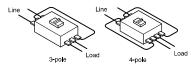


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NF-C (Economy class)

Frame (A) Model		30 NF30-CS	50	60 NF63-CV	63	100	125 25-CV	
Image		NI 30-C3						
Rated current In (A) Rated ambient temperture 40°C (45°C for mari	ine use)	3 5 10 15 20 30	3 4 (5) 6 10 (15) 16 20 25 (30) 32 40 50	(60)	63	50 (60) 63 (75) 80 100	125	
Number of poles Rated insulation voltage Ui (V	/\	2 3	2 3	2 3	2 3	2 3	2 3	
	690V	_	-	_	_	_	_	
EC 60947-2 EC 60947-2 C EN 60947-2 C EN 60947-2 C EN 60947-2 C EN 60947-2	500V	-	2.5/2.5	2.5/2.5	2.5/2.5	7.5/4	7.5/4	
gg 150 000 17 0	440V 415V	1.5/1.5	2.5/2.5	2.5/2.5 2.5/2.5	2.5/2.5 2.5/2.5	10/5	10/5 10/5	
EN 60947-2 AC	400V	1.5/1.5	2.5/2.5 5/5	5/5	5/5	10/5 10/5	10/5	
in (lcu/lcs)	380V	1.5/1.5	5/5	5/5	5/5	10/5	10/5	
l dr	230V	2.5/2 (240V)	7.5/7.5	7.5/7.5	7.5/7.5	30/15	30/15	
s	200V	2.5/2 (240V)	7.5/7.5	7.5/7.5	7.5/7.5	30/15	30/15	
	250V	-	2.5/2.5 (*7)	2.5/2.5 (*7)	2.5/2.5 (*7)	7.5/4 (*4)	7.5/4 (*4)	
Rated impulse withstand voltage Uin	np (kV)	4	8	8	8	8	8	
Current (*1) Suitability for isolation		AC	AC/DC compatible Compatible	AC/DC compatible Compatible	AC/DC compatible Compatible	AC/DC compatible Compatible	AC/DC compatible Compatible	
Reverse connection		_	Possible	Possible	Possible	Possible	Possible	
Number of Without cur	rrent	10,000	10,000	10,000	10,000	10,000	10,000	
operating cycles With current (44		6,000 (AC415V)	6,000	6,000	6,000	6,000	6,000	
Utilization category		Α	Α	Α	Α	Α	A	
Pollution degree		2	3	3	3	3	3	
EMC environment condition (environment		N/A	N/A	N/A	N/A	N/A	N/A	
	a	45 67.5	50 75	50 75	50 75	60 90	60 90	
overall ensions (b	96 52	130 68	130 68	130 68	130 68	130 68	
	c	67	90	90	90	90	90	
Mass of front-face type (kg)	ca	0.25 0.35	0.45 0.65	0.5 0.7	0.5 0.7	0.6 0.9	0.6 0.9	
Front connection (F)	Page	Screw terminal	●Screw terminal	●Screw terminal	Screw terminal	Screw terminal	●Screw terminal	
		-	-	-	-	•	•	
Solderless (BOX) terminal (SL) Rear (B) Plug-in (PM)		●Round stud (assembled in)	●Round stud	●Round stud	●Round stud	●Bar stud	●Bar stud	
		-	•	•	•	•	•	
Alarm switch (AL) Auxiliary switch (AX)		● (*5)	● (*6)	● (*6)	● (*6)	• (*6)	●(*6)	
Auxiliary switch (AX)		●(*5)	● (*6) ● (*6)	● (*6) ● (*6)	● (*6) ● (*6)	● (*6) ● (*6)	●(*6) ●(*6)	
Shunt trip (SHT) Undervoltage trip (UVT) With lead-wire terminal block (SLT) Pre-glarm (PAL)		<u>-</u>	● (*6)	● (*6)	● (*6)	● (*6)	●(*6) ●(*6)	
With lead-wire terminal block (SLT)		•	• (5)	• •	• •	• (6)	•	
Pre-alarm (PAL)		_	_		_	=	_	
Closed (S)		•	•	•	•	•	•	
Enclosure Dustproof (I)		_	•	•	•	•	•	
Waterproof (W)		-	- •	- •	- •	- •	- •	
Electrical operation device (NFM) Mechanical Panel mounting		-	-	-	-	- •	- •	
Mechanical Intellect (MI) (1910 Breaker mounting Intellect (MI) (1910 Breaker mo		<u>-</u>		•		-	•	
& LC		•	•	•		•	•	
Handle lock HL device	127	•	•	•	•	•	•	
device HL-S		-	•	•	•	•	•	
External (F)	117	-	•	•	•	•	•	
operating handle (V)		-	•	•	•	•	•	
Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121	•	•	•	•	•	•	
Rear stud (B-ST)	94	=	•	•	•	•	•	
IEC 35mm rail mounting adapters		<u>-</u>	•					
CE marking	107	TÜV approval	Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	
CCC recognition				Recognition in process		Recognition in process		
Marine use approval (NK, LR, ABS	S, GL)	☆ (NK, LR, ABS)	र्गर	☆	章	ń	☆	
Automatic tripping device		Hydraulic magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	
Trip button		- (*2)	Equipped	Equipped	Equipped	Equipped	Equipped	
Page of Characteristics and dimer		140		142		1-	44	
Notes: *1 The trip action characte	ristics :	differ between AC and DO	for products that are co	mnatible with both AC an	id DC			



e of Characteristics and dimensions | 140 | 142 |

11 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.

2 It is attached with the alarm switch.

3 In case of a current rating of 100A, it does not specify NK rating.

4 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. If wired as shown on the right, three and four poles can be used for up to 400 and 500VDC, respectively.

5 The standard lead drawing is performd laterally. Load drawing is also available.

6 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UYT).

7 Use two poles for three- and four-pole products. In this case, do not use the neutral pole of the four-pole products. Not available for use with connection as shown on the right.

8 Place an order of other models in conjunction with the circuit breaker.

9 Solid state relay output is option. Please specify if other output is necessary. (Standard type is thus SLT equipped).

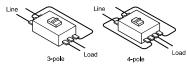
*10 Not isolation compatible, excluding 400 to 800A frame.

NF-C (Economy class)

	225	250	400	600	630	800
-	NF25		NF400-CW	NF63	0-CW	NF800-CEW
				a de		
	(100) 125 150 175 200 225 (*3)	250	250 300 350 400	500 600	630	Adjustable 400 450 500 600 700 800
	2 3	2 3	2 3	2 3	2 3	3
	600	600	690	690	690	690
	10/8			18/9	18/9	18/9
	15/12	15/12	25/13	36/18	36/18	36/18
	25/19	25/19	36/18	36/18	36/18	36/18
	25/19	25/19	36/18	36/18	36/18	36/18
	25/19	25/19	40/20	40/20	40/20	40/20
	36/27 36/27	36/27 36/27	50/25 50/25	50/25 50/25	50/25	50/25 50/25
	15/12 (*4)	15/12 (*4)	20/10 (*4)	20/10 (*4)	50/25 20/10 (*4)	50/25
	8	8	8	8	8	8
	AC/DC compatible	AC/DC compatible	AC/DC compatible	AC/DC compatible	AC/DC compatible	AC
	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
	Possible	Possible	Possible	Possible	Possible	Possible
	8,000	8,000	6,000	6,000	6,000	4,000
	4,000	4,000	1,000	1,000	1,000	500
	A	A	A	A	A	В
	3 N/A	3 N/A	3 N/A	3 N/A	3 N/A	3 A
	105	105	140	140	140	210
	165	165	257	257	257	275
	68	68	103	103	103	103
	92	92	134	134	134	155
	1.3 1.5	1.3 1.5	4.4 5.0	5.2 6.0	5.2 6.0	10.9
	●Screw terminal	●Screw terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal
	•	•	-	-		-
	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud
	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)
	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)
	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)
	●(*6)	● (*6)	•	•	•	•
	•	•	•	•	•	•
		=	-	-	=	●(*9)
	•	•				
	-	-	•	•	•	•
	-	-	●(*8)	●(*8)	●(*8)	●(*8)
	•	•	•	•	•	•
	•	•	•	•	•	•
	•	•	-	-	_	_
	•	•	•	•	•	•
	•	•	•	•	•	•
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	•	•	• •	• •	• •	
	•	•	•	• •	• •	•
	-	-	-	<u>-</u>		_
	TÜV approval	TÜV approval	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
	Thomas money	The man all man are esti-	The same of the same of the	The support was a specific	The sum of the sum of the	The street (affective value date stice)
	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Electronic (effective value detection) Equipped
		Equipped 18	156		52	166

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.

Model	Frame (A)	30	32	50	60	63	
Pate down in (A) S + (B) 6 10 20 20 20 20 20 20 20	Model	NF3	32-SV		NF63-SV		
Read and impulses will related to 1,000 15 (20 55 (30) 25	lmage		e a				
Number of poles		3 4 (5) 6 10	32	3 4 (5) 6 10 (15) 16	(60)	63	
Red			2 3		2 3 4	2 3 4	
Section Company Comp							
Rated impulse withsland voltage lump (kV)			 				
Rated impulse withsland voltage lump (kV)	§ 500V						
Rated impulse withsland voltage lump (kV)	[440\						
Rated impulse withsland voltage lump (kV)	S IEC 60947-2 AC 4150						
Rated impulse withsland voltage lump (kV)	景 (lcu/lcs) 4000 第 (lcu/lcs) 380V						
Rated impulse withsland voltage lump (kV)	를 (230V						
Rated impulse withsland voltage lump (kV)	등 급 200V						
Current (*1)							
Subability for isolation							
Reverse connection							
Number of Without current 10,000 10,000 15,000 15,000							
Utilization desproy		10,000					
Pollution degree 3							
ENC environment condition (environment A or B)							
Mass of front-face type (kg) Mass of face type (kg) Mass							
Bar Common Comm	e a Lead o						_
Mass of front-face type (kg)	E						
Mass of front-face type (kg)							
Fig. Front connection Fig. Page Screw terminal Screw terminal Screw terminal total Sc	ca ca						
Solderless (BOX) terminal (SL) Rear (Rear (B) SQ							
Radam switch (AL)	Solderless (BOX) terminal (SL)	Screw terminal	Screw terminal	Screw terminal	- Screw terminal	Screw terminar	-
Radam switch (AL)	Rear (B) 92	●Bar stud	●Round stud	●Round stud	●Round stud	●Round stud	
Second Control Contr		The state of the s					
Closed (S) Dustproof (W)	Alarm switch (AL)						
Closed (S) Dustproof (W)	Auxiliary switch (AX)						
Closed (S) Dustproof (W)	Undervoltage trip (UVT)						
Closed (S) Dustproof (W)	With lead-wire terminal block (SLT) 114		•	 			
Enclosure Dustproof (IV) 130	TTO GIGHT	_	_	-	_	-	
Waterproof (W)							
Electrical operation device (NFM) 133			 	_			
Mechanical Panel mounting 129	Electrical operation device (NFM) 133		-				
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	Mechanical Panel mounting	•	•	• •	• •	• •	
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	interlock (MI) (*7) Breaker mounting	•	•	• -	• -	• -	
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	Handle lock LC	•	•	•	•		
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	device HL-S	_	<u> </u>		 		
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	External (F)	-	•		•	<u> </u>	
Termial cover (TCL, TCS, TTC, BTC, PTC) 121	operating handle (V)	•	•	•	•	•	
Plug-in (PM) 94	Terminal cover (TC-L, TC-S, TTC, BTC, PTC) 121	•	•		• •		
Pflug-in Pflug-in		•	•		•		
CE marking Self-declaration Self-declaration Self-declaration Self-declaration CCC recognition Recognition in process Recognition in process Recognition in process Recognition in process Marine use approval (NK, LR, ABS, GL) ☆ ☆ ☆ - → - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ - ☆ * *	Plug-in (PM)	•	•				
CCC recognition Recognition in process Marine use approval (NK, LR, ABS, GL) ☆ ☆ - ☆ - ☆ - Automatic tripping device Thermal-magnetic Thermal-magnetic Thermal-magnetic Thermal-magnetic Trip button Equipped Equipped Equipped Equipped Page of Characteristics and dimensions 142 142		Self-declaration	Self-declaration				
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 Page of Characteristics and dimensions 142 142							
Trip button Equipped Equipped Equipped Equipped Page of Characteristics and dimensions 142 142	Marine use approval (NK, LR, ABS, GL)	☆	☆	☆ -	☆ -	☆ -	
Page of Characteristics and dimensions 142 142							
				Equipped		Equipped	
				with both AC and DC	174		



¹¹ The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.

12 In case of a current rating of 100A, it does not specify NK rating.

13 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)

14 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).

15 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.

16 Place an order of other models in conjunction with the circuit breaker.

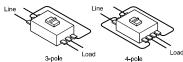
17 Not isolation compatible. excluding 400 to 800A frame.

	100		12	25	125		1:	25	160		225		250	
		NF12			NF125-S	GV		5-SEV	NF160-S	GV		NF25		
	(15) 16 20 (30) 32 40 (15) 20 20			8							-			
	(15) 16 20 (30 50 (60) 63 (75)) 32 40 80 100	12	25	16-20 20-25 25-32 45-63 56-80 70-1		16-32 32-	63 63-125	125-16	60	(100) 125 15 175 200 22		250	
	2 3	4	2 3		2 3	4	3	4	2 3	4	2 3	4	2 3	4
	690 8/8		69		690 8/8			90 /8	690 8/8		690 8/8		690 8/8	
	18/18		18/		30/30)		/30	30/30)	30/30		30/30	
	25/25		25/		36/36			/36	36/36		36/36		36/36	
	30/30		30/		36/36			/36	36/36		36/36		36/36	
	30/30		30/		36/36			/36	36/36		36/36		36/36	
-	30/30		30/		36/36			/36	36/36		36/36		36/36	
	50/50 50/50		50/ 50/		85/85 85/85			/85	85/85 85/85		85/85		85/85	
	40/40 (*3	2)	40/40		20/20 (300)			/85 -	20/20 (300		85/85 20/20 (300V	\ (*3)	85/85 20/20 (300V	() (*3)
	40/40 (3	,,	40/40		20/20 (300	v) (0)		<u>-</u> 8	20/20 (300	v) (0)	20/20 (3007	/ (3)	20/20 (3007	/(3)
	AC/DC comp	atible	AC/DC co		AC/DC com	patible		iC	AC/DC com	patible	AC/DC compat	ib l e (*1)	AC/DC compat	tible (*1)
	Compatib		Comp		Compati			oatible	Compat		Compatib		Compatib	
	Possible		Pos	sible	Possib	le	Pos	sible	Possib	le	Possible		Possible	е
	25,000		25,0		50,000			000	40,00		25,000		25,000	
	10,000		10,		30,000)		000	15,00	0	10,000		10,000	
	A 3				A 3			<u>4</u> 3	A 3		A 3		A 3	
	N/A		N/		N/A			<u>م</u>	N/A		N/A		N/A	
	60 90	120	60 9		105	140	105	140	105	140	105	140	105	140
-	130	, .20	13		165	1		65	165	1	165	,	165	
	68		6	8	68			8	68		68		68	
	90		9		92			2	92		92		92	
	0.7 1.0	1.3	0.7 1.		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 terr	ninal	Screw	terminal	●Screw te	rminal	Screw	terminal	●Screw te	rminal	Screw terr		●Screw terr	
	●Bar stu	d	●Bar	etud	●Bar st	ud	Bar stud	● ●Bar stud	●Bar st	ud	●Bar stu	d •	●Bar stu	ıd •
	• Dai sta	•	•	• •	• OBAI SI	uu	• Dar stad	• Dai stad	•	uu	• Dai sta	<u> </u>	• Dai sto	
-	• (*4)	•	• (*4)	•	● (*4)	•	● (*4)	•	● (*4)	•	• (*4)	•	• (*4)	•
	● (*4)	•	● (*4)	•	● (*4)	•	● (*4)	•	● (*4)	•	● (*4)	•	● (*4)	•
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	Self-declara	ation	Self-ded		Self-declar	ration	Salf-do	claration	Self-decla	ration	TÜV approval	Self-declaration	TÜV approval	Self-declaration
	Recognition in		Recognition		Recognition in			n in process	Recognition in		Recognition in		Recognition in	
	∴.coogrillion III	_	riecognition		☆ (LR, ABS, GL		☆ (LR, ABS, GL)		☆ (LR, ABS, GI		riecognition in	_	∴.cogmittori iii	
	Thermal-mag	netic	Thermal-	magnetic	Thermal-ma			ve value detection)	Thermal-ma		Thermal-mag	netic	Thermal-mag	gnetic
	Equippe	d	Equi		Equippe	ed		pped	Equipp		Equippe	d	Equippe	d
		14	14		152		1.	54	152			14	48	

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

Frame (A)	250 NECEO COV	250 NECEO CEV	400 NE400 CW	400 NE400 CEW	600	630	
Model	NF250-SGV	NF250-SEV	NF400-SW	NF400-SEW		0-SW	
	K.K.K	10.00			• •	Charles .	
Imaga	THE PERSON NAMED IN	* * * * * * * * * * * * * * * * * * *	Septill.		S. Ph		
Image			a 1	B 1			
	0 000	_ 36M	elete:	etete	et.		
But to see the (a)	125-160 140-200	PEPEP	4 4 4	A.F. 1.11. 000 005	- RET		
Rated current In (A) Rated ambient temperture 40°C (45°C for marine use)	125-160 140-200 175-250	80-160 125-250	250 300 350 400	Adjustable 200 225 250 300 350 400	500 600	630	
Number of poles Rated insulation voltage Ui (V)	2 3 4	3 4	2 3 4 690	3 4	2 3 4	2 3 4	
	8/8	8/8	10/10	10/10	10/10	10/10	
Second S	30/30	30/30	30/30	30/30	30/30	30/30	
440V E IEC 60947-2	36/36 36/36	36/36 36/36	42/42 45/45	42/42 50/50	42/42 50/50	42/42 50/50	
EN 60947-2 AC 400V	36/36	36/36	45/45	50/50	50/50	50/50	
(Icu/Ics) 380V	36/36	36/36	50/50	50/50	50/50	50/50	
230V 200V	85/85 85/85	85/85 85/85	85/85 85/85	85/85 85/85	85/85 85/85	85/85 85/85	
DC 250V	20/20 (300V) (*2)	-	40/40 (*2)	-	40/40 (*2)	40/40 (*2)	
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8	8	
Current Suitability for isolation	AC/DC compatible Compatible	AC Compatible	AC/DC compatible Compatible	AC Compatible	AC/DC compatible Compatible	AC/DC compatible Compatible	
Reverse connection	Possible	Possible	Possible	Possible	Possible	Possible	
Number of Without current	25,000	25,000	6,000	6,000	6,000	6,000	
operating cycles With current (440VAC) Utilization category	10,000 A	10,000 A	1,000 A	1,000 B	1,000 A	1,000 A	
Rated short time with stand current lcw (kA) at 0.25s	_	_		5	_		
Pollution degree	3	3	3	3	3	3	
EMC environment condition (environment A or B)	N/A 105 140	A 105 140	N/A 140 185	A 140 185	N/A 140 185	N/A 140 185	
	165	165	257	257	257	257	
Overall nensions	68	68	103	103	103	103	
長 L ca Mass of front-face type (kg)	92 1.4 1.6 2.0	92	155 4.6 5.2 6.8	155 6.0 7.6	155 5.4 6.2 8.0	155 5.4 6.2 8.0	
Front connection (F) Page	•	Screw terminal Screw terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	●Busbar terminal	
Solderless (BOX) terminal (SL) Rear (B) 92	•	• •					
Solderless (BOX) terminal (SL) Rear (B) Plug-in (PM)	●Bar stud	●Bar stud ●Bar stud	●Barstud ●Barstud ●Barstud	●Bar stud ●Bar stud	●Bar stud ●Bar stud ●Bar stud	●Bar stud ●Bar stud ●Bar stud	
Φ Alarm switch (AL)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	● (*3)	
Auxiliary switch (AX) Shunt trip (SHT)	● (*3) ● ● (*3) ●	● (*3) ●	● (*3) ● ● (*3) ●	● (*3) ● ● (*3) ●	● (*3) ● ● (*3) ●	● (*3) ● (*3) ● (*3)	
Undervoltage trip (UVT)	• (*3)	● (*3) ● ● (*3) ●	• •	0 0	0 0	• •	
With lead-wire terminal block (SLT) 114	•	• •	• •	• •	• •	• •	
Pre-alarm (PAL) 116 Closed (S)	• -	• -	<u>-</u>	● (*5)	_	-	
Enclosure Dustproof (I) 130	• -	-	• -	• -	• -	• -	
Waterproof (W)	• -	• -	• -	• -	• -	• -	
Electrical operation device (NFM) 133 Mechanical Panel mounting	•	• •	● (*6) ● ●	● (*6)	● (*6) ● ●	● (*6) ● ●	
Mechanical Panel mounting 129	•	• -	• -	• -	• -	• -	
Handle lock LC	•	•	-	-	-	-	
device HL 127	•	•	•	•	•	•	
HL-S	•	•	•	•	•	•	
operating handle (V)	•	•	•	•	•	•	
Terminal cover (TC-L, TC-S, TTC, BTC, PTC) 121 Rear stud (B-ST)	•	• •	• •	• •	• •	• •	
Plug-in (PM) 94	•	• •	• • •	• •	• • •	• • •	
IEC 35mm rail mounting adapters 137		<u> </u>	-	_	-	-	
CE marking CCC recognition	Self-declaration	Self-declaration Recognition in process	Self-declaration	Self-declaration Recognition in process	Self-declaration Recognition in process	Self-declaration Recognition in process	
Marine use approval (NK, LR, ABS, GL)	☆ (LR, ABS, GL) –	☆ (LR, ABS, GL) –	☆ –	† –	thecognition in process	rtecognition in process	
Automatic tripping device	Thermal-magnetic	Electronic (effective value detection)	Thermal-magnetic	Electronic (effective value detection)	Thermal-magnetic	Thermal-magnetic	
Trip button Page of Characteristics and dimensions	Equipped 152	Equipped 154	Equipped 156	Equipped 158	Equipped 16	Equipped 52	
Notes: *1 The trip action characteristics	·						

- - *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.



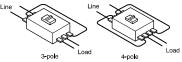
6:	20	80	20	800	1.0	000	10	50	1200	1600	1600
NF630		NF800		NF800-SDW		0-SEW		0-SEW	NF1250-SDW	NF1600-SEW	NF1600-SDW
147630	Lil	200 0	J-SEVV	NF000-SDW	NETOC		INF 123		NF1250-3DW	NF 1000-SEW	NF 1800-SDW
0.0	io.	7117			8	2 2	8		8		
Adjustable	300 350 600 630	Adjustable 500 600	400 450 700 800	(700) 800		500 600 700 00 1000		00 700 800 00 1250	1000 1250	Adjustable 800 1000 1200 1400 1500 1600	1600
3	4	3	4	2	3	4	3	4	2	3 4	2
69		69	90	690		90		90	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/		_		/43		/43	_	85/43	_
50		50/		_		/43		/43	_	85/43	_
50		50/		_		/43		/43	_	85/43	_
 85		85/		_		5/63		5/63	_	125/63	_
 85		85/		_		5/63		5/63	_	125/63	_
	-	-		40/40		-		-	40/20	-	40/20
	3			8		8		3	8	8	8
 A			C	DC		KC		.C	DC	AC AC	DC
Comp		Comp		Compatible		patible		patible	Compatible	Compatible	Compatible
Pos		Poss				sible			Possible		Possible
				Possible				sible		Possible	
6,0		4,0		4,000		000		000	3,000	3,000	3,000
1,0		50		500		00		00	500	500	500
	3	E		A		В		3	Α	В	В
7			.6	-		at 0.1	20 a			20 at 0.1	-
	3	3		3		3		3	3	3	3
	١	ļ		N/A		A		4	N/A	A	Α
 140	185	210	280	210	210	280	210	280	210	210 280	210
 2		27		275		06		06	406	406	406
 10		10		103		40		40	140	140	140
 15		15		155		90		90	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
●Busba	terminal	●Busbar	terminal	●Busbar terminal	Busbar terminal	 Busbar terminal 	 Busbar terminal 	●Busbar terminal	●Busbar terminal	■Busbar terminal ■Busbar termina	●Busbar terminal
— ■Bar etud	- ●Bar stud	– ●Bar stud	– Bar etud	– ●Bar stud	– Baretud	- ●Bar stud	– Bar etud	— ■Rar etud	– ●Bar stud	Bar stud Bar stud	– ●Bar stud
 • Dai otaa	• Dai Staa	• Dar stad	• Dar Stad	• Dair olda	• Dar staa	- Dar stad	• Dar Staa	_	• Dar olda	- Dai staa Dai staa	
● (*3)	•	● (*3)	•	•		•	•	•	<u> </u>		•
● (*3)	•	● (*3)	•	•	•	•	•	•	•	• •	•
 • (*3)	•	● (*3)	•	•	•	•		•		• •	•
0 (0)	•	•		•	•		•	•	•	• •	•
•	•	•		•	•	•	•	•	•	•	
	*5)	• (^(*5)	_		(*5)		(*5)	_		-
	*5) -	• ((*5) -	<u>-</u>	•	(*5) -	•	(*5)	<u>-</u>	• (*5)	- -
•	*5)	- ((*5) - _		_	(*5) - _	-	(*5) - -	-	• (*5)	_
•	-			-		-		-	-	● (*5) -	-
•	- - -	•	- - -	- •	- -	- - -	- -	- - -	- - -	• (*5) - - -	- - -
•	- - -	•		-	- - -		- - -	- - (*6)	- - - - • (*6)	• (*5) - - - - • (*6)	- - - - - (*6)
•	- - *6)	•	- - - (*6)	- • • •(*6)	- - -	- - -	- - -	- - - (*6)	- - -	- (*5) 	- - -
•	- - - *6)	•	- - (*6)	- • • •(*6)	-	- - - (*6)	-	- - - (*6)	- - - - • (*6)	• (*5) - • (*6) •	- - - - - (*6)
•	- - *6) •	• •	- - *6) •	- • • •(*6) •	-	- - - (*6)	-	- - - *6)	- - - - (*6)	• (*5) • (*6) • -	- - - - - (*6)
•	*6) •	• • •	*6)	- • •('6) •	-	- - - (*6)	-	- - - (*6)	- - - - • (*6)	• (*5) - • (*6) •	- - - - - (*6)
•	*6) •	• •	*6)	- • (*6) • -	-	(*6) 	-		- - - - (*6) - -	• (*5)	- - - - (*6) - - -
•	*6) •	• • •	*6)	- • • • • • • • • •	-	- - - (*6)	-	- - - *6)	- - - - (*6)	• (*5) • (*6) • -	- - - - - (*6)
•	*6)	•	- - - (*6)	- • • • • • • • • • •	-	(*6)	-	(*6)	- - - - (*6) - - -	(*5) 	- - - - (*6) - - -
	*6)		- - - (*6)	- • • (*6) • • • • • • • • •	-	(*6)	-	- (*6)	- - - - (*6) - -	(*5) (*6) 	- - - - - (*6) - - - - -
	*6)		*6)	- • • • • • • • • • • •	-	- (*6) 	-	- (*6) 	- - - - - (*6) - - - - - -	• (*5) • (*6)	- - - - - - - - - - - -
	*6)		*6)	- • • (*6) • • • • • • • • •	-	(*6)	-	- (*6)	- - - - (*6) - - -	(*5) 	- - - - - (*6) - - - - -
	*6)	-	*6)	- • (°6) • - • • • • • • • •	-	- (*6) 	-	(*6) 	- - - - (*6) - - - - - -	(*5)	- - - - - - - - - - - - - - - -
Self-dec		Self-dec	(*6)	- (*6) (*6) (**) (**) (**) (**) (**) (**)	Self-de	- (*6) -	Self-de	- (*6)	- - - - - - - - - - - - - - - - - - -	• (*5)	
Self-dec		• • • • • • • • • • • • • • • • • • •	'*6) • •	- ('6) - - - - Self-declaration Recognition in process	Self-decognition	(*6)	Self-deapnition	- (*6)		• (*5)	
Self-det	*6) • • • • • • • • • • • • • • • • • •	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●		- (*6) (*6)		(*6)		- (*6)		• (*5) Self-declaration Recognition in process	
Self-dec	*6) *6)	Self-dec Recognition	*6) Claration in process evalue detection)		Self-ded Recognition	(*6)	Self-de:	- (*6) - (*6) - (*a) - (*b) - (*b) - (*b) - (*c) -		• (*5)	
Self-dec		Self-dec Recognition	- "6) - "6) - "10	- O O O O O O O O O O O O O O O O O O O	Self-development	(*6)	Self-deel	- (*6)		• (*5)	
Self-dec		Self-dec Recognition	- "6) - "6) - "10		Self-development	(*6)	Self-deel	- (*6) - (*6) - (*a) - (*b) - (*b) - (*b) - (*c) -		• (*5)	

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

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

		ame (A) Model			50		60 NF63-I	ΗV	63		100	NF12	125 25-HV		125 NF125-LGV	125 NF125-HGV	125 NF125-RGV	
		Image						a							14 123-234	14 1254 104	11 123 100	
		current In (A)			10 15 16		60	-12	(63)		15 16 20 30		125		16-20 20-25 25-32 32-40 35-50		16-20 20-25 25-32 32-40 40-50	
Rated	ambient temperti	ure 40°C (45°C fo per of poles	r marin	ne use)	30 32 40	50	2 3	4	2 3	4	50 60 63 75 2 3	80 100	2 3	4	45 63 56 80 70 100 90 125 2 3 4	45 63 56 80 70 100 90 125 2 3 4	50 63 63 80 80 100 100 125 2 3	
	Rated insula		Ui (V)		690	1 -	690		690		690		690		690	690	690	
(KA)				690V	2.5/2.		2.5/2		2.5/2		10/8		10/8		8/8	10/8	_	
hated short-circuit breaking capacities (kA)				500V 440V	7.5/7. 10/8		7.5/7.		7.5/7		30/20 50/38		30/23 50/38		36/36 50/50	50/38 65/65	125/125	
ng cap	IEC 60947-2	,	İ	440V	10/8		10/8		10/8		50/38		50/38		50/50	70/70	150/150	
oreakir	EN 60947-2	•	AC	400V	10/8		10/8		10/8		50/38		50/38		50/50	75/75	150/150	
jicali.	(Icu/Ics)			380V	10/8		10/8		10/8		50/38		50/38		50/50	75/75	150/150	
short-c			-	230V 200V	25/19		25/19		25/1 25/1		100/7 100/7		100/75 100/75		90/90	100/100 100/100	150/150 150/150	
Bated			DC	250V	25/19 7.5/7.5 (25/19 7.5/7.5		7.5/7.5		100//	5	100/75)	20/20 (300V) (*2)		150/150	
Rate	d impulse with	stand voltage			8		8	(0)	8	(0)	8		8		8	8	8	
		Current					AC/DC compa				AC		AC		AC/DC compatible		AC	
		ty for isolation			Compat Possib		Compat Possit		Compa Possil		Compat Possib		Compatil Possibl		Compatible Possible	Compatible Possible	Compatible Possible	
	Number of	Withou		rent	15.00		15,00		15,00		25,00		25,000		50.000	50,000	50,000	
	erating cycles				8,000		8,000		8,00		10,00		10,000		30,000	30,000	30,000	
		ion category			Α		A		Α		Α		A		A	A	Α	
E140		tion degree		A D)	3		3		3		3		3		3	3	3	
EMC	environment cor	ndition (environ	ment	A or B)	N/A 50 75	100	N/A 50 75	100	N/A 50 75		N/A 90	120	N/A 90	120	N/A 105 140	N/A 105 140	N/A 105	
la di		, Î	ŀ	b	130	100	130		130		130	120	130	120	165	165	165	
Overall dimensions (b √∏ I		С	68		68		68		68		68		68	68	68	
ê		↓ ¹ □		ca	90		90		90	_	90		90		92	92	92	
<u></u>		nt-face type		Done	0.5 0.7				0.55 0.75			1.3	0.8 1.0	1.3			1.5 1.8	
on and ions	Front connection Solderless (Bo		(F) (SL)	Page	●Screw te	rminai	●Screw te	rminai	●Screw te	erminai	●Screw te	rminai	●Screw ter	minai	•	•	•Screw terminal	
Installation	Rear	ON TOTAL	(B)	92	●Round	stud	●Round	stud	●Round	stud	●Bar s	tud	●Bar sti	ud	●Bar stud	●Bar stud	●Bar stud	
<u>131</u> 8	Plug-in		PM)		•		•		•		•	•	•	•	•	•	•	
e e	Alarm switch		(AL)		● (*3)	•	• (*3)	•	• (*3)	•	• (*3)	•	• (*3)	•	• (*3)	• (*3)	• (*3)	
le de	Auxiliary swi Shunt trip		(AX) SHT)	102	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	÷	● (*3) ● (*3)	•	● (*3) ● ● (*3) ●	● (*3) ● (*3) ●	● (*3) ● (*3)	
ette	Undervoltage		UVT)	}	● (*3)	•	• (*3)	+	● (*3)	•	● (*3)	+	● (*3)		• (*3)	• (*3)	• (*3)	
Cassette-type accessories		terminal block (114	•	•	•	•	•	•	•	•	•	•	•	•	•	
0 **	Pre-alarm		PAL)	116					_	_			_		-	-	-	
1	Enclosure	Closed	(S) (I)	130	-:	-	•	 -	•	+-	•	+=	•	-	• -	_		
		Waterproof		130	<u> - Ť • </u>	+=	- 1 •	+=	- 1 •	+=		+=		=	-	-	_	
1 "	Electrical oper	ation device (l	NFM)	133							•		•		•	•	•	
jė.	Mechanical	Panel mour	nting	129	•	•	•	•	•	•	•	•	•	•	•	•	•	
accessories	interlock (MI) (*4)	Breaker mou	nting		•		•	1 -	•		•	! -	•		•	•	•	
8	Handle lock	HL		127					•		-		-					
<u>a</u>	device	HL-S	$\overline{}$		•		•		•		•		•		•	•	•	
External	External	(F)		117	•		•		•		•		•		•	•	•	
<u>~</u>	operating handle	(V)	DTO)		•	_	•		•	-	•	_	•	_	•	•	•	
	Rear stud	-L, TC-S, TTC, BTC,	, PIC) B-ST)	121	••	•	•	•	•	•	•	+	• •	•	•	•	-	
	Plug-in		PM)	94	•	•	•	•	•	•	• •	•	• •	•	•	•	•	
\perp	IEC 35mm rail	mounting ada		137	•	-	•	 -	•	-	_				-	-	_	
		marking			Self-decla		Self-decla		Self-decla		Self-decla		Self-declar		Self-declaration	Self-declaration	Self-declaration	
Mar	ine use appro	recognition	ΔRS		Recognition in	process	Recognition in	process	Recognition in	process	Recognition in	process	Recognition in	orocess _	Recognition in process ☆ (LR, ABS, GL) —	Recognition in process ☆ (LR, ABS, GL) —	Recognition in process ☆ (LR, ABS, GL)	
Ivial		tripping dev		, GL)		gnetic		agnetic	™ Thermal-m	agnetic		agnetic			Thermal-magnetic			
	Tri	p button			Equipp		Equipp		Equip		Equipp		Equippe		Equipped	Equipped	Equipped	
Pag	e of Characte	eristics and d	imen	sions			142					14	14		152	152	152	
Notes	: *1 The tri	p action char	racter	istics o	liffer betwee	n AC	and DC for p	product	s that are c	ompatib	le with both	AC an	d DC.			line .	_	

- 11 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.
 22 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.
 33 The cassette type design makes it easy for customer to install. Available for installation on side below 250A frame (excluding UVT).
 43 Not isolation compatible, excluding 400 to 800A frame.
 45 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.



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

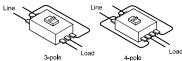
		25 5-HEV	160 NF160-L0	GV	160 NF160-H	GV	225	NF25	250 50-HV		250 NF250-l		250 NF250-H	GV	250 NF250-RGV
		• 1				12 100						*	4.4		
	P:P		PPP	1	PPI			-	, ,)		P.P.		PiPi		rinin
		63 63-125	125-160		125-16		125 150 175 200	225	250		125-160 1 175-2	50	125-160 14 175-25	0	125-160 160-200 200-250
	3	90	2 3 690	4	2 3	4	2 3 690	4	2 3	4	2 3	4	2 3	4	2 3
-		0/8	8/8		10/8		10/8		10/8		8/8		10/8		- 690
		/38	36/36		50/38		50/38		50/38		36/3		50/38		_
-	65.	/65	50/50		65/65		65/65		65/65		50/5		65/65		125/125
		/70	50/50		70/70		70/70		70/70		50/5		70/70		150/150
		/75	50/50		75/75		75/75		75/75		50/5		75/75		150/150
		/75	50/50		75/75		75/75		75/75		50/5		75/75		150/150
		/100	90/90		100/10		100/100		100/10		90/9		100/10		150/150
	100	/100	90/90 20/20 (300V		100/10 40/40 (300\		100/100 40/40 (300V		100/10 40/40 (300		90/9		100/10 40/40 (300)		150/150
	-	- 8	20/20 (3007	1(4)	40/40 (300)	7 (2)	40/40 (300V 8	1(4)	40/40 (300	v) (Z)	20/20 (300	· v) (2)	40/40 (300)	1 (4)	8
		iC	AC/DC comp	patible	AC/DC com	oatible	AC/DC compat	tible (*1)		atible (*1)		npatible	AC/DC com	patible	AC
		oatible	Compatib		Compati		Compatib		Compat		Compa		Compati		Compatible
	Pos	sible	Possible	le	Possibl	е	Possible	le	Possib	ole	Possik	ole	Possib	le	Possible
		000	40,000		40,000		25,000		25,00		25,00		25,000		25,000
		000	15,000		15,000)	10,000)	10,00	0	10,00	00	10,000)	10,000
		A 3	A 3	\longrightarrow	A		A 3		A 3		A 3		A 3		A 3
		<u>з</u> А	N/A	\rightarrow			N/A		N/A		N/A		N/A		N/A
-	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105
		65	165	1.10	165	1	165	1	165		165		165	,	165
		8	68		68		68		68		68		68		68
		2	92		92		92		92		92		92	,	92
	1.7	2.2	1.4 1.6	2.0	1.4 1.6	2.0	1.4 1.6	2.0	1.4 1.6		1.4 1.6		1.4 1.6	2.0	1.5 1.8
	Screw terminal	Screw terminal	●Screw terr	minai	●Screw ter	minai	Screw terr	minai	●Screw te	erminai	●Screw te	erminai	●Screw ter	minai	Busbar terminal
	_	●Bar stud	●Bar stu	ud	●Bar st	ud	●Bar stu		●Bar s		●Bar s	tud	●Bar st	ud	●Bar stud
	•	•	•		•		•	•	•	•	•		•		•
	● (*3)	•	● (*3)	•	● (*3)	•	● (*3)	•	● (*3)	•	● (*3)	•	● (*3)	•	● (*3)
	● (*3)	•	• (*3)	•	• (*3)	•	• (*3)	•	● (*3)	•	● (*3)	•	• (*3)	•	• (*3)
-	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)	•	● (*3) ● (*3)
-	• (3)	•	• (3)	 	• (3)		• (3)		(3)	+ -	• (3)		• (3)		• (3)
			_	-			_		_		_		_		_
		-	•	- 1			_		-		•	-	_		-
	•	-	•	-	•	<u> </u>	•		•		•	-	•	-	-
	•		•	<u> </u>	•	<u> </u>	•	-	•		•		•	<u> </u>	_
	•	•		\rightarrow	•		•	•	•	•	-		•		•
	•	_		\rightarrow				_		+ -	-		-		-
-			•				•		•		•		•		•
		•	•		•		•		•		•		•		•
		•	•		•		•		•		•		•		•
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-			•		•		•		•		•		•		•
	•	•	•	+	•		-	•	•	•	-		•		•
	-	•	•	\rightarrow	.				•	+ :	•		•		-
-			_	-+			_		_		_				
	Self-ded	claration	Self-declara	ation	Self-declar	ation	Self-declara	ation	Self-decla	ration	Self-decla	ration	Self-declar	ation	Self-declaration
	Recognition	n in process	Recognition in	process	Recognition in	process					Recognition i	n process	Recognition in	process	Recognition in proce
	☆ (LR, ABS, GL)	_	☆ (LR, ABS	6, GL)	☆ (LR, ABS	6, GL)	*	_	ń		☆ (LR, AB	S, GL)	☆ (LR, ABS	6, GL)	☆ (LR, ABS, GL)
		ve value detection)	Thermal-mag		Thermal-ma		Thermal-mag		Thermal-ma		Thermal-m		Thermal-ma		Thermal-magnetic
	ı Faui	pped	Equippe	÷CI	Equippe	ed	Equippe	÷Cl	Equipp	ed	Equipp	ed	Equippe	ed	Equipped
		54	152		152			- 4.	48		152		152		152

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

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

	Frame (A)		2!	50		40	00		6	30		80	00	
	Model		NF25		NF400)-HEW	NF400-REW	NF630		NF630-REW	NF800)-HEW	NF800-REW	
	lmage						01010		100					
Rate	Rated current In (A) d ambient temperture 40°C (45°C for man	ine use)	80-160	125-250		200 225 350 400	Adjustable 200 225 250 300 350 400	Adjustable 400 500		Adjustable 300 350 400 500 600 630		400 450 700 800	Adjustable 400 450 500 600 700 800	
	Number of poles		3	4	3	4	3	3	4	3	3	4	3	
	Rated insulation voltage Ui (V			90		90	690	69		690		90	690	
3		690V)/8		/18	_	35/		_		/15	_	
acitie		500V 440V	50,	/38 /65		/50 /65	70/35 125/63	50/ 65/		70/35 125/63		/50 /65	70/35 125/63	
lg cs	IEC 60947-2	415V		/70		/70	125/63	70/		125/63		/70	125/63	
ated short-circuit breaking capacities (KA)	EN 60947-2 AC	400V		/75		/70	125/63	70/		125/63		/70	125/63	
jin ji	(Icu/Ics)	380V	75.			/70	125/63	70/		125/63		/70	125/63	
thort		230V		/100		/100	150/75	100/		150/75		/100	150/75	
ated	DC.	200V 250V	100.	/100		/100	150/75	100/	100	150/75	100	/100	150/75	
Bate	d impulse withstand voltage Uin		,	<u>-</u> 8		- 8	8	8		8		3	8	
riace	Current	np (KY)		.C		iC	AC	A		AC		.c	AC	
	Suitability for isolation		Comp		Comp	oatible	Compatible	Comp	atible	Compatible	Comp	atib l e	Compatible	
	Reverse connection		Pos			sible	Possible	Poss		Possible		sible	Possible	
	Number of Without cu		25,			000	6,000	6,0		6,000		000	4,000	
Ор	erating cycles With current (4 Utilization category	40VAC)		000 A		000 B	1,000 B	1,0 E		1,000 B		00 3	500 B	
Rated	short time with stand current Icu (kA)	at 0.25s		_		5	5	7.		7.6		.6	9.6	
	Pollution degree		(3		3	3	3		3		3	3	
EMC	environment condition (environment	t A or B)		4		Ą	A	Α		A		4	A	
_ Ē	* a y ca	а	105	140	140	185	140	140	185	140	210	280	210	
Overall ensions (▎▕▄╠▗▋▎	b c		65 68		57 03	257 103	25 10		257 103		75 03	275 103	
l me	[2][4]	ca		12		55	155	15		155		55	155	
Ť	Mass of front-face type (kg)	, ou	1.7	2.2	6.0	7.6	6.0	6.5	8.3	6.0	10.9	14.2	10.9	
and	Front connection (F)	Page	●Screw	terminal	●Busba	r terminal	●Busbar terminal	 Busbar terminal 	Busbar terminal	●Busbar terminal	 Busbar terminal 	●Busbar terminal	●Busbar terminal	
ation	Solderless (BOX) terminal (SL)		•	•	-	<u> </u>		-		-	-		-	
Installation	Rear (B) Plug-in (PM)	92	●Bar stud	●Bar stud	●Ba	r stud	●Bar stud	Bar stud	●Bar stud	●Bar stud	Bar stud	Bar stud	●Bar stud	
	Alarm switch (AL)		● (*1)	•	• (*1)	•	• (*1)	● (*1)	÷	• (*1)	● (*1)	•	• (*1)	
Cassette-type accessories	Auxiliary switch (AX)	102	● (*1)	•	● (*1)	•	● (*1)	● (*1)	•	● (*1)	● (*1)	•	● (*1)	
so the	Shunt trip (SHT)	102	● (*1)	•	● (*1)	•	● (*1)	● (*1)	•	● (*1)	● (*1)	•	● (*1)	
sse	Undervoltage trip (UVT) With lead-wire terminal block (SLT)	114	● (*1) ●	•	•	•	•	•	•	•	•	•	•	
S ¤	Pre-alarm (PAL)		•		•	(*2)	• (*2)	• (• (*2)	_	(*2)	• (*2)	
	Closed (S)	110				_		_	<u></u>			_	_	
	Enclosure Dustproof (I)	130	•	_		-	-	-		-		-	-	
	Waterproof (W)	400	•		<u> </u>			-		- (40)	-	(+0)	- (+0)	
Se	Electrical operation device (NFM) Mechanical Panel mounting	133	•	•	•	(*3)	● (*3) ●	• (*3) •	● (*3) ●	•	(*3) •	• (*3) •	
accessories	interlock (MI) (*4) Breaker mounting	129		_	•	_	•	•	_	•	-		•	
l ses	I.C.						_			_		-	-	
SS	Handle lock HL	127		•		•	•	•)	•		•	•	
External	HL-S				(•	•	•)	•	· '	•	•	
ten	External (F) operating handle (V)	117			,	•	•			•		<u> </u>	•	
û	operating handle (V) Terminal cover (TC-L, TC-S, TTC, BTC, PTC)	121	•	•	<u> </u>	_						-		
	Rear stud (B-ST)		•	•	1		•	•	·	•	•	•	•	
1	Plug-in (PM)	94	•	•		•	•	•	•	•		•	•	
<u></u>	IEC 35mm rail mounting adapters	137		_		_	-	_		-		-	-	
<u> </u>	CE marking			claration		claration	Self-declaration	Self-dec		Self-declaration		laration	Self-declaration	
Mar	CCC recognition	CI.	Recognition	n in process	-	n in process	Recognition in process		in process	Hecognition in process		n in process	Recognition in process	
Mar	ine use approval (NK, LR, ABS Automatic tripping device	5, UL)		ue value detection\	Flectronic (effectiv	ye yalue detection\	Electronic (effective value detection)	Flectronic (effective	- value detection	Electronic (effective value detection)	☆ Electronic /effecti	/e value detection\	Flectronic (effective value detection)	
	Trip button			pped		pped	Equipped	Equip		Equipped		pped	Equipped	
Pag	e of Characteristics and dimer	nsions		54		58	158	16		164		36	166	
Notes	s: *1 The cassette type design	n mak	es it easy f	or custome	er to install.	Available f	or installation on side	below 250	A frame					

^{*1} The cassette type design makes it easy for customer to Install. Available for lexicular (excluding UVT).
*2 Solid state relay output is option. Please specify if other output is necessary. (Standard type is thus SLT equipped).
*3 Place an order of other models in conjunction with the circuit breaker.
*4 Not isolation compatible, excluding 400 to 800A frame.



NF-U (Ultra current-limiting class)

125	250	400	800
NF125-UV	NF250-UV	NF400-UEW	NF800-UEW
9:5159	rintrip	# # #	9 9 9
15 20 30 40 50 60 75 100 125	125 150 175 200 225 250	Adjustable 200 225 250 300 350 400	Adjustable 400 450 500 600 700 800
2 3 4	2 3 4	3 4	3 4
690	690	690	690
10/10	15/15	_	35/35
200/200	200/200	170/170	170/170
200/200	200/200	200/200	200/200
200/200	200/200	200/200	200/200
200/200	200/200	200/200	200/200
200/200	200/200	200/200	200/200
200/200	200/200	200/200	200/200
200/200	200/200	200/200	200/200
-	_	-	200/200 -
8	8	8	8
AC	AC	AC	AC
Compatible	Compatible	Compatible	Compatible
Possible	Possible	Possible	Possible
25,000	25,000	6,000	4,000
10,000	10,000	1,000	500
A	A	В	В
	_	5	9.6
3	3	3	3
N/A	N/A	A	A
90 120	105 140	140 280	210 280
191	240	297 322	322
68	68	200	200
90	92	252	252
1.35 1.5 1.9	2.5 2.7 3.7	16.2 25.4	27.6 33.7
●Screw terminal	●Screw terminal	●Busbar terminal	●Busbar terminal
●Bar stud	●Bar stud	_	_
●Bar stud	●Bar stud	●Bar stud	●Bar stud
• -	• -	• -	-
• (*1) •	• (*1)	• (*1)	<u> </u>
• (*1)	● (*1)	● (*1)	● (*1)
● (*1) ●	● (*1)	● (*1)	● (*1)
● (*1) ●	● (*1) ●	•	•
•	•	•	•
_	=	• (*2)	● (*2)
-	_	<u> </u>	<u>-</u>
_	_	_	-
	_	-	_
-	•		<u> </u>
		● (*3)	
•	•	•	•
<u>-</u>	=	<u>-</u>	=
	•	_	_
•			_
	•	•	•
		•	•
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•	•	• • • • • • • • • • • • • • • • • • •	• • -
•	•	• -	• • -
	• • • • • • • • • • • • • • • • • • •	• •	• • • • -
•	•	• • • • • • • • • • • • • • • • • • •	• • -
Self-declaration	Self-declaration	• •	• • • - - - Self-declaration
Self-declaration	Self-declaration	Self-dedaration	- Self-declaration
Self-declaration	Self-declaration	Self-dedaration	• Self-declaration
Self-declaration Thermal-magnetic	Self-declaration Thermal-magnetic	Self-dedaration	Self-declaration
Self-declaration Thermal-magnetic Equipped	Self-declaration Thermal-magnetic Equipped	Self-declaration Self-declaration Electronic (effective value detection) Equipped	Self-declaration - Self-declaration - Electronic (effective value detection) Equipped
Self-declaration Thermal-magnetic	Self-declaration Thermal-magnetic	Self-dedaration	Self-declaration

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.

NV-C (Economy class) Harmonic Surge Ready

Frame (A) Model	50	60 NV63-CV	63	100 NV12	125 5-CV	
Image						
Rated current In (A) Rated ambient temperture 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)	1¢2W 3¢3W, 1¢3W, 1¢2W	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 30.100/200/500	100-240 100-440 30,100/200/500	100-240 100-440 30,100/200/500	100-440 30,100/200/500	100-440 30,100/200/500	
$ \begin{array}{c} \hline g \\ g \\ g \\ \hline E \\ \hline \end{array} \begin{array}{c} \text{Rated current sensitivity} & \text{(mA)} \\ \hline \\ \text{Max. operating time (s)} & \hline \\ \text{at } \overline{\text{5l}} \Delta n \\ \hline \end{array} $	30 30,100/200/300 selectable 0.1	30 30,100/200/500 selectable 0.1	30 30,100/200/300 selectable 0.1	selectable 0.1	selectable 0.1	
Max. operating time (s) at 5lΔn	0.04	0.04	0.04	0.04	0.04	
Rated current sensitivity (mA) Max. operating time (s) (*3) Internal non-operating (s) (or more)	<u>-</u>	<u>-</u>	<u>-</u>	(100/200/500 selectable) (0.45/1.0/2.0 selectable)	(100/200/500 selectable) (0.45/1.0/2.0 selectable)	
	-	_	-	(0.1/0.5/1.0)	(0.1/0.5/1.0)	
Earth leakage indication system 440V	Mechanical type (button) - 2.5/2.5	Mechanical type (button) - 2.5/2.5	Mechanical type (button) 2.5/2.5	Mechanical type (button) 10/5	Mechanical type (button) 10/5	
うg	- 2.5/2.5	- 2.5/2.5 - 2.5/2.5	- 2.5/2.5 - 2.5/2.5	10/5	10/5	
등등 IEC 60947-2 으로 EN 60947-2 AC	- 5/5	- 5/5	- 5/5	10/5	10/5	
1	7.5/7.5 7.5/7.5	7.5/7.5 7.5/7.5	7.5/7.5 7.5/7.5	30/15 30/15	30/15 30/15	
100V	7.5/7.5	7.5/7.5	7.5/7.5	30/15	30/15	
Rated impulse withstand voltage Uimp (kV)	6	6	6	6	6	
Current Suitability for isolation	AC Compatible	AC Compatible	AC Compatible	AC Compatible	AC Compatible	
Reverse connection (below 230VAC)	Possible	Possible	Possible	Possible	Possible	
Number of Without current	10,000	10,000	10,000	10,000	10,000	
operating cycles With current	6,000	6,000	6,000	6,000	6,000	
Utilization category Pollution degree	A 2	A 2	A 2	A 2	A 2	
EMC environment condition (environment A or B)	A	Ā	A	A	A	
(E) (a) (a) (a) (a) (b) (b) (b) (b) (c)	75	75	75	90	90	
lleray0 C ca	130	130	130 68	130 68	130	
Significant Signif	68 90	68 90	90	90	90	
Mass of front-face type (kg)	0.7 0.75	0.7 0.75	0.7 0.75	1.0	1.0	
Front connection (F) Page	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	
Solderless (BOX) terminal (SL) Rear (B) 92	- ●Round stud	- ●Round stud	- ●Round stud	– ●Bar stud	– ●Bar stud	
Front connection (F) Page Solderless (BOX) terminal (SL) Rear (B) Plug-in (PM)	- Hourid stud	-	- Hourid stud	- Dai stud	- Bai stud	
Alarm switch (AL)	● (*4)	● (*4)	● (*4)	● (*4)	• (*4)	
Δ ω Auxiliary switch (AX)	• (*4)	• (*4)	• (*4)	• (*4)	• (*4)	
Shunt trip (SHT) 102	● (*4) ● (*4)	● (*4) ● (*4)	● (*4) ● (*4)	● (*4) ● (*4)	● (*4) ● (*4)	
Auxiliary switch (AX) Shunt trip (SHT) Undervoltage trip (UVT) Carth leakage alarm switch (EAL) With lead-wire terminal block (SLT) 114	-	-	-	-	-	
	•	•	•	•	•	
Test button module (TBM) 115	● (*5) 	● (*5) _	● (*5) 	● (*5) 	● (*5) 	
Enclosure Dustproof (I) 130	<u>-</u>	<u>-</u>	<u>-</u>	-	-	
Waterproof (W)	-	-	-	-	-	
Electrical operation device (NFM) 133 Mechanical Panel mounting	_	-	-	•	•	
Mechanical Panel mounting interlock (MI) (*7) Breaker mounting LC Handle lock	•	•	•	•	•	
S Handle leak LC	•	•	•	•	•	
	•	•	•	•	•	
E External (E)	•	•	•	•	•	
operating handle (V)	•	•	•	•	•	
Terminal cover (TC-L, TC-S, TTC, BTC, PTC) 121	•	•	•	•	•	
Rear stud (B-ST) 94	•	•	• -	•	•	
IEC 35mm rail mounting adapters 137	-	-	<u>-</u>	<u>-</u>	-	
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	-1	180	-4-6622	18		
Notes: *1 If using a 3-pole earth leakage	circuit breaker as a 1-pole 2-r	phase device,	*6 Place an order of other	models in conjunction with the	circuit breaker.	_

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.
 In case of time delay type, rated voltage is 200-440VAC.
 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.
 The cassette type design makes it easy for customer to install. Available for installation on side below 2504 frame (excluding UVT).
 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	NV630-CW			
	NV25	50-CV	NV400-CW	NV63	0-CW			
				1914				
	- 1 - 1	1767	Title general Rev Co.	i n	Da. 5			
		3.71			6			
	- A1		etete:	ete	101			
	Pir		78178	1811	i i			
	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	3ø3W, 1ø3W, 1ø2W	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 (100/200/500 selectable)	0.04 (100/200/500 selectable)	0.04 (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) Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	(0.1/0.5/1.0)			
	15/12	15/12	25/13	36/18	Mechanical type (button) 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	36/27 36/27	50/25 50/25	50/25 50/25	50/25 50/25			
	36/27	36/27	50/25	-	-			
	6	6	8	8	8			
	AC Compatible	AC Compatible	AC Compatible	AC Compatible	AC 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 2	A 2	A 3	A 3	A 3			
	A	A	A	A	A			
	105	105	140	140	140			
-	165 68	165 68	257 103	257 103	257 103			
	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			
	<u> </u>	<u> </u>	<u> </u>	<u>−</u> • (*4)	<u>-</u> ● (*4)			
	• (*4)	• (*4)	● (*4)	● (*4)	• (*4)			
	• (*4)	• (*4)	• (*4)	• (*4)	• (*4)			
-	● (*4) -	● (*4) -	• -	• -	<u> </u>			
	•	•	•	•	•			
	● (*5)	● (*5)	● (*5)	● (*5)	● (*5)			
	<u>-</u>	<u>-</u>	<u>-</u>	-	<u>=</u>			
	-	-	-	-	-			
	•	•	• (*6)	• (*6)	• (*6)			
-	•	•	•	•	•			
	•	•	_	_	•			
	•	•	•	•	•			
-	•	•	•	•	•			
	•	ě	ě	•	•			
	•	•	•	•	•			
	• -	• -	• -	-	<u> </u>			
	-	-	-	_	-			
	TÜV approval	TÜV 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				
	1	84	188	19	ped Equipped 192			

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.

4.	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	170-484V

NV-S (Standard class) Harmonic Surge Ready

Frame (A)			30	32	50	60	63	100	125	125	
	Model		NV3	2-SV		NV63-SV		NV12	5-SV	NV125-SEV	
	Image		· · · · · · · · · · · · · · · · · · ·					6			
	Rated current In (A) Rated ambient temperture 40°	°C	(5) 6 10 (15) 16 20 25 (30)	(32)	(5) (10) (15) 16 20 25 (30) 32 40 50	(60)	63	(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 (*3)	125	63-125	
	Number of poles		3	3	3	3	3	3 4	3 4	3 4	
	Phase line (*1)		3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 3φ4W 1φ2W	3φ3W, 1φ3W, 3φ4W 1φ2W	3φ3W, 1φ2W 3φ4W	
	tated operational voltage Ue (V) (*2) AC		100-440 30,100/200/500	100-440 30,100/200/500	100-440 30,100/200/500	100-440 30.100/200/500	100-440 30,100/200/500	100-440 200-440 30.100/200/500	100-440 200-440 30.100/200/500	100-440 (30),100/200/500	
High-speed type		mA) t I∆n	selectable 0.1	selectable 0.1	selectable 0.1	selectable 0.1	selectable 0.1	selectable 0.1	selectable 0.1	selectable 0.1	
₽Ē		5l∆n	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
ne-delay type		mA)	-	-	-	-	-		(100/200/500selectable)		
F ag		(*4)	_	-	_	-	_		(0.45/1.0/2.0selectable)		
Earth	Internal non-operating (s) (or h leakage indication system	more)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	(0.1/0.5/1.0) Mechanical type (button)	
-		440V	5/5	5/5	7.5/7.5	7.5/7.5	7.5/7.5	25/25	25/25	36/36	
is ei	IEC 00047.0	415V	5/5	5/5	7.5/7.5	7.5/7.5	7.5/7.5	30/30	30/30	36/36	
hort-c	IEC 60947-2 EN 60947-2 AC	400V	5/5	5/5	7.5/7.5	7.5/7.5	7.5/7.5	30/30	30/30	36/36	
Rated short-circuit reaking capacities (kA	(Icu/Ics)	230V	10/10	10/10	15/15	15/15	15/15	50/50	50/50	85/85	
reaki		200V 100V	10/10 10/10	10/10 10/10	15/15 15/15	15/15 15/15	15/15 15/15	50/50 50/50 –	50/50 50/50 –	85/85 85/85	
	d impulse withstand voltage Uir		6	6	6	6	6	6	6	6	
- iaio	Current		AC	AC	AC	AC	AC	AC	AC	AC	
	Suitability for isolation		Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	
	everse connection (below 230)		Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	
	Number of Without cu erating cycles With curr		10,000 6,000	10,000 6,000	15,000 8,000	15,000 8,000	15,000 8,000	25,000 10,000	25,000 10,000	25,000 10,000	
Ор	Utilization category	enii	6,000 A	6,000 A	8,000 A	6,000 A	8,000 A	A	A	A	
Rated	short time withstand current Icu (kA)	at 0.25s	_	-	_	-	_	_	_	_	
	Pollution degree		2	2	2	2	2	2	2	2	
EMC	environment condition (environmen		A 75	A 75	A 75	A 75	A 75	A 100	A 100	A 105 110	
# j		a b	75 130	75 130	75 130	75 130	75 130	90 120 130	90 120 130	105 140 165	
Overall dimensions (n	□ 4	С	68	68	68	68	68	68	68	68	
dine		ca	90	90	90	90	90	90	90	92	
	Mass of front-face type (kg)	Derr	0.75	0.75	0.75	0.8	0.8	1.1 1.4	1.1 1.4	1.9 2.5	
ions	Front connection (F) Solderless (BOX) terminal (SL)	Page	•Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	•Screw terminal	•Screw terminal	• -	
Installation and connections	Rear (B) Plug-in (PM)		●Round stud	●Round stud	●Round stud	●Round stud	●Round stud	●Bar stud	●Bar stud	●Bar stud	
ر و ا	Alarm switch (AL) Auxiliary switch (AX)	-	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● ● (*5) ●	● (*5) ● ● (*5) ●	● (*5) ● ● (*5) ●	
Cassette-type accessories	Shunt trip (SHT)	102	• (*5)	• (*5)	● (*5)	• (*5)	● (*5)	• (*5) •	• (*5) •	• (*5) •	
ette ssc	Undervoltage trip (UVT)		● (*5)	● (*5)	● (*5)	● (*5)	● (*5)	● (*5) ●	● (*5) ●	● (*5) ●	
ass 1006	Earth leakage alarm switch (EAL)	4.00								-	
1000	With lead-wire terminal block (SLT)		● ● (*6)	● ● (*6)	● ● (*6)	● ● (*6)	• (***)	• •	• •	● ● (*6)	
1	Test button module (TRM)	115					(^h)	(*6)	(*6)		
	Test button module (TBM) Closed (S) Enclosure Dustproof (I)		-	-	-	-	● (*6) - -	● (*6) - -	● (*6) - -	• -	
		130		-		-	_	-	-	-	
	Enclosure Closed (S) Dustproof (I) Waterproof (W) Electrical operation device (NFM)	130	=	- - -	- - -	- - -	-			• -	
ories	Enclosure Closed (S) Ustproof (I) Waterproof (W) Electrical operation device (NFM) Mechanical Panel mounting	130	- - -	- - - -	- - -	- - -	- - -	- - - •		• - • -	
essories	Enclosure Closed (S) Dustproof (I) Waterproof (W) Mechanical Panel mounting interlock (MI) (*8) Breaker mounting	130	- - - -	- - -	- - -	- - -	- - -	- - - •	- - - •	• -	
	Enclosure Dustproof (I) Waterproof (W) Waterproof (W) Mechanical Interlock (MI) (*8) Breaker mounting LC Handle lock	130	- - - -	- - - -	- - -	- - -	- - -	- - - •	- - - •	• - • -	
	Enclosure Dustproof (I) Waterproof (W) Waterproof (W) Waterproof (W) Waterproof (W) We Panel mounting Interlock (MI) (*8) Breaker mounting Handle lock device HL HL-S	130 133 129	- - - - - •	- - - - - - 0			- - - - - 0		- - - •	• - • • • • • • • • • • • • • • • • • •	
	Enclosure Dustproof (W) Electrical operation device (NFM) Mechanical Panel mounting Breaker mounting Handle look device HL-S External (F)	130 133 129 127	- - - - 0 0	- - - 0 0		- - - 0 0	- - - 0 0				
External accessories	Enclosure Closed (S) Dustproof (W) Waterproof (W) Electrical operation device (NFM) Mechanical Panel mounting interlock (MI) (*8) Handle lock device HL External Operating handle (V)	130 133 129 127	- - - - 0 0	- - - - - • • •	- - - - - - 0	- - - - 0 0	- - - - 0 0	- - - - 0 0 0 0	- - - - 0 0 0 0		
	Enclosure Closed (S) Dustproof (W) Waterproof (W) Mechanical Panel mounting interlock (MI) (*8) Breaker mounting Handle lock device HL External (F) External (F) Operating handle (V) Termind cover (TC-L, TC-S, TTC, BTC, PTC)	130 133 129 127 117 121	- - - - 0 0 0 0	- - - - 0 0 0 0	- - - - 0 0 0 0	- - - - 0 0 0 0	- - - - 0 0 0 0				
	Enclosure Closed (S) Dustproof (W) Waterproof (W) Electrical operation device (NFM) Mechanical Panel mounting interlock (MI) (*8) Handle lock device HL External Operating handle (V)	130 133 129 127 117 121	- - - - 0 0	- - - 0 0		- - - - 0 0	- - - - 0 0				
	Enclosure Closed (S)	130 133 129 127 117 121 94	- - - 0 0 0 0 0 0	- - - 0 0 0 0 0 0	- - - - 0 0 0 0 0	- - - 0 0 0 0 0 0	- - - - 0 0 0 0 0 0				
	Enclosure Dustproof (W) Electrical operation device (NFM) Mechanical interfock (MI) (*8) Handle lock device External (F) operating handle (V) HL-S External (F) operating handle (V) Rear stud (B-ST) Rear stud	130 133 129 127 117 121 94	- - - - - - - - - - - - - - - - - - -							Self-declaration	
External acce	Enclosure Closed (S) Dustproof (W) Waterproof (W) Electrical operation device (NFM) Mechanical Panel mounting Interlock (MI) (*8) Handle lock device External operating handle (F) operating handle (V) Terminal cover (TCL, TC-S, TTC, BTC, PTC) Plug-in (PM) IEC 35mm rail mounting adapters CE marking CCC recognition	130 133 129 127 117 121 94 137	- - - - - - - - - - - - - - - - - - -				- - - - 0 0 0 0 0 0				
External acce	Enclosure Dustproof (W) Electrical operation device (NFM) Mechanical interfock (MI) (*8) Handle lock device External (F) operating handle (V) HL-S External (F) operating handle (V) Rear stud (B-ST) Rear stud	130 133 129 127 117 121 94 137						Self-declaration	Self-declaration	Self-declaration	
External acce	Enclosure Closed (S) Dustproof (W) Electrical operation device (NFM) Mechanical Panel mounting Handle lock device External operating handle (F) Operating handle (P) Terminal cover (TC-L, TC-S, TTC, BTC, PTC) Plug-in (PM) IEC 35mm rail mounting adapters CE marking CCC recognition rine use approval (NK, LR, AB: Automatic tripping device Trip button	130 133 129 127 117 121 94 137								Self-declaration Recognized Electronic fellective value detection; Equipped	
External acce	Enclosure Dustproof (W) Electrical operation device (NFM) Mechanical Panel mounting interlock (MI) (*8) Handle lock device HL-'s External (F) operating handle (V) Terminal cover (TC-L, TC-S, TTC, BTC, PTC) Rear stud (B-ST) Plug-in (PM) IEC 35mm rail mounting adapters CE marking CCC recognition interes as approval (NK, LR, AB: Automatic tripping device	130 133 129 127 117 121 94 137								Self-declaration Recognized	

^{*1} If using a 3-pole earth leakage cirsuit 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 In case of time delay type, rated current is produced with 20 amp. or more.
*4 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.

<sup>Cassette type accessories are field mountable type. It can respend to adh attachment of a breaker as standard below 250A frame. (excluding UVT.)
Standard type is SLT equipped.
Place an order of other models in conjunction with the circuit breaker.
Not isolation compatible, excluding 400 to 800A frame.
AC100V does not acquire the CCC certification.</sup>

NV-S (Standard class) Harmonic Surge Ready

225 NV25	250 60-SV	250 NV250-SEV	400 NV400-SW	400 NV400-SEW	600 NV63	630 0-SW	630 NV630-SEW	800 NV800-SEW	
125 150 175 200 225	250	125-250	250 300 350 400	Adjustable 200 225 250 300 350 400	500 600	(630)	Adjustable 300 350 400 500 600 630	Adjustable 400 450 500 600 700 800	
3 3¢3W, 1¢3W, 1¢2W	3 3ø3W, 1ø3W, 1ø2W	3 3φ3W, 1φ2W	3 3ø3W, 1ø3W, 1ø2W	3 4 3¢3W, 1¢3W, 3¢4W 1¢2W	3 3ø3W, 1ø3W, 1ø2W	3 3¢3W, 1¢3W, 1¢2W	3 4 3¢3W, 1¢3W, 3¢4W 1¢2W	3 3ø3W, 1ø3W, 1ø2W	
 100-440 (30),100/200/500	100-440 (30),100/200/500	100-440 (30),100/200/500	100-440 (30),100/200/500	100-440 (30),100/200/500	200-440	200-440	100-440	200-440	
 selectable	selectable	selectable	selectable	selectable	_	_	_	-	
 0.1 0.04	0.1 0.04	0.1 0.04	0.1 0.04	0.1 0.04		-	<u> </u>	_	
	(100/200/500selectable)	(100/200/500selectable)						100/200/500selectable	
 (0.45/1.0/2.0selectable) (0.1/0.5/1.0)	(0.45/1.0/2.0selectable) (0.1/0.5/1.0)	(0.45/1.0/2.0selectable) (0.1/0.5/1.0)	(0.45/1.0/2.0selectable) (0.1/0.5/1.0)	(0.45/1.0/2.0selectable) (0.1/0.5/1.0)	0.45/1.0/2.0selectable 0.1/0.5/1.0	0.45/1.0/2.0selectable 0.1/0.5/1.0	(0.45/1.0/2.0selectable) (0.1/0.5/1.0)	0.45/1.0/2.0selectable 0.1/0.5/1.0	
 Mechanical type (button)									
36/36	36/36	36/36	42/42	42/42	42/42	42/42	42/42	42/42	
 36/36	36/36	36/36	45/45 45/45	50/50	50/50	50/50 50/50	50/50	50/50	
 36/36 85/85	36/36 85/85	36/36 85/85	85/85	50/50 85/85	50/50 85/85	85/85	50/50 85/85	50/50 85/85	
85/85	85/85	85/85	85/85	85/85	85/85	85/85	85/85	85/85	
 85/85	85/85	85/85	85/85	85/85		_	85/85	-	
 6 AC	6 AC	6 AC	8 AC	8 AC	AC	8 AC	8 AC	8 AC	
Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	
Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	
25,000 10,000	25,000 10,000	25,000 10,000	6,000 1,000	6,000 1,000	6,000 1,000	6,000 1,000	6,000 1,000	4,000 500	
Α	Α	A	A	В	A	A	В	A	
-	-	-	-	5	-	-	7.6	9.6	
 2 A	2 A	2	3 A	3	3 A	3	3 A	3 A	
	A	A		A	A	Α			
105	105	105	140	140 185	140	140	140 185	210	
 105 165	105 165	105 165	140 257	140 185 257	140 257	140 257	140 185 257	210 275	
165 68	165 68	165 68	257 103	257 103	257 103	257 103	257 103	275 103	
165 68 92	165 68 92	165 68 92	257 103 155	257 103 155	257 103 155	257 103 155	257 103 155	275 103 155	
165 68	165 68	165 68	257 103	257 103	257 103	257 103	257 103	275 103	
165 68 92 1.9 •Screw terminal	165 68 92 1.9 •Screw terminal	165 68 92 1.9	257 103 155 6.4	257 103 155 6.2 8.2	257 103 155 6.9 •Busbar terminal	257 103 155 6.9 •Busbar terminal	257 103 155 7.1 8.9	275 103 155 15.3 •Busbar terminal	
165 68 92 1.9	165 68 92 1.9	165 68 92 1.9	257 103 155 6.4	257 103 155 6.2 8.2	257 103 155 6.9 •Busbar terminal	257 103 155 6.9 •Busbar terminal	257 103 155 7.1 8.9	275 103 155 15.3 •Busbar terminal	
165 68 92 1.9 • Screw terminal —	165 68 92 1.9 • Screw terminal —	165 68 92 1.9 ———————————————————————————————————	257 103 155 6.4	257 103 155 6.2 8.2	257 103 155 6.9	257 103 155 6.9	257 103 155 7.1 8.9	275 103 155 15.3	
165 68 92 1.9 •Screw terminal - •Bar stud - • (*5) • (*5)	165 68 92 1.9 •Screw terminal - •Bar stud - • (*5) • (*5)	165 68 92 1.9 - Bar stud - (*5) (*5)	257 103 155 6.4	257 103 155 6.2 8.2 • Busbar terminal • Bar stud • (*5) • (*5)	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5)	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5)	257 103 155 7.1 8.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	275 103 155 15.3 ■Busbar terminal — ■Bar stud — — (*5) — (*5)	
165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5)	165 68 92 1.9 •Screw terminal - •Bar stud - • (*5) • (*5)	165 68 92 1.9 — Bar stud — (*5) —(*5) —(*5)	257 103 155 6.4	257 103 155 6.2 8.2 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9	257 103 155 6.9	257 103 155 7.1 8.9	275 103 155 15.3	
165 68 92 1.9 •Screw terminal - •Bar stud - • (*5) • (*5)	165 68 92 1.9 •Screw terminal - •Bar stud - • (*5) • (*5)	165 68 92 1.9 - Bar stud - (*5) (*5)	257 103 155 6.4	257 103 155 6.2 8.2 • Busbar terminal • Bar stud • (*5) • (*5)	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5)	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5)	257 103 155 7.1 8.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	275 103 155 15.3 ■Busbar terminal — ■Bar stud — — (*5) — (*5)	
165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5)	165 68 92 1.9 •Screw terminal - •Bar stud - (*5) (*5) (*5)	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*5)	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9 ■Busbar terminal — ■Bar stud — (*5) (*5) (*5) — — —	257 103 155 6.9	257 103 155 7.1 8.9	275 103 155 15.3	
165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) (*5)	165 68 92 1.9 — Bar stud — (*5) —(*5) —(*5) —(*5) —(*5) —(*6)	257 103 155 6.4	257 103 155 6.2 8.2 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — ■Bar stud — (*5) (*5) (*5) (*5) (*5) (*6)	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5)	275 103 155 15.3	
165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5)	165 68 92 1.9 •Screw terminal - •Bar stud - (*5) (*5) (*5)	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*5)	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9 ■Busbar terminal — ■Bar stud — (*5) (*5) (*5) — — —	257 103 155 6.9	257 103 155 7.1 8.9	275 103 155 15.3	
165 68 92 1.9 •Screw terminal - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) (*5) - (*6)	165 68 92 1.9 — — — — — — — — — — — — — — — — — — —	257 103 155 6.4	257 103 155 6.2 8.2 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9	257 103 155 6.9 Busbar terminal - Bar stud - (*5) (*5) (*5) (*6) - - - - - - - - - - - - -	257 103 155 7.1 8.9 Busbar terminal - Bar stud - (*5) (*5) (*5) (*6) - - - - - - - - - - - - -	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - - - - - - - - - - - - -	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6)	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 ——————————————————————————————————	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6) - (*7)	257 103 155 6.2	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5)	275 103 155 15.3 ■Busbar terminal - ■Bar stud - (*5) (*5) (*5) - (*6) - - (*6) - - (*7)	
165 68 92 1.9 •Screw terminal - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) (*5) - (*6)	165 68 92 1.9 — — — — — — — — — — — — — — — — — — —	257 103 155 6.4 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.2 8.2 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - - (*6) - - (*7)	257 103 155 6.9 ■Busbar terminal — ■Bar stud — (*5) —(*5) —(*5) — — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - - - - - - - - - - - - -	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) - - - - - - - - - - - - -	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 - Bar stud - (*5) (*5) (*5) - (*6)	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6) - (*7)	257 103 155 6.2 8.2 ■ Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5)	275 103 155 15.3 ■Busbar terminal — — — — — — — — — — — — — — — — — —	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) - - - - - - - - - - - - -	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 - Bar stud - (*5) (*5) (*5) - (*6)	257 103 155 6.4 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.2 8.2 ■ Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - - (*6) - - (*7)	257 103 155 6.9 ■Busbar terminal — ■Bar stud — (*5) —(*5) —(*5) — — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 ■Busbar terminal — — — — — — — — — — — — — — — — — —	
165 68 92 1.9 Screw terminal Bar stud (*5) (*5) (*5) (*6) - - - - - - - - - - - - -	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6) (*6)	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - - (*6) - - (*7) (*7)	257 103 155 6.2 8.2 ■ Busbar terminal - ■ Bar stud - (*5) (*5) (*5) (*6) - (*6) - (*7)	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6) (*7) (*7)	257 103 155 6.9	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*7) (*7)	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6)	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) •(*6)	165 68 92 1.9 - Bar stud - (*5) (*5) (*5) - (*6)	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*6) - (*7)	257 103 155 6.2 8.2 ■ Busbar terminal - ■ Bar stud - (*5) (*5) (*5) (*6) - (*6) - (*7)	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 ■Busbar terminal - ■Bar stud - (*5) (*5) (*5) - (*6) - - (*6) - - (*7) - (*7)	
165 68 92 1.9 Screw terminal - - - - - - - - - - - - -	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) •(*6)	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6)	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal - ■ (*5) ● (*5) ● (*5) ■ (*6) - ■ (*7) ■ (*7)	257 103 155 6.9 Busbar terminal	257 103 155 6.9	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6) (*7)	
165 68 92 1.9 Screw terminal - (*5) (*5) (*5) - (*6)	165 68 92 1.9 •Screw terminal - •Bar stud - •(*5) •(*5) •(*5) - •(*6)	165 68 92 1.9 ——————————————————————————————————	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*7) (*7)	257 103 155 6.2	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal - ■Bar stud - ●(*5) ●(*5) ●(*5) - - ●(*6) - - - (*77) ● - ● - ● - ● - • • • • • • • • • • • •	257 103 155 7.1 8.9 Busbar terminal (*5) (*5) (*5) (*6) (*6) (*7)	275 103 155 15.3 Busbar terminal - Bar stud - (*5) (*5) (*5) - - (*6) - - - (*7) - (*7)	
165 68 92 1.9 Screw terminal - - - - - - - - - - - - -	165 68 92 1.9 Screw terminal - - - - - - - - - - - - -	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6)	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal - ■ (*5) ● (*5) ● (*5) ■ (*6) - ■ (*7) ■ (*7)	257 103 155 6.9 Busbar terminal	257 103 155 6.9	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - (*6) - (*7)	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6) (*7)	
165 68 92 1.9 Screw terminal - (*5) (*5) (*5) - (*6)	165 68 92 1.9 Screw terminal - - - - - - - - - - - - -	165 68 92 1.9 ——————————————————————————————————	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*7) (*7)	257 103 155 6.2	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal - ■Bar stud - ●(*5) ●(*5) ●(*5) - - ●(*6) - - - (*77) ● - ● - ● - ● - • • • • • • • • • • • •	257 103 155 7.1 8.9 Busbar terminal (*5) (*5) (*5) (*6) (*6) (*7)	275 103 155 15.3 Busbar terminal - Bar stud - (*5) (*5) (*5) - - (*6) - - - (*7) - (*7)	
165 68 92 1.9 Screw terminal Bar stud (*5) (*5) (*5) (*6) - - - - - - - - - - - -	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) - - TÜV approval	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6) - - - - - - - - - - - - -	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*6) - - (*7) (*7) - - - - - - - - - - - - -	257 103 155 6.2	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal - ■Bar stud - ■ (*5) ■ (*5) ■ (*5) ■ (*6) ■ (*7) ■ (*	257 103 155 7.1 8.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*6) - (*7) - Self-declaration	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*6) (*6)	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) - - TÜV approval Recognition in process	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) (*6) - - - - TÜV approval Recognition in process	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6) Self-declaration Recognized	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal - ■ (*5) ■ (*5) ■ (*5) ■ (*6) - ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*8) ■ (*	257 103 155 6.9 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) (*6)	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) (*7) (*7) Self-declaration Recognition in process	
165 68 92 1.9 Screw terminal - Bar stud - ('5) ('5) ('5) - ('6) TÜV approval Recognition in process - Thermal-magnetic	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) TÜV approval Recognition in process - Thermal-magnetic	165 68 92 1.9 ———————————————————————————————————	257 103 155 6.4 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) - (*6) Self-declaration Recognition in process	257 103 155 6.2	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — — —	257 103 155 7.1	275 103 155 15.3 ■Busbar terminal — —————————————————————————————————	
165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5) - (*6) - - TÜV approval Recognition in process	165 68 92 1.9 Screw terminal - Bar stud - (*5) (*5) (*5)	165 68 92 1.9 Bar stud (*5) (*5) (*5) (*6) (*6) Self-declaration Recognized	257 103 155 6.4	257 103 155 6.2 8.2 ■ Busbar terminal - ■ (*5) ■ (*5) ■ (*5) ■ (*6) - ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*7) ■ (*8) ■ (*	257 103 155 6.9	257 103 155 6.9 ■Busbar terminal — — — — — — — — — — — — — — — — — —	257 103 155 7.1 8.9	275 103 155 15.3 Busbar terminal Bar stud (*5) (*5) (*5) (*5) (*6) (*7) (*7) Self-declaration Recognition in process	

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.

^{4.} Rated operational voltage 100-440V 200-440V Applicable circuit voltage 100/110/200/220/240/254/265/380/400/415/440V 200/220/240/254/265/380/400/415/440V Available voltage range 85-484V 170-484V

NV-H / NV-R (High-performance class) Harmonic Surge Ready

	Frame (A) Model		50	60 NV63-HV	63	100 NV1	125 25-HV	125 NV125-HEV	225 NV/24	250 50-HV	250 NV250-HEV	
	Wodel			14409-114		INVI	_∪-11V		INV2	50-11V	INVZJU•NEV	
	lmage											
	Rated current In (A) Rated ambient temperture		(15) 16 20 (30) 32 40 50		63	(15) 16 20 (30) 32 40 50 (60) 63 (75) 80 100 (*3)	125	63-125	125 150 175 200 225	250	125-250	
	Number of poles		3	3	3	3 4	3 4	3 4	3	3	3	
	Phase line (*1)		3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W 3φ4W	1ø2W	3ø3W, 1ø2W 3ø4W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ3W, 1φ2W	3φ3W, 1φ2W	
Rate	d operational voltage Ue (V)	(*2) AC	100-440	100-440	100-440		30,100/200/500		100-440	100-440	100-440	
High-speed type	Rated current sensitivity	(mA)	30,100/200/500 selectable	selectable	selectable	selectable	selectable	selectable	selectable	selectable	selectable	
ē _{+,}	Max. operating time (s)	at l∆n at 5l∆n	0.1	0.1 0.04	0.1 0.04	0.1 0.04	0.1	0.1 0.04	0.1 0.04	0.1 0.04	0.1 0.04	
lay T	Rated current sensitivity	(mA)	-	-	-		(100/200/500selectable)				(100/200/500selectable)	
Fime-delay type	Max. operating time (s)	(*4)	-	-	-		(0.45/1.0/2.0selectable)			(0.45/1.0/2.0selectable)		
<u> </u>	Internal non-operating (s)	(or more)				(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)	(0.1/0.5/1.0)	
2	leakage indication syster	n │ 440\		chanical type (bu	10/8	Mechanical type (button 50/38	Mechanical type (button) 50/38	Mechanical type (button) 65/65	Mechanical type (button) 65/65	Mechanical type (button) 65/65	Mechanical type (button) 65/65	
ircuit es (kA)		415\		10/8	10/8	50/38	50/38	70/70	70/70	70/70	70/70	
Rated short-circuit breaking capacities (k	IEC 60947-2 EN 60947-2	400V	10/8	10/8	10/8	50/38	50/38	75/75	75/75	75/75	75/75	
ed st	(Icu/Ics)	230		25/19	25/19	100/75	100/75	100/100	100/100	100/100	100/100	
reakir Teakir		200\ 100\		25/19 25/19	25/19 25/19	100/75	100/75	100/100 100/100	100/100 100/100	100/100 100/100	100/100 100/100	
	l d impulse withstand voltage			25/19	6	6	6	6	6	6	100/100	
	Current	o omino (itt	AC	AC	AC	AC	AC	AC	AC	AC	AC	
	Suitability for isolation		Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	
	everse connection (below 2		-	-	-	-	-	-	-	-	-	
		ut current current	15,000 8,000	15,000 8,000	15,000 8,000	25,000 10,000	25,000 10,000	25,000 10,000	25,000 10,000	25,000 10,000	25,000 10,000	
Op	Utilization category	current	A	A A	A A	A	A	A	A	A	A A	
Rated	short time withstand current Icu	(kA) at 0.25s		_	_	_	_	_	_	_	_	
	Pollution degree		2	2	2	2	2	2	2	2	2	
	environment condition (environ			A 75	A	Α	Α	A	A	A	105	
W		a b	75 130	75 130	75 130	90 120	90 120	105 140 165	105 165	105 165	165	
Overall dimensions (⊟ ⊳ ४	c	68	68	68	68	68	68	68	68	68	
mje		ca	90	90	90	90	90	92	92	92	92	
_	Mass of front-face type		0.75	0.8	0.8	1.1 1.4	1.1 1.4	1.9 2.5	1.8	1.8	1.9	
n and jours	Front connection Solderless (BOX) terminal	(F) Page	Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	•	Screw terminal	●Screw terminal	•	
Installation connection	Rear	(B) 92	●Round stud	●Round stud	●Round stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	●Bar stud	
13 8		(PM)	-	-	-	-	-	_	-	-	_	
		(AL)	• (*5)	● (*5)	• (*5)	● (*5) ●	● (*5) ●	● (*5) ●	● (*5)	● (*5)	● (*5)	
ie K		(AX) SHT) 102	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● ● (*5) ●	● (*5) ● ● (*5) ●	● (*5) ● ● (*5) ●	● (*5) ● (*5)	● (*5) ● (*5)	● (*5) ● (*5)	
Cassette-type accessories		UVT) 102	• (*5)	• (*5) • (*5)	● (*5) ● (*5)	● (*5) ● ● (*5) ●	• (*5) •	● (*5) ● ● (*5) ●	● (*5) ● (*5)	• (*5) • (*5)	• (*5)	
Sse 2005	Earth leakage alarm switch (EAL)	-	-			_	-	_	-	-	
ç	With lead-wire terminal block (• (40)	• (40)	• (*0)	• (***)	• (40)	• (40)	• (#0)	• (40)	• (10)	
<u> </u>		TBM) 115	● (*6) -	● (*6)	● (*6) <u></u>	● (*6)	● (*6)	• (*6)	● (*6) -	● (*6) —	● (*6)	
1	Closed Enclosure Dustproof	(S) (I) 130		_	_	-	-	• -	_	_	-	
İ	Waterproof		-	-	-	-	_	• -	-	-	•	
l o	Electrical operation device (-	-	-	•	•	•	•	•	•	
ssories	Mechanical Panel mour		•	•	•	• •	• •	•	•	•	•	
)SSE	interlock (MI) (*7) Breaker mou	nung	•	•	•	-	• -	• -		•		
000	Handle lock	127			•	•	-	•	•	•	•	
<u> </u>	device HL-S		•	•	•	•	•	•	•	•	•	
External acc	External (F)	117	•	•	•	•	•	•	•	•	•	
<u>ŭ</u>	operating handle (V) Terminal cover (TC-L, TC-S, TTC, BTC.		•	•	•	•	•	•	•	•	•	
		R-QT\	-		•		- :		•	•		
1	Plug-in (PM) 94						_	_	_		 -
<u></u>	IEC 35mm rail mounting ada		•	•	•	-	_	-	-	-	-	
<u> </u>	CE marking			Self-declaration			Self-declaration					
Mar	CCC recognition ine use approval (NK, LR,	ARS GLV	Hecognition in process	Hecognition in process	Hecognition in process	Hecognition in process	Recognition in process	Recognized _	Hecognition in process	Recognition in process	Recognized	
ivial	Automatic tripping dev		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	
Pag	e of Characteristics and d	imensions		180		1	82	186	1	84	186	
Notes	s: *1 If using a 3-pole ea						Cassette type ac		d mountable typeard, (excluding U		to adhesion	

¹¹ If using a 3-pole earth leakage cirsuit 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.
12 In case of time delay type, rated voltage is 200-440/AC.
13 In case of time delay type, rated current is prodused with 20 amp. or more.
14 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.

<sup>Cassette type accessories are neigh monitable type. It attachment of a breaker as standard. (excluding UVT.)
Standard type is SLT equipped.
Not isolation compatible.
AC100V does not acquire the CCC certification.</sup>

NV-H / NV-R (High-performance class) Harmonic Surge Ready

	40		400	630	800
	NV400		NV400-REW	NV630-HEW	NV800-HEW
	• • • • • • • • • • • • • • • • • • •	Contract of the Contract of th			
	Adjustable 200 225	250 300 350 400	Adjustable 200 225 250 300 350 400	Adjustable 300 350 400 500 600 630	Adjustable 400 450 500 600 700 800
	3	4	3	3	3
	3φ3W, 1φ3W, 1φ2W	3φ4W	3φ3W, 1φ3W, 1φ2W	3¢3W, 1¢3W, 1¢2W	3φ3W, 1φ3W, 1φ2W
	100-	440	100-440	100-440	100-440
	(30), 100/200/		(30), 100/200/500 selectable	-	-
	0.0		0.1 0.04	<u>-</u>	
	(100/200/500		(100/200/500 selectable)	(100/200/500 selectable)	(100/200/500 selectable)
	(0.45/1	.0/2.0)	(0.45/1.0/2.0)	(0.45/1.0/2.0)	(0.45/1.0/2.0 selectable)
	(0.1/0.		(0.1/0.5/1.0)	(0.1/0.5/1.0)	(0.1/0.5/1.0)
	Mechanical t		Mechanical type (button) 125/63	Mechanical type (button) 65/65	Mechanical type (button) 65/65
	70/		125/63	70/70	70/70
	70/		125/63	70/70	70/70
	100/	100	150/75	100/100	100/100
	100/		150/75	100/100	100/100
	100/		150/75	100/100	100/100
	A A		8 AC	8 AC	8 AC
	Comp		Compatible	Compatible	Compatible
	-		-	-	-
	6,0		6,000	6,000	4,000
	1,0		1,000 B	1,000 B	500 B
	5		5	7.6	9.6
	3		3	3	3
	A	1	A	A	A
	140	185	140	140	210
-	25		257 103	257 103	275 103
•	15		155	155	155
	6.6	8.2	6.6	7.1	15.3
	●Busbar		●Busbar terminal	●Busbar terminal	●Busbar terminal
	●Bar		– ●Bar stud	– ●Bar stud	– ●Bar stud
	- Dai		- Bar stud	- Bar stud	- Bar stud
	• (● (*5)	• (*5)	• (*5)
	• (● (*5)	● (*5)	● (*5)
	• (● (*5)	● (*5)	● (*5)
			<u> </u>	<u> </u>	<u> </u>
			•	•	<u>-</u>
	• (● (*6)	● (*6)	● (*6)
	-		=	-	-
	•	_	•	•	•
	• (• (*7)	• (*7)	• (*7)
			•	•	•
)	•	•	•
		-	<u>-</u>	<u>-</u>	<u>-</u>
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			•	•	•
-			<u> </u>	<u> </u>	<u> </u>
-	-		-	_	
	Self-ded		Self-declaration	Self-declaration	Self-declaration
	Recognition		Recognition in process	Recognition in process	Recognition in process
	Electronic (effective		Electronic (effective value detection)	Electronic (effective value detection)	Electronic (effective value detection)
	Electronic (effectiv		Equipped	Equipped	Equipped Electronic (effective value detection)
	19		190	194	196
	`		hanized are produced when		

Remarks: 1. Products with rated current parenthesized are produced when

6.	Rated operational voltage	Applicable circuit voltage	Available voltage range
	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	175-484V

 ^{1.} Products with rated current parenthesized are produced when an order is placed.
 2. The setting is set to 500mA and delivered when not specifying the rated current sensitivity and the time of time-delay type of operation to 2.0 seconds.
 3. Specify "FP-LT" when using a flush plate product with a leadwire terminal block.
 4. Specify "P-LT" when using a plug-in product with a lead-wire terminal block.
 5. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.

ı	NF-MB							Please	specify MB
						_			
		ame (A) Model		30 NE2	2-SV	NF63-CV	0 NF63-SV	100 NF125-SV	225 NF250-SV
	Rated on Rated moto	current In (A) or capacity (kW) nt temperture 40 r marine use)		A 200220V 400440V 525 5.5 11 16 3.7 7.5 12 2 5.5 10 2.2 2 8 2 3.7 7.1 1.5 5 2 2 4 0.75 1.5	A 200/220V 400/440V 400/440V 32 7.5 15	A 200220V 400440V 4W 4W 4W 40 - 18.5 15 25 5.5 11 16 3.7 7.5 12 - 5.5 10 2.2 - 8 - 3.7	Nr63-5V Nr64-65-5V A	NF125-SV NF1	A 200/220V 400/440V 4W 225 55 1110 200 175 45 95 1125 37 75 125 30 -
	Numb	er of poles		3	3	3	3	3	3
		tion voltage Ui (V)	500	500	500	500	500	500
₹	1		440V	2.5/2.5	2.5/2.5	2.5/2.5	7.5/7.5	25/25	36/36
Rated short-circuit reaking capacities (k/	IEC 60947-2		415V	2.5/2.5	2.5/2.5	2.5/2.5	7.5/7.5	30/30	36/36
Shor	EN 60947-2	AC		5/5	5/5	5/5	7.5/7.5	30/30	36/36
Pater Saking	(Icu/Ics)		380V	5/5	5/5	5/5	7.5/7.5	30/30	36/36
_ 0			230V	7.5/7.5	7.5/7.5	7.5/7.5	15/15	50/50	85/85
Hate		stand voltage Ui	mp (kV)	8 AC	8 AC	8 AC	8 AC	8 AC	8 AC
		urrent y for isolation		Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
		e connection		Possible	Possible	Possible	Possible	Possible	Possible
	Number of	Without cu	ırrent	10,000	10,000	10,000	15,000	25,000	25,000
	erating cycles			6,000	6,000	6,000	8,000	10,000	10,000
_ op		ion category	HOVAO	A A	A	A A	A	A	A A
		ion degree		3	3	3	3	3	3
EMC		ndition (environmer	nt A or B)	N/A	N/A	N/A	N/A	N/A	N/A
Œ	La J	ca	a	75	75	75	75	90	105
= E	1 ====		b	130	130	130	130	130	165
Overall dimensions (⊳	С	68	68	68	68	68	68
#	بلڪا ا	, 4 <u> </u>	ca	90	90	90	90	90	92
	Mass of from	nt-face type (kg)	0.65	0.65	0.65	0.7	1.0	1.6
and suc	Front connec			●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal	●Screw terminal
Installation a		OX) terminal (SL		_	-	-	-	•	•
o galla	Rear	(B		●Round stud	●Round stud	●Round stud	●Round stud	●Bar stud	●Bar stud
	Plug-in	(PM		•	•	•	•	•	•
Cassette-type accessories	Alarm switch			● (*1)	• (*1)	• (*1)	• (*1)	• (*1)	• (*1)
o c	Auxiliary swit			● (*1)	● (*1)	● (*1)	● (*1)	● (*1)	● (*1)
set	Shunt trip	(SHT e trip (UVT		● (*1)	● (*1)	● (*1)	● (*1)	● (*1)	● (*1)
acc	Undervoltage	erminal block (SLT		• (*1)	● (*1)	● (*1)	● (*1)	• (*1)	● (*1)
10	with leau-wife t	Closed (SLI				•		•	•
1	Enclosure	Dustproof (I		<u> </u>		•		-	•
1		Waterproof (W		•	•	•	•	•	•
1		ation device (NFM						• (*3)	• (*3)
ies		Panel mounting	,	•	•	•	•	•	•
accessories		Breaker mounting		•	•	•	•	•	•
es		LC		•	•	•	•	•	•
8	Handle lock device	HL	127	•	•	•	•	•	•
	uevice	HL-S		•	•	•	•	•	•
External	External	(F)	117	•	•	•	•	•	•
X	operating handle	(V)		•	•	•	•	•	•
-		L, TC-S, TTC, BTC, PTC		•	•	•	•	•	•
	Rear stud	(B-ST		•	•	•	•	•	•
	Plug-in	(PM)	•	•	•	•	•	•
<u> </u>		mounting adapter	s 137	•	•	•	•	-	
<u> </u>		marking		Self-declaration	Self-declaration	Self-declaration	Self-declaration	Self-declaration	TÜV approval
14.		recognition	6 01,	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process	Recognition in process
IVIai		val (NK, LR, AB	5, GL)	Thermal	Thormol	Thormol	Thormol	Thormal magnetic	Thermal magnetic
-		tripping device p button		Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped	Thermal-magnetic Equipped
Pac		ristics and dime	neione		1 Equipped 42		Equipped 2	Equipped 144	Equipped 148
ray	je oi Onaracie	nous and diffe	11310115	1	74	1	T.C.	144	140

^{*1} The cassette type design makes it easy for customer to install. Available for installation on side (excluding UVT).
*2 Not isolation compatible.
*3 Place an order of other models in conjunction with the circuit breaker.

Parallel 142 144 148

Remarks: 1. The motor circuit breakers do not have an applicable rated motor capacity. Select a motor circuit breaker based on the total load current of the motor.

2. Products with rating parenthesized are produced when an order is placed.

3. Specify "P-LT" when using a plug-in product with a lead wire terminal block.

4. The circuit breaker has the rated short circuit breaking capacity specified in the shaded cells.

5. Please refer to "Table 4-17", of Page 73 for details.

Detailed 2 Specifications 4

UL 489 Listed Circuit Breakers

UL 489 Listed Molded Case Circuit Breakers

Model	Frame (A)				50 100		125				
Flated current in (A) (**) (**)	Model				NF50-SVFU	NF100-CVFU	NF125	5-SVU	NF125	5-HVU	
Rated ambient temperture 40°C (EC 30°C) 40 50 100 100 1725 (70) 75 (80) (80) 100 1725 (70) 75 (80) 100 1725 (70)		Image									
Number of Delical AC (VI) 2		Rated current In	(A) (*4)		(3) 5 10 15 20 30	60 (70) 75 (80) (90)	15 20 30 40 50 60	105	15 20 30 40 50 60	105	
Rated AC (**) 240 240 460 460 690 690 690 690 50 50 50 50 50 50 50	Rate			EC 30°C)							
Page Page Value Page Value Page		Number of p									
Section Content Cont									600Y/347	600Y/347	
88 Ul 488 George CSA C22.2 No.5-20 Ac George CSA C22.2 No.5-	ब		voltage						-	-	
Rated impulse withstand voltage Uimp (kV)	×				_	=					
Rated impulse withstand voltage Uimp (kV)	iji.	© UL 489 48 48 480 AC AC 480 AC AC 480 AC AC 480 AC AC 480 AC AC 480 AC AC AC AC AC AC AC AC AC AC AC AC AC									
Rated impulse withstand voltage Uimp (kV)	aci	G CSA C22.2 No.5-02 AC									
Rated impulse withstand voltage Uimp (kV)	g	cab									
Rated impulse withstand voltage Uimp (kV)) g		DC								
Rated impulse withstand voltage Uimp (kV)	🛓										
Rated impulse withstand voltage Uimp (kV)	l ş		naieu ilisulau								
Rated impulse withstand voltage Uimp (kV)	1 =										
Rated impulse withstand voltage Uimp (kV)	2										
Rated impulse withstand voltage Uimp (kV)	1 💆		ΔC								
Rated impulse withstand voltage Uimp (kV)	je		,								
Rated impulse withstand voltage Uimp (kV)	1 50	(Icu/Ics)									
Rated impulse withstand voltage Uimp (kV)	l ĕ										
Rated impulse withstand voltage Urimp (kV) 6	22			250V	_	-	-	-	-	_	
Current(1)	ı		DC		_	-	-	-	-	-	
Suitability for isolation	Rate	d impulse withstand v	oltage L	Jimp (kV)	6	8	8	8	8	8	
Reverse connection		Current (*	1)		AC	AC	AC	AC	AC	AC	
Utilization category		Suitability for is	olation		Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	
Pollution degree 3 3 3 3 3 3 3 3 3					-	Possible	Possible	Possible	Possible	Possible	
EMC environment condition (environment A or B)											
A											
D			environme								
Mass of front-face type (kg)	l l		⊭c>								
Mass of front-face type (kg)	veral	را ⊾ال ا	- 1								
Mass of front-face type (kg)	0 8	쁘 ° 4	4								
Screw terminal AlliPut Page	-		type /k/								
Solderless terminal (SL) Bar (BAR) 92 -	-										
Auxiliary switch (AL) (AZ) (*7) (*	in an	Solderless term									
Auxiliary switch (AL) (AZ) (*7) (*	lagic la	Bar				<u> </u>					
Auxiliary switch (AL) (AZ) (*7) (*	<u>135</u> 15	Power supply solderless to			_						
Auxiliary switch (AX) 102 (7) (7					● (*7)						
Mechanical interlock (MI) 129	g (\$	Auxiliary switch		Υ\	● (*7)	● (*7)	● (*7)	● (*7)	● (*7)	● (*7)	
Mechanical interlock (MI) 129	ete Sorie	Shunt trip	(SH	T) 102	● (*7)	● (*7)	● (*7)	● (*7)	● (*7)	● (*7)	
Mechanical interlock (MI) 129	ass					● (*7)	● (*7)	● (*7)	● (*7)	● (*7)	
Handle lock device (HLS) 127	0 8				•	•	•	•	•	•	
Tamial Large terminal cover (TC-L) 121	2										
Tamial Large terminal cover (TC-L) 121	- S										
Tamial Large terminal cover (TC-L) 121	sori			·S)							
Tamial Large terminal cover (TC-L) 121	Ses										
Small terminal cover TC-S 122	<u>ac</u>			V)				•			
CE marking TÜV approval TÜV app	l m										
CE marking TÜV approval TÜV app	18										
CCC recognition Recognition in process Recogn	F			10/							
Automatic tripping device Thermal-magnetic Thermal-magnet											
Trip button Equipped Equipped Equipped Equipped Equipped Equipped)							
	Pag			ensions							

- Notes: *1 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.

 *2 These accessories differ from the general and CE/CCC products in specifications. Please consult us for details.

 *3 The standard structure conforms to IP20 (finger protection).

 *4 The rated ambient temperature for NF50-SVFU, NF100-CVFU, NF125-SVU and NF125-HVU is specified at 40°C also by IEC.

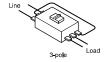
 *5 The circuit breakers with busbar terminals have insulation barriers.

 *6 Circuit breakers for power supply solderless load screw terminal (SL/AMP-N) are available. In this case, a busbar terminal is not provided on the load side.
 - on the load side.

 These cassett by circuit breakers can be installed by the customer.
 They can be installed with their side faces in close contact (except NF50-SVFU and UVT).
- Remarks: 1. Products with rated current parenthesized are produced when an order is placed.

 2. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.

 3. The 3-pole circuit breakers can be used on single-phase



US UL Standard 489 UL File No.E167691 Body UL File No E108284 Accessories

Canada CSA Standard C22.2 No.5

UL 489 Listed Molded Case Circuit Breakers

	Frame (A	.)		225			50		
	Model			NF225-CWU	NF25	0 - SVU	NF250)-HVU	
	Image				7. I		5		
	Rated current In	(A) (*5)	1	125 150 175	125 150 175	250	125 150 175	250	
Hate	d ambient temperture		EC 30°C)	200_225	200 225		200 225		
<u> </u>	Number of p			3	3	3	3	3	
	Rated AC (240	480	480	600Y/347	600Y/347	
₹ (₹		voltage		-	-	-	_		
×			600Y/347V	=	-	-	18	18	
breaking capacities	UL 489		480V	=	35	35	50	50	
gc.	CSA C22.2 No.5-02	AC	480Y/277V	<u> </u>	-	-	-	_	
g.			240V	35	65	65	100	100	
6			120V	-	-	-	-	-	
·≅		DC	60V	_	-	-	-	-	
ea		Hated insulat	ion voltage Ui (V)	600	690	690	690	690	
ا ق			690V	-	8/4	8/4	10/5	10/5	
short-circuit			500V	10/5	25/13	25/13	36/18	36/18	
i	IEC 60947-2		440V	15/8	36/18	36/18	50/25	50/25	
1 5	EN 60947-2	AC	415V	18/9	36/18	36/18	50/25	50/25	
š	(Icu/Ics)		400V	18/9	36/18	36/18	50/25	50/25	
8			380V	18/9	36/18	36/18	50/25	50/25	
Rated			230V	35/18	65/33	65/33	100/50	100/50	
1 "		DC	250V (*3)	10/5	-	-	-	_	
<u> </u>	Ļ		60V	-	<u> </u>	-	-	<u>-</u>	
Rate	d impulse withstand v		Jimp (kV)	6	8	8	8	8	
	Current (*			AC/DC compatible	AC	AC	AC	AC	
	Suitability for is			Compatible	Compatible	Compatible	Compatible	Compatible	
	Reverse conn			Possible	Possible	Possible	Possible	Possible	
-	Utilization cat			A	A	A	A	A	
FMC	Pollution deg		A D)	3 N/A	3 N/A	3 N/A	3 N/A	3 N/A	
	environment condition (environm ca . i		105	105	105	105	105	
_E		≥ eŞ	a b	165	185	185	185	185	
Vera		ri I		68	68	68	68	68	
Overall dimensions (r	쁘 ゜ 4	4	ca	92	92	92	92	92	
-	Mass of front-face	tuno /k		1.5	1.6	1.6	1.6	1.6	
70	Screw termi			I.5 ●	1.0	1.0	1.0	1.0	
Installation and connections	Screw termi Solderless term Bar Power supply solderless I				•	•	•	•	
ed agi	5 Bar	(BA		•	•	•	•	•	
nsta	Power supply solderless li				●(*8)	●(*8)	●(*8)	•(*8)	
_		(A		<u>-</u>	●(*7)	●(*7)	●(*7)	●(*7)	
type s (*2)	Auxiliary switch	(A	Y)	•	●(*7)	●(*7)	●(*7)	●(*7)	
Jaj ég	Shunt trip	(SF		•	●(*7)	●(*7)	●(*7)	●(*7)	
Cassette-ty	Undervoltage trip	(UV		•	●(*7)	●(*7)	●(*7)	●(*7)	
ပိမ္မ	With lead-wire terminal b			•	•	•	•	•	
(2)	Mechanical interloc		/II) 129	●(*6)	i -	_	_	_	
	Handle lock	(H		•	•	•	•	•	
ie	device	(HL	-S) 127	•	•	•	•	•	
accessories	External		EV	•	•	•	•	•	
ŏŏ	operating handle	e (V) 117	•	•	•	•	•	
<u> </u>	Terminal Large terminal c	over (TC	-L) 121	•	•	•	•	•	
External	cover Small terminal o	over (TC	-S) 122	- (*4)	- (*4)	- (*4)	- (*4)	- (*4)	
Ľ	IEC 35mm rail mounting		ers 137	1	-	-			
	CE markir	ng		TÜV approval	TÜV approval	TÜV approval	TÜV approval	TÜV approval	
	CCC recogn			Recognition in process	Recognition in process	Recognition in process	Recognition in process		
	Automatic trippin		Э	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	
	Trip butto			Equipped	Equipped	Equipped	Equipped	Equipped	
Pag	ge of Characteristics	and dim	ensions	204	2	06	20	06	
Noto	e: *1 The trip actio	n chara	ctarietice	differ between AC and DC for products Re	marks: 1. Products with r	ated current parenthesize	ed are produced Line		

Notes: *1 The trip action characteristics differ between AC and DC for products

*1 The trip action characteristics differ between AC and DC for products that are compatible with both AC and DC.
*2 These accessories differ from the general products in specifications. Please consult us for details.
*3 When using a 3-pole circuit breaker, use two poles. When wired as shown right, NF225-CWU can be used at up to 400 V DC.
*4 Since NF225-CWU comes with a protective cover, it has an IP20 (finger protection) structure as standard. Other models have IP20 (finger protection) structures as standard.
*5 The rated ambient temperature for NF250-SVU and NF250-HVU is specified at 40°C also by IEC.
*6 Not isolation compatible.
*7 These cassette type circuit breakers can be installed by the customer. They can be installed with their side faces in close contact (except UVT).
*8 Circuit breakers for power supply solderless load screw terminal (SL/AMP-N) are available. In this case, a busbar terminal is not provided on the load side.

Remarks: 1. Products with rated current parenthesized are produced

The roducts with rated current parenthesized are produced when an order is placed.
 The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.
 The 3-pole circuit breakers can be used on single-phase circuits.



US UL Standard 489 UL File No.E167691 Body UL File No.E108284 Accessories

Canada CSA Standard C22.2 No.5

UL 489 Listed Molded Case Circuit Breakers

	Frame (A			40	00	63	80
	Model			NF400-SWU	NF400-HWU	NF630-SWU	NF630-HWU
	5461			<u> </u>	2.4.4	# # #	= = =
	Image						
	Rated current	In (A)		அத் தி	சிற்றி	2 2 2	2 2 2
	Rated ambient temperture 40°C Number of poles			250 300 350 400	250 300 350 400	500 600 630	500 600 630
<u> </u>	Number of p			3	3	3	3
		Rated	AC (V)	600Y/347	600Y/347	600Y/347	600Y/347
€		voltage	DC (V)		-	-	
1 😸			600Y/347V	20	25	20	25
l≘	UL 489 CSA C22.2 No.5-02	AC	480V 480Y/277V	35 _	65 -	35	65 _
ac	CSA C22.2 NO.5-02	AC	240V	<u>-</u> 65	100	<u>-</u> 85	100
8			120V				
Ď		DC	60V	-	-	<u>-</u>	<u>-</u>
눑			ion voltage Ui (V)	690	690	690	690
Rated short-circuit breaking capacities (kA)		ı arcu IIIƏLIĞÜ	690V	10/10(5/5)(*4)	15/10	10/10	15/10
#			500V	30/30(25/25)(*4)	42/42	30/30	42/42
<u>5</u>			440V	42/42(36/36)(*4)	65/65	42/42	65/65
1 💆	IEC 60947-2	AC	415V	45/45(36/36)(*4)	70/70	45/45	70/70
	EN 60947-2	,,,	400V	45/45(36/36)(*4)	70/70	45/45	70/70
1 50	(Icu/Ics)		380V	50/50(42/42)(*4)	70/70	50/50	70/70
l ĕ			230V	85/85(65/65)(*4)	100/100	85/85	100/100
22			250V	=	-	_	-
ı		DC	60V	_	-	_	_
Rate	d impu l se withstand v	oltage l		8	8	8	8
	Current			AC	AC	AC	AC
	Suitability for is	olation		Compatible	Compatible	Compatible	Compatible
	Reverse conne	ection		Possible	Possible	Possible	Possible
	Utilization cate	gory		А	Α	Α	Α
	Pollution deg			3	3	3	3
	environment condition (e	environme	ent A or B)	N/A	N/A	N/A	N/A
Ē	, a , e c	a d	а	140	140	210	210
Overall dimensions (mm)		⇔	b	257	257	275	275
O Su	 		С	103	103	103	103
-5		<u> </u>	ca	155	155	155	155
-	Mass of front-face			5.7	5.7	9.6	9.6
Installation and connections	Screw terming Solderless terming Bar Power supply solderless lo		N Page		<u>-</u>	- - - -	
istallation an	Solderless term	inal (S (BA		● ●(*5)		●(*7)	<u>-</u> ●(*5)
stall	Power supply solderless to			●(5) ●(*5)	● (*5)	●(*5) ●(*5)	● (5)
_	Alarm switch	(A		●(*3)	— ●(*3)	●(*3)	 ●(*3)
Cassette-type accessories	Auxiliary switch	(A	<u>vi</u>	●(*3)	●(*3)	●(*3)	●(3) ●(*3)
isor #	Shunt trip	(SH		●(*3)	●(*3)	●(*3)	●(*3)
Sse	Undervoltage trip	(UV		•	•	•	•
ag g	With lead-wire terminal b			•	•	•	•
_	Mechanical interloc			●(*1)(*2)	•(*1)(*2)	•(*1)(*2)	●(*1)(*2)
External accessories	Handle lock	(H	u X	●(*6)	●(*6)	●(*6)	●(*6)
SSC	device	(HL		_	_		_
8	External		E	•	•	•	•
<u>a</u>	operating handle		\	•	•	•	•
na l	Teminal Large terminal co			•	•	•	•
l de	cover Small terminal co	over (TC	-S) 122		-		
<u>Lû</u>	IEC 35mm rail mountin		ers 137	-	-	-	-
	CE markin			TÜV approval	TÜV approval	TÜV approval	TÜV approval
	CCC recogni			Recognition in process	Recognition in process	Recognition in process	Recognition in process
	Automatic tripping		э	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic
	Trip butto			Equipped	Equipped	Equipped	Equipped
Pag	e of Characteristics	and dim	ensions	208	208	210	210
	. And Aller to a least on a				Demonstrated The characteristics	and the contract of the contra	

US UL Standard 489 UL File No.E167691 Body UL File No.E108284 Accessories

Canada CSA Standard C22.2 No.5

Page of Characteristics and dimensions | 208

Notes: *1 Not isolation compatible.

*2 Not acquire the TUV certification.

*3 Cassette type accessories are field mountable type. It can respend to adhesion attachment of a breaker as standard below 250A frame. (excluding UVT.)

*4 The values in parentheses apply to the circuit breakers with solderless terminals.

*5 The circuit breakers with busbar terminals have insulation barriers.

*6 Please consult us. (Models which are not UL or TUV certified but can be locked in the ON and OFF positions are available.)

*7 Not available for 630A.

Remarks: 1. The circuit breaker has the rated short-circuit breaking capacity specified in the shaded cells.

2. The 3-pole circuit breakers can be used on single-phase circuits.

UL 489 Listed Earth Leakage Circuit Breakers (Harmonic Surge Ready)

March Marc	Frame (A)			50	100		12	25			2	50			
Pated current in IA)		Model			NV50-SVFU		NV100-CVFU	NV12	5-SVU	NV12	5-HVU	NV25	0-SVU	NV250)-HVU
Part		lmage				BACE BACE BACE BACE BACE BACE BACE BACE									
Part	-	Data d accomand	I (A)		(5) (4	0) 15 00	00 (70) 75	15 00 00 (40)		15 00 00 (40)		105 150 175		105 150 175	
Number of poles 2 3 3 3 3 3 3 3 3 3				40.50			125		125		250		250		
Phase line (1) 1				40 C					-		-		-		
Part															
Part															
Pickup current, UL 1053	Rate				12	:0-240	120-240	120-480	120-480	120-480	120-480	120-480	120-480	120-480	120-480
Second Control Series Second Control	volta				100-240	100-440	100-440	100-440	100-440	100-440	100-440	100-440	100-440	100-440	100-440
Post Post	be			∆n mA	30.50	30 50 100									
Max. coperating time (s) at SIA- 1/4	1 g 8														
Earth learlage indication system	e >														
Section Companies Compan	王			5l∆n (*∠											
1	Earth	leakage indication	system			y window	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)	Mechanical type (button)
Section Company Com	1 3	400				_	_		30	50		35	35	50	
Page 1 1 1 1 1 1 1 1 1			AC	240V		14	14	50	50	100	100	65	65	100	100
Record R	9 #	C3A C22.2 NO.3-02		120V		14	14	50	50	100	100	65	65	100	100
Record R	F &			440V	_	7.5/4	10/5	30/15	30/15	50/25	50/25	36/18	36/18	50/25	50/25
May of front-face type (kg) Face of the face of th				400V	_										
Surface Total To	불별		AC												
Rated Impulse withstand voltage Ulinp (kV)	1 8	(Icu/Ics)													
Suitability for isolation		l dimonula a with at and s	rollto a o												
Possible Possible	nate			Ollip (K											
Utilization actegory					Cor	npatible									
Pollution degree	Re			10VAC)		-									
EMC environment condition (environment A or B)															
Auxiliary switch CAL) 102 105 10															
Note	EMC	environment condition (environm	nent A or	3)										
B	Ê	k a →		а	36	54	75	90	90	90	90	105	105	105	105
Solideriana Tripoint Tripoi	10 Si	l i s i t l	ñ.	b		120	150	160	160	160	160	185	185	185	185
Solideriana Tripoint Tripoi	19.8	⊟ ⊳		С		68	68	68	68	68	68	68	68	68	68
Solideria Soli	l iii	ٰ بلایا ا	Ш	ca		90	90	90	90	90	90	92	92	92	92
Screw terminal			type (F	(a)	0.4	0.5	0.9	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8
Alarm switch (AL) (AZ)	2 °	Screw termi	nai (AV	P-N) Pac	е	•	•	•	•	•	•	•	•	•	•
Alarm switch (AL) (AZ)	ig a	Solderless tem	ninal (S			_	•	•	•	•	•	•	•	•	•
Alarm switch (AL) (AZ)	ig gr	Bar Bar				_	●(*5)	•	•	•	•	•	•	•	•
Alarm switch (AL) (AZ)	132 55	Power supply solderless I				_		●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)	●(*6)
102 103 104 105					_	△ /*8\									
102 103 104 105	25	Auxilian/ ewitch		(V)											
Recharcial interfock (III) 129	l £ s) ———										
Recharcial interfock (III) 129	1# 2					(0)									
Recharcial interfock (III) 129	SSS					-	· · · ·	- ' '				- '	· · ·		
Mechanical interlock Mil 129	12.8														
Handle lock device Handle lock device Handle lock device Handle lock Handle	a					("9)	-	●(*9)	●("9)	●(*9)	●("9)	●(*9)	●("9)	●(*9)	●(*9)
Second Color Col					,					_				_	
CE marking TÜV approval TÜV app	es es				, <u> </u>	•	•		•					_	
CE marking TÜV approval TÜV app	<u>@</u>						•		•						
CE marking TÜV approval TÜV app	l is					•	•	+	•						
CE marking TÜV approval TÜV app	acc			(V)		•	•		•	_					_
CE marking TÜV approval TÜV app	Ja					•	•	_	•				_		_
CE marking TÜV approval TÜV app	ter					(*3)		- (*3)	- (*3)	- (*3)	- (*3)	- (*3)	- (*3)	- (*3)	- (*3)
CE marking TÜV approval TÜV app	Ľŭ	IEC 35mm rail mounting	ng adapt	ers 137	' Standar	d accessory	Standard accessory	_	_	_	_	_	_	_	_
CCC recognition Recognition in process Automatic tripping device Thermal-magnetic Thermal-magnetic Trip button Equipped Equipped Page of Characteristics and dimensions 198 Recognition in process Recognitio								TÜV approval							
Automatic tripping device Thermal-magnetic Thermal-magnetic Thermal-magnetic Thermal-magnetic Themal-magnetic															
				e											
Page of Characteristics and dimensions 198 200 202 202 206 206										_					
	Pag			nension											
								•							

- 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.
 *2 These are different from general models in specifications. Consult us

 - Triese are different from general modes in specifications. Consult us for the details.
 The standard structure conforms to IP20 (finger protection).
 The maximum operating time is 0.1 according to UL 1053.
 The circuit breakers with busbar terminals have insulation barriers.
 Circuit breakers for power supply soldefless load screw terminal (SL/AMP-N) are available. In this case, a bar terminal is not provided on the load side.
 Circuit breakers for 100 VAC do not have obtained CCC confidents.
 - the load side.

 7 Circuit breakers for 100 V AC do not have obtained CCC certificate.

 8 These cassette type accessories can be installed by the customer.

 They can be installed with their side faces in close contact with circuit breakers (except NV50-SVFU and UVT).

 9 Standard type is SLT equipped.

Remarks: 1. Products with rated current parenthesized are produced when an order is placed.

2.	Rated operational voltage	Applicable circuit voltage	Available voltage range		
	120-240V (UL)	120/240V	66-264V		
	120-240-480V (UL)	120/240/480V	66-528V		
	240V (UL)	240V	132-264V		
	100-230V (IEC)	100/110/200/220/230V	85-253V		
	100-240V (IEC)	100/110/200/220/230/240V	85-264V		
	100-230-400-440V (IEC) 100-440V (IEC)	100/110/200/220/ 230/240/254/265/ 380/400/415/440V	85-484V		
	230-400-440V (IEC)	230/240/254/265/ 380/400/415/440V	195-484V		

US UL Standard 489 UL File No.E167691 Body UL File No.E108284 Accessories

Canada CSA Standard C22.2 No.144 C22.2 No.5

Detailed 2 Specifications 5

Measuring Display Unit Breakers

MDU Breakers

	Fra	ame (A)				2	50			4	00		630 800							
		Model			NF250-SEV			V with MDU	NF400-SE	NF400-SEP with MDU NF400-HEP with MDU				NF630-SEP with MDU NF630-HEP with MDU						
Image																				
	Rated o			·C	Α		125-250 Step)	A	Adjustable 200 225 250 300 350 400				Ad		00 350 00 630	400	Adjus	stable 400 600 7		500
	Numb	er of po	oles		3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	Ph	ase line)		3φ3W, 1φ3W, 1φ2W	3 <i>φ</i> 4W	3φ3W, 1φ3W, 1φ2W	3¢4W	3φ3W, 1φ3W, 1φ2W	3 <i>ø</i> 4W	3φ3W, 1φ3W, 1φ2W	3 <i>∲</i> 4W	3φ3W, 1φ3W, 1φ2W	3 <i>∲</i> 4W	3φ3W, 1φ3W, 1φ2W	3 <i>∲</i> 4W	3ø3W, 1ø3W, 1ø2W	3 <i>φ</i> 4W	3φ3W, 1φ3W, 1φ2W	3 <i>φ</i> 4W
	Rated insula	tion vol				69	90				90				90				90	
2				690V	8/			0/8		/10	10/			/10		/15		/10		/15
1 = 2				500V	18/			/23	30		50/		30			/50		/30		/50
lies gi				440V	36/			/50		/42	65/		42			/65 /70		/42		/65
aci at	IEC 60947-2			415V 400V	36/ 36/			/70 /75		/45 /45	70/ 70/		45 45			/70 /70		/45 /45		/70 /70
ls g	(Icu/Ics)			380V	36			/75		/45	70/		45			70		/45		/70
Rated short-circuit breaking capacities (kA)				230V	85/			/100	85		100/			/85		/100		/85		/100
18 g				200V	85/			/100	85.		100/		85			/100		/85		/100
				100V	-			_		_		-		-		-		_		-
Rate	l impulse with		oltage Uin	np (kV)			3				8				3				3	
		urrent					C				.C				C			Α		
- Do	Suitabilit verse connec			(AC)	Compatible				Compatible			Compatible				Compatible				
ne	Number of	HOII (DE	Without of		t 25,000				6,000				6.0	000			4 (000		
(perating cycl	es	With cu		10,000				1,000			1.000				500				
	Utilizati				A				В			В			В					
		ion deg			3				3			3			3					
	EMC environment condition (environment A or B) A A 105 140 105 140			A 140 185 140 185			A 210 280 210 280			A 210 280 210 280						
Overall dimensions (mm			b	105 140 105 140 165 68 92			257 103 155			275 103			275 103 155		280					
	of front-face type	o /Pron	kor mountii	ca pa) (ka)	1.8	2.3	1.8	2.3	6.2	8	6.2	8	155 10.7 13.8 10.7 13.8			11.1	14.4	11.1	14.4	
IVIASS		installa		ilg) (kg)			Panel mou					Breaker mounting, Panel mounting (*2				14.4	11.1	14.4		
E g	Fro			Page	•	•	•	•						(•	g (-	ĺ		•	
Instalation and connections	Rear		(B)	92	•	•	•	•						(
12 00	Plug		(PM)	32							-				-				-	
	Alarm switch Auxiliary swi		(AL)	4	●(*4) ●(*4)	•	●(*4) ●(*4)	•			*4)				*4)				*4)	
l de sa	Shunt trip	LCIT	(SHT)		●(*4)	÷	●(*4)		●(*4)				●(*4)				●(*4) ●(*4)			
or te	Undervoltage	e trip	(UVT)		•	•	•	•			•		•			•				
Cassette-type accessories	MDU transform Al				●(*4)	•	● (*4)	•		•(*4)	●(*4)			*4)				*4)	
acc	With lead-wire to			114	•	•	•	•			D. A.			(N. di				N d -	
-	Alarm contact output (*5)	Trip-indic		116	-	• PA	AL 1a				AL 1a a, OAL 1a				AL 1a a, OAL 1a		● PAL 1a ● PAL 1a, OAL 1a			
-	Electrical operat			133	Available or	ly for the M	DU panel me	ounting type			ilable only									
	Mechanical		mounting	129		(3 71		(•			(•				•	
2	interlock (MI) (*7)	Breaker	mounting	129	●(*9)	-	●(*9)	_				Avail	able only	for the M	DU panel	mounting	type			
) se	Handle lock		LC			<u> </u>						-				_				
l in	device		HL IL-S	127	Available only for the MDU panel mounting type															
l se	External		(F)		Available only for the MDU panel mounting type Available only for the MDU panel mounting type															
External accessories (*2)	operating handle		(V)	117 Available only for the MDU panel mounting type Available only for the MDU panel mounting type																
힐	, ,		C-L		●(*8)	•	●(*8)	•		Available only for the MDU panel mounting type										
den	Terminal		C-S	121	●(*8)	•	●(*8)	•							-					
Ιŭ	cover		TC	'-'	●(*8)	●(*8)	●(*8)	●(*8)							*8)					
	Паа: -		BTC	94	●(*8)	● (*0)	●(*8)	•			Av	ailable or	nly for the	MDU ра	nel moun	ing type a	and line s	ide		
	Automatic	tud (B-		94	Flectroni	●(*8)			Electroni	ic (effectiv	e value d	etection)	Flectron	c (effectiv	e value o	letection)	Flectron	ic (effectiv	e value c	letection)
N	1DU measure			ons	LICOLIOIII	c (choons	o value (o (oncoin	.c value u		2. 36	C (CITCOII)	.c value (1=10001011	.c (chooti	o value t	0.000001)
	Tri	p buttor	1			Equi	pped			Equi	pped			Equi	pped			Equi	pped	
Pag	e of Characte	ristics a	and dimer	nsions						214			216				216			

Notes: *1 In the case of panel mounting, the panel holder plate, the screws and the MDU connection cable (2m) are packed as standard. The MDU connection cable of 0.5m, 3m, 5m and 10m can be specified when ordering. And dimension of the front panel drilling of the breaker is different between breaker mounting and panel mounting.

*2 In the case of panel mounting, the panel holder plate, the nuts and the MDU connection cable (2m) are packed as standard. The MDU connection cable of 0.5m, 3m, 5m and 10m can be specified when ordering.

*3 For 250AF breakers, the studs are packed as standard. For 400/630/800AF breakers, please specify the installation angle of the studs because it is installed to the breaker before

Measuring Display Unit Breakers (Circuit Breakers with Measuring Display Unit)

- Three major features of Measuring Display Unit Breakers
 - 1. Saving of space and labor for installation
 - 2. Improved and diversified functions
 - 3. Provision of total cost advantages

Measuring Display Unit Breakers with built-in VT and CT and Measuring Display Unit realize measurement, display and transmission of electric circuit information in small space with less installation and wiring work and provide total cost advantages.

The Measuring Display Unit Breakers full of functions in small bodies are suitable for monitoring and protection of electric circuits and maintenance of equipment. A wide variety of models applicable to various networks supports the customers' energy saving activities through detailed energy control as energy saving supporting devices.

Simply realizing measurement and monitoring of electric circuits for supporting various types of energy saving control

The circuit breakers measure and display the load current, line voltage, electric power, electric energy, harmonic current, leak current and power factor to realize detailed energy control. They support customers' energy saving control.

WS-V Series Measuring Display Unit Breakers

Applicable models NE250-SEV with MDU, NE250-HEV with MDU

The measuring display unit can be installed on the body or panel.

[Examples of installation of measuring display unit] Breaker mounting

Note: The size of holes in the face board of the circuit breaker body varies depending on whether the measuring display unit is installed on the body or the panel.

Model list

Model type	Type name
CC-Link communication	MDU-DP-C
Electric energy pulse output	MDU-DP-P
No transmission	MDU-DP-N

Measuring Display Unit cable list

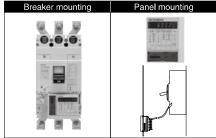
Type name	Cable length
MDU-DP-CB-2M	2m
MDU-DP-CB-3M	3m
MDU-DP-CB-5M	5m
MDU-DP-CB-10M	10m

W & WS Series Measuring Display Unit Breakers

Applicable models
NF400-SEP with MDU, NF400-HEP with MDU, NF630-SEP with MDU,
NF630-HEP with MDU, NF800-SEP with MDU, NF800-HEP with MDU

The measuring display unit can be installed on the body or panel.

[Examples of installation of measuring display unit]



Model list		
Model type	Type name	Remarks
CC-Link communication	MDU-AC OOO	• The model names do not include OOO.
Electric energy pulse output	MDU-AP OOO	• When installing the Measuring Display Unit on the body, specify the A frame type in OOO.
No transmission	MDU-AN OOO	For example, when the circuit breaker NF400-SEP with MDU and the Measuring Display Unit with CC-Link communication
		are combined, the model name is MDU-AC400. If 630A frame or 800A frame is used, specify 630 or 800 in OOO.
		• When installing the Measuring Display Unit on the panel, specify the cable length (0.5 m, 2 m, 3 m, 5 m or 10 m) in 000.
		For example, when the Measuring Display Unit with CC-Link communication is installed on the panel with a 3-m cable,
		the model name is MDU-AC-PANEL 3M.

Specifications for Measuring Display Unit (1)

The measurement and display items vary depending on the model or frame A. (For the measurement accuracy, please refer to page 39.)

Table 2-1

Applicable models NF250-SEV with MDU, NF250-HEV with MDU

		Model	Display	Storage	With CC-Link communication	Remarks		
Measurement and memor	y items (accuracy) (*1) (*2	2)	Jiopidy	(*3)	Communication	. Iomano		
		Each phase	•	_	•			
	Present value	General (average value) (*5)	•	_	•			
Load current	Present value of demand	Phase with max. value Each phase	-	_				
(±1.0%)	(*4)	Phase with max. value	•		•			
	Max. demand value	among all phases	•	•	•			
	Time of occurrence of max.	demand value among all phases	•	•	•			
Line voltage	Present value	Between each lines General (average value) (*5)	•		•			
(±1.0%)	Max. value among a	all lines	•	•	•			
, ,	Time of occurrence of n	nax. value among all lines	•	•	•			
		Fundamental wave of each phase	•		•			
	Present value	Each order of each phase General of each phase (*6)	•		•			
	Max. value of fundamen	ital wave among all phases	•	•	ě			
	Time of occurrence of max, value of	of fundamental wave among all phases	•	•	_			
Harmonic current	Max. value in each		•	•	•			
(±2.5%)	Time of occurrence of max. v	alue in each order of each phase	•	•	•			
	Demand value (*4)	General of each phase (*6) General max. value among all phases						
		Time of occurrence of general max, value among all phases	•	•	•			
	General distortion fa	actor of each phase	•	_	_			
	Content in each ord	er of each phase	•					
Electric power	Present value	Present value	•	- -	•			
(±1.5%)	Demand value (*4)	Max. value		-				
· · · · · ·	, ,	Time of occurrence of max. value	•	•	•			
	Present value		•	_	•			
Reactive power	Demond visiting (#4)	Present value	•	-	•			
(±2.5%)	Demand value (*4)	Max. value Time of occurrence of max. value		-				
	Integrated value	Time of occurrence of max. value	-	-	•			
Electric energy	Amount for last 1 ho	•		•	Notes and the state of the stat			
(±2.0%) (*7)	Max. value of amou	nt for 1 hour	•	•	•	Value accumulated from previous reset to present		
(' '	Time of occurrence of ma	•	•	•				
Reactive energy	Integrated value		•	•	•			
(±3.0%)	Amount for last 1 hour Max. value of amount for 1 hour			-		Value accumulated from previous reset to present		
(*7)	Time of occurrence of ma:	•	•	•				
Cause of fault (*8)	Fault current (accura	t current (accuracy: ±15%)			•	Information on fault after previous reset or last fault, and cause of fa		
Cause of lault (0)	Cause of fault		•	•	•	(continuously monitored)		
Power factor	Present value Max. value		•	-	•			
(±5.0%)	Time of occurrence	of max_value		-				
Frequency (±2.5%)	Present value		•	-	•			
Alarm of circuit breaker	PAL, OVER,		•		•	The PAL functions are enabled when the MDU breaker with PAL		
(*9)	IDM_AL, ILA_AL, IU	JB_AL,				module (option) is used.		
, ,	Neutral line open ph Tripping state of circ	uit brooker (AL)	-	-	-	The neutral line open phase alarm is given only on the display. On installation of alarm switch for transmission with Measuring Display Unit (opti		
State of	ON/OFF state of circ	cuit breaker (AX)			-	On installation of auxiliary switch for transmission with Measuring Display Unit (opti		
	Number of times of tr	_	•	•	On installation of alarm switch for transmission with Measuring Display Unit (opti			
	Number of times of opening		•	•	On installation of auxiliary switch for transmission with Measuring Display Unit (opt			
	Time setting	•	•	•	Initial setting and resetting after power failure are necessary (no power failure compensati			
	Demand time limit s	etting (*4)	•	•	•	By default, the demand time limit is 2 min. It can be set in the range from 0 to 15 min in 1-min steps.		
						By default, the function is off.		
						The parameters can be set in the following ranges.		
	IDM_AL (current de	mand alarm)	•	•	•	Function: ON/OFF		
						Pickup current: 50 to 100% (1% step) Demand time limit: 1 to 10 min (1-min step), 15, 20, 25 and 30 min		
				-		By default, the function is off.		
						The parameters can be set in the following ranges.		
	ILA_AL (current ope	en phase alarm)	•	•		Function: ON/OFF		
						Pickup current: 10%, fixed (no setting)		
Default settings				<u> </u>		Operating time: 30 sec (no setting) By default, the function is off.		
Delault Settings						The parameters can be set in the following ranges.		
	IUB_AL (unbalance	d current alarm)	•	•	•	Function: ON/OFF		
				1		Pickup current: 30%, fixed (no setting)		
				L		Operating time: 30 sec (no setting)		
	Noutral line open = 5	aco alarm		ا م	_	30 When the single-phase 3-wire type is set, the function is turned of Rated operating overvoltage: 135 V AC (no setting)		
	Neutral line open ph	iase alarm	_	•	•	Hated operating overvoltage: 135 V AC (no setting) Operating time: 1 sec (no setting)		
	Phase switching set	ting	•	•	•	Default: No phase switching		
	Alarm retention (self-retent	ion or automatic reset) setting	•	•	•	Default: Automatic reset		
	Phase and wire type	•	•	•	•	Default: 3-phase 3-wire		
	Electric energy arbit	rary setting	•	•	•			
	Reactive energy arb Display direction	otrary setting	•	•	•	Default: Vertical One of vertical, horizontal 1 and horizontal 2 can be selected		
						∟ Derauji. Verticaj One di verticaj, nonzontaj i and nonzontaj ∠ can de sejecte		

Display direction

I The term "each phase" used for load current and harmonic current refers to phase 1, 2, 3 or N. However, the phase N is provided only on 4-pole circuit breakers.

The term "between each phase" used for line voltage refers to between phases 1 and 2, 2 and 3, 3 and 1, 1 and N, 2 and N or 3 and N. However, voltage between phases 1 and 2, 2 and 3, 3 and 1, 1 and N, 2 and N or 3 and N. However, voltage between phases 1 and N, 2 and N and 3 and N is applicable only on 4-pole circuit breakers.

These circuit breakers measure the values every 0.25 sec. Therefore, even when a low order circuit breaker operates, operating current may not be measured.

Each maximum value is the largest value among values obtained from the start of operation (after the previous reset) to the present.

The integrated value of electric energy and the integrated value of reactive energy as tored upon occurrence of fault, the set values are stored when they are set, and other values are stored every 30 minutes in the nonvolatile E[±]PROM.

The average values of load current and line voltage are calculated as shown below when the phase and wire type is specified.

-		
Phase and wire type	Average present value of current	Average present value of voltage
Single-phase 2-wire	Average present value of current = phase 3 current	Average present value of voltage = voltage between phases 2 and
Single-phase 3-wire	Average present value of current = (phase 1 current + phase 3 current)/2	Average present value of voltage = (voltage between phases 1 and 2 + voltage between phases 2 and 3)/2
3-phase 3-wire	Average present value of current = (phase 1 current + phase 2 current +	Average present value of voltage = (voltage between phases 1 and 2 + voltage between
3-phase 4-wire	phase 3 current)/3	phases 2 and 3 + voltage between phases 3 and 1 phases)/3

^{*6} Sum of values of harmonic components in third to 19th orders except fundamental wave component

7 The reverse power is not measured.

8 If the upper limit of the fault current measurement range (rated current 125 to 250 A (adjustable): 4000 A, rated current 50, 60, 75, 100, 125 A (fixed): 2000 A)) is exceeded when overload or short circuit fault occurs, the cause of the fault may not be displayed, and the fault current may not be measured. For fault current, display of cause of fault and measurement of fault current are enabled when the AL for transmission with the Measuring Display Unit (option) is installed.

9 When the alarm retention mode has been set to Automatic reset, the alarm display on the Measuring Display Unit will be reset automatically. When the alarm retention mode is Self-retention, the alarm display will be self-retention mode, the display can be reset through the alarm reset operation (collective reset). OVER will be automatically reset regardless of the mode setting.

Specifications for Measuring Display Unit (1)

The measurement and display items vary depending on the model or frame A.

(For the measurement accuracy, please refer to page 40.)

Applicable models
NF400-SEP with MDU, NF400-HEP with MDU, NF630-SEP with MDU,
NF630-HEP with MDU, NF800-SEP with MDU, NF800-HEP with MDU

Table 2-2

	Model	MDU	Storage	Electric energy with pulse output	With CC-Link communication	Domonico
Measurement and mem	ory items (accuracy) (*3)	Display	(*1)	Pulse output (*1)	Communication	Remarks
Load current (±2.5%)	Present value of each phase Demand value of each phase Average present value (*11) Max. demand value (general value) (*4) Time of occurrence of max. value (year, month, day, hour, minute)			- - - -	•	Time limit: 0 to 15 min, changeable (Same as the present value when 0 min is specified) Max. demand value after previous reset
Line voltage (±2.5%)	Present value between each phases Average present value (*11) Max. value (general value) (*4) Time of occurrence of max. value (year, month, day, hour, minute)	•	- - •	- - - -	•	Max. value after previous reset (not demand value)
	Current value in 3rd, 5th, 7th 19th orders of each phase Max. value in 3rd, 5th, 7th 19th orders (general value) ('4) Time of occurrence of max. value (year, month, day, hour, minute)	• •	-	- - -	•	Max. value after previous reset (not demand value)
Harmonic current (±2.5%)	Current value of general harmonics of each phase (*10) Demand value of general harmonics of each phase (*10) Max. demand value (general value) (*4) Time of occurrence of max. value (year, month, day, hour, minute)	• •	-	- - - -	•	Time limit: 0 to 15 min, changeable (Same as the present value when 0 min is specified) Max. demand value after previous reset
Electric power (±2.5%)	Current value (also reverse power is measured) Demand value (also reverse power is measured) Max. demand value Time of occurrence of max. value (year, month, day, hour, minute)	• • •	• •	- - - -	•	Time limit: 0 to 15 min, changeable (Same as the present value when 0 min is specified) Max. demand value after previous reset
Electric energy (±2.5%)	Electric energy (integrated value) (*5) Electric energy per time (*5) Max. value of electric energy per time (*5) Time of occurrence of max. value (year, month, day, hour, minule)		• • •	• - - -	•	Value accumulated from previous reset to present Amount for 1 hour from hour to hour on built-in clock Max. demand value after previous reset
Cause of fault	Fault current (accuracy: ±15%) (*11)	•	•		•	Information on fault after previous reset or last fault, and cause of fault (continuously monitored)
Power factor (±5%)	Present value	•	-	_	•	
Alarm of circuit breaker	PAL, OVER (*6) (*11)	ED on	-	_	•	
State of circuit breaker	Tripping state of circuit breaker (AL) ON/OFF state of circuit breaker (AX)	-	-	_ _	•	When alarm switch for transmission with Measuring Display Unit (option) is installed When auxiliary switch for transmission with Measuring Display Unit (option) is installed
	Time setting	_	_	_	•	Initial setting and resetting after power failure are necessary (no power failure compensation).
	Demand time limit setting (*7)	•	•	_	•	Default: 2 min Setting in 1-min steps in range from 0 to 15 min
Default settings	PAL pickup current setting * Setting on circuit breaker body The Measuring Display Unit does not have the setting function.	•	•	_	•	Default: 100% Setting in 5% steps in range from 70 to 100% Default setting on breaker body is 70% unless otherwise specified.
	Pulse unit setting	•	•	-	-	Default: 1 kWh/pulse Setting to 1 kWh, 10 kWh, 100 kWh, 1000 kWh or 10000 kWh
	Phase switching setting	•	•	_	•	Default: No phase switching
	Alarm retention (self-retention or automatic reset) setting	•	•	_	•	Default: Automatic reset

1 The electric energy (integrated value) is stored upon occurrence of power failure and every 2 hours, the fault current and the cause are stored upon occurrence of fault, the demand time limit, EPAL sensitivity current, PAL pickup current, pulse unit, alarm retention and phase switching settings are stored when they are set, and other values are stored every 2 hours in the nonvolatile E²PROM.

hours in the nonvolatile E*PROM.

Each maximum value is the largest value among values obtained from the start of operation (after the previous reset) to the present.

*2 Every time the electric energy is integrated in the pulse unit (the unit can be set to 1 kWh, 10 kWh, 100 kWh, 1000 kWh or 10000 kWh), a pulse is output. Counting can be performed with a PLC.

*3 The term "between each phase" used for load current and harmonic current refers to phase 1, 2, 3 or N. However, the phase N is provided only on 4-pole circuit breakers.

The term "between each phase" used for line voltage refers to between phases 1 and 2, 2 and 3, 3 and 1, 1 and N, 2 and N or 3 and N. However, voltage between phases 1 and N, 2 and N and 3 and N is applicable only on 4-pole circuit breakers.

The electric energy data is 6-digit data of up to 999999 kWh. The voltage and harmonic current are 3-digit data, and others are 4-digit.

These circuit breakers measure the values every 0.25 sec. Therefore, even when a low order circuit breaker operates, operating current may not be measured.

*4 Each general value indicates the value only of the phase with the maximum value.

*5 The electric energy is not measured in the case of reverse power flow.

*6 When the alarm retention mode is Self-retention, the alarm display will be self-retained. In the self-retention mode, the display can be reset through alarm reset operation (collective reset). OVER will be automatically reset regardless of the mode setting.

*7 The demand time limit cannot be set individually. It is common to the items.

17 Ine demand time limit cannot be set individually. It is common to the items.
18 Sum of values of harmonic components in third to 19th orders except fundamental wave component.
19 The average present value of load current is the average value of current among phases 1, 2 and 3 (the current of the phase N is not included even in the case of a 4-pole circuit breaker). When the circuit breaker is used on a single-phase 3-wire circuit, the calculated value is displayed. However, ignore it. The average present value of line voltage is the average value of voltages between phases 1 and 2, 2 and 3 and 3 and 1 (the voltages between phases 1 and N, 2 and N and 3 and N are not included in the case of a 4-pole circuit breaker).
*10 Setting at the pre-alarm current Ip (which can be set in the range from 70 to 100% of the rated current In in 5% steps) on the circuit breaker body. The Measuring Display Unit does are the certified function.

not have the setting function.
*11 The operating time of PAL is shown below.

PAL Same as pre-alarm operating time Tp on circuit breaker body

Specifications for Measuring Display Unit (2)

Table 2-3

Applicable models	
NF250-SEV with MDU, NF250-HEV with MDU	j

Item		Specification							
Data up	dating cycle	250 ms (harmonic current: 2 s)							
		Current and voltage: ±1.0% (to rating input)							
		ctric power: ±1.5% (to rating input)							
		active power: ±2.5% (to rating input)							
		rmonic current: ±2.5% (to rating input)							
Toleran	ces	Power factor: ±5%							
		Frequency: ±2.5%							
		Electric energy: ±2.0% (voltage 100 V to 440 V, range from 5 to 100% of current rating, power factor 1)							
		Reactive energy: ±3.0% (voltage 100 V to 440 V, range from 10 to 100% of current rating, power factor 0)							
		ault current: ±15% (*1)							
Demand	d time limit setting range	0 to 15 min (1-min steps)							
Voltage circuit (1¢2W, 3¢3W)									
Rated	Voltage circuit (1ø3W)	440 V (only 4-pole breakers applicable to 3ϕ 4W)							
input	Voltage circuit (3ø4W)								
par	Current circuit	Load current/harmonic current: 250 A							
	Frequency	50 Hz/60 Hz (automatic discrimination of frequency)							
	(1) Wh (integrated value)	Stored in EEPROM (nonvolatile memory)							
Power failure	(2) Max. value	* Wh and varh are stored upon occurrence of power failure and every 30 min.							
compensation	(3) Setting data	Max. value is stored every 30 min. Setting data are stored when they are set.							
	Clock	No power failure compensation							
Clock a	ccuracy	Approx. 1 min/month							
Externa	dimensions (unit: mm)	See Characteristics and Dimensions.							
Control	power supply	Compatible with 100 to 240 V AC/DC, 50/60 Hz (allowable voltage range: 85% to 110%), 12 VA (*2)							
		Function for switching phases to be measured to 1-3 and 3-1							
Other fu	inctions	PAL alarm, self-retention/automatic reset setting function (*3)							
		Function for counting number of times of opening and closing of circuit breaker body (*4)							

*1 The measurement of fault current of load is enabled when the AL switch for transmission with Measuring Display Unit (option) is installed in the Measuring Display Unit

- body.

 2 When the MDU unit control power is turned on, a rush current transitionally flows (maximum rush current: 2A, energizing time: 1ms (240V AC)

 3 The PAL functions are enabled when the MDU breaker with PAL module (option) is used.

 4 The function is enabled when the AX switch for transmission with Measuring Display Unit (option) is installed in the Measuring Display Unit Breaker body.

Network Specifications for Measuring Display Unit

[Electric energy pulse output]

Table 2-4

Item	Specification					
Output	Solid state relay (SSR), no voltage a					
elements	contact (Ca and Cb terminals: no polarity)					
Contact capacity	Compatible with 24V DC and 100 to 200 V AC, 20 mA					
Output pulse unit	1, 10, 100, 1000 and 10000 kWh/pulse (settable)					
Output pulse width	0.35 to 0.45 s					
Max. wiring length	100m					

[CC-Link communication]

Table 2-5

Item	Specification								
Communication speed	10M/5M/2.5M/625k/156kbps								
Communication method	Broadcast polling method								
Synchronization method	Frame synchronization method								
Encoding method	NRZI								
Transmission format	Conforming to HDLC								
Number of occupied stations	Remote device occupying 1 station								
	Meet the following conditions.								
	When a system consists only of Measuring Display Units, up to 42 units can be connected.								
	Condition 1 for number of connected units								
	$[(1\times a) + (2\times b) + (3\times c) + (4\times d)] \le 64$								
	a: Number of units occupying 1 station								
Number of connected	b: Number of units occupying 2 stations								
units	c: Number of units occupying 3 stations								
units	d: Number of units occupying 4 stations								
	Condition 2 for number of connected units								
	{ (16×A) + (54×B) + (88×C) } ≤ 2304								
	A: Number of units at 1 remote I/O station ≤ 64								
	B: Number of units at remote device station ≤ 42								
	C: Number of units at local station ≦ 26								
Station number	Setting in range from 1 to 64 (Set the station number without fail.)								
CC-Link version	CC-Link Ver.1.10								
	Master station Remote I/O Remote I/O Local station Local station or intelligent								
	device station device station device station								
Max. total extension									
cable length and	Cable length between stations								
cable length between stations	Max. total extension cable length								
Stations	Cables applicable to CC-Link Ver. 1.10 (with use of 110-ohm terminal resistance)								
	Communication speed 156kbps 625kbps 2.5Mbps 5Mbps 10Mbps								
	Cable length between stations 0.2 m or more								
	Max. total extension cable length 1200m 900m 400m 160m 100m								
Connecting cable	Cables applicable to CC-Link Ver. 1.10 (shielded 3-core twisted pair cables) * Cables applicable to Ver. 1.10 supplied by different manufacturers can be used simultaneously.								

Specifications for Measuring Display Unit (2)

Table 2-6

Applicable models
NF400-SEP with MDU, NF400-HEP with MDU, NF630-SEP with MDU,
NF630-HEP with MDU, NF800-SEP with MDU, NF800-HEP with MDU

Item		Specification						
Data updating cycle 250 ms (harmonic current: 2 s)								
		Current, voltage and Electric power: ±2.5% (to rating input)						
Tolerand	200	Power factor: ±5%						
Tolcrand		Electric energy: ±2.5% (voltage 100 V to 440 V, range from 5 to 100% of current rating, power factor 1)						
		Fault current: ±15%						
Demand	time limit setting range	0 to 15 min (1-min steps)						
	Voltage circuit (1φ2W, 3φ3W)							
	Voltage circuit (1 ø3W)	440 V (only 4-pole breakers applicable to 3φ4W)						
Rated	Voltage circuit (3¢4W)							
input Current circuit		Load current/harmonic current: 100 A/225 A/400 A/600 A/800 A (Automatic discrimination. Determined based on A frame of circuit breaker.						
Current circuit		100 A when rated current of 225 A frame is 100 A or less) Leakage current: 500 mA						
	Frequency	50 Hz/60 Hz (automatic discrimination of frequency)						
	(1) Wh (integrated value)	Stored in EEPROM (nonvolatile memory)						
Power failure	(2) Max. value	* Wh is stored upon occurrence of power failure and every 2 hours						
compensation	(3) Setting data	The max. value is stored every 2 hours. The setting data is stored when it is set.						
	Clock	No power failure compensation						
Clock ac	curacy	Approx. 1 min/month						
External	dimensions (unit: mm)	WxDxH: 90x75x30						
Control p	oower supply	Compatible with 100 to 240 V AC/DC, 50/60 Hz (allowable voltage range: 85% to 110%), 12 VA (*1)						
Other fu	actions	Function for switching phases to be measured to 1-3 and 3-1						
Other lui	ICTIONS	ECA/PAL alarm, self-retention/automatic reset setting function						

Note: *1 When the MDU unit control power is turned on, a rush current transitionally flows (maximum rush current: 2A, energizing time: 1ms (240V AC)

Network Specifications for Measuring Display Unit

[Electric energy pulse output]

[CC-Link communication]

Table 2-7

Item	Specification
Output	Solid state relay (SSR), no voltage a
elements	contact (Ca and Cb terminals: no polarity)
Contact capacity	Compatible with 24V DC and 100 to 200 V AC, 20 mA
Output pulse unit	1, 10, 100, 1000 and 10000 kWh/pulse (settable)
Output pulse width	0.35 to 0.45 s
Max. wiring length	100m

Table 2-8

Item	Specification								
Communication speed	10M/5M/2.5M/625k/156kbps								
Communication method	Broadcast polling method								
Synchronization method	Frame synchronization method								
Encoding method	NRZI								
Transmission format	Conforming to HDLC								
Number of occupied stations	Remote device occupying 1 station								
Number of connected units	Meet the following conditions. Meet the following conditions. When a system consists only of Measuring Display Units, up to 42 units can be connected. Condition 1 for number of connected units [(1×a) + (2×b) + (3×c) + (4×d) ≤ 64 a: Number of units occupying 1 station b: Number of units occupying 2 stations c: Number of units occupying 3 stations d: Number of units occupying 4 stations Condition 2 for number of connected units [(16×A) + (54×B) + (88×C) ≤ 2304 A: Number of units at 1 remote I/O station ≤ 64 B: Number of units at remote device station ≤ 42								
	C: Number of units at local station ≦ 26								
Station number	Setting in range from 1 to 64 (Set the station number without fail.)								
CC-Link version	CC-Link Ver. 1.10								
Max. total extension	Master station Station or remote device station device station Cables applicable to CC-Link Ver. 1.10 (with use of 110-ohm terminal resistance)								
cable length and									
cable length between	Communication speed 156kbps 625kbps 2.5Mbps 5Mbps 10Mbps								
stations	Cable length between stations 0.2 m or more								
	Max. total extension cable length 1200m 900m 400m 160m 100m								
	When the Measuring Display Unit is installed on the panel, the terminal block on the panel mounting plate and the terminal block on the Measuring Display Unit are connected with a CC-Link cable having a one-way length of 15 cm and an entire length of 30 cm. When connecting the unit in consideration of the following three points. (1) The one-way length of the CC-Link cable, 15 cm, is included in the distance between stations. (2) The entire length of the CC-Link cable, 30 cm, is included in the maximum transmission distance (total extension distance).								
Connecting cable	Cables applicable to CC-Link Ver. 1.10 (shielded 3-core twisted pair cables) * Cables applicable to Ver. 1.10 supplied by different manufacturers can be used simultaneously.								
Make: Fee access to 6- march to a	visit the website of CC-Link Partner Association (HYPERLINK "http://www.cc-Link.org/")								

Cautions when Using Measuring Display Unit Breakers (common instructions) Measuring accuracy

(1) The accuracy of measurement of current or voltage is indicated as the percentage of error to the rated current or voltage for measurement by the Measuring Display Unit.

The measurement rated current is the maximum rated current of each ampere frame. For W & WS Series Measuring Display Unit Breakers, the accuracy is the max. rated current $\times \pm 2.5\%$. For WS-V Series Measuring Display Unit Breakers, the accuracy is the max. rated current $\times \pm 1\%$.

(For example, when the rated current of NF630-SEP with Measuring Display Unit is 350 A, the measurement rated current is 630 A, and the current accuracy is 630 A \times ±2.5% = ±15 A.)

- * The measurement rated voltage is 440 V. (Common to all A frames)
 When the current is less than 1.0% of the measurement rated current in the case of WS-V Series Measuring Display Unit
 Breakers or less than 2.0% of the measurement rated current in the case of W & WS Series Measuring Display Unit
 Breakers or when the voltage is less than 5.0% of the measurement rated voltage in the case of WS-V Series Measuring
 Display Unit Breakers or less than 2.0% of the measurement rated current in the case of W & WS Series Measuring
 Display Unit Breakers, the current or voltage is cut off, and zero is displayed.
- (2) When the current is cut off, the current is displayed as 0 A. However, if the current is 0.4% or more of the measurement rated current, the electric energy is measured.
- (3) The accuracy of power factor is the percentage to electrical angle of 90°. A power factor of 50% or less is displayed as a reference value.
- (4) The accuracy of electric energy is ±2.0% of the true value in the case of WS-V Series Measuring Display Unit Breakers and ±2.5% of the true value in the case of W & WS Series Measuring Display Unit Breakers in the range of measurement rated voltage (100 V to 440 V) × current (measurement rated current of 5 to 100%).

How to use Measuring Display Unit Breaker on single-phase 2-wire circuity

(1) Connect the breaker as shown in the right figure.

The phase 1 on the load side is charged. Insulate it.

As measurement data, use the current of the phases 2 and 3 and the voltage between the phases 2 and 3.

Although the current of the phase 1 and the voltage between the phases 1 and 2 and the phases 3 and 1 are measured, ignore the measurements. The Measuring Display Unit is designed for 3-phase 3-wire and single-phase and 3-wire circuits.

On W & WS Series Measuring Display Unit Breakers, the average values of load current and line voltage are calculated from the values of the phases 1, 2 and 3 (between the phases). Ignore these measurement values.

Also when the breaker is used on a single-phase 3-wire circuit, ignore these values. When using any WS-V Series Measuring Display Unit Breaker, set the phase and wire type.

Connection on single-phase 2-wire circuit

Phase sequence of Measuring Display Unit Breaker

The phase sequence of Measuring Display Unit Breaker can be set by using the phase switching function as shown below.

When the breaker is installed vertically with the power supply side upward (see the right figure), the phase sequence is set as stated below. No phase switching: 1, 2, 3 and N from the left (default)

With phase switching: 3, 2, 1, and N from the left

Set the phase sequence in accordance with the installation and wiring methods.

- Notes (1) The phase N is provided only on 4-pole circuit breakers.
 - (2) Note that the position of the phase N is unchanged regardless of the phase switching setting.

Reverse connection of Measuring Display Unit Breaker

The Measuring Display Unit Breakers cannot be connected with the power supply and load sides set reversely.

Installation of Measuring Display Unit Breaker in close contact

The Measuring Display Unit Breakers must not be installed in close contact.

- (1) In the case of 400, 630 or 800A frame, install the breaker body securing a wiring space of 30 mm or more on the right side of the breaker to connect the connecting cables and fitting the connecting cable connectors.
- (2) In the case of WS-V Series Measuring display Unit Breaker, install the breaker body securing a wiring space of 40 mm or more on the right side of the breaker to connect the connecting cables.

Cautions when using Measuring Display Unit Breaker (For Measuring Display Unit) Transmission method

- (1) One of No transmission, With pulse output and With CC-Link communication should be specified.
- (2) W & WS Series Measuring Display Unit Breaker with CC-Link communication cannot be manufactured for installing the Measuring Display Unit on the breaker body.
- (3) When With transmission is selected, data which can be transmitted depends on the function of the Measuring Display Unit Breaker body. The transmission options cannot be installed or changed later. Specify the options when issuing the initial order.
- (4) For the maximum number of connected units and transmission distance for each transmission type, see the following tables. <WS-V Measuring Display Unit Breakers>

Tables 2-4 and 2-5

< W & WS Measuring Display Unit Breakers>

Tables 2-7 and 2-8

Installation of Measuring Display Unit

- (1) When the installation of Measuring Display Unit on panel has been specified, the breaker will come with the panel mounting parts, mounting screws and 2-m connecting cable (standard). (The 0.5-, 3-, 5- or 10-m connecting cable can be specified.)
- (2) If the installation position of the Measuring Display Unit is changed from the panel to the body or vice versa, the Measuring Display Unit and the breaker body must be returned to the manufacturer for modification.

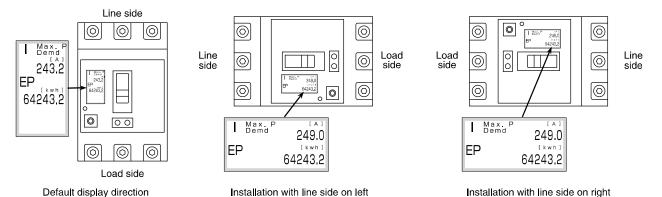
Measuring Display Unit Breaker with CC-Link communication (W & WS Series Measuring Display Unit Breakers)

(1) If you intend to use the circuit breaker with its pane out on the face board, specify the installation on panel.

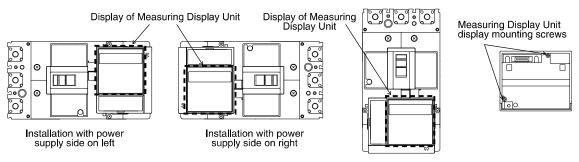
Change of display direction for breaker mounting

<WS-V Series Measuring Display Unit Breaker>

- (1) When installing the Measuring Display Unit on the breaker body installed in the horizontal direction, the direction of the display can be changed according to the installation direction.
- (2) The display direction is set on the display unit.



- < W & WS Series Measuring Display Unit Breaker>
 (1) When installing the Measuring Display Unit on the breaker body installed in the horizontal direction, the direction of the display of Measuring Display Unit can be changed for ease in reading according to the installation direction.
- (2) Remove the screws on the rear panel of the Measuring Display Unit, and change the direction according to the installation direction.



Default direction of Measuring Display Unit display

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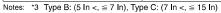
Model					ВН		вн-Р			
	Fra	ıme (A)		70	100	100	70	100	100	
Image							eace of the control o			
Number of po	oles			1	2	3	1	2	3	
Rated current at ambient te	t (A) mperatu	re 40°C		70	70, 100	70, 100	70	70, 100	70, 100	
Data da alta da	- 00		AC		230/400			230/400		
Rated voltage	e (v)		DC		125			125		
		IEC 60000 1	AC230/400V	3		_	3		_	
Rated short capacity (kA)	t cirsuit	uit IEC 60898-1	AC400V	-	;	3	- 3			
		-	DC125V		1		1			
Instantaneou	s tripping	9		Type C (5 In <, ≦10 In)						
		ca	а	25	50	75	25	50	75	
Dimensions	<u>а</u>	a Ca	b		95		74			
(mm)		bd	С		57.5		60.5			
			ca		77.5		79			
Mass (kg)				0.16	0.16 0.32 0.48			0.26	0.38	
				Clamp terminal		Plug-in (line) Clamp (load)				
Connection (*1)										
Automatic tripping device						Thermal,	magnetic	magnetic		
Terminal cover					•			-		
Optional Mounting plate					•			_		
accessories	Termina	al base			-			•		
	Lock co	ver			•			•		
Approved by				-	LR, GL, NK	_	-	- LR, BV, AB, GL, NK -		

Notes: *1 If reguired solderless terminal can be supplied. (BH: Line and Load side, BH-P: Load side only)

Model BH-D6						BH-D10				BH-DN			
Image													
Number o	of poles [P]			1	2	3	4(3+N)*1	2(1+N)*1	1	2	3	4(3+N)*1	2 (1+N) ^{*1}
Instantan	eous trippin	g			Type B	, C, D*2		Type B, C*2		Туре В,	C, D*2		Type C ^{*2}
Rated ins	ulation volta	age U_{i} [\	/]			440				44	0		230
	rrent I_n [A] nt temperat	ure 30°C	:			3, 4, 6, 1 32, 40, 50		0.5, 1, 1.6, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40		5, 1, 1.6, 2, 3 6, 20, 25, 3			6, 10, 16, 20
Rated short-		AC	230V	6		-		6	10		-		4.5
circuit	IEC 60898-1 (Icn)		230/400V	6		_		_	10		_		-
capacity [kA]	(101.)		400V	-		6		_	_		10		-
Number o	of	Without	current	8,000					10,000				20,000
operating	cycles	With cu	rrent	8,000				10,000				20,000	
Dimensio [mm]	ns	ca	а	18	36	54	72	36	18	36	54	72	18
[]		<u> </u>	b	87					87	7		88	
			С	44					44				44
		ئـــــ	ca	70					70)		70	
Type of o	vercurrent r	elease		Thermal-magnetic			Thermal-magnetic				Thermal-magnetic		
Mounting					IE	C35mm	rail		IEC35mm rail				IEC35mm rail
Applicable	e wire size				1	to 25mr	n ²		1 to 25mm ²				1 to 10mm ²
Weight [Weight [kg]			0.15	0.3	0.45	0.55	0.25	0.15	0.3	0.45	0.55	0.12
Mass Alarm switch (AL)						•)		-				
optional Auxiliary switch (AX)					•				•)		-	
accessories Shunt trip (SHT)						•			•				-
Terminal	Terminal connection				Solderless				Solderless				Solderless
Based on	Based on standard			IEC 60898-1				IEC 60898-1				IEC 60898-1	
CE marki	ng			Е	N 60898	-1 : Self-	declaratio	n	EN	60898-1 : S	elf-declara	tion	EN 60898-1 : Self-declaration
CCC					(B 10963	3.1		GB 10963.1			GB 10963.1	
Notes: *1	lotes: *1 N pole is a switched neutral pole (without overcurrent release device).												

*1 N pole is a switched neutral pole (without overcurrent release device).
*2 Type B (3 In <, \le 5 In), Type C (5 In <, \le 10 In), Type D (10 In <, \le 20 In)

	Mode	al .		BH-D10 (For DC)		
	lmag	Э				
Number of	poles [P]			1	2	
Instantane	ous trippin	g		Type I	3, C*3	
Rated insu	lation volta	$ge\ U_i$ [V]	25	60	
Rated curr at ambien	ent <i>I</i> n [A] t temperati	ure 30°C		0.5, 1, 1.6, 2, 3 16, 20, 25, 3		
Rated short-	IEC 60898-2	DC	125V	10	-	
circuit capacity [kA]	(Icn)		250V	-	10	
Number of		Without current		8,0	00	
operating of		With cu	rent	4,0	00	
Dimension	-	ca_	а	18	36	
[mm] 	_a	-C-	b	87		
		[[С	44	4	
Į L	<u> </u>	ك	ca	70	0	
Type of ov	ercurrent re	elease		Thermal-magnetic		
Mounting				IEC35mm rail		
Applicable	wire size			1 to 25mm ²		
Weight [ko	g]			0.15	0.3	
Mass	Alarm swit	ch (AL))	
optiona l	Auxiliary s	witch (A)	())	
Shunt trip (SHT))	
Terminal c	onnection			Solderless		
Based on s	standard			IEC 60	898-2	
CE markin	g			EN 60898-2 : Self-declaration		
ccc				GB 10	963.2	
Notes: *3						





			RC	СВ		
Мо	del		BV-D			
lma	age					
Number of poles [I	-]		2(1+N)*1	4(3+N)*1 *3		
Rated current [A] at ambient tempera	ature 30°C		25, 4	0, 63		
Rated voltage [VA0	[230	230/400		
Rated current sens	itivity I ∆n [ı	mA]	30,	300		
Max. operating time	e at 5l∆n [s]	0.0)4		
Pulsating current s	ensitivity		Туре	AC		
Rated conditional sho	rt-circuit cu	rent [kA]	6	;		
Dimensions [mm] a	ca	а	36	72		
	<u> </u>	b	85			
	· [[С	4	4		
		ca	70			
Mass [kg]			0.2	0.35		
Rated making and bre	aking capaci	ty Im [A]	500(In 25,40A	500(In 25,40A), 630(In63A)		
Rated conditional short	-circuit currer	t Inc [kA]	6			
Rated residual making and	breaking capa	city I∆m [A]	500(In 25,40A), 630(In63A)			
Rated conditional residual s	hort-circuit curr	ent I∆c [kA]	6			
Number of	Without cu	ırrent	8,000			
operating cycles	perating cycles With curren		8,000			
Type of overcurren	t release		_	-		
Mounting			IEC35mm rail			
Applicable wire size	Э		1 to 2	5mm ²		
Weight [kg]			0.2	0.35		
Terminal connectio	n		Solderless			
Based on standard			IEC 61008-2-2			
CE marking			EN 61008-2-2 : Self-declaration			
ccc			GB 16916.22			

			RCBO			
Mo	odel		BV-DN			
lm	age		24 EC			
Number of poles	[P]		2(1+N) ^{*1}			
Rated current [A] at ambient temper	ature 30°C		6, 10, 16, 20, 25, 32, 40			
Rated voltage [VA	C]		230			
Rated current sens	sitivity I ∆n [ı	mA]	30, 100, 300			
Max. operating tim	ne at 5l∆n [s	[]	0.04			
Pulsating current s	sensitivity		Type AC			
Breaking capacity [l	kA] sym. (IE	C 61009)	4.5			
Tripping character	istics		Type C ^{*2}			
Dimensions [mm] a	ca	а	36			
		b	88			
	ь	С	44			
	ئے ا	ca	70			
Mass [kg]			0.19			
Automatic tripping device			Thermal, magnetic			
	Without cu	ırrent	20,000			
Number of operating cycles	With curre	nt	20,000 (In 6,10,16,20A) 15,000 (In 25A) 10,000 (In 32,40A)			
Type of overcurrer	nt release		Thermal-magnetic			
Mounting			IEC35mm rail			
Applicable wire size			1 to 16mm ²			
Weight [kg]			0.19			
Terminal connection			Solderless			
Based on standard	d		IEC 61009-2-2			
CE marking			EN 61009-2-2 : Self-declaration			
CCC			GB 16917.22			

Notes: *1 N pole is a switched neutral pole (without overcurrent release device).

*2 Type C: (5 In <, ≦ 10 In)

*3 For use to three phase 4-wire type. When using, it be sure to connect the neutral wire to the neutral phase. Not available for use to three phase 3-wire type.

				Isolatin	ıg switch			
Model				K	B-D			
Image								
Number of poles [P]]		1	2	3	4(3+N)		
Utilization category				AC22	A class			
Rated current [A] at ambient temperati	ure 30°C			32, 6	63, 80			
Rated voltage [VAC]			230		400			
Short time withstand	current [/	A]	20 × In, 1s					
Short-circuit making capacity [A]			20 × In					
Dimensions [mm] a	ca	а	18	36	54	72		
[IIIIII] Fa	,	b		87				
	[С	44					
	ן ניי	ca		70				
Mass [kg]			0.09	0.18	0.27	0.36		
number of a	Vithout cu	rrent	20,000					
	Vith curre	nt	3,000					
Mounting		IEC35mm rail						
Applicable wire size			1 to 25mm ²					
Weight [kg]		0.1	0.2	0.3	0.4			
Terminal connection		Solderless						
Based on standard			IEC 60947-3					
CE marking				EN 60947-3 :	Se lf -declaration			
ccc		GB 14048.3						

Accessories for Miniature Circuit Breakers

Functions of Accessories

Internal accessory	Function		
AL Alarm switch	Electrically indicates the trip status of the circuit breaker.		
AX Auxiliary switch	Electrically indicates the On/Off status of the circuit breaker.		
SHT Shunt trip	Electrically trips the circuit breaker from a remote location. Permissible working voltages are 70 to 110% of the AC rated voltage or 70 to 125% of the DC rated voltage.		

Equipping of Accessories

Accessory	BH-D6	BH-D10	BH, BH-P, BH-DN, BV-DN, KB-D, BV-D
AL	0	0	
AX	0	0	-
SHT	0	0	

O: Accessory equipped

Specifications

Туре		AL	AX		AL+AX	AX+AX
		AL-05DLS AX-05DLS		Al	_AX-05DLS	AX2-05DLS
Contact	Configuration	1C	1C	2C		2C
Contact	Contact capacity	400VAC, 2A	230VAC, 5A 120	VDC, 0 . 4A	48VDC, 1.5A	24VDC, 4A
Function	Line	-	-		AX	AX
Function	Load	AL	AX		AL	AX
Conn	ection	Clamp terminal				
Compliance standard		IEC 60947-5-1				

Time	SHT				
Туре	SHTA400-05DLS	SHTD048-05DLS			
Cut-off switch	Equi	uipped			
Voltage	110-400VAC	24-48VDC			
Input power requirement	110VAC 60VA 230VAC 250VA 400VAC 750VA	24VDC 75VA 48VDC 300VA			
Operating time [ms]	<20				
Connection	Solderless terminal				
Compliance standard	IEC 60947-2				

^{*} Secure a sufficient input power supply so that the voltage will not drop below the permissible lower working voltage (70% of the lowest rated voltage).

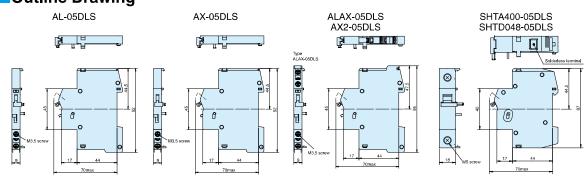
* The operating time denotes the time from when the rated voltage is applied to SHT until the time the main contact of the breaker starts to open.

^{-:} Accessory not equipped

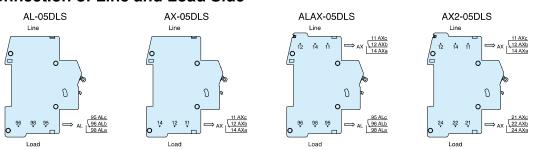
Combinations of Accessories

	AL			
	AX			
	2AX			
	ALAX			
Accessory connection combinations	SHT			
	AX+SHT			
	AL+SHT			
	2AX+SHT			
	ALAX+SHT			
Breaker AL O AX O AX+AX SHT				

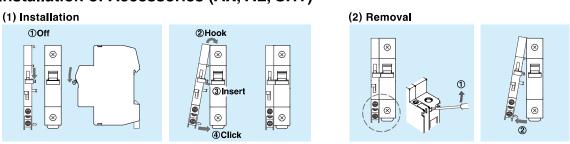
Outline Drawing



■Connection of Line and Load Side



■Installation of Accessories (AX, AL, SHT)



Detailed 2 Specifications 7 Circuit Protectors

Frame (A)						30		
Model			CP30-BA				CP-S	
Image								
Number of poles			1	2	3	1	2	3
Rated insulation vo	Itage Ui (V)			250			250	
	stand voltage Uimp (kV)			2.5			2.5	
Rated current (A)			0.1 0.25	0.3 0.5 1 2 3 5 7 10	15 20 30	0.05 0.1 0.25 0.3 0	5 0.75 1 2 2.5 3 5 7	7.5 10 15 20 25 30
		Rated voltage (V)		250		250	-	-
	UL 1077	DC (V)	65	125	_	65	-	-
	CSA C22.2 No.235 (*11)	AC		2.5kA at 250V		1.5kA at 250V	-	-
		DC	2.5kA at 65V	2.5kA at 125V	_	1kA at 65V	-	
Rated short-circuit		Rated insulation voltage Ui (V)		250			250	
capacity (kA)	IEC 60934 EN 60934 (Icn)	AC		250	Г		1.5kA at 230V 2.5kA at 120V	
	(1011)	DC	2.5kA at 60V	2.5kA at 120V	-	1kA at 60V	1kA at 120V (1kA at 60V) (*7)	1kA at 60V
	EN 60947-2	Rated insulation voltage Ui (V)		250				
	IEC 60947-2 (lcu/lcs)	AC DC	2.5/2.5kA at 60V	2.5/2.5kA at 230V 2.5/2.5kA at 120V	_			
AC-DC common us	1	l DC		2.5/2.5KA at 120V	<u> </u>			
Reverse connection			,	•	('/	_		
Rated short time cu (for switch only type			-			AC250V 50/60Hz 1500A 0.02s AC125V 50/60Hz 2500A 0.02s DC65V 1000A 0.02s DC125V 1000A 0.02s		
Rated ambient tem	perature (°C)		40 (T40)			25 (T25)		
Operating characte	ristics		Instantaneous type (I); Medium type (M), (MD); Slow type (S), (SD); Fast type (F) (*2)			Instantaneous type (I); Medium type (M), (MD); Slow type (S), (SD); Fast type (F) (FD)		
Mode of tripping			Instantaneous type (I): magnetic only [MO] Medium type (M), (MD) Slow type (S), (SD) : hydraulic-magnetic [HM] Fast type (F)		Instantaned Medium type (M Slow type (S), (S Fast type (F), (F	SD) : hydrauli	c only [MO]	
Method of operation	n				S-type (IE	EC 60934)		
Trip-free behaviour					Trip-free (EC 60934)		
Mass (kg)			0.08 0.16 0.23			0.06 0.12 0.18		
	Retractable small terminal	cover (TC-S)		nt, terminal covers clos			_	
	Inertial delay (ID)		● (Me	edium, Slow type: A0	C only)	● (Mediu	ım, Slow, Fast type:	AC only)
	Alarm switch (AL)			• (1c)			• (1c) (*7)	
	Auxiliary switch (AX) Shunt trip (SHT)			● (1c) ● (for relay type) (*3	1)	● (for na	• (1c) rallel and relay type	AC only)
Accessories	Large terminal cover (TC-I)		● (*6)	7	• (Ioi pu		, no only)
	Flushpanel mounting brackets (FP)			•			_	
	Back facing wiring termnal			• (*4), (*6)			_	
	Lock cover (LC)			_		•	•	_
Accessory terminal cover (TC)		• (*6)			=			
Connection Main body			20A or less : Screw terminal M4 30A : Screw termnal M5				ub terminal 6.3mm erminal M4 (series ty	
	Alarm switch / Auxiliary switch			Screw terminal M3.5			ub terminal 2.8mm	(#110)
Main body mounting method			Srface, IEC rail mounting Flush panel mounting (option)				Panel mounting	
International standard			UL(cURus), CCC (*5)			UL(UR) (*9), (*10)		-
CE Marking			EN 60934 : TUV approval EN 60947-2 : Self-declaration (*5)		EN 60934 : TUV a	medi pproval (*10) The	ating characteris is um type (M) only, rated current, 0.3A, A and 7A are not ed.	

Notes:

- * *1 The 3-pole products are for AC use only.

 2 Contact us for operating characteristics other than those mentioned above.

 3 In poles equipped with a shunt tripping mechanism, the overcurrent tripping element is not operative (switched shunt tripping).

 4 For back-face wiring terminals, specify if it will be used with 30A, or 20A or less.

 5 UL(cURus), CCC, and CE Marking are displayed on standard products.

 6 It is recognition of UL(cURus), CCC, and TUV.

 7 In case of DC use, only DC65V is available.

 8 Specify if for DC use when ordering.

 9 Specify when ordering. (In case of CP-S UL, type name is CP-SU.)

 10 Connection is male tub terminal only.

 11 CP30-BA only.

- Remarks: 1. Products for non-standard conditions are special order. (Low temperature, 1st and 2nd-degree moisture fungal treatment, corrosion-resistant)

 2. Although a buzzing sound may occur when an instantaneous type becomes 80% or more of the rated current for AC use, performance is not effected. Please take this point into consideration when selecting units for use in quiet environments.

 3. Please use in environments free of high temperatures, humidity, dust, corrosive gas, vibration, and impact.

 Also, do not use it in a circuit with inrush current or harmonics. Problems may result.

Internal circuits and examples of application

			Ope	erating	chara		tics		
Internal circuit	Available model	Instantaneous type						ed type	shunt
	model	ı	F	FD	М	MD	s	SD	trip
Serial type	CP30-BA	•	•	-	•	•	•	•	-
L×w_	CP-S	•	•	•	•	•	•	•	_
Serial type with auxiliary switch	CP30-BA	•	•	-	•	•	•	•	-
	CP-S	•	•	•	•	•	•	•	-
Serial type with alarm switch	CP30-BA	•	•	-	•	•	•	•	_
	CP-S	•	•	•	•	•	•	•	-
Relay type shunt trip (with SHT) SHT	CP30-BA	_	-	-	-	-	_	-	•
	CP-S	_	-	-	-	-	-	-	•
Parallel type shunt trip (with SHT)	CP-S	-	I	_	ı	I	ı	1	•
Relay type current trip	CP-S	•	•	•	•	•	•	•	-
Parallel type current trip	CP-S	•	•	•	•	•	•	•	-
Switch type	CP-S	-	-	_	1	-	-	-	-

Internal accessories

Auxiliary switch (AX)

Operates in conjunction with the main circuit operating mechanism to electrically retrieve the ON/OFF status of protector.

Alarm switch (AL)

Operates in conjunction with the main circuit operating mechanism to electrically retrieve the tripping status of protector.

Remarks (1) When the handle of CP30-BA is constrained in the ON status, it does not issue the alarm signal even if it is tripped.

(2) The alarm switch will be reset when the body is reset or turned on.

Shunt trip (SHT)

A parallel relay type protector, which can break the circuit instantaneously when receiving an external signal

Inertial delay device

The inertial delay device is designed to avoid unnecessary operation caused by inrush current of transformer or lamp load. The device can withstand unrepeated one pulse of crest value 20 times higher than the rated current (pulse time = 8 ms). It can be added to circuits having high, medium and low speed operating characteristics. (It cannot be added to instantaneous or DC types.)

Ratings of alarm switches (AL) and auxiliary switches (AX)

(1) For CP30-BA

Classification					AC			DC	
Ratings of For May (250) (1) (0.5) 50 1 0.5	Cla	ssification		Voltage	Curre	Current (A)		Curre	nt (A)
				(V)	Resistive load	Inductive load	(V)	Resistive load	Inductive load
	Ratings of	For	Mov	(250)	(1)	(0.5)	50	1	0.5
items other general 125 3 1 30 2 1	items other	general	iviax.	125	3	1	30	2	1
than those load Min. 0.1A/15VAC 0.1A/15VDC	than those	load	Min.	().1A/15VA()	().1A/15VD(0
shaded in For minute Max. 125 0.5 - 30 0.5 -		For minute	Max.	125	0.5	_	30	0.5	_
Table 1 load Min. 1mA/24VDC, 2mA/12VDC, 5mA/6VDC	Table 1	load	Min.	1mA/24VDC, 2mA/12VDC, 5mA/6VDC					
Batings For Max. (250) (1) (0.5) (50) (1) (0.5)	Detinos	For	May	(250)	(1)	(0.5)	(50)	(1)	(0.5)
Ratings of items of items Max. 125 3 (1) 30 (2), 0.5 (1)		general	iviax.	125	3	(1)	30	(2), 0.5	(1)
shaded in load Min. 0.1A/15VAC 0.1A/15VDC		load	Min.	().1A/15VA(0	C).1A/15VD(
Table 1 For minute Max. 125 (0.5), 0.1 - 30 (0.5), 0.1 -		For minute	Max.	125	(0.5), 0.1	-	30	(0.5), 0.1	-
load Min. 1mA/24VDC, 2mA/12VDC, 5mA/6VDC	load N		Min.	1mA/24VDC, 2mA/12VDC, 5mA/6VDC					

Remarks: 1. The switches having the ratings in parentheses are manufactured at the customer's request. (Specify the voltage). Such switches do not conform to UL (cURus), CCC or CE Marking requirements.

(2) For CP-S

	AC		DC			
Voltage (V)	Current (A)		Voltage (V)	Current (A)		
voltage (v)	Resistive load	Inductive load	voltage (v)	Resistive load	Inductive load	
250	3	2	250	0.2	0.2	
125	5	3	125	0.4	0.4	
_	_	_	30	4	3	
_	_	_	14	5	4	

Remarks: 1. When using these switches to a circuit with a minute load (125 V AC, 0.1 A or 30 V DC, 0.1 A or less), designate the application as minute load.

Ratings of shunt trip (SHT) coils

(1) For CP30-BA

Ratings		
Rated	operating voltage (V)	Time rating
100-200	Compatible with 100 to 200 V AC and 100 V DC	10 sec or less
24-48	Compatible with 24 to 48 V DC	TO Sec or less
Coil resistance, res	stance and impedance	(at25°C)
Voltage (V)	Impedance for AC (Ω)	DC resistance for DC (Ω)
24-48	1	160
100-200	2400	2100

Remarks: 1. The allowable range is 70 to 110% of the rated voltage for AC and 75 to 120% of the rated voltage for DC.

2. The time rating is 10 seconds or less. Configure the circuit on which voltage will not be applied for more than 10 seconds.

(2) For CP-S

Ratings

Rated	operating voltage (V)	Time rating
100	Compatible with 100 to 120 V AC (50/60Hz)	
200	Compatible with 200 to 240 V AC (50/60Hz)	10 sec or less
24, 48, 100	DC24, DC48, DC100	

Coil resistance, resi	stance and impedance	(at25°C)
Voltage (V)	Impedance for AC (Ω)	DC resistance for DC (Ω)
24	_	110
48	_	110
100	1100	400
200	1100	_

Remarks: 1. The allowable range is 70 to 110% of the rated voltage for AC and 75 to 120%

of the rated voltage for DC.

2. The time rating is 10 seconds or less. Configure the circuit on which voltage will not be applied for more than 10 seconds.

Operation of auxiliary switch and alarm switch

	Protector status	Switch status CP30-BA, CP-S					
AX	Off or trip	AXa (open) / ALa (closed) AXb (open) / ALb (closed)					
AL	Off or ON	AXc /ALc					
AX	ON	AXa (closed) / ALa (open) AXb (closed) / ALb (open)					
AL	Trip	AXC /ALC					

Table 1 List of numbers of internal accessories which can be fitted

Table 1 List of numbers of internal accessories which can be fitted ●AL ○AX ●AL or AX ■SHT												X ■SHT								
Typo pamo	ma AX		X	AX More than one			AL		AL+AX		SHT		AL+SHT or AX+SHT		AL+AX+SHT					
Type name	1P	2P	3P	1P	2P	3P	3P	1P	2P	3P	1P	2P	3P	1P	2P	3P	1P	2P	3P	3P
СР30-ВА	0	0		-	00	0	000	•			-	0								
CP-S	0	0		-			000	•		lacktriangle	_	•					-	0	-	

Remark: 1. All accessories should be fitted on the internal accessory terminal block

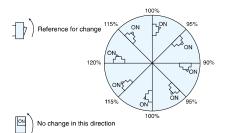
Installation and connection

Installation method	With screws	On IEC rails	With embedded fittings	On panel
Appearance			Circuit protectors with AL, AX and/or SHT cannot be installed by this method.	
СР30-ВА	•	•	•	-
CP-S	-	-	-	•

Installation posture

The operating characteristics of electromagnetic (instantaneous) type circuit protectors are not affected by the installation posture. However, when installing a fluid electromagnetic (high, medium or low speed) type circuit protector, pay attention to the installation angle because the operating current value is changed under the influence of the gravity applied to the iron core in the oil dash pot.

Generally, it is recommended to use the circuit protectors in the vertical direction.



■Electric wires which can be connected and applicable screw terminals

СР30-ВА

Classification	Shape of term	inal	Electric wire size used (mm²)	Applicable screw terminals	Tightening torque (N • m)	
	Threaded terminal	20 A or less M4	0.25-1.65	R1.25-4 R1.25-5	M4 1-1.4	
Dodu	(standard specification)	20 A or less 1014	1.04-2.63	R2-4 R2-5	WI4 I-1.4	
Body	Cross recessed	30A M5	2.63-6.64	R5.5-4 R5.5-5	M5 1.8-2.2	
	or slotted	SUA IVIS	6.64-10.52	*8-5NS (made by JST)	IVIS 1.8-2.2	
Alarm and auxiliary	Wire retaining screw (square	M3.5	0.25-1.65	R1.25-3.5	0.7.0.0	
switch terminals	washer) Cross recessed or slotted	IVI3.5	1.04-2.63	R2-3.5	0.7-0.9	

 $^{^{\}star}\text{Use}$ the screw terminal 8-5NS made by JST.

Low Voltage Air Circuit Breakers (AE-SW Series)

Frame (A)	630	1000	1250	1600	2000	2000	2500	3200	4000		
Model	AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SWA	AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA		
Image		AE1600-SW (Drawout type) • See the catalog of Low Voltage Air Circuit Breakers, Y-0622, for the details.									
Rated current (CT rating) In (A)	630 (*1)	1000	1250	1600	2000	2000 (*1)	2500	3200	4000		
Rated current setting Ir (A) (adjustable (Rated ambient temperature 40°C) (For marine use 45°C)	315-346.5-378-409.5- 441-472.5-504-535.5- 567-598.5-630 (*1)	500-550-600- 650-700-750- 800-850-900- 950-1000	625-687.5-750- 812.5-875-937.5- 1000-1062.5- 1125-1187.5-1250	800-880-960- 1040-1120-1200- 1280-1360-1440- 1520-1600	1000-1100-1200- 1300-1400-1500- 1600-1700-1800- 1900-2000	1300-1400-1500-	1250-1375-1500- 1625-1750-1875- 2000-2125-2250- 2375-2500	2080-2240-2400-	2000-2200-2400- 2600-2800-3000- 3200-3400-3600- 3800-4000		
Number of poles	\ '/	1 000 1000	11120 1107.0 1200	1020 1000	3, 4 (*2)	1000 2000 (1)	2010 2000	0010 0200	0000 1000		
Rated insulation voltage V		1000									
Current carrying capacity of neutral pole		1000	1250	1600	2000	2000	2500	3200	4000		
夏 黛 IEC 60947-2, EN 60947-2 AC690			65					75			
Elec 60947-2, EN 60947-2 AC690 Elec 60947-2, EN 60947-2 AC690 Elec 60947-2, EN 60947-2 AC690 Elec 60947-2, EN 60947-2 AC690 Elec 60947-2, EN 60947-2 AC690 Elec 9 Elec 9 Elec 9 Elec 9 Elec 9 Elec 9 Elec 60947-2, EN 60947-2 AC690 Elec 9 Elec 9 Elec 9 Elec 60947-2 AC690 Elec 9 Elec 9 Elec 9 Elec 9 Elec 9 Elec 60947-2 Elec 9			65					75			
B S NK, LR, GL, BV, ABS, DNV, CCS AC240-50	OV		65		100%			35			
Rated short-time withstand current (kA symmetrical RMS) 1 secon	d	65 75									
Suitability for isolation	u	Compatible									
Reverse connection		Companie Possible									
Without our	ent		25000		, 000,010	20000					
Number of operating cycles With curre	it	50	000		1500	1500 1000 500					
Utilization category					В						
Pollution degree					3						
EMC environment condition (environment A or					Α	Γ					
Fixed 3-pole prod			410×340×290					75×290			
Outline dimension (mm) type 4-pole prod Height (H) x width (W) x depth (D) Drawout 3-pole prod			410×425×290					05×290	400-400-000		
Height (H) x width (W) x depth (D) Drawout 3-pole prod type 4-pole prod			430×300×368 430×385×368				430×435×368 430×565×368		430×439×368 430×569×368		
		1	430×385×368	42	47	60	61	63	81		
Fixed 3-pole prod type 4-pole prod			51	52	57	72	73	75	99		
Weight (kg) Drawout 3-pole prod			64	65	70	92	93	95	108		
(Without Accessory) type 4-pole prod			78	79	84	113	114	116	136		
Cradle 3-pole prod			26		31		5	36	49		
only 4-pole prod			30		35		3	44	61		
CE Marking					Self-declaration						
CCC recognition (☆ Certified)					章						
Marine approval					(, LR, GL, BV, AE						
Automatic tripping device				Electronic	(effective value	detection)					

- ●When the MCR is provided, the breaking capacity may be changed. See the catalog of Low Voltage Air Circuit Breakers, Y-0622.
- •See the catalog of Low-voltage Air Circuit Breakers, Y-0622, for the details of the accessories.
- Notes: *1 AE630-SW and AE2000-SW having low rating types are available. See the catalog of Low Voltage Air Circuit Breakers, Y-0622, for the details.

 *2 The 4-pole products do not have obtained the marine approval.

 *3 4 (HN) means the neutral poles current capacity is 50% of the rated current, for 4-poles.

 - 4 (FN) means the neutral poles current capacity is 100% of the rated current, for 4poles.

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Features

- Higher reliability by High operating durability (Mechanical)
- Increase of rated short-time withstand current

Combination of the Electronic trip relay (ETR) with MCR (*1) enables increase of the choice coordination range.

• Applicability to increase and decrease of load and improvement of protection coordination

The electronic tripping system enables detailed setting of tripping characteristics. The system uses RMS detection resistant to distorted waves.

 More improved Electronic trip relay (ETR) and transmission functions To flexibly meet various requirements, functions suitable for purposes can be selected effectively. In addition, improved measuring functions are provided, so that the circuit breakers are applicable to CC-Link, PROFIBUS-DP and MODBUS transmission and helpful in establishing various electrical circuit measurement monitoring systems and energy-saving systems in combination with measuring display unit breakers.

Notes: *1 MCR is an abbreviation for marking current release. It has INST characteristic only when the circuit breaker in the OFF state turns ON (closes). The circuit breaker will lose the INST characteristic after closing, and it will have LTD and STD characteristics.

Various connections

Various connections for panel structures are available. (See the following figure.)

Connections

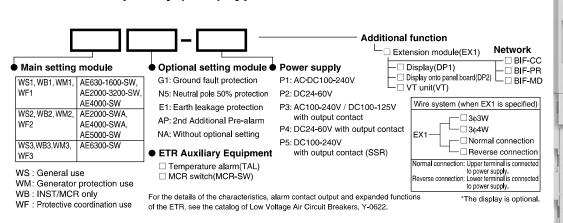
Drawout type light	Connections Model	Horizontal (standard)	Vertical (*1) (VT)	Front (FT)	Vertical terminal adapter (VTA)	Front terminal adapter (FTA)
Drawout type light	type			_		
type kg Pkg Ekg Pkg Fikg		(Standard)	FIX-VT		(FIX-VTA)	(FIX-FTA)
(Standard) (DR-VT) (DR-FT) (DR-VTA) (DR-FT		(Standard)	(DR-VT)	(DR-FT)	(DR-VTA)	(DR-FTA)

AE6300-SW models, vertical terminal only is available.

Low Voltage Air Circuit Breakers (AE-SW Series)

Frame	(A)		4000	5000	6300					
Mode			AE4000-SW	AE5000-SW	AE6300-SW					
Imag (Refere	nce)		AE6300-SW (Drawout type)	●See the catalog of Low Voltage Air Circuit Breakers, Y-0622, for the details.						
Rated current (C7			4000	5000	6300					
Rated current setting (Rated ambient ten (For marine u	npèrátùre	40°C)	2000-2200-2400-2600-2800-3000-3200-3400- 3600-3800-4000	2500-2750-3000-3250-3500-3750-4000-4250- 4500-4750-5000	3150-3465-3780-4095-4410-4725-5040-5355-5670- 5985-6300					
Number o				3, 4 (HN, FN) (*3)						
Rated insulation			1000 2000 (4000) (*4) 2500 (5000) (*4) 3150 (6300) (*4)							
Current carrying capaci	ty of neut	tral pole A	2000 (4000) (*4)							
BEC 60947-2, EN BS BS BS BS BS BS BS BS BS BS BS BS BS	60947-2	AC690V	<u>85</u> 85							
을 통을 JIS C 8201-2-1, Ar	n.1 Ann.2	AC600V AC240-500V		130 (*5)						
THE SE NK, LH, GL, BV, /	- º/ lou	AC240-500V		100%						
Rated short-time withstand current (kA syr	mmatrical RMS)	1 second	100 /8							
Suitability for			Compatible							
Reverse co			Possible							
		Without current	1000 (3P) /5000 (4P)							
Number of operating	cycles	With current (690 V AC)	1000							
Utilization of	ategory			В						
Pollution of				3						
EMC environment condition				Α						
		3-pole product		414×873×290						
Outline dimension (mm)	type	4-pole product		414×1003×290						
Height (H) x width (W) x depth (D)				480×875×368						
		4 pole product	400	480×1005×368	400					
		3-pole product	160	160	160					
)M/=:=b4 ((.=)	type	4-pole product 3-pole product	180 233	180 233	180 240					
Weight (kg) (without Accessory)	Drawout type	4-pole product	233 256	256	263					
(William / Goodsory)			118	118	125					
	only	4-pole product	133	133	140					
CE Mar	,	, pose product	.30	Self-declaration	. 10					
CCC recognition		fied)	Self-declaration							
Marine ap		/	☆ Certified (NK, LR, GL, BV, ABS)							
Automatic tripp		ce		Electronic (effective value detection)						
				•						

■Electronic trip relay (ETR) Type code



Earth Leakage Relays

								In	terchangeable le	eakage relays (*					
March Marc		М	odel		Electrical s	self-hold type	Mechai	nical sel	If-hold type						
Model name of 2CT combined 15		141	odoi				Wiccital		**			type	Mecha		old type
Model Part Color			Hole diameter mm		-ZBA		NV-ZS	SA							
Minimage						_			_						
Second S						_			-						
	Mode				ZT40B		ZT40B								
		((*5)		-		_								
Prison line type					_	ZT80B	_		ZT80B					ZT80B	
Preside				100	_	ZT100B	_		ZT100B	ZT	Г100В			ZT100B	
Preside			Imago				THE PARTY								
Second Part		image				O		0		0					
March Marc			Phase line type)				3ø4W, 3ø3W.							
Second 120 240 3			40.1/	JIS	120 • 240) selectable					-			-	
Second S	Col	Illoi voita	age AC V			-		-						• 440 se l ec	
Max		speed type		-	100 • 200 • 500 selectable	selectable	100 • 200 •	le							
Delay Delay Delay Delay Per Delay Dela	ا	ļ.,,,	Max. opera	ting time (s)	ļ).1		0.1							
	JIS						(200 • 50	00 • 1000	0 selectable)		_			_	
		,,,,,													
Max operating time (s) Max operating time		High		11 0 17	0.1 • 0	J.5 • 1.1	0	0.1 • 0.5	• 1.1		0.50			00.50	
		speed													
Max_	1117110										otoblo	100 • 2		lostoblo	
March Marc	00010	speed					_					+			
		Delay									ciable				
												table			
		speed										лаые			eciable
		type	wax. operating	time (a) at SiAm											
Max. Optimizing time (s) at ZiAn	UL/CE		pe Max. operating time (s) at 2I\(\Delta\n\) (*4)				-		300 • 500 • 1000 selectable		300 • 500 • 1000 selectable		electable		
Earth leakage indication Electric type (LED) Mechanical type (button) Electric type (LED) Mechanical type (button)		",""												rable	
Push button or control power switch off Configuration Co	\vdash				F1	hina (LED)								(h at a e \	
Resetting method Fush button of control power Switch off Switc	-	Ea	rtri leakage indic	auon											
Continuous current capacity A S S S S S S S S S		1			swit	ch off		(conbined with earth leakage			switch off			d with eartl indicator)	
Cose -1 Cose -0.4 Cose -									,	1					
	ಕ	L C0	munuous current	сарасну А	1	1 aaa 4 0 4	 	l .	L oos + 0.4	I	5	2004.01	-	l	L 2004 04
	Built-in conta		Contact capa	city A	120VAC 240VAC	5 2 5 2	240VAC 415VAC 30VDC	5 3 2 4	L/R=0.007 3 2 1 3	COSΦ=1 L/R=0.007 120VAC 5 2 240VAC 5 2 24VDC 5 2		240VAC 480VAC	5 3 1	L/R=0.007 3 2 1	
Rear - Oclamp terminal Oclamp terminal Oclamp terminal Oclamp terminal				Fuent		- As wester at	200VDC	0.2	0.2	•01		-1		Name to	la a l
Standard attachment (Front concection)		Coni	nection		●Clam _i		_				•				
Mass kg Relay 0.3 0.4 0.4 0.4	-C+	Standard attachment (Fro						namp (6			ih rettitili	cai	-	латр тегт	ıııaı
Terminal cover	اح				,	13		0.4	Mountin	,~	0.4			0.4	
Mounting hook for IEC 39mm rall (DIN rall) Fixture	F						 .		'SΔ\			3)	_		(*6)
Max. consumption VA 3 UL1053 UL1053 Recognized component (File No.E196562) Canada CSA standard - - LR103083(Certified No.) LR103							<u> </u>	→ (10-Z	.01)	● (10.	-23A) (C	<i>J</i>	_	(10-23A) (, J)
US UL standard (UR certified) Recognized component (File No.E196562) Canada CSA standard LR103083(Certified No.) Canada CSA standard LR103083(Certified No.) Declaration for conformity IEC 60947-2 AnnexB EN 60947-2 AnnexB EN 60947-2 AnnexB					■ (DI	200)		_		3			1		
EN 60947-2 AnnexB EN 60947-2 AnnexB	ra ping					-		_		UL Recognize	ed compo			nized com	
EN 60947-2 AnnexB EN 60947-2 AnnexB	P P		Canada CSA s	andard		_									
EN 60947-2 AnnexB EN 60947-2 AnnexB	onf										1		Declara	ation for co	nformity
Notes: *1 Interchangeable leakage relays can be easily combined with other relays and our ZCT. However, products Remarks: 1. Relays with rates shown in parentheses are special						_		_		IEC 6094 EN 6094	47-2 Anne 17-2 Anne	exB exB	IEC 60947-2 AnnexB		

- Interchangeable leakage relays can be easily combined with other relays and our ZCT. However, product with 30mA sensitivity (excluding NV-ZHA/ZLA) can only be used in combination with ZT15B, ZT30B and ZT40B.
- ZT40B.
 12 Indicates the UL-standard control voltage. UL, CSA and JIS standards are indicated together. For JIS voltage indications, 100-200V changeover is 120-240V changeover, 200-415V changeover is 240-440V changeover, and 460V and 480V are described together. When ordering, specify "UL/JIS".
 3 Indicates the UL-standard control voltage. UL, CSA and CE standards are indicated together. For CE voltage indications, 120-230V changeover is 120-240V changeover, 230-440V changeover is 240-440V selectable, which are described together. When ordering, specify "UL/CE".
 4 When operating times are 0.3 and 0.45sec, 0.8 and 1.0sec and 1.6sec, the relay operates between 0.15 and 0.45sec, 0.6 and 1.0sec and 1.2 and 2.0sec, respectively.
 5 Can be combined with an interchangeable ZCT equipped with a primary conductor. Refer to the next page for details.
 6 Not UL-certified.

- Relays with rates shown in parentheses are special order.
 The relay complies with CE marking conformity declaration only when used with CE marking type MCCB with a voltage tripping device to interrupt current during ground fault.

Control voltage	Available voltage range	Example of applicable circuit voltage
120V	80-126V	100 • 110V • 120V
240V	160 - 252V	200 • 220 • 240V
415V	320-484V	400 • 415 • 440V

4.NV-ZHA/ZLA

Control voltage	Available voltage range	Example of applicable circuit voltage
120V	80-132V	100 • 110 • 120V
240V	160 - 264V	200 • 220 • 230 • 240V
440V	304-484V	380 • 400 • 415 • 440V
480V	368-528V	460 • 480V

Interchangeable ZCT

Туре		ZT15B	ZT30B	ZT40B	ZT60B	ZT80B	ZT100B				
Aperture diameter (mm)		15	30	40	60	80	100				
Mass (kg)		0.2	0.4	0.6	2.0	2.6	3.3				
Rated short time current			50 (peak value)								
Dimensions (mm)	a	48	68	85	140	160	185				
	b	52	52	52	90	90	90				
	С	70	90	100	150	169	190				
	d	25	50	50	100	100	100				
	е	40	40	40	70	70	70				

ZCT aperture diameter and wire size

	ZCT an artista diamatas (man)	15	30	40	60	80	100	
	ZCT aperture diameter (mm)	Max. 600V rated wire size in mm ² (current in amperes)						
1 <i>∲</i> 2w	Polyvinyl-chloride insulated wire	14 (88)	60 (217)	150 (395)	325 (650)	600 (992)	800 (1185)	
ıφ≥w	Cross-linked polyethylene insulated cable	2 (33)	38 (190)	60 (260)	250 (655)	400 (870)	600 (1140)	
1 <i>∲</i> 3w	Polyvinyl-chloride insulated wire	8 (61)	38 (162)	100 (298)	250 (556)	500 (842)	725 (1095)	
3 <i>ϕ</i> 3w	Cross-linked polyethylene insulated cable	2 (33)	22 (135)	60 (260)	200 (560)	325 (760)	600 (1140)	
3 <i>ø</i> 4w	Polyvinyl-chloride insulated wire	8 (61)	38 (162)	100 (298)	150 (395)	325 (650)	600 (992)	
3φ4w	Cross-linked polyethylene insulated cable	-	14 (105)	38 (190)	100 (365)	250 (655)	400 (870)	

Interchangeable ZCTs with primary conductors

Туре		ZTA600A	ZTA1200A	ZTA2000A		
Number of poles		3				
Rated voltage (VAC)		600				
Rated short time current (kA)		100 (peak value)				
1 a - 1	а	227	227	360		
	b	256	298	250		
	ba	366	444	594		
	С	42	78	79		
+ + + + + + + + + + + + +	ca	125	176	214		

ELRs with a ZCT with primary conductors

Frame (A)		600	1200	2000	3200		
ZBA					NV-ZBA3200		
Туре	ZSA	Interchangeable ELD	Interchangeable ELD and interchangeable ZCTs with national conductors				
	ZHA	Interchangeable ELR	terchangeable ELR and interchangeable ZCTs with primary conductors				
	ZLA		NV-ZLA3200				
Number of poles		3					
Rated voltage (VAC)		600					
Rated short time current (kA)		100 (peak value)					
- a- 	а	227	227	360	490		
	b	256	298	250	320		
	ba	366	444	594	868		
tal c	С	42	78	79	111		
	ca	125	176	214	290		
Mass (kg)		6.5	11	27	54		

Specification of ELRs	High-speed type		Control voltage (VAC)	Rated current sensitivity (mA)	Max. operating time (s)	Inertial non-operating time (s)
		ZBA	120 • 240 (*1)	100 • 200 • 500 (*1)		
		ZSA	120 • 240 (*1) 240 • 415 (*1)	100 • 200 • 500 (*1)	0.1	_
		ZBA	120 • 240 (*1)	100 • 200 • 500 (*1)	0.3 • 0.8 • 1.6 (*1)	0.1 • 0.5 • 1.1
		ZSA	120 • 240 (*1) 240 • 415 (*1)	100 • 200 • 500 (*1) (200 • 500 • 1000 (*1))	0.3 • 0.8 • 1.6 (*1)	0.1 • 0.5 • 1.1
	Time-delay type (High-speed • (Time-delay type)	ZHA 120 • 240 (*1)	100 • 200 • 500 (*1)	0.1 • 0.45 • 1.0 (*1)	-•0.1 • 0.5	
				100 • 300 • 500 (*1) 300 • 500 • 1000 (*1)	0.45 • 1.0 (*1) (at 2l∆n)	0.1 • 0.5 (at 2l∆n)
		ZLA 120 • 240 (*1) 240 • 440 (*1) 480	100 • 200 • 500 (*1)	0.1 • 0.45 • 1.0 (*1)	-•0.1•0.5	
			240 • 440 (*1)	100 • 300 • 500 (*1) 300 • 500 • 1000 (*1)	0.45 • 1.0 (*1) (at 2l∆n)	0.1 • 0.5 (at 2l∆n)

Note: *1 Selectable