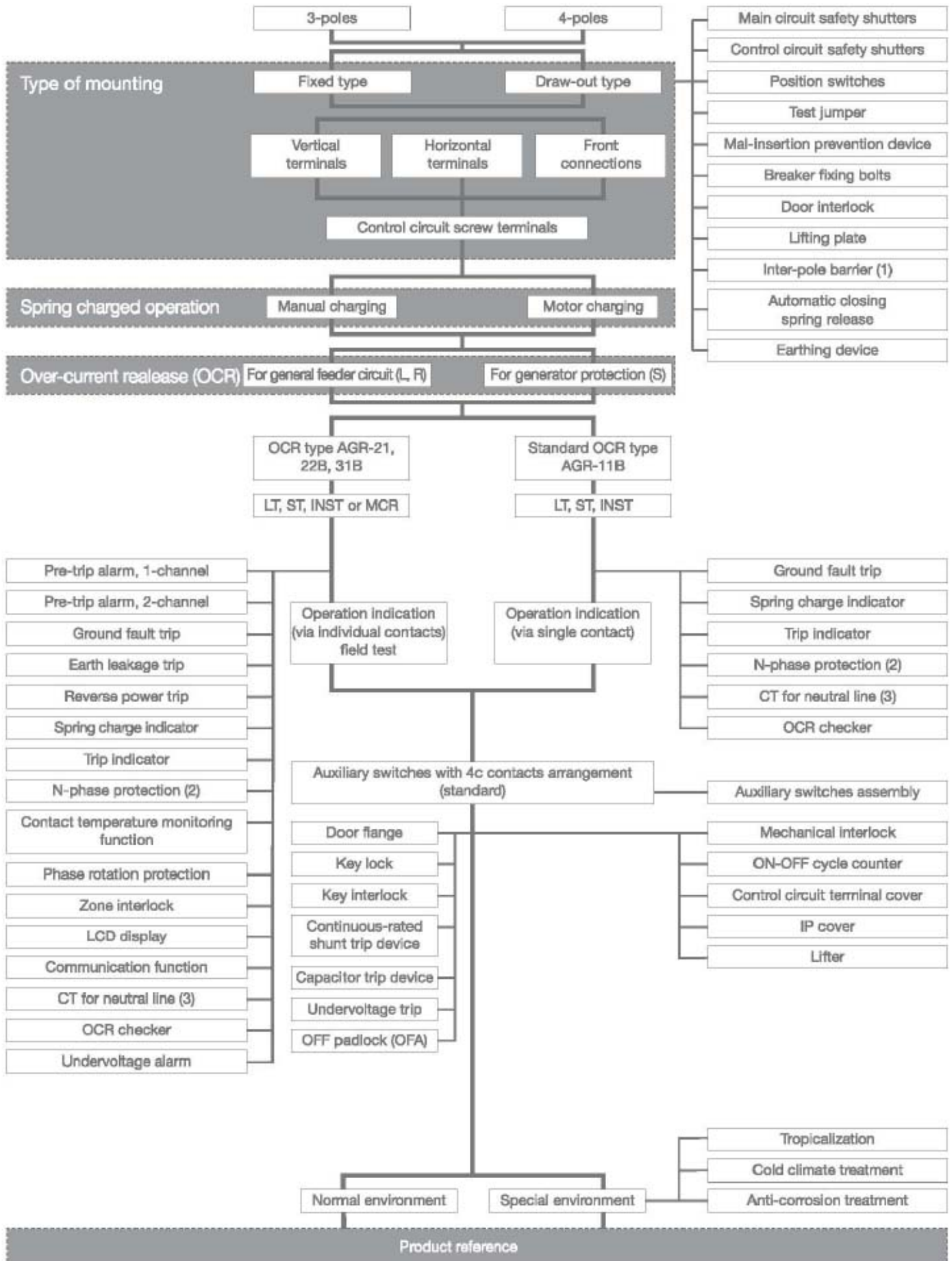


## Double break system

The "double break" main contact system ensures fast interruption of short-circuit currents and substantially reduces main contact wear, which exceed the requirement of IEC 60947-2.



### Specifications



(1) : not applicable to ACBs equipped with front connections.  
 (2) : applicable to 4-pole ACBs.

(3) required for ground fault protection for 3-poles ACB on 3-phase, 4-wire systems.

### The range

- 3 frames from 800 to 6300A
- frame HWT2xxx from 800 to 2000A
- frame HWT3xxx from 2000 to 4000 A
- frame HWT6xxx from 5000 to 6300 A
- calibrated @50°C up to 3200A
- breaking capacity from 65 to 120 kA
- same depth for all fixed frames
- same depth for all draw out frames
- uniform panel cut-out size
- Standard: IEC 60947-2  
EN 60942-2



		HWT2		HWT3			HWT6
Type		S	H	S	H	SB	S
<b>In</b>	Rated current (A)	800/1250/ 1800/2000	1250/1800/ 2000	2500/3200	1800/2000/ 2500/3200	4000	5000/6300
<b>In</b>	Neutral rating (%)	100	100	100	100	100	100
<b>Reference</b>		HWT208S/ HWT212S/ HWT216S/ HWT220S	HWT212H/ HWT216H/ HWT220H	HWT325S/ HWT332S	HWT316H/ HWT320H/ HWT325H/ HWT332H	HWT440SB	HWT650S/ HWT663S
<b>Rated operational voltage</b>							
Ue (50/60Hz) (V)		690	690	690	690	690	690
<b>Rated insulation voltage</b>							
Ui (50/60Hz) (V)		1000	1000	1000	1000	1000	1000
<b>Rated impulse withstand voltage</b>							
Uimp (kV)		12	12	12	12	12	12
<b>Icu</b>							
(kA eff.)	400/415V	85	80	85	100	100	120
	440V	65	80	85	100	100	120
	690V	50	55	65	85	85	85
<b>Ica</b>							
(kA eff.)	400/415V	85	80	85	100	100	120
	440V	65	80	85	100	100	120
	690V	50	55	65	85	85	85
<b>Icm</b>							
(kA peak)	690V	105	121	143	187	187	187
	440V	143	176	187	220	220	264
	400/415V	143	176	187	220	220	264
<b>Icw</b>							
(kA²s)	1 second	65	80	85	100	100	120
	3 seconds	50	55	65	75	85	85
<b>No. of operating cycles</b>							
mechanical life (with maintenance)		30000	30000	20000	20000	15000	10000
mechanical life (without maintenance)		15000	15000	10000	10000	8000	5000
electrical life (with maintenance)		12000	12000	7000	7000	3000	1000
electrical life (without maintenance)		10000	10000	5000	5000	2500	500
<b>Time</b>							
total breaking time (s)		0.03	0.03	0.03	0.03	0.03	0.03
spring charging time (s) max.		10	10	10	10	10	10
close time (s) max.		0.08	0.08	0.08	0.08	0.08	0.08
<b>Dimensions</b>							
fixed type (mm)	width 3-poles	360	360	466	466	-	-
	width 4-poles	445	445	586	586	-	-
	height	480	480	480	480	-	-
	depth	290	290	290	290	-	-
draw-out type (mm)	width 3-poles	354	354	460	460	460	799
	width 4-poles	439	439	580	580	580	1034
	height	460	460	460	460	460	460
	depth	345	345	345	345	345	380

## Over Current Release

L : long delay  
 S : short delay  
 I : instantaneous  
 (G: ground fault)

Note:

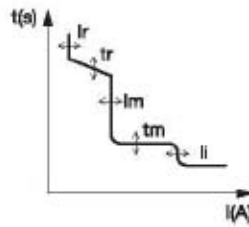
- Optional protection functions of the OCR include those against ground fault, earth leakage, undervoltage and reverse power. Pre-trip alarm function can also be installed.

## Designation

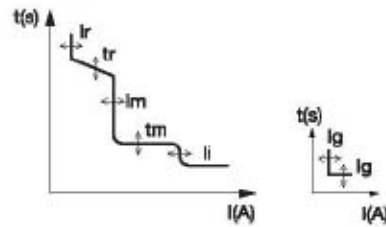


### OCR11, standard OCR with adjustment dial

- LSI

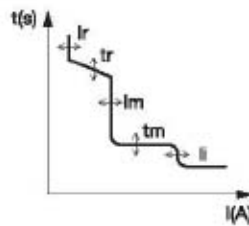


- LSIG

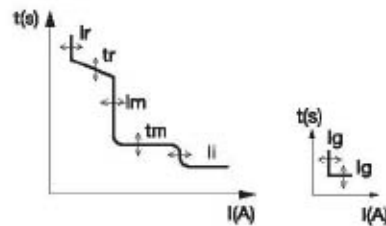


### OCR21, standard OCR with LCD-ammeter

- LSI



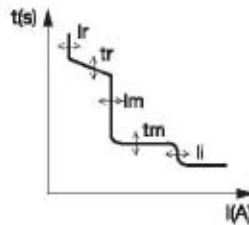
- LSIG



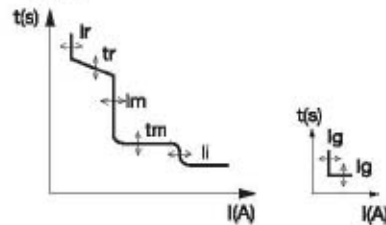
### OCR31, enhanced OCR with backlit LCD-analyser

(phase current, current, line voltage, active power, communication)

- LSI



- LSIG



### Setting range of protection functions

Protection function	Setting range																			
<b>Adjustable long-time delay trip characteristics LT</b>																				
Pick up current $I_r$ (A)	Primary setting = $I_n \times (0.5-0.63-0.8-1)$ Secondary setting = Primary setting $\times (0.8 - 0.85 - 0.9 - 0.95 - 1)$																			
Time-delay $t_r$ (s)	$(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30)$ at 600% $[I_R]$ ; 9 graduations																			
Time-delay setting tolerance (%)	$\pm 15\% + 150 \text{ ms} - 0 \text{ ms}$																			
<b>Adjustable short-time delay trip characteristics ST</b>																				
Pick up current $I_{sd}$ (A)	$[I_n] \times (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - \text{NON})$ ; 10 graduations																			
Current setting tolerance (%)	$\pm 15\%$																			
Time delay $t_{sd}$ (ms) Relay time	<table border="1"> <tr> <td>50</td> <td>100</td> <td>200</td> <td>400</td> <td>600</td> <td>800</td> <td rowspan="3">; 6 graduations</td> </tr> <tr> <td>25</td> <td>75</td> <td>175</td> <td>375</td> <td>575</td> <td>775</td> </tr> <tr> <td>120</td> <td>170</td> <td>270</td> <td>470</td> <td>670</td> <td>870</td> </tr> </table>	50	100	200	400	600	800	; 6 graduations	25	75	175	375	575	775	120	170	270	470	670	870
50	100	200	400	600	800	; 6 graduations														
25	75	175	375	575	775															
120	170	270	470	670	870															
Resettable time (ms)																				
Max. total clearing time (ms)																				
<b>Adjustable instantaneous trip characteristics INST or MCR (INST only for OCR-11)</b>																				
Pick up current $I_i$ (A)	$[I_n] \times (2 - 4 - 6 - 8 - 10 - 12 - 14 - 16 - \text{NON})$ ; 9 graduations																			
Current setting tolerance (%)	$\pm 20\%$																			
<b>Adjustable pre-trip alarm characteristics PTA</b>																				
Pick up current $I_{p1}$ (A)	$[I_n] \times (0.75 - 0.8 - 0.85 - 0.9 - 0.95 - 1.0)$ ; 6 graduations																			
Current setting tolerance (%)	$\pm 7.5\%$																			
Time-delay $t_{p1}$ (s)	$(5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200)$ at $[I_{P1}]$ or more ; 10 graduations																			
Time-delay setting tolerance (%)	$\pm 15\% + 100 \text{ ms} - 0 \text{ ms}$																			
<b>Adjustable ground fault trip characteristics GF</b>																				
Pick up current $I_g$ (A)	$[I_{CT}] \times (0.1 - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 1.0 - \text{NON})$ ; 8 graduations																			
Current setting tolerance (%)	$\pm 20\%$																			
Time delay $t_g$ (s) Relay time	<table border="1"> <tr> <td>100</td> <td>200</td> <td>300</td> <td>500</td> <td>1000</td> <td>2000</td> <td rowspan="3">; 6 graduations</td> </tr> <tr> <td>75</td> <td>175</td> <td>275</td> <td>475</td> <td>975</td> <td>1975</td> </tr> <tr> <td>170</td> <td>270</td> <td>370</td> <td>570</td> <td>1070</td> <td>2070</td> </tr> </table>	100	200	300	500	1000	2000	; 6 graduations	75	175	275	475	975	1975	170	270	370	570	1070	2070
100	200	300	500	1000	2000	; 6 graduations														
75	175	275	475	975	1975															
170	270	370	570	1070	2070															
Resettable time (ms)																				
Max. total clearing time (ms)																				
<b>Ground fault trip characteristics on line side REF (OCR-21, 31 only)</b>																				
Pick up current $I_{Ref}$ (A)	$[I_{CT}] \times (0.1 - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 1.0 - \text{NON})$ ; 8 graduations																			
Current setting tolerance (%)	$\pm 20\%$																			
Time-delay (s)	Inst																			
<b>N-phase protection characteristics NP</b>																				
Pick up current $I_{ns}$ (A)	$[I_{CT}] \times (0.4 - 0.5 - 0.63 - 0.8 - 1.0)$ ; factory set to a user-specified value for AGR-11BL.																			
Time-delay $t_{ns}$ (s)	Tripping at 600% of $[I_N]$ with LT time delay $[t_R]$																			
Time-delay setting tolerance (%)	$\pm 15\% + 150 \text{ ms} - 0 \text{ ms}$																			
<b>Phase rotation protection characteristics NS (OCR-21, 31 only)</b>																				
Pick up current $[I_{NS}]$ (A)	$[I_n] \times (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0 - \text{NON})$ ; 9 graduations																			
Current setting tolerance (%)	$\pm 10\%$																			
Time-delay $[t_{NS}]$ (s)	$0.4 - 0.8 - 1.2 - 1.6 - 2 - 2.4 - 2.8 - 3.2 - 3.6 - 4$ ; 10 graduations																			
Time-delay setting tolerance (%)	$\pm 20\% + 150 \text{ ms} - 0 \text{ ms}$																			
<b>Adjustable earth leakage trip characteristics ELT (OCR-31 only)</b>																				
Pick up current $I_{\Delta r}$ (A)	0.2 - 0.3 - 0.5 - 1 (medium sensitivity) or 3 - 5 (low sensitivity)																			
Current setting tolerance (%)	Non operate below 70% of $[I_{\Delta r}]$ , operate between 70% et 100% of $[I_{\Delta r}]$																			
Time-delay $t_{\Delta r}$ (ms) Relay time	<table border="1"> <tr> <td>100</td> <td>200</td> <td>300</td> <td>500</td> <td>1000</td> <td>2000</td> <td rowspan="3">; 6 graduations</td> </tr> <tr> <td>50</td> <td>150</td> <td>250</td> <td>450</td> <td>950</td> <td>1950</td> </tr> <tr> <td>250</td> <td>350</td> <td>450</td> <td>600</td> <td>1150</td> <td>2150</td> </tr> </table>	100	200	300	500	1000	2000	; 6 graduations	50	150	250	450	950	1950	250	350	450	600	1150	2150
100	200	300	500	1000	2000	; 6 graduations														
50	150	250	450	950	1950															
250	350	450	600	1150	2150															
Resettable time (ms)																				
Max. total clearing time (ms)																				
<b>Undervoltage alarm characteristics UV (OCR-31 only)</b>																				
Recovery setting voltage (V)	$[V_n] \times (0.6 - 0.85 - 0.9 - 0.95)$ ; 4 graduations																			
Recovery voltage setting tolerance (%)	$\pm 5\%$																			
Setting voltage (V)	$[V_n] \times (0.4 - 0.6 - 0.8)$ ; 3 graduations																			
Voltage setting tolerance (%)	$\pm 5\%$																			
Time-delay (s)	$0.1 - 0.5 - 1 - 2 - 5 - 10 - 15 - 20 - 30 - 36$ ; 10 graduations																			
Time-delay setting tolerance (%)	$\pm 15\% + 100 \text{ ms} - 0 \text{ ms}$																			
Control power	AC 100-120 V      DC 100-125 V      DC 24 V AC 200-240 V      DC 200-250 V      DC 48 V																			
Power consumption	5 VA : default setting																			

Designation	Cat. ref.	
	3P	4P
<b>ACB fixed type 65 kA</b> Icu/Ics/Icw for 1sec 65 kA at 400/415 V - Over Current Release OCR-11BL-AI (LSI) - horizontal connection		
ACB 800A 65kA, fixed type	HW083NSFB4	HW084NSFB4
ACB1250A 65kA, fixed type	HW123NSFB4	HW124NSFB4
ACB 1600A 65kA, fixed type	HW163NSFB4	HW164NSFB4
ACB 2000A 65kA, fixed type	HW203NSFB4	HW204NSFB4
<b>ACB fixed type 65 kA</b> Icu/Ics/Icw for 1sec 65 kA at 400/415 V - Over Current Release OCR-11BL-GL (LSIG) - horizontal connection		
ACB 800A 65kA, fixed type	HW083NSFC4	HW084NSFC4
ACB1250A 65kA, fixed type	HW123NSFC4	HW124NSFC4
ACB 1600A 65kA, fixed type	HW163NSFC4	HW164NSFC4
ACB 2000A 65kA, fixed type	HW203NSFC4	HW204NSFC4
<b>ACB fixed type 85 kA</b> Icu/Ics/Icw for 1sec 85 kA at 400/415 V - Over Current Release OCR-11BL-AI (LSI) - horizontal connection		
ACB 2500A 85kA, fixed type	HW253HUFB4	HW254HUFB4
ACB 3200A 85kA, fixed type	HW323HUFB4	HW324HUFB4
<b>ACB fixed type 85 kA</b> Icu/Ics/Icw for 1sec 85 kA at 400/415 V - Over Current Release OCR-11BL-GL (LSIG) - horizontal connection		
ACB 2500A 85kA, fixed type	HW253HUFC4	HW254HUFC4
ACB 3200A 85kA, fixed type	HW323HUFC4	HW324HUFC4
<b>Switch, fixed type 65kA</b> - rated short time withstand Icw, 1 sec: 65kA - horizontal connection		
Switch 800A 65kA, fixed type	HW083NSFA4	HW084NSFA4
Switch 1250A 65kA, fixed type	HW123NSFA4	HW124NSFA4
Switch 1600A 65kA, fixed type	HW163NSFA4	HW164NSFA4
Switch 2000A 65kA, fixed type	HW203NSFA4	HW204NSFA4

**Note:** For 4000A/5000A/6300A ratings, please contact Hager office

	<i>Designation</i>	<i>Characteristics</i>	<i>Cat. ref.</i>
	Shunt trip	110V AC 240V AC 24V DC 48V DC	HXSHT110AC HXSHT240AC HXSHT024DC HXSHT048DC
	Undervoltage trip	110V AC 240V AC 415V AC 24V DC 48V DC	HXUVT110AC HXUVT240AC HXUVT415AC HXUVT024DC HXUVT048DC
	Undervoltage trip with timedelay	110V AC 240V AC 415V AC	HXUVD110AC HXUVD240AC HXUVD415AC
	Motor operator	110V AC 240V AC 24V DC 48V DC	HXMOP110AC HXMOP240AC HXMOP024DC HXMOP048DC
	Closing coil	110V AC 240V AC 24V DC 48V DC	HXCLC110AC HXCLC240AC HXCLC024DC HXCLC048DC
	Close-open cycle counter		HXCOC000XX
	Storage draw-out handle		HXHAN000XX
	Insertion prevention Device		HXIPD000XX
	Transparent cover	IP55	HXCOV055IP
	OCR-Tester		HXOCR000XX
	Door Interlock	For HWT2 Frame For HWT3 Frame	HXDIN000PV+ HXDIN002PV HXDIN000PV+ HXDIN003PV
	Key Lock in 'Open Position'	Key lock Castell Lock	HXKEY001PV HXKEY004PV
	Mechanical Interlock (cable type)	Drawout type ACB (1No required for each ACB) For HWT2 Frame For HWT3 Frame	HXINT002DO HXINT003DO
		Fixed Type ACB (1No required for each ACB) For HWT2 Frame For HWT3 Frame	HXINT002FX HXINT003FX
		Cable Kit - length - 1320mm (1 Cable kit required for interlock between 2 ACBs 3 Cable kits required for interlock between 3 ACBs)	HXINT101PV
	Safety Shutter Padlock	Drawout type ACB	HXFBC000XX



**Design by Hager**  
In harmony with Hager enclosures and modular products.



**Visibility of auxiliaries fitted**  
Indicates type of auxiliary mounted in breaker.



**Electronic trip unit (LSI)**  
Is permitting total selectivity and generator protection.



**Integrated padlocking facility**  
Nice solution for maintenance.



**Breaking capacity**  
18 to 70kA, Icu 415V AC, covers all applications.



**Complete range of accessories**  
Rotary handles, padlocks, motors, terminal covers.



**Easy mounting of auxiliaries**  
Easy opening of secondary cover, clip-on type auxiliaries.



**Flexible connection**  
Collar terminals, front and rear connections, extended connections, spreaders ...

# MCCBs technical characteristics

Frame			x160				x250			h250 TM
Product			Switch		MCCB		Switch	MCCB		MCCB
Reference			HCA	HDA	HHA/HJA	HNA	HCB	HHB	HNB	HHG
Number of poles			[No.]	3-4	1-2-3-4	1-2-3-4/3-4	3-4	3-4	3-4	3-4
<b>Electrical characteristics</b>										
Rated current			In	[A]	160		250		250	
Current rated range			[A]	125-160	16-125 (1P), 16-160 (2,3,4P)		250	100-250		20-250
Rated service voltage, (AC)			Ue	[V]	220-440		220-440		220-690	
Frequency			f	[Hz]	50/60		50/60		50/60	
Rated insulation voltage			Ui	[V]	690		800		800	
Rated impulse withstand voltage			Uimp	[kV]	8		8		8	
Rated ultimate short-circuit breaking capacity, (Icu)										
(AC) 50-60 Hz 220/230 V			Icu	[kA]	-	25	35	85	-	35
(AC) 50-60 Hz 380/415 V			Icu	[kA]	-	18	25	40	-	25
(AC) 50-60 Hz 480/500/525 V			Icu	[kA]	-	-	-	-	-	10
(AC) 50-60 Hz 660/690 V			Icu	[kA]	-	-	-	-	-	-
(DC) 250 V - 2 poles in series			Icu	[kA]	-	10	10	10	-	25
Rated service short-circuit breaking capacity, (Ics)										
(AC) 50-60 Hz 220/230 V			Ics	[kA]	-	25	25	40	-	27
(AC) 50-60 Hz 380/415 V			Ics	[kA]	-	18	20/25	20	-	19
(AC) 50-60 Hz 480/500/525 V			Ics	[kA]	-	-	-	-	-	7.5
(AC) 50-60 Hz 660/690 V			Ics	[kA]	-	-	-	-	-	-
(DC) 250 V - 2 poles in series			Ics	[kA]	-	5	5	5	-	19
Rated short-circuit making capacity			Icm	[kA]	2.8	-	-	9	-	-
Rated short-time withstand current for 1s			Icw	[kA]	2	-	-	3.6	-	-
Category of utilisation (EN 60947-2)					A		A		A	
Calibration temperature					50°C		50°C		50°C	
Derating			40°C		100%		100%		100%	
			50°C		100%		100%		100%	
			55°C		95%		94%		94%	
			60°C		93%		91%		91%	
			85°C		90%		88%		88%	
Suitability for isolation					ok		ok		ok	
Electric endurance in number of cycles					10000		10000		10000	
Mechanical endurance in number of operations					20000		20000		30000	
Operating temperature					-25 to +70°C		-5 to +70°C		-25 to +70°C	
Storage temperature					-35 to +70°C		-35 to +70°C		-35 to +70°C	
Power loss (at In for 3P)			[W]		39		60		65	
Reference standard					IEC 60947-3		IEC 60947-2		IEC 60947-2	
Releases: switch					ok		ok		-	
Releases: TM (thermomagnetic)					-		ok		ok	
T fixed, M fixed					-		ok		-	
T adjustable, M fixed					-		-		-	
T adjustable, M adjustable					-		ok		ok	
Thermal adjustment value					-		0.63 to 1 x In		0.63 to 1 x In	
Magnetic adjustment value					-		6-8-10-13 x In (200A) 5-7-9-11 In (250A)		6-8-10-13 x In	
Releases: LSI (electronic)					-		-		-	
Long delay					-		-		-	
Short delay					-		-		-	
Time delay					-		-		-	
<b>Accessories</b>										
Auxiliary switches					#1		#1		#2	
Alarm switches					#1		#1		#2	
Shunt release					#1		#1		#2	
Undervoltage release					#1		#1		#2	
Rotary handle mechanism					ok		ok		ok	
Motor operator					-		ok		ok	
Padlockable handle					integrated		integrated		ok	
Interphase barriers					ok		integrated		integrated	
Dln rail adapter					ok		-		-	
<b>Terminations</b>										
Standard terminal type					cage		lugs		lugs	
Maximum terminal capacity					95 mm²		185 mm² (cage)		185 mm² (cage)	
Terminal width			mm		-		25		25	
Terminal shields					ok		ok		ok	
Cage terminal					integrated		ok		ok	
Extended connections					ok		ok		ok	
Rear connections					no		ok		ok	
<b>Dimensions</b>										
Height			mm		130		165		165	
Width			1P	mm	-	25	-	-	-	-
			2P	mm	-	50	-	-	-	-
			3P	mm	75	-	-	105	-	105
			4P	mm	100	-	-	140	-	140
Depth			mm		68		68		68	
Weight			1P	kg	-	0.29	-	-	-	-
			2P	kg	-	0.48	-	-	-	-
			3P	kg	0.715	-	-	1.3	-	1.5
			4P	kg	0.95	-	-	1.6	-	1.9



		h400		h630			h1000			h1800		
		MCCB		Switch	MCCB		Switch	MCCB		Switch	MCCB	
HNG	HEG	HHD	HND	HCD	HND	HED	HCE	HNE / HNK	HEE / HEK	HCF	HNF	HEF
		3-4		3-4			3-4			3-4		
		400		630			1000			1600		
		250-400		400-630	250-630		630-800-1000			1250-1600		
		220-690		220-690			220-690			220-690		
		50/60		50/60			50/60			50/60		
		800		800			800			800		
		8		8			8			8		
85	85	35	85	-	85	100	-	85 (800A) 75 (1000A)	100	-	100	100
50	65	25	50	-	50	70	-	50	70	-	50	70
25	25	10	30	-	30	30	-	30	30	-	45	65
7.5	7.5	7.5	20	-	20	20	-	20	20	-	25	45
40	40	25	40	-			-	-	-	-	-	-
65	85	35	85	-	85	85	-	85 (800A) 75 (1000A)	100 (800A) 75 (1000A)	-	75	75
25	36	25	50	-	50	50	-	50	50	-	50	50
25	25	10	30	-	30	30	-	30	30	-	45	50
7.5	7.5	7.5	15	-	15	15	-	20	20	-	25	34
40	40	25	40	-			-	-	-	-	-	-
		-	-	9	-	-	20	-	-	45	-	-
		-	-	5 (0.3s)	-	-	10KA (0.3s)	-	-	20 (0.3s)	-	-
		A		-	B (400A) - A (830A)		-	B (800A) - A (1000A)		-	B	
		50°C		-	50°C		-	50°C		-	50°C	
		100%		-	100%		-	100%		-	100%	
		100%		-	100%		-	100%		-	100%	
		95%		-	95%		-	95%		-	95%	
		92%		-	90%		-	90%		-	90%	
		89%		-	80%		-	80%		-	80%	
		ok		ok			ok			ok		
		4500		4500			4500			4500		
		15000		15000			15000			15000		
		-25 to +70°C		-25 to +70°C			-25 to +70°C			-25 to +70°C		
		-35 to +70°C		-35 to +70°C			-35 to +70°C			-35 to +70°C		
		75		150			150			170		
		IEC 60947-2		IEC 60947-3	IEC 60947-2		IEC 60947-3	IEC 60947-2		IEC 60947-3	IEC 60947-2	
		-		ok	-		ok	-		ok	-	
		ok		-			-			-		
		-		-			-			-		
		-		-			-			-		
		ok		-			-			-		
		0.63 to 1 x In		-			-			-		
		6-8-10-12 x In		-			-			-		
		-		-	ok		-	ok		-	ok	
		-		-	0.4 to 1 x Ir		-	0.4 to 1 x Ir		-	0.4 to 1 x In	
		-		-	2.5 to 10 x Ir (400A)		-	2.5 to 10 x Ir (800A)		-	2.5 to 10 x Ir	
		-		-	2.5 to 8 x Ir (630A)		-	2.5 to 8 x Ir (1000A)		-		
		-		-	0.1 - 0.2s		-	0.1 - 0.2s		-	0.1 - 0.2s	
		#2		#2			#2			#2		
		#2		#2			#2			#2		
		#2		#2			#2			#2		
		ok		ok			ok			ok		
		ok		ok			ok			ok		
		ok		ok			ok			ok		
		integrated		integrated			integrated			integrated		
		-		-			-			-		
		lugs		lugs			lugs			lugs		
		240 mm² (cage)		-			-			-		
		30		30			45			45		
		ok		ok			ok			ok		
		ok		-			-			-		
		ok		integrated			integrated			integrated		
		ok		ok			ok			ok		
		260		260			273/433			370/570		
		-		-			-			-		
		-		-			-			-		
		140		140			210			210		
		185		185			280			280		
		97		97			99.5			140		
		-		-			-			-		
		-		-			-			-		
		4.2		4.3			11			27		
		5.6		5.7			14.8					

**Moulded case circuit breakers x160**  
 Mechanical test button, lockable settings,  
 Integrated padlocking handle  
 Ø 4mm.

**Connection capacity**  
 95<sup>2</sup> rigid cables  
 70<sup>2</sup> flexible cables  
 Complies with IEC 60947-2

**Switch disconnectors**  
 allows tripping using a shunt trip unit (optional)  
 Complies with IEC 60947-3  
 AC 22/23A



HDA 125Z



HDA 126U

Designation	In	Cat. ref.				
		1P	2P	3P	4P	
<b>MCCBs x160 18kA</b> TM breaking capacity Icu : 18 kA Ics : 18 kA (400/415 V AC)  fixed overload 1x In fixed shortcircuit > 10 x In   adjustable overload 0.63 - 0.8 - 1 x In fixed shortcircuit > 10 x In	16A	HDA 014Z	HDA 015Z	HDA 016Z	HDA 017Z	
	20A	HDA 018Z	HDA 019Z	HDA 020Z	HDA 021Z	
	25A	HDA 023Z	HDA 024Z	HDA 025Z	HDA 026Z	
	32A	HDA 030Z	HDA 031Z	HDA 032Z	HDA 033Z	
	40A	HDA 038Z	HDA 039Z	HDA 040Z	HDA 041Z	
	50A	HDA 048Z	HDA 049Z	HDA 050Z	HDA 051Z	
	63A	HDA 061Z	HDA 062Z	HDA 063Z	HDA 064Z	
	80A	HDA 078Z	HDA 079Z	HDA 080Z	HDA 081Z	
	100A	HDA 098Z	HDA 099Z	HDA 100Z	HDA 101Z	
	125A	HDA 123Z	HDA 124Z	HDA 125Z	HDA 126Z	
	160A	-	HDA 159Z	HDA 160Z	HDA 161Z	
	*125A	HDA 123P	HDA 124P	HDA 125P	HDA 126P	
	*160A	-	HDA 159P	HDA 160P	HDA 161P	
	25A	-	-	HDA 025U	HDA 026U	
	40A	-	-	HDA 040U	HDA 041U	
	63A	-	-	HDA 063U	HDA 064U	
	80A	-	-	HDA 080U	HDA 081U	
	100A	-	-	HDA 100U	HDA 101U	
	125A	-	-	HDA 125U	HDA 126U	
	160A	-	-	HDA 160U	HDA 161U	
	*125A	-	-	HDA 125S	HDA 126S	
	*160A	-	-	HDA 160S	HDA 161S	
	<b>MCCBs x160 25kA</b> TM breaking capacity Icu : 25 kA Ics : 20 kA (400/415 V AC)  fixed overload 1x In fixed shortcircuit > 10 x In   adjustable overload 0.63 - 0.8 - 1 x In fixed shortcircuit > 10 x In	16A	HHA 014Z	HHA 015Z	HHA 016Z	HHA 017Z
		20A	HHA 018Z	HHA 019Z	HHA 020Z	HHA 021Z
25A		HHA 023Z	HHA 024Z	HHA 025Z	HHA 026Z	
32A		HHA 030Z	HHA 031Z	HHA 032Z	HHA 033Z	
40A		HHA 038Z	HHA 039Z	HHA 040Z	HHA 041Z	
50A		HHA 048Z	HHA 049Z	HHA 050Z	HHA 051Z	
63A		HHA 061Z	HHA 062Z	HHA 063Z	HHA 064Z	
80A		HHA 078Z	HHA 079Z	HHA 080Z	HHA 081Z	
100A		HHA 098Z	HHA 099Z	HHA 100Z	HHA 101Z	
125A		HHA 123Z	HHA 124Z	HHA 125Z	HHA 126Z	
160A		-	HHA 159Z	HHA 160Z	HHA 161Z	
*125A		HHA 123P	HHA 124P	HHA 125P	HHA 126P	
*160A		-	HHA 159P	HHA 160P	HHA 161P	
25A		-	-	HHA 025U	-	
40A		-	-	HHA 040U	-	
63A		-	-	HHA 063U	-	
80A		-	-	HHA 080U	-	
100A		-	-	HHA 100U	-	
125A		-	-	HHA 125U	-	
160A		-	-	HHA 160U	-	
*125A		-	-	HHA 125S	-	
*160A		-	-	HHA 160S	-	

Note : \*The references are without collar terminal



HNA 160Z

Designation	In	Cat. ref.			
		1P	2P	3P	4P
<b>MCCBs x160 40kA</b>	16A	-	-	HNA 016Z	HNA 017Z
TM	20A	-	-	HNA 020Z	HNA 021Z
breaking capacity	25A	-	-	HNA 025Z	HNA 028Z
Icu : 40 kA	32A	-	-	HNA 032Z	HNA 033Z
Ics : 20 kA	40A	-	-	HNA 040Z	HNA 041Z
(400/415 V AC)	50A	-	-	HNA 050Z	HNA 051Z
	63A	-	-	HNA 063Z	HNA 064Z
fixed overload	80A	-	-	HNA 080Z	HNA 081Z
1 x In	100A	-	-	HNA 100Z	HNA 101Z
fixed short circuit	125A	-	-	HNA 125Z	HNA 128Z
> 10 x In	160A	-	-	HNA 160Z	HNA 161Z
	*125A	-	-	HNA 125P	HNA 126P
	*160A	-	-	HNA 160P	HNA 161P
adjustable overload	25A	-	-	HNA 025U	HNA 028U
0.63 - 0.8 - 1 x In	40A	-	-	HNA 040U	HNA 041U
fixed short circuit	63A	-	-	HNA 063U	HNA 064U
> 10 x In	80A	-	-	HNA 080U	HNA 081U
	100A	-	-	HNA 100U	HNA 101U
	125A	-	-	HNA 125U	HNA 128U
	160A	-	-	HNA 160U	HNA 161U
	*125A	-	-	HNA 125S	HNA 126S
	*160A	-	-	HNA 160S	HNA 161S



HJA 063Z

<b>MCCBs x160 25kA</b>	16A	-	-	HJA 016Z	HJA 017Z
TM	20A	-	-	HJA 020Z	HJA 021Z
breaking capacity	25A	-	-	HJA 025Z	HJA 028Z
Icu : 25 kA	32A	-	-	HJA 032Z	HJA 033Z
Ics : 25 kA	40A	-	-	HJA 040Z	HJA 041Z
(400/415 V AC)	50A	-	-	HJA 050Z	HJA 051Z
	63A	-	-	HJA 063Z	HJA 064Z
fixed overload	80A	-	-	HJA 080Z	HJA 081Z
1 x In	100A	-	-	HJA 100Z	HJA 101Z
fixed short circuit	125A	-	-	HJA 125Z	HJA 128Z
> 10 x In	160A	-	-	HJA 160Z	HJA 161Z
<b>Switch disconnectors x160</b>	125A	-	-	HCA 125Z	HCA 126Z
suitable for	160A	-	-	HCA 160Z	HCA 161Z
AC22A / AC 23A					

Note: \* The references are without collar terminal

**Technical characteristics**  
 Mechanical test button,  
 lockable settings,  
 integrated padlocking handle  
 Ø 4mm.  
 Complies with IEC 60947-2

**Connection:**  
 directly on copper cable  
 terminal,  
 with end lug max. width: 25 mm  
 Connection capacity: 185<sup>sq</sup> rigid  
 cables  
 Complies with IEC 60947-2

**Switch disconnectors**  
 allows tripping using a shunt  
 trip unit (optional)  
 Complies with IEC 60947-3  
 AC 22/23A



HNB 250Z



HNB 100U

Designation	Characteristics	In	Cat. ref.	
			3P	4P
<b>MCCBs x250 25kA</b> TM breaking capacity Icu : 25 kA (400/415 V AC) Ics: 20kA	fixed overload: 1 x In fixed short circuit: ≥ 10 x In	100A	HNB 100Z	HNB 101Z
		125A	HNB 125Z	HNB 126Z
		160A	HNB 160Z	HNB 161Z
		200A	HNB 200Z	HNB 201Z
		250A	HNB 250Z	HNB 251Z
	adjustable overload: 0.63 - 0.8 - 1x In adjustable short circuit: 6 - 8 - 1 0 - 1 3 xIn (100 - 200A) 5 - 7 - 9 - 1 1 xIn (250A) 3P, 3 trip units - 4P - neutral setting: 0 or 100%	100A	HNB 100U	HNB 101U
		125A	HNB 125U	HNB 126U
		160A	HNB 160U	HNB 161U
		200A	HNB 200U	HNB 201U
		250A	HNB 250U	HNB 251U
<b>MCCBs x250 40kA</b> TM breaking capacity Icu : 40 kA (400/415 V AC) Ics: 20 kA	fixed overload: 1 x In fixed short circuit: ≥ 10 x In	100A	HNB 100Z	HNB 101Z
		125A	HNB 125Z	HNB 126Z
		160A	HNB 160Z	HNB 161Z
		200A	HNB 200Z	HNB 201Z
		250A	HNB 250Z	HNB 251Z
	adjustable overload: 0.63 - 0.8 - 1x In adjustable short circuit: 6 - 8 - 1 0 - 1 3 xIn (100 - 200A) 5 - 7 - 9 - 1 1 xIn (250A) 3P, 3 trip units - 4P - neutral setting: 0 or 100%	100A	HNB 100U	HNB 101U
		125A	HNB 125U	HNB 126U
		160A	HNB 160U	HNB 161U
		200A	HNB 200U	HNB 201U
		250A	HNB 250U	HNB 251U
<b>Switch disconnectors x250</b>	AC 22/23A	250A	HCB 250Z	HCB 251Z

**Moulded case circuit breakers h250**  
**Thermal magnetic trip unit:**  
 thermal adjustment: 0.63 to 1 x In  
 magnetic adjustment:  
 6-8-10-13 x In  
 3P & 4P (3P only for 25kA)  
 Mechanical test button,  
 lockable settings,

Connection:  
 Directly on copper cable  
 terminal,  
 with end lug max. width: 25 mm  
  
 Comply with IEC 60 947-2.



HHG250U

Designation	Characteristics	In	Cat. ref.	
			3P	4P
<b>MCCBs h250 25kA</b> TM breaking capacity Icu : 25 kA (400/415 V AC) Ics: 19 kA	adjustable overload	20A	HHG020U	-
	0.63 to 1 x In	32A	HHG032U	-
	adjustable short circuit	50A	HHG050U	-
	6 - 8 - 10 - 13 x In	63A	HHG063U	-
		100A	HHG100U	-
		125A	HHG125U	-
		160A	HHG160U	-
		200A	HHG200U	-
		250A	HHG250U	-

<b>MCCBs h250 50kA</b> TM breaking capacity Icu : 50 kA (400/415 V AC) Ics: 25 kA	adjustable overload	20A	HNG020U	HNG021U
	0.63 to 1 x In	32A	HNG032U	HNG033U
	adjustable short circuit	63A	HNG063U	HNG064U
	6 - 8 - 10 - 13 x In	100A	HNG100U	HNG101U
		125A	HNG125U	HNG126U
		160A	HNG160U	HNG161U
		200A	HNG200U	HNG201U
		250A	HNG250U	HNG251U

<b>MCCBs h250 65kA</b> TM breaking capacity Icu : 65 kA (400/415 V AC) Ics: 36 kA	adjustable overload	50A	HEG050U	HEG051U
	0.63 to 1 x In	63A	HEG063U	HEG064U
	adjustable short circuit	100A	HEG100U	HEG101U
	6 - 8 - 10 - 13 x In	125A	HEG125U	HEG126U
		160A	HEG160U	HEG161U
		200A	HEG200U	HEG201U
		250A	HEG250U	HEG251U



HNH250U

<b>MCCBs h250 50kA</b> TM+ breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload	20A	HNH020U	
	0.63 to 1 x In	32A	HNH032U	
	adjustable short circuit	50A	HNH050U	
	6 - 8 - 10 - 13 x In	63A	HNH063U	
		100A	HNH100U	
		125A	HNH125U	
		160A	HNH160U	
		250A	HNH250U	

<b>MCCBs h250 70kA</b> TM+ breaking capacity Icu : 70 kA (400/415 V AC) Ics: 50 kA	adjustable overload	20A	HEH020U	
	0.63 to 1 x In	32A	HEH032U	
	adjustable short circuit	50A	HEH050U	
	6 - 8 - 10 - 13 x In	63A	HEH063U	
		100A	HEH100U	
		125A	HEH125U	
		160A	HEH160U	
		250A	HEH250U	

**Technical characteristics**  
Mechanical test button,  
lockable settings

**Connection:**  
directly on copper cable  
terminal,  
with end lug max. width: 30 mm  
Complies with IEC 60947-2)

**Switch disconnectors**  
allows tripping using a shunt  
trip unit (optional)  
  
Complies with IEC 60947-3  
AC 23A / DC 22A



HHD 400U



HND 631H

Designation	Characteristics	In	Cat. ref	
			3P	4P
<b>MCCBs h400 25kA</b> <b>TM</b> breaking capacity Icu : 25 kA (400/415 V AC) Ics: 25 kA	adjustable overload: 0.63 to 1 x In adjustable short circuit: 6 to 1.2 xIn	250A	<b>HHD 250U</b>	-
		400A	<b>HHD 400U</b>	-
<b>MCCBs h400 50kA</b> <b>TM</b> breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload: 0.63 to 1 x In adjustable short circuit: 6 to 1.2 xIn	250A	<b>HND 250U</b>	<b>HND 251U</b>
		400A	<b>HND 400U</b>	<b>HND 401U</b>
<b>MCCBs h630 50kA</b> <b>LSI</b> breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload: I <sub>r</sub> = 0.4 to 1 x In adjustable short circuit: 2.5 to 8 x I <sub>r</sub> time delay: 0.1 - 0.2 s	400A	<b>HND 400H</b>	<b>HND 401H</b>
		630A	<b>HND 630H</b>	<b>HND 631H</b>
<b>MCCBs h630 70kA</b> <b>LSI</b> breaking capacity Icu : 70 kA (400/415 V AC) Ics: 50 kA	adjustable overload: I <sub>r</sub> = 0.4 to 1 x In adjustable short circuit: 2.5 to 10 x I <sub>r</sub> (400A) 2.5 to 8 x I <sub>r</sub> (630A) time delay: 0.1 - 0.2 s	400A	<b>HED 400H</b>	<b>HED 401H</b>
		630A	<b>HED 630H</b>	<b>HED 631H</b>
<b>Switch disconnectors</b>	AC 22A / AC 23A	400A 630A	<b>HCD 400H</b> <b>HCD 630H</b>	<b>HCD 401H</b> <b>HCD 631H</b>

**Moulded case circuit breakers h800**

**Thermal magnetic trip unit TM:**

- thermal adjustment: from 0.63 to 1 x In
- magnetic adjustment: from 6 to 12 x In

**Connection:**

Directly on copper cable terminal, with end lug max. width: 30 mm

Comply with IEC 60 947-2.

**Moulded case circuit breakers h1000**

**Electronic trip unit LSI:**

- long delay (thermal equivalent) adjustable: Ir = 0.4 to 1 x In
- short delay (magnetic equivalent) adjustable: 2.5 to 10 x Ir (630-800A) and 2.5 to 8 x Ir (1000A)
- time delay: 0.1-0.2 s

3P & 4P (adjustable neutral 0 - 50% - 100%). Mechanical test button,

lockable settings.

**Connection:**

Directly on copper cable terminal, with end lug max. width: 50 mm

Comply with IEC 60 947-2.

**Trip-free switches**

Allows tripping at distance using a voltmeter trip unit (optional)

Comply with IEC 60 947-3. AC 23A / DC 22A

Designation	Characteristics	In	Cat. ref.	
			3P	4P
<b>MCCBs h800 50kA TM</b> breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload 0.63 to 1 x In	630A	<b>HNK630U</b>	<b>HNK631U</b>
	adjustable short circuit 6 to 12 x In	800A	<b>HNK800U</b>	<b>HNK801U</b>
<b>MCCBs h800 70kA TM</b> breaking capacity Icu : 70 kA (400/415 V AC) Ics: 50 kA	adjustable overload 0.63 to 1 x In	630A	<b>HEK630U</b>	<b>HEK631U</b>
	adjustable short circuit 6 to 12 x In	800A	<b>HEK800U</b>	<b>HEK801U</b>
<b>MCCBs h1000 50kA LSI</b> breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload Ir = 0.4 to 1 x In	800A	<b>HNE800H</b>	<b>HNE801H</b>
	adjustable short circuit 2.5 to 10 x Ir (630 - 800A) 2.5 to 8 x Ir (1000A) time delay: 0.1-0.2 s	1000A	<b>HNE970H</b>	<b>HNE971H</b>
	neutral setting from 0-50 to 100%			
	* without straight extended connection			
<b>MCCBs h1000 70kA LSI</b> breaking capacity Icu : 70 kA (400/415 V AC) Ics: 50 kA	adjustable overload Ir = 0.4 to 1 x In	800A	<b>HEE800H</b>	<b>HEE801H</b>
	adjustable short circuit 2.5 to 10 x Ir (800A) 2.5 to 8 x Ir (1000A) time delay: 0.1-0.2 s	1000A	<b>HEE970H</b>	<b>HEE971H</b>
	neutral setting from 0-50 to 100%			
<b>Switch disconnectors</b>	AC 22A / AC 23A	800A	<b>HCE800H</b>	<b>HCE801H</b>
		1000A	<b>HCE970H</b>	<b>HCE971H</b>



HNE970H

**Technical characteristics**  
Mechanical test button,  
lockable settings.

**Connection:**  
directly on copper cable terminal,  
with end lug max. width: 60 mm

**Switch disconnectors**  
allows tripping using a shunt  
trip unit (optional)

Complies with IEC 60947-2

Complies with IEC 60947-3  
AC 23A / DC 22A



HNF 990U

Designation	Characteristics	In	Cat. ref.	
			3P	4P
<b>MCCBs h1600 50kA</b> <b>LSI</b> breaking capacity Icu : 50 kA (400/415 V AC) Ics: 50 kA	adjustable overload: $I_r = 0.4 \text{ to } 1 \times I_n$ adjustable short circuit: $2.5 \text{ to } 10 \times I_r$ time delay: 0.1-0.2 s  neutral setting 0, 50, 100%	1250A	<b>HNF 980H</b>	<b>HNF 981H</b>
		1600A	<b>HNF 990H</b>	<b>HNF 991H</b>
<b>MCCBs h1600 70kA</b> <b>LSI</b> breaking capacity Icu : 70 kA (400/415 V AC) Ics: 50 kA	adjustable overload: $I_r = 0.4 \text{ to } 1 \times I_n$ adjustable short circuit: $2.5 \text{ to } 10 \times I_r$ time delay: 0.1-0.2 s  neutral setting from 0, 50, 100%	1250A	<b>HEF 980H</b>	<b>HEF 981H</b>
		1600A	<b>HEF 990H</b>	<b>HEF 991H</b>
<b>Switch disconnectors</b>	AC 22A / AC 23A	1250A 1600A	<b>HCF 980H</b> <b>HCF 990H</b>	<b>HCF 981H</b> <b>HCF 991H</b>



		<i>Designation</i>	<i>Frame</i>	<i>In/a Ue/V</i>	<i>3P Cat. ref.</i>	<i>4P Cat. ref.</i>						
 HXA004H   HXD014H   HXE014H   HXF030H   HXD030H   HXB042H   HXD042H	 HXC004H   HXC014H   HXC021H   HXC024H   HXC030H   HXC039H   HXD039H	<b>Shunt trip release</b>	x160, x250  h250, h400-h630, h1000  h1600	24V DC 48V DC 110V AC 230V AC 400V AC  24V DC 48V DC 110V AC 230V AC 400V AC  24V DC 48V DC 110V AC 230V AC 400V AC	HXA001H HXA002H HXA003H HXA004H HXA005H  HXC001H HXC002H HXC003H HXC004H HXC005H  HXF001H HXF002H HXF003H HXF004H HXF005H	HXA001H HXA002H HXA003H HXA004H HXA005H  HXC001H HXC002H HXC003H HXC004H HXC005H  HXF001H HXF002H HXF003H HXF004H HXF005H						
		 HXD014H   HXE014H   HXF030H   HXD030H   HXB042H   HXD042H	 HXC014H   HXC021H   HXC024H   HXC030H   HXC039H   HXD039H	<b>Undervoltage release</b>	x160, x250  h250, h400-h630  h1000, h1600	24V DC 110V AC 230V AC 400V AC  24V DC 110V AC 230V AC 400V AC  24V DC 110V AC 230V AC 400V AC	HXA011H HXA013H HXA014H HXA015H  HXC011H HXC013H HXC014H HXC015H  HXE011H HXE013H HXE014H HXE015H	HXA011H HXA013H HXA014H HXA015H  HXC011H HXC013H HXC014H HXC015H  HXE011H HXE013H HXE014H HXE015H				
				 HXD021H   HXD024H   HXD030H   HXD039H   HXD042H	 HXC021H   HXC024H   HXC030H   HXC039H   HXD039H	<b>Auxiliary contact</b>	x160, x250 h250, h400-h630, h1000, h1600	1NO+1NC 1NO+1NC	HXA021H HXC021H	HXA021H HXC021H		
						 HXD024H   HXD030H   HXD039H   HXD042H	 HXC024H   HXC030H   HXC039H   HXD039H	<b>Alarm contact</b>	x160, x250 h250, h400-h630, h1000, h1600	1NO+1NC 1NO+1NC	HXA024H HXC024H	HXA024H HXC024H
								 HXD030H   HXD039H   HXD042H	 HXC030H   HXC039H   HXD039H	<b>Direct rotary handle</b>	x160 x250 h250 h400-h630 h1000 h1600	
				 HXD039H   HXD042H	 HXC039H   HXD039H					<b>Extended rotary handle</b>	x160 x250 h250 h400-h630 h1000 h1600	
						 HXD039H   HXD042H	 HXC039H   HXD039H			<b>Padlock</b>	x160, x 250 utility approved x160, x250 h250 h400-h630, h1000 h1600	
								 HXD039H   HXD042H	 HXC039H   HXD039H	<b>Motor operator</b>	x250  h250  h400-h630  h1000  h1600	24V DC 220V AC  24V DC 220V AC  24V DC 220V AC  24V DC 220V AC
				 HXD039H   HXD042H	 HXC039H   HXD039H					<b>Electrical inter lock for motor operator</b>	x250/h250 h400/h630/h1000 x250/h250-h400/h630/h1000	

	<i>Designation</i>	<i>Frame</i>	<i>In/a Ue/V</i>	<i>3P Cat. ref.</i>	<i>4P Cat. ref.</i>
	Cable type mechanical interlock - kit Cable length - 1mtr.	x250 h250 h400-h630 h1000		HXB065H HXC065H HXD065H HXE065H	HXB065H HXC065H HXD065H HXE065H
<b>HYD003H</b>					
	Cable type mechanical interlock - unit Cable length - 1mtr. Cable length - 1.5mtr.	x250 h250 h400-h630 h1000		HXB066H HXC066H HXD066H HXE066H HXB070H HXB071H	HXB066H HXC066H HXD066H HXE066H HXB070H HXB071H
<b>HYA013H</b>					
	<b>Collar terminal</b>	x250 h250 h400-h630 (400)		HYB001H HYC003H HYD006H	HYB002H HYC004H HYD006H
<b>HYB010H</b>					
	<b>Extended connection straight</b>	x160 x250 h250 h400-h630 (400) h400-h630 (630)		HYA013H HYB010H HYC010H HYD010H HYD013H	HYA013H HYB010H HYC010H HYD010H HYD013H
<b>HYB010H</b>					
	<b>Extended connection spreaders</b>	x160 x250 h250 h400-h630 (400) h400-h630 (630)		HYA014H HYB011H HYC011H HYD011H HYD014H	HYA015H HYB012H HYC012H HYD012H HYD016H
<b>HYC011H</b>					
	<b>Interphase barrier</b>	x160 x250 h250TM+ h250 to h1600		HYA019H HYB019H HYG019H HYD019H	HYA019H HYB019H HYG019H HYD019H
<b>HYD015H</b>					
	<b>Rear connections</b>	x250 h400-h630 (400) h400-h630 (630) h1000 (800) h1000 (1000)		HYB031H HYD031H HYD033H HYE031H HYE033H	HYB032H HYD032H HYD034H HYE032H HYE034H
<b>HYB031H</b>					
	<b>Terminal cover for extended connections</b>	x160 x250 h250 h400-h630 h1000		HYA021H HYB021H HYG021H HYD021H HYE021H	HYA022H HYB022H HYG022H HYD022H HYE022H
<b>HYA021H</b>					
	<b>Terminal cover for spreaders</b>	x160 x250 h400-h630		HYA023H HYB023H HYD023H	HYA024H HYB024H HYD024H
<b>HYA023H</b>					
	<b>Terminal cover for rear connections</b>	x250 h250 h400-h630 h1000		HYB025H HYC025H HYD025H HYE025H	HYB026H - HYD026H HYE026H
<b>HYA025H</b>					
	<b>Terminal cover for collar terminals</b>	x160 x250 h250 h400-h630		HYA027H HYB027H HYC027H HYD027H	HYA028H HYB028H - HYD028H
<b>HYA027H</b>					
	<b>Din rail adaptor</b>	x160 x250		HYA033H HYB033H	HYA033H HYB033H
<b>HYA023H</b>					
	<b>Compact lugs 120mm² D:10</b>	h400-h630		HYD093H	HYD093H
<b>HYB025H</b>					
	<b>Compact lugs 150mm² D:10,5</b>	h400-h630		HYD095H	HYD095H
<b>HYA023H</b>					
	<b>Compact lugs 185mm² D:10,5</b>	h400-h630		HYD096H	HYD096H
<b>HYB025H</b>					
	<b>Compact lugs 185mm² D:12,8</b>	h400-h630		HYD097H	HYD097H
<b>HYB025H</b>					
	<b>Compact lugs 240mm² D:12,8</b>	h400-h630		HYD098H	HYD098H
<b>HYB025H</b>					

# ElcomNet

Hager software for calculation of LV Electrical installations



- ElcomNet, the state of the art software is designed to calculate Low Voltage Electrical installations in accordance with IEC60364 standards
- ElcomNet produces electrical diagrams and calculation reports required for the design and verification of an electrical network
- ▣ The software effortlessly performs all calculations for short circuit study, cable sizing, protective device sizing, voltage drop, discrimination and backup study
- ▣ The software produces the network single line diagram for the whole installation and a detailed single line diagram for each switchboard
- It determines the most economical solution and guarantees compliance with the electrical standards
- ▣ Automatically calculate protection devices with optimal circuit breaker settings for overload and short circuit
- ▣ Review and print a wide variety of reports containing single line diagrams, discrimination curves, circuit specifications and equipment lists

**hager**

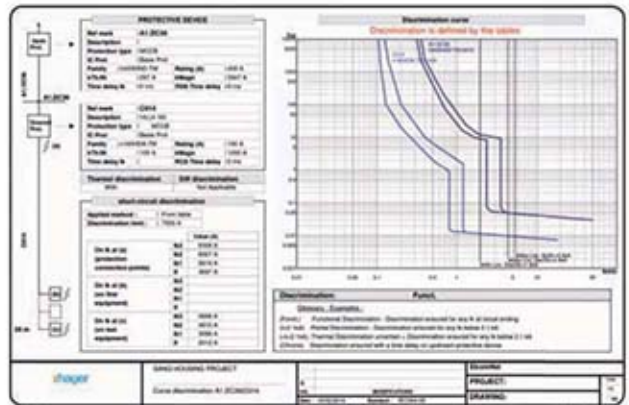
The screenshot shows the ElcomNet software interface. At the top, there's a menu bar with options like File, Edit, Display, Supplies, Distribution, Circuits, Tools, and Windows. Below the menu is a toolbar. The main workspace is divided into several panes:

- Project folders:** Shows a tree view of the project structure, including folders for manufacturers, documents, and individual circuits (D6001-D6009).
- Main Diagram:** A detailed single-line diagram of a power distribution system with various components like cables, switches, and protection devices.
- Results Panel:** Displays the status of the circuit (C001) as "Circuit compliant". It lists various parameters such as PE or PEN, Criterion 2d1, Max. length, I<sub>B</sub>, I<sub>TH</sub>, I<sub>Z</sub>, ΔU circuit, ΔU total, S<sub>0</sub> Max, S<sub>0</sub> Min, S<sub>1</sub> Max, S<sub>1</sub> Min, S<sub>2</sub> Max, S<sub>2</sub> Min, S<sub>3</sub> Max, S<sub>3</sub> Min, I<sub>sc</sub> Max, I<sub>sc</sub> Min, I<sub>sc</sub> Max, I<sub>sc</sub> Min, and I<sub>sc</sub> Min. It also indicates the discrimination type and thermal discrimination settings.
- Normal D6000:** A list of circuit types (C015, C016, C017, C018, C019, C020) with a note: "Thermal stress: Limitation curve missing: No limitation has been applied. Verify working time or protection device limitation. Circuit compliant. Thermal stress: Limitation curve missing: No limitation has been applied. Verify working time or protection device limitation. Result status."

Board Single Line Diagram



Discrimination Curve



Calculation Sheet

CONFORMITY SHEET		CIRCUIT INFORMATION		CIRCUIT RESULTS		RESULTS	
Item	Value	Item	Value	Item	Value	Item	Value
PE or PEN	100.0 A	Circuit type	300 A	Criterion 2d1	100.0 A	Max. length	100.0 m
Criterion 2d1	100.0 A	Protection type	300 A	I <sub>B</sub>	100.0 A	I <sub>TH</sub>	100.0 A
Max. length	100.0 m	Rating	300 A	I <sub>Z</sub>	100.0 A	I <sub>Z</sub>	100.0 A
I <sub>B</sub>	100.0 A	Rating	300 A	ΔU circuit	0.00 %	ΔU total	0.36 %
I <sub>TH</sub>	100.0 A	Rating	300 A	S <sub>0</sub> Max	34292 A	S <sub>0</sub> Min	29698 A
I <sub>Z</sub>	100.0 A	Rating	300 A	S <sub>1</sub> Max	30972 A	S <sub>1</sub> Min	23674 A
ΔU circuit	0.00 %	Rating	300 A	S <sub>2</sub> Max	30972 A	S <sub>2</sub> Min	22487 A
ΔU total	0.36 %	Rating	300 A	S <sub>3</sub> Max	18729 A	S <sub>3</sub> Min	14447 A
S <sub>0</sub> Max	34292 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>0</sub> Min	29698 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>1</sub> Max	30972 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>1</sub> Min	23674 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>2</sub> Max	30972 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>2</sub> Min	22487 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>3</sub> Max	18729 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>3</sub> Min	14447 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
I <sub>sc</sub> Max	34.3 kA/34.3 kA	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
I <sub>sc</sub> Min	22487 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
Discrimination Type	From table	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
Discrimination on R	Total	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
Thermal discrimination	Not Calc	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
Differential discrimination	Not Applicable	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A

Conformity Sheet

CONFORMITY SHEET		CIRCUIT INFORMATION		CIRCUIT RESULTS		RESULTS	
Item	Value	Item	Value	Item	Value	Item	Value
PE or PEN	100.0 A	Circuit type	300 A	Criterion 2d1	100.0 A	Max. length	100.0 m
Criterion 2d1	100.0 A	Protection type	300 A	I <sub>B</sub>	100.0 A	I <sub>TH</sub>	100.0 A
Max. length	100.0 m	Rating	300 A	I <sub>Z</sub>	100.0 A	I <sub>Z</sub>	100.0 A
I <sub>B</sub>	100.0 A	Rating	300 A	ΔU circuit	0.00 %	ΔU total	0.36 %
I <sub>TH</sub>	100.0 A	Rating	300 A	S <sub>0</sub> Max	34292 A	S <sub>0</sub> Min	29698 A
I <sub>Z</sub>	100.0 A	Rating	300 A	S <sub>1</sub> Max	30972 A	S <sub>1</sub> Min	23674 A
ΔU circuit	0.00 %	Rating	300 A	S <sub>2</sub> Max	30972 A	S <sub>2</sub> Min	22487 A
ΔU total	0.36 %	Rating	300 A	S <sub>3</sub> Max	18729 A	S <sub>3</sub> Min	14447 A
S <sub>0</sub> Max	34292 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>0</sub> Min	29698 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>1</sub> Max	30972 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>1</sub> Min	23674 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>2</sub> Max	30972 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>2</sub> Min	22487 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
S <sub>3</sub> Max	18729 A	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
S <sub>3</sub> Min	14447 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
I <sub>sc</sub> Max	34.3 kA/34.3 kA	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
I <sub>sc</sub> Min	22487 A	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
Discrimination Type	From table	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
Discrimination on R	Total	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A
Thermal discrimination	Not Calc	Rating	300 A	I <sub>sc</sub> Max	34.3 kA/34.3 kA	I <sub>sc</sub> Min	22487 A
Differential discrimination	Not Applicable	Rating	300 A	I <sub>sc</sub> Min	22487 A	I <sub>sc</sub> Min	22487 A



HAB408

Designation	Characteristics	In/A	Width in 17.5mm		Cat. ref.	
			3P	4P	3P	4P
Load break switches visible breaking	disconnecter modular design IP20 AC23	20A	2.5	3.5	HAB302	HAB402
		32A	2.5	3.5	HAB303	HAB403
		40A	2.5	3.5	HAB304	HAB404
		63A	2.5	3.5	HAB306	HAB406
		63A	3	4	HAC306	HAC406
		80A	3	4	HAC308	HAC408
		100A	3	4	HAC310	HAC410
		100A	4.5	6	HAD310	HAD410
		125A	4.5	6	HAD312	HAD412

Auxillaries contacts In = 10A	1O + 1F	0.5	0.5	HZC311	HZC311
	2F	0.5	0.5	HZC312	HZC312

External handle IP55 locked with 3 padlocks	for LBS 20 to 100A			HZC010	HZC010
	for LBS 100 to 125A			HZC011	HZC011
	for LBS 100 to 125A			HZC014	HZC014

Shaft extension	20 to 100A, 150mm			HZC111	HZC111
	20 to 100A, 200mm			HZC112	HZC112
	20 to 100A, 320mm			HZC113	HZC113
	100 to 125A, 150mm			HZC114	HZC114
	100 to 125A, 200mm			HZC115	HZC115
	100 to 125A, 320mm			HZC116	HZC116

Terminal shrouds top and bottom 2 pieces / packaging	20 to 63A			HZC211	HZC212
	63 to 100A			HZC213	HZC214
	100 to 125A			HZC215	HZC216



HZC014

## Load break switches 160A, 200A, 250A for use as distribution board incomer

Designation	In/A	Cat. ref. 3P
Load break switches AC22/AC23	160A	JK160S
	200A	JK200S
	250A	JK250S



JK160S



JK200S



HA358



HZC101

<i>Designation</i>	<i>Characteristics</i>	<i>In/A</i>	<i>Cat. ref.</i>	
			<i>3P</i>	<i>4P</i>
<b>Load break switches with handle</b>	direct rotary handle AC22 and AC23	125A 160A 200A 250A 315A 400A 630A 800A 1250A 1600A	HA351 HA352 HA353M HA354 HA355M HA357 HA358 HA380 HA382 HA384	HA451 HA452 HA453M HA454 HA455M HA457 HA458 HA460 HA462 HA464
<b>Auxiliary contacts</b>			HZ023	HZ023
<b>Rotary handle</b>	for extended shaft - 125 to 630A - 800 to 1600A - double hand		HZC002 HZC003 HZA001	HZC002 HZC003 HZA001
<b>Shaft extension</b>	125 to 630A, 200mm 125 to 630A, 320mm 800 to 1600A, 200mm 800 to 1600A, 320mm		HZC101 HZC102 HZC105 HZC106	HZC101 HZC102 HZC105 HZC106

**Technical Characteristics**

Standards: IEC 60947-4-1  
 DIN rail / Screw mounted apvention  
 Utilisation catagory: AC3  
 Rated current at 380V / 400V AC  
 High grade of coil insulation-class F



EW020\_K



EW040\_J



EW063\_M

Rated operational current I <sub>c</sub>	Kw	in-built AUX contact	Cat.ref.
9A	4	1 NO	EW009_■
12A	5.5	1 NO	EW012_■
16A	7.5	1 NO	EW016_■
22A	11	1 NO + 1 NC	EW020_■
26A	11	1 NO + 1 NC	EW025_■
32A	15	1 NO + 1 NC	EW032_■
40A	20	1 NO + 1 NC	EW040_■
55A	25	2 NO + 2 NC	EW050_■
64A	30	2 NO + 2 NC	EW063_■
72A	37	2 NO + 2 NC	EW070_■
90A	51	2 NO + 2 NC	EW090_■
115A	60	2 NO + 2 NC	EW115_■
138A	75	2 NO + 2 NC	EW138_■
147A	80	2 NO + 2 NC	EW150_■
179A	95	2 NO + 2 NC	EW180_■
225A	120	2 NO + 2 NC	EW220_■
300A	160	2 NO + 2 NC	EW300_■

Note: Replace ■ with coil voltages

Coil voltages:

- C: 220V AC 50/60 Hz (EW009\_C ~ EW300\_C)
- D: 380V AC 50/60 Hz (EW009\_D ~ EW300\_D)
- H: 110V AC 50/60 Hz (EW009\_H ~ EW070\_H)
- J: 230V AC 50Hz (EW009\_J ~ EW300\_J)
- K: 240V AC 50Hz (EW009\_K ~ EW300\_K)
- L: 400V AC 50Hz (EW009\_L ~ EW070\_L)
- M: 415V AC 50Hz (EW009\_M ~ EW070\_M)

Accessories



EWA001



EWA007








EWA101



EWA102

Relay range	Contact configuration	Cat ref.
<b>Auxillary contact</b> Top mounting on contactor EW009 to EW070	1 NO + 1 NC	EWA001
	2 NO	EWA002
	2 NC	EWA003
	4 NO	EWA004
	4 NC	EWA005
	3 NO + 1 NC	EWA006
	2 NO + 2 NC	EWA007
	1 NO + 3 NC	EWA008
	1 NO + 1 NC	EWA009
	1 NO + 1 NC	EWA010
<b>Mechanical interlock</b> For contactor EW009 - EW025 For contactor EW032 - EW070		EWA101
		EWA103
	<b>Mechanical / Electrical interlock</b> For contactor EW009 - EW025	EWA102

	Designation	Characteristics	Cat. ref.
 EWT...B	<b>Thermal overload relays</b> - for EW007 to EW032	Setting range:	
		0.1 - 0.16A	EWT001B
		0.16 - 0.25A	EWT002B
		0.35 - 0.5A	EWT005B
		0.45 - 0.63A	EWT006B
		0.55 - 0.8A	EWT008B
		0.9 - 1.3A	EWT013B
		1.1 - 1.6A	EWT016B
		1.4 - 2A	EWT020B
		1.8 - 2.5A	EWT025B
		2.3 - 3.2A	EWT032B
		 EWT...E	- for EW040
3.5 - 4.8A	EWT048B		
4.5 - 6.3A	EWT063B		
5.5 - 7.5A	EWT075B		
7.2 - 10A	EWT100B		
9 - 12.5A	EWT125B		
11.3 - 16A	EWT160B		
15 - 20A	EWT200B		
17.5 - 21.5A	EWT215B		
21 - 25A	EWT250B		
24.5 - 30A	EWT300B		
 EWT...G	- for EW050 to EW090		
		24.5 - 36A	EWT360E
		35 - 47A	EWT470E
 EWT...F	<b>Separated thermal overload relays</b> connection with wires	24.5 - 36A	EWT360G
		35 - 47A	EWT470G
		45 - 60A	EWT600G
		58-75A	EWT750G
		72 - 90A	EWT900G
 EWT...F	<b>Separated thermal overload relays</b> connection with wires	Setting range: 17 - 25A	EWT250F
		24.5 - 36A	EWT360F
		35 - 47A	EWT470F
		45 - 60A	EWT600F
		58 - 75A	EWT750F
		72 - 90A	EWT900F

Note: CT operated overload relays available on request  
 Ratings: 87 - 120A / 105 - 144A / 135 - 158A / 175 - 240A / 225 - 250A / 245 - 336A



# Switch disconnecter (Isolator)



**Description**  
For use as a switch disconnecter in all types of circuit.

Complies with : BS EN 60 947-3 all ratings

**Technical data utilisation category**  
AC 22A, 230V/400V

**In : 16, 25, 32A**  
Shrouded cable clamps  
connection capacity:  
16mm<sup>2</sup> rigid conductor  
10mm<sup>2</sup> flexible conductor

**In : 40, 63A**  
Cable clamps,  
connection capacity:  
25mm<sup>2</sup> rigid conductor  
16mm<sup>2</sup> flexible conductor

**In : 80A, 125A**  
Cable clamps  
connection capacity:  
50mm<sup>2</sup> rigid conductor  
35mm<sup>2</sup> flexible conductor  
All switches have a green / red indication on the handle giving positive contact indication.

Use MZN175 as locking device

	<i>Designation</i>	<i>Cat Ref. 1 Pole</i>	<i>Cat Ref. 2 Pole</i>	<i>Cat Ref. 3 Pole</i>	<i>Cat Ref. 4 Pole</i>
	16A	<b>SBN116</b>	<b>SBN216</b>	<b>SBN316</b>	<b>SBN416</b>
	16A with indicator light	<b>SBB116</b>	<b>SBB216</b>		
	25A	<b>SBN125</b>	<b>SBN225</b>	<b>SBN325</b>	<b>SBN425</b>
	25A with indicator light	<b>SBB125</b>	<b>SBB225</b>		
	32A	<b>SBN132</b>	<b>SBN232</b>	<b>SBN332</b>	<b>SBN432</b>
	32A with indicator light	<b>SBB132</b>	<b>SBB232</b>		
	32A with large terminal	<b>SBN133</b>	<b>SBN233</b>	<b>SBN333</b>	<b>SBN433</b>
	40A	<b>SBN140</b>	<b>SBN240</b>	<b>SBN340</b>	<b>SBN440</b>
	63A	<b>SBN163</b>	<b>SBN263</b>	<b>SBN363</b>	<b>SBN463</b>
	63A with large terminal	<b>SBN164</b>	<b>SBN264</b>	<b>SBN364</b>	<b>SBN464</b>
	80A	<b>SBN180</b>	<b>SBN280</b>	<b>SBN380</b>	<b>SBN480</b>
	100A	<b>SBN190</b>	<b>SBN290</b>	<b>SBN390</b>	<b>SBN490</b>
	125A	<b>SBN199</b>	<b>SBN299</b>	<b>SBN399</b>	<b>SBN499</b>
	<b>Auxilliary contact</b>	<b>ESC080</b>			

# Modular changeover switches

	<i>Rating</i>	<i>Toggle Operation (3 position) p</i>	<i>Cat Ref. 1 Pole</i>	<i>Cat Ref. 2 Pole</i>	<i>Cat Ref. 3 Pole</i>	<i>Cat Ref. 4 Pole</i>
	25A	I - 0 - II	<b>SFT125</b>	<b>SFT225</b>	-	-
	40A	I - 0 - II	<b>SFT140</b>	<b>SFT240</b>	<b>SFT340</b>	<b>SFT440</b>
	63A	I - 0 - II	-	<b>SF263</b>	-	<b>SF463</b>

- Technical characteristics:**
- Voltage range -20% to +10%: 230 - 400 V
  - Vmax: 254 - 440 V
  - Frequency: 50 / 60 Hz
  - IP rating: IP 2X

Range	MW	MU	MC	MT	MB	MV
Breaking capacity IEC 898 (kA)	3	6	6	6	6	3
Breaking capacity IEC 947-2 (kA)		10	10	10	10	
Auxillaries	no	no	yes	no	yes	no
Tripping curve	C	C	C	B	B	B

*Designation In / A cat. ref. cat. ref. cat. ref. cat.ref. cat. ref. cat. ref.*



MC106A

Designation	In / A	cat. ref.	cat. ref.	cat. ref.	cat.ref.	cat. ref.	cat. ref.
<b>Single Pole</b>	0.5			MC100A			
	1			MC101A			
	2			MC102A			
	4			MC104A			
	6	MW106	MU106A	MC106A	MT106A	MB106A	MV106A
	10	MW110	MU110A	MC110A	MT110A	MB110A	MV110A
	16	MW116	MU116A	MC116A	MT116A	MB116A	MV116A
	20	MW120	MU120A	MC120A	MT120A	MB120A	MV120A
	25	MW125	MU125A	MC125A	MT125A	MB125A	MV125A
	32	MW132	MU132A	MC132A	MT132A	MB132A	MV132A
	40	MW140	MU140A	MC140A	MT140A	MB140A	MV140A
	50		MU150A	MC150A	MT150A	MB150A	
	63		MU163A	MC163A	MT163A	MB163A	



MU220A

<b>Double Pole</b>	0.5			NC200A			
	1			NC201A			
	2			NC202A			
	4			NC204A			
	6	MW206	MU206A	NC206A	MT206A	MB206A	MV206A
	10	MW210	MU210A	NC210A	MT210A	MB210A	MV210A
	16	MW216	MU216A	NC216A	MT216A	MB216A	MV216A
	20	MW220	MU220A	NC220A	MT220A	MB220A	MV220A
	25	MW225	MU225A	NC225A	MT225A	MB225A	MV225A
	32	MW232	MU232A	NC232A	MT232A	MB232A	MV232A
	40	MW240	MU240A	NC240A	MT240A	MB240A	MV240A
	50		MU250A	NC250A	MT250A	MB250A	
	63		MU263A	NC263A	MT263A	MB263A	



MB316A

<b>Triple Pole</b>	0.5			MC300A			
	1			MC301A			
	2			MC302A			
	4			MC304A			
	6	MW306	MU306A	MC306A	MT306A	MB306A	MV306A
	10	MW310	MU310A	MC310A	MT310A	MB310A	MV310A
	16	MW316	MU316A	MC316A	MT316A	MB316A	MV316A
	20	MW320	MU320A	MC320A	MT320A	MB320A	MV320A
	25	MW325	MU325A	MC325A	MT325A	MB325A	MV325A
	32	MW332	MU332A	MC332A	MT332A	MB332A	MV332A
	40	MW340	MU340A	MC340A	MT340A	MB340A	MV340A
	50		MU350A	MC350A	MT350A	MB350A	
	63		MU363A	MC363A	MT363A	MB363A	



MB432A

<b>Four pole</b>	0.5			MC400A			
	1			MC401A			
	2			MC402A			
	4			MC404A			
	6	MW406	MU406A	MC406A	MT406A	MB406A	MV406A
	10	MW410	MU410A	MC410A	MT410A	MB410A	MV410A
	16	MW416	MU416A	MC416A	MT416A	MB416A	MV416A
	20	MW420	MU420A	MC420A	MT420A	MB420A	MV420A
	25	MW425	MU425A	MC425A	MT425A	MB425A	MV425A
	32	MW432	MU432A	MC432A	MT432A	MB432A	MV432A
	40	MW440	MU440A	MC440A	MT440A	MB440A	MV440A
	50		MU450A	MC450A	MT450A	MB450A	
	63		MU463A	MC463A	MT463A	MB463A	

**Technical characteristics:**

- Voltage range -20% to +10%:
- MC/NCN/NDN/NR: 230 - 400V
- HLF/HMC: 240 - 415 V

- Vmax: 254 - 440 V
- Frequency: 50 / 60 Hz
- IP rating: IP 2X
- Auxiliaries

Range	NC	NCN	NDN	NRN	HLF	HMC
Breaking capacity IEC 898 (kA)	10	10	10			
Breaking capacity IEC 947-2 (kA)		15	15	25 (20A) 20 (25-40A) 15 (50-63A)	10	15
Tripping curve	C	C	D	C	C	C



NC110A



NCN220A



NDN320A



HLF399S

Designation	In / A	cat. ref.	cat. ref.	cat. ref.	cat.ref.	cat. ref.	cat. ref.
<b>Single Pole</b>	0.5	NC100A	NCN100A	NDN100A	NRN100		
	1	NC101A	NCN101A	NDN101A	NRN101		
	2	NC102A	NCN102A	NDN102A	NRN102		
	4	NC104A	NCN104A	NDN104A	NRN104		
	6	NC106A	NCN106A	NDN106A	NRN106		
	10	NC110A	NCN110A	NDN110A	NRN110		
	16	NC116A	NCN116A	NDN116A	NRN116		
	20	NC120A	NCN120A	NDN120A	NRN120		
	25	NC125A	NCN125A	NDN125A	NRN125		
	32	NC132A	NCN132A	NDN132A	NRN132		
	40	NC140A	NCN140A	NDN140A	NRN140		
	50	NC150A	NCN150A	NDN150A	NRN150		
	63	NC163A	NCN163A	NDN163A	NRN163		
	80*					HLF180S	HMC180
	100*					HLF190S	HMC190
125*					HLF199S	HMC199	
<b>Double Pole</b>	0.5	NC200A	NCN200A	NDN200A	NRN200		
	1	NC201A	NCN201A	NDN201A	NRN201		
	2	NC202A	NCN202A	NDN202A	NRN202		
	4	NC204A	NCN204A	NDN204A	NRN204		
	6	NC206A	NCN206A	NDN206A	NRN206		
	10	NC210A	NCN210A	NDN210A	NRN210		
	16	NC216A	NCN216A	NDN216A	NRN216		
	20	NC220A	NCN220A	NDN220A	NRN220		
	25	NC225A	NCN225A	NDN225A	NRN225		
	32	NC232A	NCN232A	NDN232A	NRN232		
	40	NC240A	NCN240A	NDN240A	NRN240		
	50	NC250A	NCN250A	NDN250A	NRN250		
	63	NC263A	NCN263A	NDN263A	NRN263		
	80*					HLF280S	HMC280
	100*					HLF290S	HMC290
125*					HLF299S	HMC299	
<b>Triple Pole</b>	0.5	NC300A	NCN300A	NDN300A	NRN300		
	1	NC301A	NCN301A	NDN301A	NRN301		
	2	NC302A	NCN302A	NDN302A	NRN302		
	4	NC304A	NCN304A	NDN304A	NRN304		
	6	NC306A	NCN306A	NDN306A	NRN306		
	10	NC310A	NCN310A	NDN310A	NRN310		
	16	NC316A	NCN316A	NDN316A	NRN316		
	20	NC320A	NCN320A	NDN320A	NRN320		
	25	NC325A	NCN325A	NDN325A	NRN325		
	32	NC332A	NCN332A	NDN332A	NRN332		
	40	NC340A	NCN340A	NDN340A	NRN340		
	50	NC350A	NCN350A	NDN350A	NRN350		
	63	NC363A	NCN363A	NDN363A	NRN363		
	80*					HLF380S	HMC380
	100*					HLF390S	HMC390
125*					HLF399S	HMC399	
<b>Four Pole</b>	0.5	NC400A	NCN400A	NDN400A	NRN400		
	1	NC401A	NCN401A	NDN401A	NRN401		
	2	NC402A	NCN402A	NDN402A	NRN402		
	4	NC404A	NCN404A	NDN404A	NRN404		
	6	NC406A	NCN406A	NDN406A	NRN406		
	10	NC410A	NCN410A	NDN410A	NRN410		
	16	NC416A	NCN416A	NDN416A	NRN416		
	20	NC420A	NCN420A	NDN420A	NRN420		
	25	NC425A	NCN425A	NDN425A	NRN425		
	32	NC432A	NCN432A	NDN432A	NRN432		
	40	NC440A	NCN440A	NDN440A	NRN440		
	50	NC450A	NCN450A	NDN450A	NRN450		
	63	NC463A	NCN463A	NDN463A	NRN463		
	80*					HLF480S	HMC480
	100*					HLF490S	HMC490
125*					HLF499S	HMC499	

\* each pole is 1.5 module width

**Technical characteristics:**

- standards: IEC 61008-1
- operational voltage:  
127-230V (2 poles)  
tolerance -6 / +10%
- 230-400V (4 poles)  
tolerance -6 / +10%
- V<sub>max</sub>: 254 / 440V

- current ratings: 16A - 100A
- poles: 2P / 4P
- sensitivity: 10mA / 30mA /  
100mA / 300mA / 500mA
- IP rating: IP 2X

- earth fault indication
- On - Off indication
- clip on busbar facility
- selective (S) version  
(time delayed)
- accessories:  
only for CxxxxJ version:



CD241J

Designation	In / A	10mA cat. ref.	30mA cat. ref.	100mA cat. ref.	300mA cat.ref.	500mA cat. ref.
<b>2 poles 50 Hz</b>	16	<b>CC217J</b>	-	-	-	-
	25	-	<b>CD226J</b>	<b>CE226J</b>	<b>CF226J</b>	-
	40	-	<b>CD241J</b>	<b>CE241J</b>	<b>CF241J</b>	-
	63	-	<b>CD264J</b>	<b>CE264J</b>	<b>CF264J</b>	-
	80	-	<b>CD281Z</b>	<b>CE281Z</b>	<b>CF281Z</b>	-
	100	-	<b>CD285Z</b>	<b>CE285Z</b>	<b>CF285Z</b>	-
	<b>S</b> 63	-	-	-	<b>CP285F</b>	-



CD441J

<b>4 pole 50 Hz</b>	25	-	<b>CD426J</b>	<b>CE426J</b>	<b>CF426J</b>	-
	40	-	<b>CD441J</b>	<b>CE441J</b>	<b>CF441J</b>	-
	63	-	<b>CD464J</b>	<b>CE464J</b>	<b>CF464J</b>	-
	80	-	<b>CD480Z</b>	<b>CE481Z</b>	<b>CF481Z</b>	<b>CG481Z</b>
	100	-	<b>CD485Z</b>	<b>CE485Z</b>	<b>CF485Z</b>	<b>CG485Z</b>
	<b>S</b> 40A	-	-	-	<b>CP441J</b>	-
	<b>S</b> 63A	-	-	-	<b>CP464J</b>	-

## RCCBs - 60 Hz



CD225S

<b>2 pole 60 Hz</b>	25	-	<b>CD225S</b>	-	<b>CF225S</b>	-
	40	-	<b>CD240S</b>	-	<b>CF240S</b>	-
	63	-	<b>CD263S</b>	-	<b>CF263S</b>	-
	80	-	<b>CD280S</b>	-	<b>CF280S</b>	-
	100	-	<b>CD284S</b>	-	<b>CF284S</b>	-



CD463S

<b>4 pole 60 Hz</b>	25	-	<b>CD425S</b>	-	<b>CF425S</b>	-
	40	-	<b>CD440S</b>	-	<b>CF440S</b>	-
	63	-	<b>CD463S</b>	-	<b>CF463S</b>	-
	80	-	<b>CD480S</b>	-	<b>CF480S</b>	-
	100	-	<b>CD484S</b>	-	<b>CF484S</b>	-

**Technical characteristics:**

- Standards:  
IEC61009-1  
IEC61009-2-2  
EN61009-1
- Operating voltage:  
230/240 VAC  
Tolerance -15% to +10%

- Breaking capacity 6kA/10kA
- Frequency 50/60Hz
- ON/OFF Indications



AD110Z

<i>Designation</i>	<i>I<sub>n</sub> /A</i>	<i>30mA cat. ref.</i>	<i>100mA cat. ref.</i>	<i>300mA cat. ref.</i>
<b>6 kA</b>	6	AD106Z	AE106Z	-
	10	AD110Z	AE110Z	AF110Z
	16	AD116Z	AE116Z	AF116Z
	20	AD120Z	AE120Z	AF120Z
	25	AD125Z	AE125Z	AF125Z
	32	AD132Z	AE132Z	AF132Z
	40	AD140Z	AE140Z	AF140Z
	45	-	-	AF145Z
	50	-	-	AF150Z
<b>10 kA</b>	6	AD184	-	-
	10	AD185	-	-
	16	AD187	-	-
	20	AD188	-	-
	25	AD189	-	-
	32	AD190	-	-
	40	AD191	-	-

# RCBOs 2 module type AC - C curve

**Technical characteristics**

- Standards  
IEC61009-1  
IEC61009-2-2  
EN61009-1
- Operating voltage  
230 VAC  
Tolerance -15% to +10%

- Breaking capacity  
4.5kA / 6kA















AD866J



<i>Designation</i>	<i>I<sub>n</sub> /A</i>	<i>30mA, 4.5kA cat. ref.</i>	<i>30mA, 6kA cat. ref.</i>	<i>300mA, 6kA cat. ref.</i>
<b>RCBO type AC 50HZ</b>	6	AD866J	AD966B	AF966B
	10	AD860J	AD960B	AF960B
	16	AD866J	AD966B	AF966B
	20	AD870J	AD970B	AF970B
	25	AD875J	AD975B	AF975B
	32	AD882J	AD982B	AF982B
	40	AD890J	AD990B	AF990B
<b>RCBO type AC 60HZ</b>	6	ADC813F		
	10	ADC817F		
	16	ADC823F		
	20	ADC827F		
	25	ADC833F		
	32	ADC839F		
40	ADC847F			

# RCD add-on blocks - type AC for MB, MC, NC, NCN, NDN, and NRN ranges



	<i>Designation</i>	<i>Sensitivity</i>	<i>In/A</i>	<i>Width in 17.5mm</i>	<i>cat.ref.</i>		
 BD264	<b>2 poles add-on blocks</b>	10mA	25A	2	BC226		
			25A	2	BD226		
			40A	2	BD241		
			63A	2	BD264		
		100mA	63A	2	BE264		
			25A	2	BF226		
		300mA	40A	2	BF241		
			63A	2	BF264		
		 BF364	<b>3 poles add-on blocks</b>	30mA	25A	2	BD326
					40A	3	BD341
					63A	3	BD364
 BD464	<b>4 poles add-on blocks</b>	300mA	25A	2	BF326		
			40A	3	BF341		
			63A	3	BF364		
		 BS364		 300mA  1A	63A	3	BP364
					63A	3	BS364
					25A	2	BD426
					40A	3	BD441
 BE464		100mA	63A	3	BD464		
			63A	3	BE464		
		300mA	25A	2	BF426		
			40A	3	BF441		
		 BN464		 100mA  300mA  1A	63A	3	BF464
					63A	3	BN464
 BP464			63A	3	BP464		
			63A	3	BS464		

## Auxiliaries and accessories for MCBs and RCCBs

	<i>Designation</i>	<i>Characteristics</i>	<i>Width in 17.5mm</i>	<i>Cat.ref.</i>	
 MZ201	<b>Auxiliary contact 6A 230V</b>	1NO +1NC aux. contact for indication of the main contact status	1/2	<b>MZ201</b>	
	<b>Alarm contact 6A 230V</b>	SD contact indicates tripping on fault	1/2	<b>MZ202</b>	
	<b>Shunt trip</b>	allows remote tripping of the device	- 230 - 415V AC	1	<b>MZ203</b>
			- 110 - 130V DC	1	<b>MZ204</b>
 MZ204	<b>Under voltage release</b>	allows MCB to be closed only when voltage is above 70% Un MCB will automatically trip when voltage falls below 35% Un	- 48V DC	1	<b>MZ205</b>
			- 230V AC	1	<b>MZ206</b>
			<b>Aux. and alarm contact</b>	dedicated to RCCBs also acts as RCCB interface with standard MCB auxiliaries MZ203 - MZ206	1
	<b>Locking kit</b>	allows padlocking of the device		<b>MZN175</b>	

For selection of auxiliaries combinations, please refer to the main catalogue.



LS401



LS703

Designation	L31 8.5x31.5mm	L38 10.3x38mm	L51 14x51mm	L51 14x51mm	L58 22x58mm	L58 22x58mm
<b>Single pole</b>						
1 Phase	LS401	LS501	LS601*	LR601	LS701*	LR701
1 Phase + Ind. light	LS431	LS531	LS601*+LS672		LS701*+LS672	
<b>Double pole</b>						
1 Phase + Neutral	LS412	LS512	LS612*	LR612	LS712*	LR712
1 Phase + Neutral + Ind. light (1 module)	L43201	L53201				
1 Phase + Neutral + Ind. light			LS612*+LS672		LS712*+LS672	
1 Phase + Neutral (1 module)	L40600	L50600				
2 Phases	LS402	LS502	LS602*	LR602	LS702*	LR702
<b>Triple pole</b>						
3 Phases	LS403	LS503	LS603*	LR603	LS703*	LR703
<b>Four poles</b>						
3 Phases + Neutral	LS404	LS504	LS604*	LR604	LS704*	LR704
* Possibility to mount accessories						
Spare cartridge fuse box						L14700

Fuse links

**Cylindrical fuses type aM**  
protection for motor application against short circuits  
L38, L51, L58

**Cylindrical fuses type gG**  
protection for general purpose application against overload & short circuits  
L38, L51, L58

Standard:  
EN/IEC 60269-1,  
EN/IEC 60269-2

Designation	In / A	Cat. Ref. Type aM	Cat. Ref. Type gG
<b>Cylindrical fuses</b>			
type aM	0,5 A	LF300M	LF300G
10 x 38 mm (L38)	1 A	LF301M	LF301G
500V~ (from 0.5A to 16A)	2 A	LF302M	LF302G
400V~ (from 20A to 32A)	4 A	LF304M	LF304G
	6 A	LF306M	LF306G
	8 A	LF308M	LF308G
type gG	10 A	LF310M	LF310G
10 x 38 mm (L38)	12 A	LF312M	LF312G
500V~ (from 0.5A to 25A)	16 A	LF316M	LF316G
400V~ (32A)	20 A	LF320M	LF320G
	25 A	LF325M	LF325G
	32 A	LF332M	LF332G
<b>Cylindrical fuses</b>			
type aM	2 A	LF402M	LF402G
14 x 51 mm (L51)	4 A	LF404M	LF404G
type gG	6 A	LF406M	LF406G
14 x 51 mm (L51)	8 A	LF408M	LF408G
	10 A	LF410M	LF410G
	12 A	LF412M	LF412G
	16 A	LF416M	LF416G
	20 A	LF420M	LF420G
690V~ (from 2A to 25A)	25 A	LF425M	LF425G
500V~ (from 32A to 45A)	32 A	LF432M	LF432G
400V~ (50A)	40 A	LF440M	LF440G
	45 A	LF445M	LF445G
	50 A	LF450M	LF450G
<b>Cylindrical fuses</b>			
type aM	16 A	LF516M	LF516G
22 x 58 mm (L58)	20 A	LF520M	LF520G
type gG	25 A	LF525M	LF525G
22 x 58 mm (L58)	32 A	LF532M	LF532G
	40 A	LF540M	LF540G
	50 A	LF550M	LF550G
	63 A	LF563M	LF563G
690V~ (from 16A to 63A)	80 A	LF580M	LF580G
500V~ (from 80A to 100A)	100 A	LF590M	LF590G
400V~ (125A)	125 A	LF599M	LF599G

**Technical characteristics:**

- Voltage range : 230V +/- 20%
- Network voltage: 50 to 700 V
- Frequency: 50 / 60 Hz
- Working temperature: -10 to +55°C
- Storage temperature: -25 to +70°C

- Max. cable length to torroids: 25m non-twisted cable 0.5 to 1.5mm<sup>2</sup>  
50m twisted cable
- Standards: IEC 60755, IEC 947-2 annex B, IEC 61543, IEC 61008-1



HR 520

Designation	Characteristics	Power absorbed	Positive safety contact	Cat. ref.
Earth leakage relays non adjustable	fixed:0.03A Instantaneous tripping	3VA		HR500
	fixed:0.3A instantaneous tripping	3VA		HR502

Earth leakage relays adjustable	adjustable: 0.03-0.1-0.3-0.5-1-3-10A adjustable delay: 0-0.1-0.3-0.4-0.5-1-3 s	5VA	1 C/O	HR510
	adjustable: 0.03-0.1-0.3-0.5-1-3-10A adjustable delay: 0-0.1-0.3-0.4-0.5 s-1-3 s 50% pre alarm output bargraph	5VA	1 C/O	HR520
	adjustable: 0.5-1-3-5-10-20-30A adjustable delay: 0-0.1-0.2-0.25-0.3-0.4-0.5 s 50% pre alarm output bargraph	5VA	1 C/O	HR523



HR525

Earth leakage relays adjustable LCD type	adjustable: 0.03-0.1-0.3-0.5-1-3-5-10-30A adjustable delay: 0-0.1-0.3-0.4-0.5-1-3-5-10 s 1 channel	6VA	1 C/O	HR525
	adjustable: 0.03-0.1-0.3-0.5-1-3-10-30A adjustable delay: 0-0.1-0.3-0.4-0.5-1-3 s 4 channel	6VA	1 C/O	HR534



HR440

Earth leakage relays with integrated torroids	adjustable: 0.03-0.1-0.3-0.5-1-3A adjustable delay: 0-0.1-0.3-0.4-0.5-0.75-1 s			
	with integrated torroid Ø 25mm	5VA		HR440
	with integrated torroid Ø 35mm	5VA		HR441



**Technical characteristics:**

- Frequency: 50 / 60 Hz
- Working temperature: -10 to +55°C
- Storage temperature: -25 to +70°C
- IP rating: IP 41



HR742

<i>Designation</i>	<i>Characteristics</i>	<i>Cat. ref.</i>
<b>Circular toroids</b>	Internal Ø35 mm	HR741
	Internal Ø70 mm	HR742
	Internal Ø105 mm	HR743
	Internal Ø140 mm	HR744
	Internal Ø210 mm	HR745



HR820

<b>Open rectangular toroids</b>	20 x 30 mm	HR820
	50 x 80 mm	HR821
	80 x 80 mm	HR822
	80 x 120 mm	HR823
	80 x 160 mm	HR824



HR831

<b>Rectangular toroids</b>	75 x 175 mm	HR830
	115 x 305 mm	HR831
	150 x 350 mm	HR832

## Contactors

Contactors are essential switching devices to control heating, lighting & ventilation systems. They are recommended in association with control and energy management devices like thermostats, Time switches, PIRs sensors etc.

## Humfree contactors

The humfree versions are recommended for application where silent operating is required.

## Override contactors

The override contactors are equipped with 3 position manual control button

- permanent ON
- automatic mode
- permanent OFF

## Complies with IEC 61095

### Auxiliary contact

1NO+1NC for remote signaling not compatible with ESC225S.

## Heat dissipation insert LZ060

- Recommended to use heat dissipation insert LZ060 between group of 3 contactors.



ESC425

Designation	Rated Current		Main contacts	Coil	Width in 17.5mm	Cat. ref.
	AC1	AC3				
<b>Contactors</b>	25A-250V	8.5A	1NO	230VAC 50/60Hz	1	ESC125
	25A-250V	8.5A	1NC	230VAC 50/60Hz	1	ESC126
	25A-250V	8.5A	2NO	230VAC 50/60Hz	1	ESC225
	25A-250V	8.5A	2NC	230VAC 50/60Hz	1	ESC226
	25A-250V	8.5A	1NO+1NC	230VAC 50/60Hz	1	ESC227
	25A-440V	8.5A	3NO	230VAC 50/60Hz	2	ESC325
	25A-440V	8.5A	4NO	230VAC 50/60Hz	2	ESC425
	25A-440V	8.5A	4NC	230VAC 50/60Hz	2	ESC426
	25A-440V	8.5A	2NO+2NC	230VAC 50/60Hz	2	ESC427
	40A-440V	25A	2NO	230VAC 50Hz	3	ESC240
	40A-440V	25A	2NC	230VAC 50Hz	3	ESC241
	40A-440V	25A	3NO	230VAC 50Hz	3	ESC340
	40A-440V	25A	4NO	230VAC 50Hz	3	ESC440
	40A-440V	25A	4NC	230VAC 50Hz	3	ESC441
40A-440V	25A	2NO+2NC	230VAC 50Hz	3	ESC442	
63A-440V	32A	2NO	230VAC 50Hz	3	ESC263	
63A-440V	32A	2NC	230VAC 50Hz	3	ESC264	
63A-440V	32A	3NO	230VAC 50Hz	3	ESC363	
63A-440V	32A	4NO	230VAC 50Hz	3	ESC463	
63A-440V	32A	4NC	230VAC 50Hz	3	ESC464	
63A-440V	32A	2NO+2NC	230VAC 50Hz	3	ESC465	



ESC463S

<b>Hum-free contactors</b>	25A-250V	8.5A	2NO	220VDC, 230VAC 50/60Hz	1	ESC225S
	25A-440V	8.5A	3NO	220VDC, 230VAC 50/60Hz	2	ESC325S
	25A-440V	8.5A	4NO	220VDC, 230VAC 50/60Hz	2	ESC425S
	25A-440V	8.5A	4NC	220VDC, 230VAC 50/60Hz	2	ESC426S
	25A-440V	8.5A	2NO+2NC	220VDC, 230VAC 50/60Hz	2	ESC427S
	40A-440V	25A	2NO	220VDC, 230VAC 50/60Hz	3	ESC240S
	40A-440V	25A	3NO	220VDC, 230VAC 50/60Hz	3	ESC340S
	40A-440V	25A	4NO	220VDC, 230VAC 50/60Hz	3	ESC440S
	63A-440V	32A	2NO	220VDC, 230VAC 50/60Hz	3	ESC263S
	63A-440V	32A	3NO	220VDC, 230VAC 50/60Hz	3	ESC363S
	63A-440V	32A	4NO	220VDC, 230VAC 50/60Hz	3	ESC463S

<b>Accessories</b>	Auxiliary contact (1NO + 1NC)	ESC060*
	Heat dissipation insert	LZ060

Note : A. Override contactors are available on request  
 B. Other coil voltages like 8/12V, 24V, 110/127V available on request  
 \* Not compatible with ESC 225S

### Technical characteristics

- Standards: EN 60730
- Operating voltage: 230V AC (+10/-15%), 50/60 Hz
- \*\*110-230V AC - 48V DC, 50/60 Hz for EH715 and EH716

- Contact rating: 16A 230V AC1
- Programming configuration: daily / weekly / daily + weekly
- Versions with power reserve
- DIN mountable



EH010



EH111

Designation	Operating cycle	Power fail reserve	No. of channels	Width in 17.5 mm	Cat. ref.
<b>Analog time switches (dIn rail)</b>					
Daily dial without reserve	24hrs		1	1	EH010
Daily dial with reserve: 200h	24hrs	200hrs	1	1	EH011
Daily dial without reserve	24hrs		1	3	EH110
Daily dial with reserve: 200h	24hrs	200hrs	1	3	EH111
Weekly dial with reserve	7d	200hrs	1	3	EH171
Daily+weekly dial with reserve	7d/24hrs	200hrs	1	5	EH191

### Analog time switches (72x72mm)

Daily dial without reserve	24hrs		1		EH710
Daily dial with reserve	24hrs	200hrs	1		EH711
Weekly dial without reserve	7d		1		EH770
Weekly dial with reserve	7d	200hrs	1		EH771
Daily dial without reserve (eco. version)	24hrs		1		EH712
Daily dial without reserve	24hrs		1		EH715*
Daily dial with reserve	24hrs	200hrs	1		EH716*

# Time switches digital version

### Technical characteristics

- Standards: EN 60730
- Operating voltage: 230V AC 50/60 Hz
- \*\*12/24V AC/DC for EG103V,
- Contact rating: 16A 250V AC1 changeover contact

- Programming configuration: daily / weekly / daily + weekly
- Versions with power reserve
- Versions with PC programmable key
- PC Interface for key and software available
- DIN mountable



EG203E



EG005

Designation	Operating cycle	Power fail reserve	No. of channels	Width in 17.5 mm	Cat. ref.
<b>Digital time switches (dIn rail)</b>					
Daily cycle	24hrs	3years	1	1	EG010
Weekly cycle	7d	3years	1	1	EG071
<b>Key programmable digital time switches (dIn rail)</b>					
Basic version w/o key	7d	5years	1	2	EG103B
Evolution version with EG005	7d	5years	1	2	EG103E
Evolution version with EG005	7d	5years	1	2	EG103V**
Basic version w/o key	7d	5years	2	2	EG203B
Evolution version with EG005	7d	5years	2	2	EG203E
Weekly 4 Channel, 4 module	7d	3years	4	4	EG403E
USB interface with software					EG003G
Locking Key for EG103x, EG203x					EG004
Programming key for EG103x, EG203x					EG005
Programming key for, EG403E					EG007

**Technical characteristics**

- Voltage: 230V (+10/-15%),
- Frequency: 50 Hz (\*50/60 Hz)
- Contact rating:  
16A AC1 230V  
8A AC1 230V (EE701)
- Loads: Incandescent, halogen and fluorescent lamps

- Functional: lighting level:  
50 to 100 lux and 50 to 2000 lux
- ON-OFF delay: 15 to 60 sec
- Mounting: surface/ flush
- Programmable version available



EE110



EE702

Designation	Operating cycle	Power fail reserve	Width in 17.5 mm	Cat. ref.
Compact-basic (fixed lux/delay) IP55, 8A				<b>EE701</b>
Compact-enhanced (adjustable) IP55, 16A				<b>EE702</b>
Modular - with surface cell			3	<b>EEN100*</b>
Modular - with flush cell			3	<b>EEN101*</b>
Modular programmable electromechanical clock with surface cell	24hrs	200hrs	5	<b>EE110</b>
Modular programmable electronic clock with surface cell, 8 preset programs	7d	3years	3	<b>EE170</b>
Modular programmable electronic clock with surface cell, freely programmable	7d	3years	3	<b>EE171</b>

Astronomical time switches

**Technical characteristics**

- Supply Voltage: 230V AC  $\pm$  15%
- Frequency: 50/60 Hz
- Maximum load: 16A AC 1
- Loads: incandescent, halogen and fluorescent lamps

**Functional characteristics**

- Running accuracy:  $\pm$  1.5 sec/24 hr
- Astronomical time accuracy:  $\pm$  10 minutes
- Operating reserve: lithium battery 5 years back up

**Environment**

- Operating temperature: -10°C to +55°C
- Storage temperature: -20°C to +80°C
- Connection: 1- 6mm<sup>2</sup> flexible 1.5-10mm<sup>2</sup> rigid



EE180

EG005

Designation	Operating cycle	Power fail reserve	Width in 17.5 mm	Cat. ref.
1 channel + programming key	7d	5years	2	<b>EE180</b>
2 channel + programming key	7d	5years	2	<b>EE181</b>
Programming key				<b>EG005</b>
PC interface & programming software				<b>EG003G</b>

Time lag switches

**Technical characteristics**

- Voltage: 230V (+10/-15%),
- Frequency: 50/60 Hz
- Contact rating:  
16A AC1 230V  
250V - 2300W Incandescent, halogen and fluorescent lamps

- Function:  
EMN001 - standard time lag switch with adjustable delay from 30s to 10 min

mode and double delay mode:  
30s to 10 min or 1 hour

- EMN005 - multifunctional time lag switch with pre-warning



EMN001

Designation	Cat. ref.
Stair case time lag switch	<b>EMN001</b>
Multifunction stair case time lag switch	<b>EMN005</b>

**Description**

To provide all types of automatic control i.e. lighting, ventilation, watering, machine pre-heating, automatic door and visual audible indication, cycle control etc.

**Applications**

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.

**Technical data**

Voltage range :  
12 to 48V DC  
12 to 230V AC ; 50/60 Hz  
Adjustable: time delay from 0.1s to 10 hours.  
LED indicator

complies with EN 60668-2-1

**Connection capacity :**  
6mm<sup>2</sup> max flexible  
1.5 - 10mm<sup>2</sup> rigid



EZN 001



EZN 006

Designation	Characteristics	Width in 17.5mm	Pack qty.	Cat ref.
<b>Delay ON</b> 	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 001</b>
<b>1 Delay OFF</b> 	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 002</b>
<b>Adjustable time ON</b> 	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 003</b>
<b>Timer</b> 	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 004</b>
<b>Symmetrical flasher</b> 	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 005</b>
<b>Multifunction</b> 6 individual functions including : D - delay on C - delay off E - adjustable time ON B - adjustable time OFF A - timer F - symmetrical flasher - ON - OFF	1 c/o contact 8A / 230V~ AC1 time delay T : 0.1s to 10hr	1	1	<b>EZN 006</b>

## Description

For the control of lighting circuits in private buildings, small industry buildings and administration buildings. Latching relays - operate when impulsed by a signal voltage. The impulse can be provided via a pushbutton or switch. The first

pulse operates the relay and latches it into its set (opposite) state, the next operation of the pushbutton returns the relay into its reset (original) state.

The latching relays are built to add on optionally the following auxiliaries :

- an auxiliary for centralised ON/OFF control EPN 050
- an auxiliary contact for remote signalling EPN 051
- an auxiliary for multi levelled centralised control EPN 052
- an auxiliary for control by maintained contact EPN 053.

## Connection capacity

10 mm<sup>2</sup> rigid cables  
6 mm<sup>2</sup> flexible cables

Conform to standard EN609-1 and EN609-2-2



EPN 510



EPN 540

Designation	Type	Coll VAC 50/60Hz	Coll VDC	Power Circuit AC1	Width in 17.5 mm	Pack qty.	Cat. ref.
<b>Latching relays</b> 	<b>1NO</b>	230	110	16A-250V	1	12	EPN 510
		48	24	16A-250V	1	1	EPN 501
		24	12	16A-250V	1	1	EPN 513
		12	-	16A-250V	1	1	EPN 511
	<b>2NO</b>	230	110	16A-250V	1	1	EPN 520
		110	48	16A-250V	1	1	EPN 523
		48	24	16A-250V	1	1	EPN 526
		24	12	16A-250V	1	1	EPN 524
		12	-	16A-250V	1	1	EPN 521
	<b>1NC+1NO</b>	230	110	16A-250V	1	1	EPN 515
		110	48	16A-250V	1	1	EPN 516
		48	24	16A-250V	1	1	EPN 503
		24	12	16A-250V	1	1	EPN 518
		12	-	16A-250V	1	1	EPN 519
	<b>4NO</b>	230	110	16A-400V	2	1	EPN 540
		48	24	16A-400V	2	1	EPN 548
		24	12	16A-400V	2	1	EPN 541
	<b>2NC+2NO</b>	230	110	16A-250V	2	1	EPN 525
		24	12	16A-250V	2	1	EPN 528
	<b>3NO+1NC</b>	230	110	16A-400V	2	1	EPN 546

## Latching relays auxiliaries



EPN 052




























Designation		Voltage supply	Width in 17.5 mm	Pack qty.	Cat. ref.
<b>Auxiliary for centralised control</b>		24 to 230V AC	1/2	1	EPN 050
<b>Auxiliary contact</b>		2A - 250 V AC	1/2	1	EPN 051
<b>Auxiliary for multi levelled centralised control</b>		24 to 230V AC	1/2	1	EPN 052
<b>Auxiliary for control by maintained contact</b>		24 to 230V AC	1/2	1	EPN 053

**Push buttons:**  
2 versions :  
Impulse push buttons  
latching push buttons

These versions with indicator lights are equipped with green or red diffuser. (led technology)

**Connection capacity :**  
- 10mm<sup>2</sup> rigid,  
- 6mm<sup>2</sup> flexible.

**Standard conformity :**  
IEC 60947-5-1 for push buttons  
IEC 62094-1 for Indicator lights

	<i>Designation</i>	<i>Characteristics</i>	<i>Width in 17.5 mm</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>	
 <b>SVN 311</b>	<b>Impulse push button</b>					
		16 A - 250 V ~ <b>without indicator light</b> contact: 1NO	1	12	<b>SVN 311</b>	
		contact: 1NC	1	12	<b>SVN 321</b>	
		contacts: 2NO	1	12	<b>SVN 331</b>	
		contacts: 2NC	1	12	<b>SVN 341</b>	
		contacts: 1NO+1NC	1	12	<b>SVN 351</b>	
 <b>SVN 391</b>		contacts: 2NO	1	12	<b>SVN 371</b>	
		contacts: 1NO+1NC	1	12	<b>SVN 391</b>	
		<b>with indicator light :</b> contact: 1NO	green	1	12	<b>SVN 411</b>
		contact: 1NC	red	1	12	<b>SVN 422</b>
		contacts: 2NO	red	1	12	<b>SVN 432</b>
		contacts: 2NC	green	1	12	<b>SVN 441</b>
 <b>SVN 411</b>		contacts: 1NO+1NC	red	1	12	<b>SVN 452</b>
		16 A - 12/48 V AC/DC <b>with indicator light</b> contacts: 2NO	green	1	12	<b>SVN461</b>
		contacts: 2 NO	red	1	12	<b>SVN 462</b>
		<b>with indicator light</b> contacts: 2NO	green	1	12	<b>SVN 463</b>
		contacts: 2 NO	red	1	12	<b>SVN 464</b>
	<b>Latching push buttons</b>					
 <b>SVN 422</b>		16 A - 250 V ~ <b>without indicator light</b> contact: 1NO	1	12	<b>SVN 312</b>	
		contact: 1NC	1	12	<b>SVN 322</b>	
		contacts: 2NO	1	12	<b>SVN 332</b>	
		contacts: 2NC	1	12	<b>SVN 342</b>	
		contacts: 1NO+1NC	1	12	<b>SVN 352</b>	
		<b>with indicator light :</b> contact: 1 NO	green	1	12	<b>SVN 413</b>
		contacts: 2 NO	green	1	12	<b>SVN 433</b>

**Indicator lights and push buttons**  
 These products are used for remote controlling signalisation of any event in any electric installation (domestic, tertiary &

Industrial)  
 LED technology providing longer life, new design, integrated label holder

**Connection capacity :**  
 - 10 mm<sup>2</sup> rigid  
 - 6 mm<sup>2</sup> flexible

**Standard conformity :**  
 IEC 62094-1 for indicator lights

	<i>Designation</i>	<i>Characteristics</i>	<i>Width in 17.5 mm</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>
<p>SVN 122   SVN 125   SVN 121                  SVN 123   SVN 124</p>	<b>Single indicator light</b> 230 V ~ 	with light : green	1	12	SVN 121
		red	1	12	SVN 122
		orange	1	12	SVN 123
		blue	1	12	SVN 124
		color less	1	12	SVN 125
<p>SVN 126</p>	<b>Double Indicator light</b> 230 V ~ 	with light: green and red	1	12	SVN 126
		color less 2x	1	12	SVN 128
<p>SVN 127</p>	<b>Triple indicator light</b> 	with light: red	1	12	SVN 127
		red/orange/green	1	12	SVN 129
		green	1	12	SVN 221
<p>SVN 127</p>	<b>Low voltage indicator lights</b> 12 to 48 V AC/DC 	with light green	1	12	SVN 131
		red	1	12	SVN 132
		orange	1	12	SVN 133
		blue	1	12	SVN 134
		color less	1	12	SVN 135

Hour counters

**Technical characteristics**

- Voltage: 230V +/- 15%, 50 Hz
- Connection: in parallel to the load

	<i>Designation</i>	<i>Characteristics</i>	<i>Width in 17.5 mm</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>
<p>EC 100</p>	<b>Hours counter</b>	230V 50Hz	2	1	EC 100








EC 100



Energymeters are aimed to measure the active energy consumed by an installation. They permit to have under control the real cost of an installation and to divide the consumption between the different appliances.

**Characteristics :**  
 - fully compliant with the european standard EN50470-3.  
 - class B.  
 - accuracy 1%  
 - energy readout : 7 digits.  
 - Backlighted display  
 - Indication of instantaneous power consumption  
 - Total / partial counter (except

MID references)  
 - Pulsed output  
 - unlimited saving of measures.  
 - LED flashing according to consumption.  
 - Option : tarif 1 / tarif 2.  
 - Three phases energymeters are adapted to all kind of networks.  
 - Display Indication In case of bad wiring.

	<i>Designation</i>	<i>Characteristics</i>	<i>Width in 17.5 mm</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>
 EC 051	<b>Single phase</b>	230V +/- 15%, 50/60 Hz			
	- direct reading 32A	single tariff without pulsed output	1	1	<b>EC 050</b>
		single tariff with pulsed output	1	1	<b>EC 051</b>
 EC 150	<b>Single phase energymeters direct 63A</b>	230V~ 50/60 Hz starting current = 40mA base current = 10A max current = 63A			
		energymeter with pulsed output and total/partial	3	1	<b>EC 150</b>
		energymeter with pulsed output total/partial counter and 2 tariffs	3	1	<b>EC 152</b>
		energymeter with pulsed output with MID approval	3	1	<b>EC 154M</b>
 EC 150	<b>Three phase energymeters direct 63A</b>	230/400V~ 50/60 Hz starting current = 40mA base current = 10A max current = 63A			
		energymeter with pulsed output and total/partial	4	1	<b>EC 350</b>
		energymeter with pulsed output total/partial counter and 2 tariffs	4	1	<b>EC 352</b>
 EC 364M	<b>Three phase energymeters direct 100A</b>	230/400V~ 50/60 Hz starting current = 80mA base current = 20A max current = 100A			
		energymeter with pulsed output and total/partial	7	1	<b>EC 360</b>
		energymeter with pulsed output total/partial counter and 2 tariffs	7	1	<b>EC 362</b>
		energymeter with pulsed output with MID approval	7	1	<b>EC 364M</b>
		energymeter with bi-directional counter	7	1	<b>EC 365B</b>
 EC 370	<b>Three phase energymeters connection via current transformers to be connected with CT with 5A on the secondary.</b>	230/400V~ 50/60 Hz starting current = 10mA max current on CT secondary=6A			
		energymeter with pulsed output and total/partial	4	1	<b>EC 370</b>
		energymeter with pulsed output total/partial counter and 2 tariffs	4	1	<b>EC 372</b>

The Hager products are suitable for all light sources : incandescent, LV and VLV halogen, fluorescent with electronic ballast.

Dimming controlled by push button :  
 - start/stop by short press  
 - increasing/decreasing by maintaining pressure

**Common characteristics :**  
 - Softstart (progressive start) to increase the working life of lamps  
 - memorisation of last dimming level  
 - protection against overheating  
 - control possible by illuminated pushbutton until 5mA.

Dimmers 500W and 1000W  
 - universal products with automatic recognition of the load type (inductive/capacitive)  
 - electronic protection against overheating and overload  
 - Indicators :  
 230 V / overheating / overload



EVN 004

Designation	Characteristics	Width in 17.5 mm	Pack qty	Cat. Ref.
<b>Universal remote control dimmer 500W</b> - incandescent 230 V - halogen 230 V - VLV halogen lamps supplied by ferromagnetic or dimmable electronic transformer (cos $\phi \geq 0.95$ ) - 230V dimmable CFL/LED(100W) <b>Comfort version</b> - scene calling - time delayed scene - progressive switch off	500W 230V + 10% - 15% 50/60Hz - products with automatic load recognition - dimming function	4	1	EVN 002  EVN 004



EV 100

<b>Universal dimmer 1000 W for :</b> • Functional mode selection via local switch : - control via pushbutton (local) - remote control via 1/10V (slave) • Min/Max setting via potentiometer • LED Indication : - 230V power supply/load error - overload / overheating <b>Load type :</b> - incandescent - 230V halogen lamps - VLV halogen lamps associated to ferromagnetic transformer (inductive) - VLV halogen lamps associated to electronic transformer (capacitive)	230 V ~ / 50 Hz  20 ...1000W  1/10V-Input	5	1	EV 100
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EV 102

<b>Universal dimmer 1000 W with scene inputs</b> • Functional mode selection via local switch : - control via pushbutton (local) - remote control via 1/10V (slave) - control of the other dimmers via 1/10V (master) • Display to show the dim level and to set the parameters: - dimming rise time (4s ..99s) - min dim level (0...49%) - max dim level (51...99%) - rise time when switching ON (1s..99s) - fall time when switching OFF (1s..99s) - scene level - dimming rise time for each scene - scene working mode : recall or override mode • Output contact to display the dim state (load is OFF, contact is opened, if load is dimmed the contact is closed) • LED Indication : - 230V power supply / load error - overload / overheating <b>Load type :</b> - incandescent - 230V halogen lamps - VLV halogen lamps associated to ferromagnetic transformer (inductive) - VLV halogen lamps associated to electronic transformer (capacitive)	230 V ~ / 50 Hz  20 ...1000W  1/10V-Input/output (max. 50mA, 30 EV100 / EV102) defined via the local switch  Contact output : 1 NO, 250V ~, $\mu$ 5A	5	1	EV 102
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These devices are made for automatic control of lighting in both the residential and private/public industry sectors. They automatically switch on lighting in case a person in movement is detected and light is needed. They turn off the light after a pre-set duration.

**EE 820, EE 830, EE 840, EE 825, EE 827**

- That waterproof detector range (IP55) is mainly dedicated to outdoor applications.
- They are equipped with Fresnel lenses that permit to get a high detection performance.
- Detector 140° for access control and perimeter lighting

- 200° models to survey a house facade
- 360° to cover a house corner

- The fixing accessories allow ceiling and corner mounting.
  - Settings
- The timer and the lux level are set locally, via potentiometer.

**EE 804, EE 805**

- Movement detector for the automatic control of lighting in indoor circulating zones. Surface mounted (EE 804) or flush fitting (EE 805).
  - Setting
- The timer and the lux level are defined via potentiometers
- Mounting of EE805
- Connecting system

conform to false ceiling installation standards (cable clamp, fixing spring and protection cover)

- Surface mounting of EE804
- Connecting on a ceiling box or on mouldings thanks to side pre-cut outs compatible with Tehalit

ATA 83000 (8 x 30) or ATA 12200 (12x20)

- Output: Potential free relay contact 10A

**EE 810**

- Relay output light channel
- Lux level and on delay time (duration or pulse) defined via potentiometers
- Slave output for association with EE811/EE812 - Lux OFF

**EE 811**




- Relay output light channel
- Lux level and On delay time define via potentiometers
- Input slave / derogation
- 230V input used with push button

**EE 812**


- Relay output used to switch ON/OFF the electronic ballast
- 1/10V output used to control an electronic ballast or Hager dimmers EV100/EV102
- 230V input used with push button

**EE 813 :**

- Accessory for surface mounting.

	<i>Designation</i>	<i>Characteristics</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>
 <p>EE 820</p>	<b>Detector surface IP55</b> 230 V ~ 50/60 Hz Lux: 5 to 1000 lux Timer: pulse, 5s to 15 min Contact 10A AC1	140° white	1	<b>EE 820</b>
		200° white	1	<b>EE 830</b>
		360° white	1	<b>EE 840</b>
	<b>Corner mounting accessory</b>	white	1	<b>EE 825</b>
	<b>Ceiling mounting accessory</b>	white	1	<b>EE 827</b>
 <p>EE 804</p>	<b>Detector 360° surface IP21</b> diam. 105.5 white*	230 V ~ ± 10%, 50Hz Functions : - 1 open contact 10 A - detection angle 360° Lux: 5 to 1000 lux Timer: 5 s. to 15 min.	1	<b>EE 804</b>
 <p>EE 805</p>	<b>Detector 360° flush IP21</b> diam. 105.5 white*	230 V ~ ± 10%, 50Hz Functions : - 1 open contact 10 A - detection angle 360° Lux: 5 to 1000 lux Timer: 5 s. to 15 min.	1	<b>EE 805</b>

# Presence detectors

	<i>Designation</i>	<i>Characteristics</i>	<i>Pack qty.</i>	<i>Cat. ref.</i>
 <p>EE 810</p>	<b>Dual eye presence detector</b> (coverage area: 1.3m x 7m at 2.5m height)	1 channel 16A, 50Hz	1	<b>EE 810</b>
		2 channels 16A, 50Hz	1	<b>EE 811</b>
		1/10V, 50Hz	1	<b>EE 812</b>
		Surface mounting accessory for EE 810, EE 811 and EE 812	1	<b>EE 813</b>

**Description**

High performance presence detector that will be used in premises or in passage areas, where they increase comfort and reduce drastically the energy costs.  
Settings via potentiometers or via remote control EE807

**EE815 - presence detector ON/OFF**

Direct control of a light load  
Lux level and ON delay settings

**EE816 - presence detector for light regulation**

3 functional modes  
DALI/DSI bus output  
Customer remote control EE808 for override operation.

**EE883 - HF motion detector**

The detector employs hyper frequency technology and reacts to movements regardless of the temperature.  
It detects movements through doors, windows and even non-metallic low thickness partitions.

*Designation*

*Characteristics*

*Pack qty.*

*Cat. ref.*



EE 816

**Presence detector Monobloc ON/OFF (IP41)**

Timer: 1min to 1 hour  
Brightness: 5 to 1000 lux

Switched phase 16A AC1  
230 V AC ~ 50/60 Hz  
360° white

1

EE 815

**Monobloc DALI/DSI (IP41)**

For lighting regulation  
Timer: 1min to 1 hour  
Brightness: 5 to 1000 lux

DALI/DSI bus (24 ballasts)  
230 V AC ~ 50/60 Hz  
360° white

1

EE 816

**Surface mount kit**

White

1

EEK005



EE 807

EE 808

**Remote control (for EE815 & EE816)**

For settings

Infra red remote control

1

EE 807

For customer

Infra red remote control  
override operation

1

EE 808

**HF motion detector**

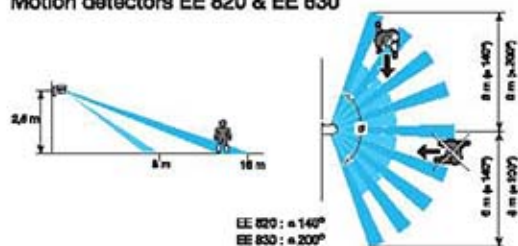
Hyper frequency  
Wire basket

1  
1

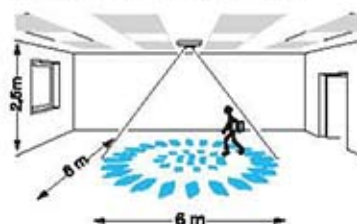
EE 883  
EEK 006

PIR detection - Range

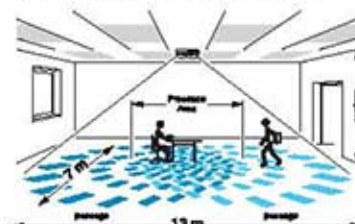
Motion detectors EE 820 & EE 830



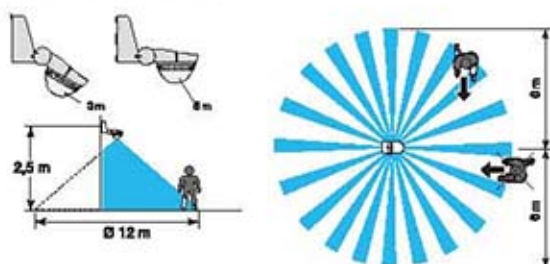
Motion detectors EE 804 & EE 805



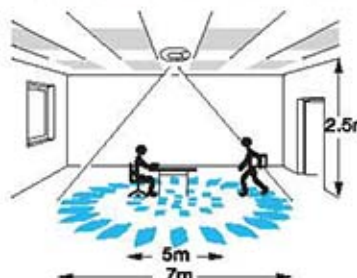
Presence detectors EE810/811/812



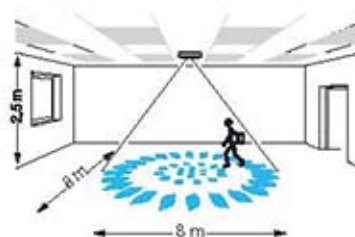
Motion detector EE 840



Presence detectors EE 815 & EE 816



HF Motion detector EE883



Note: The optimum height of installation is 2.5m. The detection field must remain free.

### Technical characteristics

Base pre-drilled with lid.

Material: Rigid PVC

Fire classification : UL 94VO.

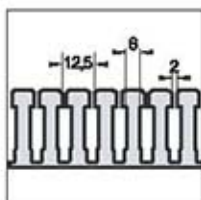
Standard length: 2 Mtr.

Colour: Grey (RAL 7030)

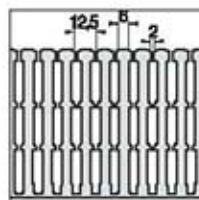
Base and lid



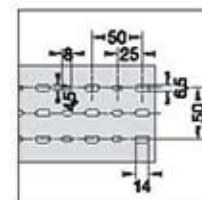
	Dimensions (Height x Width) in mm	Qty. per pack in Mtrs.	Cat. ref.
 Height 25 mm	25 x 25	50m	BA7A25025
	25 x 40	48m	BA7A25040
 Height 40 mm	40 x 25	48m	BA7A40025
	40 x 40	50m	BA7A40040
	40 x 80	40m	BA7A40060
	40 x 80	30m	BA7A40080
	40 x 100	20m	BA7A40100
 Height 60 mm	60 x 25	60m	BA7A60025
	60 x 40	40m	BA7A60040
	60 x 60	24m	BA7A60060
	60 x 80	20m	BA7A60080
	60 x 100	16m	BA7A60100
	60 x 120	12m	BA7A60120
 Height 80 mm	80 x 25	20m	BA7A80025
	80 x 40	20m	BA7A80040
	80 x 60	20m	BA7A80060
	80 x 80	16m	BA7A80080
	80 x 100	12m	BA7A80100
	80 x 120	16m	BA7A80120
 Height 100 mm	100 x 60	16m	BA7A100060
	100 x 80	16m	BA7A100080
	100 x 100	12m	BA7A100100



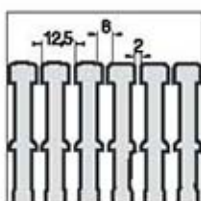
Dimensions height 25 mm ducting 25 x 40



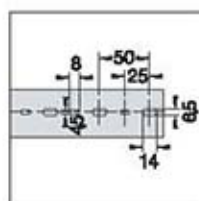
Dimensions height 100 mm



Perforation details  
DIN 43659  
EN 50 085-2-3  
width 80, 100 and 120 mm



Dimensions height 60 and 80 mm



Perforation details  
DIN 43659  
EN 50 085-2-3  
width 25, 40 and 60 mm



# New invicta type B distribution boards & panel boards

Hager has developed the new invicta Type B distribution boards as a solution for modern residential, commercial and industrial installations. The key features like the state of the art PAN assembly, incomer shrouds adds value to the installation system in terms of safety, elegance and flexibility.

The new Panel boards with the feature loaded H3 MCCBs makes the best combination in terms of value for money for the users in terms of flexibility, choice & performance. The solution is versatile with Meter boxes, DIN rail extension boxes and cable spreader boxes.

The whole range offer the best performance and ASTA certified.



VT04SM

<i>Designation</i>	<i>No. of outgoing ways</i>	<i>Cat. Ref. Surface mounted</i>	<i>Cat. Ref. Flush mounted</i>
<b>Consumer unit with 100A SP busbar</b>	4	VT04SM	VT04FM
	6	VT06SM	VT06FM
	8	VT08SM	VT08FM
	10	VT10SM	VT10FM
	12	VT12SM	VT12FM
	16	VT16SM	VT16FM

<i>No. of modules</i>	<i>Door</i>	<i>Cat. Ref. Surface mounted</i>	<i>Cat. Ref. Flush mounted</i>
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**Consumer unit without busbar**



VT08MF



VT08TF

4	Metal (non transparent)	VT04MS	VT04MF
	Opaque plastic	VT04PNS	VT04PNF
	Transparent	VT04TS	VT04TF
8	Metal (non transparent)	VT08MS	VT08MF
	Opaque plastic	VT08PNS	VT08PNF
	Transparent	VT08TS	VT08TF
10	Transparent		VT10TF
12	Metal (non transparent)	VT12MS	VT12MF
	Opaque plastic	VT12PNS	VT12PNF
	Transparent	VT12TS	VT12TF
16	Metal (non transparent)	VT16MS	VT16MF
	Opaque plastic	VT16PNS	VT16PNF
	Transparent	VT16TS	VT16TF
20	Metal (non transparent)	VT20MS	VT20MF
	Opaque plastic	VT20PNS	VT20PNF
	Transparent	VT20TS	VT20TF

Invicta DIN rail distribution boards



DR32S

<i>Designation</i>	<i>No. of rows</i>	<i>No. of Modules</i>	<i>Cat. Ref. Surface mounted</i>	<i>Cat. Ref. Flush mounted</i>
<b>DIN Rail Distribution boards</b>	1	16	DR16S	DR16F
	2	32	DR32S	DR32F
	3	48	DR48S	DR48F
	4	64	DR64S	DR64F
	5	80	DR80S	DR80F
	6	96	DR96S	DR96F

<i>Designation</i>	<i>Cat. Ref</i>
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<b>Accessories</b>	Joining kits for surface boards	JK01SK
	Joining kits for flush boards	JK01FK
	1 mod blanking strip	P032H
	Key lock	VZ303



Removable and height adjustable PAN assembly



Top 'Tap-Off' provision for extension



1.2mm thick treated and powder coated sheet steel



Tin plated copper busbar short circuit withstand :  
20kA for 0.2 sec  
17kA for 0.25 sec



Removable door and reversible for ease of fitting



Fully insulated busbar  
IP 20 incomer shroud



**Technical characteristics**

**Standards:**  
BS EN 61439 - 1 & 3  
Suitable for modular as well as non modular incomers and modular outgoing  
**ASTA certified**

**Busbar current rating:**

125A  
- Rated short circuit withstand for busbars:  
20 kA for 0.2 sec.  
17kA for 0.25 sec.

Removable pre punched top and bottom gland plates.

Incomer cutout width: 9 mod

Reversible doors.

1.2 mm thickness sheet steel with epoxy powder coating in RAL 9002

IP41

Accessories like key lock, DIN rail extension boxes etc...



JK1B08S2

Designation	Cat. Ref. Surface	Cat. Ref. Flush
4 way	JK1B04S2	JK1B04F2
6 way	JK1B06S2	JK1B06F2
8 way	JK1B08S2	JK1B08F2
10 way	JK1B10S2	JK1B10F2
12 way	JK1B12S2	JK1B12F2
16 way	JK1B16S2	JK1B16F2
18 way	JK1B18S2	JK1B18F2
24 way	JK1B24S2	JK1B24F2

**Notes:**

1. I/C link kit suitable for 3 pole isolator (up to 125A) / MCBs up to 63A / RCCBs fitted as standard with the DB
2. For product references of boards with I/C fitted, please suffix the I/C product reference to the board reference. e.g. if JK1B04S2 to be fitted with SB399, the new reference will be JK1B04S2SB399.

Invicta - TPN125 type B distribution board extensions & accessories

Designation	Cat. Ref.	
<b>Incomer link kits</b>		
3 pole isolator (up to 125A) / MCB (up to 63A) (Fitted as standard with the DB)	JK1L1003SM	
3 pole 80A - 125A MCB	JK1L1253MM	
3 pole isolator + RCCB	JK1L1003SR	
3 pole 80A - 125A MCB + RCCB	JK1L1253MR	
3 pole 125A switch disconnecter (JK125S)	JK1L1253SK	
4 pole isolator (up to 125A) / MCB (up to 63A) / RCCB	JK1L1004SM	
4 pole 80 - 125A MCB	JK1L1254MM	
Direct connection kit	JK2L2504D	
4 pole 80 - 125A MCB + RCCB	JK1L1254MR	
4 pole isolator + RCCB	JK1L1004SR	
<b>Cable spreader box</b>		
Cable spreader box	Surface JK1E01S	Flush JK1E01F
<b>DIN rail extension box</b>		
16 mod	Surface JK1E16S	Flush JK1E16F
32 mod	JK1E32S	JK1E32F
48 mod	JK1E48S	JK1E48F



JK1XBSP

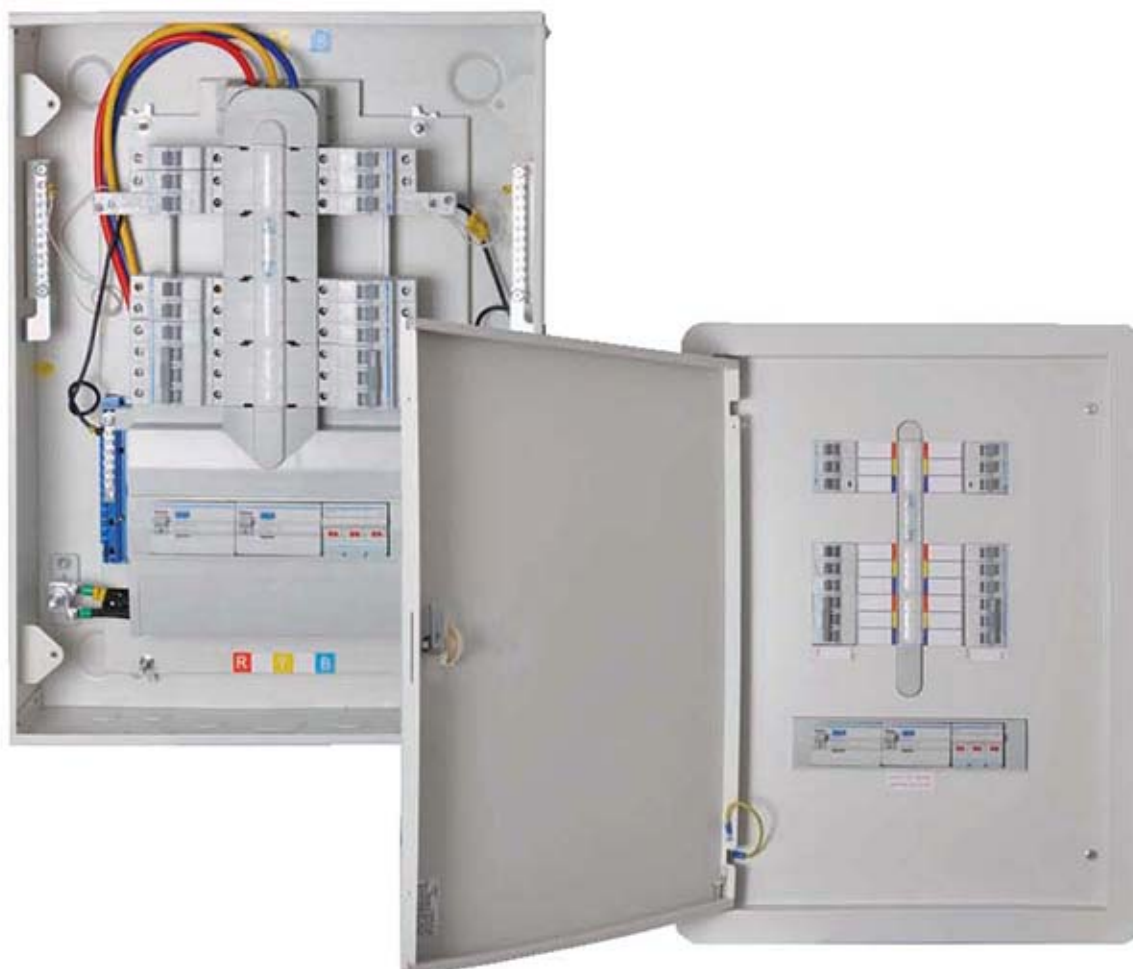
P032H

JK1XNC

**Accessories**

Top & bottom gland plate with screws  
1 mod blank  
1 mod MCB blank  
Busbar protective boot  
Key lock  
Incomer shroud 9 mod  
Neutral terminal cover IP2X

JK1XGP  
P032H  
JK1XBSP  
P100H  
JK1XKLS  
JK1XIS  
JK1XNC



Order codes for Invicta split busbar boards without wire sets.

<i>No. of ways Section A</i>	<i>Section B</i>	<i>Cat. Ref. Surface</i>	<i>Cat. Ref. Flush</i>
2	2	JK1B022S2	JK1B022F2
4	2	JK1B042S2	JK1B042F2
4	4	JK1B044S2	JK1B044F2
6	2	JK1B062S2	JK1B062F2
6	4	JK1B064S2	JK1B064F2
6	6	JK1B066S2	JK1B066F2
8	4	JK1B084S2	JK1B084F2
8	6	JK1B086S2	JK1B086F2
8	8	JK1B088S2	JK1B088F2
10	4	JK1B104S2	JK1B104F2

To fit up to 125A isolator 2 nos of 4P RCCB (Section A and B) as Incomers.



JK1B042S2WA316

No. of out going ways Section A	Section B	Cat. Ref. Surface	Cat. Ref. Flush
2	2	JK1B022S2WA316	JK1B022F2WA316
4	2	JK1B042S2WA316	JK1B042F2WA316
4	4	JK1B044S2WA316	JK1B044F2WA316
6	2	JK1B062S2WA316	JK1B062F2WA316
6	4	JK1B064S2WA316	JK1B064F2WA316
6	6	JK1B068S2WA316	JK1B068F2WA316
8	4	JK1B084S2WA316	JK1B084F2WA316
8	6	JK1B088S2WA316	JK1B088F2WA316
8	8	JK1B088S2WA316	JK1B088F2WA316
8	8	JK1B088S2WA316	JK1B088F2WA316
10	4	JK1B104S2WA316	JK1B104F2WA316

**Notes:**

Incomers are not fitted and should be ordered separately

Invicta - TPN125 type B distribution board with split busbar accessories

Designation	Cat. Ref.	
<b>Cable spreader box</b>	<b>Surface</b>	<b>Flush</b>
Cable spreader box	JK2E01S	JK2E01F
<b>DIN rail extension box</b>		
16 mod	JK2E16S	JK2E16F
32 mod	JK2E32S	JK2E32F
48 mod	JK2E48S	JK2E48F

**Accessories**

- Top & bottom gland plate with screws
- 1 mod blank
- 1 mod MCB blank
- Busbar protective boot
- Key lock
- Incomer shroud 13 mod
- Neutral terminal cover IP2X

- JK1XGP
- P032H
- JK1XBSP
- P100H
- JK1XKLS
- JK2XISS
- JK1XNC



JK1XBSP

P032H

JK1XNC

**Technical characteristics**

**Standards:**  
BS EN 61439 - 1 & 3

Suitable for non modular  
Incomers and  
modular outgoing

**ASTA certified**

**Busbar current rating:**

250A  
- Rated short circuit withstand  
for busbars:  
20 kA for 0.2 sec.  
17kA for 0.25 sec.

Removable pre punched top  
and bottom gland plates.

Reversible doors.

1.2 mm thick, sheet steel RAL  
9002 epoxy powder coated en-  
closure.

IP41

Accessories like key lock, DIN  
rail extension boxes etc...



JK2B06S2

Designation	Cat. Ref. Surface	Cat. Ref. Flush
4 way	JK2B04S2	JK2B04F2
6 way	JK2B06S2	JK2B06F2
8 way	JK2B08S2	JK2B08F2
10 way	JK2B10S2	JK2B10F2
12 way	JK2B12S2	JK2B12F2
16 way	JK2B16S2	JK2B16F2
18 way	JK2B18S2	JK2B18F2
24 way	JK2B24S2	JK2B24F2

**Notes:**

1. I/C link kits are not supplied as standard, please order link kits separately.
2. 13mod Blank supplied with link kit to suit JK switch/MCCB incomers
3. For product references of boards with I/C fitted, please suffix the I/C product reference to the board reference.  
e.g. if JK2B04S2 to be fitted with JK200S, the new reference will be JK2B04S2JK200S.  
e.g. if JK2B04S2 to be fitted with MCCB HHA100Z, the new reference will be JK2B04S2HHA100Z.

Invicta - TPN250 type B distribution board  
extensions & accessories

Designation	Cat. Ref.	
<b>Incomer link kits</b>		
3 pole 160A switch disconnector (JK160S)	JK2L1603SK	
3 pole 200A / 250A switch disconnector (JK200S/JK250S)	JK2L2503SK	
3 pole X160 Frame MCCB (up to 160A)	JK2L1603MH	
3 pole X250 Frame MCCB (up to 250A)	JK2L2503MH	
4 pole X160 Frame MCCB (up to 160A)	JK2L1604MH	
4 pole X250 Frame MCCB (up to 250A)	JK2L2504MH	
Direct connection kit	JK2L2504D	
<b>Cable spreader box</b>		
Cable spreader box	Surface JK2E01S	Flush JK2E01F
<b>DIN rail extension box</b>		
16 mod	JK2E16S	JK2E16F
32 mod	JK2E32S	JK2E32F
48 mod	JK2E48S	JK2E48F
<b>Accessories</b>		
Top & bottom gland plate with screws	JK2XGP	
1 mod blank	P032H	
1 mod MCB blank	JK1XBSP	
Busbar protective boot	P100H	
Key lock	JK1XKLS	
Neutral terminal cover IP2X	JK1XNC	
13 mod blank for 160A switch disconnector (JK160S)	JK2XBSK1	
13 mod blank for 200/250A switch disconnector (JK250S)	JK2XBSK2	
13 mod blank for X160 frame MCCB	JK2XBMH1	
13 mod blank for X250 frame MCCB	JK2XBMH2	



JK1XBSP



P032H



JK1XNC



Optimal cabling space.



Ease of phase identification  
L1, L2, L3 mouldings show through when the front cover is fitted. Textured surface on bus-bar assembly allows contractor to write circuit identification.



Earth and neutral bars positioned for easier cabling



Multiple in-come choice switch or MCCB

**Technical characteristics**

**Standards:**  
BS EN 61439 - 1 & 2

Suitable for non - modular (MCCBs & Isolating switches) incomers and MCCB outgoing.

Option for installing CTs in meterable versions.

**ASTA certified**

**Busbar current rating:**  
250A

- Rated short circuit withstand for busbars 25KA for 1 sec  
Removable top and bottom gland plates.

1.5 mm thickness sheet steel with epoxy powder coating RAL 9002

IP41

Accessories like key lock, DIN rail extension boxes etc...



JN2B00006S2

<i>Designation</i>	<i>No. of out going ways</i>	<i>Provision for 3 pole switch disconnecter (JK200S / JK250S) / X160 frame MCCB (up to 125A)</i>	<i>Provision for 3 pole X250 / h250 frame MCCB (up to 250A) incomer</i>
		<i>(non-meterable)</i>	<i>(meterable)</i>
<b>250A panel board</b>	2	<b>JN2B00002S2</b>	<b>JN2B00002S3</b>
<b>Incomer:</b> X250 / h250 frame MCCB (up to 250A) / JK200S / JK250S switch disconnecter	4	<b>JN2B00004S2</b>	<b>JN2B00004S3</b>
<b>Outgoing:</b> X160 frame MCCB (up to 125A)	6	<b>JN2B00006S2</b>	<b>JN2B00006S3</b>
	8	<b>JN2B00008S2</b>	<b>JN2B00008S3</b>
	10	<b>JN2B00010S2</b>	<b>JN2B00010S3</b>
	12	<b>JN2B00012S2</b>	<b>JN2B00012S3</b>
	16	<b>JN2B00016S2</b>	<b>JN2B00016S3</b>

**Notes:**

- Incomer link kits are not supplied as standard for non meterable boards. For link kits refer below table
- 3 pole incomer link kits are supplied with the meterable boards.

Invicta - 250A panel board accessories

<i>Description</i>	<i>Cat. Ref.</i>
<b>Incomer kits</b>	
3 pole X250 frame MCCB	<b>JN2L2503MH</b>
3 pole H250 frame MCCB (for meterable boards only)	<b>JN2L2503MHH</b>
3 pole switch disconnecter (JK200S/JK250S)	<b>JN2L2503SK</b>
250A direct Incomer kit	<b>JN2L2503D</b>
<b>Extension box</b>	
Cable spreader box / Meter box without cutout	<b>JN2E01S</b>
Meter box with cutout (Provision for 96mm x 96mm for VM/AM, RYB Indicating lamps, selector switches)	<b>JN2E02S</b>
20 mod din rail box	<b>JN2E20S</b>
<b>Accessories / spares</b>	
Single pole X160 frame MCCB blank	<b>JN2XBSP</b>
Key lock	<b>JK1XKLS</b>



JN2E02S

**Technical characteristics**

**Standards:**  
BS EN 61439 - 1 & 2

Suitable for MCCBs incomers and outgoing.

Option for installing CTs in meterable versions.

**ASTA certified**

**Busbar current rating:**

400A

- Rated short circuit withstand for busbars 35KA for 1 sec

Removable top and bottom gland plates.

1.5 mm thickness sheet steel with epoxy powder coating RAL 9002

IP41

Accessories like key lock, DIN rail extension boxes etc...



JNAB0004S2

Designation	No. of out going ways X160 frame MCCB (up to 125A)	Provision for 3 pole h400 frame MCCB incomer (non-meterable)	Provision for 3 pole h400 frame MCCB incomer (meterable)
400A panel board Incomer: h400 frame MCCB (up to 400A)	4	JN4B00004S2	JN4B00004S3
Outgoing: X160 frame MCCB (up to 125A)	6	JN4B00006S2	JN4B00006S3
	8	JN4B00008S2	JN4B00008S3
	10	JN4B00010S2	JN4B00010S3
	12	JN4B00012S2	JN4B00012S3
	16	JN4B00016S2	JN4B00016S3

Designation	No. of out going ways X250 frame MCCB (up to 250A)	No. of out going ways X160 frame MCCB (up to 125A)	Provision for 3 pole h400 frame MCCB incomer (non-meterable)	Provision for 3 pole h400 frame MCCB incomer (meterable)
400A panel board Incomer: h400 frame MCCB (up to 400A)	2	2	JN4B00202S2	JN4B00202S3
Outgoing: X250 frame MCCB (up to 250A) + X160 frame MCCB (up to 125A)	2	4	JN4B00204S2	JN4B00204S3
	2	6	JN4B00206S2	JN4B00206S3
	2	8	JN4B00208S2	JN4B00208S3
	2	10	JN4B00210S2	JN4B00210S3
	2	14	JN4B00214S2	JN4B00214S3

**Notes:**

1. Incomer link kits are not supplied as standard for non-meterable boards. For link kits refer below table
2. 3 pole Incomer link kits are supplied with the meterable boards.

Invicta - 400A panel board accessories

Description	Cat. Ref.
<b>Incomer kits</b> 3 pole h400 frame MCCB 400A direct incomer kit	JN4L4003MH JN4L4003D
<b>Extension box for X160 frame MCCB outgoing</b> Cable spreader box / Meter box without cutout Meter box with cutout (Provision for 96mm x 96mm for VM/AM, RYB indicating lamps, selector switches) 24 mod din rail box	JN4E01S JN4E02S JN4E24S
<b>for X250 + X160 frame MCCB outgoing</b> Cable spreader box / Meter box without cutout Meter box with cutout (Provision for 96mm x 96mm for VM/AM, RYB indicating lamps, selector switches) 32 mod din rail box	JN8E01S JN8E02S JN8E32S
<b>Accessories / spares</b> Blank for single pole X160 frame MCCB Blank for three pole X250 frame MCCB Key lock	JN2XBSP JN4XBTP JK1XKLS



JN4E02S



JN8E02S

**Technical characteristics**

**Standards:**  
BS EN 61439 - 1 & 2

Suitable for MCCBs incomers and outgoing.

Option for installing CTs in meterable versions.

**ASTA certified**

**Busbar current rating:**  
800A

Rated short circuit withstand for busbars 40KA for 1 sec

Removable top and bottom gland plates.

1.5 mm thickness sheet steel with epoxy powder coating in RAL 9002

IP41

Accessories like key lock, DIN rail extension boxes etc...



JN8B00006S2

Description	No. of outgoing ways X250 frame MCCB (up to 250A)	No. of outgoing ways X160 frame MCCB (up to 125A)	Provision for 3 pole h630/h800 frame MCCB incomer (non-meterable)	Provision for 3 pole h630/h800 frame MCCB incomer (meterable)
<b>630A / 800A panel board</b>				
Incomer:	/	4	JN8B00004S2	/
h630 frame MCCB (up to 630A) / h800 frame MCCB (up to 800A)	/	6	JN8B00006S2	/
Outgoing:	/	8	JN8B00008S2	/
X160 frame MCCB (up to 125A)	/	10	JN8B00010S2	/
	/	12	JN8B00012S2	/
	/	16	JN8B00016S2	/
<b>630A / 800A panel board</b>				
Incomer:	4	/	JN8B00400S2	/
h630 frame MCCB (up to 630A) / h800 frame MCCB (up to 800A)	6	/	JN8B00600S2	/
Outgoing:	8	/	JN8B00800S2	/
X250 frame MCCB (up to 250A)	10	/	JN8B01000S2	/
	12	/	JN8B01200S2	/
	16	/	JN8B01600S2	/
<b>630A / 800A panel board</b>				
Incomer:	2	2	JN8B00202S2	JN8B00202S3
h630 frame MCCB (up to 630A) / h800 frame MCCB (up to 800A)	2	4	JN8B00204S2	JN8B00204S3
Outgoing:	2	6	JN8B00206S2	JN8B00206S3
X250 frame MCCB (up to 250A) + X160 frame MCCB (up to 125A)	2	8	JN8B00208S2	JN8B00208S3
	2	10	JN8B00210S2	JN8B00210S3
	2	14	JN8B00214S2	JN8B00214S3
<b>630A / 800A panel board</b>				
Incomer:	4	2	JN8B00402S2	/
h630 frame MCCB (up to 630A) / h800 frame MCCB (up to 800A)	4	4	JN8B00404S2	/
Outgoing:	4	6	JN8B00406S2	/
X250 frame MCCB (up to 250A) + X160 frame MCCB (up to 125A)	4	8	JN8B00408S2	/
	4	10	JN8B00410S2	/

**Notes:**

- Incomer link kits are not supplied as standard for non meterable boards, For link kits please refer next page.
- 3 pole h630 frame MCCB Incomer link kits are supplied with the meterable boards.





JN8B0006S2

<i>Description</i>	<i>No. of out going ways h400 frame MCCB (up to 400A)</i>	<i>No. of out going ways X250 frame MCCB (up to 250A)</i>	<i>No. of out going ways X160 frame MCCB (up to 125A)</i>	<i>Provision for 3 pole h630/h800 frame MCCB incomer (non-meterable)</i>	<i>Provision for 3 pole h630/h800 frame MCCB incomer (meterable)</i>
<b>630A / 800A panel board</b>					
Incomer:	/	6	6	JN8B0006S2	/
h630 frame MCCB (up to 630A) / h800 frame MCCB (up to 800A)	/	6	6	JN8B0006S2	/
Outgoing:					
X250 frame MCCB (up to 250A) + X160 frame MCCB (up to 125A)					

**Notes:**

1. Incomer link kits are not supplied as standard for non meterable boards, For link kits please refer next page.
2. 3 pole h630 frame MCCB incomer link kits are supplied with the meterable boards.

Invicta - 630A / 800A panel board accessories

<i>Description</i>	<i>Cat. Ref.</i>
<b>Incomer Kits</b>	
3 pole h630 frame MCCB incomer	JN8L6303MH
630A direct incomer kit	JN8L6303D
3 pole h800 frame MCCB incomer	JN8L8003MH
800A direct incomer	JN8L8003D
<b>Extension box</b>	
Cable spreader box / Meter box without cutout	JN8E01S
Meter box with cutout (Provision for 96mm x 96mm for VM/AM, RYB indicating lamps, selector switches)	JN8E02S
32 mod din rail box	JN8E32S
<b>Accessories / spares</b>	
Key lock	JK1XKLS



JN8E02S

**Description**

The range of enclosed LBS have been designed to match the TP&N range of distribution boards. The number of enclosure sizes have been optimized, to ensure that the installation is easy and uniform. Products are designed to isolate individual circuits. All handles can be padlocked in the off position.

Extension boxes are available for extra cabling space. Operation is through a door operated rotary handle.

**Electrical specification**

Tested and complies to BS EN 60439-1 (enclosure) BS EN 60947-3 (device) LBS Sequence 1 & 3 FCS Sequence 1 & 4

**Electrical Supply**

415V ~ AC Rating AC23A (100, 315, 400 & 630A AC22A)

**Mechanical specification**

Material 1.2 mm CR4 Steel Powder Coated RAL 9002 IP40

**Devices & accessories**

TPN 20-1600A (14 ratings) TPSN 20-1600A (14 ratings)



JAB306

<i>Description</i>	<i>In A</i>	<i>Utilisation category</i>	<i>Cat. ref.</i>
<b>Triple pole and neutral</b>	20A	AC23A	JAB302
	32A	AC23A	JAB303
	63A	AC23A	JAB306
	100A	AC22A	JAB310
	125A	AC23A	JAC312
	160A	AC23A	JAC318
	200A	AC23A	JAE320
	250A	AC23A	JAE325
	315A	AC22A	JAG331
	400A	AC22A	JAG340
	630A	AC22B	JAH363
	800A	AC23B	JAH380
	1250A	AC23A	JAH390
	1600A	AC23A	JAH392
<b>Triple pole switched neutral</b>	20A	AC23A	JAB402
	32A	AC23A	JAB403
	63A	AC23A	JAB406
	100A	AC22A	JAB410
	125A	AC23A	JAC412
	160A	AC23A	JAC418
	200A	AC23A	JAE420
	250A	AC23A	JAE425
	315A	AC22A	JAG431
	400A	AC22A	JAG440
	630A	AC22B	JAH463
	800A	AC23B	JAH480
	1250A	AC23A	JAH490
	1600A	AC23A	JAH482
<b>Cable extension boxes triple pole and triple pole switched neutral</b>	125A, 160A		JZA700
	200A, 250A, 315A, 400A		JZA701
	630A, 800A		JZA702

**Description**

The range of enclosed FCS have been designed to match the TP&N range of distribution boards. The number of enclosure sizes have been optimized, to ensure that the installation is easy and uniform. The FCS products are designed to protect and isolate individual circuits. All handles can be padlocked in the off position. Extension boxes are available for extra cabling space.

Operation is through a door operated rotary handle.

**Note**

Maximum rate fuse links are fitted in all fuse combination switches.

**Electrical specification**

Tested and complies to IEC 60 497-3  
LBS Sequence 1 & 3  
FCS Sequence 1 & 4

**Electrical Supply**

415V-AC Rating AC23 (100A-AC22A)

**Mechanical specification**

Material 1.2mm CR4 Steel  
Powder Coated RAL 9002  
IP40

**Devices & accessories**

SPSN 20 - 100A ( 4 ratings)  
TP & N 20 - 800A (12 ratings)  
TPSN 20 - 800A (12 ratings)



JFD306U

Description	In A	Utilisation category	Fuse type	Cat. ref.
<b>Single pole switched neutral</b>	20A	AC23A	A1	JFB202U
	32A	AC23A	A1	JFB203U
	63A	AC23A	A2-A3	JFD208U
	100A	AC22A	A4	JFE210U
<b>Triple pole and neutral</b>	20A	AC23A	A1	JFB302U
	32A	AC23A	A1	JFB303U
	63A	AC23A	A2-A3	JFD306U
	100A	AC22A	A4	JFE310U
	125A	AC23A	B1-B2	JFG312U
	160A	AC23A	B1-B2	JFG318U
	200A	AC23A	B1-B2	JFG320U
	250A	AC23A	B1-B3	JFG325U
	315A	AC23B	B1-B3	JFH331U
	400A	AC23B	B1-B4	JFH340U
	630A	AC23B	C1-C2	JFI363U
	800A	AC23B	C1-C3	JFI380U
<b>Triple pole switched neutral</b>	20A	AC23A	A1	JFB402U
	32A	AC23A	A1	JFB403U
	63A	AC23A	A2-A3	JFD408U
	100A	AC22A	A4	JFE410U
	125A	AC23A	B1-B2	JFG412U
	160A	AC23A	B1-B2	JFG418U
	200A	AC23A	B1-B2	JFG420U
	250A	AC23A	B1-B3	JFG425U
	315A	AC23B	B1-B3	JFH431U
	400A	AC23B	B1-B4	JFH440U
	630A	AC23B	C1-C2	JFI463U
	800A	AC23B	C1-C3	JFI480U
<b>Cable extension boxes</b>	125A, 160A, 200A, 250A			JZA701
<b>triple pole and</b>	315A, 400A			JZA702
<b>triple pole switched neutral</b>	630A, 800A			JZA703

### Technical characteristics

Surface mounting	Insulation Voltage : 690 VAC	Removable pre punched top and bottom glandplates
1.2 mm thickness sheet steel	Direct cable connection for MCCBs, Neutral and Earth terminal up to 125A. For higher ratings neutral bar with bolts and nuts as standard	Dual knockouts
Epoxy Powder coated RAL 9002 colour	Provision for Padlock	Enough cabling space
Operating voltage : 127/220/415V AC 50/60Hz		MCCBs are calibrated at 50 Deg Centigrade

### Designation

### Cat. Ref.

#### Enclosed circuit breaker fitted with MCCB

ECB fitted with MCCB X160 3P 18kA 63A	MH1253S4HDA063Z
ECB fitted with MCCB X160 3P 18kA 100A	MH1253S4HDA100Z
ECB fitted with MCCB X160 3P 18kA 125A	MH1253S4HDA125Z
ECB fitted with MCCB X160 3P 25kA 63A	MH1253S4HHA063Z
ECB fitted with MCCB X160 3P 25kA 100A	MH1253S4HHA100Z
ECB fitted with MCCB X160 3P 25kA 125A	MH1253S4HHA125Z
ECB fitted with MCCB X160 3P 40kA 63A	MH1253S4HNA063Z
ECB fitted with MCCB X160 3P 40kA 100A	MH1253S4HNA100Z
ECB fitted with MCCB X160 3P 40kA 125A	MH1253S4HNA125Z
ECB fitted with MCCB X250 3P 25kA 160A	MH2503S4HHB160Z
ECB fitted with MCCB X250 3P 25kA 200A	MH2503S4HHB200Z
ECB fitted with MCCB X250 3P 25kA 250A	MH2503S4HHB250Z
ECB fitted with MCCB X250 3P 40kA 160A	MH2503S4HNB160Z
ECB fitted with MCCB X250 3P 40kA 200A	MH2503S4HNB200Z
ECB fitted with MCCB X250 3P 40kA 250A	MH2503S4HNB250Z
ECB fitted with MCCB h400 3P 50kA 400A	MH4003S2HND400U
ECB fitted with MCCB h630 3P 50kA 630A	MH6303S2HND630U

#### Note:

The above are the standard ratings of MCCBs. In case any other ratings are required add the MCCB reference to the board reference.

For Eg : If x160 frame, 3P, 18KA, 40A MCCB required the cat reference will be MH1253S4HDA040Z.



**Technical characteristics:**

- Standards: IEC 60439
  - IP rating: IP55 / 65 as per IEC 529
  - Insulation voltage: 400V AC
  - colour: RAL 7035 light grey
  - mechanical impact resistance:
    - enclosures < 12 - IK07
    - enclosures > 12 - IK08
  - Reversible doors - for enclosures > 12 modules
- supplied with earth and neutral terminals
  - Distance between rails
    - 12 mod. wide enclosures - 125 mm
    - 18 mod. wide enclosures - 150 mm
  - Metric knock outs on top and bottom
  - Transparent door for all enclosures sizes



VE218L

<i>Designation</i>	<i>Dimension (H x W x D)</i>	<i>Cat. Ref.</i>
1 Row, 2 + 1 modules	175 x 111 x 93	VE103L
1 Row, 4 + 2 modules	190 x 165 x 113	VE106L
1 Row, 8 + 2 modules	210 x 237 x 114	VE110L
1 Row, 12 modules	302 x 310 x 151	VE112L
2 Row, 24 modules	427 x 310 x 151	VE212L
3 Row, 36 modules	552 x 310 x 151	VE312L
4 Row, 48 modules	677 x 310 x 151	VE412L
1 Row, 18 modules	302 x 418 x 151	VE118L
2 Row, 36 modules	452 x 418 x 151	VE218L
3 Row, 54 modules	602 x 418 x 151	VE318L

Golf enclosures






**Technical characteristics:**

- Golf enclosures are available in surface and flush mounting 1 - 3 rows, 4 to 54 modules.
  - Enclosures are of insulating material coloured RAL 9010.
  - Fixed DIN rail for devices with shoulder measurement of 47mm.
  - Distance between rails 125mm.
- Door opens up to 180°.
  - Surface mounted enclosures are available with opaque or transparent doors.
  - Key lock optional.
  - IP40





VS212TF

<i>Designation</i>	<i>Characteristics</i>	<i>Plain door cat. ref.</i>	<i>Transparent door cat. ref.</i>
<b>Surface mounting</b>	1 row, 4 modules	VS104PF	VS104TF
	1 row, 8 modules	VS108PF	VS108TF
	1 row, 12 modules	VS112PF	VS112TF
	1 row, 18 modules	VS118PF	VS118TF
	1 row, 22 modules	VS122PF	VS122TF
	2 rows, 24 modules	VS212PF	VS212TF
	2 rows, 36 modules	VS218PF	VS218TF
	3 rows, 36 modules	VS312PF	VS312TF
	3 rows, 54 modules	VS318PF	VS318TF
	4 rows, 72 modules	VS418PF	VS418TF
<b>Flush mounting</b>	1 row, 4 modules	VF104PF	VF104TF
	1 row, 8 modules	VF108PF	VF108TF
	1 row, 12 modules	VF112PF	VF112TF
	1 row, 18 modules	VF118PF	VF118TF
	1 row, 22 modules	VF122PF	VF122TF
	2 rows, 24 modules	VF212PF	VF212TF
	2 rows, 36 modules	VF218PF	VF218TF
	3 rows, 36 modules	VF312PF	VF312TF
	3 rows, 54 modules	VF318PF	VF318TF
	4 rows, 72 modules	VF418PF	VF418TF

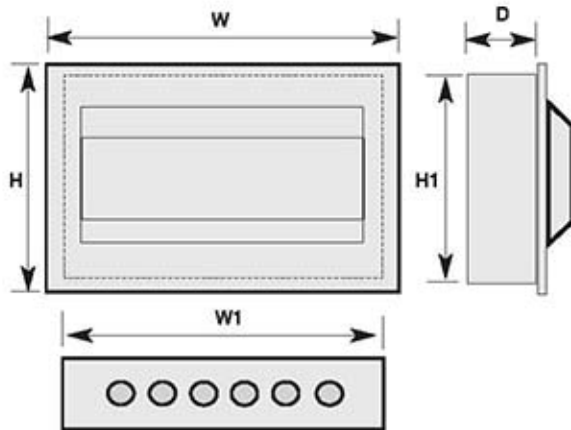
	Type		Prong			Fork				
			In/A	Section mod. mm <sup>2</sup>	Width	Cat. Ref.	In/A	Section mod. mm <sup>2</sup>	Width	Cat. Ref.
 KB163P	1 Pole	Brown insulated	63A	10	13	KB163P				
		Blue insulated	63A	10	13	KB163N				
							63A	10	56	KD163B
							80A	16	56	KD180B
				100A	20	57	KB190B	100A	20	56
 KB190C	1P end caps				KB190C					
						KZ021				KZN021
 KD263B	2 Pole		63A	10	12	KB263A				
			63A	10	24	KB263C				
			80A	16	56	KB260B	63A	10	56	KD263B
							80A	16	56	KDN260B
	2P end caps					KZ022				KZN023
 KD363B	3 Pole		63A	10	12	KB363A				
			63A	10	57	KB363B	63A	10	57	KD363B
			63A	10	24	KB363C				
			80A	16	12	KB380A				
			80A	16	57	KB380B	80A	16	57	KD380B
 KD463B	3P end caps				KZ023A					
	4 Poles		63A	10	12	KB463A				
			63A	10	24	KB463C				
							63A	10	56	KD463B
			80A	16	12	KB480A				
		80A	16	56	KB480B	80A	16	56	KDN480B	
	4P end caps				KZ024				KZN024	

Note : all busbars grey insulated unless otherwise mentioned

Brass terminals

	Connections mm <sup>2</sup>	Terminals with support		Phase	Terminals w/o support Bare
		Neutral	Earth		
 K151	2x16 + 2x10			KM04L	K140
	4x16 + 4x10			KM08L	
	3x16 + 4x10	KM07N	KM07E	KM07L	K142
	5x16 + 5x10	KM10A	KM10B	KM10C	K143
	5x16 + 6x10	KM11N	KM11E	KM11L	K144
	2x16 + 8x10	KM10N	KM10E	KM10L	K145
	6x16 + 7x10	KM13N	KM13E		K148
	1x25 + 5x16 + 5x10		KM11B		K151
	1x25 + 8x16 + 8x10	KM17N	KM17E		K156
	1x25 + 11x16 + 13x10	KM25N	KM25E		K158
 KM10B	1x25 + 8x16 + 29x10				K159
	1x25 + 16x16 + 61x10				K160
	1x25 + 33x16 + 129x10				K162

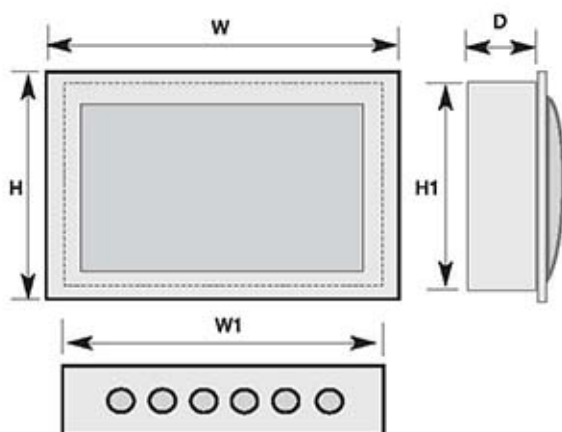
Supports and Rail Clips available



Cat. Ref.	Dimensions				
	H	W	D	H1	W1
<b>Surface</b>					
VT04SM	231	214	70	226	208
VT06SM	231	250	70	226	244
VT08SM	231	286	70	226	280
VT10SM	231	322	70	226	316
VT12SM	231	358	70	226	352
VT16SM	231	430	70	226	424

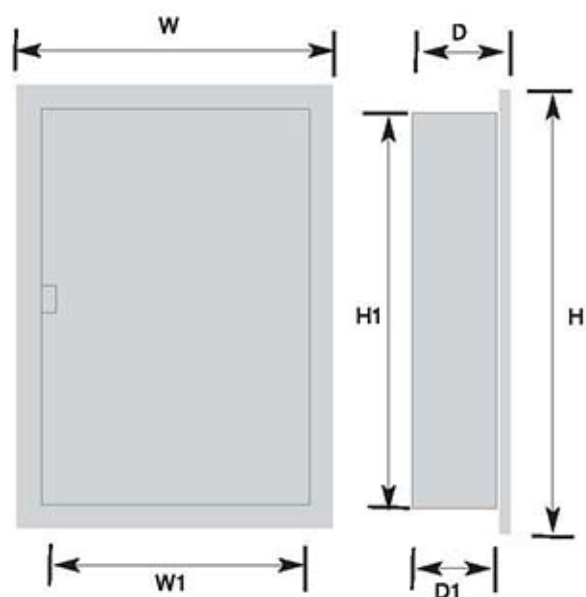
<b>Flush</b>					
Cat. Ref.	H	W	D	H1	W1
VT04FM	251	234	70	226	208
VT06FM	251	270	70	226	244
VT08FM	251	306	70	226	280
VT10FM	251	342	70	226	316
VT12FM	251	378	70	226	352
VT16FM	251	450	70	226	424

Consumer unit without busbar



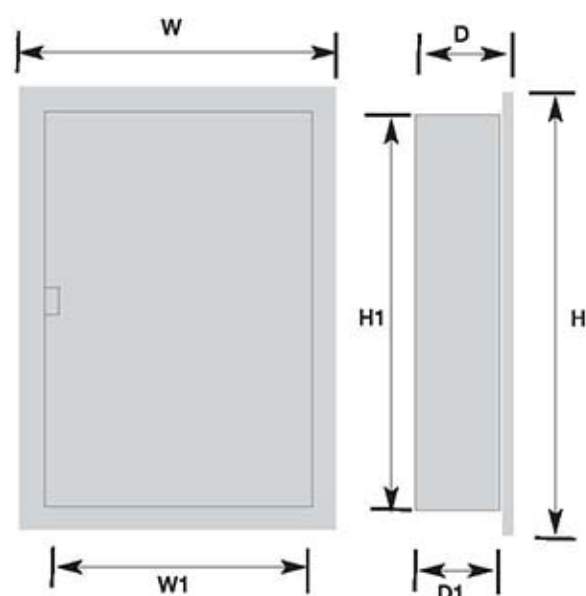
Cat. Ref.	Dimensions				
	H	W	D	H1	W1
<b>Surface</b>					
VT04MS/PNS/TS	253	245	93	250	242
VT08MS/PNS/TS	253	316	93	250	313
VT12MS/PNS/TS	253	387	93	250	384
VT16MS/PNS/TS	253	458	93	250	456
VT20MS/PNS/TS	253	529	93	250	527

<b>Flush</b>					
Cat. Ref.	H	W	D	H1	W1
VT04MF/PNF/TF	253	245	93	220	206
VT08MF/PNF/TF	253	316	93	220	277
VT12MF/PNF/TF	253	387	93	220	348
VT16MF/PNF/TF	253	458	93	220	420
VT20MF/PNF/TF	253	529	93	220	491



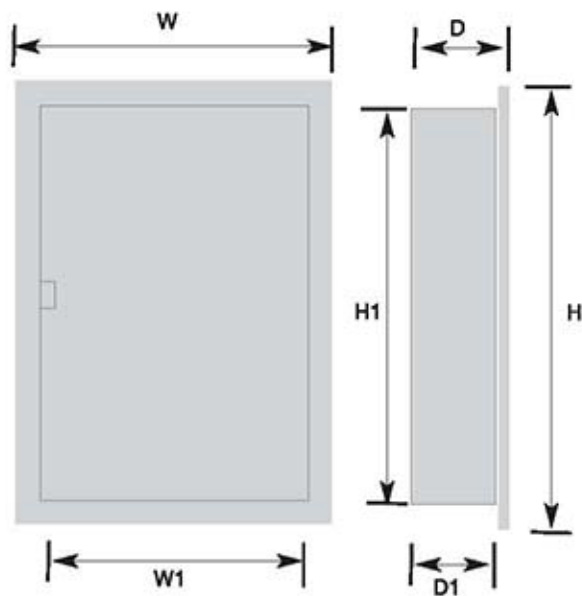
Cat. Ref.	Dimensions					
	H	W	D	H1	W1	D1
<b>Surface</b>						
DR16S	325	405	115	320	400	110
DR32S	475	405	115	470	400	110
DR48S	625	405	115	620	400	110
DR64S	775	405	115	770	400	110
DR80S	925	405	115	920	400	110
DR96S	1075	405	115	1070	400	110
<b>Flush</b>						
DR16F	350	430	115	320	400	110
DR32F	500	430	115	470	400	110
DR48F	650	430	115	620	400	110
DR64F	800	430	115	770	400	110
DR80F	950	430	115	920	400	110
DR96F	1110	430	115	1070	400	110

TPN 125 type B distribution boards



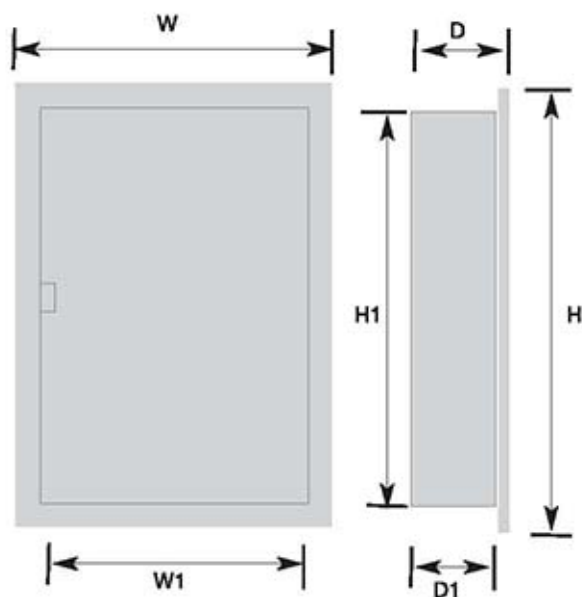
Cat. Ref.	Dimensions					
	H	W	D	H1	W1	D1
<b>Surface</b>						
JK1B04S2	495	405	125	490	400	120
JK1B06S2	555	405	125	550	400	120
JK1B08S2	605	405	125	600	400	120
JK1B10S2	660	405	125	655	400	120
JK1B12S2	715	405	125	710	400	120
JK1B14S2	770	405	125	765	400	120
JK1B16S2	820	405	125	815	400	120
JK1B18S2	940	405	125	935	400	120
JK1B24S2	1105	405	125	1100	400	120
<b>Flush</b>						
JK1B04F2	520	430	125	490	400	120
JK1B06F2	580	430	125	550	400	120
JK1B08F2	630	430	125	600	400	120
JK1B10F2	685	430	125	655	400	120
JK1B12F2	740	430	125	710	400	120
JK1B14F2	795	430	125	765	400	120
JK1B16F2	845	430	125	815	400	120
JK1B18F2	965	430	125	935	400	120
JK1B24F2	1130	430	125	1100	400	120





<i>Cat. Ref.</i>	<i>Dimensions</i>					
	<i>H</i>	<i>W</i>	<i>D</i>	<i>H1</i>	<i>W1</i>	<i>D1</i>
<b>Surface</b>						
<b>JK1B022S2</b>	555	445	125	550	440	120
<b>JK1B042S2</b>	610	445	125	605	440	120
<b>JK1B044S2</b>	665	445	125	660	440	120
<b>JK1B062S2</b>	665	445	125	660	440	120
<b>JK1B064S2</b>	720	445	125	715	440	120
<b>JK1B066S2</b>	775	445	125	770	440	120
<b>JK1B082S2</b>	720	445	125	715	440	120
<b>JK1B084S2</b>	775	445	125	770	440	120
<b>JK1B086S2</b>	830	445	125	825	440	120
<b>JK1B088S2</b>	885	445	125	880	440	120
<b>JK1B104S2</b>	935	445	125	930	440	120

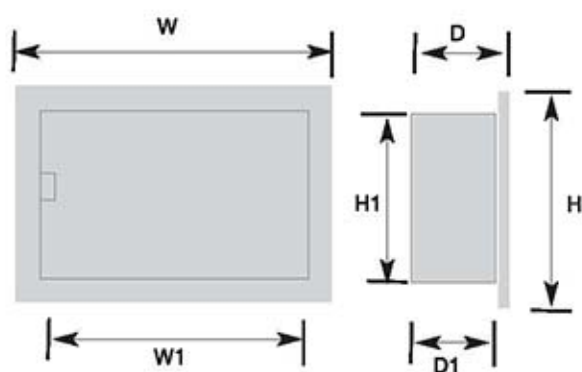
<b>Flush</b>						
<b>JK1B022F2</b>	580	470	125	550	440	120
<b>JK1B042F2</b>	635	470	125	605	440	120
<b>JK1B044F2</b>	690	470	125	660	440	120
<b>JK1B062F2</b>	690	470	125	660	440	120
<b>JK1B064F2</b>	745	470	125	715	440	120
<b>JK1B066F2</b>	800	470	125	770	440	120
<b>JK1B082F2</b>	745	470	125	715	440	120
<b>JK1B084F2</b>	800	470	125	770	440	120
<b>JK1B086F2</b>	855	470	125	825	440	120
<b>JK1B088F2</b>	910	470	125	880	440	120
<b>JK1B104F2</b>	960	470	125	930	440	120



Cat. Ref.	Dimensions					
	H	W	D	H1	W1	D1
<b>Surface</b>						
JK2B04S2	655	445	125	650	440	120
JK2B06S2	705	445	125	700	440	120
JK2B08S2	760	445	125	755	440	120
JK2B10S2	815	445	125	810	440	120
JK2B12S2	865	445	125	860	440	120
JK2B14S2	920	445	125	915	440	120
JK2B16S2	975	445	125	970	440	120
JK2B18S2	1030	445	125	1025	440	120
JK2B24S2	1195	445	125	1190	440	120

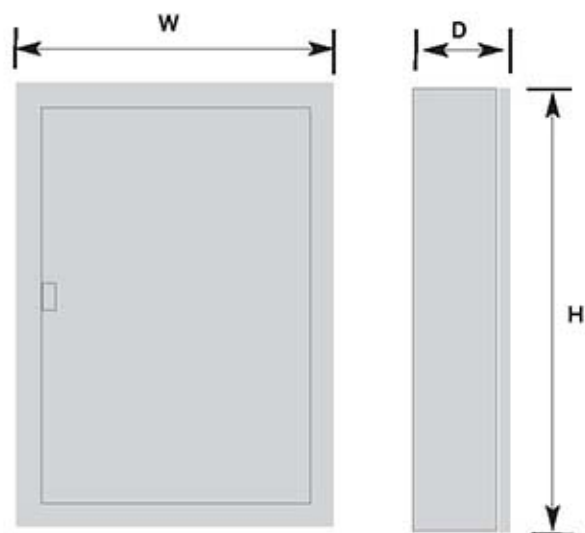
Cat. Ref.	Dimensions					
	H	W	D	H1	W1	D1
<b>Flush</b>						
JK2B04F2	680	470	125	650	440	120
JK2B06F2	730	470	125	700	440	120
JK2B08F2	785	470	125	755	440	120
JK2B10F2	840	470	125	810	440	120
JK2B12F2	890	470	125	860	440	120
JK2B14F2	945	470	125	915	440	120
JK2B16F2	1000	470	125	970	440	120
JK2B18F2	1055	470	125	1025	440	120
JK2B24F2	1220	470	125	1190	440	120

TPN Board Accessories



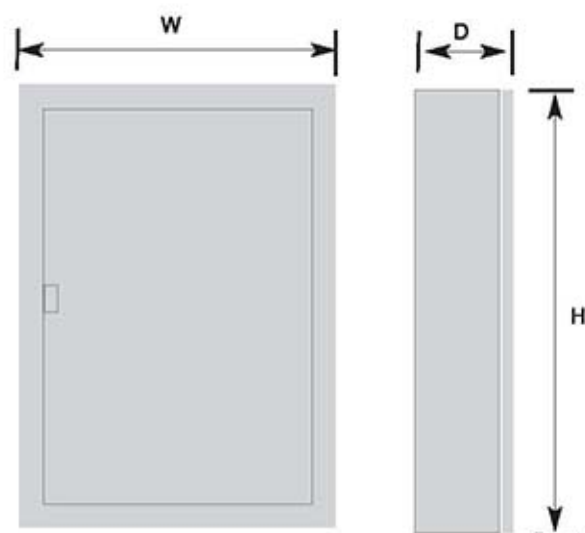
Cat. Ref.	Dimensions					
	H	W	D	H1	W1	D1
JK1E01S	275	405	125	269	400	120
JK2E01S	275	445	125	269	440	120
JK1E01F	300	430	125	269	400	120
JK2E01F	300	470	125	269	440	120

JK1E16S	275	405	125	269	400	120
JK1E32S	425	405	125	420	400	120
JK1E48S	655	405	125	650	400	120
JK2E16S	275	445	125	270	440	120
JK2E32S	425	445	125	420	440	120
JK2E48S	575	445	125	570	440	120
JK1E16F	300	430	125	269	400	120
JK1E32F	450	430	125	419	400	120
JK1E48F	600	430	125	569	400	120
JK2E16F	300	470	125	269	440	120
JK2E32F	450	470	125	419	440	120
JK2E48F	600	470	125	569	440	120

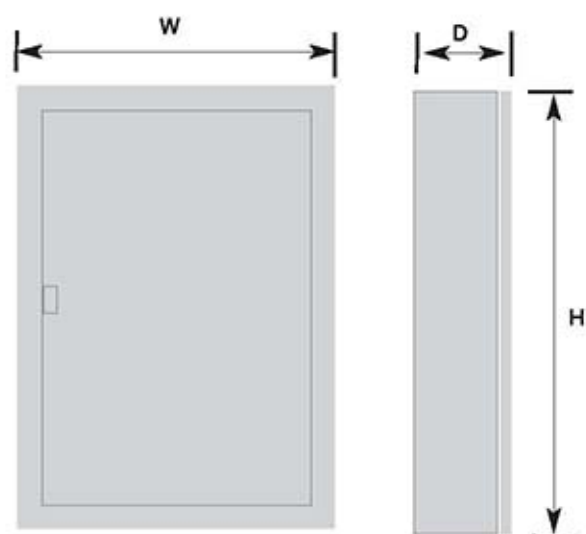


Cat. Ref.	Dimensions		
	H	W	D
<b>Surface mounted</b>			
JN2B00002S2	700	615	160
JN2B00004S2	775	615	160
JN2B00006S2	850	615	160
JN2B00008S2	925	615	160
JN2B00010S2	1000	615	160
JN2B00012S2	1115	615	160
JN2B00016S2	1375	615	160
JN2B00002S3	860	615	160
JN2B00004S3	935	615	160
JN2B00006S3	1010	615	160
JN2B00008S3	1085	615	160
JN2B00010S3	1160	615	160
JN2B00012S3	1275	615	160
JN2B00016S3	1535	615	160

Invicta 400A panel board

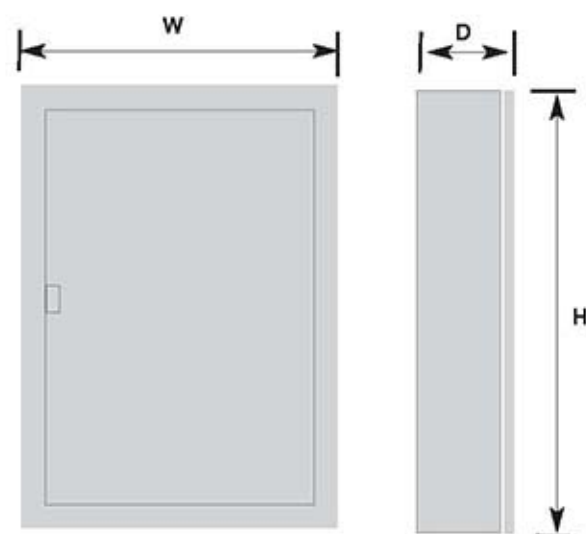


Cat. Ref.	Dimensions		
	H	W	D
<b>Surface mounted</b>			
JN4B00004S2	930	690	200
JN4B00006S2	1005	690	200
JN4B00008S2	1080	690	200
JN4B00010S2	1155	690	200
JN4B00012S2	1230	690	200
JN4B00016S2	1380	690	200
JN4B00202S2	960	846	200
JN4B00204S2	1035	846	200
JN4B00206S2	1110	846	200
JN4B00208S2	1185	846	200
JN4B00210S2	1260	846	200
JN4B00214S2	1410	846	200

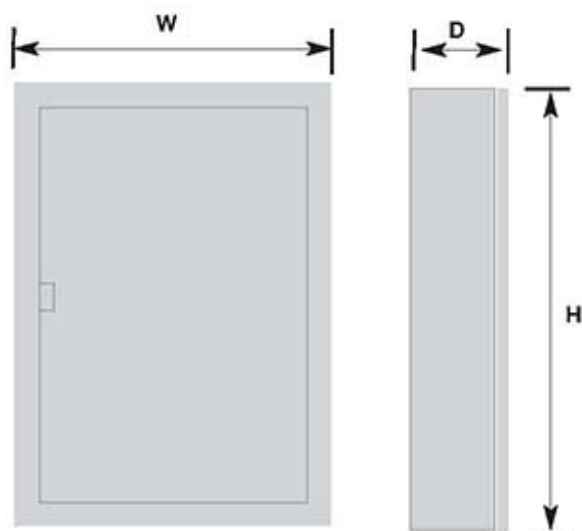


<i>Cat. Ref.</i>	<i>Dimensions</i>		
	<i>H</i>	<i>W</i>	<i>D</i>
<b>Surface mounted</b>			
JN4B00004S3	1090	690	200
JN4B00006S3	1165	690	200
JN4B00008S3	1240	690	200
JN4B00010S3	1315	690	200
JN4B00012S3	1390	690	200
JN4B00016S3	1540	690	200
JN4B00202S3	1120	846	200
JN4B00204S3	1195	846	200
JN4B00206S3	1270	846	200
JN4B00208S3	1345	846	200
JN4B00210S3	1420	846	200
JN4B00214S3	1570	846	200

Invicta 630 / 800A panel boards

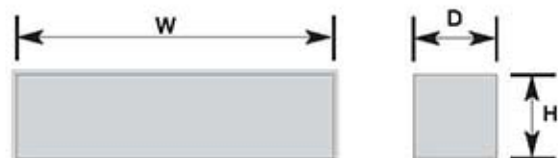


<i>Cat. Ref.</i>	<i>Dimensions</i>		
	<i>H</i>	<i>W</i>	<i>D</i>
<b>Surface</b>			
JN8B00004S2	1035	846	200
JN8B00006S2	1110	846	200
JN8B00008S2	1215	846	200
JN8B00010S2	1320	846	200
JN8B00012S2	1410	846	200
JN8B00016S2	1620	846	200
JN8B00202S2	1065	846	200
JN8B00204S2	1140	846	200
JN8B00206S2	1215	846	200
JN8B00208S2	1320	846	200
JN8B00210S2	1410	846	200
JN8B00214S2	1560	846	200
JN8B00402S2	1170	846	200
JN8B00404S2	1245	846	200
JN8B00406S2	1350	846	200
JN8B00408S2	1440	846	200
JN8B00410S2	1650	846	200
JN8B00606S2	1485	846	200
JN8B00608S2	1620	846	200
JN8B00400S2	1095	846	200
JN8B00600S2	1200	846	200
JN8B00800S2	1305	846	200
JN8B01000S2	1410	846	200
JN8B01200S2	1515	846	200
JN8B01400S2	1725	846	200



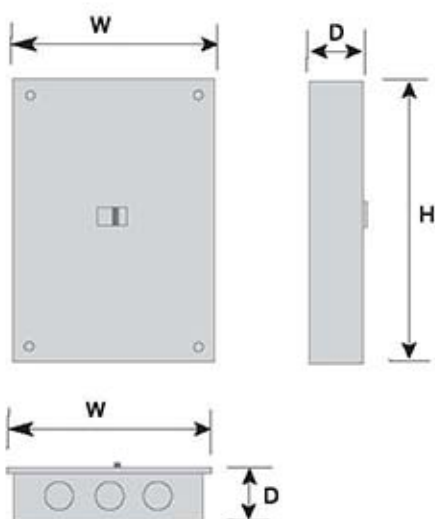
<i>Cat. Ref.</i>	<i>Dimensions</i>		
	<i>H</i>	<i>W</i>	<i>D</i>
<b>Surface</b>			
<b>JN8B00202S3</b>	1225	846	200
<b>JN8B00204S3</b>	1300	846	200
<b>JN8B00206S3</b>	1375	846	200
<b>JN8B00208S3</b>	1480	846	200
<b>JN8B00210S3</b>	1570	846	200
<b>JN8B00214S3</b>	1720	846	200

Invicta panel board accessories



<i>Cat. Ref.</i>	<i>Dimensions</i>		
	<i>H</i>	<i>W</i>	<i>D</i>
<b>Surface</b>			
<b>JN2E01S</b>	303	615	160
<b>JN2E02S</b>	179	615	160
<b>JN2E20S</b>	303	615	160
<b>JN4E01S</b>	303	690	200
<b>JN4E02S</b>	179	690	200
<b>JN4E24S</b>	303	690	200
<b>JN8E01S</b>	303	846	200
<b>JN8E02S</b>	179	846	200
<b>JN8E32S</b>	453	846	200

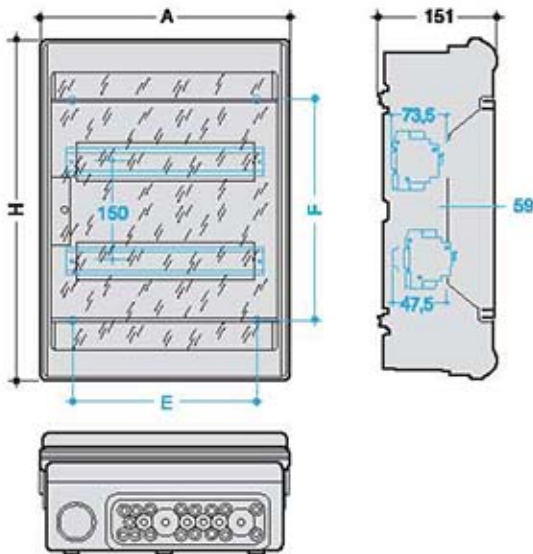
Enclosed circuit breaker



<i>Cat. Ref.</i>	<i>Dimensions</i>		
	<i>H</i>	<i>W</i>	<i>D</i>
<b>MH1253S4</b>	416	246	92
<b>MH2503S4</b>	466	296	122
<b>MH4003S2</b>	650	370	152
<b>MH6303S2</b>	1010	600	152

**Vector IP65 enclosures**

**VE 212L - 2 rows 24**

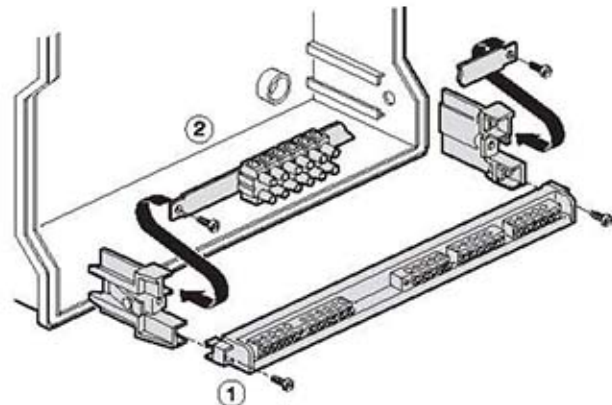


**Dimensions**

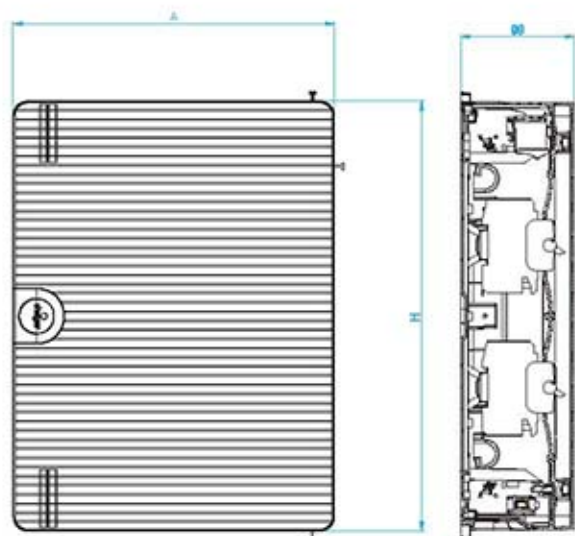
References		Enclosure sizes			Wall box	
		B	A	H	E	F
VE103L	3	1	111	175	-	147
VE106L	6	1	165	190	108	158
VE110L	10	1	237	210	180	173
VE112L	12	1	310	302	230	155
VE212L	24	2	310	427	230	280
VE312L	36	3	310	552	230	405
VE412L	18	4	310	677	230	550
VE118L	18	1	418	302	338	155
VE218L	36	2	418	452	338	305
VE318L	54	3	418	602	338	455

**Connection assembly**

mounting on insulating support at both end of the chassis  
 additional connection assembly : VZ 403 or VZ 428  
 Insulated terminal VZ 743



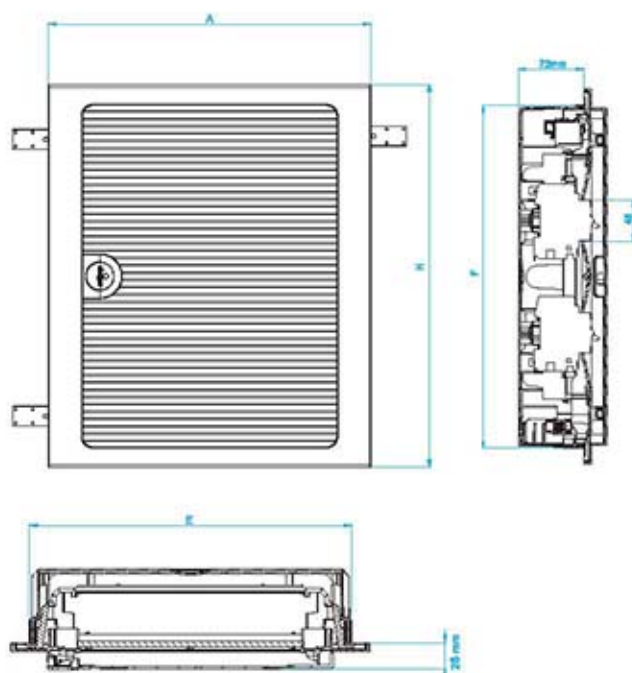
enclosure reference	knock outs high and low	side	supplied cable bushes
VE103L	2 x M20	-	3 x M20
VE106L	1 x M20 + 1 x M25 + 1 x M20/32	2 x 16	2 x M20 + 2 x M25 + 1 x M32
VE110L	1 x M20/32 + 1 x M25 + 3 x M20	2 x 16	4 x M20 + 2 x M25 + 1 x M32
VE112L	2 x M20/32/40 + 2 x M 25/32 + 3 x M25 + 6 x M20	2 x 21	10 x M20 + 2 x M25 + 1 x M32
VE118L	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	2 x 21	8 x M20 + 10 x M25 + 1 x M32
VE212L	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	3 x 21	14 x M20 + 4 x M25 + 1 x M32
VE218L	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	3 x 21	8 x M20 + 14 x M25 + 1 x M32
VE312L	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	4 x 21	14 x M20 + 10 x M25 + 2 x M32
VE318L	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	4 x 21	8 x M20 + 18 x M25 + 2 x M32
VE412L	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	5 x 21	14 x M20 + 10 x M25 + 2 x M32



Ref.		Dimension		Wall fixation		
		A	H	E	F	G
VS104...	1 row 4 ■	137.5	183.5	101	68	58
VS108...	2 row 8 ■	209.5	183.5	173.5	68	58
VS112...	1 row 12 ■	281.5	251.5	221.5	135.5	58
VS212...	2 row 12 ■	281.5	376.5	221.5	260.5	58
VS312...	3 row 12 ■	281.5	500	221.5	385.5	58
VS412...	4 row 12 ■	281.5	646.5	221.5	491	78
VS118...	1 row 18 ■	389.5	251.5	329.5	135.5	58
VS218...	2 row 18 ■	389.5	376.5	329.5	260.5	58
VS318...	3 row 18 ■	389.5	500	329.5	385.5	58
VS418...	4 row 18 ■	389.5	646.5	329.5	491	78
VS122...	1 row 22 ■	461.5	251.5	401.5	135.5	58

■ - mod

# Golf flush mounted enclosure VF series



Ref.		Dimension // mm			
		Frame		Wall niche	
		A	H	E	F
VF104...	1 row 4 ■	204	225	170	189
VF108...	2 row 8 ■	275	225	242	189
VF112...	1 row 12 ■	352	293	318	257
VF212...	2 row 12 ■	352	418	318	382
VF312...	3 row 12 ■	352	543	318	507
VF412...	4 row 12 ■	352	688	318	652
VF118...	1 row 18 ■	460	293	426	257
VF218...	2 row 18 ■	460	418	426	382
VF318...	3 row 18 ■	460	543	426	507
VF418...	4 row 18 ■	460	688	426	652
VF122...	1 row 22 ■	532	293	498	257

For the wall niche, these dimensions are minimal.

■ - mod

**Warranty:**

A warranty period of 2years is offered on Hager Energy Distribution products, from date of manufacture, relating to any material or manufacturing defect.

The warranty is withdrawn if:

After inspection by Hager quality control department the device is found to have been installed in a manner which is contrary to IEE wiring regulations and accepted practice within the industry at the time of installation.

An explanation of defect must be included when returning the goods.



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