



Beyond XTM

UL Electric Products

ACB / MCCB / Smart MCCB / MCB / MC&TOR
Mini-MS / MMS / EMPR / DC Relay / VCB / LIS



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Air Circuit Breakers



Molded Case Circuit Breakers



Vacuum Circuit Breakers



**Electronic motor protection relays /
High Voltage DC Relay**



Contactors & Overload Relays



Miniature Circuit Breakers

Contents

Air Circuit Breakers	4
Molded Case Circuit Breakers	14
Smart MCCB	17
Miniature Circuit Breakers	21
Contactors & Overload Relays	26
Mini Contactors	39
Manual Motor Starters	42
Electronic motor protection relays	46
High Voltage DC Relay	53
Vacuum Circuit Breakers	56
Load Interrupter Switch	74

Air circuit breakers

Ratings for Susol UL circuit breakers



Type					
AF					
Rated current (CT Ration)	(A)	at 40°C			
Rated current (Available Rating plug)	(V)	at 40°C			
Rated maximum voltage	(V)				
Frequency	(Hz)				
Number of poles	(P)				
Type of trip relay (Electronic trip device)					
Rated short circuit current (Sym.) (Duty: 0-15s-CO)	(kA)	With instantaneous	AC	847V(60Hz)	
				635V	
				508V	
				254V	
		Without instantaneous	AC	847V(60Hz)	
				635V	
				508V	
				254V	
Rated making current (X/R=more than 6.6)	(kA peak)	With instantaneous	AC	847V(60Hz)	
				635V	
				508V	
				254V	
		Without instantaneous	AC	847V(60Hz)	
				635V	
				508V	
				254V	
Rated short time current	(kA)	AC			
Operating time (t)	(ms)	Breaking time			
		Opening time			
		Closing time			
		Charging time			
Endurance Rating C/O Cycles (Without maintenance)	(Cycles)	Mechanical (60 times per hour)			
		Electrical (30 times per hour)			
Weight (Include Charging motor)	lb (kg)	Drawout type	Main Body with Cradle Only Cradle	3P	
				4P	
				3P	
				4P	
		Fixed type	3P		
			4P		
External dimension	Draw-out type	in (mm)	H×W×D	3P	
				4P	
		Fixed type	in (mm)	H×W×D	3P
					4P
Enclosure dimension		in (mm)	H×W×D	3P	
				4P	
Operation Temperature					
Certified Standards					

Susol	
UAS-□□□	
08	16
800	1600
400	800
600	1000
630	1200
800	1250
	1600
254V / 508V / 635V	
UAS: 50/60	
3P / 4P	
N, A, P, S (4 type)	
-	
65	
85	
85	
-	
65	
65	
65	
-	
149.5	
195.5	
195.5	
-	
149.5	
150.5	
151.5	
60	
Less than 30ms	
Less than 50ms	
Less than 80ms	
Less than 5 sec.	
12,500	
2,800	
154 (70)	
187 (85)	
71 (32)	
84 (38)	
77 (35)	
99 (45)	
16.93×13.15×16.02	
(430×334×407)	
16.93×16.50×16.02	
(430×419×407)	
11.81×11.81×11.61	
(300×300×295)	
11.81×15.16×11.61	
(300×385×295)	
19.69×15.75×13.39	
(500×400×340)	
19.69×19.69×13.39	
(500×500×340)	
-4°F ~ +140°F (-20°C ~ +60°C)	
UL 1066 / ANSI C37.13	



Susol				
UAH-□□E / UAW-□□E				
08	16	20	25	32
800	1600	2000	2500	3200
400	800	1000	1200	1600
600	1000	1200	1250	2000
630	1200	1250	1600	2500
800	1250	1600	2000	3000
	1600	2000	2500	3200
254V / 508V / 635V / 847V(UAW)				
UAH/UAW: 50/60				
3P / 4P				
N, A, P, S (4 type)				
85				
85				
100				
100				
85				
85				
85				
195.5				
195.5				
230				
230				
195.5				
195.5				
195.5				
195.5				
85				
Less than 30ms				
Less than 50ms				
Less than 80ms				
Less than 5 sec.				
12,500				5,000
2,800				1,000
214 (97)			245 (111)	326 (148)
269 (122)			309 (140)	414 (188)
99 (45)			123 (56)	205 (93)
121 (55)			152 (69)	256 (116)
101 (46)			110 (50)	196 (89)
126 (57)			137 (62)	249 (113)
16.93×16.22×16.02 (430×412×407)				
16.93×20.75×16.02 (430×527×407)				
11.81×14.88×11.61 (300×378×295)				
11.81×19.41×11.61 (300×493×295)				
19.69×19.69×13.39 (500×500×340)				
19.69×24.21×13.39 (500×615×340)				
-4°F ~ +140°F (-20°C ~ +60°C)				
UL 1066 / ANSI C37.13				

<i>Susol</i>			
UAH-□□G			
32	40	50	60
3200	4000	5000	6000
1600	2000	2500	3000
2000	2500	3000	3200
2500	3000	3200	3600
3000	3200	3600	4000
3200	3600	4000	5000
	4000	5000	6000
254V / 508V / 635V			
UAH: 50/60			
3P / 4P			
N, A, P, S (4 type)			
-			
100			
130			
130			
-			
100			
100			
100			
-			
230			
299			
299			
-			
230			
230			
230			
100			
Less than 30ms			
Less than 50ms			
Less than 90ms			
Less than 5 sec.			
5,000			
1,000			
489 (222)			
626 (284)			
276 (125)			
355 (161)			
227 (127)			
287 (130)			
18.11×30.91×16.02 (460×785×407)			
18.11×39.96×16.02 (460×1015×407)			
11.81×29.57×11.61 (300×751×295)			
11.81×38.62×11.61 (300×981×295)			
31.50×32.48×13.39 (800×825×340)			
31.50×41.54×13.39 (800×1055×340)			
-4°F ~ +140°F (-20°C ~ +60°C)			
UL 1066 / ANSI C37.13			

Trip relay (STU : Smart Trip Unit)

The trip relay of Susol ACB provides the additional protection functions for voltage, frequency, unbalance, and others in addition to main protection functions for over current, short-circuit, ground fault. It supports the advanced measurement functions for voltage, current, power, electric energy, harmonics, communication function, and others. Analog trip function interlocked with mechanism enhanced a durability of devices as well as the breaking capacity of ACB. Zone selective interlocking function makes the protective coordination more simple and thermal memory can be applied to various loads.



Trip relay types

		N-Type	A-Type	P-Type	S-Type
Externals					
Current relay		• L, S, I, G	• L(N), S, I, G, PTA, Gext	• L(N), S1, I, G, PTA, Gext • D, S(N)1, IU	• P type Current relay • S(V)2
Voltage relay		-	-	• UV1, OV1, RV, VU	• P type Voltage relay • UV2, OV2
Frequency relay		-	-	• UF1, OF1, ROCOF	• P type Frequency relay • UF2, OF2
Power relay		-	-	• RP, RQ1, OP, OQ, UP	• P type Power relay • RP, RQ1, RQ2
Group control		-	-	-	• A,B (Control by DI and communication)
Relay fine tuning		-	-	• Possible (Adjust knob and freely set operating value current)	• Possible (Freely set operating value current)
ERMS		-	• Control by DI and Communication	• Control by DI and Communication	• Control by DI and Communication
IDMTL Support		-	• L relay element (Thermal, DT, SIT, VIT, EIT, EIT50)	• L relay element (Thermal, DT, SIT, VIT, EIT, EIT50)	• L relay element (Thermal,DT,SIT,VIT, EIT,EIT50)
Trip information Maintenance LED		• L, S, I, G • SP : Self protection	• L, S, I, G/Gext/PTA, SP	• L, S, I, G/Gext/PTA, SP	• L, S, I, G/Gext/PTA, SP
Incident record	Screen	-	• Display of 32 incident events (Incident phase/current/time)	• Display of 127 incident events (Incident phase/current/time)	• Display of 127 incident events (Incident phase/current/time)
	Memory	-	• Saves 127 incident events • Saves 6 incident waveforms (In case of operation by Self Power, incident waveform is not saved)	• Saves 127 incident events • Saves 6 incident waveforms (In case of operation by Self Power, incident waveform is not saved)	• Saves 127 incident events • Saves 6 incident waveforms (In case of operation by Self Power, incident waveform is not saved)

Air circuit breakers

Trip relay types

		N-Type	A-Type	P-Type	S-Type
Measuring function		-	• Current(A/B/C/N) • External CT current • Current phase (Based on the phase A) • Vector Sum zero sequence current • Imbalance negative sequence current • Previous current demand for each phase	• Current(A/B/C/N) • Vector Sum zero sequence Current • 3 phase voltage, line - to - line voltage • Frequency • External CT current • Voltage/Current phase (Based on the phase A) • Total/Each phase power (P, Q, S) • Total/Each phase power factor • Positive/Negative, Effective/Reactive/Apparent energy • Vector sum zero sequence voltage • Vector sum zero sequence current • Positive, Negative sequence voltage • Positive, Negative sequence current • Voltage imbalance rate • Current imbalance rate • Previous current demand for each phase • Previous apparent, reactive and active power demand	• Current(A/B/C/N) • Vector Sum zero sequence Current • 3 phase voltage, line - to - line voltage • Frequency • External CT current • Voltage/Current phase (Based on the phase A) • Total/Each phase power (P, Q, S) • Total/Each phase power factor • Positive/Negative, Effective/Reactive/Apparent energy • Vector sum zero sequence voltage • Vector sum zero sequence current • Positive, Negative sequence voltage • Positive, Negative sequence current • Voltage imbalance rate • Current imbalance rate • Previous current demand for each phase • Previous apparent, reactive and active power demand
Accuracy degree of measurement	Current	-	• 0.5%	• 0.5%	• 0.5%
	Voltage	-	-	• 0.5%	• 0.5%
	Power	-	-	• Class 1 (IEC 62053 - 21, 22)	• Class 1 (IEC 62053 - 21, 22)
	Frequency	• 50Hz or 60Hz	• 50Hz or 60Hz	• 0.1% (10 ~ 200Hz)	• 0.1% (10 ~ 200Hz)
PQ function		-	• Voltage/Current harmonics harmonics 63rd • Current THD, TDD, K – Factor	• Voltage/Current harmonics harmonics 63rd • Voltage THD • Current THD, TDD, K – Factor	• Voltage/Current harmonics harmonics 63rd • Voltage THD • Current THD, TDD, K – Factor
Measurement record		-	• Max Ext Io • Max Current demand • Max Io • Max In • Max Max internal temperature	• Max Current demand • Demand for max apparent, reactive and active power • Max active power • Max Vo • Max Io • Max Ext Io • Max In • Max internal temperature	• Max Current demand • Demand for max apparent, reactive and active power • Max active power • Max Vo • Max Io • Max Ext Io • Max In • Max internal temperature
Real time waveform		-	• Using USB/RS485 communication	• Using USB/RS485 communication • Using LCD screen	• Using USB/RS485 communication • Using LCD screen

* N/A type can check measurement function, measurement record, and PQ function through USB communication.

		N-Type	A-Type	P-Type	S-Type
Communication		• NFC (Near Field communication)	• USB (For site operator) • RS485/Modbus (Communication type Only))	• USB (For site operator) • RS485/Modbus • BLE (Bluetooth, Option)	• USB (For site operator) • RS485/Modbus • BLE (Bluetooth) • NFC (Near Field communication)
Power		• Self Power (Operates when it is higher than 30% of rated current by single phase load)	• Self Power (Operates when it is higher than 30% of rated current by single phase load) • AC/DC 100V~250V • DC 24V~48V	• Self Power (Operates when it is higher than 50% of rated current by single phase load) • AC/DC 100V~250V • DC 24V~48V	• Self Power (Operates when it is higher than 50% of rated current by single phase load) • AC/DC 100V~250V • DC 24V~48V
Event record		-	• 255 kinds including change of device status (Information, status, date and time)	• 255 kinds including change of device status (Information, status, date and time)	• 255 kinds including change of device status (Information, status, date and time)
Clock		• RTC embedded (Back up with battery)	• RTC embedded (Back up with battery)	• RTC embedded (Back up with battery)	• RTC embedded (Back up with battery)
Other LED		• Run, Alarm, Self diagnosis	• Run, Alarm, Self diagnosis, Communication	• Run, Alarm, Self diagnosis, Communication	• Run, Alarm, Self diagnosis, Communication
Operating button		• Reset button	• Reset/Menu/Tap/Up, Down/Enter	• Reset button • LCD Touch	• Reset button • LCD Touch
Self diagnosis	LED	• RUN/AL LED blinking (Red ↔ Blue blinking)	• RUN/AL LED blinking (Red ↔ Blue blinking)	• RUN/AL LED blinking (Red ↔ Blue blinking)	• RUN/AL LED blinking (Red ↔ Blue blinking)
	LCD	-	• Displays relevant Segment or error number at LCD	• Can check at self diagnosis screen on LCD	• Can check at self diagnosis screen on LCD
	List	• Battery Low Alarm: Occurs when internal battery is not inserted or battery voltage is low. • Rating Plug Unmatched or Error: Rating Plug is not assembled or there's error with Rating Plug. • Ampere Frame Error: Value of Rating Plug is not within 45 ~ 100% of AF. • MTD Fail (Wiring check): STU is not assembled with MTD or Trip coil is disconnected. • Factory Cfg Error: Factory mode setting is wrong. • Device Type Error: Rating Plug information is different from CT information. • Over Heat Error: Internal temperature of CPU is over 100 degree (N/A type) or 115 degree (P/S type) • Contact Wear Alarm: Contact wear rate is over 80% • Electrical Open Count Over Alarm: Electrical Open Count is over the tolerable degree of 80%. • Mechanical Open Count Over Alarm: Mechanical Open Count is over the tolerable degree of 80% • RTC Error: There's error at internal RTC information. • Memory Error: Duplicated internal setting saved at internal nonvolatile memory was damaged. • CT disconnection Error: CT disconnection occurred (Each phase is monitored). • ROM Err: Occurs when there is a problem with the software ROM • RAM Err: Occurs when there is a problem with the software RAM • CLOCK Err: Occurs when there is a problem with the software clock • PROGRAM Cnt. Err: Occurs when there is a problem with the software program counter • CPU Reg. Err: Occurs when there is a problem with the software CPU Register • Intercomm Error: Occurs when the network communication between CPU and HMI is in bad connection • Calibration Error: Occurs when the value of voltage, current and phase are different than entered values in factory			

* N type can check the event records through USB communication

Air circuit breakers

Ordering - Breaker and accessories

UAS	—	16	D	3	—	16	A
Frame type		Frame size	Phasing	Poles		Sensor rating	Mounting and terminal
		08 800AF	D 3/4P standard RST(N)	3 3P		04~08 400A~800A	Mounting
		16 1600AF	W 4P reversed NRST	4 4P		08~16 800A~1600A	A Drawout
							Fixed
							H Horizontal terminals
							V Vertical terminals
							M Horizontal for line
							Vertical for load
							N Vertical for line
							Horizontal for load
							P Front terminal
							G Horizontal-con type
							W Vertical-con type
							* Terminals for P type must be ordered separately
							* G and W types are applicable to D-frame only
							* Front terminal is only available for 800~2000A
							* 3200AF(E, X), 6000AF(G, Z) offers only vertical type terminals (Busbar).
							* 6000AF is only available for drawout type

UAH	—	32	E	3	—	32
Frame type		Frame size	Phasing	Poles		Sensor rating
		08 800AF	E 3/4P standard RST(N)	3 3P		04~08 400A~800A
		16 1600AF	X 4P reversed NRST	4 4P		08~16 800A~1600A
		20 2000AF				10~20 1000A~2000A
		25 2500AF				12~25 1200A~2500A
		32 3200AF				16~32 1600A~3200A
		32 3200AF	G 3/4P standard RST(N)	3 3P		16~32 1600A~3200A
		40 4000AF	Z 4P reversed NRST	4 4P		20~40 2000A~4000A
		50 5000AF				25~50 2500A~5000A
		60 6000AF				30~60 3000A~6000A

UAW	—	32	E	3	—	32
Frame type		Frame size	Phasing	Poles		Sensor rating
		08 800AF	E 3/4P standard RST(N)	3 3P		04~08 400A~800A
		16 1600AF	X 4P reversed NRST	4 4P		08~16 800A~1600A
		20 2000AF				10~20 1000A~2000A
		25 2500AF				12~25 1200A~2500A
		32 3200AF				16~32 1600A~3200A

UAA	—	16	D	3	—	00
Frame type		Frame size	Phasing	Poles		Sensor rating
		08 800AF	D 3/4P standard RST(N)	3 3P		Not applied
		16 1600AF	W 4P reversed NRST	4 4P		
		08 800AF	E 3/4P standard RST(N)			
		16 1600AF	X 4P reversed NRST			
		20 2000AF				
		25 2500AF				
		32 3200AF				
		32 3200AF	G 3/4P standard RST(N)			
		40 4000AF	Z 4P reversed NRST			
		50 5000AF				
		60 6000AF				

						Sensor rating reference
						00 Not applied
						04 400A
						05 600A
						06 630A
						08 800A
						10 1000A
						12 1200A
						13 1250A
						16 1600A
						20 2000A
						25 2500A
						30 3000A
						32 3200A
						36 3600A
						40 4000A
						50 5000A
						60 6000A

M1	D1	D1	HX	NH0	U1	AL
Motor operator		Shunt trip		Trip relay		Option
MA None (Manual operated)		D0 None		Refer to page 23		
M1 AC/DC 100V~125V		D1 AC/DC 100V~125V				
M2 AC/DC 200V~250V		D2 AC/DC 200V~250V				
M3 DC 125V		D3 DC 125V				
M4 DC 24V~30V		D4 DC 24V~30V				
M5 DC 48V~60V		D5 DC 48V~60V				
M8 AC 48V		D7 AC 48V				
	Closing coil	Charging/Auxiliary switch			UVT	
	D0 None	HX High capacity OFF charge/5a5b			U0 None	
	D1 AC/DC 100V~125V	HC High capacity ON charge/5a5b			U1 AC/DC 100V~125V	
	D2 AC/DC 200V~250V	GX High capacity OFF charge/3a3b			U2 AC/DC 200V~250V	
	D3 DC 125V	GC High capacity ON charge/3a3b			U3 DC 125V	
	D4 DC 24V~30V	JC Capacity ON charge/6a6b			U4 DC 24V~30V	
	D5 DC 48V~60V				U5 DC 48V~60V	
	D7 AC 48V				U6 AC 380V~480V	
					U7 AC 48V	

Code	Description	Code	Description
AL	AL1+MRB	K	K1 Key lock
A1	AL1+MRB+RES (AC110~130V) *AC only	K2	K2 Key Interlock set
A2	AL1+AL2+MRB	K3	K3 Key Interlock double
A3	AL1+MRB+RES (DC110~125V) *DC only	K4	K4 Key lock (Same key)
A4	AL1+MRB+RES (AC200~250V) *AC only	K5	K5 Note 4) Profalux lock (CAMLOCK type)
A5	AL1+MRB+Auto reset	K6	K6 Note 4) Kirkkey lock (CAMLOCK type)
A6	AL1+AL2+MRB+Auto reset	K7	K7 Note 4) Kirkkey lock (CN-22 type)
A7	AL1+MRB+RES (DC110~125V)+Auto reset *DC only	R	RCS Ready to close switch
A8	AL1+MRB+RES (AC200~250V)+Auto reset *AC only	T	TM Temperature monitoring
A9	AL1+MRB+RES (AC110~130V)+Auto reset *AC only	H1	AC/DC 100V ~125V, Double shunt coil
S	CS2 Charge switch communication	H2	AC/DC 200V ~250V, Double shunt coil
B	B Lockable On/Off button cover	H3	DC 125V, Double shunt coil
M	MI Mechanical interlock	H4	DC 24V ~30V, Double shunt coil
D	DI or MOC Door interlock or MOC (Mechanism operated cell switch)	H5	DC 48V ~60V, Double shunt coil
(-V)	Without VDM module (External type VDM is required to order)	H7	AC 48V, Double shunt coil

N01	A4 (AL1+MRB+RES(AC200~250V))+B(Lockable On/Off button cover)+K(Key lock)+R(Ready to close switch)+M(Mechanic interlock)+E(Spring auto release)
N02	AL (AL1+MRB)+K(Key lock(OFF lock))+R(Ready to close switch)+D(Door interlock or MOC)+H1(AC/DC 100V ~ 130V, Double shunt coil)+E(Spring auto release)
N03	B(Lockable On/Off button cover)+K2(Key interlock set)+R(Ready to close switch)+T(Temperature monitoring)
N04	A4(AL1+MRB+RES(AC200~250V))+B(Lockable On/Off button cover)+K(Key lock(OFF lock))+M(Mechanical interlock)+T(Temperature monitoring)
N05	A1(AL1+MRB+RES110~130V)+B(Lockable On/Off button cover)+K(Key lock(OFF lock))+R(Ready to close switch)+M(Mechanical interlock)+T(Temperature monitoring)
N06	A2(AL1+AL2+MRB)+K(Key lock(OFF lock))+R(Ready to close switch)+T(Temperature monitoring)

Note) 1. * Codes for over 5 optional accessories are composed separately.

2. UVT and SHT2 can not be selected together. Select one of two.

3. C(counter) is provided as standard.

4. K5, K6, K7 options are factory installed keylock.

Air circuit breakers

Ordering - Adapter (Cradle)

UAL

For UL ACB
cradle type



S16D

Frame size Note)

S16D	1600AF
S20E	2000AF
S25E	2500AF
S32E	3200AF
S50G	5000AF
S60G	6000AF

3

Number of poles

3	3P
4	4P

A

Secondary
connector type

A	Connector type
B	Screw joint type
C	Spring type

H

Terminal configuration

H	Horizontal type
V	Vertical type
M	Line: Horizontal Load: Vertical
N	Line: Vertical Load: Horizontal
P	Front type
G	Horizontal-con type
W	Vertical-con type

* Terminals for P type must be ordered separately
* G and W types are applicable to S16D (1600AF) only.
* Metering CT for ST type must be ordered separately

E

Shutter

E	Without safety shutter
F	With safety shutter

S

Other options

N	ARC Cover N/A
S	Arc cover
ST	Arc Cover+Metering CT

* The depth of Metering CT included cradle is longer than normal cradle

Note) The corresponding Breaker Adapter

Breaker	Adapter	Breaker	Adapter
UAS-08D	UAS-08W	UAH-32E	UAH-32X
UAS-16D	UAS-16W	UAH-32G	UAH-32Z
UAH-08E	UAH-08X	UAH-40G	UAH-40Z
UAH-16E	UAH-16X	UAH-50G	UAH-50Z
UAH-20E	UAH-20X	UAH-60G	UAH-60Z
UAH-25E	UAH-25X		

Rating plug

Rating plug classification			ACB ampere frame							
For none NCT type	For NCT type	Rating	800A	1600A	2000A	2500A	3200A	4000A	5000A	6000A
72313460238	72313460278	400A/200CT	400A~800A							
72313460239	72313460279	400A/400CT								
72313460241	72313460282	600A								
72313460242	72313460283	630A								
72313460243	72313460284	800A		800A~1600A						
72313460244	72313460285	1000A			1000A~2000A					
72313460245	72313460286	1200A				1200A~2500A				
72313460246	72313460287	1250A					1600A~3200A			
72313460247	72313460288	1600A						2000A~4000A		
72313460248	72313460289	2000A							2500A~5000A	
72313460249	72313460290	2500A								3000A~6000A
72313460250	72313460291	3000A								
72313460264	72313460293	3200A								
72313460266	72313460295	3600A								
72313460267	72313460296	4000A								
72313460268	72313460297	5000A								
72313460269	72313460298	6000A								

* A rating plug ranging from 48 to 100% of the ACB ampere frame should be used.
 * The minimum value of the Trip Relay self-power supply is based on the CT rating, not the rating plug rating.



- * Self-power is basic function (Automatic power supply to the Trip Unit without additional control power)
- * L_SI: Long time delay trip, Short time delay trip, Instantaneous trip
- * G: Ground fault (Residual earth fault protection)
- * Gext + Ground wire CT: Source return Trip * PTA: Pre-trip alarm Function
- * Customers must purchase their own Ground wire CT (Secondary output: 5A, accuracy 1%)
- * Customers must purchase their own Neutral CT (Primary output: same as ACB's Rated Current / Secondary output: 5A, accuracy 1%)
- * The STU acceptable voltage range is 100 to 250V.
- * If you want an external VDM, please insert 'V' at the end of the full ordering.

* If you want to apply external VDM separately, please order the code above.

Molded case circuit breakers

UTE/UTS 2, 3 pole series up to 1200AF

Maximum
rated current
(Amperes)



Frame	
Maximum rated current	
Number of poles	
Breaker type	
UL489/CSA C22.2	
Interrupting capacity	120/240V
(kA rms) AC	240V
(50/60HZ)	277V
UL, CSA, NOM	347V
	480V
	600V
	600V/347V
UL489 DC	
Interrupting capacity	250V 2P
(kA) DC	500V 3P
UL, CSA	600V 3P
IEC 60947-2	
Ultimate breaking capacity,	220/240V
(kA rms) AC	380/415V
50/60Hz, Icu	480/500V
Service breaking capacity, Ics (%Icu)	
Insulation voltage, Ui	
Impulse withstand voltage, Uimp	
Rated short-time withstand current (Icw)	
Utilization category	
TRIP UNITS	Amperes
F: Fixed	ATU *
A: Adjustable	FMU *
T: Thermal	FTU *
M: Magnetic	ETS
E: Electronics	ETM
	MCS **
	DSU ***
	OCR
MCP	Amperes
	MCP
MCS	Amperes
	MCS
Unit mounted	
Mechanical lugs	
Busbar connectors	
Control wire terminal kit	
Terminal shields	
Interphase barriers	
Shunt trip	
Undervoltage trip	
Auxiliary switch	
Alarm switch	
Fault alarm switch	
Flange cable handle	
Flange variable-depth mechanism	
Directly-mounted rotary operating handle	
NEMA-Door-mounted operating mechanisms	
IEC-Door-mounted operating mechanisms	
Mechanical interlocks	
Handle padlock attachment	
Motor operator	
Residual Current Device	
Weight(approximate)	1-Pole
lbs.(kg)	2-Pole
	3-Pole
Dimensions	W x H x D
Inches(mm)	1-Pole
	2-Pole
	3-Pole

UTE100			UTE100			UTE100			UTS150		
	100A		100A			100A			150A		
	1		2			3			2,3		
E	N	H	E	N	H	E	N	H	N	H	L
UTE100			UTE100			UTE100			UTS150		
50	65	100	50	65	100	50	65	100	-	-	-
50	65	100	50	65	100	50	65	100	65	100	150
25	35	65	-	-	-	-	-	-	-	-	-
10	14	18	-	-	-	-	-	-	-	-	-
-	-	-	25	35	65	25	35	65	35	65	100
-	-	-	-	-	-	-	-	-	18	35	50
-	-	-	14	18	18(35)	14	18	18(35)	-	-	-
UTE100			UTE100			UTE100			UTS150		
-	-	-	16	25	-	16	25	-	35	50	65
-	-	-	-	-	-	25	35	-	-	-	-
-	-	-	-	-	-	-	-	-	35	50	65
UTE100			UTE100			UTE100			UTS150		
50	65	100	50	65	65	50	65	65	65	100	150
-	-	-	25	35	35	25	35	35	35	65	100
-	-	-	-	-	-	-	-	-	18	35	50
100%			100%			100%				100%	
750 Vac			750 Vac			750 Vac			750 Vac		
6 kVac			8 kVac			8 kVac			8 kVac		
-			-			-			-		
A			A			A			A		
15~100A			100A			100A			40~150A		
-			-			-			●		
-			-			●			●		
●			●			●			●		
-			-			-			●(60,100,150A)		
-			-			-			-		
-			-			-			-		
-			-			-			-		
-			-			-			-		
-			-			-			1.6~60A		
-			-			-			100~150A		
-			-			-			●		
100A			100A			100A			150A		
●			●			●			●		
●			●			●			●		
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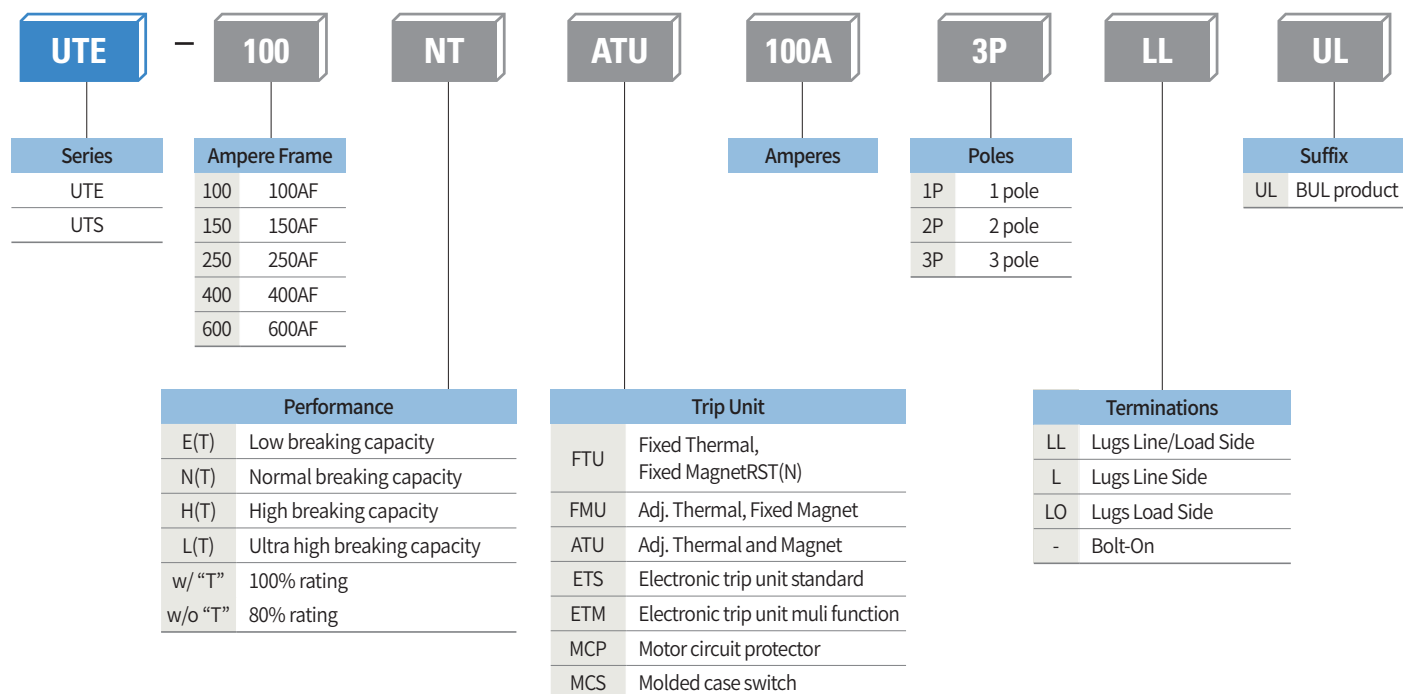


UTS250			UTS400			UTS600			UTS800			UTS1200			
250A			400A			600A			800A			1200A			
2, 3			2, 3			2, 3			3			3			
N	H	L	N	H	L	N	H	L	N	H	L	N	H	P	L
UTS250			UTS400			UTS600			UTS800			UTS1200			
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	100	150	65	100	150	65	100	150	50	100	150	50	100	65	150
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	65	100	35	65	100	35	65	100	35	65	100	35	65	50	100
18	35	50	18	35	50	18	35	50	18	35	50	18	25	50	35
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UTS250			UTS400			UTS600			UTS800			UTS1200			
35	50	65	35	50	65	35	50	65	-			-			
-	-	-	-	-	-	-	-	-	-			-			
35	50	65	35	50	65	35	50	65	-			-			
UTS250			UTS400			UTS600			UTS800			UTS1200			
65	100	150	65	100	150	65	100	150	65	100	150	50	100	65	150
35	65	100	35	65	100	35	65	100	35	65	100	35	65	50	100
18	35	50	18	35	50	18	35	50	18	35	50	25	35	50	50
	100%			100%			100%			100%		100%			
750 Vac			750 Vac			750 Vac			1000 Vac			1000 Vac			
8 kVac			8 kVac			8 kVac			8 kVac			8 kVac			
-			-			-			18kA	-	-	25kA	-	25kA	-
A			A			A			B	A	A	B	A	B	A
150~250A			250/300/350/400A			500/600A			400/600/630/800A			800/1000/1200A			
●			●			●			-			-			
●			●			●			-			-			
●			●			●			-			-			
●(150, 250A)			●(250, 400A)			●(400, 600A)			-			-			
-			●(250, 400A)			●(400, 600A)			-			-			
-			-			-			-			-			
-			-			-			-			-			
-			-			-			●			●			
220A			320A			500A			800A			1200A			
●			●			●			●			●			
250A			400A			600A			800A			1200A			
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●															

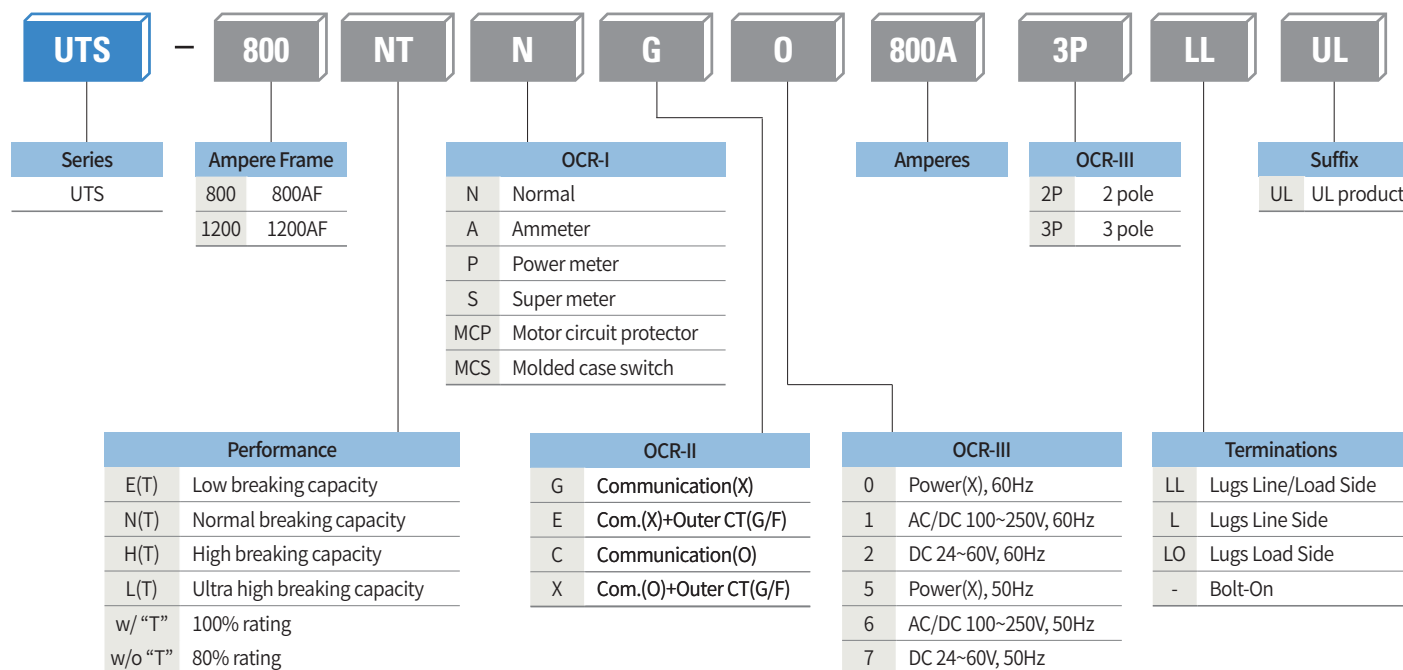
Molded case circuit breakers

Ordering

UL MCCB 100~600AF



UL MCCB 800~1200AF



UL Smart MCCB



Basic type		UTS150			UTS250			UTS400		
Frame size	[AF]	150			250			400		
No. of poles	[P]	3			3			3		
Rated current, In	[A]	40, 100, 150			250			250, 400		
Interrupting Capacity (kA rms) AC(50/60Hz) UL, CSA	Type	Ni	Hi	Li	Ni	Hi	Li	Ni	Hi	Li
	240 Vac	65	100	150	65	100	150	65	100	150
	480 Vac	35	65	100	35	65	100	35	65	100
	600 Vac	18	35	50	18	35	50	18	35	50
Trip Units	ETSi	●			●			●		
ETSi: Standard	ETMi	●			●			●		
ETMi: Multi-function	ETHi	●			●			●		
ETHi: High performance	ETLi	●			●			●		
ETLi: Limited performance										
Trip relay		-			-			-		
Size Inch(mm)	W	4.13 (105)			4.13 (105)			5.51 (140)		
	H	6.50 (165)			7.48 (190)			11.42 (290)		
	D	3.44 (87.5)			3.44 (87.5)			4.33 (110)		
Standard		UL			UL			UL		
Unit mounted		●			●			●		
Mechanical lugs		●			●			●		
Busbar connectors		●			●			●		
Control wire terminal kit		●			●			●		
Terminal shields		●			●			●		
Interphase barriers		●			●			●		
Shunt trip		●			●			●		
Undervoltage trip		●			●			●		
Auxiliary switch		●			●			●		
Alarm switch		●			●			●		
Fault alarm switch		●			●			●		
Flange cable handle		●			●			●		
Flange variable-depth mechanism		●			●			●		
Directly-mounted rotary operating handle		●			●			●		
NEMA-Door-mounted operating mechanisms		●			●			●		
IEC-Door-mounted operating mechanisms		●			●			●		
Mechanical interlocks		●			●			●		
Handle padlock attachment		●			●			●		
Motor operator		●			●			●		
Residual Current Device		●			●			●		

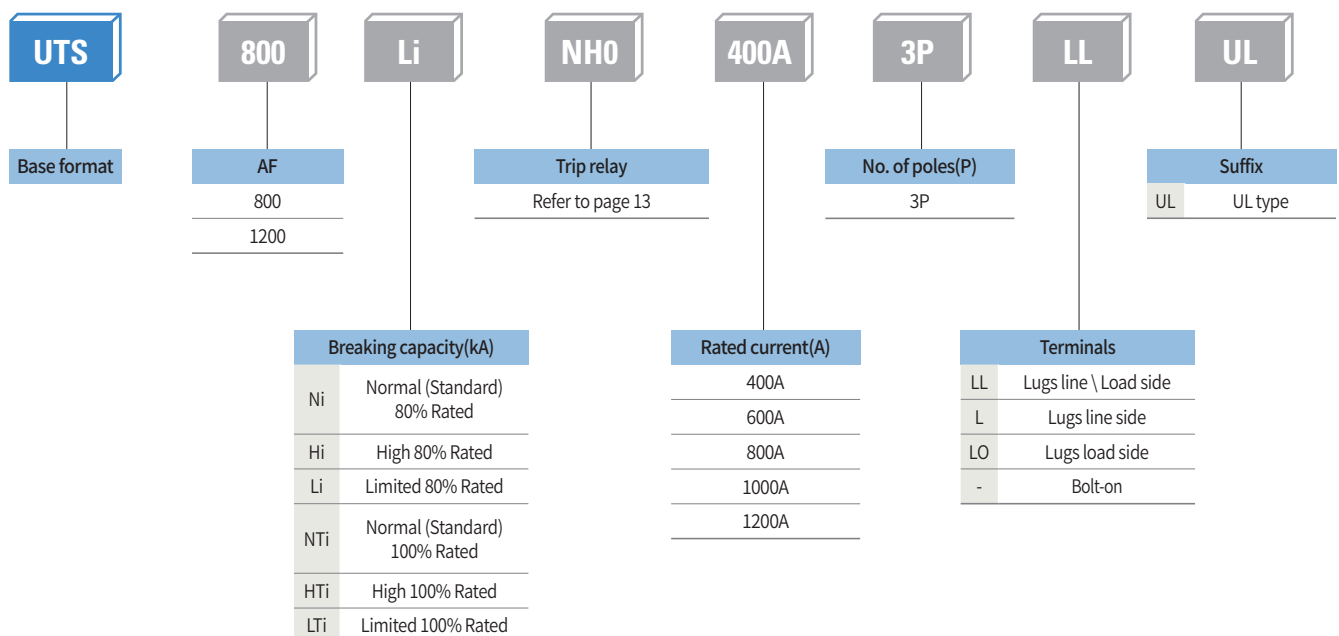
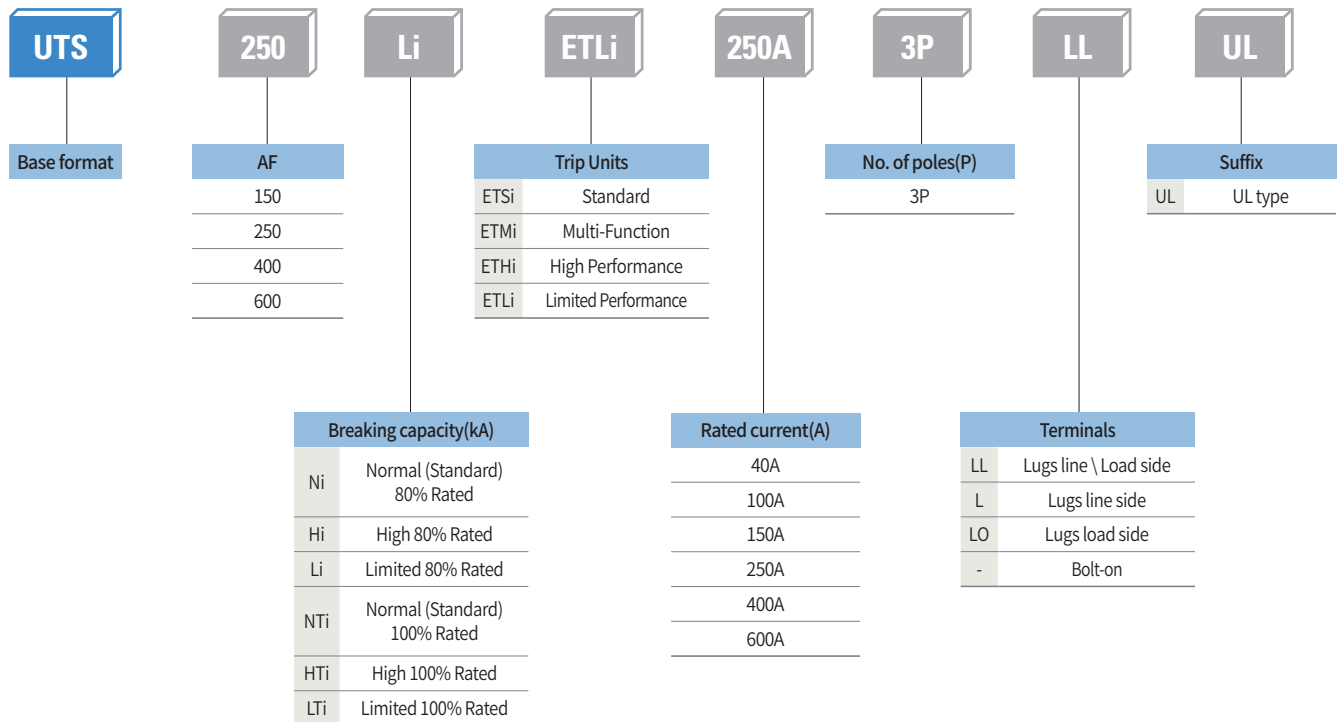
Smart MCCB

UL Smart MCCB



Basic type		UTS600			UTS800			UTS1200		
Frame size	[AF]	600			800			1200		
No. of poles	[P]	3			3			3		
Rated current, In	[A]	600			400, 600, 800			800, 1000, 1200		
Interrupting Capacity (kA rms) AC(50/60Hz) UL, CSA	Type	Ni	Hi	Li	Ni	Hi	Li	Ni	Hi	Li
	240 Vac	65	100	150	50	100	150	50	100	150
	480 Vac	35	65	100	35	65	100	35	65	100
	600 Vac	18	35	50	18	35	50	18	35	50
Trip Units	ETSi	●			-			-		
	ETMi	●			-			-		
	ETHi	●			-			-		
	ETLi	●			-			-		
Trip relay		-			●			●		
Size	W	5.51 (140)			8.27 (210)			8.27 (210)		
	H	13.39 (340)			12.88 (327.2)			16.26 (413)		
	D	4.33 (110)			6 (152.5)			6 (152.5)		
Standard		UL			UL			UL		
Unit mounted		●			●			●		
Mechanical lugs		●			●			●		
Busbar connectors		●			●			●		
Control wire terminal kit		●			-			-		
Terminal shields		●			●			●		
Interphase barriers		●			●			●		
Shunt trip		●			●			●		
Undervoltage trip		●			●			●		
Auxiliary switch		●			●			●		
Alarm switch		●			●			●		
Fault alarm switch		●			-			-		
Flange cable handle		●			●			●		
Flange variable-depth mechanism		●			●			●		
Directly-mounted rotary operating handle		●			●			●		
NEMA-Door-mounted operating mechanisms		●			●			●		
IEC-Door-mounted operating mechanisms		●			●			●		
Mechanical interlocks		●			●			●		
Handle padlock attachment		●			●			●		
Motor operator		●			-			-		
Residual Current Device		●			-			-		

Ordering



Smart MCCB

Smart trip units (ETSi, ETMi, ETHi, ETLi)

Trip unit exterior



Trip unit type

The UL Susol Smart MCCB's Electronic Trip Unit (ETU) is available with a wide variety of configurations. The standard type (ETSi) includes basic current measurement and LSGI protections, Multi-Function type (ETMi) features additional communications functionality, High Performance type (ETHi) adds voltage and power measurement, and Limited performance type (ETLi) provides mobile/bluetooth (BLE) communication.

ETSi (Standard)



ETMi (Multi-Function)



ETHi (High Performance)



ETLi (Limited Performance)



• ETSi

Standard/LSIG relay, current measurement

• ETHi

High Performance/LSIG relay, current/voltage/power measurement, communication function

• ETMi

Multi-Function/LSIG relay, current measurement, communication function

• ETLi

Limited Performance/LSIG relay, current/voltage/power measurement, communication function, mobile communication

UL MCB



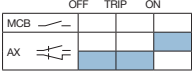
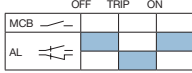
Ratings

Performance	UL489 MCB	UL1077 MCB
Standard	UL489, UL486E(Lug)	UL 1077
Protection	Overload, Short circuit	Overload, Short circuit
Rated current	1, 2, 3, 4, 5, 6, 8, 10, 15, 16, 20, 25, 30, 32, 40, 50, 63A	1, 2, 3, 4, 5, 6, 8, 10, 15, 16, 20, 25, 30, 32, 40, 50, 63A
Number of poles	1P, 2P, 3P	1P, 2P, 3P, 4P
Rated short circuit capacity	(AC) 1P: 10kA@120/240VAC, 10kA@277VAC(1~25A) 10kA@120/240VAC(30~63A) 2~3P: 10kA@240VAC, 480Y/277VAC(1~25A) 10kA@240VAC(30~63A) (DC) 1P: 10kA@60VDC 2~3P: 10kA@125VDC	(AC) 1P: 10kA@120/240VAC 6kA@277VAC 2~4P: 10kA@120/240VAC 6kA@480Y/277VAC (DC) 1P: 10kA@60VDC 2~4P: 10kA@125VDC
Rated frequency	50/60 Hz	50/60 Hz
Reference temperature	40°C	40°C
Normal ambient temperature	-25 ~ 55°C	-25 ~ 55°C
Tripping curve	B, C, D, K Curve	B, C, D Curve
Trip type	Thermal Magnetic	Thermal Magnetic
Type of terminals	Terminal with stirrup(indirect pressure)	Terminal with stirrup(indirect pressure)
Terminal size acceptability - Min/Max	14 / 4AWG	- 1 Wire: 14~4AWG - 2~4Wires: 14~10AWG (Wires must be of like size and stranding)
Tightening Torque	3.9 Nm (35 lbf-in)	2Nm (17.5 lbf-in)
Installation	Mounting on 35mm Din rail	Mounting on 35mm Din rail
Dimension of specimen (W×H×D)	18×105×66 (1P)	18×81×66 (1P)
Protection degree	IP20	IP20
Accessory	AX-HU, AL-HU, SHT-HU, UVT-HU	AX-H, AL-H, SHT-H, UVT-H
Relative humidity	45~85%RH	45~85%RH
Electrical Endurance	6,000	6,000
Maximum switching frequency (time/h)	360/h	360/h
Approvals	UL, CB	UL, CB, ABS

Miniature circuit breakers

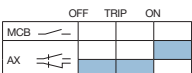
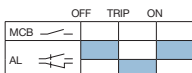
Accessory / Circuit Diagrams(BK63HU)

UL489 accesory

Type		AX-HU	AL-HU
Appearance			
Rating	AC circuit	6A at 240V 3A at 415V	
	DC circuit	1A at 110V DC 2A at 48V DC	
Contact			
Dimension(W×H×D)		9×105×66	

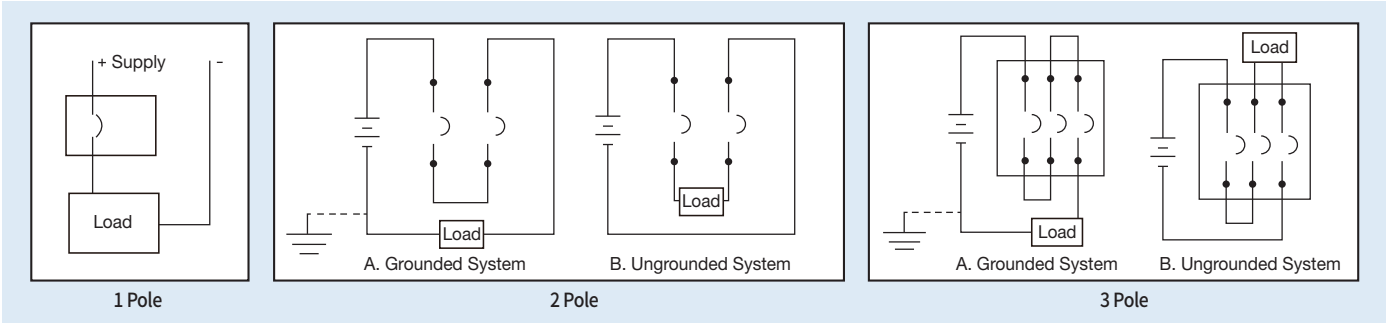
Type		SHT-HU	UVT-HU
Appearance			
Control Voltage [Ue]		AC 110~380V DC 60~220V	AC 110~120V AC 220~240V AC 380~415V
Operation Voltage		80~110% Ue	-
Trip voltage		-	35~70% Ue
Dimension(W×H×D)		18×105×66	

UL1077 accesory

Type		AX-H	AL-H
Appearance			
Rating	AC circuit	6A at 240V 3A at 415V	
	DC circuit	1A at 110V DC	
Contact			
Dimension(W×H×D)		18×81×66	

Type		SHT-H	UVT-H
Appearance			
Control Voltage [Ue]		AC 110~380V DC 60~220V	AC 110~120V AC 220~240V AC 380~415V
Operation Voltage		80~110% Ue	-
Trip voltage		-	35~70% Ue
Dimension(W×H×D)		18×81×66	

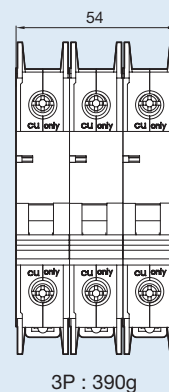
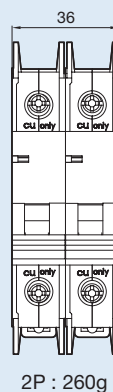
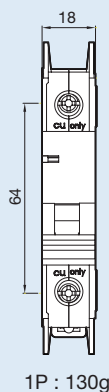
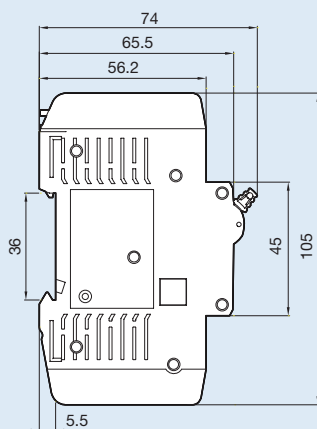
Exemplary DC circuit diagrams(BK63HU)



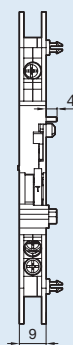
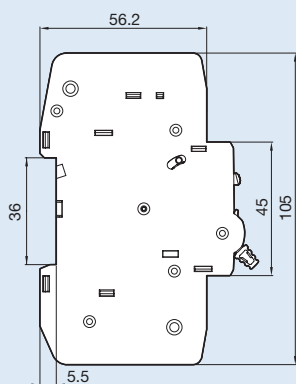
Dimension / Operating curve

UL489 MCB

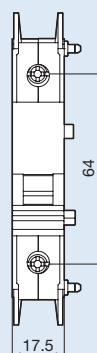
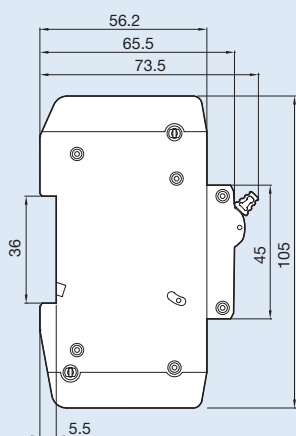
● BK63HU



● AX-HU/AL-HU



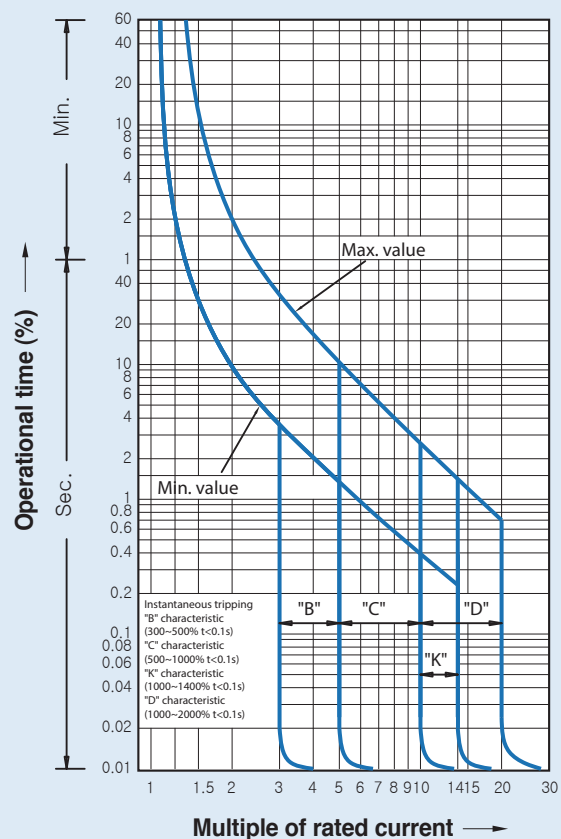
● SHT-HU/UVT-HU



SHT : 100g / UVT : 110g

AX : 48g / AL : 48g

UL489 MCB Operating curves

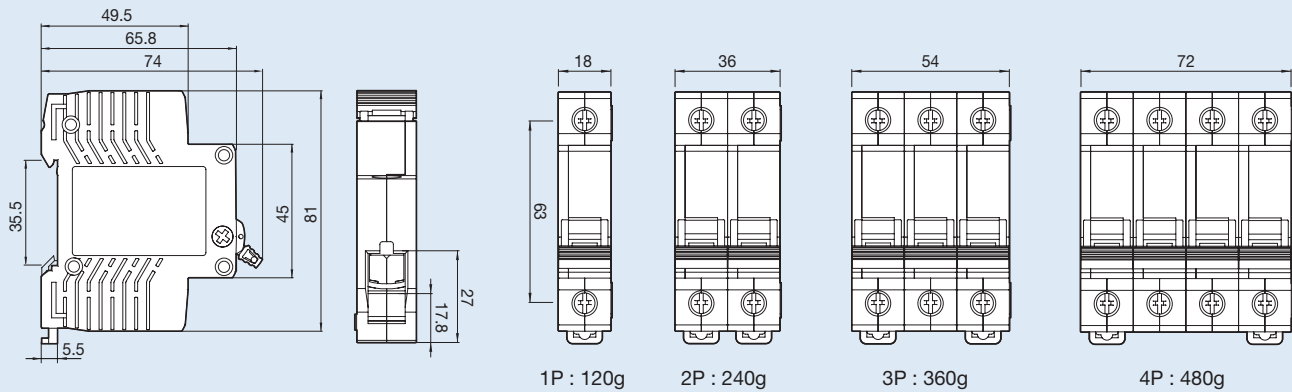


Miniature circuit breakers

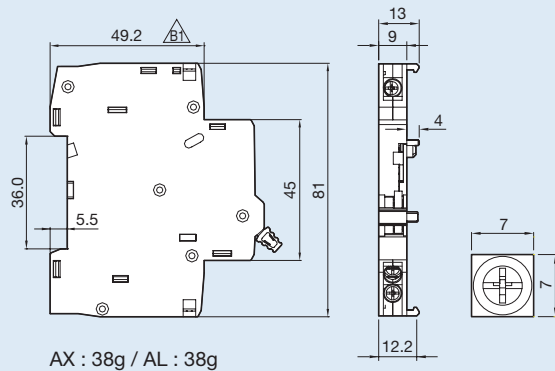
Dimension / Operating curve

UL1077 MCB

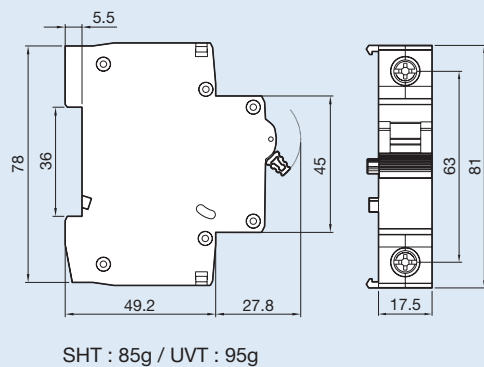
● BK63H



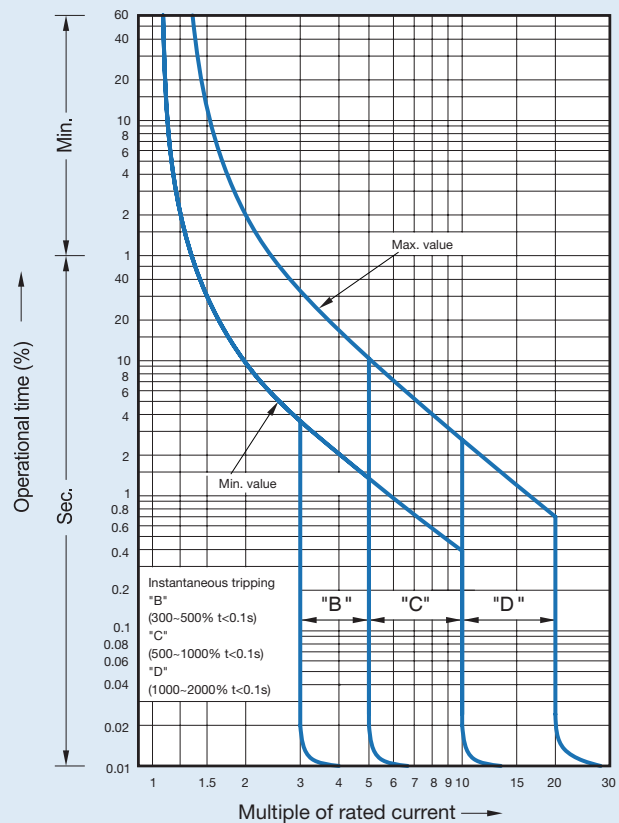
● AX-H/AL-H



● SHT-H/UVT-H



UL1077 MCB Operating curves



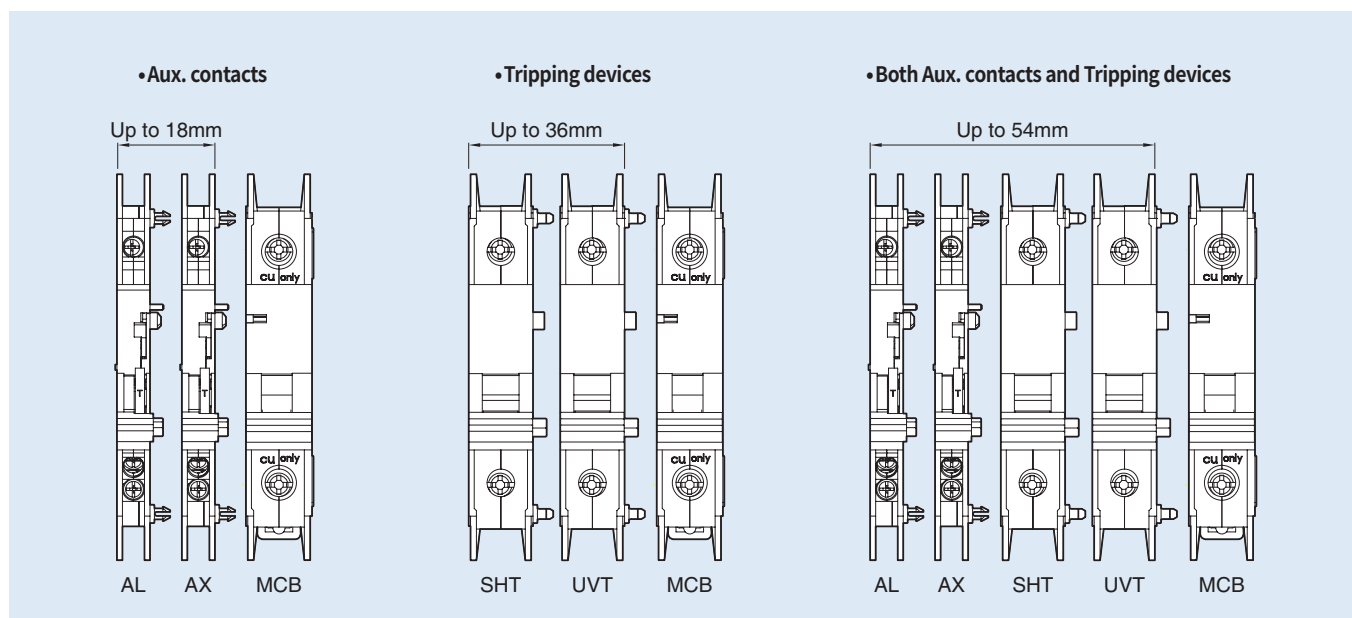
Ordering / Accessory connecting

UL 489 / 1077 MCB

BK	63H	U	1P	B	63A	10kA	240VAC	UL489
Series	AF	Standard	Poles	Type	A	kA	Rated voltage	Standard
MCB	63	U	1P	B-Type	1, 2, 3, 4, 5,	6	120/240VAC	UL489
		UL489	2P	C-Type	6, 8, 10, 15,	10	240VAC	UL1077
		UL1077	3P	D-Type	16, 20, 25,		277VAC	
			4P	K-Type	30, 32, 40,		480Y/277VAC	
					50, 63			

AX	H	UL1077
Standard	Applicable product	Applied standard
AX Auxiliary switch	H (UL1077) BK63H	UL1077 UL1077
AL Alarm switch	HU (UL489) BK63HU	UL489 UL489
SHUT Shunt trip device		
UVT Under voltage trip device		

Accessory connecting



Contactors & Overload relays

Metasol MC 3P 18 to 150A

MC type Magnetic Contactors



Frame size			
Type	Screws clamp terminals		
	Lug clamp terminals		
Number of poles			
Rated operational voltage, Ue			
Rated insulation voltage, Ui			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC3)			
Durability	Mechanical		
	Electrical		
UL rating (50/60Hz)	Continuous curren		[A]
	Single phase	110-120V	[HP]
		220-240V	[HP]
	Three phase	200-208V	[HP]
		220-240V	[HP]
		440-480V	[HP]
		550-600V	[HP]
NEMA size			
Size and weight	AC	Weight	[kg]
	control	Size	[inch]
		(W×H×D)	[mm]
	DC	Weight	[kg]
	control	Size	[inch]
		(W×H×D)	[mm]
Auxiliary(standard)			
Auxiliary	Side mount		
	Front mount		

18AF			
MC-6a	MC-9a	MC-12a	MC-18a
●	●	●	●
-	-	-	-
3pole			
690V			
690V			
50/60Hz			
6kV			
1800 operations per hour			
15 mil. operations			
2.5 mil. operations			
25	25	25	32
0.5	0.5	1	2
1.5	1.5	2	3
2	2	3	7.5
3	3	5	7.5
5	5	7.5	10
7.5	7.5	10	15
00	00	0	1
0,33			
1.77×2.89×3.17			
(45×73.5×80.4)			
0.4			
1.77×2.89×3.80			
(45×73.5×96.6)			
1NO or 1NC			
UA-1			
UA-2, UA-4			

22AF			
MC-9b	MC-12b	MC-18b	MC-22b*
●	●	●	●
-	-	-	-
3pole			
690V			
690V			
50/60Hz			
6kV			
1800 operations per hour			
15 mil. operations			
2.5 mil. operations			
25	25	40	40
0.5	1	2	2
1.5	2	3	3
2	3	7.5	7.5
3	5	7.5	10
5	7.5	10	15
7.5	10	15	20
00	0	1	-
0.34			
1.77×2.89×3.44			
(45×73.5×87.4)			
0.41			
1.77×2.89×4.08			
(45×73.5×103.6)			
1NO1NC			
UA-1			
UA-2, UA-4			

Note) Minimum conduct current of Auxiliary contactor is DC 17V 5mA.

MT type Thermal Overload Relays



Type			
	Screws clamp terminals		
	Lug clamp terminals		
Rated operational voltage, Ue		[V]	
Rated insulation voltage, Ui		[V]	
Rated impulse withstand voltage, Uimp		[kV]	
Trip class			
Setting range			
Size and weight		Weight	kg
		Size(W×H×D) [mm]	

MT-12/□	
●	
-	
690	
690	
6	
10A, 20	
0.1~18A	
0.1	
1.77×2.88×2.51	
(45×73.2×63.7)	

MT-32/□	
●	
-	
690	
690	
6	
10A, 20	
0.1~40A	
0.17	
1.77×2.95×3.54	
(45×75×90)	

*The safety covevnetic contactor and thermal overload relay is optional.

**40AF**

MC-32a	MC-40a
•	•
-	-
3pole	
600V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
12 mil. operations	
2 mil. operations	
50	60
3	3
5	7.5
7.5	15
10	15
20	30
25	30
1P	2
0.4	
1.77×3.27×3.54	
(45×83×90)	
0.6	
1.77×3.27×4.61	
(45×83×117.1)	
2NO2NC	
UA-1	
UA-2, UA-4	

**65AF**

MC-50a	MC-65a
•	•
•	•
3pole	
600V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
12 mil. operations	
2 mil. operations	
70	100
3	5
10	15
20	25
25	30
40	50
50	60
-	-
0.9	
2.17×4.17×4.69	
(55×106×119)	
1.2	
2.17×4.17×5.76	
(55×106×146.4)	
2NO2NC	
UA-1	
UA-2, UA-4	

**100AF**

MC-75a	MC-85a	MC-100a
•	•	•
•	•	•
3pole		
600V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
12 mil. operations		
2 mil. operations	1 mil. operations	
110	135	160
5	7.5	10
15	15	20
25	30	30
30	40	40
50	60	75
60	75	75
-	3	-
1.6		
2.76×5.51×5.35		
(70×140×135.8)		
2.6		
2.76×5.51×6.78		
(70×140×172.3)		
2NO2NC		
UA-1		
UA-2, UA-4		

**150AF**

MC-130a	MC-150a
•	•
•	•
3pole	
600V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
5 mil. operations	
1 mil. operations	
200	250
10	15
20	25
40	40
40	50
75	100
75	75
-	4
2.4	
3.74×6.22×5.13	
(95×158×130.3)	
2.3	
3.74×6.22×5.13	
(95×158×130.3)	
2NO2NC	
UA-1	
UA-2, UA-4	

**MT-32/□**

•
-
690
690
6
10A, 20
0.1~40A
0.17
1.77×2.95×3.54
(45×75×90)

**MT-63/□**

•
•
690
690
6
10A, 20
4~65A
0.31/0.33
2.77×3.19×3.94
(55×81×100)

**MT-95/□**

•
•
690
690
6
10A, 20
7~100A
0.48/0.5
2.76×3.82×4.33
(70×97×110)

**MT-150/□**

•
•
690
690
6
10A, 20
34~150A
0.67
3.74×4.29×4.45
(95×109×113)

Contactors & Overload relays

Metasol MC 3P 225 to 2650A

MC type Magnetic Contactors



Frame size			
Type	Screws clamp terminals		
	Lug clamp terminals		
Number of poles			
Rated operational voltage, Ue			
Rated insulation voltage, Ui			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC3)			
Durability	Mechanical		
	Electrical		
UL rating (50/60Hz)	Continuous curren		[A]
	Single phase	110-120V	[HP]
		220-240V	[HP]
	Three phase	200-208V	[HP]
		220-240V	[HP]
		440-480V	[HP]
		550-600V	[HP]
NEMA size			
Size and weight	AC	Weight	[kg]
	control	Size	[inch]
		(W×H×D)	[mm]
	DC	Weight	[kg]
control	Size	[inch]	
	(W×H×D)	[mm]	
			
Auxiliary(standard)			
Auxiliary	Side mount		
	Front mount		



225AF	
MC-185a	MC-225a
•	•
•	•
3pole	
600V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
5mil. operations	
1mil. operations	
300	350
15	15
30	40
60	60
60	75
125	150
125	150
-	-

5.4
5.43×7.99×7.29
(138×203×185.1)

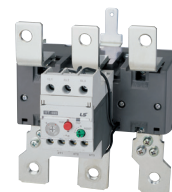
2NO2NC	
AU-100 (Max.4NO4NC), AU-100E	
-	

400AF		
MC-265a	MC-330a	MC-400a
•	•	•
-	-	-
3pole		
600V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
5mil. operations		2.5mil. operations
1mil. operations		0.5mil. operations
400	500	520
-	-	-
-	-	-
75	100	125
100	100	150
200	200	300
200	200	300
5	-	-

9.2
6.48×9.92×8.05
(163×243×204.4)

2NO2NC	
AU-100 (Max.4NO4NC), AU-100E	
-	

MT type Thermal Overload Relays



Type	Screws clamp terminals	
	Lug clamp terminals	
Rated operational voltage, Ue		[V]
Rated insulation voltage, Ui		[V]
Rated impulse withstand voltage, Uimp		[kV]
Trip class		
Setting range		
Size and weight	Weight	kg
	Size(W×H×D)	[mm]



MT-225/□	
•	
•	
690	
690	
6	
10A, 20	
65~240A	
2.5	
5.79×5.55×7.24	
(147×141×184)	

MT-400/□	
•	
-	
690	
690	
6	
10A, 20	
85~400A	
2.6	
5.94×6.73×7.79	
(151×171×198)	

* The safety cover of magnetic contactor and thermal overload relay is optional.



800AF		
MC-500a	MC-630a	MC-800a
●	●	●
-	-	-
3pole		
600V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
2.5mil. operations		
0.5mil. operations		
700	900	1050
-	-	-
-	-	-
150	200	200
200	250	300
400	500	600
400	500	600
6	-	7

22.2
11.22×12.2×9.68
(285×310×246)

2NO2NC
AU-100 (Max.4NO4NC), AU-100E
-



MT-800/□
●
-
690
690
6
10A, 20
200~800A
11.5
14.17×20.87×8.35 (360×530×212)



1260AF
MC-1260a
●
-
3pole
1000V
1000V
50/60Hz
8kV
300 operations per hour
0.5mil. operations
0.05mil. operations
1260
-
-
-
-
-

24
11.22×13.86×9.68
(285×352×246)

2NO2NC
AU-100, AU-100E (Max.4NO4NC)
-



2650AF			
MC-1400a	MC-1700a	MC-2100a	MC-2650a
●	●	●	●
-	-	-	-
3pole			
1000V			
1000V			
50/60Hz			
8kV			
300 operations per hour			
0.5mil. operations			0.3mil. operations
0.05mil. operations			0.02mil. operations
1400	1700	2100	2650
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

33.8
16.97×14.96×9.68
(431×380×246)

47
16.97×15.43×9.68
(431×392×246)

2NO2NC
AU-100, AU-100E (Max.4NO4NC)
-

Contactors

Metasol MC 4P 18 to 85A

MC type Magnetic Contactors



Frame size			
Type	Screw clamp terminal		
Number of poles			
Rated operational voltage (Ue)			
Rated insulation voltage (Ui)			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC1)			
Durability	Mechanical		
	Electrical		
UL rating (50/60Hz)	Continuous current	A	
	Single	110~120V	HP
	Phase	220~240V	HP
		200~208V	HP
	Three	220~240V	HP
	Phase	440~480V	HP
550~600V		HP	
Size and weight	AC	Weight	kg
	Control	Size	inch
		W×H×D	(mm)
	DC	Weight	kg
	Control	Size	inch
		W×H×D	(mm)
			
Auxiliary(standard)			
Auxiliary	Side Mount		
	Front Mount		



18AF			
MC-6a/4	MC-9a/4	MC-12a/4	MC-18a/4
●			
4pole			
600V			
690V			
50/60Hz			
6kV			
1800 operations per hour			
15 mil. Operations			
0.5 mil. Operations		0.8 mil. Operations	
25	25	25	32
0.5	0.5	0.75	1
1.5	1.5	2	3
2	2	3	7.5
3	3	5	7.5
5	5	7.5	10
7.5	7.5	10	15
0.33			
1.77×2.89×3.77			
(45×73.5×80.4)			
0.5			
1.77×2.89×3.80			
(45×73.5×96.6)			
-			
UA-1			
UA-2, UA-4			



22AF		40AF		85AF			
MC-22a/4		MC-32a/4	MC-40a/4	MC-50a/4	MC-65a/4	MC-75a/4	MC-85a/4
●		●		●			
4pole		4pole		4pole			
600V		600V		600V			
690V		690V		1000V			
50/60Hz		50/60Hz		50/60Hz			
6kV		6kV		8kV			
1800 operations per hour		1800 operations per hour		1800 operations per hour			
15 mil. Operations		15 mil. Operations		12 mil. Operations			
1 mil. Operations		1 mil. Operations		1 mil. Operations			
32		45	50	70	80	90	100
2		2	3	3	5	5	7.5
3		5	5	7.5	10	15	15
7.5		7.5	10	10	15	20	25
7.5		10	10	15	20	25	30
10		20	25	30	40	50	50
15		20	25	30	40	50	50
0.4		0.59		1.2			
1.86×3.15×3.42 (47.2×80×86.8)		2.32×3.29×3.72 (59×83.5×94.5)		3.58×4.86×4.64 (91×123.5×117.8)			
0.5		0.7		1.29			
1.86×3.15×4.47 (47.2×80×113.2)		2.32×3.29×4.76 (59×83.5×121)		3.58×4.86×4.64 (91×123.5×117.8)			
-		-		-			
AU-1		AU-1		AU-1			
UA-2, UA-4		UA-2, UA-4		UA-2, UA-4			

Contactors

Metasol MC 4P 225 to 800A

MC type Magnetic Contactors



Frame size			
Type	Screw clamp terminal		
Number of poles			
Rated operational voltage (Ue)			
Rated insulation voltage (Ui)			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC1)			
Durability	Mechanical		
	Electrical		
UL rating (50/60Hz)	Continuous current	A	
	Single	110~120V	HP
	Phase	220~240V	HP
		200~208V	HP
	Three	220~240V	HP
	Phase	440~480V	HP
		550~600V	HP
Size and weight	AC	Weight	kg
	Control	Size	inch
		W×H×D	(mm)
	DC	Weight	kg
	Control	Size	inch
		W×H×D	(mm)
Auxiliary(standard)			
Auxiliary	Side Mount		
	Front Mount		

* - FLA = 722 A, LRA = 5618 A

** - FLA = 566 A, LRA = 4495 A

225AF				
MC-100a/4	MC-130a/4	MC-150a/4	MC-185a/4	MC-225a/4
●				
4pole				
600V				
1000V				
50/60Hz				
8kV				
1200 operations per hour				
5 mil. Operations				
0.8 mil. Operations				
200	250	275	300	350
7.5	10	15	15	15
15	20	25	30	40
30	40	40	60	60
30	40	50	60	75
60	75	100	125	150
60	75	100	125	150
5.6				
6.89×7.99×7.28				
(175×203×185)				
2NO2NC				
AU-100, AU-100E				
-				



400AF

MC-265a/4	MC-330a/4	MC-400a/4
●		
4pole		
600V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
2.5 mil. Operations		
0.5 mil. Operations		
400	500	520
-	-	-
-	-	-
75	100	125
100	100	150
200	200	300
200	200	300

9.9
8.11×9.57×8.07
(206×243×205)

2NO2NC

AU-100, AU-100E
-

800AF

MC-500a/4	MC-630a/4	MC-800a/4
●		
4pole		
600V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
2.5 mil. Operations		
0.5 mil. Operations		
700	900	1050
-	-	-
-	-	-
150	200	200
200	250	300
400	500	600 *
400	500	600 **

26.3
13.62×12.20×9.61
(346×310 ×244)

2NO2NC

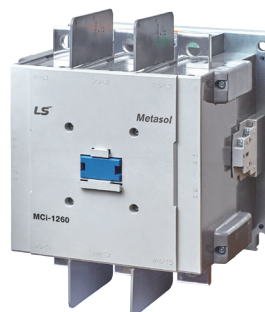
AU-100, AU-100E
-

Contactors

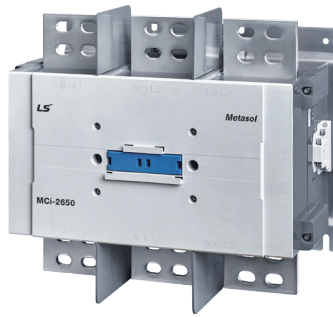
Metasol MC 3P 1260 to 2650A

Renewable Magnetic Contactor

- Eco-friendly contact material applied (Cd free)
- Type 2 coordination data with MCCB or ACB



Frame size				1260AF		
Type				MCI-900	MCI-1050	MCI-1260
Screw clamp terminals						
Number of poles			pole		3	
Rated operational voltage (Ue)			Vac		1000	
Rated insulation voltage (Ui)			Vac		1000	
Rated frequency			Hz		50/60	
Rated impulse withstand voltage (Uimp)			kV		8	
Mechanical operating cycle			cycles/hour	600	600	300
Eelectrical operating cycle			cycles/hour	600	600	300
Durability	Mechanical	million		1	1	0.5
	Electrical (AC-1@690V)	million		0.26	0.26	0.15
	Electrical (AC-1@400V)	million		0.5	0.5	0.2
Current and Power (IEC)	AC-1 1000V 55/60/70°C	A		900/850/700	1050/875/720	1260/1060/900
	Thermal current	A		900	1050	1260
	Heat dissipation	W		100	170	170
Rated Short-time withstand current(I _{cw}) (IEC 60947)	1s	A		7000	7500	8000
	10s	A		6400	7000	7200
	1min	A		3500	3800	4000
	10min	A		1550	1550	2300
max. breaking capacity (I _{cd})	400V	A		6000	7500	7500
	690V	A		5000	7000	7000
	1000V	A		2000	2500	2500
Type-2 Coordination (with MCCB or ACB)			kA	42kA (Break time: less than 20ms)		
Current and HP (UL)	Thermal current			900	1050	1260
	Single phase	110~120V	HP	-	-	-
		220~240V	HP	-	-	-
	Three phase	200~208V	HP	200	200	-
		220~240V	HP	250	300	-
		440~480V	HP	500	600	-
		550~600V	HP	500	600	-
				22.2	22.2	25
Weight (kg)				285×310×246	285×310×246	285×352×246
Size (W×H×D)			mm			
Auxiliary(standard)				2NO2NC		
Auxiliary	Side Mount			AU-100, AU-100E (max.4a4b)		
	Front Mount			-		

**2650AF**

MCI-1700	MCI-2100	MCI-2650
	●	
	3	
	1000	
	1000	
	50/60	
	8	
	300	
300	300	120
0.5	0.5	0.3
0.05	0.05	0.02
0.05	0.05	0.05
1700/1450/1300	2100/1750/1500	2650/2350/2150
1700	2100	2650
220	350	350
	12000	
	10000	
	5500	
	3000	
9000	12000	12000
8000	8500	8500
3000	3150	3150
	42kA (Break time: less than 50ms)	
1700	2100	2650
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
34.6	34.6	47
431×380×246	431×380×246	431×392×246
2NO2NC		
AU-100, AU-100E (max.4a4b)		
-		

Contactors & Overload relays

Ordering

Contactors

MC-65A	40	22	K7	L
Product (6A~2650A)	Main contact	Auxiliary contact	Coil voltage	Terminal ^{Note2)}
MC6A MC-6a	30 3NO0NC	00 None	See coil code table	S Screw
MC2650A MC-2650a	40 4NO0NC	11 Normal 1NO normal 1NC	Note) MC catalog reference 23 for details	L Lug
MC9B MC-9b	22 2NO2NC	22 Normal 2NO normal 2NC		B hex Bolt
MC22B MC-22b		11L Low current 1NO Low current 1NC		
		22L Low current 2NO Low current 2NC		
		11H Hoist 1NO normal 1NC		
		22H Hoist 2NO normal 2NC		

- A : Metasol A Type
- B : Metasol B Type

ex)	MC65A-30-00-Q7-S-E	MC-65a AC380V 50/60Hz SCREW (Metasol) EXP
	MC75A-30-22-H7-L-E	MC-75a AC100V 50/60Hz LUG 2a2b (Metasol) EXP
	MC185A-30-22-FV-B-E	MC-185a AC100-240V 50/60Hz, DC100-220V 2a2b (Metasol) EXP
	MC85A-40-00-M7-S-E	MC-85a AC220V 50/60Hz 4P (Metasol) EXP
	MC800A-40-22-EV-B-E	MC-800a AC/DC200V 2a2b 4P (Metasol) EXP

Note2)

3Pole

S: Screw with Phillips head; Bare wire or fork terminal are accessible. (Applied model : MC6a to MC150a)

L: Box Lug; Bare wire is accessible. (Applied model : MC50a to MC150a)

B: Screw with hex Bolt head; Ring terminal or fork terminal are accessible (Applied model : MC185a to MC2100a)

4Pole

S: Screw with Phillips head; Bare wire or fork terminal are accessible. (Applied model : MC6a to MC85a)

L: X

B: Screw with hex Bolt head; Ring terminal or fork terminal are accessible (Applied model : MC100a to MC800a)

Renewable Contactors

MCi-900	AC 300V	50/60Hz	2NO2NC
Rated current	Coil voltage	Frequency	Auxiliary contact
900 900A	AC 300V	50/60Hz	2NO2NC
2650 2650A	AC 100~240V		
	DC 100~220V		

Contactor relays

MR4		22L		B7	
Product		Main contact		Coil voltage	
MR4	MR-4	00	None	See coil code table	
MR6	MR-6	13	Normal 1NO normal 3NC	Note) MC catalog reference 23 for details	
MR8	MR-8	22	Normal 2NO normal 2NC		
		22L	Low current 2NO low current 2NC		
		44	Normal 4NO normal 4NC		
		44L	Low current 2NO low current 2NC		

ex)	MR4-22-B7-E	MR-4 AC24V 50/60Hz 2a2b (Metasol) EXP
	MR6-42-JD-E	MR-6 DC12V 4a2b (Metasol) EXP
	MR8-44-MD-E	MR-8 DC220V 4a4b (Metasol) EXP

Thermal overload relay

MT-12		2H		0.1	
Product		Relay version		Relay setting current	
12	12AF	3H	Non-differential (3-heater)	0.1	0.1A
32	32AF			⋮	⋮
63	63AF	3K	Differential	800	800A
95	95AF	3D	Class 20		
⋮	⋮				
800	800AF				

ex)	MW32aB-30-22-M7-21.5-3H-S-E	MW-32aB AC220V 50/60Hz SCREW 2a2b 21.5A 3H (Metasol) EXP
	MW32A-30-22-N5-34-3H-S-E	MW-32a AC415V 50Hz SCREW 2a2b 34A 3H (Metasol) EXP
	MW22BMB-11-Q7-19-SH-S-E	MW-22bMB AC380V 50/60Hz SCREW 1a1b 19A 3H (Metasol) EXP

Enclosed motor starters

MW22B		M		B	
Product		Material		Material	
MW6A	MW-6a	-	Iron	-	None
⋮	⋮				
MW100A	MW-100a	B	Mold	B	Button
MW9B	MW-9b				
⋮	⋮				
MW22B	MW-22b				

Main Coil Voltage											
AC						DC		Semi-electric (AC)		Electric (AC/DC)	
50Hz		60Hz		50/60Hz				50/60Hz			
Coil Voltage(V)	code	Coil Voltage(V)	code	Coil Voltage(V)	code	Coil Voltage(V)	code	Coil Voltage(V)	code	Coil Voltage(V)	code
24V	B5	24V	B6	24V	B7	12V	JD	100~120	HF	24 (AC24~25 50/60Hz, DC24)	AV
48V	E5	48V	E6	48V	E7	24V	BD	220~240	MU	48 (AC48~50 50/60Hz, DC24)	BV
110V	F5	110V	F6	110V	F7	48V	ED	265~347	OQ	24/48 (AC24~50 50/60Hz, DC100~110)	CV
220V	M5	220V	M6	220V	M7	110V	FD	380~440	OV	100/200 (AC100~240 50/60Hz, DC100~220)	FV
380V	Q5	380V	Q6	380V	Q7	125V	GD	440~575	S7	100/200 (AC100~240 50/60Hz, DC100~220)	DV
415V	N5	415V	N6	415V	N7	220V	MD				EV
440V	R5	440V	R6	440V	R7	240V	OD				GV

* MC catalog reference 23 for details

Contactors & Overload relays

Ordering

Optional Accessories

Auxiliary contact unit



Version	
UA-1	Side mount
AU-100	
AU-100E	
UA-2	Front mount(2P)
UA-4	Front mount(4P)

Note) UA-2: 2NO, 1NO1NC, 2NC
 UA-4: 4NO, 3NO1NC, 4NC,
 2NO2NC, 1NO3NC



Contact composition	
11	1NO+1NC
20	2NO
02	2NC
40	4NO
32	3NO+1NC
22	2NO+2NC
13	1NO+3NC
04	4NC

Surge absorber



Product composition	
Varistor+RC	
Varistor+RC	
Varistor+RC	
Varistor+RC	
Varistor+RC	
Varistor+RC	
Varistor	
Varistor	
Varistor	
Varistor	
RC	



Voltage	
1	AC 24~48V
2	AC 100~125V
3	AC 200~240V
4	DC 24~48V
5	DC 100~125V
6	DC 200~220V
11	AC/DC 24~48V
12	AC/DC 100~125V
13	AC/DC 200~240V
14	AC/DC 380~440V
22	AC 100~125V

Note) MC catalog reference 82 for details

Interlock unit



Product	Contact composition
02	2NC
00	None

Wire kit for Interlocking



Product	Rated current	
18	18AF	
22	22AF	
32	40AF	
63	65AF	
95	100AF	

Separate mounting unit (For relay)



Product	Rated current	
12	12AF	
32	32AF	
63	63AF	
95	95AF	
150	150AF	

Remote reset unit (For relay)



Product	Cable length	
4R	400	
5R	500	
6R	600	

6 to 12A

Mini contactors					
3NO main contacts 1 auxiliary contacts		Screw clamp type	Fast-on type	Cage clamp type	
Frame size		6A	9A	12A	
Screw clamp type	AC coil	GMC-6M	GMC-9M	GMC-12M	
	DC coil	GMD-6M	GMD-9M	GMD-12M	
Fast-on type	AC coil	GMC-6MF	GMC-9MF	GMC-12MF	
	DC coil	GMD-6MF	GMD-9MF	GMD-12MF	
Cage clamp type	AC coil	GMC-6MC	GMC-9MC	GMC-12MC	
	DC coil	GMD-6MC	GMD-9MC	GMD-12MC	
Solder pin type	AC coil	GMC-6MP	GMC-9MP	GMC-12MP	
	DC coil	GMD-6MP	GMD-9MP	GMD-12MP	
Ratings / UL508		hp	A	hp	A
continuous current		lth = 20A (maximum for cage clamp type is 10A)			
single phase	120V	1/2	1/2	1 *	
	230V/240V	1	1.5	2 **	
three phase	240V	1.5	3	3	
	480V	3	5	7.5 ***	
	600V	3	5	7.5	
Wire Range : Copper, 75°C, Stranded, 18-12AWG					
NEMA size		00	00	00	
Additional auxiliary contacts		Screw clamp type	Fast-on type	Cage clamp type	
2-pole, Front mount		AU-2M 	AU-2MF 	AU-2MC 	
4-pole, Front mount		AU-4M 	AU-4MF 	AU-4MC 	
2-pole, Side mount		AU-1M 	AU-1MF 	AU-1MC 	

Note) * = 1/2 for cage clamp type
 ** = 1.5hp for cage clamp type
 *** = 5hp for cage clamp type
 16AF : not approved from UL

Overload Relays

Bimetallic style Type GT		Setting ranges (A) 0.1 - 0.16 0.16 - 0.25 0.25 - 0.4 0.4 - 0.63 0.63 - 1 1 - 1.6 1.6 - 2.5 2.5 - 4	4 - 6 5 - 8 6 - 9 7 - 10 9 - 13 12 - 16	
		GT-12M		Base for separate mount
	Differential		GTK-12M	
	Non-differential (3-heater)		GTH-12M/3	
Non-differential (2-heater)			GTH-12M	

Mini contactors

Ordering

Catalog Numbering [Mini-MC]

GM	C	-	12	M	R	F	/	4P
Series	Device Type		Nominal rating		Mini contactor	Terminations		Poles
Contactor	C	AC coil	6	6A		None	Screw	None 3 pole
	D	DC Coil	9	9A		F	Fast-on	4P 4 pole
	S	Starter	12	12A		C	Cage clamp	
						P	Solder pin	
					Combination			
					None	w/o additional device		
					R	Reversing		

Catalog Numbering [Mini-TOR]

GT	K	-	12M	/	H	0.14	3H			
Series	Device Type		Ampere frame		Mounting	Current range		No. of thermal elements (just for H type device)		
Thermal Overload Relay	K	Differential type	12M	12AF Mini	-	Standard	0.14	0.1 ~ 0.16A	3H	3 elements
	H	Non-differential			H	Separate mount		⋮	2H	2 elements
							14	12 ~ 16A		

Manual motor controller (UL 508, CSA C22.2 as Manual motor controllers)

Combination Motor Controller

- Group Installation
- Type E starter



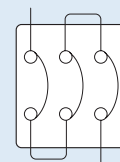
MMS 63S

Rated operational current I _e [A]		10	13	17	22	26	32	40	50	63	65
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	50	50	40	40	40	40	40	40	40	40
600V	[kA]	10	10	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1/2	1/2	1	1½	2	3	3	5	5
	230V	[HP]	1½	2	3	3	5	7½	10	10	10
3 Phase	200V	[HP]	2	3	3	5	7½	10	15	20	20
	230V	[HP]	3	3	5	7½	10	10	15	20	20
	460V	[HP]	5	7½	10	15	20	30	30	40	40
	575V	[HP]	7½	10	15	20	30	30	40	60	60
Maximum rated current of fuse or breaker		[A]	600	600	600	600	600	600	600	600	600

MMS 100S

Rated operational current I _e [A]		17	22	26	32	40	50	63	75	90	100
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	50	50	50	50	50	50	40	40	40	40
600V	[kA]	10	10	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1	1½	2	2	3	5	5	7½	10
	230V	[HP]	3	3	3	5	7½	10	15	20	20
3 Phase	200V	[HP]	3	5	7½	7½	10	15	20	25	30
	230V	[HP]	5	7½	7½	10	10	15	20	30	30
	460V	[HP]	10	15	15	20	30	40	50	60	75
	575V	[HP]	15	20	20	30	30	40	60	75	100
Maximum rated current of fuse or breaker		[A]	1000	1000	1000	1000	1000	1000	1000	1000	1000

In case of 1-phase use in series as shown below



Manual motor starters

Manual motor controller (UL 508, CSA C22.2 as Manual motor controllers)

Combination Motor Controller

- Group Installation
- Type E starter



MMS 32H

Rated operational current I _e [A]		0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32	40
Max. short-circuit current																		
240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
480V	[kA]	65	65	65	65	65	65	65	65	65	65	65	65	30	30	30	30	30
600V	[kA]	25	25	25	25	25	25	25	25	25	25	25	25	10	10	10	10	10
Motor load																		
1 Phase	115V	[HP]	-	-	-	-	-	-	1/8	1/4	1/3	1/2	1/2	1	1½	2	2	3
	230V	[HP]	-	-	-	-	1/10	1/6	1/3	1/2	1	1½	2	3	3	3	5	7½
3 Phase	200V	[HP]	-	-	-	-	-	1/2	3/4	1	2	2	3	3	5	7½	7½	10
	230V	[HP]	-	-	-	-	-	1/2	3/4	1½	2	3	3	5	7½	7½	10	10
	460V	[HP]	-	-	-	-	3/4	1	2	3	5	5	7½	10	15	15	20	30
	575V	[HP]	-	-	-	1/2	3/4	1½	3	5	5	7½	10	15	20	20	30	30
Maximum rated current of fuse or breaker		[A]	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500

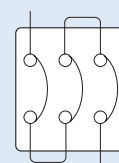
MMS 63H

		10	13	17	22	26	32	40	50	63	65
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	65	65	50	50	50	50	50	50	50	50
600V	[kA]	25	25	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1/2	1/2	1	1½	2	2	3	5	5
	230V	[HP]	1½	2	3	3	5	7½	10	10	10
3 Phase	200V	[HP]	2	3	3	5	7½	7½	10	15	20
	230V	[HP]	3	3	5	7½	7½	10	15	20	20
	460V	[HP]	5	7½	10	15	20	30	30	40	40
	575V	[HP]	7½	10	15	20	30	30	40	60	60
Maximum rated current of fuse or breaker		[A]	600	600	600	600	600	600	600	600	600

MMS 100H

Rated operational current I _e [A]		17	22	26	32	40	50	63	75	90	100
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	65	65	65	65	65	65	50	50	50	50
600V	[kA]	25	25	25	20	20	20	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1	1½	2	2	3	3	5	7½	10
	230V	[HP]	3	3	3	5	7½	10	15	20	20
3 Phase	200V	[HP]	3	5	7½	7½	10	15	20	25	30
	230V	[HP]	5	7½	7½	10	10	15	20	30	30
	460V	[HP]	10	15	15	20	30	30	40	60	75
	575V	[HP]	15	20	20	30	30	40	60	75	100
Maximum rated current of fuse or breaker		[A]	1000	1000	1000	1000	1000	1000	1000	1000	1000

In case of 1-phase use in series as shown below



Manual motor controller (UL508)



MMS 32S

Rated operational current I _e [A]			0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32	40
Max. short-circuit current																			
240V	[kA]		100	100	100	100	100	100	100	100	100	100	50	50	40	30	30	20	20
480V	[kA]		50	50	50	50	50	50	50	50	25	25	10	10	10	10	7.5	7.5	7.5
600V	[kA]		10	10	10	10	10	10	10	5	5	5	5	5	5	5	5	5	5
Motor load																			
1 Phase	115V	[HP]	-	-	-	-	-	-	-	1/8	1/4	1/3	1/2	1/2	1	1½	2	2	3
	230V	[HP]	-	-	-	-	-	1/10	1/6	1/3	1/2	1	1½	2	3	3	3	5	7½
3 Phase	200V	[HP]	-	-	-	-	-	-	1/2	3/4	1	2	2	3	3	5	7½	7½	10
	230V	[HP]	-	-	-	-	-	-	1/2	3/4	1½	2	3	3	5	7½	7½	10	10
	460V	[HP]	-	-	-	-	-	3/4	1	2	3	5	5	7½	10	15	15	20	30
	575V	[HP]	-	-	-	-	1/2	3/4	1½	3	5	5	7½	10	15	20	20	30	30
Max. fuse size			[A]	1	1	1	1	3	6	10	15	20	30	40	50	60	80	100	125
Max. breaker size			[A]	15	15	15	15	15	15	15	20	30	40	50	60	80	100	125	150

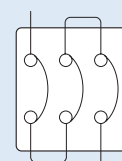
MMS 63S

Rated operational current I _e [A]			10	13	17	22	26	32	40	50	63	65
Max. short-circuit current												
240V	[kA]		100	100	100	100	100	100	100	100	100	100
480V	[kA]		25	25	25	25	25	25	25	25	25	25
600V	[kA]		10	10	10	10	10	10	10	10	10	10
Motor load												
1 Phase	115V	[HP]	1/2	1/2	1	1½	2	2	3	3	5	5
	230V	[HP]	1½	2	3	3	3	5	7½	10	10	10
3 Phase	200V	[HP]	2	3	3	5	7½	7½	10	15	20	20
	230V	[HP]	3	3	5	7½	7½	10	10	15	20	20
	460V	[HP]	5	7½	10	15	15	20	30	30	40	40
	575V	[HP]	7½	10	15	20	20	30	30	40	60	60
Max. fuse size			[A]	40	50	60	80	100	125	150	200	250
Max. breaker size			[A]	40	50	60	80	100	125	150	200	250

MMS 100S

Rated operational current I _e [A]			17	22	26	32	40	50	63	75	90	100
Max. short-circuit current												
240V	[kA]		100	100	100	100	100	100	100	100	100	100
480V	[kA]		25	25	25	25	25	25	25	25	25	25
600V	[kA]		10	10	10	10	10	10	10	10	10	10
Motor load												
1 Phase	115V	[HP]	1	1½	2	2	3	3	5	5	7½	10
	230V	[HP]	3	3	3	5	7½	10	10	15	20	20
3 Phase	200V	[HP]	3	5	7½	7½	10	15	20	20	25	30
	230V	[HP]	5	7½	7½	10	10	15	20	25	30	30
	460V	[HP]	10	15	15	20	30	30	40	50	60	75
	575V	[HP]	15	20	20	30	30	40	60	60	75	100
Max. fuse size			[A]	60	80	100	125	150	200	250	300	400
Max. breaker size			[A]	60	80	100	125	150	200	250	300	400

In case of 1-phase use
in series as shown below



Manual motor starters

Manual motor controller (UL508)



MMS 32H

Rated operational current I _e [A]		0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32	40
Max. short-circuit current																		
240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
480V	[kA]	50	50	50	50	50	50	50	50	50	50	50	50	30	30	30	30	30
600V	[kA]	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Motor load																		
1 Phase	115V	[HP]	-	-	-	-	-	-	1/8	1/4	1/3	1/2	1/2	1	1½	2	2	3
	230V	[HP]	-	-	-	-	1/10	1/6	1/3	1/2	1	1½	2	3	3	3	5	7½
3 Phase	200V	[HP]	-	-	-	-	-	1/2	3/4	1	2	2	3	3	5	7½	7½	10
	230V	[HP]	-	-	-	-	-	1/2	3/4	1½	2	3	3	5	7½	7½	10	10
	460V	[HP]	-	-	-	-	3/4	1	2	3	5	5	7½	10	15	15	20	30
	575V	[HP]	-	-	-	-	1/2	3/4	1½	3	5	5	7½	10	15	20	30	30
Max. fuse size		[A]	1	1	1	1	3	6	10	15	20	30	40	50	60	80	100	125
Max. breaker size		[A]	15	15	15	15	15	15	15	20	30	40	50	60	80	100	125	150

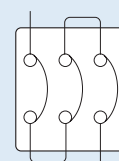
MMS 63H

Rated operational current I _e [A]		10	13	17	22	26	32	40	50	63	65
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	50	50	50	50	50	50	50	50	50	50
600V	[kA]	10	10	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1/2	1/2	1	1½	2	2	3	5	5
	230V	[HP]	1½	2	3	3	5	7½	10	10	10
3 Phase	200V	[HP]	2	3	3	5	7½	7½	10	15	20
	230V	[HP]	3	3	5	7½	7½	10	15	20	20
	460V	[HP]	5	7½	10	15	20	30	30	40	40
	575V	[HP]	7½	10	15	20	30	30	40	60	60
Max. fuse size		[A]	40	50	60	80	100	125	150	200	250
Max. breaker size		[A]	40	50	60	80	100	125	150	200	250

MMS 100H

Rated operational current I _e [A]		17	22	26	32	40	50	63	75	90	100
Max. short-circuit current											
240V	[kA]	100	100	100	100	100	100	100	100	100	100
480V	[kA]	50	50	50	50	50	50	50	50	50	50
600V	[kA]	10	10	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1	1½	2	2	3	3	5	7½	10
	230V	[HP]	3	3	3	5	7½	10	15	20	20
3 Phase	200V	[HP]	3	5	7½	7½	10	15	20	25	30
	230V	[HP]	5	7½	7½	10	10	15	20	30	30
	460V	[HP]	10	15	15	20	30	30	40	60	75
	575V	[HP]	15	20	20	30	30	40	60	75	100
Max. fuse size		[A]	60	80	100	125	150	200	250	300	400
Max. breaker size		[A]	60	80	100	125	150	200	250	300	400

In case of 1-phase use in series as shown below



Ordering

Numbering [Manual Motor Starter]

MMS	—	32	S	0.16A
Series		Ampere frame	Type of breaker	Max. adjustable current
Manual motor starter		32 32AF	S Standard breaking capacity	0.16A 0.1~0.16A
		63 63AF	H High breaking capacity	⋮
		100 100AF	HI High breaking capacity and instantaneous break only	100A 80~100A

Catalog Numbering [Aux. contact, Alarm, Release unit]

L	X	—	11
Direction of install			Contact Configuration Or Operating voltage
F Front			11 0.1~0.16A
L Left side			20
R Right side			02
			24V 50Hz/28V 60Hz
			⋮
			415~440V 50Hz/460~480V 60Hz
Type of breaker			
X Aux. contact			
A Alarm switch			
AM Short circuit alarm			
U Under voltage release (UVT)			
UX UVT operating with MMS handle			
S Shunt release (SHT)			

Electronic motor protection relays

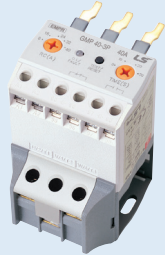
GMP Series

Ratings										
Model			GMP22-2P (1c)		GMP22-2P(1a1b)	GMP22-3P/3PR	GMP22-2S	GMP22-3S/3SR	GMP22-2T	GMP22-3T/3TR
Type			Pin type			Screw type			Tunnel type	
No. of CT			2CT		2CT	3CT	2CT	3CT	2CT	3CT
Protection	Overcurrent		●	●	●	●	●	●	●	●
	Phase failure Note1)		●	●	●	●	●	●	●	●
	Lock/Stall		●	●	●	●	●	●	●	●
	Phase unbalance		-	-	●	-	●	-	●	
	Reverse phase		-	-	●(3PR)	-	●(3PR)	-	●(3PR)	
Current setting range (A)			0.3~1.5, 1~5, 4.4~22							
Operating time characteristics			Inverse time (GMP22-2PD: Definite time)							
Time setting (sec)	Inverse time		0~30 sec							
	Definite	D-time	0.2~60 sec for GMP22-2PD							
		O-time	5sec (Fixed) for GMP22-2PD							
	Reset-time		Manual reset							
Tolerance	Current		±5%							
	Time		±5%(or±0.5sec)							
Control power	Voltage		AC 110V/220V(±10%)		AC 100~260V(±10%)					
	Frequency		50/60Hz							
Aux. contact	Contact Note 3)		1SPDT (1c)		2SPST (1a1b)					
	Ratings		5A/250VAC Resistive load		3A/250VAC Resistive load					
	Operate		(95 - + 96 Close)		(95 - + 96 Close)		(97 - + 98 Open)			
Insulation resistance			Min 100MΩ at 500Vdc							
Surge endurance (IEC 61000-4-5)			5kV Apply the standard wave							
Fast transient burst (IEC 61000-4-4)			2kV							
Environment	Operation		-25~70℃							
Temperature	Storage		-30~80℃							
	Relative humidity		30~90%RH(No freezing)							
Trip indicator			Red LED		Red/Green LED		Red LED	Red/Green LED	Red LED	Red/Green LED
Dimension	W×H×D	inch	1.73×2.80×3.07		2.09×3.07×3.44		2.87×2.68×3.44		2.09×1.50×3.44	
		(mm)	(44×71×78)		(53×78×87.5)		(53×68×87.5)		(53×38×87.5)	
Mounting type			Direct mount onto a Metasol MC (MC-9b-22b)				Separate mount (Screw or Din-rail) Note2)			
Certification			UL, cUL, CE							

Note) 1. When it is 2CT model, only two-phase protection is available

2. The bracket for Din-rail mount is optional

3. When power applied Aux. contact operate

Ratings														
Model			GMP40-2P	GMP40-3P/3PR	GMP40-2S	GMP40-3S/3SR	GMP40-2T	GMP40-3T/3TR	GMP80-2S	GMP80-3S/3SR	GMP60T	GMP60TE		
Type			Pin type *		Screw type		Tunnel type		Screw type		Tunnel type			
No. of CT			2CT	3CT	2CT	3CT	2CT	3CT	2CT	3CT	2CT			
Protection	Overcurrent		●	●	●	●	●	●	●	●	●			
	Phase failure Note1)		●	●	●	●	●	●	●	●	●			
	Lock/Stall		●	●	●	●	●	●	●	●	●			
	Phase unbalance		-	●	-	●	-	●	-	●	-			
	Reverse phase		-	●(3PR)	-	●(3PR)	-	●(3PR)	-	●(3PR)	-			
Current setting range(A)			4~20, 8~40						16~80		0.5~6, 3~30, 5~60			
Operating time characteristics			Inverse time characteristics, Definite (GMP-PD Type)									Definite		
Time setting (sec)	Inverse time		0~30 sec									-		
	Definite	D-time	0.2~60 sec (GMP40-2PD)									0.2~30 sec		
		O-time	5sec (Fixed) (GMP40-2PD)									0.2~30 sec	5 sec (Fixed)	
		Reset time	Manual reset (Auto Reset type : GMP□-A)									-	GMP-TA	
Tolerance	Current		±5%									±5%		
	Time		±5% (or±0.5 sec)									±5% (or±5 sec)		
Control power	Voltage Note3)		AC 100~260V									AC 110V/260V		
	Frequency		50/60Hz									50/60Hz		
Aux. contact	Contact Note4)		2SPST (1a1b)									1SPDT (1c)		
	Ratings		3A/250VAC Resistive load									1A/250VAC Resistive load		
	Operate		(95┤┐96 Close) (97┤┐98 Open)									-		
Insulation resistance			Min 100MΩ at 500Vdc									Min 100MΩ at 500Vdc		
Surge endurance (IEC 61000-4-5)			5kV Apply the standard wave									5kV Apply the standard wave		
Fast transient burst (IEC 61000-4-4)			2kV									2kV		
Environment	Operation		-25~70°C									-25~70°C		
Temperature	Storage		-30~80°C									-30~80°C		
	Relative humidity		30~90%RH (No freezing)									30~90%RH (No freezing)		
Trip indicator			Red LED	Red/Green LED	Red LED	Red/Green LED	Red LED	Red/Green LED	Red LED	2Red LEDs	Red LED			
Dimension	W×H×D	inch (mm)	2.09×3.07×3.44 (53×78×87.5)		2.09×2.68×3.44 (53×68×87.5)		2.09×2.68×3.44 (53×38×87.5)		3.50×3.05×3.83 (89×77.5×97.4)		2.83×2.64×2.72 (72×67×69)			
Mounting type			Direct mount onto a Metasol MC (MC-32a, 40a)		Separate mount (Screw or Din-rail)						Separate mount (Screw or Din-rail)			
Certification			UL, cUL, CE											

Note) 1. When it is 2CT model, only two-phase protection is available.

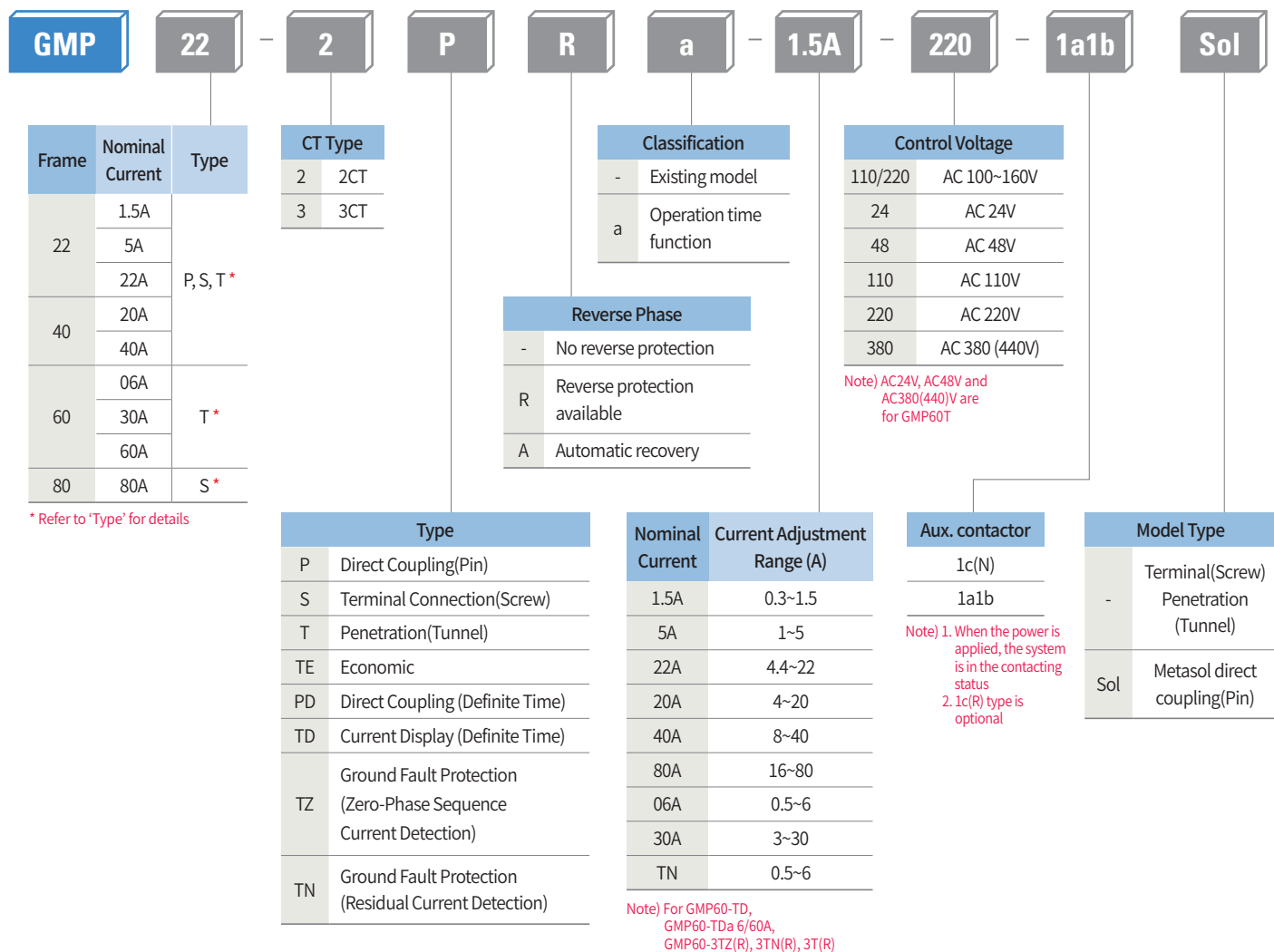
2. GMP60T/TE: AC24V, 48V or 380V, 50/60Hz types a option.

3. When power applied the Aux. contact operate.

Electronic motor protection relays

Ordering

GMP series - ordering



DMPi series



A list of standard models

Rated current	Connection method	Model No.	Over-current	Stall/ Locked rotor	Phase fail current	Phase un-balance	Reverse phase	Under current	Ground fault	Instant short circuit	Remarks
0.5~6A	Terminal type	DMP06i-S	●	●	●	●	●	●	-	-	If there is the function of RS485 communication, 'M' is appended to its type name. If there is the function of 4~20mA DC output, 'A' is appended to its type name.
		DMP06i-SZ, SB	●	●	●	●	●	●	●	-	
		DMP06i-SI	●	●	●	●	●	●	-	●	
		DMP06i-SZI, SBI ^{Note1)}	●	●	●	●	●	●	●	●	
	Penetrated type	DMP06i-T	●	●	●	●	●	●	-	-	
		DMP06i-TZ, TB	●	●	●	●	●	●	●	-	
		DMP06i-TI	●	●	●	●	●	●	-	●	
		DMP06i-TZI, TBI ^{Note1)}	●	●	●	●	●	●	●	●	
5~65A	Terminal type	DMP65i-S	●	●	●	●	●	●	-	-	RS485 communication function and 4~20mA DC output function are not supported at the same time.
		DMP65i-SZ, SB	●	●	●	●	●	●	●	-	
		DMP65i-SI	●	●	●	●	●	●	-	●	
		DMP65i-SZI, SBI ^{Note1)}	●	●	●	●	●	●	●	●	
	Penetrated type	DMP65i-T	●	●	●	●	●	●	-	-	
		DMP65i-TZ, TB	●	●	●	●	●	●	●	-	
		DMP65i-TI	●	●	●	●	●	●	-	●	
		DMP65i-TZI, TBI ^{Note1)}	●	●	●	●	●	●	●	●	

Note) 1. It is possible to set up ground fault and instantaneous trip contacts separately.

Electronic motor protection relays

DMPi series

Rated specifications

Connection method		Penetrated / Terminal type
Protection functions		Overcurrent, phase fail, phase unbalance, stall, locked rotor, reverse phase, ground fault (Type option) Instance (Type option)
Connection method		Penetrated / Terminal type
Operating time characteristics		Thermal heat build-up inverse time / Non-thermal heat build-up inverse time / Definite time
Rated current		0.5~6A/5~65A (Rating option upon placing an order)
Display		4 digit, 7-Segment
Operating power		AC/DC 85~260V, AC/DC 24V(50Hz/60Hz)
Reset method	Automatic	1~20min (only for overcurrent)
	Manual	(Electrical reset)
Installation / Mounting method		Display can be installed separately, 35mm DIN rail / Screw installation
Tolerance	Current	±3%
	Time	±5%
	4~20mA output	±5%
Time setting	Startup delay	1~200sec
	Operation delay	1~60sec
Aux. contact	Composition	3-SPST (Power supply 1a1b, instantaneous operation 1a) ^{Note1)}
	Capacity	3A/250VAC Resistive Load
	Contact minimum load	100mA / 6VDC : (95-996, 97-98) 10mA / 5VDC (07-08)
ZCT Input	External	200mA/100mV (Exclusive ZCT) ^{Note2)}
	Built-in	Support (Separate connection unnecessary) ^{Note2)}
Service environment	Service temperature	-20°C ~ 60°C
	Storage temperature	-30°C ~ 70°C
	Relative humidity	Below 50% RH (Without condensation)
Insulation resistance		100MΩ/500VDC
Lightning impulse voltage		1.2X50us 5kV Prototype waveform supply
Fast transient		2kV/1Min
Power consumption		Below 2W

Note) 1. See No. 21 to 23 of A-Group in Setting menu. If single phase is set, the device measures R/S/T phase. In HMI, the maximum phase of three phases is displayed without any indication of phase.

2. It is used when zero current detection type is selected.

3. This product is used to protect a low-voltage motor with 1000V or less.

Model numbering system

DMP	06i	S	Z	I	M	AC/DC85~260V, AC/DC24V	2a2b
	Rated current	Connection method	Ground fault	Additional function	Communication	Operating voltage	Auxiliary contact
	06i 0.5~6A	S Terminal type	- None	- Alarm	- None	AC/DC85~260V	2a1b
	65i 5~65A	T Penetrated type	Z External ZCT	I + Instance	M RS485 MOD	AC/DC24V	Note) Contact state when power is applied
			B Built-in ZCT		A 4~20mA		

* When using display separately, please purchase a dedicated cable as well (See other options)

* Please ensure that at least one of the R, S and T phases carries a current above the minimum rated value during the ground fault protection test.

* For unbalanced loads, selecting an external ZCT model allows for both unbalance and ground fault protection.

Note)
"-" models have Alarm + Operating Time + Failure History storage functions as the default.

"I" models have an additional instance protection function.

Note)
Contact state when power is applied.

- 95-96: b (modifiable in menu items)
- 97-98: a (modifiable in menu items)
- 07-08: a

IMP series



Integral type



Extention type

Rated specifications

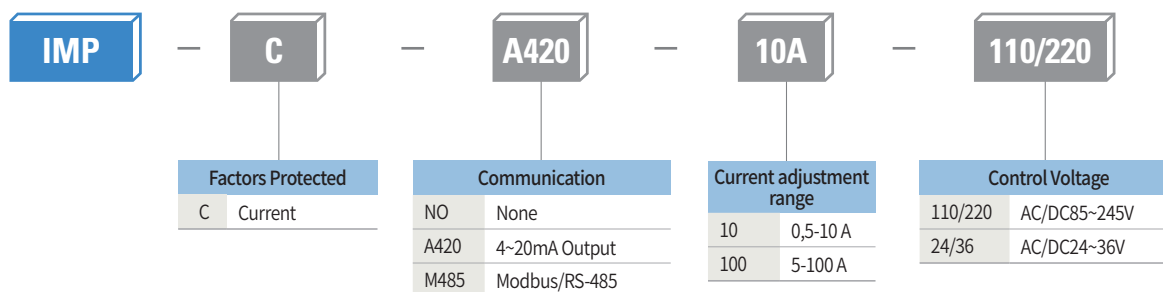
Protection	Over current, Lock/Stall, Phase failure, Phase unbalance, Reverse phase, Under current, Ground fault, Short circuit	
Connection method	Extention type	
Operating Time Characteristics	Heat accumulation inverse time / inverse time / definite time	
Rated current	0.5~10A/5~100A (Separate)	
Display	4digit, 7-Segment	
Operating power	AC/DC 85~245V (50Hz/60Hz)	
Return method	Auto	1~20min
	Manual / Electrical	On/Off Selectable
Installation / installation method	Display can be installed separately, 35mm DIN rail / Screw installation	
Tolerance	Current	±5 %
	Time	±5 %
	4~20mA Output	±5 %
Time setting	Startup delay	1~200sec
	Operation delay	1~60sec
Aux. contact	Configuration	3-SPST(Power supply 1a1b, instantaneous operation 1a) ^{Note1)}
	Capacity	3A/250VAC Resistive Load
	Contact minimum loadконтакт	10mA / 5VDC
ZCT Input	200mA/100mV (Exclusive ZCT) ^{Note2)}	
Environment	Operation	-10~55°C
	Storage	-20~70°C
	Relative humidity	within 80% RH, no condensation
Insulation Resistance	100Mohm/500VDC	
Power consumption	1.2 × 50us 5kV Prototype waveform supply	
Fast Transient	2kV/1Min	
Power consumption	Below 3W	

Note) 1. See No. 17-19 of A-Group in Setting menu.

2. It is used if zero current detection type is selected.

3. This product is designed for protecting a low-voltage motor with 1,000V or less. Therefore, it should not be used in high voltage lines.

Model numbering system



* When using display separately, please purchase a dedicated cable as well (See other options)

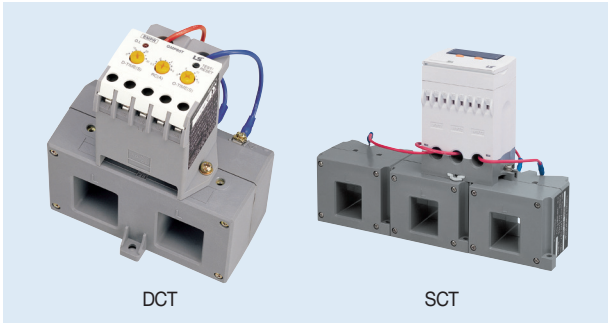
Electronic motor protection relays

CT, ZCT, Cable and Terminal Accessories

CT Ratings

Type	2CT	3CT
CT ratio	100 : 5A	DCT-100
	150 : 5A	DCT-150
	200 : 5A	DCT-200
	300 : 5A	DCT-300
	400 : 5A	DCT-400
Class	1.0	
Burden	5VA	
Insulation voltage	600VAC	
Insulated impulse voltage	2kV	
Insulation resistance	10MΩ(DC 500V Megger)	
Mounting	Panel	

(Note) Please use DCT for LS Electronic Motor Protection Relay only.

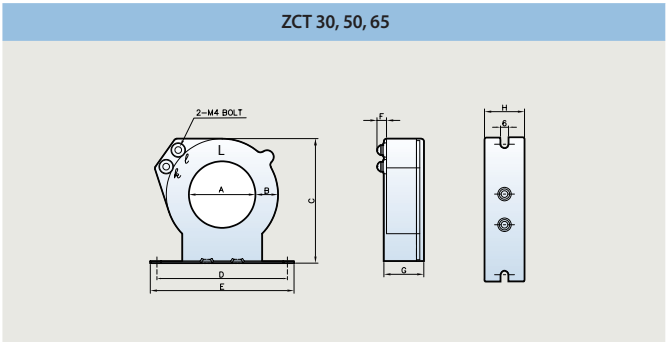


Rated specifications

Unit : mm

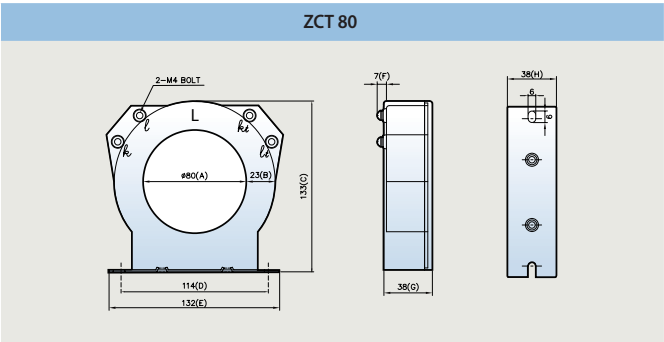
Code	Model name	Inside diameter (mm)	Zero phase current transformer ratio	Weight (kg)
76512124011	LZR-030(V)	30	200mA/100mV (LS only)	0.2
76512124012	LZR-050(V)	50		0.3
76512124013	LZR-065(V)	65		0.4
76512124014	LZR-080(V)	80		0.8

Dimensions



Unit : mm

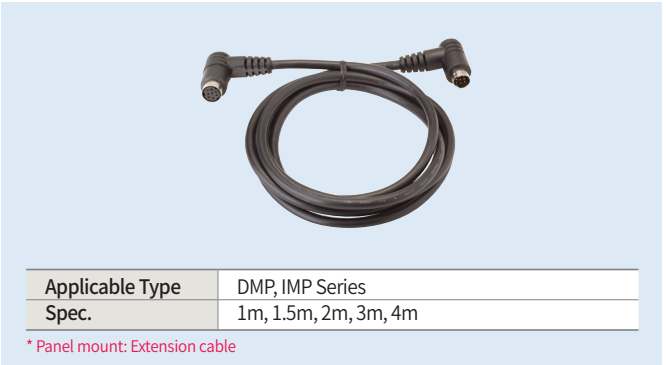
Model name	A	B	C	D	E	F	G	H	Ø
LZR-030(V)	30	17	74	75	85	7	23	25	6
LZR-050(V)	50	17	94	98	108	7	30	30	6
LZR-065(V)	65	17	108	98	108	7	30	30	6



Unit : mm

Model name	A	B	C	D	E	F	G	H	Ø
LZR-080(V)	80	23	133	114	132	7	38	38	6

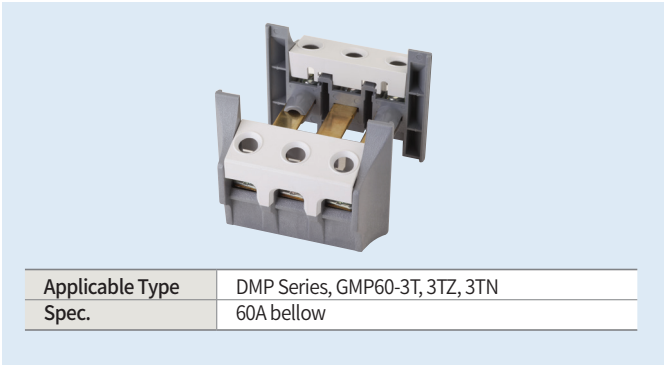
Cable



Applicable Type	DMP, IMP Series
Spec.	1m, 1.5m, 2m, 3m, 4m

* Panel mount: Extension cable

Terminal Block



Applicable Type	DMP Series, GMP60-3T, 3TZ, 3TN
Spec.	60A bellow

GPR-M type



Type		GPR-M010	GPR-M040	GPR-M100	GPR-M150
Number of poles		1 Pole	1 Pole	1 Pole	1 Pole
Operating Voltage, U _e		DC 600V	DC 1000V	DC 1000V	DC 1000V
Rated impulse withstand voltage, U _{imp}		4kV	4kV	6kV	6kV
Conventional thermal current, I _{th}		10A	40A	100A	150A
Short-time withstand current	2Min	-	100A	225A	320A
	15Min	15A	60A	150A	225A
Durability	Mechanical (*) (3,600 operations per hour)	200,000 cycles	200,000 cycles	200,000 cycles	200,000 cycles
	Electrical	5A, 600VDC, 10,000cycles (at 360cycles/Hr) (only Making)	20A, 1000VDC, 1,000cycles (at 360cycles/Hr)	50A, 1000VDC, 1,000cycles (at 360cycles/Hr)	75A, 1000VDC, 1,000cycles (at 360cycles/Hr)
Voltage drop (Initial)		0.5V @ 10A	0.2V @ 20A	0.04V @ 20A	0.04V @ 20A
Operating time		Max. 50ms	Max. 50ms	Max. 50ms	Max. 50ms
Release time		Max. 30ms	Max. 30ms	Max. 30ms	Max. 30ms
Insulation strength (Initial)		Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)
W × H × D (mm)		56 × 28 × 45	67 × 35 × 47	81 × 39 × 70	81 × 39 × 70
Temperature range		-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Humidity		5-95% R.H.	5-95% R.H.	5-95% R.H.	5-95% R.H.
Weight		80g	145g	330g	330g
Certification		CE cULus CCC	CE cULus CCC	CE cULus CCC	CE cULus CCC

* The number of Mechanical times is the number that meets the basic performance after durability.

High Voltage DC Relay

GPR-M/GPR-H type



Type		GPR-M250	GPR-M400	GPR-M400-A	GPR-H500-A
Number of poles		1 Pole	1 Pole	1 Pole	1 Pole
Operating Voltage, Ue		DC 1000V	DC 1000V	DC 1000V	DC 1500V
Rated impulse withstand voltage, Uimp		6kV	6kV	6kV	8kV
Conventional thermal current, Ith		250A	400A	400A	500A
Short-time withstand current	2Min	500A	750A	750A	900A
	15Min	350A	500A	500A	750A
Durability	Mechanical (*) (3,600 operations per hour)	200,000 cycles	200,000 cycles	200,000 cycles	200,000 cycles
	Electrical	125A, 1000VDC, 1,000cycles (at 360cycles/Hr)	200A, 1000VDC, 1,000cycles (at 360cycles/Hr)	200A, 1000VDC, 3,000cycles (at 360cycles/Hr)	200A, 1500VDC, 1,000cycles (at 360cycles/Hr)
Voltage drop (Initial)		0.02V @ 20A	0.02V @ 20A	0.02V @ 20A	0.04V @ 20A
Operating time		Max. 30ms	Max. 30ms	Max. 30ms	Max. 35ms
Release time		Max. 10ms	Max. 10ms	Max. 10ms	Max. 15ms
Insulation strength (Initial)		Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)	Min. 100MΩ(@1000VDC)
W × H × D (mm)		92 × 45 × 87	100 × 58 × 91	100 × 58 × 99	118 × 70 × 108
Temperature range		-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Humidity		5-95% R.H.	5-95% R.H.	5-95% R.H.	5-95% R.H.
Weight		500g	630g	750g	1.3kg
Certification		CE cRU [®] US CCC	CE cRU [®] US CCC	CE cRU [®] US	CE cRU [®] US CCC

* The number of Mechanical times is the number that meets the basic performance after durability.

Model number structure

GPR-M 400 -A DC12V SM □

1
2
3
4
5
6

1 Operating Voltage

R 450V
 R-M 1,000V
 R-H 1,500V~

2 Conventional thermal Current

010	10A	250	250A
040	40A	400	400A
100	100A	500	500A
150	150A		

3 Aux Type

-A Aux.
 blank No Aux.

4 Control Voltage

DC12V
 DC24V

5 Mounting Type

blank | Bottom Mounting

6 Brand Name

blank | General
 Brand name

Vacuum Circuit Breakers

Ratings for Susol UL circuit breakers

Rated voltage		4.76kV				15kV				27kV			38kV	
I _r [A]	I _{sc} [kA]	25	31.5	40	50	25	31.5	40	50	25	31.5	40	31.5	40
		25	31.5	40	50	25	31.5	40	50	25	31.5	40	31.5	40
1200		UVL/UVM-05/15	UVL/UVM-05/15	UVH-05/15	UVH-05/15	UVL/UVM-05/15	UVL/UVM-05/15	UVH-05/15	UVH-05/15	UVM-27	UVH-27	UVH-27	UVH-38	UVH-38
2000		UVL/UVM-05/15	UVL/UVM-05/15	UVH-05/15	UVH-05/15	UVL/UVM-05/15	UVL/UVM-05/15	UVH-05/15	UVH-05/15	UVM-27	UVH-27	UVH-27	UVH-38	UVH-38
2500		Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	UVH-27	UVH-27	UVH-27	Not developed	Not developed
2750		Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	Not developed	UVH-27	UVH-27	UVH-27	Not developed	Not developed
3000		UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	Not developed	Not developed	Not developed	Not developed	Not developed
4000		UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	UVH-05/15	Not developed	Not developed	Not developed	Not developed	Not developed

UVL/UVM-05/15	UL certified
UVM-27	UL certified
UVH-05/15	UL certified
UVH-27	UL certified
UVH-38	ANSI type test
Not developed	

UVL Series 4.76/15kV 25/31.5kA 1200/2000A

UVL-05/15 Fixed Type:  US Draw-out Type:  LISTED

Circuit breaker type			UVL-05				UVL-15			
Rated voltage	U _r (kV)		4.76				15			
Rated withstand voltage	Power frequency (1min)	U _d (kV)	19				36			
	Lightening impulse (1.2×50μs)	U _p (kV)	60				95			
Rated short-circuit current	I _{sc} (kA)		25	25	31.5	31.5	25	25	31.5	31.5
Rated normal current	I _r (A)		1200	2000	1200	2000	1200	2000	1200	2000
Rated frequency	f _r (Hz)		50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-circuit making current	I _p (kA) at 60 Hz		65	65	81.9	81.9	65	65	81.9	81.9
Rated short-time withstand current	I _k (kA)		25	25	31.5	31.5	25	25	31.5	31.5
	3sec		●	●	●	●	●	●	●	●
Operating sequence	O - 0.3s - CO - 15s - CO		●	●	●	●	●	●	●	●

Technical data

UVL-05/15		
Opening time		Less than 0.04 sec
Rated breaking time		3 Cycle
No-load closing time		Less than 0.06 sec
Type test class	Mechanical endurance	M2 (10,000)
	Apacitance current switching	C2
Operate temperature	Low	- 40 °C
	High	40 °C

UVL Series 4.76/15kV 25/31.5kA 1200/2000A

Description for circuit breaker type

UVL type, Fixed type

UVL	—	15	P	32	A	12
Basic model name		Rated voltage (kV)	Type	Interrupting current (kA)	Phase distance	Rated current (A)
UVL Susol VCB		05 4.76 15 15	P Fixed	25 25 32 31.5	A 5.9in(150mm)	12 1200A 20 2000A

Selection table of circuit breaker type

Ur [kV]	Isc [kA]	Ir [A] p = 5.9in	Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
4.76	25	1200 2000	UVL-05P25A12 UVL-05P25A20	187.4 220.5	26.4×23.2×20 26.4×23.2×20.6
	31.5	1200 2000	UVL-05P32A12 UVL-05P32A20	187.4 220.5	26.4×23.2×20 26.4×23.2×20.6
15	25	1200 2000	UVL-15P25A12 UVL-15P25A20	187.4 220.5	26.4×23.2×20 26.4×23.2×20.6
	31.5	1200 2000	UVL-15P32A12 UVL-15P32A20	187.4 220.5	26.4×23.2×20 26.4×23.2×20.6

Withdrawl VCB, Cradle for MCSG

UVL type, Draw-out type

UVL	—	15	H	32	B	20
Basic model name		Rated voltage (kV)	Type	Interrupting current (kA)	Phase distance	Rated current (A)
UVL Susol VCB		05 4.76 15 15	H H type Draw-out (For Arc type MCSG)	25 25 32 31.5	R 5.9in(150mm) S 8.27in(210mm)	12 1200A 20 2000A
					B 8.27in(210mm)	
			H	32	S	20
			Type H type Draw-out (For Non-arc type MCSG)	Interrupting current (kA) 25 25 32 31.5	Phase distance B 8.27in(210mm) S 8.27in(210mm)	Rated current (A) 12 1200A 20 2000A
			H	32	A	12
			Type H type Draw-out (For L-type Cradle)	Interrupting current (kA) 25 25 32 31.5	Phase distance A 5.9in(150mm) S 8.27in(210mm)	Rated current (A) 12 1200A 20 2000A

Vacuum Circuit Breakers

Selection table of circuit breaker type

Selection table for H-Type VCB(For arc type MCSG)

Ur [kV]	Isc [kA]	Symbol	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
			p = 5.9in	p = 8.27in			
4.76	25	R	1200		UVL-05H25R12	187.4	26.4×23.2×20
		S		1200	UVL-05H25S12	220.5	26.4×23.2×20
		B		2000	UVL-05H25B20	275.6	26.4×23.2×20
	31.5	R	1200		UVL-05H32R12	187.4	26.4×23.2×20
		S		1200	UVL-05H32S12	220.5	26.4×23.2×20
		B		2000	UVL-05H32B20	275.6	26.4×23.2×20
15	25	R	1200		UVL-15H25R12	187.4	26.4×23.2×20
		S		1200	UVL-15H25S12	220.5	26.4×23.2×20
		B		2000	UVL-15H25B20	275.6	26.4×23.2×20
	31.5	R	1200		UVL-15H32R12	187.4	26.4×23.2×20
		S		1200	UVL-15H32S12	220.5	26.4×23.2×20
		B		2000	UVL-15H32B20	275.6	26.4×23.2×20

Selection table for H-Type VCB(For non-arc type MCSG)

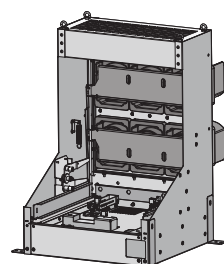
Ur [kV]	Isc [kA]	Symbol	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
			p = 5.9in	p = 8.27in			
4.76	25	B		1200	UVL-05H25B12	253.5	27.2×25.7×25.5
		S		2000	UVL-05H25S20	308.6	27.2×25.7×25.5
	31.5	B		1200	UVL-05H32B12	253.5	27.2×25.7×25.5
		S		2000	UVL-05H32S20	308.6	27.2×25.7×25.5
15	25	B		1200	UVL-15H25B12	253.5	27.2×25.7×25.5
		S		2000	UVL-15H25S20	308.6	27.2×25.7×25.5
	31.5	B		1200	UVL-15H32B12	253.5	27.2×25.7×25.5
		S		2000	UVL-15H32S20	308.6	27.2×25.7×25.5

Selection table for H-Type VCB(For L-type Cradle)

Ur [kV]	Isc [kA]	Symbol	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
			p = 5.9in	p = 8.27in			
4.76	25	A	1200		UVL-05H25A12	253.5	27.2×19.8×25.3
		S		2000	UVL-05H25S20	308.6	27.2×25.7×25.5
	31.5	A	1200		UVL-05H32A12	253.5	27.2×19.8×25.3
		S		2000	UVL-05H32S20	308.6	27.2×25.7×25.5
15	25	A	1200		UVL-15H25A12	253.5	27.2×19.8×25.3
		S		2000	UVL-15H25S20	308.6	27.2×25.7×25.5
	31.5	A	1200		UVL-15H32A12	253.5	27.2×19.8×25.3
		S		2000	UVL-15H32S20	308.6	27.2×25.7×25.5

UVL Series 4.76/15kV 25/31.5kA 1200/2000A

Description for Cradle



L-Type

UVL type, Draw-out type

UVCL		15		L	32	S	20		
Basic model name		Rated voltage (kV)		Type	Interrupting current (kA)	Phase distance	Rated current (A)		
UVCL	Susol UL VCB Cradle (UVCL)	05	4.76	L	MCSG Cradle type	P	5.9in(150mm)	12	1200
		15	15						
						S	8.27in(210mm)	20	2000

Selection table of cradle

Selection table for H-Type VCB(For L-type Cradle)

Ur [kV]	Isc [kA]	Symbol	Ir [A]		Type of circuit breaker	Outline dimension H×W×D [inch]
			p = 5.9in	p = 8.27in		
4.76	25	P	1200		UVCL-05L25P12	26.4×23.2×20
		S		2000	UVCL-05L25S20	26.4×23.2×20
	31.5	P	1200		UVCL-05L32P12	26.4×23.2×20
		S		2000	UVCL-05L32S20	26.4×23.2×20
15	25	P	1200		UVCL-15L25P12	26.4×23.2×20
		S		2000	UVCL-15L25S20	26.4×23.2×20
	31.5	P	1200		UVCL-15L32P12	26.4×23.2×20
		S		2000	UVCL-15L32S20	26.4×23.2×20

Vacuum Circuit Breakers

UVM Series 4.76/15kV 25/31.5kA 1200/2000A, 27kV 25kA 1200/2000A

UVM-05/15/27 Fixed Type:  US Draw-out Type:  LISTED

Circuit breaker type			UVM-05				UVM-15				UVM-27P	
Rated voltage	Ur (kV)		4.76				15				27	
Rated withstand voltage	Power frequency (1min)	Ud (kV)	19				36				60	
	Lightening impulse (1.2×50µs)	Up (kV)	60				95				125	
Rated short-circuit current	Isc (kA)		25	25	31.5	31.5	25	25	31.5	31.5	25	
Rated normal current	Ir (A)		1200	2000	1200	2000	1200	2000	1200	2000	1200	2000
Rated frequency	fr (Hz)		60	60	60	60	60	60	60	60	60	60
Rated short-circuit making current	Ip (kA) at 60 Hz		65	65	81.9	81.9	65	65	81.9	81.9	65	65
Rated short-time withstand current	Ikt (kA)		25	25	31.5	31.5	25	25	31.5	31.5	25	25
	3sec		●	●	●	●	●	●	●	●	●	●
Operating sequence	O - 0.3s - CO - 15s - CO		●	●	●	●	●	●	●	●	●	●

Technical data

Opening time		Less than 0.04 sec
Rated breaking time		3 Cycle
No-load closing time		Less than 0.06 sec
Type test class	Mechanical endurance	M2 (10,000)
	Apacitance current switching	C2
Operate temperature	Low	- 40 °C
	High	40 °C

UVM Series 4.76/15kV 25/31.5kA 1200/2000A, 27kV 25kA 1200/2000A

Description for circuit breaker type

UVL type, Fixed type

UVM	—	15	P	32	A	12
Basic model name		Rated voltage (kV)	Type	Interrupting current (kA)	Phase distance	Rated current (A)
UVM Susol VCB		05 4.76	P Fixed type	25 25	A 7in(178mm)	12 1200
		15 15		32 31.5	C 10in(254mm)	20 2000
		27 27	P Fixed type	25 25	C 10in(254mm)	12 1200
						20 2000

Selection table of circuit breaker type

Ur [kV]	Isc [kA]	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
		p = 7in	p = 10in			
4.76	25	1200		UVM-05P25A12	187.4	26.4×24.8×20.6
		2000		UVM-05P25A20	242.5	26.4×24.8×20.6
	31.5		1200	UVM-05P25C12	220.5	26.4×32.2×20.6
			2000	UVM-05P25C20	275.6	26.4×32.2×20.6
15	25	1200		UVM-05P32A12	187.4	26.4×24.8×20.6
		2000		UVM-05P32A20	242.5	26.4×24.8×20.6
	31.5		1200	UVM-05P32C12	220.5	26.4×32.2×20.6
			2000	UVM-05P32C20	275.6	26.4×32.2×20.6
27	25	1200		UVM-15P25A12	187.4	27.2×24.8×23.9
		2000		UVM-15P25A20	242.5	27.2×24.8×23.9
	31.5		1200	UVM-15P25C12	220.5	26.4×32.2×20.6
			2000	UVM-15P25C20	275.6	26.4×32.2×20.6
27	25		1200	UVM-15P32A12	187.4	27.2×24.8×23.9
			2000	UVM-15P32A20	242.5	27.2×24.8×23.9
27	25		1200	UVM-15P32C12	220.5	26.4×32.2×20.6
			2000	UVM-15P32C20	275.6	26.4×32.2×20.6
27	25		1200	UVM-27P25C12	264.6	33.3×32.7×22
			2000	UVM-27P25C20	297.6	33.3×32.7×22

Vacuum Circuit Breakers

UVM Series 4.76/15kV 25/31.5kA 1200/2000A, 27kV 25kA 1200/2000A

Withdrawal VCB, Cradle for MCSG

UVM type, Draw-out type

Basic model name		Rated voltage (kV)		Type		Interrupting current (kA)		Phase distance		Rated current (A)	
UVM	Susol VCB	05	4.76	H	Draw-out Type (For UVM, UVH MCSG)	25	25	A	7in(178mm)	12	1200
		15	15			32	31.5	C	10in(254mm)	20	2000
		27	27	H	Draw-out Type (For UVM, UVH MCSG)	25	25	C	10in(254mm)	12	1200
										20	2000

Selection table of circuit breaker type

Select withdrawal VCB/Cradle with same horizontal line.

Ur [kV]	Isc [kA]	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
		p = 7in	p = 10in			
4.76	25	1200 2000		UVM-05H25A12 UVM-05H25A20	220.46 286.6	26.7×21.8×28.9 26.7×21.8×28.9
			1200 2000	UVM-05H25C12 UVM-05H25C20	264.55 330.69	26.7×31.8×28.9 26.7×31.8×28.9
	31.5	1200 2000		UVM-05H32A12 UVM-05H32A20	220.46 286.6	26.7×21.8×28.9 26.7×21.8×28.9
			1200 2000	UVM-05H32C12 UVM-05H32C20	264.55 330.69	26.7×31.8×28.9 26.7×31.8×28.9
15	25	1200 2000		UVM-15H25A12 UVM-15H25A20	220.46 286.6	26.7×21.8×28.9 26.7×21.8×28.9
			1200 2000	UVM-15H25C12 UVM-15H25C20	264.55 330.69	26.7×31.8×28.9 26.7×31.8×28.9
	31.5	1200 2000		UVM-15H32A12 UVM-15H32A20	220.46 286.6	26.7×21.8×28.9 26.7×21.8×28.9
			1200 2000	UVM-15H32C12 UVM-15H32C20	264.55 330.69	26.7×31.8×28.9 26.7×31.8×28.9
27	25		1200 2000	UVM-27H25C12 UVM-27H25C20	286.6 330.69	33.9×31.8×30.9 33.9×31.8×30.9

UVM Series 4.76/15kV 25/31.5kA 1200/2000A, 27kV 25kA 1200/2000A

Description for Cradle

UVL type, Draw-out type



H type

Basic model name		Rated voltage (kV)		Type	Interrupting current (kA)		Phase distance	Rated current (A)	
UVC	Susol UL VCB Cradle (UVC)	5	4.76	L MCSG Cradle type	25	25	A 7in(178mm)	12	1200
		15	15	C Compact type Draw-out(for MCSG)	32	31.5	C 10in(254mm)	20	2000
				H H type Draw-out (for MCSG)					
		27	27	L MCSG Cradle type	25	25	C 10in(254mm)	12	1200
				C Compact type Draw-out(for MCSG)				20	2000
				H H type Draw-out (for MCSG)					

Selection table of cradle

Ur [kV]	Isc [kA]	Ir [A]		Arc resistance	Type of circuit □ = [L,C,H]	Outline dimension H×W×D [inch]		
		p = 7in	p = 10in			L - type	C - type	H - type
4.76	25	1200	-	-	UVC-05□25A12	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
		2000	-	-	UVC-05□25A20	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
		1200	-	-	UVC-05□25C12	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
		2000	-	-	UVC-05□25C20	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
	31.5	1200	-	-	UVC-05□32A12	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
		2000	-	-	UVC-05□32A20	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
15	25	1200	-	-	UVC-15□32C12	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
		2000	-	-	UVC-15□32C20	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
		1200	-	-	UVC-15□25A12	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
		2000	-	-	UVC-15□25A20	36.4×26×47.3	41.7×26×56.9	41.7×26×57.3
	31.5	1200	-	-	UVC-15□25C12	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
		2000	-	-	UVC-15□25C20	36.4×36×47.3	41.7×36×56.9	41.7×36×57.3
27	25	1200	-	-	UVC-27□25C12	44×36×52.9	46.3×36×62.5	46.3×36×62.9
		2000	-	-	UVC-27□25C20	44×36×52.9	46.3×36×62.5	46.3×36×62.9

Vacuum Circuit Breakers

UVH Series 4.76/15kV 25/31.5kA 3000/4000A, 4.76/15kV 40/50kA 1200/2000/3000/4000A

UVH-05 Fixed Type:  **Draw-out Type:** 

Circuit breaker type			UVH-05											
Rated voltage		Ur (kV)	4.76											
Rated withstand voltage	Power frequency (1min)	Ud (kV)	19											
	Lightening impulse (1.2×50μs)	Up (kV)	60											
Rated short-circuit current		Isc (kA)	25	25	31.5	31.5	40	40	40	40	50	50	50	50
Rated normal current		Ir (A)	3000	4000	3000	4000	1200	2000	3000	4000	1200	2000	3000	4000
Rated frequency		fr (Hz)	60	60	60	60	60	60	60	60	60	60	60	60
Rated short-circuit making current	Ip (kA) at 50 Hz		-	-	-	-	-	-	-	-	-	-	-	-
	Ip (kA) at 60 Hz		65	65	81.9	81.9	104	104	104	104	130	130	130	130
Rated short-time withstand current	Ik (kA)		25	25	31.5	31.5	40	40	40	40	50	50	50	50
	3sec		●	●	●	●	●	●	●	●	●	●	●	●
Operating sequence		O - 0.3s - CO - 15s - CO	●	●	●	●	●	●	●	●	●	●	●	●

UVH-15 Fixed Type:  **Draw-out Type:** 

Circuit breaker type			UVH-15											
Rated voltage		Ur (kV)	15											
Rated withstand voltage	Power frequency (1min)	Ud (kV)	36											
	Lightening impulse (1.2×50μs)	Up (kV)	95											
Rated short-circuit current		Isc (kA)	25	25	31.5	31.5	40	40	40	40	50	50	50	50
Rated normal current		Ir (A)	3000	4000	3000	4000	1200	2000	3000	4000	1200	2000	3000	4000
Rated frequency		fr (Hz)	60	60	60	60	60	60	60	60	60	60	60	60
Rated short-circuit making current	Ip (kA) at 50 Hz		-	-	-	-	-	-	-	-	-	-	-	-
	Ip (kA) at 60 Hz		65	65	81.9	81.9	104	104	104	104	130	130	130	130
Rated short-time withstand current	Ik (kA)		25	25	31.5	31.5	40	40	40	40	50	50	50	50
	3sec		●	●	●	●	●	●	●	●	●	●	●	●
Operating sequence		O - 0.3s - CO - 15s - CO	●	●	●	●	●	●	●	●	●	●	●	●

Technical data

Opening time		Less than 0.04 sec
Rated breaking time		3 Cycle
No-load closing time		Less than 0.06 sec
Type test class	Mechanical endurance	M2 (10,000)
	Apacitance current switching	C2
Operate temperature	Low	- 40 °C
	High	40 °C

UVH Series 27kV 25kA 2500/2750A, 27kV 31.5/40kA 1200/2000/2500/2750A 38kV 31.5/40kA 1200/2000/3000A

UVH-27 Fixed Type:  **Draw-out Type:** 

Circuit breaker type		UVH-27									
Rated voltage	Ur (kV)	27									
Rated withstand voltage	Power frequency (1min)	Ud (kV)	60								
	Lightening impulse (1.2×50μs)	Up (kV)	125								
Rated short-circuit current	Isc (kA)	25		31.5		40					
Rated normal current	Ir (A)	2500	2750	1200	2000	2500	2750	1200	2000	2500	2750
Rated frequency	fr (Hz)	60	60	60	60	60	60	60	60	60	60
Rated short-circuit making current	Ip (kA) at 50 Hz	-	-	-	-	-	-	-	-	-	-
	Ip (kA) at 60 Hz	65	65	81.9	81.9	81.9	81.9	104	104	104	104
Rated short-time withstand current	Ik (kA)	25	25	31.5	31.5	31.5	31.5	40	40	40	40
	3sec	●	●	●	●	●	●	●	●	●	●
Operating sequence	O - 0.3s - CO - 15s - CO	●	●	●	●	●	●	●	●	●	●

UVH-38 Fixed Type:  **Draw-out Type:** 

Circuit breaker type		UVH-38H				
Rated voltage	Ur (kV)	38				
Rated withstand voltage	Power frequency (1min)	Ud (kV)	80			
	Lightening impulse (1.2×50μs)	Up (kV)	170			
Rated short-circuit current	Isc (kA)	31.5	31.5	40	40	40
Rated normal current	Ir (A)	1200	2000	1200	2000	3000
Rated frequency	fr (Hz)	60	60	60	60	60
Rated short-circuit making current	Ip (kA) at 60 Hz	81.9	81.9	104	104	104
Rated short-time withstand current	Ik (kA)	31.5	31.5	40	40	40
	3sec	●	●	●	●	●
Operating sequence	O - 0.3s - CO - 15s - CO	●	●	●	●	●

Technical data

Opening time	Less than 0.04 sec	
Rated breaking time	3 Cycle	
No-load closing time	Less than 0.06 sec	
Type test class	Mechanical endurance	M2 (10,000)
	Apacitance current switching	C2
Operate temperature	Low	- 40 °C
	High	40 °C

Vacuum Circuit Breakers

UVH Series 4.76/15kV 25/31.5kA 3000/4000A, 4.76/15kV 40/50kA 1200/2000/3000/4000A

Description for circuit breaker type

UVH type, Fixed type

UVH		15		P		40		A		12	
Basic model name		Rated voltage (kV)		Type		Interrupting current (kA)		Phase distance		Rated current (A)	
UVH	Susol VCB	05	4.76	P	Fixed type	40	40	A	7in(178mm)	12	1200
		15	15			50	50	C	10in(254mm)	20	2000
						25	25	C	10in(254mm)	30	3000
						32	31.5				
						40	40	L	12.59in(320mm)	40	4000
						50	50				

Selection table of circuit breaker type

Ur [kV]	Isc [kA]	Ir [A]			Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
		p = 7in	p = 10in	p = 12.59in			
4.76	25		3000	4000	UVH-05P25C30 UVH-05P25L40	540.1 970.0	29.7×32.2×24.8 37.4×43.8×25.6
	31.5		3000	4000	UVH-05P32C30 UVH-05P32L40	540.1 970.0	29.7×32.2×24.8 37.4×43.8×25.6
	40	1200 2000			UVH-05P40A12 UVH-05P40A20 UVH-05P40C12 UVH-05P40C20 UVH-05P40C30 UVH-05P40L40	407.9 407.9 429.9 429.9 540.1 970.0	29.7×24.6×24.4 29.7×24.6×24.4 29.7×32.2×24.4 29.7×32.2×24.4 29.7×32.2×24.8 37.4×43.8×25.6
			1200 2000 3000	4000			
	50	1200 2000			UVH-05P50A12 UVH-05P50A20 UVH-05P50C12 UVH-05P50C20 UVH-05P50C30 UVH-05P50L40	407.9 407.9 429.9 429.9 540.1 970.0	29.7×24.6×24.4 29.7×24.6×24.4 29.7×32.2×24.4 29.7×32.2×24.4 29.7×32.2×24.8 37.4×43.8×25.6
			1200 2000 3000	4000			
15	25		3000	4000	UVH-15P25C30 UVH-15P25L40	540.1 970.0	29.7×32.2×27.5 37.4×43.8×25.6
	31.5		3000	4000	UVH-15P32C30 UVH-15P32L40	540.1 970.0	29.7×32.2×27.5 37.4×43.8×25.6
	40	1200 2000			UVH-15P40A12 UVH-15P40A20 UVH-15P40C12 UVH-15P40C20 UVH-15P40C30 UVH-15P40L40	407.9 407.9 429.9 429.9 540.1 970.0	34×24.6×27.5 34×24.6×27.5 29.7×32.2×24.4 29.7×32.2×24.4 29.7×32.2×27.5 37.4×43.8×25.6
			1200 2000 3000	4000			
	50	1200 2000			UVH-15P50A12 UVH-15P50A20 UVH-15P50C12 UVH-15P50C20 UVH-15P50C30 UVH-15P50L40	407.9 407.9 429.9 429.9 540.1 970.0	34×24.6×27.5 34×24.6×27.5 29.7×32.2×24.4 29.7×32.2×24.4 29.7×32.2×27.5 37.4×43.8×25.6
			1200 2000 3000	4000			

UVH Series 27kV 25kA 2500/2750A, 27kV 31.5/40kA 1200/2000/2500/2750A 38kV 31.5/40kA 1200/2000/3000A

Description for circuit breaker type

UVH type, Fixed type

UVH	—	38	P	32	E	12
Basic model name		Rated voltage (kV)	Type	Interrupting current (kA)	Phase distance	Rated current (A)
UVH Susol VCB		27 27	P Fixed type	32 31.5 40 40	C 10in(254mm)	12 1200 20 2000
				25 25 32 31.5 40 40	C 10in(254mm)	25 2500 28 2750
		38 38	P Fixed type	32 31.5 40 40	E 11.8in(300mm)	12 1200 20 2000

Selection table of circuit breaker type

Ur [kV]	Isc [kA]	Ir[A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
		p = 10in	p = 11.8in			
27	25	2500		UVH-27P25C25	661.4	36.7×32.2×31.3
		2750		UVH-27P25C28	661.4	36.7×32.2×31.3
	31.5	1200		UVH-27P32C12	573.2	36.7×32.2×31.3
		2000		UVH-27P32C20	573.2	36.7×32.2×31.3
		2500		UVH-27P32C25	661.4	36.7×32.2×31.3
		2750		UVH-27P32C28	661.4	36.7×32.2×31.3
	40	1200		UVH-27P40C12	573.2	36.7×32.2×31.3
		2000		UVH-27P40C20	573.2	36.7×32.2×31.3
2500			UVH-27P40C25	661.4	36.7×32.2×31.3	
2750			UVH-27P40C28	661.4	36.7×32.2×31.3	
38	31.5		1200	UVH-38P32E12	881.8	41×37.2×37.5
			2000	UVH-38P32E20	881.8	41×37.2×37.5
			3000	UVH-38P32E30	1038.8	41×37.2×37.5
	40		1200	UVH-38P40E12	881.8	41×37.2×37.5
			2000	UVH-38P40E20	881.8	41×37.2×37.5
			3000	UVH-38P40E30	1038.8	41×37.2×37.5

Vacuum Circuit Breakers

UVH Series 4.76/15kV 25/31.5kA 3000/4000A, 4.76/15kV 40/50kA 1200/2000/3000/4000A, 27kV 25kA 2500/2750A, 27kV 31.5/40kA 1200/2000/2500/2750A 38kV 31.5/40kA 1200/2000A

Description for circuit breaker type

UVH type, Drawout type

UVH

Basic model name

UVH Susol VCB

15

Rated voltage (kV)

05 4.76

15 15

H

Type

H Draw-out Type
(For UVM, UVH MCSG)

40

Interrupting current (kA)

40 40

50 50

25 25

32 31.5

40 40

50 50

A

Phase distance

A 7in(178mm)

C 10in(254mm)

C 10in(254mm)

L 12.59in(320mm)

12

Rated current (A)

12 1200

20 2000

30 3000

40 4000

27

Rated voltage (kV)

27 27

H

Type

H Draw-out Type
(For UVM, UVH MCSG)

40

Interrupting current (kA)

32 31.5

40 40

25 25

32 31.5

40 40

C

Phase distance

C 10in(254mm)

C 10in(254mm)

12

Rated current (A)

12 1200

20 2000

25 2500

28 2750

38

Rated voltage (kV)

38 38

H

Type

H Draw-out Type
(For UVM, UVH MCSG)

40

Interrupting current (kA)

32 31.5

40 40

E

Phase distance

E 11.8in(300mm)

12

Rated current (A)

12 1200A

20 2000A

30 3000A

UVH Series 27kV 25/31.5kA 1200/2000A, 27kV 40kA 1200/2000/3000/400A 38kV 31.5/40kA 1200/2000/3000A

Selection table of circuit breaker type

Select withdrawal VCB/Cradle with same horizontal line.

Ur [kV]	Isc [kA]	Ir [A]			Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]	
		p = 7in	p = 10in	p = 12.59in				
4.76	25		3000	4000	UVH-05H25C30 UVH-05H25L40	573.2 970	31.7×31.9×28.8 39.4×40.9×28.6	
	31.5		3000	4000	UVH-05H32C30 UVH-05H32L40	573.2 970	31.7×31.9×28.8 39.4×40.9×28.6	
	40	1200 2000			UVH-05H40A12	429.9	31.7×21.9×28.8	
					UVH-05H40A20	463	31.7×21.9×28.8	
				1200	UVH-05H40C12	463	31.7×31.9×28.8	
			2000	UVH-05H40C20	496	31.7×31.9×28.8		
			3000	UVH-05H40C30	573.2	31.7×31.9×28.8		
				4000	UVH-05H40L40	970	39.4×40.9×28.6	
	50	1200 2000			UVH-05H50A12	463	31.7×21.9×28.8	
					UVH-05H50A20	463	31.7×21.9×28.8	
				1200	UVH-05H50C12	496	31.7×31.9×28.8	
			2000	UVH-05H50C20	496	31.7×31.9×28.8		
			3000	UVH-05H50C30	573.2	31.7×31.9×28.8		
				4000	UVH-05H50L40	970	39.4×40.9×28.6	
	15	25		3000	4000	UVH-15H25C30 UVH-15H25L40	573.2 970	31.7×31.9×28.8 39.4×40.9×28.6
		31.5		3000	4000	UVH-15H32C30 UVH-15H32L40	573.2 970	31.7×31.9×28.8 39.4×40.9×28.6
40		1200 2000			UVH-15H40A12	429.9	31.7×21.9×28.8	
					UVH-15H40A20	463	31.7×21.9×28.8	
				1200	UVH-15H40C12	463	31.7×31.9×28.8	
			2000	UVH-15H40C20	496	31.7×31.9×28.8		
			3000	UVH-15H40C30	573.2	31.7×31.9×28.8		
				4000	UVH-15H40L40	970	39.4×40.9×28.6	
50		1200 2000			UVH-15H50A12	463	31.7×21.9×28.8	
					UVH-15H50A20	463	31.7×21.9×28.8	
				1200	UVH-15H50C12	496	31.7×31.9×28.8	
			2000	UVH-15H50C20	496	31.7×31.9×28.8		
			3000	UVH-15H50C30	573.2	31.7×31.9×28.8		
				4000	UVH-15H50L40	970	39.4×40.9×28.6	

Ur [kV]	Isc [kA]	Ir [A]		Type of circuit breaker	Weight [lb]	Outline dimension H×W×D [inch]
		p = 10in	p = 11.8in			
27	25	2500	1200	UVH-27H25C25	705.5	36.6×31.9×34.8
		2750		UVH-27H25C28	705.5	36.6×31.9×34.8
	31.5	1200		UVH-27H32C12	606.3	36.6×31.9×34.8
		2000		UVH-27H32C20	606.3	36.6×31.9×34.8
		2500		UVH-27H32C25	705.5	36.6×31.9×34.8
		2750		UVH-27H32C28	705.5	36.6×31.9×34.8
	40	1200		UVH-27H40C12	606.3	36.6×31.9×34.8
		2000		UVH-27H40C20	606.3	36.6×31.9×34.8
38	31.5	2500		UVH-27H40C25	705.5	36.6×31.9×34.8
		2750		UVH-27H40C28	705.5	36.6×31.9×34.8
	40	1200		UVH-38H32E12	881.8	43.3×37.9×39.4
		2000		UVH-38H32E20	881.8	43.3×37.9×39.4
		3000		UVH-38H32E30	1038.8	43.3×37.9×39.4
	40	1200		UVH-38H40E12	881.8	43.3×37.9×39.4
		2000		UVH-38H40E20	881.8	43.3×37.9×39.4
		3000		UVH-38H40E30	1038.8	43.3×37.9×39.4

Vacuum Circuit Breakers

UVH Series 4.76/15kV 25/31.5kA 3000/4000A, 4.76/15kV 40/50kA 1200/2000/3000/4000A, 27kV 25kA 2500/2750A, 27kV 31.5/40kA 1200/2000/2500/2750A 38kV 31.5/40kA 1200/2000/3000A

Description for Cradle



H type

UVCH		15		H		40		A		12		
Basic model name		Rated voltage (kV)		Type		Interrupting current (kA)		Phase distance		Rated current (A)		
UVCH	Susol VCB Cradle	5	4.76	L	MCSG Cradle type	25	25	A	7in(178mm)	12	1200	
		15	15	C	Compact type Draw-out (for MCSG)	32	31.5	C	10in(254mm)	20	2000	
				H	H type Draw-out (for MCSG)							
						25	25	C	10in(254mm)	30	3000	
						32	31.5					
						40	40					
						50	50					
				L	MCSG Cradle type	25	25	L	12.59in(320mm)	40	4000	
				H	H type Draw-out (for MCSG)	32	31.5					
						40	40					
						50	50					

27		H		40		C		12	
Rated voltage (kV)		Type		Interrupting current (kA)		Phase distance		Rated current (A)	
27	27	L	MCSG Cradle type	32	31.5	C	10in(254mm)	12	1200
		C	Compact type Draw-out (for MCSG)	40	40			20	2000
		H	H type Draw-out (for MCSG)	25	25	C	10in(254mm)	25	2500
				32	31.5			40	2750
				40	40				

38		H		40		E		12	
Rated voltage (kV)		Type		Interrupting current (kA)		Phase distance		Rated current (A)	
38	38	H	H type Draw-out (for MCSG)	32	31.5	E	11.8in(300mm)	12	1200
				40	40			20	2000
								30	3000

UVH Series 27kV 25/31.5kA 1200/2000A, 27kV 40kA 1200/2000/3000/4000A 38kV 31.5/40kA 1200/2000/3000A

Selection table of cradle

UVH type, L type

Ur [kV]	Isc [kA]	Ir [A]			Arc resistance	Type of circuit □ = [L,C*,H]	Outline dimension H×W×D [inch]			
		p = 7in	p = 10in	p = 12.59in			L - type	C - type	H - type	
4.76	25	3000			-	UVCH-05□25C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-05L25L40	49.8×47.2×47.6	-	-	
					-	UVCH-05H25L40	-	-	49.8×47.2×47.6	
	31.5	3000			-	UVCH-05□32C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-05L32L40	49.8×47.2×47.6	-	-	
					-	UVCH-05H32L40	-	-	49.8×47.2×47.6	
	40	1200 2000				-	UVCH-05□40A12	40×26×47.3	41.7×26×56.9	41.7×26×57.3
						-	UVCH-05□40A20	40×26×47.3	41.7×26×56.9	41.7×26×57.3
		1200 2000 3000				-	UVCH-05□40C12	40×36×47.3	41.7×36×56.9	41.7×36×57.3
						-	UVCH-05□40C20	40×36×47.3	41.7×36×56.9	41.7×36×57.3
					-	UVCH-05□40C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-05L40L40	49.8×47.2×47.6	-	-	
	50				-	UVCH-05H40L40	-	-	49.8×47.2×47.6	
		1200 2000				-	UVCH-05□50A12	40×26×47.3	41.7×26×56.9	41.7×26×57.3
						-	UVCH-05□50A20	40×26×47.3	41.7×26×56.9	41.7×26×57.3
		1200 2000 3000				-	UVCH-05□50C12	40×36×47.3	41.7×36×56.9	41.7×36×57.3
						-	UVCH-05□50C20	40×36×47.3	41.7×36×56.9	41.7×36×57.3
					-	UVCH-05□50C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
4.76	25	3000			-	UVCH-15□25C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-15L25L40	49.8×47.2×47.6	-	-	
					-	UVCH-15H25L40	-	-	49.8×47.2×47.6	
	31.5	3000			-	UVCH-15□32C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-15L32L40	49.8×47.2×47.6	-	-	
					-	UVCH-15H32L40	-	-	49.8×47.2×47.6	
	40	1200 2000				-	UVCH-15□40A12	40×26×47.3	41.7×26×56.9	41.7×26×57.3
						-	UVCH-15□40A20	40×26×47.3	41.7×26×56.9	41.7×26×57.3
		1200 2000 3000				-	UVCH-15□40C12	40×36×47.3	41.7×36×56.9	41.7×36×57.3
						-	UVCH-15□40C20	40×36×47.3	41.7×36×56.9	41.7×36×57.3
					-	UVCH-15□40C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
					-	UVCH-15L40L40	49.8×47.2×47.6	-	-	
	50				-	UVCH-15H40L40	-	-	49.8×47.2×47.6	
		1200 2000				-	UVCH-15□50A12	40×26×47.3	41.7×26×56.9	41.7×26×57.3
						-	UVCH-15□50A20	40×26×47.3	41.7×26×56.9	41.7×26×57.3
		1200 2000 3000				-	UVCH-15□50C12	40×36×47.3	41.7×36×56.9	41.7×36×57.3
						-	UVCH-15□50C20	40×36×47.3	41.7×36×56.9	41.7×36×57.3
					-	UVCH-15□50C30	40×36×47.3	41.7×36×56.9	41.7×36×57.3	
50				-	UVCH-15L50L40	49.8×47.2×47.6	-	-		
				-	UVCH-15H50L40	-	-	49.8×47.2×47.6		

Ur [kV]	Isc [kA]	Ir [A]		Arc resistance	Type of circuit □ = [L,C*,H]	Outline dimension H×W×D [inch]		
		p = 10in	p = 11.8in			L - type	C - type	H - type
27	25	2500		-	UVCH-27□25C25	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2750		-	UVCH-27□25C28	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
	31.5	1200			UVCH-27□32C12	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2000		-	UVCH-27□32C20	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2500		-	UVCH-27□32C25	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2750		-	UVCH-27□32C28	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
	40	1200			UVCH-27□40C12	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2000		-	UVCH-27□40C20	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2500		-	UVCH-27□40C25	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
		2750		-	UVCH-27□40C28	44.1×36×56.7	46.3×36×66.3	46.3×36×66.7
38	31.5		1200	-	UVCH-38H32E12	-	-	71.9×42×72.9
			2000	-	UVCH-38H32E20	-	-	71.9×42×72.9
			3000	-	UVCH-38H32E30	-	-	71.9×42×72.9
	40		1200	-	UVCH-38H40E12	-	-	71.9×42×72.9
			2000	-	UVCH-38H40E20	-	-	71.9×42×72.9
			3000	-	UVCH-38H40E30	-	-	71.9×42×72.9

Load Interrupter Switch

ULI Series 4.76/15kV 25/40kA 600/1200A, 27/29kV 25/31.5kA 600/1200A, 38kV 25/31.5kA 600A
UGS Series 4.76/15 40kA, 27/38kV 40kA

ULI-05/15  US

Load interrupter switch type		ULI-05				ULI-15			
Maximum Designed voltage	(kV)	4.76				15			
Withstand voltage	Dielectric (1min)	(kV)	19			36			
	Lightening impulse (1.2×50μs)	(kV)	60			95			
Rated normal current	(A)	600		1200		600		1200	
Rated frequency	(Hz)	60		60		60		60	
Fault-making symmetrical	(kA)	25	40	25	40	25	40	25	40
Fault-making asymmetrical	(kA)	40	64	40	64	40	64	40	64
Rated peak current	(kA)	65	104	65	104	65	104	65	104
Rated short-time withstand current	(kA)	25	40	25	40	25	40	25	40
	(3sec)	●	●	●	●	●	●	●	●
Installation type		Fixed type(Upright type: Left(L)/Right(R) Operation, Inverted type: Left(S)/Right(T) Operation)							
Mechanical endurance	Operations	500 times							
Operate temperature		-40°C ~ 40°C							
Standard		IEEE C37.20.4, ANSI C37.58, CSA C22.2 No. 193:M83							
UL Certificate		R/C(Recognized Component), UL/CSA							

ULI-27/29 

※ Scheduled for release in 2025.

Load interrupter switch type		ULI-27				ULI-29			
Maximum Designed voltage	(kV)	27				29			
Withstand voltage	Dielectric (1min)	(kV)	60			60			
	Lightening impulse (1.2×50μs)	(kV)	125			125			
Rated normal current	(A)	600		1200		600		1200	
Rated frequency	(Hz)	60		60		60		60	
Fault-making symmetrical	(kA)	25	31.5	25	31.5	25	31.5	25	31.5
Fault-making asymmetrical	(kA)	40	50.4	40	50.4	40	50.4	40	50.4
Rated peak current	(kA)	65	81.9	65	81.9	65	81.9	65	81.9
Rated short-time withstand current	(kA)	25	31.5	25	31.5	25	31.5	25	31.5
	(3sec)	●	●	●	●	●	●	●	●
Installation type		Fixed type(Upright Type: Left(L)/Right(R) Operation)							
Mechanical endurance	Operations	500 times							
Operate temperature		-40°C ~ 40°C							
Standard		IEEE C37.20.4, ANSI C37.58							
UL Certificate		R/C(Recognized Component)							

ULI-38

Load interrupter switch type		ULI-38	
Maximum Designed voltage	(kV)	38	
Withstand voltage	Dielectric (1min)	(kV)	80
	Lightening impulse (1.2×50μs)	(kV)	150
Rated normal current	(A)	600	
Rated frequency	(Hz)	60	60
Fault-making symmetrical	(kA)	25	31.5
Fault-making asymmetrical	(kA)	40	50.4
Rated peak current	(kA)	65	81.9
Rated short-time withstand current	(kA)	25	31.5
	(3sec)	●	●
Installation type		Fixed type(Upright Type: Left(L)/Right(R) Operation)	
Mechanical endurance	Operations	500 times	
Operate temperature		-40°C ~ 40°C	
Standard		IEEE C37.20.4, ANSI C37.58	
UL Certificate		R/C(Recognized Component)	

UGS-05/15/27/38

VT grounding switch type			UGS-05	UGS-15	UGS-27	UGS-38
Maximum Designed voltage		(kV)	4.76	15	27	38
Withstand voltage	Dielectric (1min)	(kV)	19	36	60	80
	Lightening impulse (1.2×50μs)	(kV)	60	95	125	150
Rated normal current		(A)	-	-	-	-
Rated frequency		(Hz)	60	60	60	60
Fault-making symmetrical		(kA)	-	-	-	-
Fault-making asymmetrical		(kA)	-	-	-	-
Rated peak current		(kA)	104	104	104	104
Rated short-time withstand current		(kA)	40	40	40	40
		(2sec)	●	●	●	●
Installation type			Fixed type(Upright Type: Left(L)/Right(R) Operation)			
Mechanical endurance		Operations	750 times		500 times	
Operate temperature			-40°C ~ 40°C			
Standard			IEEE C37.20.4, ANSI C37.58, CSA C22.2 No. 193:M83			
UL Certificate			R/C(Recognized Component), UL/CSA			

Load Interrupter Switch

Description for Load Interrupter Switch

ULI	15	L	40	C	12	G
Basic model name	Rated voltage (kV)	Type	Fault making current (Sym, kA)	Phase distance	Rated current (A)	Accessories
ULI LOAD INTERRUPTER SWITCH	05 4.76 15 15	L Upright Type (Left Operation) R Upright Type (Right Operation) S Inverted Type (Left Operation) T Inverted Type (Right Operation)	25 25 40 40	C 10in(254mm)	06 600 12 1200	G Blade Grounding in open position
	27 ^{Note} 27 29 ^{Note} 29	L Upright Type (Left Operation) R Upright Type (Right Operation)	25 25 32 31.5	D 12in(304.8mm)	06 600 12 1200	
	38 38	L Upright Type (Left Operation) R Upright Type (Right Operation)	25 25 32 31.5	E 16in(406.4mm)	06 600	G Blade Grounding in open position

Note) 27/29kV load interrupter switch is scheduled for release in 2025.

Selection table of Load Interrupter Switch

Max. Voltage	Fault Making Current [kA]		Current [A] p = 10"	Type of load interrupter switch (Common applied to L,R,S and T type)	Weight [lb]	Outline dimension H×W×D [inch]
	Symmetrical	Asymmetrical				
4.76	25	40	600	ULI-05□25C06	220.5	27×33×29
			1200	ULI-05□25C12	220.5	27×33×29
	40	64	600	ULI-05□40C06	220.5	27×33×29
			1200	ULI-05□40C12	220.5	27×33×29
15	25	40	600	ULI-15□25C06	220.5	27×33×29
			1200	ULI-15□25C12	220.5	27×33×29
	40	64	600	ULI-15□40C06	220.5	27×33×29
			1200	ULI-15□40C12	220.5	27×33×29

Max. Voltage	Fault Making Current [kA]		Current [A] p = 12"	Type of load interrupter switch (Common applied to L or R type)	Weight [lb]	Outline dimension H×W×D [inch]
	Symmetrical	Asymmetrical				
27	25	40	600	ULI-27□25D06	-	30.8×43.5×34.7
			1200	ULI-27□25D12	-	30.8×43.5×34.7
	31.5	50.4	600	ULI-27□32D06	-	30.8×43.5×34.7
			1200	ULI-27□32D12	-	30.8×43.5×34.7
29	25	40	600	ULI-29□25D06	-	30.8×43.5×34.7
			1200	ULI-29□25D12	-	30.8×43.5×34.7
	31.5	50.4	600	ULI-29□32D06	-	30.8×43.5×34.7
			1200	ULI-29□32D12	-	30.8×43.5×34.7

Max. Voltage	Fault Making Current [kA]		Current [A] p = 16"	Type of load interrupter switch (Common applied to L or R type)	Weight [lb]	Outline dimension H×W×D [inch]
	Symmetrical	Asymmetrical				
38	25	40	600	ULI-38□25E06	385.8	33.6×55.4×40.3
	31.5	50.4	600	ULI-38□32E06	385.8	33.6×55.4×40.3

Description for VT Grounding Switch

UGS	—	15	L	40	D
Basic model name		Rated voltage (kV)	Type	Short-time withstand current(kA)	Phase distance
UGS VT GROUNDING SWITCH		05 4.76 15 15	L Upright Type (Left Operation) R Upright Type (Right Operation)	40 40	D 12in(304.8mm)
		27 27 38 38	L Upright Type (Left Operation) R Upright Type (Right Operation)	40 40	E 16in(406.4mm)

Selection table of VT Grounding Switch

Max. Voltage [kV]	Rated peak current [kA]	Rated Short-time withstand current [kA/2s]	Phase distance	Type of VT grounding switch (Common applied to L or R type)	Weight [lb]	Outline dimension (H×W×D) [inch]
4.76	104	40	12in	UGS-05□40D	242.5	27×43.5×29
15	104	40	12in	UGS-15□40D	242.5	27×43.5×29
27	104	40	16in	UGS-27□40E	363.8	34×55.5×40.3
38	104	40	16in	UGS-38□40E	385.8	34×55.5×40.3

**LS ELECTRIC America Inc. Chicago Head Office**

625 Heathrow Dr, Lincolnshire, IL 60069, USA

Tel: 1-224-352-2265 E-Mail: sales.us@lselectricamerica.com

Headquarter

127 LS-ro (Hogye-dong) Dongan-gu, Anyang-si, Gyeonggi-Do, 14119, Korea

Seoul Office

LS Yongsan Tower, 92, Hangang-daero, Yongsan-gu, Seoul, 04386, Korea

TEL: 82-2-2034-4916, 4684, 4429

China

LS ELECTRIC (Dalian) Co., Ltd.

+86-411-8730-7560

china.dalian@lselectric.com.cn

LS ELECTRIC (Wuxi) Co., Ltd.

+86-510-8534-6666

china.wuxi@lselectric.com.cn

LS ELECTRIC (Lishui) Co., Ltd.

+86-133-6207-7980

china.lishui@lselectric.com.cn

Shanghai Office

+86-21-5237-9977

china@lselectric.com.cn

Beijing Office

+86-10-5095-1631

china@lselectric.com.cn

Guangzhou Office

+86-20-3818-2883

china@lselectric.com.cn

Qingdao Office

+86-532-8501-2065

china@lselectric.com.cn

Chengdu Office

+86-28-8670-3201

china@lselectric.com.cn

Nanjing Office

+86-25-8467-0005

china@lselectric.com.cn

India

India Office

+91-80-6142-9108

Info_india@ls-electric.com

Indonesia

PT. LS ELECTRIC INDONESIA

+62-21-2933-7614

indonesia@ls-electric.com

PT SYMPHOS ELECTRIC

+62-81-1900-1474

marketing@sympfos-weltraf.com

Italy

Italy office

+39-030-8081-833

italia@ls-electric.com

Japan

LS ELECTRIC Japan Co., Ltd.

+81-3-6268-8241

japan@ls-electric.com

Tokyo Office

+81-3-6268-8241

tokyo@ls-electric.com

Netherlands

LS ELECTRIC Europe B.V.

+31-20-654-1424

europartner@ls-electric.com

Russia

Moscow Office

+7-499-682-6130

info@lselectric-ru.com

Singapore

Singapore Office

+65-6958-8162

singapore@ls-electric.com

Spain

LS ELECTRIC IBERIA S.L.U.

+34-910-28-02-74

iberia@ls-electric.com

Thailand

Bangkok Office

+66-2-128-0295

thailand@ls-electric.com

Türkiye

LS ELECTRIC Türkiye Co., Ltd.

+90-212-806-1252

turkiye@ls-electric.com

U.A.E

LS ELECTRIC Middle East FZE (Dubai)

+971-4-886-5360

middleeast@ls-electric.com

USA

LS ELECTRIC America Inc.

+1-800-891-2941

sales.us@lselectricamerica.com

LS ENERGY SOLUTIONS LLC

+1-980-221-0654

cmfeldman@ls-es.com

MCM Engineering II

+1-435-865-0125

sales.us@lselectricamerica.com

America Western Office

+1-949-333-3140

america@ls-electric.com

America Bastrop Campus

+1-224-352-2265

sales.us@lselectricamerica.com

Vietnam

LS ELECTRIC Vietnam Co., Ltd.

+84-222-2221-110

vietnam@ls-electric.com

Hanoi Sales Office

+84-24-6275-8054

vietnam@ls-electric.com

Ho Chi Minh Sales Office

+84-3823-7890

vietnam@ls-electric.com

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www.LSElectricAmerica.com