

LV&MV Circuit Breakers and Contactors



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MC (Magnetic Contactors)

Product Features

- **Various Product Ranges**
 - Front Auxiliary Type : 18/40/65/100 (4 Frames)
 - Side Auxiliary Type : 65B/100B
150/265/500/800AF (6 Frames)
- **Variable Accessories**
 - Thermal Overload Relay : HGT18K - 800K (0.18 - 800 A)
 - Control relay : HGR40/31/22/13/04
 - Auxiliary Contact Block : HGCTB(Top) / HGCSB(Side)
 - Interlock Unit : HGCIU
 - Mechanical Latching Block : HGCLB100
 - Surge Absorber : HGCRC(AC) / HGCCD(DC)
 - Electronic Timer Block : HGCET
- **Terminal Designation** : Screw & Cage
- **Standards**
 - UL 60947 4-1 / IEC 60947 4-1



Ratings and Specifications

Model		HGC9	HGC12	HGC18	HGC25	HGC32	HGC40	HGC50	HGC65	HGC75	HGC85	HGC100	HGC50B	HGC65B	HGC75B	HGC85B	HGC100B	
UL 60947 4-1	Standard	UL Recognized (File Number : E532729)																
	Pole	3																
	Rated frequency	50/60																
	Continuous current (ambient temperature 40 °C)	50/60																
	Single phase	1P/110 - 120 V	25	25	40	45	55	60	70	85	115	125	145	70	85	115	125	145
			0.5	1	2	2	3	3	3	5	7.5	7.5	10	3	5	7.5	7.5	10
		1P/220 - 240 V	1.5	2	3	5	5	7.5	10	15	15	15	20	10	15	15	15	20
			2	3	7.5	7.5	7.5	15	20	25	25	30	30	20	25	25	30	30
			3	5	7.5	10	10	15	25	30	30	40	40	25	30	30	40	40
	Three phase	3P/200 - 208 V	5	7.5	10	15	20	30	40	50	50	60	75	40	50	50	60	75
3P/440 - 480 V		7.5	10	15	20	25	30	50	60	60	75	75	50	60	60	75	75	
3P/600 V																		
Mounting method	Screw & rail mounting																	
Terminals	Screw clamp terminals or lug clamp terminals																	
Auxiliary contacts	standard	1NO 1NC 2NO 2NC						2NO 2NC 2NO 1NC						2NO 2NC 2NO 1NC				
	Additional (front or side mount)	2NO 2NC						2NO 2NC 1NO 1NC						2NO 2NC 1NO 1NC				
Dimension	AC	1.77×3.71×3.59 [45×94.2×9.1.1]				1.77×3.92×3.80 [45×99.6×96.6]				2.17×4.87×4.96 [55×123.6×126]		2.76×5.75×6.02 [70×146×153]		3.15×4.87×4.21 [80×123.6×107]		3.74×5.75×5.14 [95×146×130.6]		
	DC	1.77×3.71×4.88 [45×94.2×124]				1.77×3.92×5.10 [45×99.6×129.5]												

Model		HGC115	HGC130	HGC150	HGC185	HGC225	HGC265	HGC300	HGC400	HGC500	HGC630	HGC800		
UL 60947 4-1	Standard	UL Recognized (File Number : E532729)												
	Pole	3												
	Rated frequency	50/60												
	Continuous current (ambient temperature 40 °C)	50/60												
	Single phase	1P/110 - 120 V	160	180	210	275	315	350	400	500	550	750	900	
			10	10	15	15	15	-	-	-	-	-	-	
		1P/220 - 240 V	20	20	25	30	40	-	-	-	-	-	-	
			30	40	40	60	60	75	100	125	150	200	300	
			40	40	50	60	75	100	100	150	200	250	350	
	Three phase	3P/200 - 208 V	75	75	100	125	150	200	250	300	400	500	600	
3P/440 - 480 V		75	75	100	125	150	200	200	300	400	500	600		
3P/600 V														
Mounting method	Screw mounting													
Terminals	Screw clamp terminals													
Auxiliary contacts	standard	2NO 2NC												
	Additional (side mount)	2NO 2NC												
Dimension	AC & DC	4.06×6.10×5.71 [103×155×145.1]				5.43×8.03×6.86 [138×204×174.2]			6.42×9.57×7.99 [163×243×203]			10.87×12.36×10.05 [276×314×255.3]		

MCCB (Molded Case Circuit Breakers)

Product Features

• Simplified Product Ranges

- AF : 125 / 150 /250 /400 /600 AF
- AT : 15 - 600 A
- Number of Poles : 1/2/3P (125 AF),
2/3P (150 - 600 AF)

• Variable Accessories

- Electrical auxiliaries [AX, AL, UVT, SHT]
- Extended and direct mount rotary handle
- Flange handle with flexible cable and linkage
- Variable depth mechanism
- Locking devices
- LUG for CU cable with UL486

• High Performance

- Ultimate breaking capacity (kA rms)
- Max 100 kA @480 VAC and 65 kA @600 VAC

• Standards

- World class with UL489

• Various Trip Units

- MTM FF : Fixed thermal
Fixed magnetic
- MTM JF : Adjustable thermal
Fixed magnetic
- MTM JJ : Adjustable thermal
Adjustable magnetic



Ratings and Specifications

Model			HGU125	HGU150	HGU250	HGU400	HGU600	
Standard			UL FILE No. MCCB : E542499 / MCS : E542498 / MCP : E547188					
Pole	P		1/2/3 ¹⁾	2/3	2/3	2/3	2/3	
Current rating	%		80/100	80/100	80/100	80/100	80	
UL489 Interrupting capacity (kA rms) AC (50/60 Hz)	120/240 V	kA	100	150	150	150	150	
	277V		1P:65	-	-	-	-	
	347V		1P:18	-	-	-	-	
	480V		2P/3P:65	100	100	100	100	
	600V		-	65	65	65	65	
	600V/347V		2P/3P:35	-	-	-	-	
Rated current	A		15 - 125	MCP	2.5 - 150	220	320	500
				MTM FF	15 - 150	150 - 250	250 - 400	500, 600
				MTM JF	40 - 150	160 - 250	300, 400	500, 600
				MTM JJ	100 - 150	160 - 250	300, 400	500, 600
				MCS	150	175, 250	400	600
Trip unit			MTM, MCS ²⁾	MTM, MCS, MCP	MTM, MCS, MCP	MTM, MCS, MCP	MTM, MCS, MCP	
Dimension ³⁾	W×H×D	inch [mm]	1P:25.4×130×86.5 [1×5.12×3.41]	2P/3P:105×165×86.5 [4.13×6.5×3.41]	2P/3P:105×190×86.5 [4.13×7.48×3.41]	2P/3P:140×290×110 [5.51×11.4×4.33]	2P/3P:140×340×110 [5.51×13.39×4.33]	
			2P:50.8×130×86.5 [2×5.12×3.41]					
			3P:76.2×130×86.5 [3×5.12×3.41]					
Certification			UL486, UL489					

※ **1)** 2P is S-phase block for HGU150/250/400/600
2) MCS - 1P : N/A
3) 2P and 3P dimension is equal for HGU150/250/400/600

ACB (Air Circuit Breakers)

Product Features

- HGL circuit breakers and their accessories conform to ANSI C37.13, C37.16, C37.17, C37.50 standards and are UL 1066 certified. HGL can be used in UL1588 switchgear, UL 891 switchboards and CSA C22.2 no.31 switchgear.
- Easy for maintenance.
- High breaking capacity and full line-up to 6,000 A
- N-Phase conducting capacity 100 %.
- Interchangeable trip unit and rating plug.
- Supply a variety of accessories and easy to install them additionally.



Ratings and Specifications

Frame				A	B	C	D
Model				HGL			
				08, 16	08, 16, 20, 25, 32	40	60
Rated current (In max)	A	40°C, CT Rating plug		08: 400/600/630/800 16: 800/1,000/1,200/ 1,250/1,600	08: 400/600/630/800 16: 800/1,000/1,200/ 1,250/1,600 20: 1,000/1,200/1,250/ 1,600/2,000 25: 1,250/1,600/ 2,000/2,500 32: 1,600/2,000/ 2,500/3,000/3,200	40: 2,000/2,500/3,000/ 3,200/3,600/4,000	60: 3,000/3,200/3,600/ 4,000/5,000/6,000
Certified Standards				UL 1066 / ANSI C37.13			
Frequency	Hz			50/60			
Poles	P			3, 4			
Current setting range	A	Control trip relay (..... × In max)		0.5 ~ 1.0			
Rated current of neutral pole (N) (%×In)	A			100%			
Rated short circuit current (Duty : 0-15s-CO) with instantaneous	kA	AC	635V	65	85	85	100
			508V	85	100	100	130
			254V	85	100	100	130
Rated short circuit current (Duty : 0-15s-CO) without instantaneous	kA	AC	635V	65	85	85	100
			508V	65	85	85	100
			254V	65	85	85	100
Rated short time current	kA	AC	65	85	85	100	
Dimension inch [mm]	W×H×D	3 Pole	Draw-out	12.91×19.17×16.54 [328×487×420.2]	15.71×19.17×16.54 [399×487×420.2]	24.57×19.96×16.54 [624×507×420.2]	30.16×19.96×16.54 [766×507×420.2]
			Fixed	13.91×15.92×11.65 [353.4×404.4×295.8]	16.71×15.92×11.65 [424.4×404.4×295.8]	25.57×15.98×11.65 [649.4×406×295.8]	31.16×15.92×11.65 [791.4×404.4×295.8]
		4 Pole	Draw-out	16.26×19.17×16.54 [413×487×420.2]	20.24×19.17×16.54 [514×487×420.2]	31.26×19.96×16.54 [794×507×420.2]	39.21×19.96×16.54 [996×507×420.2]
			Fixed	17.26×15.92×11.65 [438.4×404.4×295.8]	21.24×15.92×11.65 [539.4×404.4×295.8]	32.26×15.98×11.65 [819.4×406×295.8]	40.21×15.92×11.65 [1021.4×404.4×295.8]

VCB (Vacuum Circuit Breakers)

Product Features

- **Full Line-up of High/Middle/Low VCB Models**
 - 4.76 kV 25 kA 630 - 2,000 A
 - 4.76 kV 31.5/40 kA 630 - 3,000 A
 - 4.76 kV 50 kA 630 - 4,000 A
 - 15 kV 31.5/40 kA 1,200 - 3,000 A
 - 38 kV 31.5/40 kA 1,200 - 3,000 A
- **Strong Structure with High Reliability**
 - High dielectric strength and temperature rising
 - Reliable mechanical durability
 - Excellent breaking capability
- **Convenience and Supply a Variety of Accessories**
 - Full types of Cradle
- **Certified by ANSI C37.09 and UL Recognized**



Ratings and Specifications

Model ¹⁾	HVF 144□	HVF 145□	HVF 146□	HVF 147□	HVF 344□	HVF 345□	HVF 346□	HVF 705□	HVF 706□	
Standard	ANSI C37.09, UL Recognized				ANSI C37.09, UL Recognized			ANSI C37.09		
Rated voltage (kV)	4.76				15			38		
Frequency (Hz)	60				60			60		
Rated current (A)	1: 630 2: 1,200 4: 2,000	1: 630 2: 1,200 4: 2,000 7: 3,000	1: 630 2: 1,200 4: 2,000 7: 3,000	1: 630 2: 1,200 4: 2,000 7: 3,000 8: 4,000	1: 630 2: 1,200 4: 2,000	1: 630 2: 1,200 4: 2,000 7: 3,000	1: 630 2: 1,200 4: 2,000 7: 3,000	2: 1,200 4: 2,000 7: 3,000	2: 1,200 4: 2,000 7: 3,000	
Rated short-circuit breaking current (kA)	25	31.5	40	50	25	31.5	40	31.5	40	
Rated short-circuit making current (kA)	65	82	104	130	65	82	104	82	104	
Short-time withstand current for 3 sec (kA)	25	31.5	40	50	25	31.5	40	31.5	40	
Power-frequency withstand voltage (kV, 1 min)	19				36	36	36	80	80	
Impulse withstand voltage (kV, 1.2×50 μs)	60				95	95	95	150	150	
Operating duty	O - 0.3sec - CO - 15sec ²⁾ - CO				O - 0.3sec - CO - 15sec - CO			O - 0.3sec - CO - 3min - CO		
Closing time (ms, at DC125 V)	45 - 70			45 - 55	45 - 70			45 - 70		
Opening time (ms, at DC125 V)	28 - 38			31.5 - 38.5	28 - 38			35 - 50		
Breaking time (cycles)	3				3			5		
Closing operating	System	Motor spring stored energy				Motor spring stored energy			Motor spring stored energy	
	Supply voltage (V)	DC48, 125, 250 / AC110, 120, 240				DC48, 125, 250 / AC110, 120, 240			DC48, 125, 250 / AC120, 240	
Closing & tripping control	Tripping system	Shunt trip				Shunt trip			Shunt trip	
	Supply voltage (V)	DC48, 125, 250 / AC110, 120, 240				DC48, 125, 250 / AC110, 120, 240			DC48, 125, 250 / AC120, 240	
Operating life (times)	10,000 ³⁾				10,000 ³⁾			10,000 ⁴⁾		
Auxiliary contacts	4NO+4NC (Max. 10NO+10NC)				4NO+4NC (Max. 10NO+10NC)			4NO+4NC (Max. 10NO+10NC)		
Weight (kg/lbs) (Main-body)	□ 170/375 □ 170/375 □ 210/463	□ 180/397 □ 180/397 □ 220/485 □ 280/662	□ 180/397 □ 180/397 □ 220/485 □ 280/662	□ 200/375 □ 200/375 □ 220/463 □ 280/662 □ 280/662	□ 170/375 □ 170/375 □ 210/463	□ 180/397 □ 180/397 □ 220/485 □ 300/662	□ 180/397 □ 180/397 □ 220/485 □ 300/662	□ 420/927(l) □ 460/1015(l) □ 600/1324(l)	□ 420/927(l) □ 460/1015(l) □ 600/1324(l)	

※ **1)** Type number in the square "□" shall be listed as shown in the line for the rated current.
2) HVF 147□ is 3min.
3) The value is with maintenance, 2,000 times without maintenance.
4) 500 times without maintenance.

VI (Vacuum Interrupters)



Product Features

• High Short-circuit Breaking Capacity

HD HYUNDAI vacuum interrupters realize high short-circuit breaking capacity at compact size by applying two geometrically different contacts according to specification. Radial magnetic field contact flow higher current through a constricted arc, and axial magnetic field allows a diffuse arc even where the current intensity is high. Both the radial and axial magnetic fields are produced by special current paths provided in the contacts under the surface.

• Low Chopping Current

Below a certain minimum current, the metal vapour arc is interrupted prior to the natural current zero. When the current is interrupted by chopping phenomenon, the overvoltage shall appear just before the natural current zero point. Therefore this chopping current must be as low as possible in order to prevent the build-up of impermissibly high overvoltage. The magnitude of chopping current depends largely on the contact material used. The CrCu contact material keeps the chopping current below 5 A.

• High Dielectric Strength

On opening of the contact, the current to be interrupted produces a metal vapour arc discharge and continues flowing through the plasma until the next current is zero. The arc is extinguished in the vicinity of the current zero, and the metal vapour loses its conductivity within a few microseconds. The dielectric strength of the break is thus re-established very quickly. The steady state of pressure in a vacuum interrupter is less than 1×10^{-7} mbar. Contact clearances of 2 mm to 20 mm suffice and therefore produces a high dielectric strength.

• Minimal Contact Erosion

The metal vapour plasma of the vacuum arc is highly conductive. The arc voltage and the energy conversion in the break are likewise minimal. The high conductivity, in conjunction with the minimal energy conversion and short arcing times are the reasons for the minimal contact erosion and long electrical service life of our vacuum interrupters.

Ratings and Specifications

Rated voltage	Rated lightning impulse voltage	Power frequency withstand voltage	Rated current	Short-circuit breaking current						
				4/4.3 kA	12/12.5 kA	16 kA	25 kA	31.5 kA	40 kA	50 kA
4.76	60	19	1,200/2,000				HVS 01525*	HVS 01750*	HVS 01750*	HVS 01554*
			3,000							HVS 01558*
7.2	60	20	400	HVC 00703**						
				HVC 00704**						
				HVC 00709***						
			700/800	HVC 00710***						
			1,200	HVC 00712***						
12	75	28	2,000				HVS 01525*		HVS 01750*	
			3,000							HVS 01753*
			400	HVC 01204**						
15	95	36	3,000				HVS 01525*		HVS 01750*	
27	150	60	630/800		HVC 02407****					
			1,600/2,000		HVS 02416*****	HVS 02416*****			HVS 02436*****	
38	170	70	630/800		HVS 03816****	HVS 03816****				
			3,000					HVS 03644*****		
										HVS 03645*

* : VI for Vacuum Circuit Breaker
 ** : VI for Vacuum Contactor
 *** : VI for Tap Changer
 **** : VI for Load Breaker Switch
 ***** : VI for Recloser
 ***** : VI for C-GIS

VC (Vacuum Contactors)

Product Features

• Superior switching performance

Switching a vacuum makes for rapid breaking. Rapid build-up of the dielectric strength ensures safety breaking.

• High Reliability

Rigid insulation frame and operating mechanism offer high reliability, especially for safety and quality assurance.

• Free voltage of control power

Common operating voltage of AC/DC 100 ~ 125 V, AC/DC 220 ~ 240 V. Controller used in two voltage ranges is compatible as they are identical parts.

• Optimum Design

Optimized structure and mechanism complement frequent switching.

• Customer Convenience

Light weight and compact size enable easy installation with high efficiency in space. Optimum design makes maintenance convenient.

• UL and cUL certification

Acquired UL and cUL certification according to UL347, proving reliability for use in the US and Canada.



Ratings and Specifications

Division		Fixed-Type				Draw-Out			
		X1				B1			
Item									
Type									
Continuous-Type		UVC 32C□	UVC 34C□	UVC 62C□	UVC 64C□	UVC 32C□	UVC 34C□	UVC 62C□	UVC 64C□
Latch-Type		UVC 32L□	UVC 34L□	UVC 62L□	UVC 64L□	UVC 32L□	UVC 34L□	UVC 62L□	UVC 64L□
Rated Breaking Voltage	kV	3.6		7.2		3.6		7.2	
Rated Operating Voltage	kV	3.3		6.6		3.3		6.6	
Rated Frequency	Hz	60				60			
Rated Current	A	200	400	200	400	200	400	200	400
Impact Withstand Voltage	kV	60				60			
Commercial Frequency Withstand Voltage	for 1 min, kV	20				20			
Control Circuit Withstand Voltage	for 1 min, kV					2			
Opening/Closing Capacity Category						AC 4			
Breaking Capacity (O-3 min-CO-3 min-CO)	kA					4			
Short-Time Current									
1 sec						6.3			
30 sec						2.4			
Durability		10,000 operations							
Continuous-Type						100			
Latch-Type						30			
Control Voltage	V					AC/DC 100 ~ 125 V, AC/DC 220 ~ 240V			
Aux Contacts						3a2b			
Weight	kg	20				50			

Memo

A large, empty rectangular box with a thin black border, intended for handwritten notes or a memo.

Memo

Atlanta

(U.S.A, HD Hyundai Electric America)

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