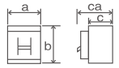
Specifications >>>

Frame(A)				250				400				630			
Series				C	S		H	S		H		S		H	
Model				NFC250-CMXA	NFC250-SMXA		NFC250-HMXA	NFC400-SMXA		NFC400-HMXA		NFC630-SMXA		NFC630-HMXA	
Rated current In (A)				175, 200, 225, 250 (*2)				250, 300, 350, 400				500, 600, 630 (*3)			
Image															
Rated ambient temperature (℃)				40	40		40	40		40		40		40	
Number of poles				3	3	4	3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V AC)				690	690		690	690		690		690		690	
Rated short-circuit breaking capacity (kA)	IEC 60947-2 EN 60947-2 (Icu/Ics)	AC	415V	15/7.5	25/12.5		36/18	36/18		50/25		36/18		50/25	
			400V	15/7.5	25/12.5		36/18	36/18		50/25		36/18		50/25	
			380V	22/11	30/15		36/18	36/18		50/25		36/18		50/25	
			230V	30/15	50/25		85/43	50/25		85/43		50/25		85/43	
	GB/T 14048.2 (Icu/Ics)	AC	400V	15/7.5	25/12.5		36/18	36/18		50/25		36/18		50/25	
			230V	30/15	50/25		85/43	50/25		85/43		50/25		85/43	
Rated impulse withstand voltage Uimp (kV)				8	8		8	8		8		8		8	
Suitability for isolation				●	●		●	●(*1)		●(*1)		●(*1)		●(*1)	
Reverse connection				-	-		-	-		-		-		-	
Number of operating cycles	Without current			8,000	8,000		8,000	5,000		5,000		5,000		5,000	
	With current			1,000	1,000		1,000	1,000		1,000		1,000		1,000	
Utilization category				A	A		A	A		A		A		A	
Pollution degree				3	3		3	3		3		3		3	
Overall Dimension (mm)			a	105	105	140	105	140	140	185	140	185	210	280	210	280
			b	165	165		165		257		257		275		275	
			c	68	68		68		103		103		103		103	
			ca	92	92		92		155		155		155		155	
Mass(kg)				1.8	1.8	2.0	1.8	2.0	5.7	7.5	5.7	7.5	10	13	10	13
Installation and connection (Front connection) (F)				Screw terminal	Screw terminal		Screw terminal		Busbar terminal		Busbar terminal		Busbar terminal		Busbar terminal	
Internal accessory (cassette-type)	Alarm switch		AL	●	●		●		●		●		●		●	
	Auxiliary switch		AX	●	●		●		●		●		●		●	
	Alarm and auxiliary switch		ALAX	●	●		●		-		-		-		-	
	Shunt trip		SHT	●	●		●		●		●		●		●	
	Undervoltage trip		UVT	●	●		●		●		●		●		●	
External accessories	External operating handle		F	●	●		●		●	-	●	-	●	-	●	-
			V	●	●		●		●		●		●		●	
	Terminal cover		TC-L	●	●		●		●		●		●		●	
			TC-S	-	-		-		-		-		-		-	
Certification	CE			Self declaration	KEMA		Self declaration		Self declaration		Self declaration		Self declaration		Self declaration	
	CCC			Passed	Passed		Passed		Passed		Passed		Passed		Passed	
Automatic tripping device				Thermal-magnetic	Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic		Thermal-magnetic	

*1. While installing the external operating handle,the isolation function are unavailable for NFC400-SMXA, NFC400-HMXA, NFC630-SMXA and NFC630-HMXA.

*2. The rated current of NFC250-CMXA, NFC250-SMXA and NFC250-HMXA are adjustable. They can be adjusted to rated current x0.8 or 1.0. (for example: 200A can be adjusted to 160A and 200A)

*3. The instantaneous trip current of NFC630-SMXA and NFC630-HMXA are adjustable. They can be adjusted to rated currentx4 or x7 or x10 or x13. (for example:500A can be adjusted to 2000A,3500A,5000A and 6500A)

Internal Accessories

1.Alarm Switch (AL) Operation

Circuit Breaker Status	AL Switch contact
OFF or ON	98/ALa (Open) 96/ALb (Closed) 95/ALc
Trip	98/ALa (Closed) 96/ALb (Open) 95/ALc

Auxiliary switch (AX) Operation

Circuit Breaker Status	AX Switch Contact
OFF or Trip	14/AXa (Open) 12/AXb (Closed) 11/AXc
ON	14/AXa (Closed) 12/AXb (Open) 11/AXc

2.AL · AX Switch Rating

Model Name	Type	AC Voltage (V)	AC Current (A) Resistive Load	AC Current (A) Inductive Load	DC Voltage (V)	DC Current (A) Resistive Load	DC Current (A) Inductive Load
NFC30-SMX (*1) NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA NFC100-HMXA NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	AL-2MXLA AL-2MXRA AX-2MXLA AX-2MXRA ALAX-2MXA	125	5	3	125	0.4	0.4
		250	3	2	-	-	-
NFC400-SMXA NFC400-HMXA NFC630-SMXA NFC630-HMXA	AL-4MXLA (*2) AX-4MXA (*3)	125	5	3	125	0.4	0.4
		250	3	2	-	-	-

*1. AL and AX for NFC30-SMX are not cassette-type accessories and need to be assembled at factory.
*2. Can be installed only on left pole. *3. Can be installed on both left and right poles.

3.SHT Rating

Model Name	Type	Cut-off Switch	Voltage (V)	Input Power Requirement (VA) AC	Input Power Requirement (VA) DC	Operating Time (ms)
NFC30-SMX (*1) NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA NFC100-HMXA NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	SHTA120-2MXLA SHTA120-2MXRA SHTA440-2MXLA SHTA440-2MXRA SHTD024-2MXLA SHTD024-2MXRA SHTD048-2MXLA SHTD048-2MXRA SHTD100-2MXLA SHTD100-2MXRA	Equipped	AC100-120V	120	—	15 or less
			AC220-440V			
			DC24V	—	120	
			DC48V			
			DC100V			
NFC400-SMXA NFC400-HMXA NFC630-SMXA NFC630-HMXA	SHTA220-4MXRA (*2) SHTA440-4MXRA SHTD024-4MXRA SHTD048-4MXRA	Equipped	AC110-240V	120	—	
			AC380-440V			
			DC24V	—	120	
			DC48V			

*1. SHT for NFC30-SMX is not cassette-type accessory and need to be assembled at factory. *2. SHT for NFC400 and NFC630 can not be installed on left pole.

4.UVT Rating

Model Name	Type	Resettable/ Non-resettable	Voltage (V)	Input Power Requirement (VA) AC	Input Power Requirement (VA) DC	Operating Time (ms)
NFC30-SMX (*1) NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA NFC100-HMXA NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	UVTSA120-2MXRA (*2) UVTSA240-2MXRA UVTSA400-2MXRA UVTSA460-2MXRA	Resettable (*3)	AC100-120V	5	—	30 or less
			AC220-240V			
			AC380-400V			
			AC440-460V			
NFC400-SMXA NFC400-HMXA NFC630-SMXA NFC630-HMXA	UVTSA120-4MXRA (*2) UVTSA240-4MXRA UVTSA415-4MXRA UVTSA460-4MXRA	Resettable	AC110-120V	5	—	
			AC200-240V			
			AC380-415V			
			AC440-460V			

*1. UVT for NFC30-SMX is not cassette-type accessory and need to be assembled at factory. *2. UVT can not be installed on left pole. *3. UVT for NFC30-SMX is non-resettable.

5.Maximum Number of Internally Mounted Accessories

Model Name	Number of Poles	AL	AX	SHT/UVT	AL + AX	ALAX	AL + SHT/UVT	AX + SHT/UVT	AL+AX+SHT/UVT	ALAX+SHT/UVT
NFC30-SMX NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA NFC100-HMXA	2P	●	○	(*2)(*3)		▲ (*4)				
	3P,4P	●	○	(*1)(*2)	● ○	▲ (*4)	(*2)	(*2)		(*2) (*4)
NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	3P,4P	●	○	(*1)(*2)	● ○	▲	(*2)	(*2)		(*2)
NFC400-SMXA NFC400-HMXA	3P,4P	■	(*6)	(*1)(*2)	■ ○ (*5)				(*1) (*2) (*5)	
NFC630-SMXA NFC630-HMXA	3P,4P	■	(*6)	(*1)(*2)	■ ○ (*5)				(*1) (*2) (*5)	

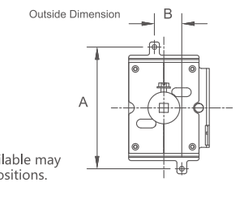
*1. UVT can not be installed on left pole.
*2. When UVT is provided, the UVT voltage module will come in the vertical lead wire terminal block type. (SHT does not have a voltage module.)
*3. UVT can not be installed for NFC30-SMX.
*4. NFC30-SMX does not have ALAX.
*5. AX can be installed on where AL is installed.
*6. It can be also installed on left and right pole. but it is better to install on left pole unless the AX QTY is more than 3 for NFC400 or more than 4 for NFC630.

External Accessories

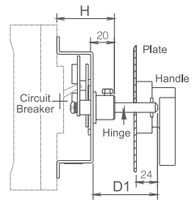
1. V-type Operating Handle

Exterior (Color: black)

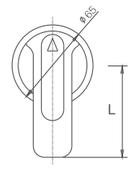
- IP50 rating (IEC 60529)
- Three padlocks which are commercially available may realize locking function in the ON or OFF positions.
- The door lock mechanism makes the door open only in the OFF position.



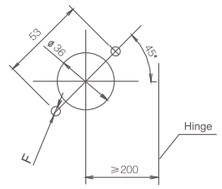
Manual Operation Mechanism



Manual Operation Mechanism



Handle



Drilling Plan

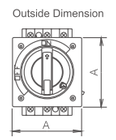
Summary of Dimensions

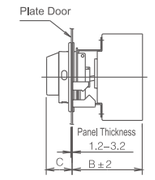
Model Name	Type	Number of Poles	Dimension (mm) A	B	D1	F	H	L	Lock Position	Panel door open position	Padlock(See drawing below) a	b	c
NFC30-SMX	V-05MX	3P	111	25	MIN:50 MAX:150	Ø5.5	53.5	65	ON,OFF	OFF	35～40	19～22	5～6
NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA	V-05MXA	3P,4P	111	25	MIN:40 MAX:144	Ø7	55						
NFC100-HMXA	V-1MXA	3P,4P	111	25			55						
NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	V-2MXA	3P,4P	126	35			55						
NFC400-SMXA NFC400-HMXA	V-4MXA	3P,4P	221	44	MIN:50 MAX:150	Ø5.5	85	95					
NFC630-SMXA NFC630-HMXA	V-6MXA	3P,4P	242	70			85						

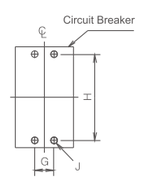
2. F-type Operating Handle

Exterior (Color: white)

- Installed with the safety device, the plate door can't be opened when the circuit breaker is in the ON position.
- The handle can be locked while in the ON or OFF position.
- IP30 rating (IEC60529)
- The door lock mechanism makes the door open only in the OFF position.







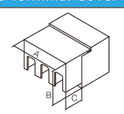
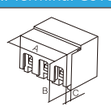
The user must prepare padlocks.

Summary of Dimensions

Model Name	Type	Number of Poles	Dimension (mm) A	B	C	D	E	F	G	H	J	Lock Position	Panel door open position	Padlock a	b	c
NFC30-SMX	F-05MX	3P	104	105	39	90	78	10	25	111	M4 taps or Φ5	ON,OFF,RESET	RESET	35～40	19～22	5～6
NFC60-CMXA NFC60-SMXA NFC60-HMXA NFC100-CMXA NFC100-SMXA	F-05MXA	3P,4P	104	105	39	90	78	10	25	111		ON,OFF	OFF			
NFC100-HMXA	F-1MXA	3P,4P	104	105	39	90	78	10	25	111						
NFC160-CMXA NFC160-SMXA NFC160-HMXA NFC250-CMXA NFC250-SMXA NFC250-HMXA	F-2MXA	3P,4P	104	105	39	90	78	10	35	126						
NFC400-SMXA NFC400-HMXA (*1)	F-4MXA	3P	150	173	60	108	112	10	44	194	M6 taps or Φ7					
NFC630-SMXA NFC630-HMXA (*1)	F-6MXA	3P	150	173	60	108	112	10	70	243						

*1. The F handle is unavailable for 4P product of NFC400-SMXA、NFC400-HMXA、NFC630-SMXA、NFC630-HMXA.

3. Terminal cover

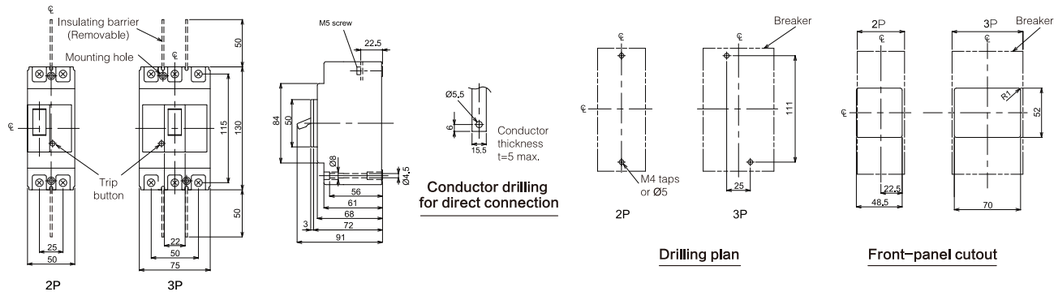
Model Name	Number of Poles	Large Terminal Cover (TC-L)		Small Terminal Cover (TC-S)	
					
NFC30-SMX NFC60-CMXA NFC60-SMXA NFC60-HMXA (*2) NFC100-CMXA NFC100-SMXA NFC100-HMXA	2P	TCL-05MX2	50X65X32	TCS-05MX2	50X65X5
	3P	TCL-05MX3	75X65X32	TCS-05MX3	75X65X5
	4P	TCL-05MX4	100X65X32	TCS-05MX4	100X65X5
NFC160-CMXA NFC160-SMXA NFC160-HMXA (*2) NFC250-CMXA NFC250-SMXA NFC250-HMXA	3P	TCL-2MX3	105X65X39	-	-
	4P	TCL-2MX4	140X65X39	-	-
NFC400-SMXA NFC400-HMXA (*3) (*4)	3P	TCL-4MX3	171X98X110	-	-
	4P	TCL-4MX4	240X98X110	-	-
NFC630-SMXA NFC630-HMXA (*3) (*4)	3P	TCL-6MX3	220X98X131	-	-
	4P	TCL-6MX4	290X98X131	-	-

*1. The outside dimension is A×B×C(mm). *2. Installation method: plug-in
*3. Installation method: lock screw *4. The terminal cover cannot be installed while using the V or F type Operating Handle.

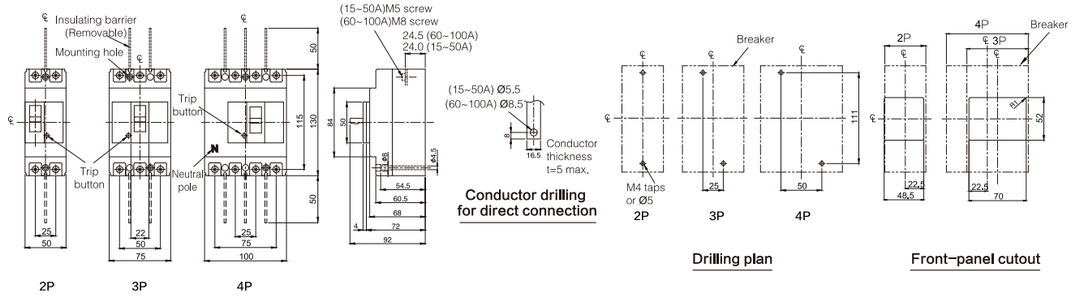
Characteristics and Dimensions >>>

Dimension

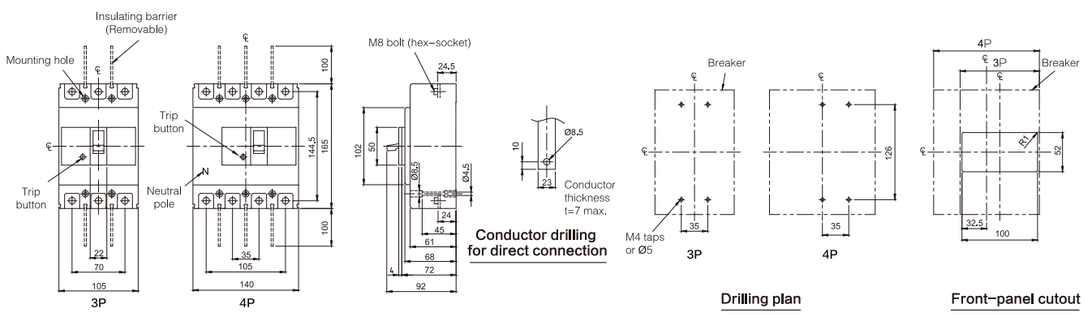
NFC30-SMX



NFC60-CMXA, NFC60-SMXA, NFC60-HMXA
NFC100-CMXA, NFC100-SMXA, NFC100-HMXA

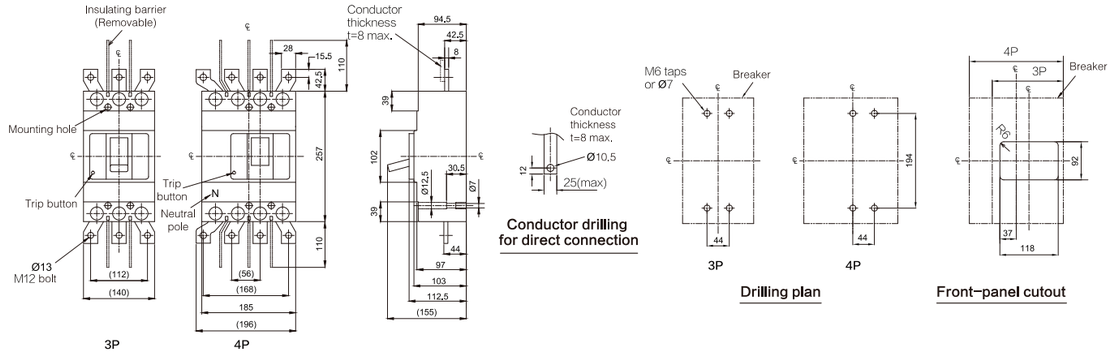


NFC160-CMXA, NFC160-SMXA, NFC160-HMXA
NFC250-CMXA, NFC250-SMXA, NFC250-HMXA

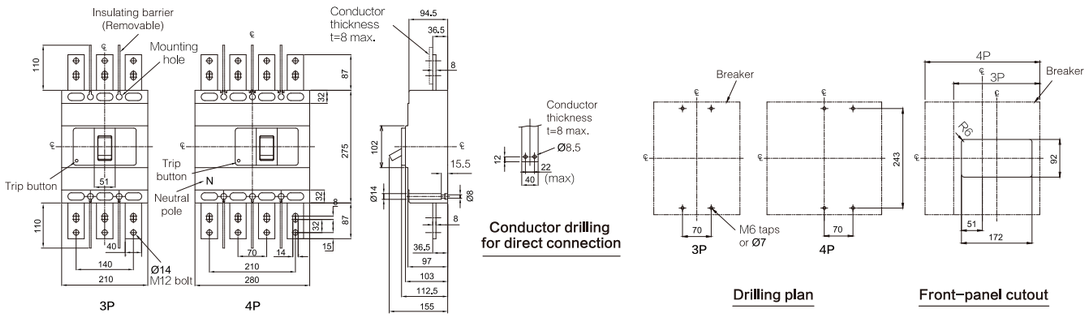


Dimension

NFC400-SMXA, NFC400-HMXA

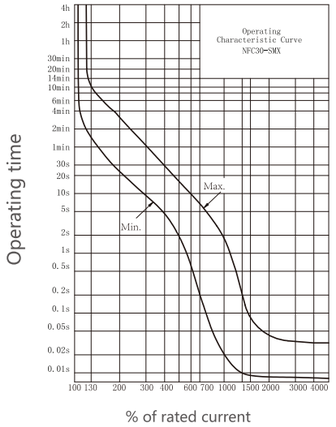


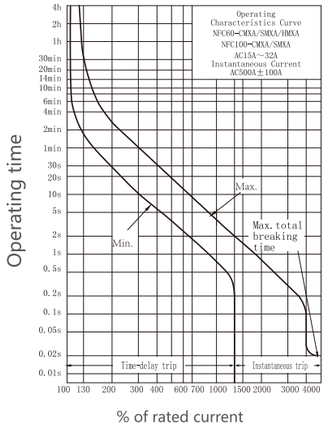
NFC630-SMXA, NFC630-HMXA

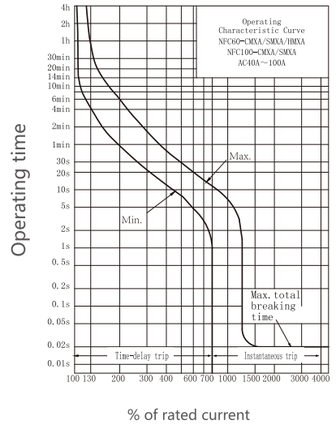


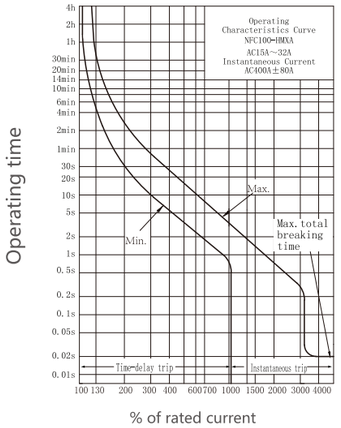
Characteristics and Dimensions >>>

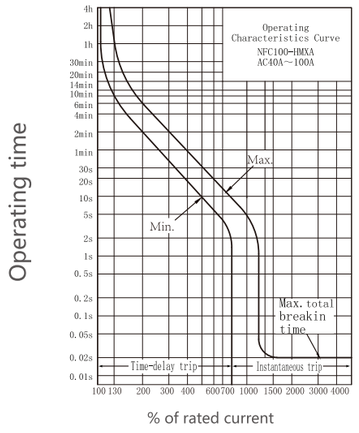
Operating Characteristics

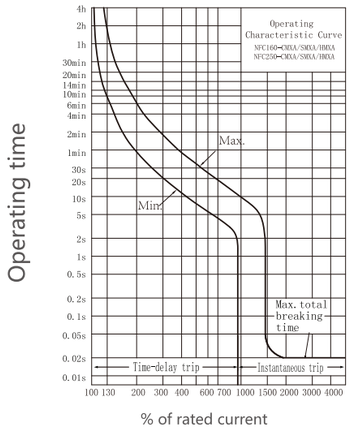




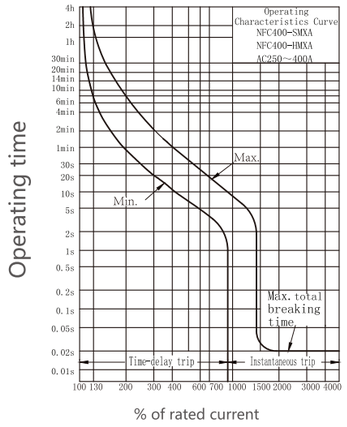


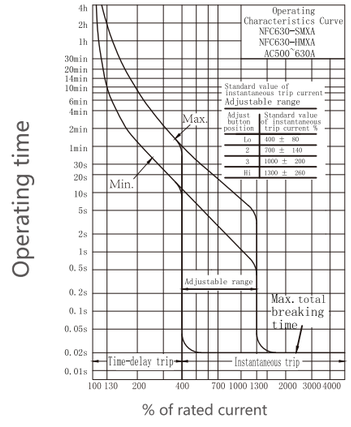




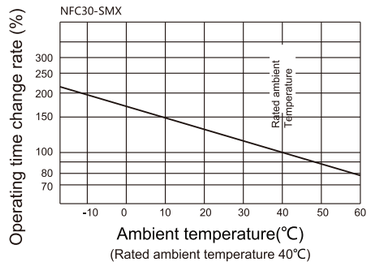


Operating Characteristics

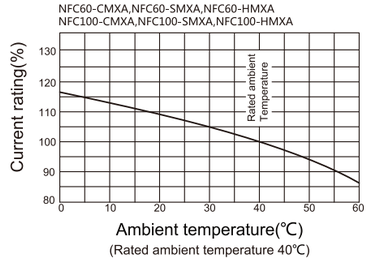


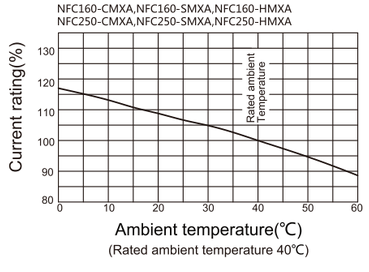


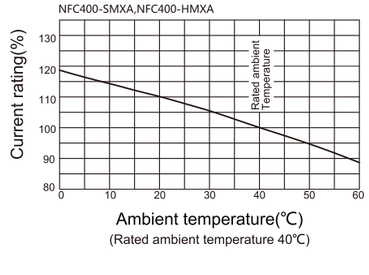
Temperature Characteristics Curve

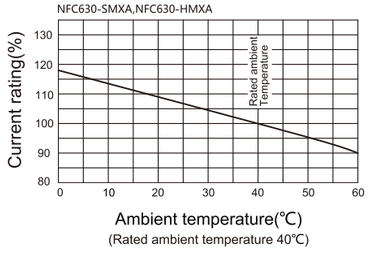


Temperature Compensation Curve







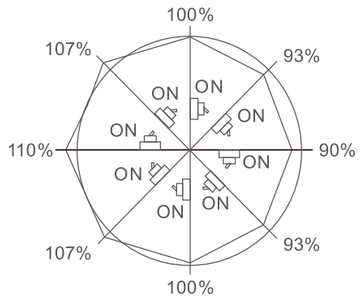


Installation direction

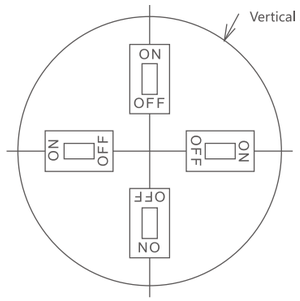
1. The trip way of NFC30-SMX is hydraulic-magnetic type.Please pay attention to the mounting position while installing it.
   The time-delay trip characteristic varies depending on the mounting position. It is recommended to mount it vertically.

Model
NFC30-SMX

(1) Change Rate of Rated Current at Different Mounting Angles:



(2) Mounting methods which will not influence the tripping characteristic.



2. Thermal-magnetic type won't be affected by the mounting method:

Model		
NFC60-CMXA	NFC60-SMXA	NFC60-HMXA
NFC100-CMXA	NFC100-SMXA	NFC100-HMXA
NFC160-CMXA	NFC160-SMXA	NFC160-HMXA
NFC250-CMXA	NFC250-SMXA	NFC250-HMXA
NFC400-SMXA	NFC400-HMXA	
NFC630-SMXA	NFC630-HMXA	

Ordering Information

Model	Number of Poles	Rated Current (A)
NFC60-CMXA	3P	60A
NFC30-SMX	2,3P	3,4,6,10,15,20,25,30A
NFC60-CMXA	2.3P	15,16,20,25,30,32,40,50,60A
NFC60-SMXA	2,3,4P	15,16,20,25,30,32,40,50,60A
NFC60-HMXA	2,3,4P	15,16,20,25,30,32,40,50,60A
NFC100-CMXA	2,3P	15,16,20,25,30,32,40,50,60,63,75,80,100A
NFC100-SMXA	2,3,4P	15,16,20,25,30,32,40,50,60,63,75,80,100A
NFC100-HMXA	3,4P	15,16,20,25,30,32,40,50,60,63,75,80,100A
NFC160-CMXA	3P	125,140,150,160A
NFC160-SMXA	3,4P	125,140,150,160A
NFC160-HMXA	3,4P	125,140,150,160A
NFC250-CMXA	3P	175,200,225,250A
NFC250-SMXA	3,4P	175,200,225,250A
NFC250-HMXA	3,4P	175,200,225,250A
NFC400-SMXA	3,4P	250,300,350,400A
NFC400-HMXA	3,4P	250,300,350,400A
NFC630-SMXA	3,4P	500,600,630A
NFC630-HMXA	3,4P	500,600,630A

Internal Accessories	Quantity
AL,AX,SHT(AC100-120V)	100台
AL (Alarm Switch)	
AX (Auxiliary Switch)	
ALAX (Alarm and Auxiliary Switch)	
SHT (Shunt Trip) (AC:100-120, 110-240, 220-440, 380-440V; DC:24, 48, 100V)	
UVT (Undervoltage Trip) (AC:100-120, 110-120, 200-240, 220-240, 380-400, 380-415, 440-460V)	

External Accessories
F, V, TC-S, TC-L
F (External Operating Handle)
V (External Operating Handle)
TC-S (Short Terminal Cover)
TC-L (Long Terminal Cover)

*1. The internal accessories for NFC30-SMX need to be assembled at factory. Please order together with the body model. The other accessories are all cassette-type and realized field installation.
*2. Please refer to page11~12 for accessories' model name.