



**MITSUBISHI
ELECTRIC**

Changes for the Better

OPERATING HANDLES FOR MITSUBISHI NO-FUSE CIRCUIT
BREAKERS (MCCB)/ELECTRIC LEAKAGE CIRCUIT BREAKERS (ELCB)

**“Safety”
&
Flexibility**



**Empowering
Industries**



Operating Handles for Mitsubishi MCCB/ELCB of

Our product lineup includes operating handles for MCCB and ELCB of 800A frame or smaller which are used in equipment and power receiving/distribution panels supplied on the worldwide markets such as semiconductor/automobile manufacturing equipment and machine tools. We have incorporated our safety concept which changes in response to market globalization into our products' specifications. At the same time, efforts have been made for standardization of specifications and increased mounting interchangeability with conventional products in order to ensure higher safety and usability.

F-type Operating Handles

- Mounting type: Circuit Breaker Mount Type
Structure in which the operating handle and the operating section are mounted on the circuit breaker body
- Panel door open state
State where both the operating handle and the operating section are attached on the breaker body



F-type operating handle
(Photo shows an image when installed.)

V-type Operating Handle

- Mounting type: Door Mount Type
Structure in which the operating section is mounted on the circuit breaker body and the operating handle is mounted on the panel door
- Panel door open state
State where the operating handle is attached on the door and the operating section on the circuit breaker body



V-type operating handle
(Photo shows an image when installed.)

Type Name

F - 1 S UL E 2
① ② ③ ④ ⑤ ⑥

- ① Types of operating handles (F: F-type, V: V-type)
- ② Groups of circuit breaker
(As for details of groups 05, 1, 2, 4, 6, 8..., see the table below.)
- ③ Types of circuit breakers
(As for details of types S, U, SG..., see the table below.)
- ④ Standard (Blank: General product, UL: UL Listed product)
- ⑤ For standard/ emergency stop use
(Blank: Standard, E: For emergency stop use)
- ⑥ Number of poles of circuit breaker (Blank: 3P/4P, 2: 2P)

List of Specifications

	Circuit breakers		Type names of operating handles		Applicable models (Note 1)	
	Group names	Types	F-type operating handles	V-type operating handles (Fixed type)	MCCB	ELCB/MCCB with ground fault protection
General products	05	S	F-05S, F-05SE, F-05S2, F-05SE2	V-05S, V-05SE, V-05S2, V-05SE2	NF32-SW, NF63-CW, NF63-SW, NF63-HW, MB30-SW, MB50-CW, MB50-SW, DSN32-SW, DSN63-CW, DSN63-SW	NV32-SW, NV63-CW, NV63-SW, NV63-HW
		1	S	F-1S, F-1SE, F-1S2, F-1SE2	V-1S, V-1SE, V-1S2, V-1SE2	NF125-CW, NF125-SW, NF125-HW, MB100-SW, DSN125-CW, DSN125-SW
	2	U	F-1U, F-1UE	V-1U, V-1UE	—	NV125-RW
		S	F-2S, F-2SE	V-2S, V-2SE	NF160-SW, NF160-HW, NF250-CW, NF250-SW, NF250-HW, MB225-SW, DSN250-CW, DSN250-SW	NV250-CW, NV250-SW, NV250-HW, NV250-SEW, NV250-HEW
		U	F-2U, F-2UE	V-2U, V-2UE	—	NV250-RW
		SG	F-2SG, F-2SGE	V-2SG, V-2SGE	NF125-SGW, NF125-HGW, NF160-SGW, NF160-HGW, NF250-SGW, NF250-HGW, DSN125-SGW, DSN160-SGW, DSN250-SGW	—
	4	S	F-4S, F-4SE	V-4S, V-4SE	NF125-RGW, NF125-UGW, NF250-RGW, NF250-UGW	—
		U	F-4U, F-4UE	—	NF400-CW, NF400-SW, NF400-SEW, NF400-HEW, NF400-REW, DSN400-CW, DSN400-SW, NF630-CW, NF630-SW, NF630-SEW, NF630-HEW, NF630-REW, DSN630-CW, DSN630-SW	NV400-CW, NV400-SW, NV400-SEW, NV400-HEW, NV400-REW, NV630-CW, NV630-SW, NV630-SEW, NV630-HEW
	8	S	F-8S, F-8SE	V-8S, V-8SE	NF400-UEW(3P)	—
		U	F-8U, F-8UE	—	NF800-CEW, NF800-SDW, NF800-SEW, NF800-HEW, NF800-REW, DSN800-SW	NV800-SEW, NV800-HEW
UL 489 Listed products	05	S	F-05SUL, F-05SUL2	V-05SUL, V-05SUL2	NF50-SWU	NV50-SWU
	1	S	F-1SUL, F-1SUL2	V-1SUL, V-1SUL2	NF100-CWU, NF100-SWU	NV100-SWU
	2	S	F-2SUL	V-2SUL	NF225-CWU	NV225-CWU
		SG	F-2SGUL	V-2SGUL	NF-SFW, NF-SJW, NF-HJW	—
	4	S	F-4SUL	V-4SUL	NF-SKW	NV-SKW
	6	S	F-6SUL	V-6SUL	NF-SLW	—

(Note 1) As for applicable models other than those mentioned above, please contact us.

USA UL Standards 489 UL File No. E108284 Annex	Canada CSA Standards C22.2 No. 5-02
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Characteristics of Products



F-type Operating Handles Standardization of OFF Lock Specifications

As locking is possible only in the OFF position (power disconnected position), increased safety is achieved.

* The ON/OFF lock specification is also available to order.



Supporting Various Lockout Devices

Our operating handles can support not only padlocks but also lockout latches (scissors lock).

Safety



V-type Operating Handle Supporting Locking of Operating Section

The operating section can be locked even while the door is open.



V-type Operating Handle Warning Indication of Adjustment Shaft Added

A warning mark is displayed at the tip of the adjustment unit "V-AD3S" "V-AD3L" shaft.



V-type Operating Handle Supporting Adjustable Type

By addition of the adjustment unit "V-AD3S" "V-AD3L" which is a separately available part, the fixed type can also be used as the adjustable type.



Mounting Comparison

These handles can replace the conventional one without requiring any additional machining.

Flexibility



V-type Operating Handle 2P Supporting Lineup

These handles can support the 2-pole external breakers (fixed type only)



F-Type Operating Handle Degrees of Protection IP54 as Standard

The standard product complies with degrees of protection (IEC 60529) IP54.

F-type Operating Handle (Breaker Mount Type)



Breaker Mount Type of Operating Handle Attached on Circuit Breaker Body

- 1 Conforming to the safety standard of EN Standards (EN 60204-1).
- 2 Offering circuit disconnecting (isolating) function in combination with the breaker body.
- 3 Degrees of protection (IEC 60529) is IP54.
- 4 Also available in UL489 listed products.

Door Lock Mechanism

The standard product complies with the reset open specification.
The panel door can be opened only by the open (reset) operation performed.
The panel door can also be opened in ON or OFF position when the release screw is operated with the tool, etc.

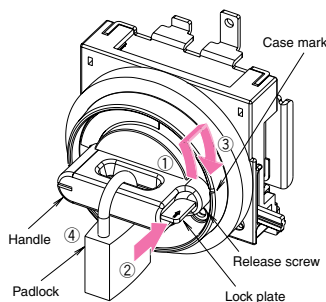
Operation Lock

The standard product complies with the OFF lock specification. You can perform operation lock in the OFF position by following the procedure below: (For example, in the case of a padlock)

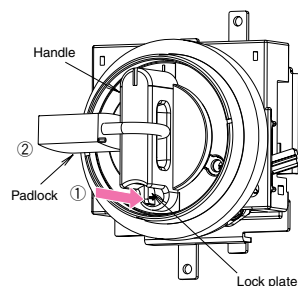
- 1 Turn the handle in the Reset direction to a position at which the marks on the lock plate and on the case are aligned.
- 2 Push the lock plate into.
- 3 While pushing the lock plate, return the handle to the OFF position.
- 4 Lock by passing the padlock through the hole in the center of the handle.

Three padlocks (35/40mm) which are commercially available can be installed. Even while the padlocks are installed, you can still open the panel door by operating the release screw.

Note: For 400-800AF, operation 3 during locking is not required.



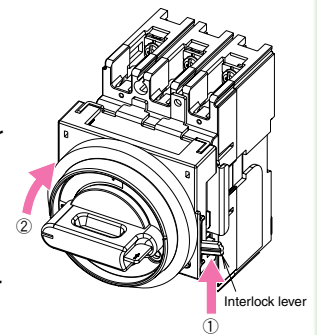
The ON/OFF lock specification enables operation lock even in the ON position. After pushing the lock plate in the handle ON position, engage the padlocks. Even in the case that the breaker has tripped after lockup in the ON position, the operating handle displays the trip information.



Note: In case of one 35mm padlock (under 70g) for under 250AF.
In case of one 40mm padlock (under 100g) for under 400AF.

Safety Device

The interlock lever is provided to prevent the breaker from being turned on while the panel door is open. When the breaker needs to be turned on while the door is open during checkup, turn the handle to ON position, while pushing the interlock lever in the arrowed direction.



Manufactured to Order

Breaker mounting direction (Not including UL listed products)

Even when a breaker is mounted horizontally, we can supply to order the product for which the handle operation and the ON/OFF indication remains in the same directions as those for the standard vertical mounting type. The hole dimension on the door stays the same. As for the horizontal mounting type, specification of either the left-facing power supply or the right-facing power supply is available.

Door Lock mechanism

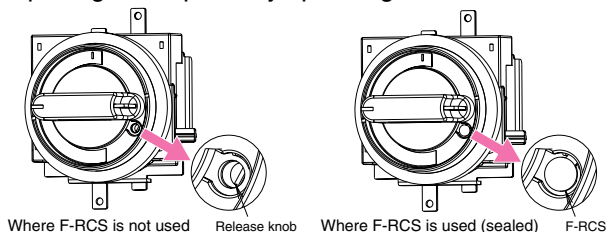
OFF-Open specification..... The panel door can be opened in the OFF position.

Operation Lock mechanism

ON/OFF-Lock specification.... Operation Lock can be engaged in the ON or OFF position.

Sealing-Off of Release Knob

By using the release protection device "F-RCS" which is a separately available, you can prohibit opening of the panel by operating the release knob.

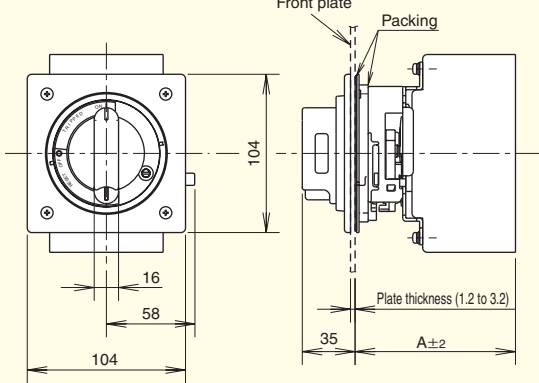


Note: For applicable lock devices, please refer to page 6.

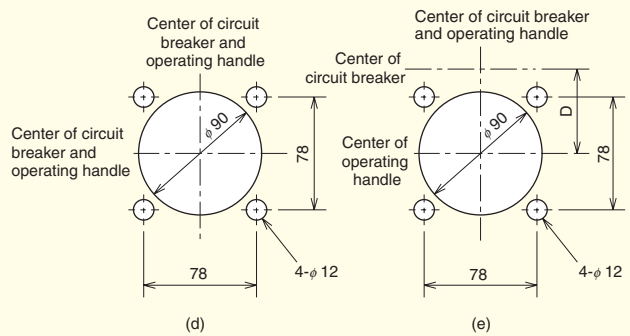
Outside Dimension Drawing

250A Frame or Smaller

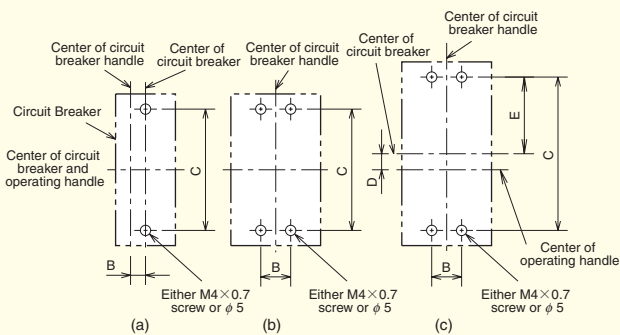
Outside Dimension Drawing



Front Plate Drilling Dimension Drawing

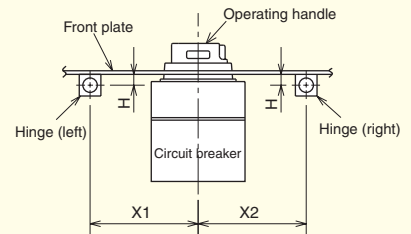


Circuit Breaker Mounting-Hole Drilling Dimension Drawing



Center of Hinge and Circuit Breaker

Left hinge		Right hinge	
H	X1	H	X2
0 or more	(5H+85) or more	Less than 10	170 or more
		10 or more	(5H+120) or more



* The above drawing shows a layout of the hinge and the circuit breaker when viewed from the load side.

Summary of Dimensions

Type names	Applicable models (Note 1)				Drilling plans	Dimensions (mm)				
	MCCB	Number of poles	ELCB/MCCB with ground fault protection	Number of poles		A	B	C	D	E
F-05S2, F-05SE2 (Note4)	NF32-SW, NF63-CW, NF63-SW, NF63-HW, DSN32-SW, DSN63-CW, DSN63-SW	2	—	—	(a) (d)	105	12.5	111	—	—
F-05S, F-05SE	NF32-SW, NF63-CW, NF63-SW, NF63-HW, MB30-SW, MB50-CW, MB50-SW, DSN32-SW, DSN63-CW, DSN63-SW	3, 4	NV32-SW, NV63-CW, NV63-SW, NV63-HW	2, 3	(b) (d)		25			
F-1S2, F-1SE2 (Note4)	NF125-CW, NF125-SW, DSN125-CW, DSN125-SW	2	—	—	(a) (d)		15			
F-1S, F-1SE	NF125-CW, NF125-SW, MB100-SW, DSN125-CW, DSN125-SW	3, 4	NV125-CW, NV125-SW, NV125-HW	3, 4	(b) (d)	30				
F-1U, F-1UE	—	—	NV125-RW	3	(c) (e)			172	30.5	86
F-2S, F-2SE	NF250-CW, NF250-SW, NF250-HW, MB225-SW, DSN250-CW, DSN250-SW	2, 3, 4	NV250-CW, NV250-SW, NV250-HW, NV250-SEW, NV250-HEW	3, 4	(b) (d)	107		126	—	—
F-2U, F-2UE	—	—	NV250-RW	3	(c) (e)			201	37.5	100.5
F-2SG, F-2SGE	NF125-SGW, NF125-HGW, NF160-SGW, NF160-HGW, NF250-SGW, NF250-HGW, DSN125-SGW, DSN160-SGW, DSN250-SGW	2, 3, 4	—	—	(b) (d)	125	35	126	—	—
F-2UG, F-2UGE	NF125-RGW, NF125-UGW, NF250-RGW, NF250-UGW	2, 3, 4	—	—	(c) (e)			201	37.5	100.5
F-05SUL2	NF50-SWU	2	—	—	(a) (d)	105	12.5	111	—	—
F-05SUL		3	NV50-SWU	3	(b) (d)		25			
F-1SUL2	NF100-CWU, NF100-SWU	2	—	—	(a) (d)		15			
F-1SUL		3	NV100-SWU	3	(b) (d)	30				
F-2SUL	NF225-CWU	3	NV225-CWU	3	(b) (d)	107				
F-2SGUL	NF-SFW, NF-SJW, NF-HJW	3	—	—	(b) (d)	125	35	126		

Note 1: As for applicable models other than those mentioned above, please contact us.

Note 2: Shows dimensions for front connection and rear connection types. For plug-in types, the reference surface changes.

Note 3: 4-pole plug-in type is a special type. For details, please contact us.

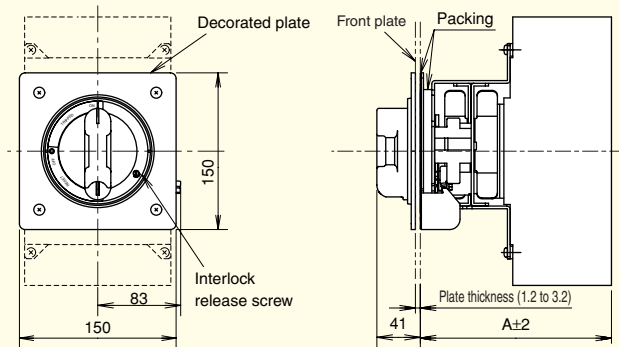
Note 4: When using with a terminal cover, please specify "F" at the end of terminal cover model name. (Special type terminal cover for operating handle with screws.)

F-type Operating Handle (Breaker Mount Type)

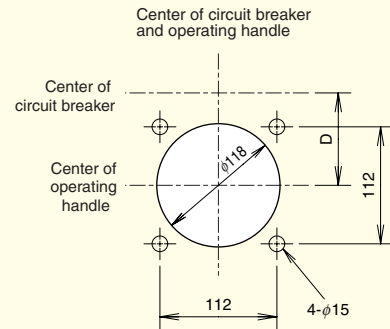
Outside Dimension Drawing

400~800A Frame

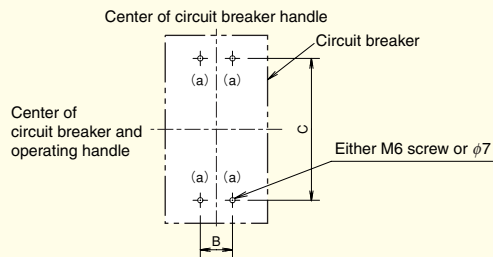
Outside Dimension Drawing



Front Plate Drilling Dimension Drawing

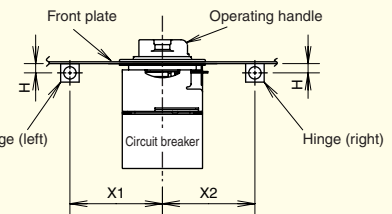


Circuit Breaker Mounting-Hole Drilling Dimension Drawing



Center of Hinge and Circuit Breaker

Left hinge		Right hinge	
H	X1	H	X2
0 or more	(5H+85) or more	0 or more	(4H+120) or more



* The above drawing shows a layout of the hinge and the circuit breaker when viewed from the load side.

Summary of Dimensions

Type names	Applicable models (Note 1)				Dimensions (mm)			
	MCCB	Number of poles	ELCB/MCCB with ground fault protection	Number of poles	A (Note 2)	B	C	D
F-4S, F-4SE	NF400-CW, NF400-SW, NF400-SEW, NF400-HEW, NF400-REW, DSN400-CW, DSN400-SW, NF630-CW, NF630-SW, NF630-SEW, NF630-HEW, NF630-REW, DSN630-CW, DSN630-SW	2, 3, 4	NV400-CW, NV400-SW, NV400-SEW, NV400-HEW, NV400-REW, NV630-CW, NV630-SW, NV630-SEW, NV630-HEW	3, 4	183	44	194	0
F-4U, F-4UE	NF400-UEW	3	—	—	280	44	234	20
F-8S, F-8SE	NF800-CEW, NF800-SDW, NF800-SEW, NF800-HEW, NF800-REW, DSN800-SW	2, 3, 4	NV800-SEW, NV800-HEW	3	183	70	243	0
F-8U, F-8UE	NF800-UEW, NF400-UEW(4P)	3, 4	—	—	280	70	290	23.5
F-4SUL	NF-SKW	3	NV-SKW	3	183	44	194	0
F-6SUL	NF-SLW	3	—	—	183	70	243	0

Note 1: As for applicable models other than those mentioned above, please contact us.

Note 2: Shows dimensions for front connection types. For rear connection and plug-in types, the reference surface changes.

Appearance of 400~800A Frame



V-type Operating Handle (Door Mount Type)

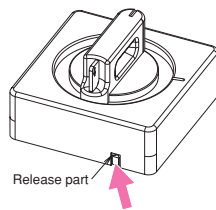


Door mount type of operating handle for which operating section is Attached on breaker body and operating handle on panel door

- 1 Conforming to the safety standard of EN Standards (EN 60204-1).
- 2 Offering disconnecting (isolating) function in combination with the breaker body.
- 3 Degrees of protection (IEC 60529) is IP54.
- 4 Mountable on the 2-pole breaker.
- 5 Operating handle for the 3-pole breaker also usable with the 4-pole breaker.

Door Lock Mechanism

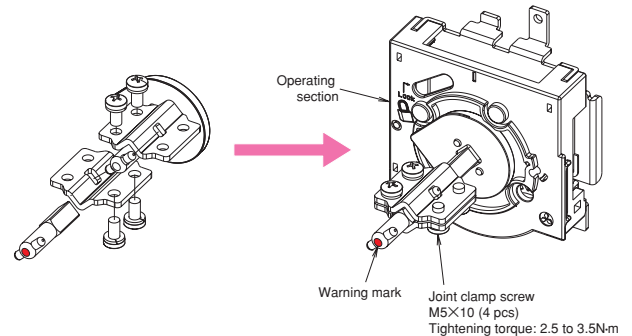
The panel door can be opened in the OFF position. In the ON and TRIP position, the panel door is locked so that it cannot be opened. However, you can still open the panel door in the ON and TRIP position by pushing the release part in the arrowed direction with a tool.



Adjustable Type

By mounting the adjustment unit "V-AD3S" "V-AD3L" which is a separately available part to the fixed type operating section, you can adjust the height between the breaker installation face and the panel door. Cut the shaft of the adjustment unit to fit the height.

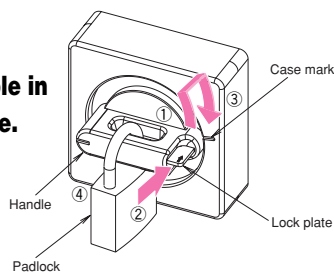
Note: This is not usable for the 2-pole breaker. If it should be used for the 2-pole breaker, the position display may go wrong.



Operation Lock

This complies with the OFF lock specification. You can perform operation lock in the OFF position by following the procedure below: (For example, in the case of a padlock)

- 1 Turn the handle in the Reset direction to a position at which the marks on the lock plate and on the case are aligned.
- 2 Push the lock plate.
- 3 While pushing the lock plate, return the handle to the OFF position.
- 4 Lock by passing the padlock through the hole in the center of the handle.

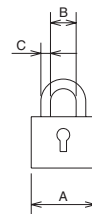


Three padlocks (35/40mm) which are commercially available can be installed.

Note: For 400-800AF, operation 3 during locking is not required.

Usable Operation Lock Device

(1) Padlock



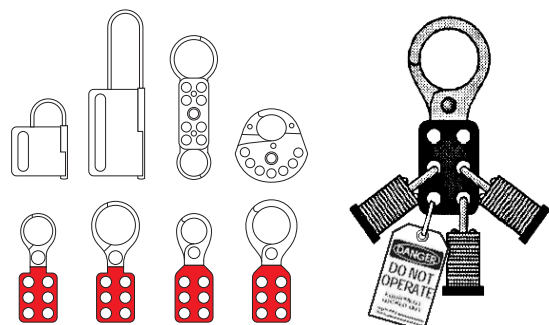
Padlock Dimensions

Use commercially available padlocks. (mm)

Applicable model	A (Nominal size)	B	C
All models	35	19	5
	40	22 or 23	5.5

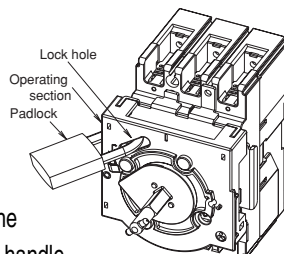
Dimension C: Maximum 8mm size is usable.

(2) Lockout Devices (Scissors Lock)



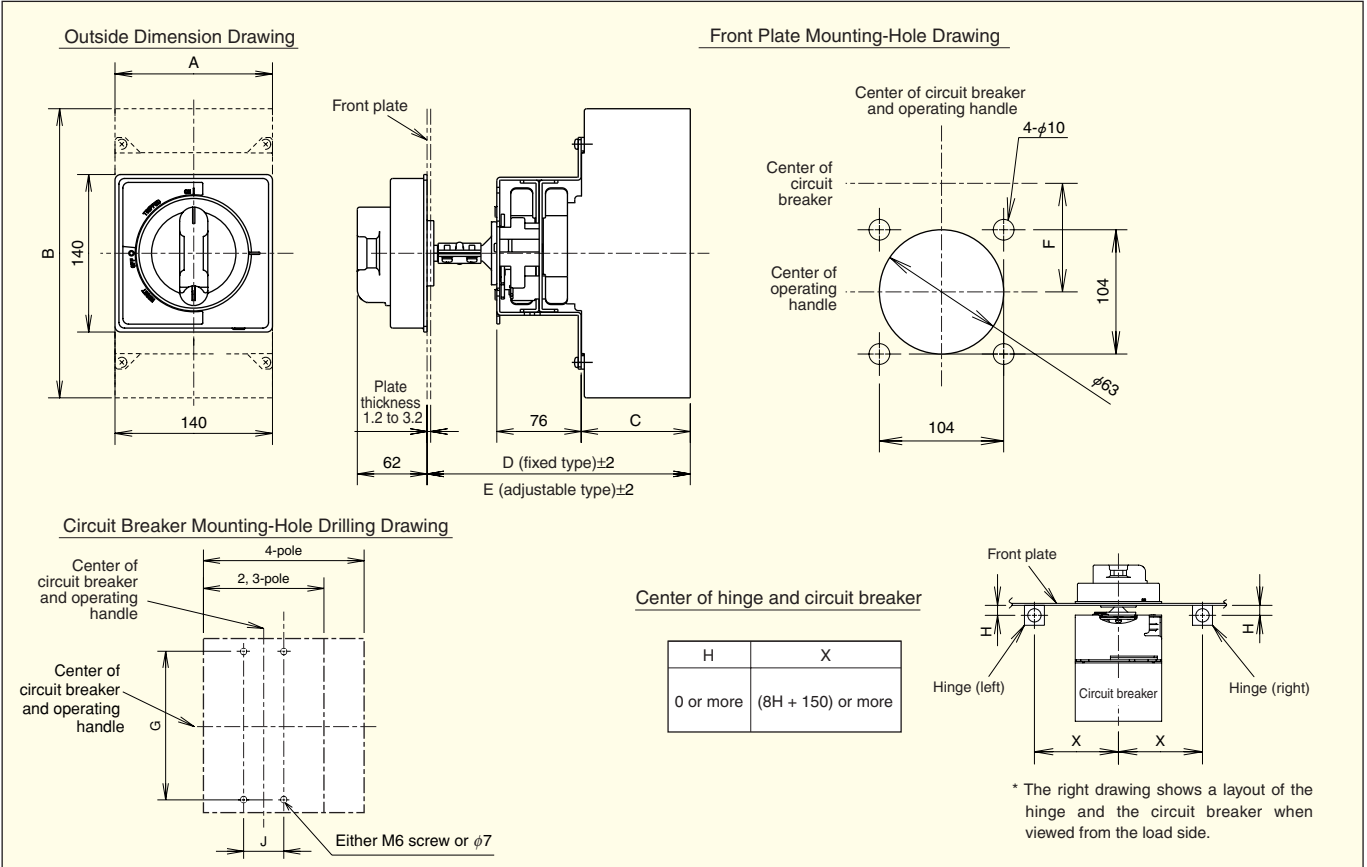
Operation Lock While Panel Door Is Open

During checkup, etc. while the panel door is open, you can use operation lock to prevent the breaker from being turned on by accident. Lock by passing a padlock through the lock hole of the operating section of the operating handle.



Outside Dimension Drawing

400~800A Frame



Summary of Dimensions

Type names	Applicable models (Note 1)				Dimension (mm)									
	MCCB	Number of poles	ELCB/MCCB with ground fault protection	Number of poles	A	B	C	Fixed type		Adjustable type (Note 2)		F	G	J
								D	E (min.)	E (max.)				
V-4S, V-4SE	NF400-CW, NF400-SW, NF400-SEW, NF400-HEW, NF400-REW, DSN400-CW, DSN400-SW, NF630-CW, NF630-SW, NF630-SEW, NF630-HEW, NF630-REW, DSN630-CW, DSN630-SW	2, 3, 4	NV400-CW, NV400-SW, NV400-SEW, NV400-HEW, NV400-REW, NV400-NCW, NV630-CW, NV630-SW, NV630-SEW, NV630-HEW	3, 4	140	257	97	191	233	300	0	194	44	
V-8S, V-8SE	NF800-CEW, NF800-SDW, NF800-SEW, NF800-HEW, NF800-REW, DSN800-SW	2, 3, 4	NV800-SEW, NV800-HEW	3	210	275	97	191	233	300	0	243	70	
V-4SUL	NF-SKW	3	NV-SKW	3	140	257	97	191	233	300	0	194	44	
V-6SUL	NF-SLW	3	—	—	210	275	97	191	233	300	0	243	70	

Note 1: As for applicable models other than those mentioned above, please contact us.

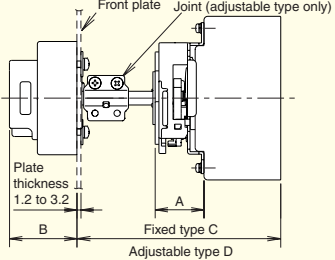
Note 2: As for the adjustable type, the dimensions shown above are those when the adjustment unit V-AD3L separately available is mounted.

Note 3: Shows dimensions for front connection types. For rear connection types, the reference surface changes. For plug-in types, please contact us.

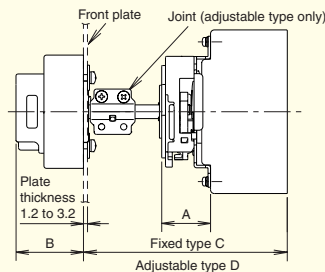
Appearance of 400~800A Frame



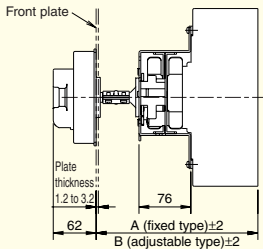
Comparison of Previous and New Models

Breaker type	General products	MCCB	NF32-SW, NF63-CW, NF63-SW, NF63-HW MB30-SW, MB50-CW, MB50-SW	NF125-CW, NF125-SW, NF125-HW MB100-SW	NF250-CW, NF250-SW, NF250-HW, NF250-SEW, NF250-HEW MB225-SW																
		ELCB	NV32-SW, NV63-CW, NV63-SW, NV63-HW	NV125-CW, NV125-SW, NV125-HW	NV250-CW, NV250-SW, NV250-HW, NV250-SEW, NV250-HEW																
	UL listed products		NF50-SWU, NV50-SWU	NF100-CWU, NF100-SWU, NV100-SWU	NF225-CWU, NV225-CWU																
F-type	General products	Conventional type	F05SW2P, F05SW	F1SW2P, F1SW	F2SW																
		New type	F-05S2, F-05S	F-1S2, F-1S	F-2S																
	UL listed products	Conventional type	F05SWU2P, F05SWU	F1SWU2P, F1SWU	F2SWU																
		New type	F-05SUL2, F-05SUL	F-1SUL2, F-1SUL	F-2SUL																
V-type	General products	Conventional type	V05SW, V05SWF	V1SW, V1SWF	V2SW, V2SWF																
		New type	V-05S2, V-05S	V-1S2, V-1S	V-2S																
	UL listed products	Conventional type	V05SWU	V1SWU	V2SWU																
		New type	V-05SUL2, V-05SUL	V-1SUL2, V-1SUL	V-2SUL																
F-type	Breaker mounting-hole dimension		No additional machining required	No additional machining required	No additional machining required																
	Front-plate hole dimension		No additional machining required	No additional machining required	No additional machining required																
	Dimension between the breaker bottom and the front plate		No change	No change	No change																
V-type	Breaker mounting-hole dimension		No additional machining required	No additional machining required	No additional machining required																
	Front-plate hole dimension		No additional machining required	No additional machining required	No additional machining required																
	Dimension between the breaker bottom and the front plate		<ul style="list-style-type: none"> ● The fixed type does not require modification. ● The adjustable type is unified to the max. 300 mm.  <p>■ Dimensional Change Table ("Conventional type→New type" are shown.)</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B No change</th> <th>C No change</th> <th>D(Note 1)</th> </tr> </thead> <tbody> <tr> <td>63A frame</td> <td rowspan="2">44→39</td> <td rowspan="2">54</td> <td rowspan="2">125</td> <td>154-300→162-300</td> </tr> <tr> <td>125A frame</td> <td>154-518→162-300</td> </tr> <tr> <td>250A frame</td> <td>46→41</td> <td></td> <td></td> <td>154-518→162-300</td> </tr> </tbody> </table> <p>Note 1: As for the new type, the dimensions shown above are those when the adjustment unit V-AD3S is mounted.</p>				A	B No change	C No change	D(Note 1)	63A frame	44→39	54	125	154-300→162-300	125A frame	154-518→162-300	250A frame	46→41		
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63A frame	44→39	54	125	154-300→162-300																	
125A frame				154-518→162-300																	
250A frame	46→41			154-518→162-300																	

Breaker type	General products	MCCB			NF125-RGW NF125-UGW NF250-RGW NF250-UGW	NF125-SGW, NF125-HGW NF160-SGW, NF160-HGW NF250-SGW, NF250-HGW																								
		ELCB	NV125-RW	NV250-RW																										
	UL listed products					NF-SFW, NF-SJW, NF-HJW																								
F-type	General products	Conventional type	F1UW	F2UW	F2GUW	F2GSW																								
		New type	F-1U	F-2U	F-2UG	F-2SG																								
	UL listed products	Conventional type	–	–	–	F2GSWU																								
		New type	–	–	–	F-2SGUL																								
V-type	General products	Conventional type	V1UW, V1UWF	V2UW, V2UWF	V2GUW, V2GUWF	V2GSW, V2GSWF																								
		New type	V-1U	V-2U	V-2UG	V-2SG																								
	UL listed products	Conventional type	–	–	–	V2GSWU, V2GSWUF																								
		New type	–	–	–	V-2SGUL																								
F-type	Breaker mounting-hole dimension		No additional machining required	No additional machining required	No additional machining required	No additional machining required																								
	Front-plate hole dimension		No additional machining required	No additional machining required	No additional machining required	No additional machining required																								
	Dimension between the breaker bottom and the front plate		No change	No change	No change	No change																								
V-type	Breaker mounting-hole dimension		No additional machining required	No additional machining required	No additional machining required	No additional machining required																								
	Front-plate hole dimension		No additional machining required	No additional machining required	No additional machining required	No additional machining required																								
	Dimension between the breaker bottom and the front plate		<ul style="list-style-type: none"> ● The fixed type does not require modification. ● The adjustable type is unified to the max. 300 mm. <p>■ Dimensional Change Table ("Conventional type→New type" are shown.)</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B No change</th> <th>C No change</th> <th>D(Note 1)</th> </tr> </thead> <tbody> <tr> <td>125-RW</td> <td>44→39</td> <td rowspan="2">54</td> <td rowspan="2">125</td> <td>154-518→162-300</td> </tr> <tr> <td>250-RW</td> <td></td> <td>154-518→162-300</td> </tr> <tr> <td>SFW/SJW/HJW</td> <td rowspan="3">46→41</td> <td rowspan="3">54</td> <td rowspan="3">143</td> <td rowspan="3">172-536→180-318</td> </tr> <tr> <td>125-SGW/HGW/RGW/UGW</td> </tr> <tr> <td>160-SGW/HGW</td> </tr> <tr> <td>250-SGW/HGW/RGW/UGW</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Note 1: As for the new type, the dimensions shown above are those when the adjustment unit V-AD3S is mounted.</p>					A	B No change	C No change	D(Note 1)	125-RW	44→39	54	125	154-518→162-300	250-RW		154-518→162-300	SFW/SJW/HJW	46→41	54	143	172-536→180-318	125-SGW/HGW/RGW/UGW	160-SGW/HGW	250-SGW/HGW/RGW/UGW			
	A	B No change	C No change	D(Note 1)																										
125-RW	44→39	54	125	154-518→162-300																										
250-RW				154-518→162-300																										
SFW/SJW/HJW	46→41	54	143	172-536→180-318																										
125-SGW/HGW/RGW/UGW																														
160-SGW/HGW																														
250-SGW/HGW/RGW/UGW																														



Comparison of Previous and New Models

Breaker type	General products	MCCB	NF400-CW, NF400-SW, NF400-SEW, NF400-HEW, NF400-REW NF630-CW, NF630-SW, NF630-SEW, NF630-HEW, NF630-REW		NF400-UEW	NF800-CEW, NF800-SDW, NF800-SEW, NF800-HEW, NF800-REW	NF800-UEW, NF400-UEW(4P)								
		ELCB		NV400-CW, NV400-SW, NV400-SEW, NV400-HEW, NV400-REW NV630-CW, NV630-SW, NV630-SEW, NV630-HEW, NV630-REW			NV800-SEW, NV800-HEW								
	UL listed products		NF-SKW	NV-SKW		NF-SLW									
F-type	General products	Conventional type	F4SW	F4SWNV	F4UW	F8SW	F8SWNV	F8UW							
		New type	F-4S		F-4U	F-8S		F-8U							
UL listed products		Conventional type	F4SKW	F4SKWNV	—	F6SLW	—	—							
		New type	F-4SUL		—	F-6SUL		—							
V-type	General products	Conventional type	V4SW, V4SWF	V4SWNV, V4SWFNV	V4UW, V4UWF	V8SW, V8SWF	—	—							
		New type	V-4S		—	V-8S		—							
UL listed products		Conventional type	V4SKW, V4SKF	V4SKWNV, V4SKWFNV	—	V6SLW, V6SLWF	—	—							
		New type	V-4SUL		—	V-6SUL		—							
F-type	Breaker mounting-hole dimension	No additional machining required			No additional machining required										
	Front-plate hole dimension	No additional machining required			No additional machining required										
	Dimension between the breaker bottom and the front plate	No change			No change										
V-type	Breaker mounting-hole dimension	No additional machining required			No additional machining required										
	Front-plate hole dimension	No additional machining required			No additional machining required										
	Dimension between the breaker bottom and the front plate	<ul style="list-style-type: none"> ● The fixed type does not require modification. ● The adjustable type is unified to the max. 300 mm.  <p>■ Dimensional Change Table ("Conventional type→New type" are shown.)</p> <table border="1"> <thead> <tr> <th></th> <th>A No change</th> <th>B(Note 1)</th> </tr> </thead> <tbody> <tr> <td>NF400-UEW</td> <td>288</td> <td>314-636→330-397</td> </tr> <tr> <td>Other than above</td> <td>191</td> <td>217-539→233-300</td> </tr> </tbody> </table> <p>Note 1: As for the new type, the dimensions shown above are those when the adjustment unit V-AD3L is mounted.</p>							A No change	B(Note 1)	NF400-UEW	288	314-636→330-397	Other than above	191
	A No change	B(Note 1)													
NF400-UEW	288	314-636→330-397													
Other than above	191	217-539→233-300													

Operating Handle for Emergency Stop Use

In the circumstances where safety of machinery is emphasized, this operating handle is effective for the emergency stop use in accordance to provisions of IEC 60204-1, EN 60204-1, NFPA79, and JIS B 9960-1. The operating handle is colored in accordance with the applicable standard (handle in red and the surrounding part in yellow).

The type name consists of "E" added to the type name of the standard operating handle.



REFERENCE Requirements Regarding Operating Handles Covered by Standards Relating to Machinery

* Major requirements regarding operating handles are excerpted below from the standards relating to machinery.

Standard	Details of Requirement	Standard	Details of Requirement
IEC 60204-1 EN 60204-1 (Safety of Machinery, Electric Equipment of Machines - Part 1: Specifications for General Requirements)	<ul style="list-style-type: none"> • "0" and "1" should be clearly identified. • The operating direction should conform to IEC 60447/EN 60447. → Clockwise direction • There should be no OFF indication until the contact is fully opened. • Disconnecting (isolating) function should be provided. • The handle should be colored in either black or gray. (Except some of those for emergency stop use.) • Measures to enable to lock in the OFF position should be provided. • The enclosure can be opened while live parts are disconnected. → Interlock with the door • Interlock can be released by a qualified person using a tool when the conditions (a) and (b) below are satisfied: → Release operation <ul style="list-style-type: none"> (a) While interlock is released, turning OFF and OFF lock are always enabled. (b) When the door is closed, the door lock is automatically reset. • The enclosure should conform to the protection grade of, at least, IP22. • The actuator of the emergency stop device should be red in color. The surrounding part where the actuator is installed should be yellow in color. 	NFPA79 (Electrical Standard for Industrial Machinery)	<ul style="list-style-type: none"> • Measures to enable locking only in the OFF position regardless of door position should be provided. → Prohibition of ON lock • Operation should be enabled without any tool regardless of door position. • Either OFF state or ON state should be clearly indicated. • Interlock should be provided to prevent the door from being opened without disconnecting power supply. • The handle function should not be lost when the door position is open. • A qualified person can make an access without disconnecting power supply. → Release operation • A qualified person can release interlock by using a tool. → Release operation • When the door is closed, the door lock is automatically reset. • While the door is open, it cannot be turned ON unless interlock is intentionally released.
		UL508A (Industrial Control Panel)	<ul style="list-style-type: none"> • Either OFF state or ON state should be clearly indicated. • Unless power supply is cut off, the door cannot be opened. (Interlock) • Interlock can be released by use of a tool. → Release operation • Measures are provided to prevent recovery of power supply while the door is open. • Locking should be enabled in either the ON or OFF position. • When the door is closed, the door lock is automatically reset.

How To Order

Operating Handles

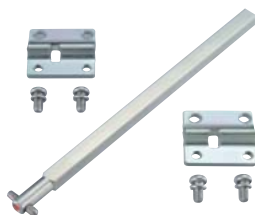
The basic type (standard) for the F-type operating handle includes OFF-lock/reset open/mounting on power source. When ordering specifications other than those mentioned above, designate the specifications in symbols together with the basic type name. The V-type operating handle is available only in the basic type (standard).

Basic type name		Required specifications										
F-05S2		Operation lock	Door open	Installation direction								
		LF	DR	Y								
F-type	For general use	<table border="1"> <thead> <tr> <th>Symbol</th> <th>Specifications</th> </tr> </thead> <tbody> <tr> <td>LF</td> <td>OFF-lock</td> </tr> <tr> <td>LN</td> <td>ON/OFF lock</td> </tr> </tbody> </table>			Symbol	Specifications	LF	OFF-lock	LN	ON/OFF lock		
	Symbol	Specifications										
LF	OFF-lock											
LN	ON/OFF lock											
For emergency stop use	<table border="1"> <thead> <tr> <th>Symbol</th> <th>Specifications</th> </tr> </thead> <tbody> <tr> <td>DR</td> <td>Reset open</td> </tr> <tr> <td>DF</td> <td>OFF open</td> </tr> </tbody> </table>			Symbol	Specifications	DR	Reset open	DF	OFF open			
Symbol	Specifications											
DR	Reset open											
DF	OFF open											
V-type	General products	<table border="1"> <thead> <tr> <th>Symbol</th> <th>Specifications</th> </tr> </thead> <tbody> <tr> <td>Blank</td> <td>Power supply (upper)</td> </tr> <tr> <td>Y</td> <td>Power supply (left)</td> </tr> <tr> <td>Z</td> <td>Power supply (right)</td> </tr> </tbody> </table>			Symbol	Specifications	Blank	Power supply (upper)	Y	Power supply (left)	Z	Power supply (right)
	Symbol	Specifications										
Blank	Power supply (upper)											
Y	Power supply (left)											
Z	Power supply (right)											
UL listed product	<p>Note: As for the UL listed products, only the specification of "mounting on power source" is available.</p>											

Adjustment Unit (for V-type operating handle)

Please specify the type name and the necessary quantity. One order unit includes 1 piece.

	Type name
Under 250AF	V-AD3S
Over 400AF	V-AD3L



Release Protection (for F-type operating handle)

Please specify the type name and the necessary quantity. One order unit includes 10 pieces.

Type name
F-RCS



Service network

Country / Region	Company	Address	Telephone
Australia	Mitsubishi Electric Australia Pty. Ltd.	348 Victoria Road, Rydalmere, N.S.W. 2116, Australia	+61-2-9684-7777
Chile	Rhona S.A.	Agua Santa 4211 P.O. Box 30-D Vina del Mar, Chile	+56-32-2-320-600
China	Mitsubishi Electric Automation (Shanghai) Ltd.	17/F., ChuangXing Financial Center, No.288 West Nanjing Road, Shanghai, 200003	+86-21-2322-3030
China	Mitsubishi Electric Automation (HongKong) Ltd.	10/F., Manulife Tower, 169 Electric Road, North Point, Hong Kong	+852-2887-8810
Colombia	Proelectrico Representaciones S.A.	Carrera 53 No 29C-73 - Medellin, Colombia	+57-4-235-30-38
Egypt	Cairo Electrical Group	9, Rostoum St. Garden City P.O. Box 165-11516 Maglis El-Shaab, Cairo - Egypt	+20-2-27961337
Europe	Mitsubishi Electric Europe B.V.	Gothaer Strasse 8, D-40880 Ratingen, Germany	+49-(0)2102-486-0
Indonesia	P. T. Sahabat Indonesia	P.O.Box 5045 Kawasan Industri Pergudangan, Jakarta, Indonesia	+62-(0)21-6610651-9
Korea	Mitsubishi Electric Automation Korea Co., Ltd	1480-6, Gayang-Dong, Gangseo-Gu, Seoul, Korea	+82-2-3660-9572
Laos	Societe Lao Import Co., Ltd.	43-47 Lane Xang Road P.O. BOX 2789 VT Vientiane Laos	+856-21-215043
Lebanon	Comptoir d'Electricite Generale-Liban	Cebaco Center - Block A Autostrade Dora, P.O. Box 11-2597 Beirut - Lebanon	+961-1-240445
Malaysia	Mitric Sdn Bhd	5 Jalan Pemberita U1/49, Temasya Industrial Park, Glenmarie 40150 Shah Alam, Selangor, Malaysia	+603-5569-3748
Myanmar	Peace Myanmar Electric Co.,Ltd.	NO137/139 Botataung Pagoda Road, Botataung Town Ship 11161, Yangon, Myanmar	+95-(0)1-202589
Nepal	Watt&Volt House	KHA 2-65, Volt House Dillibazar Post Box:2108, Kathmandu, Nepal	+977-1-4411330
Other Middle East Arab Countries & Cyprus	Comptoir d'Electricite Generale-International-S.A.L.	Cebaco Center - Block A Autostrade Dora P.O. Box 11-1314 Beirut - Lebanon	+961-1-240430
Pakistan	Prince Electric Co.	1816 Brandreth Road, Lahore-54000, Pakistan	+92-(0)42-7654342
Philippines	Edison Electric Integrated, Inc.	24th Fl. Galleria Corporate Center, Edsa Cr. Ortigas Ave., Quezon City Metro Manila, Philippines	+63-(0)2-634-8691
Saudi Arabia	Center of Electrical Goods	Al-Shuwayer St. Side way of Salahuddin Al-Ayoubi St. P.O. Box 15955 Riyadh 11454 - Saudi Arabia	+966-1-4770149
South Africa	CBI-electric: low voltage	Private Bag 2016, Isando, 1600, South Africa	+27-(0)11-9282000
Taiwan	Setsuyo Enterprise Co., Ltd	6th Fl., No.105, Wu Kung 3rd, Wu-Ku Hsiang, Taipei, Taiwan, R.O.C.	+886-(0)2-2298-8889
Thailand	United Trading & Import Co., Ltd.	77/12 Bamrungmuang Road, Klong Mahanak, Pomprab Bangkok Thailand	+66-223-4220-3
Uruguay	Fierro Vignoli S.A.	Avda. Uruguay 1274, Montevideo, Uruguay	+598-2-902-0808
Venezuela	Adesco S.A.	Calle 7 La Urbina Edificio Los Robles Locales C y D Planta Baja, Caracas - Venezuela	+58-212-241-9952
Vietnam	CTY TNHH-TM SA GIANG	47-49 Hoang Sa, St., Dakao Ward, Dist 1, Ho Chi Minh City, Viet Nam	+84-8-9103633

Safety Tips : Be sure to read the instruction manual fully before using this product.


MITSUBISHI ELECTRIC CORPORATION
 FACTORY AUTOMATION SYSTEM: TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN