

1 Outline of Mitsubishi Circuit Breakers

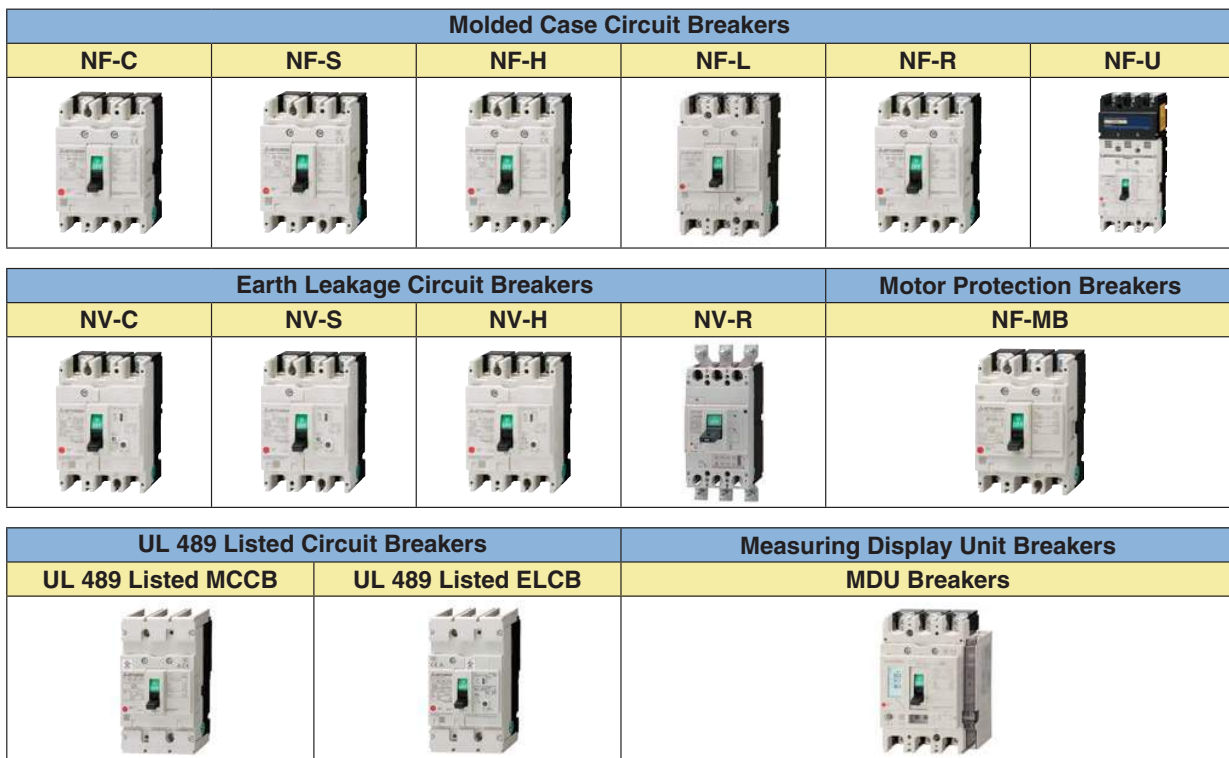
Product Line-up

Outline of Mitsubishi Circuit Breakers















		Frame (A)							
Classification		20	30 32	40	50 60 63	70	100 125	160	
Molded Case Circuit Breakers	NF-C Economy class	NF30-CS		NF63-CV		NF125-CV			
	NF-S Standard class	NF32-SV		NF63-SV		NF125-SV NF125-SEV	NF125-SGV	NF160-SGV	
	NF-H/L High-performance class			NF63-HV		NF125-HV NF125-HEV	NF125-LGV NF125-HGV	NF160-LGV NF160-HGV	
	NF-R/U Ultra current-limiting class					NF125-RGV NF125-UV			
Earth Leakage Circuit Breakers	NV-C Economy class			NV63-CV		NV125-CV			
	NV-S Standard class	NV32-SV		NV63-SV		NV125-SV NV125-SEV			
	NV-H/R High-performance class			NV63-HV		NV125-HV NV125-HEV			
Motor Protection Breakers	NF-MB	MB30-CS		NF63-CV (*1) NF63-SV (*1)		NF125-SV (*1)			
		NF32-SV (*1)							
UL 489 Listed Circuit Breakers	UL 489 Listed MCCB			NF50-SVFU		NF100-CVFU NF125-SVU NF125-HVU			
	UL 489 Listed ELCB			NV50-SVFU		NV100-CVFU NV125-SVU NV125-HVU			
Measuring Display Unit Breakers	MDU Breakers								
Miniature Circuit Breakers		BH-DN		BH-S BH-D6 BH-D10		BH BH-P			
Residual Current Circuit Breaker				BV-D					
Residual Current Circuit Breaker with Overload Protection				BV-DN					
Isolating Switch				KB-D					
Circuit Protectors		CP30-BA CP-S							
Air Circuit Breakers	AE-SW								
Related Components	Earth Leakage Relays	NV-ZBA, NV-ZSA, NV-ZHA, NV-ZLA							

Note *1 When placing an order, specify "MB."

WS-V Series (New models)





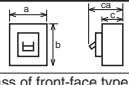
	225 250	400	600 630	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
NF250-CV		NF400-CW	NF630-CW	NF800-CEW									
NF250-SV NF250-SGV NF250-SEV		NF400-SW NF400-SEW	NF630-SW NF630-SEW	NF800-SDW NF800-SEW	NF1000-SEW	NF1250-SDW NF1250-SEW	NF1600-SDW NF1600-SEW						
NF250-HV NF250-LGV NF250-HEV NF250-HGV		NF400-HEW	NF630-HEW	NF800-HEW									
NF250-RGV NF250-UV		NF400-REW NF400-UW	NF630-REW	NF800-REW NF800-UW									
NV250-CV		NV400-CW	NV630-CW										
NV250-SV NV250-SEV		NV400-SW NV400-SEW	NV630-SW NV630-SEW	NV800-SEW									
NV250-HV NV250-HEV		NV400-HEW NV400-REW	NV630-HEW	NV800-HEW									
NF250-SV (*1)													
NF225-CWU NF250-SVU NF250-HVU		NF-SKW	NF-SLW										
NV250-SVU NV250-HVU													
NF250-SEV with MDU NF250-HEV with MDU		NF400-SEP with MDU NF400-HEP with MDU	NF630-SEP with MDU NF630-HEP with MDU	NF800-SEP with MDU NF800-HEP with MDU									
			AE630-SW		AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SW AE2000-SWA	AE2500-SW	AE3200-SW	AE4000-SWA AE4000-SW	AE5000-SW	AE6300-SW

Miniature Circuit Breakers						
BH-DN	BH-S	BH-D6	BH-PS	BH-D10	BH	BH-P
						
Residual Current Circuit Breaker			Residual Current Circuit Breaker with Overload Protection		Isolating Switch	
BV-D			BV-DN		KB-D	
						
Circuit Protectors		Air Circuit Breakers			Related Components	
CP30-BA	CP-S	AE-SW			Earth Leakage Relays	
						

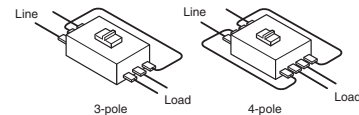
2 Detailed Specifications

Molded Case Circuit Breakers

2 Detailed Specifications








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 3		2 3 4			2 3 4			2 3 4			
Rated insulation voltage Ui (V)		600			600		600			600			600			
Rated short-circuit breaking capacity (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			7.5/7.5	
			440V	2.5/2.5			2.5/2.5		7.5/7.5			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			7.5/7.5	
			400V	5/5			5/5		7.5/7.5			7.5/7.5			7.5/7.5	
			380V	5/5			5/5		7.5/7.5			7.5/7.5			7.5/7.5	
			230V	7.5/7.5			7.5/7.5		15/15			15/15			15/15	
200V	7.5/7.5			7.5/7.5		15/15			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)			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		10,000			15,000			15,000			
	With current (440VAC)	6,000			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			130		
		c	68			68		68			68			68		
		ca	90			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		
Insulation and connectors	Front connection (F)	●Screw terminal														
	Solderless (BOX) terminal (SL)	-														
	Rear (B)	●Bar stud														
Cassette-type accessories	Plug-in (PM)	●														
	Alarm switch (AL)	●(*4)														
	Auxiliary switch (AX)	●(*4)														
External accessories	Shunt trip (SHT)	●(*4)														
	Undervoltage trip (UVT)	●(*4)														
	With lead-wire terminal block (SLT)	●														
External accessories	Pre-alarm (PAL)	-														
	Enclosure	Closed (S)	●													
		Dustproof (I)	●													
		Waterproof (W)	-													
	Electrical operation device (NFM)	Mechanical interlock (MI) (*7)	-													
		Panel mounting	●													
		Breaker mounting	●													
	Handle lock device	LC	●													
		HL	●													
	External operating handle	HL-S	●													
(F)		●														
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	(V)	●														
	(F)	●														
Rear stud (B-ST)	(F)	●														
	(V)	●														
Plug-in (PM)	(F)	●														
	(V)	●														
IEC 35mm rail mounting adapters	(F)	●														
	(V)	●														
CE marking		Self-declaration			Self-declaration		Self-declaration			Self-declaration			Self-declaration			
CCC recognition		Recognition in process			Recognition in process		Recognition in process			Recognition in process			Recognition in process			
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		144											144			

- 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)

2 Detailed Specifications

100		125		125		125		160		225		250	
NF125-SV		NF125-SV		NF125-SGV		NF125-SEV		NF160-SGV		NF250-SV		NF250-SV	
													
(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100		125		16-20 20-25 25-32 32-40 35-50 45-63 56-80 70-100 90-125		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		2 3 4	
690		690		690		690		690		690		690	
8/8		8/8		8/8		8/8		8/8		8/8		8/8	
18/18		18/18		30/30		30/30		30/30		30/30		30/30	
25/25		25/25		36/36		36/36		36/36		36/36		36/36	
30/30		30/30		36/36		36/36		36/36		36/36		36/36	
30/30		30/30		36/36		36/36		36/36		36/36		36/36	
30/30		30/30		36/36		36/36		36/36		36/36		36/36	
50/50		50/50		85/85		85/85		85/85		85/85		85/85	
50/50		50/50		85/85		85/85		85/85		85/85		85/85	
40/40 (*3)		40/40 (*3)		20/20 (300V) (*3)		–		20/20 (300V) (*3)		20/20 (300V) (*3)		20/20 (300V) (*3)	
8		8		8		8		8		8		8	
AC/DC compatible		AC/DC compatible		AC/DC compatible		AC		AC/DC compatible		AC/DC compatible (*1)		AC/DC compatible (*1)	
Compatible		Compatible		Compatible		Compatible		Compatible		Compatible		Compatible	
Possible		Possible		Possible		Possible		Possible		Possible		Possible	
25,000		25,000		50,000		25,000		40,000		25,000		25,000	
10,000		10,000		30,000		10,000		15,000		10,000		10,000	
A		A		A		A		A		A		A	
3		3		3		3		3		3		3	
N/A		N/A		N/A		A		N/A		N/A		N/A	
60 90 120		60 90 120		105 140		105 140		105 140		105 140		105 140	
130		130		165		165		165		165		165	
68		68		68		68		68		68		68	
90		90		92		92		92		92		92	
0.7 1.0 1.3		0.7 1.0 1.3		1.4 1.6 2.0		1.7 2.2		1.4 1.6 2.0		1.4 1.6 2.0		1.4 1.6 2.0	
●Screw terminal		●Screw terminal		●Screw terminal		●Screw terminal		●Screw terminal		●Screw terminal		●Screw terminal	
●Bar stud		●Bar stud		●Bar stud		●Bar stud ●Bar stud		●Bar stud		●Bar stud		●Bar stud	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
–		–		–		●		–		–		–	
●		●		●		●		●		●		●	
–		–		●		●		–		–		●	
●		●		●		●		●		●		●	
–		–		●		●		●		●		●	
●		●		●		●		●		●		●	
–		–		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
●		●		●		●		●		●		●	
–		–		–		–		–		–		–	
Self-declaration		Self-declaration		Self-declaration		Self-declaration		Self-declaration		TÜV approval	Self-declaration	TÜV approval	Self-declaration
Recognition in process		Recognition in process		Recognition in process		Recognition in process		Recognition in process		Recognition in process		Recognition in process	
☆		☆		☆ (LR, ABS, GL)		☆ (LR, ABS, GL)		☆ (LR, ABS, GL)		☆		☆	
Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Electronic (effective value detection)		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped		Equipped		Equipped	
	146				154				154				150

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.

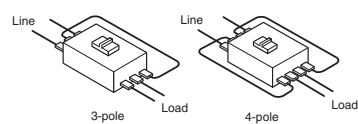
2 Detailed Specifications

Molded Case Circuit Breakers

1 Detailed Specifications

NF-S (Standard class)																		
Frame (A)		250			250			400			400			600		630		
Model		NF250-SGV			NF250-SEV			NF400-SW			NF400-SEW			NF630-SW				
Image																		
Rated current In (A)		125-160 140-200			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)																		
Number of poles		2 3 4			3 4			2 3 4			3 4			2 3 4		2 3 4		
Rated insulation voltage Ui (V)		690			690			690			690			690		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	8/8			8/8			10/10			10/10			10/10		
			500V	30/30			30/30			30/30			30/30			30/30		
			440V	36/36			36/36			42/42			42/42			42/42		
			415V	36/36			36/36			45/45			50/50			50/50		
			400V	36/36			36/36			45/45			50/50			50/50		
			380V	36/36			36/36			50/50			50/50			50/50		
			230V	85/85			85/85			85/85			85/85			85/85		
			200V	85/85			85/85			85/85			85/85			85/85		
			DC	250V	20/20 (300V) (*2)			-			40/40 (*2)			-			40/40 (*2)	
			Rated impulse withstand voltage Uimp (kV)		8			8			8			8			8	
Current		AC/DC compatible			AC			AC/DC compatible			AC			AC/DC compatible		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			6,000			6,000			6,000		6,000		
		With current (440VAC)			10,000			1,000			1,000			1,000		1,000		
Utilization category		A			A			A			B			A		A		
Rated short time with stand current low (kA) at 0.25s		-			-			-			5			-		-		
Pollution degree		3			3			3			3			3		3		
EMC environment condition (environment A or B)		N/A			A			N/A			A			N/A		N/A		
Overall dimensions (mm)			a	105	140	105	140	140	185	140	185	140	185	140	185	140	185	
	b	165	165	165	257	257	257	257	257	257	257	257	257	257	257	257		
	c	68	68	68	103	103	103	103	103	103	103	103	103	103	103	103		
	ca	92	92	92	155	155	155	155	155	155	155	155	155	155	155	155		
	Mass of front-face type (kg)	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	5.4	6.2	8.0	
Isolation and connecting accessories	Front connection (F)	Page	●			● Screw terminal			● Screw terminal			● Busbar terminal			● Busbar terminal			
	Solderless (BOX) terminal (SL)	94	●			●			●			●			●			
	Rear (B)	94	● Bar stud			● Bar stud			● Bar stud			● Bar stud			● Bar stud			
	Plug-in (PM)	94	●			●			●			●			●			
	Alarm switch (AL)	104	● (*3)			● (*3)			● (*3)			● (*3)			● (*3)			
	Auxiliary switch (AX)	104	● (*3)			● (*3)			● (*3)			● (*3)			● (*3)			
	Shunt trip (SHT)	104	● (*3)			● (*3)			● (*3)			● (*3)			● (*3)			
	Undervoltage trip (UVT)	104	● (*3)			● (*3)			● (*3)			● (*3)			● (*3)			
	With lead-wire terminal block (SLT)	116	●			●			●			●			●			
	Pre-alarm (PAL)	118	●			●			● (*5)			-			-			
External accessories	Enclosure	132	●			●			●			●			●			
	Closed (S)	132	●			●			●			●			●			
	Dustproof (I)	132	●			●			●			●			●			
	Waterproof (W)	132	●			●			●			●			●			
	Electrical operation device (NFM)	135	●			● (*6)			● (*6)			● (*6)			● (*6)			
	Mechanical interlock (MI) (*7)	131	●			●			●			●			●			
	Panel mounting Breaker mounting	131	●			●			●			●			●			
	Handle lock device	129	●			●			●			●			●			
	LC	129	●			●			●			●			●			
	HL	129	●			●			●			●			●			
HL-S	129	●			●			●			●			●				
External operating handle (F)	119	●			●			●			●			●				
(V)	119	●			●			●			●			●				
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	123	●			●			●			●			●				
Rear stud (B-ST)	96	●			●			●			●			●				
Plug-in (PM)	96	●			●			●			●			●				
IEC 35mm rail mounting adapters	139	-			-			-			-			-				
CE marking	Self-declaration	Self-declaration			Self-declaration			Self-declaration			Self-declaration			Self-declaration		Self-declaration		
CCC recognition	Recognition in process	Recognition in process			Recognition in process			Recognition in process			Recognition in process			Recognition in process		Recognition in process		
Marine use approval (NK, LR, ABS, GL)	☆ (LR, ABS, GL) -	☆ (LR, ABS, GL) -			☆ (LR, ABS, GL) -			☆ -			☆ -			☆ -		☆ -		
Automatic tripping device	Thermal-magnetic	Electronic (effective value detection)			Thermal-magnetic			Electronic (effective value detection)			Thermal-magnetic			Thermal-magnetic		Thermal-magnetic		
Trip button	Equipped	Equipped			Equipped			Equipped			Equipped			Equipped		Equipped		
Page of Characteristics and dimensions	154	156			158			160			164			164		164		

- 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-S (Standard class)

630 NF630-SEW		800 NF800-SEW		800 NF800-SDW	1000 NF1000-SEW		1250 NF1250-SEW		1200 NF1250-SDW		1600 NF1600-SEW		1600 NF1600-SDW
Adjustable 300 350 400 500 600 630		Adjustable 400 450 500 600 700 800		(700) 800	Adjustable 500 600 700 800 900 1000		Adjustable 600 700 800 1000 1200 1250		1000 1250		Adjustable 800 1000 1200 1400 1500 1600		1600
3 4		3 4		2	3 4		3 4		2		3 4		2
690		690		690	690		690		690		690		690
10/10		10/10		-	25/13		25/13		-		25/13		-
30/30		30/30		-	65/33		65/33		-		65/33		-
42/42		42/42		-	85/43		85/43		-		85/43		-
50/50		50/50		-	85/43		85/43		-		85/43		-
50/50		50/50		-	85/43		85/43		-		85/43		-
50/50		50/50		-	85/43		85/43		-		85/43		-
85/85		85/85		-	125/63		125/63		-		125/63		-
85/85		85/85		-	125/63		125/63		-		125/63		-
-		-		40/40	-		-		40/20		-		40/20
8		8		8	8		8		8		8		8
AC		AC		DC	AC		AC		DC		AC		DC
Compatible Possible		Compatible Possible		Compatible Possible	Compatible Possible		Compatible Possible		Compatible Possible		Compatible Possible		Compatible Possible
6,000 1,000		4,000 500		4,000 500	3,000 500		3,000 500		3,000 500		3,000 500		3,000 500
B		B		A	B		B		A		B		B
7.6		9.6		-	20 at 0.1		20 at 0.1		-		20 at 0.1		-
3		3		3	3		3		3		3		3
A		A		N/A	A		A		N/A		A		A
140 185		210 280		210	210 280		210 280		210		210 280		210
257		275		275	406		406		406		406		406
103		103		103	140		140		140		140		140
155		155		155	190		190		190		190		190
6.5 8.3		10.9 14.2		9.0	23.5 30.7		23.5 30.7		22.0		34.5 41.2		32.0
●Busbar terminal		●Busbar terminal		●Busbar terminal	●Busbar terminal ●Busbar terminal		●Busbar terminal ●Busbar terminal		●Busbar terminal		●Busbar terminal ●Busbar terminal		●Busbar terminal
●Bar stud ●Bar stud		●Bar stud ●Bar stud		●Bar stud	●Bar stud ●Bar stud		●Bar stud ●Bar stud		●Bar stud		●Bar stud ●Bar stud		●Bar stud
● (*3)		● (*3)		●	●		●		●		●		●
● (*3)		● (*3)		●	●		●		●		●		●
● (*3)		● (*3)		●	●		●		●		●		●
● (*5)		● (*5)		-	● (*5)		● (*5)		-		● (*5)		-
-		-		-	-		-		-		-		-
● (*6)		● (*6)		● (*6)	● (*6)		● (*6)		● (*6)		● (*6)		● (*6)
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
●		●		●	●		●		●		●		●
Self-declaration		Self-declaration		Self-declaration	Self-declaration		Self-declaration		Self-declaration		Self-declaration		Self-declaration
Recognition in process		Recognition in process		Recognition in process	Recognition in process		Recognition in process		-		Recognition in process		-
☆ -		☆ -		-	☆ -		☆ -		-		-		-
Electronic (effective value detection) Equipped		Electronic (effective value detection) Equipped		Thermal-magnetic Equipped	Electronic (effective value detection) Equipped		Electronic (effective value detection) Equipped		Thermal-magnetic Equipped		Electronic (effective value detection) Equipped		magnetic Equipped
166		168		170	174		174		176		178		180

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.

2 Detailed Specifications

Molded Case Circuit Breakers

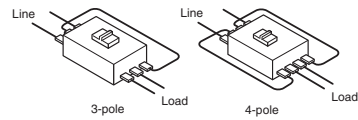
2

1 Detailed Specifications

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

Frame (A)	50	60	63	100	125	125	125	125	125	
Model	NF63-HV			NF125-HV		NF125-LGV	NF125-HGV	NF125-RGV		
Image										
Rated current In (A)	10 15 16 20 25	60	(63)	15 16 20 30 32 40	125	125	125	125	125	
Rated ambient temperature 40°C (45°C for marine use)	30 32 40 50			50 60 63 75 80 100						
Number of poles	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4	2 3	
Rated insulation voltage Ui (V)	690	690	690	690	690	690	690	690	690	
Rated short-circuit breaking capacities (kA) IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	2.5/2.5	2.5/2.5	2.5/2.5	10/8	10/8	8/8	10/8	-
	500V	7.5/7.5	7.5/7.5	7.5/7.5	30/23	30/23	36/36	50/38	-	-
	440V	10/8	10/8	10/8	50/38	50/38	50/50	65/65	125/125	-
	415V	10/8	10/8	10/8	50/38	50/38	50/50	70/70	150/150	-
	400V	10/8	10/8	10/8	50/38	50/38	50/50	75/75	150/150	-
	380V	10/8	10/8	10/8	50/38	50/38	50/50	75/75	150/150	-
	230V	25/19	25/19	25/19	100/75	100/75	90/90	100/100	150/150	-
	200V	25/19	25/19	25/19	100/75	100/75	90/90	100/100	150/150	-
DC	250V	7.5/7.5 (*5)	7.5/7.5 (*5)	7.5/7.5 (*5)	-	-	20/20 (300V) (*2)	40/40 (300V) (*2)	-	-
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8	8	8	8	8	
Current	AC/DC compatible (*1)	AC/DC compatible (*1)	AC/DC compatible (*1)	AC	AC	AC/DC compatible	AC/DC compatible	AC	AC	
Suitability for isolation	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	
Reverse connection	Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	
Number of operating cycles	Without current	15,000	15,000	15,000	25,000	25,000	50,000	50,000	50,000	
	With current (440VAC)	8,000	8,000	8,000	10,000	10,000	30,000	30,000	30,000	
Utilization category	A	A	A	A	A	A	A	A	A	
Pollution degree	3	3	3	3	3	3	3	3	3	
EMC environment condition (environment A or B)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Overall dimensions (mm)		a	50 75 100	50 75 100	50 75 100	90 120	90 120	105 140	105 140	105
		b	130	130	130	130	130	165	165	165
		c	68	68	68	68	68	68	68	68
		ca	90	90	90	90	90	92	92	92
Mass of front-face type (kg)	0.5 0.7 0.9	0.55 0.75 1.0	0.55 0.75 1.0	0.8 1.0 1.3	0.8 1.0 1.3	1.4 1.6 2.0	1.4 1.6 2.0	1.5 1.8	1.5 1.8	
Installation and connections	Front connection (F)	Page 94	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	
	Solderless (BOX) terminal (SL)		●	●	●	●	●	●	●	
	Rear (B)		●Round stud	●Round stud	●Round stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	
	Plug-in (PM)		●	●	●	●	●	●	●	
Cassette-type accessories	Alarm switch (AL)	104	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	
	Auxiliary switch (AX)		● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	
	Shunt trip (SHT)		● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	
	Undervoltage trip (UVT)		● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	
	With lead-wire terminal block (SLT)	116	●	●	●	●	●	●	●	
	Pre-alarm (PAL)	118	-	-	-	-	-	-	-	
External accessories	Enclosure	Closed (S)	132	●	●	●	●	●	●	
		Dustproof (I)		●	●	●	●	●	●	
		Waterproof (W)		●	●	●	●	●	●	
	Electrical operation device (NFM)	Panel mounting	131	●	●	●	●	●	●	
		Breaker mounting		●	●	●	●	●	●	
	Handle lock device	LC	129	●	●	●	●	●	●	
		HL		●	●	●	●	●	●	
		HL-S		●	●	●	●	●	●	
	External operating handle	(F)	119	●	●	●	●	●	●	
		(V)		●	●	●	●	●	●	
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	123	●	●	●	●	●	●	●		
Rear stud (B-ST)	96	●	●	●	●	●	●	●		
Plug-in (PM)		●	●	●	●	●	●	●		
IEC 35mm rail mounting adapters	139	●	●	●	●	●	●	●		
CE marking	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	
CCC recognition	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	
Marine use approval (NK, LR, ABS, GL)	☆ -	☆ -	☆ -	☆ -	☆ -	☆ (LR, ABS, GL) -	☆ (LR, ABS, GL) -	☆ (LR, ABS, GL) -	☆ (LR, ABS, GL) -	
Automatic tripping device	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	
Trip button	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	
Page of Characteristics and dimensions	144			146		154	154	154	154	

- 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 500 and 600VDC, respectively.
 - *3 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 - *4 Not isolation compatible, excluding 400 to 800A frame.
 - *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.



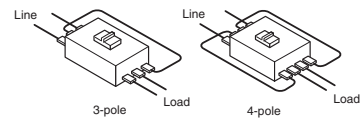
2 Detailed Specifications

Molded Case Circuit Breakers

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 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)		3 4		3 4			3 4			3 4			3		
Number of poles		3 4		3 4			3			3			3		
Rated insulation voltage Ui (V)		690		690			690			690			690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	690V	10/8	35/18			-			35/18			-	
			500V	50/38	50/50			70/35			50/50			70/35	
			440V	65/65	65/65			125/63			65/65			125/63	
			415V	70/70	70/70			125/63			70/70			125/63	
			400V	75/75	70/70			125/63			70/70			125/63	
			380V	75/75	70/70			125/63			70/70			125/63	
			230V	100/100	100/100			150/75			100/100			150/75	
			200V	100/100	100/100			150/75			100/100			150/75	
DC 250V		-		-			-			-			-		
Rated impulse withstand voltage Uimp (kV)		8		8			8			8			8		
Current		AC		AC			AC			AC			AC		
Suitability for isolation		Compatible		Compatible			Compatible			Compatible			Compatible		
Reverse connection		Possible		Possible			Possible			Possible			Possible		
Number of operating cycles		Without current 10,000		6,000			6,000			6,000			4,000		
Utilization category		A		B			B			B			B		
Rated short time with stand current Icu (kA) at 0.25s		-		5			5			7.6			9.6		
Pollution degree		3		3			3			3			3		
EMC environment condition (environment A or B)		A		A			A			A			A		
Overall dimensions (mm)		a	105	140	140	185	140	140	185	140	210	280	210		
		b	165		257			257			275				
		c	68		103			103			103				
		ca	92		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 accessories	Front connection (F)	Page	●Screw terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal			
	Solderless (BOX) terminal (SL)	94	●	●	●	●	●	●	●	●	●	●			
	Rear (B)	94	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud			
	Plug-in (PM)	94	●	●	●	●	●	●	●	●	●	●			
	Alarm switch (AL)	104	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)			
	Auxiliary switch (AX)	104	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)			
	Shunt trip (SHT)	104	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)	●(*1)			
	Undervoltage trip (UVT)	104	●(*1)	●	●	●	●	●	●	●	●	●			
	With lead-wire terminal block (SLT)	116	●	●	●	●	●	●	●	●	●	●			
	Pre-alarm (PAL)	118	●	●(*2)	●(*2)	●(*2)	●(*2)	●(*2)	●(*2)	●(*2)	●(*2)	●(*2)			
External accessories	Enclosure	132	●	●	●	●	●	●	●	●	●	●			
	Closed (S)	132	-	-	-	-	-	-	-	-	-	-			
	Dustproof (I)	132	●	●	●	●	●	●	●	●	●	●			
	Waterproof (W)	132	●	●	●	●	●	●	●	●	●	●			
	Electrical operation device (NFM)	135	●	●(*3)	●(*3)	●(*3)	●(*3)	●(*3)	●(*3)	●(*3)	●(*3)	●(*3)			
	Mechanical interlock (MI) (*4)	131	●	●	●	●	●	●	●	●	●	●			
	Panel mounting Breaker mounting	131	●	●	●	●	●	●	●	●	●	●			
	LC	129	●	●	●	●	●	●	●	●	●	●			
	Handle lock device	129	●	●	●	●	●	●	●	●	●	●			
	HL	129	●	●	●	●	●	●	●	●	●	●			
HL-S	129	●	●	●	●	●	●	●	●	●	●				
External operating handle (F)	119	●	●	●	●	●	●	●	●	●	●				
(V)	119	●	●	●	●	●	●	●	●	●	●				
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	123	●	●	●	●	●	●	●	●	●	●				
Rear stud (B-ST)	96	●	●	●	●	●	●	●	●	●	●				
Plug-in (PM)	96	●	●	●	●	●	●	●	●	●	●				
IEC 35mm rail mounting adapters	139	●	●	●	●	●	●	●	●	●	●				
CE marking	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration				
CCC recognition	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process				
Marine use approval (NK, LR, ABS, GL)	☆ (LR, ABS, GL)	-	☆	-	☆	-	☆	-	☆	-	☆				
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)	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	Equipped	Equipped	Equipped	Equipped				
Page of Characteristics and dimensions	156	160	160	166	166	166	168	168							

- 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.








2 Detailed Specifications 2 Earth Leakage Circuit Breakers

NV-C (Economy class) Harmonic Surge Ready

Frame (A)	50	60	63	100	125
Model	NV63-CV			NV125-CV	
Image					
Rated current In (A) Rated ambient temperature 40°C	(5) (10) (15) 16 20 25 (30) 32 40 50	(60)	63	(60) 63 (75) 80 100	125
Number of poles	2 3	2 3	2 3	3	3
Phase line (*1)	1φ2W 3φ3W, 1φ3W, 1φ2W	1φ2W 3φ3W, 1φ3W, 1φ2W	1φ2W 3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W
Rated operational voltage Ue (V) (*2) AC	100-240	100-440	100-240 100-440	100-440	100-440
Rated current sensitivity (mA)	30	30, 100/200/500 selectable	30	30, 100/200/500 selectable	30, 100/200/500 selectable
Time-delay type	High-speed				
Max. operating time (s)	at IΔn 0.1 at 5IΔn 0.04	0.1 0.04	0.1 0.04	0.1 0.04	0.1 0.04
Rated current sensitivity (mA)	-	-	-	(100/200/500 selectable)	(100/200/500 selectable)
Max. operating time (s) (*3)	-	-	-	(0.45/1.0/2.0 selectable)	(0.45/1.0/2.0 selectable)
Internal non-operating (s) (or more)	-	-	-	(0.1/0.5/1.0)	(0.1/0.5/1.0)
Earth leakage indication system	Mechanical type (button)		Mechanical type (button)	Mechanical type (button)	Mechanical type (button)
Rated short-circuit breaking capacities (kA)	AC 440V - 415V - 400V - 230V 7.5/7.5 200V 7.5/7.5 100V 7.5/7.5	2.5/2.5 2.5/2.5 5/5 7.5/7.5 7.5/7.5 7.5/7.5	- - - 7.5/7.5 7.5/7.5 7.5/7.5	10/5 10/5 10/5 30/15 30/15 30/15	10/5 10/5 10/5 30/15 30/15 30/15
Rated impulse withstand voltage Uimp (kV)	6	6	6	6	6
Current	AC	AC	AC	AC	AC
Suitability for isolation	Compatible	Compatible	Compatible	Compatible	Compatible
Reverse connection (below 230VAC)	Possible	Possible	Possible	Possible	Possible
Number of operating cycles	Without current 10,000 With current 6,000	Without current 10,000 With current 6,000	Without current 10,000 With current 6,000	Without current 10,000 With current 6,000	Without current 10,000 With current 6,000
Utilization category	A	A	A	A	A
Pollution degree	2	2	2	2	2
EMC environment condition (environment A or B)	A	A	A	A	A
Overall dimensions (mm)		a 75 b 130 c 68 ca 90	a 75 b 130 c 68 ca 90	a 75 b 130 c 68 ca 90	a 75 b 130 c 68 ca 90
Mass of front-face type (kg)	0.7 0.75	0.7 0.75	0.7 0.75	1.0	1.0
Insulation and connections	Front connection (F) Page 94 Solderless (BOX) terminal (SL) - Rear (B) ●Round stud Plug-in (PM) -	●Screw terminal - ●Round stud	●Screw terminal - ●Round stud	●Screw terminal - ●Round stud	●Screw terminal - ●Bar stud
Cassette-type accessories	Alarm switch (AL) ●(*4) Auxiliary switch (AX) ●(*4) Shunt trip (SHT) ●(*4) Undervoltage trip (UVT) ●(*4) Earth leakage alarm switch (EAL) - With lead-wire terminal block (SLT) 116 ● Test button module (TBM) 117 ●(*5)	●(*4) ●(*4) ●(*4) ●(*4) - ● ●(*5)	●(*4) ●(*4) ●(*4) ●(*4) - ● ●(*5)	●(*4) ●(*4) ●(*4) ●(*4) - ● ●(*5)	●(*4) ●(*4) ●(*4) ●(*4) - ● ●(*5)
External accessories	Enclosure Closed (S) 132 - Dustproof (I) - Waterproof (W) - Electrical operation device (NFM) 135 - Mechanical interlock (MI) (*7) Panel mounting 131 ● Breaker mounting ● Handle lock device LC 129 ● HL ● HL-S ● External operating handle (F) 119 ● (V) ● Terminal cover (TCL, TC-S, TTC, BTC, PTC) 123 ● Rear stud (B-ST) 96 ● Plug-in (PM) - IEC 35mm rail mounting adapters 139 ●	- - - - ● ● ● ● ● ● ● ● ● ● ●	- - - - ● ● ● ● ● ● ● ● ● ● ●	- - - - ● ● ● ● ● ● ● ● ● ● ●	- - - - ● ● ● ● ● ● ● ● ● ● ●
CE marking	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration
CCC recognition	- Recognition in process	- Recognition in process	- Recognition in process	- Recognition in process	- Recognition in process
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	182			184	

- Notes: *1 If using a 3-pole earth leakage circuit breaker as a 1-pole 2-phase device, connect the left and right poles and not the central pole. When wiring to single-phase 3-wire, connect the neutral line to the central pole.
 *2 In case of time delay type, rated voltage is 200-440VAC.
 *3 When the operating time are 0.45, 1.0 and 2.0 seconds, the Earth Leakage circuit breaker operates between 0.15 and 0.45 seconds, between 0.6 and 1.0 seconds and between 1.2 and 2.0 seconds respectively.
 *4 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 *5 Standard type is SLT equipped.
 *6 Place an order of other models in conjunction with the circuit breaker.
 *7 Not isolation compatible, excluding 400 to 630A frame.
 *8 AC100V does not acquire the CCC certification.

NV-C (Economy class) Harmonic Surge Ready

225		250		400		600		630	
NV250-CV		NV250-CV		NV400-CW		NV400-CW		NV630-CW	
									
125 150 175 200 225		250		250 300 350 400		500 600		(630)	
3		3		3		3		3	
3φ3W, 1φ3W, 1φ2W		3φ3W, 1φ3W, 1φ2W		3φ3W, 1φ3W, 1φ2W		3φ3W, 1φ3W, 1φ2W		3φ3W, 1φ3W, 1φ2W	
100-440		100-440		100-440		200-440		200-440	
30,100/200/500 selectable		30,100/200/500 selectable		(30),100/200/500 selectable		-		-	
0.1		0.1		0.1		-		-	
0.04		0.04		0.04		-		-	
(100/200/500 selectable)		(100/200/500 selectable)		(100/200/500 selectable)		(100/200/500 selectable)		(100/200/500 selectable)	
(0.45/1.0/2.0 selectable)		(0.45/1.0/2.0 selectable)		(0.45/1.0/2.0 selectable)		(0.45/1.0/2.0 selectable)		(0.45/1.0/2.0 selectable)	
(0.1/0.5/1.0)		(0.1/0.5/1.0)		(0.1/0.5/1.0)		(0.1/0.5/1.0)		(0.1/0.5/1.0)	
Mechanical type (button)		Mechanical type (button)		Mechanical type (button)		Mechanical type (button)		Mechanical type (button)	
15/12		15/12		25/13		36/18		36/18	
25/19		25/19		36/18		36/18		36/18	
25/19		25/19		36/18		36/18		36/18	
36/27		36/27		50/25		50/25		50/25	
36/27		36/27		50/25		50/25		50/25	
36/27		36/27		50/25		50/25		50/25	
6		6		8		8		8	
AC		AC		AC		AC		AC	
Compatible		Compatible		Compatible		Compatible		Compatible	
Possible		Possible		Possible		Possible		Possible	
8,000		8,000		6,000		6,000		6,000	
4,000		4,000		1,000		1,000		1,000	
A		A		A		A		A	
2		2		3		3		3	
A		A		A		A		A	
105		105		140		140		140	
165		165		257		257		257	
68		68		103		103		103	
92		92		134		155		155	
1.7		1.7		6.1		6.9		6.9	
●Screw terminal		●Screw terminal		●Busbar terminal		●Busbar terminal		●Busbar terminal	
-		-		-		-		-	
●Bar stud		●Bar stud		●Bar stud		●Bar stud		●Bar stud	
-		-		-		-		-	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●(*4)		●(*4)		●(*4)	
●(*4)		●(*4)		●		●		●	
●		●		●		●		●	
●(*5)		●(*5)		●(*5)		●(*5)		●(*5)	
-		-		-		-		-	
-		-		-		-		-	
●		●		●(*6)		●(*6)		●(*6)	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
-		-		-		-		-	
TUV approval		TUV approval		Self-declaration		Self-declaration		Self-declaration	
Recognition in process		Recognition in process		Recognition in process		Recognition in process		Recognition in process	
-		-		-		-		-	
Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped	
186		186		190		194		194	

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.

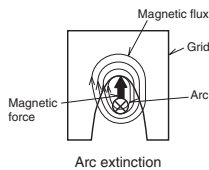
Rated operational voltage	Applicable circuit voltage	Available voltage range
100-240V	100/110/200/220/230/240V	85-264V
100-440V	100/110/200/220/240/254/265/380/400/415/440V	85-484V
200-440V	200/220/240/254/265/380/400/415/440V	160-484V

4 Selection 1 Construction and Operation

1. Construction of MCCB

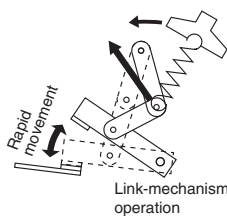
●Arc-Extinguishing Device

Mitsubishi MCCBs feature excellent arc-extinguishing performance by virtue of the optimum combination of grid gap, shape, and material.



●Switching Mechanism

The contacts open and close rapidly, regardless of the moving speed of the handle, minimizing contact wear and ensuring safety.

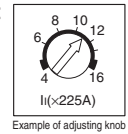


●Trip Button (Push to Trip)

Enables tripping mechanically from outside, for confirming the operation of the accessory switches and the manual resetting function.

●Adjustable Instantaneous Tripping Current

On electronic molded case circuit breakers, the instantaneous tripping current can be adjusted only by turning the knob. Therefore, optimum characteristics for load can be obtained.



●Overcurrent Tripping Device

Detects overcurrent and trips the circuit breaker.

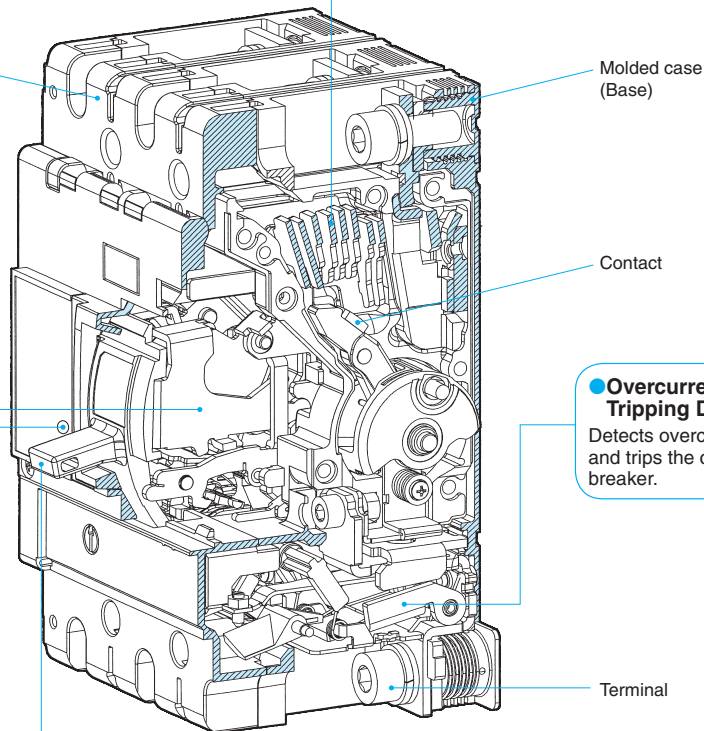


Fig. 4.1 Construction

●Handle

- 1. Trip indication**
The automatically tripped condition is indicated by the handle in the center position between ON and OFF, the yellow (or white) line cannot be seen in this position.
- 2. Resetting**
Resetting after tripping is performed by first moving the handle to the OFF position to engage the mechanism, then returning the handle to ON to reclose the circuit.
- 3. Trip-Free**
Even if the handle is held at ON, the breaker will trip if an overcurrent flows.



Handle indication

4. Contact On Mechanism

Even in the worst case in which welding occurs owing to an overcurrent, the breaker will trip and the handle will maintain to ON, indicating the energizing state.

4-pole Breaker

- The 4-pole breaker is designed for 3-phase 4-wire circuits. A neutral pole without an overcurrent tripping element is provided at the right end. The construction and operation are the same as class S, H and U breakers. (Electronic molded case circuit breakers with frame size of 1600A or less have overcurrent tripping elements on the neutral poles.)
- Since the four poles are simultaneously opened and closed, the user will not fail in turning on the neutral pole or carelessly open the pole. (The standard construction is designed to close the neutral pole earlier and open it later than the voltage pole except for the construction with frame size of 2000A.)

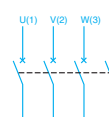


Fig. 4.2 4-pole Breaker (NF250-SV)

● Automatic Tripping Devices

Thermal-Magnetic Type

(NF32-SV, NF63-CV/SV/HV, NF125-CV/SV/HV, NF250-CV/SV/HV)
(NF400-CW/SW, NF630-CW/SW, NF800-SDW, etc.)

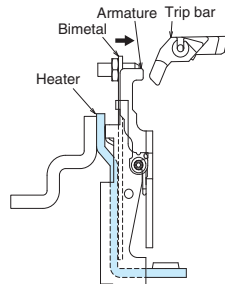


Fig. 4.3

1. Time-Delay Operation
An overcurrent heats and warps the bimetal to actuate the trip bar.
2. Instantaneous Operation
If the overcurrent is excessive, the armature is attracted and the trip bar actuated.

Thermal-Magnetic Type (NF1250-SDW)

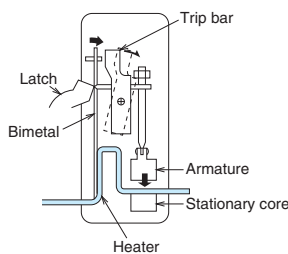


Fig. 4.4

1. Time-Delay Operation
An overcurrent heats and warps the bimetal to actuate the trip bar.
2. Instantaneous Operation
If the overcurrent is excessive, magnetization of the stationary core is strong enough to attract the armature and actuate the trip bar.

Hydraulic-Magnetic Type (NF30-CS etc.)

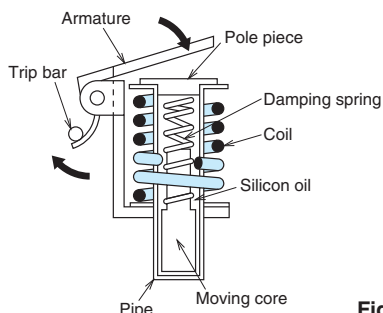


Fig. 4.5

1. Time-Delay Operation
At an overcurrent flow, the magnetic force of the coil overcomes the spring, the core closes to the pole piece, attracts the armature, and actuates the trip bar.
The delay is obtained by the viscosity of silicon oil.
2. Instantaneous Operation
If the overcurrent is excessive, the armature is instantly attracted, without the influence of the moving core.

Principle of Electronic Trip Relay (ETR) Operation

(NF125-SEV/HEV, NF250-SEV/HEV, etc.) (NF400-SEW-NF800-CEW)
(NF1000-SEW-NF1600-SEW, etc.)

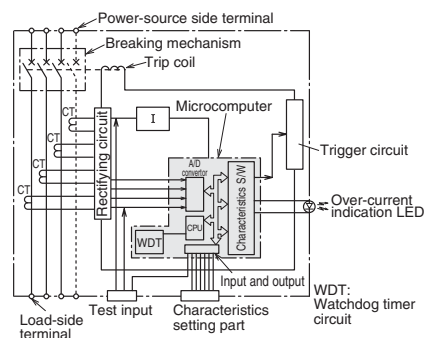


Fig. 4.6.1

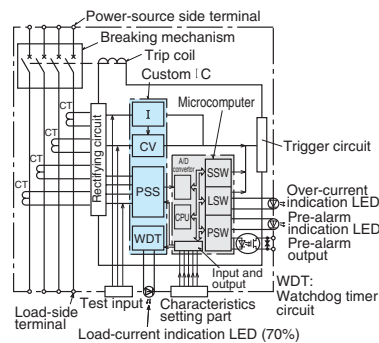


Fig. 4.6.2

1. The current flowing in each phase is monitored by a current transformer (CT).
2. Each phase of the transformed current undergoes full-phase rectification in the rectifier circuit.
3. After rectification, each of the currents are converted by a peak-conversion and an effective-value conversion circuit.
4. The largest phase is selected from the converted currents.
5. Each time-delay circuit generates a time delay corresponding to the largest phase.
6. The trigger circuit outputs a trigger signal.
7. The trip coil is excited, operating the switching mechanism.

Number of tripping devices


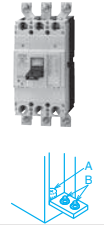
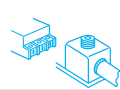
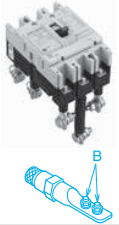






Descriptions (e.g. 2P1E and 2P0E) are not given in the number of poles fields of some models. For these models, the same number of overcurrent tripping devices as the number of poles is provided in the circuit breakers.

2 poles: 2P2E, 3 poles: 3P3E, 4 poles: 4P4E or 4P3E

(Some 4-pole models do not have overcurrent tripping devices for the neutral poles.)

1. Connection Types

Table 5-1 Connection

Connection type (Code address)	Front connection (F)			Rear (B)			
	Screw terminal (AMP-N)	Busbar terminal (BAR)	Solderless (BOX) terminal (SL)	Bar stud (B-ST)	Round stud (B-ST)		
Image	 Please refer to page 98.						
MCCB	NF30-CS	●	-	-	●		
	NF32-SV • NF63-CV • NF63-SV • NF63-HV	●	●	-	●		
	NF125-CV • NF125-SEV • NF125-SV • NF125-SGV • NF125-LGV • NF125-HEV • NF125-HV • NF125-HGV	●	●	-	●		
	NF160-SGV • NF160-LGV • NF160-HGV • NF250-CV • NF250-SV • NF250-HV • NF250-SEV • NF250-HEV • NF250-SGV • NF250-LGV • NF250-HGV	●	●	-	●		
	NF400-SW • NF400-SEW • NF400-HEW • NF400-REW • NF400-CW	-	●	-	●		
	NF630-SW • NF630-SEW • NF630-HEW • NF630-REW • NF630-CW	-	●	-	●		
	NF800-SEW • NF800-HEW • NF800-REW • NF800-SDW • NF800-CEW	-	●	-	●		
	NF1000-SEW • NF1250-SEW • NF1600-SEW	-	●	-	●		
	NF125-UV	●	●	-	●		
	NF125-RGV • NF250-RGV • NF250-UV	●	●	-	●		
	NF400-UEW	-	●	-	●		
	NF800-UEW	-	●	-	●		
	NF50-SVFU	●	●	-	-		
	NF100-CVFU	●	●	●	-		
	NF125-SVU	●	●	●	-		
	NF125-HVU	●	●	●	-		
	NF250-SVU	●	●	●	-		
	NF250-HVU	●	●	●	-		
	NF225-CWU	●	●	-	-		
	NF-SKW • NF-SLW	-	●	●	-		
BH	BH-K • BH-C1 • BH-C2 • BV-C1 • BV-C2	●	-	-	-		
	BH-P	● (Only load side)	-	-	-		
ELCB	NV32-SV • NV63-CV • NV63-SV • NV63-HV	●	●	-	●		
	NV125-CV • NV125-SV • NV125-HV • NV125-SEV • NV125-HEV	●	●	-	●		
	NV250-CV/SV/HV • NV250-SEV/HEV	●	●	-	●		
	NV400-SW • NV400-SEW • NV400-HEW • NV400-REW • NV400-CW	-	●	-	●		
	NV630-SW • NV630-SEW • NV630-HEW • NV630-CW	-	●	-	●		
	NV800-SEW • NV800-HEW	-	●	-	●		
Shape	Kind of terminal screw (A) (Circuit breakers having frame size of 1000A and more are not provided with terminal screws (A).)						
					● With insulating base (tube) for installation of metallic board ● The bar stud installation position can be turned 90° on all models (except NF800-UEW, NF1200-UR and breakers having frame size of 2500A and more). The current-carrying capacity of a vertically installed bus bar is larger than that of a horizontally installed bus bar even if the bus bars have the same dimensions.		
Screw size	M5	M8	M8 2×M8	M10			
Remarks	NF32-SV 63-CV 63-SV 63-HV 50-SVFU(*3)	BH-K BH-P	NV32-SV 63-CV 63-SV 63-HV	NF 63-CV(60, 63A) 63-SV(60, 63A) 63-HV(60, 63A) 125-CV 125-SV 125-HV 125-SEV 125-HEV 100-CVFU 125-SVU 125-HVU 125-UV	NV 63-CV(60, 63A) 63-SV(60, 63A) 63-HV(60, 63A) 125-CV 125-SV 125-HV 125-SEV 125-HEV 250-CV 250-SV 250-HV 250-SEV 250-SGV 250-LGV 250-HGV 250-RGV 250-UV 225-CWU 250-SVU 250-HVU	NF 400-UEW (4P) 800-CEW 800-SEW 800-HEW 800-REW 800-UEW 800-SDW	NF 400-CW 400-SW 400-SEW 400-HEW 400-REW 400-UEW(3P) 630-CW 630-SW 630-SEW 630-HEW 630-REW
	Type	In case of clamp connection (*3) 			NV 125-SEV 125-HEV 250-CV 250-SV 250-HV 250-SEV 250-HVU	NV 400-CW 400-SW 400-SEW 400-HEW 400-REW 630-CW 630-SW 630-SEW 630-HEW	

Notes *1 For 50A or less, a pan-head screw M5 with clamp is provided.
*2 A pan-head screw M5 is provided on the power supply side of BH-C1 and C2 and BV-C1 and C2.
*3 It is impossible to directly connect the wires of 40- and 50-A, NF/NV 50-SVFU.


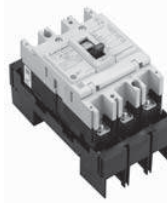
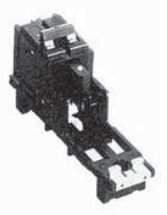
	Plug-in (PM)		Plug-in type for distribution board For distribution board for electric lamps (BPA)
	Bar stud (PM)	Screw terminal (PM)	
			
	-	-	-
	-	●	-
	-	●	-
	●	-	-
	●	-	-
	●	-	-
	(Except for NF1600-SEW)	-	-
	-	●(Except for 4P)	-
	●(Except for 4P)	-	-
	●	-	-
	(Except for NF800-UEW)	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	●	●
	-	●	-
	●	-	-
	●	-	-
	-	-	-
	The circuit breaker can be connected only by pushing it onto the preliminarily wired terminal block. Install it tightening the supplied screws through the mounting holes.		Mounting base for distribution board for electric lamps. For the external dimensions, refer to page 139.

Table 5-2 List of terminal screws (B)

Model		Connection type	Front	Rear	Plug-in
MCCB	H • S • C	NF400-CW • NF400-SW • NF400-SEW • NF400-HEW • NF400-REW • NF630-CW • NF630-SW • NF630-SEW	M12 bolt		
		NF630-HEW • NF630-REW • NF800-CEW • NF800-SEW • NF800-HEW • NF800-REW • NF800-SDW • NF-SKW • NF-SLW	M12 bolt		
		NF1000-SEW • NF1250-SEW	M12 bolt		
		NF1600-SEW	M10 bolt		—
U		NF400-UEW	M12 bolt		
		NF800-UEW	M12 bolt		—
ELOCB	E • W • C	NV400-SW • NV400-SEW • NV400-HEW • NV400-REW • NV400-CW • NV630-SW • NV630-SEW • NV630-HEW • NV630-CW • NV-SKW	M12 bolt		
		NV800-SEW • NV800-HEW	M12 bolt		

2. Connecting Parts

For the connection shown in the table on the previous page, the following parts are available as connecting parts.

Table 5-3 Studs on rear surface (B-ST)

Type name	Number of poles	Applicable models		Set of order	Stud shape and major included parts	Remarks
		MCCB	ELCB			
ST-05SV2	2	NF32-SV, NF63-CV, NF63-SV	NV32-SV, NV63-CV	sets	★Round studs ●Round studs (with insulating tube) (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Bolts and nuts	One set includes the parts for one unit. Please place an order for the number of circuit breakers.
ST-05SV3	3	NF63-HV	NV63-SV, NV63-HV			
ST-05SV4	4	NF63-SV, NF63-HV	—			
ST-1SV2	2	—	—	sets	★Bar studs ●Bar studs (with insulating tube) (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Bolts and nuts	
ST-1SV3	3	NF125-CV, NF125-SV	NV125-CV, NV125-SV			
ST-1SV4	4	NF125-HV(3, 4P)	NV125-HV			
ST-1HV2	2	NF125-HV(2P)	—	sets	★Bar studs ●Bar studs (with insulating tube) (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Bolts and nuts	
ST-2SV2	2	NF125-SEV, NF125-HEV, NF125-RGV	—			
ST-2SV3	3	NF125-SGV, NF125-LGV, NF125-HGV NF160-SGV, NF160-LGV, NF160-HGV NF250-SGV, NF250-LGV, NF250-HGV	NV125-SEV, NV125HEV NV250-CV, NV250-SV NV250-HV, NV250-SEV NV250-HEV			
ST-2SV4	4	NF250-CV, NF250-SV NF250-LGV/HGV, NF250-HV NF250-SEV, NF250-RGV NF250-HEV, NF125-SGV/HGV NF125-LGV, NF160-SGV NF160-LGV/HGV	—	sets	★Bar studs ●Bar studs (with insulating tube) (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Bolts and nuts	
ST-4SW2	2	—	—			
ST-4SW3	3	NF400-CW, NF400-SW NF400-SEW, NF400-HEW	NV400-CW, NV400-SW NV400-SEW			
ST-4SW4	4	NF400-REW	NV400-HEW NV400-REW	sets	★Bar studs ●Insulating bases (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Bar studs (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Mounting screws, bolts and nuts	
ST-6SW2	2	NF630-CW, NF630-SW	—			
ST-6SW3	3	NF630-SEW, NF630-HEW	NV630-CW, NV630-SW			
ST-6SW4	4	NF630-REW	NV630-SEW, NV630-HEW	sets	★Bar studs ●Insulating base (2 pcs) ●Bar studs (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Mounting screws, bolts and nuts	
ST-8SW2	2	—	—			
ST-8SW3	3	NF800-SDW, NF800-CEW NF800-SEW, NF800-HEW	NV800-SEW, NV800-HEW			
ST-8SW4	4	NF800-REW	—	sets	★Bar studs ●Insulating base (2 pcs) ●Bar studs (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs) ●Mounting screws, bolts and nuts	

Table 5-4 Plug-in type terminal blocks (PM)

Type name	Number of poles	Applicable models	Set of order	Major included parts
PM-05SV2	2	NF32-SV, NF63-CV, NF63-SV, NF63-HV	sets	Plug-in type terminal block (1 pc)
PM-05SV3	3	NV32-SV, NV63-CV (3P), NV63-SV (3P), NV63-HV		
PM-05SV4	4	NF63-SV, NF63-HV		
PM-NV05SV2	2	NV63-CV, NV63-SV	sets	Plug-in type terminal block (1 pc) (2-pole: 4 pcs)
PM-1SV2	2	NF125-CV, NF125-SV	sets	Plug-in type terminal block (1 pc) Tulip terminals (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs)
PM-1SV3	3	NF125-CV, NF125-SV, NF125-HV, NV125-CV, NV125-SV		
PM-1SV4	4	NF125-SV, NF125-HV, NV125-SV, NV125-HV		
PM-1HV2	2	NF125-HV	sets	Plug-in type terminal block (1 pc) Plug-in type barriers (2-pole: 2 pcs, 3-pole: 4 pcs, 4-pole: 6 pcs) Tulip terminals (2-pole: 4 pcs, 3-pole: 6 pcs, 4-pole: 8 pcs)
PM-2SV2	2	NF125-SEV, NF125-HEV, NF250-CV, NF250-SV, NF250-HV NF250-SEV, NF250-HEV, NF125-SGV, NF125-LGV		
PM-2SV3	3	NF125-HGV, NF160-SGV, NF160-LGV, NF160-HGV NF250-SGV, NF250-LGV, NF250-HGV, NV125-SEV NV125-HEV, NV250-CV, NV250-SV, NV250-HV, NV250-SEV NV250-HEV, NF250-LGV/HGV, NF250-RGV, NF125-SGV/HGV NF125-LGV, NF160-SGV, NF160-LGV/HGV		
PM-4SW3	3	NF400-CW, NF400-SW, NF400-SEW, NF400-HEW, NF400-REW NV400-CW, NV400-SW, NV400-SEW, NV400-HEW, NV400-REW	sets	Plug-in type terminal block (2 pcs) Plug-in type barriers (4 pcs) Tulip terminals (3-pole: 6 pcs)
PM-6SW3	3	NF630-CW, NF630-SW, NF630-SEW, NF630-HEW, NF630-REW NV630-CW, NV630-SW, NV630-SEW, NV630-HEW	sets	Plug-in type terminal block (2 pcs) Tulip terminals (3-pole: 6 pcs)
PM-8SW3	3	NF800-CEW, NF800-SEW, NF800-HEW, NF800-REW NV800-SEW, NV800-HEW		
PM-10SW3	3	NF1000-SEW, NF1250-SEW		

Note *1 In addition to the circuit breakers shown above, 4-pole and 2-pole circuit breakers are available. We are ready to manufacture such circuit breakers to order. Please consult us.

3. Standard Tightening Torque

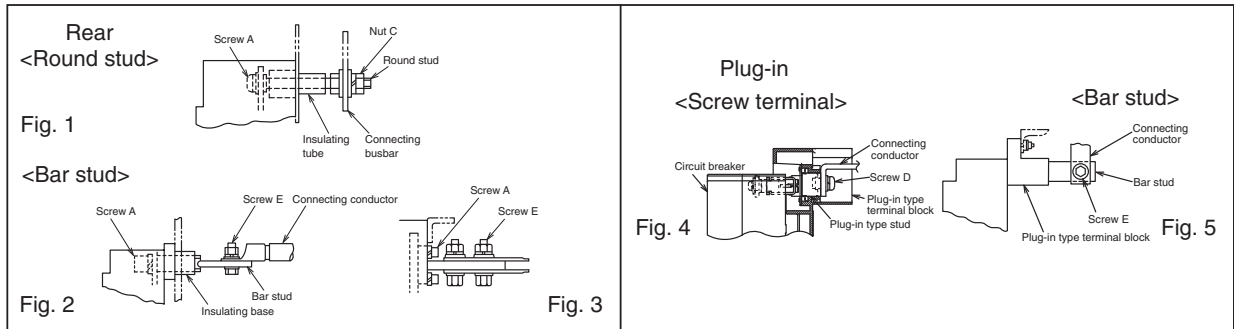


Table 5-5 Standard tightening torque (*1)

Model	Connection type	Tightening torque N·m											
		Rear						Plug-in					
		Round stud				Bar stud		Screw terminal			Bar stud		
		Fig.1		Fig.2, Fig.3		Fig.4		Fig.5					
MCCB	ELCB	Screw A		Nut C		Screw A		Screw E		Screw D		Screw E	
		Size	Tightening torque	Size	Tightening torque	Size	Tightening torque	Size	Tightening torque	Size	Tightening torque	Size	Tightening torque
NF30-CS	-	M4x0.7	1	M6	2	-	-	-	-	-	-	-	-
NF32-SV, NF63-CV NF63-SV, NF63-HV	NV32-SV, NV63-CV NV63-SV, NV63-HV	M4x0.7	1	M6	2	-	-	-	-	M6	3	-	-
NF125-CV, NF125-SV NF125-HV, NF125-UV	NV125-CV, NV125-SV NV125-HV	-	-	-	-	M6	4	M8	12	M8	6	-	-
NF125-SEV, NF125-HEV, NF125-RGV NF250-CV, NF250-SV, NF250-HV, NF250-SEV NF250-HEV, NF250-RGV, NF250-UV NF250-LGV/HGV, NF250-RGV, NF125-SGV/HGV NF125-LGV, NF160-SGV, NF160-LGV/HGV NF125-SGV, NF125-LGV, NF125-HGV NF160-SGV, NF160-LGV, NF160-HGV NF250-SGV, NF250-LGV, NF250-HGV	NV125-SEV, NV125-HEV NV250-CV, NV250-SV NV250-HV, NV250-SEV NV250-HEV	-	-	-	-	M6	10	M8	12	-	-	M8	12
NF400-CW, NF400-SW, NF400-SEW NF400-HEW, NF400-REW NF400-UEW (3P) NF400-UEW (4P)	NV400-CW, NV400-SW NV400-SEW, NV400-HEW NV400-REW	-	-	-	-	M8	20	M12	45	-	-	M12	45
NF630-CW, NF630-SW, NF630-SEW NF630-HEW, NF630-REW	NV630-CW, NV630-SW NV630-SEW NV630-HEW	-	-	-	-	M8	20	M12	45	-	-	M12	45
NF800-CEW, NF800-SDW NF800-SEW, NF800-HEW, NF800-REW NF800-UEW (*2)	NV800-SEW NV800-HEW	-	-	-	-	M10	30	2-M12	45	-	-	2-M12	45
NF1000-SEW	-	-	-	-	-	4-M8	12	2-M12	45	-	-	2-M12	45
NF1250-SEW	-	-	-	-	-	4-M8	12	4-M10	25	-	-	-	-

Notes *1 The appropriate range of tightening torque is $\pm 20\%$ of each value (standard tightening torque) shown in the above table. Please refer to the supplied assembly manual and instruction manual for more information.
*2 The plug-in type is not available.

4. Crimp Terminal Type

As the terminals in , commercially available crimp terminals can be used. Please purchase the terminals at an electric material store.

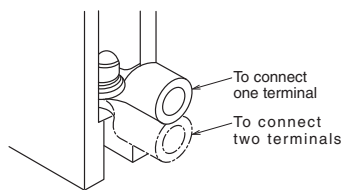
For others, the crimp terminals for Mitsubishi MCCB must be used. Place an order with us. For the connection types shown in Fig. a and Fig. b, only crimp terminals will be delivered.

Table 5-6 List of applicable crimp terminals

Frame (A)	Nominal sectional area mm ²		2	5.5	8	14	22
	Allowable current (600 V, IV wire at 30°C, not in conduit) (*4)		27A	49A	61A	88A	115A
Model	Size of mm ²		1.04 to 2.63	2.63 to 6.64	6.64 to 10.52	10.52 to 16.78	16.78 to 26.66
	MCCB	ELCB					
30 50 100	BH-K, BH-P BH-K100, BH-P100	— —	R-2-5	R-5.5-5	R-8-5	R-14-5	BH-22 (L330T459-23)
30 32 50 60 63	NF30-CS, NF32-SV, NF63-CV*, NF63-SV* NF63-HV* *50A or below NF63-CV, NF63-SV, NF63-HV 60, 63A	NV32-SV, NV63-CV*, NV63-SV* NV63-HV* *50A or below NV63-CV, NV63-SV, NV63-HV 60, 63A	R-2-5 *(R-2-6)	R-5.5-5 *(R-5.5-6)	R-8-5	R-14-5	JST22-S5 BH-22 (L330T459-23)
125	— NF125-CV, NF125-SV, NF125-HV, NF125-UV 60A or more	— NV125-CV, NV125-SV, NV125-HV 60A or more	R-2-5 (R-2-6)	R-5.5-5 (R-5.5-6)	R-8-5	R-14-5	JST22-S5 (L330T459-23)
125 225 250	NF125-SEV, NF125-HEV, NF125-RGV NF250-CV, NF250-SV, NF250-HV, NF250-UV NF250-SEV, NF250-HEV, NF250-RGV NF125-SGV, NF160-SGV, NF250-SGV NF125-LGV, NF160-LGV, NF250-LGV NF125-HGV, NF160-HGV, NF250-HGV	NV125-SEV, NV125-HEV NV250-CV, NV250-SV, NV250-HV NV250-SEV, NV250-HEV				R-14-8	R-22-8
400 600 630	NF400-CW, NF400-SW, NF400-SEW NF400-HEW, NF400-REW, NF400-UW NF630-CW, NF630-SW, NF630-SEW NF630-HEW, NF630-REW	NV400-CW, NV400-SW NV400-SEW, NV400-HEW NV400-REW, NV630-CW NV630-SW, NV630-SEW NV630-HEW					
800 1000 1200 1250	NF800-CEW, NF800-SEW, NF800-HEW NF800-REW, NF800-UW, NF800-SDW NF1000-SEW, NF1250-SEW	NV800-SEW, NV800-HEW					

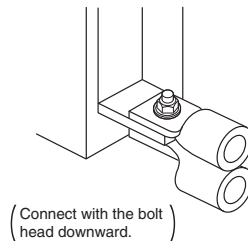
● Reference drawings of connection types

Method of connecting directly to terminal(s) of body

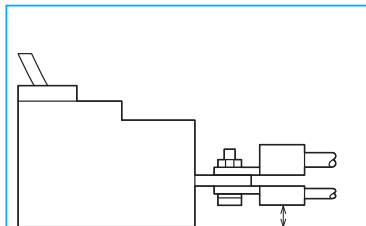


(Fig. a)

Method of connecting to front bar terminal



(Fig. b)



Carefully check the insulating distance between the connecting bus bar, crimp terminal and tightening bolt and the ground and the phase-to-phase insulating distance.

<Explanation of abbreviations> R.....Product specified by JIS
 CB.....Product specified by JEM 1399
 AMP.....Product made by Nippon AMP
 JST.....Product made by J.S.T. Mfg. Co., Ltd.
 NTK.....Product made by Nippon Tanshi Co., Ltd.
 NTM.....Product made by Nichifu Co., Ltd.
 DST.....Product made by Daido Solderless Terminal Mfg. Co., Ltd.

	38	60	100	150	200	325	Crimp terminal tightening screw			Remarks	Reference drawing of connection type
							Screw size	Tightening torque N • m	Shape		
	162A	217A	298A	395A	469A	650A					
	26.66 to 42.42	42.42 to 60.57	96.3 to 117.2	117.2 to 152.05	192.6 to 242.27	242.27 to 325					
							M5	2 to 3		When connecting two crimp terminals, set the terminals as shown below if the *-marked terminals are used. 	(Fig. a)
AMP #322870 JST 38-S8 NTK R38-S8	1AF-60 (L330T459-12) CB60-S8						M8	5 to 7	M5 • M6		
							M5	2 to 3			
							M8	5 to 7			
							M5	2 to 3			
AMP #322870 JST 38-S8 NTK R38-S8	1AF-60 (L330T459-12) CB60-S8						M8	5 to 7			
							M5	2 to 3			
AMP #322870 JST 38-S8 NTK R38-S8	1AF-60 (L330T459-12) CB60-S8						M8	5 to 7			
R-38-8	R-60-8	2AF (LN300T920-20) CB100-S8	2CR-150(*1) (LN300T920-21) (*1)CB150-S8				M8	8 to 13		When using 2AF, use a crimp tool having a nominal size of 100.	
R-38-12	R-60-12	R-100-12	R-150-12	R-200-12	JST325-12		M12	40 to 50		Fit to a front type bar terminal. Up to two pieces can be fitted to one terminal.	(Fig. b)
R-38-12	R-60-12	R-100-12	R-150-12 RD150-12 SD150-12	R-200-12 RD200-12 SD200-12	JST325-12 RD325-12 SD325-12						

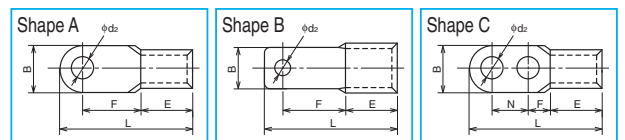
Notes *1 When using 2CR-150 or CB150-S8, insulate it from TC-S with insulating tube or tape. For a 2- or 3-pole circuit breaker, TCL-2SV3L is applicable.
 *2 On the power supply side, pan-head screws M5 are used.
 *3 When tightening a terminal screw without connecting a wire, crimp terminal or bar, tighten the screw to 20 to 30% of the torque shown in the above table (to prevent damage to the threads).
 *4 The table shows not the allowable current values of circuit breakers, but those of wires applicable to crimp terminals.
 Remark: 1. For the crimp terminals for UL listed circuit breakers, refer to the page of the characteristics and external dimensions of UL 489 Listed Circuit Breakers.

● Dimensions of crimp terminals <extracted from catalog of JST>

Part number	Shape	Applicable screw size	External dimensions						Applicable wire mm ²		
			φd2	B	L	F	E	Thickness			
R2-5	A	M5	5.3	9.5	16.8	7.3	4.8	0.8	1.04		
R2-6		M6	6.4	12.0	21.8	11.0			to 2.63		
R2-8		M8	8.4	15.0	29.8	13.8			to 6.64		
R5.5-5	A	M5	5.3	9.5	19.8	8.3	6.8	1.0	2.63		
R5.5-6		M6	6.4	12.0	25.8	13.0			to 6.64		
R5.5-8		M8	8.4	15.0	28.0	13.7			to 6.64		
R8-5	A	M5	5.3	12.0	23.8	9.3	8.5	1.2	6.64		
8-5NS		M5	5.3	9.0	22.3				to 10.52		
R8-6		M6	6.4	12.0	23.8				to 10.52		
R8-8	M8	8.4	15.0	29.8	13.8						
8-5SC-9		M5	5.3	9	23.8	9.3	8.5	1.2	6.64 to 10.52		
R14-5	A	M5	5.3	12.0	29.8	13.3	10.5	1.5	10.52		
14-5NS		M5	5.3	9.0	28.3				to 16.78		
R14-6		M6	6.4	12.0	29.8				to 16.78		
R14-8	M8	8.4	16.0	32.8	14.5						
L330T459-23		M5	5.3	12.0	30.0						
22-5NS	A	M5	5.3	9.5	28.7	12.0	12.0	1.8	16.78		
22-S6		M6	6.4	12.0	30.0				to 26.66		
R22-8		M8	8.4	16.5	33.7				13.5		
R22-12	M12	13.0	22.0	42.5	19.5						
38-S8	A	M8	8.4	15.5	38.0	16.0	14.0	1.8	26.66		
R38-8		M8	8.4	22.0	42.7	17.7			to 42.42		
R38-12		M12	13.0								
L330T459-12		M8	8.4	16.0	46.7	20.7			42.42		
R60-8	A	M8	8.4	22.0	49.7	20.7	18.0	2.0	60.57		
R60-12		M12	13.0								
LN300T920-20		B	M8	8.4	22.5	51.0			20.0		
R100-12	A	M12	13.0	28.5	55.6	20.4	21.0	2.6	96.3 to 117.2		

Part number	Shape	Applicable screw size	External dimensions						Applicable wire mm ²
			φd2	B	L	F	E	Thickness	
LN300T920-21	B	M8	8.4	22.5	70.0	33.0	27.0	3.2	117.2
L330T402-8		M8	8.4	25.3	61.5	23.0			to 152.05
R150-12	A	M12	13.0	36.0	66.0	21.0			
R200-12	A	M12	13.0	44.0	78.0	24.5	31.5	4.0	192.6 to 242.27
325-12	A	M12	13.0	50.5	88.0	33.5	35.5	4.5	242.27 to 325
CB60-S8	B	M8	8.4	16.0	46.7	20.7	18.0	2.0	42.42 to 60.57
CB100-S8			8.4	22.0	52.5	20.5	21.0	2.6	96.3 to 117.2
CB150-S8			8.4	22.0	61.0	23.0	27.0	3.2	117.2 to 152.05

Part number	Shape	Applicable screw size	External dimensions							Applicable wire mm ²	
			φd2	B	L	F	E	N	Thickness		
RD60-12	C	M12	14.0	22.0	89.0	20.0	18.0	40	4.0	42.42 to 60.57	
RD100-12			14.0	28.5	95.5	20.3	21.0			2.6	96.3 to 117.2
RD150-12			14.0	36.0	106.0	21.0	27.0			3.2	117.2 to 152.05
RD200-12			14.0	44.0	116.5	23.0	31.5			4.0	192.6 to 242.27
RD325-12			14.0	50.5	123.8	23.0	35.5			4.5	242.27 to 325
SD150-12	C	M12	14.0	36.0	107.0	29.0	28.0	32	4.0	117.2 to 152	
SD200-12			14.0	44.0	108.0	36.0	32.0			3.2	192.6 to 242.2
SD325-12			14.0	50.5	125.0	38.0	37.0			4.5	242.2 to 325



5. Busbar

The size of the conductor can be connected is shown on the outline drawing of each model. The following special busbars are available. Use them as needed. When using any busbar, isolate it from the bare busbar on the circuit breaker power supply side with an insulating barrier.

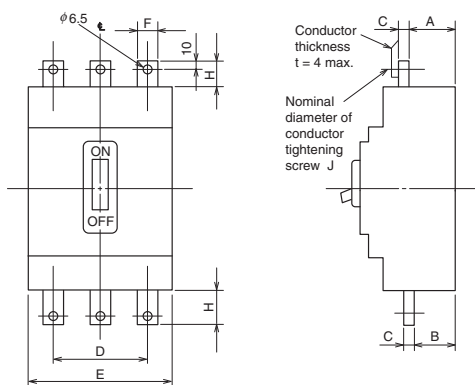


Fig. 1

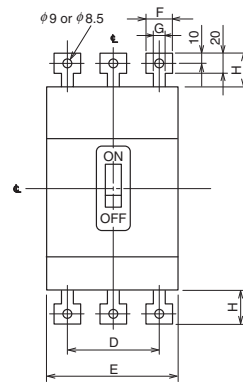


Fig. 2

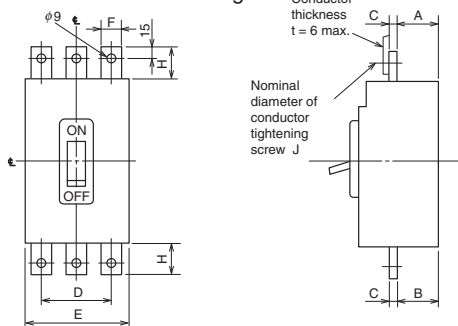


Fig. 3

Table 5-7 Table of variable dimensions

Type name	Applicable models		Outline and dimentions	Busbar									
	MCCB	ELCB		Fig.	A	B	C	D	E	F	G	H	J
FB-05SV	NF32-SV NF63-CV (50A or below) NF63-SV (50A or below) NF63-HV (50A or below)	NV32-SV NV63-CV (50A or below) NV63-SV (50A or below) NV63-HV (50A or below)		1	24	24	2	50	75	11.5	-	25	M5x0.8
FB-1SV	NF125-CV, NF125-SV NF125-HV, NF125-UV	NV125-CV NV125-SV NV125-HV		2	24	24	4	60	90	18	15	29	M8
FB-2SV	NF125-SEV NF125-HEV, NF125-RGV NF250-CV, NF250-SV, NF250-HV NF250-UV, NF250-SEV NF250-HEV, NF250-RGV NF125-SGV/LGV/HGV NF160-SGV/LGV/HGV NF250-SGV/LGV/HGV	NV125-SEV NV125-HEV NV250-CV, NV250-SV NV250-HV, NV250-SEV NV250-HEV		3	24	24	6	70	105	20	-	37	M8

6. Insulation Distance on Power Source Side

● Basic concept

Insulation distance (distance indicated in standards)

Be sure to at least secure the insulation distances (spatial distance and creeping distance) specified by the codes and standards of the relevant equipment and facilities where the circuit breakers are installed.

It is recommended that insulation barriers and insulation tape be used to enhance the electrical insulation between bare-live parts and between bare-live parts and ground to avoid accidents otherwise caused by a loose metal piece, conductive dust, abnormal surge voltage in the circuit or a similar event so as to improve the reliability of panels.

Arc Space (insulation space)

At the exhaust outlet side of breaker, arc space is necessary. When the actual load circuit is opened, especially when a large current such as overload or short-circuit is interrupted, ionized gas is emitted from the exhaust outlet. This gas can cause a short circuit between bare, live parts such as busbars, and also can cause grounding faults between conductive installation metal panels.

Therefore, it is important to secure enough arc space at the exhaust outlet side of the breaker and to strengthen insulation of parts exposed to the gas. In addition, securing enough space at the front of the exhaust outlet is necessary, because when the gas emission is blocked, failures such as deterioration of breaking performance can be caused.

● Insulation required part

With regard to insulation of bear, live parts of the line side of the breaker, please make sure to insulate at least C part C indicated in the diagram above with insulation tape, a tube or a terminal cover.

- ① A : Distance from the circuit breaker to the ceiling plate
- ② B1 : Distance from the circuit breaker to the uncovered conducting part of the upper circuit breaker terminal (front connection)
- ③ B2 : Distance from the lower circuit breaker to the end face of the upper circuit breaker (rear connection)
- ④ D1 : Distance from the side of the breaker to the side plate
- ⑤ C : Insulated length of the power source terminal of the circuit breaker (front connection)

Please secure insulation using insulating tape, insulating tubing, insulation barrier, or a terminal cover, between bare charge parts within this size range. Please refer to a table a necessary size must.

◇ When using insulation tape and insulation tubing together with insulation barriers and terminal covers, make them overlap with the other by at least 10 mm.

◇ For the models with insulation barriers supplied as standard, please make sure to use the barriers.

a : clearance specified in standard

⑥ D2 : Side-to-side spacing of breakers

While the circuit breakers can basically be installed together without a clearance in between, be sure to observe the following instructions.

◇ It is desirable to install an insulation barrier between the adjacent circuit breakers or insulate the bare-live parts considering the effect of cutoff gas.

◇ Be sure to secure the insulation distance (dimension a) as the minimum, indispensable requirement.

◇ With a leakage circuit breaker and a leakage alarm circuit breaker installed in close contact with the other, a current of 2,500A or higher flowing through one of the circuit breakers could cause the other to operate falsely.

Be sure to secure a distance of at least 50 mm in between.

◇ A circuit breaker of 400-ampere frame or larger with an SHT or a UVT could operate falsely if a current of 50 kA or higher flows through the adjacent circuit breaker.

Be sure to secure a distance of at least 50 mm in between.

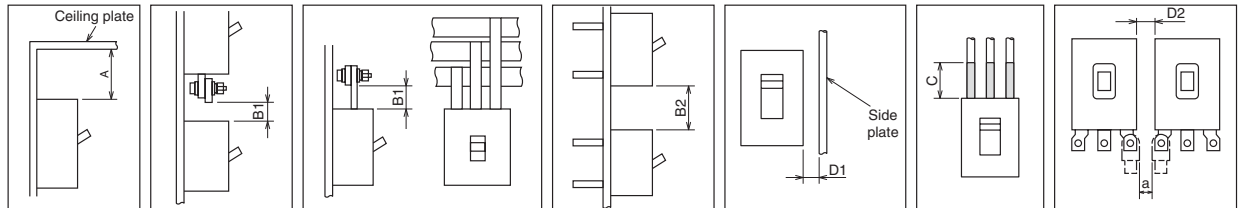


Table 5-8 Insulation distance (mm) (440VAC or below) *Figures in parentheses are for 230VAC or below.

Class • Series	Model		Ceiling plate			Vertical spacing		C	Horizontal spacing D1
	MCCB	ELCB	A		B1, B2				
			Uncovered metal Plate Without terminal cover	Insulated plate coated plate With terminal cover	Without terminal cover	With terminal cover			
C • S • H • R • MB	NF30-CS	-	10	10	10	20	20	(*)	20
	NF32-SV, NF63-CV	NV63-CV	5	5	5	20	20	(*)	20
	NF63-SV, NF63-HV	NV32-SV, NV63-SV, NV63-HV	10	10	10	30	30		25
	NF125-CV	NV125-CV	50(30)	40(30)	10	50	50	(*)	25
	NF125-SV	NV125-SV	50(10)	30(10)	10	50	50		25
	NF125-HV	NV125-HV	50	40	40	80	80		40
	NF250-CV	NV250-CV	40	40	40	50	50		50
	NF125-SEV, NF250-SV, NF250-SEV	NV125-SEV, NV250-SV, NV250-SEV	70(40)	40	40	70(50)	50		50
	NF125-SGV, NF160-SGV, NF250-SGV	-	-	-	-	-	-	-	-
	NF125-HEV, NF250-HV, NF250-HEV	NV125-HEV, NV250-HV, NV250-HEV	80	60	60	80	80		60
	NF125-LGV, NF160-LGV, NF250-LGV	-	-	-	-	-	-	-	-
	NF125-HGV, NF160-HGV, NF250-HGV	-	-	-	-	-	-	-	-
	NF400-CW	NV400-CW	60	60	60	60	60		40
	NF400-SW, NF400-SEW	NV400-SW, NV400-SEW	70	70	70	70	70		70
	NF400-HEW, NF400-REW	NV400-HEW, NV400-REW	200	200	200	200	200		150
NF630-SW, NF630-SEW, NF630-CW	NV630-CW, NV630-SW, NV630-SEW	70	70	70	70	70		70	
NF630-HEW, NF630-REW	NV630-HEW	200	200	200	200	200		150	
NF800-SEW, NF800-CEW	NV800-SEW	80	80	80	80	80		80	
NF800-HEW, NF800-REW	NV800-HEW	200	200	200	200	200		150	
NF1000-SEW, NF1250-SEW	-	100	100	100	100	100		100	
NF1600-SEW	-	-	-	-	-	-	-	-	
R • U	NF125-RGV, NF250-RGV	-	30 (*)	30 (*)	30 (*)	50 (*)	50 (*)		5
	NF125-UV, NF250-UV	-	(*)	(*)	(*)	(*)	(*)	(*)	25
	NF400-UJEW	-	70	70	70	70	70		70
	NF800-UJEW	-	80	80	80	80	80		80
BH	BH-K, BH-K100	-	-	(*)	(*)	(*)	(*)	(*)	20
	NF225-CWU	-	(40)	-	(40)	(50)	-	(50)	(50)
UL	NF50-SVFU	-	10 (*)	10 (*)	10 (*)	20 (*)	20 (*)		30
	NF100-CVFU	-	50(25)	40(25)	10	50	50		25(15)
	NF125-SVU(*)	-	40(10)	30(10)	10	50	50		25(20)
	NF125-HVU(*)	-	40	40	40	80	80		25(20)
	NF250-SVU(*)	-	40	40	40	70(50)	50		50(20)
	NF250-HVU(*)	-	40	40	40	80	80		50(20)
	NF-SKW(*)	-	70	70	70	70	70		70
	NF-SLW(*)	-	70	70	70	70	70		70

Remark: 1. The table shows the dimensions in the case of the use of a large terminal cover (TC-L).

Notes *1 It is not necessary to provide an insulation distance (an arc space) on the power supply side. However, if a grounding metal piece or the like comes in close contact with the terminal, be sure to completely insulate the terminals or the bare-live parts of the cable conductors.

*2 At more than 440 V AC, the distance shall be 10 mm.

*3 For 480Y/277V AC.

*4 For 480V AC.

*5 For 600Y/347V AC.

*6 An exhaust port is provided also on the circuit breaker load side. Secure the dimension A both on the power supply side and on the load side.

*7 When any of the circuit breakers NF125-RGB to NF250-RGV is used on the upstream side, an exhaust port is provided also on the circuit breaker load side. Secure the larger distance of the dimension B1 of NF125-RGV, NF250-RGV or NF50-SVFU and the dimension B1 of the downstream circuit breaker.

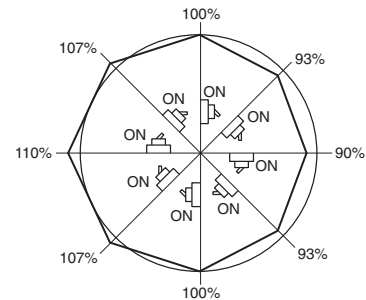
7. Effect of Installation Orientation

Installation orientation does not affect the operating characteristics of circuit breakers of electronic or thermo-magnetic operation types. However, the installation orientation affects the operating current of fully magnetic type circuit breakers as the iron core in the oil dash pot is under gravitational force.

It is generally suggested they be installed vertically.

●Hydraulic-magnetic (The same applies to other models of hydraulic-magnetic type.)

MCCB	
Class	Model
C	NF30-CS



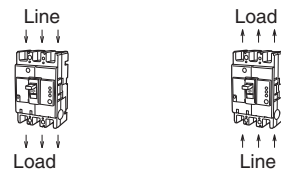
Rate of change of rated current by mounting angle

8. Connection of Line and Load

The standard wiring of line and load on the circuit breaker is as shown in (a) normal connection on the right.

Avoid the wiring shown in (b) reverse connection. This may lead to a decrease in breaking performance.

However, the reverse connection is allowed for the following models (excluding MDU breakers).



(a) Normal connection (b) Reverse connection

Connection methods

NF-C, NF-S, NF-H, NF-R and NF-U class BH-P, CP30-BA, NV-C, S, H and R class of 400 to 800AF, NF100-CVFU, NF125-SVU, NF125-HVU, NF250-SVU, NF250-HVU	Reverse connection is allowed for the standard models.
--	--

6

Accessories

1 Internal Accessories **104**

1) Internal Accessories	104
2) Kinds of Internal Accessories	105
3) Operations and Ratings of Switches	105
4) Maximum Number of Internal Accessories	106
5) Cassette Type Accessories	111
6) Shunt Trip (SHT)	113
7) Undervoltage Trip (UVT)	114
8) Lead Wire Drawing	116
9) Lead Wire Terminal Block	116
10) Test Button Module (TBM)	117
11) Pre-Alarm Module (PAL)	118

2 External Accessories **119**

1) F-type Operating Handle (Breaker Mount Type)	119
2) V-type Operating Handle (Door Mount Type)	121
3) Terminal Covers	123
4) Insulating Barriers.....	126
5) Handle Lock Devices, Lock Covers, Auxiliary Handles, Card Holders	129
6) Mechanical Interlocks (MI)	131
7) Boxes for Circuit Breakers and Boxed Circuit Breakers	132
8) Electrical Operated Circuit Breakers and Electrical Operation Devices	135
9) Distribution Board Mounting Parts, Lock Covers and Handle Caps	138
10) IEC 35-mm Rail Mounting Adapters	139

6 Accessories 1 Internal Accessories

1. Internal Accessories

The accessories to be installed in circuit breakers include the followings. For the numbers of the accessories which can be installed, refer to the tables on pages 106 to 110. The standard internal accessories have lead wires (450 mm long) drawn out. (However, some of Models UVT and TBM have vertical lead wire terminal blocks as standard.)

When circuit breakers are installed side by side, keep a space of 8 mm or more for lead wires between the circuit breakers. (Models with lead wires drawn out toward load and models with lead wire grooves in the side faces can be installed in close contact.)

SHT (Shunt trip)
 Device to electrically trip a circuit breaker from a distance. The allowable operating voltage range is 70 to 110% of the rated voltage. (JIS C 8201-2-1 Ann.1, Ann.2)

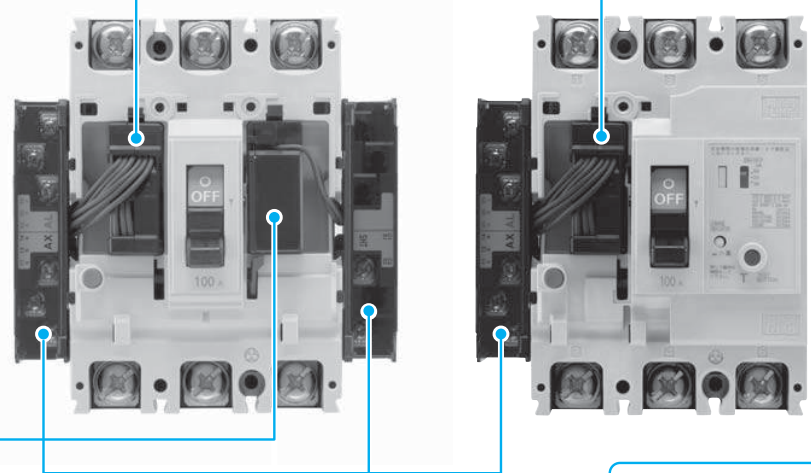
Connection diagram

AL (Alarm switch)
 Switch to electrically display the tripping status of circuit breaker

Connection diagram

AX (Auxiliary switch)
 Switch to electrically display the ON-OFF status of circuit breaker

Connection diagram



UVT (Undervoltage trip)
 Device to automatically trip a circuit breaker when the voltage drops. The operating voltage is 70 to 35% of the UVT rated voltage. (JIS C 8201-2-1 Ann.1)
 When the voltage recovers at least to 85% or more, the circuit breaker can be turned on after the device is manually reset.

Connection diagram

SLT (Lead wire terminal block)
 Terminals for connecting with internal accessories. The terminal block will be manufactured to order. For the detailed dimensions, refer to pages 116 and 117. (The dimensions of SLT slightly vary depending on the number of installed accessories and the model.)
 However, circuit breakers with a frame size of 400A and above having an electrical operation device are normally provided with SLT.

TBM (Test button module)
 Unit to perform test under voltage from a distance. TBMs can be connected in parallel. (The standard TBMs are provided with SLT. In the case of the flush plate type, the external dimensions are partially different from those of the standard type.)

TBM circuit diagram

2. Kinds of Internal Accessories

Table 6-1

Accessory name	Nameplate (sample)	Accessory name	Nameplate (sample)
AL Alarm switch		EAL Earth leakage trip alarm switch	
AX Auxiliary switch			
SHT Shunt tripping device			
UVT Undervoltage tripping device		TBM Test button module	

3. Operations and Ratings of Switches

Table 6-2 Operations of AL switch

Status of circuit breaker	Contact status of AL switch
 Off or On	
 Trip	

* The terminal numbers 98/ALa, 96/ALb and 95/ALc may vary depending on the number of installed switches and the installation poles.

Table 6-3 Operations of AX switch

Status of circuit breaker	Contact status of AX switch
 Off or Trip	
 On	

* The terminal numbers 14/AXa, 12/AXb and 11/AXc may vary depending on the number of installed switches and the installation poles.

Table 6-4 Ratings of AL and AX switches

Applied switch	AC			DC		
	Voltage V	Current A		Voltage V	Current A	
		Resistive load	Inductive load		Resistive load	Inductive load
A	(250)	(1)	(0.5)	(50)	(1)	(0.5)
	125	3	(1)	30	(2)	(1)
	460	—	—	250	0.2	0.2
S	250	3	2	125	0.4	0.4
	125	5	3	30	4	3
	460	5	2	250	0.3	0.3
V	250	10	10	125	0.6	0.6
	125	10	10	30	10	6

Remarks: 1. The ratings in parentheses do not conform to UL.
2. For the applied switches, refer to Tables 6-9-1 to 6-14-1.

6 Accessories 1 Internal Accessories

4. Maximum Number of Internal Accessories

MCCB and Motor Protection Breakers

Table 6-5 Table of maximum number of internal accessories

● AL ○ AX ▣ SHT or UVT
■ PAL → Outgoing direction of lead wires

Handle of circuit breaker
Left pole → → Right pole

□ are cassette type accessories. (Some of UVT are not provided with cassettes. Refer to page XXX for details.)

Model	C	NF30-CS	NF63-CV NF125-CV	NF63-CV NF125-CV NF250-CV	NF32-SV NF63-SV NF125-SV NF160-SGV NF250-SV NF250-SGV	NF125-SEV NF250-SEV	NF400-CW NF630-CW	NF800-CEW	
	S		NF32-SV NF63-SV NF125-SV	NF63-HV NF125-HV NF125-LGV NF125-HGV NF160-LGV NF160-HGV NF250-HV NF250-LGV NF250-HGV NF250-RGV	NF125-HEV NF250-HEV	NF400-SW NF400-SEW NF630-SW NF630-SEW	NF800-SEW NF800-SDW	NF1000-SEW NF1250-SEW NF1600-SEW	
Number of poles AL and AX (standard) switches	L • H • R		NF63-HV	NF63-HV NF125-HV NF125-LGV NF125-HGV NF160-LGV NF160-HGV NF250-HV NF250-LGV NF250-HGV NF250-RGV	NF125-HEV NF250-HEV	NF400-HEW NF400-REW NF630-HEW NF630-REW	NF800-HEW NF800-REW		
	U	2 or 3 poles	2 poles	2, 3 or 4 poles	3, 4 poles	2, 3 or 4 poles	2, 3 or 4 poles	2, 3 or 4 poles	2, 3 or 4 poles
Accessory	S								V
	AL								
AX									
SHT or UVT									
AL + AX									
AL + SHT or UVT									
AX + SHT or UVT									
AL + AX + SHT or UVT									
PAL (contact output)									

Notes *1 When UVT is provided, the UVT voltage module will come in the vertical lead wire terminal block type. (SHT does not have a voltage module.)
 *2 The second AX can be installed in place of the AL on the left pole side. When placing an order, specify the incorporation of the switches in the body.
 *3 Although the lead wires are normally drawn out laterally, those with lead wires drawn out toward load are available. (Only for front connection type)
 *4 PAL (contact output) can be installed together with AL and AX on the left pole side. (It cannot be installed together with SHT or UVT.)
 The standard type is provided with SLT. PAL control voltage (compatible with 100 to 200 V AC) is necessary.
 *5 SHT and UVT can be installed on the left side.
 *6 SHT and UVT are normally installed on the right pole side. If you intend to install them on the left pole side, specify so. (The reset preventing UVT must be installed on the left pole side.)
 *7 In the case where three or more accessories are installed on the left pole side and AL, AX or AL and AX are installed on the pole on which SLT, SHT or UVT is installed, the SLT will be manufactured to order.
 *8 When AL, AX or AL and AX are installed on the pole on which UVT is installed, the UVT voltage module must be installed separately.
 *9 SLT is provided as standard. A control power supply (100 to 200 V AC) is required. (In this case, other internal accessories cannot be installed on the right pole side.)

Remarks: 1. For electrically operated automatic reset type circuit breakers having a frame size of 400A or above, the numbers of AL switches which can be installed are smaller by 1 than the values shown above.
 2. The encircled numbers indicate the order of installation.

5. Cassette Type Accessories

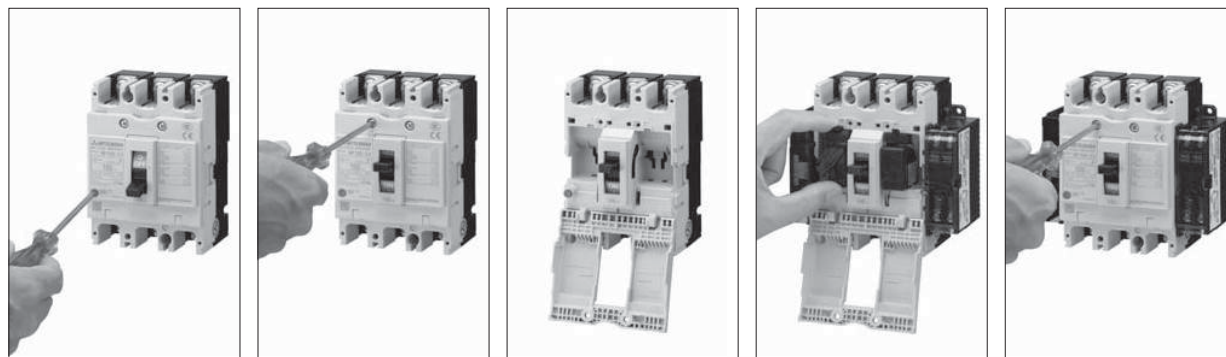
The internal accessories for major models having a frame size from 30 to 800 A come in cassettes, and they can be installed to and removed from circuit breakers by the user.

Some cassette type accessories have lead wires drawn out, and others have vertical lead wire terminal blocks (SLT). (These parts are supplied by 10 pieces for frame size from 30 to 250 A or by 1 piece for frame size from 400 to 800 A.)

■ Applicable models and kinds of cassette type accessories

	Model	Alarm switch (AL)	Auxiliary switch (AX)	Shunt tripping device (SHT)	Undervoltage tripping device (UVT)
MCCB	NF63-CV~NF250-CV, NF32-SV~NF250-SV NF63-HV~NF250-HV NF125-SGV~NF250-SGV, NF125-LGV~NF250-LGV NF125-HGV~NF250-HGV NF125-SEV, NF250-SEV, NF125-HEV, NF250-HEV NF125-RGV, NF250-RGV, NF125-UV, NF250-UV NF100-CVFU, NF125-SVU/HVU, NF250-SVU/HVU	○	○	○	○
	NF50-SVFU, NF400-CW, NF630-CW, NF800-CEW NF400-SW, NF630-SW, NF400-SEW~NF800-SEW NF800-SDW, NF400-HEW~NF800-HEW NF400-REW~NF800-REW, NF400-UEW, NF800-UEW	○	○	○	-
ELCB	NV63-CV~NV250-CV, NV32-SV~NV250-SV NV63-HV~HV250-HV NV125-SEV, NV250-SEV, NV125-HEV, NV250-HEV NV100-CVFU, NV125-SVU/HVU, NV250-SVU/HVU	○	○	○	○
	NV50-SVFU, NV400-CW, NV630-CW NV400-SW, NV630-SW, NV400-SEW~NV800-SEW NV400-HEW~NV800-HEW, NV400-REW	○	○	○	-

■ Procedure for installing cassette type accessories



1. Press the trip button (PTT) to trip the circuit breaker. (*1)
2. Loosen the cover screws.
3. Open the cover.
4. Install the cassette type accessory. (*2)
5. Close the cover, and tighten the screws.

Notes *1. When installing any cassette type accessory, set the circuit breaker to the tripped state.

*2. If the inner lid or another accessory has been installed, remove it before installing the accessory.

When any circuit breaker supplied with the inner lid is used without an accessory, fit the inner lid without fail.

Failure to do so may affect the short-circuiting performance.

Models with inner lid: NF125-SV, NF125-HV, NF125-UV

NV125-SV, NV125-HV
NF250-SV, NF250-HV,
NV250-SV, NV250-HV,
NF125-SVU, NF125-HVU, NV125-SVU, NV125-HVU
NF250-SVU, NF250-HVU, NV250-SVU, NV250-HVU

NF250-HEV, NF250-UV
NV250-HEV
NF125-SEV, NF125-HEV,
NV125-SEV, NV125-HEV,
NF400-REW, NF400-UEW
NF630-REW, NV400-REW
NF800-HEW, NF800-REW, NF800-UEW
NV800-HEW

Cautions when installing

Before installing or removing any cassette type accessory, set the circuit breaker and accessories to the no-voltage state.

Never install a cassette type accessory while the handle is in the ON or OFF position. Doing so may damage the accessory.

When installing an accessory with lead wires drawn out, apply the supplied nameplate to the circuit breaker side face.

When installing an accessory with lead wires drawn out for a frame size of 400 to 800 A, secure the lead wires along the circuit breaker side face with the supplied lead wire retainers.

6 Accessories 1 Internal Accessories

Type name

Table 6-9-1

Model		Installation pole	AL	AX	AL+AX	SHT	UVTN or UVTS	
MCCB	ELCB							
NF50-SVFU		For right pole	AL-03SVU AL-03SVURS	AX-03SVU AX-03SVURS	ALAX-03SVU ALAX-03SVURS	SHTA240-03SVUR SHTA440-03SVUR SHTD100-03SVUR SHTA240-03SVURS SHTA440-03SVURS SHTD100-03SVURS	-	
		For left pole	AL-03SVU AL-03SVULS	AX-03SVU AX-03SVULS	ALAX-03SVU ALAX-03SVULS	SHTA240-03SVUL SHTA440-03SVUL SHTD100-03SVUL SHTA240-03SVULS SHTA440-03SVULS SHTD100-03SVULS	-	
NF32-SV, NF63-CV, NF63-SV, NF63-HV NF125-CV, NF125-SV, NF125-HV NF125-SGV, NF125-LGV, NF125-HGV NF160-SGV, NF160-LGV, NF160-HGV NF125-SEV, NF125-HEV NF125-RGV, NF125-UV NF250-CV, NF250-SV, NF250-HV NF250-SGV, NF250-LGV, NF250-HGV NF250-SEV, NF250-HEV NF250-RGV, NF250-UV		For right pole	AL-05SV AL-05SVRS	AX-05SV AX-05SVRS	ALAX-05SV ALAX-05SVRS	SHTA240-05SVR SHTA550-05SVR SHTD125-05SVR SHTA240-05SVRS SHTA550-05SVRS SHTD125-05SVRS	UVTNAD130-05SVR UVTNA250-05SVR UVTNA480-05SVR UVTNAD130-05SVRS UVTNA250-05SVRS UVTNA480-05SVRS	UVTSAD130-05SVR UVTSA250-05SVR UVTSA480-05SVR UVTSAD130-05SVRS UVTSA250-05SVRS UVTSA480-05SVRS
		For left pole	AL-05SV AL-05SVLS	AX-05SV AX-05SVLS	ALAX-05SV ALAX-05SVLS	SHTA240-05SVL SHTA550-05SVL SHTD125-05SVL SHTA240-05SVLS SHTA550-05SVLS SHTD125-05SVLS	UVTNAD130-05SVL UVTNA250-05SVL UVTNA480-05SVL UVTNAD130-05SVLS UVTNA250-05SVLS UVTNA480-05SVLS	UVTSAD130-05SVL UVTSA250-05SVL UVTSA480-05SVL UVTSAD130-05SVLS UVTSA250-05SVLS UVTSA480-05SVLS
NF100-CVFU NF125-SVU/HVU NF250-SVU/HVU		For right pole	AL-05SVU AL-05SVURS	AX-05SVU AX-05SVURS	ALAX-05SVU ALAX-05SVURS	SHTA240-05SVUR SHTA550-05SVUR SHTD125-05SVUR SHTA240-05SVURS SHTA550-05SVURS SHTD125-05SVURS	UVTNAD130-05SVUR UVTNA250-05SVUR UVTNA480-05SVUR UVTNAD130-05SVURS UVTNA250-05SVURS UVTNA480-05SVURS	UVTSAD130-05SVUR UVTSA250-05SVUR UVTSA480-05SVUR UVTSAD130-05SVURS UVTSA250-05SVURS UVTSA480-05SVURS
		For left pole	AL-05SVU AL-05SVULS	AX-05SVU AX-05SVULS	ALAX-05SVU ALAX-05SVULS	SHTA240-05SVUL SHTA550-05SVUL SHTD125-05SVUL SHTA240-05SVULS SHTA550-05SVULS SHTD125-05SVULS	UVTNAD130-05SVUL UVTNA250-05SVUL UVTNA480-05SVUL UVTNAD130-05SVULS UVTNA250-05SVULS UVTNA480-05SVULS	UVTSAD130-05SVUL UVTSA250-05SVUL UVTSA480-05SVUL UVTSAD130-05SVULS UVTSA250-05SVULS UVTSA480-05SVULS
NF400-CW, NF400-SW, NF400-SEW NF400-HEW, NF400-REW, NF400-UEW NF630-CW, NF630-SW, NF630-SEW NF630-HEW, NF630-REW NF800-CW, NF800-SW, NF800-SEW NF800-HEW, NF800-REW, NF800-UEW		For right pole (2, or 3 poles)	-	AX-4SW AX-4SWRS AX2-4SWRS	-	SHT-4SW SHT-4SWRS	-	
		For right pole (4 poles)	-	-	-	SHT-4SWRFS SHT-8SWRFS	-	
		For left pole (2, 3 or 4 poles)	AL-4SWL AL-4SWLS AL2-4SWLS	AX-4SW AX-4SWLS AX2-4SWLS	ALAX-4SWL ALAX-4SWLS	SHT-4SW SHT-4SWLS	-	
	NV32-SV, NV63-CV NV63-SV, NV63-HV NV125-CV, NV125-SV NV125-HV NV125-SEV, NV125-HEV NV250-CV, NV250-SV NV250-HV NV250-SEV, NV250-HEV	For left pole	AL-05SV AL-05SVLS	AX-05SV AX-05SVLS	ALAX-05SV ALAX-05SVLS	SHTA240-05SVL SHTA550-05SVL SHTD125-05SVL SHTA240-05SVLS SHTA550-05SVLS SHTD125-05SVLS	UVTNAD130-05SVL UVTNA250-05SVL UVTNA480-05SVL UVTNAD130-05SVLS UVTNA250-05SVLS UVTNA480-05SVLS	UVTSAD130-05SVL UVTSA250-05SVL UVTSA480-05SVL UVTSAD130-05SVLS UVTSA250-05SVLS UVTSA480-05SVLS
	NV100-CVFU NV125-SVU/HVU NV250-SVU/HVU	For left pole	AL-05SVU AL-05SVULS	AX-05SVU AX-05SVULS	ALAX-05SVU ALAX-05SVULS	SHTA240-05SVUL SHTA550-05SVUL SHTD125-05SVUL SHTA240-05SVULS SHTA550-05SVULS SHTD125-05SVULS	UVTNAD130-05SVUL UVTNA250-05SVUL UVTNA480-05SVUL UVTNAD130-05SVULS UVTNA250-05SVULS UVTNA480-05SVULS	UVTSAD130-05SVUL UVTSA250-05SVUL UVTSA480-05SVUL UVTSAD130-05SVULS UVTSA250-05SVULS UVTSA480-05SVULS

- Remarks:
- For the possibility of installation of accessories and the installation pole, refer to the tables of maximum numbers on pages 106 to 110.
 - AL and AX for minute load can be manufactured to order.
 - Corrosion-proof cassette type AL and AX are not available. When the circuit breaker body is exposed to class 1 tropicalization, class 2 tropicalization, reinforced corrosion resistance treatment or class 2 heat resistance treatment, place an order for the circuit breaker including the accessories.
 - Cassette type accessories with SLT for right pole cannot be installed to 4-pole circuit breakers. Accessories with SLT for right pole to be used in 4-pole circuit breakers are manufactured to order.
 - Cassette type accessories with SLT cannot be installed to flush plate type circuit breakers.
 - Cassette type accessories (AL, AX and SHT) cannot be installed to circuit breakers with MG.
 - It is impossible to install a combination of a cassette type accessory with lead wires drawn out and that with SLT or a combination of cassette type accessories with SLT on the same pole.
 - It is impossible to install the cassette type AL or AX to the pole to which UVT has been installed.
 - AX and SHT with lead wires drawn out for frame size from 400 to 800 A can be installed to any of the right and left poles.
 - When installing more than one AL or AX with lead wires drawn out for frame size from 400 to 800 A to one side, install the necessary number of the accessories for one piece. The lead wires from the circuit breaker vary in length depending on the installation position.
 - Install the cassette accessories for frame size from 400 to 800 A starting from the outside of the installation positions. For the installation positions, see the installation positions shown in the following table.
 - When three pieces of more of AL and AX are installed on a circuit breaker with a frame size 400 to 800 A, the AL and AX with SLT are manufactured to order.

Installation positions of cassette type accessories for 400 to 800 A frames

Installation positions

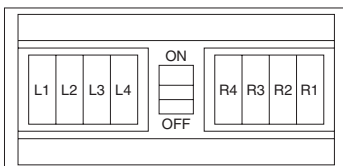


Table 6-9-2 Installation positions of cassette type accessories

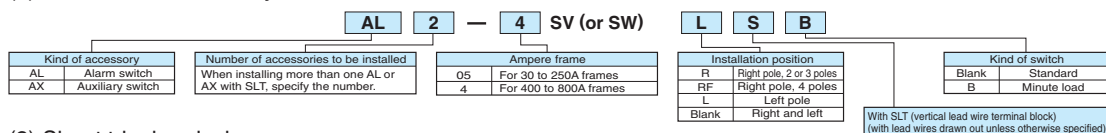
Frame (A)	400 • 600 • 630						800						
	Installation positions						Installation positions						
Accessory	L1	L2	L3	R2	R1	L1	L2	L3	L4	R4	R3	R2	R1
AL	○	○	-	-	-	○	○	○	-	-	-	-	-
AX	○	○	-	○	○	○	○	○	○	-	-	○ ^(*)	○
AL + AX	○	○	-	-	-	○	○	-	-	-	-	-	-
SHT	-	○	-	○	-	-	-	○	-	○ ^(*)	-	-	-

* Accessories only for Earth Leakage Circuit Breakers (NV-C, S and H), Earth Leakage Alarm Breakers (NF-Z) and single-phase 3-wire circuits (NF-N and NV-N) cannot be installed to R1, R2, R3 or R4.

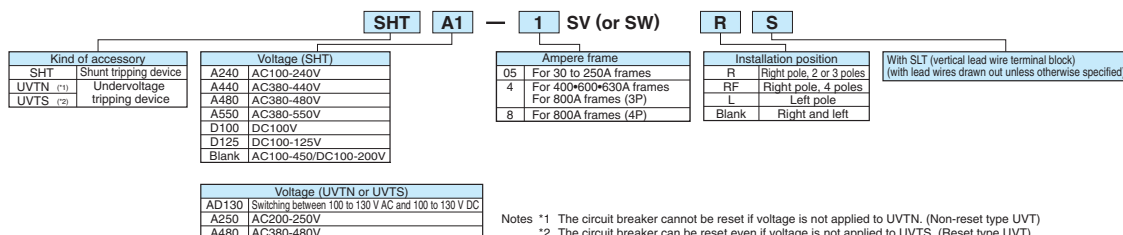
Note *1 It is impossible to simultaneously install AX on R2 and SHT on R3 or R4.

Interpretation of type name

(1) Alarm switch • Auxiliary switch



(2) Shunt tripping device
Undervoltage tripping device



Notes *1 The circuit breaker cannot be reset if voltage is not applied to UVTN. (Non-reset type UVT)
*2 The circuit breaker can be reset even if voltage is not applied to UVTS. (Reset type UVT)

6. Shunt Trip (SHT)

Coil ratings (standard)

Table 6-10-1

Model	Provision of coil burnout preventing switch	Voltage (V)	Input (VA) (1)		Operating time (2) (ms)	
			AC	DC		
NF50-SVFU NV50-SVFU	Provided	AC100-240 380-440 DC100	120	60	15 or less	
NF32-SV, NF63-CV/SV/HV, NF125-SGV/LGV/HGV NF160-SGV/LGV/HGV, NF125-CV/SV/HV/SEV/HEV/RGV/UV NF250-CV/SV/HV/SEV/HEV/RGV/UV NF250-SGV/LGV/HGV NV32-SV, NV63-CV/SV/HV NV125-CV/SV/HV/SEV/HEV, NV250-CV/SV/HV/SEV/HEV NF100-CVFU, NF125-SVU/HVU, NF250-SVU/HVU NV100-CVFU, NV125-SVU/HVU, NV250-SVU/HVU		AC100-240 380-550 DC100-125				50
NF225-CWU		AC100-240 380-480 DC100-125				60
NF400-CW/SW/SEW/HEW/REW/UEW NF630-CW/SW/SEW/HEW/REW NF800-CEW/SDW/SEW/HEW/REW/UEW NV400-CW/SW/SEW/HEW/REW NV630-CW/SW/SEW/HEW NV800-SEW/HEW, NF-SKW, NF-SLW		Compatible with 100 to 450 V AC and 100 to 200 V DC	100V 20 200V 50 380V 120 450V 170	100V 10 200V 35		5-15
NF1000-SEW, NF1250-SEW/SDW NF1600-SEW/SDW		AC100-120 200-240 380-450 DC100	200 300	70 100		7-15 15-25

Notes *1 Ensure that the voltage of the operating power supply for SHT is not dropped below the allowable operating voltage (70% of the rated minimum voltage value) by the input power.
*2 The operating time is the time from when the rated voltage is applied to the shunt tripping device until the main contact of the circuit breaker starts opening.

Remark: 1. The accessory is usable at 50 Hz and 60 Hz.

Coil ratings (list of available special voltage coils)

Table 6-10-2

Model	VAC										VDC										Compatible with AC/DC		
	24	25-27	24-48	48	50-55	60	440-480	380-550	440-550	500-550	12	24	24-36	36	36-48	48	60	110	125	220		200-250	220-250
NF32-SV, NF63-CV/SV/HV NF125-CV/SV/HV/SEV/HEV/RGV/UV NF125-SGV/LGV/HGV, F160-SGV/LGV/HGV NF250-CV/SV/HV/SEV/HEV/RGV/UV NF250-SGV/LGV/HGV NV32-SV, NV63-CV/SV/HV NV125-CV/SV/HV/SEV/HEV NV250-CV/SV/HV/SEV/HEV NF100-CVFU, NF125-SVU/HVU, NF250-SVU/HVU NV100-CVFU, NV125-SVU/HVU, NV250-SVU/HVU	-	-	○	-	-	-	-	-	-	○	-	○	-	○	-	-	-	-	-	○	-	-	-
NF225-CWU	-	-	○	-	-	○	-	-	-	○	-	○	-	○	-	○	-	-	-	-	○	-	-
NF400-CW/SW/SEW/HEW/REW/UEW NF630-CW/SW/SEW/HEW/REW NF800-CEW/SDW/SEW/HEW/REW/UEW NV400-CW/SW/SEW/HEW/REW NV630-CW/SW/SEW/HEW NV800-SEW/HEW, NF-SKW, NF-SLW	-	-	-	-	-	-	○	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	○
NF1000-SEW, NF1250-SEW/SDW NF1600-SEW/SDW	○	-	-	○	-	-	○	-	-	○	○	-	○	-	○	-	○	○	-	-	-	-	-

7. Undervoltage Trip (UVT)

(1) Specifications for UVT and coil ratings

Table 6-11

Model	Specification		Coil ratings			
	Reset type	Non-reset type	Voltage (V)		Input (VA)	Operating time ^{(*)2} (ms)
			Standard voltage	Special voltage ^{(*)1}		
NF50-SVFU NV50-SVFU	-	○		AC/DC24V AC/DC48V	5	30 or less
NF32-SV, NF63-CV/SV/HV/HRV NF125-CV/SV/HV/RGV/SEV/HEV/UV NF125-SGV/LGV/HGV, NF160-SGV/LGV/HGV NF250-CV/SV/HV/RGV/SEV/HEV/UV NF250-SGV/LGV/HGV NV32-SV, NV63-CV/SV/HV NV125-CV/SV/HV/SEV/HEV NV250-CV/SV/HV/SEV/HEV NF100-CVFU, NF125-SVU/HVU, NF250-SVU/HVU NV100-CVFU, NV125-SVU/HVU, NV250-SVU/HVU	○	○	AC/DC100-130V AC200-250V AC380-480V	AC/DC24V AC/DC48V AC500-600V		
NF400-CW/SW/SEW/HEW/REW/UEW NF630-CW/SW/SEW/HEW/REW NF800-CEW/SDW/SEW/HEW/REW/UEW NV400-CW/SW/SEW/HEW/REW NV630-CW/SW/SEW/HEW NV800-SEW/HEW	○ (^{(*)4})	○ (^{(*)5})	^{(*)3} Switching between 100 to 110 and 120 to 130 AC Switching between 200 to 220 and 230 to 250 AC Switching between 380 to 415 and 440 to 480 AC Switching between 100 and 110 DC	^{(*)3} Switching between 24/48 AC Switching between 500 to 550/600 AC Switching between 24/48DC Switching between 110/125DC	5	5-30 5-35 5-30
NF1000-SEW, NF1250-SEW NF1600-SEW	○	○		Switching between 24/48DC Switching between 110/125DC	5	5-35
NF-SKW/SLW	○ (^{(*)4})	-		Switching between 24/48DC Switching between 110/125DC		5-30
NF225-CWU	-	○		Switching between ^{(*)3} 24/48 AC Switching between 24/48DC Switching between 110/125DC		30 or less

Notes ^{(*)1} Some special voltage models vary in voltage range.

^{(*)2} The operating time is the time from when the undervoltage tripping device is set to the no-voltage state until the main contact starts opening.

^{(*)3} The accessory is usable at 50 Hz and 60 Hz.

^{(*)4} If UVT is turned on without excitation, the circuit breaker instantaneously opens and immediately trips.

^{(*)5} Only for installation on the left pole

(2) Reset type and non-reset type UVT

■ Reset type (Refer to Table 6-12.)

The reset type UVT has a structure which does not trip a circuit breaker even if the UVT coil is not excited when the circuit breaker handle is in the OFF or reset position. Therefore, it keeps the circuit breaker in the reset state even if the coil is not excited when the breaker is reset electrically.

When the coil in the unexcited state is turned on, the circuit breaker is normally tripped. However, the major contacts of some models of circuit breakers may instantaneously close, or, on circuit breakers with AX, the AX switches may instantaneously change over. For electrical interlock, use a non-reset type UVT.

■ Non-reset type (Refer to Table 6-12.)

When the UVT coil is not excited, the circuit breaker cannot be set to the off state even if the circuit breaker is tried to be reset from the tripped state. When the coil exciting voltage restores to the reference voltage or more, the circuit breaker can be reset to the off state.

(3) Time delay UVT

- This type of UVT has a time delay in operation.
- It can prevent operation upon occurrence of instantaneous power failure.

Table 6-12

UVT module type name	Time delay	Voltage (V)	
		Standard voltage	Special voltage
U-05W	Switching among 0.1, 0.3 and 0.5 s	AC24/48 AC100-120/200-240/380-450 AC220-250/380-450/460-550 (Compatible with 50 Hz and 60 Hz) DC100-110	AC380-450/460-550/600-690 (Compatible with 50 Hz and 60 Hz) DC24/48
U-30W	Switching among 0.5, 1 and 3 s	AC100-120/200-240/380-450 AC220-250/380-450/460-550 (Compatible with 50 Hz and 60 Hz)	-

(4) Structure of UVT

The UVT mechanical unit is installed in a circuit breaker, and the UVT voltage module is installed on the outside of the circuit breaker. When the voltage drops, the UVT voltage module detects the voltage drop, and the UVT mechanical unit trips the circuit breaker.

The UVT voltage module has a vertical lead wire terminal block and is normally installed on the body. The external module will be manufactured to order.

●Outline drawing

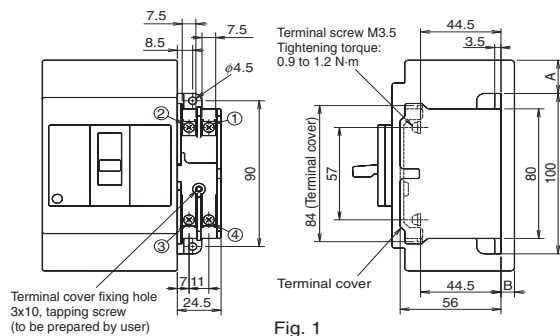


Fig. 1

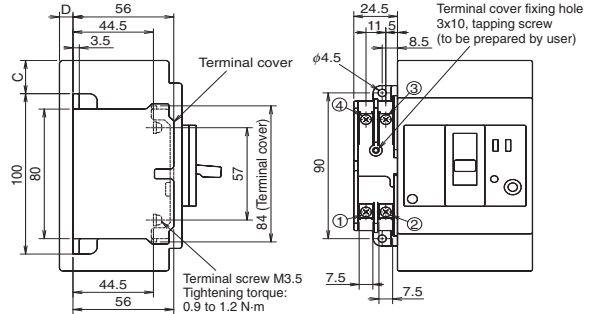


Fig. 2

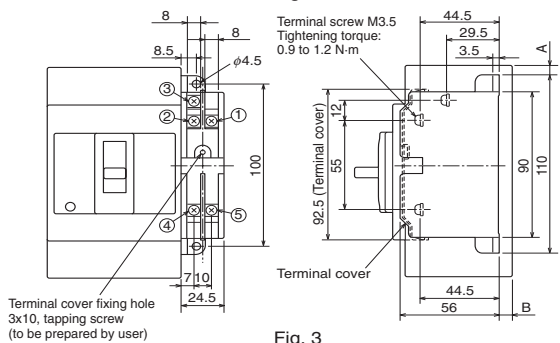


Fig. 3

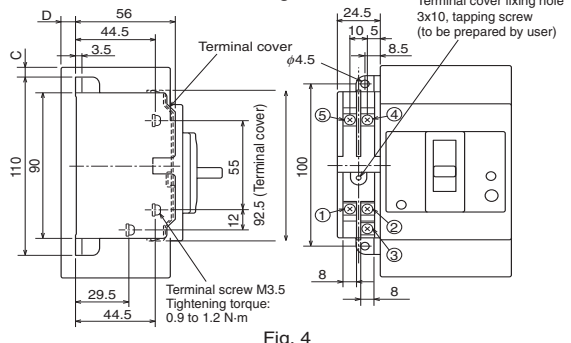


Fig. 4

●Examples of connection

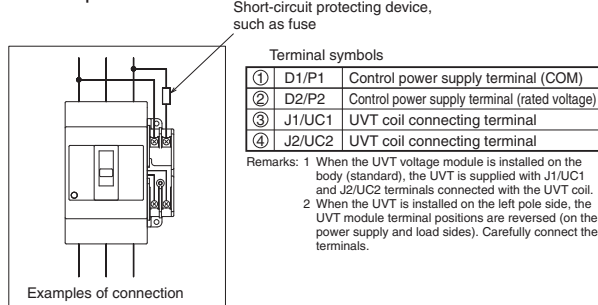


Fig. 5

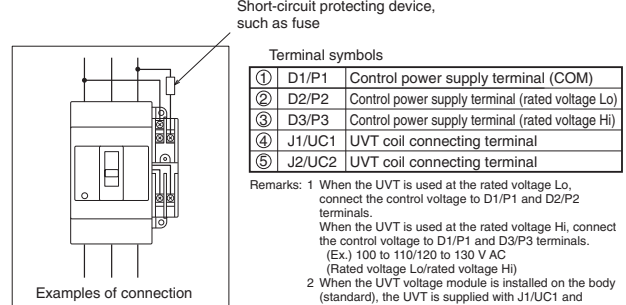


Fig. 6

Table 6-13 Installation on right pole side

Model	Reference drawing	Variable dimensions				
		A	B			
NF50-SVFU	Fig. 1	11	7.5			
NF32-SV, NF63-CV/SV/HV		20.5	7.5			
NF100-CVFU		20.5	7.5			
NF125-CV/SV/HV		20.5	7.5			
NF125-SVU/HVU		41.5	7.5			
NF125-UV		81.5	7.5			
NF125-SEV/HEV/RGV, NF250-CV/SV/HV/RGV/SEV/HEV		Fig. 5	38	7.5		
NF125-SGV/LGV/HGV, NF160-SGV/LGV/HGV						
NF250-SGV/LGV/HGV						
NF250-SVU/HVU						
NF250-UV						
NF225-CWU						
NF400-CW/SW/SEW/HEW/REW	Fig. 3	67.5	41.5			
NF630-CW/SW/SEW/HEW/REW, NF-SKW						
NF400-U EW(3P)						
NF800-CEW/SDW/SEW/HEW/REW, NF-SLW						
NF400-U EW(4P), NF800-U EW						
NF1000-SEW, NF1250-SEW, NF1600-SEW						
				Fig. 6	107.5	138.5
		123.5	138.5			
		161	63			

Table 6-14 Installation on left pole side

Model	Reference drawing	Variable dimensions	
		C	D
NV125-CV/SV/HV	Fig. 2	20.5	7.5
NV125-SEV/HEV, NV250-CV/SV/HV/SEV/HEV	Fig. 5	38	7.5
NF400-CW/SW/SEW/HEW/REW			
NF630-CW/SW/SEW/HEW/REW	Fig. 4	67.5	41.5
NV400-CW/SW/SEW/HEW/REW			
NV630-CW/SW/SEW/HEW			
NF400-ZCW/ZSW/ZEW			
NF-SKW			
NF400-U EW(3P)			
NF800-CEW/SDW/SEW/HEW/REW			
NV800-SEW/HEW, NF-SLW			
NF400-U EW(4P), NF800-U EW			
		76.5	41.5
		123.5	138.5

6 Accessories 1 Internal Accessories

8. Lead Wire Drawing

Lead wire lateral drawing ... Available to all models

Note *1 Except for BH, BH-P, BH-S, BH-PS, BH-D6, BH-D10, BH-DN, BV-D, BV-DN and KB-D.

Remark: 1. Although the following models are applicable to lead wires drawn laterally, they are normally applicable to installation in close contact with the circuit breaker side faces. (The circuit breaker side faces have grooves.)

Lead wires drawing to load

Table 6-15

Model applicable to lead wire drawing to load (only front connection type)
NF30-CS

Specifications for lead wires

Table 6-16

Applicable model	Kind of lead wire	Lead wire thickness	Lead wire length	Example of ring mark
NF30-CS	Heat-resistant wire	0.4mm ²	450mm	98/ALa (Red), 96/ALb (Blue) 95/ALc (Gray), 14/AXa (Brown) 12/AXb (Black), 11/AXc (White) C1/S1 (Red), C2/S2 (Red) J1/UC1 (White), J2/UC2 (White)
1000A frame or above		0.75mm ²		
30 to 800A frames except above models		0.5mm ²		

A terminal symbol is indicated on each lead wire with a ring mark.

NF32-SV, NF63-CV/SV/HV~NF250-CV/SV/HV/UV
NF125-SEV/HEV, NF250-SEV/HEV, NF125-RGV
NF250-RGV, NF125-SGV/LGV/HGV~NF250-SGV/LGV/HGV
NV32-SV, NV63-CV/SV/HV~NV250-CV/SV/HV
NV125-SEV/HEV, NV250-SEV/HEV
NF50-SVFU, NF100-CVFU, NF125-SVU/HVU, NF250-SVU/HVU, NF225-CWU
NF100-CVFU, NV125-SVU/HVU
NV250-SVU/HVU

(When a 4-pole model among the above models has accessories installed on the right pole side, the lead wires are 400 mm long.)

9. Lead Wire Terminal Block

(1) Vertical lead wire terminal block (SLT)

The lead wire terminal blocks for plug-in terminal blocks are available (P-LT). The drilling size of these terminal blocks differs from the standard size. Consult us for details.

For a flush plate type circuit breaker, a terminal block will be installed on the circuit breaker rear face. (Specify as FP-LT.)

Note *1 When the circuit breaker body is equipped with internal accessories and electrical operation device of motor-driven type (2) or spring charge type (2), the circuit breaker is normally provided with a lead wire terminal block.

MCCB

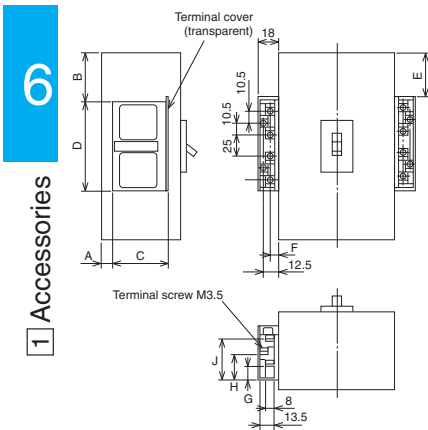


Table 6-17-1 Table of variable dimensions

Model	A	B	C	D	E	F	G	H	J	
NF30-CS	(*)	4	4.5	44.5	86.5	4.5	7	10	22	34
NF32-SV, NF63-CV/SV/HV		7	26.5	54	86.5	26.5	7	14	26	38
NF125-CV/SV/HV		7	26.5	54	86.5	26.5	7	14	26	38
NF125-UV		7	87.5	54	86.5	87.5	7	14	26	38
NF250-UV		7	119	54	86.5	119	7	14	26	38
NF125-SEV/HEV/RGV, NF250-CV/SV/HV/SEV/HEV/RGV NF125-SGV/LGV/HGV, NF160-SGV/LGV/HGV NF250-SGV/LGV/HGV		7	44	54	86.5	44	7	14	26	38
NF50-SVFU		7	27.5	54	86.5	27.5	7	14	26	38
NF100-CVFU		7	28.5	54	86.5	28.5	7	14	26	38
NF125-SVU/HVU		7	47.5	54	86.5	47.5	7	14	26	38
NF225-CWU		7	37	54	86.5	37	7	14	26	38
NF400-CW/SW/SEW/HEW/REW, NF-SKW NF630-CW/SW/SEW/HEW/REW NF800-CEW/SDW/SEW/HEW/REW, NF-SLW		41	79.5	54	86.5	79.5	7	14	26	38
NF1000-SEW, NF1250-SEW, NF1600-SEW		62.5	173	54	86.5	173	7	14	26	38
NF400-UEW(3P)	(*)	138	119.5	54	86.5	119.5	7	14	26	38
NF400-UEW(4P), NF800-UEW	(*)	138	135.5	54	86.5	135.5	7	14	26	38

Note *1 The terminal positions are different from those shown in the left figure. Consult us for details.

Remark: 1. Terminal screw tightening torque: M3.5 ... 0.9 to 1.2 N·m

(2) External dimensions

■ MCCB

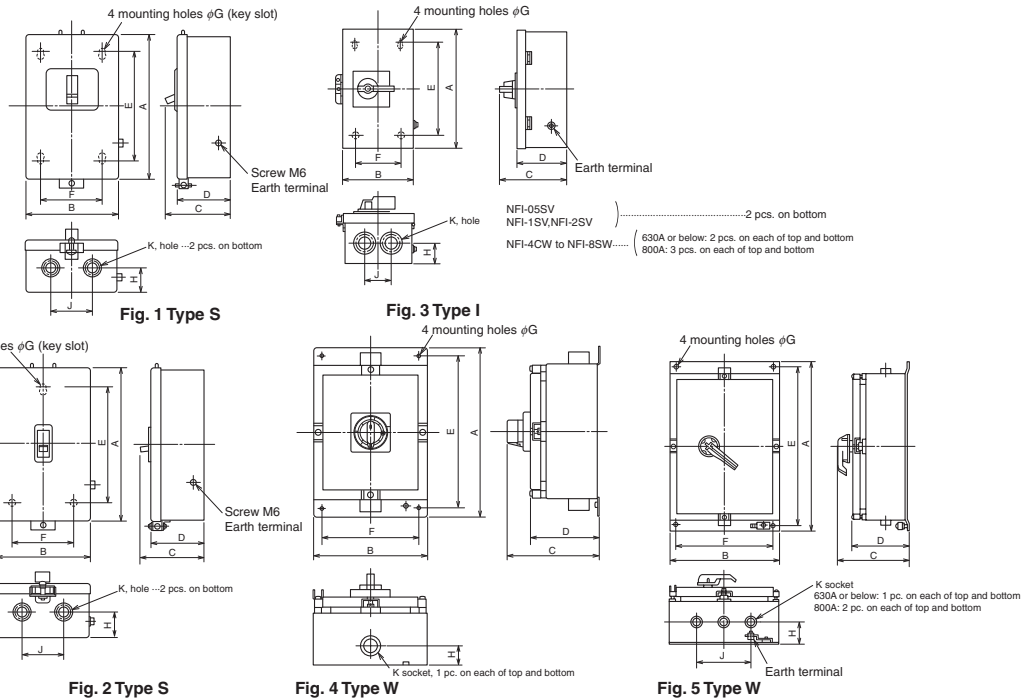


Table 6-40 Table of variable dimensions (Boxes for 4-pole circuit breakers are not manufactured.)

Note) The sockets are applicable to thick steel duct (JIS C 8305) and conduit tube thread.

Box type	Type name	Applicable Model	Fig.	Variable dimensions										
				A	B	C	D	E	F	G	H	J	K	
S	NFS-03CS	NF30-CS	2	188	158	69	58	150	78	6	25	100	20, 28	
	NFS-05SV2	NF32-SV, NF63-CV/SV/HV	1	260	178	98	78	202	100	7	34	100	28, 35, 44	
	NFS-05SV													
	NFS-1SV2	NF125-CV/SV	1	310	178	98	78	252	100	7	34	100	28, 35, 44	
	NFS-1SV	NF125-CV/SV/HV												
I	NFS-2SV	NF250-CV/SV, NF125/250-SEV NF125-SGV/LGV NF160-SGV/LGV NF250-SGV/LGV	1	440	247	137	116	373	170	9	52	120	50, 62, 78	
	NFI-05SV	NF32-SV, NF63-CV/SV/HV	3	350	186	155.5	117	286	120	7	42	100	28, 35, 44	
	NFI-1SV	NF125-CV/SV/HV	3	352	188	155.5	118	286	120	7	42	100	28, 35, 44	
	NFI-2SV	NF250-CV/SV/HV, NF125/250-SEV/HEV NF125-SGV/LGV/HGV NF160-SGV/LGV/HGV NF250-SGV/LGV/HGV	3	442	248	162	124	373	170	9	54	120	50, 62, 78	
	NFI-4CW	NF400-CW	3	730	320	244	191	650	240	11	87	120	50, 62, 78	
	NFI-4SW	NF400-SW/SEW	3	730	320	244	191	650	240	11	65	120	50, 62, 78	
	NFI-6SW	NF630-CW/SW/SEW	3	940	433	260	207	856	350	15	90	150	92	
W	NFI-8SW	NF800-CEW/SDW/SEW	3	1353	543	304	251	1270	460	15	90	320	104	
	NFW-05SV	NF32-SV, NF63-CV/SV/HV	4	390	265	214	160	350	225	9.5	45	-	28	
	NFW-1SV	NF125-CV/SV	4	390	265	214	160	350	225	9.5	50	-	36	
	NFW-1HV	NF125-HV	4	480	265	239	186	440	225	9.5	60	-	36	
	NFW-2SV	NF250-CV/SV/HV, NF125/250-SEV/HEV NF125-SGV/LGV/HGV NF160-SGV/LGV/HGV NF250-SGV/LGV/HGV	4	550	355	264	210	510	315	11	75	-	54	
	NFW-4CW	NF400-CW	5	800	355	257	220	760	315	11	85	-	70	
	NFW-4SW	NF400-SW/SEW	5	800	355	257	220	760	315	11	85	-	70	
	NFW-6SW	NF630-CW/SW/SEW	5	800	355	257	220	760	315	11	85	-	82	
	NFW-8SW	NF800-CEW/SDW/SEW	5	1435	550	339	265	1395	515	15	100	180	104	

7 Characteristics and Dimensions

Molded Case Circuit Breakers

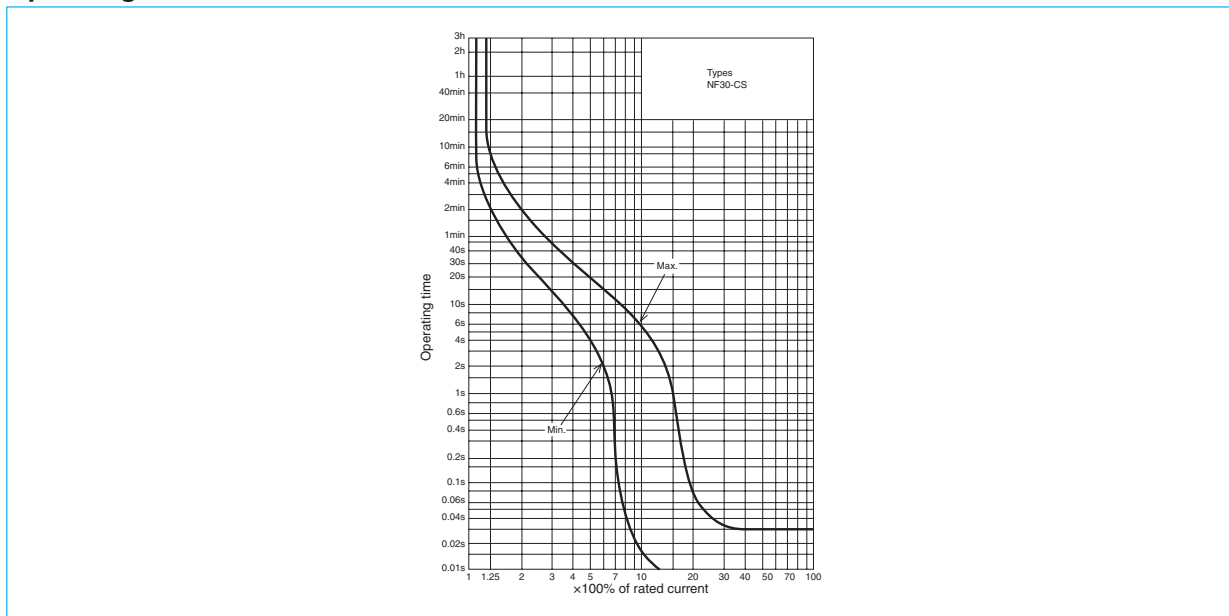
NF30-CS



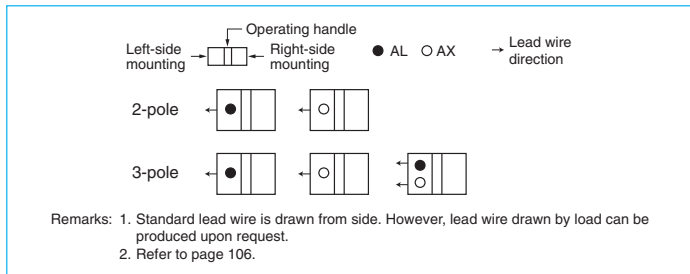
NF30-CS

Model		NF30-CS		
Rated current I _n (A)		3, 5, 10, 15, 20, 30		
Number of poles		2	3	
Rated insulation voltage U _i (V)		500		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	-
			500V	-
			415V	1.5/1.5
			380V	1.5/1.5
			240V	2.5/2
Standard Attached Parts (Front connection)		Mounting screw: M4×0.7×20 (2pcs)		

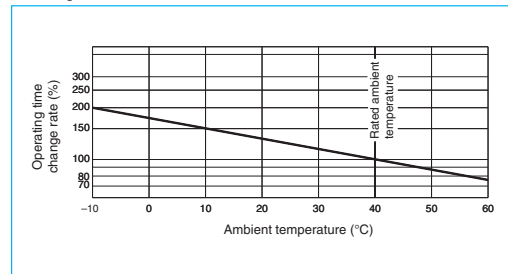
Operating Characteristics



Internal Accessories



Temperature Characteristics Curve



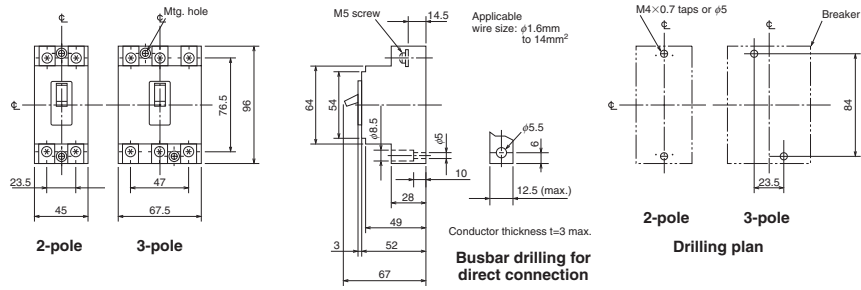
External Accessories

Accessories	Type name	Reference page
Terminal cover	Small (TC-S)	123
	Large (TC-L)	
	Rear (BTC)	
	Skeleton (TTC)	
Handle lock (HL)	HL-05FH	129
Lock cover (LC)	LC03CS	130
IEC 35mm rail mounting adapter (DIN)	DIN-03CS	139

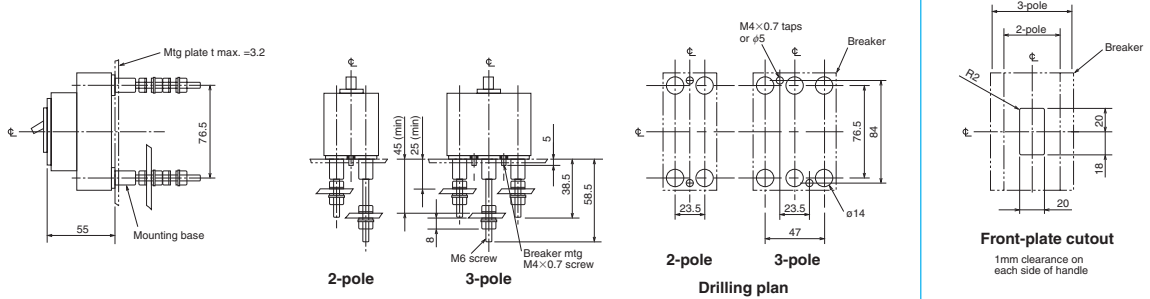
Note *1 The designation depends on the number of poles. Refer to the reference page.

Outline Drawing

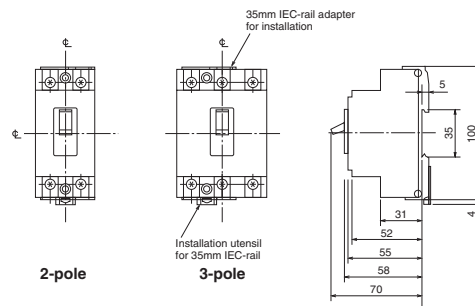
Front connection



Rear connection



IEC Rail Mounting Adapter



7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF32-SV
NF63-CV
NF63-SV
NF63-HV

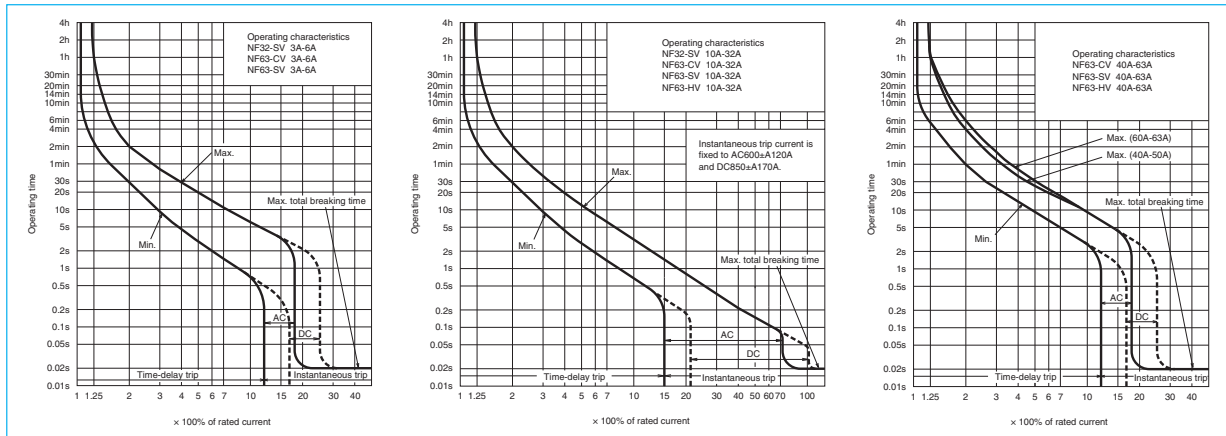


NF63-SV

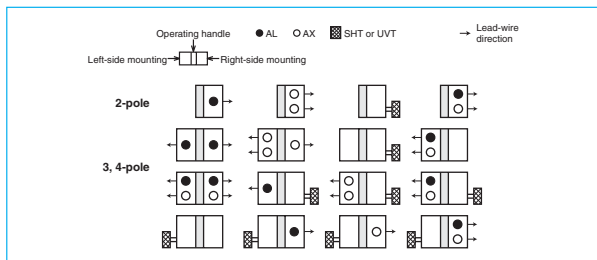
Model		NF32-SV			NF63-CV			NF63-SV			NF63-HV						
Rated current In (A)		3	4	(5)	6	10	15	16	20	25	(30)	32	40	50	60	63	
Number of poles		2			3			2			3			4			
Rated insulation voltage Ui (V)		600			600			600			690						
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	-			-			-			2.5/2.5				
			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			10/8				
			415V	2.5/2.5			2.5/2.5			7.5/7.5			10/8				
			400V	5/5			5/5			7.5/7.5			10/8				
			380V	5/5			5/5			7.5/7.5			10/8				
		DC	230V	7.5/7.5			7.5/7.5			15/15			25/19				
			250V (*1)	2.5/2.5			2.5/2.5			7.5/7.5			7.5/7.5				
			Standard attached parts (front connection)														
			Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) Insulation barrier: (2P: 1pc, 3P: 2pcs, 4P: 3pcs) (*2)														

Notes *1 Use two poles for three- and four-pole products. Not available for use with connection as shown at the bottom of page 14.
*2 Supplied with NF63-SV and NF63-HV.

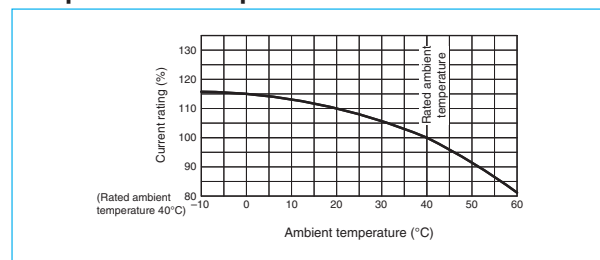
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



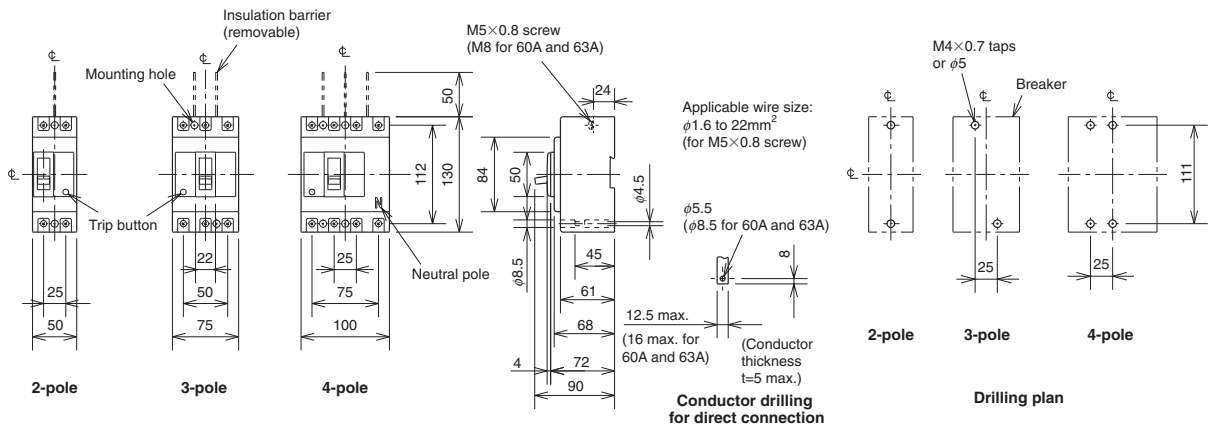
External Accessories

Accessories				Type name	Reference page	Accessories				Type name	Reference page	
Operating handle	F	2P	F-05SV2	119	Mechanical interlock	MI	2, 3P	MI-05SV3	131			
		3, 4P	F-05SV				4P	MI-05SV4				
	V	2P	V-05SV2		121	Terminal cover	Small	TC-S		2P	TCS-05SV2	
		3, 4P	V-05SV							3P	TCS-05SV3	
Handle lock device	LC	LC-05SV		129	Large				TC-L	2P	TCL-05SV2	
		HL(*1)	HLF-05SV							2P	TCL-05SV2L	
			HLN-05SV							3P	TCL-05SV3	
	HLS	HLS-05SV								3P	TCL-05SV3L	
		Skeleton	TTC				2P	TTC-05SV2		123		
							3P	TTC-05SV3				
Rear	BTC	2P	BTC-05SV2									
		3P	BTC-05SV3									
		Plug-in	PTC	2P	PTC-05SV2							
3P	PTC-05SV3											
IEC 35mm rail mounting adapters				DIN-05SV	139							

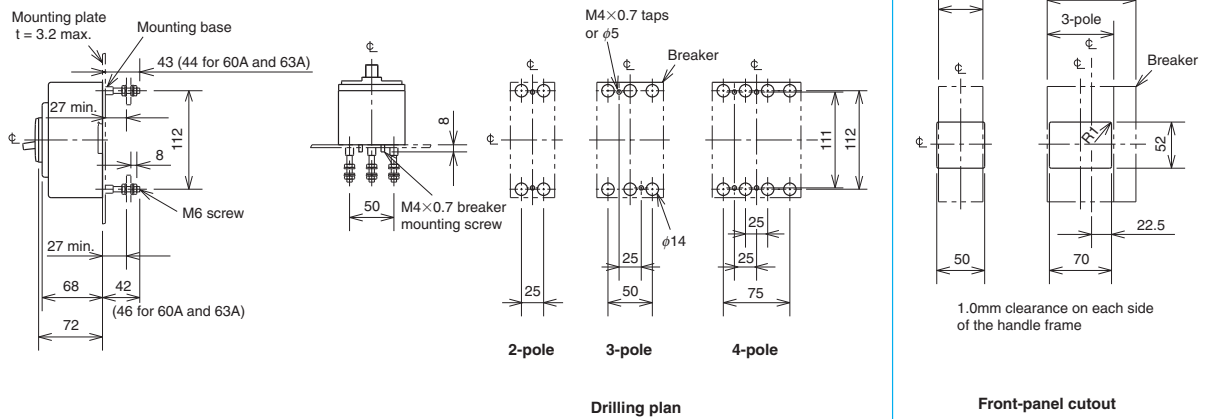
Note *1 HLF types are used for OFF lock and HLN types for ON lock.

Outline Drawing

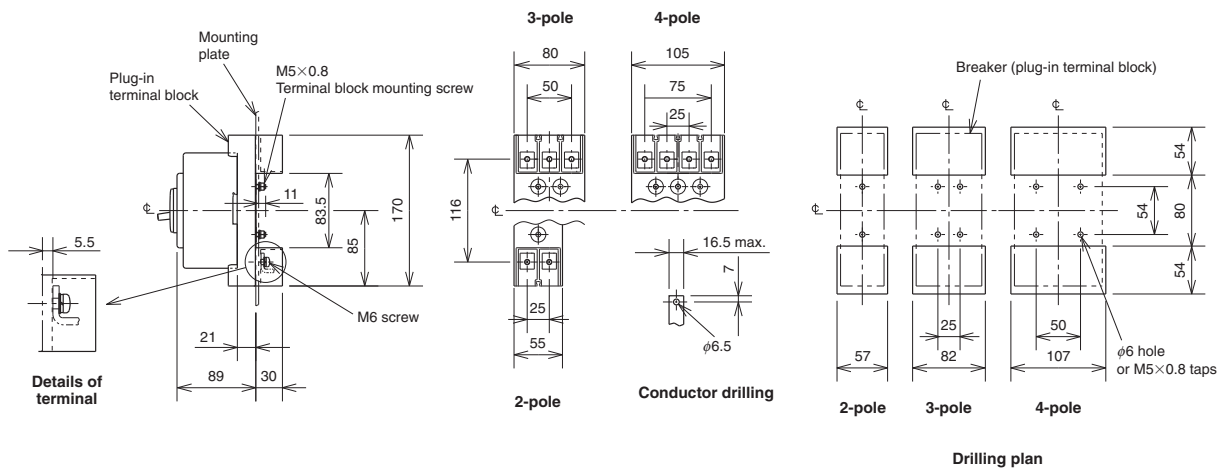
Front connection



Rear connection



Plug-in



Remark: 1. Only 2-pole and 3-pole models are available for NF32-SV and NF63-CV.

7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF125-CV NF125-SV NF125-HV

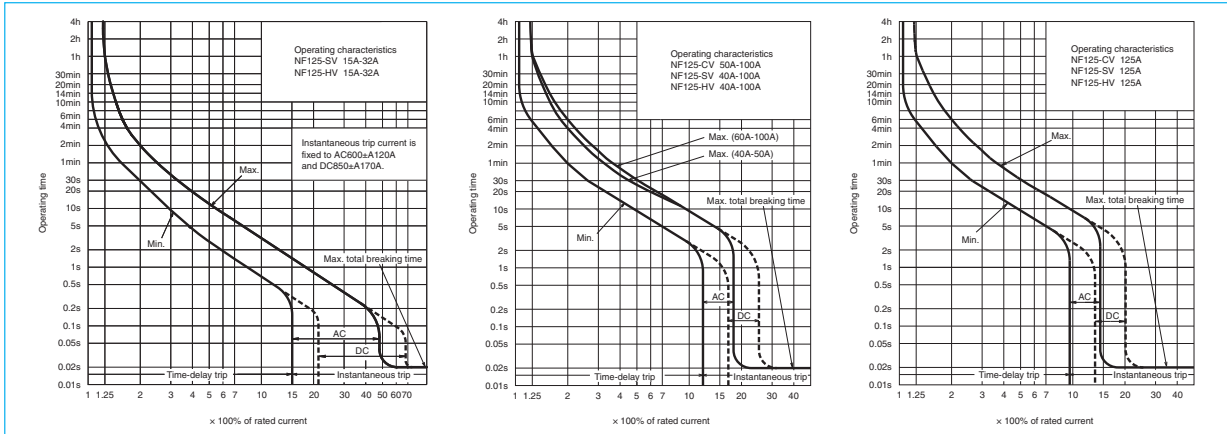


NF125-SV

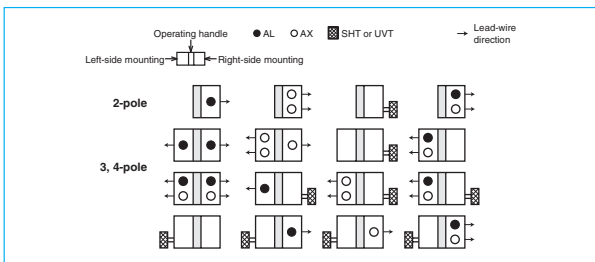
Model		NF125-CV					NF125-SV			NF125-HV				
Rated current In (A)		50 (60) 63 (75) 80 100 125					(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 125			(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 125				
Number of poles		2					3			2				
Rated insulation voltage Ui (V)		600					690			690				
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	-					8/8			10/8		
			500V	7.5/4					18/18			30/23		
			440V	10/5					25/25			50/38		
			415V	10/5					30/30			50/38		
			400V	10/5					30/30			50/38		
			380V	10/5					30/30			50/38		
		230V	30/15					50/50			100/75			
		DC	250V (*1)					7.5/4			40/40			
Standard attached parts (front connection)		Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) (*2) Insulation barrier: (2P: 1pc, 3P: 2pcs, 4P: 3pcs)												

Notes *1 Use two poles for three- and four-pole products.
If wired as shown at the bottom on page 14, three and four poles can be used for up to 400 and 500VDC, respectively.
*2 Supplied with NF125-SV and NF125-HV.

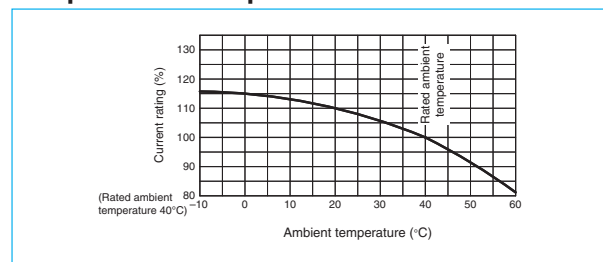
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



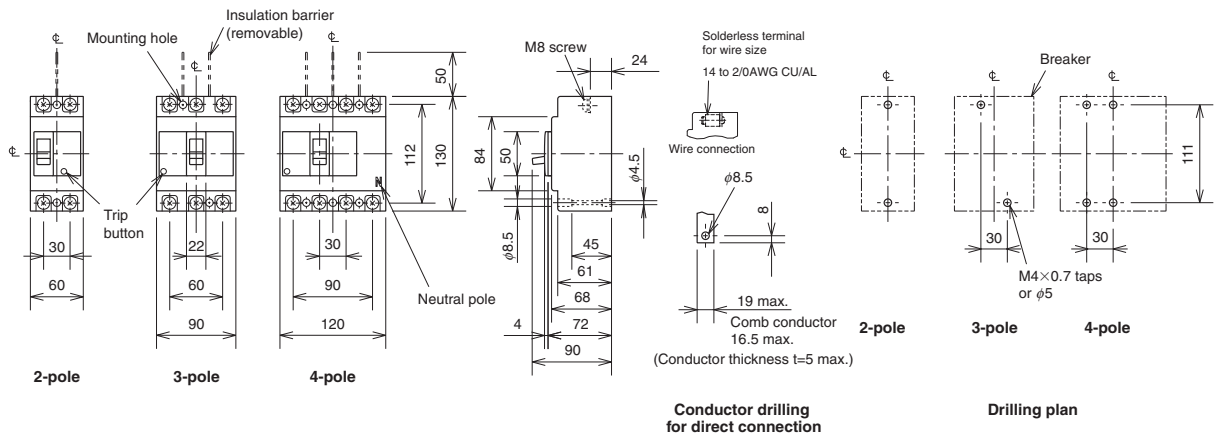
External Accessories

Accessories		Type name	Reference page	Accessories		Type name	Reference page
Operating handle	F	2P F-1SV2	119	Mechanical interlock	MI	2, 3P MI-05SV3	131
		3, 4P F-1SV				4P MI-05SV4	
	V	2P V-1SV2	121	Terminal cover	Small	TC-S	2P TCS-1SV2
		3, 4P V-1SV					3P TCS-1SV3
Handle lock device	LC	LC-05SV	129		Large	TC-L	2P TCL-1SV2
	HL(*1)	HLF-05SV					3P TCL-1SV3
		HLN-05SV					4P TCL-1SV4
	HL-S	HLS-05SV			Skeleton	TTC	2P TTC-1SV2
			3P TTC-1SV3				
					Rear	BTC	2P BTC-1SV2
			3P BTC-1SV3				
					Plug-in	PTC	2P PTC-1SV2
			3P PTC-1SV3				
				Electrical operation device		(*2)	135

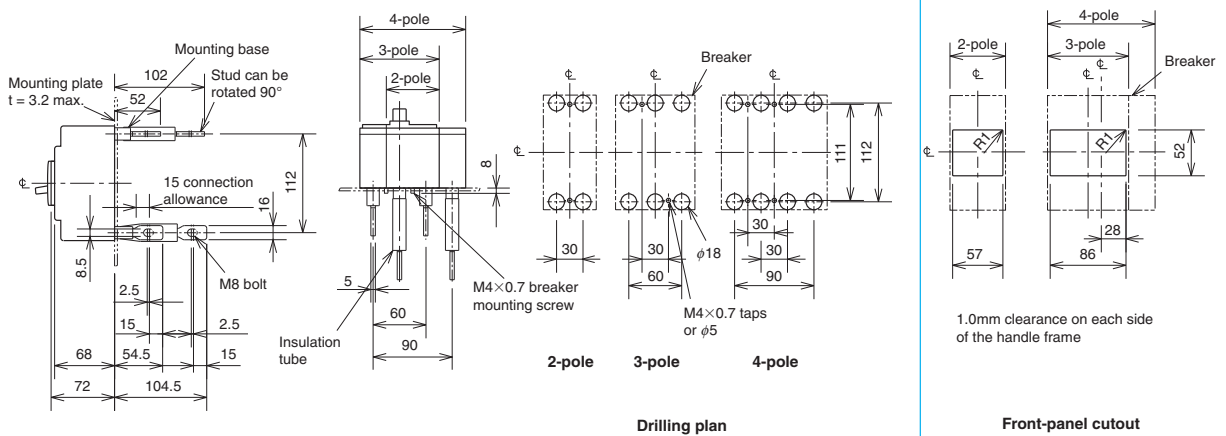
Notes *1 HLF types are used for OFF lock and HLN types for ON lock.
*2 Specify the working voltage. Refer to the reference page for type name.

Outline Drawing

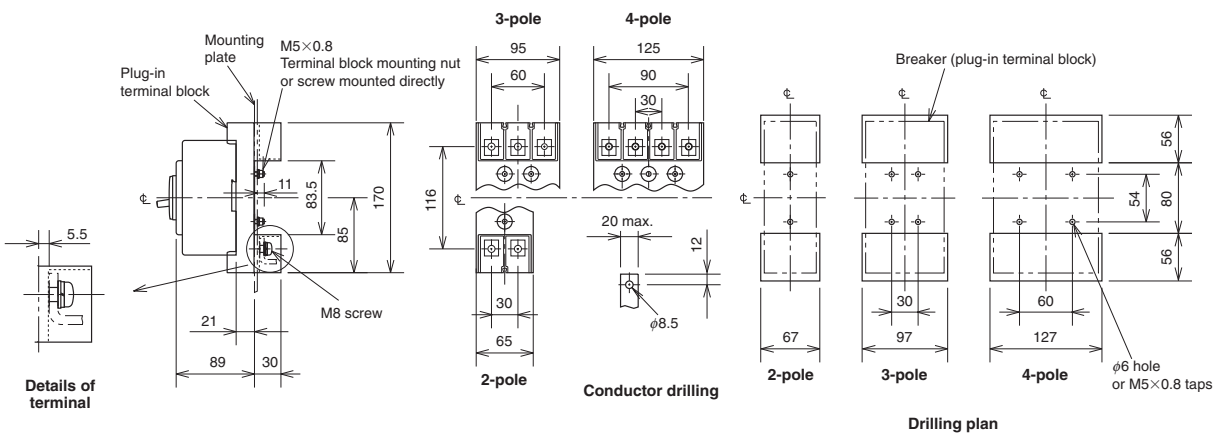
Front connection



Rear connection



Plug-in



Remarks: 1. The 2-pole models of NF125-HV are 3-pole models with the central pole removed.
 2. Only 2-and 3-pole models are available for NF125-CV.

7 Characteristics and Dimensions

Molded Case Circuit Breakers

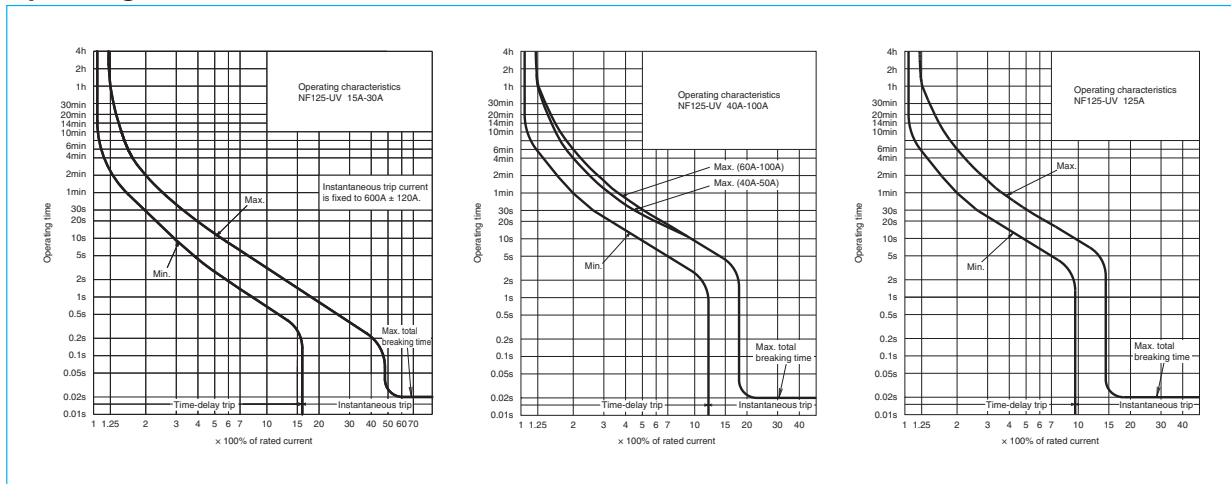
NF125-UV



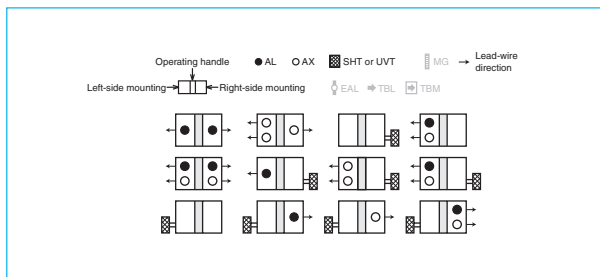
NF125-UV

Model		NF125-UV		
Rated current In (A)		15 20 30 40 50 60 75 100 125		
Number of poles		2	3	4
Rated insulation voltage Ui (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	10/10
			500V	200/200
			440V	200/200
			415V	200/200
			400V	200/200
			380V	200/200
		DC	250V	-
Standard attached parts (front connection)		Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) M4x0.7x73 (2 and 3P: 2pcs)		

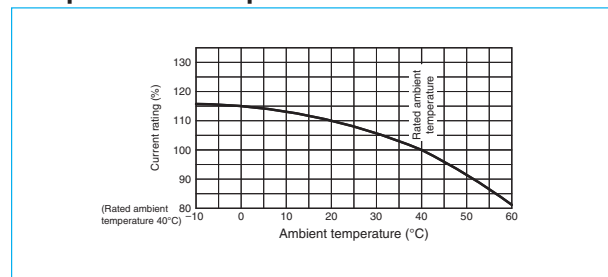
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



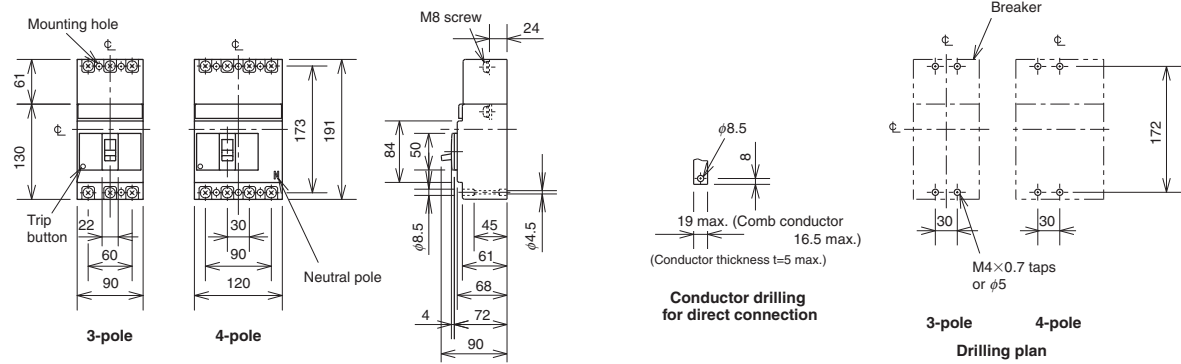
External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page
Operating handle	F	F-1UV	Mechanical interlock	2, 3P	MI-05SV3
	V	V-1UV		4P	MI-05SV4
Lock cover	LC	LC-05SV	Terminal cover	Small	TC-S
Handle lock device	HL (*1)	HLF-05SV		3P	TCS-1SV3
		HLN-05SV		3P	TCL-1SV4
		HLS-05SV		4P	TCL-1SV4
				Skeleton	TTC
				3P	TTC-1SV3
			Rear	BTC	
			3P	BTC-1SV3	
			Plug-in	PTC	
			3P	PTC-1SV3	
Electrical operation device				(*2)	135

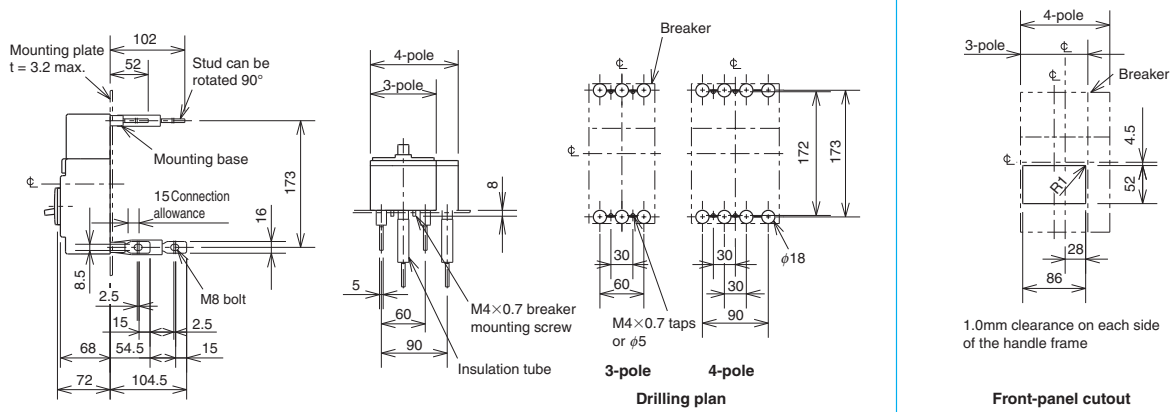
Notes *1 HLF types are used for OFF lock and HLN types for ON lock.
*2 Specify the working voltage. Refer to the reference page for type name.

Outline Drawing

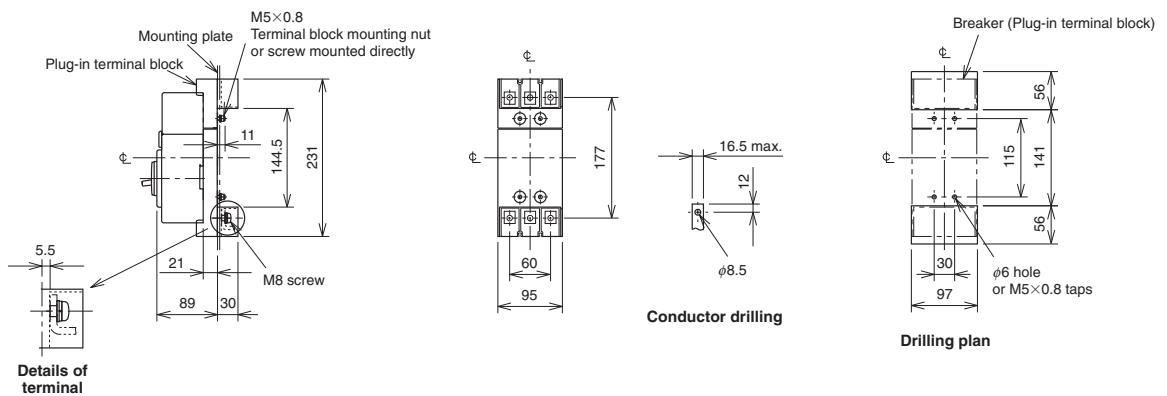
Front connection



Rear connection



Plug-in



Remark: 1. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF250-CV NF250-SV NF250-HV

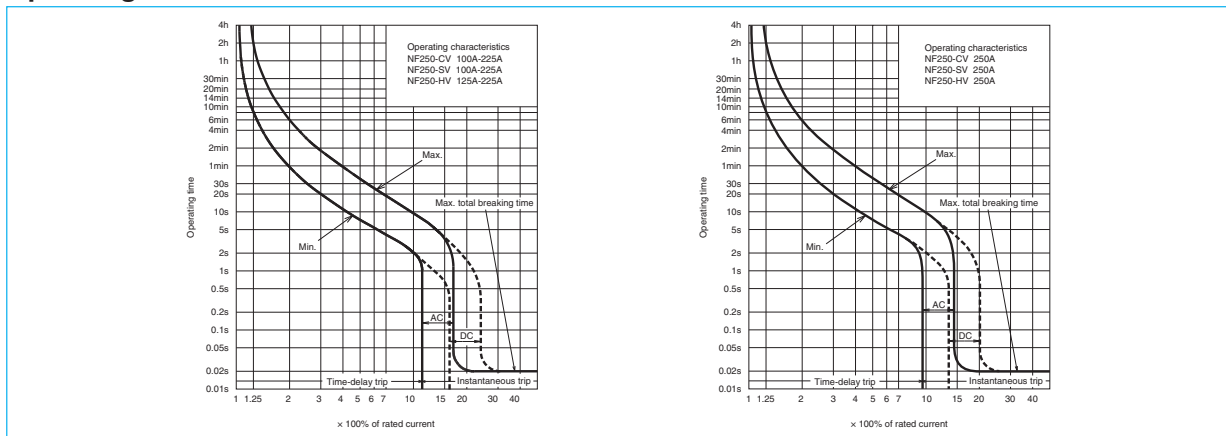


NF250-SV

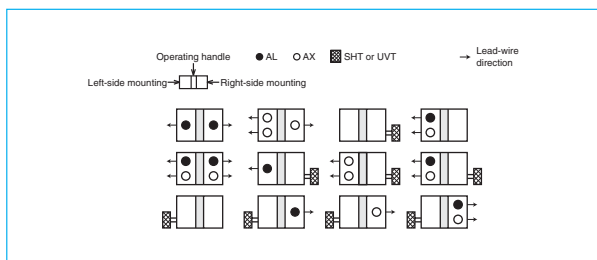
Model		NF250-CV		NF250-SV			NF250-HV					
Rated current In (A)		(*1) (100) 125 150 175 200 225 250		(*1) (100) 125 150 160 175 200 225 250			125 150 160 175 200 225 250					
Number of poles		2 3		2 3 4			2 3 4					
Rated insulation voltage Ui (V)		600		690			690					
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	-			8/8			10/8		
			500V	10/8			30/30			50/38		
			440V	15/12			36/36			65/65		
			415V	25/19			36/36			70/70		
			400V	25/19			36/36			75/75		
			380V	25/19			36/36			75/75		
			230V	36/27			85/85			100/100		
		DC (*1)	250V	15/12			20/20 (300V)			40/40 (300V)		
Standard attached parts (front connection)		Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) Insulation barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)										

Note *1 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 at the bottom of page 14, three-pole NF250-CV can be used for up to 400VDC, three-pole NF250-SV and NF250-HV up to 500VDC and four-pole products up to 600VDC.

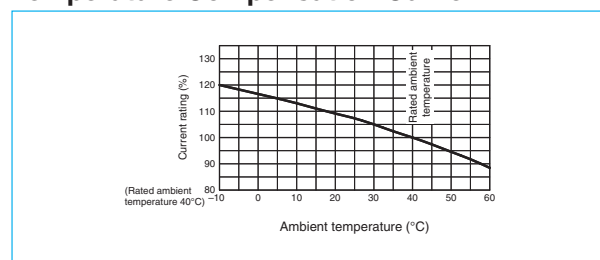
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



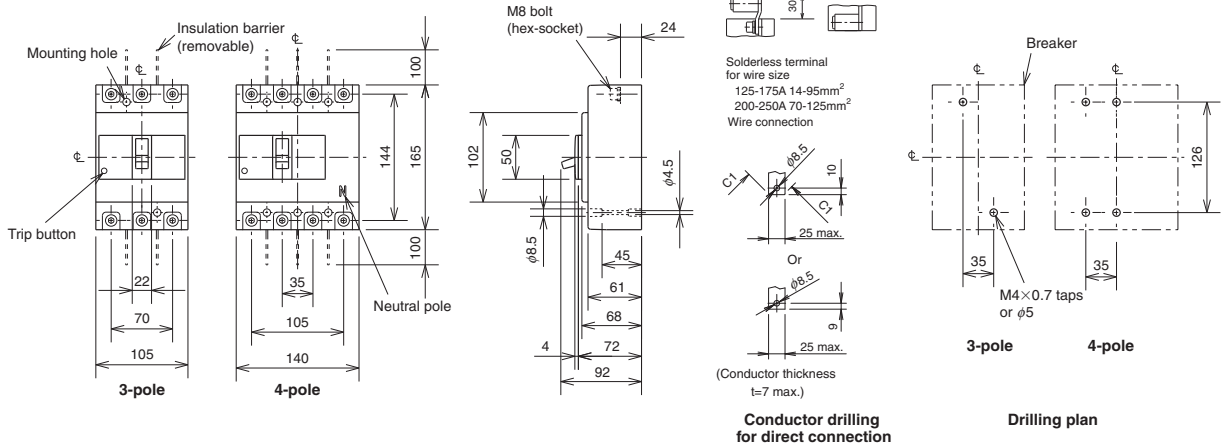
External Accessories

Accessories		Type name	Reference page	Accessories		Type name	Reference page	
Operating handle	F	F-2SV	119	Mechanical interlock	MI	2, 3P MI-05SV3	131	
	V	V-2SV	121		MI	4P MI-2SV4		
Handle lock device	LC	LC-05SV	129	Terminal cover	Small	TC-S	2, 3P TCS-2SV3	123
	HL(*1)	HLF-05SV				TC-L	2, 3P TCL-2SV3	
	HLN-05SV	TC-L			4P TCL-2SV3L			
HL-S	HLN-05SV	TC-L	2, 3P TCL-2SV4					
		HL-S-2SV	TTC		2, 3P TTC-2SV3			
			Rear		BTC	2, 3P BTC-2SV3		
			Plug-in	PTC	2, 3P PTC-2SV3			
Electrical operation device						(*2)	135	

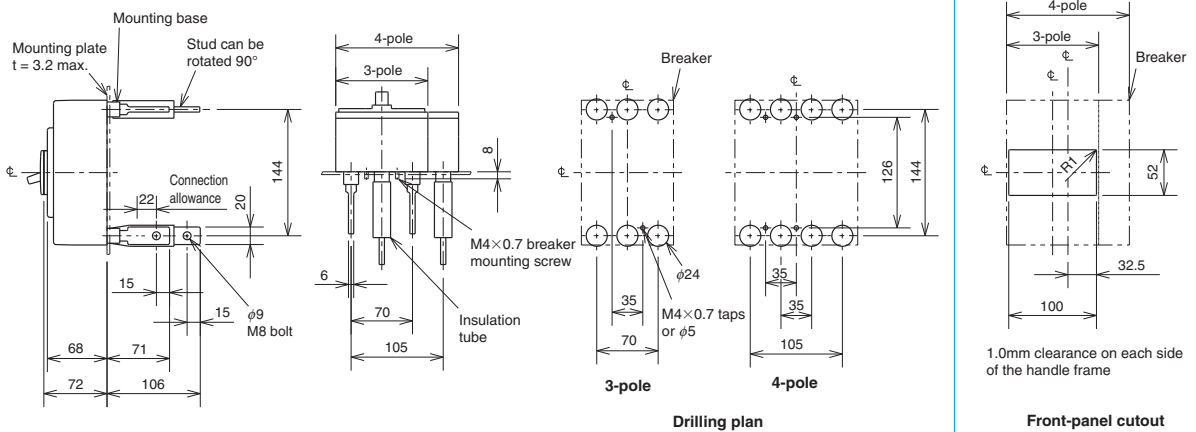
Notes *1 HLF types are used for OFF lock and HLN types for ON lock.
*2 Specify the working voltage. Refer to the reference page for type name.

Outline Drawing

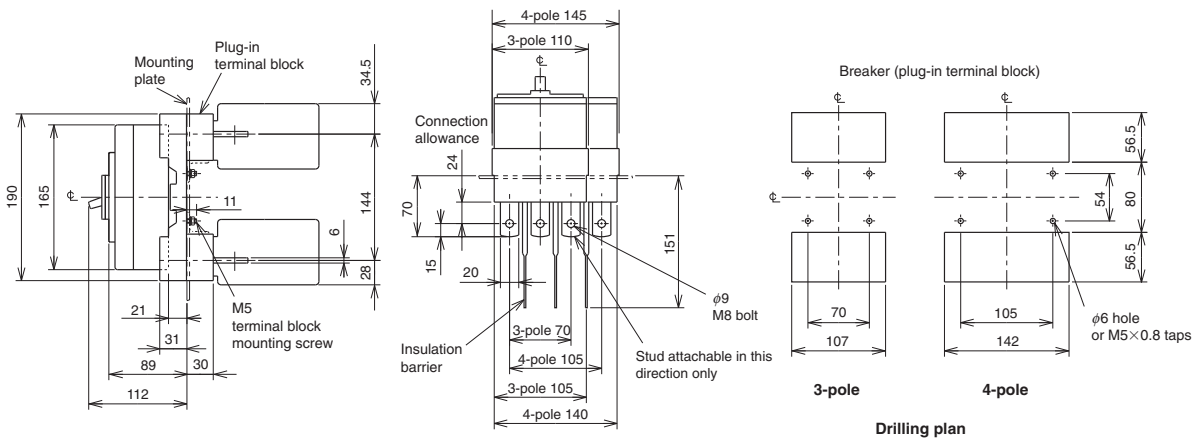
Front connection



Rear connection



Plug-in



Remarks: 1. 2-pole models are 3-pole models with the central pole removed.
 2. Only 2-pole and 3-pole models are available for NF250-CV.

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

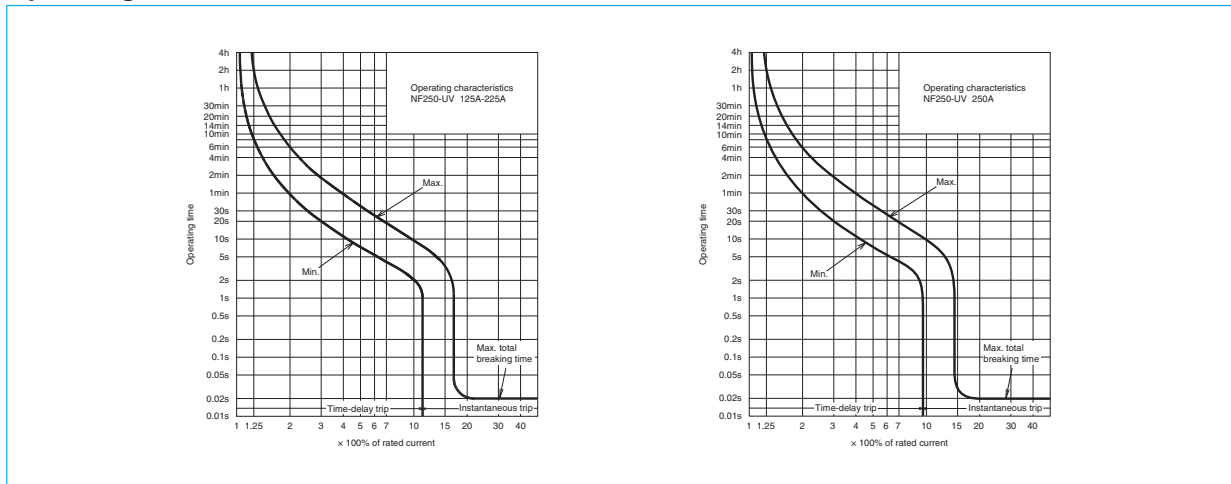
NF250-UV



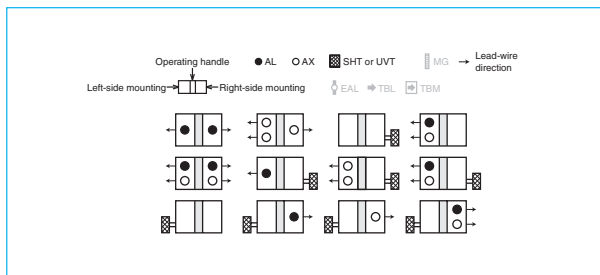
NF250-UV

Model		NF250-UV		
Rated current In (A)		125	150	175
		200	225	250
Number of poles		2	3	4
Rated insulation voltage Ui (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	15/15
			500V	200/200
			440V	200/200
			415V	200/200
			400V	200/200
			380V	200/200
		DC	250V	-
Standard attached parts (front connection)		Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) Mounting screw: M4x0.7x73 (2 and 3P: 2pcs) Insulation barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)		

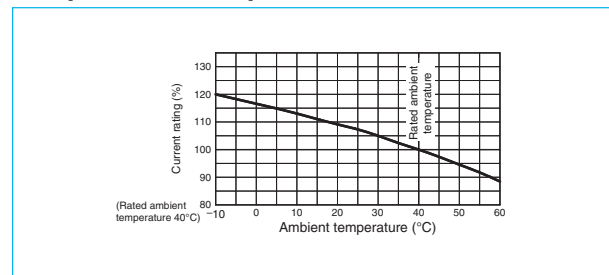
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



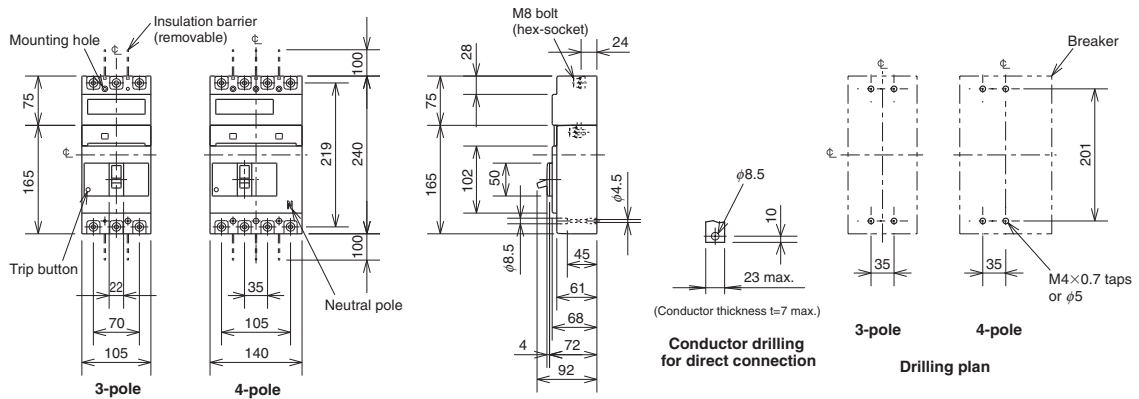
External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page	
Operating handle	F	F-2UV	Mechanical interlock	MI	2, 3P MI-05SV3	
	V	V-2UV		4P MI-2SV4	131	
Handle lock device	LC	LC-05SV	Terminal cover	Small		TC-S
	HL(*1)	HLF-05SV		2, 3P TCL-2SV3	123	
		HLN-05SV		2, 3P TCL-2SV3L		
		HLS-S		4P TCL-2SV4		
		Skeleton		TTC		2, 3P TTC-2SV3
		Rear		BTC	2, 3P BTC-2SV3	
		Plug-in	PTC	2, 3P PTC-2SV3		
		Electrical operation device		(*2)	135	

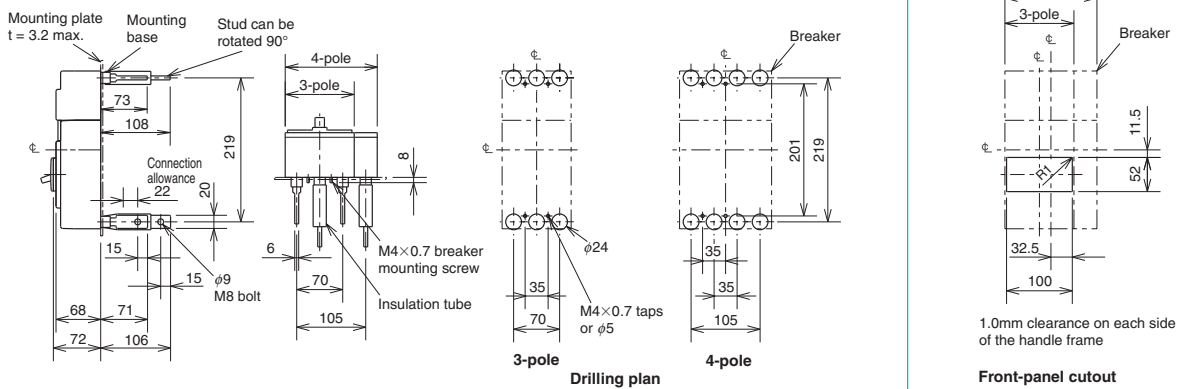
Notes *1 HLF types are used for OFF lock and HLN types for ON lock.
 *2 Specify the working voltage. Refer to the reference page for type name.

Outline Drawing

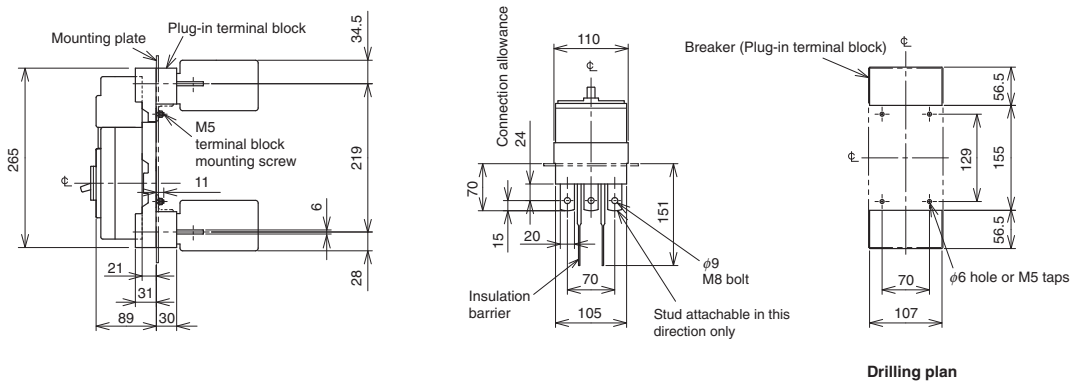
Front connection



Rear connection



Plug-in



Remark: 1. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF125-SGV
NF250-SGV
NF160-LGV
NF125-HGV
NF250-HGV
NF250-RGV

NF160-SGV
NF125-LGV
NF250-LGV
NF160-HGV
NF125-RGV



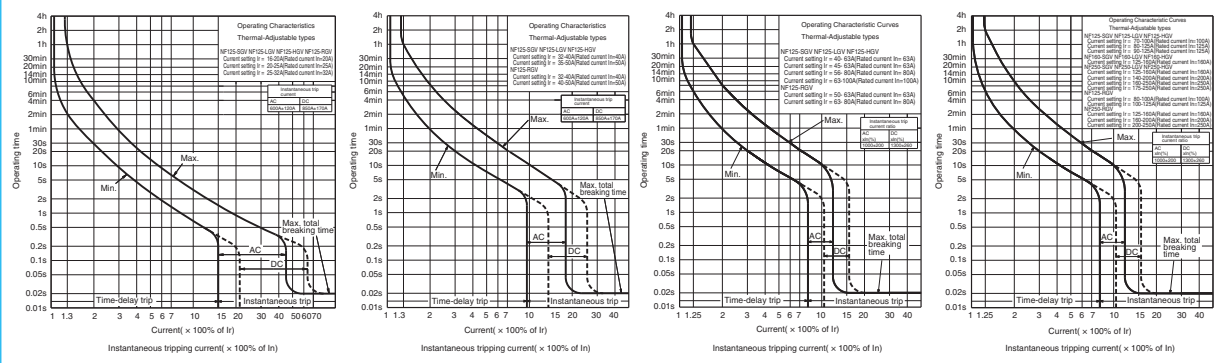
NF250-SGV

Model	NF125-SGV	NF160-SGV	NF250-SGV	NF125-LGV	NF160-LGV	NF250-LGV
Rated current In (A)	16-20, 20-25, 25-32 32-40, 35-50, 45-63 56-80, 70-100, 90-125	125-160	125-160 140-200 175-250	16-20, 20-25, 25-32 32-40, 35-50, 45-63 56-80, 70-100, 90-125	125-160	125-160 140-200 175-250
Number of poles	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4	2 3 4
Rated insulation voltage Ui (V)	690	690	690	690	690	690
Rated short-circuit breaking capacity (kA) IEC 60947-2 (Icu/Ics)	AC	AC	AC	AC	AC	AC
	690V	8/8	8/8	8/8	8/8	8/8
	500V	30/30	30/30	30/30	36/36	36/36
	440V	36/36	36/36	36/36	50/50	50/50
	415V	36/36	36/36	36/36	50/50	50/50
	400V	36/36	36/36	36/36	50/50	50/50
	380V	36/36	36/36	36/36	50/50	50/50
	230V	85/85	85/85	85/85	90/90	90/90
	200V	85/85	85/85	85/85	90/90	90/90
	DC (*)	300V	20/20	20/20	20/20	20/20
Standard attached parts (front connection)	Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) Insulation barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)					

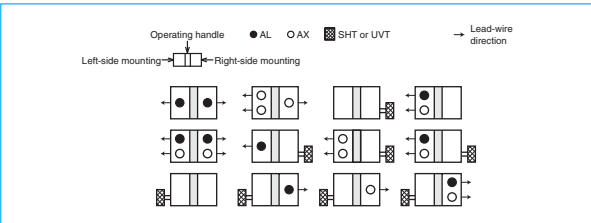
Model	NF125-HGV	NF160-HGV	NF250-HGV	NF125-RGV	NF250-RGV
Rated current In (A)	16-20, 20-25, 25-32 32-40, 35-50, 45-63 56-80, 70-100, 90-125	125-160	125-160 140-200 175-250	16-20, 20-25, 25-32 32-40, 40-50, 50-63 63-80, 80-100, 100-125	125-160 160-200 200-250
Number of poles	2 3 4	2 3 4	2 3 4	2 3	2 3
Rated insulation voltage Ui (V)	690	690	690	690	690
Rated short-circuit breaking capacity (kA) IEC 60947-2 (Icu/Ics)	AC	AC	AC	AC	AC
	690V	10/8	10/8	10/8	-
	500V	50/38	50/38	50/38	-
	440V	65/65	65/65	65/65	125/125
	415V	70/70	70/70	70/70	150/150
	400V	75/75	75/75	75/75	150/150
	380V	75/75	75/75	75/75	150/150
	230V	100/100	100/100	100/100	150/150
	200V	100/100	100/100	100/100	150/150
	DC (*)	300V	40/40	40/40	-
Standard attached parts (front connection)	Mounting screw: M4x0.7x55 (2 and 3P: 2pcs, 4P: 4pcs) Insulation barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)				

Note *1 When wired as shown at the bottom of page 14, three-pole models can be used for up to 500VDC, and four-pole models for up to 600VDC.

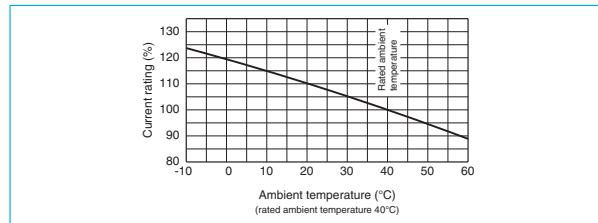
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page	
Operating handle	F	F-2SV	Mechanical interlock	MI	2, 3P MI-05SV3	
	V	V-2SV		4P MI-2SV4	131	
Handle lock device	LC	LC-05SV	Terminal cover	Small	TC-S	2, 3P TCS-2SV3
	HL(*1)	HLF-05SV			2, 3P TCL-2SV3	123
		HLN-05SV		4P TCL-2SV3L		
		HLS-2SV		4P TCL-2SV4		
			Skeleton	TTC	2, 3P TTC-2SV3	
				Rear	BTC	2, 3P BTC-2SV3
			Plug-in	PTC	2, 3P PTC-2SV3	
			Electrical operation device	(*2)	135	

Notes *1 HLF types are used for OFF lock and HLN types for ON lock.
*2 Specify the working voltage. Refer to the reference page for type name.

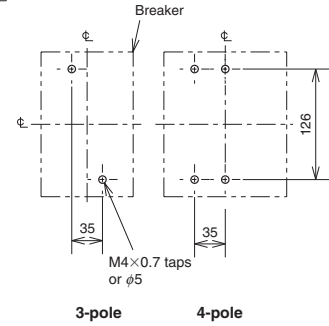
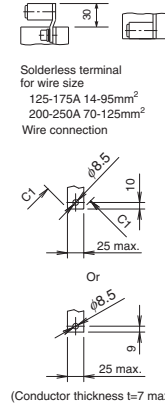
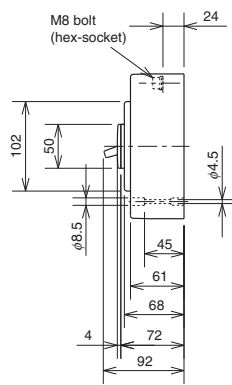
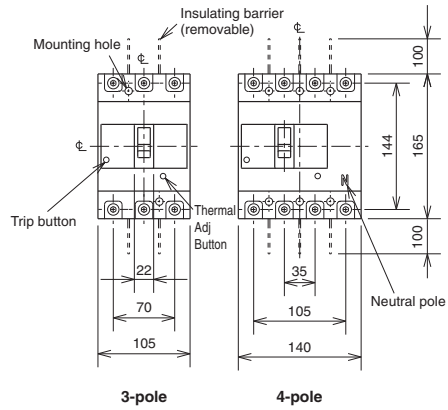
7 Characteristics and Dimensions ¹

Molded Case Circuit Breakers

NF125-SGV · NF160-SGV · NF250-SGV · NF125-LGV · NF160-LGV · NF250-LGV · NF125-HGV · NF160-HGV · NF250-HGV · NF125-RGV · NF250-RGV

Outline Drawing

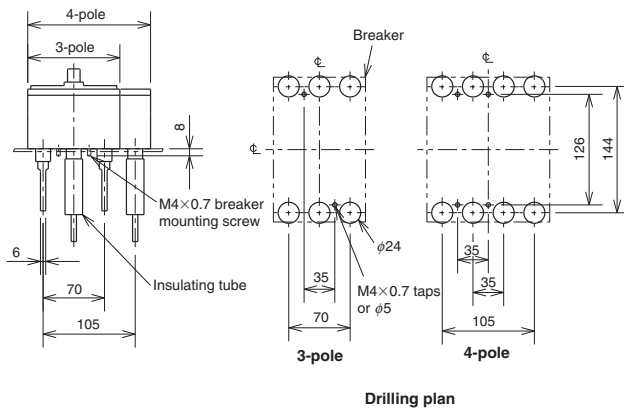
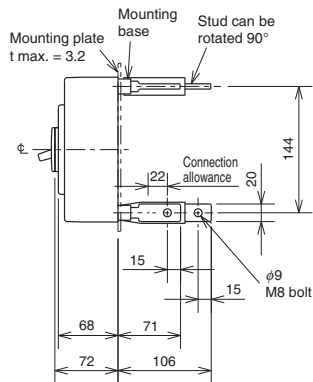
Front connection



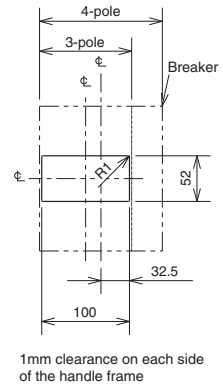
Conductor drilling for direct connection

Drilling plan

Rear connection

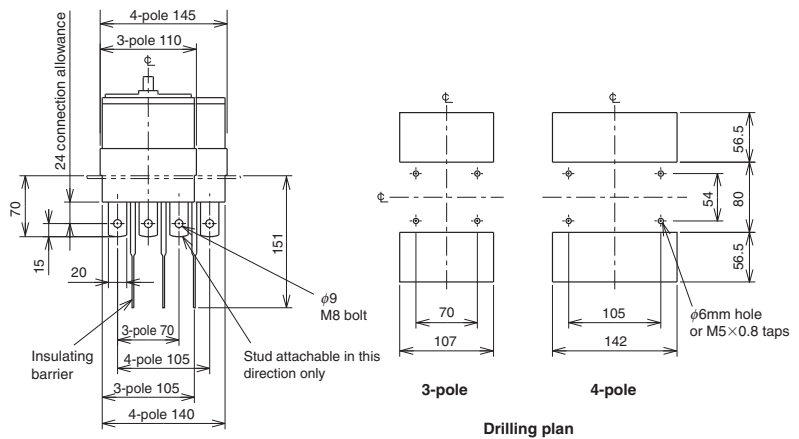
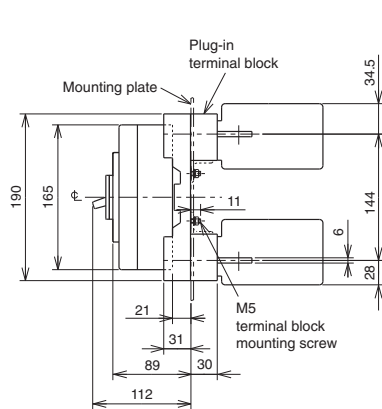


Drilling plan



Front-panel cutout

Plug-in



Drilling plan

Remark: 1. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions

Molded Case Circuit Breakers

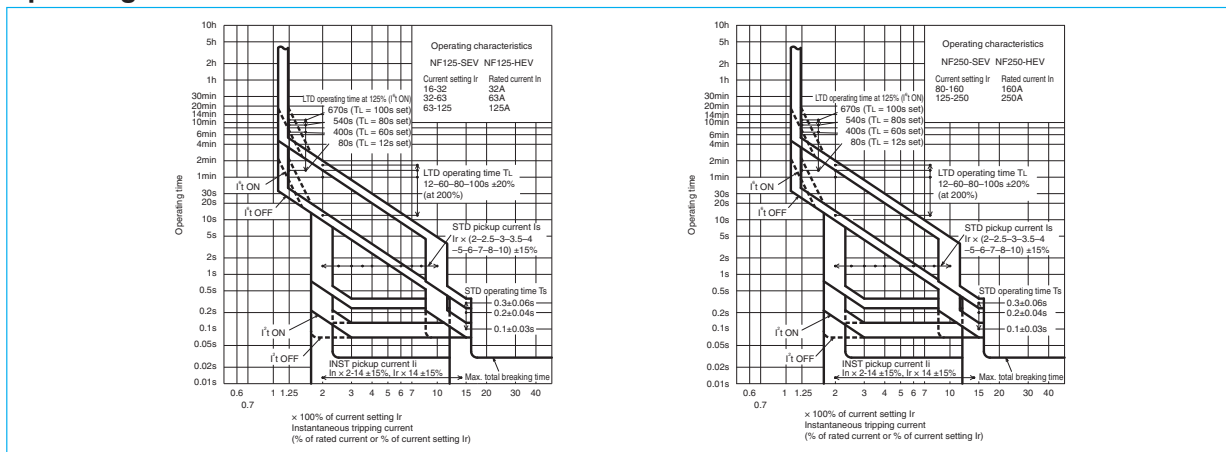
NF125-SEV
NF125-HEV
NF250-SEV
NF250-HEV



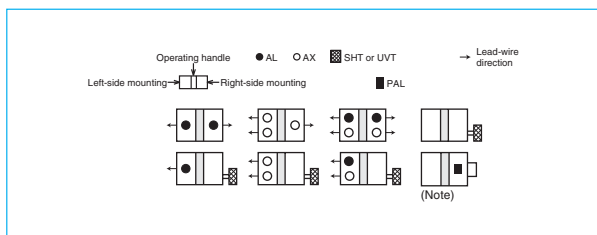
NF125-SEV

Model		NF125-SEV	NF125-HEV	NF250-SEV	NF250-HEV		
Rated current In (A)		32 63 125	32 63 125	160 250	160 250		
Current setting Ir (A)		16-32 32-63 63-125	16-32 32-63 63-125	80-160 125-250	80-160 125-250		
Number of poles		3 4	3 4	3 4	3 4		
Rated insulation voltage Ui (V)		690	690	690	690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	8/8	10/8	8/8	10/8
			500V	30/30	50/38	30/30	50/38
			440V	36/36	65/65	36/36	65/65
			415V	36/36	70/70	36/36	70/70
			400V	36/36	75/75	36/36	75/75
			380V	36/36	75/75	36/36	75/75
DC	250V	85/85	100/100	85/85	100/100		
		—	—	—	—		
Standard attached parts (front connection)		Mounting screw: M4x0.7x55 (3P: 2pcs, 4P: 4pcs) Insulation barrier: (3P: 4pcs, 4P: 6pcs)					

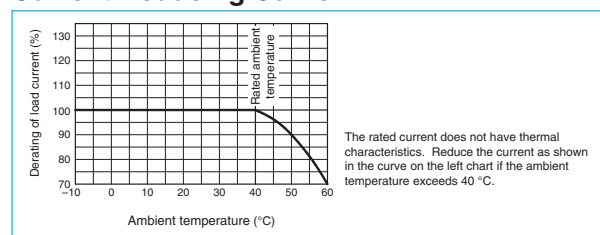
Operating Characteristics



Internal Accessories



Current Reducing Curve



External Accessories

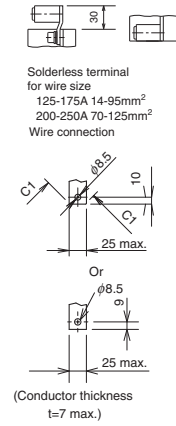
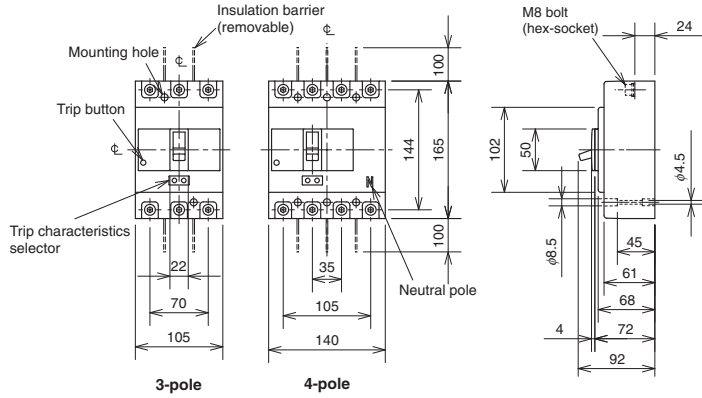
Accessories	Type name	Reference page	Accessories	Type name	Reference page		
Operating handle	F	F-2SV	Mechanical interlock	MI	3P MI-05SV3		
	V	V-2SV		4P MI-2SV4	131		
Handle lock device	LC	LC-05SV	Terminal cover	Small	TC-S	3P TCL-2SV3	123
	HL(*1)	HLF-05SV			3P TCL-2SV3L		
		HLN-05SV		4P TCL-2SV4			
	HLS-2SV	Skeleton		TTC	3P TTC-2SV3		
		Rear		BTC	3P BTC-2SV3		
		Plug-in		PTC	3P PTC-2SV3		
Notes *1 HLF types are used for OFF lock and HLN types for ON lock. *2 Specify the working voltage. Refer to the reference page for type name.			Electrical operation device	(*2)	135		

7

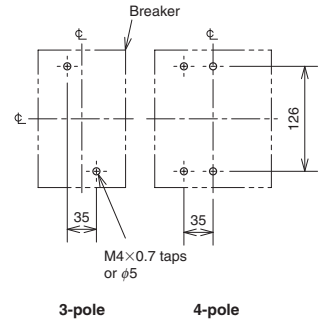
1 Characteristics and Dimensions

Outline Drawing

Front connection

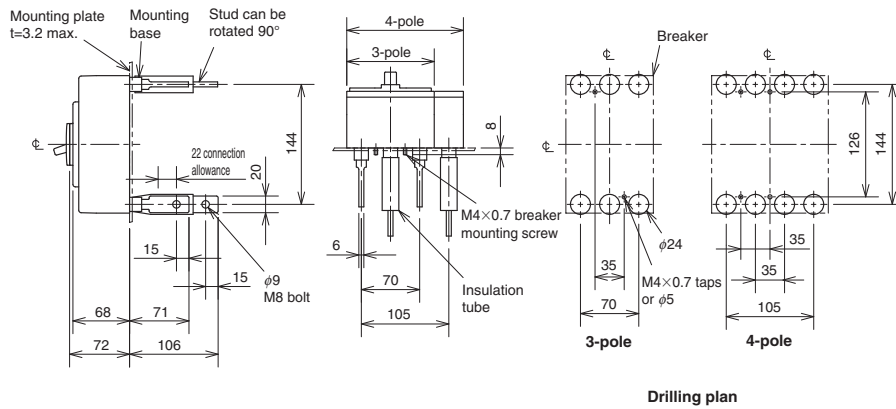


Conductor drilling for direct connection

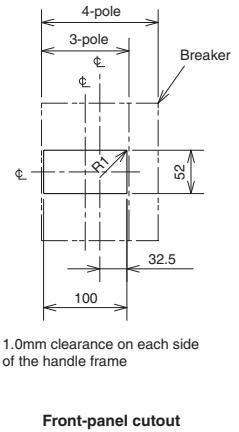


Drilling plan

Rear connection

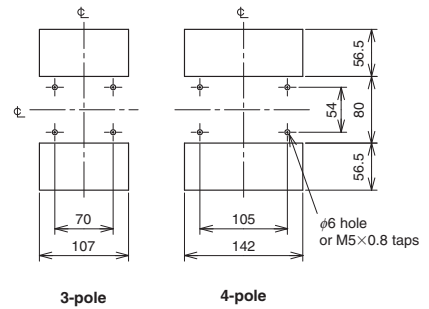
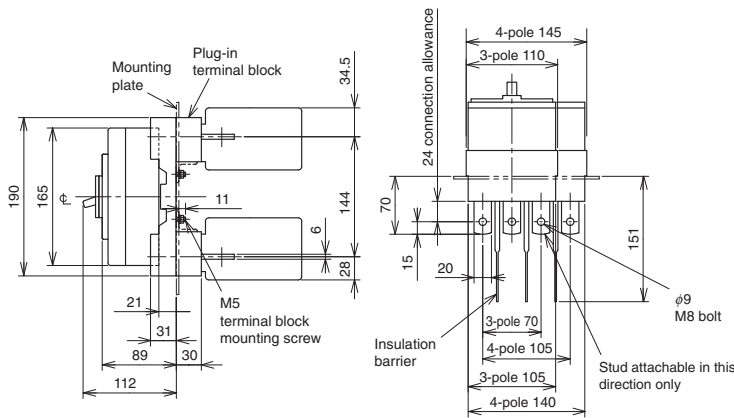


Drilling plan



Front-panel cutout

Plug-in



Drilling plan

7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF400-CW NF400-SW

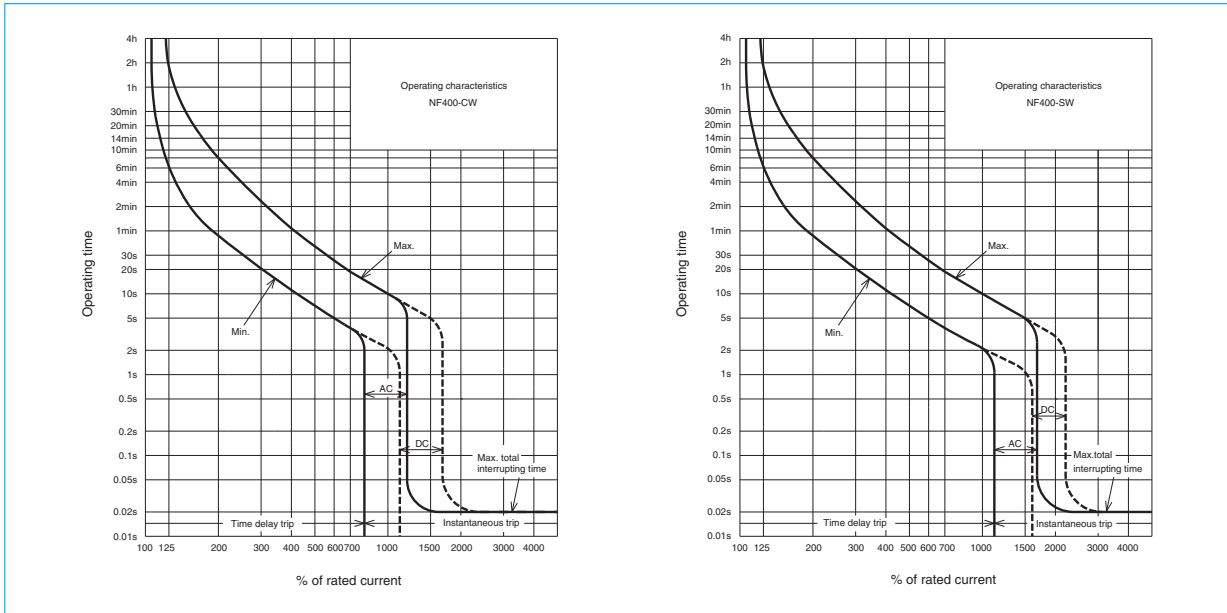


NF400-SW

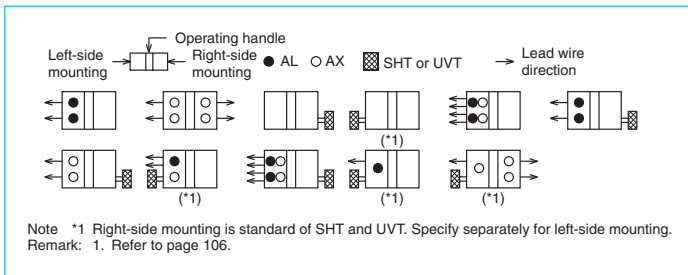
Model		NF400-CW		NF400-SW	
Rated current In (A)		250 300 350 400			
Number of poles		2 3		2 3 4	
Rated insulation voltage Ui (V)		690		690	
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	–	10/10
			500V	15/8	30/30
			440V	25/13	42/42
		DC (*1)	400V	36/18	45/45
			230V	50/25	85/85
			250V	20/10	40/40
Standard attached parts		Front connection	Mounting screw: M6×60 (4pcs) Insulating barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)		
		Rear connection	Mounting screw: M6×72 (4pcs)		

Note *1 When wired as shown at the bottom of page 14, 3-pole models can be used for up to 400VDC, and 4-pole models for up to 500VDC.

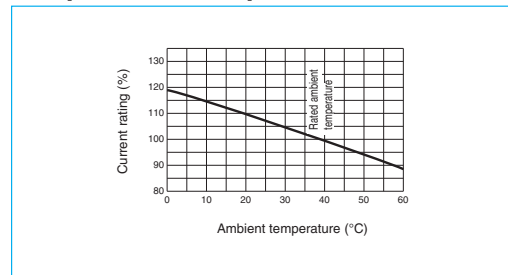
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



External Accessories

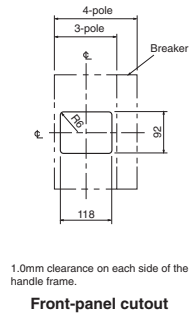
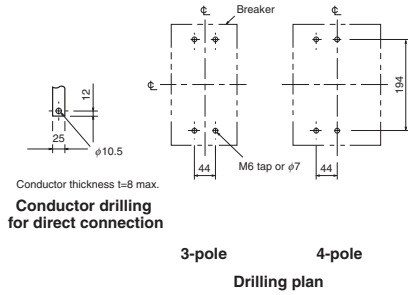
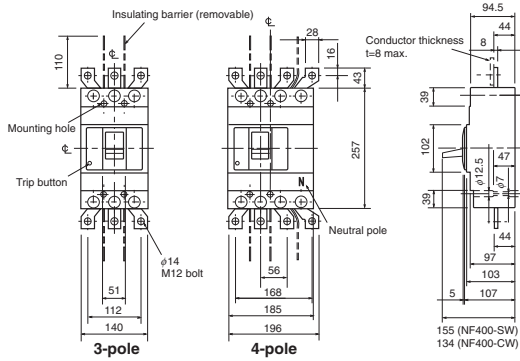
Accessories	Type name	Reference page	Accessories	Type name	Reference page
Operating handle	F	F-4S	Terminal cover	Large	119
	V	V-4S			
Mechanical interlock	MI	131	Skeleton	TTC	123
Auxiliary handle	HT	130	Rear	BTC	129
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.			Handle lock device	HL	HL-4CW, HL-4SW
				HL-S	HLS-4SW
			Electrical operation device	NFM	3P: (*1) 4P: (*1)

7

1 Characteristics and Dimensions

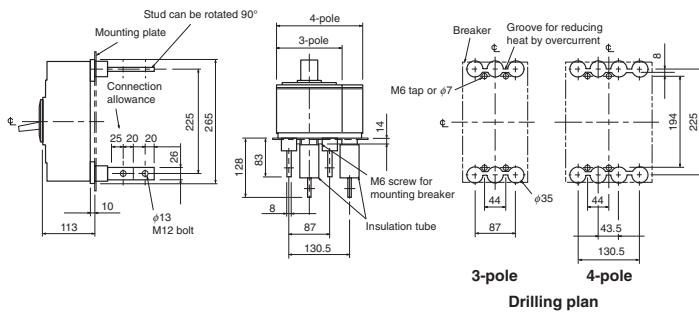
Outline Drawing

Front connection

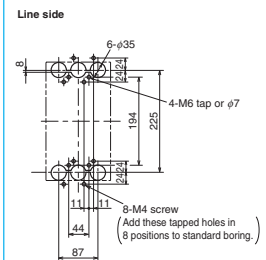


1.0mm clearance on each side of the handle frame.

Rear connection

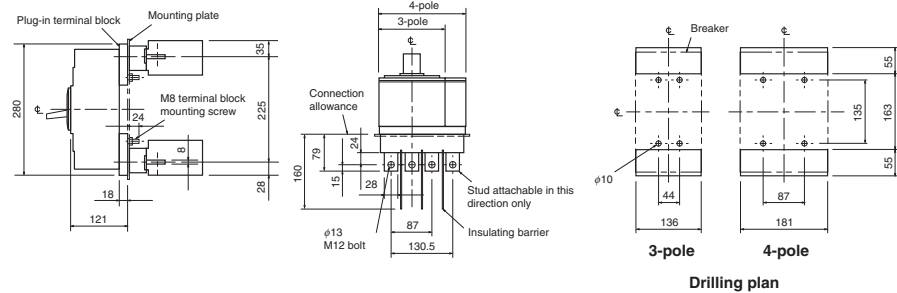


Boring dimensions for rear connection type barriers (3-pole)



Note The bore dimensional drawing shows the breaker viewed from the rear.

Plug-in



Remark: 1. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

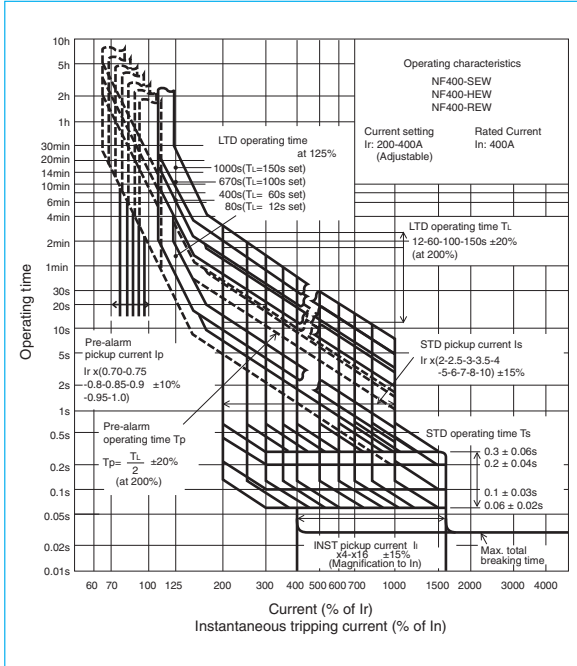
NF400-SEW NF400-HEW NF400-REW



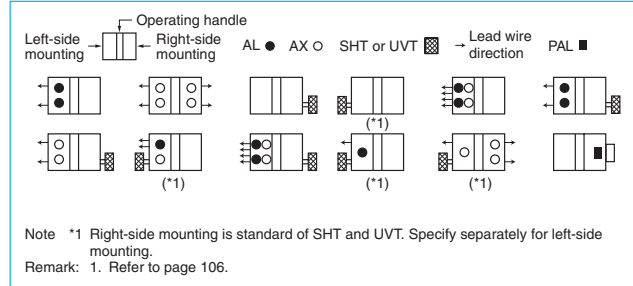
NF400-SEW

Model		NF400-SEW	NF400-HEW	NF400-REW		
Rated current In (A)		200-400 adjustable				
Number of poles		3	4	3		
Rated insulation voltage Ui (V)		690	690	690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	10/10	35/18	—
			500V	30/30	50/50	70/35
			440V	42/42	65/65	125/63
			400V	50/50	70/70	125/63
			230V	85/85	100/100	150/75
Standard attached parts		Front connection	Mounting screw: M6x72 (4pcs) Insulating barrier: (3P: 4pcs, 4P: 6pcs)			
		Rear connection	Mounting screw: M6x85 (4pcs)			

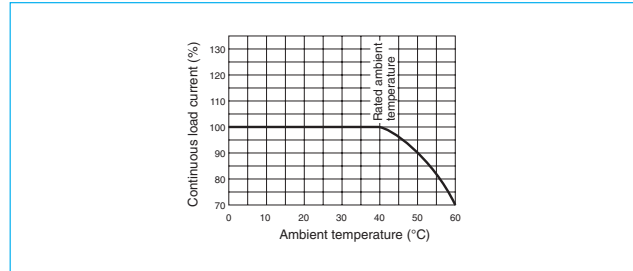
Operating Characteristics



Internal Accessories



Current Reducing Curve



7

External Accessories

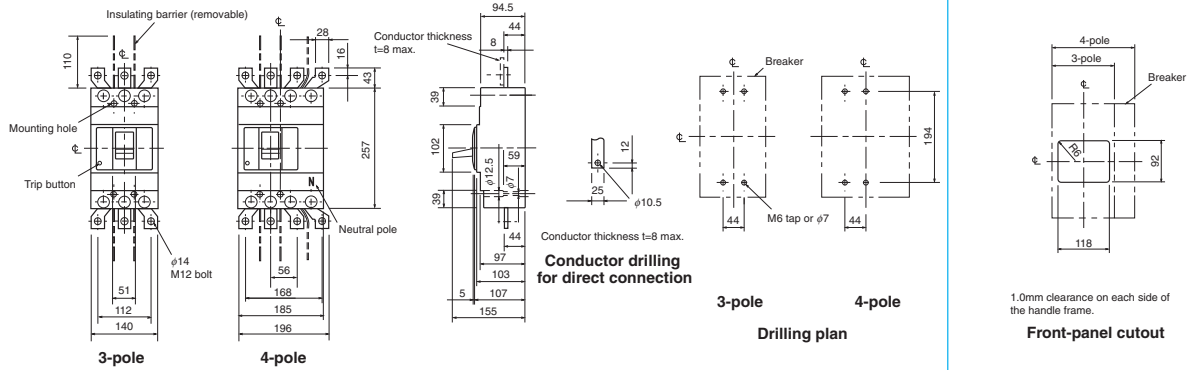
Accessories		Type name	Reference page	Accessories		Type name	Reference page	
Operating handle	F	F-4S	119	Terminal cover	Large	TC-L 3P	TCL-4SW3 (*2)	
	V	V-4S	121			TC-L 4P	TCL-4SW4 (*3)	
Mechanical interlock	MI	3P	131		Skeleton	TTC 3P	TTC-4SW3	
		4P				TTC 4P	TTC-4SW4	
Auxiliary handle	HT	130			Rear	BTC 3P	BTC-4SW3 (*2)	
						BTC 4P	BTC-4SW4 (*3)	
Handle lock device					HL		HL-4SW	129
					HL-S		HLS-4SW	
Electrical operation device				NFM	3P	(*1)	135	
					4P			

Notes *1 Specify the operation method and voltage. Order in combination with the breaker unit.
*2 This is for NF400-SEW.
*3 This is for NF400-SEW/HEW.

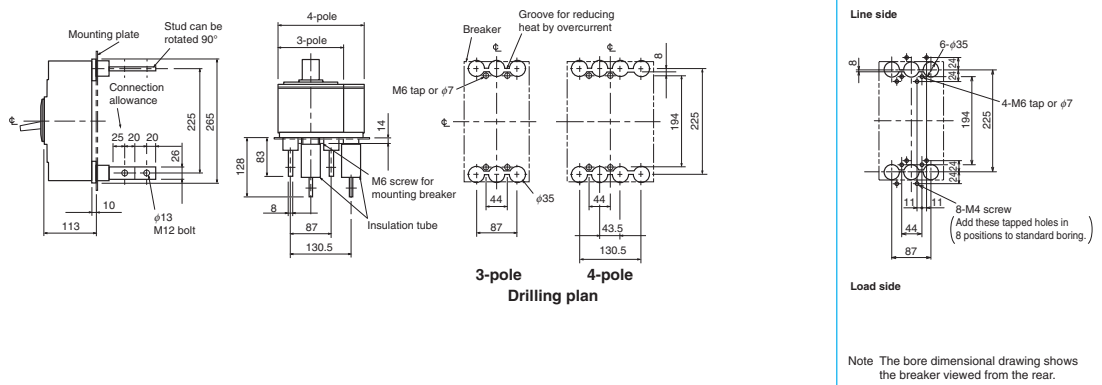
1 Characteristics and Dimensions

Outline Drawing

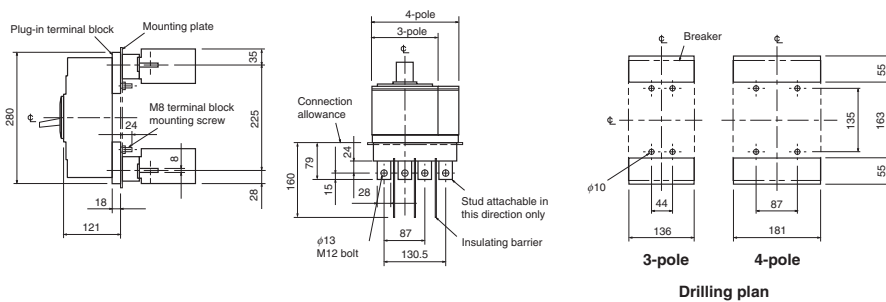
Front connection



Rear connection



Plug-in



7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

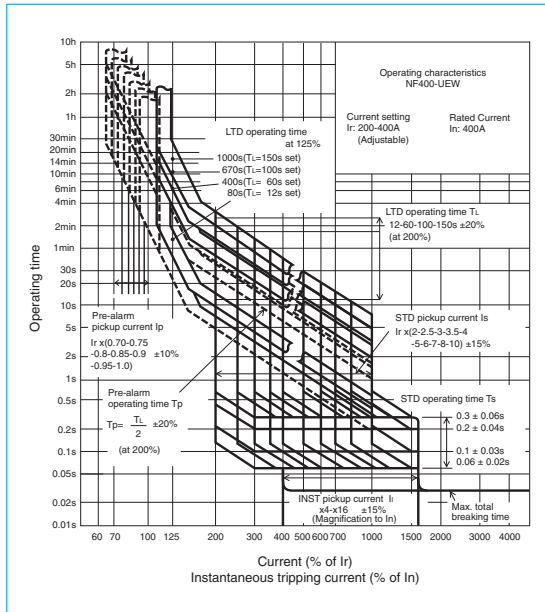
NF400-U EW



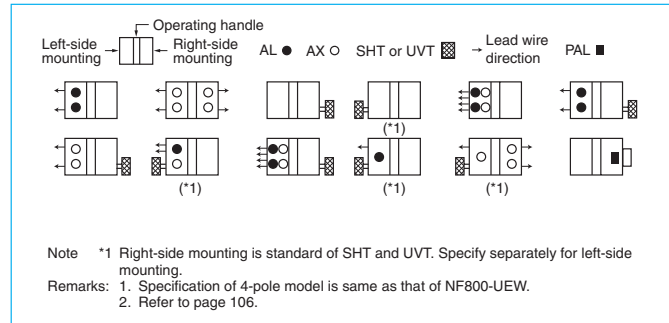
NF400-U EW

Model		NF400-U EW		
Rated current I _n (A)		200-400 adjustable		
Number of poles		3	4	
Rated insulation voltage U _i (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (I _{cu} /I _{cs})	AC	690V	—
			500V	170/170
			440V	200/200
			400V	200/200
			230V	200/200
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection	Mounting screw: M6×65 (2pcs), M6×174 (2pcs) Insulating barrier: (3P: 4pcs)	
		Rear connection	Mounting screw: M6×72 (2pcs), M6×181 (2pcs)	

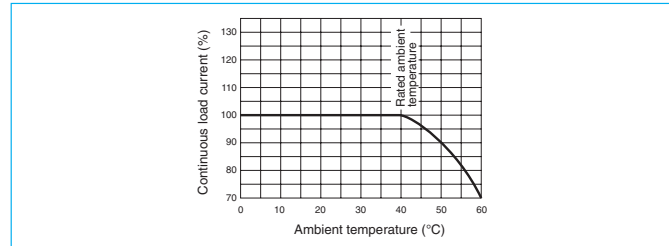
Operating Characteristics



Internal Accessories



Current Reducing Curve



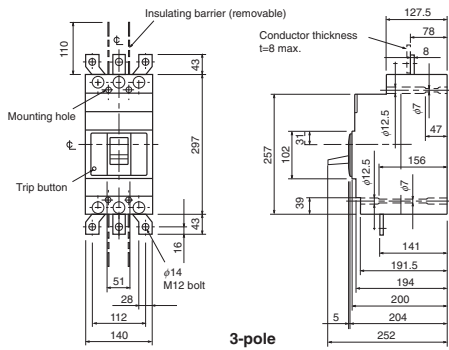
7 External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page
Operating handle	F	F-4U	Terminal cover	Large	TC-L 3P TCL-4SW3
	V	V-4U		Skeleton	TTC 3P —
Mechanical interlock	MI	MI-4SW3		Rear	BTC 3P BTC-4SW3
Auxiliary handle	HT	HT-4SW	Handle lock device	HL	HL-4SW
			HL-S	HLS-4UW	
			Electrical operation device	(*1)	135

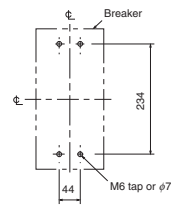
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.
Remark *1 Specification of 4-pole model is same as that of NF800-U EW.

Outline Drawing

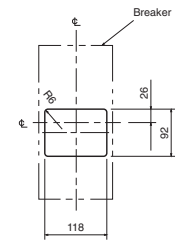
Front connection



Conductor thickness $t=8$ max.
Conductor drilling for direct connection

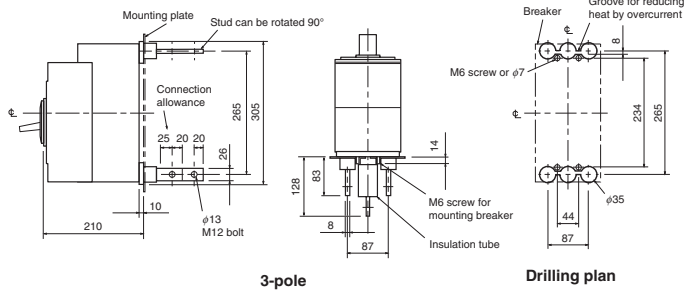


3-pole
Drilling plan



1.0mm clearance on each side of the handle frame.
Front-panel cutout

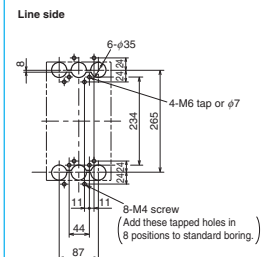
Rear connection



3-pole

Drilling plan

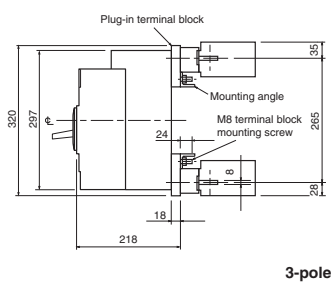
Boring dimensions for rear connection type barriers (3-pole)



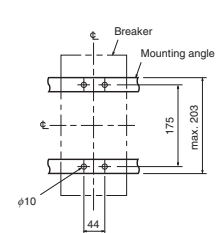
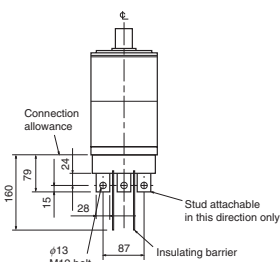
Load side

Note The bore dimensional drawing shows the breaker viewed from the rear.

Plug-in



3-pole



3-pole
Drilling plan

7 Characteristics and Dimensions

Molded Case Circuit Breakers

NF630-CW NF630-SW

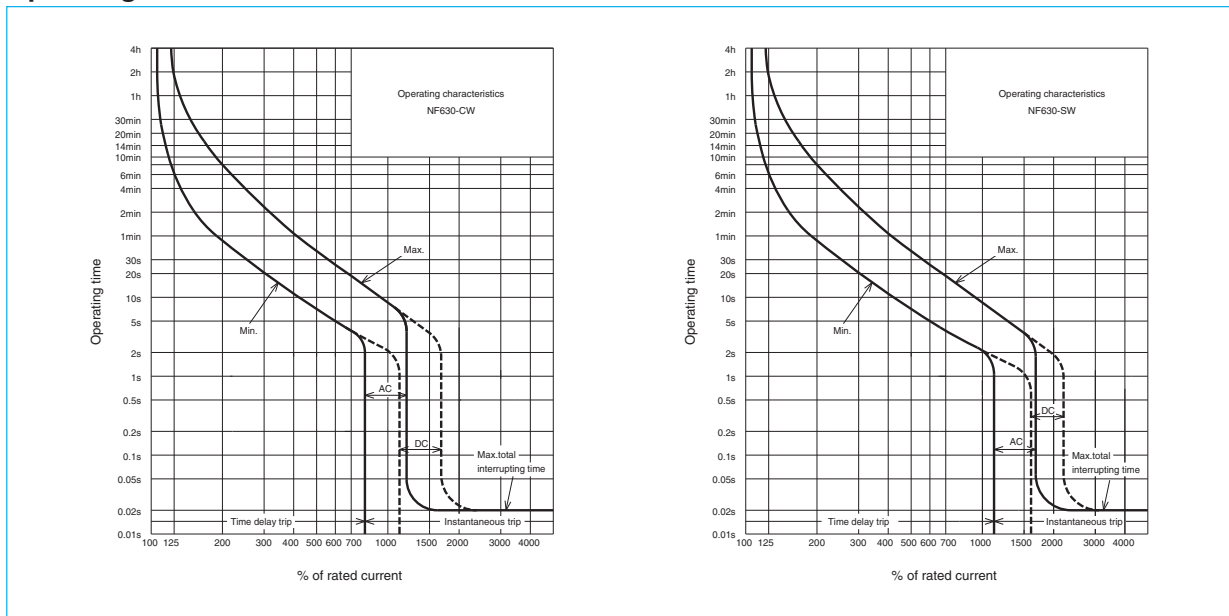


NF630-SW

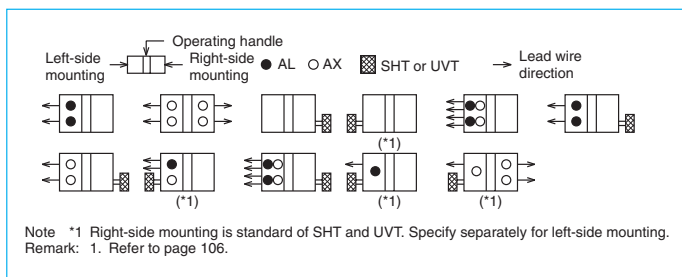
Model		NF630-CW		NF630-SW	
Rated current In (A)		500 600 630			
Number of poles		2	3	2	3 4
Rated insulation voltage Ui (V)		690		690	
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	–	10/10
			500V	18/9	30/30
			440V	36/18	42/42
			400V	36/18	50/50
			230V	50/25	85/85
		DC (*1)	250V	20/10	40/40
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection	Mounting screw: M6x72 (4pcs) Insulating barrier: (2P: 2pcs, 3P: 4pcs, 4P: 6pcs)		
		Rear connection	Mounting screw: M6x85 (4pcs)		

Note *1 When wired as shown at the bottom of page 14, 3-pole models can be used for up to 400VDC, and 4-pole models for up to 500VDC.

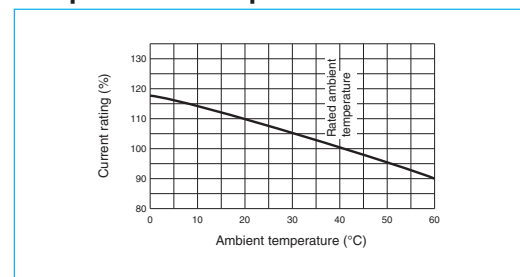
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



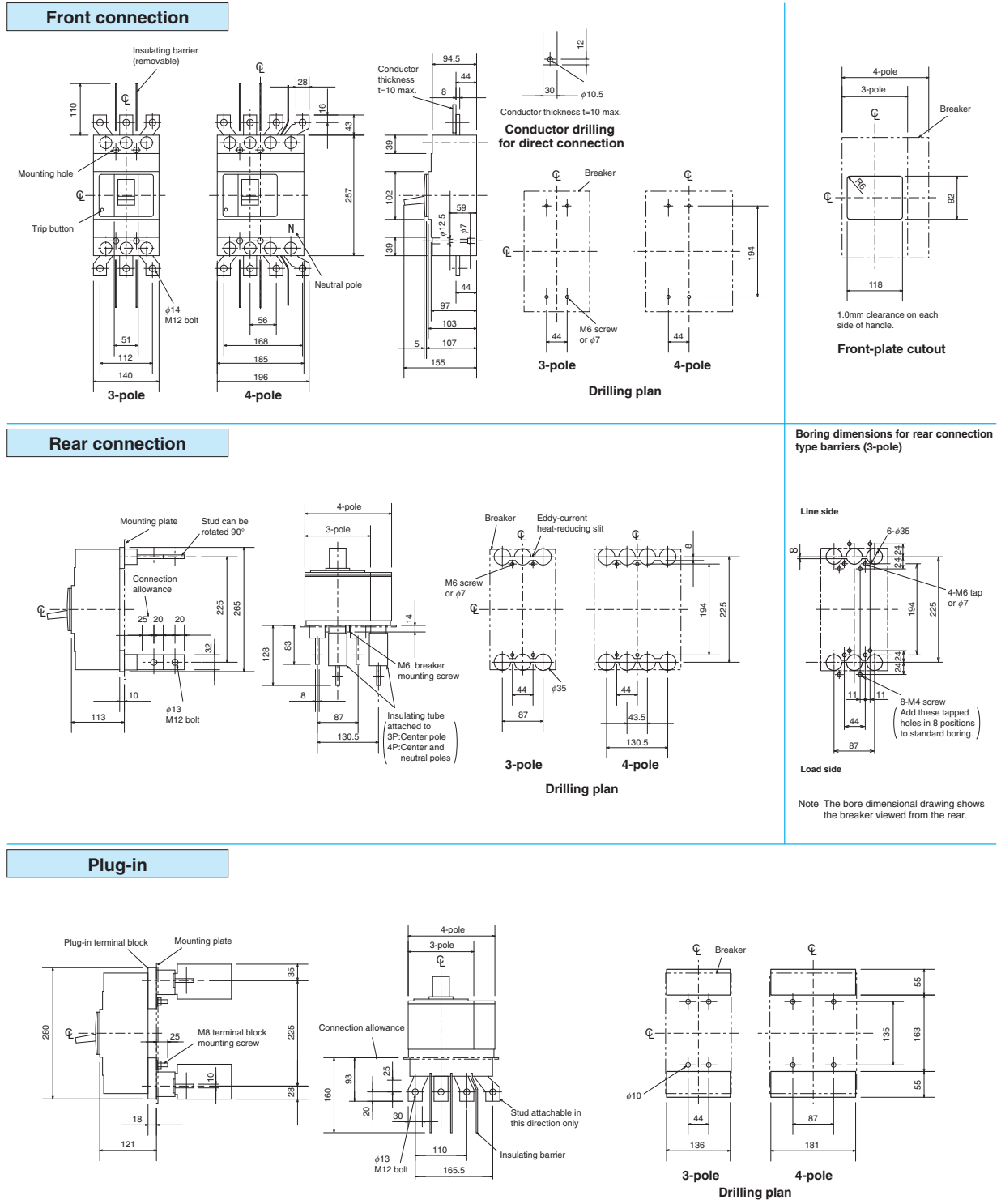
External Accessories

Accessories		Type name	Reference page	Accessories		Type name	Reference page	
Operating handle	F	F-4S	119	Terminal cover	Large	2, 3P	TCL-4SW3	
	V	V-4S	121			4P	TCL-4SW4	
Mechanical interlock	MI	2, 3P	131		Skeleton	TTC	2, 3P	TTC-4SW3
		4P					TTC-4SW4	
Auxiliary handle	HT	130			Rear	BTC	2, 3P	BTC-4SW3
							4P	BTC-4SW4
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.					Handle lock device	HL	HL-4SW	
						HL-S	HLS-4SW	
				Electrical operation device	NFM	3P	(*1)	
						4P		135

7

1 Characteristics and Dimensions

Outline Drawing



Remark: 1. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

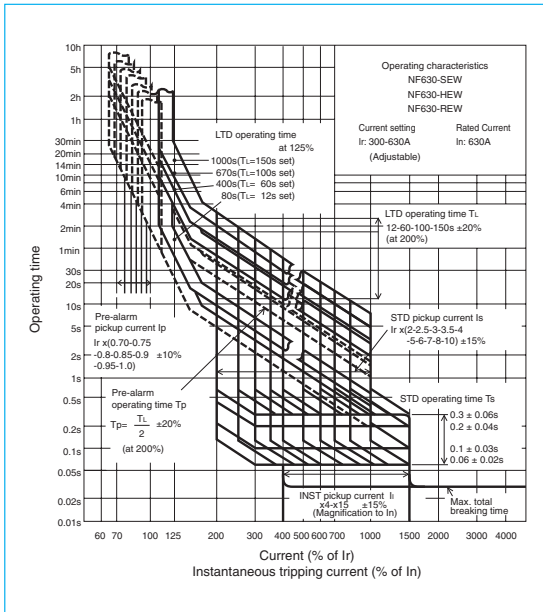
NF630-SEW NF630-HEW NF630-REW



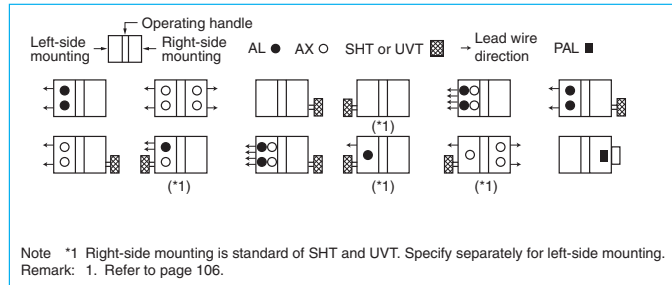
NF630-SEW

Model		NF630-SEW	NF630-HEW	NF630-REW		
Rated current I _n (A)		300-630 adjustable				
Number of poles		3	4	3		
Rated insulation voltage U _i (V)		690	690	690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	10/10	35/18	—
			500V	30/30	50/50	70/35
			440V	42/42	65/65	125/63
			400V	50/50	70/70	125/63
			230V	85/85	100/100	150/75
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection	Mounting screw: M6×72 (4pcs) Insulating barrier: (3P: 4pcs, 4P: 6pcs)			
		Rear connection	Mounting screw: M6×85 (4pcs)			

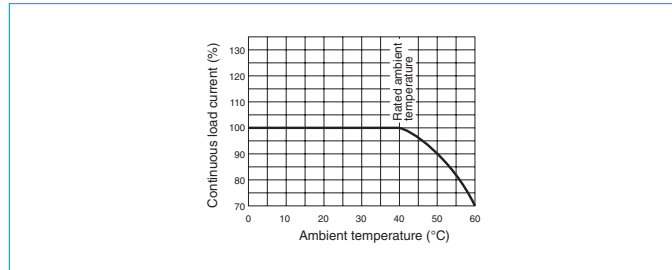
Operating Characteristics



Internal Accessories



Current Reducing Curve

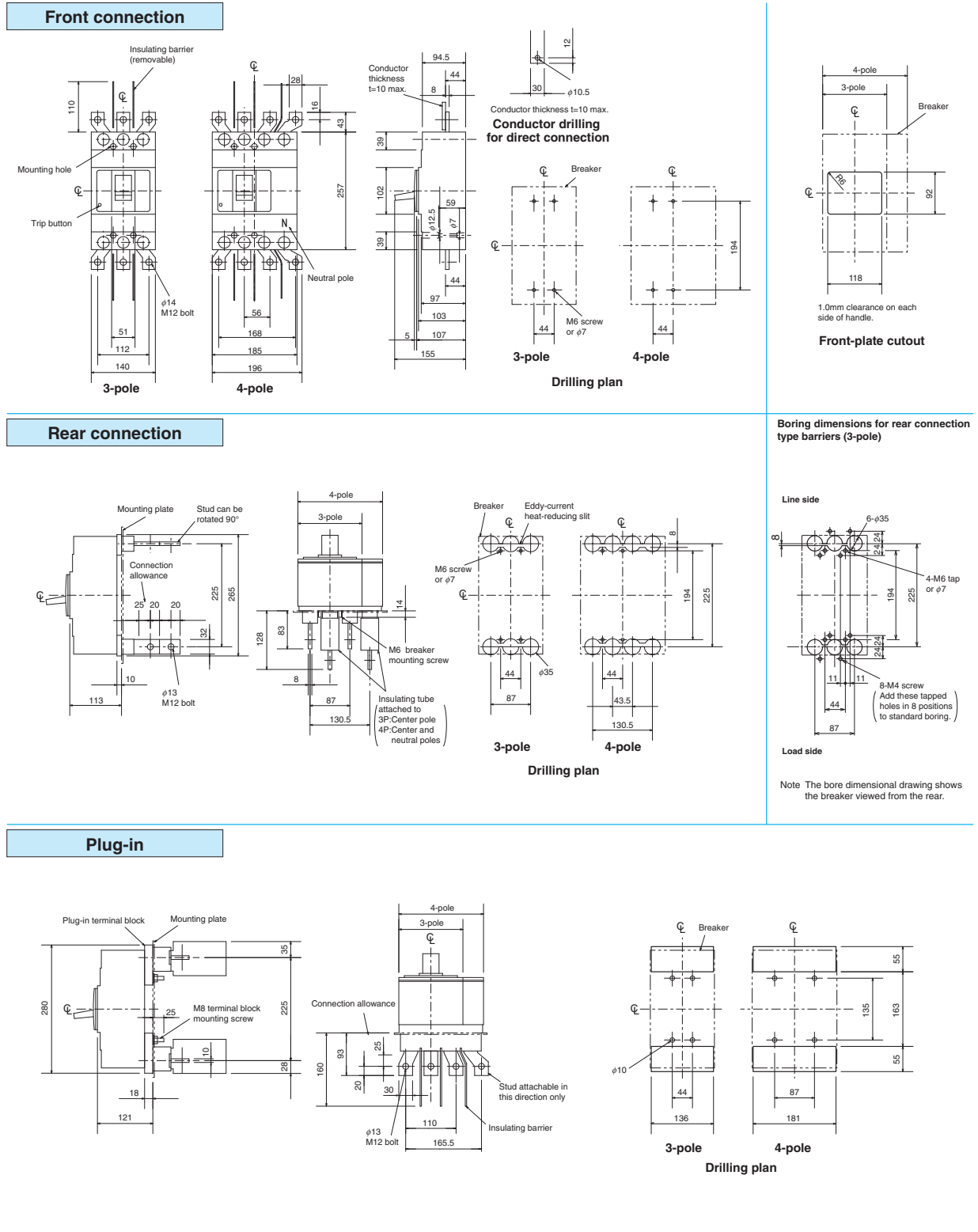


7 External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page	
Operating handle	F	F-4S	Terminal cover	Large	TC-L	
	V	V-4S				3P
Mechanical interlock	MI	3P	Skeleton	TTC	4P	TCL-4SW4 (*3)
					MI-4SW3	3P
Auxiliary handle	HT	4P	Rear	BTC	4P	TTC-4SW4
					HT-4SW	3P
			Handle lock device	HL	4P	BTC-4SW4 (*3)
					HL-S	HL-4SW
			Electrical operation device	NFM	3P	(*1)
					4P	

Notes *1 Specify the operation method and voltage. Order in combination with the breaker unit.
*2 This is for NF630-SEW.
*3 This is for NF630-SEW/HEW.

Outline Drawing



7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

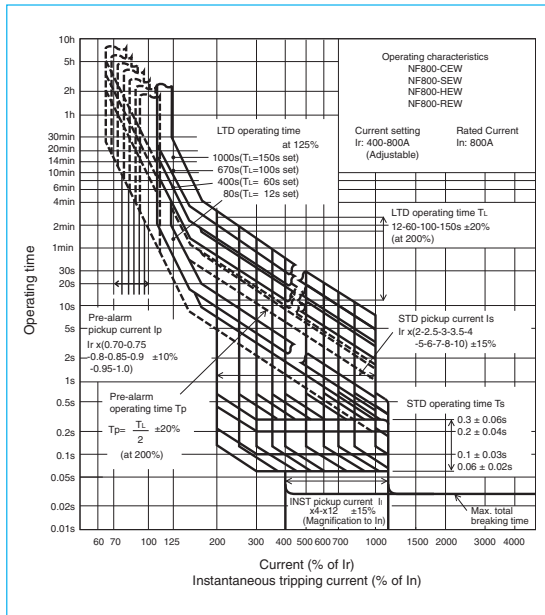
NF800-CEW
NF800-SEW
NF800-HEW
NF800-REW



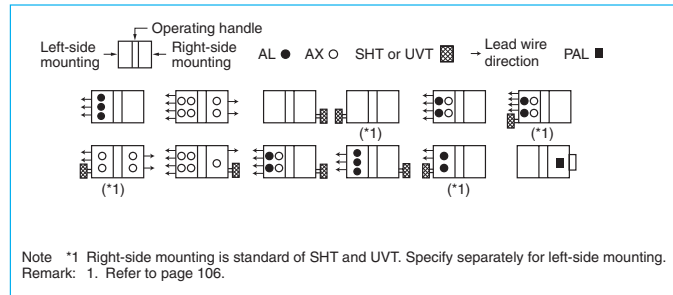
NF800-SEW

Model		NF800-CEW	NF800-SEW	NF800-HEW	NF800-REW		
Rated current I _n (A)		400-800 adjustable					
Number of poles		3	3	4	3		
Rated insulation voltage U _i (V)		690	690	690	690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	10/10	15/15	–	
			500V	18/9	30/30	50/50	70/35
			440V	36/18	42/42	65/65	125/63
			400V	36/18	50/50	70/70	125/63
			230V	50/25	85/85	100/100	150/75
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection		Mounting screw: M6×35 (4pcs) Insulating barrier: (3P: 2pcs, 4P: 3pcs)			
		Rear connection		Mounting screw: M6×40 (4pcs)			

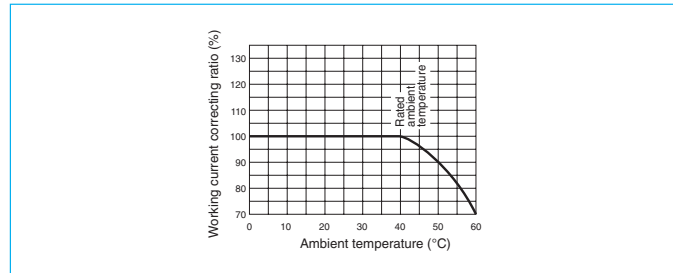
Operating Characteristics



Internal Accessories



Current Reducing Curve



7

External Accessories

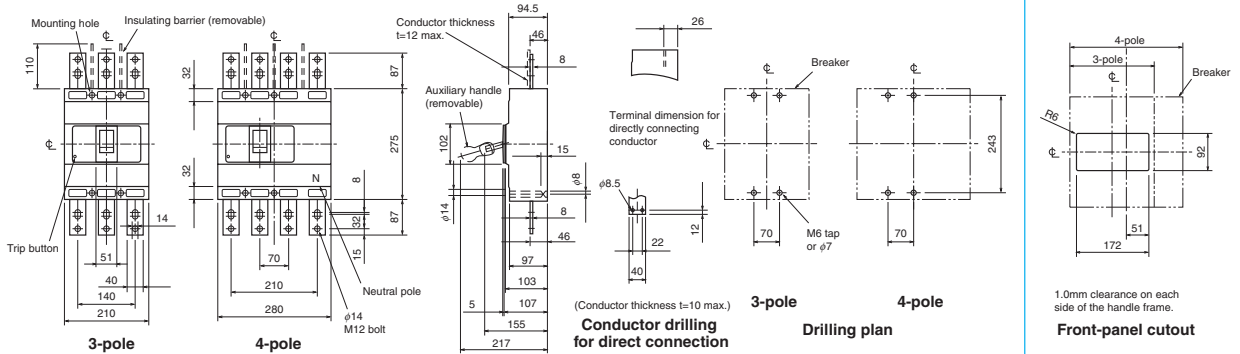
Accessories		Type name	Reference page	Accessories		Type name	Reference page	
Operating handle	F	F-8S	119	Terminal cover	Large	TC-L	3P TCL-8SW3	
	V	V-8S	121			4P TCL-8SW4		
Mechanical interlock	MI	3P	MI-8SW3		Skeleton	TTC	3P TTC-8SW3	123
		4P	MI-8SW4			4P TTC-8SW4		
Auxiliary handle	HT	HT-4SW			Rear	BTC	3P BTC-8SW3	
						4P BTC-8SW4		
					Handle lock device	HL	HL-4SW	129
						HL-S	HLS-8SW	
				Electrical operation device	NFM	3P	(*1)	135
						4P		

Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

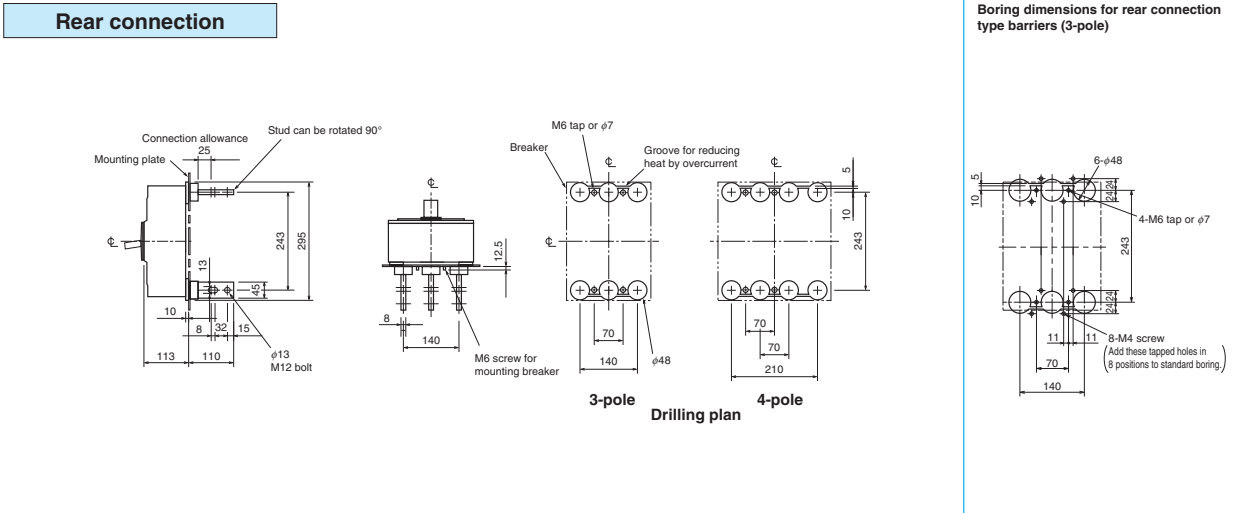
1 Characteristics and Dimensions

Outline Drawing

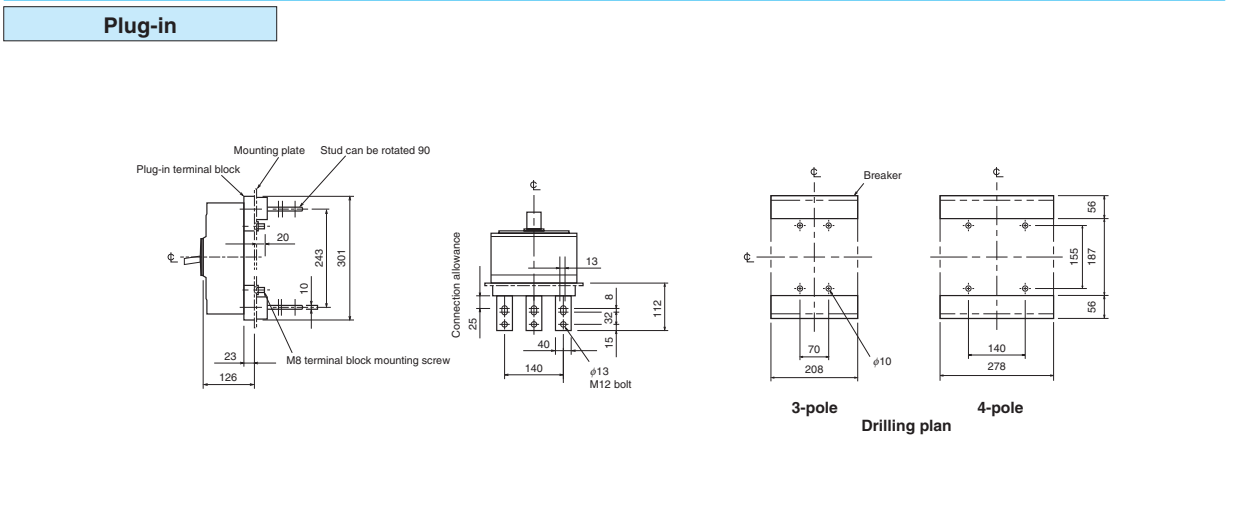
Front connection



Rear connection



Plug-in



7 Characteristics and Dimensions

Molded Case Circuit Breakers

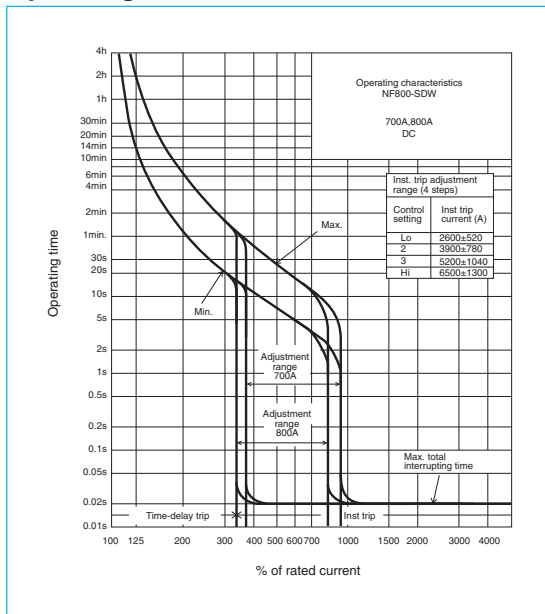
NF800-SDW



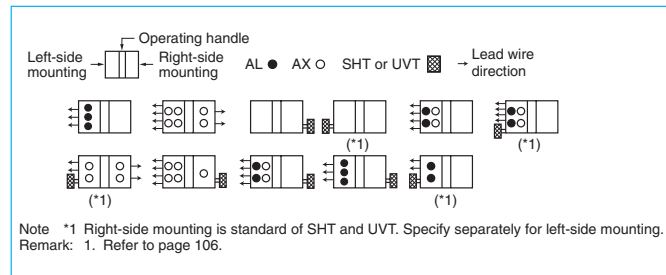
NF800-SDW

Model		NF800-SDW	
Rated current I _n (A)		(700), 800	
Number of poles		2	
Rated insulation voltage U _i (V)		690	
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (I _{cu} /I _{cs}) Time constant not larger than 10ms	DC	250V
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection	Mounting screw: M6x35 (4pcs) Insulating barrier: (2P: 1pc, 3P: 2pcs, 4P: 3pcs)
		Rear connection	Mounting screw: M6x40 (4pcs)

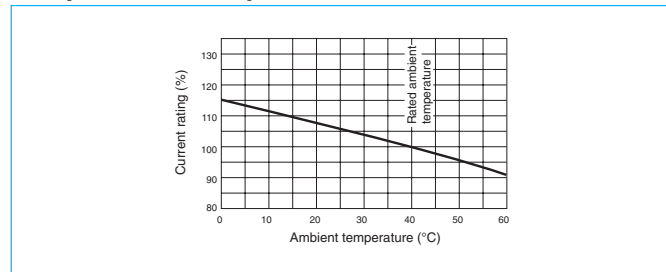
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



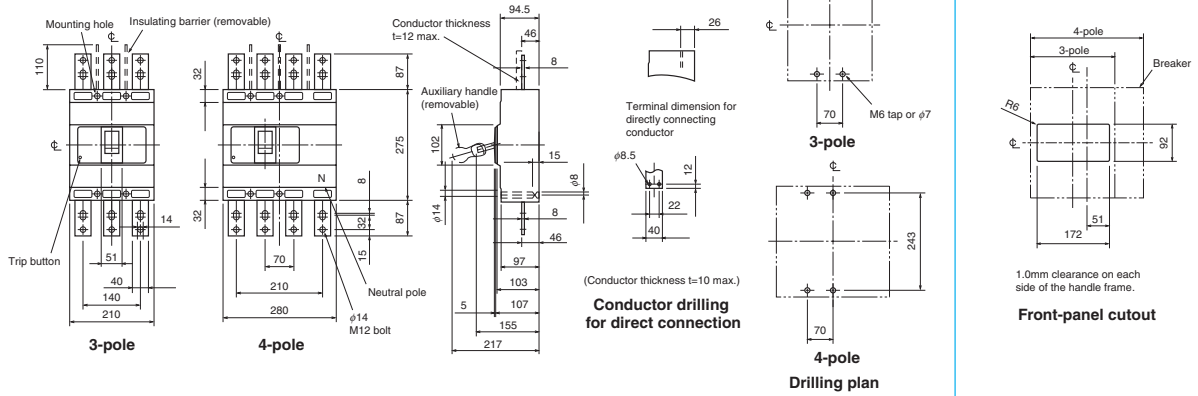
7 External Accessories

Accessories	Type name	Reference page	Accessories	Type name	Reference page	
Operating handle	F	F-8S	Terminal cover	Large	TC-L	
	V	V-8S				2, 3P
Mechanical interlock	MI	2, 3P	4P	TTC	4P	TCL-8SW4
					MI-8SW3	2, 3P
Auxiliary handle	HT	4P	BTC	Rear	4P	TTC-8SW4
					MI-8SW4	2, 3P
					4P	BTC-8SW4
					HL	HL-4SW
					HL-S	HLS-8SW
					NFM	
					2, 3P	(*1)
					4P	

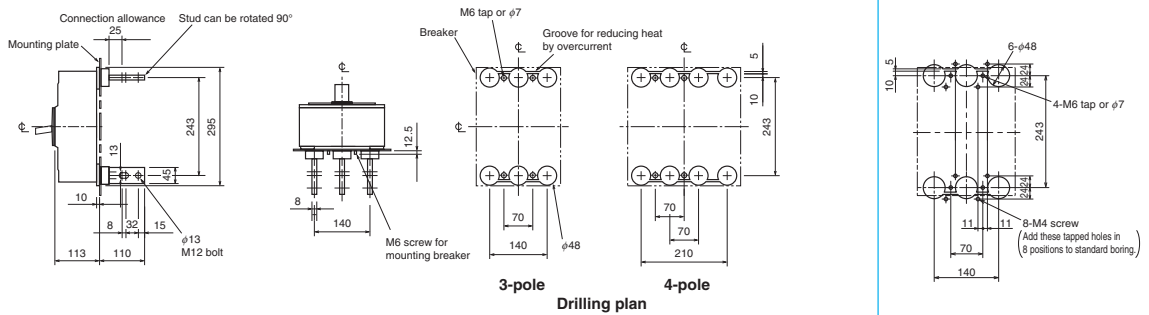
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

Outline Drawing

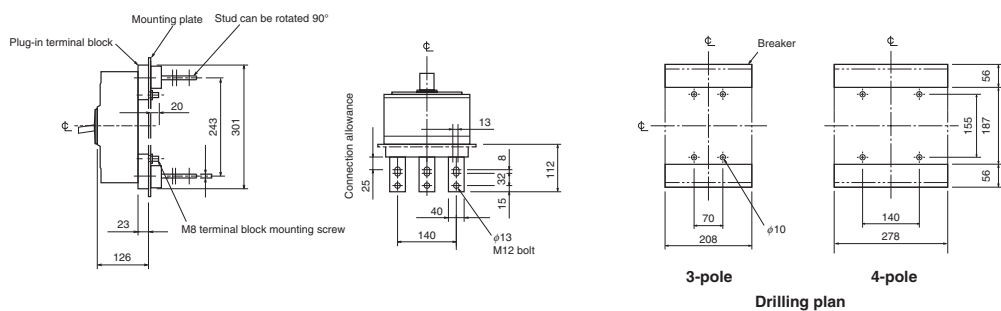
Front connection



Rear connection



Plug-in



Remarks: 1. Standard specification of NF800-SDW is 2-pole model. 3-pole and 4-pole models are available for DC special voltage.
2. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

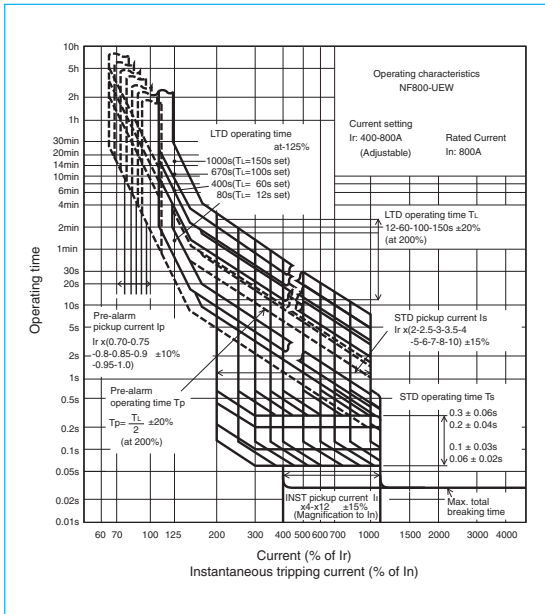
NF800-UEW



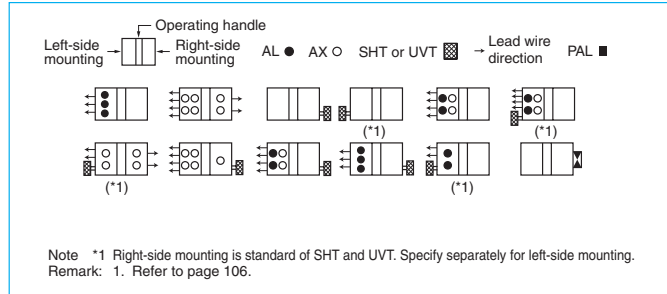
NF800-UEW

Model		NF800-UEW		
Rated current I _n (A)		400-800 adjustable		
Number of poles		3	4	
Rated insulation voltage U _i (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	35/35
			500V	170/170
			440V	200/200
			400V	200/200
			230V	200/200
Standard attached parts (4-pole models are provided with auxiliary handle.)		Front connection	Mounting screw: 3P: M6×35, M6×132 (2pcs each) 4P: M6×35 (3pcs), M6×132 (2pcs) Insulating barrier: (3P: 2pcs, 4P: 3pcs)	
		Rear connection	Mounting screw: 3P: M6×40, M6×137 (2pcs each) 4P: M6×40 (3pcs), M6×137 (2pcs)	

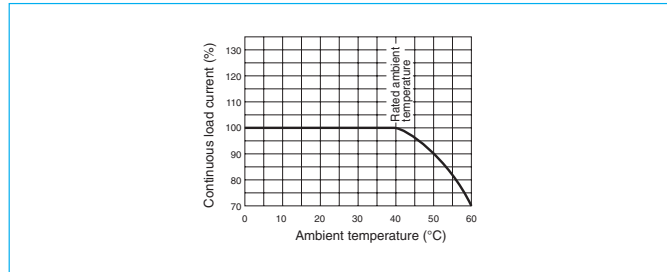
Operating Characteristics



Internal Accessories



Current Reducing Curve



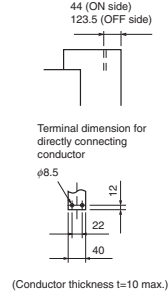
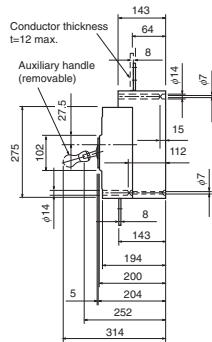
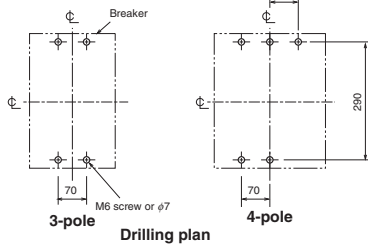
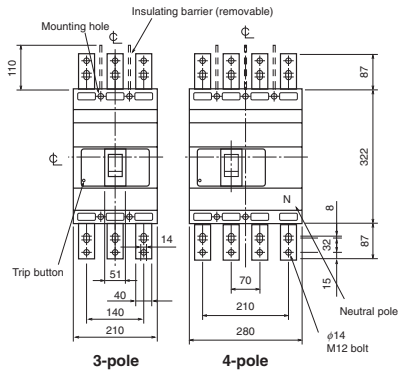
7 External Accessories

Accessories		Type name	Reference page	Accessories		Type name	Reference page	
Operating handle	F	F-8U	119	Terminal cover	Large	3P	TCL-8UW3	
	V	-	121			4P	TCL-8UW4	
Mechanical interlock	MI	3P	MI-8SW3		Skeleton	TTC	3P	-
		4P	MI-8SW4				4P	-
Auxiliary handle	HT	HT-4SW			Rear	BTC	3P	BTC-8SW3
							4P	BTC-8SW4
Handle lock device	HL		HL-4SW				129	
	HL-S		HLS-8UW					
Electrical operation device						(*1)	135	

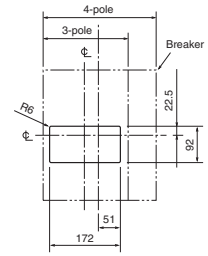
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

Outline Drawing

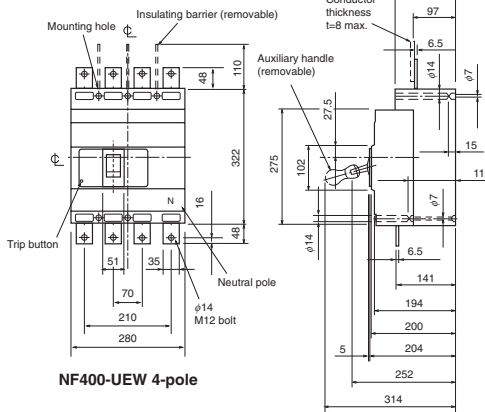
Front connection



Conductor drilling for direct connection

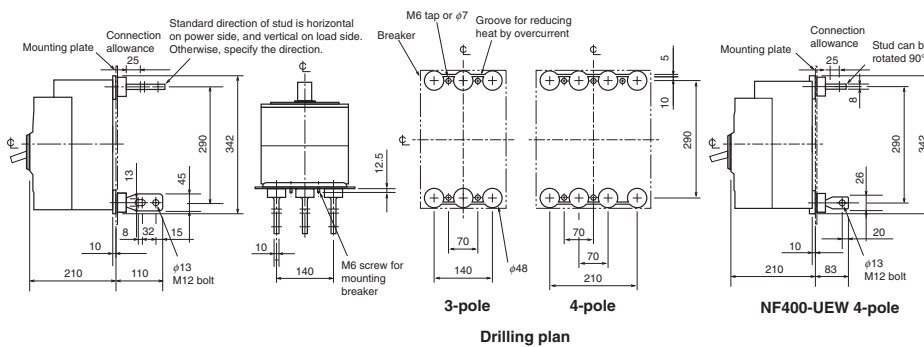


Front-panel cutout



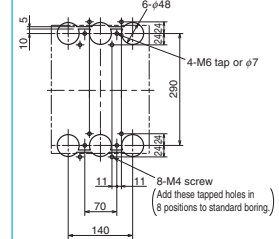
NF400-UEW 4-pole

Rear connection



Drilling plan

Boring dimensions for rear connection type barriers (3-pole)



7

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

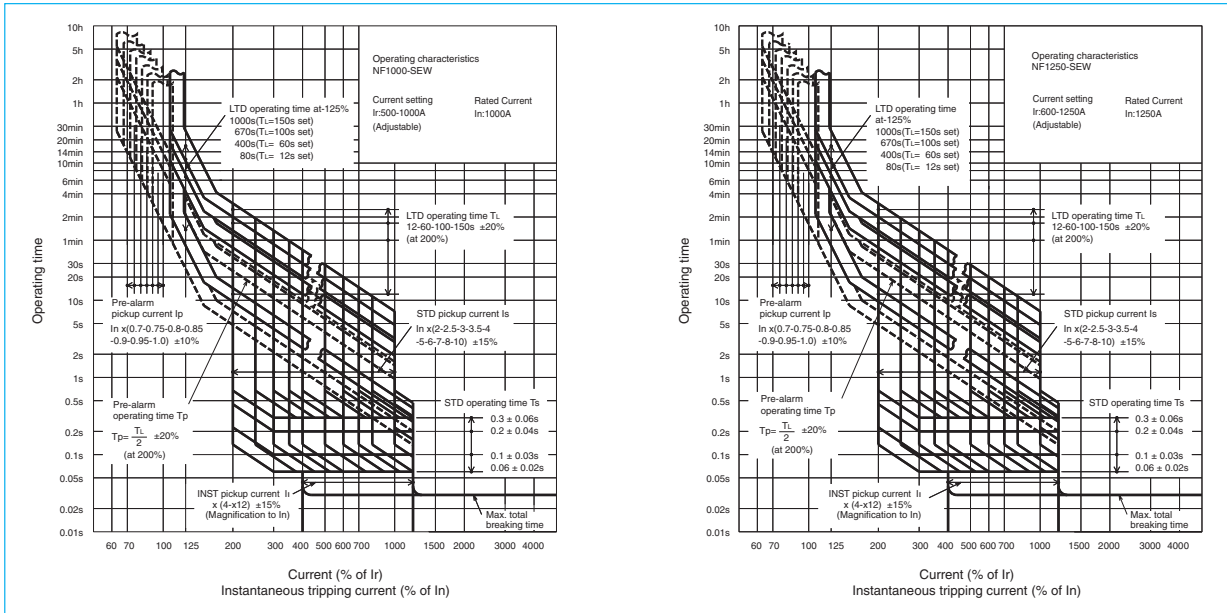
NF1000-SEW NF1250-SEW



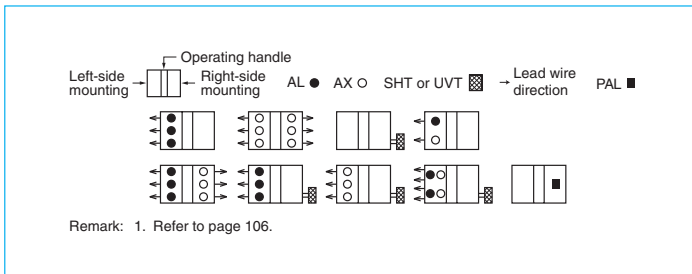
NF1250-SEW

Model		NF1000-SEW	NF1250-SEW		
Rated current In (A)		500-1000 Adjustable	600-1250 Adjustable		
Number of poles		3 4	3 4		
Rated insulation voltage Ui (V)		690	690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	25/13	25/13
			500V	65/33	65/33
			440V	85/43	85/43
			400V	85/43	85/43
			230V	125/63	125/63
Standard attached parts		Front connection	Mounting screw: M8x40 (4pcs) Insulating barrier: (3P: 2pcs, 4P: 3pcs) Auxiliary handle: (1pc)		
		Rear connection	Mounting screw: M8x40 (4pcs) Insulating barrier: (3P: 2pcs, 4P: 4pcs) Auxiliary handle: (1pc)		

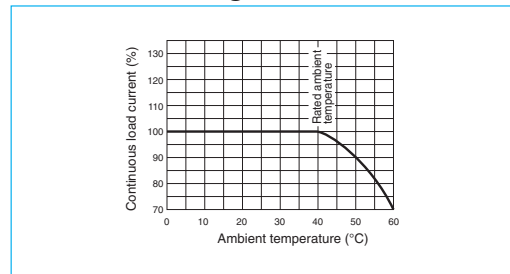
Operating Characteristics



Internal Accessories



Current Reducing Curve



External Accessories

(An order for ☆ should be placed at the same time as an order of circuit breaker main body.)

Accessories			Type name	Reference page	Accessories			Type name	Reference page
Operating handle	F	3P	F10SW	119	Auxiliary handle	HT	HT-10SW	130	
		4P	F10SW4P		Handle lock device	HL	HL (☆)		129
Mechanical interlock	MI	3P	MI-10SW3	131	Large terminal cover	TC-L	3P	TCL-10SW3	123
		4P	MI-10SW4				4P	TCL-10SW4	
					Electrical operation device	NFM	3P	(*1)	135
							4P		

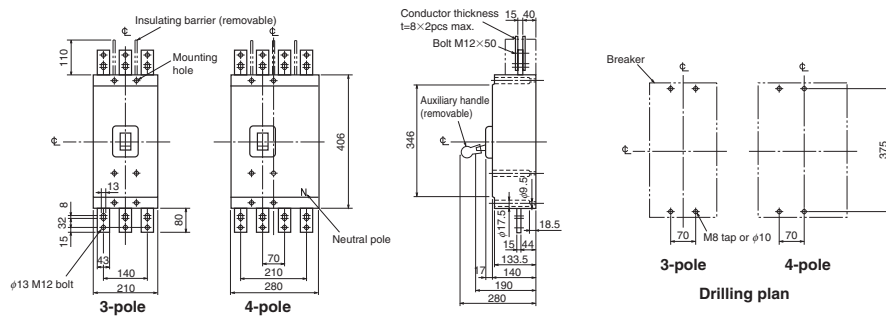
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

7

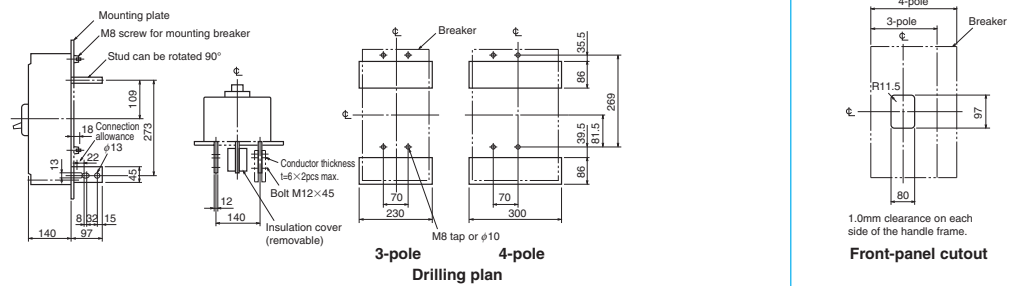
1 Characteristics and Dimensions

Outline Drawing

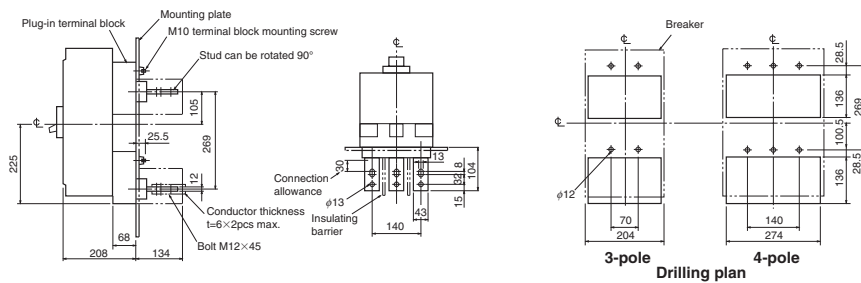
Front connection



Rear connection



Plug-in



7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

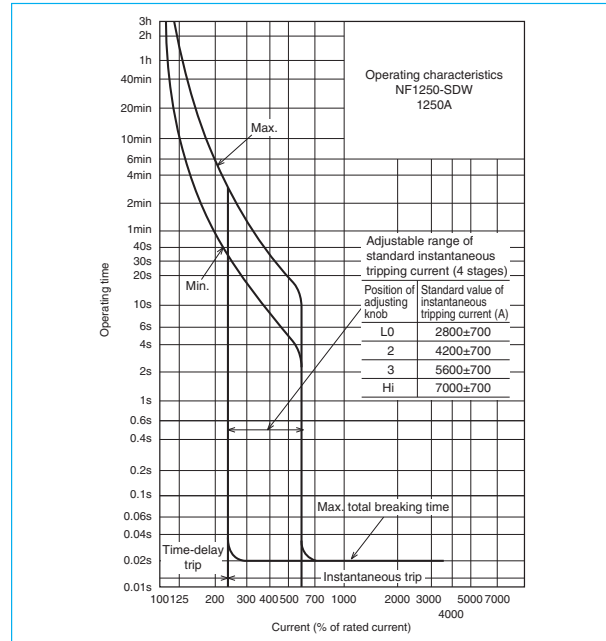
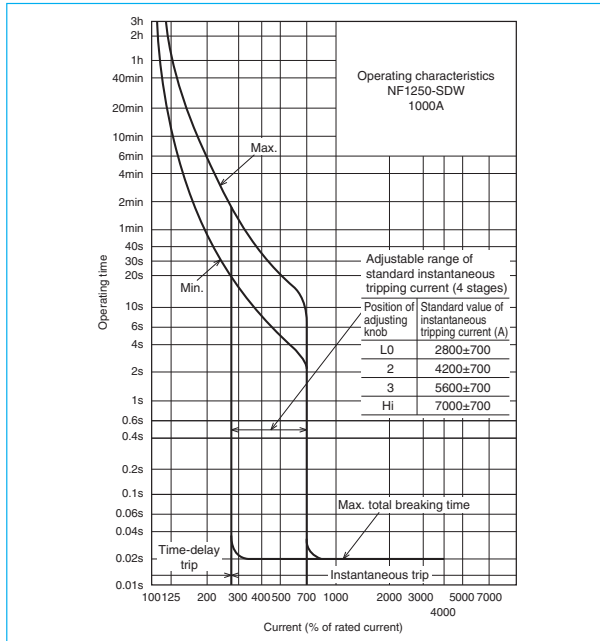
NF1250-SDW



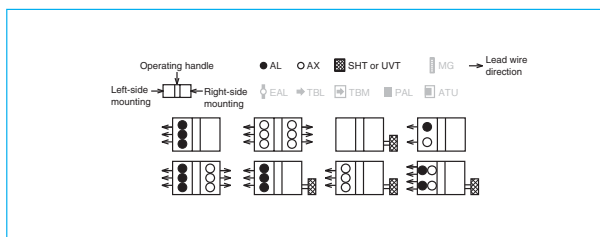
NF1250-SDW

Model		NF1250-SDW	
Rated current In (Amp.)		1000, 1250	
Number of poles		2	
Rated insulation voltage Ui (V)		690	
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	DC	250V
	Time constant not large than 10ms		
Standard Attached parts		Front connection	Mounting screw: M8×40 (4pcs) Insulating barrier: (2P: 1pc, 3P: 2pcs, 4P: 3pcs) Auxiliary handle: (1pc)
		Rear connection	Mounting screw: M8×40 (4pcs) Insulating barrier: (3P: 2pcs, 4P: 4pcs) Auxiliary handle: (1pc)

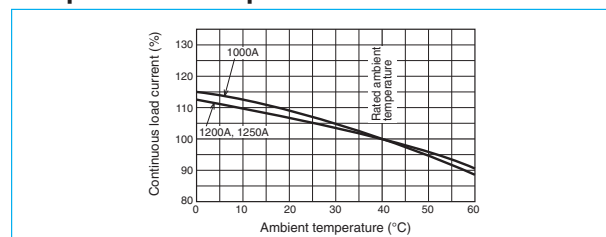
Operating Characteristics



Internal Accessories



Temperature Compensation Curve



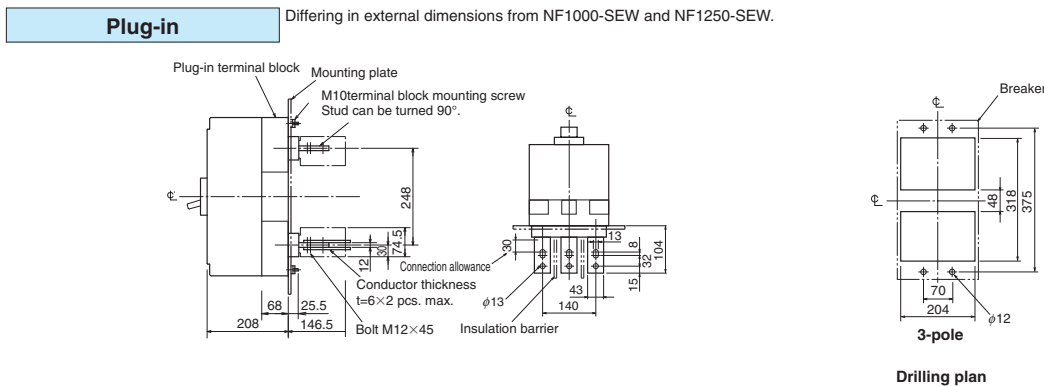
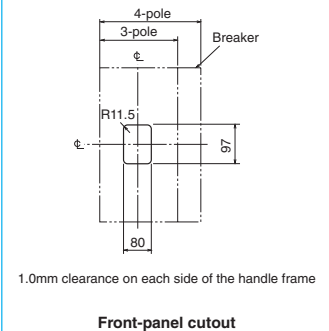
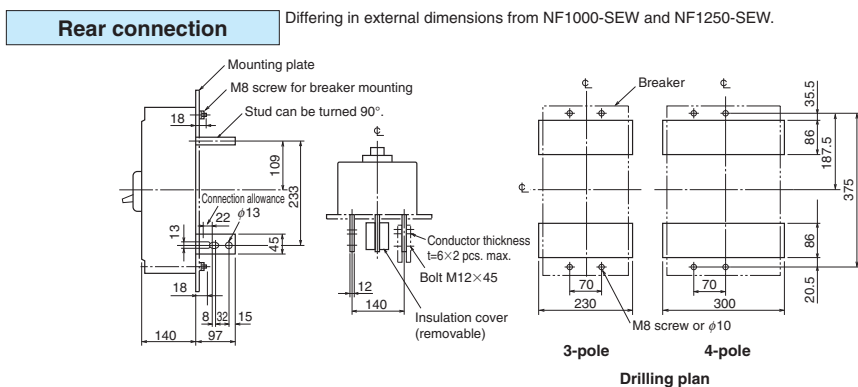
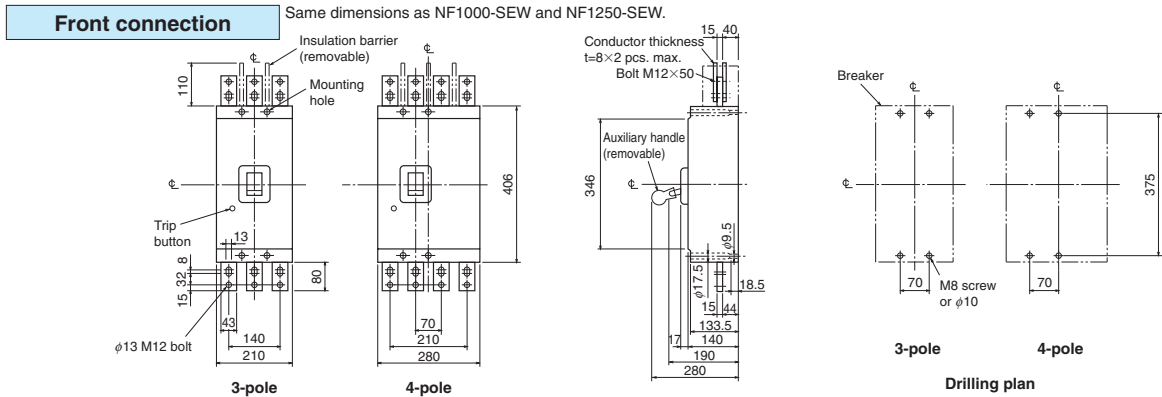
External Accessories

(An order for ☆ should be placed at the same time as an order of circuit breaker main body.)

Accessories	Type name	Reference page	Accessories	Type name	Reference page		
Operating handle	F 2, 3P	119	Auxiliary handle	HT	HT-10SW		
	4P		F10SW4P	HL	HL (☆)		
Mechanical interlock	MI 2, 3P	131	Large terminal cover	TC-L	2, 3P	TCL-10SW3	
	4P				MI-10SW4	4P	TCL-10SW4
			Electrical operation device	NFM	2, 3P 4P	(*)	135

Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

Outline Drawing



Remarks: 1. Standard specification of NF1250-SDW is 2-pole model. 3-pole and 4-pole models are available for DC special voltage.
2. 2-pole models are 3-pole models with the central pole removed.

7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

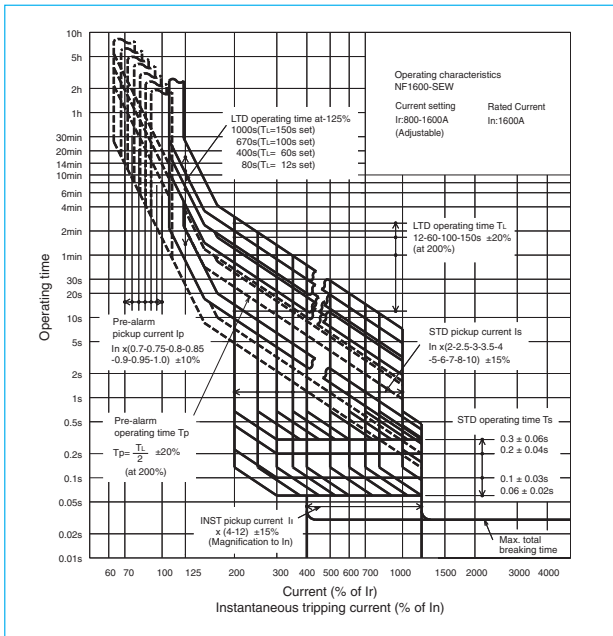
NF1600-SEW



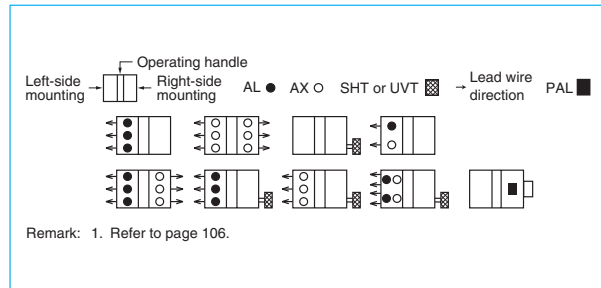
NF1600-SEW

Model		NF1600-SEW		
Rated current I _n (A)		Adjustable 800–1600		
Number of poles		3	4	
Rated insulation voltage U _i (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	AC	690V	25/13
			500V	65/33
			440V	85/43
			400V	85/43
			230V	125/63
Standard attached parts		Front connection	Mounting screw: M8 × 40 (4pcs) Insulating barrier: (3P: 2pcs, 4P: 3pcs) Auxiliary handle: (1pc)	
		Rear connection	Mounting screw: M8 × 40 (4pcs) Auxiliary handle: (1pc)	

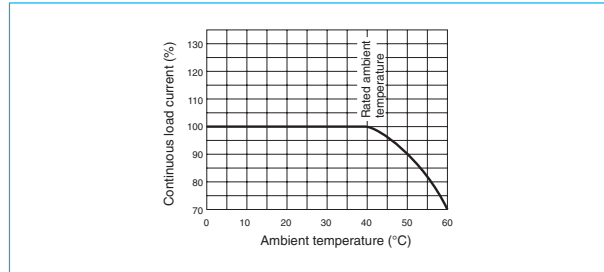
Operating Characteristics



Internal Accessories



Current Reducing Curve



External Accessories

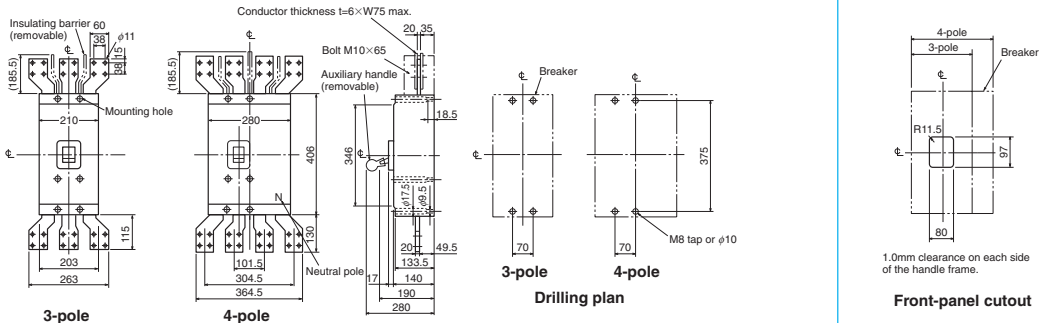
(An order for ☆ should be placed at the same time as an order of circuit breaker main body.)

Accessories	Type name	Reference page	Accessories	Type name	Reference page
Operating handle	F 3P	F10SW	Auxiliary handle	HT	HT-10SW
	F 4P	F10SW4P		Handle lock device	HL
Mechanical interlock	MI 3P	MI-16SW3	Electrical operation device	NFM 3P	(*)
	MI 4P	MI-16SW4		NFM 4P	

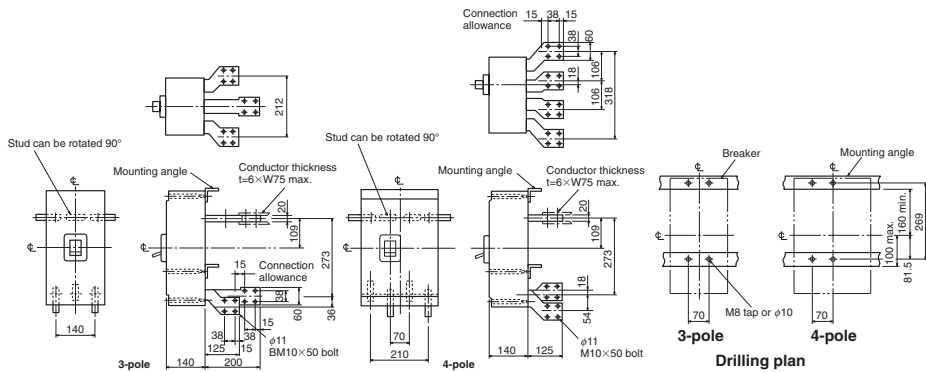
Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

Outline Drawing

Front connection



Rear connection



7 Characteristics and Dimensions 1

Molded Case Circuit Breakers

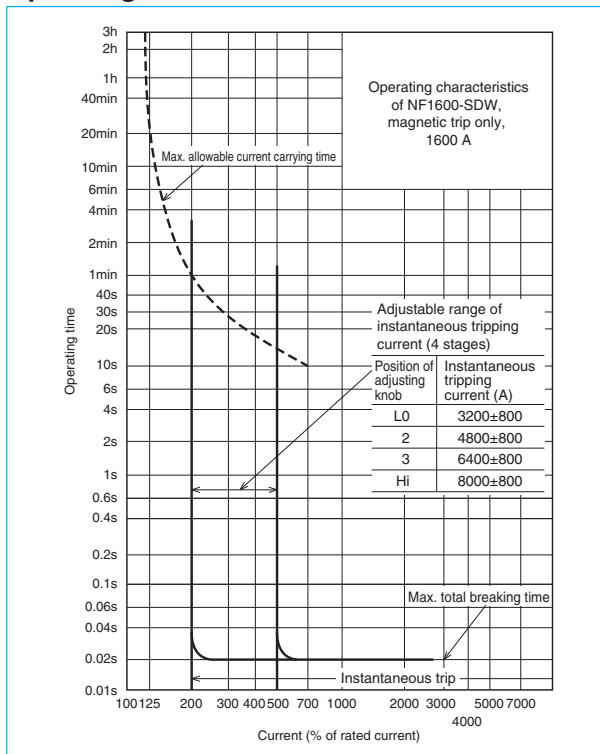
NF1600-SDW



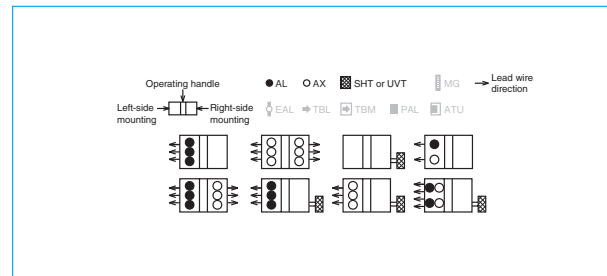
NF1600-SDW

Model		NF1600-SDW		
Rated current In (Amp.)		1600		
Number of poles		2		
Rated insulation voltage Ui (V)		690		
Rated short-circuit breaking capacity (kA)	IEC 60947-2 (Icu/Ics)	DC	250V	40/20
	Time constant not large than 10msec			
Standard Attached parts	Front connection	Mounting screw: M8×40 (4pcs) Insulating barrier: (2P: 1pc, 3P: 2pcs, 4P: 3pcs) Auxiliary handle: (1pc)		
	Rear connection	Mounting screw: M8×40 (4pcs) Auxiliary handle: (1pc)		

Operating Characteristics



Internal Accessories



External Accessories

(An order for ☆ should be placed at the same time as an order of circuit breaker main body.)

Accessories	Type name	Reference page	Accessories	Type name	Reference page
Operating handle	F 2, 3P	F10SW	Auxiliary handle	HT	HT-10SW
	4P	F10SW4P		Handle lock device	HL
Mechanical interlock	MI 2, 3P	MI-16SW3	Electrical operation device	NFM 2, 3P	(*1)
	4P	MI-16SW4		4P	

Note *1 Specify the operation method and voltage. Order in combination with the breaker unit.

1. Handle Operation Angle Dimensions

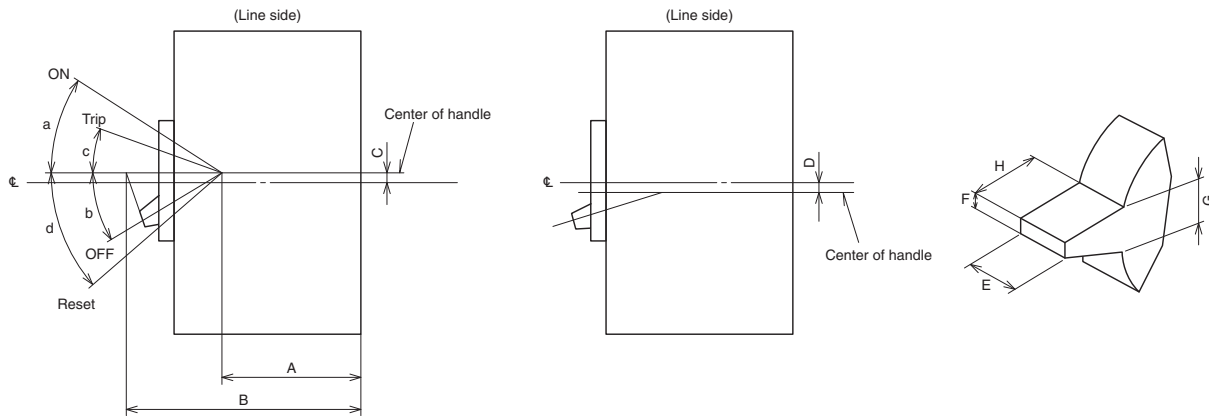


Table of dimension variations

Class	Model		Operation angle (°)				Dimensions (mm)							
			ON	OFF	Trip	Reset	A	B	C	D	E	F	G	H
			a	b	c	d	A	B	C	D	E	F	G	H
C • S • H	MCCB, MCB	ELCB, RCCB, RCBO	a	b	c	d	A	B	C	D	E	F	G	H
	NF50-SVFU	NV50-SVFU	12	20	4	27	55	90	13	–	8	5	5	14
	NF32-SV	NV32-SV	15	19	5	21	40	90	2	–	12	7	7	17
	NF63-CV, NF63-SV, NF63-HV	NV63-CV, NV63-SV, NV63-HV												
	NF125-CV, NF125-SV, NF125-HV	NV125-CV, NV125-SV, NV125-HV												
	NF100-CVFU, NF125-SVU, NF125-HVU	NV100-CVFU, NV125-SVU, NV125-HVU												
	NF125-SEV, NF125-HEV	NV125-SEV, NV125-HEV	15	19	5	21	40	92	2	–	12	7	7	19
	NF250-CV, NF250-SV, NF250-HV													
	NF250-SEV, NF250-HEV													
	NF250-SGV, NF250-LGV, NF250-HGV													
	NF125-SGV, NF125-LGV, NF125-HGV													
	NF160-SGV, NF160-LGV, NF160-HGV													
	NF250-SVU, NF250-HVU													
	NF30-CS	–	21	29	1	31	47	67	10	–	8.5	4.5	6	13
	NF225-CWU	–	12	18	2	21.5	38	92	7.5	–	13.5	7	8	18.5
	NF400-CW	NV400-CW	16.5	10	6.5	14.5	49	134	6.5	–	32.5	14.5	15.5	25
	NF400-SW/SEW/HEW/REW	NV400-SW/SEW/HEW/REW	16.5	10	6.5	14.5	49	155	6.5	–	32.5	13.5	15.5	46
	NF630-CW/SW/SEW/HEW/REW	NV630-CW/SW/SEW/HEW												
NF-SKW	NV-SKW													
NF800-CEW/SDW/SEW/HEW/REW	NV800-SEW/HEW	16.5	10	6.5	14.5	49	155	6.5	–	32.5	13.5	15.5	46	
NF1000-SEW, NF1250-SEW	–	18	12	6	17	84	190	–	4	41.5	13.5	15	36.5	
NF1600-SEW														
R • U	NF125-RGV, NF250-RGV	–	15	19	5	21	40	92	2	–	12	7	7	19
	NF125-UV	–	15	19	5	21	40	92	–	29	12	7	7	17
	NF250-UV	–	15	19	5	21	40	92	–	35	12	7	7	19
	NF400-UEW	–	16.5	10	6.5	14.5	146	252	–	13.5	32.5	13.5	15.5	46
	NF400-UEW(4P), NF800-UEW	–	16.5	10	6.5	14.5	146	252	–	17	32.5	13.5	15.5	46
BH	BH	–	19	18	5	21	56	77.5	5	–	9.5	9.5	9.5	13
	BH-P	–	19	18	5	21	57.5	79	12	–	9.5	9.5	9.5	13
	BH-S	–	19	18	5	21	56	76.5	5	–	34.5	8	9.5	12
	BH-PS	–	19	18	5	21	57.5	78	12	–	34.5	8	9.5	12
	BH-D6, BH-D10 ^{*1}	–	41	36	–	–	63	76	9	–	–	–	–	–
	BH-DN ^{*1}	–	42	48	–	–	63	76	10	–	17	4	9.5	12
	KB-D ^{*1}	–	41	48	–	–	63	76	9	–	–	–	–	–
	–	BV-D ^{*1}	42	40	–	–	61	76	10	–	14	4	–	–
–	BV-DN ^{*1}	42	48	–	–	63	76	10	–	17	4	–	–	

Note *1 Trip is the same as the OFF position. Resetting is not required.

2. MCCB Trip Button, Instantaneous Adjustment Dial Drilling and Terminal Cover Mounting Hole Dimensions

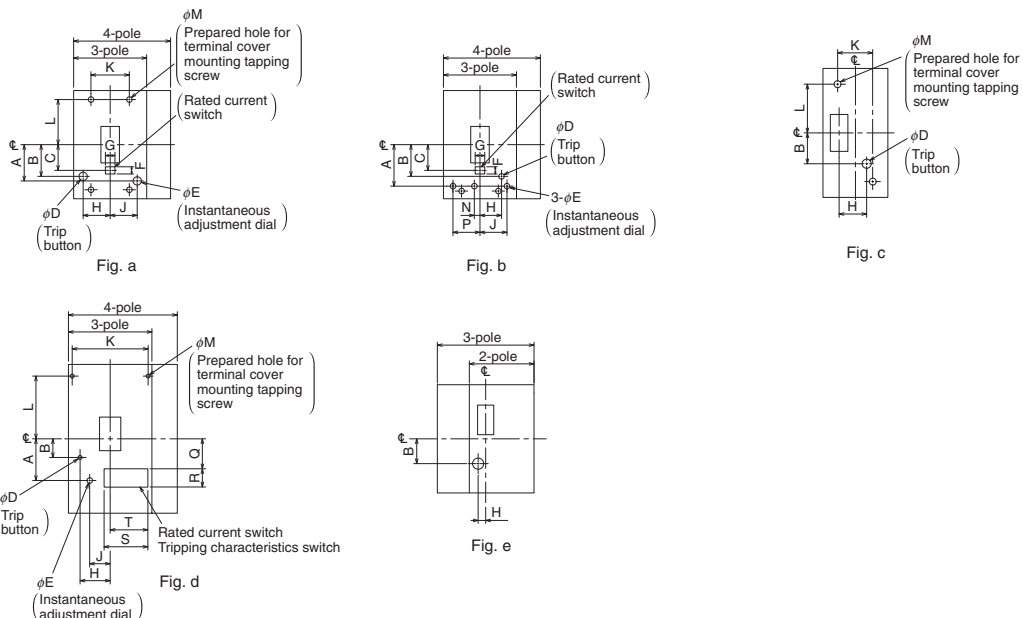


Table of dimension variations

(mm)

Model	Number of poles	Fig.	A	B	C	ϕD	ϕE	F	G	H	J	K	L	ϕM	N	P	Q	R	S	T
NF50-SVFU	2, 3	e	-	14	-	6.5	-	-	-	4	-	-	-	-	-	-	-	-	-	-
NF32-SV, NF63-CV	2	c	-	20	-	6.5	-	-	-	21	-	-	-	-	-	-	-	-	-	-
NF63-SV, NF63-HV	3, 4	a	-	20	-	6.5	-	-	-	29	-	-	-	-	-	-	-	-	-	-
NF125-CV, NF125-SV, NF125-HV	2	c	-	20	-	6.5	-	-	-	21	-	-	-	-	-	-	-	-	-	-
NF100-CVFU, NF125-SVU, NF125-HVU	3, 4	a	-	20	-	6.5	-	-	-	37	-	-	-	-	-	-	-	-	-	-
NF125-UV	2, 3, 4	a	-	20	-	6.5	-	-	-	37	-	-	-	-	-	-	-	-	-	-
NF125-SEV, NF125-HEV, NF250-SV, NF250-HV NF125-SGV, NF125-LGV, NF125-HGV NF160-SGV, NF160-LGV, NF160-HGV NF250-SGV, NF250-LGV, NF250-HGV NF250-SVU, NF250-HVU, NF250-UV	2, 3, 4	a	-	20	-	6.5	-	-	-	44	-	-	-	-	-	-	-	-	-	-
NF250-SEV, NF250-HEV	3, 4	a	-	20	-	6.5	-	-	-	44	-	-	-	-	-	-	-	-	-	-
NF125-RGV	2, 3	a	-	20	-	6.5	-	-	-	44	-	-	-	-	-	-	-	-	-	-
NF250-RGV	2, 3	a	-	20	-	6.5	-	-	-	44	-	-	-	-	-	-	-	-	-	-
NF30-CS	2	b	-	14.5	-	4	-	-	-	16	-	-	-	-	-	-	-	-	-	-
	3	b	-	14.5	-	4	-	-	-	27.5	-	-	-	-	-	-	-	-	-	-
NF225-CWU	2, 3	a	-	15.5	-	6.5	-	-	-	43	-	-	-	-	-	-	-	-	-	-
NF400-CW	2, 3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
NF400-SW, NF-SKW	2, 3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
	4	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
NF400-SEW, NF400-HEW, NF400-REW	3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	53	30	74	63.5
	4	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	53	30	74	63.5
NF400-U EW	3	d	-	50.5	-	6.5	-	-	-	51.5	-	125	130.5	3.5	-	-	53	30	74	63.5
	4	d	-	54	-	6.5	-	-	-	78.5	-	156	152	3.5	-	-	76.5	30	74	98.5
NF630-CW	2, 3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
NF630-SW	2, 3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
	4	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	-	-	-	-
NF630-SEW, NF630-HEW, NF630-REW	3	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	53	30	74	98.5
	4	d	-	30.5	-	6.5	-	-	-	51.5	-	125	110.5	3.5	-	-	53	30	74	98.5
NF800-CEW, NF800-SEW, NF800-HEW, NF800-REW	3	d	-	30.5	-	6.5	-	-	-	78.5	-	86	128.5	3.4	-	-	53	30	74	98.5
	4	d	-	30.5	-	6.5	-	-	-	78.5	-	156	128.5	3.4	-	-	53	30	74	98.5
NF800-SDW, NF-SLW	2, 3	d	74	30.5	-	6.5	10	-	-	78.5	57	86	128.5	3.4	-	-	-	-	-	-
	4	d	74	30.5	-	6.5	10	-	-	78.5	57	156	128.5	3.4	-	-	-	-	-	-
NF800-U EW	3	d	-	54	-	6.5	-	-	-	78.5	-	86	152	3.4	-	-	76.5	30	74	98.5
	4	d	-	54	-	6.5	-	-	-	78.5	-	156	152	3.4	-	-	76.5	30	74	98.5
NF1000-SEW, NF1250-SEW	3	d	-	70	-	6	-	-	-	56.5	-	199	178.5	3.4	-	-	130	30	74	89
NF1600-SEW	4	d	-	70	-	6	-	-	-	56.5	-	269	178.5	3.4	-	-	130	30	74	89

Remarks: 1. The 4-pole part is available for the S and H Series 50A frame to 1600A frame (excluding NF400-REW, NF630-REW and NF800-REW).

2. The 2-pole part for NF250-CV and larger is the same as the 3-pole part. (Including NF125-HV.)

3. The terminal cover mounting hole shows the case for the screwed type. The breaker mounting hole is used to mount the one-touch terminal cover. Refer to the respective dimension drawings.

4. The K dimensions are divided down the breaker center.