

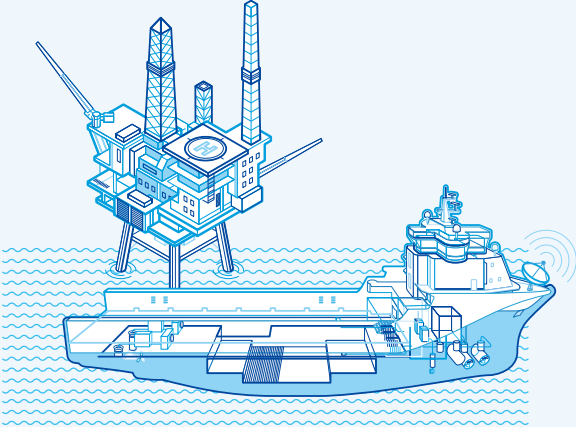


HGP Series

Molded Case Circuit Breakers

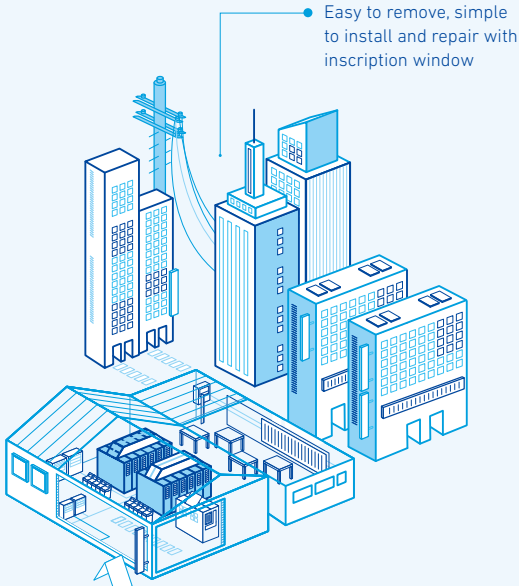
HGP Type Molded Case Circuit Breakers

Applicable to Various Location



 Marine

• Approved marine certificate



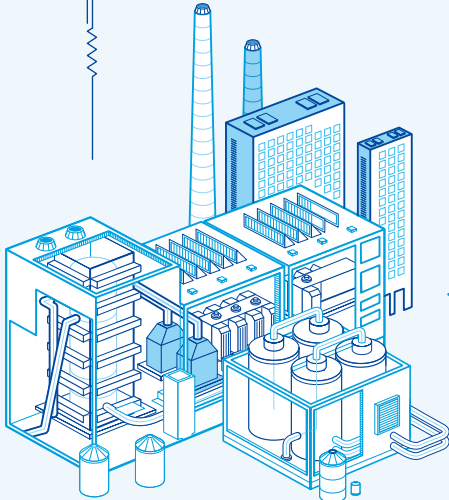
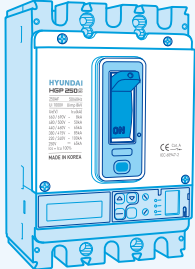
• Easy to remove, simple to install and repair with inscription window

 Building



 Residence

Reliable short circuit capacity offering more stable and better protection of electric appliances



 Industry

IEC60947-2 certified for industrial installation

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



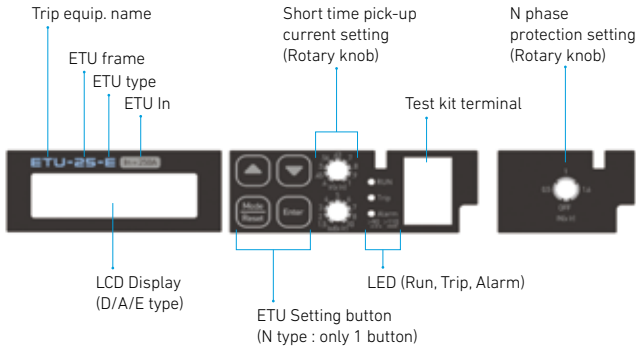
Test and monitoring for maintenance

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

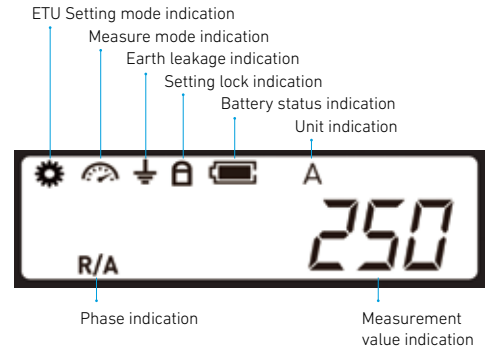


Overview

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

Rated insulation voltage, U_i	1,000 V
Rated operational voltage, U_e	690 V
Impulse withstand voltage, U_{imp}	8 kV
Protection function	Overload, short-circuit and instantaneous protection

Things in common

Suitability for isolation	Yes
Utilization category	A
Pollution degree	3
Reference standard	IEC60947-2

Model			HGP50D				HGP125D				HGP160D			
Frame			50				125				160			
Pole			3, 4 ¹⁾				3, 4 ¹⁾				3, 4 ¹⁾			
Recognition code for order			F ⁴⁾	S	H	X	F ⁴⁾	S	H	X	F ⁴⁾	S	H	X
Rated short-circuit breaking capacity [Icu] (kA rms)	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 lcm)	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			
Electronic	Rated current, at 40 °C (A)		—				—				—			
	Long time [LT]	I _r (A)	N, D, A, E		—		—		—		—		—	
		T _r (s)	N		—		—		—		—		—	
	Short time [STD]	I _{sd} (A)	N, D, A, E		—		—		—		—		—	
		T _{sd} (s)	N		—		—		—		—		—	
	Instantaneous [INST]	I _i (A)	N		—		—		—		—		—	
		Break time (s)	N, D, A, E		—		—		—		—		—	
	Ground fault protection [GFT]	I _g (A)	N		—		—		—		—		—	
			D, A, E		—		—		—		—		—	
		T _g (ms)	N		—		—		—		—		—	
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 I_r < 0.63 ("1" is applicable if I_r ≥ 0.63)

Accessory

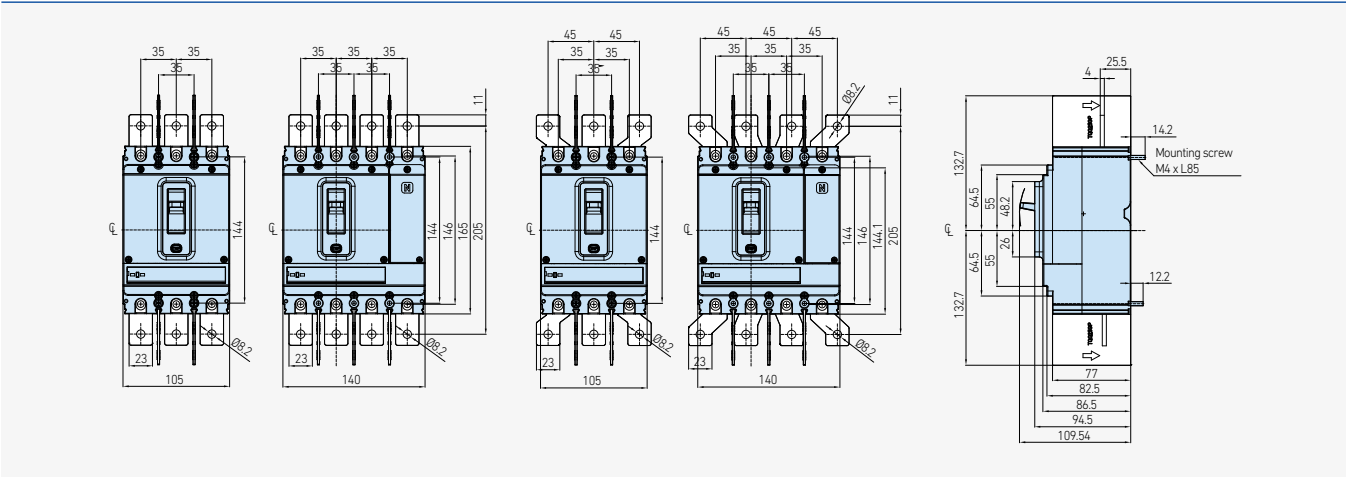
Internal	Auxiliary switch (AUX), Alarm switch (ALT), Shunt trip (SHT), Undervoltage trip (UVT)
External	Rotary handle - Front contact (TFG)/Extended (TFH), Motor operator (MOT), Mechanical interlock (MIF), Locking device (PLD), Cage terminal block (CTB), Insulation terminal cover (TCF), Insulation barrier (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)×ln				(0.7-0.8-0.9-1.0)×ln				(0.7-0.8-0.9-1.0)×ln				(0.8-0.9-1.0)×ln				(0.8-0.9-1.0)×ln				(0.8-0.9-1.0)×ln			
10×ln				(5-6-7-8-9-10)×ln				(5-6-7-8-9-10)×ln				(5-6-7-8-9-10)×ln				(5-6-7-8-9-10)×ln				(5-6-7-8-9-10)×ln			
●				●				●				●				●				●			
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×ln				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×ln				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×ln				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×ln				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×ln				0.4-0.45-0.5-0.56-0.63-0.7-0.8-0.9-1×ln			
16 @ 6lr				16 @ 6lr				16 @ 6lr				16 @ 6lr				16 @ 6lr				16 @ 6lr			
0.5-1-2-4-6-8-16 @ 6×lr				0.5-1-2-4-6-8-16 @ 6×lr				0.5-1-2-4-6-8-16 @ 6×lr				0.5-1-2-4-6-8-16 @ 6×lr				0.5-1-2-4-6-8-16 @ 6×lr				0.5-1-2-4-6-8-16 @ 6×lr			
1.5-2-3-4-5-6-7-8-10×ln				1.5-2-3-4-5-6-7-8-10×ln				1.5-2-3-4-5-6-7-8-10×ln				1.5-2-3-4-5-6-7-8-10×ln				1.5-2-3-4-5-6-7-8-10×ln				1.5-2-3-4-5-6-7-8-10×ln			
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×ln				1.5-2-4-6-8-10-11-12-13-14-15×ln				1.5-2-4-6-8-10-11×ln				1.5-2-4-6-8-10-11×ln				1.5-2-4-6-8-10-11×ln				1.5-2-4-6-8-10-11×ln			
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×ln				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×ln				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×ln				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×ln				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×ln				OFF-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×ln			
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 ³⁾ ×ln				OFF-0.5-1-1.6 ³⁾ ×ln				OFF-0.5-1-1.6 ³⁾ ×ln				OFF-0.5-1-1.6 ³⁾ ×ln				OFF-0.5-1-1.6 ³⁾ ×ln				OFF-0.5-1-1.6 ³⁾ ×ln			
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			

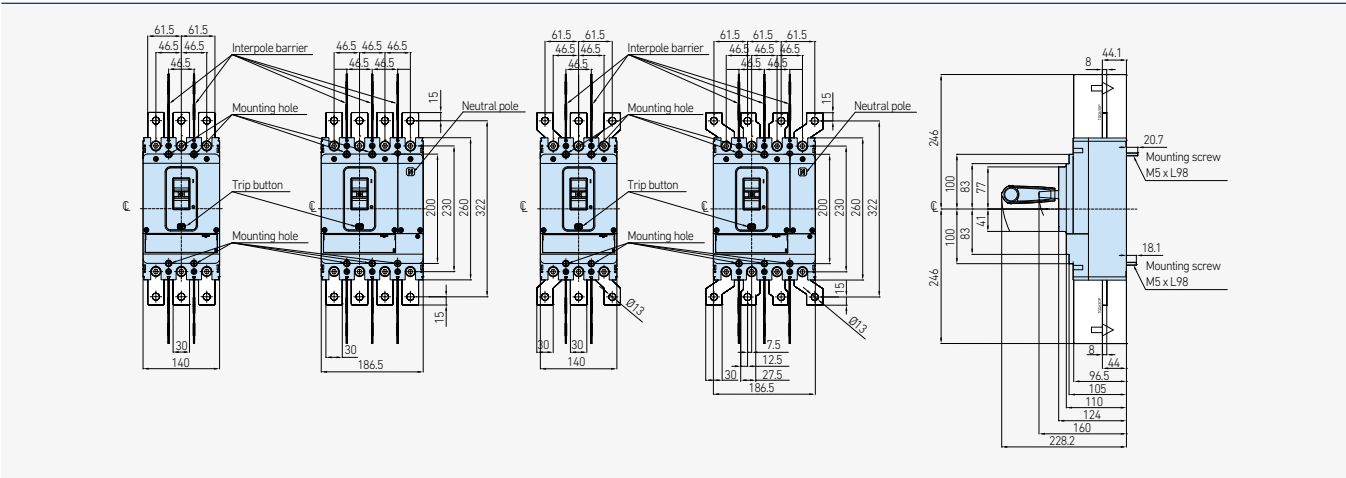
※ 3) DC is only applicable to thermal magnetic
4) *Only applicable to oversea products/ship products

Dimensions for Electronic MCCB

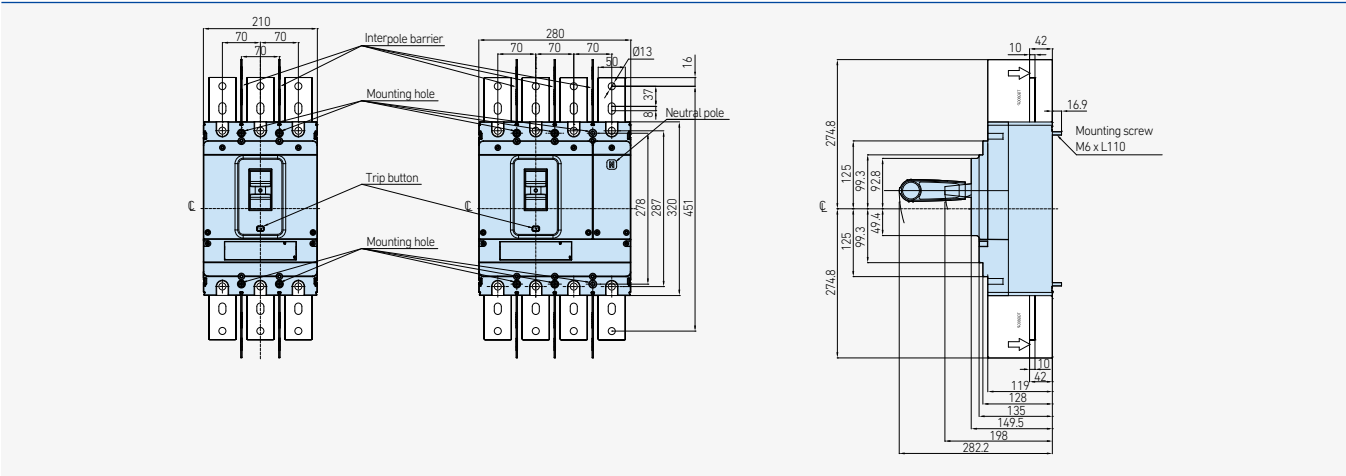
HGP250



HGP630



HGP800



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

HYUNDAI ELECTRIC

KOREA

Headquarter (Financial)	Hyundai Bldg, 75, Yulgok-ro, Jongno-gu, Seoul, Korea Tel: +82-2-746-7646 / Fax: +82-2-746-7441
Sales & Marketing (Seongnam)	5th Floor 55, Bundang-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea Tel: +82-31-8006-6780 / Fax: +82-31-8006-6898
Main Factory (Ulsan)	700, Bangeojinsunhwan-doro, Dong-gu, Ulsan, Korea Tel: +82-52-202-8114 / Fax: +82-52-202-8010
Seonam Factory (Ulsan)	223, Sapyong-ro, Nam-gu, Ulsan, Korea Tel: +82-52-202-8114
R&D Center (Yongin)	17-10, Mabuk-ro 240beon-gil, Mabuk-ro, Giheung-gu, Yongin-si, Korea Tel: +82-31-289-5114 / Fax: +82-31-289-5040

OVERSEAS

Branch Offices

U.S.A (Atlanta)	6100 Atlantic Boulevard, 2nd FL., Norcross, GA30071, U.S.A Tel: +1-678-823-7839 / Fax: +1-678-823-7553
Japan (Osaka)	5th Floor Nagahori Plaza Bldg. 2-4-8 Minami Senba, Chuo-ku, Osaka 542-0081, Japan Tel: +81-6-6261-5766~7 / Fax: +81-6-6261-5818
Saudi Arabia (Riyadh)	Office number 404, 4th floor, Akaria-3 building, Olaya street, P.O Box 8072, Riyadh, 11482, Kingdom of Saudi Arabia Tel: +966-11-464-4696, 9366 / Fax: +966-11-462-2352
Russia (Moscow)	World Trade Center, Ent.3, #703, Krasnopresnenskaya Nab.12, Moscow, 123610, Russia Tel: +7-495-258-1381
U.A.E (Dubai)	Unit 205, Emaar Square Building No.4 Sheikh Zayed Road, Dubai 252458, U.A.E Tel: +971-4-425-7995 / Fax: +971-4-425-7996
Germany (Frankfurt)	Mendelssohn strabe 55-59 Frankfurt 60325, Germany Tel: +49-69-4699-4988
Thailand (Bangkok)	19th Floor, Unit 1908, Sathorn Square Office Tower, 98 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand Tel: +66-02-115-7920 / Fax: +66-2-115-7898

Subsidiaries

U.S.A (Alabama)	Inc., 215 Folmar Parkway, Montgomery, AL 36105, U.S.A. Tel: +1-334-481-2000 / Fax: +1-334-481-2098
Bulgaria (Sofia)	41, Rojen Blvd., 1271 Sofia, Bulgaria Tel: +359-2-803-3200, 3210, 3220 / Fax: +359-2-803-3203, 3242
China (Yangzhong)	No.9, Xiandai Road, Xinba Scientific and Technologic Zone, Yangzhong, Jiangsu, P.R.C. Zip:212212, China Tel: +86-511-8842-0666, 0500 / Fax: +86-511-8842-0668, 0231
India (Anantapur)	5-289-4, Near Aimuktheeshwara Temple, Penukonda Mandal, Penukonda, Anantapur Dist, Andhrapradesh-515110, India Tel: +91-93982-5137

R&D Centers

Hungary (Budapest)	Hyundai Technologies Center Hungary Ltd., 1146, Budapest, Hermina ut 22, Hungary Tel: +36-1-273-3733 / Fax: +36-1-220-6708
China (Shanghai)	Room 10102, Building 10, No.498, Guoshoujing Road, Pudong, Shanghai, China Tel: +86-21-5013-3393 #108 / Fax: +86-21-5013-3393 #105
Switzerland (Zurich)	Hardturmstrasse 135, CH-8005, Zurich, Switzerland Tel: +41-44-527-0-56