

Low-voltage electrical
distribution system

Technical Specifications 2023/2024

:hager

**The reliable
partner for
intelligent
solutions.**

MCCB

h3+ MCCB / h3 MCCB	1 - 2
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Circuit breakers				h3+ P160				h3+ P250			
											
Number of poles				3,4				3,4			
General characteristics											
Rated current at 50 °C		In	(A)	160				250			
Current rated range			(A)	25 - 160 (Thermal Magnetic) 40 - 160 (Electronic)				50 - 250 (Thermal Magnetic) 40 - 250 (Electronic)			
Operational voltage, (AC)		Ue	M	220 - 690				220 - 690			
Frequency			(Hz)	50/60				50/60			
Rated insulation voltage		Ui	M	800				800			
Rated impulse withstand voltage		Uimp	(kV)	8				8			
Suitability for isolation				yes				yes			
Breaking capacity level				HHS	HNS	HMS	HES	HHT	HNT	HMT	HET
Rated ultimate short-circuit breaking capacity, {Icu}											
(AC) 50/60 Hz 220/240 V		Icu	(kA)	35	50	65	85	35	50	65	85
(AC) 50/60 Hz 380/415 V		Icu	(kA)	25	40	50	70	25	40	50	70
(AC) 50/60 Hz 660/690 V		Icu	(kA)	6	6	6	6	6	6	6	6
Rated service short-circuit breaking capacity, {Ics}											
(AC) 50/60 Hz 220/240 V		Ics	(kA)	35	50	65	85	35	50	65	85
(AC) 50/60 Hz 380/415 V		Ics	(kA)	25	40	50	50	25	40	50	50
(AC) 50/60 Hz 660/690 V		Ics	(kA)	6	6	6	6	6	6	6	6
Mechanical endurance in number of operations (IEC 60947-2)				40000				40000			
Electrical endurance in number of cycles at 440 V~ (IEC 60947-2)				10000				10000			
Operating temperature				-25 °C to +70 °C				-25 °C to +70 °C			
Storage temperature				-35 °C to +70 °C				-35 °C to +70 °C			
Tropicalisation				95 % HR at 55 °C				95 % HR at 55 °C			
Altitude (m)				<=2000				<=2000			
Terminations											
Pitch (mm)				30				35			
Maximum terminal Torque (nm)				6				12			
Terminal width (mm)				21				25			
Dimensions											
Height (mm)				130				165			
Width (mm)	3P			90				105			
	4P			120				140			
Depth (mm)				97				97			
Weight (kg)	3P			1.1				1.5			
	4P			1.4				1.9			
Protection				YES				YES			
MAG (ICB): li adjustable				YES				YES			
TM: Ir adjustable, li adjustable, neutral protection adjustable on 4P				YES				YES			
LSnl: Ir adjustable, tr fixed, lsd adjustable, tsd fixed, li fixed, neutral protection adjustable on 4P				YES				YES			
LSI: Ir & tr adjustable, lsd & tsd adjustable, li adjustable, neutral protection adjustable on 4P				YES				YES			
LSIG: Ir & tr adjustable, lsd & tsd adjustable, li adjustable, lg & tg fixed, neutral protection adjustable on 4P				NO				YES			
Energy: Ir & tr adjustable, lsd & tsd adjustable, li adjustable, lg & tg adjustable, neutral protection adjustable on 4P				YES				YES			
Earth leakage protection				YES				YES			
Measurement and advanced functions											
Trip unit version				LSnl	LSI	Energy		LSnl	LSI	LSIG	Energy
Embedded display of measurements and trip causes				NO	NO	YES		NO	NO	NO	YES
PTA output contact				NO	YES	YES		NO	YES	YES	YES
OAC output contact				NO	NO	YES		NO	NO	NO	YES
MIP connector for Configuration tool				YES	YES	YES		YES	YES	YES	YES
Options											
Panel display				NO	NO	YES		NO	NO	NO	YES
Communication module				NO	NO	YES		NO	NO	NO	YES
MCCB status, operation and trip counters via AX/AL				NO	NO	YES		NO	NO	NO	YES
Configuration tool				YES*	YES*	YES		YES*	YES*	YES*	YES

h3+ P630										h3+ P630										h3 h1000										h3 h1600									
																																							
3,4										3,4										3,4										3,4									
630										630										1000										1000									
630 (Electronic)										630 (TM)										1000 (Electronic)										1600 (Electronic)									
630 - 690										420 - 415										630 - 690										630 - 690									
50/60										50/60										50/60										50/60									
800										800										800										800									
8										8										8										8									
yes										yes										yes										yes									
V	HN	HMW	HMMEW	HEW	WPW	HPW	HJ	HH	HNJ	HN	HMJ	HM	HEJ	HE	HNE	HNE	HEE	HEE		V	HN	HMW	HMMEW	HEW	WPW	HPW	HJ	HH	HNJ	HN	HMJ	HM	HEJ	HE	HNE	HNE	HEE	HEE	
70 85										35 70										100 85										100 85									
40 50										25 40										50 70										50 70									
7 12										- -										20										20									
70 85										35 70										100 85										100 85									
40 50										25 40										50 70										50 70									
7 12										- -										20										20									
030000										15000										15000										15000									
<6000A> 400A										<6000A> 400A										<6000A> 400A										<6000A> 400A									
C-25+70 °C										C-25+70 °C										C-25+70 °C										C-25+70 °C									
C-35+70 °C										C-35+70 °C										C-35+70 °C										C-35+70 °C									
95 % 55 °C										95 % 55 °C										95 % 55 °C										95 % 55 °C									
00=2000										00=2000										00=2000										00=2000									
45										45										70										70									
18										18										65										65									
32										32										40										44.5									
260										260										433										570									
140										140										210										210									
185										185										280										280									
150										150										145										191									
5.8										5.8										11.0										27.0									
7.6										7.6										14.8										30.0									
YES										YES										YES										YES									
YES										YES										NO										NO									
YES										YES										NO										NO									
YES										YES										NO										NO									
YES										NO										YES										YES									
YES										NO										NO										NO									
YES										NO										NO										NO									
LS										LS										LS										LS									
SIG										SIG										SIG										SIG									
Energy										Energy										Energy										Energy									
NONO										NOYES										YES										YES									
YES										YES										YES										YES									
NONO										NOYES										YES										YES									
YES										YES										YES										YES									
NONO										NOYES										YES										YES									
NONO										NOYES										YES										YES									
NONO										NOYES										YES										YES									
YES										YES										YES										YES									

			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 (Icm) (kA peak)	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	5					
	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	up to 2000A: 10000 from 2500A: 5000			2000	
	with maintenance		10000	up to 2000A: 15000 from 2500A: 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	up to 3200A: 44 4000A: 61		76	
		4 pole		44	up to 3200A: 55 4000A: 81		81	
	draw-out type	3 pole		63	up to 3200A: 87 4000A: 107		145	
		4 pole		80	up to 3200A: 130 4000A: 161		173	

Frame

A

B

C

Type	A	N.....A	N.....A	N.....A
Rated current	V	630-2000	630-4000	3200-5000
Rated insulation voltage (Ui)	V		690	1000

3	Rated impulse withstand voltage (Uimp)	KV	12	Subject to technical modification
	Frequency	Hz	50/60	

Features of MCB, RCCB/ELCB and RCBO

- ✓ Positive Contact Indication : Mechanical indicator, appearing on the front face of all hager MCBs (except MY and MT/MU...A), RCBOs and RCCBs, linked to the contacts, shows the positive opening of all poles.
Red = Contacts closed. Green = Contacts opened.
- ✓ Earth Fault Indicator : Mechanical indicator, appearing on the front face of the RCCB/RCBO, to differentiate between tripped (yellow) and off position.
- ✓ Anti-Nuisance Tripping : All RCCBs and RCBOs are protected against nuisance tripping due to transient voltages (lightning, line disturbance) and transient current (from high capacitive circuits).
- ✓ Auxiliaries & Accessories : All MCBs, RCCBs & RCBOs can be fitted with auxiliary, signal/alarm contact, shunt trip, under voltage release and pad-locking kit.

MCB

	Model	No. of Pole	Current Rating	Reference Calibration Temperature	Tripping Curve	Rated Voltage	Breaking Capacity	Standards	Mechanical Endurance	Connection Capacity
 MY106E	MY...E	1-2-3P	1-63A	30°C	Type C	230/ 400V~	4.5KA 6KA	IEC 60898 IEC 60947-2	20,000 operations	25mm ² rigid cable 16mm ² flexible cable
 MU216A	MT...A MU...A	1-2-3P	6-63A 2-63A	30°C	Type B Type C	230/ 400V~	6KA 10KA	IEC 60898 IEC 60947-2	20,000 operations	25mm ² rigid cable 16mm ² flexible cable
 MR240	MR... MS...	1-2-3P	6-63A	40°C	Type B Type C	230/ 400V~	6KA 10KA	IEC 60898 IEC 60947-2	20,000 Operations	25mm ² rigid cable 16mm ² flexible cable
 NC210A	NB...A NC...A NDN...A	1-2-3-4P	6-63A 0.5-63A 0.5-63A	30°C	Type B Type C Type D	230/ 400V~	10KA 15KA	IEC 60898 IEC 60947-2	20,000 operations	25mm ² rigid cable 16mm ² flexible cable
 HMC380	HLE...S HLF...S HMB... HMC... HMD...	1-2-3-4P	80-125A	30°C	Type B Type C Type B Type C Type D	240/ 415V~	10KA 10KA 15KA 15KA 15KA	IEC 60898	20,000 operations	70mm rigid cable 50mm ² flexible cable
 NRN320	NRN...	1-2-3-4P	0.5-63A	40°C	Type C	230/ 400V~	25KA (≤25A) 20KA (32-40A) 15KA (50-63A)	IEC 60947-2	20,000 operations	25mm ² rigid cable 16mm ² flexible cable
 HMX320	HMX...	1-2-3-4P	10-63A	40°C	Type C	230/ 400V~	50KA	IEC 60947-2	20,000 operations	50mm ² rigid cable 35mm ² flexible cable
 HMK399	HMK...	1-2-3-4P	80-125A	40°C	Type C	230/ 400V~	30KA	IEC 60947-2	20,000 operations	50mm ² rigid cable 35mm ² flexible cable

Combined

	Model	Type	No. of Pole	Normal voltage	Rated Current	Sensitivity	Standards
 CD263B	C...B	AC	2P/4P	230/400V	16,25,40,63,80,100	10mA...500mA	SS97, IEC61008-1
	CN...B	S			40,63,80,100	100mA	IEC61008-1
	CP...B	S			40,63,80,100	300mA	IEC61008-1
	CH...J	A(HI)			25,40,63	30mA	IEC61008-1
	CQ...J	A(HI)			40,63	300mA	IEC61008-1
	CD...J	A			16,25,40,63	30mA	SS97, IEC61008-1
	CE...J	A			16,25,40,63,80,100	100mA	IEC61008-1
	CF...J	A			16,25,40,63,80,100	300mA	IEC61008-1
	CDB...E	B			16,25,40,63	30mA,300mA	IEC61008-1

Combined MCB/RCD (RCBO)

	Model	Type	No. of Pole	Nominal Voltage	Rated Current	Sensitivity	Breaking Capacity	Standards
 AD970B	A9...B	AC	2P	230	6A-40A	10mA,30mA,100mA,300mA	6KA	IEC61009-1 IEC60947-2
	A5...B	AC	2P	230		100mA	10KA	
	AM4...G	A	4P	400		30mA,300mA	6KA	
	AH4...H	A(HI)	4P	400		30mA,300mA	6KA	
	AX...C	A	4P	400		30mA,100mA,300mA	10KA	
	AR...C	A (HI)	4P	400		30mA,100mA,300mA	10KA	

Earth Leakage Relay (ELR)

	Model	Sensitivity	Time-Delay	Output Contact	Standards	Associated Torroid	Diameter	Model	
 HR522	HR522	30-100-300-500mA 1-3-10A	0-0.1-0.2-0.25- 0.3-0.4-0.5sec	6A/250V AC 1 volt free changeover contact	IEC 60947-2 Annex B	 HR741	Ø 30mm	HR700	
					IEC60755		Ø 35mm	HR741	
					IEC 61543		Ø 70mm	HR742	
	HR523	0.5-1-3-5A 10-20-30A	0-0.1-0.2-0.25- 0.3-0.4-0.5sec		IEC 61008-1		Ø 105mm	HR743	
					IEC 61000-6		Ø 140mm	HR744	
							Ø 210mm	HR745	

Switch Disconnecter / Enclosed Load Break Switches 20-1600A

	Model	No. of Pole	Current Rating	Duty Cycle	IP	Standards
 JAB302S	JA...S	TP & N and	20 - 1600A (IP41)	AC23	IP41	IEC 60529
	JA...S / IP55	TP & Switched Neutral	63 - 630A (IP55)		IP55	IEC 60947-3

IP66 Isolating Switch

	Model	No. of Pole	Current Rating	Duty Cycle	IP	Standards
 JG220U	JG...U JG...IN	2/3/4P	20, 32, 40A 63A	AC22A AC23A	IP66	IEC 60947-3
 JG363S JG380S JG325S	JG...S	3P	63-125A	AC21A AC22A	IP65	IEC 60947-3

Surge Protection Devices (SPD)

	Model	No. of Pole	Max Continuous Uc	Voltage Protection Level	I _{max}	I _n	Discharge Current Wave	Replacement Cartridge	Aux Contact	Type of SPD	Standards
 SPL220	SPL...12A	2P/4P	350Vac	1.5kV	50kA	12.5kA	8/20us; 10/350us	NO	NO	1+2	IEC61643-1
	SPL...65	2P/4P	350Vac	1.9kV	65kA	35kA	8/20us	YES	YES	2	IEC61643-1
	SPL...40	2P/4P	350Vac	1.5kV	40kA	20kA	8/20us	YES	YES	2	IEC61643-1
	SPL...20	2P/4P	350Vac	1.3kV	25kA	10kA	8/20us	YES	YES	2	IEC61643-1
	SPV340	3P	1000Vdc	3.7kV	40kA	15kA	8/20us	YES	NO	PV Class 2	IEC60364-7

Isolating Switch

	Model	Current Rating	No. of Pole	Duty Cycle	Standards	Positive Contact Indicator	Connection Capacity
 SBN390	SBN...	16, 25, 32A 40, 63, 80A 100A, 125A	1-2-3-4P	AC 22A	IEC 60947-3	Yes	10mm ² rigid cable, 6mm ² flexible cable 25mm ² rigid cable, 16mm ² flexible cable 50mm ² rigid cable, 35mm ² flexible cable

Changeover Modular Switch & ATS

	Model	No. of Pole	Type	Current Rating	Nominal Voltage
 SFT440	SFH...	1-2P	2-Way	25A, 32A	230V~
	SFM...	1NO+1NC	2-Way	25A, 32A	230V~
	SFT...	1-2-3-4P	Centre-Off	25A, 32A, 40A	230V/400V~
	SF...63	2-4P	Centre-Off	63A	230V/400V~
 HIC406R	HIC...R	4P	ATS I - 0 - II	40 - 630A	380V/400V~

Enclosures	Rated current of neutral pole (...% x In)	1s	KA	65	65	85
	Rated short-time capacity (Icw)	3s	KA	36	50	65
	Rated making capacity (Icm) (kA peak)	AC 690/600/550V	KA	105	105	187
Motion Detector / Enclosure / Distribution Board / Comb-Busbars		AC 415/380/220V	KA	143	143	220
Utilization category (according to IEC 60947-3)		AC23				



Motion Detector

Model	Mounting	IP	Detection Angle	Time Delay Settings	Brightness Threshold Settings	Output Contact
Maximum total breaking time	motor charging time		s		5	
Closing operating time	max. closing time		ms		40	
EE830	Wall	55	200°	5s-15 min	5-1000 lux	μ10A AC1 230V~
Mechanical life cycle	without maintenance			20000	15000	10000
EE804A / 805A	Ceiling (flush or surface)	21	360°	5s-30 min	5-1000 lux	μ10A AC1 230V~
EE830	without maintenance			5000	up to 2000A: 10000	20000
Electrical life cycle	(hyper-frequency) with maintenance			5s-50 min	from 2500A: 5000	μ10A AC1 230V~
EE883	Ceiling (hyper-frequency) with maintenance	54	360°	10000	up to 2000A: 15000	5000
EE815	Ceiling (presence)	41	360°	1-60 min	from 2500A: 10000	
EE883	fixed	3 pole		337x404x296	408x404x296	633x404x296
External dimension (W x H x D, except busbar)	EE880	544 pole	360°	422x404x296	523x404x296	605x404x296
	draw-out type	3 pole		328x460x368	399x460x368	624x460x368
		4 pole		413x460x368	514x460x368	794x460x368

Enclosure / Distribution Board

Model	Material	Mounting	No. of Rows	No. of Ways	IP	Standards	Options
	fixed type					up to 3200A: 44	76
	draw-out type					up to 3200A: 55	81
Golf	Insulated	4 pole Surface/Flush	1-2-3-4 Rows	44	4-8-12-24-36-48 ways	4000A: 61	
Icos / Cosmos	Insulated	3 pole Surface/Flush	1 Row	63	18-36-54-72-22 ways	4000A: 81	
Vector	Insulated	4 pole Surface	1-2-3-4 Rows	80	4/5-8-12/14-16/20 ways	up to 3200A: 87	145
IU	Metal		1-2-3-4-5-6 Rows	130	3-6-10-12-18-24-36-48-54 ways	up to 3200A: 107	• Key-lock
				130	13-18-26-36-39-52-54-72-90-108 ways	up to 3200A: 130	• Plain or Transparent door
				40		4000A: 161	

IP65 Metal & Glass-Reinforced Polyester (GRP) Enclosure

Model	Material	Size (HxWxD) mm	IP	Standards	Options
Orion (FL...A)	Steel	300x250x160 to 1250x800x300	65	IEC 60529	- Key-lock - Wall fixing brackets - Plain or perforated mounting plate - Equipment kits for modular devices
Orion Plus (FL...B)	GRP	350x250x160 to 2050x1100x300	65/66		
Orion Lite (FLA...RC)	Steel	350x250x150 to 1000x800x300	65	BSEN 6143913	NA

Comb-Busbars

Model	Type	Length	Cross-Section of Busbars	Max. Current Per Phase	No. of Poles	Impulse Withstand Voltage	Standards
				End feed			
KB280B	KB...B	56/57 modules	16/20mm²	80/90A	1-2-3-4P	4KV	DIN VDE0660-504
KD380B	KD...B	56/57 modules	16/20mm²	80/90A	1-2-3-4P	4KV	DIN VDE0660-504

Time-Switch

	Model	Type	Operating Cycle	Minimum Switching	Supply Failure Reserve	Manual Override	No. of Channels	Width
 EH111	EH010	Analogue	24hrs	15min	-	auto/on	1	1 module
	EH011	Analogue	24hrs	15min	200hrs	auto/on	1	1 module
	EH110	Analogue	24hrs	15min	-	auto/on/off	1	3 modules
	EH111	Analogue	24hrs	15min	200hrs	auto/on/off	1	3 modules
	EH171	Analogue	7days	2hrs	200hrs	auto/on/off	1	3 modules
	EH711	Analogue	24hrs	20min	200hrs	auto/on/off	1	72x72mm
	EH771	Analogue	7days	2hrs	200hrs	auto/on/off	1	72x72mm

Contactors

	Model	Type	Rated	Coil	Mechanical	Options
 ESC463	ESC225	2NO	25A	230V~ 50HZ	1,000,000 operations	Other control coil voltages are available: 110/127V~, 24V~, 8/12V~ 50Hz Other types are available: 1NO, 1NO+1NC, 4NC, 2NO+2NC Humfree contactors Auxiliary contact
	ESC226	2NC	25A			
	ESC240	2NO	40A			
	ESC263	2NO	63A			
	ESC325	3NO	25A			
	ESC340	3NO	40A			
	ESC363	3NO	63A			
	ESC466	3NO+1NC	63A			
	ESC425	4NO	25A			
	ESC440	4NO	40A			
	ESC463	4NO	63A			

	Model	Type	Rated Current AC3	Coil	Mechanical Endurance	Options
 EW009_C	EW...C	3NO	7-300A	220V~ 50/60Hz	10,000,000 operations	- Thermal overload relays - Auxilliary Contacts - Mechanical Interlock - Surge Suppressor
	EW...D		3-160KW	380V~ 50/60Hz		

Indicating Lights

	Model	Colour	Type of Lamp	Connection Capacity	Options
 SVN...	SVN121	Green	LED 230V~	10mm ² rigid cable 6mm ² flexible cable	Double, Triple LED lights and 12-48Vac/dc LED light also available
	SVN122	Red			
	SVN123	Amber			
	SVN124	Blue			
	SVN125	Clear			

Fuse Carrier

	Model	Max. Current Rating	No. of Pole	For Cylindrical Cartridge Fuse	Standards	Connection Capacity
 LSN501	LSN5...	32A	1P-1P+N-3P-3P+N	10.3 x 38mm	IEC 60269 IEC 60947-3	16mm ² rigid cable 10mm ² flexible cable
	LR6...	50A	1P-2P-3P-3P+N	14 x 51mm	IEC 60947-3	35mm ² rigid cable 25mm ² flexible cable
	LR7...	125A	1P-2P-3P-3P+N	22 x 58mm	IEC 60947-3	50mm ² rigid cable 35mm ² flexible cable



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