



LV Distribution Device for Renewable Energy

HGP DC Type

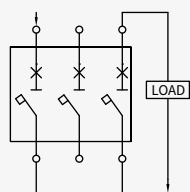
Molded Case Circuit Breaker



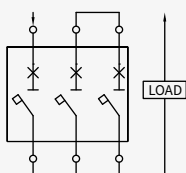
Model Selection Table

Common Ratings			
Rated Insulation Voltage, Ui	1,500V	Suitablilty for Isolation	Yes
Rated Impulse Withstand Voltage, Uimp	8kV	Utilization Category	A
Protection Function	Overload, Instantaneous, Short-Circuit Protection	Pollution Degree	3
		Reference Standard	IEC 60947-2

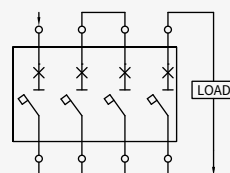
Model Name				HGP100		HGP160	
Frame			(AF)	100		160	
Number of Poles			(P)	4		4	
Rated Current, at 40 °C			(A)	40, 50, 63, 80, 100		100, 125, 150, 160	
Rated Ultimate Short-Circuit Breaking Capacity [Icu] (kA rms)		Short-Circuit Breaking Category Code		S	H	S	H
		DC 1,500V for 4P		20	50	20	50
Service Breaking Capacity [Ics = % Icu]				20	50	20	50
Trip Device	Thermal Magnetic	Long Time [LTD]		(0.7-0.8-0.9-1.0)xIn		(0.7-0.8-0.9-1.0)xIn	
		Instantaneous [INST]		10×In		10×In	
Accessory	Internal	Auxiliary Switch		AUX	●	●	
		Alarm Switch		ALT	●	●	
		Shunt Trip		SHT	●	●	
		Under-Voltage Trip		UVT	●	●	
	External	Rotary Handle	Front Contact	TFG	●	●	
			Extension	TFH	●	●	
		Mechanical Open/Close Device		MOT	●	●	
		Mechanical Interlock		MIF	●	●	
		Handle Locking Device		PLD	●	●	
		Cage Terminal Block		CTB	●	●	
		Insulation Barrier		TQQ	●	●	
		Terminal Bus Bar		TBB	●	●	
		Series Bus Bar		SBB	●	●	
		Installation and Dimensions	Connection/Installation	Front Connection		Terminal Screw, Terminal Bus Bar	
Dimension (mm)	a		140		140		
	b		165		165		
	c		86.5		86.5		
Certificates		IEC60947-2 Annex.P		●		●	



2P



3P



4P

HGP250		HGP400		HGP630	
250		400		630	
4		4		4	
125, 150, 160, 175, 200, 225, 250		300, 350, 400		500, 630	
S	H	S	H	S	H
20	50	20	50	20	50
20	50	20	50	20	50
$(0.7-0.8-0.9-1.0) \times I_n$		$(0.8-0.9-1.0) \times I_n$		$(0.8-0.9-1.0) \times I_n$	
$10 \times I_n$		$10 \times I_n$		$10 \times I_n$	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
●		●		●	
Terminal Screw, Terminal Bus bar		Terminal Screw, Terminal Bus bar		Terminal Screw, Terminal Bus bar	
140		186.5		186.5	
165		260		260	
86.5		110		110	
●		●		●	

Technical Data

(HGP DC Type)

Environmental Operating Conditions

Temperature Derating

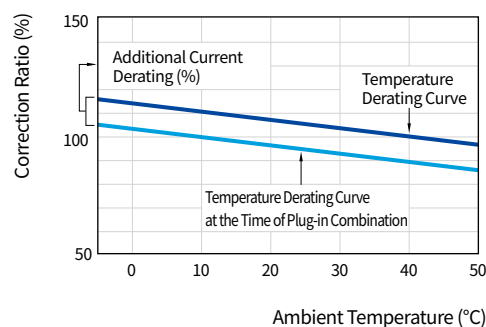
The overcurrent characteristic of MCCB has been set to the ambient temperature of 40 °C. If the ambient temperature is less or more than 40 °C, the overcurrent characteristics may differ.

If the Ambient Temperature is less than 40 °C

In order to ensure that the circuit breaker's overcurrent meet the derating curve at the given ambient temperature, the real current (Ir) has to be adjusted. The temperature correction ratio or each MCCB is shown in the circuit breaker's characteristics curve.

If the Ambient Temperature is more than 40 °C

As the internal temperature of MCCB is a sum of increased temperature due to current flow and the ambient temperature, if the ambient temperature exceeds 40 °C, thermal damage of internal insulation material of MCCB may occur causing the circuit breaker to trip at an early stage. When applying ambient temperature higher than 40 °C, the rated current must be adjusted as shown in the following rated current correction table.



In (Rated Current) :
Circuit breaker's rating at ambient temperature of 40 °C
Ir (Real Current) :
Circuit breaker's rating at the given temperature
 $I_r = \text{Correction Ratio (\%)} \times I_n$

Rated Current Derating Table : HGP DC Type/Standard Mounting (Fixed Type)

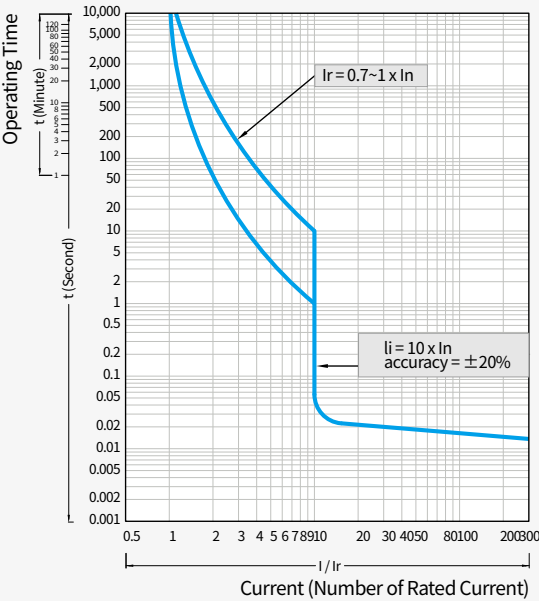
Model	Rated Current [Adc]	Ambient Temperature (°C)										Connection
		10	20	30	40	45	50	55	60	65	70	
HGP100 HGP160 HGP250	40	46	44	42	40	39	38	37	36	35	34	HGP250 Busbar
	50	58	55	53	50	49	48	46	45	44	43	
	63	72	69	66	63	61	60	58	57	55	54	
	80	92	88	84	80	78	76	74	72	70	68	
	100	115	110	105	100	98	95	93	90	88	85	
	125	144	138	131	125	122	119	116	113	109	106	HGP250 Busbar + Heat Sink
	150	173	165	158	150	146	143	139	135	131	128	
	160	184	176	168	160	156	152	148	144	140	136	
	175	201	193	184	175	171	166	162	158	153	149	
	200	230	220	210	200	195	190	185	180	175	170	
	225	259	248	236	225	219	214	208	203	197	191	
	250	288	275	263	250	244	238	231	225	219	213	
HGP400 HGP630	300	323	315	308	300	291	282	273	264	255	246	HGP630 Busbar + Heat Sink
	350	376	368	359	350	340	330	320	310	300	290	
	400	430	420	410	400	388	376	364	352	340	328	
	500	538	525	513	500	485	470	455	440	425	410	
	630	677	662	646	630	611	592	573	554	535	516	

Operation Characteristic Curve

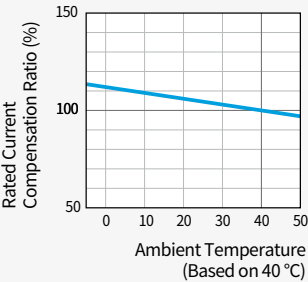
(HGP Thermal Magnetic Type)

HGP250

• HGP100, 160, 250

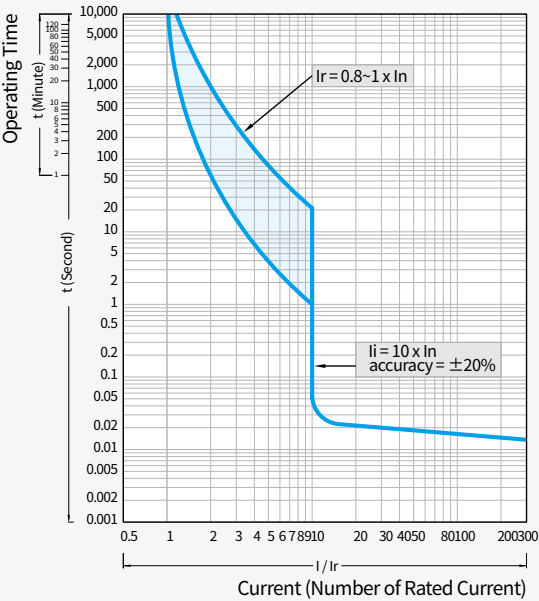


Ambient Temperature Derating Curve

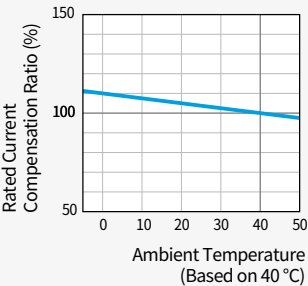


HGP630

• HGP400, 630

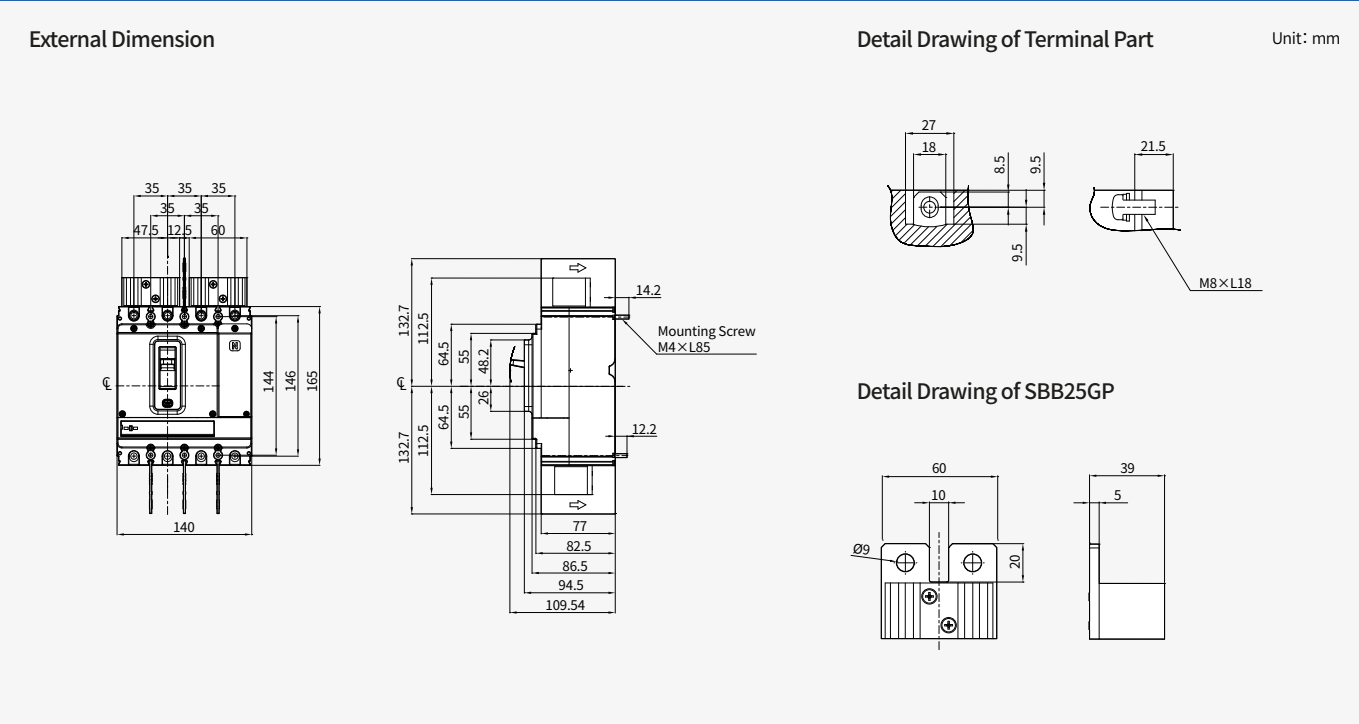


Ambient Temperature Derating Curve

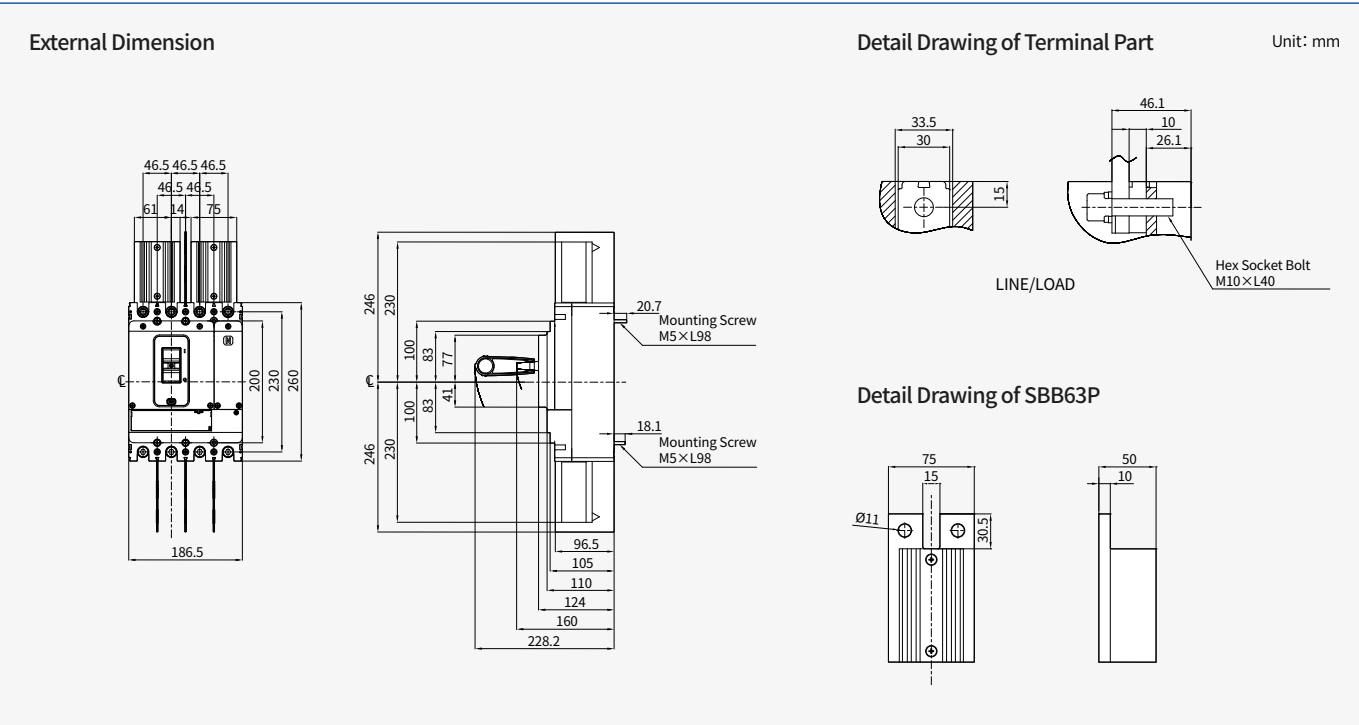


Dimensions

HGP100, 160, 250

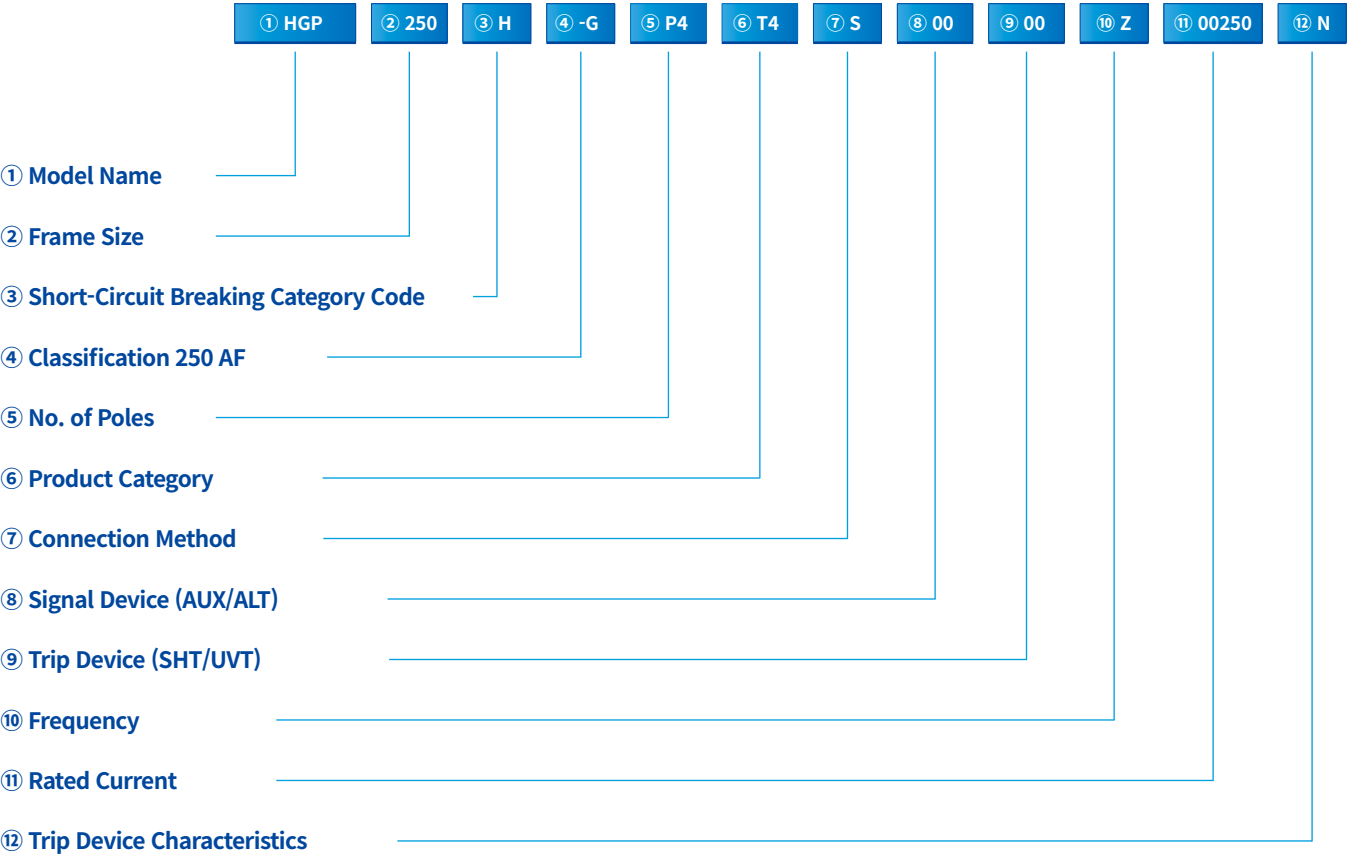


HGP400, 630



Order Information

Order Code



① Model Name		④ Classification-250 AF		⑦ Connection Method		⑩ Frequency	
HGP	Molded Case Circuit Breaker /Earth Leakage Circuit Breaker	-G	New Type Terminal Height (21.5 mm)	S	Front Connection	Z	DC
② Frame Size		⑤ No. of Poles		⑧ Signal Device (AUX/ALT)		⑪ Rated Current	
100	100AF	P4	DC 1,500V 4Pole	00	Not Attached	00040	40A
160	160AF					⋮	
250	250AF					00250	250A
400	400AF					00300	300A
630	630AF					⋮	
						00630	630A
③ Short-Circuit Breaking Category Code		⑥ Product Category		⑨ Trip Device (SHT/UVT)		⑫ Trip Device Characteristics	
DC		Molded Case Circuit Breaker		00	Not Attached	For Protecting Overload Short-Circuit	
S	20kA	T4	Ambient Temperature of 40 °C			N	Thermal Fixed/Instantaneous Fixed (MTM - FF) + 4P N Phase Protection
H	50kA					FN	Thermal Adjustable/Instantaneous Fixed (MTM - JF) + 4P N Phase Protection

 HYUNDAI ELECTRIC

Korea

Head Office	Hyundai Bldg, 75, Yulgok-ro, Jongno-gu, Seoul, Korea		
Sales Office	5th Floor 55, Bundang-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea	Tel : +82-31-8006-6780, 6786	Fax : +82-31-8006-6629
Factories	700, Bangeojinsunhwan-doro, Dong-gu, Ulsan, Korea 223, Sapyong-ro, Nam-gu, Ulsan, Korea (Seonam)		
R&D Center	17-10, Mabuk-ro 240beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Korea		

Branch Offices

Atlanta	6100 Atlantic Boulevard, 2nd FL., Norcross, GA30071, U.S.A	Tel : +1-678-823-7839	Fax : +1-678-823-7553
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
Moscow	World Trade Center, Ent.3, #703, Krasnopresnenskaya Nab.12, Moscow, 123610, Russia	Tel : +7-495-258-1381	
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
Frankfurt	Mendelssohn strabe 55-59 Frankfurt 60325, Germany	Tel : +49-69-4699-4988	
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
