HG-SERIES

Molded Case Circuit Breakers & Earth Leakage Circuit Breakers





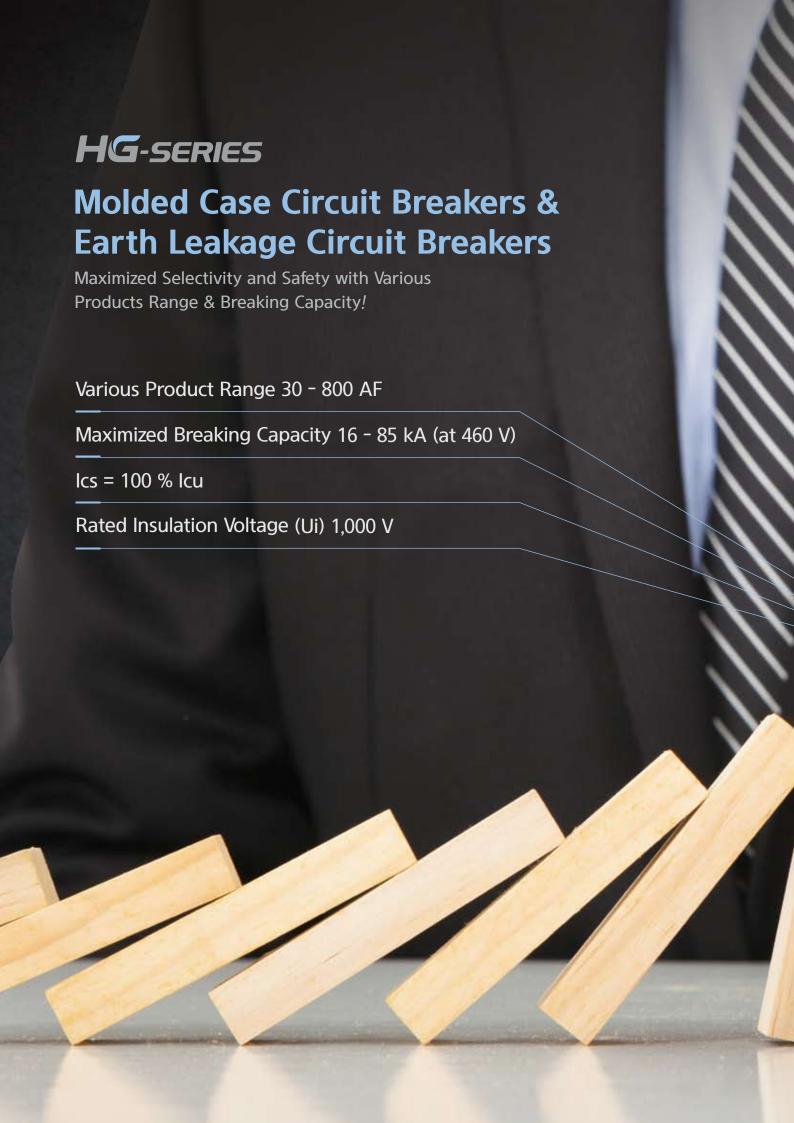
MOLDED CASE CIRCUIT BREAKERS & EARTH LEAKAGE CIRCUIT BREAKERS

CONTENTS

¹⁹ Products Selection Table / 33 Accessories / 53 Technical Information /



Globalization of Technology





HG-SERIES

Adjustable Ratings Design

Optimized Protection Based on the Load Conditions!

Adjustable Rated Currents (Molded Case Circuit Breakers)

30 - 250 AF (0.8 - 0.9 - 1 X In), 400 - 800 AF (0.63 - 0.8 - 1 X In)

Adjustable Rated Residual Currents (Earth Leakage Circuit Breakers)

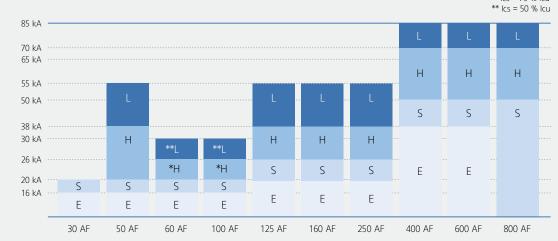
100 - 300 - 500 - 1.000 (mA)

Adjustable Residual Current Off-Time (Earth Leakage Circuit Breakers)

0 - 200 - 500 - 1.000 (ms)

Reinforcement of Protective Coordination

Rated Short-Circuit Current by AF, (lcs = 100 % lcu, at 440/460 V) * lcs = 75 % lcu ** lcs = 75 % lcu







Advanced Breaking Performance and Various Selectivity

- Various Product Range: 30 800 AF, 10 Frames
- Standardized Size of Accessories, Compatible with MCCB and ELCB
- Standardized Height of Products by Frame: 30 250 AF (68 mm), 400 800 AF (110 mm)

30, 50, 60, 100 AF 50, 125 AF 160, 250 AF

65









MCCB

ELCB





HGM Type Molded Case Circuit Breakers

Ui: 1,000 V Uimp: 8 kV lcs = 100 % lcu

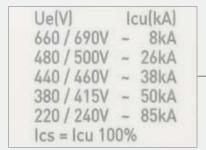
Maximized Insulation Performance

- Rated insulation voltage, Ui: 1,000 V
- · Rated impulse withstand voltage, Uimp: 8 kV

125AF 50/60Hz 40°C Ui 1000V Uimp 8kV

High Breaking Capacity

- 16 30 kA at 460 V (100 AF)
- 16 55 kA at 460 V (125 250 AF)
- 38 85 kA at 460 V (400 800 AF)



Cable Insulation Performance Suitability

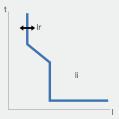
In case of continuing abnormal conditions such as welding of main contact after trip, handle is not available to move 'OFF position' in accordance with IEC 60947-2 cable insulation performance. Also, it is possible to maintenance free by checking a contact condition by the handle.



Adjustable Rated Current

As applying to adjustable rated current design, it is possible to protect circuit optimally according to the load factor. Adjustable range of rated currents. (Molded case circuit breakers)

- 30 250 AF: 80 % 90 % 100 % of rated current
- 400 800 AF: 63 % 80 % 100 % of rated current

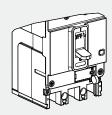


Characteristic Curve
(I - t Curve)

1.0 0.8 0.9 lr(x in)

Dial Sealing Device (Option)

Prevent removal of the protection cover from body and any operating of current setting value.







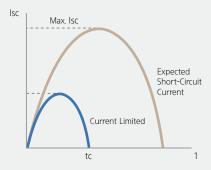
HGM Type Molded Case Circuit Breakers

High Performance & Coordination

Service Breaking Capacity (Ics = 100 % x Icu)

Service breaking capacity, '100 % X lcu' is realized by enlarging breaking capacity with internal limit current device.

- 30 800 AF
- 16 55 kA @ 460 Vac (HGM100 AF H Type lcs = 75 % lcu, HGM100 AF L Type lcs = 50 % lcu)



Current Limiting Characteristics

Available to Various Low Voltage System Protections

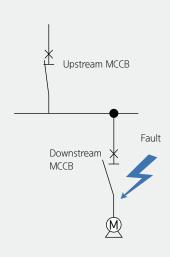
It is available to adapt various low voltage system protections such as 'Discrimination' and 'Cascading' with limit current characteristic and high breaking capacity.

Discrimination

It is a low voltage system protection to selectively separate fault point from system to minimize influence of fault. In this protection type, only circuit breaker installed at a fault point is operated whilethe other feeder can be used continuously.

Cascading

In this protection type, upstream circuit breakers can be tripped earlier than downstream circuit breaker for back up protection. So, it is applied to the smaller breaking capacity than the calculated value at down stream circuit.





Various Low Voltage System Protections









HG-SERIES

HGM Type Earth Leakage Circuit Breakers

Ics = 100 % Icu Uimp = 6 kV

- Standardized Size of Accessories, Compatible with MCCB
- Adjustable Residual Current and Current Cut-Off Time
- Application of 3 Phase Power Supply System, Enabling Normal Operation Under One Phase Loss Fault

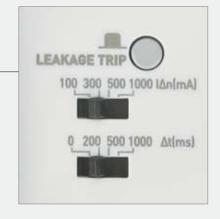


Dimensions and Specifications Compatibility with MCCB

- Service breaking capacity, lcs = 100 % lcu
- Rated impulse withstand voltage, Uimp: 6 kV

Residual Current Protection Characteristics

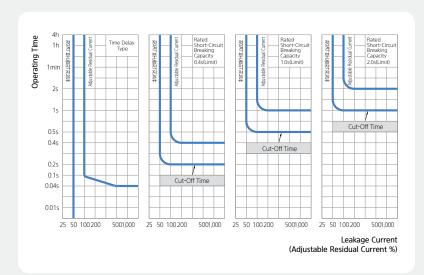
- Prevent damage from reverse connection: It is possible to prevent circuit damage under reverse connection condition.
- Prevent unnecessary malfunction on temporary leakage condition.
- · Adjustable residual current and cut-off time.
- 3 Phase power supply system: Enables normal operation under one phase loss condition by adapting 3 phase power supply system.
- Protecting an inverter load safely from ground fault by adapting IC filter.



Adjustable Residual Current and Cut-Off Time

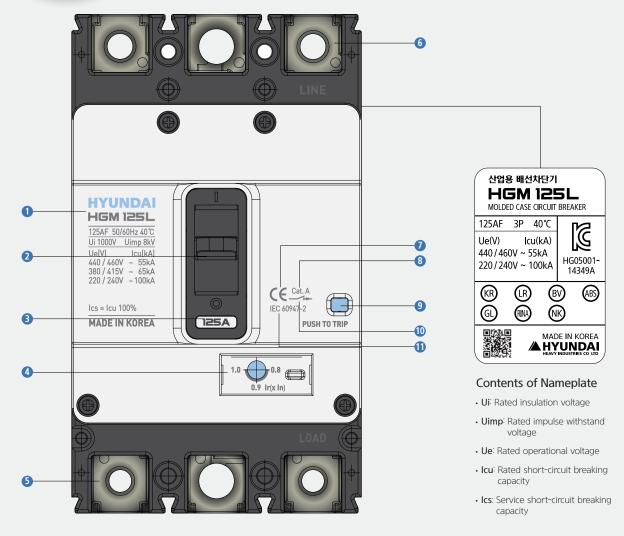
Part	A	Adjustable	e Residu	al Curren	Cut-Off Time						
Part	30 mA	100 mA	300 mA	500 mA	1,000 mA	0 ms	200 ms	500 ms	1,000 ms		
Previous ELCB	Fixed		3 steps		-	Fixed					
HG-ELCB	Fixed		4 st	eps			4 st	eps			

- · Adjustable residual current and cut-off time in 4 steps.
- Coordination protection between upstream and downstream circuit breakers by adjusting residual current and cut-off line.



External Structure and Contents of Nameplate



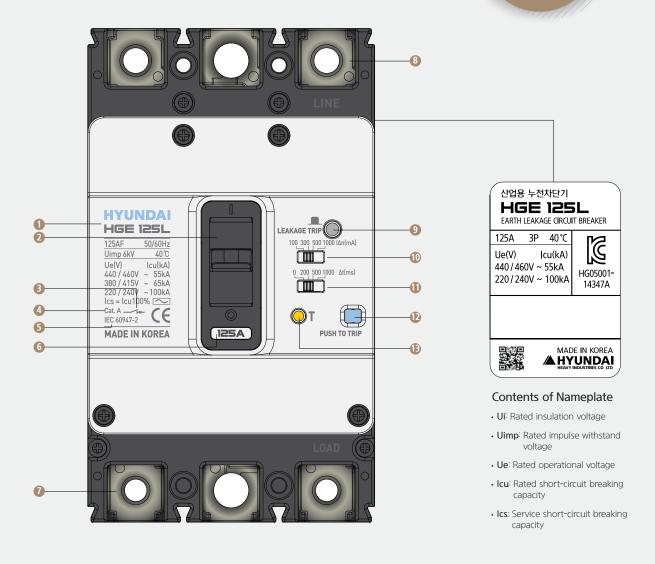


Molded Case Circuit Breakers (MCCB)

- 1 Model Name
- 2 Operating Handle
- 3 Rated Current
- 4 Adjusting Knob

- 5 Load Side Terminal
- 6 Line Side Terminal
- CE Marking
- 8 Utilization Category
- Trip Button
- 10 Cable Insulation Performance Suitability
- Standards

Earth Leakage Circuit **Breakers**



Earth Leakage Circuit Breakers (ELCB)

- 1 Model Name
- 2 Operating Handle
- 3 Cable Insulation Performance Suitability
- 4 Utilization Category
- **5** CE Marking
- 6 Rated Current
- Load Side Terminal
- 8 Line Side Terminal
- Leakage Trip Indicator
- Rated Residual Current Setting Switch
- 1 Rated Residual Current Cut-Off Time Setting Switch
- Trip Test Button
- (B) Leakage Trip Test Button

Standards and Certifications

Standards

Standards

KS C 8321

Molded case circuit breakers for industrial uses

KS C 4613

Circuit breaker incorporating residual current protection for industrial Uses (CBR)

International Standards

IEC 60947-1

Low voltage switchgear and controlgear, part 1 (General rules)

IEC 60947-2

Low voltage switchgear and controlgear, part 2 (Circuit breakers)



Approvals and Certifications

HG-Series MCCB has acquired the certification from the TEST agency registered in STL.

- CB certification (DEKRA)
- · Safety certification scheme for electrical applications
- KS (Korean industrial standards)
- · Marine approvals (8's classifications)

























Vibration/Shock Withstand Test Certification Acquisition

HG Series MCCB has acquired the vibration/shock withstand test certification in accordance with IEC 60068-2-6 standard which is the required level of IACS, international vessel inspection institute.

- Vibration resistant: 2 13.2 Hz \pm 1 mm
- Shock resistant: 13.2 100 Hz \pm 0.7 g



Testing inspections certification DEKRA provides certification of management systems as well as technical support, testing and certification of a wide range of products throughout the life cycle.



Products Selection Table

MCCB (HGM Type): 30 - 250 AF

Rated Insulation Voltage, Ui	1,000 V
Rated Operational Voltage, Ue	690 V
Impulse Withstand Voltage, Uimp	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model		HGM30 HGM50 HGM60							V160					
Frame			(AF)	3	0		5	0			6	3		
Pole			(P)	2, 3,	4 1)		2, 3,	4 ¹⁾			2, 3, 4 ¹⁾			
Rated current	, at 40 °C		(A)		25, 32	32 16, 20, 25, 32, 40, 50						2, 40, 50,	 63	
Rated	Recognition	on code for ord	ler	Е	S	E S H L			Е	S	Н	L		
short-circuit	AC660/690) V		2.5	5	2.5	5	8	10	2.5	5	7.5	8	
breaking	AC480/500	O V		7.5	10	7.5	10	26	35	7.5	10	14	26	
capacity [lcu]	AC440/460) V		16	20	16	20	38	55	16	20	26	30	
(kA rms)	AC380/415	5 V		16	20	16	20	38	55	16	20	26	30	
	AC220/240) V		35	50	35	50	85	100	35	50	50	50	
	DC250 V (2P)		5	10	10	15	20	30	10	15	15	15	
Service breaki	ing capacity	y [lcs = % lcu]		100	100	100	100	100	100	100	100	75	50	
Endurance	Mechanica	al		30,0	000		30,	000			30,0	000		
(Durability)	Electrical			10,0	000		10,	000			10,0	000		
Trip Device														
Thermal	Long time	Fixed		(1.0)	x In		(1.0)	x In			(1.0)	x In		
	[LT]	Adjustable		(0.8 - 0.9	- 1.0) x In		(0.8 - 0.9	- 1.0) x Ir			(0.8 - 0.9	- 1.0) x In		
magnetic	Instantane	eous [INST]		400	A C	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 s	switch	AUX	•			•	•						
	Alarm swi	tch	ALT	•		•				•				
	Shunt trip)	SHT	•		•								
	Undervolt		UVT	•				•			•			
External	Rotary	Front contact		•				•			•			
	handle	Extended	TFH	•				•			•			
	Motor ope		MOT	•				•		•				
		al interlock	MIF	•				•		•				
	Locking d		PLD	•				•						
	Plug-in	TDM (LINE/LO			Only)		Only)		Only)			Only)		
		TDM (LINE on			Only)		Only)		Only)			Only)		
		TDF (LINE onl	y)	-	Only)		Only)	-	Only)			Only)		
		TDA (1 row)			Only)		Only)	-	Only)			Only)		
		TDA (2 row)		• (2, 3	P Only)	• (2, 3	P Only)	• (3P	Only)		• (2, 3	P Only)		
		ninal block	СТВ	•				•						
		terminal cover						•						
	Insulation		TQQ					•						
	Terminal e		TBB	-	-						-			
Installation ar	nd Dimensio					Tamaia - L								
Connection/In	stallation	Front connec				Terminal screw Horizontal/Vertical/Front wiring								
	Rear connection											2)		
	Plug-in DIN rail installation							1		Distributio				
	a_		lation			ng DIN rail adapter -				Possible		DIN rail	adapter	
Dimensions		a (2/3/4P)		50/75		50/75/100 60/90/120					50/75			
(mm)	b I	b			30		30		55	130				
	7000	C		6			8		8			8		
Weight (kg)		2/3/4P		0.6/0.		0.6/0			.0/1.3		0.6/0			
	Detailed rating and select 122 Page 122 Page 122 Page													
Characteristics	s curve and	d outside view		70 - 80) Page		70 - 8	0 Page			70 - 80) Page		

²⁾ Plug-in: Applicable only 3P.

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











100		HGN	<i>I</i> 1100			HGN	/ 1125			HGN	<i>I</i> 1160		HGM250				
16, 20, 25, 32, 40, 50, 63, 75, 80, 100		10	00			1.	25										
E		2, 3,	4 ¹⁾			2, 3,	4 1)			2 ³⁾ , :	3, 4 ¹⁾			2 ³⁾ , :	3, 4 ¹⁾		
25	16, 20, 2	5, 32, 40,	50, 63, 75	, 80, 100	16, 20, 25	5, 32, 40, 50	, 63, 75, 80	, 100, 125		100, 125,	150, 160		100, 125	5, 150, 160,	175, 200,	225, 250	
7.5	Е	S	Н	L	Е	S	Н	L	Е	S	Н	L	Е	S	Н	L	
7.5	2.5	5	7.5	8	5	7.5	8	10	7.5	8	8	10	7.5	8	8	10	
166	7.5	10	14	26	10	14	26	35	14	20	26	35		20	26	35	
16						26											
35 S0 S0 S0 S0 S0 S0 S0 S																	
100	35	50	50	50	50	65		100		65	85	100			85	100	
100																	
30,000 30,000 10,000 25,000 25,000 10		_													-		
10,000 10	100			30	100			100	100			100	100			100	
(1.0) x in (1.0) x in (1.0) x in (0.8 - 0.9 - 1.0) x in (0.8 - 0.9 -																	
(0.8 - 0.9 - 1.0) x ln		10,	000			10,	000			10,	000			10,	000		
(0.8 - 0.9 - 1.0) x ln		(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 ln					-			<u> </u>				`					
												1					
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	10 32	A. 400 A, 2	40 - 100 A	. IU X III	10 32	A. 400 A,	+U = 123 A	. 10 X III		10	X II I			10	X II I		
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●																	
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		<u>'</u>	•														
			•												•		
			•														
(3P Only)																	
● (3P Only) ● (2, 3P Only) ● (3P Only) ●																	
(3P Only)																	
● (3P Only)										● (3P	(Only)			● (3P	(Only)		
● (2, 3P Only) ● (3P Only) ● (3P Only)										•	_				_		
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●											-				_		
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●		• (2, 3	P Only)								_				_		
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●			•														
Terminal screw Terminal screw Horizontal/Vertical/Front wiring Switchboard type (Line & Load, Line only), Distribution board type 2) Possible for using DIN rail adapter − − − − − − − − − − − − − − − − − − −															•		
Terminal screw Terminal screw, Terminal busbar Horizontal/Vertical/Front wiring Horizontal/Vertical/Front wiring Switchboard type (Line & Load, Line only), Distribution board type Switchboard type (Line & Load, Line only) Switch														•			
Horizontal/Vertical/Front wiring Horizontal/Vertical/Front wiring Switchboard type (Line & Load, Line only), Distribution board type 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		-	=				=			•				•			
Horizontal/Vertical/Front wiring Horizontal/Vertical/Front wiring Switchboard type (Line & Load, Line only), Distribution board type 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																	
Switchboard type (Line & Load, Line only), Distribution board type 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																	
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								3)							2)		
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					ne only), [Distributi	on board	type 2)		Swit	tchboard	type (Lin	e & Load	, Line onl	y) 2)		
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	Possible			adapter			_				_				-		
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		50/75	5/100							105/10	05/140			105/10	05/140		
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						1.	55			10	65			10	65		
122 Page 122 Page 122 Page 122 Page																	
		0.6/0	.8/1.0			0.8/1	.0/1.3		1.1/1.3/1.7 1.1/1.3/					.3/1.7			
70 - 80 Page 70 - 80 Page 70 - 80 Page 70 - 80 Page		122	Page			122	Page			122	Page			122	Page		
		70 - 8	0 Page			70 - 8	0 Page			70 - 8	0 Page			70 - 8	0 Page		

MCCB (HGM Type): 400 - 800 AF

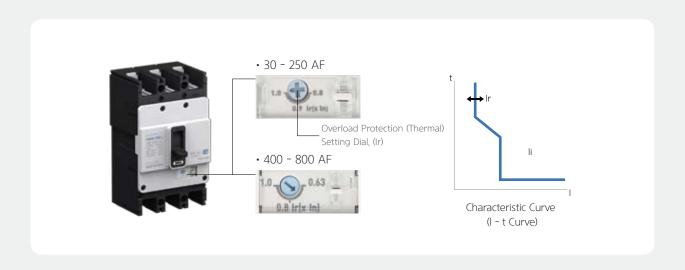
Rated Insulation Voltage, Ui	1,000 V
Rated Operational Voltage, Ue	690 V
Impulse Withstand Voltage, Uimp	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model					HGI	V1400			HGN	/1630		HGM800		
Frame			(AF)		4	00			63	30		800		
Pole			(P)		2, 3	, 4 ¹⁾			2, 3,	4 1)		2, 3, 4 ¹⁾		
Rated current	, at 40 °C		(A)			, 350, 400)	500, 630				700, 800		
Rated	Recognitio	on code for orde	r	Е	S	Н	L	Е	S	Н	L	S	Н	L
short-circuit	AC660/690) V		5	8	10	14	5	8	10	14	8	10	14
breaking	AC480/500) V		18	35	50	65	25	45	50	65	45	50	65
capacity [lcu]	AC440/460) V		38	50	70	85	38	50	70	85	50	70	85
(kA rms)	AC380/415			45 50	65	85	100	45	65	85	100	65	85	100
	AC220/240				75	100	125	50	75	100	125	75	100	125
	DC250 V (2				25	40	40	20	25	40	40	25	40	40
Service break				100	100	100	100	100	100	100	100	100	100	100
Endurance	Mechanica	al				000				00			2,500	
(Durability)	Electrical				1,0	000			50	00			500	
Trip Device		Et I			(1.0	\ I.=			(1.0)	1			(1.0)	
Thermal	Long time	Adjustable		10) x ln 3 - 1.0) x	In	(C		x In - 1.0) x	In	(0.63	(1.0) x ln - 0.8 - 1.0)) v lp
magnetic		ous [INST]		((x In	III	(C		x In	111	(0.03	10 x ln)) X III
Accessory	IIIstailtaile	:003 [11131]			10	X III			10	A 11 1			10 × 111	
Internal	Auxiliary s	witch	AUX			•				•			•	
IIILEITIAI	Alarm swi		ALT			•				•			•	
	Shunt trip		SHT		-	•				•			•	
	Undervolt	age trip	UVT			•			-	•			•	
External	Rotary	Front contact	TFG			•				•			•	
	handle	Extended	TFH			•				•			•	
	Motor ope	erator	MOT			•			•				•	
	Mechanica	al interlock	MIF			•			•	•			•	
	Locking de		PLD			•		•				•		
	Plug-in	TDM (LINE/LOA				Only)		• (3P Only)				• (3P Only)		
		TDM (LINE only			• (3F	Only)		• (3P Only)				•	(3P Only	y)
		TDF (LINE only))	-				-					-	
		TDA (1 row)						-						
	Casa tauna	TDA (2 row)	CTD	-										
	Cage term	terminal cover	CTB TCF			•							•	
			TQQ			•							_	
	Insulation barrier TQQ Terminal extentions TBB					•							•	
Installation an	allation and Dimensions													
	nection/Installation Front connection				Termin	al screw			Ter	minal sci	rew, Tern	ninal bus	bar	
COMMECTION	Rear connection			Hor		ertical wi	ring				tal/Vertic			
		Plug-in		Switchboard type (Line & Load, Line only) 2)				Switchboard type (Line &				Load, Lin	e only) 2)
Dimensions	Dimensions a (2/3/4P)			140/140/184				210/210/280				2	10/210/28	30
(mm)			257				280				280			
	C 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 ratin	g and selec	t				Page				Page		122 Page		
Characteristics curve and outside view					70 - 8	0 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 Cu	rrent (A) [In]	16	20	25	32	40	50	63	75	80	100	125
MCCB	HGM30	•	•	•	•							
	HGM50	•	•	•	•	•	•					
	HGM60	•	•	•	•	•	•	•				
	HGM100	•	•	•	•	•	•	•	•	•	•	
	HGM125	•	•	•	•	•	•	•	•	•	•	•
Time Pick	-Up Characteristics [lr]]										
Settings		16	20	25	32	40	50	63	75	80	100	125
(A)	0.8 x In	12.8	16	20	25.6	32	40	50.4	60	64	80	100
	0.9 x In	14.4	18	22.5	28.8	36	45	56.7	67.5	72	90	112.5
	1.0 x ln	16	20	25	32	40	50	63	75	80	100	125
Instantane	eous Pick-Up Characte	eristics [li]										
Settings	10 x ln		4	00		400	500	630	750	800	1,000	1,250
(A)	Instantaneous pick-up characteristics (A)		3	20		320	400	504	600	640	800	1,000
	The minimum operating current (A)		4	80		480	600	756	900	960	1,200	1,500
Neutral Po	ole Protection											
4P3D						l	Inprotecte	ed				
4P4D							-					

Rated Cur	rent (A) [In]	100	125	150	160	175	200	225	250
MCCB	HGM160	•	•	•	•				
	HGM250	•	•	•	•	•	•	•	•
Time Pick-	Up Characteristics [Ir]							
Settings	Fixed	100	125	150	160	175	200	225	250
(A)	0.8 x ln	80	100	120	128	140	160	180	200
	0.9 x In	90	112.5	135	144	157.5	180	202.5	225
	1.0 x ln	100	125	150	160	175	200	225	250
Instantane	ous Pick-Up Charact	eristi	cs [li]						
Settings	10 x ln	1,000	1,250	1,500	1,600	1,750	2,000	2,250	2,500
(A)	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 Po	le Protection								
4P3D				U	npro	tecte	ed		
4P4D						-			

Rated Cur	rent (A) [In]	250	300	350	400	500	630	700	800
MCCB	HGM400	•	•	•	•				
	HGM630					•	•		
	HGM800							•	•
Time Pick-	Up Characteristics [lr]							
Settings	Fixed	250	300	350	400	500	630	700	800
(A)	0.63 x In	158	189	221	252	315	397	441	504
	0.8 x In	200	240	280	320	400	504	560	640
	10 x ln	250	300	350	400	500	630	700	800
Instantane	ous Pick-Up Charact	eristi	cs [li]						
Settings	10 x ln	2,500	3,000	3,500	4,000	5,000	6,300	7,000	8,000
(A)	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 Po	le Protection								
4P3D				U	npro	tecte	ed		
4P4D					-	-			

ZCT MCCB (HGM□Z Type): 30 - 250 AF

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

Rated Insulation Voltage, Ui	1,000 V
Rated Operational Voltage, Ue	690 V
Impulse Withstand Voltage, Uimp	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model				HGN	/130Z		HGN	150Z		HGM60Z					
Frame			(AF)	3	0		5	0			6	53			
Pole			(P)	2 ³⁾ . :	3, 4 ¹⁾		2 ³⁾ . :	3, 4 ¹⁾	,		2 ³⁾ .	3, 4 ¹⁾			
Rated curren	t, at 40 °C		(A)		25, 32			32, 40, 50)	16, 20, 25, 32, 40, 50, 63					
Rated	Recogniti	on code for or	der	E	S	Е	S	Н	L	Е	S	Н	L		
short-circuit	AC660/690	O V		2.5	5	2.5	5	8	10	2.5	5	7.5	8.0		
breaking	AC480/50	0 V		7.5	10	7.5	10	26	35	7.5	10	14	26		
capacity [lcu]	AC440/460	0 V		16	20	16	20	38	55	16	20	26	30		
(kA rms)	AC380/41	5 V		16	20	16	20	38	55	16	20	26	30		
	AC220/24	0 V		35	50	35	50	85	100	35	50	50	50		
Service break	king capacit	y [lcs = % lcu]		100	100	100	100	100	100	100	100	75	50		
Endurance	Mechanic	al		30,0	000		30,0	000			30.	000			
(Durability)	Electrical			10,0	000		10,0	000			10.	000			
Trip Device															
Thermal mag	inetic	Long time [L	Π	(1.0)	x In		(1.0)	x In			(1.0)) x ln			
memiai mag	irietic	Instantaneou		400		16 - 32	,	40 - 50 A	: 10 x ln	16 - 32		40 - 63 A	: 10 x ln		
Accessory							,				,				
Internal	Auxiliary	switch	AUX						-			•			
internal	Alarm swi					-					•				
	Shunt trip)	SHT									•			
	Undervolt		UVT		•			•				•			
External	Rotary	Front contac	t TFG						-			•			
External	handle	Extended	TFH	-			-					•			
	Motor op	erator	MOT		•			•				•			
	<u> </u>	al interlock	MIF		•			•				•			
	Locking d	levice	PLD		•			•				•			
	Plug-in	TDM (LINE/LO	DAD)	• (3P	Only)	• (3P	Only)	• (3F	Only)	• (3P Only)					
	i lug III	TDM (LINE or			Only)	• (3P Only) • (3P Only)			• (3P Only)						
		TDF (LINE or			Only)	• (3P			Only)	• (3P Only)					
		TDA (1 row)	· · · · · · · · · · · · · · · · · · ·		Only)		Only)		Only)	• (3P Only)					
		TDA (2 row)			P Only)	• (2, 31			Only)	• (2, 3P Only)					
	Cage tern	ninal block	СТВ		•	(2, 0		•	,			•			
		terminal cove			•			•				•			
	Insulation		TQQ		•			•				•			
	Terminal e	extentions	TBB		-			-				_			
Installation ar															
Connection/Ir	nstallation	Front conne	ction					Termina	al screw						
CONTICCTION	tion				Horizo		cal/Front	wiring							
Plug-in					Switcl	nboard ty					n board t	type ²⁾			
		DIN rail insta	llation	Possible		DIN rail			-			g DIN rail	adapter		
Dimensions	F8-4 T	a (2/3/4P)			5/100	75/75		90/90	0/120			5/100			
(mm)	b	b			30	13			55			30			
		C			8	6			58			58			
Weight (kg)	<u>-, (</u>	2/3/4P		-	.8/1.0	0.7/0.			.0/1.3).8/1.0			
Detailed ratin	ng and selec	1				122 Page				122 Page					
	haracteristics curve and outside view				122 Page 122 Page 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.

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











	HGM100Z HGM125Z								HGN	1160Z		HGM250Z				
		00				25				60				50		
	2 ²⁾ , 3	3, 4 ¹⁾			2 ²⁾ , 3	3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾		
	25, 32, 40,		80, 100		32, 40, 50		, 100, 125			150, 160			5, 150, 160,		225, 250	
E	S	Н	L	E	S	Н	L	E	S	Н	L	Е	S	Н	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 85	55	20	26	38 85	55	20 50	26 65	38	55	
35 100	50 100	50 75	50 50	50 100	65 100		100	50 100	65 100	100	100 100	100	100	85 100	100	
100		000	50	100		00 100 100 30,000				000	100	100		000	100	
	10,0				10,0									000		
	10,0	300			10,0	300		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, 4		: 10 x ln	16 - 32	A: 400 A, 4		: 10 x ln			x In				x In		
10 00	,				,											
		•				•			(•			(•		
		•				•				•			-	•		
		•			•	•			-	•			•	•		
	•				•				(•			(
	•	•				•				•			•	•		
		•			•					•				•		
		•		•						•				•		
					•					•			•	•		
	- (25				- (25				- (2.5	•			- (25			
		Only)				Only)				Only)		• (3P Only)				
		Only)				Only)			● (3F	Only)		• (3P Only)				
		Only)				Only)						-				
		P Only)				Only)										
		D Offig)			(3)					•				•		
		•				•				•				•		
		•								•				•		
	-	-			-	-			-	•				•		
			Termin	al screw						Termin	al screw,	Terminal	busbar			
				Vertical/Front wiring								ical/Front				
Switch	ooard typ	e (Line &	Load, Lii	ne only), I	Distributio	on board	type 2)		Swi	tchboard	type (Lir	e & Load	, Line onl	y) ²⁾		
Possible	for using		adapter		-	-				-				-		
		5/100			90/90					05/140				05/140		
		30				55				65				65		
		8				8				8				8		
		.8/1.0			0.9/1					.3/1.7		1.1/1.3/1.7				
		Page			122					Page			122 Page			
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ZCT MCCB (HGM□Z Type): 400 - 800 AF

Rated Insulation Voltage, Ui	1,000 V
Rated Operational Voltage, Ue	690 V
Impulse Withstand Voltage, Uimp	8 kV
Protective Function	Overload, short-circuit and instantaneous protection

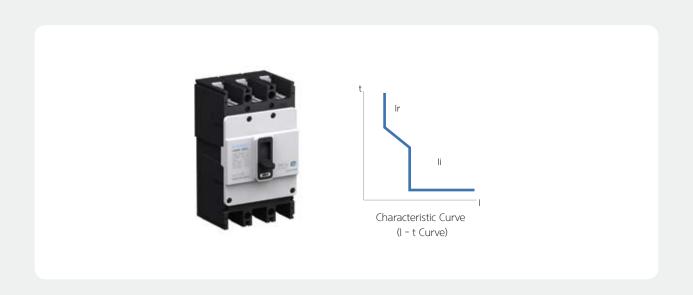
Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model					HGM	1400Z			HGM	630Z		HGM800Z			
Frame			(AF)		40	00				30			800		
Pole			(P)		2 ³⁾ , :	3, 4 ¹⁾			2 3), 3			2 ³⁾ , 3		
Rated curren	t, at 40 ℃		(A)		250, 300,	350, 400)	500, 630				700, 800			
Rated	Recognition	on code for orde	er	Е	S	Н	L	Е	S	Н	L	S	Н	L	
short-circuit	AC660/690) V		5	8.0	10	14	5	8	10	14	8	10	14	
breaking	AC480/500	V C		18	35	50	65	25	45	50	65	45	50	65	
capacity [lcu]	AC440/460) V		38	50	70	85	38	50	70	85	50	70	85	
(kA rms)	AC380/415	5 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 break	ing capacit	y [lcs = % lcu]		100	100	100	100	100	100	100	100	100	100	100	
Endurance	Mechanica	al			4,0	000			2,5	00			2,500		
(Durability)	Electrical				1,0	000			50	00			500		
Trip Device															
Thermal mag	netic	Long time [LT]			(1.0)	x In			(1.0)	x In			$(1.0) \times In$		
		Instantaneous	[INST]		10	x In			10	x In			10 x In		
Accessory															
Internal	Auxiliary s	switch			•			(•			
	Alarm swi	tch			•		•				•				
	Shunt trip SHT					•							•		
	Undervolt	age trip	UVT		•	•			•				•		
External	Rotary	Front contact			•				•			•			
	handle	Extended	Extended TFH			•			•	•			•		
	Motor op	erator	MOT			•			•				•		
	Mechanica	al interlock	MIF		•	•			•				•		
	Locking d	evice	PLD		•	•		•				•			
	Plug-in	TDM (LINE/LOA	AD)		• (3P	Only)		• (3P Only)				• (3P Only)			
		TDM (LINE only	y)		• (3P	Only)		• (3P Only)				• (3P Only)			
		TDF (LINE only	/)			-		-				-			
		TDA (1 row)				-				-	-				
		TDA (2 row)				_				_		-			
		ninal block	CTB										•		
		terminal cover	TCF										•		
	Insulation		TQQ			•			•				•		
		extentions	TBB		•	•			•				•		
Installation ar	nd Dimensio														
Connection/Ir	Connection/Installation Front connection					al screw			Ter			ninal bus			
	Rear connection					ertical wi						al wiring		`	
Plug-in				Switchboa		e & Load, L	ine only) 21				(Line &	Load, Lin	e only) 2		
Dimensions		a (2/3/4P)				40/184				/210			210/210		
(mm)		b				57				30			280		
147 . 1	To the second	C				10		110					110		
Weight (kg)		2/3/4P		4/4.5/5.4				8.7/9.5				8.7/9.5			
Detailed ratin						Page		122 Page			122 Page				
Characteristic	s curve and	d outside view			/0 - 8	0 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) 2}P 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 Cur	rent (A) [In]	16	2	20	25	32		40	50	63		75	80	10	00	125
MCCB	HGM30Z	•		•	•	•										
	HGM50Z	•		•	• •			•	•							
	HGM60Z	•		•	•	•		•	•	•						
	HGM100Z	•		•	•	•		•	•	•		•	•	•	•	
	HGM125Z	•		•	•	•		•	•	•		•	•	•		•
Time Pick-	-Up Characteristics [lr]														
Settings (A)	1.0 x ln	16	2	20	25	32		40	50	63	3	75	80	10	00	125
Instantane	eristics	[li]														
Settings	Settings 10 x In		400		4	00	4	100	500	63	0	750	800	1,0	00	1,250
(A)	Instantaneous pick-up characteristics (A)		320		3	20	3	320	400	50	4	600	640	80	00	1,000
	The minimum operating current (A)		480		4	80	4	180	600	75	5	900	960	1,2	00	1,500
Neutral Pole Protection																
4P3D			Unprotected													
4P4D									-							
Rated Cur	rent (A) [In]	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
MCCB	HGM160Z	•	•	•	•											
	HGM250Z	•	•	•	•	•	•	•	•							
	HGM400Z								•	•	•	•				
	HGM630Z												•	•		
	HGM800Z														•	•
Time Pick-	Up Characteristics [lr															
Settings (A)	1.0 x ln	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
Instantane	ous Pick-Up Characte															
Settings	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
(A)	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
												4000				0.000
	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 Po		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 Po	operating current (A)	1,200	1,500	1,800	1,920	2,100	2,400		3,000 protect	· .	4,200	4,800	6,000	7,560	8,400	9,600
	operating current (A)	1,200	1,500	1,800	1,920	2,100	2,400			· .	4,200	4,800	6,000	7,560	8,400	9,600

ELCB (HGE Type): 30 - 250 AF

Rated Operational Voltage, Ue	220/460 V
Impulse Withstand Voltage, Uimp	6 kV
Protective Function	Overload, short-circuit and instantaneous protection

Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model				HG	E30		HG	E50			HG	E60	
Frame			(AF)		30			0				3	
Pole			(P)		3, 4 ¹⁾			3, 4 ¹⁾				3, 4 ¹⁾	
Rated curren	t at 10 °C		(A)), 25, 32	16		32, 40, !	50	16		3, 4 32, 40, 50) 63
High speed		dual current	(mA)		30	10		32, 40, .	50	10, 2		32, 40, 30	7, 03
type		sidual current off-time	(s)).1			.1				1.1	
type		dual current			- 1,000 Adjustable	***				100 - 300 - 500 - 1,000 Adjustable			liustahla
Time delay		sidual current off-time			- 1.0 - 2.0				-	0.1 - 0.4 - 1.0 - 2.0			
type		n-operating time	,		1,000 Adjustable	0.1 - 0.4 - 1.0 - 2.0 0 - 200 - 500 - 1,000 Adjustable			0 - 200 - 500 - 1,000 Adjustable				
Rated short-		on code for orde		E	S	E E	S	H	L	E E	S	H	L
circuit breaking				16	20	16	20	38	55	16	20	26	30
capacity [lcu]	AC380/41!			16	20	16	20	38	55	16	20	26	30
(kA rms)	AC220/240			35	50	35	50	85	100	35	50	50	50
		y [lcs = % lcu]		100	100	100	100	100	100	100	100	75	50
Endurance		me delay [LT]			.000	100		000	100	100		000	30
(Durability)		e pick-up [LT]			.000			000				000	
Trip Device					,000		10,	000			10,	000	
Thermal mag	notic	Long time [LT]		(1.0) x In		(1.0)	x In			(1.0)	x In	
mermai may	Hetic	Instantaneous	INSTI		10 A	16 - 32		, 40, 50 A:	10 x In	16 - 32		40 - 63 A	10 x ln
Accessory		staritariesas				10 32	711 100 71	, 10, 50 7 1	10 / 111	10 32	7 11 100 7 1,	10 0371	10 // 111
Internal	Auxiliary s	switch	AUX		•		((•	
	Alarm swi	tch	ALT		•		-	•				•	
	Shunt trip)	SHT		-			-				_	
	Undervolt	age trip	UVT				_				_		
External	Rotary	Front contact	TFG		•		•	•			(•	
	handle	Extended	TFH		•		•				(•	
	Motor op	erator	MOT		•	•						•	
	Mechanica	al interlock	MIF		•	•				•			
	Locking d	evice	PLD		•	•				•			
	Plug-in	TDM (LINE/LOAI			Only)	-	Only)		Only)	• (3P Only)			
		TDM (LINE only)	-	Only)	● (3P Only) ● (3P Only)		• (3P Only)					
		TDF (LINE only)			Only)	● (3P Only) ● (3P Only)					Only)		
		TDA (1 row)			Only)	● (3P Only) ● (3P Only)						Only)	
		TDA (2 row)		• (2, 3	BP Only)	• (2, 3)	P Only)	• (3P	Only)		• (2, 3	P Only)	
	_	ninal block	CTB		•							•	
		terminal cover	TCF		•		•				•	•	
	Insulation		TQQ		•		•				•	•	
		extentions	TBB		_			-				_	
Installation A	nd Dimensi												
Connection/Ir	nstallation	Front connection						al screw					
	Rear connection				2.11. 11	Horizon						2)	
Plug-in					vitchboard type			ne oniy),	Distribu				
	Fa-	DIN rail Installa	tion		for using DIN ra			00/0/	2/4 2.0	Possible		g DIN rail	adapter
Dimensions	S-A	a (2/3/4P)			5/100	75/75			0/120			5/100	
(mm)	LI D	b			30		30		55			30	
\\/-:\/-\	700	C 2/2/4D			58		8		8			8	
Weight (kg)		2/3/4P			0.9/1.3	0.8/0.9/1.3 1.0/1.1/1.4			. 1/ 1.4				
Detailed ratin					Page			Page		122 Page 70 - 85 Page			
Cnaracteristic	s curve and	d outside view		/0 - 8	85 Page		/0 - 8	5 Page			/0 - 8	5 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) 2}P product is just removed versus central pole of 3P product. So, 2P product's dimension is equal to 3P product's dimension.











		E100				E125				E160		HGE250					
		00	-			25				60				50			
	2 2, 3	3, 4 ¹⁾			2 2,	3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾			
16, 20, 2			80, 100	16, 20, 25,	, 32, 40, 50), 63, 75, 80), 100, 125			, 150, 160)	100, 125		, 175, 200,	225, 250		
		0			3	30			3	30				80			
		.1).1).1				.1			
						- 1,000 Ad											
	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 Adj	ustable	0 - 200	- 500 -	1,000 Adj	ustable	0 - 200	0 - 200 - 500 - 1,000 Adjustable			0 - 200 - 500 - 1,000 Adjustabl					
Е	S	Н	L	E	S	Н	L	Е	S	Н	L	Е	S	Н	L		
16	20	26	30	20	26	38	55	20	26	38	55	20	26	38	55		
20	26	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		
	30,0	000			30,	000			25,	000			25,	000			
	10,	000			10,	.000			10,	,000			10,	000			
		x In			(1.0)	x In			(1.0)	x In			(1.0)	x In			
16 - 32	A: 400 A, 4	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)			• (3F	Only)		• (3P Only)				• (3P Only)					
	• (3P	Only)			• (3F	Only)		• (3P Only)				• (3P Only)					
	• (3P	Only)			• (3F	Only)				-		-					
	• (3P	Only)			• (3F	Only)				-		-					
	• (2, 3	P Only)			• (3F	Only)				-				-			
	•	•				•				•				•			
	•	•				•				•				•			
	•	•				•				•				•			
		-				-				•				•			
			Termin	al screw							Termina	al screw					
		Horizo	ntal∕Verti	ical/Front	wiring			Horizontal/Vertical/Front wiring									
Switchk	ooard typ	e (Line 8	Load, Lii	oad, Line only), Distribution board type ²⁾					Swi	tchboard	type (Lin	e & Load	, Line on	ly) 2)			
Possible	for using	g DIN rail	adapter			-				-							
	75/75	5/100		90/90/120					105/1	05/185			105/1	05/140			
	130 155							1	65			1	65				
	6	i8			- 6	58			- 6	58		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 - 8	5 Page			70 - 8	5 Page			70 - 8	5 Page			70 - 8	5 Page	Page		

ELCB (HGE Type): 400 - 800 AF

Rated Operational Voltage, Ue	220/460 V
Impulse Withstand Voltage, Uimp	6 kV
Protective Function	Overload, short-circuit and instantaneous protection

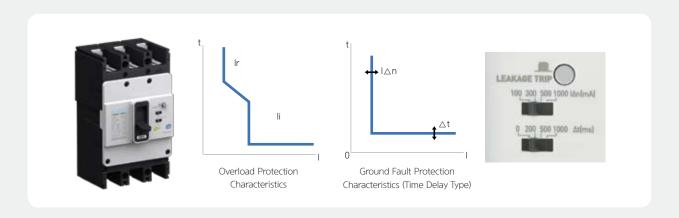
Suitablilty for Isolation	Yes
Utilization Category	А
Polution Degree	3
Reference Standard	IEC 60947-2

Model				HGE400				HGE630				HGE800			
Frame (AF)				400				630				800			
Pole	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		dual current	30				30				30				
type	Maximum residual current off-time (s)			0.1				0.1				0.1			
		dual current	100 - 300 - 500 - 1,000 Adjustable												
Time delay type		idual current off-time	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 no	n-operating time	0 - 200 - 500 - 1,000 Adjustable												
Rated short-	D "" 1 (1			Е	S	Н	L	Е	S	Н	L	S	Н	L	
circuit breaking			38	50	70	85	38	50	70	85	50	70	85		
capacity [lcu]	AC380/415			45	65	85	100	45	65	85	100	65	85	100	
(kA rms)	AC220/240			50	75	100	125	50	75	100	125	75	100	125	
	ervice breaking capacity [lcs = % lcu]			100	100	100	100	100	100	100	100	100	100	100	
Endurance		ne delay [LT]			4,0	000			2,5	00	2.500				
(Durability)	Short time	e pick-up [LT]			1,0	000			5(00		500			
Trip Device															
Thermal magr	Thermal magnetic Long time [LT]			(1.0) x In				(1.0) x In				(1.0) x ln			
		Instantaneous [INST]			10 x In				10	x In		10 x ln			
Accessory															
Internal	Auxiliary switch AUX			•				•				•			
	Alarm swi	tch	ALT			•		•			•				
	Shunt trip	hunt trip SHT			•			•			•				
	Undervolt	age trip	UVT	•				•				•			
External	Rotary	Front contact	TFG	•					•				•		
	handle	Extended	TFH	•					•				•		
	Motor ope	Motor operator MOT			•				•				•		
	Mechanical interlock MIF			•					•				•		
	Locking de	evice	PLD	•				•				•			
	Plug-in	TDM (LINE/LOAI	• (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 term	Cage terminal block CTB			•				•			•			
	Insulation	terminal cover	TCF	•					•				•		
	Insulation	barrier	TQQ	•									•		
	Terminal extentions TBB			•									•		
Installation an	nd Dimensic														
Connection/Installation Front connection			Terminal screw				Terminal screw, Terminal busbar								
		Rear connection		Horizontal/Vertical/Front wiring				Horizontal/Vertical/F							
		Plug-in			Switchboard type (Line & Load, Line only) 2)				71						
Dimensions		a (2/3/4P)				40/184		210/210					210/210		
(mm)	b b			257				280			280				
	1995	C				10		110				110			
Weight (kg)		3/4P				5/5.4		8.7/9.5				8.7/9.5			
Detailed rating						Page				Page		122 Page			
Characteristics curve and outside view					/0 - 8	5 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) 2}P 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 Cur	rrent (A) [In]	16	2	20	25	32		40	50	63		75	80	10	0	125
ELCB	HGE30	•		•	•	•										
	HGE50	•		•	•	•		•	•							
	HGE60	•		•	•	•		•	•	•						
	HGE100	•		•	•	•		•	•	•		•	•	•	,	
	HGE125	•		•	•	•		•	•	•		•	•	•	,	•
Time Pick-	-Up Characteristics [Ir	1														
Settings (A) 1.0 x In		16	2	20	25	32		40	50	63		75	80	10	00	125
	eous Pick-Up Characti															
Settings	400			400			100	500	630)	750	800	1.0	00	1.250	
(A)	IMax. non-operating current (A)	320			3	20	3	320	400	504	4	600	640	80	0	1,000
	Min. operating current (A)	480			480			180	600	75	5	900	960	1,2	00	1,500
Rated Res	sidual Current, I△n	l														
High spee	· · · · · · · · · · · · · · · · · · ·							Fix	ed: 30 r	nΑ						
Time dela							diustah	le: 100			000 m	Δ				
	on-Operating, ∆t						lajastak	nc. 100	300	300 1	,000 1111					
High spee								Fi	ved: 0 r	ns						
Time delay		Fixed: 0 ms Adjustable: 0 - 200 - 500 - 1,000 ms														
	ole Protection						Aujusto	ibie. U	200 .	700 1,	300 1113					
4P3D	Jie i Totection							Lln	protect	od						
4P4D								UI	iprotect	eu						
41 40																
Rated Cur	rrent (A) [In]	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
ELCB	HGE160	•	•	•	•		200		250	300	330		300	050	700	000
ELCD	HGE250	•	•	•	•	•	•	•	•							
	HGE400								•	•	•	•				
	HGE630												•	•		
	HGE800														•	•
Timo Dick-	-Up Characteristics [Ir	1														
Sattings (A)	, '		125	150	160	175	200	225	250	300	350	400	500	630	700	800
Settings (A)	1.0 x ln	100	125	150	160	175	200	225	250	300	350	400	500	630	700	800
Instantane	1.0 x In eous Pick-Up Charact	100 eristics [li]													
Instantane Settings	1.0 x In eous Pick-Up Characte 10 x In	100		150	1,600	1,750	200	225	250	300	350	4,000	5,000	630	7,000	8,000
Instantane	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A)	100 eristics [li]													
Instantane Settings (A)	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating current (A)	100 eristics [1,000	li] 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 6,400
Instantane Settings (A)	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400	2,000	2,250 1,800 2,700	2,500 2,000 3,000	3,000 2,400 3,600	3,500 2,800	4,000 3,200	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Instantane Settings (A) Rated Res High spee	1.0 x In eous Pick-Up Characte 10 x In IMax, non-operating current (A) Min. operating current (A) sidual Current, I△n ed type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400	2,250 1,800 2,700	2,500 2,000 3,000	3,000 2,400 3,600	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Instantane Settings (A)	1.0 x In eous Pick-Up Characte 10 x In IMax, non-operating current (A) Min. operating current (A) sidual Current, I△n ed type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400	2,250 1,800 2,700	2,500 2,000 3,000	3,000 2,400 3,600	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Instantane Settings (A) Rated Res High spee	1.0 x In eous Pick-Up Characte 10 x In IMax, non-operating current (A) Min. operating current (A) sidual Current, I△n ed type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400	2,250 1,800 2,700	2,500 2,000 3,000	3,000 2,400 3,600	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Instantane Settings (A) Rated Res High spee	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating current (A) sidual Current, I△n ed type y type on-Operating, △t	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400	2,250 1,800 2,700 Fix	2,500 2,000 3,000	3,000 2,400 3,600 mA 500 - 1	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Instantane Settings (A) Rated Res High spee Time delay Inertial No	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating current (A) sidual Current, I△n ed type y type on-Operating, △t ed type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400 Adjustak	2,250 1,800 2,700 Fix	2,500 2,000 3,000 ed: 30 I - 300 -	3,000 2,400 3,600 mA 500 - 1	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Rated Res High spee Time delay Inertial No	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating current (A) sidual Current, I△n ed type y type on-Operating, △t ed type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400 Adjustak	2,250 1,800 2,700 Fix ole: 100	2,500 2,000 3,000 ed: 30 I - 300 -	3,000 2,400 3,600 mA 500 - 1	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000 6,400
Rated Res High spee Time delay Inertial No	1.0 x In eous Pick-Up Characte 10 x In IMax. non-operating current (A) Min. operating current (A) sidual Current, I△n ed type y type on-Operating, △t ed type y type y type	100 eristics [1,000 800	1,250 1,000	1,500 1,200	1,600 1,280	1,750 1,400 2,100	2,000 1,600 2,400 Adjustak	2,250 1,800 2,700 Fix ole: 100 Fi.	2,500 2,000 3,000 ed: 30 I - 300 -	3,000 2,400 3,600 mA 500 - 1	3,500 2,800 4,200	4,000 3,200 4,800	5,000	6,300 5,040	7,000 5,600	8,000