


Model Selection Table

MCCB (HGM Type): 32 - 250 AF

Things in Common

Rated Insulation Voltage, U_i	1,000 V
Rated Operational Voltage, U_e	690 V
Impulse Withstand Voltage, U_{imp}	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitability for Isolation	Yes
Utilization Category	A
Pollution Degree	3
Reference Standard	IEC 60947-2

Model	HGM30		HGM50				HGM60						
Frame (AF)	32		50				63						
Pole (P)	2, 3, 4 ¹⁾		2, 3, 4 ¹⁾				2, 3, 4 ¹⁾						
Rated current, at 40 °C (A)	16, 20, 25, 32		16, 20, 25, 32, 40, 50				16, 20, 25, 32, 40, 50, 63						
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order		E	S	E	S	H	L	E	S	H	L	
	AC660/690 V		2.5	5	2.5	5	8	10	2.5	5	7.5	8	
	AC480/500 V		7.5	10	7.5	10	26	35	7.5	10	14	26	
	AC440/460 V		16	20	16	20	38	55	16	20	26	30	
	AC380/415 V		16	20	16	20	38	55	16	20	26	30	
Service breaking capacity [Ics = % Icu]	AC220/240 V		35	50	35	50	85	100	35	50	50	50	
	DC250 V (2P)		5	10	5	10	20	30	5	10	15	15	
Endurance (Durability)	Mechanical		30,000		30,000				30,000				
	Electrical		10,000		10,000				10,000				
Trip Device													
Thermal magnetic	Long time [LT]	Fixed	(1.0) x In		(1.0) x In				(1.0) x In				
		Adjustable	(0.8 - 0.9 - 1.0) x In		(0.8 - 0.9 - 1.0) x In				(0.8 - 0.9 - 1.0) x In				
	Instantaneous [INST]		400 A		16 - 32 A: 400 A, 40 - 50 A: 10 x In				16 - 32 A: 400 A, 40 - 63 A: 10 x In				
Accessory													
Internal	Auxiliary switch AUX		●		●				●				
	Alarm switch ALT		●		●				●				
	Shunt trip SHT		●		●				●				
	Undervoltage trip UVT		●		●				●				
External	Rotary handle	Front contact TFG	●		●				●				
		Extended TFH	●		●				●				
	Motor operator MOT		●		●				●				
	Mechanical interlock MIF		●		●				●				
	Locking device PLD		●		●				●				
	Plug-in	TDM (LINE/LOAD)		● (3P Only)		● (3P Only)		● (3P Only)		● (3P Only)			
		TDM (LINE only)		● (3P Only)		● (3P Only)		● (3P Only)		● (3P Only)			
		TDF (LINE only)		● (3P Only)		● (3P Only)		● (3P Only)		● (3P Only)			
		TDA (1 row)		● (3P Only)		● (3P Only)		● (3P Only)		● (3P Only)			
		TDA (2 row)		● (2, 3P Only)		● (2, 3P Only)		● (3P Only)		● (2, 3P Only)			
Cage terminal block CTB		●		●				●					
Insulation terminal cover TCF		●		●				●					
Insulation barrier TQQ		●		●				●					
Terminal extensions TBB		-		-				-					
Installation and Dimensions													
Connection/Installation	Front connection		Terminal screw										
	Rear connection		Horizontal/Vertical										
	Plug-in		Switchboard type (Line & Load, Line only), Distribution board type ²⁾										
	DIN rail installation		Possible for using DIN rail adapter				-		Possible for using DIN rail adapter				
Dimensions (mm)		a (2/3/4P)		50/75/100	50/75/100	60/90/120		50/75/100					
		b		130		155		130					
		c		68		68		68					
Weight (kg)	2/3/4P		0.6/0.8/1.0		0.6/0.8/1.0		0.8/1.0/1.3		0.6/0.8/1.0				
Detailed rating and select		122 Page		122 Page				122 Page					
Characteristics curve and outside view		70 - 80 Page		70 - 80 Page				70 - 80 Page					

※ ¹⁾ 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

²⁾ Plug-in: Applicable only 3P.

³⁾ 2P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.



HGM100				HGM125				HGM160				HGM250			
100				125				160				250			
2, 3, 4 ¹⁾				2, 3, 4 ¹⁾				2 ³⁾ , 3, 4 ¹⁾				2 ³⁾ , 3, 4 ¹⁾			
16, 20, 25, 32, 40, 50, 63, 75, 80, 100				16, 20, 25, 32, 40, 50, 63, 75, 80, 100, 125				100, 125, 150, 160				100, 125, 150, 160, 175, 200, 225, 250			
E	S	H	L	E	S	H	L	E	S	H	L	E	S	H	L
2.5	5	7.5	8	5	7.5	8	10	7.5	8	8	10	7.5	8	8	10
7.5	10	14	26	10	14	26	35	14	20	26	35	14	20	26	35
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
35	50	50	50	50	65	85	100	50	65	85	100	50	65	85	100
5	10	15	15	10	15	20	30	10	15	20	30	10	15	20	30
100	100	75	50	100	100	100	100	100	100	100	100	100	100	100	100
30,000				30,000				25,000				25,000			
10,000				10,000				10,000				10,000			
(1.0) x In				(1.0) x In				(1.0) x In				(1.0) x In			
(0.8 - 0.9 - 1.0) x In				(0.8 - 0.9 - 1.0) x In				(0.8 - 0.9 - 1.0) x In				(0.8 - 0.9 - 1.0) x In			
16 - 32 A: 400 A, 40 - 100 A: 10 x In				16 - 32 A: 400 A, 40 - 125 A: 10 x In				10 x In				10 x In			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				-				-			
● (3P Only)				● (3P Only)				-				-			
● (2, 3P Only)				● (3P Only)				-				-			
●				●				●				●			
●				●				●				●			
●				●				●				●			
-				-				●				●			
Terminal screw				Terminal screw				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar			
Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical			
Switchboard type (Line & Load, Line only), Distribution board type ²⁾				Switchboard type (Line & Load, Line only), Distribution board type ²⁾				Switchboard type (Line & Load, Line only) ²⁾				Switchboard type (Line & Load, Line only) ²⁾			
Possible for using DIN rail adapter				-				-				-			
50/75/100				60/90/120				105/105/140				105/105/140			
130				155				165				165			
68				68				68				68			
0.6/0.8/1.0				0.8/1.0/1.3				1.1/1.3/1.7				1.1/1.3/1.7			
122 Page				122 Page				122 Page				122 Page			
70 - 80 Page				70 - 80 Page				70 - 80 Page				70 - 80 Page			

Model Selection Table

MCCB (HGM Type): 400 - 800 AF

Things in Common


Rated Insulation Voltage, U_i	1,000 V
Rated Operational Voltage, U_e	690 V
Impulse Withstand Voltage, U_{imp}	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitability for Isolation	Yes
Utilization Category	A
Pollution Degree	3
Reference Standard	IEC 60947-2

Model		HGM400				HGM630				HGM800			
Frame	(AF)	400				630				800			
Pole	(P)	2, 3, 4 ¹⁾				2, 3, 4 ¹⁾				2, 3, 4 ¹⁾			
Rated current, at 40 °C	(A)	250, 300, 350, 400				500, 630				700, 800			
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order	E	S	H	L	E	S	H	L	S	H	L	
	AC660/690 V	5	8	10	14	5	8	10	14	8	10	14	
	AC480/500 V	18	35	50	65	25	45	50	65	45	50	65	
	AC440/460 V	38	50	70	85	38	50	70	85	50	70	85	
	AC380/415 V	45	65	85	100	45	65	85	100	65	85	100	
Service breaking capacity [Ics = % Icu]	AC220/240 V	50	75	100	125	50	75	100	125	75	100	125	
	DC250 V (2P)	20	25	40	40	20	25	40	40	25	40	40	
Endurance (Durability)	Mechanical	4,000				2,500				2,500			
	Electrical	1,000				500				500			

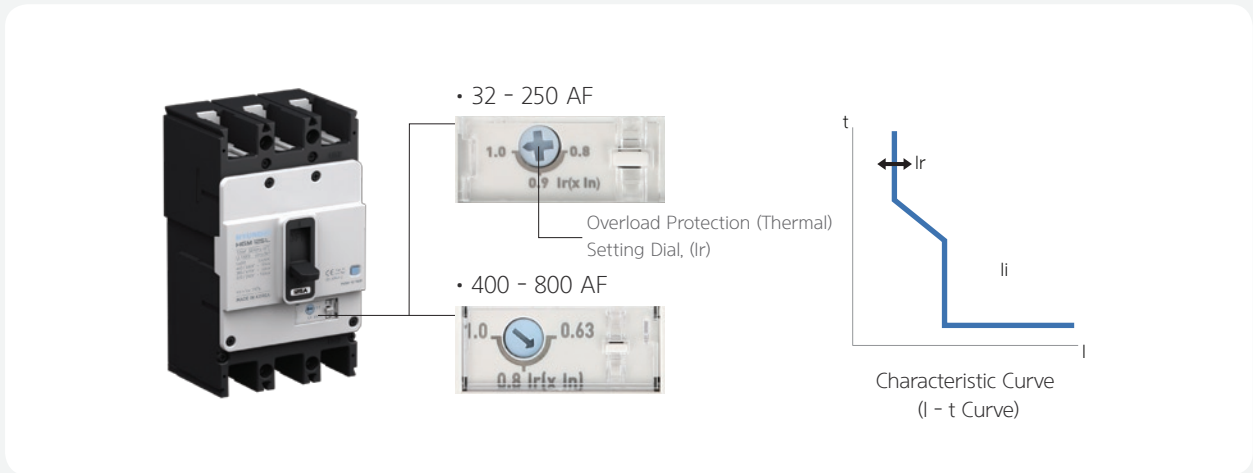
Trip Device			HGM400				HGM630				HGM800			
Thermal magnetic	Long time [LT]	Fixed	(1.0) x I _n				(1.0) x I _n				(1.0) x I _n			
		Adjustable	(0.63 - 0.8 - 1.0) x I _n				(0.63 - 0.8 - 1.0) x I _n				(0.63 - 0.8 - 1.0) x I _n			
		Instantaneous [INST]	10 x I _n				10 x I _n				10 x I _n			

Accessory			HGM400				HGM630				HGM800				
Internal	Auxiliary switch	AUX	●				●				●				
	Alarm switch	ALT	●				●				●				
	Shunt trip	SHT	●				●				●				
	Undervoltage trip	UVT	●				●				●				
External	Rotary handle	Front contact	●				●				●				
		Extended	●				●				●				
	Motor operator	MOT	●				●				●				
	Mechanical interlock	MIF	●				●				●				
	Locking device	PLD	●				●				●				
	Plug-in	TDM (LINE/LOAD)		● (3P Only)				● (3P Only)				● (3P Only)			
		TDM (LINE only)		● (3P Only)				● (3P Only)				● (3P Only)			
		TDF (LINE only)		-				-				-			
		TDA (1 row)		-				-				-			
		TDA (2 row)		-				-				-			
Cage terminal block	CTB	●				●				●					
Insulation terminal cover	TCF	●				●				●					
Insulation barrier	TQQ	●				●				●					
Terminal extensions	TBB	●				●				●					

Installation and Dimensions			HGM400		HGM630		HGM800	
Connection/Installation	Front connection	Terminal screw	Terminal screw		Terminal screw, Terminal busbar			
	Rear connection	Horizontal/Vertical wiring	Horizontal/Vertical wiring		Horizontal/Vertical wiring			
	Plug-in	Switchboard type (Line & Load, Line only) ²⁾	Switchboard type (Line & Load, Line only) ²⁾		Switchboard type (Line & Load, Line only) ²⁾			
Dimensions (mm)		a (2/3/4P)	140/140/184		210/210/280		210/210/280	
		b	257		280		280	
		c	110		110		110	
Weight (kg)	2/3/4P	4/4.5/5.4		8.7/9.5/12.5		8.7/9.5/12.5		
Detailed rating and select		122 Page		122 Page		122 Page		
Characteristics curve and outside view		70 - 80 Page		70 - 80 Page		70 - 80 Page		

※ ¹⁾ 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

²⁾ Plug-in: Applicable only 3P.



Trip Unit Characteristics - Thermal Magnetic

Rated Current (A) [I_n]		16	20	25	32	40	50	63	75	80	100	125
MCCB	HGM30	●	●	●	●							
	HGM50	●	●	●	●	●	●					
	HGM60	●	●	●	●	●	●	●				
	HGM100	●	●	●	●	●	●	●	●	●	●	
	HGM125	●	●	●	●	●	●	●	●	●	●	●
Time Pick-Up Characteristics [I_r]												
Settings (A)	Fixed	16	20	25	32	40	50	63	75	80	100	125
	0.8 x I_n	12.8	16	20	25.6	32	40	50.4	60	64	80	100
	0.9 x I_n	14.4	18	22.5	28.8	36	45	56.7	67.5	72	90	112.5
	1.0 x I_n	16	20	25	32	40	50	63	75	80	100	125
Instantaneous Pick-Up Characteristics [I_i]												
Settings (A)	10 x I_n		400			400	500	630	750	800	1,000	1,250
	Instantaneous pick-up characteristics (A)		320			320	400	504	600	640	800	1,000
	The minimum operating current (A)		480			480	600	756	900	960	1,200	1,500
Neutral Pole Protection												
4P3D		Unprotected										
4P4D		-										

Rated Current (A) [I_n]		100	125	150	160	175	200	225	250
MCCB	HGM160	●	●	●	●				
	HGM250	●	●	●	●	●	●	●	●
Time Pick-Up Characteristics [I_r]									
Settings (A)	Fixed	100	125	150	160	175	200	225	250
	0.8 x I_n	80	100	120	128	140	160	180	200
	0.9 x I_n	90	112.5	135	144	157.5	180	202.5	225
	1.0 x I_n	100	125	150	160	175	200	225	250
Instantaneous Pick-Up Characteristics [I_i]									
Settings (A)	10 x I_n	1,000	1,250	1,500	1,600	1,750	2,000	2,250	2,500
	Instantaneous pick-up characteristics (A)	800	1,000	1,200	1,280	1,400	1,600	1,800	2,000
	The minimum operating current (A)	1,200	1,500	1,800	1,920	2,100	2,400	2,700	3,000
Neutral Pole Protection									
4P3D		Unprotected							
4P4D		-							

Rated Current (A) [I_n]		250	300	350	400	500	630	700	800
MCCB	HGM400	●	●	●	●				
	HGM630					●	●		
	HGM800							●	●
Time Pick-Up Characteristics [I_r]									
Settings (A)	Fixed	250	300	350	400	500	630	700	800
	0.63 x I_n	158	189	221	252	315	397	441	504
	0.8 x I_n	200	240	280	320	400	504	560	640
	1.0 x I_n	250	300	350	400	500	630	700	800
Instantaneous Pick-Up Characteristics [I_i]									
Settings (A)	10 x I_n	2,500	3,000	3,500	4,000	5,000	6,300	7,000	8,000
	Instantaneous pick-up characteristics (A)	2,000	2,400	2,800	3,200	4,000	5,040	5,600	6,400
	The minimum operating current (A)	3,000	3,600	4,200	4,800	6,000	7,560	8,400	9,600
Neutral Pole Protection									
4P3D		Unprotected							
4P4D		-							


Model Selection Table

ZCT MCCB (HGM Type): 32 - 250 AF

Mounted with a ZCT (Zero phase Current Transformer) at MCCB, the reliability of the MCCB's ground fault protection is improved by linking with an external ELR.

Things in Common

Rated Insulation Voltage, U_i	1,000 V	Suitability for Isolation	Yes
Rated Operational Voltage, U_e	690 V	Utilization Category	A
Impulse Withstand Voltage, U_{imp}	8 kV	Polution Degree	3
Protective Function	Overload, short-circuit and instantaneous protection	Reference Standard	IEC 60947-2

Model		HGM30		HGM50				HGM60				
Frame	(AF)	32		50				63				
Pole	(P)	2 ³⁾ , 3, 4 ¹⁾		2 ³⁾ , 3, 4 ¹⁾				2 ³⁾ , 3, 4 ¹⁾				
Rated current, at 40 °C	(A)	16, 20, 25, 32		16, 20, 25, 32, 40, 50				16, 20, 25, 32, 40, 50, 63				
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order	E	S	E	S	H	L	E	S	H	L	
	AC660/690 V	2.5	5	2.5	5	8	10	2.5	5	7.5	8	
	AC480/500 V	7.5	10	7.5	10	26	35	7.5	10	14	26	
	AC440/460 V	16	20	16	20	38	55	16	20	26	30	
	AC380/415 V	16	20	16	20	38	55	16	20	26	30	
	AC220/240 V	35	50	35	50	85	100	35	50	50	50	
Service breaking capacity [Ics = % Icu]		100	100	100	100	100	100	100	100	75	50	
Endurance (Durability)	Mechanical	30,000		30,000				30,000				
	Electrical	10,000		10,000				10,000				
ZCT Output characteristic		200 mA/100 mV		200 mA/100 mV				200 mA/100 mV				
Trip Device												
Thermal magnetic	Long time [LT]	(1.0) x In		(1.0) x In				(1.0) x In				
	Instantaneous [INST]	400 A		16 - 32 A: 400 A, 40 - 50 A: 10 x In				16 - 32 A: 400 A, 40 - 63 A: 10 x In				
Accessory												
Internal	Auxiliary switch	AUX	●	●				●				
	Alarm switch	ALT	●	●				●				
	Shunt trip	SHT	●	●				●				
	Undervoltage trip	UVT	●	●				●				
External	Rotary handle	Front contact	TFG	●	●				●			
		Extended	TFH	●	●				●			
	Motor operator	MOT	●	●				●				
	Mechanical interlock	MIF	●	●				●				
	Locking device	PLD	●	●				●				
	Plug-in	TDM (LINE/LOAD)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)					
		TDM (LINE only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)					
		TDF (LINE only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)					
		TDA (1 row)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)	● (3P Only)					
		TDA (2 row)	● (2, 3P Only)	● (2, 3P Only)	● (3P Only)	● (3P Only)	● (2, 3P Only)					
	Cage terminal block	CTB	●	●				●				
	Insulation terminal cover	TCF	●	●				●				
	Insulation barrier	TQQ	●	●				●				
Terminal extensions	TBB	-	-				-					
Installation and Dimensions												
Connection/Installation	Front connection	Terminal screw										
	Rear connection	Horizontal/Vertical										
	Plug-in	Switchboard type (Line & Load, Line only), Distribution board type ²⁾										
	DIN rail installation	Possible for using DIN rail adapter			-			Possible for using DIN rail adapter				
Dimensions (mm)		a (2/3/4P)	75/75/100	75/75/100	90/90/120	75/75/100						
		b	130	130	155	130						
		c	68	68	68	68						
		e	2/3/4P	0.7/0.8/1.0	0.7/0.8/1.0	0.9/1.0/1.3	0.7/0.8/1.0					
Detailed rating and select		122 Page		122 Page				122 Page				
Characteristics curve and outside view		70 - 80 Page		70 - 80 Page				70 - 80 Page				

※ 1) 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

2) Plug-in: Applicable only 3P.

3) 2P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.



HGM100				HGM125				HGM160				HGM250			
100				125				160				250			
2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾			
16, 20, 25, 32, 40, 50, 63, 75, 80, 100				16, 20, 25, 32, 40, 50, 63, 75, 80, 100, 125				100, 125, 150, 160				100, 125, 150, 160, 175, 200, 225, 250			
E	S	H	L	E	S	H	L	E	S	H	L	E	S	H	L
2.5	5	7.5	8	5	7.5	8	10	7.5	8	8	10	7.5	8	8	10
7.5	10	14	26	10	14	26	35	14	20	26	35	14	20	26	35
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
35	50	50	50	50	65	85	100	50	65	85	100	50	65	85	100
100	100	75	50	100	100	100	100	100	100	100	100	100	100	100	100
30,000				30,000				25,000				25,000			
10,000				10,000				10,000				10,000			
200 mA/100 mV				200 mA/100 mV				200 mA/100 mV				200 mA/100 mV			
(1.0) x In				(1.0) x In				(1.0) x In				(1.0) x In			
16 - 32 A: 400 A, 40 - 100 A: 10 x In				16 - 32 A: 400 A, 40 - 125 A: 10 x In				10 x In				10 x In			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				-				-			
● (3P Only)				● (3P Only)				-				-			
● (2, 3P Only)				● (3P Only)				-				-			
●				●				●				●			
●				●				●				●			
●				●				●				●			
-				-				●				●			
Terminal screw				Terminal screw				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar			
Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical			
Switchboard type (Line & Load, Line only), Distribution board type ²⁾				Switchboard type (Line & Load, Line only), Distribution board type ²⁾				Switchboard type (Line & Load, Line only) ²⁾				Switchboard type (Line & Load, Line only) ²⁾			
Possible for using DIN rail adapter				-				-				-			
75/75/100				90/90/120				105/105/140				105/105/140			
130				155				165				165			
68				68				68				68			
0.7/0.8/1.0				0.9/1.0/1.3				1.1/1.3/1.7				1.1/1.3/1.7			
122 Page				122 Page				122 Page				122 Page			
70 - 80 Page				70 - 80 Page				70 - 80 Page				70 - 80 Page			

Model Selection Table

ZCT MCCB (HGM Type): 400 - 800 AF

Things in Common

Rated Insulation Voltage, U_i	1,000 V
Rated Operational Voltage, U_e	690 V
Impulse Withstand Voltage, U_{imp}	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitability for Isolation	Yes
Utilization Category	A
Pollution Degree	3
Reference Standard	IEC 60947-2

Model		HGM400				HGM630				HGM800		
Frame	(AF)	400				630				800		
Pole	(P)	2 ³⁾ , 3, 4 ¹⁾				2 ³⁾ , 3				2 ³⁾ , 3		
Rated current, at 40 °C	(A)	250, 300, 350, 400				500, 630				700, 800		
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order	E	S	H	L	E	S	H	L	S	H	L
	AC660/690 V	5	8	10	14	5	8	10	14	8	10	14
	AC480/500 V	18	35	50	65	25	45	50	65	45	50	65
	AC440/460 V	38	50	70	85	38	50	70	85	50	70	85
	AC380/415 V	45	65	85	100	45	65	85	100	65	85	100
	AC220/240 V	50	75	100	125	50	75	100	125	75	100	125
Service breaking capacity [Ics = % Icu]		100	100	100	100	100	100	100	100	100	100	100
Endurance (Durability)	Mechanical	4,000				2,500				2,500		
	Electrical	1,000				500				500		
ZCT Output characteristic		200 mA/100 mV				200 mA/100 mV				200 mA/100 mV		


Trip Device

Thermal magnetic	Long time [LT]	(1.0) x I _n	(1.0) x I _n	(1.0) x I _n
	Instantaneous [INST]	10 x I _n	10 x I _n	10 x I _n

Accessory

Internal	Auxiliary switch	AUX	●	●	●	
	Alarm switch	ALT	●	●	●	
	Shunt trip	SHT	●	●	●	
	Undervoltage trip	UVT	●	●	●	
External	Rotary handle	Front contact	TFG	●	●	●
		Extended	TFH	●	●	●
	Motor operator	MOT	●	●	●	
	Mechanical interlock	MIF	●	●	●	
	Locking device	PLD	●	●	●	
	Plug-in	TDM (LINE/LOAD)	● (3P Only)	● (3P Only)	● (3P Only)	
		TDM (LINE only)	● (3P Only)	● (3P Only)	● (3P Only)	
		TDF (LINE only)	-	-	-	
		TDA (1 row)	-	-	-	
		TDA (2 row)	-	-	-	
	Cage terminal block	CTB	●	●	●	
	Insulation terminal cover	TCF	●	●	●	
	Insulation barrier	TQQ	●	●	●	
Terminal extensions	TBB	●	●	●		

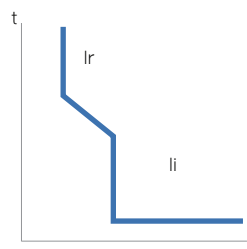
Installation and Dimensions

Connection/Installation	Front connection	Terminal screw	Terminal screw, Terminal busbar		
	Rear connection	Horizontal/Vertical wiring	Horizontal/Vertical wiring		
	Plug-in	Switchboard type (Line & Load, Line only) ²⁾	Switchboard type (Line & Load, Line only) ²⁾		
Dimensions (mm)		a (2/3/4P)	140/140/184	210/210	210/210
		b	257	280	280
		c	110	110	110
Weight (kg)	2/3/4P	4/4.5/5.4	8.7/9.5	8.7/9.5	
Detailed rating and select		122 Page	122 Page	122 Page	
Characteristics curve and outside view		70 - 80 Page	70 - 80 Page	70 - 80 Page	

※ 1) 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

2) Plug-in: Applicable only 3P.

3) 2P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.



Characteristic Curve
(I - t Curve)

Trip Unit Characteristics - Thermal Magnetic

Rated Current (A) [In]		16	20	25	32	40	50	63	75	80	100	125
MCCB	HGM30	●	●	●	●							
	HGM50	●	●	●	●	●	●					
	HGM60	●	●	●	●	●	●	●				
	HGM100	●	●	●	●	●	●	●	●	●	●	
	HGM125	●	●	●	●	●	●	●	●	●	●	●

Time Pick-Up Characteristics [Ir]

Settings (A)	1.0 x In	16	20	25	32	40	50	63	75	80	100	125
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Instantaneous Pick-Up Characteristics [Ii]

Settings (A)	10 x In	400		400		400	500	630	750	800	1,000	1,250
	Instantaneous pick-up characteristics (A)	320		320		320	400	504	600	640	800	1,000
	The minimum operating current (A)	480		480		480	600	756	900	960	1,200	1,500

Neutral Pole Protection

4P3D	Unprotected
4P4D	-

Rated Current (A) [In]		100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
MCCB	HGM160	●	●	●	●											
	HGM250	●	●	●	●	●	●	●	●							
	HGM400								●	●	●	●				
	HGM630												●	●		
	HGM800														●	●

Time Pick-Up Characteristics [Ir]

Settings (A)	1.0 x In	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
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Instantaneous Pick-Up Characteristics [Ii]

Settings (A)	10 x In	1,000	1,250	1,500	1,600	1,750	2,000	2,250	2,500	3,000	3,500	4,000	5,000	6,300	7,000	8,000
	Instantaneous pick-up characteristics (A)	800	1,000	1,200	1,280	1,400	1,600	1,800	2,000	2,400	2,800	3,200	4,000	5,040	5,600	6,400
	The minimum operating current (A)	1,200	1,500	1,800	1,920	2,100	2,400	2,700	3,000	3,600	4,200	4,800	6,000	7,560	8,400	9,600

Neutral Pole Protection

4P3D	Unprotected
4P4D	-

Model Selection Table

ELCB (HGE Type): 32 - 250 AF

Things in Common

Rated Operational Voltage, Ue	220/460 V	Suitability for Isolation	Yes
Impulse Withstand Voltage, Uimp	6 kV	Utilization Category	A
Protective Function	Overload, short-circuit and instantaneous protection	Polution Degree	3
		Reference Standard	IEC 60947-2

Model		HGE30	HGE50	HGE60	
Frame	(AF)	32	50	63	
Pole	(P)	2 ³⁾ , 3, 4 ¹⁾	2 ³⁾ , 3, 4 ¹⁾	2 ³⁾ , 3, 4 ¹⁾	
Rated current, at 40 °C	(A)	16, 20, 25, 32	16, 20, 25, 32, 40, 50	16, 20, 25, 32, 40, 50, 63	
High speed type	Rated residual current (mA)	30	30	30	
	Maximum residual current off-time (s)	0.1	0.1	0.1	
Time delay type	Rated residual current (mA)	100 - 300 - 500 - 1,000 Adjustable	100 - 300 - 500 - 1,000 Adjustable	100 - 300 - 500 - 1,000 Adjustable	
	Maximum residual current off-time (s)	0.1 - 0.4 - 1.0 - 2.0	0.1 - 0.4 - 1.0 - 2.0	0.1 - 0.4 - 1.0 - 2.0	
	Inertial non-operating time (ms)	0 - 200 - 500 - 1,000 Adjustable	0 - 200 - 500 - 1,000 Adjustable	0 - 200 - 500 - 1,000 Adjustable	
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order	E S	E S H L	E S H L	
	AC440/460 V	16 20	16 20 38 55	16 20 26 30	
	AC380/415 V	16 20	16 20 38 55	16 20 26 30	
	AC220/240 V	35 50	35 50 85 100	35 50 50 50	
Service breaking capacity [Ics = % Icu]	100	100	100 100 100 100	100 100 75 50	
Endurance (Durability)	Inverse time delay [LT]	30,000	30,000	30,000	
	Short time pick-up [LT]	10,000	10,000	10,000	
Trip Device					
Thermal magnetic	Long time [LT]	(1.0) x In	(1.0) x In	(1.0) x In	
	Instantaneous [INST]	400 A	16 - 32 A: 400 A, 40-50 A: 10 x In	16 - 32 A: 400 A, 40 - 63 A: 10 x In	
Accessory					
Internal	Auxiliary switch AUX	●	●	●	
	Alarm switch ALT	●	●	●	
	Shunt trip SHT	-	-	-	
	Undervoltage trip UVT	-	-	-	
External	Rotary handle	Front contact TFG	●	●	●
		Extended TFH	●	●	●
	Motor operator MOT	●	●	●	
	Mechanical interlock MIF	●	●	●	
	Locking device PLD	●	●	●	
	Plug-in	TDM (LINE/LOAD)	● (3P Only)	● (3P Only) ● (3P Only)	● (3P Only)
		TDM (LINE only)	● (3P Only)	● (3P Only) ● (3P Only)	● (3P Only)
		TDF (LINE only)	● (3P Only)	● (3P Only) ● (3P Only)	● (3P Only)
		TDA (1 row)	● (3P Only)	● (3P Only) ● (3P Only)	● (3P Only)
		TDA (2 row)	● (2, 3P Only)	● (2, 3P Only) ● (3P Only)	● (2, 3P Only)
	Cage terminal block CTB	●	●	●	
	Insulation terminal cover TCF	●	●	●	
	Insulation barrier TQQ	●	●	●	
Terminal extensions TBB	-	-	-		

Installation And Dimensions

Connection/Installation	Front connection	Terminal screw			
	Rear connection	Horizontal/Vertical			
Plug-in	Switchboard type (Line & Load, Line only), Distribution board type ²⁾				
	DIN rail Installation	Possible for using DIN rail adapter	-	Possible for using DIN rail adapter	
Dimensions (mm)	a (2/3/4P)	75/75/100	75/75/100	90/90/120	75/75/100
	b	130	130	155	130
	c	68	68	68	68
Weight (kg)	2/3/4P	0.8/0.9/1.3	0.8/0.9/1.3	1.0/1.1/1.4	0.8/0.9/1.3
Detailed rating and select		122 Page	122 Page		122 Page
Characteristics curve and outside view		70 - 85 Page	70 - 85 Page		70 - 85 Page

※ 1) 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

2) Plug-in: Applicable only 3P.

3) 2P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.



HGE100				HGE125				HGE160				HGE250			
100				125				160				250			
2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾				2 ²⁾ , 3, 4 ¹⁾			
16, 20, 25, 32, 40, 50, 63, 75, 80, 100				16, 20, 25, 32, 40, 50, 63, 75, 80, 100, 125				100, 125, 150, 160				100, 125, 150, 160, 175, 200, 225, 250			
30				30				30				30			
0.1				0.1				0.1				0.1			
100 - 300 - 500 - 1,000 Adjustable				100 - 300 - 500 - 1,000 Adjustable				100 - 300 - 500 - 1,000 Adjustable				100 - 300 - 500 - 1,000 Adjustable			
0.1 - 0.4 - 1.0 - 2.0				0.1 - 0.4 - 1.0 - 2.0				0.1 - 0.4 - 1.0 - 2.0				0.1 - 0.4 - 1.0 - 2.0			
0 - 200 - 500 - 1,000 Adjustable				0 - 200 - 500 - 1,000 Adjustable				0 - 200 - 500 - 1,000 Adjustable				0 - 200 - 500 - 1,000 Adjustable			
E	S	H	L	E	S	H	L	E	S	H	L	E	S	H	L
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55
30	50	50	50	50	65	85	100	50	65	85	100	50	65	85	100
100	100	75	50	100	100	100	100	100	100	100	100	100	100	100	100
30,000				30,000				25,000				25,000			
10,000				10,000				10,000				10,000			
(1.0) x In				(1.0) x In				(1.0) x In				(1.0) x In			
16 - 32 A: 400 A, 40 - 100 A: 10 x In				16 - 32 A: 400 A, 40 - 125 A: 10 x In				10 x In				10 x In			
●				●				●				●			
●				●				●				●			
-				-				-				-			
-				-				-				-			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
●				●				●				●			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				● (3P Only)				● (3P Only)			
● (3P Only)				● (3P Only)				-				-			
● (3P Only)				● (3P Only)				-				-			
● (2, 3P Only)				● (3P Only)				-				-			
●				●				●				●			
●				●				●				●			
●				●				●				●			
-				-				●				●			
Terminal screw								Terminal screw							
Horizontal/Vertical								Horizontal/Vertical							
Switchboard type (Line & Load, Line only), Distribution board type ²⁾								Switchboard type (Line & Load, Line only) ²⁾							
Possible for using DIN rail adapter								-							
75/75/100				90/90/120				105/105/140				105/105/140			
130				155				165				165			
68				68				68				68			
0.8/0.9/1.3				1.0/1.1/1.4				1.3/1.5/1.9				1.3/1.5/1.9			
122 Page				122 Page				122 Page				122 Page			
70 - 85 Page				70 - 85 Page				70 - 85 Page				70 - 85 Page			

Model Selection Table

ELCB (HGE Type): 400 - 800 AF

Things in Common

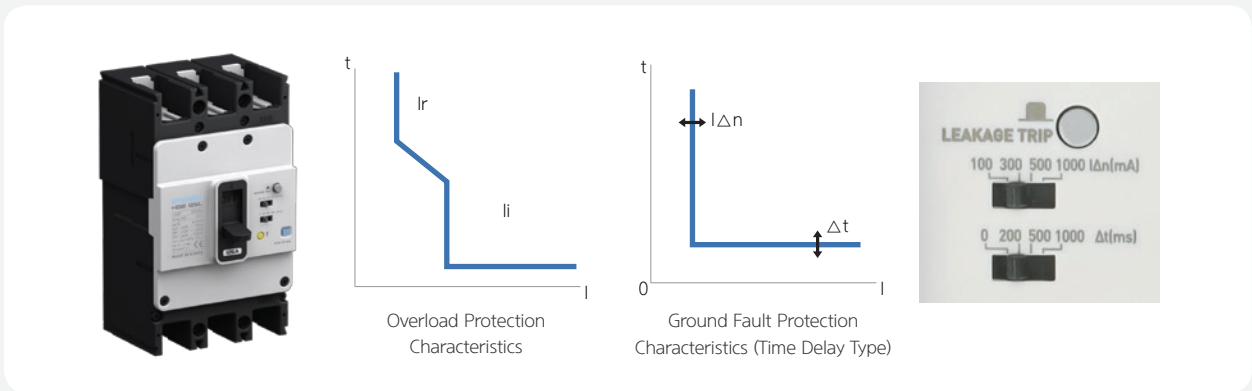
Rated Operational Voltage, Ue	220/460 V	Suitability for Isolation	Yes
Impulse Withstand Voltage, Uimp	6 kV	Utilization Category	A
Protective Function	Overload, short-circuit and instantaneous protection	Polution Degree	3
		Reference Standard	IEC 60947-2

Model		HGE400				HGE630				HGE800				
Frame	(AF)	400				630				800				
Pole	(P)	2 ³⁾ , 3, 4 ¹⁾				2 ³⁾ , 3				2 ³⁾ , 3				
Rated current, at 40 °C	(A)	250, 300, 350, 400				500, 630				700, 800				
High speed type	Rated residual current (mA)	30				30				30				
	Maximum residual current off-time (s)	0.1				0.1				0.1				
Time delay type	Rated residual current (mA)	100 - 300 - 500 - 1,000 Adjustable				100 - 300 - 500 - 1,000 Adjustable				100 - 300 - 500 - 1,000 Adjustable				
	Maximum residual current off-time (s)	0.1 - 0.4 - 1.0 - 2.0				0.1 - 0.4 - 1.0 - 2.0				0.1 - 0.4 - 1.0 - 2.0				
	Inertial non-operating time (ms)	0 - 200 - 500 - 1,000 Adjustable				0 - 200 - 500 - 1,000 Adjustable				0 - 200 - 500 - 1,000 Adjustable				
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order	E	S	H	L	E	S	H	L	S	H	L		
	AC440/460 V	38	50	70	85	38	50	70	85	50	70	85		
	AC380/415 V	45	65	85	100	45	65	85	100	65	85	100		
	AC220/240 V	50	75	100	125	50	75	100	125	75	100	125		
Service breaking capacity [Ics = % Icu]		100	100	100	100	100	100	100	100	100	100	100		
Endurance (Durability)	Inverse time delay [LT]	4,000				2,500				2,500				
	Short time pick-up [LT]	1,000				500				500				
Trip Device														
Thermal magnetic	Long time [LT]	(1.0) x In				(1.0) x In				(1.0) x In				
	Instantaneous [INST]	10 x In				10 x In				10 x In				
Accessory														
Internal	Auxiliary switch	AUX	●				●				●			
	Alarm switch	ALT	●				●				●			
	Shunt trip	SHT	●				●				●			
	Undervoltage trip	UVT	●				●				●			
External	Rotary handle	Front contact	TFG	●				●				●		
		Extended	TFH	●				●				●		
	Motor operator	MOT	●				●				●			
	Mechanical interlock	MIF	●				●				●			
	Locking device	PLD	●				●				●			
	Plug-in	TDM (LINE/LOAD)	● (3P Only)				● (3P Only)				● (3P Only)			
		TDM (LINE only)	● (3P Only)				● (3P Only)				● (3P Only)			
		TDF (LINE only)	-				-				-			
		TDA (1 row)	-				-				-			
		TDA (2 row)	-				-				-			
	Cage terminal block	CTB	●				●				●			
	Insulation terminal cover	TCF	●				●				●			
Insulation barrier	TQQ	●				●				●				
Terminal extensions	TBB	●				●				●				
Installation and Dimensions														
Connection/Installation	Front connection	Terminal screw				Terminal screw, Terminal busbar								
	Rear connection	Horizontal/Vertical/Front wiring				Horizontal/Vertical/Front wiring								
	Plug-in	Switchboard type (Line & Load, Line only) ²⁾				Switchboard type (Line & Load, Line only) ²⁾								
Dimensions (mm)	a (2/3/4P)	140/140/184				210/210				210/210				
	b	257				280				280				
	c	110				110				110				
	Weight (kg)	3/4P	4/4.5/5.4				8.7/9.5				8.7/9.5			
Detailed rating and select		122 Page				122 Page				122 Page				
Characteristics curve and outside view		70 - 85 Page				70 - 85 Page				70 - 85 Page				

※ 1) 4 pole arrangement: Basic specification is R-S-T-N (N-R-S-T is optional).

2) Plug-in: Applicable only 3P.

3) 2P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.



Trip Unit Characteristics - Thermal Magnetic

Rated Current (A) [In]		16	20	25	32	40	50	63	75	80	100	125
ELCB	HGE30	●	●	●	●							
	HGE50	●	●	●	●	●	●					
	HGE60	●	●	●	●	●	●	●				
	HGE100	●	●	●	●	●	●	●	●	●	●	
	HGE125	●	●	●	●	●	●	●	●	●	●	●

Time Pick-Up Characteristics [I_r]

Settings (A)	1.0 x In	16	20	25	32	40	50	63	75	80	100	125
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Instantaneous Pick-Up Characteristics [I_i]

Settings (A)	10 x In	400	400	400	500	630	750	800	1,000	1,250
I _{Max.} non-operating current (A)		320	320	320	400	504	600	640	800	1,000
	Min. operating current (A)	480	480	480	600	756	900	960	1,200	1,500

Rated Residual Current, I_{Δn}

High speed type	Fixed: 30 mA
Time delay type	Adjustable: 100 - 300 - 500 - 1,000 mA

Inertial Non-Operating, Δt

High speed type	Fixed: 0 ms
Time delay type	Adjustable: 0 - 200 - 500 - 1,000 ms

Neutral Pole Protection

4P3D	Unprotected
4P4D	-

Rated Current (A) [In]		100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
ELCB	HGE160	●	●	●	●											
	HGE250	●	●	●	●	●	●	●								
	HGE400								●	●	●	●				
	HGE630												●	●		
	HGE800														●	●

Time Pick-Up Characteristics [I_r]

Settings (A)	1.0 x In	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
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Instantaneous Pick-Up Characteristics [I_i]

Settings (A)	10 x In	1,000	1,250	1,500	1,600	1,750	2,000	2,250	2,500	3,000	3,500	4,000	5,000	6,300	7,000	8,000
I _{Max.} non-operating current (A)		800	1,000	1,200	1,280	1,400	1,600	1,800	2,000	2,400	2,800	3,200	4,000	5,040	5,600	6,400
	Min. operating current (A)	1,200	1,500	1,800	1,920	2,100	2,400	2,700	3,000	3,600	4,200	4,800	6,000	7,560	8,400	9,600

Rated Residual Current, I_{Δn}

High speed type	Fixed: 30 mA
Time delay type	Adjustable: 100 - 300 - 500 - 1,000 mA

Inertial Non-Operating, Δt

High speed type	Fixed: 0 ms
Time delay type	Adjustable: 0 - 200 - 500 - 1,000 ms

Neutral Pole Protection

4P3D	Unprotected
4P4D	-