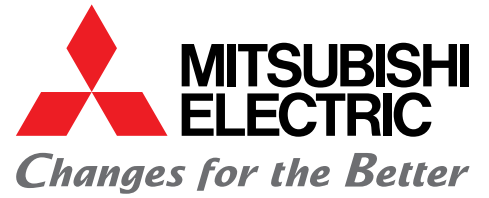




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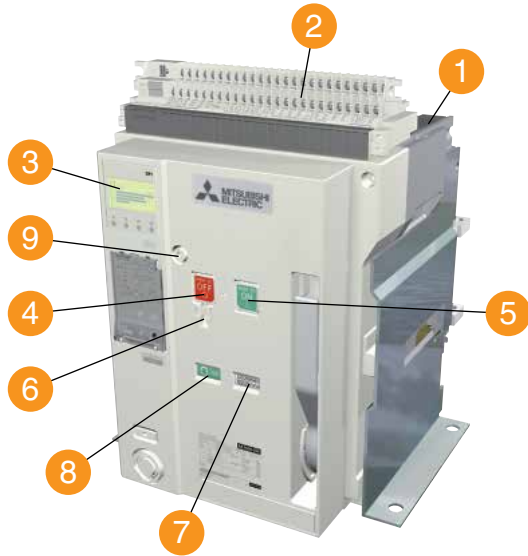
FACTORY AUTOMATION

Low Voltage Products

1	Air Circuit Breakers - World Super AE Series	1 - 4
2	Molded-Case Circuit Breakers - World Super WS-V Series	5 - 14
3	Molded-Case Circuit Breakers - MX Series	15 - 16
4	Miniature Circuit Breakers	17
4	Residual Current Circuit Breakers & Isolation Switch	18
5	Magnetic Contactors - S-T and S-N Series	19 - 22
6	Electronic Power Meter - SS Series	23 - 26
7	Appendix	27

Fixed type

AE-SW Series



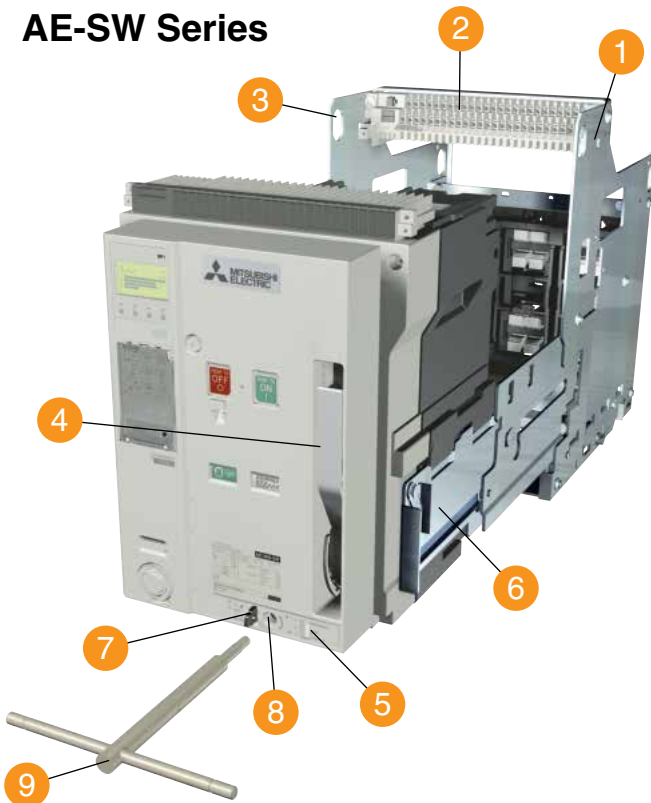
AE1600-SW 3P

- 1 Arc extinguishing chamber
- 2 Control circuit terminal block
- 3 Electronic trip relay
- 4 OFF button
- 5 ON button
- 6 Padlock hook
- 7 Charging indicator
- 8 ON/OFF indicator
- 9 Manual reset button(Optional)

For the fixed type, Lifting hooks (HP) are attached.

Drawout type

AE-SW Series

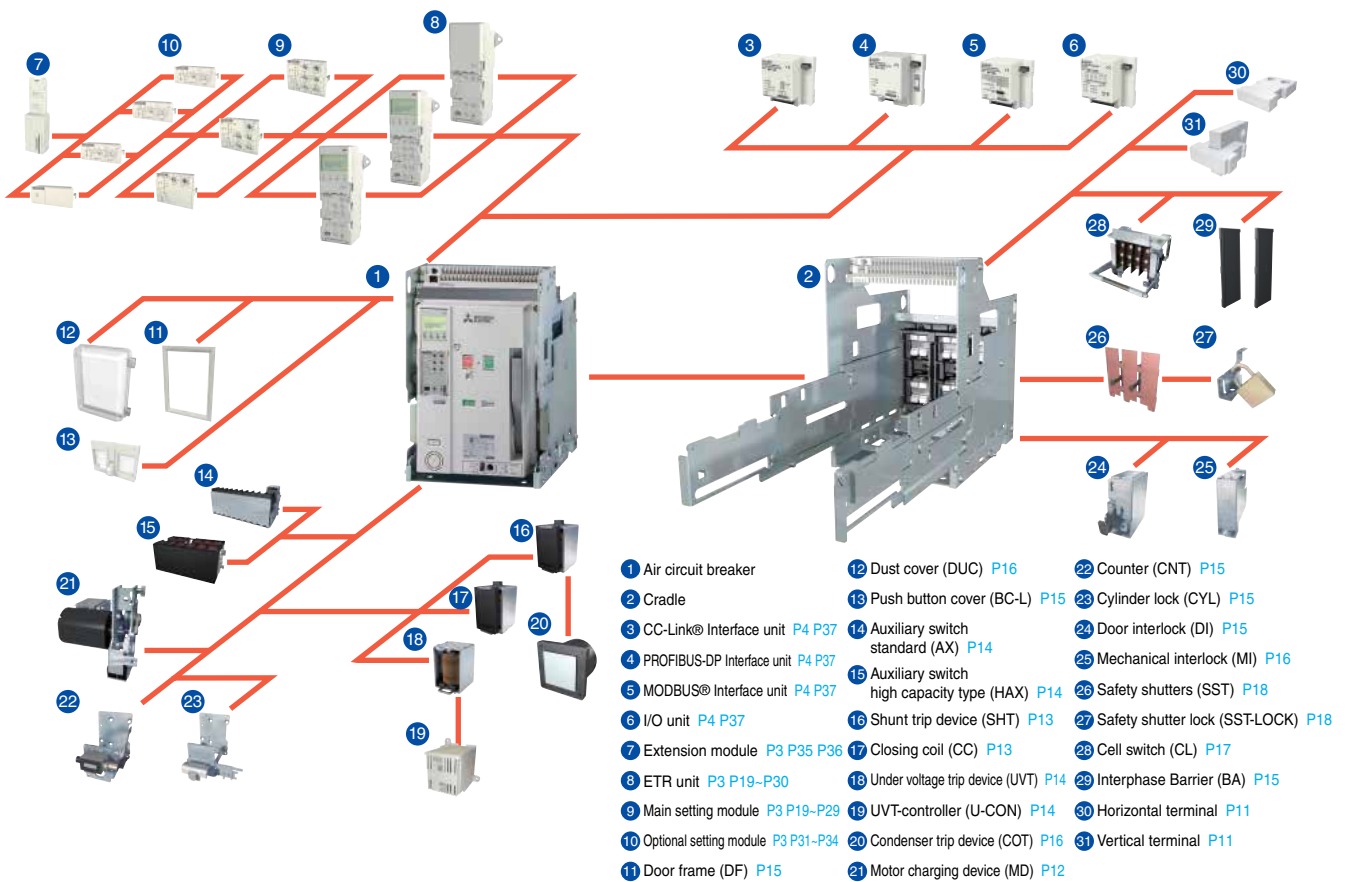


AE1600-SW 3P

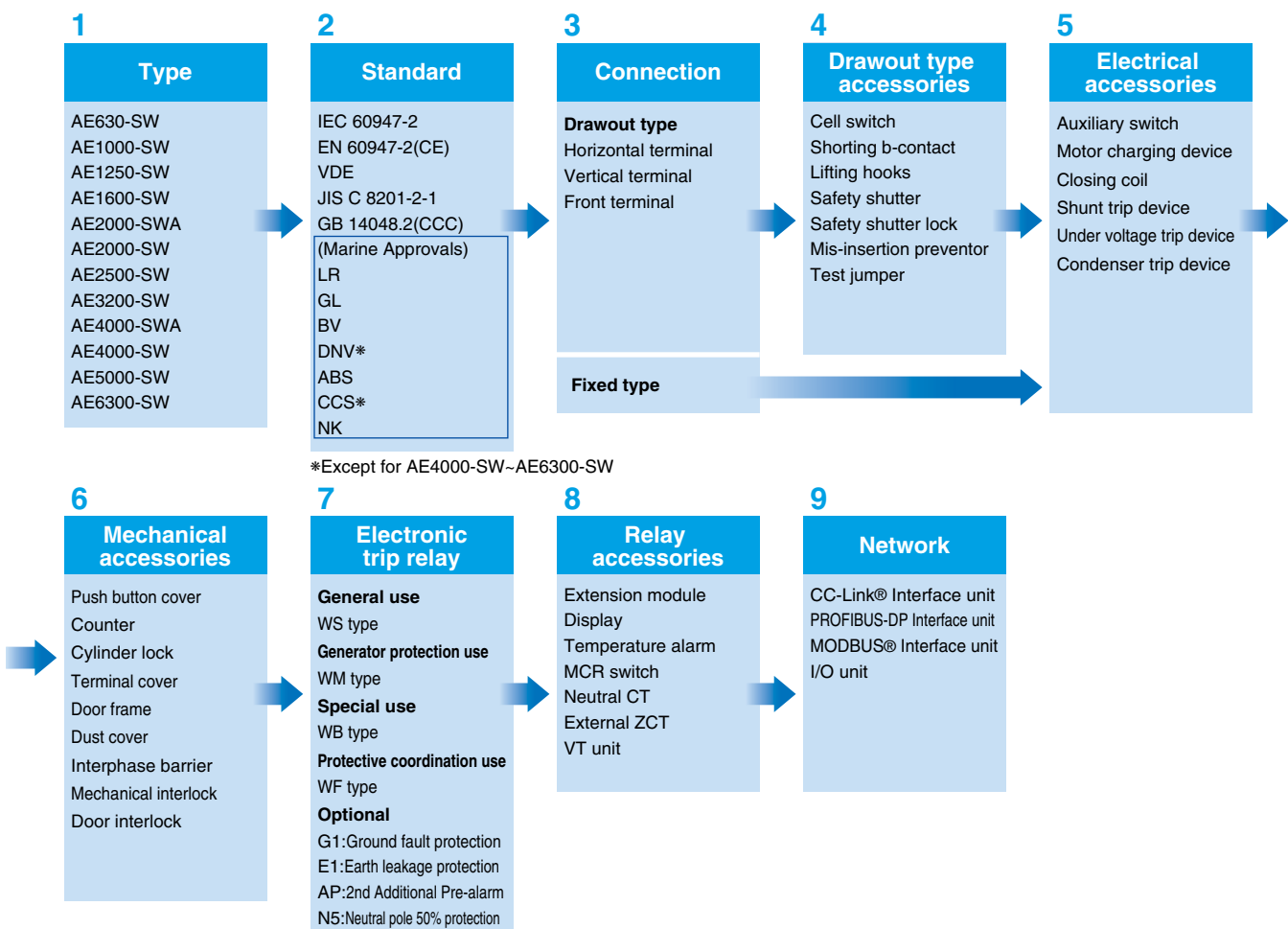
- 1 Cradle
- 2 Control circuit terminal block
- 3 Lifting hole
- 4 Charging handle
- 5 Drawout position indicator
- 6 Extension rail
- 7 Position lock
- 8 Aperture for the drawout handle
- 9 Drawout handle

For the drawout type, Drawout handle is attached.

Skeleton



Product configuration



● Specification

Type		AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	
Frame size	(A)	630	1000	1250	1600	
Rated insulation voltage (Ui)	(50/60Hz)(AC.V)	1000				
Rated operational voltage (Ue)	(50/60Hz)(AC.V)	690				
Rated impulse withstand voltage (Uimp)	(kV)	12				
Pollution degree		3				
Number of poles		3, 4				
Rated current In (CT rating)		630 (Note 5)	1000	1250	1600	
Current setting Ir (A) (40°C)	WS WB General use (Current rating adjustable) (0.5 to 1.0 × In 0.05 step)	315-346.5-378-409.5- 441-472.5-504-535.5- 567-598.5-630 (Note 5)	500-550-600-650- 700-750-800-850- 900-950-1000	625-687.5-750-812.5- 875-937.5-1000-1062.5- 1125-1187.5-1250	800-880-960-1040- 1120-1200-1280-1360- 1440-1520-1600	
	WM Generator protection use (Current rating fixed) (Note 10)	160 ≤ Ir ≤ 630	400 ≤ Ir ≤ 1000	800 ≤ Ir ≤ 1250	1000 ≤ Ir ≤ 1600	
Rated current of neutral pole	(A)	630	1000	1250	1600	
IEC60947-2 EN60947-2 BS VDE JIS C 8201-2-1	Ultimate breaking capacity Icu (kA rms)	690V AC	65			
		600V AC	65			
		240-500V AC	65			
	with MCR	690V AC	65			
		600V AC	65			
		240-500V AC	65			
	Bare + External relay	690V AC	25 (Note 1)			
		500V AC	25 (Note 1)			
	Rated service breaking capacity Ics (kA rms) %Icu		100%			
	Rated making capacity Icm (kA peak)	690V AC	143			
			600V AC	143		
				240-500V AC	143	
		with MCR	690V AC	143		
			600V AC	143		
240-500V AC			143			
Bare or Bare + External relay	690V AC	52.5				
	500V AC	52.5				
Rated short time withstand current Icw (kA rms)	1s	65				
	2s	60				
	3s	50				
Maximum total breaking time	(ms)	40 (Note 6)				
Maximum closing time	(ms)	80				
Number of operating cycles	With rated current	500V AC In	5,000			
		690V AC In	5,000			
(Note 2)	Without rated current	25,000 (Note 4)				
Connecting terminal	Horizontal terminal	○				
	Vertical terminal	○				
	Front terminal	○				
Outline dimension (mm) H×W×D	Fixed type	3-pole	410×340×290			
		4-pole	410×425×290			
	Drawout type	3-pole	430×300×375			
		4-pole	430×385×375			
Weight (kg) (without Accessory)	Fixed type	3-pole	40	41	42	
		4-pole	50	51	52	
	Drawout type (including cradle)	3-pole	63	64	65	
		4-pole	77	78	79	
	Cradle only	3-pole	26			
		4-pole	30			
Marine approval	3-pole	○ (LR, GL, BV, DNV, ABS, NK, CCS)				

(Note 1) This is the Icu value when the bare main body and the external relay are combined.

(Note 2) The number of operating cycles without rated current also includes the number of operating cycles with rated current.

(Note 3) AE2000-SWA, AE4000-SWA and AE4000-SW-AE6300-SW apply for only vertical terminal of connecting terminal.

(Note 4) This value is max. operating cycle for just ACB body without any accessories.

(The max. operating cycles for the accessories like AX, MD, CC, SHT and UVT are half of this value.)

(Note 5) Products with low rating types are available. For AE630-SW low rating types (250A, 315A, 500A), DP3 is not available.

AE 630-SW 3 kinds of products with low rating types are available.

- 250-275-300-325-350-375-400-425-450-475-500(CT 500A)
- 157.5-173.3-189-204.8-220.5-236.3-252-267.8-283.5-299.3-315(CT 315A)
- 125-137.5-150-162.5-175-187.5-200-212.5-225-237.5-250(CT 250A)

AE 2000-SW 2 kinds of products with low rating types are available.

- 800-880-960-1040-1120-1200-1280-1360-1440-1520-1600(CT 1600A)
- 625-687.5-750-812.5-875-937.5-1000-1062.5-1125-1187.5-1250(CT 1250A)

AE2000-SWA	AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA	AE4000-SW	AE5000-SW	AE6300-SW
2000	2000	2500	3200	4000	4000	5000	6300
		1000			1000		
		690			690		
		12			12		
		3			3		
		3, 4			3, 4 (HN, FN) (Note 7)		
2000	2000 (Note 5)	2500	3200	4000	4000	5000	6300
1000-1100-1200-1300-1400-1500-1600-1700-1800-1900-2000	1000-1100-1200-1300-1400-1500-1600-1700-1800-1900-2000 (Note 5)	1250-1375-1500-1625-1750-1875-2000-2125-2250-2375-2500	1600-1760-1920-2080-2240-2400-2560-2720-2880-3040-3200	2000-2200-2400-2600-2800-3000-3200-3400-3600-3800-4000	2000-2200-2400-2600-2800-3000-3200-3400-3600-3800-4000	2500-2750-3000-3250-3500-3750-4000-4250-4500-4750-5000	3150-3465-3780-4095-4410-4725-5040-5355-5670-5985-6300
$1250 \leq I_r \leq 2000$	$800 \leq I_r \leq 2000$	$1600 \leq I_r \leq 2500$	$2000 \leq I_r \leq 3200$	$2500 \leq I_r \leq 4000$	$2500 \leq I_r \leq 4000$	$3150 \leq I_r \leq 5000$	$4000 \leq I_r \leq 6300$
2000	2000	2500	3200	4000	2000 (4000) (Note 8)	2500 (5000) (Note 8)	3150 (6300) (Note 8)
		75			85		
		75			85		
		85			130 (Note 9)		
		75			85		
		75			85		
		75			100		
		45 (Note 1)			65 (Note 1)		
		45 (Note 1)			65 (Note 1)		
		100%			100%		
		165			187		
		165			187		
		187			286		
		165			187		
		165			187		
		165			220		
		94.5			143		
		94.5			143		
		75			100		
		75			85		
		65			85		
		40 (Note 6)			50 (Note 6)		
		80			80		
1,500	1,500	1,000	500			1,000	
1,500	1,500	1,000	500			1,000	
		20,000 (Note 4)			10,000 (3P) / 5,000 (4P)		
		○			-		
○ (Note 3)		○			○ (Note 3)	○ (Note 3)	
		○			-		
		410×475×290			414×874×290		
		410×605×290			414×1004(1134)×290 (Note 8)		
		430×435×375		430×439×375	480×889×375		
		430×565×375		430×569×375	480×1019(1149)×375 (Note 8)		
47	60	61	63	81	160	160	160
57	72	73	75	99	180 (200) (Note 8)	180 (200) (Note 8)	180 (200) (Note 8)
70	92	93	95	108	233	233	240
84	113	114	116	136	256 (279) (Note 8)	256 (279) (Note 8)	263 (286) (Note 8)
31	35	35	36	49	118	118	125
35	43	43	44	61	133 (148) (Note 8)	133 (148) (Note 8)	140 (155) (Note 8)
		○ (LR, GL, BV, DNV, ABS, NK, CCS)			○ (NK, LR, GL, BV, ABS)		

(Note 6) This value means the instantaneous breaking time at shortcircuit interruption. As for accessories (SHT, UVT), refer to page 13 and 14.

(Note 7) 4(HN) means the neutral poles current capacity is 50% of the rated current, for 4 poles. 4(FN) means the neutral poles current capacity is 100% of the rated current, for 4 poles.

(Note 8) () shows the value for 4P FN type.

(Note 9) Marine approval value is 138kA.

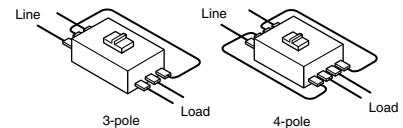
(Note 10) For WM relay, the current setting I_r can be set by 1A except AE630-SW low rating types "CT315A" and "CT250A". For AE630-SW with "CT315A" and "CT250A", it can be set by 0.1A.

(Remark) All models conform the isolating function according to IEC 60947-2. Reverse connection is possible.





NF-C (Economy class)

Frame (A)	30			50			60			63			100			125			
Model	NF30-CS						NF63-CV						NF125-CV						
Image																			
Rated current In (A)	3 5 10 15 20 30			3 4 (5) 6 10 (15) 16 20 25 (30) 32 40 50			(60)			63			50 (60) 63 (75) 80 100			125			
Rated ambient temperature 40°C (45°C for marine use)																			
Number of poles	2 3			2 3			2 3			2 3			2 3			2 3			
Rated insulation voltage Ui (V)	500						600						600						
Rated short-circuit breaking capacities (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	-			-			-			-			-			
			500V	-			2.5/2.5			2.5/2.5			2.5/2.5			7.5/4			
			440V	-			2.5/2.5			2.5/2.5			2.5/2.5			10/5			
			415V	1.5/1.5			2.5/2.5			2.5/2.5			2.5/2.5			10/5			
			400V	1.5/1.5			5/5			5/5			5/5			10/5			
			380V	1.5/1.5			5/5			5/5			5/5			10/5			
			230V	2.5/2 (240V)			7.5/7.5			7.5/7.5			7.5/7.5			30/15			
			200V	2.5/2 (240V)			7.5/7.5			7.5/7.5			7.5/7.5			30/15			
			DC 250V	-			2.5/2.5 (*7)			2.5/2.5 (*7)			2.5/2.5 (*7)			7.5/4 (*4)			
Rated impulse withstand voltage Uimp (kV)	4						8						8						
Current (*1)	AC						AC/DC compatible						AC/DC compatible						
Suitability for isolation	-						Compatible						Compatible						
Reverse connection	-						Possible						Possible						
Number of operating cycles	Without current		10,000			10,000			10,000			10,000			10,000				
	With current (440VAC)		6,000 (AC415V)			6,000			6,000			6,000			6,000				
Utilization category	A						A						A						
Pollution degree	2						3						3						
EMC environment condition (environment A or B)	N/A						N/A						N/A						
Overall dimensions (mm)	a		45 67.5			50 75			50 75			50 75			60 90				
	b		96			130			130			130			130				
	c		52			68			68			68			68				
	ca		67			90			90			90			90				
Mass of front-face type (kg)		0.25 0.35			0.45 0.65			0.5 0.7			0.5 0.7			0.6 0.9			0.6 0.9		
Installation and connections	Front connection (F)	Page	dScrew terminal			dScrew terminal			dScrew terminal			dScrew terminal			dScrew terminal				
	Solderless (BOX) terminal (SL)		-			-			-			-			-				
	Rear (B)	92	dRound stud (assembled in)			dRound stud			dRound stud			dRound stud			dBar stud				
	Plug-in (PM)		-			d			d			d			d				
Cassette-type accessories	Alarm switch (AL)		d (*5)			d (*6)			d (*6)			d (*6)			d (*6)				
	Auxiliary switch (AX)	102	d (*5)			d (*6)			d (*6)			d (*6)			d (*6)				
	Shunt trip (SHT)		-			d (*6)			d (*6)			d (*6)			d (*6)				
	Undervoltage trip (UVT)		-			d (*6)			d (*6)			d (*6)			d (*6)				
	With lead-wire terminal block (SLT)	114	d			d			d			d			d				
	Pre-alarm (PAL)	116	-			-			-			-			-				
External accessories	Enclosure	Closed (S)	d			d			d			d			d				
		Dustproof (I)	-			d			d			d			d				
		Waterproof (W)	-			-			d			-			d				
	Electrical operation device (NFM)	133	-			-			-			-			-				
	Mechanical interlock (M) (*10)	Panel mounting	129	-			d			d			d			d			
		Breaker mounting		-			d			d			d			d			
	Handle lock device	LC	127	d			d			d			d			d			
		HL		d			d			d			d			d			
		HL-S		-			d			d			d			d			
	External operating handle	(F)	117	-			d			d			d			d			
(V)			-			d			d			d			d				
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121	d			d			d			d			d					
Rear stud (B-ST)	94	-			d			d			d			d					
Plug-in (PM)		-			d			d			d			d					
IEC 35mm rail mounting adapters	137	d			d			d			d			-					
CE marking	TÜV approval						Self-declaration						Self-declaration						
CCC recognition	Recognized						Recognized						Recognized						
Marine use approval (NK, LR, ABS, GL)	(NK, LR, ABS)																		
Automatic tripping device	Hydraulic magnetic						Thermal-magnetic						Thermal-magnetic						
Trip button	- (*2)						Equipped						Equipped						
Page of Characteristics and dimensions	140						142						144						

- Notes: *1 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.
 *2 It is attached with the alarm switch.
 *3 In case of a current rating of 100A, it does not specify NK rating.
 *4 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. If wired as shown on the right, three and four poles can be used for up to 400 and 500VDC, respectively.
 *5 The standard lead drawing is performed laterally. Load drawing is also available.
 *6 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 *7 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. Not available for use with connection as shown on the right.
 *8 Place an order of other models in conjunction with the circuit breaker.
 *9 Solid state relay output is option. Please specify if other output is necessary. (Standard type is thus SLT equipped).
 *10 Not isolation compatible, excluding 400 to 800A frame.



NF-C (Economy class)

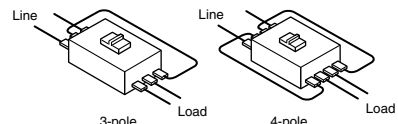
225	250	400	600	630	800
NF250-CV		NF400-CW	NF630-CW		NF800-CEW
					
(100) 125 150 175 200 225 (*3)		250 300 350 400	500 600		Adjustable 400 450 500 600 700 800
2 3	2 3	2 3	2 3	2 3	3
600	600	690	690	690	690
-	-	-	-	-	-
10/8	10/8	15/8	18/9	18/9	18/9
15/12	15/12	25/13	36/18	36/18	36/18
25/19	25/19	36/18	36/18	36/18	36/18
25/19	25/19	36/18	36/18	36/18	36/18
25/19	25/19	40/20	40/20	40/20	40/20
36/27	36/27	50/25	50/25	50/25	50/25
36/27	36/27	50/25	50/25	50/25	50/25
15/12 (*4)	15/12 (*4)	20/10 (*4)	20/10 (*4)	20/10 (*4)	-
8	8	8	8	8	8
AC/DC compatible	AC/DC compatible	AC/DC compatible	AC/DC compatible	AC/DC compatible	AC
Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Possible	Possible	Possible	Possible	Possible	Possible
8,000	8,000	6,000	6,000	6,000	4,000
4,000	4,000	1,000	1,000	1,000	500
A	A	A	A	A	B
3	3	3	3	3	3
N/A	N/A	N/A	N/A	N/A	A
105	105	140	140	140	210
165	165	257	257	257	275
68	68	103	103	103	103
92	92	134	134	134	155
1.3 1.5	1.3 1.5	4.4 5.0	5.2 6.0	5.2 6.0	10.9
dScrew terminal	dScrew terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal
d	d	-	-	-	-
dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud
d	d	d	d	d	d
d(*6)	d(*6)	d(*6)	d(*6)	d(*6)	d(*6)
d(*6)	d(*6)	d(*6)	d(*6)	d(*6)	d(*6)
d(*6)	d(*6)	d(*6)	d(*6)	d(*6)	d(*6)
d(*6)	d(*6)	d	d	d	d
d	d	d	d	d	d
-	-	-	-	-	d(*9)
d	d	-	-	-	-
d	d	d	d	d	d
-	d	d	d	d	d
d	d	d(*8)	d(*8)	d(*8)	d(*8)
d	d	d	d	d	d
d	d	d	d	d	d
d	d	-	-	-	-
d	d	d	d	d	d
d	d	d	d	d	d
d	d	d	d	d	d
d	d	d	d	d	d
d	d	d	d	d	d
d	d	d	d	d	d
d	d	d	d	d	d
-	-	d d	d d	d d	d
-	-	d	d	d	d
-	-	-	-	-	-
TÜV approval Recognized	TÜV approval Recognized	Self-declaration Recognized	Self-declaration Recognized	Self-declaration Recognized	Self-declaration Recognized
Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Electronic (effective value detection)
152		162	168		172

Remarks: 1. Products with rated current parenthesized are produced when an order is placed.
2. Specify "P-LT" when using a plug-in product with a lead-wire terminal block.
3. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.







NF-S (Standard class)

Frame (A)	30			32			50				60			63				
Model	NF32-SV						NF63-SV											
Image																		
Rated current In (A)	3 4 (5) 6 10			32			3 4 (5) 6 10 (15) 16				(60)			63				
Rated ambient temperature 40°C (45°C for marine use)	15 16 20 25 (30)						20 25 (30) 32 40 50											
Number of poles	2			2			2				2			2				
Rated insulation voltage Ui (V)	600			600			600				600			600				
Rated short-circuit breaking capacities (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	-			-			-				-				
			500V	2.5/2.5			2.5/2.5			7.5/7.5				7.5/7.5				
			440V	2.5/2.5			2.5/2.5			7.5/7.5				7.5/7.5				
			415V	2.5/2.5			2.5/2.5			7.5/7.5				7.5/7.5				
			400V	5/5			5/5			7.5/7.5				7.5/7.5				
			380V	5/5			5/5			7.5/7.5				7.5/7.5				
			230V	7.5/7.5			7.5/7.5			15/15				15/15				
			200V	7.5/7.5			7.5/7.5			15/15				15/15				
			DC 250V	2.5/2.5 (*5)			2.5/2.5 (*5)			7.5/7.5 (*5)				7.5/7.5 (*5)				
Rated impulse withstand voltage Uimp (kV)	8			8			8				8			8				
Current (*1)	AC/DC compatible			AC/DC compatible			AC/DC compatible				AC/DC compatible			AC/DC compatible				
Suitability for isolation	Compatible			Compatible			Compatible				Compatible			Compatible				
Reverse connection	Possible			Possible			Possible				Possible			Possible				
Number of operating cycles	Without current			10,000			10,000				15,000			15,000				
	With current (440VAC)			6,000			6,000				8,000			8,000				
Utilization category	A			A			A				A			A				
Pollution degree	3			3			3				3			3				
EMC environment condition (environment A or B)	N/A			N/A			N/A				N/A			N/A				
Overall dimensions (mm)		a	50	75	50	75	50	75	100	50	75	100	50	75	100			
		b	130			130			130				130					
		c	68			68			68				68					
		ca	90			90			90				90					
Mass of front-face type (kg)	0.45 0.65			0.45 0.65			0.5 0.7 0.9				0.55 0.75 1.0			0.55 0.75 1.0				
Installation and connections	Front connection (F)	Page			dScrew terminal			dScrew terminal				dScrew terminal			dScrew terminal			
	Solderless (BOX) terminal (SL)	-			-			-				-			-			
	Rear (B)	92			dBar stud			dRound stud				dRound stud			dRound stud			
	Plug-in (PM)	-			d			d				d			d			
Cassette-type accessories	Alarm switch (AL)	102			d (*4)			d (*4) d				d (*4) d			d (*4) d			
	Auxiliary switch (AX)	-			d (*4)			d (*4) d				d (*4) d			d (*4) d			
	Shunt trip (SHT)	-			d (*4)			d (*4) d				d (*4) d			d (*4) d			
	Undervoltage trip (UVT)	-			d (*4)			d (*4) d				d (*4) d			d (*4) d			
	With lead-wire terminal block (SLT)	114			d			d d				d d			d d			
	Pre-alarm (PAL)	116			-			-				-			-			
External accessories	Enclosure	Closed (S)	130			d			d -				d -			d -		
		Dustproof (I)	-			d			d -				d -			d -		
		Waterproof (W)	-			d			d -				d -			d -		
	Electrical operation device (NFM)	133			-			-				-			-			
		Mechanical interlock (MI) (*7)	129			d			d d				d d			d d		
	Handle lock device	LC	127			d			d				d			d		
		HL	-			d			d				d			d		
		HL-S	-			d			d				d			d		
	External operating handle	(F)	117			d			d				d			d		
		(V)	-			d			d				d			d		
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121			d			d d				d d			d d				
Rear stud (B-ST)	94			d			d				d			d				
Plug-in (PM)	-			d			d d				d d			d d				
IEC 35mm rail mounting adapters	137			d			d -				d -			d -				
CE marking	Self-declaration			Self-declaration			Self-declaration				Self-declaration			Self-declaration				
CCC recognition	Recognized			Recognized			Recognized				Recognized			Recognized				
Marine use approval (NK, LR, ABS, GL)	-			-			-				-			-				
Automatic tripping device	Thermal-magnetic			Thermal-magnetic			Thermal-magnetic				Thermal-magnetic			Thermal-magnetic				
Trip button	Equipped			Equipped			Equipped				Equipped			Equipped				
Page of Characteristics and dimensions	142			142			142				142			142				

- Notes:
- *1 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.
 - *2 In case of a current rating of 100A, it does not specify NK rating.
 - *3 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. If wired as shown on the right, three and four poles can be used for up to 400 and 500VDC, respectively. (In case of NF250-SV, three and four poles can be used for up to 500 and 600VDC)
 - *4 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 - *5 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. Not available for use with connection as shown on the right.
 - *6 Place an order of other models in conjunction with the circuit breaker.
 - *7 Not isolation compatible. excluding 400 to 800A frame.



NF-S (Standard class)

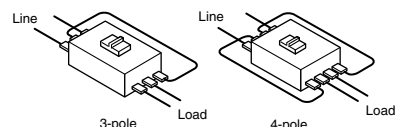
125 NF125-SV			125 NF125-SXV NEW			125 NF125-SGV			125 NF125-SEV			160 NF160-SGV			250 NF250-SV		
																	
(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 125			(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 125			16-20 20-25 25-32 32-40 35-40-50 45-50-63 56-63-80 70-80-100 90-100-125			16-32 32-63 63-125			125-160			(100) 125 150 160 175 200 225 (*2) 250		
2 3 4			2 3 4			2 3 4			3 4			2 3 4			2 3 4		
690			690			690			690			690			690		
8/8			8/8			8/8			8/8			8/8			8/8		
18/18			23/23			30/30			30/30			30/30			30/30		
25/25			36/36			36/36			36/36			36/36			36/36		
30/30			36/36			36/36			36/36			36/36			36/36		
30/30			36/36			36/36			36/36			36/36			36/36		
30/30			36/36			36/36			36/36			36/36			36/36		
50/50			75/75			85/85			85/85			85/85			85/85		
50/50			75/75			85/85			85/85			85/85			85/85		
40/40 (*3)			-			20/20 (300V) (*3)			-			20/20 (300V) (*3)			20/20 (300V) (*3)		
8			8			8			8			8			8		
AC/DC compatible			AC			AC/DC compatible			AC			AC/DC compatible			AC/DC compatible		
Compatible			Compatible			Compatible			Compatible			Compatible			Compatible		
Possible			Possible			Possible			Possible			Possible			Possible		
25,000			25,000			50,000			25,000			40,000			25,000		
10,000			10,000			30,000			10,000			15,000			10,000		
A			A			A			A			A			A		
3			3			3			3			3			3		
N/A			N/A			N/A			A			N/A			N/A		
60 90 120			90 120			105 140			105 140			105 140			105 140		
130			130			165			165			165			165		
68			68			68			68			68			68		
90			90			92			92			92			92		
0.7 1.0 1.3			0.6 1.0 1.2			1.4 1.6 2.0			1.7 2.2			1.4 1.6 2.0			1.4 1.6 2.0		
dScrew terminal			dScrew terminal			dScrew terminal			dScrew terminal			dScrew terminal			dScrew terminal		
d			d			d			d			d			d		
dBar stud			dBar stud			dBar stud			dBar stud			dBar stud			dBar stud		
d			d			d			d			d			d		
d (*4)			d (*4)			d (*4)			d (*4)			d (*4)			d (*4)		
d (*4)			d (*4)			d (*4)			d (*4)			d (*4)			d (*4)		
d (*4)			d (*4)			d (*4)			d (*4)			d (*4)			d (*4)		
d (*4)			d (*4)			d (*4)			d (*4)			d (*4)			d (*4)		
d			d			d			d			d			d		
-			-			-			d			-			-		
d			d			d			d			d			d		
d			d			d			d			d			d		
-			d			d			d			d			d		
-			d			d			d			d			d		
d			d			d			d			d			d		
d			d			d			d			d			d		
d			d			d			d			d			d		
d			d			d			d			d			d		
-			d			d			d			d			d		
d			d			d			d			d			d		
d			d			d			d			d			d		
d			d			d			d			d			d		
-			-			-			-			-			-		
Self-declaration Recognized			Self-declaration Recognized			Self-declaration Recognized			Self-declaration Recognized			Self-declaration Recognized			TUV approval Recognized		
-			(LR, ABS, GL)			(LR, ABS, GL)			(LR, ABS, GL)			(LR, ABS, GL)			-		
Thermal-magnetic Equipped			Thermal-magnetic Equipped			Thermal-magnetic Equipped			Electronic (effective value detection) Equipped			Thermal-magnetic Equipped			Thermal-magnetic Equipped		
144			146			158			160			158			152		

Remarks: 1. Products with rated current parenthesized are produced when an order is placed.
 2. Specify "P-LT" when using a plug-in product with a lead-wire terminal block.
 3. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.

NF-S (Standard class)

Frame (A)	250 NEW	250	250	400	400	630			
Model	NF250-SXV	NF250-SGV	NF250-SEV	NF400-SW	NF400-SEW	NF630-SW			
Image									
Rated current In (A)	(100) 125 150	125-160 140-160-200	80-160 125-250	250 300 350 400	Adjustable 200 225 250 300 350 400	500 600 630			
Rated ambient temperature 40°C (45°C for marine use)	175 200 225 250	175-200-250							
Number of poles	2 3 4	2 3 4	3 4	2 3 4	3 4	2 3 4			
Rated insulation voltage Ui (V)	690	690	690	690	690	690			
Rated short-circuit breaking capacities (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	8/8	8/8	8/8	10/10	10/10	10/10
			500V	30/30	30/30	30/30	30/30	30/30	30/30
			440V	36/36	36/36	36/36	42/42	42/42	42/42
			415V	36/36	36/36	36/36	45/45	50/50	50/50
			400V	36/36	36/36	36/36	50/50	50/50	50/50
			380V	36/36	36/36	36/36	50/50	50/50	50/50
			230V	85/85	85/85	85/85	85/85	85/85	85/85
			200V	85/85	85/85	85/85	85/85	85/85	85/85
			DC 250V	20/20 (*2)	20/20 (300V) (*2)	-	40/40 (*2)	-	40/40 (*2)
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8	8			
Current	AC/DC compatible (*1)	AC/DC compatible (*1)	AC	AC/DC compatible	AC	AC/DC compatible			
Suitability for isolation	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible			
Reverse connection	Possible	Possible	Possible	Possible	Possible	Possible			
Number of operating cycles	Without current	25,000	25,000	25,000	6,000	6,000			
	With current (440VAC)	10,000	10,000	10,000	1,000	1,000			
Utilization category	A	A	A	A	B	A			
Rated short time with stand current Icw (kA) at 0.25s	-	-	-	-	5	-			
Pollution degree	3	3	3	3	3	3			
EMC environment condition (environment A or B)	N/A	N/A	A	N/A	A	N/A			
Overall dimensions (mm)		a	105 140	105 140	105 140	140 185	140 185	140 185	
		b	165	165	165	257	257	257	
		c	68	68	68	103	103	103	
		ca	92	92	92	155	155	155	
Mass of front-face type (kg)	1.4 1.6 2.0	1.4 1.6 2.0	1.7 2.2	4.6 5.2 6.8	6.0 7.6	5.4 6.2 8.0			
Installation and connections	Front connection (F)	Page	dScrew terminal	d	dScrew terminal	dScrew terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal
	Solderless (BOX) terminal (SL)		d	d	d	d	-	-	-
	Rear (B)	92	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud
	Plug-in (PM)		d	d	d	d	d	d	d
Cassette-type accessories	Alarm switch (AL)	102	d (*3)	d	d (*3)	d	d (*3)	d	d (*3)
	Auxiliary switch (AX)		d (*3)	d	d (*3)	d	d (*3)	d	d (*3)
	Shunt trip (SHT)		d (*3)	d	d (*3)	d	d (*3)	d	d (*3)
	Undervoltage trip (UVT)		d (*3)	d	d (*3)	d	d	d	d
	With lead-wire terminal block (SLT)	114	d	d	d	d	d	d	d
	Pre-alarm (PAL)	116	-	-	d	-	-	d (*5)	-
External accessories	Enclosure	Closed (S)	130	d	-	d	-	-	-
		Dustproof (I)		d	-	d	-	d	-
		Waterproof (W)		d	-	d	-	d	-
	Electrical operation device (NFM)	133	d	d	d	d	d (*6)	d (*6)	d (*6)
	Mechanical interlock (MI) (*7)	129	d	d	d	d	d	d	d
	Handle lock device	LC	127	d	d	d	-	-	-
		HL		d	d	d	d	d	d
		HL-S		d	d	d	d	d	d
	External operating handle	(F)	117	d	d	d	d	d	d
		(V)		d	d	d	d	d	d
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121	d	d	d	d	d	d	d	
Rear stud (B-ST)	94	d	d	d	d	d	d	d	
Plug-in (PM)		d	d	d	d	d	d	d	
IEC 35mm rail mounting adapters	137	-	-	-	-	-	-	-	
CE marking	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration			
CCC recognition	Recognized	Recognized	Recognized	Recognized	Recognized	Recognized			
Marine use approval (NK, LR, ABS, GL)	(LR, ABS, GL) -	(LR, ABS, GL) -	(LR, ABS, GL) -	q -	q -	q -			
Automatic tripping device	Thermal-magnetic	Thermal-magnetic	Electronic (effective value detection)	Thermal-magnetic	Electronic (effective value detection)	Thermal-magnetic			
Trip button	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped			
Page of Characteristics and dimensions	154	158	160	162	164	168			

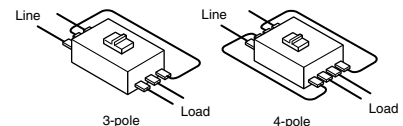
- Notes:
- *1 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.
 - *2 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. If wired as shown on the right, three and four poles can be used for up to 400 and 500VDC, respectively.
 - *3 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 - *4 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. Not available for use with connection as shown on the right.
 - *5 Solid state relay output is option. Please specify if other output is necessary. (Standard type is thus SLT equipped) AS for flush plate type, an outline differs from a standard.
 - *6 Place an order of other models in conjunction with the circuit breaker.
 - *7 Not isolation compatible. excluding 400 to 800A frame.







NF-H / NF-R (High-performance class)

Frame (A)	250		400		630		800							
Model	NF250-HEV		NF400-HEW		NF400-REW		NF630-HEW		NF630-REW		NF800-HEW		NF800-REW	
Image														
Rated current In (A)	80-160 125-250		Adjustable 200 225 250 300 350 400		Adjustable 200 225 250 300 350 400		Adjustable 300 350 400 500 600 630		Adjustable 300 350 400 500 600 630		Adjustable 400 450 500 600 700 800		Adjustable 400 450 500 600 700 800	
Rated ambient temperature 40°C (45°C for marine use)														
Number of poles	3 4		3 4		3		3 4		3		3 4		3	
Rated insulation voltage Ui (V)	690		690		690		690		690		690		690	
Rated short-circuit breaking capacities (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	10/8	35/18	–	35/18	–	15/15	–				
			500V	50/38	50/50	70/35	50/50	70/35	50/50	70/35				
			440V	65/65	65/65	125/63	65/65	125/63	65/65	125/63				
			415V	70/70	70/70	125/63	70/70	125/63	70/70	125/63				
			400V	75/75	70/70	125/63	70/70	125/63	70/70	125/63				
			380V	75/75	70/70	125/63	70/70	125/63	70/70	125/63				
			230V	100/100	100/100	150/75	100/100	150/75	100/100	150/75				
			200V	100/100	100/100	150/75	100/100	150/75	100/100	150/75				
			DC 250V	–	–	–	–	–	–	–				
			DC 250V	–	–	–	–	–	–	–				
Rated impulse withstand voltage Uimp (kV)	8		8		8		8		8		8		8	
Current	AC		AC		AC		AC		AC		AC		AC	
Suitability for isolation	Compatible		Compatible		Compatible		Compatible		Compatible		Compatible		Compatible	
Reverse connection	Possible		Possible		Possible		Possible		Possible		Possible		Possible	
Number of operating cycles	Without current		6,000		6,000		6,000		6,000		4,000		4,000	
	With current (440VAC)		10,000		1,000		1,000		1,000		500		500	
Utilization category	A		B		B		B		B		B		B	
Rated short time with stand current Icu (kA) at 0.25s	–		5		5		7.6		7.6		9.6		9.6	
Pollution degree	3		3		3		3		3		3		3	
EMC environment condition (environment A or B)	A		A		A		A		A		A		A	
Overall dimensions (mm)		a	105	140	140	185	140	185	140	210	280	210	210	
		b	165	257	257	257	257	257	257	275	275	275	275	
		c	68	103	103	103	103	103	103	103	103	103	103	
		ca	92	155	155	155	155	155	155	155	155	155	155	
		ca	92	155	155	155	155	155	155	155	155	155	155	
Mass of front-face type (kg)	1.7 2.2		6.0 7.6		6.0		6.5 8.3		6.0		10.9 14.2		10.9	
Installation and connections	Front connection (F)	Page	dScrew terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	dBusbar terminal	
	Solderless (BOX) terminal (SL)	92	d	d	–	–	–	–	–	–	–	–	–	
	Rear (B)	92	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	dBar stud	
	Plug-in (PM)	92	d	d	d	d	d	d	d	d	d	d	d	
Cassette-type accessories	Alarm switch (AL)	102	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	
	Auxiliary switch (AX)	102	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	
	Shunt trip (SHT)	102	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	d	d (*1)	
	Undervoltage trip (UVT)	102	d (*1)	d	d	d	d	d	d	d	d	d	d	
	With lead-wire terminal block (SLT)	114	d	d	d	d	d	d	d	d	d	d	d	
	Pre-alarm (PAL)	116	d	d	d (*2)	d	d (*2)	d	d (*2)	d	d (*2)	d	d (*2)	
External accessories	Enclosure	130	–	–	–	–	–	–	–	–	–	–	–	
	Dustproof (I)	130	d	–	–	–	–	–	–	–	–	–	–	
	Waterproof (W)	130	d	–	–	–	–	–	–	–	–	–	–	
	Electrical operation device (NFM)	133	d	d	d (*3)	d	d (*3)	d	d (*3)	d	d (*3)	d	d (*3)	
	Mechanical interlock (MI) (*4)	129	d	d	d	d	d	d	d	d	d	d	d	
	Breaker mounting	129	d	–	d	–	d	–	d	–	d	–	d	
	Handle lock device	127	d	d	d	d	d	d	d	d	d	d	d	
	HL	127	d	d	d	d	d	d	d	d	d	d	d	
	HL-S	127	d	d	d	d	d	d	d	d	d	d	d	
	External operating handle (F)	117	d	d	d	d	d	d	d	d	d	d	d	
(V)	117	d	d	d	d	d	d	d	d	d	d	d		
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121	d	d	d	d	d	d	d	d	d	d	d		
Rear stud (B-ST)	94	d	d	d	d	d	d	d	d	d	d	d		
Plug-in (PM)	94	d	d	d	d	d	d	d	d	d	d	d		
IEC 35mm rail mounting adapters	137	–	–	–	–	–	–	–	–	–	–	–		
CE marking	Self-declaration		Self-declaration		Self-declaration		Self-declaration		Self-declaration		Self-declaration		Self-declaration	
CCC recognition	Recognized		Recognized		Recognized		Recognized		Recognized		Recognized		Recognized	
Marine use approval (NK, LR, ABS, GL)	(LR, ABS, GL)		q		q		q		q		q		q	
Automatic tripping device	Electronic (effective value detection)		Electronic (effective value detection)		Electronic (effective value detection)		Electronic (effective value detection)		Electronic (effective value detection)		Electronic (effective value detection)		Electronic (effective value detection)	
Trip button	Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	
Page of Characteristics and dimensions	160		164		164		170		170		172		172	



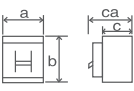
- Notes: *1 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 *2 Solid state relay output is option. Please specify if other output is necessary. (Standard type is thus SLT equipped).
 *3 Place an order of other models in conjunction with the circuit breaker.
 *4 Not isolation compatible, excluding 400 to 800A frame.



NF-U (Ultra current-limiting class)

125 NF125-UV				250 NF250-UV				400 NF400-UEW				800 NF800-UEW			
															
15 20 30 40 50 60 75 100 125				125 150 175 200 225 250				Adjustable 200 225 250 300 350 400				Adjustable 400 450 500 600 700 800			
2 3 4				2 3 4				3 4				3 4			
690				690				690				690			
10/10				15/15				-				35/35			
200/200				200/200				170/170				170/170			
200/200				200/200				200/200				200/200			
200/200				200/200				200/200				200/200			
200/200				200/200				200/200				200/200			
200/200				200/200				200/200				200/200			
200/200				200/200				200/200				200/200			
200/200				200/200				200/200				200/200			
-				-				-				-			
8				8				8				8			
AC				AC				AC				AC			
Compatible				Compatible				Compatible				Compatible			
Possible				Possible				Possible				Possible			
25,000				25,000				6,000				4,000			
10,000				10,000				1,000				500			
A				A				B				B			
-				-				5				9.6			
3				3				3				3			
N/A				N/A				A				A			
90				105 140				140 280				210 280			
191				240				297 322				322			
68				68				200				200			
90				92				252				252			
1.35 1.5 1.9				2.5 2.7 3.7				16.2 25.4				27.6 33.7			
dScrew terminal				dScrew terminal				dBusbar terminal				dBusbar terminal			
dBar stud				dBar stud				-				-			
dBar stud				dBar stud				dBar stud				dBar stud			
d				d				d				d			
d (*1)				d (*1)				d (*1)				d (*1)			
d (*1)				d (*1)				d (*1)				d (*1)			
d (*1)				d (*1)				d (*1)				d (*1)			
d (*1)				d (*1)				d				d			
-				-				d				d			
-				-				d (*2)				d (*2)			
-				-				-				-			
-				-				-				-			
-				-				-				-			
d				d				d (*3)				d (*3)			
d				d				d				d			
-				-				-				-			
-				-				-				-			
d				d				-				-			
d				d				-				-			
d				d				-				-			
d				d				-				-			
d				d				d				-			
-				-				-				-			
d				d				-				-			
-				-				-				-			
Self-declaration				Self-declaration				Self-declaration				Self-declaration			
-				-				-				-			
q				q				q				q			
Thermal-magnetic				Thermal-magnetic				Electronic (effective value detection)				Electronic (effective value detection)			
Equipped				Equipped				Equipped				Equipped			
150				156				166				176			

Remarks: 1. Products with rated current parenthesized are produced when an order is placed.
 2. Specify "P-LT" when using a plug-in product with a lead-wire terminal block.
 3. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.

Frame(A)		60			100					
Series		H			C		S			
Model		NFC60-HMXA			NFC100-CMXA		NFC100-SMXA			
Rated current In (A)		15, 16, 20, 25, 30, 32, 40, 50, 60			15, 16, 20, 25, 30,32, 40, 50, 60, 63, 75, 80, 100					
Image										
Rated ambient temperature (°C)		40			40		40			
Number of poles		2	3	4	2	3	2	3	4	
Rated insulation voltage Ui (V AC)		690			690		690			
Rated short-circuit breaking capacity (kA)	IEC60947-2 EN60947-2 (Icu/Ics)	AC	415V	10/5		10/5		25/12.5		
			400V	10/5		10/5		25/12.5		
		AC	380V	15/7.5		15/7.5		30/15		
			230V	25/12.5		25/12.5		50/25		
	GB14048.2 (Icu/Ics)	AC	400V	10/5		10/5		25/12.5		
			230V	25/12.5		25/12.5		50/25		
Rated impulse withstand voltage Uimp (kV)		8			8		8			
Suitability for isolation		●			●		●			
Reverse connection		-			-		-			
Number of operating cycles	Without current	10,000			10,000		10,000			
	With current	1,500			1,500		1,500			
Utilization category		A			A		A			
Pollution degree		3			3		3			
Overall Dimension (mm)		a	50	75	100	50	75	50	75	100
		b	130			130		130		
		c	68			68		68		
		ca	92			92		92		
Mass(kg)		0.6	0.8	1.0	0.6	0.9	0.6	0.9	1.1	
Installation and connection (Front connection) (F)		AL	Screw terminal			Screw terminal		Screw terminal		
Internal accessories (cassette-type accessories)	Alarm switch	AX	●			●		●		
	Auxiliary switch	SHT	●			●		●		
	Shunt trip	UVT	●			●		●		
	Undervoltage trip	F	●	●	●	●	●	●		
External accessories	External operating handle	V	-	●	-	●	-	●		
		TC-L	-	●	-	●	-	●		
	Terminal cover	TC-S	●			●		●		
Certification	CE	Self declaration			Self declaration		Self declaration			
	CCC	Passed			Passed		Passed			
	KEMA	Passed			-		Passed			
Automatic tripping device		Thermal-magnetic			Thermal-magnetic		Thermal-Magnetic			

Note: *1. While installing the external operating handle of NFC30-SMX, the isolation function is unavailable. *2. Not cassette-type accessory.
*3. The rated current of NFC160-CMXA, NFC160-SMXA, NFC250-CMXA or NFC250-SMXA is adjustable. (Rated current x 0.8 or 1.0; for example: 125A can be adjusted to 100A and 125A)

160			250		
C	S		C	S	
NFC160-CMXA	NFC160-SMXA		NFC250-CMXA	NFC250-SMXA	
125, 140, 150, 160 (*3)			175, 200, 225, 250 (*3)		
					
40	40		40	40	
3	3	4	3	3	4
690	690		690	690	
15/7.5	25/12.5		15/7.5	25/12.5	
15/7.5	25/12.5		15/7.5	25/12.5	
22/11	30/15		22/11	30/15	
30/15	50/25		30/15	50/25	
15/7.5	25/12.5		15/7.5	25/12.5	
30/15	50/25		30/15	50/25	
8	8		8	8	
●	●		●	●	
-	-		-	-	
8,000	8,000		8,000	8,000	
1,000	1,000		1,000	1,000	
A	A		A	A	
3	3		3	3	
105	105	140	105	105	140
165	165		165	165	
68	68		68	68	
92	92		92	92	
1.8	1.8	2.0	1.8	1.8	2.0
Screw terminal	Screw terminal		Screw terminal	Screw terminal	
●	●		●	●	
●	●		●	●	
●	●		●	●	
●	●		●	●	
●	●		●	●	
●	●		●	●	
●	●		●	●	
-	-		-	-	
Self declaration			Self declaration		
Passed			Passed		
-	Passed		-	Passed	
Thermal-magnetic			Thermal-magnetic		

Model		MCB									
Image		BHW-T10									
No. of poles [P]		1	2	3	4	1	2	3	4		
Instantaneous tripping ^{*2}		Type B				Type C, D					
Rated insulation voltage U_i [V]		660				660					
Rated current I_n [A] at ambient temperature 30:		6, 10, 16, 20, 25, 32, 40, 50, 63				0.5, 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63					
Rated short-circuit capacity [kA]	IEC/EN 60898-1 (Icn)	AC	240V	10				10			
			240/415V	10	–	10	10	–	10		
			415V	–	10	–	10				
Energy limiting class ^{*3}		Class 3									
Number of operating cycles	Without current		4,000								
	With current		4,000								
Dimensions [mm]		a	18	36	54	72	18	36	54	72	
		b	92.6								
		c	44								
		ca	Max. 73.5								
		Type of overcurrent release	Thermal-magnetic								
Mounting	IEC 35mm rail										
Applicable wire size [mm ²]	1 to 25										
Mass [kg]	0.13	0.26	0.39	0.52	0.13	0.26	0.51	0.52			
Accessories (optional) ^{*4}	Auxiliary switch (AX)		s								
	Shunt trip (SHT)		s								
Terminal connection	Solderless terminal										
Based on standard	IEC/EN 60898-1										
CE marking	s										

*1: Type B ($3 I_n < \leq 5 I_n$), Type C ($5 I_n < \leq 10 I_n$), Type D ($10 I_n < \leq 20 I_n$)
*2: Except for Type D

*3: Factory fitted
*4: In case of installing breakers side by side, reduce the passing current to under 80% of the rated current.

Model		MCB								
Image		BHW-T10								
No. of poles [P]		1	2	3	4	1	2	3	4	
Instantaneous tripping ^{*1}		Type B, C								
Rated insulation voltage U_i [V]		690								
Rated current I_n [A]	Amb. temp.	IEC/EN 60898-1 30:	80, 100, 125							
		IEC/EN 60947-2 40:								
Rated short-circuit capacity [kA]	IEC/EN 60898-1 (Icn)	AC	240/415V	10						
			IEC/EN 60947-2 (Icu/Ics)	AC	240/415V	10/7.5				
Rated impulse withstand voltage U_{imp} [kV]		6								
Suitability for isolation		Compatible								
Utilization category		A								
Pollution degree		3								
Number of operating cycles	Without current		10,000							
	With current		4,000							
Dimensions (mm)		a	27	54	81	108				
		b	94							
		c	44							
		ca	74.5							
		Type of overcurrent release	Thermal-magnetic							
Mounting	IEC 35mm rail									
Applicable wire size [mm ²]	10 to 50									
Mass [kg]	0.21	0.42	0.63	0.84						
Accessories (optional) ^{*2}	Alarm switch (AL)		s ^{*4}							
	Auxiliary switch (AX)		s							
	Shunt trip (SHT)		s ^{*4}							
Terminal connection	Solderless terminal									
Based on standard	IEC/EN 60898-1 ^{*5} , IEC/EN 60947-2									
CE marking	s									


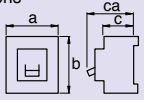
*1: Type B ($3 I_n < \leq 5 I_n$), Type C ($5 I_n < \leq 10 I_n$)

*2: Field fitted


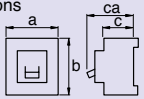
*3: In case of installing breakers side by side, reduce the passing current to under 80% of the rated current.

*4: This accessory will be released shortly. Please contact our branch office for release period and more details.

*5: This standard will be conformed shortly. Please contact our branch office for release period and more details.

Model		RCCB				
		BVW-T				
Image						
No. of poles [P]		2	4	2	4	
Rated voltage [VAC]		240	415	240	415	
Rated current I_n [A] at ambient temperature 30:		16, 25, 32, 40, 63		80, 100		
Rated current sensitivity $I_{\Delta n}$ [mA]		30, 100, 300		30, 100, 300		
Max. operating time at 5 $I_{\Delta n}$ [s]		0.04		0.04		
Pulsating current sensitivity		Type AC		Type AC		
Residual operation		Independent of line voltage		Independent of line voltage		
Rated making and breaking capacity I_m [A]		500(I_n 16, 25, 32, 40A), 630(I_n 63A)		800(I_n 80A), 1000(I_n 100A)		
Rated conditional short-circuit current I_{nc} [kA]		6		10		
Rated residual making and breaking capacity $I_{\Delta m}$ [A]		500(I_n 16, 25, 32, 40A), 630(I_n 63A)		800(I_n 80A), 1000(I_n 100A)		
Rated conditional residual short-circuit current $I_{\Delta c}$ [kA]		6		10		
Number of operating cycles	Without current	4,000 ^{*2}		3,000		
	With current	2,000		2,000		
Dimensions [mm]		a	36	72	36	72
		b	90		90	
		c	44		44	
		ca	74		74	
Mounting		IEC 35mm rail		IEC 35mm rail		
Applicable wire size [mm ²]		1 to 25		10 to 35		
Mass [kg]		0.22	0.44	0.22	0.44	
Accessories		Not available		Not available		
Terminal connection		Solderless terminal		Solderless terminal		
Based on standard		IEC/EN 61008-1		IEC/EN 61008-1		
CE marking		s		s		

*1: In case of ampere rating 32, 40 and 63A, the number of operating cycles is 3,000.

Model		Isolating Switches							
		KBW-T							
Image									
No. of poles [P]		1	2	3	4	2	3	4	
Utilization category		AC-22A				AC-22A			
Rated current I_n [A] at ambient temperature 30:		25, 40, 63				80, 100, 125			
Rated voltage [VAC]		240	240/415			240/415			
Short time withstand current I_{cw} [A]		12x I_n , 1s				12x I_n , 1s			
Short-circuit making capacity I_{cm} [A]		12x I_n				12x I_n			
Rated impulse withstand voltage U_{imp} [kV]		6				6			
Pollution degree		2				2			
Dimensions [mm]		a	18	36	54	72	36	54	72
		b	92.6				92.6		
		c	44				44		
		ca	Max. 73.5				Max. 73.5		
Number of operating cycles	Without current	10,000				10,000 8,000(125A)			
	With current	1,500				1,500 1,000(125A)			
Mounting		IEC 35mm rail				IEC 35mm rail			
Applicable wire size [mm ²]		1 to 25				10 to 50			
Mass [kg]		0.12	0.22	0.33	0.47	0.20	0.30	0.40	
Accessories		Not available				Not available			
Terminal connection		Solderless terminal				Solderless terminal			
Based on standard		IEC/EN 60947-3				IEC/EN 60947-3			
CE marking		s				s			

Frame			T10	T12	T20	T21	T25	T32	T35	T50			
Applicable standard			JIS C8201-4-1, IEC60947-4-1, EN60947-4-1, GB14048.4										
Model Name	Magnetic Contactors (Without Thermal Overload Relay, Open Type)		Non-Reversing	S-T10	S-T12	S-T20	S-T21	S-T25	S-T32	S-T35	S-T50		
			Reversing	S-2 x T10	S-2 x T12	S-2 x T20	S-2 x T21	S-2 x T25	S-2 x T32	S-2 x T35	S-2 x T50		
	Magnetic Starters (With standard 2-element, With Thermal Overload Relay)	Enclosed Type	Non-Reversing	MS-T10	MS-T12	—	MS-T21	—	—	MS-T35	MS-T50		
			Reversing	—	—	—	MS-2 x T21	—	—	MS-2 x T35	MS-2 x T50		
		Open Type	Non-Reversing	MSO-T10	MSO-T12	MSO-T20	MSO-T21	MSO-T25	—	MSO-T35	MSO-T50		
			Reversing	MSO-2 x T10	MSO-2 x T12	MSO-2 x T20	MSO-2 x T21	MSO-2 x T25	—	MSO-2 x T35	MSO-2 x T50		
			Combined Thermal Overload Relays	TH-T18			TH-T25		—	TH-T25 / T50	TH-T25 / T50		
	Magnetic Starters With 3-element type Thermal Overload Relays		Non-Reversing	MSO-T10KP	MSO-T12KP	MSO-T20KP	MSO-T21KP	MSO-T25KP	—	MSO-T35KP	MSO-T50KP		
			Reversing	MSO-2 x T10KP	MSO-2 x T12KP	MSO-2 x T20KP	MSO-2 x T21KP	MSO-2 x T25KP	—	MSO-2 x T35KP	MSO-2 x T50KP		
			Combined Thermal Overload Relays	TH-T18KP			TH-T25KP		—	TH-T25 / T50KP	TH-T25 / T50KP		
Main contact rating	Rated Insulation Voltage [V]		690										
	Rated Impulse Withstand Voltage [kV]		6										
	Rated Frequency [Hz]		50/60										
	Pollution Degree		3										
	Rated operational current / power Category AC-3 (Note 1) (Three-phase squirrel-cage motor load standard responsibility) (Note 2) [kW/A]		AC220 to 240V	2.5/11 [2.2/11]	3.5/13 [2.7/13]	4.5/18 [3.7/18]	5.5/25 [4/20]	7.5/30 [6.5/26]	7.5/32 [7.5/32]	11/40 [7.5/35]	15/55 [50] [11/50]		
			AC380 to 440V	4/9 [2.7/7]	5.5/12 [4/9]	7.5/18 [7.5/18]	11/23 [7.5/20]	15/30 [11/25]	15/32 [15/32]	18.5/40 [15/32]	22/50 [22/48]		
			AC500V	4/7 [2.7/6]	5.5/9 [5.5/9]	7.5/17 [7.5/17]	11/17 [7.5/17]	15/24 [11/20]	15/24 [11/20]	18.5/32 [15/26]	25/38 [22/38]		
			AC690V	4/5	5.5/7	7.5/9	7.5/9	11/12	11/12	15/17	22/26		
	Rated operational current / power Category AC-4 (Three-phase squirrel-cage motor load inching responsibility) [kW/A]		AC220 to 240V	1.5/8	2.2/11	3.7/18	—	4.5/20	5.5/26	5.5/26	7.5/35		
			AC380 to 440V	2.2/6	4/9	5.5/13	—	7.5/17	11/24	11/24	15/32		
		AC500V	2.7/6	5.5/9	5.5/10	—	7.5/12	7.5/13	11/17	15/24			
Rated operational current / power Category AC-1 (Resistance, heater load) [kW/A]		AC100 to 240V	20			32		60		80			
		AC380 to 440V	11	13		32		60		80			
Conventional Free Air Thermal Current Ith [A]		AC100 to 240V	20			32		60		80			
		AC380 to 440V	11	13		32		60		80			
Auxiliary contact rating	Contact Arrangement		Standard Accessory (Note 7)	Non-Reversing		1a		1a1b		2a2b			
			Reversing (Note 8, Note 10)		1a x 2 + 2b		1a1b x 2 + 2b		2a2b x 2		2a2b x 2		
			Special accessory		Non-Reversing		1b		2a		—		
			Reversing (Note 4, Note 6)		1a x 2 + 2b		2a x 2 + 2b		—				
			Max. number of additional options (Note 10)		Non-Reversing		1 for UT-AX2/4, 2 for UT-AX11						
					Reversing (Note 8, Note 10)		2 for any UT-AX2/4/11			—			
							—		2 for any UT-AX2/4/11				
	Rated Operating Current (Category AC-15: Alternating current coil load) [A]		AC120V	6	6	6	6	6	6	6	6		
			AC240V	3	3	3	3	3	3	3	3		
	Rated Operational Current (Category DC-13 : Direct current coil load)		DC24V	3									
		DC110V	0.6										
Conventional Free Air Thermal Current Ith [A]		AC100 to 240V	10	10	10	10	10	10	10	10			
		AC380 to 440V	10	10	10	10	10	10	10	10			
Performance	Mechanical Durability [x 10000]		1000										
	Electrical Durability (Note 5) [Ten thousand times]		Category AC-3		200 (Note 5, 6)								
			Category AC-4		3 (Note 5)								
			Category AC-1		50								
	Switching Frequency [Times/Hour]		Category AC-3		1800						1200		
		Category AC-4		300									
		Category AC-1		1200									
Characteristic	Coil consumption (Note 7) [VA]		Sealed		7		7		4.5		10		
			Inrush		45		75		55		110		
	Power Consumption (Note 7) [W]				2.2		2.4		2.4		1.8		
Outside Dimensions	Magnetic Contactors (without Thermal Overload Relays) (Width x Height x Depth) [mm]		Non-Reversing		36 x 75 x 78		44 x 75 x 78		63 x 81 x 81		43 x 81 x 81		
			Reversing		82 x 85 x 78		98 x 85 x 78		136 x 81 x 81		96 x 81 x 111		
	Open Type Magnetic Starters (Width x Height x Depth) [mm]		Non-Reversing		46 x 115 x 79		—		63 x 128 x 82		—		
			Reversing		90.5 x 125 x 79		98.5 x 125 x 79		136 x 138 x 82		—		
	Enclosed Magnetic Starters (Width x Height x Depth) [mm]		Non-Reversing		76 x 165 x 97.5		—		104 x 176 x 110		—		
			Reversing		—		—		220 x 192 x 115		—		
IEC 35mm rail mounting			Possible (excluding Enclosed Magnetic Starters)										
Installable Optional Unit Model Names (Note 12)	Additional Auxiliary Contact Units		(Contact Arrangement 1a1b)		UT-AX2/AX11								
			(Contact Arrangement 2a2b)		UT-AX4								
			With Low-Level Signal Contact		—								
	Coil Surge Absorber Units (Note 4)		(Varistor) (Note 4)		UT-SA21								
			(Varistor + Display LED)		UT-SA22								
			(CR)		UT-SA23								
			(Varistor + CR)		UT-SA25								
	DC-AC Interface		Triac Output		UT-SY21								
			Contact Output		UT-SY22								
	Live Part Protection Cover		For Magnetic Starters		Non-Reversing		—						
				Reversing		—							
		For Magnetic Contactors		Non-Reversing		—							
				Reversing		—							
Terminal Cover		For Magnetic Starters (Non-Reversing)		(Standard Equipment)									
		For Magnetic Contactors (Non-Reversing)		(Standard Equipment)									
Mechanical Interlock Units			UT-ML20				UN-ML21						

- Note 1. The figure in the square brackets indicates the rated current shown on the rating plate of the product at which the category AC-3 opening/closing durability is 2,000,000 times for T10 to T65 (1,000,000 times for the T20 380V, T80 and T100). Refer to the electric durability curve for the life performance.
- Note 2. The value between parentheses for the rated operating current is for the magnetic contactor (without thermal overload relay), while the value between parentheses for the motor capacity applies to an enclosed type magnetic starter.
- Note 3. AC operated types T10 to T50, DC operated types T12 to T50 can be manufactured with coil surge absorber (□-□SA type). The UT-SA21 type can be mounted.
- Note 4. T65 to N800 types have an integrated coil surge absorber rendering a coil surge absorber unit for prevention of coil switching surges unnecessary.
- Note 5. 1 million times for T20 class AC-3 380 V or more types for the rating in parentheses and 15,000 times for class AC-4 types. 15 thousand times for T35 to N800 class AC-4 380 V or more types.
- Note 6. Values are for the ratings in parentheses. The electrical durability for the current values not in parentheses varies inversely with the rough square of the current.

S-T and S-N Series

5 Detailed Specifications Magnetic Contactors - S-T and S-N Series

T65	T80	T100	N125	N150	N180	N220	N300	N400	N600	N800	
JIS C8201-4-1, IEC60947-4-1, EN60947-4-1, GB14048.4											
S-T65	S-T80	S-T100	S-N125	S-N150	S-N180	S-N220	S-N300	S-N400	S-N600	S-N800	
S-2 x T65	S-2 x T80	S-2 x T100	S-2 x N125	S-2 x N150	S-2 x N180	S-2 x N220	S-2 x N300	S-2 x N400	S-2 x N600	S-2 x N800	
MS-T65	MS-T80	MS-T100	MS-N125	MS-N150	MS-N180	MS-N220	MS-N300	MS-N400	—	—	
MS-2 x T65	MS-2 x T80	MS-2 x T100	MS-2 x N125	MS-2 x N150	MS-2 x N180	MS-2 x N220	MS-2 x N300	MS-2 x N400	—	—	
MSO-T65	MSO-T80	MSO-T100	MSO-N125	MSO-N150	MSO-N180	MSO-N220	MSO-N300	MSO-N400	—	—	
MSO-2 x T65	MSO-2 x T80	MSO-2 x T100	MSO-2 x N125	MSO-2 x N150	MSO-2 x N180	MSO-2 x N220	MSO-2 x N300	MSO-2 x N400	—	—	
TH-T65	TH-T65 / T100	TH-T65 / T100	TH-N120(TA)	TH-N120(TA)	TH-N220RH	TH-N220RH	TH-N400RH	TH-N400RH	TH-N600(+CT)	TH-N600(+CT)	
MSO-T65KP	MSO-T80KP	MSO-T100KP	MSO-N125KP	MSO-N150KP	MSO-N180KP	MSO-N220KP	MSO-N300KP	MSO-N400KP	—	—	
MSO-2 x T65KP	MSO-2 x T80KP	MSO-2 x T100KP	MSO-2 x N125KP	MSO-2 x N150KP	MSO-2 x N180KP	MSO-2 x N220KP	MSO-2 x N300KP	MSO-2 x N400KP	—	—	
TH-T65KP	TH-T65 / T100KP	TH-T65 / T100KP	TH-N120(TA)KP	TH-N120(TA)KP	TH-N220RHKP	TH-N220RHKP	TH-N400RHKP	TH-N400RHKP	TH-N600KP(+CT)	TH-N600KP(+CT)	
690											
6											
50/60											
3											
18.5/65 [15/65]	22/85 [19/80]	30/105 [22/100]	37/125 [30/125]	45/150 [37/150]	55/180 [45/180]	75/250 [55/220]	90/300 [75/300]	125/400 [110/400]	190/630 [160/630]	220/800 [200/800]	
30/65 [30/65]	45/85 [37/80]	55/105 [45/93]	60/120 [60/120]	75/150 [75/150]	90/180 [90/180]	132/250 [110/220]	160/300 [150/300]	220/400 [200/400]	330/630 [300/630]	440/800 [400/800]	
37/60 [30/45]	45/75 [45/75]	55/85 [45/75]	60/90 [60/90]	90/140 [90/140]	110/180 [110/180]	132/200 [132/200]	160/250 [160/250]	225/350 [200/350]	330/500 [300/500]	500/720 [400/720]	
30/38	45/52	55/65	60/70	90/100	110/120	132/150	200/220	250/300	330/420	500/630	
11/50	15/65	19/80	22/93	30/125	37/150	45/180	55/220	75/300	110/400	160/630	
22/47	30/62	37/75	45/90	55/110	75/150	90/180	110/220	150/300	200/400	300/630	
22/38	30/45	37/55	45/65	55/80	75/140	90/140	110/200	150/250	200/350	300/500	
100	120	150	150	200	260	260	350	450	660	800	
100	120	150	150	200	260	260	350	450	660	800	
100	120	150	150	200	260	260	350	450	660	800	
2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	2a2b	
2a2b x 2	2a2b x 2	2a2b x 2	2a2b x 2	3a3b x 2	3a3b x 2	3a3b x 2	3a3b x 2	3a3b x 2	4a4b x 2	4a4b x 2	
—	—	—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	
1 for UT-AX2/4, 2 for UT-AX11		4a4b	4a4b	4a4b	4a4b	4a4b	4a4b	4a4b	4a4b	4a4b	
2 for any UT-AX2/4/11		3a3b x 2	3a3b x 2	—	—	—	—	—	—	—	
6	6	6	6	6	6	6	6	6	6	6	
3	3	3	3	3	3	3	3	3	3	3	
	3		3	3	3	3	3	3	3	3	
0.6											
10	10	10	10	10	10	10	10	10	10	10	
500											
200				100						50	
3 (Note 5)											
50											
1200											
300											
1200			600								
20		23	24	24	40	40	50	50	90	90	
115		210	270	270	440	440	440	440	790	790	
2.2	2.2	2.8	2.9	2.9	4.2	4.2	6.1	6.1	17	17	
88 x 106 x 106	88 x 106 x 106	100 x 124 x 127	100 x 150 x 137	120 x 160 x 145	138 x 204 x 175	138 x 204 x 175	163 x 243 x 195	163 x 243 x 195	290 x 310 x 235	290 x 310 x 235	
216 x 115 x 112	216 x 115 x 112	270 x 140 x 137	276 x 150 x 148	296 x 160 x 156	370 x 215 x 189	370 x 215 x 189	395 x 250 x 209	395 x 250 x 209	660 x 435 x 254	660 x 435 x 254	
90 x 158 x 106	90 x 174.5 x 106	100 x 196 x 127	112 x 239 x 137	120 x 250 x 145	144 x 282 x 180.5	144 x 282 x 180.5	163 x 360 x 195	163 x 360 x 195	—	—	
216 x 169 x 112	216 x 185.5 x 112	270 x 213 x 137	276 x 251 x 148	296 x 276 x 156	370 x 304 x 194.5	370 x 304 x 194.5	395 x 392 x 209	395 x 392 x 209	—	—	
160 x 282 x 145	190 x 317 x 163	230 x 396 x 190			270 x 496 x 209				—	—	
320 x 282 x 140	410 x 347 x 154	440 x 436 x 170			520 x 536 x 209			600 x 616 x 230	—	—	
Possible (excluding Enclosed Magnetic Starters)											
UN-AX2/AX11	UN-AX80			UN-AX150							
UN-AX4									UN-AX600		
UN-LL22											
—											
—											
—											
UN-SY31											
UN-SY32											
UN-CZ500 + UN-CZ501	UN-CZ800+ UN-CZ801	UN-CZ1250+ UN-CZ1251	UN-CZ1500+ UN-CZ1501	UN-CZ2200 + UN-CZ2201			UN-CZ3000 + UN-CZ3001			—	—
UN-CZ504	UN-CZ804	UN-CZ1254	UN-CZ1504	UN-CZ2204			UN-CZ3004			—	—
UN-CZ500 x 2	UN-CZ800 x 2	UN-CZ1250 x 2	UN-CZ1500 x 2	UN-CZ2200 x 2			UN-CZ3000 x 2			—	—
UN-CZ502	UN-CZ802	UN-CZ1252	UN-CZ1502	UN-CZ2202			UN-CZ3002			—	—
UT-CW800 + UT-CW655											
UT-CW800											
UN-ML21	UN-ML80		UN-ML150	UN-ML220							

Note 7. Mechanically latched types and delay open types have differing auxiliary contact arrangements. Refer to page 100 for details about mechanically latched types, or page 109 for delay open types.






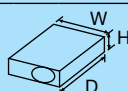
Note 8. Operational coil input and coil consumption are average values in case of applying 220V60Hz to AC200V coil.

Note 9. The +2b on the auxiliary contact arrangement of reversible T10 to T20 types indicates the break contact of the integrated UT-ML11 interlock unit. There is no need to specify when ordering.

Note 10. The body and auxiliary contact unit can be additionally installed by the customer as a separate arrangement. Enclosed type auxiliary contact units and mechanically latched front clip-on auxiliary contacts cannot be additionally installed. Refer to page 182 for details about auxiliary contact units.

Note 11. Auxiliary contact arrangements for reversible types are displayed by twos, in a contact arrangement combined with two magnetic contactors. For standard contact arrangements there is no need to specify when ordering; however, please specify a matching contact arrangement for 2 units if for a special configuration. <Example> For 1b x 2 + 2b: 2B






Note 12. Because there are products that cannot be mounted, please refer to combination details on page 180 when applying optional products.

Frame			T18	T25	T50	T65	T100	
Appearance								
Model Name	Standard with 2-Element (2E)	For Magnetic Starters	TH-T18	TH-T25	TH-T50	TH-T65	TH-T100	
		For Independent Mounting	UT-HZ18 + TH-T18		—		—	
	With 3-Element (2E)	For Magnetic Starters	TH-T18KP	TH-T25KP	TH-T50KP	TH-T65KP	TH-T100KP	
		For Independent Mounting	UT-HZ18 + TH-T18KP		—		—	
	Outline Drawing [mm] W x H x D	For Magnetic Starters	46 x 55 x 76.5	63 x 53 x 80	74.3 x 74 x 88	89 x 57 x 83.5	89 x 68.5 x 83.5	
		For Independent Mounting	48 x 65.5 x 83.5		—		—	
	Product Weight [kg]	For Magnetic Starters	0.11	0.16	0.2	0.26	0.32	
		For Independent Mounting	0.16		—		—	
Applicable Standard			JIS C8201-4-1, IEC60947-4-1, EN60947-4-1, GB14048.4					
Use Conditions		Ambient Temperature [°C]	-10 to +40 (Standard is 20°C, Inner Panel Maximum Temperature is 55°C)					
		Frequency [Hz]	0 (DC) to 400					
Rated Insulation Voltage [V]			690					
Rated Impulse Withstand Voltage [kV]			6					
Pollution Degree			3					
Specifications of the Main Circuit	Heater Designation (Adjustment Range of Settling Current) [A]		0.12 (0.1 to 0.16) 0.17 (0.14 to 0.22) 0.24 (0.2 to 0.32) 0.35 (0.28 to 0.42) 0.5 (0.4 to 0.6) 0.7 (0.55 to 0.85) 0.9 (0.7 to 1.1) 1.3 (1 to 1.6) 1.7 (1.4 to 2) 2.1 (1.7 to 2.5) 2.5 (2 to 3) 3.6 (2.8 to 4.4) 5 (4 to 6) 6.6 (5.2 to 8) 9 (7 to 11) 11 (9 to 13) 15 (12 to 18) 15 (12 to 18)	0.24 (0.2 to 0.32) 0.35 (0.28 to 0.42) 0.5 (0.4 to 0.6) 0.7 (0.55 to 0.85) 0.9 (0.7 to 1.1) 1.3 (1 to 1.6) 1.7 (1.4 to 2) 2.1 (1.7 to 2.5) 2.5 (2 to 3) 3.6 (2.8 to 4.4) 5 (4 to 6) 6.6 (5.2 to 8) 9 (7 to 11) 11 (9 to 13) 15 (12 to 18) 22 (18 to 26)	29 (24 to 34) 35 (30 to 40) 42 (34 to 50)	15 (12 to 18) 22 (18 to 26) 29 (24 to 34) 35 (30 to 40) 42 (34 to 50) 54 (43 to 65)	67 (54 to 80) 82 (65 to 100) 95 (85 to 105)	
	Power Consumption [VA/Element] Minimum/Maximum Settling		0.8/1.8	1.0/2.1	1.6/3.2	2.4/5.5	2.5/6.0	
	Terminal Screw Size		M3.5	M4	M5	M6	M6	
	Terminal-Compatible	Wire Size [mm ²]	φ 1.6, 0.75 to 2.5	φ 1.6 to 2.6, 1.25 to 6	φ 2 to 3.6, 4 to 14	—	—	
		Crimp Lug Size	1.25-3.5 to 2-3.5, 5.5-S3	1.25-4 to 5.5-4	5.5-5 to 14-5	5.5-6 to 22-6	14-6 to 22-6, 38-S6	
	Contact Arrangement			1a1b	1a1b	1a1b	1a1b	1a1b
	Conventional Free Air Thermal Current Ith [A]			2	5	5	5	5
	Rating Use Current [A]	Category AC-15 (AC Contactors) Coil Switching Make Contact/Break Contact The value in parentheses is the rating during auto reset	AC24 V	2 (0.5)/2 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)
			AC120 V	2 (0.5)/2 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)
			AC240 V	1 (0.5)/1 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)
AC550 V			0.3 (0.3)/0.3 (0.3)	0.3 (0.3)/0.3 (0.3)	0.3 (0.3)/0.3 (0.3)	0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)	
Category DC-13 (DC Contactors) Coil Switching The value in parentheses is the rating during auto reset		DC24 V	0.5(0.3)	1(0.3)	1(0.3)	1(0.3)	1(0.3)	
	DC110 V	0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)		
	DC220 V	0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)		
Minimum Applicable Load Level			20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	
Terminal Screw Size			M3.5	M3.5	M3.5	M4	M4	
Terminal-Compatible	Wire Size [mm ²]	φ 1.6, 0.75 to 2.5	φ 1.6, 0.75 to 2.5	φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2		
	Crimp Lug Size	1.25-3.5 to 2-3.5	1.25-3.5 to 2-3.5	1.25-3.5 to 2-3.5	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4		
Operating Characteristic Curve Page			145					
Vibration Resistance (Vibration and Malfunction Resistance Performance)			10 to 55 Hz 19.6 m/s ²					
Trip Free			⊙	⊙	⊙	⊙	⊙	
Reset Method			Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	
Operation Indicator (Lever Display)			⊙	⊙	⊙	⊙	⊙	
Manual Tripping Check			⊙	⊙	⊙	⊙	⊙	
Frame of the Combined Magnetic Contactor			T10, T12, T20 T12, T20 T20	T21, T25, T35, T50	T35, T50 T50	T65, T80, T100	T80, T100 T100	
Applied Products	With Saturable Reactor [See Page 138]	With 2-Element (TH-□SR)	⊙ (TH-T18SR)	⊙ (TH-T25SR)	⊙ (TH-T50SR)	⊙ (TH-T65SR)	⊙ (TH-T100SR)	
		With 3-Element (2E) (TH-□KPSR)	—	⊙ (TH-T25KPSR)	⊙ (TH-T50KPSR)	⊙ (TH-T65KPSR)	⊙ (TH-T100KPSR)	
	Quick Trip Type [See Page 139]	With 2-Element (TH-□FS)	—	△ (TH-T25FS)	△ (TH-T50FS)	△ (TH-T65FS)	△ (TH-T100FS)	
		With 3-Element (2E) (TH-□FSKP, KF)	△ (TH-T18FSKP)	△ (TH-T25FSKP)	△ (TH-T50FSKP)	△ (TH-T65FSKP)	△ (TH-T100FSKP)	
Optional	Live Part Protection Cover		—	—	—	⊙ (UN-CZ605)	—	
	Reset Release		⊙ (UT-RR□5)	⊙ (UN-RR□0)	⊙ (UN-RR□0)	⊙ (UN-RR□6)	⊙ (UN-RR□6)	
	Operation Indicator Lamp		⊙ (UN-TL12)	⊙ (UN-TL20)	⊙ (UN-TL20)	⊙ (UN-TL60)	⊙ (UN-TL60)	
	Independent/IEC 35 mm Rail Mounting Unit		⊙ (UT-HZ18)	⊙ (UN-RM20)	—	—	—	
Misoperation Prevention Cover			—	⊙ (UN-CV203)	⊙ (UN-CV203)	⊙ (UN-CV603)	⊙ (UN-CV603)	

Note 1. All model names come with ambient temperature compensation device.

Note 2. ⊙ indicates standard type (standard equipment), ○ indicates semi-standard type, △ indicates special products and - indicates products outside production range.

S-T and S-N Series

	N120	N120TA	N220	N400	N600
					
	TH-N120	TH-N120TA TH-N120TAHZ	TH-N220RH TH-N220HZ	TH-N400RH TH-N400HZ	TH-N600 (Note 3)
	TH-N120KP	TH-N120TAKP TH-N120TAHZKP	TH-N220RHKP TH-N220HZKP	TH-N400RHKP TH-N400HZKP	TH-N600KP (Note 3)
	103 x 67 x 105	112 x 87 x 105 112 x 103 x 105	144 x 114 x 179.5 144 x 104 x 166.5	144 x 160 x 193.5 144 x 173 x 166.5	63 x 42 x 83.5
	0.48	0.75 1.0	2.5 2.5	2.7 2.7	0.14
JIS, JEM, IEC, VDE, BS, UL, GB					
-10 to +40 (Standard is 20°C, Inner Panel Maximum Temperature is 55°C)					
0 (DC) to 400			50 to 60		
690					
6					
3					
42 (34 to 50) 54 (43 to 65) 67 (54 to 80) 82 (65 to 100)	105 (85 to 125) 125 (100 to 150)	82 (65 to 100) 105 (85 to 125) 125 (100 to 150) 150 (120 to 180) 180 (140 to 220) 210 (170 to 250)	105 (85 to 125) 125 (100 to 150) 150 (120 to 180) 180 (140 to 220) 250 (200 to 300) 330 (260 to 400)	250 (200 to 300) (Current Transformer Ratio: 400/5 A) 330 (260 to 400) (Current Transformer Ratio: 500/5 A) 500 (400 to 600) (Current Transformer Ratio: 750/5 A) 660 (520 to 800) (Current Transformer Ratio: 1000/5 A)	
*The thermal overload relay with the heater designation of 180A or less is the same as the N220 frame.					
3.0/7.1	3.8/8.6	1.0/2.3 (Note 4)	1.0/2.3 (Note 4)	1.0/2.3 (Note 4)	
M8	M8	M10	M12	—	
—	—	—	—	—	
8-8 to 38-8	38-8 to 100-8	22-10 to 150-10	22-12 to 200-12	—	
1a1b	1a1b	1a1b	1a1b	1a1b	
5	5	5	5	5	
2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	
2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	2 (0.5)/3 (0.5)	
1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	1 (0.5)/2 (0.5)	
0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)	0.5 (0.5)/1 (0.5)	
1(0.3)	1(0.3)	1(0.3)	1(0.3)	1(0.3)	
0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)	0.2(0.2)	
0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)	0.1(0.1)	
20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	20 V 5 mA	
M4	M4	M4	M4	M4	
φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2	φ 1.6, 1.25 to 2	
1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	1.25-4 to 2-4, 5.5-S4	
148		148		148	
10 to 55 Hz 19.6 m/s ²					
☉	☉	☉	☉	☉	
Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	Manual/Automatic Switchable	
☉	☉	☉	☉	☉	
☉	☉	☉	☉	☉	
N125, N150	N125, N150 N150	N180, N220 N220	N300, N400 N400	N600, N800	
☉ (TH-N120SR)	☉ (TH-N120TASR)	☉ (TH-N220□SR)	☉ (TH-N400□SR)	☉ (TH-N600SR)	
☉ (TH-N120KPSR)	☉ (TH-N120TAKPSR)	☉ (TH-N220□KPSR)	☉ (TH-N400□KPSR)	☉ (TH-N600KPSR)	
—	—	—	—	—	
—	—	—	—	—	
—	—	—	—	—	
☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)	☉ (UN-RR□6)	
☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)	☉ (UN-TL60)	
—	—	—	—	—	
☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)	☉ (UN-CV603)	

Note 3. Use TH-N600(KP) in combination with current transformer for measuring instruments (rated secondary load of 15 VA or more). The recommended model names are CW-15LM or CW-15L for 250, 330 and 500 A, and CW-40LM for 660 A. The ratio of current transformation is as shown in the heater designation field in the table.

Note 4. The power consumption indicates the amount consumed by the heater element only. (The current transformer consumption amounts of the N220 to N600 frames are not included.)



SS ver.A
Super - S Series

ME96SSHA-MB

Model name		ME96SSHA-MB	
Phase wire		Three phase 4-wire, Three phase 3-wire (3CT, 2CT), Single phase 3-wire, Single phase 2-wire (common use)	
Rating	Current	5AAC, 1AAC (common use)	
	Voltage	Three phase 4-wire: 277/480VAC (max) Three phase 3-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max) Single phase 3-wire: 220/440VAC (max) Single phase 2-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max)	
	Frequency	50-60Hz (common use)	
		Measurement items	Class
Measurement items and accuracy	Current (A)	A1, A2, A3, AN, A _{AVG}	±0.1%
	Current demand (DA)	DA1, DA2, DA3, DAN, DA _{AVG}	±0.1%
	Voltage (V)	V12, V23, V31, V _{AVG} (L-L) V1N, V2N, V3N, V _{AVG} (L-N)	±0.1%
	Active power (W)	W1, W2, W3, ΣW	±0.2%
	Reactive power (var)	var1, var2, var3, Σvar	±0.2%
	Apparent power (VA)	VA1, VA2, VA3, ΣVA	±0.2%
	Power factor (PF)	PF1, PF2, PF3, ΣPF	±0.2%
	Frequency (Hz)	Hz	±0.1%
	Active energy (Wh)	Imported, Exported	class 0.5S (IEC62053-22)
	Reactive energy (varh)	Imported lead, lag Exported lead, lag	class 1S (IEC62053-24)
	Apparent energy (Vah)	—	±2.0%
	Harmonic current (HI)	Total, 1 st to 31 st degree (odd number degree only)	±1.0%
	Harmonic voltage (HV)	Total, 1 st to 31 st degree (odd number degree only)	±1.0%
	Rolling demand (DW)	Rolling block, fixed block	±0.2%
	Rolling demand, reactive power (Dvar)	Rolling block, fixed block	±1.0%
	Rolling demand, apparent power (DVA)	Rolling block, fixed block	±1.0%
	Periodic Active energy (Wh)	Periodic active energy 1, 2	class 0.5S (IEC62053-22)
Operating time	Operating time 1, 2	(Reference)	
Analog output response time		2s or less (HI, HV: 10s or less)	
Measuring method	Instantaneous value	A/V: RMS calculation, W/ var/ VA/ Wh/ varh/ VAh: Digital multiplication, PF: Power ratio calculation, Hz: Zero-cross, HI/HV: FFT	
	Demand value	DA: Thermal type calculation DW, Dvar, DVA: Rolling demand calculation	
Display	Indicator		LCD with LED backlight
	No. of display digits and segments	Digital display	6 digits each at upper, middle, and lower line A, DA, V, W, var, VA, PF, DW, Dvar, DVA: 4 digits Hz: 3 digits Wh, varh, VAh: 9 digits (6 or 12 possible) Harmonic distortion ratio, content ratio: 3 digits Harmonic RMS: 4 digits Operating time: 6 digits Contact input/output: I/O
		Bar graph	21 segment bar graph, 22 segment indicator
	Display updating time interval		0.5s or 1s (selectable)
Communication		MODBUS [®] RTU communication	
Available optional plug-in module		ME-4210-SS96 ME-0000BU-SS96 ME-0040C-SS96 ME-0000MT-SS96 ME-0052-SS96	
Power failure compensation		Non-volatile memory used (items: setting value, max/min value, active/reactive energy, apparent energy, periodic active energy, rolling demand, operating time)	
Consumption (VA)	VT	Each phase 0.1VA (110VAC), 0.2VA (220VAC), 0.4VA (440VAC)	
	CT	Each phase 0.1VA (5AAC)	
	Auxiliary power circuit	7VA (at 110VAC), 8VA (at 220VAC), 5W (at 100VDC)	
Auxiliary power		100-240VAC (±15%), 100-240VDC (-30% +15%)	
Weight		0.5kg	
Dimensions		96 (H) × 96 (W) × 90 (D)	
Installation method		Embedded	
Operating temperature		-5~+55°C (average operating temperature: 35°C or less per day)	
Operating humidity		0~85% RH (non condensing)	
Storage temperature		-25~+75°C (average temperature: 35°C or less per day)	
Storage humidity		0~85% RH (non condensing)	

Notes 1. Class values based on 100% of rated value.

Notes 2. Harmonic measurements where distortion ratio (content rate) is 100% or more may exceed ±1.0%.

Notes 3. Harmonic current cannot be measured without voltage input.

ME96SSRA-MB

Model name		ME96SSRA-MB	
Phase wire		Three phase 4-wire, Three phase 3-wire (3CT, 2CT), Single phase 3-wire, Single phase 2-wire (common use)	
Rating	Current	5AAC, 1AAC (common use)	
	Voltage	Three phase 4-wire: 277/480VAC (max) Three phase 3-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max) Single phase 3-wire: 220/440VAC (max) Single phase 2-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max)	
	Frequency	50-60Hz (common use)	
		Measurement items	Class
Measurement items and accuracy	Current (A)	A1, A2, A3, AN, A _{AVG}	±0.2%
	Current demand (DA)	DA1, DA2, DA3, DAN, DA _{AVG}	±0.2%
	Voltage (V)	V12, V23, V31, V _{AVG} (L-L) V1N, V2N, V3N, V _{AVG} (L-N)	±0.2%
	Active power (W)	W1, W2, W3, ΣW	±0.5%
	Reactive power (var)	var1, var2, var3, Σvar	±0.5%
	Apparent power (VA)	VA1, VA2, VA3, ΣVA	±0.5%
	Power factor (PF)	PF1, PF2, PF3, ΣPF	±0.5%
	Frequency (Hz)	Hz	±0.1%
	Active energy (Wh)	Imported, Exported	class 0.5S (IEC62053-22)
	Reactive energy (varh)	Imported lead, lag Exported lead, lag	class 1S (IEC62053-24)
	Apparent energy (Vah)	—	±2.0%
	Harmonic current (HI)	Total, 1 st to 19 th degree (odd number degree only)	±1.0%
	Harmonic voltage (HV)	Total, 1 st to 19 th degree (odd number degree only)	±1.0%
	Rolling demand (DW)	Rolling block, fixed block	±0.5%
	Rolling demand, reactive power (Dvar)	Rolling block, fixed block	±1.0%
	Rolling demand, apparent power (DVA)	Rolling block, fixed block	±1.0%
Periodic Active energy (Wh)	Periodic active energy 1, 2	class 0.5S (IEC62053-22)	
Operating time	Operating time 1, 2	(Reference)	
Analog output response time		2s or less (HI, HV: 10s or less)	
Measuring method	Instantaneous value	A/V: RMS calculation, W/var/VA/Wh/varh: Digital multiplication, PF: Power ratio calculation, Hz: Zero-cross, HI/HV: FFT	
	Demand value	DA: Thermal type calculation DW, Dvar, DVA: Rolling demand calculation	
Display	Indicator		LCD with LED backlight
	No. of display digits and segments	Digital display	6 digits each at upper, middle, and lower line A, DA, V, W, var, VA, PF, DW, Dvar, DVA: 4 digits Hz: 3 digits Wh, varh: 9 digits (6 or 12 possible) Harmonic distortion ratio, content ratio: 3 digits Harmonic RMS: 4 digits Operating time: 6 digits Contact input/output: I/O
		Bar graph	21 segment bar graph, 22 segment indicator
	Display updating time interval		0.5s or 1s (selectable)
Communication		MODBUS [®] RTU communication	
Available optional plug-in module		ME-4210-SS96 ME-0000BU-SS96 ME-0040C-SS96 ME-0000MT-SS96 ME-0052-SS96	
Power failure compensation		Non-volatile memory used (items: setting value, max/min value, active/reactive energy, apparent energy, periodic active energy, rolling demand, operating time)	
Consumption (VA)	VT	Each phase 0.1VA (110VAC), 0.2VA (220VAC), 0.4VA (440VAC)	
	CT	Each phase 0.1VA (5AAC)	
	Auxiliary power circuit	7VA (at 110VAC), 8VA (at 220VAC), 5W (at 100VDC)	
Auxiliary power		100-240VAC (±15%), 100-240VDC (-30% +15%)	
Weight		0.5kg	
Dimensions		96 (H) × 96 (W) × 90 (D)	
Installation method		Embedded	
Operating temperature		-5~+55°C (average operating temperature: 35°C or less per day)	
Operating humidity		0~85% RH (non condensing)	
Storage temperature		-25~+75°C (average temperature: 35°C or less per day)	
Storage humidity		0~85% RH (non condensing)	

Notes 1. Class values based on 100% of rated value.

Notes 2. Harmonic measurements where distortion ratio (content rate) is 100% or more may exceed ±1.0%.

Notes 3. Harmonic current cannot be measured without voltage input.

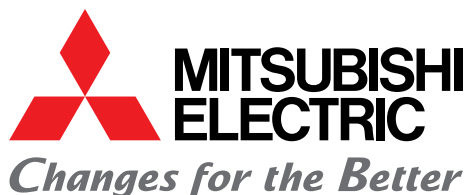
ME96SSEA-MB

Model name		ME96SSEA-MB	
Phase wire		Three phase 4-wire, Three phase 3-wire (3CT, 2CT), Single phase 3-wire, Single phase 2-wire (common use)	
Rating	Current	5AAC, 1AAC (common use)	
	Voltage	Three phase 4-wire: 277/480VAC (max) Three phase 3-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max) Single phase 3-wire: 220/440VAC (max) Single phase 2-wire: Delta connections: 220VAC (max), Star connections: 440VAC (max)	
	Frequency	50-60Hz (common use)	
		Measurement items	Class
Measurement items and accuracy	Current (A)	A1, A2, A3, AN, A _{AVG}	±0.5%
	Current demand (DA)	DA1, DA2, DA3, DAN, DA _{AVG}	±0.5%
	Voltage (V)	V12, V23, V31, V _{AVG} (L-L) V1N, V2N, V3N, V _{AVG} (L-N)	±0.5%
	Active power (W)	W1, W2, W3, ΣW	±0.5%
	Reactive power (var)	—	—
	Apparent power (VA)	—	—
	Power factor (PF)	PF1, PF2, PF3, ΣPF	±0.5%
	Frequency (Hz)	Hz	±0.2%
	Active energy (Wh)	Receiving	class 0.5S (IEC62053-22)
	Reactive energy (varh)	—	—
	Apparent energy (Vah)	—	—
	Harmonic current (HI)	Total	±2.0%
	Harmonic voltage (HV)	Total	±2.0%
	Rolling demand (DW)	—	—
	Rolling demand, reactive power (Dvar)	—	—
	Rolling demand, apparent power (DVA)	—	—
Periodic Active energy (Wh)	—	—	
Operating time	Operating time 1, 2	(Reference)	
Analog output response time		—	
Measuring method		Instantaneous value	A/V: RMS calculation, W: Digital multiplication, PF: Power ratio calculation, Hz: Zero-cross, HI/HV: FFT
		Demand value	DA: Thermal type calculation
Display	Indicator		LCD with LED backlight
	No. of display digits and segments	Digital display	6 digits each at upper, middle, and lower line A, DA, V, W, PF: 4 digits Hz: 3 digits Wh: 9 digits (6 or 12 possible) Relative harmonic content: 3 digits Harmonic RMS value: 4 digits Operating time: 6 digits
		Bar graph	21 segment bar graph, 22 segment indicator
	Display updating time interval		0.5s or 1s (selectable)
Communication		MODBUS [®] RTU communication	
Available optional plug-in module		—	
Power failure compensation		Non-volatile memory used (items: setting value, max/min value, active energy, operating time)	
Consumption (VA)	VT	Each phase 0.1VA (110VAC), 0.2VA (220VAC), 0.4VA (440VAC)	
	CT	Each phase 0.1VA (5AAC)	
	Auxiliary power circuit	7VA (at 110VAC), 8VA (at 220VAC), 5W (at 100VDC)	
Auxiliary power		100-240VAC (±15%), 100-240VDC (-30% +15%)	
Weight		0.5kg	
Dimensions		96 (H) × 96 (W) × 90 (D)	
Installation method		Embedded	
Operating temperature		-5~+55°C (average operating temperature: 35°C or less per day)	
Operating humidity		0~85%RH (non condensing)	
Storage temperature		-25~+75°C (average temperature: 35°C or less per day)	
Storage humidity		0~85%RH (non condensing)	

Notes 1. Class values based on 100% of rated value.

Notes 2. Harmonic measurements where distortion ratio (content rate) is 100% or more may exceed ±2.0%.

Low Voltage Products Website



http://www.mitsubishielectric.com/fa/sg_en/products/lv_distri/lvc-breakers/index.html

- Easier to navigate, More Information Available -

Whether you are looking for information on high-performance power distribution/protection systems and energy-saving support equipment or simply interested in one of our many low-voltage power control products, we've made things easier for you to find. The website is now organized to provide enhanced usability for customers, and the latest information on our low-voltage products and systems.

Please be sure to visit, check out our new look, and bookmark the site for future reference.

Four Key Features

1 Product Information

Based on past customer requests, we've increased the content to include a full product line-up, product specifications and relevant CAD data. The Products pages are divided into two categories:

Low-voltage Circuit Breakers

WS-V Series Next-generation MCCB and ELCB, AE-SW Series ACB, DIN Series MCB

Energy Measuring Devices

New S Series Multi-measuring Instruments, EcoMonitorPro Energy Measuring Unit

2 Downloads

The latest catalogs, information on certifications acquired, handling and maintenance information, and technical notes can all be downloaded free of charge. We've organized the information for maximum customer convenience, and will be updating the contents periodically.

3 News

Check here for the latest, up-to-date news on Mitsubishi Electric products such as new product releases and changes in specifications.

4 Support

Our interest is to serve you! Please contact us whenever you have a question or are in need of support. We'll reply at the earliest possible time. Committed to supporting our customers' businesses, we also provide information through Mitsubishi Electric's global network.

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For Safety : Please read the instruction manual carefully before using the products in this catalog.
Wiring and connection must be done by the person has a specialized knowledge of electric construction and wiring.



for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

