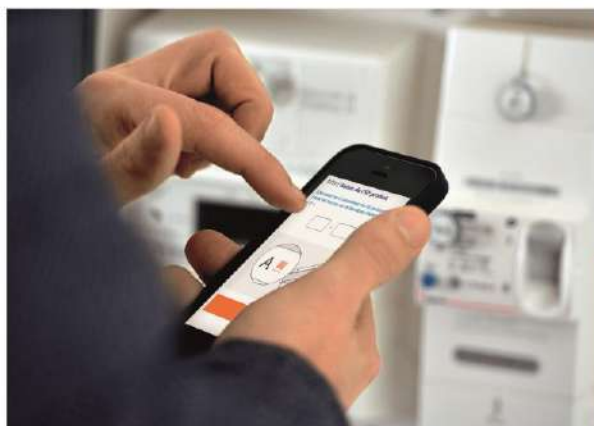


Energy Distribution Catalogue

:hager

**Your reliable
partner for
intelligent
solutions.**

We are shaping the future. Join us.



Our products and solutions are designed to ensure that your customers can make the most of the energy transition.



Daniel Hager
Hager Group CEO

Dear friends and partners,

It's clear for all to see; in our industry, society and the working world, the winds of change are sweeping through. Events that elicit enthusiasm in some are met with uncertainty by others. What is going to change, and what will stay the same? And what does all this mean for our business?

One thing is certain: at Hager Group, we are taking ownership of the changes that lie ahead. The future is what we make it, and we have the power to decide our own tomorrow by continually reinventing the future alongside our colleagues, customers and partners.

Take digitalisation, for example; a development that covers almost every area of modern life. Our IoT server harnesses the power of digital to bring you a new world that is virtually without limits, where a host of connected devices and features can be incorporated into building automation. We provide professional seminars and online training to ensure that you and your team are ready to take on the digital challenges that lie ahead. Elsewhere, we provide project planning support for your business in the form of hagercad and ZPlan as well as Hager Ready, our new planning and labelling software that has been met with high levels of user satisfaction.

Other examples include energy efficiency and the long-overdue electrical modernisation of our existing buildings. Our products and solutions are designed to ensure that your customers

can make the most of the energy transition. Our portfolio includes all of the components required to make residential and commercial buildings more energy efficient. Together, we can ensure that life in tomorrow's electrical world is more comfortable, climate-friendly and environmentally conscious.

We see it as our role to provide you with the right products and solutions for your customers before they even know they need them. This is not a new approach, far from it; staying close to our customers and partners has always been firmly rooted in our philosophy.

Even though we are seeing radical change in so many areas, much has remained the same. Take for example the trust that has underscored the relationship between Hager Group and the electrical trade for more than 60 years; the strength that results from this partnership; and the knowledge that, together, we will transform the challenges of tomorrow into opportunities.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Daniel Hager'. The signature is stylized with a long horizontal line extending from the end.

Daniel Hager

Under one roof

Members
of Hager Group

:hager

B.
Berker

ELCOM.

DAITEM

diagral

BOCCHIOTTI

IBOCO

One family

The world is changing, and we are changing with it. As a family company, we have grown over the last sixty years to become a reliable partner to expert technicians and electrical wholesalers around the world. With more than 11,500 employees and annual sales of €2 billion, we have a huge capacity for innovation. All while remaining true to ourselves and to our values. And so we continue today, with a number of well-known brands, each with their own distinctive strengths, working together under the Hager Group umbrella.

Hager Forum in Obernai, France, is a place where we can work with customers and partners to shape the future. It is the perfect symbol of the innovative power of Hager Group.

hagergroup



Your trust

As a partner and customer, you can choose from the entire range of products and services offered by every member of our brand family. For our part, we rely on feedback, ideas and involvement of our customers and partners in the electrical trade. Precise market knowledge and our close relationship with the trade and with end customers have always been the cornerstone of our success. We are now active in more than 120 countries all over the world, yet remain as close to our customers and their individual needs as we have ever been.

Our strengths

We have huge opportunities ahead: the modernisation of existing buildings, intelligent building technology, digital services, new energy sources and technologies: all of this opens up new, exciting potential for you and for us. At the same time, our business requirements are becoming more and more complex. That's why it's so important for you to have Hager Group specialists supporting you with all their expertise. Together, we are stronger. Together, we will overcome the complex challenges of our time with simple, impressive solutions, just as we have been doing for more than six decades.

Sustainable success with E3

As a family-run company with strong values, we act today to ensure our long-term success for tomorrow. One way we do this is by investing in our employees and their skills development, optimising our eco-balance and developing processes and solutions that are more energy efficient. Sustainability is rooted in everything that we do, we focus on three particular aspects as part of our E3 approach.

Ethics



E for Ethics

Ethical principles determine how we behave towards our customers, our colleagues and society as a whole. By the end of 2018 we had already exceeded our goal for 2020, to have over 17% of management and specialist positions filled by women. Additional areas of focus include Let's talk!, our group-wide Integrity Alert System, and a complete training programme on business ethics.

E for Environment

Considering products in terms of their lifecycles revolutionises the way in which we view product development, resource usage and our environmental footprint. We recycle 80% of our plastic waste in-house and certain products contain material that has been recycled from consumer waste.



Environment

“Thinking and acting sustainably helps us to systematically prevent risks and seize business opportunities at an earlier stage and on a larger scale.”



Energie

E for Energy

Contributing to the energy transition, we provide environmentally friendly, forward-looking solutions that optimise our customers' energy usage. This also applies to the development of sustainable products, particularly in the areas of energy storage systems, integrated energy management systems and e-mobility.



Design at Hager

In-depth engineering

Staying close to our customers has always been our priority at Hager Group. We're always ready to listen to customers and work towards joint solutions. It's part of our DNA.



Erwin van Handenhoven,
Hager Group Design Studio Director

Our designs create an intelligent connection between the product and the end user, much like Hager brand itself. We work on the principle of in-depth engineering, which means that, for us, getting to grips with the emotional side of our products is just as important as the technical side of things. Only then can we create solutions that appeal to our customers.

As a provider of electrical solutions, we operate in an industry where design creates added value. At Hager Group, it has been our mission for a number of years to bring together design and technology. From the very beginning, our development teams work closely with our industrial designers, involving customers in the process, to create unique, appealing products that anyone would want to have.

“For us, getting to grips with the emotional side of our products is just as important as the technical side of things. Only then can we create solutions that appeal to our customers.”

We aim to recognise the needs of the end user and to ensure that any resulting design considerations are incorporated in the product or digital application right from the early stages of the development process. As a result, we are able to develop and roll out meticulously designed solutions. This is what makes Hager brand: solutions that are systematically tested by end users, who can then give us feedback about their experience.

We want to create sophisticated products that are just as refined as they are safe and simple. The day-to-day work of our teams revolves around our ability to offer user-friendly, innovative, efficient, aesthetically pleasing, contemporary solutions to our customers.

In a sense, our design is our signature; it is our DNA. It unites all of the products in our catalogue and represents the essence of our brand.

Outstanding design

We strive for excellence in every field. In the area of design, our efforts are regularly recognised by international awards that assess products based on aesthetics, ergonomics, ethics and emotion. We have been honoured to receive a number of awards over the years; most recently for our gallery range, which was launched in 2018 in France. We have also received recognition for witty, our charging stations for electric vehicles. Our collection of awards includes a Red Dot Design Award, a Good Design Award (Chicago), a Janus Industry Award, which is awarded by the French Institute of Design, an iF Design Award and a German Design Award.



Berker R.8

Index	Page
Reference Index	14
Terms and Conditions	23

Small Enclosures	Page
01 Cosmos	28
02 Icos	28
03 IU	30
04 Volta Flush	32
05 Golf	36
06 Vector	42
07 Accessories for Other Enclosures	44
08 Orion	46

Air Circuit Breakers	Page
01 Air Circuit Breakers	56
02 Accessories	64
03 Protection Trip Unit (OCR)	68

Main Incomers	Page
01 MCCBs and trip-free switches	72
02 h3e MCCB	128

Protection Devices	Page
01 MCBs	140
02 RCCBs	150
03 RCBOs	151

Control and Signaling	Page
01 HRC fuse	158
02 Motor starters	161
03 Monolog surge protection devices	163
04 Surge protection devices	164
05 Modular switch disconnecter	168
06 Modular changeover switch	169

Energy and Lighting Control	Page
01 Latching relays	172
02 Latching relays auxiliaries	173
03 EW Series expert tips	174
04 EW Series	176
05 Contactors	181
06 Humfree contactors	185
07 Override contactors	186
08 Dimmers	189

Power Interface Programming	Page
01 Analog time switch	192
02 Digital time switch	194
03 Delay timer	196
04 Indicator light	196
05 Ammeter	197
06 Current transformer	197
07 Selector switches	198

Connection	Page
01 Insulated busbars prong	202
02 Insulated busbars fork	203

IP66 Isolating Switch	Page
01 IP66 Isolating switch	204

Note : You can find the wiring accessories details in separate catalogue.

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
A			EG170	193	1	ESC263	184	1
AC966B	151	1	EG203B	193	1	ESC264	184	1
AD956B	151	1	EG203E	193	1	ESC325	184	6
AD960B	151	1	EG210	193	1	ESC325S	185	6
AD966B	151	1	EG270	193	1	ESC340	184	4
AD970B	151	1	EG293B	193	1	ESC363	184	1
AD975B	151	1	EG403E	193	1	ESC425	184	6
AD982B	151	1	EG493E	193	1	ESC425S	185	12
AD990B	151	1	EH011	192	1	ESC426	184	1
ADA306T	151	1	EH071	192	1	ESC426S	185	1
ADA310T	151	1	EH110	192	1	ESC440	184	4
ADA316T	151	1	EH110A	192	1	ESC441	184	1
ADA320T	151	1	EH111	192	1	ESC463	184	4
ADA325T	151	1	EH111A	192	1	ESC464	184	1
ADA332T	151	1	EH171A	192	1	ESD240S	185	1
AE956B	151	1	EH191	192	1	ESD263S	185	1
AE960B	151	1	EH271	192	1	ESD425SDC	185	1
AE966B	151	1	EH711	192	1	ESD440S	185	1
AE970B	151	1	EH771	192	1	ESD463S	185	1
AE975B	151	1	EPN050	172	1	ESL225SDC	185	1
AE982B	151	1	EPN051	172	1	ESL240S	185	1
AE990B	151	1	EPN052	172	1	ESL263S	185	1
AF956B	151	1	EPN053	172	1	ESL425SDC	185	1
AF960B	151	1	EPN501	172	12	ESL426SDC	185	1
AF966B	151	1	EPN503	172	1	EV100	189	1
AF970B	151	1	EPN510	172	12	EV102	189	1
AF975B	151	1	EPN511	172	12	EV106	189	1
AF982B	151	1	EPN512	172	12	EV108	189	1
AF990B	151	1	EPN513	172	12	EVN002	189	1
			EPN515	172	1	EVN004	189	1
C			EPN516	172	1	EVN011	189	1
CD616B	150	1	EPN518	172	1	EVN012	189	1
CD625B	150	1	EPN519	172	1	EW005_C	181	1
CD640B	150	1	EPN520	172	1	EW005_D	181	1
CZ001	145	1	EPN521	172	1	EW005_N	181	1
			EPN522	172	1	EW005_P	181	1
E			EPN523	172	1	EW006_C	181	1
EE804	232	1	EPN524	172	1	EW006_D	181	1
EE805	232	1	EPN525	172	1	EW006_N	181	1
EE806	232	1	EPN526	172	1	EW006_P	181	1
EE810	233	1	EPN528	172	1	EW007_C	181	1
EE811	233	1	EPN540	172	1	EW007_D	181	1
EE825	232	1	EPN541	172	1	EW009_C	181	1
EE830	232	1	EPN546	172	1	EW009_D	181	1
EE831	232	1	EPN548	172	1	EW012_C	181	1
EE870	232	1	ERC225	186	12	EW012_D	181	1
EE871	232	1	ERC240	186	1	EW016_C	181	1
EG003U	193	1	ERC263	186	1	EW016_D	181	1
EG004	193	1	ERC325	186	6	EW020_C	181	1
EG005	193	1	ERC425	186	6	EW020_D	181	1
EG006	193	1	ESC080	169	1	EW025_C	181	1
EG007	193	1	ESC125	184	12	EW025_D	181	1
EG010	193	1	ESC225	184	12	EW032_C	181	1
EG071	193	1	ESC225S	185	12	EW032_D	181	1
EG103B	193	1	ESC226	184	12	EW038_C	181	1
EG103E	193	1	ESC227	184	12	EW038_D	181	1
EG103V	193	1	ESC240	184	1	EW040_C	181	1
EG110	193	1	ESC241	184	1	EW040_D	181	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
EW050_D	181	1	EWT215C	182	1	FL352B	50	1
EW055_C	181	1	EWT250B	182	1	FL354B	50	1
EW063_C	181	1	EWT250C	182	1	FL368B	50	1
EW063_D	181	1	EWT250D	182	1	FL402A	51	1
EW070_C	181	1	EWT250E	182	1	FL404A	51	1
EW070_D	181	1	EWT250F	182	1	FL407A	51	1
EW090_C	181	1	EWT250H	182	1	FL408A	51	1
EW090_D	181	1	EWT300B	182	1	FL412A	51	1
EW115_C	181	1	EWT300C	182	1	FL413A	51	1
EW115_D	181	1	EWT360C	182	1	FL415A	51	1
EW138_C	181	1	EWT360E	182	1	FL416A	51	1
EW138_D	181	1	EWT360F	182	1	FL417A	51	1
EW150_C	181	1	EWT360G	182	1	FL419A	51	1
EW150_D	181	1	EWT360H	182	1	FL450A	52	1
EW180_C	181	1	EWT380C	182	1	FL472A	52	1
EW180_D	181	1	EWT470E	182	1	FL473A	52	1
EW220_C	181	1	EWT470F	182	1	FL474A	52	1
EW220_D	181	1	EWT470G	182	1	FL475A	52	1
EW300_C	181	1	EWT470H	182	1	FL476A	52	1
EW300_D	181	1	EWT600F	182	1	FL477A	52	1
EWA001	182	1	EWT600G	182	1	FL479A	52	1
EWA002	183	1	EWT750F	182	1	FL480A	52	1
EWA003	183	1	EWT750G	182	1	FL481A	52	1
EWA004	183	1	EWT900F	182	1	FL483A	52	1
EWA005	183	1	EWT900G	182	1	FL500A	53	1
EWA006	183	1	EZN001	196	1	FL501A	53	1
EWA007	183	1	EZN002	196	1	FL502A	53	1
EWA008	183	1	EZN003	196	1	FL503A	53	1
EWA009	183	1	EZN004	196	1	FL512E	51	1
EWA010	183	1	EZN005	196	1	FL520E	51	1
EWA101	183	1	EZN006	196	1	FL521E	51	1
EWA102	183	1				FL522E	51	1
EWA103	183	1	F			FL531E	51	1
EWA104	183	1	FL102A	48	1	FL532E	51	1
EWA501	181	1	FL104A	48	1	FL670A	49	1
EWA601	182	1	FL105A	48	1	FL712E	53	1
EWA602	182	1	FL110A	48	1	FL713E	53	1
EWA603	182	1	FL112A	48	1	FL714E	53	1
EWT001B	182	1	FL117A	48	1	FL715E	53	1
EWT002B	182	1	FL118A	48	1	FL80Z	49	1
EWT005B	182	1	FL119A	48	1	FL81Z	50	1
EWT006B	182	1	FL120A	48	1	FL85Z	49	1
EWT008B	182	1	FL122A	48	1	FL863Z	50	1
EWT013B	182	1	FL123A	48	1	FL874A	49	1
EWT016B	182	1	FL124A	48	1	FL95Z	49	1
EWT020B	182	1	FL125A	48	1	FL96Z	49	1
EWT025B	182	1	FL126A	48	1	FL97Z	50	1
EWT032B	182	1	FL127A	49	1	FL980A	53	1
EWT040B	182	1	FL128A	49	1	FL981A	53	1
EWT048B	182	1	FL130A	49	1	FL98Z	50	1
EWT063B	182	1	FL204B	50	1	FL992A	53	1
EWT075B	182	1	FL209B	50	1	FL993A	53	1
EWT100B	182	1	FL213B	50	1	FL994A	53	1
EWT125B	182	1	FL216B	50	1	FL996A	53	1
EWT160B	182	1	FL221B	50	1	FL997A	53	1
EWT200B	182	1	FL229B	50	1	FL998A	53	1
EWT200C	182	1	FL302B	50	1			
EWT215B	182	1	FL327B	50	1			

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
H			HEE800H	116	1	HHA101P	87	1
HDA014Z	86	1	HEE801H	116	1	HHA101U	88	1
HDA016P	86	1	HEE970H	116	1	HHA123Z	87	1
HDA017P	86	1	HEE971H	116	1	HHA124P	87	1
HDA018Z	86	1	HEF980H	123	1	HHA125P	87	1
HDA020P	86	1	HEF981H	123	1	HHA125U	88	1
HDA021P	86	1	HEF990H	123	1	HHA126P	87	1
HDA023Z	86	1	HEF991H	123	1	HHA126U	88	1
HDA025P	86	1	HEG063U	98	1	HHA159P	87	1
HDA025U	87	1	HEG100U	98	1	HHA160P	87	1
HDA026P	86	1	HEG125U	98	1	HHA160U	88	1
HDA026U	87	1	HEG160U	98	1	HHA161P	87	1
HDA030Z	86	1	HEG200U	98	1	HHA161U	88	1
HDA032P	86	1	HEG250U	98	1	HHB100P	93	1
HDA033P	86	1	HHA014Z	87	1	HHB101P	93	1
HDA035P	86	1	HHA015P	87	1	HHB125P	93	1
HDA038Z	86	1	HHA016P	87	1	HHB126P	93	1
HDA040P	86	1	HHA017P	87	1	HHB160P	93	1
HDA040U	87	1	HHA018Z	87	1	HHB161P	93	1
HDA041P	86	1	HHA019P	87	1	HHB200P	93	1
HDA041U	87	1	HHA020P	87	1	HHB201P	93	1
HDA048Z	86	1	HHA021P	87	1	HHB225P	93	1
HDA050P	86	1	HHA023Z	87	1	HHB250P	93	1
HDA051P	86	1	HHA024P	87	1	HHB251P	93	1
HDA061Z	86	1	HHA025P	87	1	HHD250U	106	1
HDA063P	86	1	HHA025U	88	1	HHD400U	106	1
HDA063U	87	1	HHA026P	87	1	HHG020U	98	1
HDA064P	86	1	HHA026U	88	1	HHG032U	98	1
HDA064U	87	1	HHA030Z	87	1	HHG063U	98	1
HDA078Z	86	1	HHA031P	87	1	HHG100U	98	1
HDA080P	86	1	HHA032P	87	1	HHG125U	98	1
HDA080U	87	1	HHA033P	87	1	HHG160U	98	1
HDA081P	86	1	HHA038Z	87	1	HHG200U	98	1
HDA081U	87	1	HHA039P	87	1	HHG250U	98	1
HDA098Z	86	1	HHA040P	87	1	HLF180S	143	1
HDA100P	86	1	HHA040U	88	1	HLF190S	143	1
HDA100U	87	1	HHA041P	87	1	HLF199S	143	1
HDA101P	86	1	HHA041U	88	1	HLF280S	143	1
HDA101U	87	1	HHA048Z	87	1	HLF290S	143	1
HDA123Z	86	1	HHA049P	87	1	HLF299S	143	1
HDA125P	86	1	HHA050P	87	1	HLF380S	143	1
HDA125U	87	1	HHA051P	87	1	HLF390S	143	1
HDA126P	86	1	HHA061Z	87	1	HLF399S	143	1
HDA126U	87	1	HHA062P	87	1	HLF480S	143	1
HDA160P	86	1	HHA063P	87	1	HLF490S	143	1
HDA160U	87	1	HHA063U	88	1	HLF499S	143	1
HDA161P	86	1	HHA064P	87	1	HMC180	144	1
HDA161U	87	1	HHA064U	88	1	HMC190	144	1
HEC040H	99	1	HHA078Z	87	1	HMC199	144	1
HEC041H	99	1	HHA079P	87	1	HMC280	144	1
HEC125H	99	1	HHA080P	87	1	HMC290	144	1
HEC126H	99	1	HHA080U	88	1	HMC299	144	1
HEC250H	99	1	HHA081P	87	1	HMC380	144	1
HEC251H	99	1	HHA081U	88	1	HMC390	144	1
HED400H	107	1	HHA098Z	87	1	HMC399	144	1
HED401H	107	1	HHA099P	87	1	HMC480	144	1
HED630H	107	1	HHA100P	87	1	HMC490	144	1
HED631H	107	1	HHA100U	88	1	HMC499	144	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
HMD180	144	1	HNB161P	93	1	HNG125U	98	1
HMD190	144	1	HNB161S	93	1	HNG126U	98	1
HMD199	144	1	HNB200P	93	1	HNG160U	98	1
HMD280	144	1	HNB200S	93	1	HNG161U	98	1
HMD290	144	1	HNB201P	93	1	HNG200U	98	1
HMD299	144	1	HNB201S	93	1	HNG201U	98	1
HMD380	144	1	HNB250P	93	1	HNG250U	98	1
HMD390	144	1	HNB250S	93	1	HNG251U	98	1
HMD399	144	1	HNB251P	93	1	HWAH306ED	62	1
HMD480	144	1	HNB251S	93	1	HWAH306EF	62	1
HMD490	144	1	HNC040H	99	1	HWAH308ED	62	1
HMD499	144	1	HNC041H	99	1	HWAH308EF	62	1
HNA016Z	88	1	HNC125H	99	1	HWAH310ED	62	1
HNA017Z	88	1	HNC126H	99	1	HWAH310EF	62	1
HNA020Z	88	1	HNC250H	99	1	HWAH312ED	62	1
HNA021Z	88	1	HNC251H	99	1	HWAH312EF	62	1
HNA025U	88	1	HND250U	106	1	HWAH316ED	62	1
HNA025Z	88	1	HND251U	106	1	HWAH316EF	62	1
HNA026U	88	1	HND300P	134	1	HWAH320ED	62	1
HNA026Z	88	1	HND301P	134	1	HWAH320EF	62	1
HNA032Z	88	1	HND320P	134	1	HWAH406ED	62	1
HNA033Z	88	1	HND321P	134	1	HWAH406EF	62	1
HNA040U	88	1	HND350P	134	1	HWAH408ED	62	1
HNA040Z	88	1	HND351P	134	1	HWAH408EF	62	1
HNA041U	88	1	HND400H	107	1	HWAH410ED	62	1
HNA041Z	88	1	HND400P	134	1	HWAH410EF	62	1
HNA050Z	88	1	HND400U	106	1	HWAH412ED	62	1
HNA051Z	88	1	HND401H	107	1	HWAH412EF	62	1
HNA063U	88	1	HND401P	134	1	HWAH416ED	62	1
HNA063Z	88	1	HND401U	106	1	HWAH416EF	62	1
HNA064U	88	1	HND630H	107	1	HWAH420ED	62	1
HNA064Z	88	1	HND631H	107	1	HWAH420EF	62	1
HNA080U	88	1	HNE450P	134	1	HWAN306ED	62	1
HNA080Z	88	1	HNE451P	134	1	HWAN306EF	62	1
HNA081U	88	1	HNE500P	134	1	HWAN308ED	62	1
HNA081Z	88	1	HNE501P	134	1	HWAN308EF	62	1
HNA100U	88	1	HNE600P	134	1	HWAN310ED	62	1
HNA100Z	88	1	HNE601P	134	1	HWAN310EF	62	1
HNA101U	88	1	HNE630P	134	1	HWAN312ED	62	1
HNA101Z	88	1	HNE631P	134	1	HWAN312EF	62	1
HNA125U	88	1	HNE800H	116	1	HWAN316ED	62	1
HNA125Z	88	1	HNE800P	134	1	HWAN316EF	62	1
HNA126U	88	1	HNE801H	116	1	HWAN320ED	62	1
HNA126Z	88	1	HNE801P	134	1	HWAN320EF	62	1
HNA160U	88	1	HNE970H	116	1	HWAN406ED	62	1
HNA160Z	88	1	HNE971H	116	1	HWAN406EF	62	1
HNA161U	88	1	HNH980H	123	1	HWAN408ED	62	1
HNA161Z	88	1	HNH981H	123	1	HWAN408EF	62	1
HNB100P	93	1	HNH990H	123	1	HWAN410ED	62	1
HNB100S	93	1	HNH991H	123	1	HWAN410EF	62	1
HNB101P	93	1	HNG020U	98	1	HWAN412ED	62	1
HNB101S	93	1	HNG021U	98	1	HWAN412EF	62	1
HNB125P	93	1	HNG032U	98	1	HWAN416ED	62	1
HNB125S	93	1	HNG033U	98	1	HWAN416EF	62	1
HNB126P	93	1	HNG063U	98	1	HWAN420ED	62	1
HNB126S	93	1	HNG064U	98	1	HWAN420EF	62	1
HNB160P	93	1	HNG100U	98	1	HWBN325ED	62	1
HNB160S	93	1	HNG101U	98	1	HWBN325EF	62	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
HWBN332ED	63	1	HWX502	65	1	HWY610	67	1
HWBN332EF	63	1	HWX503	65	1	HWY611	67	1
HWBN340ED	63	1	HWX504	65	1	HWY612	67	1
HWBN340EF	63	1	HWX505	65	1	HWY613	67	1
HWBN425ED	63	1	HWX506	65	1	HWY620	66	1
HWBN425EF	63	1	HWX511	65	1	HWY621	66	1
HWBN432ED	63	1	HWX512	65	1	HWY622	66	1
HWBN432EF	63	1	HWX513	65	1	HWY623	66	1
HWBN440ED	63	1	HWX514	65	1	HWY624	66	1
HWBN440EF	63	1	HWX515	65	1	HWY625	66	1
HWBP306ED	63	1	HWX516	65	1	HWY626	66	1
HWBP306EF	63	1	HWX521	65	1	HWY627	66	1
HWBP308ED	63	1	HWX522	65	1	HWY630	67	1
HWBP308EF	63	1	HWX523	65	1	HWY631	67	1
HWBP310ED	63	1	HWX524	65	1	HWY632	66	1
HWBP310EF	63	1	HWX525	65	1	HWY633	66	1
HWBP312ED	63	1	HWX526	65	1	HWY635	66	1
HWBP312EF	63	1	HWX533	65	1	HWY636	66	1
HWBP316ED	63	1	HWX534	65	1	HWY637	67	1
HWBP316EF	63	1	HWX535	65	1	HWY638	65	1
HWBP320ED	63	1	HWX536	65	1	HWY639	64	1
HWBP320EF	63	1	HWX541	64	1	HWY640	64	1
HWBP325ED	63	1	HWX542	64	1	HWY641	66	1
HWBP325EF	63	1	HWX543	64	1	HWY642	66	1
HWBP332ED	63	1	HWX544	64	1	HWY644	66	1
HWBP332EF	63	1	HWX545	64	1	HWY646	66	1
HWBP340ED	63	1	HWX546	64	1	HWY647	66	1
HWBP340EF	63	1	HWX547	65	1	HWY648	66	1
HWBP406ED	63	1	HWX548	65	1	HWY649	64	1
HWBP406EF	63	1	HWX551	64	1	HWY650	64	1
HWBP408ED	63	1	HWX552	64	1	HWY651	64	1
HWBP408EF	63	1	HWX553	64	1	HWY652	64	1
HWBP410ED	63	1	HWX554	64	1	HWY654	64	1
HWBP410EF	63	1	HWX555	64	1	HWY655	64	1
HWBP412ED	63	1	HWX556	64	1	HWY660	66	1
HWBP412EF	63	1	HWX560	65	1	HWY661	66	1
HWBP416ED	63	1	HWX561	65	1	HWY662	66	1
HWBP416EF	63	1	HWX565	65	1	HWY663	66	1
HWBP420ED	63	1	HWX570	65	1	HWY664	66	1
HWBP420EF	63	1	HWX571	65	1	HWY665	66	1
HWBP425ED	63	1	HWX572	65	1	HWY670	67	1
HWBP425EF	63	1	HWX573	65	1	HWY671	67	1
HWBP432ED	63	1	HWX611	64	1	HWY672	67	1
HWBP432EF	63	1	HWX612	64	1	HWY673	67	1
HWBP440ED	63	1	HWX613	64	1	HWY674	67	1
HWBP440EF	63	1	HWX621	64	1	HWY675	67	1
HWCP350ED	63	1	HWX622	64	1	HWY690	64	1
HWCP350EF	63	1	HWX623	64	1	HWY691	64	1
HWCP450ED	63	1	HWX633	64	1	HWY692	64	1
HWCP450EF	63	1	HWY500	66	1	HWY693	64	1
HWW065	67	1	HWY501	66	1	HWY695	64	1
HWW068	64	1	HWY502	66	1	HWY696	64	1
HWW069	64	1	HWY503	66	1	HWY697	66	1
HWW260	66	1	HWY508	67	1	HWY701	66	1
HWW261	66	1	HWY509	67	1	HWY702	66	1
HWW266	66	1	HWY570	67	1	HWY703	66	1
HWW269	66	1	HWY571	67	1	HWY704	66	1
HWX501	65	1	HWY572	67	1	HWY705	66	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
HWY706	66	1	HXC024H	100	1	HXE055H	117	1
HWY707	66	1	HXC025H	108	1	HXE065H	118	1
HWY708	66	1	HXC026H	108	1	HXE066H	118	1
HWY750	64	1	HXC030H	100	1	HXF001H	124	1
HWY751	64	1	HXC031H	100	1	HXF002H	124	1
HWY752	64	1	HXC039H	100	1	HXF003H	124	1
HWY753	64	1	HXC040H	100	1	HXF004H	124	1
HWY754	64	1	HXC042H	100	1	HXF005H	124	1
HWY755	64	1	HXC051H	100	1	HXF008H	124	1
HWY756	64	1	HXC053H	100	1	HXF030H	124	1
HWY757	64	1	HXC054H	100	1	HXF031H	124	1
HWY758	64	1	HXC055H	100	1	HXF039H	124	1
HWY759	64	1	HXC065H	100	1	HXF040H	124	1
HWY760	64	1	HXC066H	100	1	HXF042H	124	1
HWY761	64	1	HXD004P	134	1	HXF051H	124	1
HWY762	64	1	HXD005P	134	1	HXF053H	124	1
HWY763	64	1	HXD006P	134	1	HXF054H	124	1
HWY764	64	1	HXD014P	134	1	HXF055H	124	1
HWY765	64	1	HXD015P	134	1	HYA014H	90	1
HXA001H	89	1	HXD022P	134	1	HYA015H	90	1
HXA002H	89	1	HXD023P	134	1	HYA019H	90	1
HXA003H	89	1	HXD024P	134	1	HYA021H	90	1
HXA004H	89	1	HXD030H	108	1	HYA022H	90	1
HXA005H	89	1	HXD031H	108	1	HYA023H	90	1
HXA011H	89	1	HXD031P	134	1	HYA024H	90	1
HXA013H	89	1	HXD039H	108	1	HYA027H	90	1
HXA014H	89	1	HXD040H	108	1	HYA028H	90	1
HXA015H	89	1	HXD042H	108	1	HYA033H	90	1
HXA021H	89	1	HXD042P	134	1	HYA035H	90	1
HXA024H	89	1	HXD051H	108	1	HYA036H	90	1
HXA025H	89	1	HXD053H	108	1	HYA086H	90	1
HXA026H	89	1	HXD054H	108	1	HYA087H	90	1
HXA030H	90	1	HXD055H	108	1	HYA088H	90	1
HXA031H	90	1	HXD065H	108	1	HYA089H	90	1
HXA039H	90	1	HXD068H	108	1	HYA090H	90	1
HXA051H	89	1	HXE004P	134	1	HYA091H	90	1
HXA053H	89	1	HXE005P	134	1	HYA092H	95	1
HXA054H	89	1	HXE006P	134	1	HYA094H	95	1
HXA055H	89	1	HXE011H	117	1	HYB010H	95	1
HXB040H	95	1	HXE013H	117	1	HYB011H	95	1
HXB042H	95	1	HXE014H	117	1	HYB012H	95	1
HXB068H	100	1	HXE014P	134	1	HYB019H	95	1
HXB069H	100	1	HXE015H	117	1	HYB021H	95	1
HXB070H	100	1	HXE015P	134	1	HYB022H	95	1
HXB071H	100	1	HXE018H	117	1	HYB023H	95	1
HXC001H	100	1	HXE019H	117	1	HYB024H	95	1
HXC002H	100	1	HXE022P	134	1	HYB025H	95	1
HXC003H	100	1	HXE023P	134	1	HYB026H	95	1
HXC004H	100	1	HXE024P	134	1	HYB027H	95	1
HXC005H	100	1	HXE030H	118	1	HYB028H	95	1
HXC008H	100	1	HXE031H	118	1	HYC003H	101	1
HXC011H	100	1	HXE031P	134	1	HYC004H	101	1
HXC013H	100	1	HXE040H	118	1	HYC010H	100	1
HXC014H	100	1	HXE042H	118	1	HYC011H	101	1
HXC015H	100	1	HXE042P	134	1	HYC019H	101	1
HXC018H	100	1	HXE051H	117	1	HYC021H	101	1
HXC019H	100	1	HXE053H	117	1	HYC022H	101	1
HXC021H	100	1	HXE054H	117	1	HYC025H	101	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
HYC026H	101	1	IU18S	30	1	KDN363A	50	203
HYC027H	101	1	IU26S	30	1	KDN363B	20	203
HYC028H	101	1	IU36S	30	1	KDN380A	50	203
HYC031H	101	1	IU39S	30	1	KDN380B	10	203
HYC032H	101	1	IU52S	30	1	KDN463A	25	203
HYC041H	101	1	IU54S	30	1	KDN463B	10	203
HYD003H	109	1	IU65S	30	1	KDN480A	25	203
HYD004H	109	1	IU72S	30	1	KDN480B	10	203
HYD005H	109	1	IU90S	30	1	KF50S	10	202
HYD006H	109	1				KF81A	10	202
HYD007H	109	1	J			KF81D	10	203
HYD008H	109	1	JG220U	228	1	KF82A	10	202
HYD010H	109	1	JG232U	228	1	KF83A	10	202
HYD011H	109	1	JG240U	228	1	KF84A	10	203
HYD012H	109	1	JG263U	228	1	KZ021	1 set	202
HYD013H	109	1	JG320U	228	1	KZ022	1 set	202
HYD014H	109	1	JG325S	228	1	KZ023A	1 set	202
HYD015H	109	1	JG332U	228	1	KZ024	1 set	202
HYD019H	109	1	JG340U	228	1	KZN021	1 set	203
HYD021H	109	1	JG363S	228	1	KZN023	1 set	203
HYD022H	109	1	JG380S	228	1	KZN024	1 set	203
HYD023H	109	1	JG432U	228	1			
HYD024H	109	1	JG463U	228	1	L		
HYD025H	109	1	JH425S	228	1	LF300G	10	159
HYD026H	109	1	JH440S	228	1	LF300M	10	160
HYD027H	109	1	JH463S	228	1	LF301G	10	159
HYD028H	109	1	JP024	44	1	LF301M	10	160
HYD031H	109	1				LF302G	10	159
HYD031P	134	1	K			LF302M	10	160
HYD032H	109	1	K018	44	1	LF304G	10	159
HYD033H	109	1	K023	44	1	LF304M	10	160
HYD034H	109	1	K024	44	1	LF306G	10	159
HYD066H	108	1	K025	44	1	LF306M	10	160
HYD093H	109	1	KB163B	202	10	LF308G	10	159
HYD095H	109	1	KB163I	202	50	LF308M	10	160
HYD096H	109	1	KB163N	202	50	LF310G	10	159
HYD097H	109	1	KB163P	202	50	LF310M	10	160
HYD098H	109	1	KB190B	202	10	LF312G	10	159
HYD200P	134	1	KB190C	202	10	LF312M	10	160
HYE007H	117	1	KB263A	202	10	LF316G	10	159
HYE008H	117	1	KB263C	202	10	LF316M	10	160
HYE021H	117	1	KB280B	202	10	LF320G	10	159
HYE022H	117	1	KB363A	202	10	LF320M	10	160
HYE025H	117	1	KB363B	202	20	LF325G	10	159
HYE026H	117	1	KB363C	202	10	LF325M	10	160
HYE031H	118	1	KB380B	202	10	LF332G	10	159
HYE032H	118	1	KB463A	202	10	LF332M	10	160
HYE033H	118	1	KB463C	202	10	LF402G	10	159
HYE034H	118	1	KB480B	202	10	LF402M	10	160
HYE200P	134	1	KD190B	203	10	LF404G	10	159
HYE201P	134	1	KDN163A	203	100	LF404M	10	160
HYG021H	101	1	KDN163B	203	50	LF406G	10	159
HYG022H	101	1	KDN180A	203	100	LF406M	10	160
HYG041H	101	1	KDN180B	203	50	LF408G	10	159
			KDN263A	203	50	LF408M	10	160
			KDN263B	203	20	LF410G	10	159
I			KDN280A	203	50	LF410M	10	160
IU108S	30	1	KDN280B	203	10	LF412G	10	159
IU13S	30	1						

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
LF412M	160	10	MM509N	161	1	MY232E	140	6
LF416G	159	10	MM510N	161	1	MY240E	140	6
LF416M	160	10	MM511N	161	1	MY250E	140	6
LF420G	159	10	MM512N	161	1	MY263E	140	6
LF420M	160	10	MM513N	161	1	MY301E	140	4
LF425G	159	10	MU102A	141	12	MY302E	140	4
LF425M	160	10	MU104A	141	12	MY304E	140	4
LF432G	159	10	MU106A	141	12	MY306E	140	4
LF432M	160	10	MU110A	141	12	MY310E	140	4
LF440G	159	10	MU116A	141	12	MY316E	140	4
LF440M	160	10	MU120A	141	12	MY320E	140	4
LF445G	159	10	MU125A	141	12	MY325E	140	4
LF445M	160	10	MU132A	141	12	MY332E	140	4
LF450G	159	10	MU140A	141	12	MY340E	140	4
LF450M	160	10	MU150A	141	12	MY350E	140	4
LF516G	159	10	MU163A	141	12	MY363E	140	4
LF516M	160	10	MU202A	141	6	MZ201	145	1
LF520G	159	10	MU204A	141	6	MZ202	145	1
LF520M	160	10	MU206A	141	6	MZ203	145	1
LF525G	159	10	MU210A	141	6	MZ204	145	1
LF525M	160	10	MU216A	141	6	MZ205	145	1
LF532G	159	10	MU220A	141	6	MZ206	145	1
LF532M	160	10	MU225A	141	6	MZ212	145	1
LF540G	159	10	MU232A	141	6	MZ214	145	1
LF540M	160	10	MU240A	141	6	MZ520N	161	1
LF545G	159	10	MU250A	141	6	MZ521N	161	1
LF545M	160	10	MU263A	141	6	MZ527N	161	1
LF550G	159	10	MU302A	141	4	MZ528N	161	1
LF550M	160	10	MU304A	141	4	MZ529N	161	1
LF563G	159	10	MU306A	141	4	MZ530N	161	1
LF563M	160	10	MU310A	141	4	MZN175	145	1
LF580G	159	10	MU316A	141	4			
LF580M	160	10	MU320A	141	4	N		
LF590G	159	10	MU325A	141	4	NC100A	142	12
LF590M	160	10	MU332A	141	4	NC101A	142	12
LF599G	159	10	MU340A	141	4	NC102A	142	12
LF599M	160	10	MU350A	141	4	NC104A	142	12
LR601	158	10	MU363A	141	4	NC106A	142	12
LR602	158	5	MY101E	140	12	NC110A	142	12
LR603	158	3	MY102E	140	12	NC116A	142	12
LR604	158	2	MY104E	140	12	NC120A	142	12
LR612	158	5	MY106E	140	12	NC125A	142	12
LR701	158	6	MY110E	140	12	NC132A	142	12
LR702	158	3	MY116E	140	12	NC140A	142	12
LR703	158	2	MY120E	140	12	NC150A	142	12
LR704	158	1	MY125E	140	12	NC163A	142	12
LR712	158	3	MY132E	140	12	NC200A	142	6
LSN501	158	12	MY140E	140	12	NC201A	142	6
			MY150E	140	12	NC202A	142	6
M			MY163E	140	12	NC204A	142	6
MM501N	161	1	MY201E	140	6	NC206A	142	6
MM502N	161	1	MY202E	140	6	NC210A	142	6
MM503N	161	1	MY204E	140	6	NC216A	142	6
MM504N	161	1	MY206E	140	6	NC220A	142	6
MM505N	161	1	MY210E	140	6	NC225A	142	6
MM506N	161	1	MY216E	140	6	NC232A	142	6
MM507N	161	1	MY220E	140	6	NC240A	142	6
MM508N	161	1	MY225E	140	6	NC250A	142	6

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
NC263A	142	6	SFH125	169	12	SVN133	196	12
NC300A	142	4	SFH132	169	12	SVN134	196	12
NC301A	142	4	SFH225	169	6	SVN135	196	12
NC302A	142	4	SFH232	169	6	SVN136	196	12
NC304A	142	4	SFM125	169	12	SVN221	196	12
NC306A	142	4	SFM132	169	12	SVN222	196	12
NC310A	142	4	SFT125	169	12			
NC316A	142	4	SFT132	169	12	T		
NC320A	142	4	SFT140	169	12	TG501A	233	1
NC325A	142	4	SFT225	169	6			
NC332A	142	4	SFT232	169	6	U		
NC340A	142	4	SFT240	169	6	UC969	52	1 set
NC350A	142	4	SFT340	169	3			
NC363A	142	4	SFT440	169	4	V		
			SK001	198	1	VE106U	42	1
P			SK600	198	1	VE110U	42	1
P031F	44	1	SK601	198	1	VE112U	42	1
P032F	44	1	SK602	198	1	VE118U	42	1
P032H	44	1	SK603	198	1	VE212U	42	1
			SK604	198	1	VE218U	42	1
S			SK606	198	1	VE312U	42	1
SBN116	168	12	SM500	197	1	VE318U	42	1
SBN125	168	12	SM501	197	1	VE412U	42	1
SBN132	168	12	SM600	197	1	VF104PM	38	1
SBN140	168	12	SM601	197	1	VF104PVA	28	1
SBN163	168	12	SPM220E	163	1	VF104TM	38	1
SBN180	168	12	SPM240E	163	1	VF104TVA	28	1
SBN190	168	12	SPM265E	163	1	VF108PM	38	1
SBN199	168	12	SPM420E	163	1	VF108PVA	28	1
SBN216	168	12	SPM440E	163	1	VF108TM	38	1
SBN225	168	12	SPM465E	163	1	VF108TVA	28	1
SBN232	168	12	SPN208S	164	1	VF112PM	38	1
SBN233	168	6	SPN408S	164	1	VF112PVA	28	1
SBN240	168	6	SPN504	164	1	VF112TM	38	1
SBN263	168	6	SPN505	164	1	VF112TVA	28	1
SBN280	168	6	SRA00505	197	1	VF118PM	38	1
SBN290	168	6	SRA01005	197	1	VF118TM	38	1
SBN299	168	6	SRA01505	197	1	VF122PM	38	1
SBN316	168	6	SRA02005	197	1	VF122TM	38	1
SBN325	168	6	SRA02505	197	1	VF212PM	38	1
SBN332	168	6	SRC04005	197	1	VF212TM	38	1
SBN333	168	4	SRC06005	197	1	VF218PM	38	1
SBN340	168	4	SRD08005	197	1	VF218TM	38	1
SBN363	168	4	SRD10005	197	1	VF312PM	38	1
SBN380	168	4	SRD15005	197	1	VF312TM	38	1
SBN390	168	4	SRE20005	197	1	VF318PM	38	1
SBN399	168	4	SRI03005	197	1	VF318TM	38	1
SBN416	168	6	SVN121	196	12	VF412PM	38	1
SBN425	168	6	SVN122	196	12	VF412TM	38	1
SBN432	168	6	SVN123	196	12	VF418PM	38	1
SBN433	168	3	SVN124	196	12	VF418TM	38	1
SBN440	168	3	SVN125	196	12	VS104PM	39	1
SBN463	168	3	SVN126	196	12	VS104PVA	28	1
SBN480	168	3	SVN127	196	12	VS104TM	39	1
SBN490	168	3	SVN128	196	12	VS104TVA	28	1
SBN499	168	3	SVN129	196	12	VS108PM	39	1
SF263	169	3	SVN131	196	12	VS108PVA	28	1
SF463	169	1	SVN132	196	12	VS108TM	39	1

Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.	Cat. ref.	Page	Pack Qty.
VS108TVA	28	1	VS212TM	39	1	VS418TM	39	1
VS112PM	39	1	VS218PM	39	1	VU12NSG	34	1
VS112TM	39	1	VS218TM	39	1	VU24NSG	34	1
VS112TVA	28	1	VS312PM	39	1	VU36NSG	34	1
VS118PM	39	1	VS312TM	39	1	VU48NSG	34	1
VS118TM	39	1	VS318PM	39	1	VZ303	44	1
VS118TVA	28	1	VS318TM	39	1	VZ308	44	1
VS122PM	39	1	VS412PM	39	1	VZ309	44	1
VS122TM	39	1	VS412TM	39	1	VZ310	44	1
VS212PM	39	1	VS418PM	39	1	VZ311	44	1

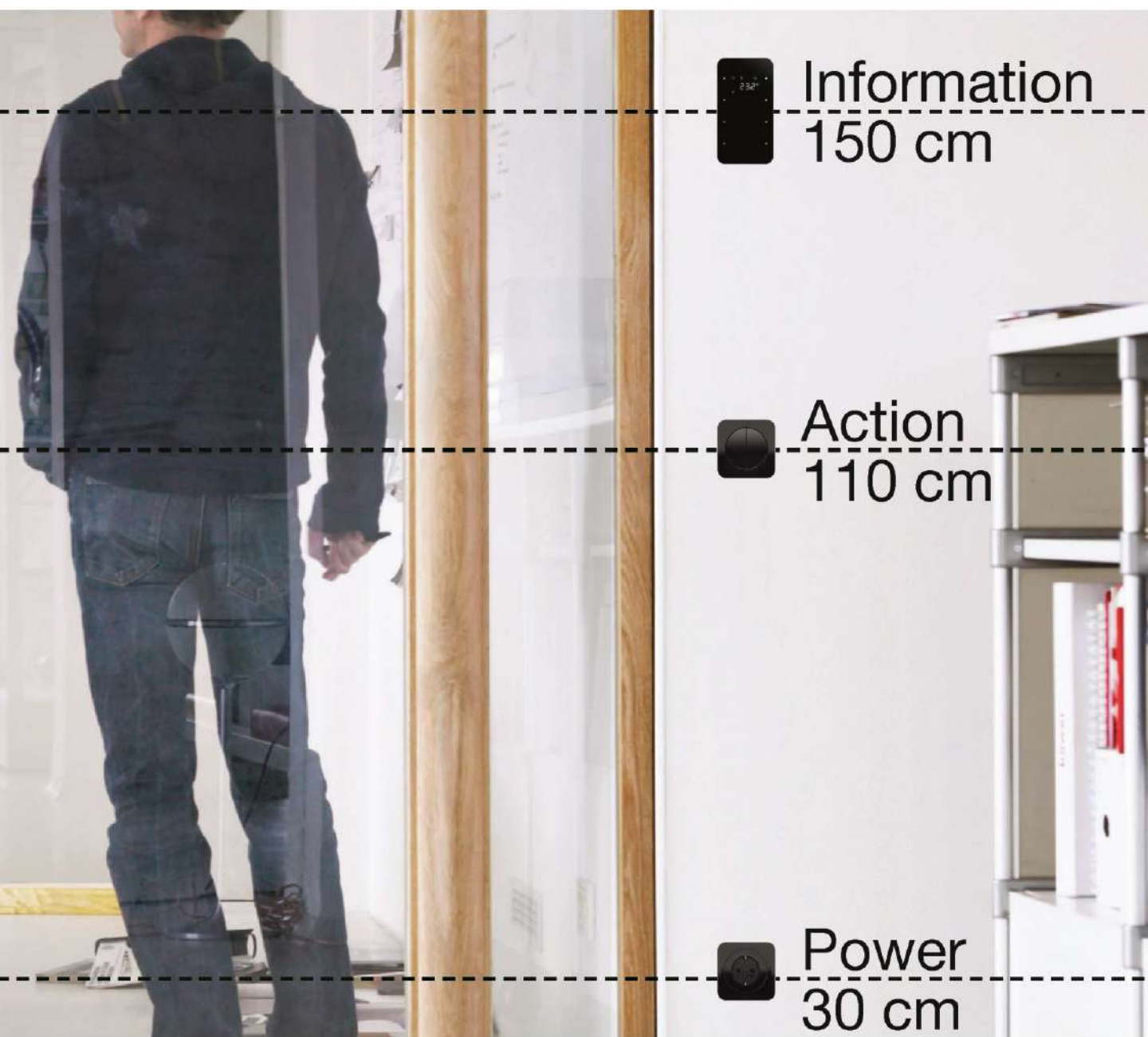
Terms and Conditions

All informations about the product that input in this catalogue (type, packing, size, color, etc.) are subject to change without prior notification.

Perfect location

We have all got so used to it, that we don't think about it anymore. And yet the "Where" and "How" of switch installation follows a clearly thought-out concept. Switches and socket outlets are always installed in such a way as to meet human requirements: information and control panels at eye level, switches close at hand and socket outlets on the floor, where plugs and cables impede us the least. This ensures not only maximum operating comfort, but also a standardised appearance throughout the building.





Small enclosures Easy to use

As a specialist for housing and commercial premises enclosures, Hager provides a large range of products. Plastic or steel enclosures, flush or surface mounting, there is always a Hager solution to answer to your need.

Small Enclosures

Page

01 Cosmos enclosures	28
02 Icos enclosures	28
03 IU enclosures	30
04 Volta flush enclosures	32
05 Golf enclosures	36
06 Vector enclosures	42
07 Accessories for enclosures	44
08 Orion plus metal IP65 enclosures	46
09 Orion plus GRP IP66/65 enclosures	49
10 Accessories for orion plus enclosures	51

Cosmos flush mounting enclosure with hinged cover 1 row for 4, 8 and 14 modules

Supplied with:

- plain/ transparent door for devices up to 61mm installation depth
- DIN profile for modular devices 46mm under the cover

- terminals neutral & earth fixed to the base with metallic screw

Wall boxes symmetrically, therefore they can be turned around by 180°

Cable entries:

knock-out type, top, bottom, side cover tube/cable entry

Rated insulated Voltage
AC 400V/ 50Hz

Rated current up to 63A

Insulation Class II

Colour
RAL9010

IP rating

IP30 without door
IP40 with door

In accordance with
IEC 61439-3



IEC 60 695-2-1/0
and 60 695-2-1/1



VF104PVA



VF104TVA



VF108PVA



VF108TVA



VF112PVA



VF112TVA

Description

Pack Qty.
Cat. ref.

1 row 4 modules
w.123 x h.165 x d.59 (wall recess)

N : 2 x 16 + 2 x 10mm²
E : 2 x 16 + 2 x 10mm²

1 Transparant
1 Plain

VF104TVA
VF104PVA

1 row 8 modules
w.195 x h.165 x d.59 (wall recess)

N : 3 x 16 + 3 x 10mm²
E : 3 x 16 + 3 x 10mm²

1 Transparant
1 Plain

VF108TVA
VF108PVA

1 row 12 modules
w.287 x h.165 x d.59 (wall recess)

N : 5 x 16 + 5 x 10mm²
E : 5 x 16 + 5 x 10mm²

1 Transparant
1 Plain

VF112TVA
VF112PVA

Icos Enclosures

Surface mounting enclosure with hinged cover 1 row for 5, 8, 14 and 20 modules

Supplied with:

- plain/ transparent door for devices up to 61mm installation depth
- DIN profile for modular devices 46mm under the cover

- terminals neutral & earth fixed to the base with metallic screw

Base can be turned around by 180° for wall mounting

Cable entries:

knock-out type, top, bottom, side cover trunking/cable entry

Rated insulated voltage
AC 400V/ 50Hz

Rated current up to 63A

Insulation Class II

Colour
RAL9010

IP rating

IP30 without door
IP40 with door

In accordance with
IEC 61439-3



EC 60 695-2-1/0
and 60 695-2-1/1



VS112TVA



VS118TVA

Description

Pack Qty.
Cat. ref.

1 row 4 modules
w.137 x h.188 x d.93

N : 2 x 16 + 2 x 10mm²
E : 2 x 16 + 2 x 10mm²

1 Transparant
1 Plain

VS104TVA
VS104PVA

1 row 8 modules
w.210 x h.188 x d.93

N : 4 x 16 + 5 x 10mm²
E : 4 x 16 + 5 x 10mm²

1 Transparant
1 Plain

VS108TVA
VS108PVA

1 row 12 modules
w.302 x h.188 x d.93

N : 1 x 25 + 5 x 16mm² + 5 x 10mm²
E : 1 x 25 + 5 x 16mm² + 5 x 10mm²

1 Transparant

VS112TVA

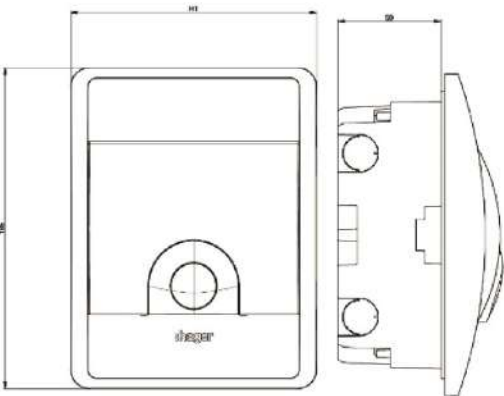
1 row 18 modules
w.410 x h.188 x d.93

N : 1 x 25 + 8 x 16mm² + 8 x 10mm²
E : 1 x 25 + 8 x 16mm² + 8 x 10mm²

1 Transparant

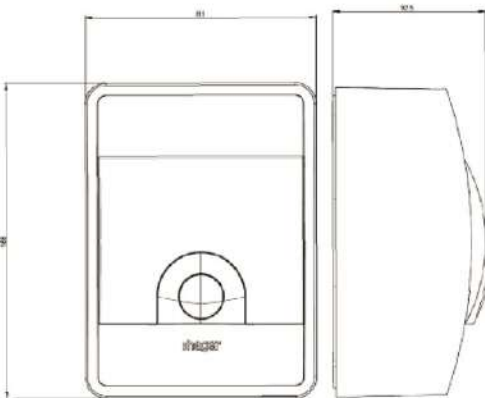
VS118TVA

cosmos



References	Dimension (mm)		
	H	W	D
VF104PVA/TVA	185	143	59
VF108PVA/TVA	185	215	59
VF112PVA/TVA	185	307	59

icos



References	Dimension (mm)		
	H	W	D
VS104PVA/TVA	188	137	93
VS108PVA/TVA	188	210	93
VS112PVA/TVA	188	302	93
VS118PVA/TVA	188	410	93

- IU metal enclosure IP41
 - Powder coating to RAL 9002
 - With rectangular knock-out
 - Removable top and bottom plates
 - Reversible door
 - 1.2mm sheet steel, epoxy for trunking
- In accordance with IEC 61439-3



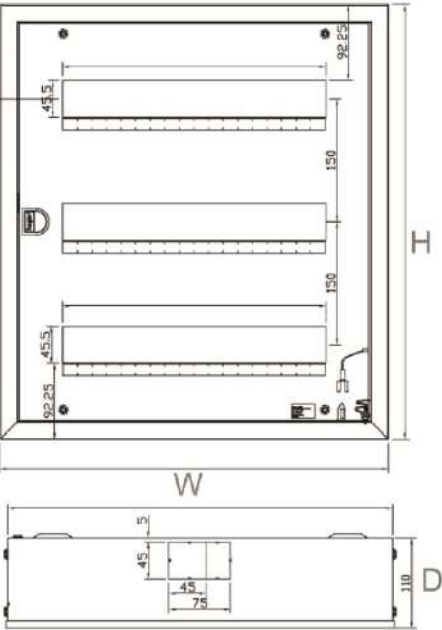
IU26S



IU36S

Description		Pack Qty.	Cat. ref.
Metal enclosure surface mounting			
1 row 13 modules w.355 x h.275 x d.110	N : 13 x 16mm ² E : 13 x 16mm ²	1	IU13S
1 row 18 modules w.475 x h.275 x d.110	N : 18 x 16mm ² E : 18 x 16mm ²	1	IU18S
2 rows 26 modules w.355 x h.380 x d.110	N : 2 x (13 x 16mm ²) E : 26 x 16mm ²	1	IU26S
2 rows 36 modules w.475 x h.380 x d.110	N : 2 x (18 x 16mm ²) E : 36 x 16mm ²	1	IU36S
3 rows 39 modules w.355 x h.530 x d.110	N : 3 x (13 x 16mm ²) E : 39 x 16mm ²	1	IU39S
4 rows 52 modules w.355 x h.680 x d.110	N : 4 x (13 x 16mm ²) E : 2 x (26 x 16mm ²)	1	IU52S
3 rows 54 modules w.475 x h.530 x d.110	N : 3 x (18 x 16 mm ²) E : 36 x 16mm ² + 18 x 16 mm ²	1	IU54S
5 rows 65 modules w.355 x h.830 x d.110	N : 4 x (13 x 16mm ²) E : 2 x (26 x 16mm ²)	1	IU65S
4 rows 72 modules w.475 x h.680 x d.110	N : 4 x (18 x 16mm ²) E : 2 x (36 x 16mm ²)	1	IU72S
5 rows 90 modules w.475 x h.830 x d.110	N : 5 x (18 x 16mm ²) E : 2 x (36 x 16mm ²) + (18 x 16mm ²)	1	IU90S
6 rows 108 modules w.475 x h.975 x d.110	N : 6 x (18 x 16mm ²) E : 3 x (36 x 16mm ²)	1	IU108S

IU



Reference	No of Rows	Dimension (mm)		
		W	H	D
IU13S	1	355	275	110
IU26S	2	355	380	110
IU39S	3	355	530	110
IU52S	4	355	680	110
IU65S	5	355	680	110

IU18S	1	475	275	110
IU36S	2	475	380	110
IU54S	3	475	530	110
IU72S	4	475	680	110
IU90S	5	475	830	110
IU108S	6	475	980	110

IU54MS	3	475	632	110
IU72MS	4	475	782	110
IU90MS	5	475	932	110

New generation volta flush enclosures

For installation under plaster and in hollow wall mounting

When building or renovating residential buildings, compact solutions are often required for electrical and multimedia installations.

The volta small distribution board is especially suitable thanks to its easy assembly in walls as well as its manifold versions with 30% larger wiring space by lateral wiring trunking and larger upper and lower connection areas.



The advantages for you

- Protection against power theft-the screws can be sealed
- High degree of safety-the door lock can be retrofitted without requiring any additional conversions
- Large selection of design variants
- Installation even in thin walls
- 30% more wiring space
- Power distributor
- Shorter mounting time
- Swift mounting in cavity walls

Technical data :

- From 1 to 4 rows
- From 12 to 48 modules
- IP30
- Protection class II, totally insulated



1 Larger upper and lower connection areas

Offering more space for terminals and wiring.



2 All wall sleeves avail of separate side areas

For cable management and retaining clamps.



3 Retaining clamps

In the door for circuit tables and plans.



4 A miniature spirit level

Is integrated in all wall sleeves as an installation aid. It can be used for aligning.



5 By pressing in the screw in the cavity wall anchor

The levers swivel outwards and click into place. The wall sleeve is fixed into place.



6 The slides are removed

Before cables are entered. Pre-punched segments on the side facilitate knockouts.



7 New quick connection for the cover

Simply turn to secure or release.



8 Flat version

Any standard version with 90 mm installation depth can be converted into a "flat version" with 72 mm installation depth using the raising frame.



Flush mounting enclosures with doors 1-4 rows, 12-48 modules
Enclosures manufactured from insulated material.
Frame and door manufactured from metal.

Delivered with earth bar, blanking clips and circuit identification labelling.

In accordance with IEC 61439-3

Reversible door

Colour white RAL 9016



VU12NSG

VU24NSG

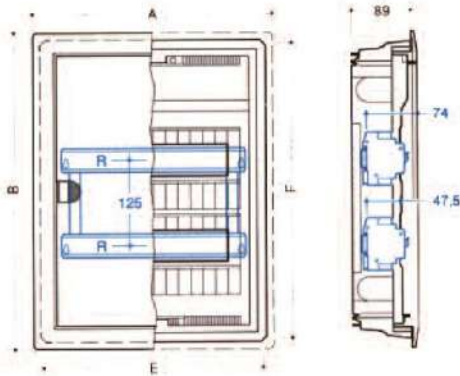


VU36NSG

VU48NSG

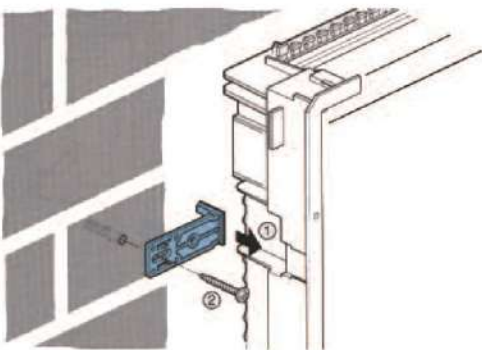
Description		Pack Qty.	Cat. ref.
Flush mounting metal door 1 row 12 modules Wall recess w.330 x h.317 x d.89 Outside w.348 x h.336 x d.9	$2 + 1/2$  E : 13 x 10mm ² N : 13 x 10mm ²	1	VU12NSG
Flush mounting metal door 2 rows 24 modules Wall recess w.330 x h.442 x d.89 Outside w.348 x h.461 x d.9	$4 + 2/2$  E : 5 x 16 + 20 x 10mm ² N : 5 x 16 + 20 x 10mm ²	1	VU24NSG
Flush mounting metal door 3 rows 36 modules Wall recess w.330 x h.567 x d.89 Outside w.348 x h.586 x d.9	$6 + 3/2$  E : 2 x (8 x 16 + 9 x 10mm ²) N : 2 x (8 x 16 + 9 x 10mm ²)	1	VU36NSG
Flush mounting metal door 4 rows 48 modules Wall recess w.330 x h.692 x d.89 Outside w.348 x h.711 x d.9	$8 + 4/2$  E : 2 x (8 x 16 + 9 x 10mm ²) + (6 x 16 mm ² + 7 x 10mm ²) N : 2 x (8 x 16 + 9 x 10mm ²) + (6 x 16 mm ² + 7 x 10mm ²)	1	VU48NSG

VU 24NSG

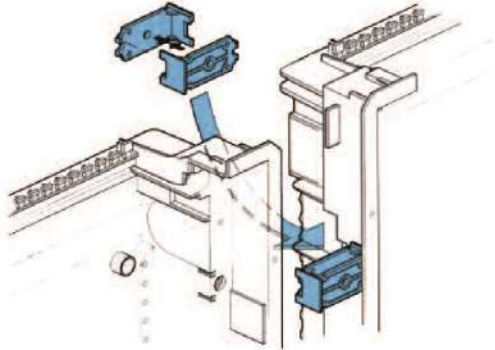


Enclosure volta		Outside			Inside	
		R	A	B	E	F
VU12NSG	12	348	356	300	315	322
VU24NSG	24	348	505	300	315	471
VU36NSG	36	348	630	300	315	596
VU48NSG	48	348	755	300	315	721

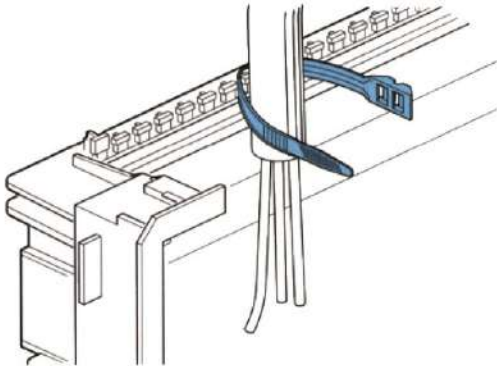
Wall mounting bracket



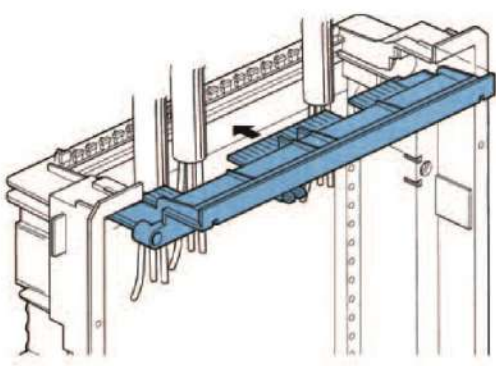
Connecting two enclosures



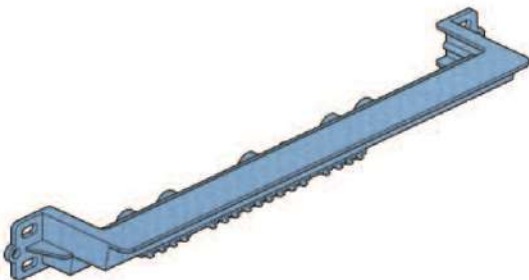
Conduit entry



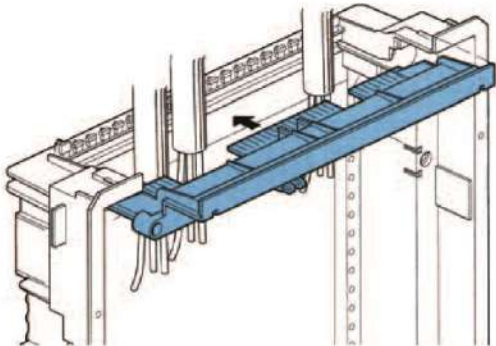
Cable entry plate



Connection assembly



Mounting of lock and key



Small enclosure golf VF & VS

The enclosure for flush or surface mounting installation

When building or renovating residential buildings, compact solutions are often required for electrical installations. The golf VF & VS small enclosure is particularly suitable thanks to its ease of mounting on walls.

The small enclosure is easily and swiftly mounted and offers space for a large number of modular devices. Thanks to a patented convenient cable management system, cables can be laid safely and swiftly.



reddot design award



The advantages for you

- Easy installation of the flush / surface-mounted enclosure can be turned through 180°
- Sure 6-point fixture with 2 keyholes arranged in the centre
- Optimised pipe and trunking entries
- More wiring space between the modular devices and terminals as well as behind the DIN rails
- Clean and convenient wiring thanks to patented integrated cable management system
- Unbreakable door hinges
- Same door for VS surface-mounted version and VF flush mounted version

Technical data :

- Flush / Surface mounted
- Assembly of devices up to 63A
- Ingress protection IP30 (without door), IP40 (with door)
- Isolation class II, double insulation
- Impact resistance IK07



1 Convenient cable management

Clean and easy wiring thanks to patented, integrated fixation for cable clips and cable ties.



2 Snap-in PE/N terminal strips

Quick Connect or brass terminal strips can be easily mounted by simply snapping into the wall sleeve.



3 Self-explanatory graphics in the wall box

All product features are explained by integrated graphics in the wall box.



4 More space for wiring

Easier wiring of the installed modular devices guaranteed by larger wiring space between the devices and PE/N terminals. More space behind the DIN rails facilitates installation of insulated wires.



5 Easily-accessible DIN rail mounting saves time and effort

DIN rail can be swiftly mounted using the keyhole on the side. The screwed fixture is outside the modular device area providing easy access.



6 Vertical and horizontal connecting of the enclosures

Connecting pieces permits safe, vertical and horizontal connection of the enclosures.



7 Swift and safe cover fixing with 1/4 turn

Position the cover and turn the screw through 90°. Quick-fixing screws can not get lost.



8 Unbreakable door hinges

Defective hinges are now a thing of the past. Same door for surface-mounted and flush-mounted distributors. Symmetrical door installation; door hinges can be mounted on left or right.

Flush mounted distribution boxes from 1 to 4 rows, from 4 to 72 modules

Supplied with:

- Opaque or transparent door for devices up to 70mm installation depth
- DIN profile for modular devices 47mm under the cover.

Distance between the DIN rails axis 125mm.
Distribution boards manufactured from plastic material.
Door can be fitted on right or left without dismounting the cover; optional lock and keys.
Door opens up to 180°. Wall box and cover can be installed either way up.

- Removable cable entry slider.
- Cable entries for cable and conduit.

Components included

- Brass screw-type terminals
- Marking stickers
- Towers to fix cable ties for clear cable management are included, cable-retaining clips are optional (except in 4 and 8 enclosures.)

- Carton packaging
- DIN rails directly fixed to the wall box allow room for wiring behind them.

IEC 61439-1 and IEC 61439-3

IEC 60 695-2-1/0 and 60 695-2-1/1



VF212TM



VF218PM



VF312TM



VF318PM

Description			Pack Qty.	Cat. ref.
1 row 4 modules w.170 x h.189 x d.72	2 + 1/2	N : 2 x 16mm ² + 2 x 10mm ² E : 2 x 16mm ² + 2 x 10mm ²	1 Transparent 1 Plain	VF104TM VF104PM
1 row 8 modules w.242 x h.189 x d.72	2 + 1/2	N : 2 x 16mm ² + 4 x 10mm ² E : 2 x 16mm ² + 4 x 10mm ²	1 Transparent 1 Plain	VF108TM VF108PM
1 row 12 modules w.318 x h.257 x d.72	2 + 1/2	N : 4 x 16mm ² + 6 x 10mm ² E : 4 x 16mm ² + 6 x 10mm ²	1 Transparent 1 Plain	VF112TM VF112PM
1 row 18 modules w.426 x h.257 x d.72	2 + 1/2	N : 7 x 16mm ² + 9 x 10mm ² E : 7 x 16mm ² + 9 x 10mm ²	1 Transparent 1 Plain	VF118TM VF118PM
1 row 22 modules w.318 x h.257 x d.72	2 + 1/2	N : 8 x 16 mm ² + 10 x 10 mm ² E : 8 x 16 mm ² + 10 x 10 mm ²	1 Transparent 1 Plain	VF122TM VF122PM
2 rows 24 modules w.318 x h.382 x d.72	4 + 2 1/2	N : (5 x 16mm ² + 6 x 10mm ²) x 2 E : 9 x 16mm ² + 13 x 10mm ²	1 Transparent 1 Plain	VF212TM VF212PM
2 rows 36 modules w.426 x h.382 x d.72	2 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16 mm ² + 8 x 10 mm ²) x 2 E : 1 x 25 mm ² + 14 x 16 mm ² + 17 x 10 mm ²	1 Transparent 1 Plain	VF218TM VF218PM
3 rows 36 modules w.318 x h.507 x d.72	3 x 2 + 1/2	N : (1 x 25mm ² + 7 x 16mm ² + 8 x 10mm ²) x 2 E : 1 x 25mm ² + 14 x 16mm ² + 17 x 10mm ²	1 Transparent 1 Plain	VF312TM VF312PM
3 rows 54 modules w.426 x h.507 x d.72	3 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16 mm ² + 8 x 10 mm ²) x 2 + (7 x 16 mm ² + 9 x 10 mm ²) E : (1 x 25 mm ² + 14 x 16 mm ² + 17 x 10 mm ²) + (7 x 16 mm ² + 9 x 10 mm ²)	1 Transparent 1 Plain	VF318TM VF318PM
4 rows 48 modules w.318 x h.652 x d.72	4 x 2 + 1/2	N : (1 x 25mm ² + 6 x 16mm ² + 7 x 10mm ²) x 3 E : (1 x 25mm ² + 10 x 16mm ² + 13 x 10mm ²) + (9 x 16mm ² + 11 x 10mm ²)	1 Transparent 1 Plain	VF412TM VF412PM
4 rows 72 modules w.426 x h.652 x d.72	3 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16mm ² + 8 x 10mm ²) x 4 E : (1 x 25 mm ² + 14 x 16 mm ² + 17 x 10 mm ²) x 2	1 Transparent 1 Plain	VF418TM VF418PM

Surface mounted distribution box from 1 to 4 rows, from 4 to 72 modules

Supplied with:

- opaque or transparent door for devices up to 70mm installation depth.
- DIN profile for modular devices 47mm under the cover.

Distance between the DIN profiles axis 125mm.

Distribution boards manufactured from plastic material.

Door can be fitted on right or left without dismantling the cover, optional lock with keys. Door opens up to 180°.

Enclosure can be installed either way up.

Cable entries for cable, conduit and trucking.

Components included

- brass screw-type terminals
- directly fixed DIN rails to the wall box let to have room enough for wiring behind them.
- marking stickers
- door protected by a plastic film.

- towers to fix cable ties for clear cable management are included, cable-retaining clips are optional (except in 4 and 8 enclosures).
- carton packaging

IEC 61439-1 and IEC 61439-3



IEC 60 695-2-1/0
and 60 695-2-1/1



VS108TM



VS1212TM



VS318PM



VS412TM

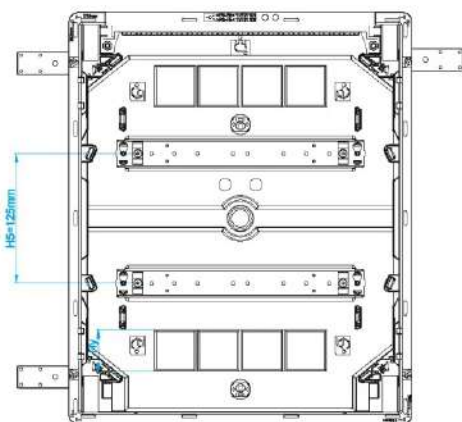
Description				Pack Qty.	Cat. ref.
1 row 4 modules w.138 x h.184 x d.99		2 + 1/2	N : 2 x 16mm ² + 2 x 10mm ² E : 2 x 16mm ² + 2 x 10mm ²	1 1	Transparent VS104TM Plain VS104PM
1 row 8 modules w.210 x h.184 x d.99		2 + 1/2	N : 2 x 16mm ² + 4 x 10mm ² E : 2 x 16mm ² + 4 x 10mm ²	1 1	Transparent VS108TM Plain VS108PM
1 row 12 modules w.282 x h.252 x d.99		2 + 1/2	N : 4 x 16mm ² + 6 x 10mm ² E : 4 x 16mm ² + 6 x 10mm ²	1 1	Transparent VS112TM Plain VS112PM
1 row 18 modules w.390 x h.257 x d.99		2 + 1/2	N : 7 x 16mm ² + 9 x 10mm ² E : 7 x 16mm ² + 9 x 10mm ²	1 1	Transparent VS118TM Plain VS118PM
1 row 22 modules w.462 x h.252 x d.99		2 + 1/2	N : 8 x 16 mm ² + 10 x 10 mm ² E : 8 x 16 mm ² + 10 x 10 mm ²	1 1	Transparent VS122TM Plain VS122PM
2 rows 24 modules w.282 x h.377 x d.99		2 x 2 + 2	N : (5 x 16mm ² + 6 x 10mm ²) x 2 E : 9 x 16mm ² + 13 x 10mm ²	1 1	Transparent VS212TM Plain VS212PM
2 rows 36 modules w.390 x h.377 x d.99		2 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16 mm ² + 8 x 10 mm ²) x 2 E : 1 x 25 mm ² + 14 x 16 mm ² + 17 x 10 mm ²	1 1	Transparent VS218TM Plain VS218PM
3 rows 36 modules w.282 x h.500 x d.99		3 x 2 + 1/2	N : (1 x 25mm ² + 7 x 16mm ² + 8 x 10mm ²) x 2 E : 1 x 25mm ² + 14 x 16mm ² + 17 x 10mm ²	1 1	Transparent VS312TM Plain VS312PM
3 rows 54 modules w.390 x h.500 x d.99		3 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16mm ² + 8 x 10 mm ²) x 2 + (7 x 16 mm ² + 9 x 10 mm ²) E : (1 x 25 mm ² + 14 x 16mm ² + 17 x 10 mm ²) + (7 x 16 mm ² + 9 x 10 mm ²)	1 1	Transparent VS318TM Plain VS318PM
4 rows 48 modules w.282 x h.647 x d.99		4 x 2 + 1/2	N : (1 x 25mm ² + 6 x 16mm ² + 7 x 10mm ²) x 3 E : (1 x 25mm ² + 10 x 16mm ² + 13 x 10mm ²) + (9 x 16mm ² + 11 x 10mm ²)	1 1	Transparent VS412TM Plain VS412PM
4 rows 72 modules w.390 x h.647 x d.99		4 x 2 + 1/2	N : (1 x 25 mm ² + 7 x 16mm ² + 8 x 10mm ²) x 4 E : (1 x 25 mm ² + 14 x 16mm ² + 17 x 10 mm ²) x 2	1 1	Transparent VS418TM Plain VS418PM

Cable entries

Top/bottom

One side cable entry slide, knockout-type, (VF104... and VF108... - NO slider).

The other side pre cuts with diameters 20 mm, 25 mm, 32 mm and 40 mm the wall box is 180° turnable (slider can be placed at top or bottom).



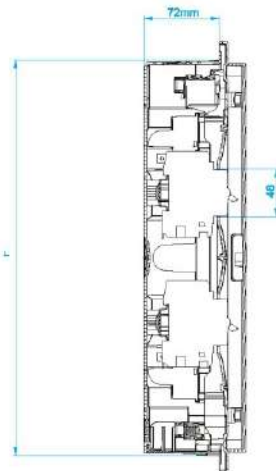
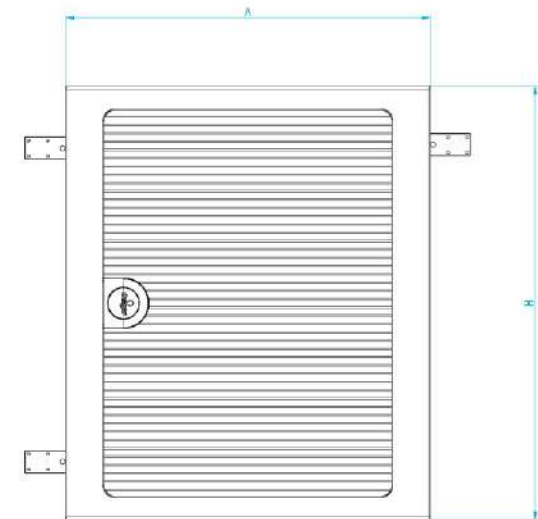
Side

Each one knockout Ø 25 mm on the left and right in the upper and lower connection space.

As of 2 rows, knockouts Ø 25 mm on the left and right between the device rows. (no knockouts at 4 and 8 module enclosures).

Reference		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

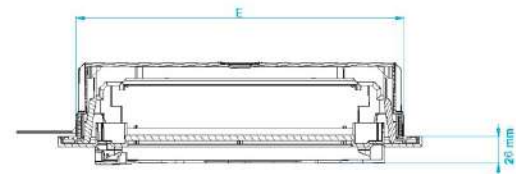
For the wall niche, these dimensions are minimal.



For hollow wall,
the cavity wall section should be:

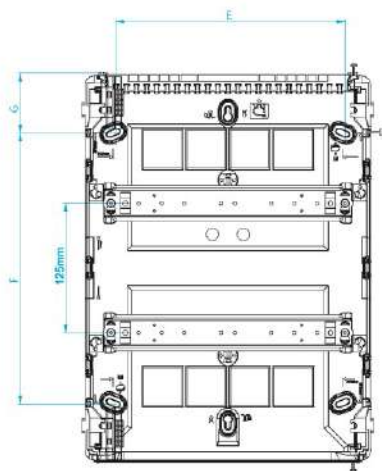
Ref.	E	F
VF104...	170	189
VF108...	242	189
VF112...	318	257
VF212...	318	382
VF312...	318	507
VF412...	318	652
VF118...	426	257
VF218...	426	382
VF318...	426	507
VF418...	426	652
VF122...	498	257

Depth must always be 72 mm min.

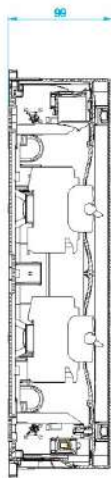
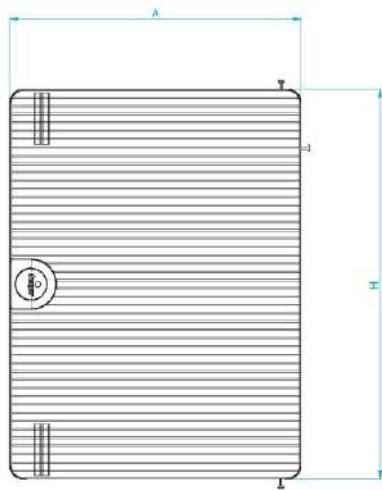


Cable entries

Top/bottom
One side cable entry optimised for use of trunking, knockout-type.
The other side pre cuts with diameters 20 mm, 25 mm, 32 mm and 40 mm the wall box is 180° turnable.



Reference		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





VE 212U

Surface mounting enclosures with transparent doors 1 to 4 rows from 2 to 48 modules, 1 to 3 rows from 18 to 54 modules. Adjustable DIN rail for shoulder measurement 47 and 63 mm, transparent hinged cover (2 to 10 modules) or door (12 to 54 modules), lateral knock outs for cable entry or coupling pieces.

With premarked knock outs for bushes or cable glands M20, M25, M32, M40 and M50; supplied with a set of cable bushes

Colour : light grey RAL7035
nominal voltage : Ui 400V~
nominal current : 63A at 30/400V~

In accordance with IEC 61439-3



IEC 60 695-2-1/0
and 60 695-2-1/1



VE 106U



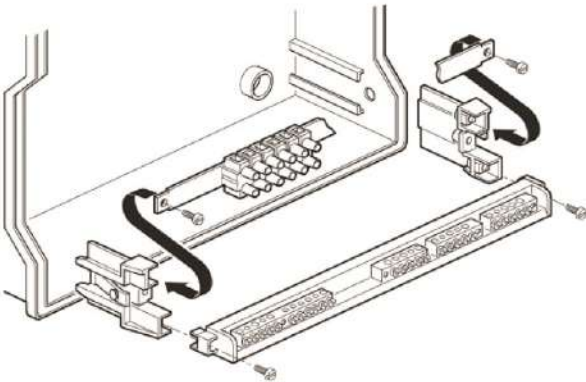
VE 312U



VE 218U

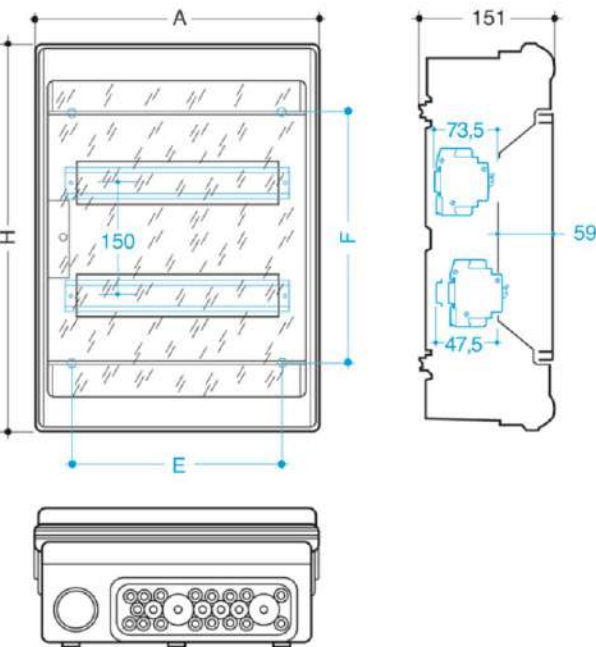
Description		Pack Qty.	Cat. ref.
Surface mounting transparant door 1 row 6 modules w.165 x h.190 x d.113	N : 1x25 + 5x16mm ² E : 1x25 + 7x16mm ²	1	VE106U
Surface mounting transparant door 1 row 10 modules w.237 x h.210 x d.114	N : 1x25 + 9x16mm ² E : 1x25 + 11x16mm ²	1	VE110U
Surface mounting transparant door 1 row 12 modules w.310 x h.302 x d.151	N : 1x25 + 10x16mm ² E : 1x25 + 13x16mm ²	1	VE112U
Surface mounting transparant door 1 row 18 modules w.418 x h.302 x d.151	N : 1x25 + 16x16mm ² E : 1x25 + 16x16mm ²	1	VE118U
Surface mounting transparant door 2 rows 24 modules w.310 x h.427 x d.151	N : 1x25 + 16x16mm ² E : 1x25 + 16x16mm ²	1	VE212U
Surface mounting transparant door 2 rows 36 modules w.418 x h.452 x d.151	N : 1x25 + 19x16mm ² E : 1x25 + 19x16mm ²	1	VE218U
Surface mounting transparant door 3 rows 36 modules w.310 x h.552 x d.151	N : 1x25 + 19x16mm ² E : 1x25 + 19x16mm ²	1	VE312U
Surface mounting transparant door 3 rows 54 modules w.418 x h.602 x d.151	N : 2x (1x25 + 19x16mm ²) E : 2x (1x25 + 19x16mm ²)	1	VE318U
Surface mounting transparant door 4 rows 48 modules w.310 x h.677 x d.151	N : 2x (1x25 + 19x16mm ²) E : 2x (1x25 + 19x16mm ²)	1	VE412U

- Mounting on insulating support at both end of the chassis
- 1. additional connection assembly : VZ 403 or VZ 428
 - 2. insulated terminal VZ 743



Enclosure	Knock outs	Supplied cable bushes
Reference		
VE103U	2 x M20	3 x M20
VE106U	1 x M20 + 1 x M25 + 1 x M30/32	2 x M20 + 2 x M25 + 1 x M32
VE110U	1 x M20/32 + 1 x M25 + 3 x M20	4 x M20 + 2 x M25 + 1 x M32
VE112U	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	10 x M20 + 2 x M25 + 1 x M32
VE118U	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	8 x M20 + 10 x M25 + 1 x M32
VE212U	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	14 x M20 + 4 x M25 + 1 x M32
VE218U	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	8 x M20 + 14 x M25 + 1 x M32
VE312U	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	14 x M20 + 10 x M25 + 2 x M32
VE318U	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	8 x M20 + 18 x M25 + 2 x M32
VE412U	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	14 x M20 + 10 x M25 + 1 x M32

VE 212U - 2 rows 24



Dimensions

References		Enclosure sizes					Wall box	
		R	A	H	E	F		
VE103U	3	1	111	175	-	119		
VE106U	6	1	165	190	108	126		
VE110U	10	1	237	210	180	136		
VE112U	12	1	310	302	230	155		
VE212U	24	2	310	427	230	280		
VE312U	36	3	310	552	230	405		
VE412U	48	4	310	677	230	550		
VE118U	18	1	418	302	338	155		
VE218U	36	2	418	452	338	305		
VE318U	54	3	418	602	338	455		



VZ310



VZ311



VZ303



P031 P032



JP024



K018



K023

Description	Pack Qty.	Cat. ref.
Key Lock	1	VZ310
Key Lock for 'VF/VVE' Distribution Box	1	VZ311
Key Lock for 'IU/VU' Distribution Box	1	VZ303
Key Lock plastic latch	1	VZ308
Key Lock hinge	1	VZ309
Blanking Clip 1/2 Module (white) Standard packing per 50 pieces : Rp. 100.000 / pack	1	P031F
Blanking Clip 1 Module (white) Standard packing per 50 pieces : Rp. 200.000 / pack	1	P032F
Blanking Plate 1 Module (light grey) Standard packing per 50 pieces : Rp. 200.000 / pack	1	P032H
Blanking Plate 1 Row 24 Module (white)	1	JP024
Connection Block 125A 1 pole	1	K018
Connection Block 125A 2 pole	1	K023
Connection Block 125A 4 pole	1	K024
Connection Block 125A 5 pole	1	K025

Tertiary buildings
h3+ moulded cases

Guaranteed protection



:hager

IP65 enclosures orion plus

One system for indoor and outdoor application

Sheet steel or glass reinforced polyester - the orion plus enclosures are suited for harshest conditions and can be applied for wet and mechanical use. Even under chemical use, orion plus offers the ideal solution with glass reinforced polyester.

The interior equipment can be realized flexibly via mounting plate or DIN rail (in 2 different versions) and thus offers the suitable interior equipment system - both for the application in automation and for classical current distribution.



The advantages for you

- High protection class (IP65/K10) and nice design.
- Size and depth adapted according to your need.

Technical data :

- IP 65 door closed, RAL 7035
- Sheet steel - class I or polyester - class II
- Height: 300 to 1250mm.
- Height (polyester enclosures): 1200 to 2050mm.
- Depth: 160 to 300mm.



1
Front plates adjustable in depth

Thanks to slides.



2
Modular kits on pillars

Screws integrated in the pillars 2 for fast mounting in the enclosure.



3
Easy fixing

Fast fixing screws to fix the plates.



4
Reversible door

Doors can be mounted on the right side or on the left side.



5
Easy mounting and cabling

Modular devices are mounted on the chassis, outside or inside the enclosure.



6
Association

Metal enclosures can be fixed on a base or vertically associated using a seal kit.

Enclosures with plain or transparent door
Steel colour RAL 7035

IP 65 / door closed
Insulation class : I $\frac{1}{2}$
according to IEC 60529
1,5mm thick sheet steel for body and door

These enclosures feature:

- 2 removable gland plate for cable entry on top and bottom
- Earth studs on both body and door
- Door easily removable
- Plain door equipped with one or two locks with triangular 8mm bit centres, located out of the sealed area.

Options:

- Key lock
- Wall fixing brackets
- Plain or perforated mounting plate
- Equipment kits for modular devices



FL110A

Description	Pack Qty.	Cat. ref.
Metal enclosure IP65 plain door h.300 x w.250 x d.160	1	FL102A
Metal enclosure IP65 plain door h.350 x w.300 x d.160	1	FL104A
Metal enclosure IP65 plain door h.350 x w.300 x d.200	1	FL105A
Metal enclosure IP65 plain door h.500 x w.300 x d.200	1	FL110A
Metal enclosure IP65 plain door h.500 x w.400 x d.200	1	FL112A
Metal enclosure IP65 plain door h.650 x w.400 x d.200	1	FL117A
Metal enclosure IP65 plain door h.650 x w.400 x d.250	1	FL118A
Metal enclosure IP65 plain door h.650 x w.500 x d.200	1	FL119A
Metal enclosure IP65 plain door h.650 x w.500 x d.250	1	FL120A
Metal enclosure IP65 plain door h.800 x w.500 x d.250	1	FL122A
Metal enclosure IP65 plain door h.800 x w.600 x d.250	1	FL123A
Metal enclosure IP65 plain door h.800 x w.600 x d.300	1	FL124A
Metal enclosure IP65 plain door h.950 x w.600 x d.250	1	FL125A
Metal enclosure IP65 plain door h.950 x w.600 x d.300	1	FL126A



FL96Z



FL80Z



FL95Z



FL85Z



FL874A



FL670A

Description	Pack Qty.	Cat. ref.
Metal enclosure IP65 plain door h.950 x w.800 x d.250	1	FL127A
Metal enclosure IP65 plain door h.950 x w.800 x d.300	1	FL128A
Metal enclosure IP65 plain door h.1250 x w.800 x d.300	1	FL130A
Key Lock Key Lock to be mounted on the triangular lock	1	FL96Z
Replace the triangular locks of origin 1 set of 2 key locks with male square 8mm, with 1 key	1	FL80Z
Replace the triangular locks of origin 1 set of 2 locks double-bars 3mm, with 1 key	1	FL95Z
Wall fixing brackets metal Metallic wall fixing brackets with screws, set of 4 pieces	1	FL85Z
Kit for connection to earth For metal enclosures	1	FL874A
Vertical connection kit	1	FL670A

Orion Plus GRP IP66/65 Enclosures



Enclosure with plain door
Made of glass reinforced polyester (GRP)
Colour : RAL 7035

Body made out of one piece up to height 800mm
IP 65 / door closed IEC60529

IP 65 / door closed IEC60529
insulation class : II
according to IEC 61140

These enclosures feature :

- Plain door equipped with one or two locks with triangular 8mm centres, located out of the sealed

- area, gasket directly moulded on the door.
- Studs in the back of the enclosure for mounting plate fastening

- Options:
- Key lock

- Wall fixing brackets
- Plain or perforated mounting plate
- Equipment kits for modular devices



FL216B

Description		Pack Qty.	Cat. ref.
Orion GRP enclosure plain door h.350 x w.300 x d.160		1	FL204B
Orion GRP enclosure plain door h.500 x w.300 x d.200		1	FL209B
Orion GRP enclosure plain door h.500 x w.400 x d.200		1	FL213B
Orion GRP enclosure plain door h.650 x w.400 x d.200		1	FL216B
Orion GRP enclosure plain door h.650 x w.500 x d.250		1	FL221B
Orion GRP enclosure plain door h.800 x w.600 x d.300		1	FL229B
Orion GRP enclosure plain door h.1150 x w.600 x d.300		1	FL302B
Orion GRP enclosure plain door h.1200 x w.850 x d.300		1	FL327B
Orion GRP enclosure plain door h.1450 x w.850 x d.300*	Heights: top and bottom parts 550/850	1	FL352B
Orion GRP enclosure plain door h.1750 x w.850 x d.300*	Heights: top and bottom parts 550/1150	1	FL354B
Orion GRP enclosure plain door h.2050 x w.1100 x d.300*	Heights: top and bottom parts 850/1150	1	FL368B

*Enclosure with 2 superposed doors and a plinth height 70mm

Orion Plus GRP IP66/65 Enclosures



FL863Z

Description	Pack Qty.	Cat. ref.
Key locks to be mounted on the triangular lock, supplied with 2 keys n° 427 (for enclosure h≤1150mm)	1	FL98Z
Replacement of triangular lock of origin. 1 set of 2 locks with male square 8mm with 1 key.	1	FL81Z
Replacement of triangular lock of origin. 1 set of 2 locks double-bars 3mm with 1 key.	1	FL97Z
Plastic wall fixing brackets Delivered with fixing screws M6x12 on enclosure set of 4 pieces	1	FL863Z

Designation:

Plain mounting plates

Steel sheet 2mm thickness,
aluminium zinc

Assembly of the plates :

- Fixed directly on the back of the enclosure
- Or on slides allowing the indepth setting (fixing with slides FL450A)

Plain mounting plates

Steel sheet 2mm thickness,
aluminium zinc

Assembly of the plates :

- Fixed directly on the back of the enclosure
- Or on slides allowing the indepth setting (fixing with slides FL450A)



FL408A

Description	Pack Qty.	Cat. ref.
For enclosure : FL102A, FL152A L.193 x H.280	1	FL402A
For enclosure : FL104A, FL105A, FL204B, FL154A, FL155A, FL254B L.243 x H.330	1	FL404A
For enclosure : FL110A, FL209B, FL160A, FL259B L.243 x H.480	1	FL407A
For enclosure : FL112A, FL213B, FL162A, FL263B L.343 x H.480	1	FL408A
For enclosure : FL117A, FL118A, FL216B, FL167A, FL168A, FL266B L.343 x H.630	1	FL412A
For enclosure : FL119A, FL120A, FL221B, FL169A, FL170A, FL271B L.443 x H.630	1	FL413A
For enclosure : FL123A, FL124A, FL229B, FL173A, FL174A, FL279B L.543 x H.780	1	FL415A
For enclosure : FL125A, FL126A, FL175A, FL176A L.543 x H.930	1	FL416A
For enclosure : FL127A, FL128A, FL177A, FL178A L.743 x H.930	1	FL417A
For enclosure : FL130A, FL180A L.743 x H.1230	1	FL419A
For enclosure : FL302B, FL502B L.493 x H.1080	1	FL512E
For enclosure : FL327B, FL527B L.693 x H.1080	1	FL522E
For enclosure : FL352B L.693 x H.480 (upper plate) L.693 x H.780 (bottom plate)	1 1	FL520E FL521E
For enclosure : FL 354B L.693 x H.480 (upper plate) L.693 x H.1080 (bottom plate)	1 1	FL520E FL522E
For enclosure : FL 368B L.993 x H.780 (upper plate) L.993 x H.1080 (bottom plate)	1 1	FL531E FL532E

	Designation: Plain mounting plates Steel sheet 2mm thickness, aluminium zinc	Assembly of the plates : - Fixed directly on the back of the enclosure - Or on slides allowing the indepth setting (fixing with slides FL450A)		
	Description	Pack Qty.	Cat. ref.	
Perforated mounting plate Steel sheet 2mm thickness Assembly of the plates : - Fixed directly on the back of the enclosure - Or on slides allowing the indepth setting (fixing with slides FL450A)  FL475A	For enclosure : FL102A, FL152A, FL201B L.193 x H.280	1	FL472A	
	For enclosure : FL104A, FL105A, FL204B, FL154A, FL155A, FL254B L.243 x H.330	1	FL473A	
	For enclosure : FL110A, FL209B, FL160A, FL259B L.243 x H.480	1	FL474A	
	For enclosure : FL112A, FL213B, FL162A, FL263B L.343 x H.480	1	FL475A	
	For enclosure : FL117A, FL118A, FL216B, FL167A, FL168A, FL266B L.343 x H.630	1	FL476A	
	For enclosure : FL119A, FL120A, FL221B, FL169A, FL170A, FL271B L.443 x H.630	1	FL477A	
	For enclosure : FL169A, FL170A, FL271B, FL123A, FL124A, FL229B L.543 x H.780	1	FL479A	
	For enclosure : FL173A, FL174A, FL279B, FL125A, FL126A L.543 x H.930	1	FL480A	
	For enclosure : FL175A, FL176A, FL127A, FL128A L.743 x H.930	1	FL481A	
	For enclosure : FL177A, FL178A, FL130A, FL180A L.743 x H.1230	1	FL483A	
 FL450A  UC969	Adjustment slides For assembly of the plates on depth 4 slides delivered with screws	1	FL450A	
Nut-clips and screw M5 For perforated mounting plate	Nut-clips and screw M5 For perforated mounting plate 1 set = 25 nuts	1 set	UC969	

Equipment kits For modular devices	Description	Pack Qty.	Cat. ref.
- On chassis only FL980A and FL981A	For enclosure : FL104A, FL105A, FL204B, FL154A, FL155A, FL254B 2 rows 24 modules (on chassis)	1	FL980A
Composed of			
- Rails DIN (slide length 44 mm) assembled on chassis and adjustable in depth (of front plates with slide)	For enclosure : FL110A, FL209B, FL180A, FL259B 3 rows 36 modules (on chassis)	1	FL981A
- On vertical rail Composed of 2 vertical rail, DIN rail (slide length 44 mm)	For enclosure : FL112A, FL213B, FL162A, FL263B 3 rows 48 modules (on vertical rail)	1	FL992A
- Front plates with slit	For enclosure : FL117A, FL118A, FL216B, FL167A, FL168A, FL266B 4 rows 64 modules (on vertical rail)	1	FL993A
- A cross-rail authorizing the assembly of bars on base and slides	For enclosure : FL119A, FL120A, FL221B, FL169A, FL170A, FL271B 4 rows 88 modules (on vertical rail)	1	FL994A
	For enclosure : FL123A, FL124A, FL229B, FL173A, FL174A, FL279B 5 rows 130 modules (on vertical rail)	1	FL996A
	For enclosure : FL125A, FL126A, FL175A, FL176A 6 rows 156 modules (on vertical rail)	1	FL997A
	For enclosure : FL127A, FL128A, FL177A, FL178A 6 rows 222 modules (on vertical rail)	1	FL998A
	For enclosure : FL112A, FL117A, FL118A, FL213B, FL216B, FL162A, FL167A, FL168A, FL263A, FL266B Adj. DIN Rails length 400mm	1	FL500A
Adjustable DIN rails In depth for terminal blocks tilting 30°	For enclosure : FL119A, FL120A, FL221B, FL169A, FL170A, FL271B Adj. DIN Rails length 500mm	1	FL501A
For equipment kits with vertical rails	For enclosure : FL123A, FL124A, FL125A, FL126A, FL129A, FL229B, FL173A, FL174A, FL175A, FL179A, FL176A, FL279B Adj. DIN Rails length 600mm	1	FL502A
	For enclosure : FL127A, FL128A, FL130A, FL177A, FL178A, FL180A Adj. DIN Rails length 800mm	1	FL503A
Replacement of the front plates with slits of origin	For enclosure : FL112A, FL117A, FL118A, FL162A, FL167A, FL168A, FL213B, FL216B, FL263B, FL266B Plain front plates H.150mm x L.400mm	1	FL712E
Height : 150 mm	For enclosure : FL119A, FL120A, FL221B, FL169A, FL170A, FL271B Plain front plates H.150mm x L.500mm	1	FL713E
	For enclosure : FL123A, FL124A, FL125A, FL126A, FL129A, FL173A, FL174A, FL175A, FL179A, FL176A, FL279B, FL229B Plain front plates H.150mm x L.600mm	1	FL714E
	For enclosure : FL127A, FL128A, FL130A, FL177A, FL178A, FL180A Plain front plates H.150mm x L.800mm	1	FL715E



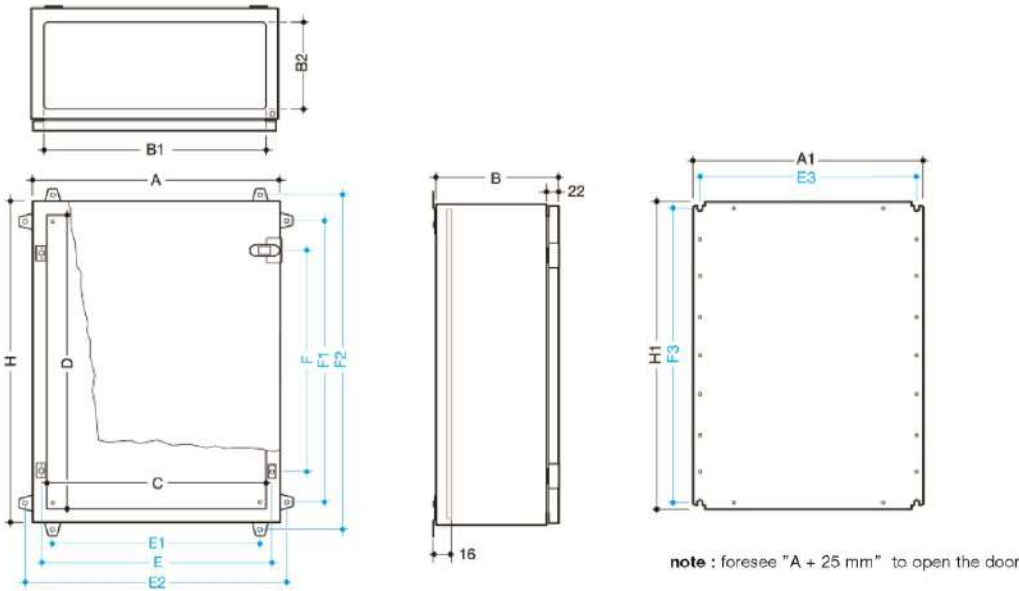
FL981A



FL712E

Dimensions

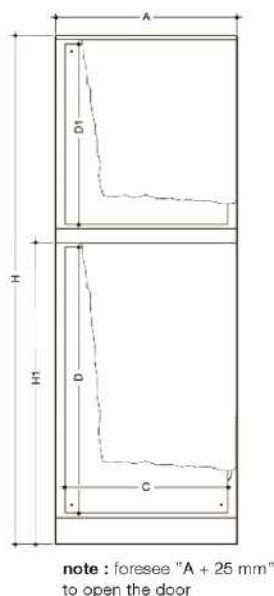
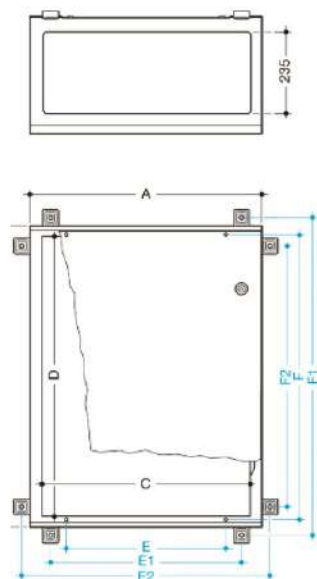
References	Rows	Enclosure							Outside fixing				Inside fixing	
		A	H	B	B1	B2	C	D	E1	E2	F1	F2	E	F
FL102A	-	250	300	160	195	80	200	250	210	320	220	332	169	208
FL104A	2	300	350	160	245	80	250	300	260	370	272	382	219	258
FL105A	2	300	350	200	245	120	250	300	260	370	272	382	219	258
FL110A	3	300	500	200	245	120	250	450	260	370	422	532	219	408
FL112A	3	400	500	200	345	120	350	450	360	470	422	532	319	408
FL117A	4	400	650	200	345	120	350	600	360	470	572	682	319	558
FL118A	4	400	650	250	345	170	350	600	360	470	572	682	319	558
FL119A	4	500	650	200	445	120	450	600	460	570	572	682	419	558
FL120A	4	500	650	250	445	170	450	600	460	570	572	682	419	558
FL122A	-	500	800	250	-	-	-	-	-	-	-	-	-	-
FL123A	5	600	800	250	545	170	550	750	560	670	722	832	519	708
FL124A	5	600	800	300	545	220	550	750	560	670	722	832	519	708
FL125A	6	600	950	250	545	170	550	900	560	670	872	982	519	858
FL126A	6	600	950	300	545	220	550	900	560	670	872	982	519	858
FL127A	6	800	950	250	745	170	750	900	760	870	872	982	719	858
FL128A	6	800	950	300	745	220	750	900	760	870	870	982	719	858
FL130A	-	800	1250	300	745	220	750	1200	760	870	1172	1282	719	858



Dimensions of mounting plates

Full plates	Perforated plates	For enclosures	Dimension plates		Plates fixing	
			A1	H1	E3	F3
FL402A	FL472A	FL102A	193	280	169	208
FL404A	FL473A	FL104A, FL105A, FK204B	243	330	219	258
FL407A	FL474A	FL110A, FL209B	243	480	219	258
FL408A	FL475A	FL112A, FL213B	343	480	219	408
FL412A	FL476A	FL117A, FL118A, FL216B	343	630	319	408
FL413A	FL477A	FL120A, FL221B	443	630	319	558
FL415A	FL479A	FL123A, FL124A, FL229B	543	780	319	558
FL416A	FL480A	FL125A, FL126A	543	930	419	558
FL417A	FL481A	FL127A, FL128A	743	930	419	558
FL419A	FL483A	FL130A	743	1230	519	708
FL512E		FL302B	493	1080	519	708
FL520E		FL352B, FL354B	693	480	519	858
FL521E		FL352B	693	780	519	858
FL522E		FL327B, FL354B	693	1080	719	858
FL531E		FL368B	993	780	719	858
FL532E		FL368B	993	1080	719	1158

GRP enclosures orion plus



Reference	Rows	Enclosure							Inside fixing		Outside fixing			
		A	H	H1	B	C	D	D1	E	F	E1	E2	F1	F2
FL204B	2	300	350	-	160	250	300	-	219	258	339	339	269	389
FL209B	3	300	500	-	200	250	450	-	219	408	339	339	419	539
FL213B	3	400	500	-	200	350	450	-	319	408	439	439	419	539
FL216B	4	400	650	-	200	350	600	-	319	558	439	439	569	689
FL221B	4	500	650	-	250	450	600	-	419	558	539	539	569	689
FL229B	5	600	800	-	300	550	750	-	519	708	639	639	719	839
FL302B	-	600	1150	-	300	500	1050	-	-	-	-	-	-	-
FL327B	-	850	1200	-	300	750	1050	-	-	-	-	-	-	-
FL352B	-	850	1450	810	300	750	750	510	-	-	-	-	-	-
FL354B	-	850	1750	1100	300	750	1050	510	-	-	-	-	-	-
FL368B	-	1100	2050	1110	300	1000	1050	510	-	-	-	-	-	-

High powered air circuit breakers

Air Circuit Breakers are widely used in low voltage power distribution systems of industrial, residential and commercial buildings. As the main incoming device, Hager ACBs has high dynamic and thermal stability. It not only ensures uninterrupted power supply, but also breaks reliably at high short circuit currents.

Air Circuit Breakers

Page

01 Expert tips	59
02 Ratings	60
03 Air Circuit Breakers	62
04 Accessories	64
05 Protection trip unit (OCR)	68
06 Discrimination table	70

High powered air circuit breakers Hw



The advantages for you

- High breaking capacity: full range $I_{cu}=I_{cs}$
- Optimized and compact panel size: same height and depth
- Terminal connection flexibility: horizontal/vertical terminal easy to turn at 90°
- Quick and easy mounting of accessories
- OCR: integrated communication, remote reset, ZSI, Temperature alarm
- Reliable information: fault LED info keep 1 month, fault record
- Advanced protection: low load, unbalance voltage, reserve power, low/over voltage protection
- Advanced metering: ammeter, voltage, power, energy, demand...

Technical data :

- Comply with : IEC 60947-2 and GB14048.2
- Rated current range : 630-5000A with 3 frames
- Breaking capacity: 50, 65, 85, 100kA
- Rated voltage: 690V
- Insulated voltage: 1000V
- Impulse voltage: 12KV
- Switch Disconnector
- 3 kinds of OCR: Basic, Amp, Energy



1
Intelligent OCR

LSIGN protection, LCD display, pre-trip alarm, fault recording, remote reset. Signal indication LED PTA/LSI/GF/COM.



2
Flexible protection

Can switch ON/OFF LSIGN and thermal memory separately.



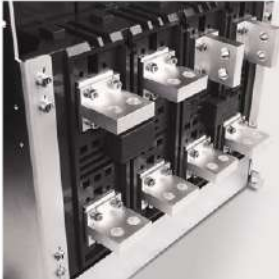
3
Fast and economic

To build up communication network. Communication module integrated in OCR.



4
Easy maintenance

Event record 200, fault record 250 (reserved for ever), OCR checker tool.



5
Flexible terminal connection

Horizontal/Vertical terminal rotate at 90° to make it easier for panel builder to mount on busbars. For frame A up to 1600A and frame B up to 3200A.

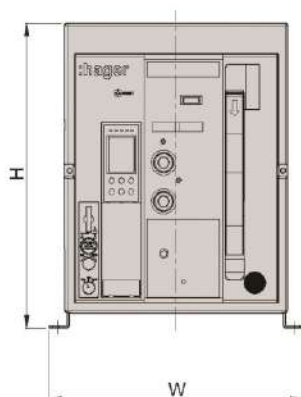


6
Wide range of accessories

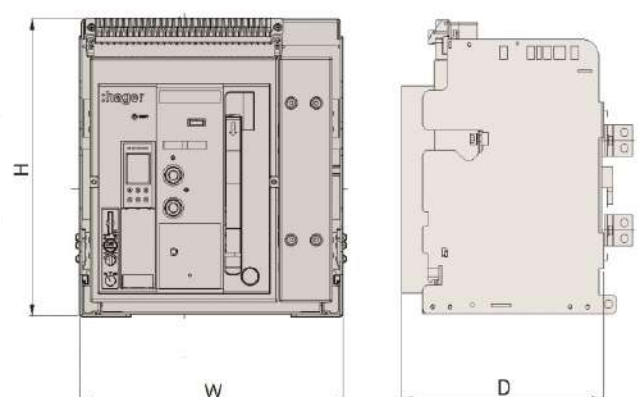
Including: arc shield, phase barrier, temperature sensor, dust cover (IP54), ...

Frame			A		B			C
Type			H	N	N	S	P	P
Rated current		A	630-2000		630-4000			3200-5000
Rated operating voltage (Ue)		V	690					
Rated insulation voltage (Ui)		V	1000					
Rated impulse withstand voltage (Uimp)		KV	12					
Frequency		Hz	50/60					
Number of poles		poles	3-4					
Current setting range (...x In max)		Ir	0.4-1.0					
Rated current of neutral pole (...% x In)		%/In	100%					
Rated breaking capacity (Icu)	AC 690/600/550V	KA	36	50	50	65	85	85
	AC 415/380/220V		50	65	65	85	100	100
Rated service breaking capacity (Ics)	AC 690/600/550V	KA	100% Icu					
	AC 415/380/220V							
Rated short-time capacity (Icw)	1s	KA	50	65	65	85	85	85
	3s		36	36	50	55	65	65
Rated making capacity (kA peak) (Icm)	AC 690/600/550V	KA	76	105	105	143	187	187
	AC 415/380/220V		105	143	143	187	220	220
Utilization category (according to IEC 60947-2)			B					
Time								
Maximum total breaking time		ms	40					
Closing operating time	motor charging time	s	10					
	max. closing time	ms	40					
Operating cycle								
Mechanical life cycle	without maintenance	times	20000		15000			10000
	with maintenance		30000		20000			20000
Electrical life cycle	without maintenance		5000		06-20: 10000 25-40: 5000			2000
	with maintenance		10000		06-20: 15000 25-40: 10000			5000
Dimensions								
External dimension (W x H x D, except busbar)	fixed type	3 pole	mm	337x404x296		408x404x296		633x404x296
		4 pole		422x404x296		523x404x296		803x404x296
	draw-out type	3 pole		328x460x368		399x460x368		624x460x368
		4 pole		413x460x368		514x460x368		794x460x368
Weight	fixed type	3 pole	kg	34		06-32: 44 40: 61		76
		4 pole		44		06-32: 55 40: 81		81
	draw-out type	3 pole		63		06-32: 87 40: 107		145
		4 pole		80		06-32: 130 40: 161		173

Fixed type

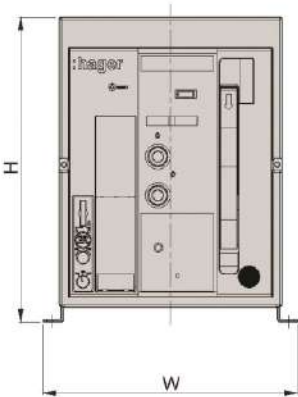


Draw-out type

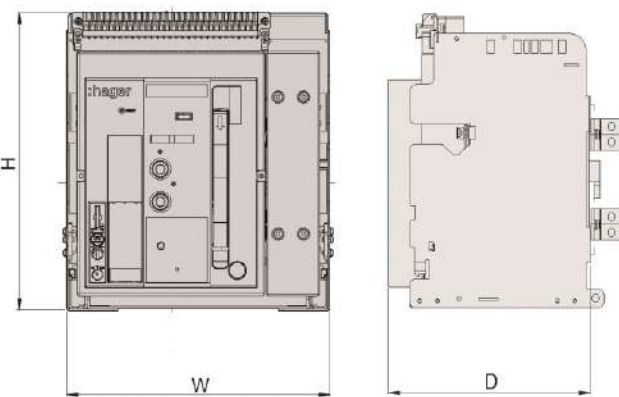


Frame			A	B	C	
Type			N....A	N....A	P....A	
Rated current		A	630-2000	630-4000	3200-5000	
Rated operating voltage (Ue)		V	690			
Rated insulation voltage (Ui)		V	1000			
Rated impulse withstand voltage (Uimp)		KV	12			
Frequency		Hz	50/60			
Number of poles		poles	3-4			
Rated current of neutral pole (...% x In)		%/In	100%			
Rated short-time capacity (Icw)	1s	KA	65	65	85	
	3s		36	50	65	
Rated making capacity (kA peak) (Icm)	AC 690/600/550V	KA	105	105	187	
	AC 415/380/220V		143	143	220	
Utilization category (according to IEC 60947-3)			AC23			
Time						
Maximum total breaking time		ms	40			
Closing operating time	motor charging time	s	10			
	max. closing time	ms	40			
Operating cycle						
Mechanical life cycle	without maintenance	times	20000	15000	10000	
	with maintenance		30000	20000	20000	
Electrical life cycle	without maintenance		5000	06-20: 10000 25-40: 5000	2000	
	with maintenance		10000	06-20: 15000 25-40: 10000	5000	
Dimensions						
External dimension (W x H x D, except busbar)	fixed type	3 pole	mm	337x404x296	408x404x296	633x404x296
		4 pole		422x404x296	523x404x296	803x404x296
	draw-out type	3 pole		328x460x368	399x460x368	624x460x368
		4 pole		413x460x368	514x460x368	794x460x368
Weight	fixed type	3 pole	kg	34	06-32: 44 40: 61	76
		4 pole		44	06-32: 55 40: 81	81
	draw-out type	3 pole		63	06-32: 87 40: 107	145
		4 pole		80	06-32: 130 40: 161	173

Fixed type



Draw-out type





HWAN416ED



HWBN416ED



HWCP432ED

Description	Rating	Number of poles		Pack Qty.	Cat. ref.
Frame A Icu=Ics=50kA Icu=Ics=Icw	630A	3	Draw-out type	1	HWAH306ED
	800A	3		1	HWAH308ED
	1000A	3		1	HWAH310ED
	1250A	3		1	HWAH312ED
	1600A	3		1	HWAH316ED
	2000A	3		1	HWAH320ED
	630A	4	Draw-out type	1	HWAH406ED
	800A	4		1	HWAH408ED
	1000A	4		1	HWAH410ED
	1250A	4		1	HWAH412ED
	1600A	4		1	HWAH416ED
	2000A	4		1	HWAH420ED
Frame A Icu=Ics=50kA Icu=Ics=Icw	630A	3	Fixed type	1	HWAH306EF
	800A	3		1	HWAH308EF
	1000A	3		1	HWAH310EF
	1250A	3		1	HWAH312EF
	1600A	3		1	HWAH316EF
	2000A	3		1	HWAH320EF
	630A	4	Fixed type	1	HWAH406EF
	800A	4		1	HWAH408EF
	1000A	4		1	HWAH410EF
	1250A	4		1	HWAH412EF
	1600A	4		1	HWAH416EF
	2000A	4		1	HWAH420EF
Frame A Icu=Ics=65kA Icu=Ics=Icw	630A	3	Draw-out type	1	HWAN306ED
	800A	3		1	HWAN308ED
	1000A	3		1	HWAN310ED
	1250A	3		1	HWAN312ED
	1600A	3		1	HWAN316ED
	2000A	3		1	HWAN320ED
	630A	4	Draw-out type	1	HWAN406ED
	800A	4		1	HWAN408ED
	1000A	4		1	HWAN410ED
	1250A	4		1	HWAN412ED
	1600A	4		1	HWAN416ED
	2000A	4		1	HWAN420ED
Frame A Icu=Ics=65kA Icu=Ics=Icw	630A	3	Fixed type	1	HWAN306EF
	800A	3		1	HWAN308EF
	1000A	3		1	HWAN310EF
	1250A	3		1	HWAN312EF
	1600A	3		1	HWAN316EF
	2000A	3		1	HWAN320EF
	630A	4	Fixed type	1	HWAN406EF
	800A	4		1	HWAN408EF
	1000A	4		1	HWAN410EF
	1250A	4		1	HWAN412EF
	1600A	4		1	HWAN416EF
	2000A	4		1	HWAN420EF

Description	Rating	Number of poles		Pack Qty.	Cat. ref.
Frame B Icu=Ics=65KA Icu=Ics=Icw	2500A	3	Draw-out type	1	HWBN325ED
	3200A	3		1	HWBN332ED
	4000A	3		1	HWBN340ED
	2500A	4	Draw-out type	1	HWBN425ED
	3200A	4		1	HWBN432ED
	4000A	4		1	HWBN440ED
Frame B Icu=Ics=65KA Icu=Ics=Icw	2500A	3	Fixed type	1	HWBN325EF
	3200A	3		1	HWBN332EF
	4000A	3		1	HWBN340EF
	2500A	4	Fixed type	1	HWBN425EF
	3200A	4		1	HWBN432EF
	4000A	4		1	HWBN440EF
Frame B Icu=Ics=100KA Icw=85KA	630A	3	Draw-out type	1	HWBP306ED
	800A	3		1	HWBP308ED
	1000A	3		1	HWBP310ED
	1250A	3		1	HWBP312ED
	1600A	3		1	HWBP316ED
	2000A	3		1	HWBP320ED
	2500A	3		1	HWBP325ED
	3200A	3		1	HWBP332ED
	4000A	3		1	HWBP340ED
	630A	4	Draw-out type	1	HWBP406ED
	800A	4		1	HWBP408ED
	1000A	4		1	HWBP410ED
	1250A	4		1	HWBP412ED
	1600A	4		1	HWBP416ED
	2000A	4		1	HWBP420ED
	2500A	4		1	HWBP425ED
	3200A	4		1	HWBP432ED
	4000A	4		1	HWBP440ED
Frame B Icu=Ics=100KA Icw=85KA	630A	3	Fixed type	1	HWBP306EF
	800A	3		1	HWBP308EF
	1000A	3		1	HWBP310EF
	1250A	3		1	HWBP312EF
	1600A	3		1	HWBP316EF
	2000A	3		1	HWBP320EF
	2500A	3		1	HWBP325EF
	3200A	3		1	HWBP332EF
	4000A	3		1	HWBP340EF
	630A	4	Fixed type	1	HWBP406EF
	800A	4		1	HWBP408EF
	1000A	4		1	HWBP410EF
	1250A	4		1	HWBP412EF
	1600A	4		1	HWBP416EF
	2000A	4		1	HWBP420EF
	2500A	4		1	HWBP425EF
	3200A	4		1	HWBP432EF
	4000A	4		1	HWBP440EF
Frame C	5000A	3	Draw-out type	1	HWCP350ED
	5000A	4	Draw-out type	1	HWCP450ED
Frame C	5000A	3	Fixed type	1	HWCP350EF
	5000A	4	Fixed type	1	HWCP450EF



HWY750



HWW633



HWX544

Description	Characteristics	Pack Qty.	Cat. ref.
Chassis	frame A, 3 pole, 630-1600A	1	HWY750
	frame A, 4 pole, 630-1600A	1	HWY751
	frame A, 3 pole, 2000A	1	HWY752
	frame A, 4 pole, 2000A	1	HWY753
	frame B, 3 pole, 630-2500A	1	HWY754
	frame B, 4 pole, 630-2500A	1	HWY755
	frame B, 3 pole, 3200A	1	HWY756
	frame B, 4 pole, 3200A	1	HWY757
	frame B, 3 pole, 4000A vertical	1	HWY758
	frame B, 4 pole, 4000A vertical	1	HWY759
	frame B, 3 pole, 4000A horizontal	1	HWY760
	frame B, 4 pole, 4000A horizontal	1	HWY761
	frame C, 3 pole, 3200-5000A vertical	1	HWY762
	frame C, 4 pole, 3200-5000A vertical	1	HWY763
	frame C, 3 pole, 3200-5000A horizontal	1	HWY764
	frame C, 4 pole, 3200-5000A horizontal	1	HWY765
Protection trip units (OCR)	LI	1	HWX611
	LSI	1	HWX612
	LSIG	1	HWX613
	Amp LI	1	HWX621
	Amp LSI	1	HWX622
	Amp LSIG	1	HWX623
	Energy LSIG	1	HWX633
OCR portable checker		1	HWY649
Voltage module		1	HWY650
OCR manual reset and alarm switch reset (for draw-out type)		1	HWY651
OCR manual reset and alarm switch reset (fixed type)		1	HWY652
Remote control unit RCU		1	HWY639
Remote control RCTU		1	HWY654
temperature unit			
Remote control temperature unit + temperature sensor		1	HWY655
Temperature sensor		1	HWY640
Temperature sensor support	for frame A, 3 pole	1	HWY690
	for frame A, 4 pole	1	HWY691
	for frame B, 3 pole	1	HWY692
	for frame B, 4 pole	1	HWY693
	for frame C, 3 pole	1	HWY695
	for frame C, 4 pole	1	HWY696
Motor operators MO	DC 24V	1	HWX541
	DC 48V	1	HWX542
	AC/DC 110V	1	HWX543
	AC/DC 220V	1	HWX544
	AC 380/415V	1	HWX545
	AC 440V	1	HWX546
	Motor controller unit only	1	HWW068
	Motor ON/OFF switch only	1	HWW069
Closing coils CC	DC 24V	1	HWX551
	DC 48V	1	HWX552
	AC/DC 110V	1	HWX553
	AC/DC 220V	1	HWX554
	AC 380/415V	1	HWX555
	AC440V	1	HWX556



HWX501



HWX514



HWX573

Description	Characteristics	Pack Qty.	Cat. ref.
Shunt trip coils SH	DC 24V	1	HWX501
	DC 48V	1	HWX502
	AC/DC 110V	1	HWX503
	AC/DC 220V	1	HWX504
	AC 380/415V	1	HWX505
	AC 440V	1	HWX506
Secondary trip coils sSH	DC 24V	1	HWX521
	DC 48V	1	HWX522
	AC/DC 110V	1	HWX523
	AC/DC 220/250V	1	HWX524
	AC 380/415V	1	HWX525
	AC 440V	1	HWX526
Under voltage trip coils (instantaneous) UVT	DC 24V	1	HWX511
	DC 48V	1	HWX512
	AC/DC 110V	1	HWX513
	AC/DC 220/250V	1	HWX514
	AC 380/415V	1	HWX515
	AC 440V	1	HWX516
UVT time delay controllers	AC/DC 110V	1	HWX533
	AC/DC 220/250V	1	HWX534
	AC 380/415V	1	HWX535
	AC 440V	1	HWX536
Auxiliary switch (AX) draw-out type	4NO + 5NC	1	HWX560
Auxiliary switch (AX) fixed type	4NO + 5NC	1	HWX561
Mechanical operated cell switch (additional AX)	5NO + 5NC	1	HWX565
Ready to close contact RTC draw-out type	1NO	1	HWX547
Ready to close contact RTC fixed type	1NO	1	HWX548
Position switches	isolated 1C, test 1C, connected 2C	1	HWX570
	inserted 1C, isolated 1C, test 1C, connected 1C	1	HWX571
	inserted 1C, isolated 1C, test 3C, connected 3C	1	HWX572
	inserted 2C, isolated 2C, test 2C, connected 2C	1	HWX573
Counter		1	HWY638



HWY660



HWY642



HWY6xx



HWY701



HWY706



HWW268



HWY500

Description	Characteristics	Pack Qty.	Cat. ref.
Safety shutters	frame A, 630-2000A, 3 pole	1	HWY660
	frame A, 630-2000A, 4 pole	1	HWY661
	frame B, 630-4000A, 3 pole	1	HWY662
	frame B, 630-4000A, 4 pole	1	HWY663
	frame C, 3200-5000A, 3 pole	1	HWY664
	frame C, 3200-5000A, 4 pole	1	HWY665
Rotary handle for draw-out type		1	HWY644
Lifting lug		1	HWY648
Wrong insertion preventer for draw-out type		1	HWY636
Door flange for IP30		1	HWY641
Dust cover for IP54		1	HWY642
ON/OFF button cover with padlock hole		1	HWY632
Key cylinder lock in open position	type 1	1	HWY633
	type 2	1	HWY634
	type 3	1	HWY635
	type 4	1	HWY646
	type 5	1	HWY647
Key Ronis lock in open position	type 1 - K1L1/12	1	HWY701
	type 2 - K2L2/12/23	1	HWY702
	type 3 - K3L3/23	1	HWY703
	type 4 - K12L12	1	HWY704
	type 5 - K23L23	1	HWY705
Key Castell lock in open position	type 1 - A	1	HWY706
	type 2 - B	1	HWY707
	type 3 - A_B	1	HWY708
Neutral CT	630A	1	HWW260
	800A	1	HWW261
	1000A	1	HWW262
	1250A	1	HWW263
	1600A	1	HWW264
	2000A	1	HWW265
	2500A	1	HWW266
	3200A	1	HWW267
	4000A	1	HWW268
	5000A	1	HWW269
Mechanical interlock mechanism with cables	draw-out type, 2 way	1	HWY500
	draw-out type, 3 way	1	HWY501
	fixed type, 2 way	1	HWY502
	fixed type, 3 way	1	HWY503
Adaptor kit for Ronis/Castell locks		1	HWY697
Mechanical interlock parts inside breaker (trip rod + bush)	frame A, draw-out type	1	HWY620
	frame A, fixed type	1	HWY621
	frame B, draw-out type	1	HWY622
	frame B, fixed type	1	HWY623
	frame C 3 pole, draw-out type	1	HWY624
	frame C 3 pole, fixed type	1	HWY625
	frame C 4 pole, draw-out type	1	HWY626
	frame C 4 pole, fixed type	1	HWY627



HWY570



HWY630



HWY672

Description	Characteristics	Pack Qty.	Cat. ref.
Mechanical interlock (full set)	draw-out type, frame A, 2 way	1	HWY570
	draw-out type, frame A, 3 way	1	HWY571
	draw-out type, frame B, 2 way	1	HWY572
	draw-out type, frame B, 3 way	1	HWY573
	draw-out type, frame C 3 pole, 2 way	1	HWY574
	draw-out type, frame C 4 pole, 2 way	1	HWY575
	draw-out type, frame C 3 pole, 3 way	1	HWY576
	draw-out type, frame C 4 pole, 3 way	1	HWY577
	fixed type, frame A, 2 way	1	HWY580
	fixed type, frame A, 3 way	1	HWY581
	fixed type, frame B, 2 way	1	HWY582
	fixed type, frame B, 3 way	1	HWY583
	fixed type, frame C 3 pole, 2 way	1	HWY584
	fixed type, frame C 4 pole, 2 way	1	HWY585
	fixed type, frame C 3 pole, 3 way	1	HWY586
	fixed type, frame C 4 pole, 3 way	1	HWY587
Cable 3m	for mechanical interlock	1	HWY508
Cable 5m	for mechanical interlock	1	HWY509
Horizontal / vertical terminals	for frame A 3 pole, 630-1600A	1	HWY610
	for frame A 4 pole, 630-1600A	1	HWY611
	for frame B 3 pole, 630-3200A	1	HWY612
	for frame B 4 pole, 630-3200A	1	HWY613
Phase insulation barrier	3 pole (2 units)	1	HWY630
	4 pole (3 units)	1	HWY631
Control terminal protection cover	for draw-out type	1	HWY637
Arc shield (for draw-out type)	for frame A 3 pole, 630-2000A	1	HWY670
	for frame A 4 pole, 630-2000A	1	HWY671
	for frame B 3 pole, 630-4000A	1	HWY672
	for frame B 4 pole, 630-4000A	1	HWY673
	for frame C 3 pole, 3200-5000A	1	HWY674
	for frame C 4 pole, 3200-5000A	1	HWY675
Fixed type connector plug	pre-wired kit length: 3m	1	HWW065

Characteristics

Reference		HWX611	HWX612	HWX613	HWX621	HWX622	HWX623	HWX633
Type		LI	LSI	LSIG	LI Amp	LSI Amp	LSIG Amp	Energy
Frequency 50/60 Hz		•	•	•	•	•	•	•
OCR								
Power	externals	•	•	•	•	•	•	•
	self	•	•	•	•	•	•	•
Protection function	LTD	•	•	•	•	•	•	•
	STD	-	•	•	-	•	•	•
	INST	•	•	•	•	•	•	•
	PTA	-	-	-	•	•	•	•
	GFT	-	-	•	-	-	•	•
	neutral protection	•	•	•	•	•	•	•
	fail safe	•	•	•	•	•	•	•
	MCR	•	•	•	•	•	•	•
Indication	long time pick up LED	•	•	•	•	•	•	•
	fault LED	L, I	L, S/I	L, S/I, G	L, I PTA	L, S/I PTA	L, S/I, G PTA	L, S/I, G PTA
	LCD display, Amp and measurement	-	-	-	•	•	•	-
	LCD display, Amp, Energy, voltage, power, energy, demand and measurement	-	-	-	-	-	-	•
Digital output	separately continuous contact	• (2NO) L, I	• (2NO) L, S/I	• (3NO) L, S/I, G	• (3NO) L, I, PTA	• (3NO) L, S/I, PTA	• (4NO) L, S/I, G, PTA	• (4NO) L, S/I, G, PTA
ZSI		•	•	•	•	•	•	•
Reset button		•	•	•	•	•	•	•
Advanced functions	COM	-	-	-	•	•	•	•
	event / fault recording	-	-	-	•	•	•	•
	under/over voltage protection	-	-	-	-	-	-	•
	unbalanced current / voltage protection	-	-	-	-	-	-	•
	reverse power protection	-	-	-	-	-	-	•
	power P, Q, S, power factor, 3 phases voltage	-	-	-	-	-	-	•
	demand current / voltage	-	-	-	-	-	-	•

Overview



- | | |
|------------------------|--|
| ① PTA signal LED | ⑮ STD pick up setting |
| ② LTD signal LED | ⑯ STD time setting |
| ③ STD/INST signal LED | ⑰ INST pick up setting |
| ④ GFT signal LED | ⑱ PTA pick up setting |
| ⑤ Com. signal LED | ⑲ PTA time setting |
| ⑥ LCD screen | ⑳ GFT pick up setting |
| ⑦ STD/INST test button | ㉑ GFT time setting |
| ⑧ LTD test button | ㉒ GFT/STD (Inverse time setting),
MCR ON/OFF setting switch |
| ⑨ Movement button | ㉓ In (rated current) setting |
| ⑩ Enter button | ㉔ Temporary test connection jack |
| ⑪ Reset button | ㉕ Model name |
| ⑫ Menu button | ㉖ Battery |
| ⑬ LTD pick up setting | |
| ⑭ LTD time setting | |

→ Self power works normally at larger than 10% for 3 phase, 30% for single phase.

		OCR: LI, LSI, LSIg,LI Amp, LSI Amp, LSIg Amp, LSIg Energy I _n , t _n of the ACB > I _n , t _n of the MCCB / I _{sd} , t _{sd} of the ACB > I _{sd} , t _{sd} of the MCCB / I _i = 16xI _n , NON,MCR ON																			
Icc (kA)	Upstream	Frame A, type HWAH						Frame A, type HWAN						Frame B, type HWBN							
		max. rated current 2000A Icu = Ics = 50kA at 415V						max. rated current 2000A Icu = Ics = 65kA at 415V						max. rated current 4000A Icu = Ics = 65kA at 415V							
	Downstream	(A)	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	630	800	1000	1250	1600	2000	
HDA HHA HNA	x160 TM 18/25/40kA	16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		80	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T			
HHB HNB	x250 TM 25/40kA	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		225	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
HHG HNG HEG	h250 TM 25/50/65kA	20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T			
HNN HEH	h250 TM+ 50/70kA	20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HNC HEC	h250 LSI 50/70kA	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HND HND HKD	h400 TM 25/50/70kA	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		300	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		350	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		400	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HND HED	h630 LSI 50/70kA	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		400	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		500	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		600		T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	
		630		T	T	T	T	T		T	T	T	T	T		T	T	T	T	T	
HNN HEK	h800 TM 50/70kA	630		T	T	T	T	T		T	T	T	T	T		T	T	T	T	T	
		800			T	T	T	T			T	T	T	T			T	T	T	T	
HNE HEE	h1000 LSI 50/70kA	630		T	T	T	T	T		T	T	T	T	T		T	T	T	T	T	
		700		T	T	T	T	T		T	T	T	T	T		T	T	T	T	T	
		800				T	T	T	T			T	T	T	T			T	T	T	T
		1000					T	T	T				T	T	T				T	T	T
HNF HEF	h1600 LSI 50/70kA	800			T	T	T	T			T	T	T	T			T	T	T	T	
		1250						T	T				T	T					T	T	
		1600							T					T	T					T	

Main Incomeers

Main Incomers From 16 to 1600 A moulded case circuit breaker

Allow the connection, protection, breaking and switching in the low voltage distribution boards.

The range includes circuit breakers, main switches and changeover switches from 16 to 1600 A.

The offer is completed by earth leakage relays and torroids to build a main protection with adjustable setting for your installation.

Moulded Case Circuit Breaker

Page

01 Expert tips	75
02 Expert tips	77
03 Technical characteristics	78
04 Add on technical characteristics	80
05 References Guide	81
06 MCCB x160	86
07 MCCB x160 accessories	89
08 MCCB x250	93
09 MCCB x250 accessories	94
10 MCCB h250	98
11 MCCB h250 accessories	100
12 MCCB h400 - h630	106
13 MCCB h400 - h630 accessories	108
14 MCCB h800 - h1000	116
15 MCCB h800 - h1000 accessories	117
16 MCCB h1600	123
17 MCCB h1600 accessories	124

H3 MCCBs and trip-free switches 16 to 1600 A

Easy mounting and safety

The new **h3** range of MCCBs provides safe and easy solutions for low voltage electrical circuits protection. The state of the art circuit breakers offers both designers and installers wide range of features and benefits.



The advantages for you

- Easy to install
- Quick, easy and safety mounting of accessories
- Wide range of rated current ratings and breaking capacities
- Calibrated at 50 Deg centigrade
- Trip-free switches

Technical data :

- Comply with IEC 60947-2
- 6 frame sizes: x160, x250, h250, h630, h1000, h1600
- Breaking capacity: 18, 25, 40, 50, 65, 70 kA
- Thermal magnetic and electronic trip units
- 1 pole to 4 poles
- Current limiting type
- Complete range of accessories
- International certification and approvals



1 Design by Hager

In harmony with Hager enclosures and modular products.



2 Electronic trip unit (LSI)

Is permitting total selectivity and generator protection.



3 Breaking capacity

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



4 Easy mounting of auxiliaries

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



5 Visibility of auxiliaries fitted

Indicates type of auxiliary mounted in breaker.



6 Integrated padlocking facility

Nice solution for maintenance.



7 Complete range of accessories

Rotary handles, padlocks, motors, terminal covers.



8 Flexible connection

Collar terminals, front and rear connections, straight connections, spreaders ...

H3 Add-on blocks

16 to 1600 A

Easy mounting and safety

Designed to complete the MCCBs and trip-free switches range, the **h3** residual current add-on blocks feature:

- Performance : high immunity A type for standard versions, adjustable product...
- Safety : default current gradually displayed, class II...
- Ease of use : drawer system, system avoids the omission of terminal tightening, Quick Connect..



The advantages for you

- Easy to install
- safe to use
- Time saving
- Design matches with modular protection devices

Technical data :

- 3 frame sizes: x160, x250, h630
- Double isolation class II
- Type A reinforced immunity
- Fixed 300mA version for x160
- Sensitivity and time delay setting



1 Drawer system for mounting on x160

Quick and safe to mount, thanks to the system avoiding the terminal tightening omission.



2 Connections

For the information report via Quick Connect terminals: fast and long term quality connections.



3 A and HI type are standard

High detection performance product:

- detects sinusoidal alternating currents and residual pulsating currents.
- protected against nuisance tripping caused by transient voltages



4 High performance

Gradual display of the default current allows preventive action before tripping.



5 Safe connection MCCB / add-on block

Class II: terminal cover avoid direct contacts.



6 Pre-mounted connection screws

Simplified implementation of the add-on blocks:

- time saving.
- avoid part losing.

Frame	x160					x250				h250 TM			h250 TM+			
Product	Switch	MCCB				Switch	MCCB			MCCB			MCCB			
Reference	HCA	HDA	HHA	HNA	HCB	HHB	HNB	HHG	HNG	HEG	HNH	HEH				
Number of poles	[No.]	3-4	1-2-3-4	1-2-3-4	3-4	3-4					3-4					
Electrical characteristics																
Rated current	In [A]	160				250				250			250			
Current rated range	[A]	125-160	16-125 (1P), 16-160 (2,3,4P)			250	100-250			12,5-250			12,5-250			
Rated service voltage, (AC)	Ue [V]	220-440				220-440				220-690			220-690			
Frequency	f [Hz]	50/60				50/60				50/60			50/60			
Rated insulation voltage	Ui [V]	690				800				800			800			
Rated impulse withstand voltage	Uimp [kV]	6				8				8			8			
Rated ultimate short-circuit breaking capacity, (Icu)																
(AC) 50-60 Hz 220/230 V	Icu [kA]	-	25	35	85	-	35	85		35	85	85	85	100		
(AC) 50-60 Hz 380/415 V	Icu [kA]	-	18	25	40	-	25	40		25	50	65	50	70		
(AC) 50-60 Hz 480/500/525 V	Icu [kA]	-	6	7,5	12,5	-	-	10		10	25	25	30	45		
(AC) 50-60 Hz 660/690 V	Icu [kA]	-	-	-	6	-	-	4		-	7,5	7,5	20	20		
(DC) 250 V - 2 poles in series	Icu [kA]	-	12,5	20	25	-	25	25		25	40	40	40	40		
Rated service short-circuit breaking capacity, (Ics)																
(AC) 50-60 Hz 220/230 V	Ics [kA]	-	25	25	40	-	25	40		27	65	85	85	100		
(AC) 50-60 Hz 380/415 V	Ics [kA]	-	18	20	20	-	20	20		19	25	36	50	70		
(AC) 50-60 Hz 480/500/525 V	Ics [kA]	-	3	4	7,5	-	-	7,5		7,5	25	25	30	45		
(AC) 50-60 Hz 660/690 V	Ics [kA]	-	-	-	3	-	-	2		-	7,5	7,5	15	15		
(DC) 250 V - 2 poles in series	Ics [kA]	-	7	10	13	-	13	13		19	40	40	40	40		
Rated short-circuit making capacity	Icm [kA]	2,8	-	-	-	6	-	-		-			-	-		
Rated short-time withstand current for 1s	Ist [kA]	2	-	-	-	3	-	-		-			-	-		
Category of use (EN 60947-2)	-	A				-	A				A			A		
Calibration temperature	-	50°C				-	50°C				50°C			50°C		
Derating 40°C	-	100%				-	100%				100%			100%		
50°C	-	100%				-	100%				100%			100%		
55°C	-	95%				-	94%				94%			94%		
60°C	-	93%				-	91%				91%			91%		
65°C	-	90%				-	88%				88%			88%		
Suitability for isolation	ok					ok					ok			ok		
Electric endurance in number of cycles	10000					10000					10000			10000		
Mechanical endurance in number of operations	20000					20000					30000			30000		
Operating temperature	-25 to +70°C					-25 to +70°C					-25 to +70°C			-25 to +70°C		
Storage temperature	-35 to +70°C					-35 to +70°C					-35 to +70°C			-35 to +70°C		
Power loss (at In for 3P)	[W]	39					60					65			68	
Reference standard	IEC 60947-3	IEC 60947-2				IEC 60947-3	IEC 60947-2			IEC 60947-2			IEC 60947-2			
Releases: switch	ok	-				ok	-			-			-			
Releases: TM (thermomagnetic)	-	ok				-	ok			ok			ok			
T fixed, M fixed	-	ok				-	ok			-			-			
T adjustable, M fixed	-	ok				-	-			-			-			
T adjustable, M adjustable	-	-				-	ok			ok			ok			
Thermal adjustment value	-	0,63 to 1 x In				-	0,63 to 1 x In			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			6-8-10-13 x In			
Releases: LSI (electronic)	-	-				-	-			-			-			
Long delay	-	-				-	-			-			-			
Short delay	-	-				-	-			-			-			
Time delay	-	-				-	-			-			-			
Terminations																
Standard terminal type	cage					lugs				lugs			lugs			
Maximum terminal capacity	95 mm²					185 mm² (cage)				120 mm² (cage)			120 mm² (cage)			
Terminal width	mm	-				25				25			25			
Terminal shields	ok					ok				ok			ok			
Cage terminal	integrated					ok				ok			ok			
Extended connections	ok					ok				ok			ok			
Rear connections	no					ok				ok			ok			
Dimensions																
Height	mm	130				165			165			165				
Width	1P mm	-	25				-	-			-					
	2P mm	-	50				-	-			-					
	3P mm	75				105			105			105				
	4P mm	100				140			140			140				
Depth	mm	68				68			68			97				
Weight	1P kg	-	0,29				-	-			-					
	2P kg	-	0,48				-	-			-					
	3P kg	0,715				1,3			1,5			2,4				
	4P kg	0,95				1,6			1,9			3,2				

h250 LSI			h400 TM			h630 LSI			h800 TM			h1000 LSI			h1600 LSI		
MCCB			MCCB			Switch			MCCB			Switch			Switch		
HNC	HEC		HND	HND	HKD	HCD	HND	HED	HNC	HEK		HCE	HNE	HEE	HCF	HNF	HEF
3-4			3-4			3-4			3-4			3-4			3-4		
250			400			630			800			1000			1600		
40-125-250			250-400			400-630	250-400-630		630-800			630-800-1000			1250-1600		
220-690			220-690			220-690			220-690			220-690			220-690		
50/60			50/60			50/60			50/60			50/60			50/60		
800			800			800			800			800			800		
8			8			8			8			8			8		
85	100		35	85	100	-	85	100	85	100		-	85 (800A) 75 (1000A)	100	-	100	100
50	70		25	50	70	-	50	70	50	70		-	50	70	-	50	70
25	45		10	30		-	30	30	30	30		-	30	30	-	45	65
7,5	20		7,5	20		-	20	20	20	20		-	20	20	-	25	45
-	-		25	40		-			50	50		-	-	-	-	-	-
85	100		35	85		-	85	85	85	75		-	85 (800A) 75 (1000A)	100 (800A) 75 (1000A)	-	75	75
25	70		25	50	50	-	50	50	50	50		-	50	50	-	50	50
25	45		10	30		-	30	30	30	30		-	30	30	-	45	50
7,5	15		7,5	15		-	15	15	20	20		-	20	20	-	25	34
-	-		25	40		-			50	50		-	-	-	-	-	-
-	-		-	-		9	-	-	-	-		20	-	-	45	-	-
-	-		-	-		5 (0,3s)	-	-	-	-		10 (0,3s)	-	-	20 (0,3s)	-	-
A			A			-	B(250-400A) - A(630A)		A			-	B(800A) - A(1000A)		-	B	
40/50°C			50°C			-	40/50°C		40°C			-	40/50°C		-	40/50°C	
100%			100%			-	100%		100%			-	100%		-	100%	
95%			100%			-	95%		100%			-	95%		-	95%	
90%			95%			-	90%		95%			-	90%		-	90%	
80%			92%			-	80%		92%			-	80%		-	80%	
80%			89%			-	80%		89%			-	80%		-	80%	
ok			ok			ok			ok			ok			ok		
10000			4500			4500			4500			4500			4500		
30000			15000			15000			15000			15000			15000		
-25 to +70°C			-25 to +70°C			-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			-35 to +70°C			-35 to +70°C		
75			75			150			150			150			170		
IEC 60947-2			IEC 60947-2			IEC 60947-3	IEC 60947-2		IEC 60947-2			IEC 60947-3	IEC 60947-2		IEC 60947-3	IEC 60947-2	
-			-			ok	-		-			ok	-		ok	-	
-			ok			-			ok			-			-		
-			-			-			-			-			-		
-			-			-			-			-			-		
-			ok			-			ok			-			-		
-			0,63 to 1 x In			-			0,63 to 1 x In			-			-		
-			6-8-10-12 x In			-			5 to 10 x In			-			-		
-			-			-	ok		-			-	ok		-	ok	
0,4 to 1 x Ir			-			-	0,4 to 1 x Ir		-			-	0,4 to 1 x Ir		-	0,4 to 1 x In	
2,5 to 10 x Ir			-			-	2,5 to 10 x Ir (250-400A) 2,5 to 8 x Ir (630A)		-			-	2,5 to 10 x Ir (800A) 2,5 to 8 x Ir (1000A)		-	2,5 to 10 x Ir	
0,1 - 0,2s			-			-	0,1 - 0,2s		-			-	0,1 - 0,2s		-	0,1 - 0,2s	
lugs			lugs			lugs			lugs			lugs			lugs		
120 mm² (cage)			240 mm² (cage)			-			-			-			-		
25			30			30			45			45			45		
ok			ok			ok			ok			ok			ok		
ok			ok			-			-			-			-		
ok			ok			integrated			integrated			integrated			integrated		
ok			ok			ok			ok			ok			ok		
165			260			260			273/433			273/433			370/570		
-			-			-			-			-			-		
-			-			-			-			-			-		
105			140			140			210			210			210		
140			185			185			280			280			280		
97			97			97			99,5			99,5			140		
-			-			-			-			-			-		
-			-			-			-			-			-		
2,5			4,2			4,3			8,5			11			27		
3,3			5,6			5,7			11,5			14,8			31		

Product		Add-on blocks 	
Frame		x250	h630
Number of poles		4	4
Tripping access		mechanical	mechanical
Standards CEI/EN 60947-2 appendix B		ok	ok
Electrical characteristics			
Max rated current (40°) In A	In	160 - 250A	400A - 500A
Rated service voltage Ue V AC (50/60Hz)	Ue	240-415V	240-415V
Mechanical characteristics			
Top and bottom supply		ok	ok
For tripping, no additional external electrical sources		ok	ok
Possible operating with 2 active phases		ok	ok
Settings			
Sensitivity IΔn	IΔn (A)	0.03, 0.1, 0.3, 1, 3, 6A	0.03, 0.1, 0.3, 1, 3, 6A
Time delay Δt	Δt (s)	inst., 0.06, 0.15, 0.3, 0.5, 1	inst., 0.06, 0.15, 0.3, 0.5, 1
Max. opening time	ms	10	10
Delay add-on block is not possible if IΔn = 30mA		ok	ok
Selective product		ok	ok
Mechanical test button		ok	ok
Isolating test without cable removal		ok	ok
Electrical test button		ok	ok
Reset button		ok	ok
Sealable setting button		ok	ok
Isolation level signaling by led 25 and 50%		ok	ok
In running signalisation by led		ok	ok
Residual default signaling contact		ok	ok
Signaling contact 50% IΔn		ok	ok
Anti-transient	type AC	ok	ok
Pulsating current	type A	ok	ok
High immunity	type HI	yes	yes
-25°C		ok	ok
Accessories and connection			
Steel terminal cage (x3/x4)		accessories	accessories
Connection by lugs		ok	ok
Extended connections (x4)		ok	ok
Spreaders (x4)		ok	ok
Terminal covers (3P/4P)		ok	ok
Interphase barriers (x3)		ok	ok
Rigid cables connection capacity mm²		35-185	35-240
Flexible cables connection capacity mm² (with terminal)		35-150	35-185
Tightening torque Nm		12	22
Copper bar (width) in mm		25	30
Mounting			
Clips on DIN rail		no	no
Fixed on mounting plate		ok	ok
Fixation type		bottom	bottom
Mounting by customer		ok	ok
Dimensions and weight			
Dimensions (LxHxD) in mm	L	140	184
Side mounted 4P	H	107,5	133
	D	85	110
Weight	3P	/	/
	4P	1,2	2,4

	Pole	Trip unit	Serie	HDx	HHx	HNx	HNx	HEx
			In A	18kA	25kA	40kA	30kA - 50kA	65kA* - 70kA
x160	1P	TM fix/fix	16	HDA014Z	HHA014Z			
			20	HDA018Z	HHA018Z			
			25	HDA023Z	HHA023Z			
			32	HDA030Z	HHA030Z			
			40	HDA038Z	HHA038Z			
			50	HDA048Z	HHA048Z			
			63	HDA061Z	HHA061Z			
			80	HDA078Z	HHA078Z			
			100	HDA098Z	HHA098Z			
			125	HDA123Z	HHA123Z			
	2P	TM fix/fix	16	HDA015P	HHA015P			
			20	HDA019P	HHA019P			
			25	HDA024P	HHA024P			
			32	HDA031P	HHA031P			
			40	HDA039P	HHA039P			
			50	HDA049P	HHA049P			
			63	HDA062P	HHA062P			
			80	HDA079P	HHA079P			
			100	HDA099P	HHA099P			
			125	HDA124P	HHA124P			
	3P	TM fix/fix	160	HDA159P	HHA159P			
			16	HDA018P	HHA018P	HNA018P		
			20	HDA020P	HHA020P	HNA020P		
			25	HDA025P	HHA025P	HNA025P		
			32	HDA032P	HHA032P	HNA032P		
			40	HDA040P	HHA040P	HNA040P		
			50	HDA050P	HHA050P	HNA050P		
			63	HDA063P	HHA063P	HNA063P		
			80	HDA080P	HHA080P	HNA080P		
			100	HDA100P	HHA100P	HNA100P		
			125	HDA125P	HHA125P	HNA125P		
			160	HDA160P	HHA160P	HNA160P		
		TM adj/fix	16-20-25	HDA025S	HHA025S	HNA025S		
			25-32-40	HDA040S	HHA040S	HNA040S		
			40-50-63	HDA063S	HHA063S	HNA063S		
			50-63-80	HDA080S	HHA080S	HNA080S		
			63-80-100	HDA100S	HHA100S	HNA100S		
			80-100-125	HDA125S	HHA125S	HNA125S		
			100-125-160	HDA160S	HHA160S	HNA160S		
			16	HDA017P	HHA017P	HNA017P		
			20	HDA021P	HHA021P	HNA021P		
			25	HDA026P	HHA026P	HNA026P		
	4P 100%	TM fix/fix	32	HDA033P	HHA033P	HNA033P		
			40	HDA041P	HHA041P	HNA041P		
			50	HDA051P	HHA051P	HNA051P		
			63	HDA064P	HHA064P	HNA064P		
			80	HDA081P	HHA081P	HNA081P		
			100	HDA101P	HHA101P	HNA101P		
			125	HDA126P	HHA126P	HNA126P		
			160	HDA161P	HHA161P	HNA161P		
		TM adj/fix	16-20-25	HDA026S	HHA026S	HNA026S		
			25-32-40	HDA041S	HHA041S	HNA041S		
			40-50-63	HDA064S	HHA064S	HNA064S		
			50-63-80	HDA081S	HHA081S	HNA081S		
			63-80-100	HDA101S	HHA101S	HNA101S		
			80-100-125	HDA126S	HHA126S	HNA126S		
			100-125-160	HDA161S	HHA161S	HNA161S		
x250	3P	TM fix/fix	100		HHB100Z	HNB100Z		
			125		HHB125Z	HNB125Z		
			160		HHB160Z	HNB160Z		
			200		HHB200Z	HNB200Z		
			250		HHB250Z	HNB250Z		
		TM adj/adj	63-80-100			HNB100U		
			80-100-125			HNB125U		
			100-125-160			HNB160U		
			125-160-200			HNB200U		
			160-200-250			HNB250U		
		TM fix/fix	100		HHB101Z	HNB101Z		
			125		HHB126Z	HNB126Z		
			160		HHB161Z	HNB161Z		
			200		HHB201Z	HNB201Z		
			250		HHB251Z	HNB251Z		
	4P 0% - 4P 100%	TM adj/adj	63-80-100			HNB101U		
			80-100-125			HNB126U		
			100-125-160			HNB161U		
			125-160-200			HNB201U		
			160-200-250			HNB251U		

			Serie	HDx	HHx	HNx	HNx	HEx	HKx
	Pole	Trip unit	In A	18kA	25kA	40kA	30kA - 50kA	65kA* - 70kA	65kA* - 70kA
h250	3P	TM adj/adj	12,5-16-20		HHG020U		HNG020U		
			20-25-32		HHG032U		HNG032U		
			32-40-50		HHG050U			HEG050U*	
			40-50-63		HHG063U		HNG063U	HEG063U*	
			63-80-100		HHG100U		HNG100U	HEG100U*	
			80-100-125		HHG125U		HNG125U	HEG125U*	
			100-125-160		HHG160U		HNG160U	HEG160U*	
			125-160-200		HHG200U		HNG200U	HEG200U*	
			160-200-250		HHG250U		HNG250U	HEG250U*	
		TM+ adj/adj	12,5-16-20				HNH020U	HEH020U	
			20-25-32				HNH032U	HEH032U	
			32-40-60				HNH050U	HEH050U	
			40-50-63				HNH063U	HEH063U	
			63-80-100				HNH100U	HEH100U	
			80-100-125				HNH125U	HEH125U	
			100-125-160				HNH160U	HEH160U	
			125-160-200						
			160-200-250				HNH250U	HEH250U	
		LSI	16-40				HNC040U	HEC040U	
			50-125				HNC125U	HEC125U	
			100-250				HNC250U	HEC250U	
	4P	TM adj/adj	12,5-16-20				HNG021U		
			20-25-32				HNG033U		
			32-40-50				HNG051U	HEG051U	
			40-50-63				HNG064U	HEG064U	
			63-80-100				HNG101U	HEG101U	
			80-100-125				HNG126U	HEG126U	
			100-125-160				HNG161U	HEG161U	
			125-160-200				HNG201U	HEG201U	
			160-200-250				HNG251U	HEG251U	
		TM+ adj/adj	12,5-16-20				HNH021U	HEH021U	
			20-25-32				HNH033U	HEH033U	
			32-40-50				HNH051U	HEH051U	
			40-50-63				HNH064U	HEH064U	
			63-80-100				HNH101U	HEH101U	
			80-100-125				HNH126U	HEH126U	
			100-125-160				HNH161U	HEH161U	
			125-160-200						
			160-200-250				HNH251U	HEH251U	
		4P 0 - 50 - 100%	16-40				HNC041U	HEC041U	
			50-125				HNC126U	HEC126U	
			100-250				HNC251U	HEC251U	
h400 - h630	3P	TM adj/adj	160-200-250		HHD250U		HND250U		HKD250U
			250-320-400		HHD400U		HND400U		HKD400U
			160-400						
		LSI	250-630				HND630U		
			160-400				HND400H		
			400-630					HED400U	
	4P	TM adj/adj	250-630				HND630U	HED630U	
			160-200-250				HND251U		HKD251U
		LSI	250-320-400				HND401U		HKD401U
			160-400				HND401H	HED401U	
h1000	3P	TM	630				HNK630U	HEK630U	
			800				HNK800U	HEK800U	
		LSI	630				HNE630U		
			800				HNE800U	HEE800U	
	4P	TM	1000				HNE970U	HEE970U	
			630				HNK631U	HEK631U	
	4P 0% - 50% - 100%	LSI	800				HNK801U	HEK801U	
			630				HNE631U		
			1000				HNE801U	HEE801U	
			800				HNE971U	HEE971U	
h1600	3P	LSI	1250				HNK980U	HEK980U	
			1600				HNK990U	HEK990U	
	4P 0% - 50% - 100%	LSI	1250				HNK981U	HEK981U	
			1600				HNK991U	HEK991U	

Serie	Version	Poles	In A	x160	x250	h630	h1000	h1600
Trip-free switches		3 poles	125	HCA125Z				
			160	HCA160Z				
		4 poles	125	HCA126Z				
			160	HCA161Z				
		3 poles	250		HCB250Z			
		4 poles	250		HCB251Z			
		3 poles	400			HCD400U		
			630			HCD630U		
		4 poles	400			HCD401U		
			630			HCD631U		
		3 poles	800				HCE800U	
			1000				HCE970U	
		4 poles	800				HCE801U	
			1000				HCE971U	
		3 poles	1250					HCF980U
			1600					HCF990U
		4 poles	1250					HCF981U
			1600					HCF991U
Add-on blocks	Bottom mounted	4 poles	160 adjustable		HBB161H			
			250 adjustable		HBB251H			
			400 adjustable			HBD401H		
			500 adjustable			HBD631H		

Switches and accessories for h3 References Guide

Switches and accessories									
Products	Version	pole	In A / Ue V	x160	x250	h250	h400-h630	h1000	h1600
Auxiliaries	Shunt trip release	3/4P	24V DC	HXA001H		HXC001H			
			48V DC	HXA002H		HXC002H			
			110V DC	-		HXC008H			
			100-120V AC	HXA003H		HXC003H			
			200-240V AC	HXA004H		HXC004H			
			380-450V AC	HXA005H		HXC005H			
	Undervoltage release	3/4P	24V DC	HXA011H		HXC011H		HXE011H	
			100-120V DC	-		HXC018H		HXE018H	
			200-240V DC	-		HXC019H		HXE019H	
			100-120V AC	HXA013H		HXC013H		HXE013H	
			200-240V AC	HXA014H		HXC014H		HXE014H	
			380-450V AC	HXA015H		HXC015H		HXE015H	
	Delayed undervoltage release	3/4P	24V DC	HXA051H		HXC051H	HXD051H	HXE051H	HXF051H
		3/4P	110-120V AC	HXA053H		HXC053H	HXD053H	HXE053H	HXF053H
		3/4P	220-240V AC	HXA054H		HXC054H	HXD054H	HXE054H	HXF054H
	Auxiliary contact	3/4P	380-415V AC	HXA055H		HXC055H	HXD055H	HXE055H	HXF055H
		3/4P	1NO+1NC	HXA021H		HXC021H			
		3/4P	1NO+1NC	HXA024H		HXC024H			
	Alarm contact	3/4P	1NO+1NC	HXA025H		HXC025H			
		3/4P	1NO+1NC	HXA026H		HXC026H			
	Direct rotary handle			HXA030H	HXB030H	HXC030H	HXD030H	HXE030H	HXF030H
				HXA031H	HXB031H	HXC031H	HXD031H	HXE031H	HXF031H
	Extended rotary handle			HXA039H	HXB039H	HXC039H	HXD039H		HXF039H
				HXA037H*					
	Padlock								
	Motor operator	3/4P	24-48V DC	-	HXB040H	HXC040H	HXD040H	HXE040H	HXF040H
		3/4P	200-240V AC	-	HXB042H	HXC042H	HXD042H	HXE042H	HXF042H
	Interlocking wire type (kit)	3/4P	-	-	HXB065H	HXC065H	HXD065H	HXE065H	-
			-	-	HXB066H	HXC066H	HXD066H	HXE066H	-
	Interlocking wire type (unit)		-	-	HXB070H				-
			-	-	HXB071H				-
	Cable for interlock wire 1 m		-	-					-
			-	-					-
	Cable for interlock wire 1,5 m		-	-					-
			-	-					-
	Electrical interlock for motor type A	3/4P	-	-	HXB088H		HXD068H		-
		3/4P	-	-	HXB069H (between HXB04xH or HXC04xH and HXD04xH or HXE04xH.)				-

* for HxAxxxP references - standard version handle

		Switches and accessories							
Products	Version	pole	In A / Ue V	x160	x250	h250	h400-h630	h1000	h1600
Connections	Collar terminal - copper	3P		-	-	HYC003H	HYD003H (250-400A)	-	-
		4P		-	-	HYC004H	HYD004H (250-400A)	-	-
	Collar terminal - aluminium / copper 185 mm²	3P		-	HYB001H	-	-	-	-
		4P		-	HYB002H	-	-	-	-
	Collar terminal - aluminium / copper 240 mm²	3P		-	HYB005H	-	HYD005H	-	-
		4P		-	HYB006H	-	HYD006H	-	-
	Collar terminal multiple - aluminium / copper 240 mm²	3P		-	-	-	HYD007H	HYE007H (to 800)	-
		4P		-	-	-	HYD008H	HYE008H (to 800)	-
	Extended straight connection	3/4P		HYA010H	HYB010H	HYC010H	HYD010H (250-400A) HYD013H (630A integrated)	included	included
	Extended spreader connection	3P		HYA011H	HYB011H	HYC011H	HYD011H (250-400A) HYD014H (630A)	-	-
		4P		HYA012H	HYB012H		HYD012H (250-400A) HYD015H (630A)	-	-
	Interphase barrier	3/4P	short	HYA019H		-	-	-	-
			long	HYB019H		included / HYC019 (LSI/TM-) HYB019 (TM)	included / HYD019H		
	Terminal cover for extended straight connections	3P		HYA021H	HYB021H	HYC021H (LSI / TM-) HYG021H (TM)	HYD021H	HYE021H	-
		4P		HYA022H	HYB022H	HYC022H (LSI / TM-) HYG022H (TM)	HYD022H	HYE022H	-
	Terminal cover large for spreader connection	3P		HYA023H	HYB023H	-	HYD023H	-	-
		4P		HYA024H	HYB024H	-	HYD024H	-	-
	Terminal cover short for rear connections	3P		HYA025H	HYB025H	HYC025H (LSI / TM-)	HYD025H	HYE025H	-
		4P		HYA026H	HYB026H	HYC026H (LSI / TM-)	HYD026H	HYE026H	-
	Terminal cover for collar terminal	3P		HYA027H	HYB027H	HYC027H	HYD027H	-	-
		4P		HYA028H	HYB028H	HYC028H	HYD028H	-	-
	Rear connections	3P		HYA031H (16-50A) HYA131H (63-160A) for S version	HYB031H	HYC031H (LSI / TM-) HYG031H (TM)	HYD031H (250-400A) HYD033H (630A)	HYE031H (630-800A) HYE033H (1000A)	-
		4P		HYA032H (16-50A) HYA132H (63-160A) for S version	HYB032H	HYC032H (LSI / TM-) HYG032H (TM)	HYD032H (250-400A) HYD034H (630A)	HYE032H (630-800A) HYE034H (1000A)	-
	DIN rail adaptor	3/4P		HYA033H	-	-	-	-	-
	Connecting kit (0,75mm²)	3/4P		HYA035H					
	Rail Din raiser	3/4P		HYA036H	-	-	-	-	-
	OCR sealing cover			-	-	HYC041H (LSI) HYG041H (TM)	-	-	-
	Compact lugs 16mm² D:8,5	3/4P		HYA086H	-	-	-	-	-
	Compact lugs 25mm² D:8,5	3/4P		HYA087H	-	-	-	-	-
	Compact lugs 35mm² D:8,5	3/4P		HYA088H		-	-	-	-
	Compact lugs 50mm² D:8,5	3/4P		HYA089H		-	-	-	-
	Compact lugs 70mm² D:8,5	3/4P		HYA090H		-	-	-	-
	Compact lugs 95mm² D:8,5	3/4P		HYA091H		-	-	-	-
	Compact lugs 120mm² D:8,5	3/4P		-	HYB092H	-	-	-	-
	Compact lugs 120mm² D:10	3/4P		-	-	-	HYD093H	-	-
	Compact lugs 150mm² D:8,5	3/4P		-	HYB094H	-	-	-	-
	Compact lugs 150mm² D:10,5	3/4P		-	-	-	HYD095H	-	-
	Compact lugs 185mm² D:10,5	3/4P		-	-	-	HYD096H	-	-
	Compact lugs 185mm² D:12,8	3/4P		-	-	-	HYD097H*	-	-
	Compact lugs 240mm² D:12,8	3/4P		-	-	-	HYD098H*	-	-

* with spreaders



Switches and building
control systems.

**Good
design
speaks for
itself!**

B.
Berker

Moulded case circuit breakers x160

Thermal magnetic trip unit, 3 versions:

- Z version: fixed thermal and fixed magnetic
- U version: adjustable thermal and fixed magnetic, cable lug terminal

- P version: fixed thermal and fixed magnetic

1P, 3P and 4P
Mechanical test button, lockable settings, integrated padlocking handle Ø 4mm, 3 and 4 pole devices complete with DIN clip.

Connection capacity

95 mm² rigid cables
70 mm² flexible cables

Comply with IEC 60 947-2.

Trip-free switches

Allows tripping at distance using a voltmeter trip unit (optional) AC 22/23A.

Comply with IEC 60 947-3.



HDA125P

Description	In	Pack Qty.	Cat. ref.
MCCBs x160 18kA breaking capacity Ics : 18 kA (400/415 V AC)	16A	1	1P HDA014Z
	20A	1	HDA018Z
	25A	1	HDA023Z
	32A	1	HDA030Z
	40A	1	HDA038Z
	50A	1	HDA048Z
	63A	1	HDA061Z
	80A	1	HDA078Z
	100A	1	HDA098Z
	125A	1	HDA123Z
	16A	1	3P HDA016P
	20A	1	HDA020P
	25A	1	HDA025P
fixed thermal 1x In fixed magnetic > 10 x In	32A	1	HDA032P
	35A	1	HDA035P
	40A	1	HDA040P
	50A	1	HDA050P
	63A	1	HDA063P
	80A	1	HDA080P
	100A	1	HDA100P
	125A	1	HDA125P
	160A	1	HDA160P
	16A	1	4P HDA017P
	20A	1	HDA021P
	25A	1	HDA026P
	32A	1	HDA033P
	40A	1	HDA041P
	50A	1	HDA051P
	63A	1	HDA064P
	80A	1	HDA081P
	100A	1	HDA101P
	125A	1	HDA126P
	160A	1	HDA161P



HDA161U

Description	In	Pack Qty.	Cat. ref.
MCCBs x160 18kA adjustable thermal 0,63 - 0,8 - 1 x In fixed magnetic > 10 x In	25A	1	3P HDA025U
	40A	1	HDA040U
	63A	1	HDA063U
	80A	1	HDA080U
	100A	1	HDA100U
	125A	1	HDA125U
	160A	1	HDA160U
	25A	1	4P HDA026U
	40A	1	HDA041U
	63A	1	HDA064U
	80A	1	HDA081U
	100A	1	HDA101U
	125A	1	HDA126U
	160A	1	HDA161U
MCCBs x160 25kA breaking capacity Ics : 20 kA (400/415 V AC) fixed thermal 1x In fixed magnetic > 10 x In	16A	1	1P HHA014Z
	20A	1	HHA018Z
	25A	1	HHA023Z
	32A	1	HHA030Z
	40A	1	HHA038Z
	50A	1	HHA048Z
	63A	1	HHA061Z
	80A	1	HHA078Z
	100A	1	HHA098Z
	125A	1	HHA123Z
	16A	1	2P HHA015P
	20A	1	HHA019P
	25A	1	HHA024P
	32A	1	HHA031P
	40A	1	HHA039P
	50A	1	HHA049P
	63A	1	HHA062P
	80A	1	HHA079P
	100A	1	HHA099P
	125A	1	HHA124P
	160A	1	HHA159P
	16A	1	3P HHA016P
	20A	1	HHA020P
	25A	1	HHA025P
	32A	1	HHA032P
	40A	1	HHA040P
	50A	1	HHA050P
	63A	1	HHA063P
	80A	1	HHA080P
	100A	1	HHA100P
	125A	1	HHA125P
	160A	1	HHA160P
	16A	1	4P HHA017P
	20A	1	HHA021P
	25A	1	HHA026P
	32A	1	HHA033P
	40A	1	HHA041P
	50A	1	HHA051P
	63A	1	HHA064P
	80A	1	HHA081P
	100A	1	HHA101P
	125A	1	HHA126P
	160A	1	HHA161P



HNA125Z

Description	In	Pack Qty.	Cat. ref.
MCCBs x160 25kA adjustable thermal 0,63 - 0,8 - 1 x In fixed magnetic > 10 x In	25A	1	3P HHA025U
	40A	1	HHA040U
	63A	1	HHA063U
	80A	1	HHA080U
	100A	1	HHA100U
	125A	1	HHA125U
	160A	1	HHA160U
	25A	1	4P HHA026U
	40A	1	HHA041U
	63A	1	HHA064U
	80A	1	HHA081U
	100A	1	HHA101U
	125A	1	HHA126U
	160A	1	HHA161U
MCCBs x160 40kA breaking capacity Ics : 25 kA (400/415 V AC) fixed thermal 1 x In fixed magnetic > 10 x In	16A	1	3P HNA016Z
	20A	1	HNA020Z
	25A	1	HNA025Z
	32A	1	HNA032Z
	40A	1	HNA040Z
	50A	1	HNA050Z
	63A	1	HNA063Z
	80A	1	HNA080Z
	100A	1	HNA100Z
	125A	1	HNA125Z
	160A	1	HNA160Z
	16A	1	4P HNA017Z
	20A	1	HNA021Z
	25A	1	HNA026Z
	32A	1	HNA033Z
	40A	1	HNA041Z
	50A	1	HNA051Z
	63A	1	HNA064Z
	80A	1	HNA081Z
	100A	1	HNA101Z
	125A	1	HNA126Z
	160A	1	HNA161Z
adjustable thermal 0,63 - 0,8 - 1 x In fixed magnetic > 10 x In	25A	1	3P HNA025U
	40A	1	HNA040U
	63A	1	HNA063U
	80A	1	HNA080U
	100A	1	HNA100U
	125A	1	HNA125U
	160A	1	HNA160U
	25A	1	4P HNA026U
	40A	1	HNA041U
	63A	1	HNA064U
	80A	1	HNA081U
	100A	1	HNA101U
	125A	1	HNA126U
	160A	1	HNA161U

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "close".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75 mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXA021H

HXA024H



HXA014H

Description	Characteristics	Pack Qty.	Cat. ref.
Auxiliary contacts AX AL	1 changeover contact (ON/OFF) 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXA021H
	1 changeover alarm contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXA024H
	Low level contact (ON/OFF) 125 V AC 1 NO + 1 NC	1	HXA025H
	Low level alarm contact 125 V AC 1 NO + 1 NC	1	HXA026H
Shunt trips SH	24 V DC	1	HXA001H
	48 V DC	1	HXA002H
	100 - 120 V AC	1	HXA003H
	200 - 240 V AC	1	HXA004H
	380 - 450 V AC	1	HXA005H
Undervoltage releases UV	24 V DC	1	HXA011H
	100 - 120 V AC	1	HXA013H
	200 - 240 V AC	1	HXA014H
	380 - 450 V AC	1	HXA015H
Delayed undervoltage releases DUVR	24 V DC	1	HXA051H
	100 - 120 V AC	1	HXA053H
	200 - 240 V AC	1	HXA054H
	380 - 450 V AC	1	HXA055H



HXA030H



HXA031H



HXA015H



HXA021H



HXA023H

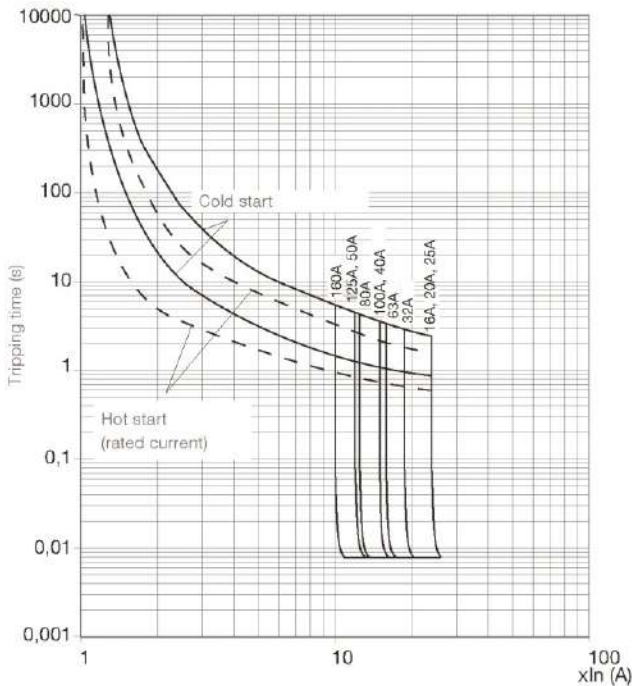


HXA027H

Description	Characteristics	Pack Qty.	Cat. ref.
Direct rotary handle	padlockable handle max Ø 6 mm	1	HXA030H
Extended rotary handle	padlockable handle max Ø 8 mm	1	HXA031H
Padlock	for padlock integrated handle to mount on MCCB for handle locking for 3 padlock max Ø 8	1	HXA039H
Extended connections	set of 3 or 4 spreader connections	3P	1
		4P	1
Interphase barriers	set of 3, height: 50 mm	3P	1
		4P	1
Terminal covers	for extended straight connections	3P	1
		4P	1
	for extended spreader connections	3P	1
		4P	1
	for collar terminal	3P	1
		4P	1
Din rail adaptor		1	HXA033H
Connection kit	0,75 mm ² , set of 3 x 2 wires length: 1,30m	1	HXA035H
Rail din raiser		1	HXA036H
Ring lugs	compact lugs 16 mm ² Ø8,5	1	HXA086H
	compact lugs 25 mm ² Ø8,5	1	HXA087H
	compact lugs 35 mm ² Ø8,5	1	HXA088H
	compact lugs 50 mm ² Ø8,5	1	HXA089H
	compact lugs 70 mm ² Ø8,5	1	HXA090H
	compact lugs 95 mm ² Ø8,5	1	HXA091H

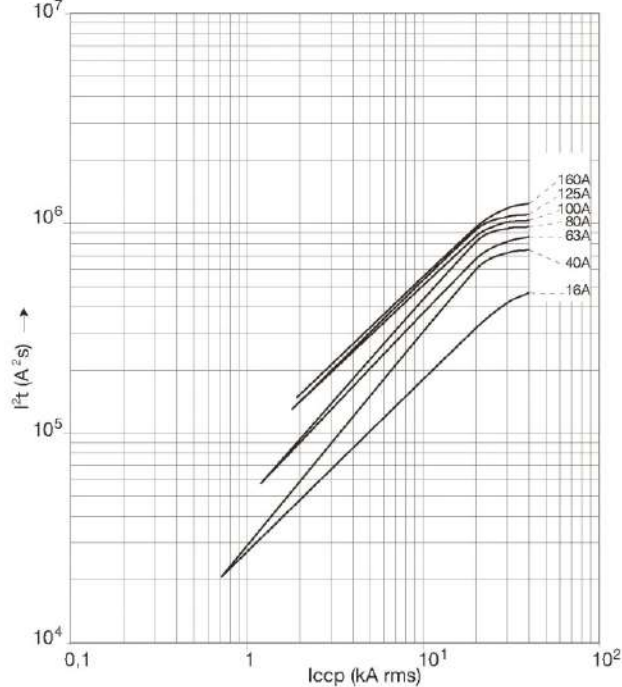
Tripping curve

MCCB x160



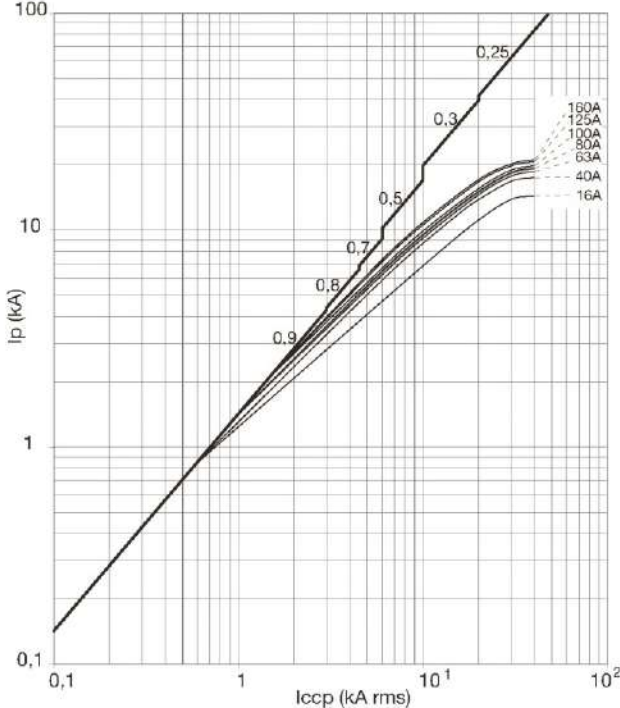
Thermal constraint curve at 400V (Let-through energy)

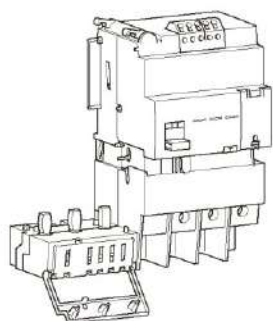
MCCB x160



Current limiting curve at 400V (Let-through peak current)

MCCB x160





When associated with MCCB, the add-on block provides an earth fault protection and protects against electrical shocks by direct or indirect contacts.

The add-on blocks are protected against nuisance tripping caused by transient voltages. It's able to detect sinusoidal alternating currents and residual pulsating direct currents (A type ). It also avoids miss tripping (HI type - High Immunity).

Characteristics

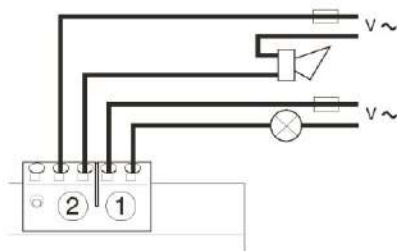
Reset button :
Signals add-on block tripping and must be acknowledged before switching on the installation.

Test button for differential functioning :
Allows to check the electrical operating of the MCCB / Add-on block association.

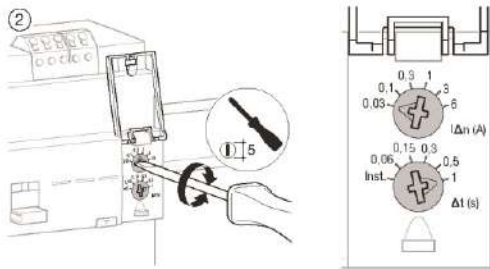
Mechanical test button :
Allows to check the mechanical operating of the MCCB / Add-on block association.

LED signaling default current level in the installation:
25% (orange) and 50% (red) $I_{\Delta n}$; green light to signal correct operating.

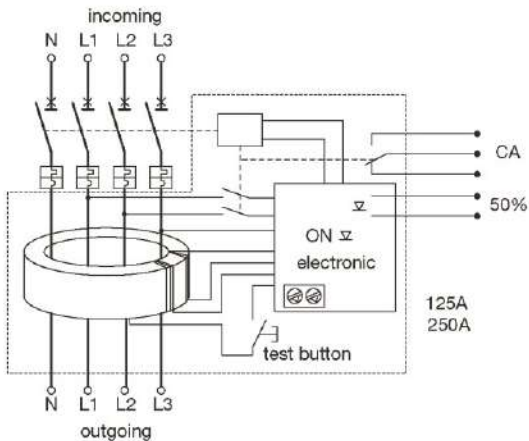
Remote tripping and advanced warning (50% $I_{\Delta n}$) signaling thanks to these contacts:



Earth leakage current ($I_{\Delta n}$) and delay (Δt) setting



Add-on block operating



(147) S	A ($I_{\Delta n}$)						
		0,03	0,1	0,3	1	3	6
	Inst.	OK	OK	OK	OK	OK	OK
	0,06	no	OK	OK	OK	OK	OK
	0,15	no	OK	OK	OK	OK	OK
	0,3	no	OK	OK	OK	OK	OK
	0,5	no	OK	OK	OK	OK	OK
	1	no	OK	OK	OK	OK	OK

Moulded case circuit breakers

- x250, 2 versions of trip unit:
- P version: fixed thermal and magnetic
 - S version: adjustable thermal and magnetic

3P and 4P
Mechanical test button, lockable settings, integrated padlocking handle Ø 4mm.

Comply with IEC 60 947-2.

Connection:
Directly on copper cable terminal, with end lug max. width: 25 mm rigid cables
Connection capacity: 185 mm² rigid cables

Comply with IEC 60 947-2.
Collar terminals

Trip-free switches
Allows tripping at distance using a voltmetrical trip unit (optional)

Complies with IEC 60 947-3
AC 22/23A

Add-on blocks for x250 devices
These devices are intended to be fixed at the bottom of the devices.

Type A and HI
for fault component dc pulsating current and the products with "reinforced immunity".
Adjustable sensitivity and tripping.

Test button for differential functioning check.
Mechanical test button LED or at distance signal for tripping or advance warning (25 - 50% I_{Δn}).

Comply with IEC 60 947-2
annexe B



HHB251Z



HNB100Z

Description	In	Pack Qty.	Cat. ref.
MCCBs x250 25kA breaking capacity Icu : 25 kA (400/415 V AC) Ics: 20kA	100A	1	3P HHB100P
	125A	1	HHB125P
	160A	1	HHB160P
	200A	1	HHB200P
	225A	1	HHB225P
	250A	1	HHB250P
fixed thermal 1 x In fixed magnetic ≥10 x In	100A	1	4P HHB101P
	125A	1	HHB126P
	160A	1	HHB161P
	200A	1	HHB201P
	250A	1	HHB251P
MCCBs x250 40kA breaking capacity Icu : 40 kA (400/415 V AC) Ics: 20 kA	100A	1	3P HNB100P
	125A	1	HNB125P
	160A	1	HNB160P
	200A	1	HNB200P
	250A	1	HNB250P
fixed thermal 1 x In fixed magnetic ≥10 x In	100A	1	4P HNB101P
	125A	1	HNB126P
	160A	1	HNB161P
	200A	1	HNB201P
	250A	1	HNB251P
adjustable thermal 0,63 - 0,8 - 1x In adjustable magnetic 6 - 8 - 10 - 13 x In (100 - 200A) 5 - 7 - 9 - 11 x In (250A)	100A	1	3P HNB100S
	125A	1	HNB125S
	160A	1	HNB160S
	200A	1	HNB200S
	250A	1	HNB250S
3P, 3 trip units 4P, neutral setting: 0 or 100%	100A	1	4P HNB101S
	125A	1	HNB126S
	160A	1	HNB161S
	200A	1	HNB201S
	250A	1	HNB251S

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75 mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXA021H



HXA024H



HXA014H

Description	Characteristics	Pack Qty.	Cat. ref.
Auxiliary contacts AX AL	1 changeover contact (ON/OFF) 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXA021H
	1 changeover alarm contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXA024H
	Low level contact (ON/OFF) 125 V AC 1 NO + 1 NC	1	HXA025H
	Low level alarm contact 125 V AC 1 NO + 1 NC	1	HXA026H
Shunt trips SH	24 V DC	1	HXA001H
	48 V DC	1	HXA002H
	100 - 120 V AC	1	HXA003H
	200 - 240 V AC	1	HXA004H
	380 - 450 V AC	1	HXA005H
Undervoltage releases UV	24 V DC	1	HXA011H
	100 - 120 V AC	1	HXA013H
	200 - 240 V AC	1	HXA014H
	380 - 450 V AC	1	HXA015H
Delayed undervoltage releases DUVR	24 V DC	1	HXA051H
	100 - 120 V AC	1	HXA053H
	200 - 240 V AC	1	HXA054H
	380 - 450 V AC	1	HXA055H
Direct rotary handle	Padlockable handle max Ø 6 mm	1	HXA030H



HYB010H



HYB012H



HYB022H

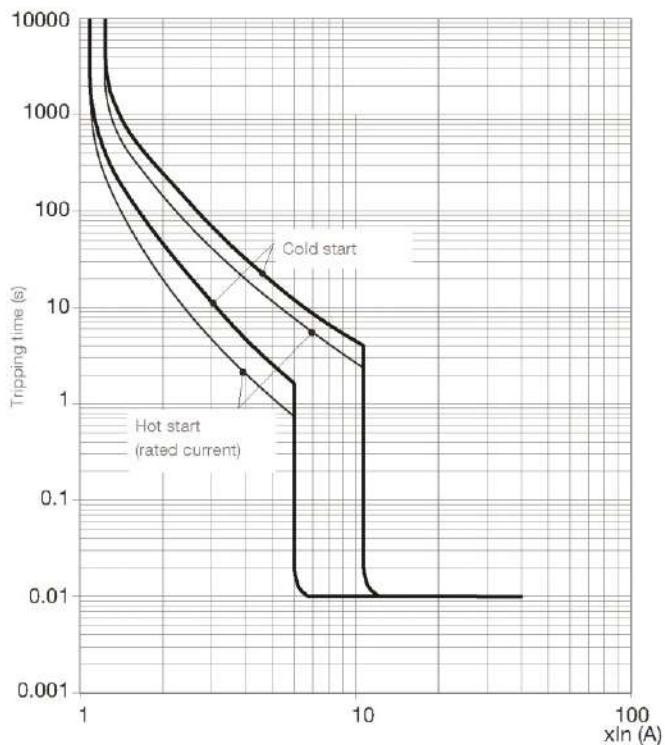


HYB024H

Description	Characteristics	Pack Qty.	Cat. ref.
Extended rotary handle	padlockable handle max Ø 8 mm	1	HXA031H
Padlock	for padlock integrated handle to mount on MCCB for handle locking for 3 padlock max Ø 8	1	HXA039H
Motor operators	24 V DC 230 - 240V AC	1 1	HXB040H HXB042H
Extended connections	set of 4 straight	1	HYB010H
	set of 3 or 4 spreader connections	3P 4P	1 1
			HYB011H HYB012H
Interphase barriers	set of 3, height: 50 mm	1	HYB019H
Terminal covers	for extended straight connections	3P 4P	1 1
			HYB021H HYB022H
	for extended spreader connections	3P 4P	1 1
			HYB023H HYB024H
	for rear connections	3P 4P	1 1
			HYB025H HYB026H
Ring lugs	for collar terminals	3P 4P	1 1
			HYB027H HYB028H
	compact lugs 35 mm ² Ø8,5	1	HYA088H
	compact lugs 50 mm ² Ø8,5	1	HYA089H
	compact lugs 70 mm ² Ø8,5	1	HYA090H
	compact lugs 95 mm ² Ø8,5	1	HYA091H
	compact lugs 120 mm ² Ø8,5	1	HYA092H
	compact lugs 150 mm ² Ø8,5	1	HYA094H

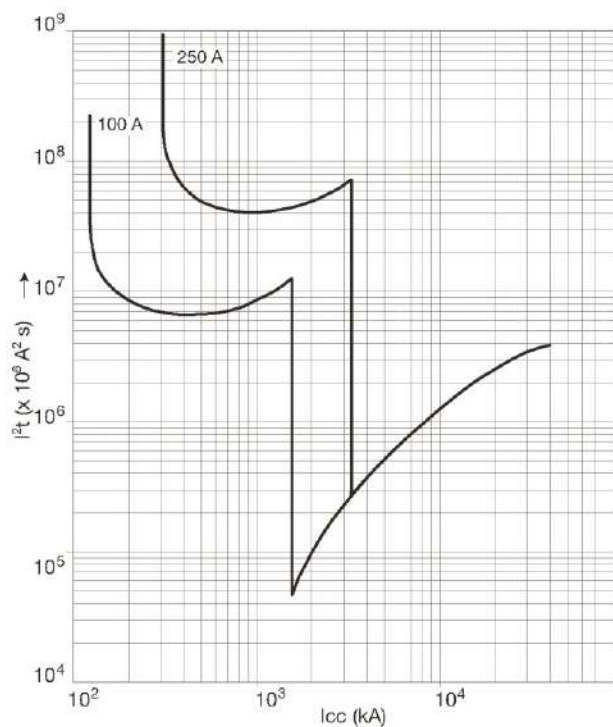
Tripping curve

MCCB x250



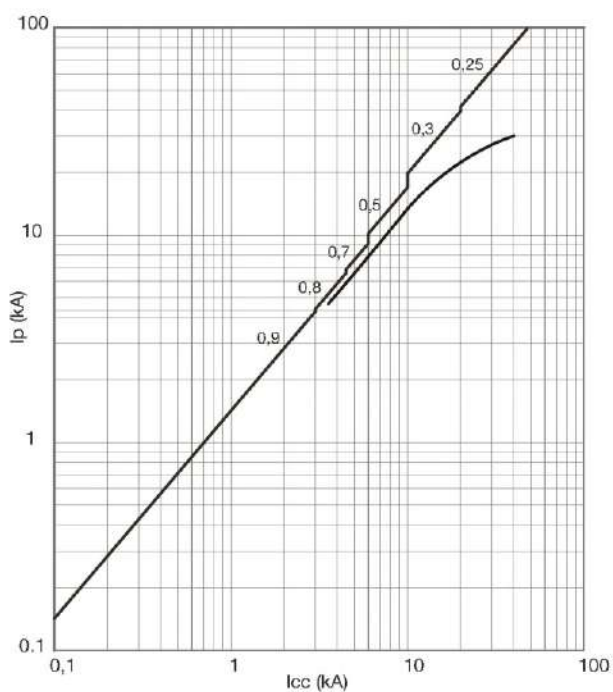
Thermal constraint curve at 400V (Let-through energy)

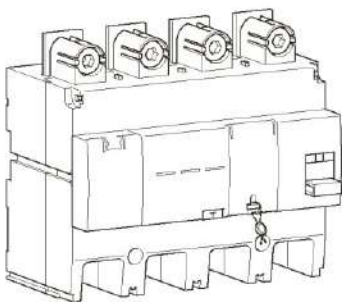
MCCB x250



Current limiting curve at 400V (Let-through peak current)

MCCB x250





When associated with MCCB, the add-on block provides an earth fault protection and protects against electrical shocks by direct or indirect contacts.

The add-on blocks are protected against nuisance tripping caused by transient voltages. It's able to detect sinusoidal alternating currents and residual pulsating direct currents (A type ). It also avoids miss tripping (HI type - High Immunity).

Characteristics

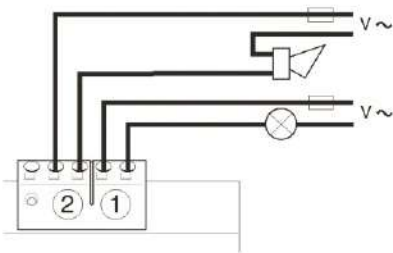
Reset button :
Signals add-on block tripping and must be acknowledged before switching on the installation.

Test button for differential operating :
Allows to check the electrical operating of the MCCB / Add-on block association.

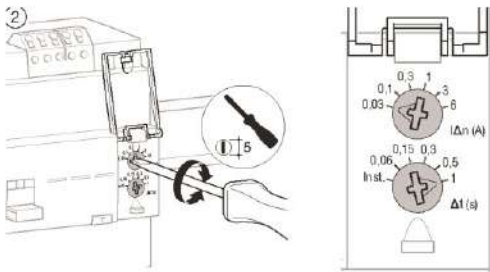
Mechanical test button :
Allows to check the mechanical operating of the MCCB / Add-on block association.

LED signaling default current level in the installation:
25% (orange) and 50% (red) $I\Delta n$; green light to signal correct operating.

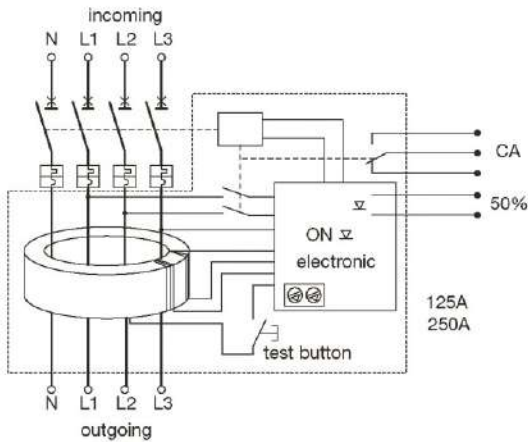
Remote tripping and advanced warning (50% $I\Delta n$) signaling thanks to these contacts:



Earth leakage current ($I\Delta n$) and delay (Δt) setting



Add-on block operating



S (Δt)	A ($I\Delta n$)						
		0,03	0,1	0,3	1	3	6
	Inst.	OK	OK	OK	OK	OK	OK
	0,06	no	OK	OK	OK	OK	OK
	0,15	no	OK	OK	OK	OK	OK
	0,3	no	OK	OK	OK	OK	OK
	0,5	no	OK	OK	OK	OK	OK
	1	no	OK	OK	OK	OK	OK

Moulded case circuit breakers h250
 2 versions of trip unit:
 - Thermal magnetic trip unit:
 thermal adjustment: 0.63 to 1 In
 - Magnetic adjustment:
 6-8-10-13 x In
 3P & 4P
 Mechanical test button,
 lockable settings.

Electronic trip unit LSI:
 Long delay (thermal equivalent)
 adjustable: $I_r = 0.4$ to $1 \times I_n$
 short delay (magnetic equivalent)
 adjustable: 2.5 to $10 \times I_r$
 time delay: 0.1 - 0.2 s
 3P & 4P
 Mechanical test button, sealable
 setting.

Not for use in TPN and panel
 boards.

Connection:
 Directly on copper cable terminal,
 with end lug max. width: 25 mm

Comply with IEC 60 947-2.



HHG250U

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h250 25kA TM	breaking capacity	1	20A	3P HHG020U
	Icu : 25 kA	1	32A	HHG032U
	(400/415 V AC)	1	63A	HHG063U
	Ics: 19 kA	1	100A	HHG100U
		1	125A	HHG125U
	adjustable thermal	1	160A	HHG160U
	0.63 to $1 \times I_n$	1	200A	HHG200U
	adjustable magnetic	1	250A	HHG250U
	6 - 8 - 10 - 13 x In			
MCCBs h250 50kA TM	breaking capacity	1	20A	3P HNG020U
	Icu : 30 kA (20-32A)	1	32A	HNG032U
	Icu : 50 kA	1	63A	HNG063U
	(400/415 V AC)	1	100A	HNG100U
	Ics: 25 kA	1	125A	HNG125U
		1	160A	HNG160U
	adjustable thermal	1	200A	HNG200U
	0.63 to $1 \times I_n$	1	250A	HNG250U
	adjustable magnetic			
	6 - 8 - 10 - 13 x In			
		1	20A	4P HNG021U
		1	32A	HNG033U
		1	63A	HNG064U
		1	100A	HNG101U
		1	125A	HNG126U
		1	160A	HNG161U
		1	200A	HNG201U
		1	250A	HNG251U
MCCBs h250 65kA TM	breaking capacity	1	63A	3P HEG063U
	Icu : 65 kA (400/415 V AC)	1	100A	HEG100U
	Ics: 36 kA	1	125A	HEG125U
		1	160A	HEG160U
	adjustable thermal	1	200A	HEG200U
	0.63 to $1 \times I_n$	1	250A	HEG250U
	adjustable magnetic			
	6 - 8 - 10 - 13 x In			



HEC250H

Description	Characteristics	Pack Qty.	In	Cat. ref.	
MCCBs h250 50kA LSI	breaking capacity Icu : 50 kA (400/415 V AC) Ics: 25 kA	1	40A	3P HNC040H	
		1	125A	HNC125H	
		1	250A	HNC250H	
	adjustable thermal Ir = 0.4 to 1 x In adjustable magnetic 2.5 to 10 x Ir	1	40A	4P HNC041H	
		1	125A	HNC126H	
		1	250A	HNC251H	
	3P, 3 trip units & 4P, 3 trip units				
	MCCBs h250 70kA LSI	breaking capacity Icu : 70 kA (400/415 V AC) Ics: 70 kA	1	40A	3P HEC040H
			1	125A	HEC125H
			1	250A	HEC250H
adjustable thermal Ir = 0.4 to 1 x In adjustable magnetic 2.5 to 10 x Ir		1	40A	4P HEC041H	
		1	125A	HEC126H	
		1	250A	HEC251H	
3P, 3 trip units & 4P, 3 trip units					

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "close".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75 mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXC021H



HXC024H



HXC004H



HXC014H



HXC030H



HXC039H

Description	Characteristics	Pack Qty.	Cat. ref.
Auxiliary contacts AX AL	1 changeover contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC021H
	1 changeover alarm contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC024H
	low level contact (ON/OFF) 125 V AC 1 NO + 1 NC	1	HXA025H
	low level alarm contact 125 V AC 1 NO + 1 NC	1	HXA026H
Shunt trips SH	24 V DC	1	HXC001H
	48 V DC	1	HXC002H
	110 V DC	1	HXC008H
	100 - 120 V AC	1	HXC003H
	200 - 240 V AC	1	HXC004H
	380 - 450 V AC	1	HXC005H
Undervoltage releases UV	24 V DC	1	HXC011H
	100 - 120 V DC	1	HXC018H
	200 - 240 V DC	1	HXC019H
	100 - 120 V AC	1	HXC013H
	200 - 240 V AC	1	HXC014H
	380 - 450 V AC	1	HXC015H
Delayed undervoltage releases DUVR	24 V DC	1	HXC051H
	110 - 120 V AC	1	HXC053H
	200 - 240 V AC	1	HXC054H
	380 - 415 V AC	1	HXC055H
Direct rotary handles	padlockable handle Ø 5 - 8 mm ² max	1	HXC030H
Extended rotary handles	padlockable handle Ø 5 - 8 mm ² max	1	HXC031H
Padlocks	to mount on MCCBs for handle locking for 3 padlocks max Ø 5 mm	1	HXC039H
Motor operators	24 V DC	1	HXC040H
	230-240 V AC	1	HXC042H
Interlocking kit	wire type set of 2 pieces and cable	1	HXC065H
Interlocking unit	wire type	1	HXC066H
Interlocking mechanical cable	1 m	1	HXB070H
	1,5 m	1	HXB071H
Electrical interlocks	for motor type A (between 2 250A)	1	HXB068H
	for motor type B (between 250A and other size)	1	HXB069H



HYC011H



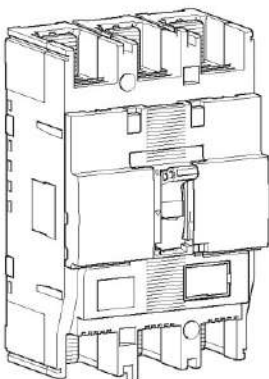
HYC022H



HYC031H

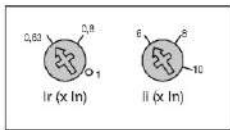
Description	Characteristics	Pack Qty.		Cat. ref.	
Collar terminals	set of 3 or 4 pieces for copper conductors 120 mm ²	1	3P	HYC003H	
		1	4P	HYC004H	
Extended connections	spreader connections	1	3P	HYC011H	
		1	4P	HYB012H	
	straight connections	1	3P	HYC010H	
		1	4P	HYC010H	
Interphase barriers	for LSI and TM+ for TM only	1		HYC019H	
		1		HYB019H	
Terminal covers	for extended straight connections (LSI and TM+)	1	3P	HYC021H	
		1	4P	HYC022H	
	for extended straight connections (TM only)	1	3P	HYG021H	
		1	4P	HYG022H	
	for rear connections (LSI only)	1	3P	HYC025H	
		1	4P	HYC026H	
	for collar terminals	1	3P	HYC027H	
		1	4P	HYC028H	
Rear connections	for LSI only	1	3P	HYC031H	
		1	4P	HYC032H	
Connecting kit	0,75 mm ² set of 3 x 2 wires length: 1,30m	1	3P	HYA035H	
		1	4P	HYA035H	
OCR sealing covers	for LSI only for TM only	1		HYC041H	
		1		HYG041H	

MCCBs



		220/240 V	380/415 V	660/690 V
		AC	AC	AC
TM	Icu (kA)	35	25	-
HHG	Ics (kA)	27	19	-
TM	Icu (kA)	35	50	7,5
HNG	Ics (kA)	65	25	7,5
TM	Icu (kA)	85	65	7,5
HEG	Ics (kA)	85	36	7,5
LSI	Icu (kA)	85	50	7,5
HNC	Ics (kA)	85	25	7,5
LSI	Icu (kA)	100	70	20
HEC	Ics (kA)	100	70	15
TM+	Icu (kA)	85	50	20
HNH	Ics (kA)	85	50	15
TM+	Icu (kA)	100	70	20
HEH	Ics (kA)	100	70	15

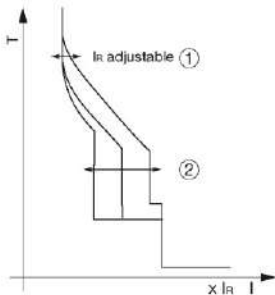
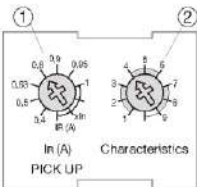
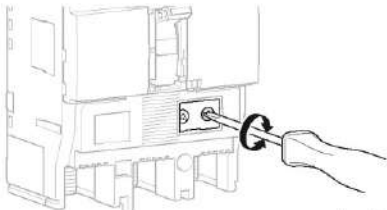
Magnetic and thermal settings (TM/TM+)



Thermal adjustment from 0,63 to 1 x In

Magnetic adjustment from 6 to 10 x In (250A)
from 6 to 13 x In (160 and 200A)
from 6 to 12 x In (32, 63, 100 and 125A)

Electronic trip unit setting (LSI)



L - Long delay - protection against overloads: Ir and tr settings

S - Short delay - protection against short circuits: Isd and tsd settings

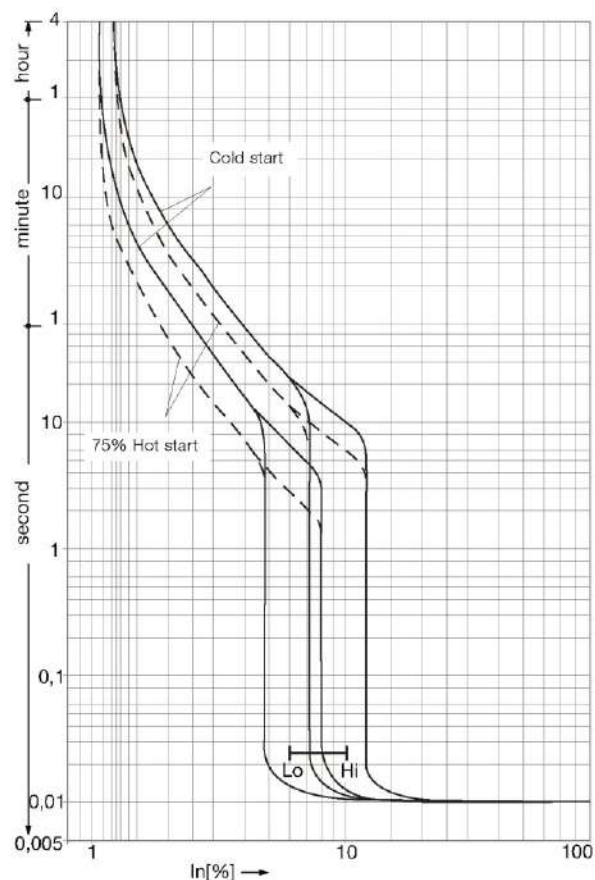
I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir.

Use	Characteristics (*)	
	3 P	4 P
Generator protection	pos. 1	pos. 1, 4 and 7
Standard protection	pos. 2 and 3	pos. 2, 5 and 8
Motor protection	pos. 4 and 5	pos. 3, 6 and 9

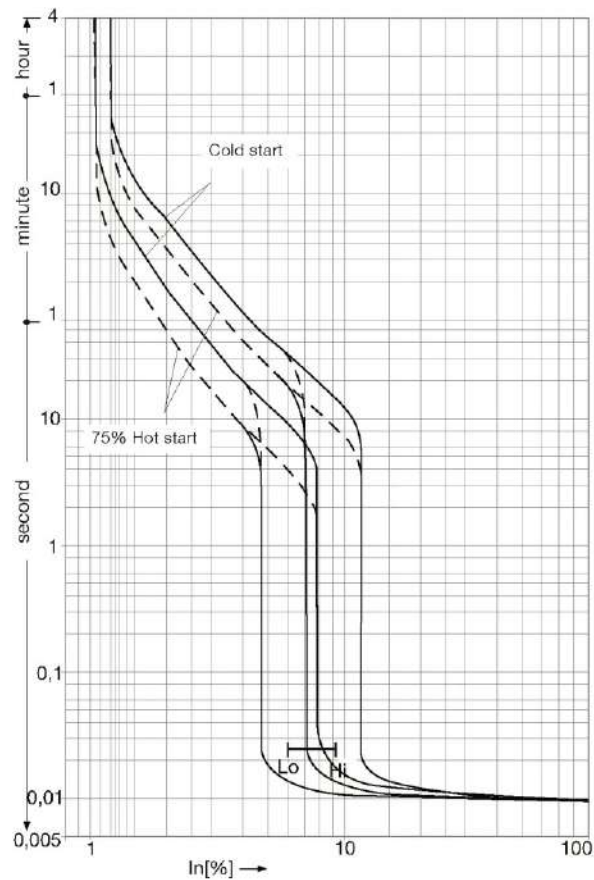
LSI		In A											
		3P					4P						
		Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst	Protection	
		Ir (x In)	tr (s)	isd (xIr)	tsd (s)	Ii (xIr)	Ir (x In)	tr (s)	isd (xIr)	tsd (s)	Ii (xIr)	Neutral	
Ir (x In)	0,4	OK						OK					
	0,5	OK						OK					
	0,63	OK						OK					
	0,8	OK						OK					
	0,9	OK						OK					
	0,95	OK						OK					
	1	OK						OK					
Characteristics	1		11s at 2 xIr	2,5	0,1	14 (max 13 x In)		11 s at 2 xIr	2,5	0,1	14	no	
	2		21s at 2 xIr					5					
	3		5										
	4		5 s at 6 xIr	10				11 s at 2 xIr	2,5	0,1			
	5		7,5 s at 6 xIr	0,2				21 s at 2 xIr	5				
	6		7,5 s at 6 xIr		10	0,2							
	7		11 s at 6 xIr		2,5	0,1							
	8		21 s at 2 xIr		5								
	9		7,5 s at 6 xIr	10	0,2	100%							

Tripping curve

MCCB h250 TM

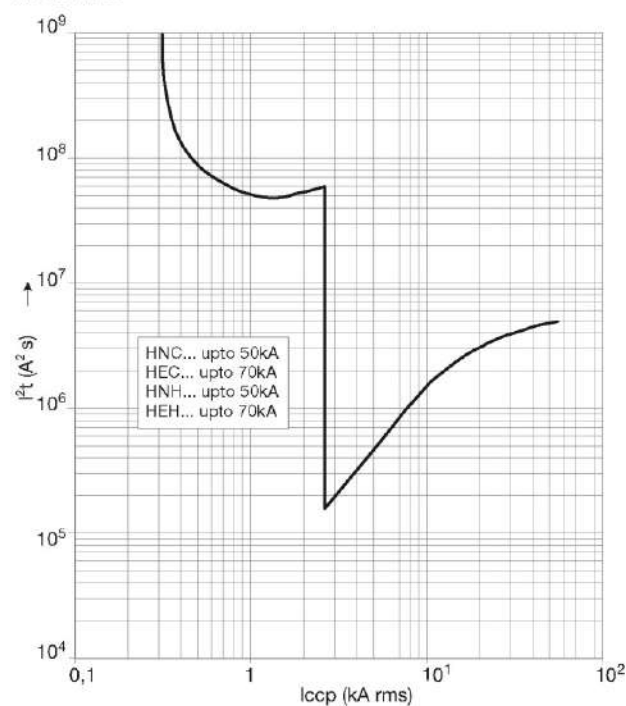


MCCB h250 TM+



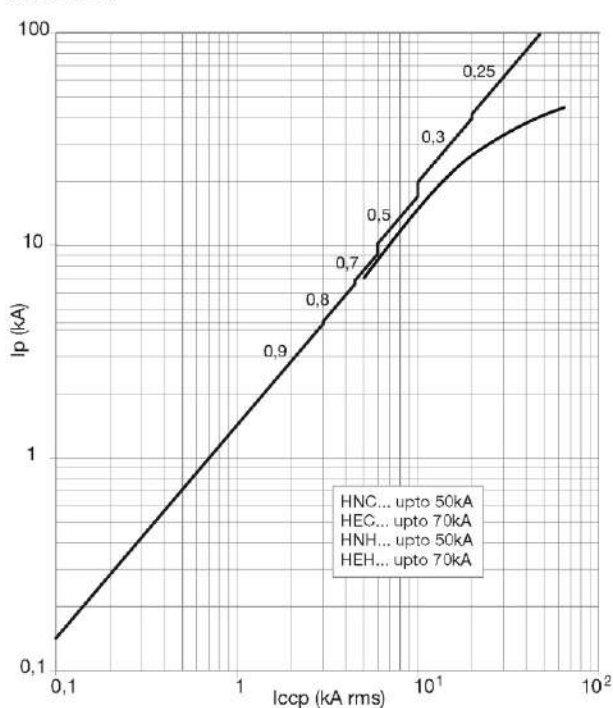
Thermal constraint curve at 400V (Let-through energy)

MCCB h250

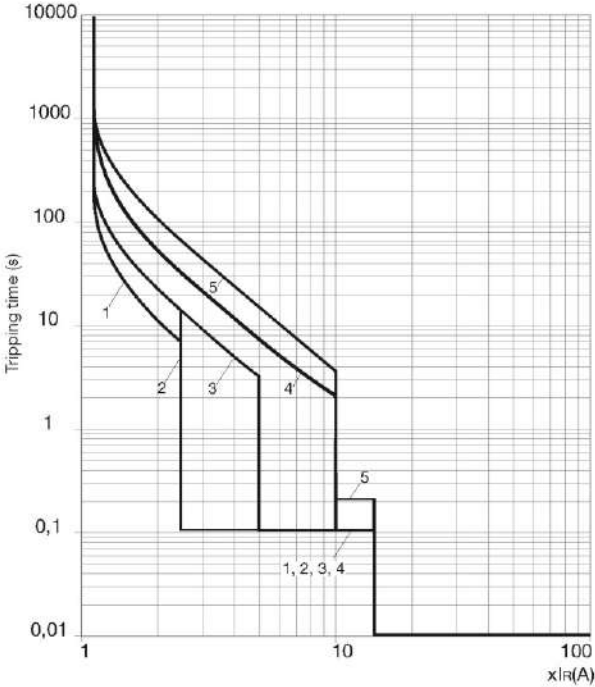


Current limiting curve at 400V (Let-through peak current)

MCCB h250

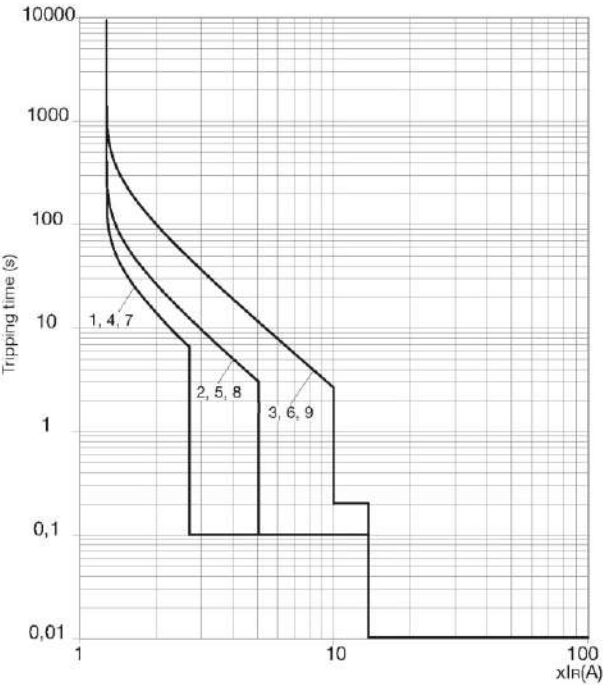


MCCB h250 3P LSI



LTD pick-up current		I _R	x I _n	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics			No.	1	2	3	4	5		
Standard	LTD	t _R	(s)	11	21	21	5	7,5		
				200 % x I _R				600 % x I _R		
	STD	I _{sd}	x I _R	2,5	2,5	5	10	10		
		t _{sd}	(s)	0,1	0,1	0,1	0,1	0,2		
	INST	I _{li}	x I _R	14 (max 13 x I _n)						

MCCB h250 4P LSI



LTD pick-up current		I_R	$\times I_n$	0,4	0,5	0,63	0,8	0,9	0,95	1		
Characteristics			No.	1	2	3	4	5	6	7	8	9
Standard	LTD	t_R	(s)	11 s	21 s	7,5 s	11 s	21 s	7,5 s	11 s	21 s	7,5 s
				200 % $\times I_R$		600% $\times I_R$	200 % $\times I_R$		600% $\times I_R$	200 % $\times I_R$		600% $\times I_R$
	STD	I_{sd}	$\times I_R$	2,5	5	10	2,5	5	10	2,5	5	10
		t_{sd}	(s)	0,1		0,2	0,1		0,2	0,1		0,2
	INST	I_i	$\times I_R$	14								
Neutral protection		$\times I_n$	no				0,5			1		

Moulded case circuit breakers
h400
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.



HHD400U

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h400 25kA TM	breaking capacity	1	250A	3P HHD250U
	Icu : 25 kA	1	400A	HHD400U
	(400/415 V AC)			
	Ics: 25 kA			
	adjustable thermal: 0.63 to 1 x In			
	adjustable magnetic: 6 to 12 x In			
MCCBs h400 50kA TM	breaking capacity	1	250A	3P HND250U
	Icu : 50 kA	1	400A	HND400U
	(400/415 V AC)			
	Ics: 50 kA			
	adjustable thermal: 0.63 to 1 x In	1	250A	4P HND251U
	adjustable magnetic: 6 to 12 x In	1	400A	HND401U

Moulded case circuit breakers
h630

Electronic trip unit LSI:

- long delay (thermal equivalent) adjustable:
 $I_r = 0.4 \text{ to } 1 \times I_n$
- short delay (magnetic equivalent) adjustable:
2.5 to $10 \times I_r$ (400A)
2.5 to $8 \times I_r$ (630A)
- 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: 30 mm

Comply with IEC 60 947-2.

Trip-free switches
Allows tripping at distance using a voltmetrical trip unit (optional)

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

Add-on blocks
For h630 (LSI) devices
These devices are intended to be fixed at the bottom of the devices.
Fixed version: 300mA sensitivity and instantaneous tripping
Adjustable version: sensitivity from 30mA to 6A, tripping from instantaneous to 1s delay.

Test button for differential functioning check.
Mechanical test button.
LED or remote signal for tripping or advance warning (25-50% $I_{\Delta n}$).
Type A (for fault component DC pulsating current) and HI (reinforced immunity against unexpected tripping).

Comply with IEC 60 947-2.



HND630H

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h630 50kA LSI	breaking capacity $I_{cu} : 50 \text{ kA}$ (400/415 V AC) $I_{cs} : 50 \text{ kA}$	1	400A	3P HND400H
		1	630A	HND630H
	adjustable thermal: $I_r = 0.4 \text{ to } 1 \times I_n$ adjustable magnetic: 2.5 to $10 \times I_r$ (250-400A) 2.5 to $8 \times I_r$ (630A) time delay: 0,1 - 0,2 s	1	400A	4P HND401H
		1	630A	HND631H
MCCBs h630 70kA LSI	breaking capacity $I_{cu} : 70 \text{ kA}$ (400/415 V AC) $I_{cs} : 50 \text{ kA}$	1	400A	3P HED400H
		1	630A	HED630H
	adjustable thermal: $I_r = 0.4 \text{ to } 1 \times I_n$ adjustable magnetic: 2.5 to $10 \times I_r$ (250-400A) 2.5 to $8 \times I_r$ (630A) time delay: 0,1 - 0,2 s	1	400A	4P HED401H
		1	630A	HED631H

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "close".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXC021H



HXC024H



HXC004H



HXC014H



HXD030H



HXD039H



HXD042H

Description

Characteristics

Pack Qty.

Cat. ref.

Auxiliary contacts

AX

AL

1 changeover contact
250 V AC / 3A
125 V DC / 0,4A
1 NO + 1 NC

1

HXC021H

1 changeover alarm contact
250 V AC / 3A
125 V DC / 0,4A
1 NO + 1 NC

1

HXC024H

low level contact (ON/OFF)
125 V AC
1 NO + 1 NC

1

HXC025H

low level alarm contact
125 V AC
1 NO + 1 NC

1

HXC026H

Shunt trips

SH

24 V DC
48 V DC
110 V DC
100 - 120 V AC
200 - 240 V AC
380 - 450 V AC

1

HXC001H

1

HXC002H

1

HXC008H

1

HXC003H

1

HXC004H

1

HXC005H

Undervoltage releases

UV

24 V DC
100 - 120 V DC
200 - 240 V DC
100 - 120 V AC
200 - 240 V AC
380 - 450 V AC

1

HXC011H

1

HXC018H

1

HXC019H

1

HXC013H

1

HXC014H

1

HXC015H

Delayed undervoltage releases

DUVR

24 V DC
100 - 120 V AC
200 - 240 V AC
380 - 450 V AC

1

HXD051H

1

HXD053H

1

HXD054H

1

HXD055H

Direct rotary handle

padlockable handle max Ø 6 mm

1

HXD030H

Extended rotary handle

padlockable handle max Ø 8 mm

1

HXD031H

Padlock

to mount on MCCBs for handle locking for 3 padlock Ø 5 - 8 mm² max.

1

HXD039H

Motor operators

24-48 V DC
100-240 V AC

1

HXD040H

1

HXD042H

Interlocking kit

wire type
set of 2 pieces and cable

1

HXD065H

Interlocking unit

wire type

1

HYD066H

Interlocking mechanical cable

1 m
1,5 m

1

HXB070H

1

HXB071H

Electrical interlocks

for motor type A
(between 2 630/1000A)
for motor type B
(between 630 and 250A)

1

HXD068H

1

HXB069H



HYD003H



HYD015H



HYD022H



HYD033H

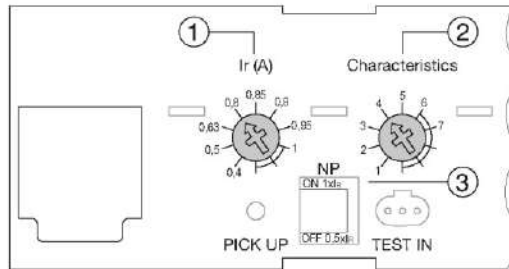
Description	Characteristics		Pack Qty.		Cat. ref.
Collar terminals	set of 3 or 4 terminals for copper conductors 1 x 35 - 240 mm ²	250 - 400A	1	3P	HYD003H
			1	4P	HYD004H
	set of 3 or 4 terminals for aluminium / copper conductors 1 x 35 - 240 mm ²	250 - 400 - 630A	1	3P	HYD005H
			1	4P	HYD006H
	set of 3 or 4 terminals for multiple aluminium / copper conductors 2 x 35 - 240 mm ²	250 - 400 - 630A	1	3P	HYD007H
			1	4P	HYD008H
Extended connections	set of 4 pieces for straight connections	250 - 400A	1		HYD010H
		630A	1		HYD013H
	spreader connections	250 - 400A	1	3P	HYD011H
		630A	1		HYD014H
		250 - 400A	1	4P	HYD012H
		630A	1		HYD015H
Interphase barrier	set of 4 pieces		1		HYD019H
Terminal covers	for extended straight connections		1	3P	HYD021H
			1	4P	HYD022H
	for extended spreader connections		1	3P	HYD023H
			1	4P	HYD024H
	for rear connections		1	3P	HYD025H
			1	4P	HYD026H
	for collar terminals		1	3P	HYD027H
			1	4P	HYD028H
Rear connections	250 - 400A		1	3P	HYD031H
			1	4P	HYD032H
	630A		1	3P	HYD033H
			1	4P	HYD034H
Connecting kit	0,75 mm ² set of 3 x 2 wires length: 1,30m		1	3P	HYA035H
			1	4P	HYA035H
Ring lugs	compact lugs 120 mm ² Ø10		1		HYD093H
	compact lugs 150 mm ² Ø10,5		1		HYD095H
	compact lugs 185 mm ² Ø10,5		1		HYD096H
	compact lugs 185 mm ² Ø12,8 suitable with spreader		1		HYD097H
	compact lugs 240 mm ² Ø12,8 suitable with spreader		1		HYD098H

Electronic trip unit setting (LSI)

L - Long delay - protection against overloads: I_r and t_r settings

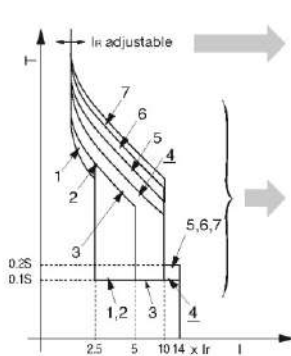
S - Short delay - protection against short circuits: I_{sd} and t_{sd} settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: $2,5$ to $10 \times I_r$ (250 - 400A) and $2,5$ to $8 \times I_r$ (630A).



Neutral settings:

- ① Long delay current I_r setting
- ② Other curve characteristics setting (t_r , I_{sd} , t_{sd})
- ③ Neutral protection against overloads setting



LSI			In A											
			250 A / 400 A						630 A					
			Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst		
			Ir (x In)	tr (s)	isd (xIr)	tscd (s)	li (xIr)	Ir (x In)	tr (s)	isd (xIr)	tscd (s)	li (xIr)		
① Ir (x In)	0,4	OK					OK							
	0,5	OK					OK							
	0,63	OK					OK							
	0,8	OK					OK							
	0,85	–					OK							
	0,9	OK					OK							
	0,95	OK					OK							
	1	OK					OK							
② Characteristics	1		11s at 2 xlr	2,5	0,1	14 (max 13 x In)		11s at 2 xlr	2,5	0,1	14 (max 10 x In)			
	2		21s at 2 xlr	5				21s at 2 xlr	5					
	3		5 s at 6 xlr					10				5 s at 6 xlr	8	
	4		10 s at 6 xlr	0,2	10 s at 6 xlr			0,2						
	5		19 s at 6 xlr		16 s at 6 xlr									
	6		29 s at 6 xlr		–									
	7			–										
	③ Neutral protection	0%												
50%														
100%														

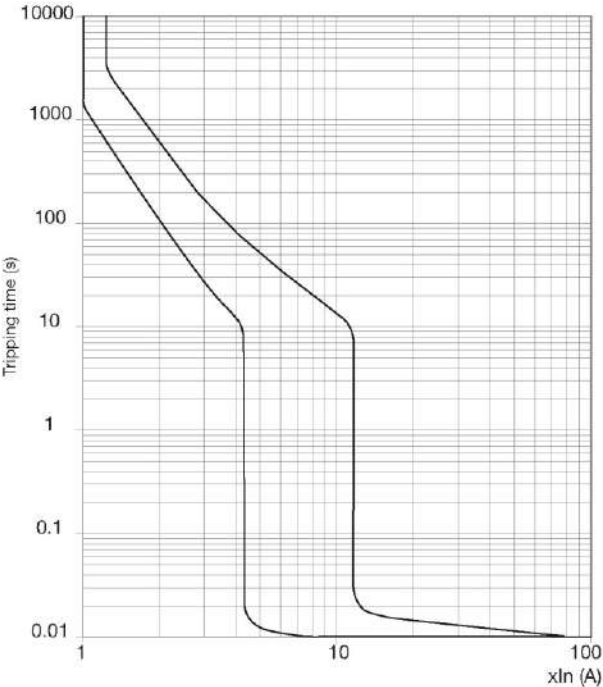
(*) Characteristic 1 : use for generators protection.

Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.

Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

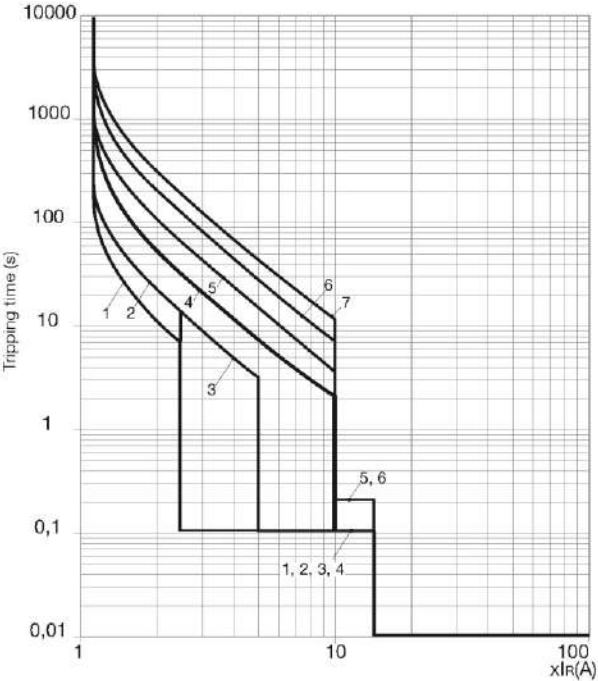
Tripping curve

MCCB h400 TM (250 and 400A)



Tripping curve

MCCB h630 LSI (250A and 400A)



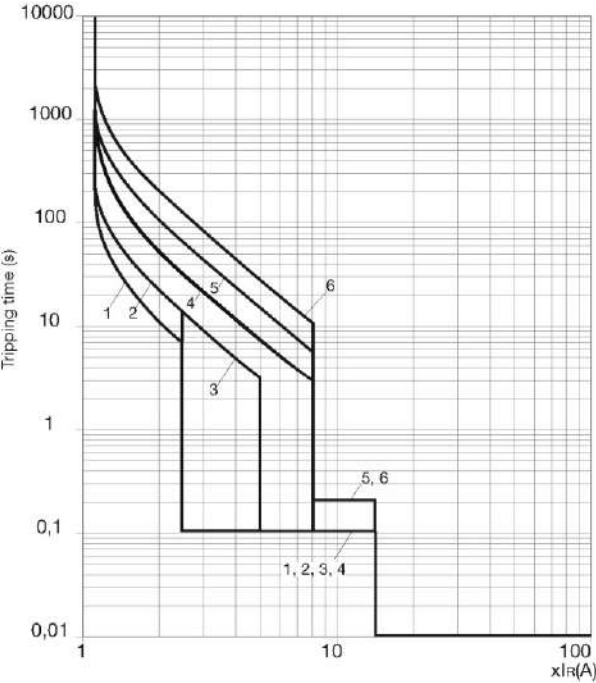
Electronic trip unit setting (LSI)

MCCB h630 LSI (250A and 400A)

I _R (A)											
LTD Pick-up current		I _R	x I _n	0,4	0,5	0,63	0,8	0,9	0,95	1	
Characteristics			No.	1	2	3	4	5	6	7	
Standard	LTD	t _R	(s)	11	21	21	5	10	19	29	
				200% x I _R				600% x I _R			
	STD	I _{sd}	x I _R	2,5		5	10				
		t _{sd}	(s)	0,1						0,2	
	INST	I _I	x I _R	14 (max : 13 x I _n)							
Optional	N	I _N	x I _n	0 - 0,5 - 1							
		t _N	(s)	t _N = t _R							

Tripping curve

MCCB h630 LSI (630A electronic)



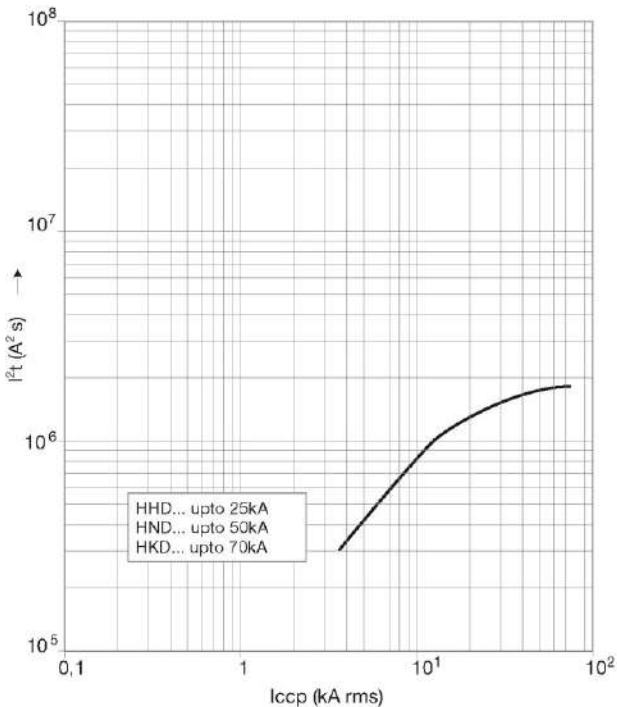
Electronic trip unit setting (LSI)

MCCB h630 LSI (630A electronic)

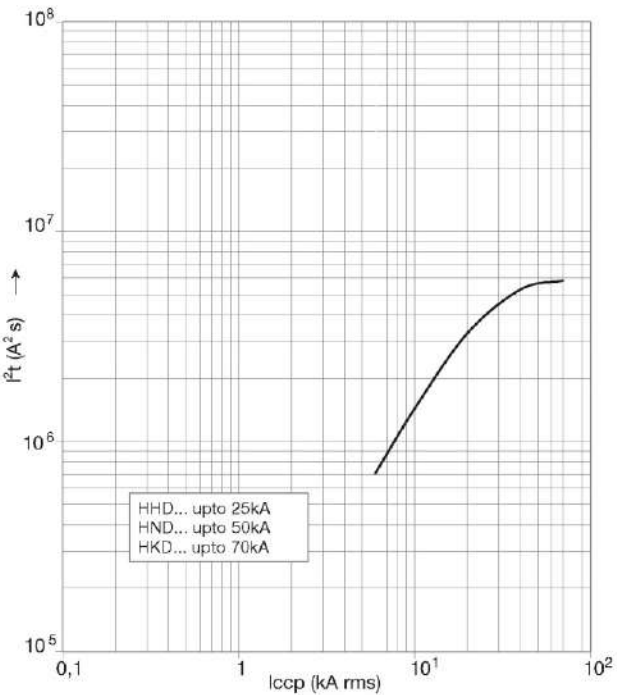
I_R (A)												
LTD Pick-up current		I_R	$x I_n$	0,4	0,5	0,63	0,8	0,85	0,9	0,95	1	
Characteristics			No.	1	2	3	4	5	6			
Standard	LTD	t_R	(s)	11	21	21	5	10	16			
				200% $\times I_R$				600% $\times I_R$				
	STD	I_{sd}	$x I_R$	2,5		5	8					
		t_{sd}	(s)	0,1				0,1				
		INST	I_I	$x I_R$	14 (max : 10 $\times I_n$)							
Optional	N	I_N	$x I_n$	0 - 0,5 - 1								
		t_N	(s)	$t_N = t_R$								

Thermal constraint curve at 400V (Let-through energy)

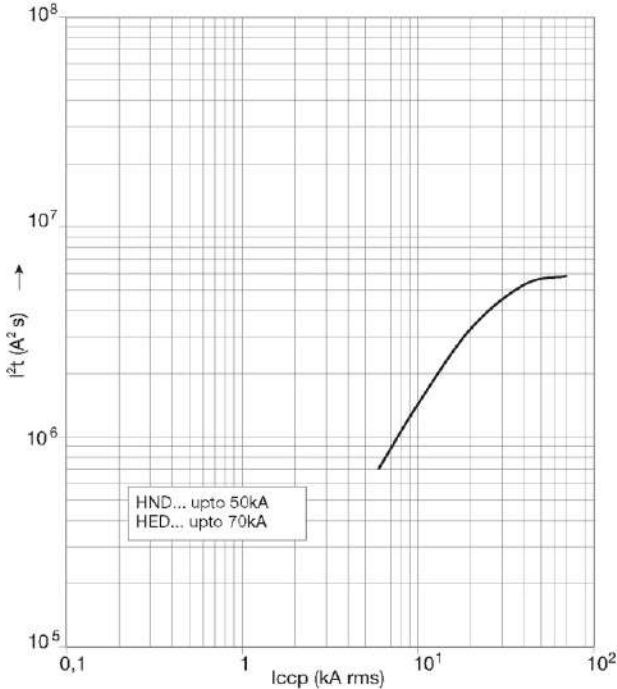
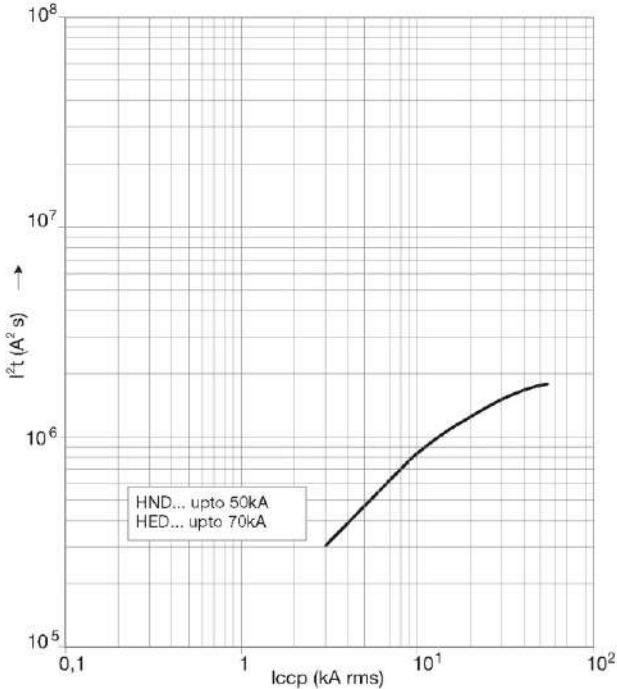
MCCB h400 TM (250A)



MCCB h400 TM (400A)

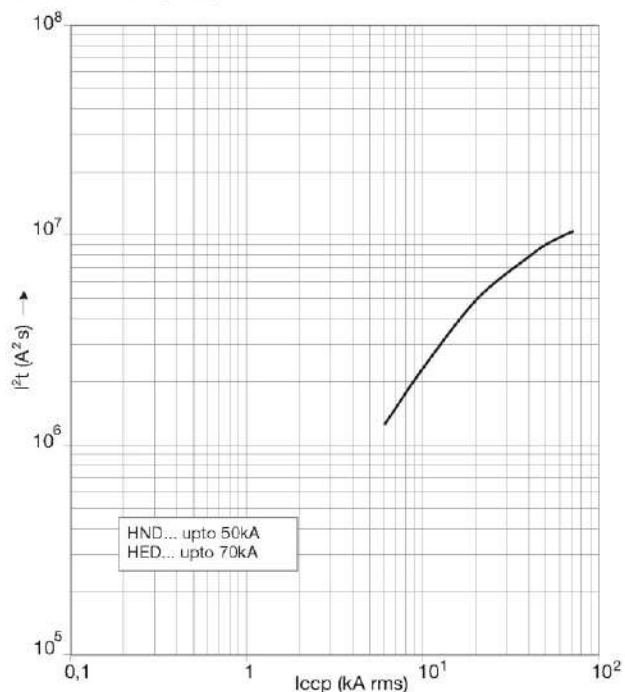


MCCB h630 LSI (250A)



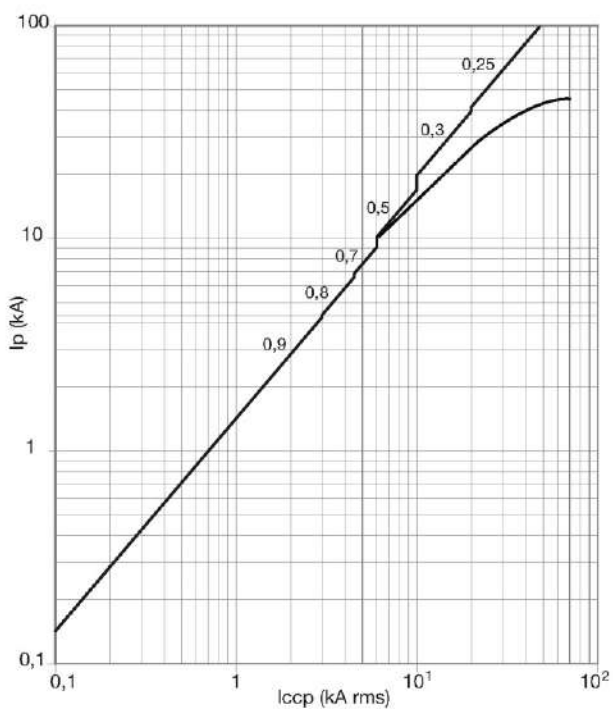
Thermal constraint curve at 400V (Let-through energy)

MCCB h630 LSI (630A)

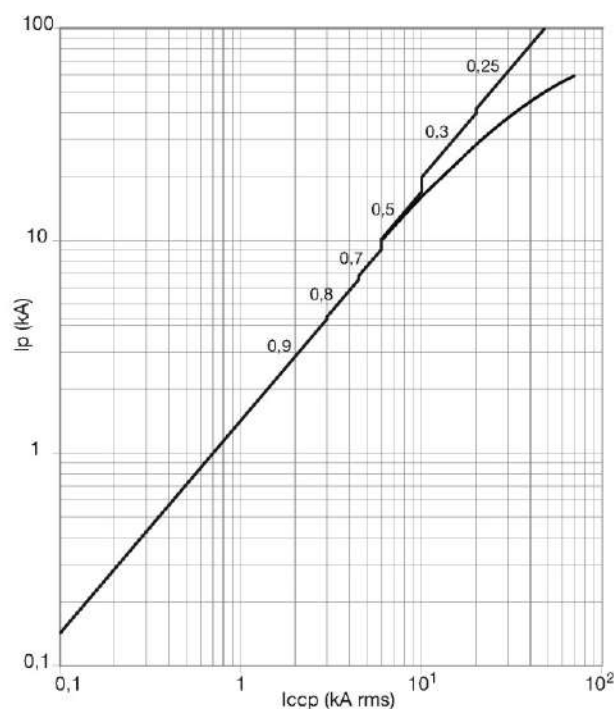


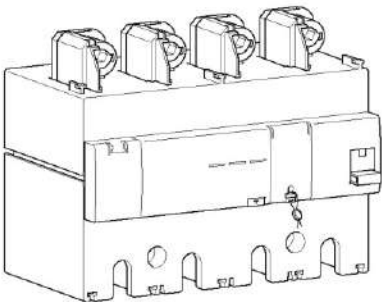
Current limiting curve at 400V (Let-through peak current)

MCCB h630 LSI (250A and 400A)
MCCB h400 TM



MCCB h630 LSI (630A)





When associated with MCCB, the add-on block provides an earth fault protection and protects against electrical shocks by direct or indirect contacts.

The add-on blocks are protected against nuisance tripping caused by transient voltages. It's able to detect sinusoidal alternating currents and residual pulsating direct currents (A type). It also avoids miss tripping (HI type - High Immunity).

Characteristics

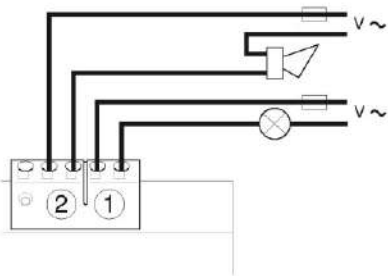
Reset button :
Signals add-on block tripping and must be acknowledged before switching on the installation.

Test button for differential functioning :
Allows to check the electrical operating of the MCCB / Add-on block association.

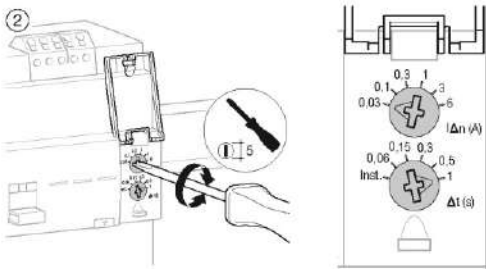
Mechanical test button :
Allows to check the mechanical operating of the MCCB / Add-on block association.

LED signaling default current level in the installation:
25% (orange) and 50% (red) $I\Delta n$; green light to signal correct operating.

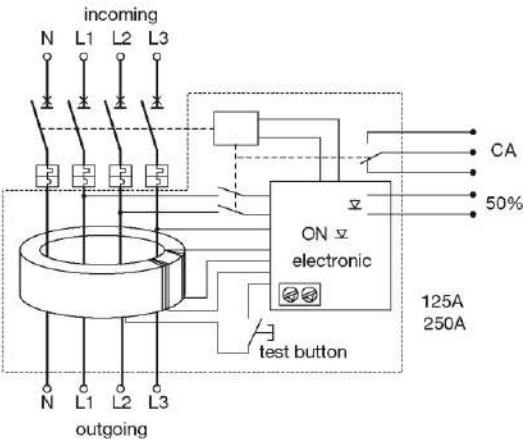
Remote tripping and advanced warning (50% $I\Delta n$) signaling thanks to these contacts:



Earth leakage current ($I\Delta n$) and delay (Δt) setting



Add-on block operating



S (Δt)	A ($I\Delta n$)						
		0,03	0,1	0,3	1	3	6
	Inst.	OK	OK	OK	OK	OK	OK
	0,06	no	OK	OK	OK	OK	OK
	0,15	no	OK	OK	OK	OK	OK
	0,3	no	OK	OK	OK	OK	OK
	0,5	no	OK	OK	OK	OK	OK
	1	no	OK	OK	OK	OK	OK

MCCBs and trip-free switches h800 - h1000



Moulded case circuit breakers
h800

Thermal magnetic trip unit TM:

- thermal adjustment:
from 0.63 to 1 x I_n
- magnetic adjustment:
from 5 to 10 x I_n

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:
I_r = 0,4 to 1 x I_n
- short delay (magnetic
equivalent) adjustable:
2,5 to 10 x I_r (630-800A) and

2,5 to 8 x I_r (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 voltmeterical trip unit (optional)

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



HNE970H

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h1000 50kA LSI	breaking capacity I _{cu} : 50 kA (400/415 V AC) I _{cs} : 50 kA	1	800A	3P HNE800H
		1	1000A	HNE970H
	adjustable thermal I _r = 0,4 to 1 x I _n adjustable magnetic 2,5 to 10 x I _r (800A) 2,5 to 8 x I _r (1000A) time delay: 0,1-0,2 s	1	800A	4P HNE801H
		1	1000A	HNE971H
	neutral setting from 0-50 to 100%			
MCCBs h1000 70kA LSI	breaking capacity I _{cu} : 70 kA (400/415 V AC) I _{cs} : 50 kA	1	800A	3P HEE800H
		1	1000A	HEE970H
	adjustable thermal I _r = 0,4 to 1 x I _n adjustable magnetic 2,5 to 10 x I _r (800A) 2,5 to 8 x I _r (1000A) time delay: 0,1-0,2 s	1	800A	4P HEE801H
		1	1000A	HEE971H
	neutral setting from 0-50 to 100%			

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "close".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXC021H



HXC024H



HXC004H



HXE014H

Description	Characteristics	Pack Qty.	Cat. ref.
Auxiliary contacts AX AL	1 changeover contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC021H
	1 changeover alarm contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC024H
	low level contact (ON/OFF) 125 V AC 1 NO + 1 NC	1	HXC025H
	low level alarm contact 125 V AC 1 NO + 1 NC	1	HXC026H
Shunt trips SH	24 V DC	1	HXC001H
	48 V DC	1	HXC002H
	110 V DC	1	HXC008H
	100 - 120 V AC	1	HXC003H
	200 - 240 V AC	1	HXC004H
	380 - 450 V AC	1	HXC005H
Undervoltage releases UV	24 V DC	1	HXE011H
	100 - 120 V DC	1	HXE018H
	200 - 240 V DC	1	HXE019H
	110 - 120 V AC	1	HXE013H
	220 - 240 V AC	1	HXE014H
	380 - 415 V AC	1	HXE015H
Delayed undervoltage releases DUVR	24 V DC	1	HXE051H
	110 - 120 V AC	1	HXE053H
	220 - 240 V AC	1	HXE054H
	380 - 415 V AC	1	HXE055H
Electrical interlock	for motor type A (between 2 630/1000A)	1	HXD068H
	for motor type B (between 1000A and 250A)	1	HXB069H
Collar terminals	Terminals for aluminium / copper conductors 4 x 35 - 240 mm ²	630 - 800A	1 3P HYE007H
			1 4P HYE008H
Connecting kits	0,75 mm ² set of 3 x 2 wires length: 1,30m		1 3P HYA035H
			1 4P HYA035H
Interphase barrier	set of 4 pieces	1	HYD019H
Terminal covers	for extended connections	1	3P HYE021H
		1	4P HYE022H
	for rear connections	1	3P HYE025H
		1	4P HYE026H



HYE031H



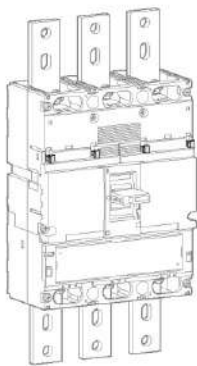
HXE030H



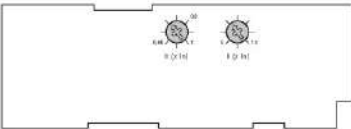
HXD039H

Description	Characteristics	Pack Qty.		Cat. ref.
Rear connections	630-800A	1	3P	HYE031H
		1	4P	HYE032H
	1000A	1	3P	HYE033H
		1	4P	HYE034H
Direct rotary handles	padlockable handle	1		HXE030H
Extended rotary handles	padlockable handle	1		HXE031H
Padlocks	to mount on MCCB for handle locking for 3 padlocks max Ø 8 mm	1		HXD039H
Motor operators	24 - 48V DC	1		HXE040H
	100 - 240V AC	1		HXE042H
Interlocking kit	wire type set of 2 pieces and cable	1		HXE065H
Interlocking unit	wire type	1		HXE066H
Interlocking mechanical cable	1 m	1		HXB070H
	1,5 m	1		HXB071H

MCCBs

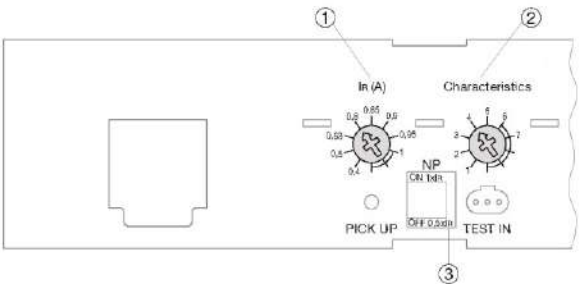
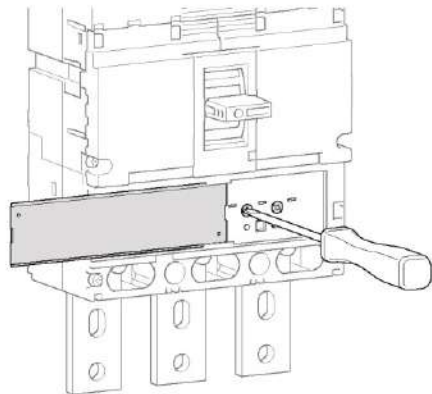


Magnetic and thermal settings



		220/240 V AC		380/415 V AC	660/690 V AC
		630 / 800A	1000A	630 / 800 / 1000A	630 / 800 / 1000A
LSI	Icu (kA)	85	75	50	20
HNE	Ics (kA)	85	75	50	20
LSI	Icu (kA)	100	100	70	20
HEE	Ics (kA)	100	75	50	20
TM	Icu (kA)	85	-	50	20
HNK	Ics (kA)	85	-	50	20
TM	Icu (kA)	100	-	70	20
HEK	Ics (kA)	75	-	50	20
HCE	Icm (kA)	-	-	17	-
HCE	Icw (kA)	-	-	10kA - 0,3s	-

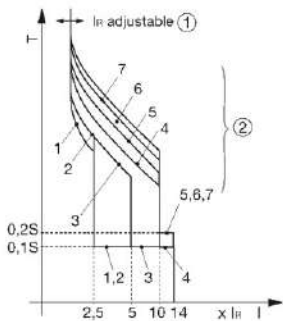
Electronic trip unit settings (LSI)



L - Long delay - protection against overloads: Ir and tr settings

S - Short delay - protection against short circuits: Isd and tsd settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir (630-800A) and 2,5 to 8 x Ir (1000A).

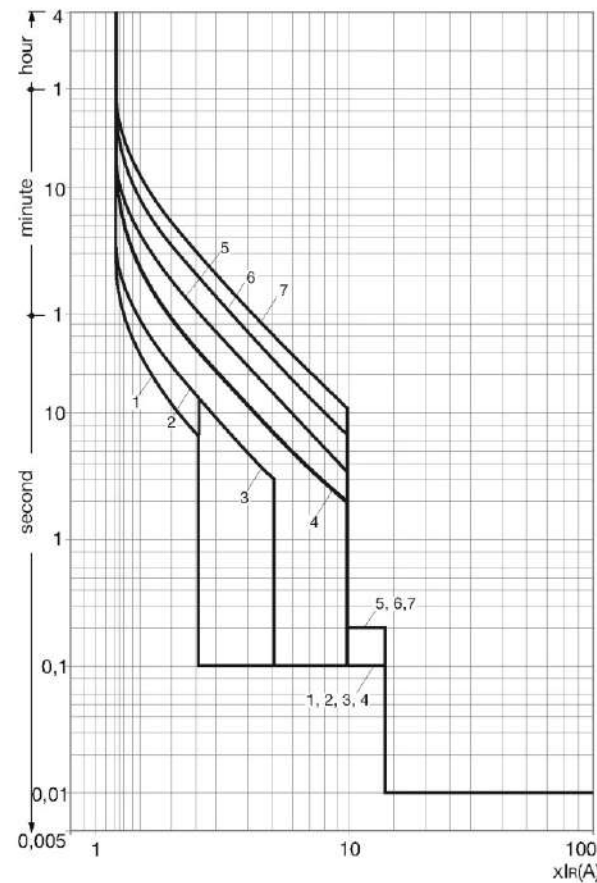


LSI		In A										
		630-800 A					1000 A					
		Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst	
		Ir (x In)	tr (s)	isd (xIr)	tsd (s)	Ii (xIr)	Ir (x In)	tr (s)	isd (xIr)	tsd (s)	Ii (xIr)	
① Ir (x In)	0,4	OK					OK					
	0,5	OK					OK					
	0,63	OK					OK					
	0,8	OK					OK					
	0,9	OK					OK					
	0,95	OK					OK					
	1	OK					OK					
② Characteristics*	1		11 s at 2 xIr	2,5	0,1	14		11 s at 2 xIr	2,5	0,1	14	
	2		21 s at 2 xIr	5	0,2	14 (max 12 x In)	21 s at 2 xIr	5	8	0,2	14 (max 10 x In)	
	3											
	4		5 s at 6 xIr	10			5 s at 6 xIr					
	5		10 s at 6 xIr				10 s at 6 xIr					
	6		19 s at 6 xIr				16 s at 6 xIr					
	7		29 s at 6 xIr									
③ Neutral protection	0%											
	50%											
	100%											

(*) Characteristic 1 : use for generators protection.
Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.
Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

Tripping curve

MCCB h1000 LSI (630-800A)



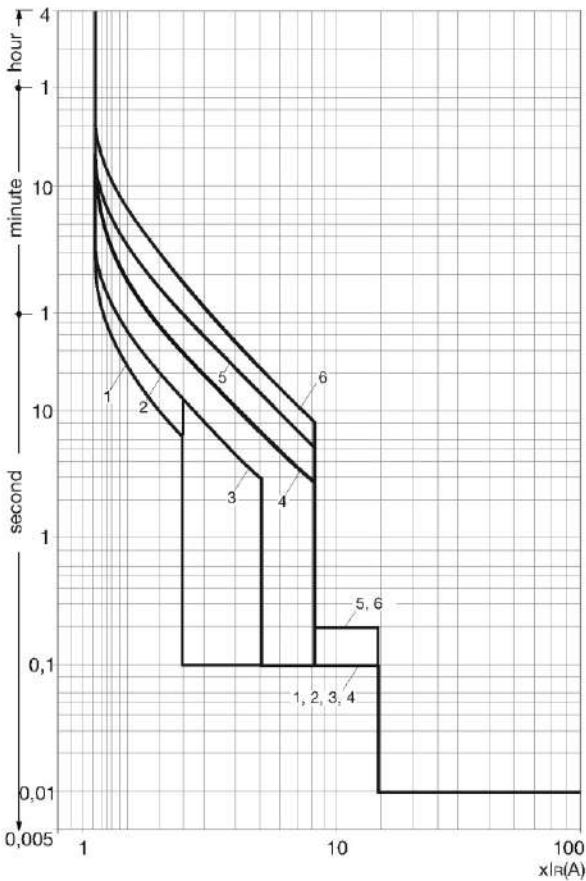
Electronic trip unit setting (LSI)

MCCBs 630-800A electronic

I _R (A)										
LTD Pick-up current		I _R	x I _n	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics			No.	1	2	3	4	5	6	7
Standard	LTD	t _R	(s)	11	21	21	5	10	19	29
				200% x I _R				600% x I _R		
	STD	I _{sd}	x I _R	2,5		5	10			
		t _{sd}	(s)	0,1						0,2
	INST	I _i	x I _R	14 (max : 12 x I _n)						
Optional	NP	I _N	x I _n	0 - 0,5 - 1						
		t _N	(s)	I _N =t _R						

Tripping curve

MCCB h1000 LSI (1000A)



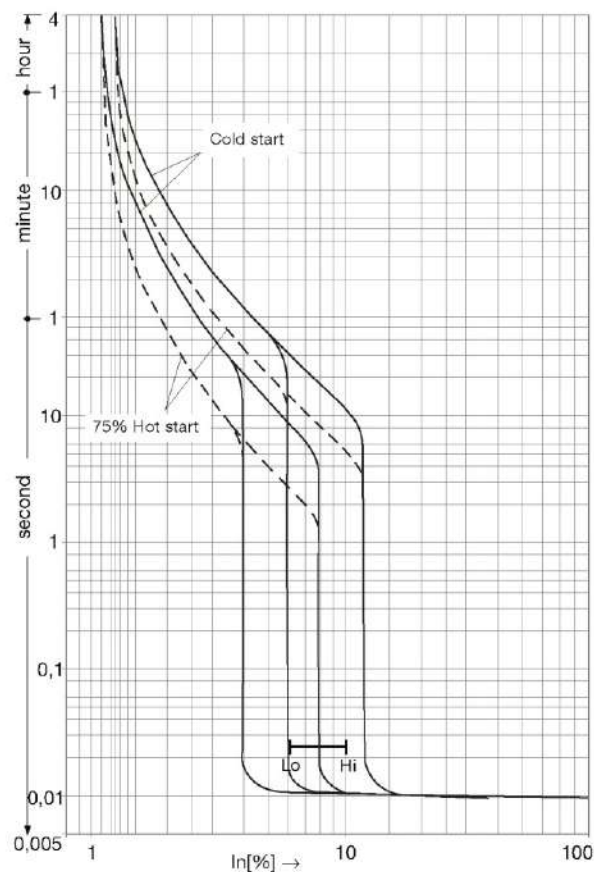
Electronic trip unit setting (LSI)

MCCBs 1000A electronic

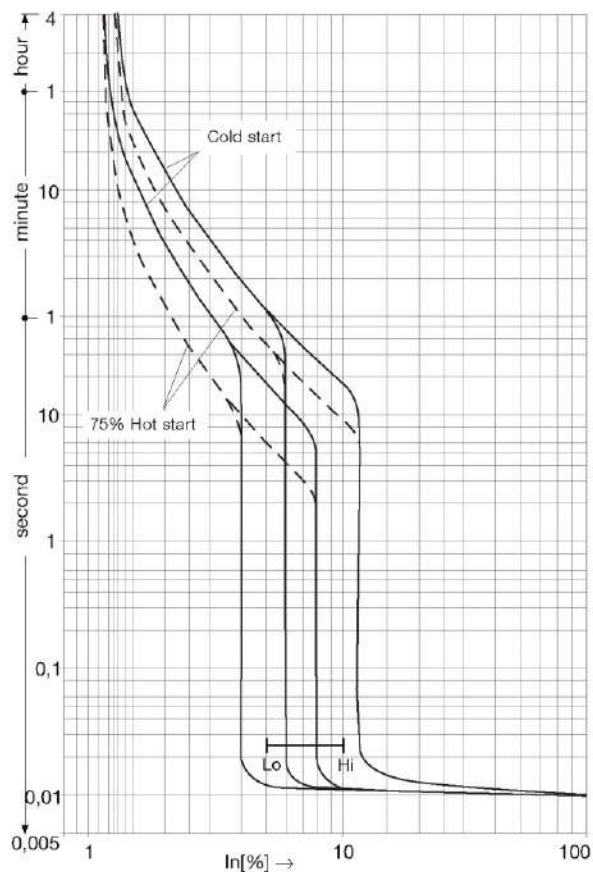
I _R (A)											
LTD Pick-up current			I _R	x I _n	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics				No.	1	2	3	4	5	6	
Standard	LTD	t _R	(s)	11	21	21	5	10	16		
				200% x I _R				600% x I _R			
	STD	I _{sd}	x I _R	2,5			5	8			
		t _{sd}	(s)	0,1						0,2	
	INST	I _i	x I _R	14 (max : 10 x I _n)							
Optional	NP	I _N	x I _n	0 - 0,5 - 1							
		t _N	(s)	I _N =t _R							

Tripping curve

MCCB h800 TM (630A)

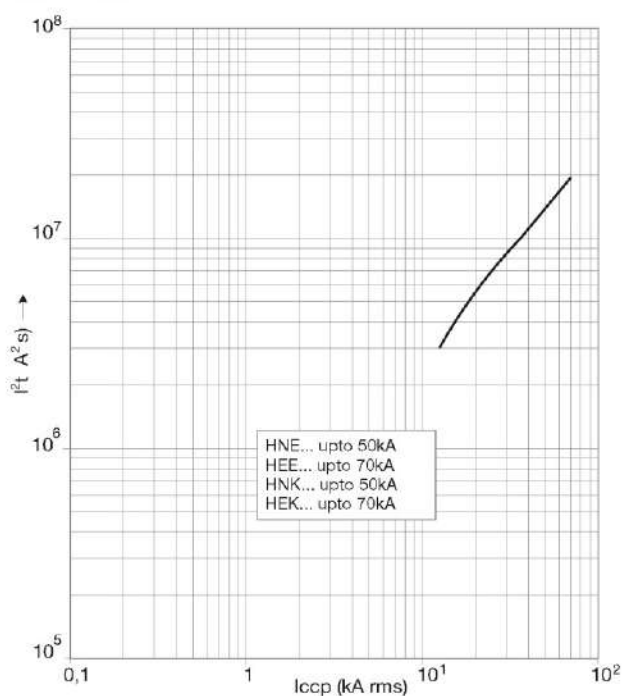


MCCB h800 TM (800A)



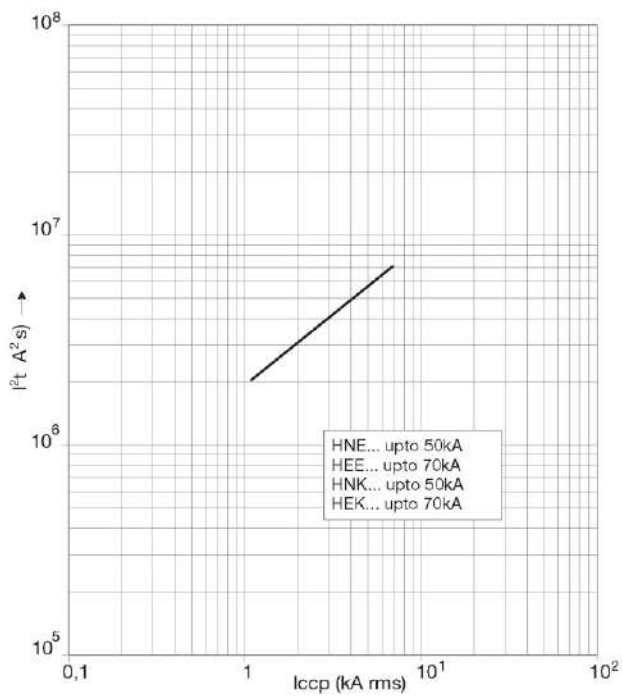
Thermal constraint curve at 400V (Let-through energy)

MCCB h1000



Current limiting curve at 400V (Let-through peak current)

MCCB h1000



Moulded case circuit breakers
h1600, selection and protection
Electronic trip unit LSI

- Long delay (thermal equivalent) adjustable:
 $I_r = 0,4 \text{ to } 1 \times I_n$
- short delay (magnetic equivalent) adjustable:
 $2,5 \text{ to } 10 \times I_r$
- time delay: 0,1-0,2 s
3 pole, 3 trip units,
4 pole, 4 trip units,
adjustable neutral 0 - 50% - 100%.

Mechanical test button, lockable settings.

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

Comply with IEC 60 947-2.

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

Trip-free switches
Allows tripping at distance using a voltmetrical trip unit (optional)



HNF990H

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h1600 50kA LSI	breaking capacity $I_{cu} : 50 \text{ kA}$ (400/415 V AC) $I_{cs} : 50 \text{ kA}$	1	1250A	3P HNF980H
		1	1600A	HNF990H
	adjustable thermal $I_r = 0,4 \text{ to } 1 \times I_n$ adjustable magnetic $2,5 \text{ to } 10 \times I_r$ time delay: 0,1-0,2 s	1	1250A	4P HNF981H
		1	1600A	HNF991H
	neutral setting 0, 50, 100%			
MCCBs h1600 70kA LSI	breaking capacity $I_{cu} : 70 \text{ kA}$ (400/415 V AC) $I_{cs} : 50 \text{ kA}$	1	1250A	3P HEF980H
		1	1600A	HEF990H
	adjustable thermal $I_r = 0,4 \text{ to } 1 \times I_n$ adjustable magnetic $2,5 \text{ to } 10 \times I_r$ time delay: 0,1-0,2 s	1	1250A	4P HEF981H
		1	1600A	HEF991H
	neutral setting from 0, 50, 100%			

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB is "open" or "close".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

Connection capacity:
0,75mm² flexible or rigid cables
Optional connection cables.
The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

Remotes tripping of MCCBs or trip-free switches.
Operating voltage: 0,7 to 1,1 x Un

Under voltage release

Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un. Pick up voltage 0,85 x Un

Direct rotary handle

- padlockable
- equipped with front cover and handle
- fixing without any additional screw.

Extended rotary handle

- IP 55
- supplied complete with shaft and handle.



HXC 021H



HXC 024H



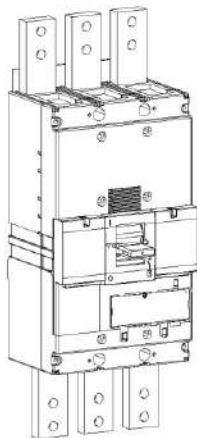
HXF 004H



HXE 014H

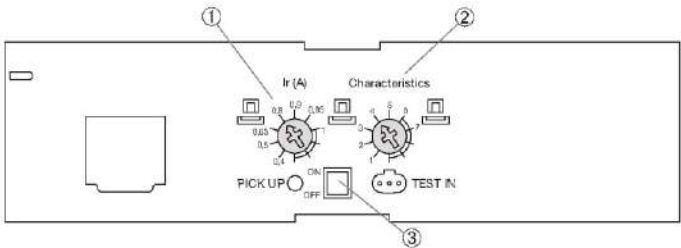
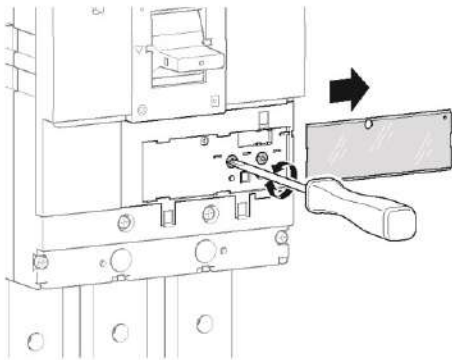
Description	Characteristics	Pack Qty.	Cat. ref.
Auxiliary contacts AX AL	1 changeover contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC021H
	1 changeover alarm contact 250 V AC / 3A 125 V DC / 0,4A 1 NO + 1 NC	1	HXC024H
	low level contact (ON/OFF) 125 V AC 1 NO + 1 NC	1	HXC025H
	low level alarm contact 125 V AC 1 NO + 1 NC	1	HXC026H
Shunt trips SH	24 V DC	1	HXF001H
	48 V DC	1	HXF002H
	110 V DC	1	HXF008H
	100 - 120 V AC	1	HXF003H
	200 - 240 V AC	1	HXF004H
	380 - 450 V AC	1	HXF005H
Undervoltage releases UV	24 V DC	1	HXE011H
	100 - 120 V DC	1	HXE018H
	200 - 240 V DC	1	HXE019H
	110 - 120 V AC	1	HXE013H
	220 - 240 V AC	1	HXE014H
	380 - 415 V AC	1	HXE015H
Delayed undervoltage releases DUVR	24 V DC	1	HXF051H
	110 - 120 V AC	1	HXF053H
	220 - 240 V AC	1	HXF054H
	380 - 415 V AC	1	HXF055H
Direct rotary handle	padlockable handle, max Ø 8 mm	1	HXF030H
Extended rotary handle	padlockable handle, max Ø 8 mm	1	HXF031H
Padlock	to mount on MCCB for handle locking for 3 padlocks max Ø 8 mm	1	HXF039H
Motor operators	24 V DC	1	HXF040H
	200 - 230 V AC	1	HXF042H
Interphase barriers	set of 4 pieces	1	HYD019H
Connection kit	0,75 mm ² set of 3 x 2 wires length: 1,30m	1	HYA035H

MCCBs



		220/240 V AC	380/415 V AC	660/690 V AC
HNF	Icu (kA)	100	50	25
	Ics (kA)	75	50	25
HEF	Icu (kA)	100	70	45
	Ics (kA)	75	50	34
HCF	Icm (kA)	-	45	-
	Icw (kA)	-	20 kA-0,3 s	-

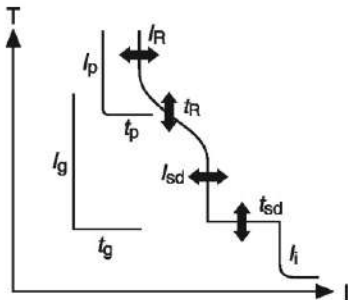
Electronic trip unit settings (LSI)



L - Long delay - protection against overloads: Ir and tr settings

S - Short delay - protection against short circuits: Isd and tsd settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir.

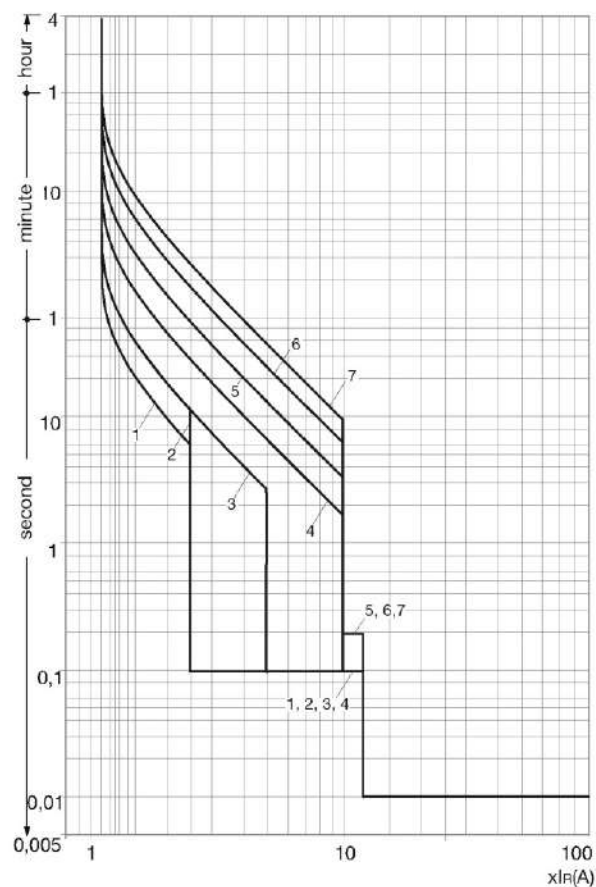


LSI		In A				
		1250 - 1600 A				
		Long Time Delay		Short Time Delay		Inst
		I _r (x I _n)	t _r (s)	i _{sd} (xI _r)	t _{sd} (s)	I _i (xI _r)
① I _r (x I _n)	0,4	OK				
	0,5	OK				
	0,63	OK				
	0,8	OK				
	0,9	OK				
	0,95	OK				
	1	OK				
② Characteristics*	1		11 s at 2 xI _r	2,5	0,1	14 (max 12 x I _n)
	2		21 s at 2 xI _r			
	3					
	4		5 s at 6 xI _r	10	0,2	
	5		10 s at 6 xI _r			
	6		19 s at 6 xI _r			
	7		29 s at 6 xI _r			
③ Neutral protection	0%					
	50%					
	100%					

(*) Characteristic 1 : use for generators protection.
Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.
Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

Tripping curve

MCCB h1600 LSI



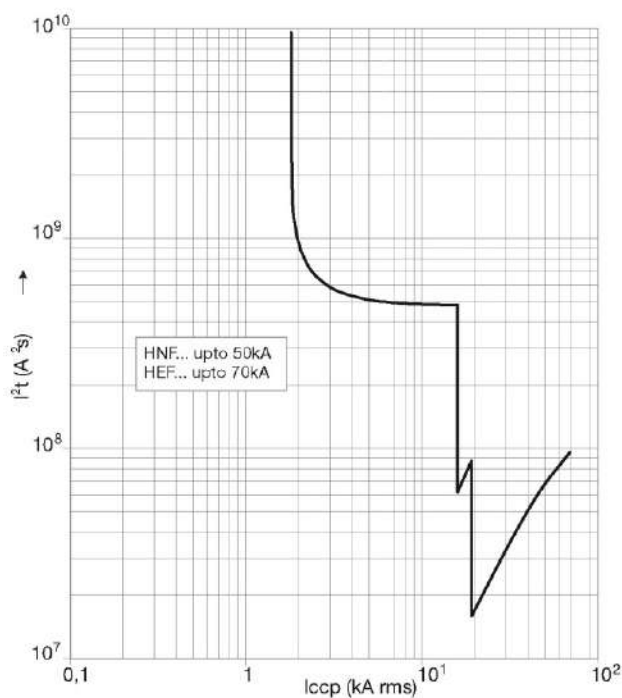
Electronic trip unit setting (LSI)

MCCBs 1250A and 1600A electronic

I_R (A)											
LTD Pick-up current		I_R	$\times I_n$	0,4	0,5	0,63	0,8	0,9	0,95	1	
Characteristics			No.	1	2	3	4	5	6	7	
Standard	LTD	t_R	(s)	11	21	21	5	10	19	29	
				$200\% \times I_R$			$600\% \times I_R$				
	STD	I_{sd}	$\times I_R$	2,5	5	10					
		t_{sd}	(s)	0,1					0,2		
		INST	I_i	$\times I_R$	14 (max : $12 \times I_n$)						
Optional	NP	I_N	$\times I_n$	0 - 0,5 - 1							
		t_N	(s)	$I_N=t_R$							

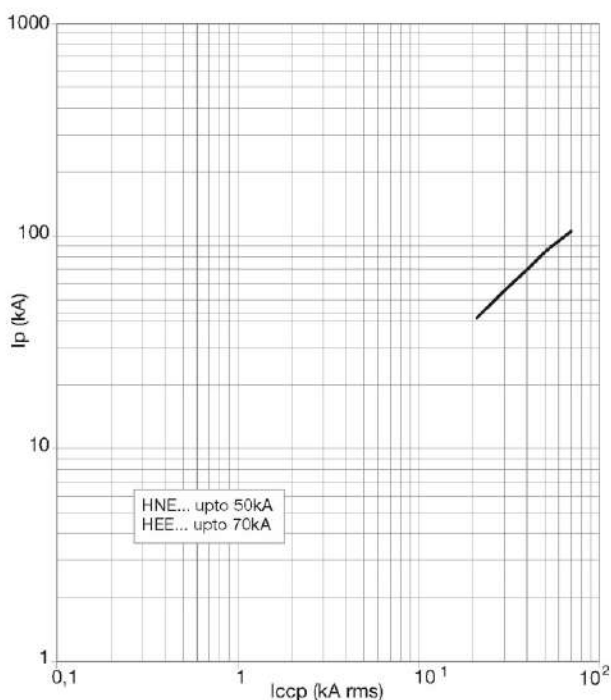
Thermal constraint curve at 400V (Let-through energy)

MCCB h1600



Current limiting curve at 400V (Let-through peak current)

MCCB h1600



Hager Muse
wiring accessories

Design for comfort and safety

:hager

h3e MCCB

Delight the style

The h3e MCCB range perfectly meets reliability requirements for main incoming devices in commercial premises; strength, reliability, efficient protection and standards compliant selections.

The style is reminiscent the H3 range and is perfectly integrated in the MCCB Hager offer.

With configurations of 3 and 4 pole offered across the range, all sizes of MCCB's have an extensive range of internal and external accessories available such as; auxiliary switches, shunt trips, undervoltage releases, terminal kits, and rotary handles.

h3e MCCB

Page

01 Expert tips	137
02 Technical characteristics	138
03 References guide	138
04 References structure	139
05 h3e h400e	140
06 h3e h800e	140

Main Incomers

h3e MCCB

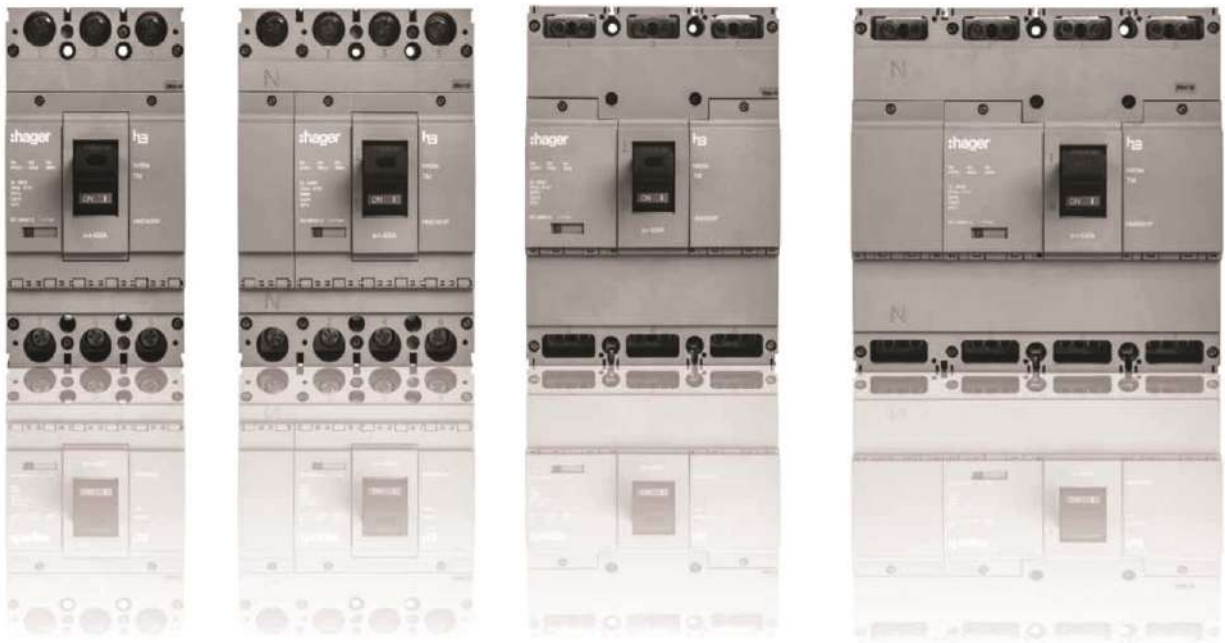
300A to 800A

Moulded case circuit breaker

The h3 range of MCCBs provides safe and easy solutions for low voltage electrical circuit protection. The state of the art circuit breakers offer both designers and installers a wide range of features and benefits.

Rated current from 300A to 800A with breaking capacity up to 50kA.

Special attention has been given to ergonomics, especially with the integration of these devices in





1
Style

In harmony with H3 MCCBs offer.



2
Full accessory range

Rotary handles, motor operators
...



3
Thermal-magnetic trip unit

Basic trip unit for providing overload and short-circuit protection. This has been developed for implementing economical, cost-efficient installations.



4
Quick Installation Accessories

Easy opening of secondary cover, clip-in type auxiliaries.



5
Flexible connection

Collar terminals, front and rear connections, straight connections, spreaders, plug in...



6
Earth leakage protection

Earth leakage relays devices can be used to prevent any injuries to personnel and protect the installations.

Products	h400e	h800e
Number of poles	3 & 4	3 & 4
Electrical Characteristics		
Rated current I_n (A)	300-320-350-400	450-500-600-630-800
Rated service voltage, (AC) U_e [Vac]	415	415
Frequency f [Hz]	50	50
Rated insulation voltage (AC) U_i [Vac]	690	690
Rated impulse withstand voltage(A) U_{imp} [KV]	8	8
Rated ultimate short-circuit breaking capacity I_{cu} (AC) 50 Hz 415Vac I_{cu} [kA]	50	50
Rated short-circuit breaking capacity I_{cs} (AC) 50 Hz 415Vac I_{cs} [kA]	36	36
Utilization category	A	A
Derating		
40°C	100%	100%
50°C	92%	94%
55°C	88%	86%
60°C	83%	82%
Suitability for isolation	OK	OK
Electric endurance (nb of cycles)	2000	1500
Mechanical endurance (nb of operation)	4000	4000
Operating temperature	-5°C to +60°C	-5°C to +60°C
Storage temperature	-25°C to +70°C	-25°C to +70°C
Size		
Height mm	257	275
Width 3 pole mm	140	210
4 pole mm	184	280
Depth mm	155	155
Weight 3 pole kg	4.3	6.6
4 pole kg	5.2	8.9

Reference Guide

Frame	Poles	Rated current	$I_{cu} : 50kA / I_{cs} : 36kA$
			Thermal magnetic protection
h400e	3	300A	HND300P
		320A	HND320P
		350A	HND350P
		400A	HND400P
	4	300A	HND301P
		320A	HND321P
		350A	HND351P
		400A	HND401P
h800e	3	450A	HNE450P
		500A	HNE500P
		600A	HNE600P
		630A	HNE630P
		800A	HNE800P
	4	450A	HNE451P
		500A	HNE501P
		600A	HNE601P
		800A	HNE801P

Type of accessories	Accessory specifications	Characteristics	Pole	h400e	h800e
Internal auxiliaries & external accessories	Shunt trip release	24V DC	3/4 P	HXD006P	HXE006P
		220V AC		HXD004P	HXE004P
		380V AC		HXD005P	HXE005P
	Under voltage release	220V AC	3/4 P	HXD014P	HXE014P
		380V AC		HXD015P	HXE015P
	Auxiliary contacts	2NO+2NC	3/4 P	HXD022P	HXE022P
	Alarm Contact	1NO+1NC	3/4 P	HXD024P	HXE024P
	Auxiliary / alarm switch	1NO+1NC/1NO+1NC	3/4 P	HXD023P	HXE023P
	Extended rotary handle		3/4 P	HXD031P	HXE031P
	Electric operation	220VAC	3/4 P	HXD042P	HXE042P
380VAC		3/4 P	HXD044P	HXE044P	
Connection	Rear connections		3P	HYD031P	HYE031P
			4P	HYD032P	HYE032P
	Plug-in kit		3P	HYD200P	HYE200P
			4P	HYD201P	HYE201P

Reference Structure

H	N	D	350	P																														
1	2	3	4	5																														
1.Breaker Series Name h3e series MCCB		5. Name of series P= h3e range																																
2. Breaking capacity N = Icu 50 kA		4. Poles & Rated current :<table><tr><td></td><td>3P</td><td>4P</td></tr><tr><td>300A</td><td>300</td><td>301</td></tr><tr><td>320A</td><td>320</td><td>321</td></tr><tr><td>350A</td><td>350</td><td>351</td></tr><tr><td>400A</td><td>400</td><td>401</td></tr><tr><td>450A</td><td>450</td><td>451</td></tr><tr><td>500A</td><td>500</td><td>501</td></tr><tr><td>600A</td><td>600</td><td>601</td></tr><tr><td>630A</td><td>630</td><td>631</td></tr><tr><td>800A</td><td>800</td><td>801</td></tr></table>				3P	4P	300A	300	301	320A	320	321	350A	350	351	400A	400	401	450A	450	451	500A	500	501	600A	600	601	630A	630	631	800A	800	801
	3P	4P																																
300A	300	301																																
320A	320	321																																
350A	350	351																																
400A	400	401																																
450A	450	451																																
500A	500	501																																
600A	600	601																																
630A	630	631																																
800A	800	801																																
3. Frame size D = h400e E = h800e																																		

h3e MCCB h400e



Description: Hager MCCBs with fixed thermal-magnetic trip unit. Supplied with spreaders, extended

handle, interphase barriers for top and bottom terminals, terminals and fixation screws as standard.

Technical parameters:
compliance with IEC60947-2

Rated ultimate short-circuit breaking capacity Icu: 50kA



HND400P

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h400e 50kA	Icu = 50 kA (415 Vac)	1	300A	3P HND300P
		1	320A	HND320P
		1	350A	HND350P
		1	400A	HND400P
	Thermal fixed (1.05x In to 1.3 x In) Magnetic fixed: 10x In (+/- 20%)	1	300A	4P HND301P
		1	320A	HND321P
		1	350A	HND351P
		1	400A	HND401P

h3e MCCB h800e

Description: Hager MCCBs with fixed thermal-magnetic trip unit. Supplied with extended straight connections, extended handle,

interphase barriers for top and bottom terminals, terminals and fixation screws as standard.

Technical parameters:
compliance with IEC60947-2

Rated ultimate short-circuit breaking capacity Icu: 50kA



HNE630P

Description	Characteristics	Pack Qty.	In	Cat. ref.
MCCBs h800e 50kA	Icu = 50 kA (415 Vac)	1	450A	3P HNE450P
		1	500A	HNE500P
		1	600A	HNE600P
		1	630A	HNE630P
	Thermal fixed (1.05x In to 1.3 x In) Magnetic fixed: 10x In (+/- 20%)	1	800A	HNE800P
		1	450A	4P HNE451P
		1	500A	HNE501P
		1	600A	HNE601P
		1	630A	HNE631P
		1	800A	HNE801P

h3e MCCB accessories



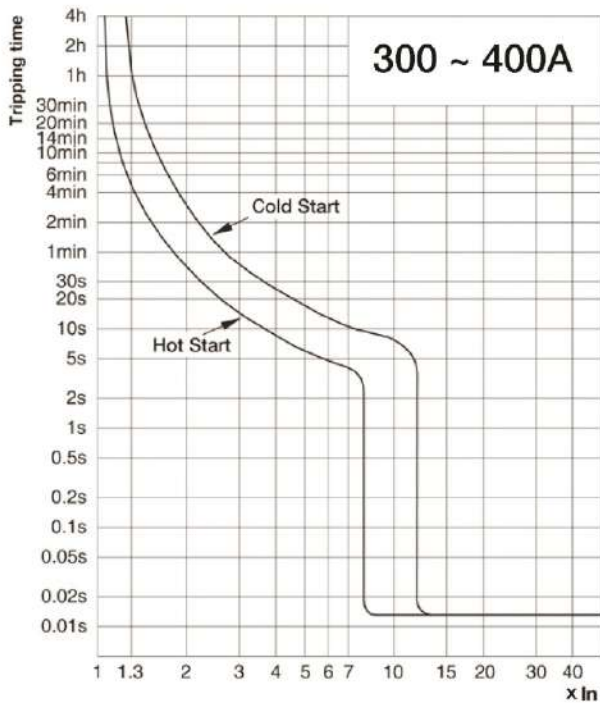
HXD042P



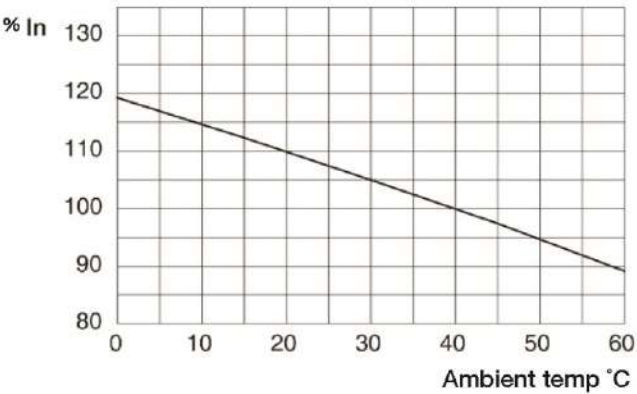
HXE004P

Description	In	Cat. ref.	
		h400e	h800e
Shunt trip	220V AC	HXD004P	HXE004P
Shunt trip	380V AC	HXD005P	HXE005P
Shunt trip	24V DC	HXD006P	HXE006P
Undervoltage release	230V AC	HXD014P	HXE014P
Undervoltage release	380V AC	HXD015P	HXE015P
Auxiliary contact	2 changeover 2NO + 2NC	HXD022P	HXE022P
Auxiliary and alarm contact	2 changeovers 1NO + 1NC / 1NO + 1NC	HXD023P	HXE023P
Alarm contact 1 changeover 1NO + 1NC		HXD024P	HXE024P
External rotary handle		HXD031P	HXE031P
Motor operator	230V AC	HXD042P	HXE042P
1 set of 3 rear connections		HYD031P	
Plug in 3P		HYD200P	HYE200P
Plug in 4P			HYE201P

Tripping curve (front connection)

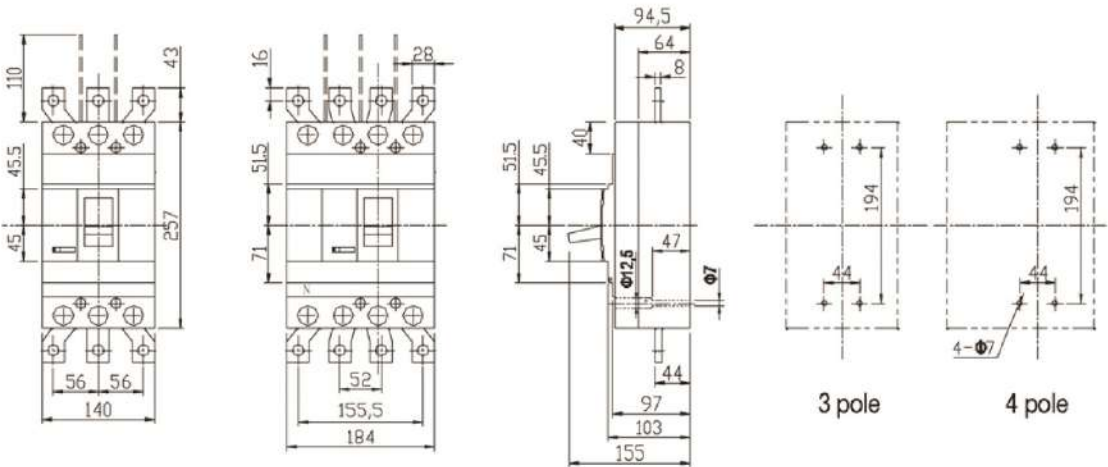


Temperature compensation curve (front connection)



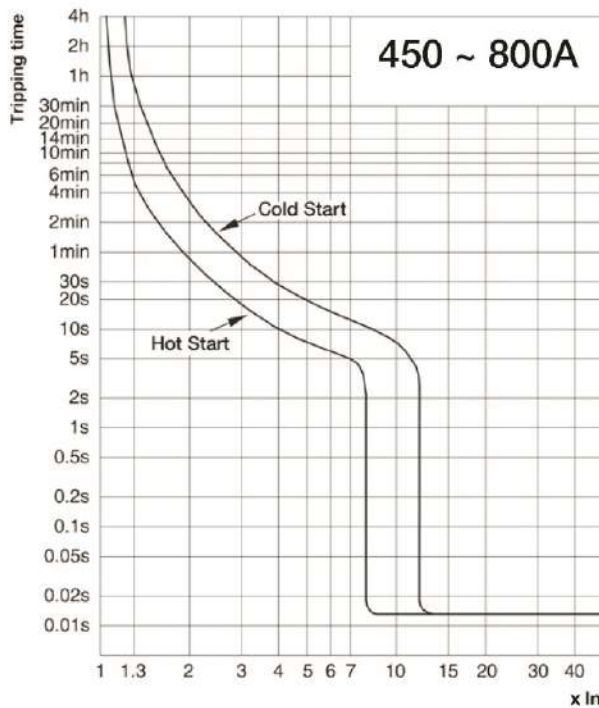
Dimensions

Front connection

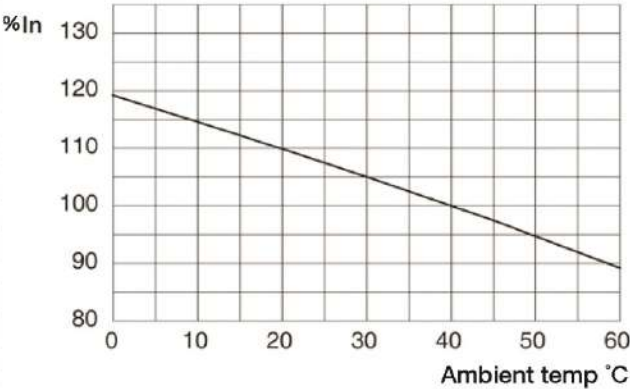


MCCB 800A

Tripping curve (front connection)



Temperature compensation curve
(front connection)



Hager Inspire
wiring accessories

Design for a better life

:hager

Protection devices the complete solution

Hager offers a wide range of protection devices, such as miniature circuit breakers, auxiliaries and accessories, RCD add-on blocks, single pole and switched neutral devices, 2 and 4 pole RCCBs, RCCB auxiliaries, RCBOs, HRC fuse carriers, motor starters, earth leakage relays and surge protection devices.

Protection Devices

	Page
01 MCB 4,5 kA	140
02 MCB 6 kA	141
03 MCB 10 kA	142
04 MCB 80 - 125 kA	143
05 MCB auxiliaries and accessories	145
06 RCCB	150
07 RCBOs residential	150
08 RCBO	151

Miniature Circuit Breakers 4.5kA type C - MY



Description

Protection and control of circuits against overloads and short circuits in domestic, commercial and industrial applications.

Technical data

C curve tripping
Current rating : 1-63A

Breaking capacity :

4.5kA IEC 60 898
6kA IEC 60 947-2
10kAIC NEMA AB-1
Reference calibration
Temperature : 30°C
Voltage rating : 230/400V
Mechanical endurance :
20 000 operations

Connection capacity :

25mm² rigid conductor
16mm² flexible conductor
Will accept accessories, shunt trips, auxiliary contact.

Approval :

KEMA
SNI



MY106E



MY232E



MY316E

Description	Width in ■ 17.5mm	Pack Qty.	In/A	Cat. ref.
Single pole MCB 	1	12	1	MY101E
	1	12	2	MY102E
	1	12	4	MY104E
	1	12	6	MY106E
	1	12	10	MY110E
	1	12	16	MY116E
	1	12	20	MY120E
	1	12	25	MY125E
	1	12	32	MY132E
	1	12	40	MY140E
	1	12	50	MY150E
	1	12	63	MY163E
Double pole MCB 	2	6	1	MY201E
	2	6	2	MY202E
	2	6	4	MY204E
	2	6	6	MY206E
	2	6	10	MY210E
	2	6	16	MY216E
	2	6	20	MY220E
	2	6	25	MY225E
	2	6	32	MY232E
	2	6	40	MY240E
	2	6	50	MY250E
	2	6	63	MY263E
Triple pole MCB 	3	4	1	MY301E
	3	4	2	MY302E
	3	4	4	MY304E
	3	4	6	MY306E
	3	4	10	MY310E
	3	4	16	MY316E
	3	4	20	MY320E
	3	4	25	MY325E
	3	4	32	MY332E
	3	4	40	MY340E
	3	4	50	MY350E
	3	4	63	MY363E

Description
Protection and control of circuits against overloads and short circuits in domestic, commercial and industrial applications.

Technical data
MUxxxA = type C tripping according to IEC 60 898 and BSEN 60-898

Reference calibration
Temperature : 30°C

Breaking capacity :
6kA IEC 60 898
10kA IEC 60 947-2
22KAIC NEMA AB-1
Voltage rating : 230/400V
Current rating : 2-63A
Mechanical endurance : 20.000 operations

Connection capacity :
25mm² rigid conductor
16mm² flexible conductor

Will accept accessories, shunt trips, auxiliary contact.

Approval :
KEMA
SNI



MU106A



MU232A



MU363A

Description	Width in 17.5mm	Pack Qty.	In/A	Cat. ref.
Single pole MCB 	1	12	2	MU102A
	1	12	4	MU104A
	1	12	6	MU106A
	1	12	10	MU110A
	1	12	16	MU116A
	1	12	20	MU120A
	1	12	25	MU125A
	1	12	32	MU132A
	1	12	40	MU140A
	1	12	50	MU150A
	1	12	63	MU163A
Double pole MCB 	2	6	2	MU202A
	2	6	4	MU204A
	2	6	6	MU206A
	2	6	10	MU210A
	2	6	16	MU216A
	2	6	20	MU220A
	2	6	25	MU225A
	2	6	32	MU232A
	2	6	40	MU240A
	2	6	50	MU250A
	2	6	63	MU263A
Triple pole MCB 	3	4	2	MU302A
	3	4	4	MU304A
	3	4	6	MU306A
	3	4	10	MU310A
	3	4	16	MU316A
	3	4	20	MU320A
	3	4	25	MU325A
	3	4	32	MU332A
	3	4	40	MU340A
	3	4	50	MU350A
	3	4	63	MU363A

Description Protection and control of circuits against overloads and short circuits in domestic, commercial and industrial electrical distribution systems.	Breaking capacity : 10kA according to IEC 60 898 15kA according to IEC 60 947-2	Positive contact indication Red - contacts closed Green - contacts open Will accept accessories, shunt trips, auxiliary contact.
	30kAIC according to NEMA AB-1 Reference calibration Temperature : 30°C Voltage rating : 230/400V Current rating : 0.5 - 63A Mechanical endurance : 20.000 operations	Connection capacity (up to 63A) : 25mm ² rigid conductor 16mm ² flexible conductor
Technical data NCxxxA = type C tripping according to IEC898 and BSEN 60-898		



NC110A

Description	Width in ■ 17.5mm	Pack Qty.	In/A	Cat. ref.
Single pole MCB 	1	12	0.5	NC100A
	1	12	1	NC101A
	1	12	2	NC102A
	1	12	4	NC104A
	1	12	6	NC106A
	1	12	10	NC110A
	1	12	16	NC116A
	1	12	20	NC120A
	1	12	25	NC125A
	1	12	32	NC132A
	1	12	40	NC140A
	1	12	50	NC150A
	1	12	63	NC163A



NC210A

Double pole MCB 	2	6	0.5	NC200A
	2	6	1	NC201A
	2	6	2	NC202A
	2	6	4	NC204A
	2	6	6	NC206A
	2	6	10	NC210A
	2	6	16	NC216A
	2	6	20	NC220A
	2	6	25	NC225A
	2	6	32	NC232A
	2	6	40	NC240A
	2	6	50	NC250A
	2	6	63	NC263A



NC310A

Triple pole MCB 	3	4	0.5	NC300A
	3	4	1	NC301A
	3	4	2	NC302A
	3	4	4	NC304A
	3	4	6	NC306A
	3	4	10	NC310A
	3	4	16	NC316A
	3	4	20	NC320A
	3	4	25	NC325A
	3	4	32	NC332A
	3	4	40	NC340A
	3	4	50	NC350A
	3	4	63	NC363A

Curves "C" 10000
IEC 60898-1
10 kA
IEC 60 947-2

In 80 to 125 A

Tripping curves :
"C" magnetic setting between
5 and 10 In

Use :
Residential, commercial and
industrial premises

Connection capacity :
- 35mm² flexible wire (50mm²
possible with some cable
end-caps),
- 70mm² rigid wire

KEMA
In conformity with the
IEC 60 898-1, 947-2 approved



HLF199S



HLF299S



HLF399S



HLF499S

Description	Width in 17.5mm	Pack Qty.	In/A	Cat. ref.
Circuit breakers 1 pole 	1.5	1	80	HLF180S
	1.5	1	100	HLF190S
	1.5	1	125	HLF199S
Circuit breakers 2 pole 	3	1	80	HLF280S
	3	1	100	HLF290S
	3	1	125	HLF299S
Circuit breakers 3 pole 	4.5	1	80	HLF380S
	4.5	1	100	HLF390S
	4.5	1	125	HLF399S
Circuit breakers 4 pole 	6	1	80	HLF480S
	6	1	100	HLF490S
	6	1	125	HLF499S

miniature circuit breakers 80-125A

HMC, HMD; "C", "D" 15000 - 15kA



Curves "C" and "D" 15000
IEC 60 898-1
15 kA
IEC 60 947-2

In 80 to 125 A

Tripping curves :
"C" magnetic setting between
5 and 10 In
"D" magnetic setting between
10 and 20 In

Use :
Residential, commercial and
industrial premises

Connection capacity :
- 35mm² flexible wire
(50mm² possible with some
cable end-caps)
- 70mm² rigid wire

KEMA
In conformity with the
IEC 60 898-1, 947-2 approved



HMC199



HMC299



HMC399



HMC499

Description	Width in ■ 17.5mm	Pack Qty.	In/A	Cat. ref.
Circuit breakers 1 pole 	1.5	1	80	Curve C HMC180
	1.5	1	100	HMC190
	1.5	1	125	HMC199
	1.5	1	80	Curve D HMD180
	1.5	1	100	HMD190
	1.5	1	125	HMD199
Circuit breakers 2 pole 	3	1	80	Curve C HMC280
	3	1	100	HMC290
	3	1	125	HMC299
	3	1	80	Curve D HMD280
	3	1	100	HMD290
	3	1	125	HMD299
Circuit breakers 3 pole 	4.5	1	80	Curve C HMC380
	4.5	1	100	HMC390
	4.5	1	125	HMC399
	4.5	1	80	Curve D HMD380
	4.5	1	100	HMD390
	4.5	1	125	HMD399
Circuit breakers 4 pole 	6	1	80	Curve C HMC480
	6	1	100	HMC490
	6	1	125	HMC499
	6	1	80	Curve D HMD480
	6	1	100	HMD490
	6	1	125	HMD499

All auxiliaries are common to both single and multi-pole circuit breakers. These auxiliaries are fitted to the left hand side of devices.
Fault indication, auxiliaries, shunt trips, and under-voltage releases are fitted with a flag indicator that indicates the automatic/remote tripping of the device.

Test mode for CZ001, MZ201, MZ202 : possible to test cabling of auxiliary circuits operation by tripping-over contacts manually. Resetting of contact occurs simultaneously with MCB/RCCB resetting.

CZ001 must be fitted on the RCCB before fitting maximum one additional auxiliary (MZ203 to MZ206).
Up to 4 auxiliaries can be fitted on MCB.



MZ201



MZ204



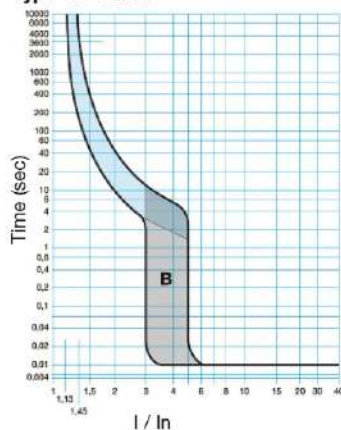
MZ205



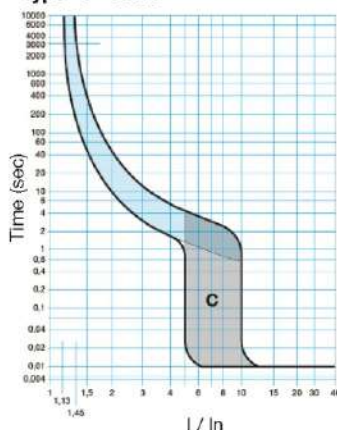
MZN175

Description	Characteristics	Width in 17.5mm	Pack Qty.	Cat. ref.
Auxiliary + alarm switch for RCCB	1 module wide for ON/OFF & trip indication	1	1	CZ001
Auxiliary contacts	1NO + 1NC auxiliary contact indication of main contact status	1/2	1	MZ201
Signal contacts	1NO + 1NC signal contact	1/2	1	MZ202
Signal contact indicates a fault condition (e.g. MCB tripped on overload or short circuit). flag indicator red - MCB tripped				
Shunt trips	230 - 415V AC 110 - 130V DC	1	1	MZ203
Allows remote tripping of the device	24V - 48V AC	1	1	MZ204
	12V - 48V DC			
Under voltage release	48V DC	1	1	MZ205
	230V AC	1	1	MZ206
Allows MCB to be closed only when voltage is above 70% of Un. MCB will automatically trip when voltage falls by 35% of Un				
Over voltage release	230V AC	1	1	MZ212
Monitors the voltage between phase and neutral in a network. It opens the current circuit in case of over voltage by tripping the connected protection device (e.g. MCB or RCCB)				
Combined Over & Under-voltage auxiliary	230V AC	1	1	MZ214
Protects the installation from permanent over and under voltage				
Locking kit			1	MZN175
This allows locking of the device dolly in the on/off position. Will accept two padlocks with hasps of 4.75mm diameter max.				

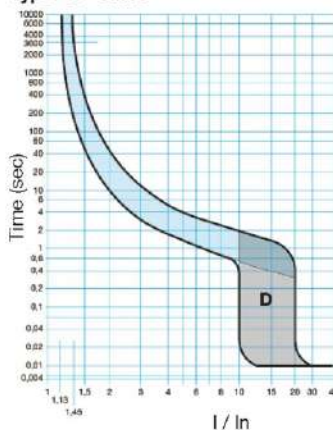
Type "B" curve



Type "C" curve



Type "D" curve



Electrical characteristics

MCB type	MY___E	MT___A	MU___A	NB___A	NC___A	NDN___A	NRN	HMX	HLE/F	HMB/C/D	HMK
Current rating	1 - 63A	6 - 63A	2 - 63A	6 - 63A	0.5 - 63A	0.5 - 63A	6 - 63A	25 - 63A	80-125A	80-125A	80-125A
Tripping curve											
B: 3 - 5In											
C: 5 - 10In	C	B	C	B	C	D	C	C	B / C	B / C / D	C
D: 10 - 20In											
Breaking capacity											
EN 60 898 & IEC 898	4.5kA	6kA	6kA	10kA	10kA	10kA	-	-	10kA	15kA	-
IEC 947 - 2	6kA	10kA	10kA	15kA	15kA	15kA	15/25kA	50kA	10kA	15kA	30kA
NEMA AB - 1	10KAIC	22KAIC	22KAIC	30KAIC	30KAIC	30KAIC	30KAIC	-	-	-	-
Rated voltage - 50/60Hz	230/400Vac (max. 440Vac)								240 / 415Vac		
Isolating voltage	500V										
Electrical endurance	0.5 to 32A		20 000 operations								
	40 to 125A		10 000 operations								
Working temperature	-5°C to +60°C										
Tropicalisation	Treatment 2 with relative humidity 95% at 55°C										

Correction factor

Depending on the model selected some of the breaker is calibrated at a temperature of 30°C in accordance to IEC 898.

Temperature correction

In (A)	30°C	35°C	40°C	45°C	50°C	55°C	60°C
0.5	0.5	0.47	0.45	0.4	0.38	-	-
1	1	0.95	0.9	0.8	0.7	0.6	0.5
2	2	1.	1.7	1.6	1.5	1.4	1.3
3	3	2.8	2.	2.	2.	2.1	1.9
4	4	3.7	3.	3.3	3	2.8	2.5
6	6	5.6	5.3	5	4.6	4.2	3.8
10	10	9.4	8.8	8	7.5	7	6.4
16	16	15	14	13	12	11	10
20	20	18.5	17.5	16.5	15	14	13
25	25	23.5	22	20.5	19	17.5	16
32	32	30	28	26	24	22	20
40	40	37.5	35	33	30	28	25
50	50	47	44	41	38	35	32
63	63	59	55	51	48	44	40
80	80	77.6	75.1	72.6	70	67.2	64.4
100	100	96.6	93.1	89.4	85.6	81.6	77.5
125	125	121.9	118.9	115.7	112.4	109.1	105.6

Grouping factor (rated current reduce by factor K)

No. of units	K
n = 1	1
2 ≤ n < 4	0.95
4 ≤ n < 6	0.90
6 ≤ n	0.85

Frequency

Thermal - Unchanged

Magnetic - Value multiplied by coefficient K

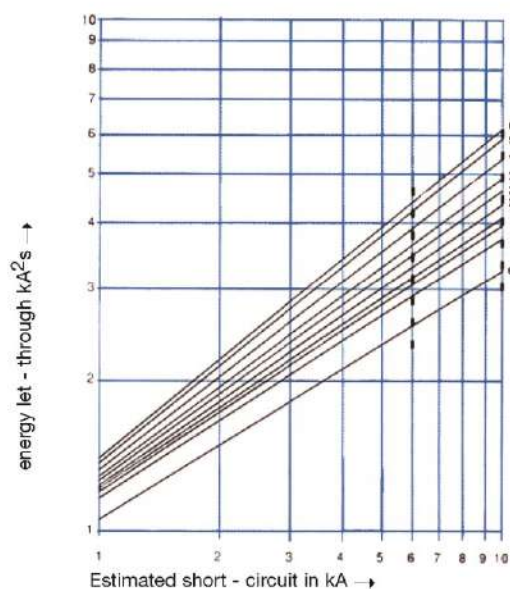
F (Hz)	17Hz - 60Hz	100Hz	200Hz	400Hz
K	1	1.1	1.2	1.5

Installation

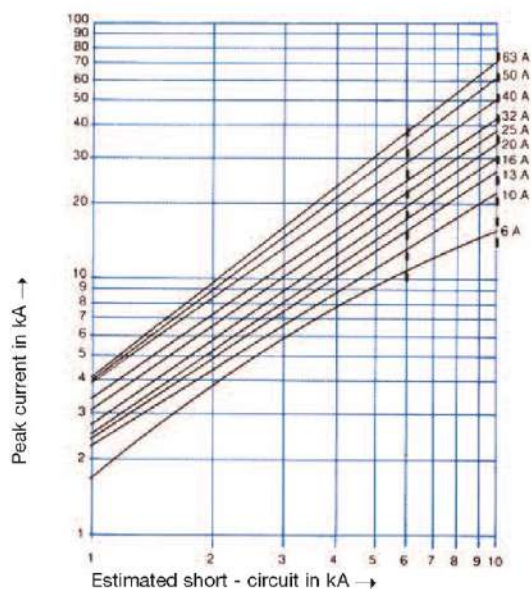
Working position : vertically, horizontally or flat.

Supply : feed from either top or bottom terminals.

i^2t characteristics curve



Current limitation curve



Power loss

The power loss of MCB's is closely controlled by the standards and is calculated on the basis of the voltage drop across the main terminals measured at rated current. The power loss of Hager circuit breakers is very much lower than that required by the IEC Standard, so in consequences run cooler and are less affected when mounted together.

The table below gives the watts loss per pole at rated current.

MCB rated current (A)	0.5	1	2	3	4	6	10	16	20	25	32	40	50	63	80	100	125
Watt loss per pole (W)	1.3	1.5	1.7	2.1	2.4	2.7	1.8	2.6	2;8	3.3	3.9	4.3	4.8	5.2	5	5.5	8

DC applications

Because of their quick make and break design and excellent arc quenching capabilities Hager circuit breakers are suitable for use on DC. When selecting a circuit breaker for any DC application it is necessary to consider two main points.

1. rated current

The thermal time/current characteristics is unaffected so that the circuit breaker will carry its rated current and operate within its designated thermal time/current zone at 40°C Derating for higher ambient temperatures and grouping apply exactly the same as AC applications. The instantaneous magnetic trip is affected however, becoming less sensitive, requiring 2 times the AC operating current. The table below shows the upper and lower limits of both B and C instantaneous characteristic curves for 50Hz and DC applications. Thermal unchanged. Magnetic trip increased as table below.

Characteristics curve	B		C	
	50Hz	DC	50Hz	DC
magnetic trip	50Hz	DC	50Hz	DC
I _{rm} 1	3In	3In	5In	5In
I _{rm} 2	5In	7.5In	10In	15In

2. system voltage

The system voltage and the type of system determines the number of poles required to provide the necessary breaking capacity and arc control. The table below gives the maximum DC voltage and breaking capacity for one pole or two poles connected in the series; The positioning of these breaking poles in the system depends on whether the system is earthed or insulated and if it is earthed whether one polarity is earthed or the centre point is earthed.

MCB	Breaking capacity			
	1 poles in series/60V	2 poles in series/125V	4 poles in series/250V	Magnetic tripping
MY	10kA	10kA	-	5 - 15In
MT	15kA	15kA	-	3 - 7.5In
MU	15kA	15kA	-	5 - 15In
NB	20kA	20kA	20kA	3 - 7.5In
NC	20kA	20kA	20kA	5 - 15In
ND	15kA	15kA	15kA	13 - 28In
NM	10kA	10kA	10kA	5 - 15In
NR	20kA	20kA	20kA	5 - 15In
HLE	10kA	10kA	10kA	3 - 7.5In
HLF	10kA	10kA	10kA	5 - 15In
HMB	15kA	15kA	15kA	3 - 7.5In
HMC	15kA	15kA	15kA	5 - 15In
HMD	15kA	15kA	15kA	13 - 28In

Functions

Tripping and indication auxiliary contacts are common to the range of Hager MCBs and RCCBs. They should be mounted on the left hand side of the device.

Auxiliary contact MZ201

Allows remote indication of the status of the device contacts to which it is associated.

Alarm contact MZ202

The alarm or signal contact will provide indication if the breaker trips under fault conditions

Note

Default indication auxiliaries and shunt trips or under voltage releases are fitted with tripping indications and reset facility.

MZN203 / MZN204 shunt trip

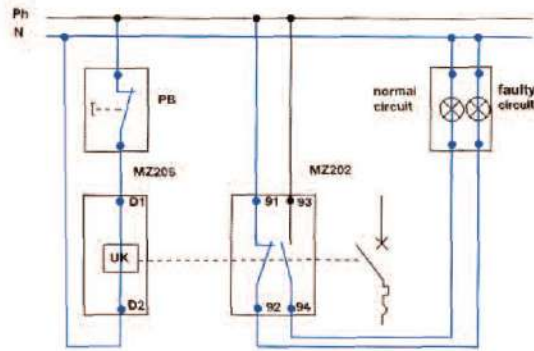
Allows tripping of the device by energizing the coil. It is fitted with internal contacts which allow it to be energized by an impulse or latched feed.

The contacts also allow for remote indication of operation.

MZN205 / MZN206 under voltage release

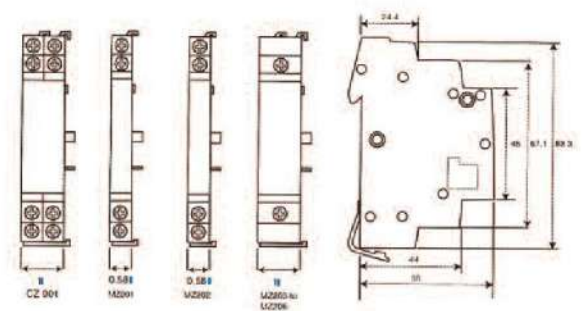
Allows the MCB to trip when the voltage drops or by pressing a remote off switch (ie emergency stop).

Emergency switch - off with under voltage release



Note : control circuit must be protected using a maximum 6A curve C MCB.

Sizes



Recapitulative table

	MZ201	MZ202	CZ001	MZ203	MZ204	MZ205	MZ206
	1O + 1C 230V~ 6A 440V~ 3A	1O + 1C 230V~ 6A 440V~ 3A	2X 1O + 1C 230V~ 6A 400V~ 3A				
				230 to 415V~ 110 to 130V= 50Hz	24 to 48V~ 12 to 48V= 50Hz	48V 50Hz	230V~ 50Hz

Grouping / combination of several auxiliaries

On 2, 3 and 4 pole MCBs it is possible to associate 3 auxiliaries - 2 indication auxiliaries and 1 release auxiliary. In this case, it is important to first fix the indication auxiliary (MZ 201 and MZ 202) and then the release auxiliary (MZ 203/204 and MZ 205/206)



**Making it really easy
to create an
intelligent home**





Description

To open a circuit automatically in the case of an earth leakage fault between phase and earth and / or neutral greater or equal to 30mA; use in domestic and commercial installations.

Technical data

Nominal voltage :
2 pole 127/230V - 50Hz
30mA
specifications : IEC 61008-1 SS97

Connection capacity :

16-40A rigid 25mm²
flexible 16mm²

Ambient temperature range :
-5 to + 40°C



CD616B

Description	Pack Qty.	Current	Cat. ref.
RCCBs sensivity - 30 mA			2P
	1	16A	CD616B
	1	25A	CD625B
	1	40A	CD640B

RCBOs Residential

Features

- 1 mod connection capacity
- 10mm² flexible
- 16mm² rigid

Specifically designed for DIN rail enclosures

4.5kA 1 Module

- Conforms with IEC 60898-1, 60947-2 and AS/NZS 61009.1
- Earth fault indication window
- Trip free mechanisms



ADA306T

Description	Breaking Capacity	Sensitivity IDn	Pack Qty.	In/A	Cat. ref.
RCBO ELE 1P+N	4,5kA	30mA	1	6	ADA306T
			1	10	ADA310T
			1	16	ADA316T
			1	20	ADA320T
			1	25	ADA325T
			1	32	ADA332T

Description
Compact protection devices which provide MCB overcurrent protection and RCCB earth leakage protection in a single unit.

Specification
IEC 61009-1

Protected against transient voltages (lightning, line disturbances,...) and transient currents (from high capacitive circuits)



Technical data :
The units are available with current ratings of 6A, 10A, 16A, 20A, 25A, 32A and 40A. The device switches both the phase and neutral conductors. All ratings have 10mA, 30mA, 100mA or 300mA earth leakage protection. The units feature indicators which show whether tripping is due to an overcurrent or earth leakage fault.

Voltage rating - 127-230V
Current rating - 6-40A.

Mechanical life :
2.000 operations
6kA IEC 61 009-1
10kA IEC 60 947-2

Type AC

Connection capacity
Rigid conductor 25mm²
Flexible conductor 16mm²



AD966B

Description	Sensitivity IDn	Breaking Capacity	Width in 17.5mm	Pack Qty.	In/A	Cat. ref.
RCBO 1P+N	10mA	6kA	2	1	16	AC966B
			2	1	6	AD956B
			2	1	10	AD960B
			2	1	16	AD966B
			2	1	20	AD970B
			2	1	25	AD975B
			2	1	32	AD982B
	100mA	6kA	2	1	40	AD990B
			2	1	6	AE956B
			2	1	10	AE960B
			2	1	16	AE966B
			2	1	20	AE970B
			2	1	25	AE975B
			2	1	32	AE982B
	300mA	6kA	2	1	40	AE990B
			2	1	6	AF956B
			2	1	10	AF960B
			2	1	16	AF966B
			2	1	20	AF970B
			2	1	25	AF975B
			2	1	32	AF982B
			2	1	40	AF990B

Residual current devices

A residual current device (RCD) is the generic term for a device which monitors the current in the line conductor and the neutral conductor of a circuit in an earthed system.

The drawing opposite shows how a toroid is located around the line and neutral conductors to measure the magnetic fields created by the current flowing in these conductors. The sum of the magnetic fields set up by these currents (which takes into consideration both the magnetic and phase relationship of the currents) is detected by the toroid.

In a normal healthy circuit the vector sum of the current values added together will be zero. Current flowing to earth, due to a line earth fault, will return via the earth conductor, and regardless of load conditions will register as a fault. This current flow will give rise to a residual current (I_{res}) which will be detected by the device.

It is most important that the line and neutral conductors are passed through the toroid. A common cause of nuisance operation is the failure to connect the neutral through the device.

RCCBs work just as well on three phase or three phase and neutral circuits, but when the neutral is distributed it must pass through the toroid.

RCCBs are not suitable for use on DC systems and unearthed networks.

RCCBs - domestic installation

RCCBs can be installed in two ways :

1. whole house protection
2. selective protection

Whole house protection is provided typically by a consumer unit where the RCCB device serves as the main switch. Although very popular this suffers from a disadvantage : all circuits are disconnected in the event of fault. Selective protection can be provided by associating the RCCB with identified high risk circuits by adopting one or more of the following :

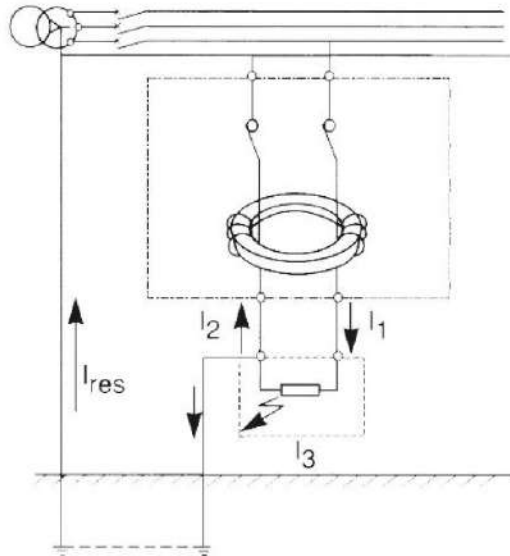
Whole ring circuit

A 30mA device adjacent to the consumer unit, which provides protection for the downstairs ring circuit, provides an easy installation with protection for all associated socket outlets. This represents the best solution for upgrading existing installations.

Nuisance tripping

All Hager RCCBs incorporate a filtering device preventing the risk of nuisance tripping due to transient voltages (lightning, line disturbances on other equipment...) and transient currents (from high capacitive circuit).

Check for the symbol : 



Pulsating DC fault current sensitive

Increasingly, semi-conductors are also extensively used in computers, VDUs, printers, plotters,... all of which may be fed from the main electrical supply. The presence of semi-conductors may result in the normal sinusoidal AC waveform being modified. For example, the waveform may be rectified or, as in asymmetric phase control devices, the waveform may be chopped. The resulting waveforms are said to have a pulsating DC component.

In the event of an earth fault occurring in equipment containing conductor devices, there is a probability that the earth fault current will contain a pulsating DC component.

Standard types of RCCB may not respond to this type of earth fault current and the intended degree of protection will not be provided.

Check for symbol : 

Hager provide a range of pulsating d.c. sensitive devices for this type of application.

Type	In A	IΔn A	Standard values of break time(s) and non-actuating time(s) at a residual current (IΔ) equal to :				
			IΔn	2 IΔn	5 IΔn	5A, 10A, 20A, 50A, 100A, 200A, 500A	
General	Any value	≤ 0.030	0.1	0.1	0.04	0.04	Maximum break times
		> 0.030	0.3	0.15	0.04	0.04	Maximum break times
S	≥ 25	> 0.030	0.5	0.2	0.15	0.15	Maximum break times
			0.13	0.06	0.05	0.04	Minimum non-actuating times

Protection against shock outside the equipotential bonding zone

Bonding conductors are used in an installation to maintain metallic parts, as near as possible, to the same potential as earth. Working with portable equipment outside this equipotential bonding zone, e.g. in the car park of a factory, introduces additional shock hazards. Socket outlets rated 32A or less 'which may be reasonably expected to supply portable equipment for use outdoors' should have at least one socket nominated for outdoor use. This socket should be equipped with RCC protection unless fed from an isolating transformer or similar device, or fed from a reduced voltage.

Protection in special situations (IEE wiring regulation)

The use of RCCBs is obligatory or recommended in the following situations :

- Caravans : 30mA RCCBs should be used
- TT systems
- Swimming pools : 30mA RCCB for socket outlets in zone B obligatory; recommended in zone C.
- Agricultural and horticultural : 30mA RCCB for socket outlets and for the purpose of protection against fire, RCCB 0.5A sensitivity.
- Construction sites : 30mA RCCB recommended

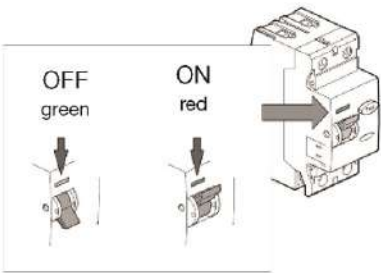
Portable equipment

With the exception mentioned above, where a socket is specifically designated for work outside the equipotential bonding zone, the Wiring Regulations demand the use of RCCBs to protect the users of portable equipment. It is widely recognised that their use has made a significant contribution to safety in the workplace and the home.

Protection against fire hazards

The provisions in the Wiring Regulations for protection against shock by indirect contact ensure rapid disconnection under earth fault assuming the fault has negligible impedance. Under such conditions the fault current, as we have seen, is sufficiently great to cause the overcurrent protection device to quickly disconnect the fault. However high impedance faults can arise where the fault current is sufficient to cause considerable local heat without being high enough to cause tripping of the overcurrent protective device. The heat generated at the point of the fault may initiate a fire long before the fault has deteriorated into a low impedance connection to earth.

Positive contact indication



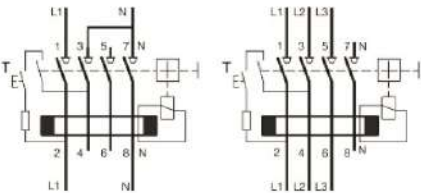
The provision of residual current protection throughout a system or in vulnerable parts of a system will greatly reduce the hazard of fire caused by such faults.

PEN conductors

The use of RCCBs is PEN conductors is prohibited. A PEN conductor is a single conductor combining the functions of neutral conductor and protective conductor. This being so, when the PEN conductor is taken through the toroid of an RCCB, earth faults will go undetected because the return path for the earth fault current is included in the residual sum.

Use of Hager RCCBs on 3 phase 3 wire systems

The Hager range of 4 pole RCCBs can be used to provide residual current protection of 3 phase, 3 wire circuits (no neutral).

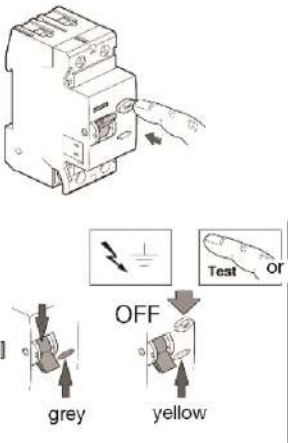


Supply entry
Top or bottom feed.

RCCBs /MCBs co-ordination

RCCBs	with MCBs				
	MY 1-63A C	MT/MU 2-63A B/C	NB/ HLE 6-100A B	NC/ HLF 0.5-100A C	NDN 6-63A D
2 poles					
16A	4.5kA	6kA	10kA	10kA	10kA
25A	4.5kA	6kA	10kA	10kA	10kA
40A	4.5kA	6kA	10kA	10kA	10kA
63A	4.5kA	6kA	10kA	10kA	10kA
80A	4.5kA	6kA	10kA	10kA	10kA
100A	4.5kA	6kA	10kA	10kA	10kA
4 poles					
16A	4.5kA	6kA	10kA	10kA	10kA
25A	4.5kA	6kA	10kA	10kA	10kA
40A	4.5kA	6kA	10kA	10kA	10kA
63A	4.5kA	6kA	10kA	10kA	10kA
80A	4.5kA	6kA	10kA	10kA	10kA
100A	4.5kA	6kA	10kA	10kA	10kA

TEST : test regularly : RCCB must trip.



Hager dream
wiring accessories

Live your DREAM



:hager

Control and signaling a wide range of devices so easy to use!

Modular push buttons range allows to realize controls with impulse or latching contacts. It offers various combinations integrating control buttons, lights and NO or NC contact types. Indicator lights range features 5 different colors, 1 to 3 LEDs, 12-48V and 230V.

1 to 4 pole switch disconnectors allows to control circuit breaking in domestic and commercial installations.

To measure common electrical values, a whole range of devices such as ammeters, voltmeters are available.

Control and Signaling

Page

01 HRC fuse	158
02 Motor starters	161
03 Monobloc surge protection devices	163
04 Surge protection devices	164
05 Modular switch disconnecter / Isolating switch	168
06 Auxiliaries and accessories	169
07 Modular changeover switches	169

Fuse carrier 32 Amps max.
Protection and control of circuits
against overloads and
Short-circuit :
- In single or three phase
subcircuits
- Suitable for fuses which
comply with IEC 269
- Rating voltage : 415 V a.c.
250 V d.c.

- Fusing factor : class Q1
- Rated breaking capacities;
80kA at 415 V a.c.
40kA at 250 V d.c.
- Complies with
IEC 60 269-2, 2-1
- For spare cartridge fuses
10.3 x 38mm



LS501

Designation	Description	Width in ■ 17.5mm	Pack Qty.	Cat. ref.
Fuse carriers For cylindrical cartridge fuses 10.3 x 38mm (supplied without fuse)	1P	1	12	LSN501

L51 - L58 HRC Fuse Carriers

Fuse carriers L 51
For spare cartridge fuses
14 x 51mm
50A 690V
Complies with IEC 60 947-3

Fuse carriers L 58
For cylindrical cartridge fuses
22 x 58mm
125A 690V
Complies with IEC 60 947-3

Can be padlocked in the off
position

Connection capacity :
35mm² rigid cable
25mm² flexible cable

Connection capacity :
50mm² rigid cable
35mm² flexible cable



LR601



LR703

Designation	Description	Width in ■ 17.5mm	Pack Qty.	Cat. ref.
L51 fuse carrier	1 phase	1.5	10	LR601
	2 phases	3	5	LR602
	3 phases	4.5	3	LR603
	3 phases + neutral	6	2	LR604
	1 phases + neutral	3	5	LR612
L58 fuse carrier	1 phase	2	6	LR701
	2 phases	4	3	LR702
	3 phases	6	2	LR703
	3 phases + neutral	8	1	LR704
	1 phases + neutral	4	3	LR712

Description (gG type)
Cylindrical gG fuse-links are intended for industrial applications.

gG protection for general purpose applications against overload and short-circuits.

Sizes:
L38: 10 x 38
L51: 14 x 51
L58: 22 x 58

Comply with IEC 60 269-1 and 60 269-2



LF302G

Description	Voltage	Pack Qty.	In/A	Cat. ref.
Cartridge fuses type gG 10 x 38 mm breaking capacity: 120kA	500V AC	10	0.5A	LF300G
		10	1A	LF301G
		10	2A	LF302G
		10	4A	LF304G
		10	6A	LF306G
		10	8A	LF308G
		10	10A	LF310G
		10	12A	LF312G
		10	16A	LF316G
		10	20A	LF320G
		10	25A	LF325G
	400V AC	10	32A	LF332G



LF425G

Cartridge fuses type gG 14 x 51 mm breaking capacity: 2 to 25A: 80kA 32 to 50A: 120kA	690V AC	10	2A	LF402G
		10	4A	LF404G
		10	6A	LF406G
		10	8A	LF408G
		10	10A	LF410G
		10	12A	LF412G
		10	16A	LF416G
		10	20A	LF420G
		10	25A	LF425G
	500V AC	10	32A	LF432G
		10	40A	LF440G
		10	45A	LF445G
	400V AC	10	50A	LF450G



LF563G

Cartridge fuses type gG 22 x 58 mm breaking capacity: 16 to 63A: 80kA 80 to 125A: 120kA	690V AC	10	16A	LF516G
		10	20A	LF520G
		10	25A	LF525G
		10	32A	LF532G
		10	40A	LF540G
		10	45A	LF545G
		10	50A	LF550G
		10	63A	LF563G
	500V AC	10	80A	LF580G
		10	100A	LF590G
	400V AC	10	125A	LF599G

HRC Cartridge Fuses aM Type



Description (aM type)
Cylindrical gG fuse-links are intended for industrial applications.

Sizes:
L38: 10 x 38
L51: 14 x 51
L58: 22 x 58

aM protection for motor protection applications against short-circuits.

Comply with IEC 60 269-1 and 60 269-2



LF302M

Description	Voltage	Pack Qty.	In/A	Cat. ref.
Cartridge fuses type aM 10 x 38 mm breaking capacity: 120kA	500V AC	10	0.5A	LF300M
		10	1A	LF301M
		10	2A	LF302M
		10	4A	LF304M
		10	6A	LF306M
		10	8A	LF308M
		10	10A	LF310M
		10	12A	LF312M
		10	16A	LF316M
		10	20A	LF320M
		10	25A	LF325M
	400V AC	10	32A	LF332M



LF432M

Cartridge fuses type aM 14 x 51 mm breaking capacity: 2 to 25A: 80kA 32 to 50A: 120kA	690V AC	10	2A	LF402M
		10	4A	LF404M
		10	6A	LF406M
		10	8A	LF408M
		10	10A	LF410M
		10	12A	LF412M
		10	16A	LF416M
		10	20A	LF420M
		10	25A	LF425M
	500V AC	10	32A	LF432M
		10	40A	LF440M
		10	45A	LF445M
	400V AC	10	50A	LF450M



LF563M

Cartridge fuses type aM 22 x 58 mm breaking capacity: 16 to 63A: 80kA 80 to 125A: 120kA	690V AC	10	16A	LF516M
		10	20A	LF520M
		10	25A	LF525M
		10	32A	LF532M
		10	40A	LF540M
		10	45A	LF545M
		10	50A	LF550M
		10	63A	LF563M
	500V AC	10	80A	LF580M
		10	100A	LF590M
	400V AC	10	125A	LF599M

Description
To ensure localised control and protection of single and three phase motors. All motor starters have thermal and adjustable magnetic trip.

Technical data :

- Adjustable thermal relay
- AC3 utilisation category

Connection capacity
2 conductors
Max size 1 to 4 mm² flexible
1.5 to 6 mm² rigid

Conform to :
IEC 60 947-1, IEC 60 947-2

Note :
Please consult us for enclosure selection

Options :
Undervoltage release :
MZ528N, MZ529N

Auxiliary contacts :
MZ520N, MZ527N

Alarm contact :
MZ527N



MM501N



MZ520N



MZ527N



MZ521N

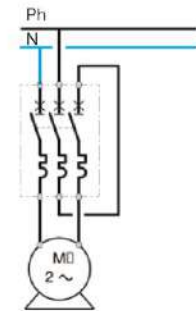
Description	Current setting	Standard power motor 50/60Hz 230V (kW)	Rating of 3 phase (AC3 category) 400V (kW)	Pack Qty.	Width in 17.5mm	Cat. ref.
Motor starters	0.1 - 0.16A	-	-	1	-	MM501N
	0.16 - 0.24A	-	0.06	1	2.5	MM502N
	0.24 - 0.4A	0.06	0.09	1	2.5	MM503N
	0.4 - 0.6A	0.09	0.12	1	2.5	MM504N
	0.6 - 1.0A	0.12	0.25	1	2.5	MM505N
	1.0 - 1.6A	0.25	0.55	1	2.5	MM506N
	1.6 - 2.4A	0.55	0.8	1	2.5	MM507N
	2.4 - 4.0A	0.8	1.5	1	2.5	MM508N
	4.0 - 6.0A	1.5	2.5	1	2.5	MM509N
	6.0 - 10A	2.5	4.0	1	2.5	MM510N
	10 - 16A	4.0	7.5	1	2.5	MM511N
	16 - 20A	5.5	9.0	1	2.5	MM512N
	20 - 25A	5.5	12.5	1	2.5	MM513N
Auxiliary contacts (act as an indicating control device to monitor the ON or OFF position)		1C + 1O	2A - 400V~ 3.5A - 230V~	1	0.5	MZ520N
Alarm contacts (mounted inside the motor starter)		1C	2A - 400V~ 3.5A - 230V~	1		MZ527N
Under voltage release (to prevent automatic restarting of the controlled device)			230V~ 5a0Hz 400V~ 50Hz	1 1		MZ528N MZ529N
Surface mounting enclosure w. 80 x h. 158 x d. 125,5 mm		weatherproof IP55 with a external rotary handle		1		MZ521N
External emergency stop button ingress degree protection: IP65		1NO + 1NC		1		MZ530N

Technical specifications

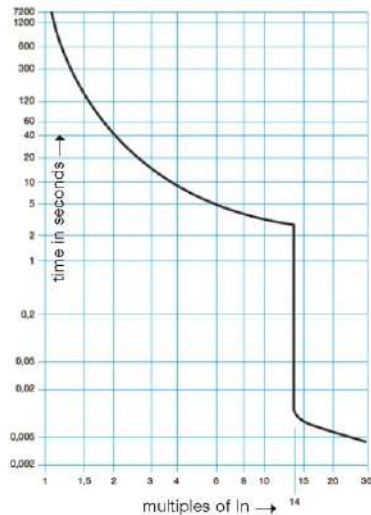
Electrical characteristics

- Electrical supply : 230/400V
- Ambient temperature range : 25°C to +55°C
- Working life : 100 000 operations AC-3
- Maximum of 40 operations/hour
- Tropicalized for all climates
- Connection with clamp type, terminals connection capacity :
Flexible : 1.0 mm² to 4 mm²
Rigid : 1.5 mm² to 3 mm²

Electrical connection single phase



Time/current characteristics



	230V	400V	230/400V + spare cartridge fuses aM/gI
MM501N	150kA	150kA	150kA
MM502N			
MM503N			
MM504N			
MM505N			
MM506N			
MM507N			
MM508N			
MM509N			
MM510N			
MM511N	50kA	50kA	50kA
MM512N			
MM513N			

Nominal breaking capacity $\geq$ short circuit current : fuses are not necessary, if nominal breaking capacity < short circuit current : fuses must be used, breaking capacity of association is 80kA (with BS 88 fuses)

Under voltage release (no volt coil)

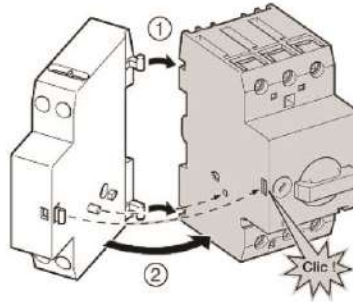
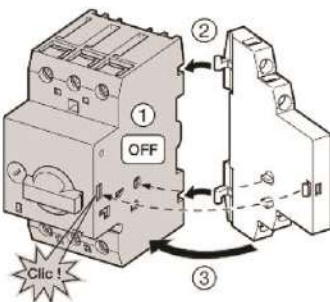
MZ528 N MZ529N
230V~ 400V~

Auxiliary contact (side mount)

MZ520N
2A - 400V~
3.5A - 230V~

Alarm contact (side mount)

MZ527N
2A - 400V~
3,5A - 230V~



Description
Thanks to these characteristics, the new range of monobloc SPDs is particularly adapted for the residential and commercial application.
These SPDs can ensure the main protection of equipment and ensure the main protection of equipment and ensure both common and differential mode.
The end of life protection is ensured by a thermal disconnecter and clearly indicates with a visual indication window.

Connection capacity:
- 25mm² flexible cables
- 5mm² rigid cables

SPDs are approved according to IEC/EN 61643



SPM240E



SPM440E

Designation	Characteristics	Width in 17.5mm	Pack Qty.	Cat. ref.
Monobloc SPDs Imax = 20kA Un = 230 / 400V ~	1 Ph+N In = 10kA Up = 1.3V to In	2	1	SPM220E
	3 Ph + N In = 10kA Up = 1.3V to In	4	1	SPM420E
Monobloc SPDs Imax = 40kA Un = 230 / 400V ~	1 Ph+N In = 20kA Up = 1.5V to In	2	1	SPM240E
	3 Ph + N In = 20kA Up = 1.5V to In	4	1	SPM440E
Monobloc SPDs Imax = 65kA Un = 230 / 400V ~	1 Ph+N In = 35kA Up = 1.8V to In	2	1	SPM265E
	3 Ph + N In = 35kA Up = 1.8V to In	4	1	SPM465E

Surge Protective Devices with Low Voltage Protection Level



SPN208S	SPDs with low voltage protection level To protect very sensitive electronic equipment. The fine protection complements the main protection and can protect 1 or several electronic devices. Optimal coordination is obtained when cascaded with a main protection device (lower Up see table below) Protection is assured in both common and differential modes.	Discharge current : I max. 8 kA (8/20 wave). A green LED on the front face indicates the status of the SPD connected in series with the equipment that needs to be protected. Connected in series with the equipment that needs to be protected. Suitable for every earthing system.	Connection capacity : - 6mm² flexible conductor - 10mm² rigid conductor. Degree of protection : IP 20 (in enclosure). Complies with NF EN 61-643-11 September 2002	
Designation	Characteristics	Width in 17.5mm	Pack Qty.	Cat. ref.
With low voltage protection level	2 poles 1 Ph + N	2	1	SPN208S



SPN408S

Un :230/400 V ~ 50/60 Hz	4 poles 3 Ph + N	3	1	SPN408S
Up (Ph/ N/) : 1,2 kV at In Up (Ph/N) : 1 kV at In	Voltage protection level with a main + fine protection : Up 800 V			

Surge Protective Devices for Telephone Lines

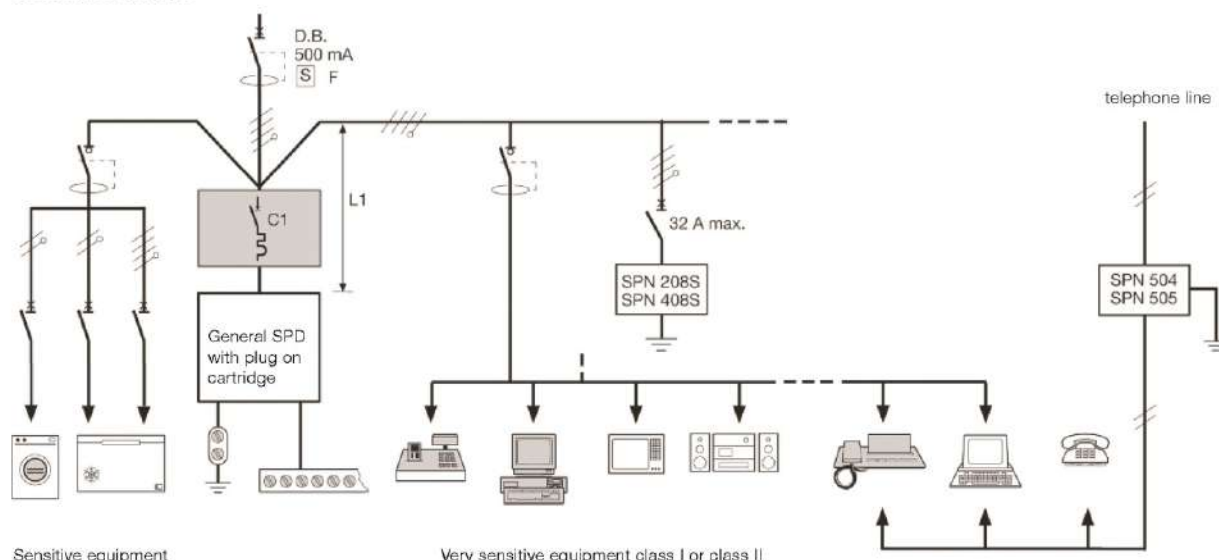
SPDs for telephone lines. For the protection of receiver against transient current surge vehicled by telephone lines (fax, modem, etc...)	Protection is assured in both common and differential modes In-line connection on telephone line with receiver to be protected.	Discharge current : I max 10 kA (8/20 wave).	Connection capacity - 0.5 to 2.5mm² flexible conductor - 0.5 to 2.5mm² rigid conductor
--	--	---	---



SPN504

Designation	Characteristics	Width in  17.5mm	Pack Qty.	Cat. ref.
Voltage surge protection for analog telephone lines	Un : 130 V Up : 600 V	1	1	SPN505
Voltage surge protection for digital telephone lines	Un : 40 V Up : 600 V	1	1	SPN504

Installation example



Some installation rules for SPDs

- General SPD protects the whole installation by diverting the lightning current to the earth. Fitted in directly downstream the type S differential function or delayed for system TT and TN-S.
- The cable length L1 must be reduced to less than 0,5m
- The resistance of the earth connection must be weakest possible (approx. 10) and only one is requested by installation,
- SPDs SPN 208 and SPN 408S protect very sensitive devices of class I and class II.
- A cable length of at least 1m is requested between general and secondary SPD to ensure a minimum impedance in order to avoid the simultaneous bringing into conduction of both SPDs,
- SPDs SPN 504 and SPN 505 protect analog or digital telephone lines from very sensitive receivers.

Note : When SPD is fitted downstream of RCD, the system should preferably be selective type (with time delay) to avoid nuisance tripping.

Choice of disconnection device

Choosing an MCB

Selection chart for disconnection device according to the SPD type

General SPD	C1 (1)
SPN 165P	32 A curve C
SPN 265R	
SPN 465R	
SPN 140C - SPD 140D	32 A curve C
SPN 240R - SPD 240D	
SPN 440R - SPD 440D	
SPN 215R - SPD 215D	32 A curve C
SPN 415R - SPD 415D	

(1) The breaking capacity of MCB must be chosen according to the short circuit intensity at the head of the installation and according to the number of poles (1,2 or 4)

Distressing of SPD

Successive discharging of current due to lightning reduces progressively the performance of SPD's, with the consequence of a possible short circuit for the installation. For this reason, all our SPDs are fitted with an automatic thermal and dynamic disconnection device LED on front indicates the good working of the device :

- For normal version :
Green = OK Red = replacement
- For version with reserve indicator :
Green = OK Yellow = caution Red = replacement
- For version with electric LED for SPDs for fine protection
Green = OK LED off = replacement

Warranty

Warranty can not be applied for SPDs as their life expectancy depends on the perturbation level absorbed to protect the electric installation.

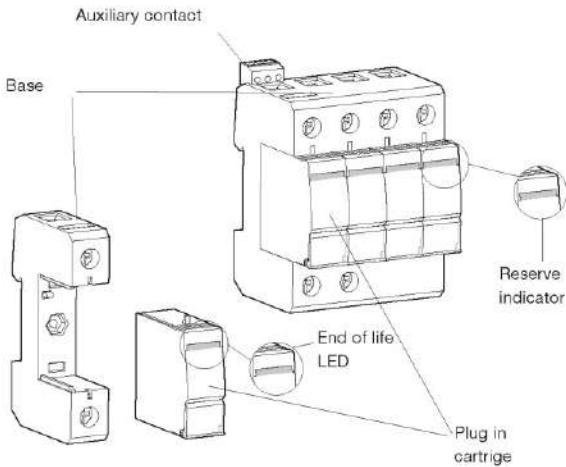
Surge Protective Devices

SPDs with plug in cartridge

Presentation of 1 pole and multi pole SPDs :

Available in two versions :

- Base with an auxiliary contact and cartridges with reserve indicator
- Base without auxiliary contact and cartridges with end of life LED



Keying system for fitting of neutral and phase cartridge

Neutral plug in cartridges can not be fitted in slots for phase cartridges and visa versa

On the front of the cartridge, a mechanical LED indicates the state of SPD

With reserve indicator



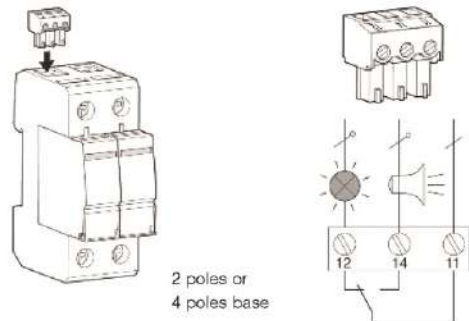
End of live LED



OK



Auxiliary contact for signalling and remote monitoring

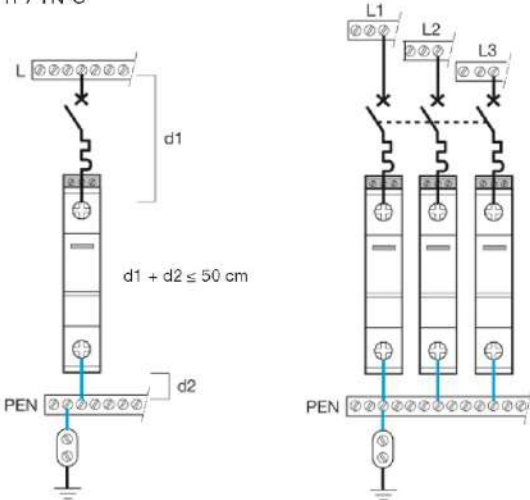


Auxiliary contact connection capacity	mini maxi	0,5 mm ² 1.5 mm ²	
		voltage	nominal current
Remote signalling		230 V~	250 V ...
		1 A	0,1 A

Connection diagrams

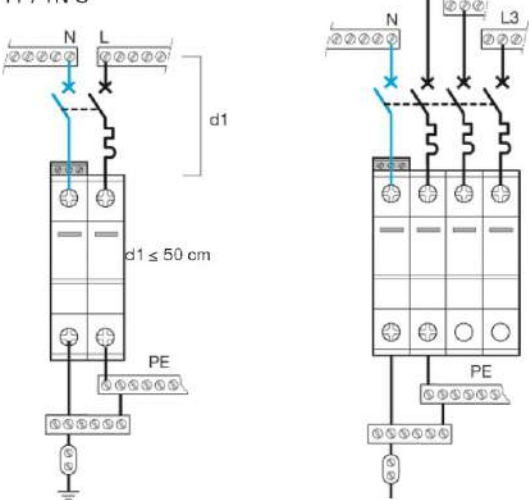
Single pole SPDs : SPN1xx - SPD1xx
Protection only in common mode

IT / TN-C



Multi pole SPDs : SPN2xx - SPN4xx - SPD2xx - SPD4xx
protection is assured in both common and differential modes without adding devices

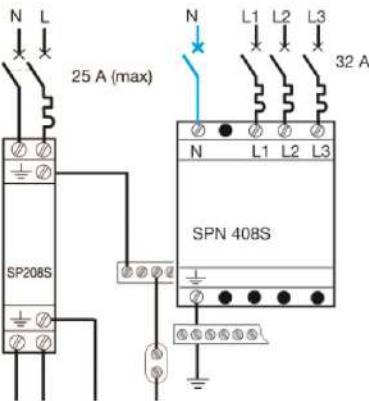
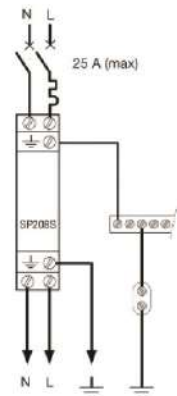
TT / TN-S



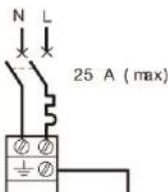
Technical characteristics of secondary SPDs (fine protection)

References		SPN208	SPN408S
Installation exposure level (risk)		low	low
Installation of SPDs		in parallel	in parallel
Nominal voltage U_n frequency		230 V~ 50/60 Hz	230/400 V~ 50/60 Hz
Max. continuous operating voltage U_c	between N / PE	255 V	255 V
	between Phase and Neutral	255 V	255 V
Protection mode	common	yes	yes
	differential	yes	yes
Voltage protection level U_p		1,5 kV	1,0 kV
Discharge current capacity 8/20 μ s wave	nominal current I_n	2 kA	2 kA
	maximal current I_{max}	8 kA	8 kA
Degree of protection		IP 20	IP 20
Short circuit resistance I_{cc} (with fuse or associated MCB)		6 kA - 16 A	6 kA - 32 A
Temperature	working	-25°C to +40°C	-25°C to +40°C
	storage	-25°C to +60°C	-25°C to +40°C
Well functioning indicator		green LED	green LED
Domestic buildings	collective / individual	yes	yes
	industrial / commercial	yes	yes
Earthing systems		TT, IT, TN - S	TT, IT, TN - S
Connection capacity (Ph, N, E)	flexible min./max.	2,5/6 mm ²	2,5/6 mm ²
	rigid min./max.	6/10 mm ²	6/10 mm ²
Screw head		PZ1	

SPDs SPN 208S and SPN 408S



Coordination : between main SPD and secondary level SPDs, this coordination allows to reduce the protection level U_p to ≤ 800 V



Description
For use as a switch disconnector
in all types of AC circuits.

Complies with:
IEC 60943-3

Features:
All switches have a green/ red
indication on the toggle, giving
positive contact indication.
Switches with LED indicator -
please contact us.

Technical data:
Utilisation category AC22A
230V/ 400V

In: 16A to 32A
Connection capacity:
10mm² - rigid conductor
6mm² - flexible conductor

In: 32A to 63A
Connection capacity:
25mm² - rigid conductor
16mm² - flexible conductor

In: 50A to 125A
Connection capacity:
50mm² - rigid conductor
35mm² - flexible conductor

Approvals



SBN125



SBN225



SBN325



SBN425

Description	Characteristics	Width in ■ 17.5mm	Pack Qty.		Cat. ref.
Single pole 	1 x 16A	1	12	230V~	SBN116
	1 x 25A	1	12	230V~	SBN125
	1 x 32A	1	12	230V~	SBN132
	1 x 40A	1	12	230V~	SBN140
	1 x 63A	1	12	230V~	SBN163
	1 x 80A	1	12	230V~	SBN180
	1 x 100A	1	12	230V~	SBN190
	1 x 125A	1	12	230V~	SBN199
Double pole 	2 x 16A	1	12	400V~	SBN216
	2 x 25A	1	12	400V~	SBN225
	2 x 32A	1	12	400V~	SBN232
	2 x 32A (2-mod)	2	6	400V~	SBN233
	2 x 40A	2	6	400V~	SBN240
	2 x 63A	2	6	400V~	SBN263
	2 x 80A	2	6	400V~	SBN280
	2 x 100A	2	6	400V~	SBN290
	2 x 125A	2	6	400V~	SBN299
Triple pole 	3 x 16A	2	6	400V~	SBN316
	3 x 25A	2	6	400V~	SBN325
	3 x 32A	2	6	400V~	SBN332
	3 x 32A (3-mod)	3	4	400V~	SBN333
	3 x 40A	3	4	400V~	SBN340
	3 x 63A	3	4	400V~	SBN363
	3 x 80A	3	4	400V~	SBN380
	3 x 100A	3	4	400V~	SBN390
	3 x 125A	3	4	400V~	SBN399
Four pole 	4 x 16A	2	6	400V~	SBN416
	4 x 25A	2	6	400V~	SBN425
	4 x 32A	2	6	400V~	SBN432
	4 x 32A (4-mod)	4	3	400V~	SBN433
	4 x 40A	4	3	400V~	SBN440
	4 x 63A	4	3	400V~	SBN463
	4 x 80A	4	3	400V~	SBN480
	4 x 100A	4	3	400V~	SBN490
	4 x 125A	4	3	400V~	SBN499



Description	Characteristics	Width in ■ 17.5mm	Pack Qty.	Cat. ref.
Auxiliary contact 1NO+1NC Compatible with disconnecter switches from 16 to 125A	6A - 230V~	1/2	1	ESC080
Padlocking kit			2	MZN175

Modular Changeover Switches

Description:
For use as a changeover switch in all types of circuits between 2 AC sources.
Complies with:
IEC 60943-3

Technical data:
Utilisation category AC22A
230V/ 400V
In: 16A to 32A
Connection capacity:
10mm² - rigid conductor
6mm² - flexible conductor

In: 32A to 63A
Connection capacity:
25mm² -rigid conductor
16mm² -flexible conductor



Control and Signaling



Description		Characteristics	Width in 	Pack Qty.		Cat. ref.
Centre off changeover switch and common point on top						
Single pole		1 x 25A	1	12	230V~	SFT125
Single pole		1 x 32A	1	12	230V~	SFT132
Single pole		1 x 40A	1	12	230V~	SFT140
Double pole		2 x 25A	2	6	230V~	SFT225
Double pole		2 x 32A	2	6	230V~	SFT232
Double pole		2 x 40A	2	6	230V~	SFT240
Triple pole		3 x 40A	3	3	400V~	SFT340
Four pole		4 x 40A	4	4	230V~	SFT440
Centre off changeover switch and common point on bottom						
Double pole		2 x 63A	4	3	230V~	SF263
Four pole		4 x 63A	8	1	230V~	SF463
2-way changeover switch and common point on top						
Single pole		1 x 25A	1	12	230V~	SFH125
Single pole		1 x 32A	1	12	230V~	SFH132
Double pole		2 x 25A	2	6	230V~	SFH225
Double pole		2 x 32A	2	6	230V~	SFH232
2-way changeover switch and common point on top						
1NO + 1NC		1 x 25A	1	12	230V~	SFM125
1NO + 1NC		1 x 32A	1	12	230V~	SFM132

Energy & lighting control comfort and efficiency

Energy and lighting control product range
allows to optimise energy consumption
while increasing comfort

Energy and Lighting Control

Page

01 Latching relays	172
02 Latching relays auxiliaries	173
03 EW Series expert tips	175
04 EW Series	176
05 Contactors	181
06 Contactors accessories	182
07 Humfree contactors	185
08 Override contactors	186
09 Dimmers	189

Latching Relays

Description

For the control of lighting circuits in residential buildings, small industry buildings and commercial buildings.

Latching relays operates when impulsed by a signal voltage. The impulse can be provided via a pushbutton or switch.

The first impulse sets the relay into its set (opposite) state, the next impulse returns it to its reset (original) state.

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

- an auxiliary for centralise 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
10mm² rigid cables
6mm² flexible cables

Conform to standard
IEC60669-1 and IEC60669-2-7



EPN510



EPN540

Description	Type	Coil VAC 50Hz	Coil VDC	In power circuit AC7-a / AC1	Pack Qty.	Width in 17.5mm	Cat. ref.
Latching relays							
	1NO	230	110	16A-250V	12	1	EPN510
		48	24	16A-250V	12	1	EPN501
		24	12	16A-250V	12	1	EPN513
		12	-	16A-250V	12	1	EPN511
		8	-	16A-250V	12	1	EPN512
	2NO	230	110	16A-250V	1	1	EPN520
		110	48	16A-250V	1	1	EPN523
		48	24	16A-250V	1	1	EPN526
		24	12	16A-250V	1	1	EPN524
		12	-	16A-250V	1	1	EPN521
		8	-	16A-250V	1	1	EPN522
	1NC+1NO	230	110	16A-250V	1	1	EPN515
		110	48	16A-250V	1	1	EPN516
		48	24	16A-250V	1	1	EPN503
		24	12	16A-250V	1	1	EPN518
		12	-	16A-250V	1	1	EPN519
	4NO	230	110	16A-400V	1	2	EPN540
		48	24	16A-400V	1	2	EPN548
		24	12	16A-400V	1	2	EPN541
	2NC+2NO	230	110	16A-250V	1	2	EPN525
		24	12	16A-250V	1	2	EPN528
	3NO+1NC	230	110	16A-400V	1	2	EPN546

Latching Relays Auxiliaries

Auxiliaries for centralised control

The EPN 050 allows the centralised control of several light sources which can be turned on or off simultaneously.

The separate switching by pushing the pushbuttons, which are connected with the latching relay, remains possible.

The EPN 052 allows an overall central control of individual central on/off EPN 050

Auxiliary contact

A remote signalling can be realised with the auxiliary contact EPN 051.

Auxiliary for control by maintained contact.

When control devices with permanent impulse are externally driven, e.g. time switches or limit switches, an impulse control directly to the latching relay's coil is possible with the auxiliary contact EPN 053

Connection latching relay + auxiliary
Several auxiliaries can be combined with the latching relay.

Connection capacity
10mm² rigid cables
6mm² flexible cables



EPN050

EPN051

EPN053

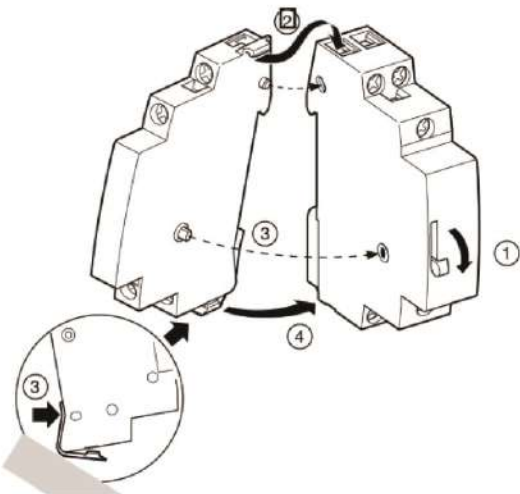
Description		Voltage supply	Pack Qty.	Width in 17.5mm	Cat. ref.
Auxiliary for centralised control		24 to 230V AC	1	1/2	EPN050
Auxiliary contact		2A 250 V AC	1	1/2	EPN051
Auxiliary for multi levelled centralised control		24 to 230V AC	1	1/2	EPN052
Auxiliary for control by maintained contact		24 to 230V AC 12 to 110V DC	1	1/2	EPN053

Auxiliaries for latching relays

	EPN050	EPN051	EPN052 - EPN053
voltage rating	(a)	-	(a)
	24 to 230V AC	-	24 to 230V AC
nominal load -	2A/250V AC	-	
Imin/230V AC -	15mA	-	
working temperature	-5 to +40°C		
storage temperature	-40 to 80°C		
Connections : flexible	6 mm ²		
rigid	10mm ²		

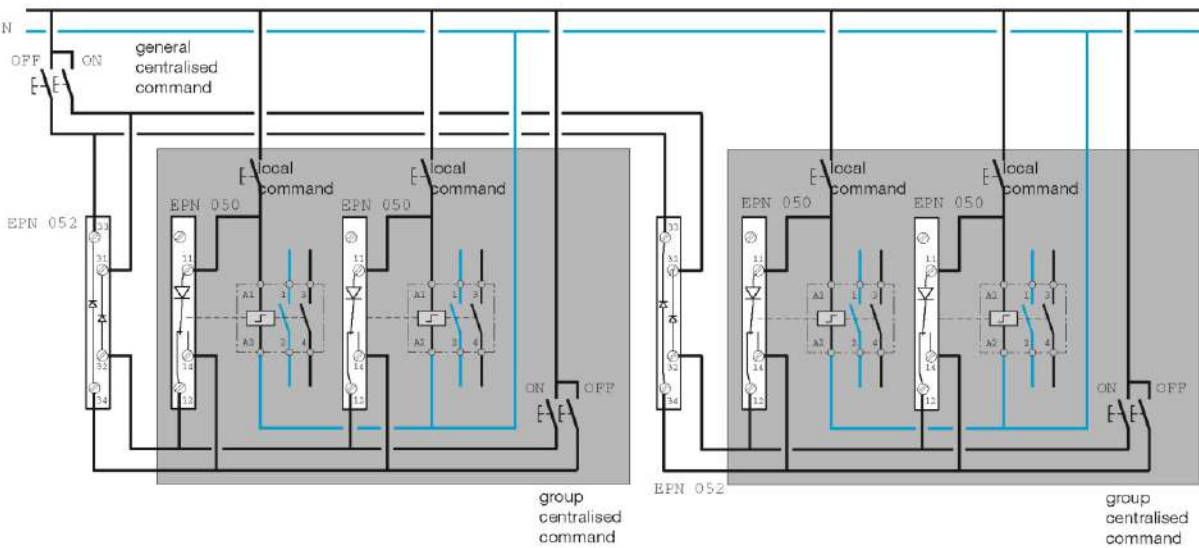
(a) : according to a latching relay connected with an auxiliary

Installation of the auxiliaries

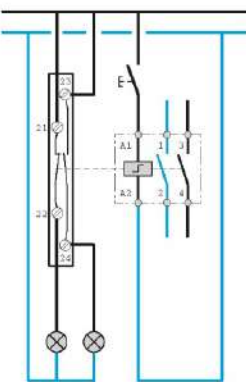


Application diagram

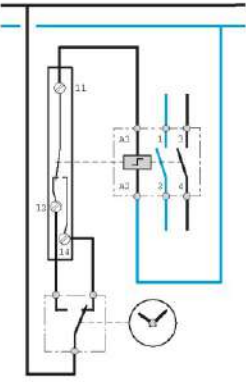
centralised command (EPN 050 - EPN 052)



Remote signalling (EPN 051)



Maintained command (EPN 053)



EW series Industrial contactors

Hager offers a complete range of contactors for commercial market such as buildings, infrastructures, etc...

Industrial contactors are used to switch high power circuits and can be controlled by a full range of control circuits.



The advantages for you

- The contactors may be additionally equipped with thermal relays, mechanical interlock, auxiliary contacts and surge suppressors etc to expand the functions of products
- Easy for installation : screw or DIN rail mounted
- Contactor terminals are designed with IP20 degree to ensure personal safety
- Double contacts auxiliary for a reliable action
- High grade of coil insulation
- Coils of high insulation degree can avoid interlayer open circuits

Technical data :

- According to IEC60947-4-1
- Approvals : UL
- Rated current: 7A~300A
- Main pole : 3 Poles
- Utilization category: AC3



1 Thermal overload relay

- with overload protection and phase-failure protection.
- 1NO-1NC, new design of independent auxiliary contacts, easy wiring and reliable action.
- thermal relays terminals designed with IP20 degree.
- manual and automatic reset function.
- front mounted auxiliary contact.



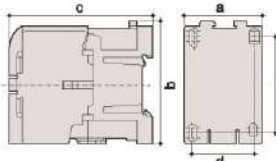
2 Auxiliary contact

- choice of auxiliary contacts.
- double contacts design for higher reliability.
- front and side mounting auxiliary contacts.



3 Mechanical Interlock

Mechanical interlock protect against the risk of short circuit for reversing and change over contactors.

References*			EW005	EW006
				
Main contact				
Rated insulation voltage Ui (V)			690	690
Rated operational voltage Ue (V)			690	690
Thermal current Ith AC1 (A)			20	20
Main contact rated operational current AC-3 Ie	Single pole	110V	8A / 0,37 kW	10.5A / 0.55kW
		220V	7A / 0.75kW	10A / 1.1kW
	Three pole	220/230V	7.5A / 1.5kW	10.1A / 2.2kW
		380/400V	7A /3kW	9A / 4kW
		415/440V	6.5A / 3kW	8.5A / 4kW
		500V	5A / 3kW	6.5A / 4kW
		660V	4A / 3kW	5A / 4kW
Auxiliary contact				
Rated insulation voltage Ui (V)			600	600
Rated operational voltage Ue (V)			600	600
Thermal current Ith AC/DC (A)			10/2.5	10/2.5
Auxiliary contact rated current Ie	AC 15	120V	6	6
		240V	3	3
		380V	1.9	1.9
		480V	1.5	1.5
	DC 13	125V	0.55	0.55
		250V	0.27	0.27
Contactor life				
Operation frequency (cycles/hour)			1200	1200
Electrical lifespan (cycles)			1,000,000	1,000,000
Mechanical lifespan (cycles)			10,000,000	10,000,000
Others				
Type of auxiliary contact	NO	1	1	
	NC	0	0	
Weight (kg)			0.18	0.18
Dimensions (mm)				
		a	45	45
		b	58	58
		c	54	54
		d	36	36
		e	50.5	50.5

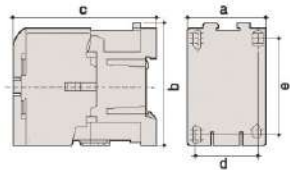
* **Note:** Control circuit rated operational voltage

C: 220V AC 50/60Hz (EW005_C ~ EW006_C)
D: 380V AC 50/60Hz (EW005_D ~ EW006_D)

N: 24V AC 50/60Hz (EW005_N ~ EW006_N)
P: 48V AC 50/60Hz (EW005_P ~ EW006_P)

EW007	EW009	EW012	EW016	EW020	EW025
					
660	660	660	660	660	660
660	660	660	660	660	660
20	20	25	25	32	35
8A / 0,37 kW	10.5A / 0.55kW	10.5A / 0.55kW	13.5A / 0.75 kW	19.5A / 1.1kW	25.5A / 1,5kW
7A / 0.75kW	10A / 1.1kW	10A / 1.1kW	14A / 1.5kW	20.5A / 2.2kW	26A / 3kW
7.5A / 1.5kW	10.1A / 2.2kW	12A / 3kW	16A / 4kW	23A / 5.5kW	27A / 7,5kW
7A / 3kW	9A / 4kW	12A / 5.5kW	16A / 7.5kW	22A / 11kW	26A / 11kW
6.5A / 3kW	8.5A / 4kW	11A / 5.5kW	15A / 7.5kW	21A / 11kW	21A / 11kW
5A / 3kW	6.5A / 4kW	9A / 5.5kW	13A / 7.5kW	19A / 11kW	21A / 11kW
4A / 3kW	5A / 4kW	7A / 5.5kW	10A / 7.5kW	14A / 11kW	19A / 11kW
690	690	690	690	690	690
600	600	600	600	600	600
10/2.5	10/2.5	10/2.5	10/2.5	10/2.5	10/2.5
6	6	6	6	6	6
3	3	3	3	3	3
1.9	1.9	1.9	1.9	1.9	1.9
1.5	1.5	1.5	1.5	1.5	1.5
0.55	0.55	0.55	0.55	0.55	0.55
0.27	0.27	0.27	0.27	0.27	0.27
1200	1200	1200	1200	1200	1200
1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
1	1	1	1	1	1
0	0	0	0	1	1
0.3	0.3	0.3	0.3	0.4	0.4
45	45	45	45	55	55
70	70	70	70	72	72
82	82	82	82	92	92
35	35	35	35	45	45
55	55	55	55	55	55

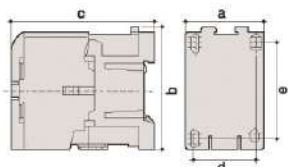
* **Note:** Control circuit rated operational voltage C: 220V AC 50/60Hz (EW007_C ~ EW300_C) D: 380V AC 50/60Hz (EW007_D ~ EW300_D)

References*			EW032	EW038	EW040
					
Main contact					
Rated insulation voltage Ui (V)			1000	1000	1000
Rated operational voltage Ue (V)			690	690	690
Thermal current Ith AC1 (A)			60	60	60
Main contact rated operational current AC-3 Ie	Single pole	110V	35A / 1.5kW	39A / 2.2kW	37A / 2.2kW
		220V	35A / 3.73kW	39A / 5kW	33A / 4kW
	Three pole	220/230V	35A / 9kW	39A / 11kW	44A / 11kW
		380/400V	32A / 15kW	38A / 18.5kW	40A / 20kW
		415/440V	32A / 15kW	38A / 22kW	40A / 22kW
		500V	30A / 18.5kW	33A / 22kW	35A / 22kW
		660V	23A / 18.5kW	25.2A / 22kW	26A / 22kW
Auxiliary contact					
Rated insulation voltage Ui (V)			690	690	690
Rated operational voltage Ue (V)			660	660	600
Thermal current Ith AC/DC (A)			10/2.5	10/2.5	10/2.5
Auxiliary contact rated current Ie	AC 15	120V	6	6	6
		240V	3	3	3
		380V	1.9	1.9	1.9
		480V	1.5	1.5	1.5
	DC 13	125V	0.55	0.55	0.55
		250V	0.27	0.27	0.27
Contactor life					
Operation frequency (cycles/hour)			1200	1200	1200
Electrical lifespan (cycles)			1,000,000	1,000,000	1,000,000
Mechanical lifespan (cycles)			10,000,000	10,000,000	10,000,000
Others					
Type of auxiliary contact	NO	1	1	1	
	NC	1	1	1	
Weight (kg)			0.7	0.7	0.8
Dimensions (mm)					
	a	55	58	69	
	b	72	94.5	99	
	c	92	111.7	111.7	
	d	45	50	60	
	e	55	75	80	

* **Note:** Control circuit rated operational voltage C: 220V AC 50/60Hz (EW007_C ~ EW300_C) D: 380V AC 50/60Hz (EW007_D ~ EW300_D)

EW050	EW063	EW070	EW090	EW115	EW138
					
660	660	660	660	1000	1000
660	660	660	660	690	690
70	80	100	135	135	150
-	50A / 3kW	60A / 4kW cW	-	-	-
-	45A / 6kW	55A / 7.5kW	-	-	-
55A / 15kW	65A / 18.5kW	75A / 22kW	85A / 25kW	115A / 30kW	138A / 40kW
55A / 25kW	64A / 30kW	72A / 37kW	85A / 45kW	115A / 60kW	138A / 75kW
52A / 30kW	64A / 37kW	70A / 40kW	85A / 51kW	105A / 60kW	135A / 75kW
45A / 30kW	55A / 37kW	65A / 45kW	30A / 18.5kW	33A / 22kW	35A / 22kW
35A / 30kW	45A / 37kW	60A / 45kW	65A / 55kW	75A / 65kW	85A / 75kW
660	660	660	660	660	660
600	600	600	600	660	660
10/2.5	10/2.5	10/2.5	10/2.5	10/2.5	10/2.5
6	6	6	6	6	6
3	3	3	3	3	3
1.9	1.9	1.9	1.9	1.9	1.9
1.5	1.5	1.5	1.5	1.5	1.5
0.55	0.55	0.55	0.55	0.55	0.55
0.27	0.27	0.27	0.27	0.27	0.27
1200	1200	1200	1200	1200	1200
1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
2	2	2	2	2	2
2	2	2	2	2	2
1.3	1.3	1.3	1.3	1.9	1.9
93.5	93.5	93.5	93.5	100	100
116	116	150 (with Cu terminals)	150 (with Cu terminals)	139	139
123	123	123	123	133	133 7
80	80	80	80	83	83
90	90	90	90	110	110

* **Note:** Control circuit rated operational voltage C: 220V AC 50/60Hz (EW007_C ~ EW300_C) D: 380V AC 50/60Hz (EW007_D ~ EW300_D)

References*			EW150	EW180	EW220	EW300	
							
Main contact							
Rated insulation voltage Ui (V)			1000	1000	1000	1000	
Rated operational voltage Ue (V)			690	690	690	690	
Thermal current Ith AC1 (A)			200	240	260	350	
Main contact rated operational current AC-3 Ie	Single pole	110V	-	-	-	-	
		220V	-	-	-	-	
	Three pole	220/230V	150A / 45kW	182A / 55kW	225A / 65kW	300A / 90kW	
		380/400V	147A / 80kW	179A / 95kW	225A / 120kW	300A / 160kW	
		415/440V	131A / 80kW	178A / 100kW	220A / 132kW	300A / 160kW	
		500V	129A / 90kW	156A / 110kW	190A / 132kW	250A / 160kW	
		660V	107A / 100kW	118A / 110kW	140A / 132kW	220A / 220kW	
Auxiliary contact							
Rated insulation voltage Ui (V)			660	660	660	660	
Rated operational voltage Ue (V)			660	660	660	660	
Thermal current Ith AC/DC (A)			10/2.5	10/2.5	10/2.5	10/2.5	
Auxiliary contact rated current Ie	AC 15	120V	6	6	6	6	
		240V	3	3	3	3	
		380V	1.9	1.9	1.9	1.9	
		480V	1.5	1.5	1.5	1.5	
	DC 13	125V	0.55	0.55	0.55	0.55	
		250V	0.27	0.27	0.27	0.27	
Contactor life							
Operation frequency (cycles/hour)			1200	1200	1200	1200	
Electrical lifespan (cycles)			1,000,000	1,000,000	1,000,000	1,000,000	
Mechanical lifespan (cycles)			10,000,000	10,000,000	10,000,000	10,000,000	
Others							
Type of auxiliary contact		NO	2	2	2	2	
		NC	2	2	2	2	
Weight (kg)			4.1	4.1	6.7	6.7	
Dimensions (mm)							
			a	130	130	146	146
			b	180	180	210	210
			c	157.2	157.2	183.2	183.2
			d	100	100	133	133
			e	130	130	150	150

* Note: Control circuit rated operational voltage

C: 220V AC 50/60Hz (EW007_C ~ EW300_C)

D: 380V AC 50/60Hz (EW007_D ~ EW300_D)

AC1	AC3	Standard Coil	Standard Auxiliary	Pack Qty.	Cat. ref.
20A	7A	220V AC	1NO	1	EW005_C
20A	9A	220V AC	1NO	1	EW006_C
20A	7A	220V AC	1NO	1	EW007_C
20A	9A	220V AC	1NO	1	EW009_C
25A	12A	220V AC	1NO	1	EW012_C
25A	16A	220V AC	1NO	1	EW016_C
32A	22A	220V AC	1NO + 1NC	1	EW020_C
35A	26A	220V AC	1NO + 1NC	1	EW025_C
60A	32A	220V AC	1NO + 1NC	1	EW032_C
60A	38A	220V AC	1NO + 1NC	1	EW038_C
60A	40A	220V AC	1NO + 1NC	1	EW040_C
70A	55A	220V AC	2NO + 2NC	1	EW055_C
80A	64A	220V AC	2NO + 2NC	1	EW063_C
100A	72A	220V AC	2NO + 2NC	1	EW070_C
135A	85A	220V AC	2NO + 2NC	1	EW090_C
135A	115A	220V AC	2NO + 2NC	1	EW115_C
150A	138A	220V AC	2NO + 2NC	1	EW138_C
200A	147A	220V AC	2NO + 2NC	1	EW150_C
240A	179A	220V AC	2NO + 2NC	1	EW180_C
260A	225A	220V AC	2NO + 2NC	1	EW220_C
350A	300A	220V AC	2NO + 2NC	1	EW300_C
20A	7A	380V AC	1NO	1	EW005_D
20A	9A	380V AC	1NO	1	EW006_D
20A	7A	380V AC	1NO	1	EW007_D
20A	9A	380V AC	1NO	1	EW009_D
25A	12A	380V AC	1NO	1	EW012_D
25A	16A	380V AC	1NO	1	EW016_D
32A	22A	380V AC	1NO + 1NC	1	EW020_D
35A	26A	380V AC	1NO + 1NC	1	EW025_D
60A	32A	380V AC	1NO + 1NC	1	EW032_D
60A	38A	380V AC	1NO + 1NC	1	EW038_D
60A	40A	380V AC	1NO + 1NC	1	EW040_D
70A	55A	380V AC	2NO + 2NC	1	EW050_D
80A	64A	380V AC	2NO + 2NC	1	EW063_D
100A	72A	380V AC	2NO + 2NC	1	EW070_D
135A	85A	380V AC	2NO + 2NC	1	EW090_D
135A	115A	380V AC	2NO + 2NC	1	EW115_D
150A	138A	380V AC	2NO + 2NC	1	EW138_D
200A	147A	380V AC	2NO + 2NC	1	EW150_D
240A	179A	380V AC	2NO + 2NC	1	EW180_D
260A	225A	380V AC	2NO + 2NC	1	EW220_D
350A	300A	380V AC	2NO + 2NC	1	EW300_D
20A	7A	24V AC	1NO	1	EW005_N
20A	9A	24V AC	1NO	1	EW006_N
20A	7A	48V AC	1NO	1	EW005_P
20A	9A	48V AC	1NO	1	EW006_P



EWT...B



EWT...E



EWT...G



EWT...F



EWA601



EWA501

Designation	Characteristics	Pack Qty.	Cat. ref.
Thermal overload relays			
- for EW007 to EW032	Setting range: 0.1 - 0.16A 0.16 - 0.25A 0.35 - 0.5A 0.45 - 0.63A 0.55 - 0.8A 0.9 - 1.3A 1.1 - 1.6A 1.4 - 2A 1.8 - 2.5A 2.3 - 3.2A 2.9 - 4A 3.5 - 4.8A 4.5 - 6.3A 5.5 - 7.5A 7.2 - 10A 9 - 12.5A 11.3 - 16A 15 - 20A 17.5 - 21.5A 21 - 25A 24.5 - 30A	1 1	EWT001B EWT002B EWT005B EWT006B EWT008B EWT013B EWT016B EWT020B EWT025B EWT032B EWT040B EWT048B EWT063B EWT075B EWT100B EWT125B EWT160B EWT200B EWT215B EWT250B EWT300B
- for EW038	15 - 20A 17.5 - 21.5A 21 - 25A 24.5 - 30A 29 - 36A 33 - 38A	1 1 1 1 1 1	EWT200C EWT215C EWT250C EWT300C EWT360C EWT380C
- for EW020 to EW032	17 - 25A	1	EWT250D
- for EW040	17 - 25A 24.5 - 36A 35 - 47A	1 1 1	EWT250E EWT360E EWT470E
- for EW050 to EW090	24.5 - 36A 35 - 47A 45 - 60A 58 - 75A 72 - 90A	1 1 1 1 1	EWT360G EWT470G EWT600G EWT750G EWT900G
- for EW038	17 - 25A 24.5 - 36A 35 - 47A	1 1 1	EWT250H EWT360H EWT470H
Separated thermal overload relays connection with wires	Setting range: 17 - 25A 24.5 - 36A 35 - 47A 45 - 60A 58 - 75A 72 - 90A	1 1 1 1 1 1	EWT250F EWT360F EWT470F EWT600F EWT750F EWT900F
Current transformers	Ratio: 150A / 5A 250A / 5A 350A / 5A	1 1 1	EWA601 EWA602 EWA603
External mounting block for thermal relays assembly	for EWT...B series	1	EWA501

	Designation	Characteristics	Pack Qty.	Cat. ref.
				
EWA001				
				
EWA007				
				
EWA009				
				
EWA101				
				
EWA102				
				
EWA104				
Auxiliary contacts				
- for EW007 to EW090 installation on the top				
		1NO + 1NC	1	EWA001
		2NO	1	EWA002
		2NC	1	EWA003
		4NO	1	EWA004
		4NC	1	EWA005
		3NO + 1NC	1	EWA006
		2NO + 2NC	1	EWA007
		1NO + 3NC	1	EWA008
- for EW007 to EW040 installation on the side				
		1 NO + 1NC	1	EWA009
- for EW115 to EW300 installation on the side				
		1 NO + 1NC	1	EWA010
Interlocks				
- for EW007 to EW032				
		mechanical	1	EWA101
		mechanical and electrical	1	EWA102
- for EW038 to EW090				
		mechanical	1	EWA103
- for EW100 to EW300				
		mechanical	1	EWA104

Contactors

Contactors are essential power devices to control heating, lighting or ventilation systems. They are recommended in association with control and energy management devices (thermostats, delay timers, programmers...)

Standard 1 and 2 versions are recommended for applications where a reduced consumption and heating dissipation are needed.

Complies with IEC 61095.

The contactors can be associated with the auxiliary contact ESC080 for remote signaling.

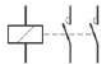
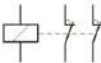
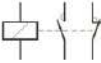
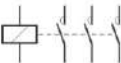
It is recommended to use a heat dissipation insert LZ060 between each 3 products.



ESD263



ESC325

Description	Type	Coil AC 50Hz	In power circuit AC7-a / AC1	Pack Qty.	Width in 17.5mm	Cat. ref.
Contactors						
	1NO	230V	25A-250V	12	1	ESC125
	2NO	230V	25A-250V	12	1	ESC225
			40A-440V	1	3	ESC240
			63A-440V	1	3	ESC263
	2NC	230V	25A-250V	12	1	ESC226
			40A-440V	1	3	ESC241
			63A-440V	1	3	ESC264
	1NO+1NC	230V	25A-250V	12	1	ESC227
	3NO	230V	25A-250V	6	2	ESC325
			40A-440V	4	3	ESC340
			63A-440V	1	3	ESC363
	4NO	230V	25A-250V	6	2	ESC425
			40A-440V	4	3	ESC440
			63A-440V	4	3	ESC463
	4NC	230V	25A-250V	1	2	ESC426
			40A-440V	1	3	ESC441
			63A-440V	1	3	ESC464

Humfree contactors

Contactors are essential power devices to control heating, lighting or ventilation systems. They are recommended in association with other control and energy management devices (thermostats, delay timers, programmers...)

The humfree versions are recommended for housing applications where silent operating is requested.

Complies with IEC 61095.

The contactors can be associated with the auxiliaries contact ESC080

for remote signaling, except the ESx225S.

It is recommended to use a heat dissipation insert LZ060 between each product.



ESC225S



ESC425S



ESC463S

Description	Type	Coil	In power circuit AC7-a / AC1	Pack Qty.	Width in 17.5mm	Cat. ref.
Humfree contactors						
	2NO	230V 50/60Hz	25A-250V	12	1	ESC225S
		220V DC				
		24V 50Hz	25A-250V	1	1	ESD240S
		24V DC	63A-440V	1	3	ESD263S
		12V 50Hz	25A-250V	1	1	ESL225SDC
	3NO	230V 50/60Hz	25A-250V	6	2	ESC325S
		220V DC				
		24V 50Hz	25A-250V	1	2	ESD425SDC
		24V DC	40A-440V	1	3	ESD440S
		12V 50Hz	25A-440V	1	2	ESL425SDC
	4NO	230V 50/60Hz	25A-250V	12	1	ESC425S
		220V DC				
		24V 50Hz	25A-250V	1	2	ESD425SDC
		24V DC	40A-440V	1	3	ESD440S
		12V 50Hz	25A-440V	1	2	ESL425SDC
	4NC	230V 50/60Hz	25A-440V	1	2	ESC426S
		220V DC				
		12V 50Hz	25A-440V	1	2	ESL426SDC
		12V DC				

Override contactors
For the remote switching and control of power circuits.
They are equipped with a 3 position manual control button:

- permanent ON,
- automatic mode,
- permanent OFF.

Can be associated with the auxiliary contact ESC080 for remote signaling.

Complies with IEC 61095.

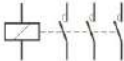
It is recommended to use a heat dissipation insert LZ060 between each 3 products.



ERC225



ERC425

Description	Type	Coil AC 50Hz	In power circuit AC7-a / AC1	Pack Qty.	Width in  17.5mm	Cat. ref.
Override contactors						
	2NO	230V	25A-250V	12	1	ERC225
			40A-440V	1	3	ERC240
			63A-440V	1	3	ERC263
	3NO	230V	25A-440V	6	2	ERC325
	4NO	230V	25A-440V	6	2	ERC425

Description			Modular contactor and relay						Auxiliary contact
Standard conformity			EN 61095						
Approvals			NF - VDE - IMQ - KEMA - RMC / CCC						
			Relay	Contactor	Relay	Contactor	Contactor	Contactor	Accessory
Number of modules			1		2		3		0.5
Thermal current I _{th} (40°C)			16A	25A	16A	25A	40A	63A	6A
Rated frequency			50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Rated insulation voltage (U _i)			250V	250V	440V	440V	440V	440V	250V
Rated impulse withstand voltage (U _{imp})			4kV	4kV	4kV	4kV	4kV	4kV	4kV
Protection degree			2	2	2	2	2	2	2
Rated operating currents and power ratings in AC									
AC-1 / AC-7a	rated operational currents I _e		16A	25A	16A	25A	40A	63A	-
	rated operational power	230V	3kW	4.6kW	3kW	4.6kW	7.3kW	11.6kW	-
		400V	-	-	8.9kW	13.8kW	22kW	35kW	-
AC-3 / AC-7b	rated operational currents I _e		5.5A	8.5A	5.5A	8.5A	25A	32A	-
	rated operational power	230V	570W	880W	570W	880W	2.6kW	3.3kW	-
		400V	-	-	1.7kW	2.6kW	7.8kW	10kW	-
AC-12	rated operational currents at 230V		-	-	-	-	-	-	6A
AC-15	rated operational currents at 230V		-	-	-	-	-	-	2A
Mechanical and electrical endurance									
Mechanical endurance	nr of operations		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Electrical endurance at I _e AC7a (AC12 for aux contacts)	nr of operations		60,000	60,000	60,000	60,000	60,000	60,000	60,000
MCB protected short-circuit withstand									
Prospected short-circuit current	rms		1kA	3kA	1kA	3kA	3kA	3kA	1kA
Associated protection			MCB C16-6kA	MCB C25-6kA	MCB C16-6kA	MCB C25-6kA	MCB C40-10kA	MCB C63-10kA	6A 10x38 gG fuse or mcb
Power dissipation									
Power dissipation per current path			1W	1.5W	1W	1.5W	3.2W	5W	0.4W
Magnetic system for eco and standard contactor									
Pick-up			7.4VA	7.4VA	9.2VA	9.2VA	60VA	60VA	-
Coil consumption			1.8VA	1.8VA	1.85VA	1.85VA	7VA	7VA	-
Closing delay			25ms	25ms	25ms	25ms	25ms	25ms	-
Opening delay			15ms	15ms	15ms	15ms	20ms	20ms	-
Connection									
Main contact cable section	rigid		1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	4...25mm ²	4...25mm ²	1...6mm ²
	flexible		1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	4...16mm ²	4...16mm ²	1...6mm ²
Main contact connection screw	type		M3.4	M3.4	M3.4	M3.4	M5	M5	M3.4
	posidrive		PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2
	max. tight. torque		1.2Nm	1.2Nm	1.2Nm	1.2Nm	2Nm	2Nm	1.2Nm
Coil connection cable section	rigid		1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	-
	flexible		1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	-
Coil connection screw	type		M3.5	M3.5	M3.5	M3.5	M4	M4	-
	posidrive		PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	-
	max. tight. torque		1.2Nm	1.2Nm	1.2Nm	1.2Nm	1.5Nm	1.5Nm	-
Working temperature									
			-10°C to +50°C						
Storage temperature									
			-40°C to +80°C						

Choice of Contactors

Choice of contactors

The choice of contactor is based on many factors:

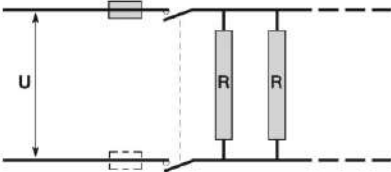
- type of the load supplied,
- nominal current of the load,
- operating voltage,
- number of operations, etc..

The contactors are AC7-a (resistive load) and AC7-b (inductive load) approved.

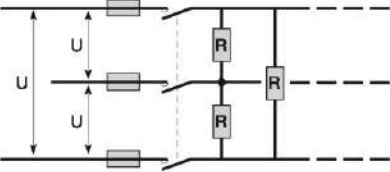
Heating applications

The choice of the contactor is based on the electrical heating load, and the targeted life time.

Single phase



Three phase supply



Number of operations		60,000	100,000	150,000	300,000	600,000
Maximum load* in kW	230V	16A	3.0	2.5	1.9	0.8
		25A	4.6	4.0	3.0	1.3
		40A	7.3	6.3	4.7	2.2
		63A	11.6	10.0	7.5	3.5
	400V	16A	8.9	8.0	5.8	2.8
		25A	13.8	12.0	8.6	4.3
		40A	22.0	18.5	14.3	6.3
		63A	35.0	30.0	22.6	10.2

* On three phase configuration the maximum load per phase corresponds to the values states divided by 3.

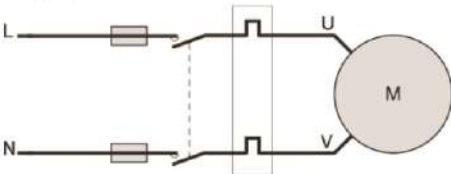
Example:

Function of a heating installation 200 days/annum, 75 operations per day (1 opening + 1 closing = 2 operations)
Mechanical life = 10 years

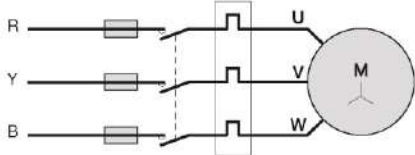
Total number of operations: $200 \times 75 \times 10 = 150,000$

in that case, depending on the type of circuit, select a contactor 40A 230V to control a load of 4.7 kW, or a contactor 16A 400V to control a load up to 5.8 kW.

Motor applications (AC7-b equivalent to AC3) Single phase 230V



Three phase 400V



	Contactor rating	Control diagram	
		2P 230V single phase	3P 400V three phase
Maximum power for the motor	16A	0.57 kW	1.7 kW
	25A	0.88 kW	2.65 kW
	40A	2.6 kW	7.8 kW
	63A	3.3 kW	10 kW

Influence of working temperature:

Derating factor between 40°C and 50°C : 0.9

Example: heating with convector

The maximum load of ESC225 is 4.6kW for 60,000 operations and for a temperature <40°C.

between 40°C and 50°C, the load is 4.6×0.9 i.e. 4.14kW

Adjacent fitting:

It is necessary to put a heat dissipation insert (reference LZ060) between each 3 products, or each humfree contact.

Description:
Hager dimmers control the lighting level of all types of lighting source: incandescent, LV halogen, VLV halogen with electronic or ferromagnetic transformer, LED VLV lamps with electronic transformer, fluorescent with electronic ballast.
The new generation EVN dimmers 300W and 500W also allow the lighting level adjustment for dimmable CFL and dimmable LED lamps.

Dimming controlled by push button:

- start / stop by short press
- increasing / decreasing by maintaining pressure

Common characteristics :

- universal dimmers with automatic load recognition
- Softstart (progressive start) to increase the working life of lamps
- memorisation of last dimming level
- protection against overheating.

Dimmer 1000 W:
Several lamps with up to 1000W power can be driven with the same control by associating EV102 (master) with up to 30 EV102 or EV100 (slave), that represents a total power of 30kW.

Dimmers 1-10V:
The lamps equipped with a 1-10 V dimmable input, whatever their power, can be driven by EV106 or EV108.
A dimmer can drive up to 30 ballasts: the total power depends on the lamps power.



EVN011



EVN004

Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
Universal dimmers 300 W	standard version	1	1	EVN011
- compatible with dimmable CFL and LED - 3 modes for load learning: auto, advanced, expert (comfort version) - can replace a latching relay, with lighting level function - push button (phase or neutral) - very low consumption	comfort version - expert mode - scene by 2 short double presses on the remote PB (progressive switch-off, night light, 100%, no function)	1	1	EVN012
Universal dimmers 500 W	standard version	1	2	EVN002
- compatible CFL and LED - 3 modes for load learning auto, advanced, expert (comfort version) - very low consumption	comfort version - expert mode - 100% via 2 short presses on the dim input PB - 1 scene PB (scene, time-delayed scene, progressive switch-off, night light) - multi-voltage dim PB	1	2	EVN004
Commercial dimmers 1000 W	standard version	1	5	EV100
- mode selection switch: "local": autonomous operating "slave": 1/10V input "master" (EV102 only): 1/10V output - min. and max. dim level	advanced version - 2 scene PB (scene or override) - dimming level display - adjustable parameters (min. and max. dim level, dimming rise time, rise time when switching on and off)	1	5	EV102
1/10V pilot dimmers	standard version	1	4	EV106
- to control electronic ballast or EV100/EV102 dimmers (max. 30) - dim level display - adjustable parameters (min. and max. dim level, dimming rise time, rise time when switching on and off)	advanced version - 2 scene PB (scene or override)	1	4	EV108

Power interface programming solution for energy efficiency

Time switches, timers, meters, energymeters:
a whole range of devices to control installations
for more energy efficiency.

Power Interface Programming

Page

01 Analog time switch	192
02 Digital time switch	193
03 Delay timer	196
04 Indicator light	196
05 Ammeter	197
06 Current transformers	197
07 Selector switches	198

Description

Electromechanical time switches
1 channel for daily or weekly
programming.

To control lighting, heating,
household appliances, shop
windows etc...

To improve comfort and save
energy.

Applications

Domestic and commercial
premises.
DIN rail mounting.

Technical data

- programming by captive
segments.

- manual override:

On 1 module devices:
- automatic

- permanent ON

On 3 and 5 module devices:

- automatic

- permanent ON

- permanent OFF

Minimum switching time:

- 15 min for daily versions
- 2 hours for weekly versions
- 15 min and 2 hours on the
daily + weekly version

Connection capacity:

1 to 4mm²

Complies with EN 60 730.



EH071



EH111

Description	Voltage	Cycle	Pack Qty.	Width in 17.5mm	Cat. ref.
Analogue time switches modular compact	230 V 50 Hz	24h reserve: 200 h	1	1	EH011
1 NO 16 A - 250 V AC1		7day reserve: 200h	1	1	EH071
Analogue time switches standard modular version	230 V 50 Hz	7day reserve: 200 h	1	2	EH271
		24h + 7day reserve: 200 h	1	5	EH191
1 NO changeover 16 A - 250 V AC1		24h without battery reserve	1	3	EH110
		24h reserve: 200 h	1	3	EH111
	6 to 24 V AC/DC	24h without battery reserve	1	3	EH110A
		24h reserve: 200 h	1	3	EH111A
		7day reserve: 200 h	1	3	EH171A

Analogue Time Switches 72 x 72mm

Description

For daily or weekly programming.
1 channel for the control of
lighting, heating, household
appliances, shop windows etc..
To improve comfort and save
energy.

Applications

Domestic and commercial
premises.

Technical data

- suitable for surface, flush or
din rail mounting
- programming by captive
segments
- manual override with
automatic return to programme
- operating reserve: 200 hours
after being connected for 120
hours

- with clock hand

- output: voltage free
changeover contact 16A/250V

Daily version

Programming in steps of 10
minutes.

Minimum time between 2
switching intervals: 20 min

Weekly version

Programming in steps of one
hour.

- minimum time between 2
switching intervals: 2 hours
- switching accuracy: 10 min

Complies with EN 60 730-2-7.



EH711

Description	Characteristics	Pack Qty.	Cat. ref.
1 channel daily cycle with battery reserve reserve : 200 hours after being connected for 120 hours	supply : 230V 50/60Hz	1	EH711
1 channel weekly cycle with battery reserve reserve : 200 hours after being connected for 120 hours	supply : 230V 50/60Hz	1	EH771

Description

Use : domestic and commercial buildings
For the control of lighting, heating, household appliances, shop windows, signage etc..., to improve comfort and to save energy.

EG103B and EG203B

(basic version)

Product set at current time and date when delivered.

Automatic change of summer / winter time.

Programming key :

- to allow easy back up and re-installation of the program to allow permanent program overrides.
- programming per day or group of days
- 56 ON/OFF programme steps
- permanent ON/OFF overrides

- temporary ON/OFF overrides
- bar graph indication showing the daily profile
- programming supply.

- presence simulation - random switching
- backlighted screen
- impulse programming capability (1s to 30min)

EG103E and EG203E

(evolution version)
Same characteristics as EG103B and EG203B plus more :
- holidays mode : forcing ON or OFF between two dates

Operating voltage
230V~ 50/60Hz



EG071



EG103E



EG203E



EG493E



EG004

Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
1 channel daily cycle	5 adjustable pre-recorded programs : 6 commutations max per day (3 ON and 3 OFF) 230V 50/60 Hz	1	1	EG010
	capacity : 20 program steps 230V 50/60 Hz	1	3	EG110
2 channels daily cycle	capacity : 20 program steps to be divided between the 2 channels 230V 50/60 Hz	1	3	EG210
1 channel weekly cycle	capacity : 20 program steps 230V 50/60 Hz	1	1	EG071
	capacity : 20 program steps 230V 50/60 Hz	1	3	EG170
	capacity : 56 program steps output : 1 changeover contact μ 16A - 250V~ AC1	1	2	EG103B
	version delivered with key EG005	1	2	EG103E
	capacity : 56 program steps output : 1 changeover contact μ 16A - AC1 - 12/24 V AC/DC 50/60 Hz	1	2	EG103V
2 channels weekly cycle	capacity : 20 program steps to be divided between the 2 channels 230v 50/60 Hz	1	3	EG270
	capacity : 56 program steps output : 2 changeover contacts μ 16A - 250V~ AC1	1	3	EG203B
	version delivered with key EG005	1	2	EG203E
4 channels weekly time switch	voltage rating: 230V~ 50/60 Hz output: 2 changeover contacts + 2NO contacts 10A - 250V ~ AC1 delivered with programming key	1	4	EG403E
2 channels yearly time switch	voltage rating: 230V~ 50/60 Hz output: 2 changeover contacts 10A - 250V~ AC1	1	4	EG293B
4 channels yearly time switch	voltage rating: 230V~ 50/60 Hz output: 3 changeover contacts 10A - 250V~ AC1 1NO contact: 10A - 250V ~ AC1 delivered with programming key	1	4	EG493E
Programming key	for EG403E, EG293B, EG493E	1		EG007
	for EG103 / EG203	1		EG005
	clock key	1		EG004
Range module		1		EG006
Interface and software	with software on CD	1		EG003
	with USB	1		EG003U

Technical specifications

Electrical characteristics

- supply : 230 V AC $\pm 15\%$
- frequency : 50/60 Hz
- consumption : max. 6 VA at 50 Hz
- output : 1 changeover contact voltage free (EG103B and EG103E)
2 changeover contacts voltage free (EG203B and EG203E)
- max. breaking capacity :
AC1 : $\mu 16A$ 250 V~
DC1 : $\mu 4A$ 12 V ...
Cos $\phi = 0,6$: $\mu 10A$ 250 V~
- incandescent lamps : 2300 W
- halogen lamps : 230 V : 2300 W
- compensated fluorescent lamps // (max. 45 μF) : 400 W
- non compensated fluorescent lamps, compensated in series :
1000 W fluo compact lamps : 500 W
- min. breaking capacity :
AC1 : 100 mA 250 V~
DC1 : 100 mA 12 V ...
- galvanic insulation between supply and output

Functional characteristics

- programming capacity : 56 steps shared on the 2 channels for EG203B and EG203E
- min. time between 2 steps : 1 minute
- accuracy : $\pm 1,5$ sec / 24h
- supply failure reserve : lithium battery total of 5 years of supply failure
- the product switches to watching state (display lighted of) after 1 min without power. It returns into Auto mode at return of power or by push on a button
- ingress protection : IP20

Environment

- working temperature : -5 to +45 °C
- storage temperature : -20 to +70 °C

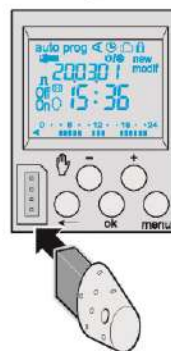
Connection by cage terminals

- flexible : 1 to 6mm²
- rigid : 1,5 to 10mm²

Main characteristics

- product delivered and updated to current date
- automatic change of time schedule summer: winter  / 
- programming key:  for temporary override for the copy or the saving of the programme
- programming per day or group of days
- 56 programmes steps ON, OFF or impulse  : 1 sec to 30 mn. (EG103E and EG203E)
- permanent priority ON or OFF  (fixes),
- temporary overrides ON or OFF  (blinking),
- holidays mode  : priority setting ON or OFF between two dates (EG103E and EG203E),
- presence simulation  (EG103E and EG203E)
- bargraph with daily profile display,
- possibility of locking the keyboard 
- programmable power off
- backlighted screen (EG103E and EG203E),
- remote controled temporary overrides (EG103E).

Product presentation



- ① menu : selection of the operating mode
auto : functioning according to the established program
prog : new for the programming
prog : modif to modify an existing program
 : checking of the program
 : modification of the hour, the date and the choice of the mode of change of the time schedule summer/winter  / 
- ②  : holidays (EG103E and EG203E)
 and  : navigation or adjustment of the values in Auto mode, selection of priority settings, overrides or of random functioning (EG103E and EG203E)
- ③ ok : to validate the blinking info
- ④  : return at the preceding step

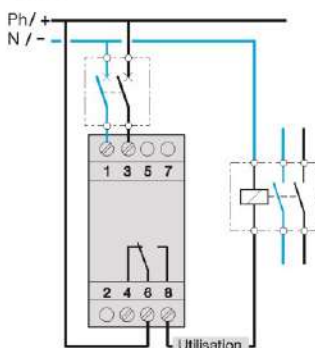
You can return in Auto mode at any time with the menu key. If no action is made during 1 min, the switch returns into Auto mode.

Reset :

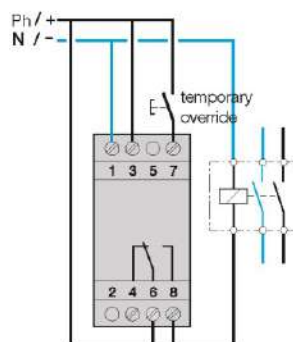
- of programme : it can be completely delated by simultaneous push on the 3 following keys : menu, ok and  . the hour and the date are maintained
- Total : by simultaneous push on menu and ok keys and  , the whole content of the product is removed. After a total reset, it is necessary to redefine the hour and the date.

Electrical connection

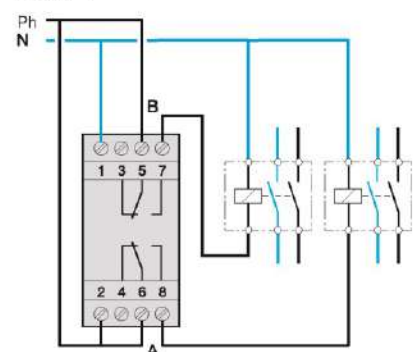
EG103B



EG103E



EG203E



EG493E programmer

Electrical characteristics

- supply : 230 V +10 -15% 50/60 Hz
- consumption <2 VA
- output : 2 changeover switches and 2 normally open contact
μ10 A - 250 V~ AC1

Functional characteristics

- annual cycle
- programming capacity : 300 program steps
- functioning precision : ± 0,2 sec / day

Environment

- working temperature : -10 at +45 °C
- storage temperature : -20 at +70 °C

Connection capacity :

0,75 to 2,5mm²

Main characteristics

• Programming

- Large display with programming instructions.
- 300 program steps (Basic weekly program, 9 sub-programs, specific program step, additional program step.).
- Advanced functions :
- Easter function : the clock calculates each year the new date of events linked to easter.
- Day of the week function : the clock calculates each year the new date in order to match the day of the week (ex : 2nd Sunday of March)

• Automatic change summer / winter

pre-defined or customized settings

• Programming key (copy, save, override)

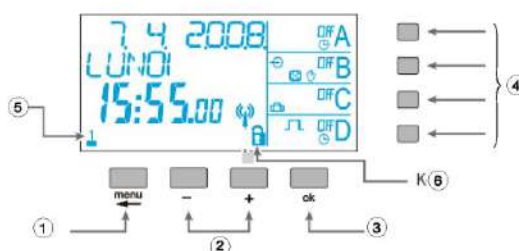
• Additional characteristics

- The output can be defined as ON, OFF, impulse or Cyclic operating.
- Hours counter on each output
- Key board locking via PIN code
- 1 button per channel for manual override (permanent, temporary or random)
- 1 input for external override (changeover, permanent ON or OFF, random, time limited..)

• Casing

- 4 modules
- Connection with Quick Connect terminals.
- 2 changeover and 2 NO contacts (10A-AC1)

Presentation



① enter in program mode and return to previous step

② navigation and value setting

③ validation

④ manual override:

- auto
- random
- temporary override
- permanent override

⑤ selection of the days of the week:

1 = monday

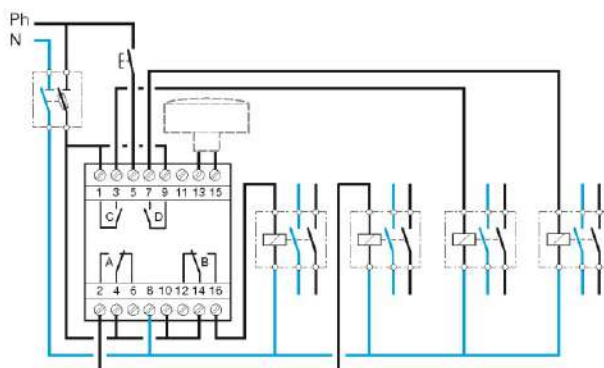
2 = tuesday

...

7 = sunday

⑥ PIN number locking

Electrical connection



Delay Timers

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.

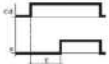
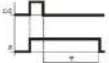
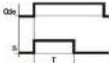
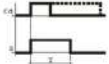
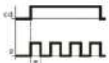
Technical data

Voltage range :
12 & 24 to 48V DC
12 & 24 to 230V AC
Adjustable:
time delay from 0.1s to 10hrs.
Led indicator

Complies with EN 60669-2-1

Connection capacity:
6mm² max rigid
1.5 - 10mm² flexible



Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
Delay on	 1 c/o contact 10A / 230V~ AC Time delay T : 0.1s to 10hr	1	1	EZN001
Delay off	 1 c/o contact 10A / 230V~ AC Time delay T : 0.1s to 10hr	1	1	EZN002
Adjustable time on	 1 c/o contact 10A / 230V~ AC time delay T : 0.1s to 10hr	1	1	EZN003
Timer	 1 c/o contact 10A / 230V~ AC time delay T : 0.1s to 10hr	1	1	EZN004
Symmetrical flasher	 1 c/o contact 10A / 230V~ AC time delay T : 0.1s to 10hr	1	1	EZN005
Multifunction 6 individual functions including : delay on, delay off, timer	1 c/o contact 10A / 230V~ AC time delay T : 0.1s to 10hr	1	1	EZN006

Indicator Lights

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 mm² rigid,
- 6 mm² flexible

Comply with IEC 62094-1
(for indicator lights).



Description		Characteristics	Pack Qty.	Width in  17.5mm	Cat. ref.
Single indicator light 230 V ~		LED light: green	12	1	SVN121
		red	12	1	SVN122
		orange	12	1	SVN123
		blue	12	1	SVN124
		clear	12	1	SVN125
Double indicator light 230 V ~		LED light: green and red	12	1	SVN126
		clear	12	1	SVN128
Triple indicator light		LED light: red/red/red	12	1	SVN127
		red/orange/green	12	1	SVN129
		green/green/green	12	1	SVN221
		red/orange/blue	12	1	SVN222
Low voltage indicator lights 12 to 48 V AC/DC		LED light: green	12	1	SVN131
		red	12	1	SVN132
		orange	12	1	SVN133
		blue	12	1	SVN134
		clear	12	1	SVN135
		green/red	12	1	SVN136

Analogue voltmeters
For indications of line or phase voltages

- Single phase : direct connection
- Three phase : use of a voltmeter selector switch SK602

Frequency: 50/60Hz

Connection capacity:
Rigid conductor 10mm²
Flexible conductor 6mm²

Analogue ammeters
For indications of AC currents

Direct reading:
SM005 : 0 - 5A
SM015 : 0 - 15A
SM030 : 0 - 30A

Indirect reading via current transformers :
50, 100, 150, 250, 400, 600A

IEC60054-1



SM500

Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
Voltmeter	Accuracy : 1.5% consumption : 2.5VA 0 - 500V	1	4	SM500
Analog ammeter current transformer operated	Accuracy : 1.5% 0 - 600A	1	4	SM600

Digital Voltmeters, Ammeters, Current Transformers

Digital voltmeters
SM501
For indications of line or phase voltages

- **Three phase:**
use of a voltmeter selector switch SK 602

Comply with IEC 60054-1

Digital ammeters
SM 020, SM 151, SM 401, SM 601
SM 020 : direct reading
SM 401, SM 601 : reading via a current transformer (see below)



SM501

Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
Digital voltmeters	Voltage rating : 220/230V; 50/60Hz accuracy : ±1% ; consumption : 4VA Scale : 0 - 500V	1	4	SM501
Digital ammeters	Voltage rating : 220/230V; 50/60Hz accuracy : ±1% ; consumption : 4VA			
- Reading via CT 600/5A (SRA060)	Scale : 0-600A	1	4	SM601

Current Transformers (C.T.)

Description
Current transformers are used to feed analogue and digital ammeters and energy meters. The current on the secondary circuit (0 - 5A) is proportional to the current on primary circuit.

The range of current transformers is composed of direct reading type, up to 30A and indirect reading type, via current transformers, from 50 to 2000A. The range is adapted to any type of mounting: edgewise or flat mounting, DIN-rail or backplate mounting.

Technical data

- secondary current : 5A
- frequency : 50/60Hz
- isolating voltage : 0.72kV at 3kV/50Hz/1s
- primary current : In from 50 to 2000A
- continuous thermal current : 1.2xIn (according to EN60044-1)

- operating temperature :
40 to +40°C

Connection capacity

- rigid conductor 4mm²
- flexible conductor 4mm²

Complies with IEC60044-1



SRA01005



SRD10005

Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
Current transformers	C.T. Ratio : 50/5 100/5 150/5 200/5 250/5 300/5 400/5 600/5 800/5 1000/5 1500/5	1 1 1 1 1 1 1 1 1 1 1	3.5 3.5 3 3 3 3.5 3 3 5 5 5	SRA00505 SRA01005 SRA01505 SRA02005 SRA02505 SRI03005 SRC04005 SRC06005 SRD08005 SRD10005 SRD15005

Selector Switches for Voltmeters & Ammeters

Description:
To provide command signals or program selection in electrical control schemes.

Application:
For domestic and commercial installations.

Connection capacity:
- rigid conductor: 1.5 to 10mm²
- flexible conductor: 1 to 6mm²

Isolating voltage 500V~
Nominal current 10-20A

Complies with:
IEC 947-3 and IEC 60 947-3



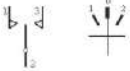
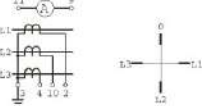
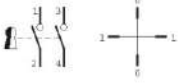
SK602



SK603



SK606

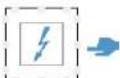
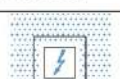
Description	Characteristics	Pack Qty.	Width in 17.5mm	Cat. ref.
1 pole selector switch 	1 contact o/c 20A 400V~ Non spring return	1	3	SK600
2 pole selector switch 	2 contacts NC/NO 20A 400V~ with return to position when not actioned	1	3	SK601
Selector switch for voltmeters 7 positions 	20A 400V~	1	3	SK602
Selector switch for ammeters 4 positions 	20A 400V~ or with current transformers / 5A	1	3	SK603
Step selector switch 	20A 400V~	1	3	SK604
Key selector switch 	10A 400V~	1	3	SK606
Spare key for SK606		1		SK001

Ingress Protection Chart

The Ingress Protection (IP) for all low voltage enclosures up to 1000 V a.c. and 1500 V d.c. is defined in identical fashion by the standards EN 60529 - IEC 529 it comprises the letters IP followed by two character numerals and or additional/supplementary letters.

The first character numeral indicates the degree of protection provided by the enclosure against access to hazardous parts by preventing or limiting the ingress of a part of the human body or an object held by a person and ingress of solid foreign objects.

The first character numeral: Protection against foreign objects

IP	Description	
0		Non-protected
1		Protected against solid objects $\geq$ than 50mm
2		Protected against solid objects $\geq$ than 12.5mm
3		Protected against solid objects $\geq$ than 2.5mm
4		Protected against solid objects $\geq$ than 1.0mm
5		Dust-protected
6		Dust-tight

Additional letter (in option) Protection of people against access to hazardous parts

	Description
A	Protected against access to hazardous parts with the back of the hand
B	Protected against access to hazardous parts with a finger
C	Protected against access to hazardous parts with a tool - $\varnothing$ 2.5mm
D	Protected against access to hazardous parts with a wire - $\varnothing$ 1mm

The second character numeral indicates the degree of protection provided by the enclosure with respect to harmful effects on the equipment due to the ingress of water. An X signifies that the tests are not applicable to the product.

The second character numeral: Protection against ingress of water with harmful effects

IP	Description	
0		Non-protected
1		Protected against vertically falling water drops
2		Protected against vertically falling water drops when enclosure tilted up to 15°
3		Protected against spraying water
4		Protected against splashing water
5		Protected against water jets
6		Protected against powerful water jets
7		Protected against the effect of temporary immersion in water
8		Protected against continuous immersion in water

Additional letter (in option) Specific information on the product

	Description
H	High voltage apparatus
M	Motion during water test
S	Stationary during water test
W	Weather conditions

Connection up to 250A

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

01 Insulated busbars prong	202
02 Insulated busbars fork	203

	Designation	Section (mm ²)	In	Pack Qty.	Width in I 17.5mm	Cat. ref.
1 pole, 1 I step						
 KB163P	Brown insulation (phase)	10	63A	50	13	KB163P
	Blue insulation (neutral)	10	63A	50	13	KB163N
 KB163N	Insulated	10	63A	10	56	KB163B
	Without insulation	10	63A	50	13	KB163I
	Insulated	20	100A	10	57	KB190B
	Insulated	20	100A	10	24	KB190C
2 pole, 1 I step						
 KB263C	Insulated	10	63A	10	12	KB263A
		10	63A	10	24	KB263C
		16	80A	10	56	KB280B
3 pole, 1 I step						
 KB463C	Insulated	10	63A	10	12	KB363A
		10	63A	20	57	KB363B
		10	63A	10	24	KB363C
		16	80A	10	57	KB380B
4 pole, 1 I step						
 KF81A KF82A	Insulated	10	63A	10	12	KB463A
		10	63A	10	24	KB463C
		16	80A	10	56	KB480B
Cable connectors						
 KF83A	Connection from top In 63A	for cables : 25mm ²		10		KF81A
		for cables : 2 x 16mm ²		10		KF82A
	Connection from side In 63A	for cables : 25mm ²		10		KF83A
	Connection from back In 63A	for cables : 50mm ²		10		KF50S
End cap cover						
 KZ021 KZ023A	For single pole busbars KB063P and KB063N			1 set		KZ021
	For double pole busbars, 10mm ²			1 set		KZ022
	For triple pole busbars, 10 or 16mm ² and double pole busbars 16mm ²			1 set		KZ023A
	For four pole busbars, 10 or 16mm ²			1 set		KZ024



KDN180B



KDN380A



KF84A



KZ023

Designation	Section (mm ²)	In	Pack Qty.	Width in 17.5mm	Cat. ref.
1 pole, 1 step	10	63A	100	12	KDN163A
	10	63A	50	57	KDN163B
	16	80A	100	12	KDN180A
	16	80A	50	57	KDN180B
	20	100A	10	57	KD190B
2 pole, 1 step	10	63A	50	12	KDN263A
	10	63A	20	56	KDN263B
	16	80A	50	12	KDN280A
	16	80A	10	56	KDN280B
3 pole, 1 step	10	63A	50	12	KDN363A
	10	63A	20	57	KDN363B
	16	80A	50	12	KDN380A
	16	80A	10	57	KDN380B
4 pole, 1 step Insulated	10	63A	25	12	KDN463A
	10	63A	10	56	KDN463B
	16	80A	25	12	KDN480A
	16	80A	10	56	KDN480B
Cable connectors					
Connection from side In 63A	for cables : 25mm ²		10		KF84A
Connection from top In 63A	for cables : 25mm ²		10		KF81D
End cap cover					
For one pole busbars, 10 or 16mm ²			1 set		KZN021
For double or triple pole busbars, 10 or 16mm ²			1 set		KZN023
For four pole busbars, 10 or 16mm ²			1 set		KZN024

IP66

For the toughest environment

Total protection from dust and water

Manufactured from a tough, durable thermoplastic, the IP66 range is ideal for indoor and outdoor applications where wiring accessories may be vulnerable to the potentially harmful effects of dust or water ingress. The IP66 rating assures total protection against airborne particles and high pressure water jets.

IP66 Isolating Switch Isolator



Description:

The range of IP66 isolators are designed to be used in outdoor applications with IP66 degree of protection. They are rated at AC22A and AC23A offer options of 2, 3 poles and 4 poles with switched neutral. They are compact and easy to install with 2 screw quick release top cover.

- Complies with
BS EN 60947-3
IEC 60947-3
AS 3947-3

Rated voltage: 250V ~ AC
440V ~ AC

Rating AC22A is for switching of mixed resistive and inductive loads, including moderate overloads.

Rating AC23A is for switching of motor loads or other highly inductive loads.

Mechanical specification:
Protection Category: IP66

Material: Polycarbonate – UV grade.

Devices & accessories:
DP 20-40A
TP & N 20-40A

TP & SW N 20-63A



JG220U



JG380S

Description	Pack Qty.	Cat. ref.
Rating: AC22A		
2 pole		
20A 2 pole IP66	1	JG220U
32A 2 pole IP66	1	JG232U
40A 2 pole IP66	1	JG240U
63A 2 pole IP66	1	JG263U
3 pole		
20A 3 pole IP66	1	JG320U
32A 3 pole IP66	1	JG332U
40A 3 pole IP66	1	JG340U
3 pole + switched neutral		
32A 4 pole IP66	1	JG432U
63A 4 pole IP66	1	JG463U
Rating: AC22A		
3 pole		
63A 3P IP65 isolator	1	JG363S
80A 3P IP65 isolator	1	JG380S
125A 3P IP65 isolator	1	JG325S
4 pole		
40A Change Over Switch IP65	1	JH440S
63A Change Over Switch IP65	1	JH463S
125A Change Over Switch IP65	1	JH425S



PT. Hager Electro Indonesia
Noble House - 9th Floor - Suite 903
Jl. Dr. Ide Anak Agung Gde Agung
E4-2 No. 2, Mega Kuningan
Jakarta Selatan 12950 - INDONESIA

Phone +62 (021) 2978 3075
hager.com

