

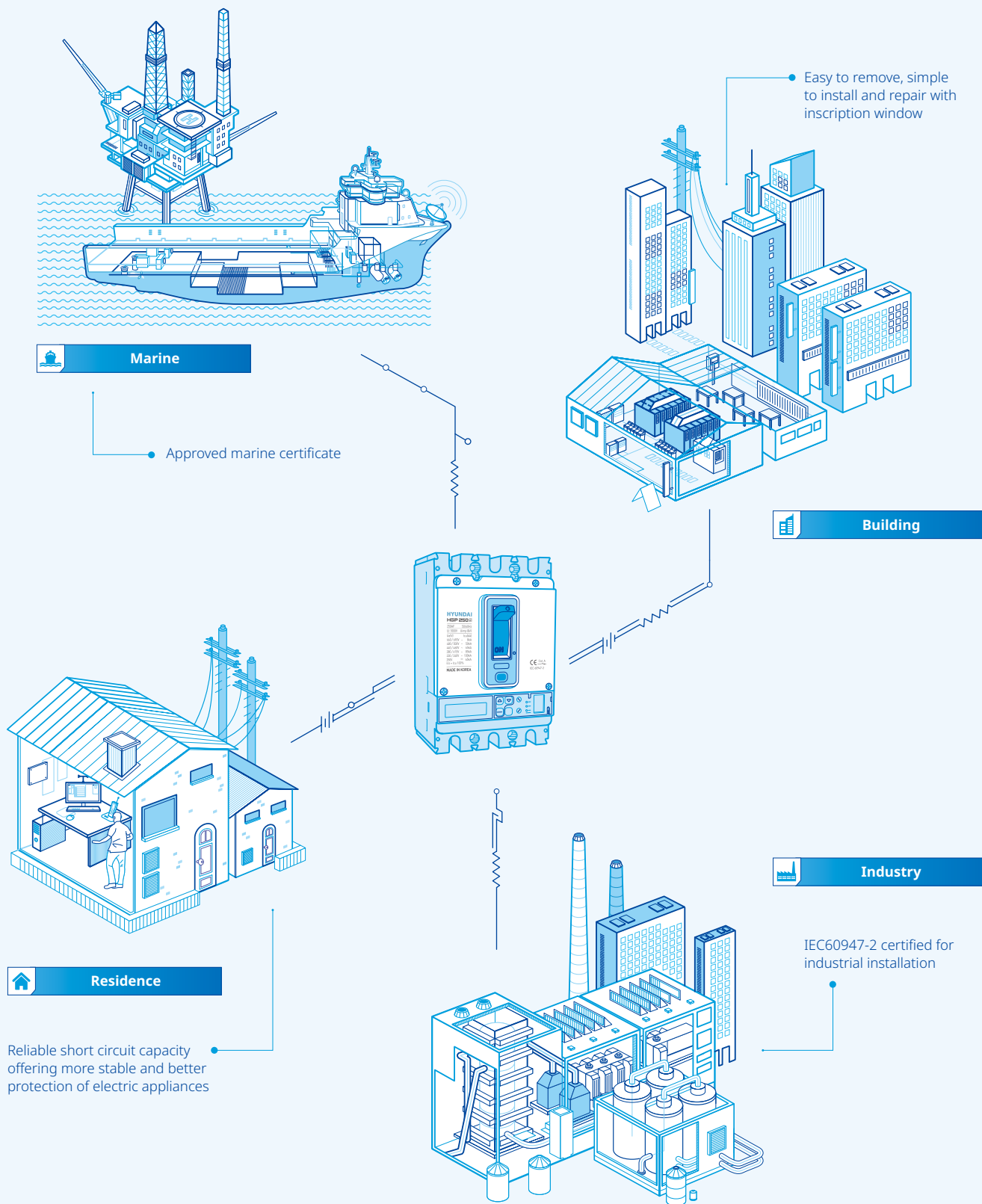


HGP Series

Molded Case Circuit Breakers

HGP Type Molded Case Circuit Breakers

Applicable to Various Location



Product Features

The HGP electronic type is equipped with intelligent electronic functions for the new era and has the highest breaking in the whole frame (100 kA at 500 V). In addition, various coordination such as selective breaking is possible, and maximizes energy efficiency through communication and power monitoring function.



Protection for various low voltage system (L/S/I/G/IN)

- L : Long-time delay
- S : Short-time delay
- I : Instantaneous
- G : Ground fault trip
- IN: Neutral protection



Customized type selection and convenient system UI

- Normal type : Key button
- Display type : Normal type
 - + Segment LCD + Ampere measurement
- Ammeter type : Display type
 - + Communication
- Energy-meter type : Ammeter type
 - + Voltage / Energy measurement



Save accident information

- Save the trip data : 20 EA (damaged phase, type, time)
- Save the system data : 32 EA



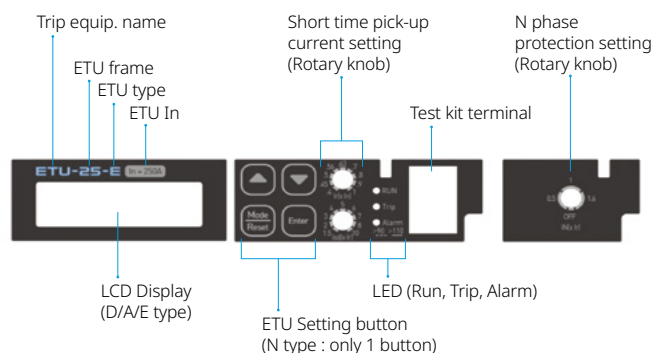
Test and monitoring for maintenance

- LOAD monitoring using RS-485 modbus-RTU
- TEST KIT can maximize the use of a circuit breaker

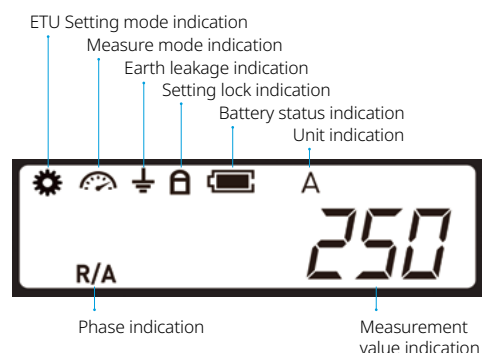


Overview

ETU Part Name



LCD Display / ICON (N type is not applicable)



ETU Type / AF

Type	Trip unit							
	Model (AF)	HGP250			HGP400		HGP630	HGP800
	Rated current (A)	100	160	250	250	400	630	800
Normal type		ETU-25-N			ETU-63-N		ETU-63-N	ETU-80-N
Display type		ETU-25-D			ETU-63-D		ETU-63-D	ETU-80-D
Ammeter type		ETU-25-A			ETU-63-A		ETU-63-A	ETU-80-A
Energy-meter type		ETU-25-E			ETU-63-E		ETU-63-E	ETU-80-E

Summary of New Electronic MCCB Features

	N	D	A	E	Remark
HMI	· Dial 2 EA key button 1 EA	· Dial 2 EA, key button 4 EA · Segment LCD	· Dial 2 EA, key button 4 EA · Segment LCD	· Dial 2 EA, key button 4 EA · Segment LCD	Dial setting (Ir, Isd)
Protection	· L (dial) · S (dial) · I (fixed) · IN (dial)	· L (dial, key button) · S (dial) · I (key button) · G (key button) · IN (dial)	· L (dial, key button) · S (dial) · I (key button) · G (key button) · IN (dial)	· L (dial, key button) · S (dial) · I (key button) · G (key button) · IN (dial)	L, S time to be changed by key button
Measurement		· IR, IS, IT, IN, IG	· IR, IS, IT, IN, IG, I avg, I max	· IR, IS, IT, IN · IG · I avg · I max/min · I unbalance · VLL, VLN · VLL avg · VLL unbalance	
History / Event	· 20 Trip information (damaged phase, type, time)	· 20 Trip information (damaged phase, type, time)	· 20 Trip information (damaged phase, type, time) · 32 System event	· 20 Trip information (damaged phase, type, time) · 32 System event	External power required
Power	· Self-power	· Self-power	· Self-power External power input (24 V DC)	· Self-power External power input (24 V DC)	
Battery	□	□	□	□	
Add-on function	· Test terminal	· Test terminal	· Test terminal · ZSI OUT: 250AF · ZSI IN/OUT: 630AF, 800AF · Trip / Alarm counter · Operating time 50 % In Over - 24 h	· Test terminal · ZSI OUT: 250AF · ZSI IN/OUT: 630AF, 800AF · Trip / Alarm counter · Operating time 50 % In Over - 24 h	External power required
Communication			· RS-485 MODBUS-RTU	· RS-485 MODBUS-RTU	External power required
Indication	· LED 3 EA · Run LED / Trip LED · Current LED (90 % off, 110 % on)	· LED 3 EA · Run LED / Trip LED · Current LED (90 % off, 110 % on)	· LED 3 EA · Run LED / Trip LED · Current LED (90 % off, 110 % on)	· LED 3 EA · Run LED / Trip LED · Current LED (90 % off, 110 % on)	

Model Selection Table

Things in common				Things in common											
Rated insulation voltage, Ui		1,000 V		Suitability for isolation		Yes									
Rated operational voltage, Ue		690 V		Utilization category		A									
Impulse withstand voltage, Uimp		8 kV		Pollution degree		3									
Protection function		Overload, short-circuit and instantaneous protection		Reference standard		IEC60947-2									
Model				HGP50D				HGP125D				HGP160D			
Frame		(AF)		50				125				160			
Pole		(P)		3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾			
Rated short-circuit breaking capacity [Icu] (kA rms)	Recognition code for order			F ^{*4)}	S	H	X	F ^{*4)}	S	H	X	F ^{*4)}	S	H	X
	AC 600/660 V			6	8	8	10	6	8	8	10	6	8	8	10
	AC 480/500 V			25	50	65	100	25	50	65	100	25	50	65	100
	AC 440/460 V			36	65	85	150	36	65	85	150	36	65	85	150
	AC 380/415 V			50	85	100	150	50	85	100	150	50	85	100	150
	AC 220/240 V			65	100	130	200	65	100	130	200	65	100	130	200
DC 250 V ³⁾				36	65	85	100	36	65	85	100	36	65	85	100
Service breaking capacity [Ics = % Icu] (kA rms)				100	100	100	100	100	100	100	100	100	100	100	100
Rated short-circuit making capacity [Icu] (kA Icm)	AC 600/660 V			9	14	14	17	9	14	14	17	9	14	14	17
	AC 480/500 V			53	105	143	220	53	105	143	220	53	105	143	220
	AC 440/460 V			76	143	187	330	76	143	187	330	76	143	187	330
	AC 380/415 V			105	187	220	330	105	187	220	330	105	187	220	330
	AC 220/240 V			143	220	286	440	143	220	286	440	143	220	286	440
Endurance (Durability)	Mechanical			25,000				25,000				25,000			
	Electrical			10,000				10,000				10,000			
Trip device															
				□				□				□			
Thermal magnetic	Rated current, at 40 °C (A)			16, 20, 25, 32, 40, 50				16, 20, 25, 32, 40, 50, 63, 75, 80, 100, 125				100, 125, 160			
	Long time [LT]			(0.8-0.9-1.0)×In				(0.8-0.9-1.0)×In				(0.8-0.9-1.0)×In			
	Instantaneous [INST]			16~32A : 400A, 40~50A : 10×In				16~32A : 400A, 40~50A : 10×In				10×In			
				□				□				□			
Rated current, at 40 °C (A)				□				□				□			
	Long time [LT]	Ir (A)	N, D, A, E	□				□				□			
		Tr (s)	N	□				□				□			
			D, A, E	□				□				□			
		Short time [STD]	Isd (A)	N, D, A, E	□				□				□		
				N	□				□				□		
			Tsd (s)	D, A, E	□				□				□		
Electronic	Instantaneous [INST]		Ii (A)	N	□				□				□		
			D, A, E	□				□				□			
	Break time (s)	N, D, A, E	□				□				□				
			N	□				□				□			
Ground fault protection [GFT]	Ig (A)	D, A, E	□				□				□				
			N	□				□				□			
	Tg (ms)	D, A, E	□				□				□				
			D, A, E	□				□				□			
N pole protection (L, S)		(A)	N, D, A, E	□				□				□			
Installation and dimensions															
Connection/ Installation	Front connection			Terminal screw				Terminal screw				Terminal screw			
	Rear connection			Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical			
	Plug-in			Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)			
Dimensions (mm)	a (3/4P)			90/120				90/120				90/120			
	b			140				140				140			
	c			86				86				86			

※ 1) 4 pole arrangement : Basic specification is R-S-T-N
2) Only applicable if Ir < 0.63 ("1" is applicable if Ir ≥ 0.63)

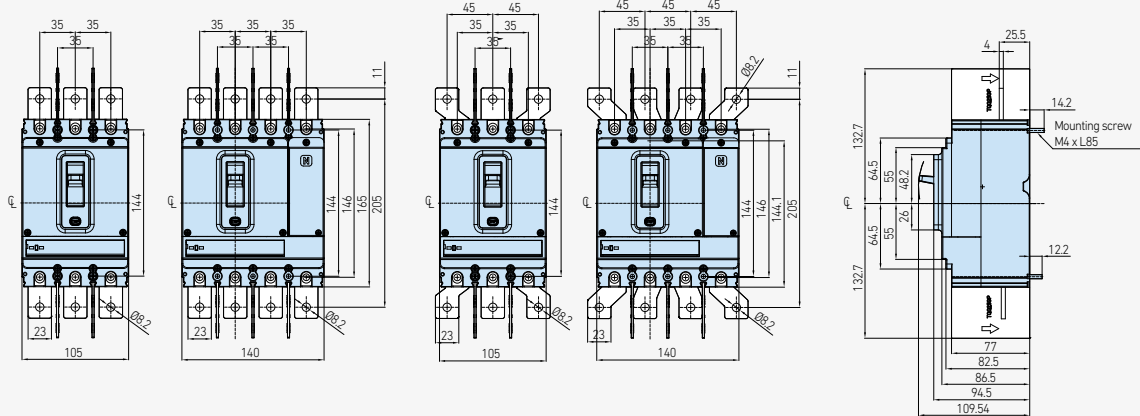
Accessory

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), Cage terminal block (CTB), Insulation terminal cover (TCF), Insulation barrier (TQQ) ※ Plug-in TDM is only for 3 pole and can be selected by LINE/LODE(P3), LINE Only(F3). Terminal extensions (TBB) excludes HGP50D, 125D and 160D types.

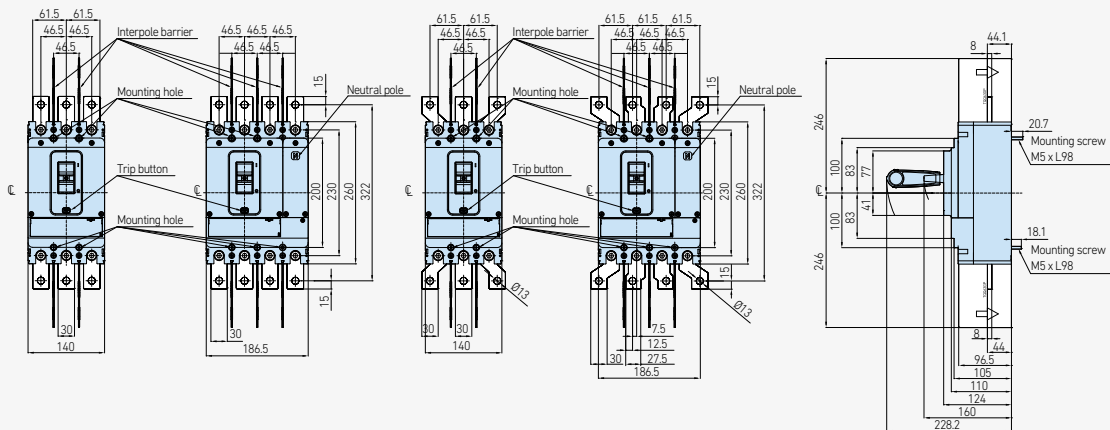
HGP100				HGP160				HGP250				HGP400				HGP630				HGP800			
100				160				250				400				630				800			
3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾			
F ^{*4)}	S	H	X	F ^{*4)}	S	H	X	F ^{*4)}	S	H	X	F ^{*4)}	S	H	X	F ^{*4)}	S	H	X	F ^{*4)}	S	H	X
6	8	8	10	6	8	8	10	6	8.0	8	10	10	10	20	35	10	10	20	35	10	10	20	35
25	50	65	100	25	50	65	100	25	50	65	100	25	50	70	100	25	50	70	100	25	50	70	100
36	65	85	150	36	65	85	150	36	65	85	150	36	70	85	150	36	70	85	150	36	70	85	150
50	85	100	150	50	85	100	150	50	85	100	150	50	85	100	150	50	85	100	150	50	85	100	150
65	100	130	200	65	100	130	200	65	100	130	200	65	100	130	200	65	100	130	200	65	100	130	200
36	65	85	100	36	65	85	100	36	65	85	100	36	65	85	100	36	65	85	100	36	65	85	100
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	14	14	17	9	14	14	17	9	14	14	17	17	17	40	74	17	17	40	74	17	17	40	74
53	105	143	220	53	105	143	220	53	105	143	220	53	105	154	220	53	105	154	220	53	105	154	220
76	143	187	330	76	143	187	330	76	143	187	330	76	154	187	330	76	154	187	330	76	154	187	330
105	187	220	330	105	187	220	330	105	187	220	330	105	187	220	330	105	187	220	330	105	187	220	330
143	220	286	440	143	220	286	440	143	220	286	440	143	220	286	440	143	220	286	440	143	220	286	440
25,000				25,000				25,000				20,000				20,000				20,000			
10,000				10,000				10,000				6,000				4,000				3,000			
□				□				□				□				□				□			
40, 50, 63, 80, 100				100, 125, 150, 160				125, 150, 160, 175, 200, 225, 250				300, 350, 400				500, 630				700, 800			
(0.7-0.8-0.9-1.0)×In				(0.7-0.8-0.9-1.0)×In				(0.7-0.8-0.9-1.0)×In				(0.8-0.9-1.0)×In				(0.8-0.9-1.0)×In				(0.8-0.9-1.0)×In			
10×In				(5-6-7-8-9-10)×In				(5-6-7-8-9-10)×In				(5-6-7-8-9-10)×In				(5-6-7-8-9-10)×In				(5-6-7-8-9-10)×In			
□				□				□				□				□				□			
100				100, 160				160, 250				250, 400				630				800			
0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×In			
16 @ 6Ir				16 @ 6Ir				16 @ 6Ir				16 @ 6Ir				16 @ 6Ir				16 @ 6Ir			
0.5-1-2-4-6-8-16 @ 6×Ir				0.5-1-2-4-6-8-16 @ 6×Ir				0.5-1-2-4-6-8-16 @ 6×Ir				0.5-1-2-4-6-8-16 @ 6×Ir				0.5-1-2-4-6-8-16 @ 6×Ir				0.5-1-2-4-6-8-16 @ 6×Ir			
1.5-2-3-4-5-6-7-8-10×In				1.5-2-3-4-5-6-7-8-10×In				1.5-2-3-4-5-6-7-8-10×In				1.5-2-3-4-5-6-7-8-10×In				1.5-2-3-4-5-6-7-8-10×In				1.5-2-3-4-5-6-7-8-10×In			
0.1				0.1				0.1				0.1				0.1				0.1			
0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4			
1,500				1,500 @ 100 A, 2,400 @ 160 A				2,400 @ 160 A, 3,000 A @ 250 A				3,000 @ 250 A, 4,800 @ 400 A				6,900				8,800			
1.5-2-4-6-8-10-11-12-13-14-15×In				1.5-2-4-6-8-10-11-12-13-14-15×In				1.5-2-4-6-8-10-11×In				1.5-2-4-6-8-10-11×In				1.5-2-4-6-8-10-11×In				1.5-2-4-6-8-10-11×In			
0.05				0.05				0.05				0.05				0.05				0.05			
NA				NA				NA				NA				NA				NA			
OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×In			
NA				NA				NA				NA				NA				NA			
0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4				0.1-0.2-0.3-0.4			
OFF-0.5-1-1.6 ²⁾ ×In				OFF-0.5-1-1.6 ²⁾ ×In				OFF-0.5-1-1.6 ²⁾ ×In				OFF-0.5-1-1.6 ²⁾ ×In				OFF-0.5-1-1.6 ²⁾ ×In				OFF-0.5-1-1.6 ²⁾ ×In			
Terminal screw, Terminal busbar				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar				Terminal screw, Terminal busbar			
Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical				Horizontal/Vertical			
Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)				Switchboard type (LINE & LOAD, LINE Only)			
105/140				105/140				105/140				140/186.5				140/186.5				210/280			
165				165				165				260				260				320			
86.5				86.5				86.5				110				110				135			

Dimensions for Electronic MCCB

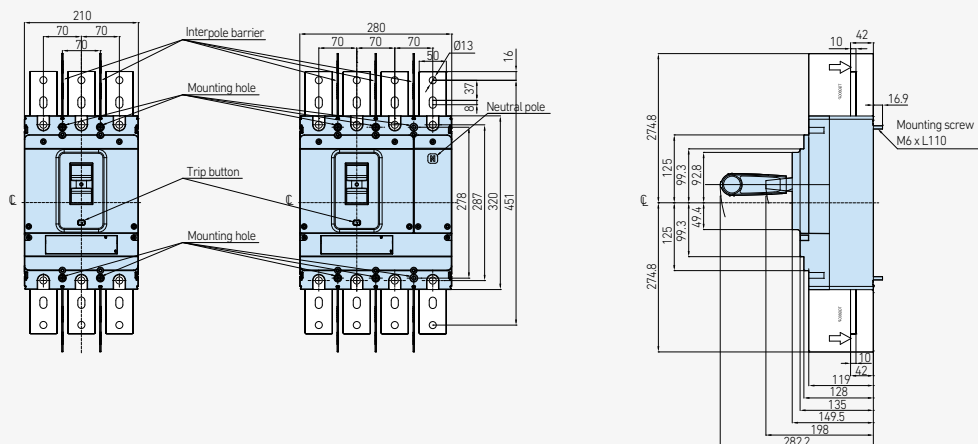
HGP250



HGP630



HGP800



※ Dimensions for mounting body / Terminal connections bus / Panel cover cutting : Refer to HGP catalog on homepage



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