

LOW-VOLTAGE MOTOR CONTROL CENTER

STANDARD TYPE **S**TYPE
 SPACE-SAVING & ECONOMICAL TYPE **E**TYPE
 HIGH FUNCTIONAL TYPE **NH-C**TYPE



S TYPE





Low-Voltage Motor Control Centers ensuring safety and maintainability.

STANDARD TYPE

Control center

S TYPE



SPACE-SAVING & ECONOMICAL TYPE

Control center

E TYPE



HIGH FUNCTIONAL TYPE

Control center

NH-C TYPE



STANDARD TYPE

Control center

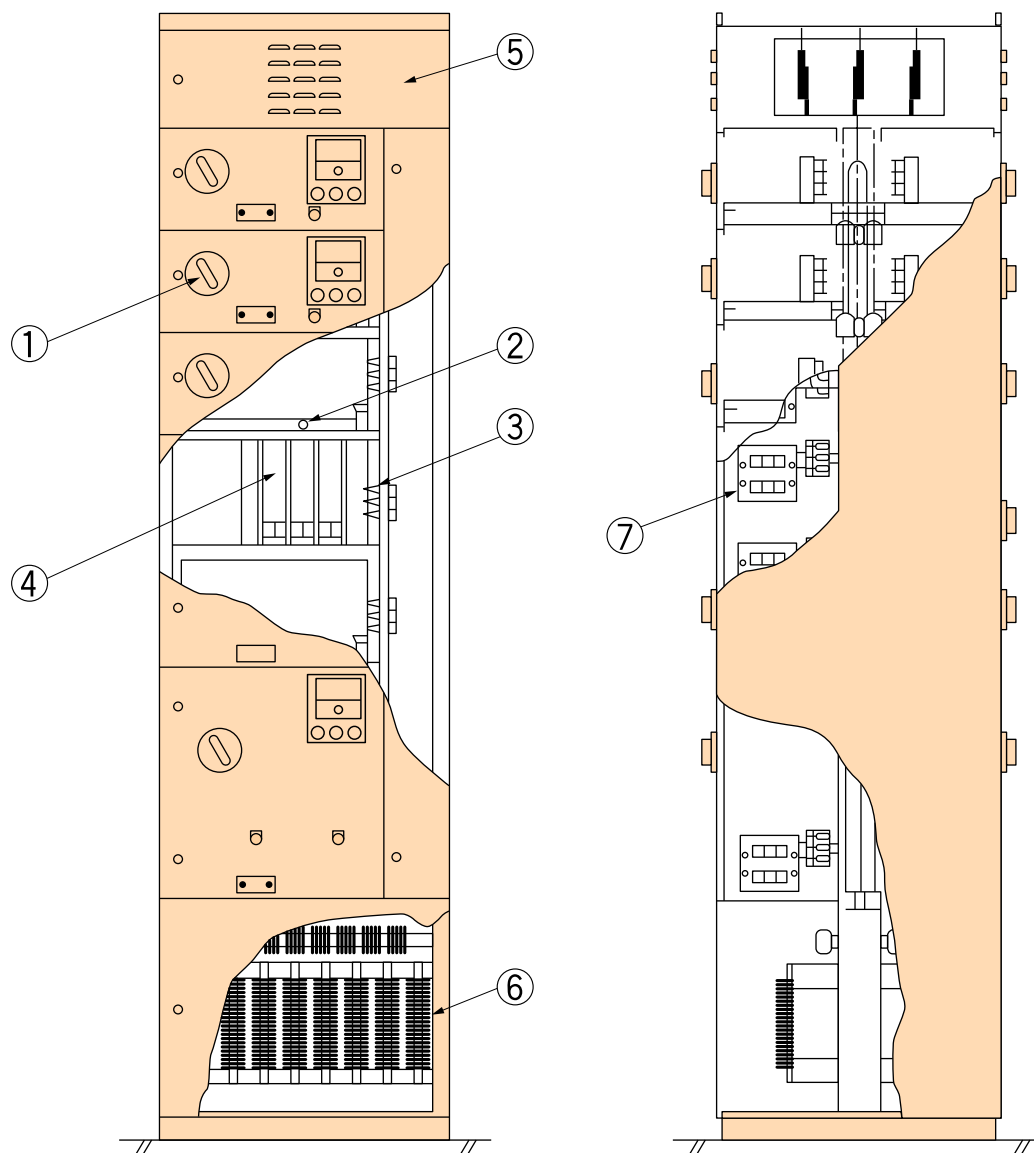
S **TYPE**

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FEATURES

LOW VOLTAGE MOTOR CONTROL CENTER S TYPE has several unitized assemblies of grouped circuit breakers, magnetic contactors, controlling and supervising devices, etc. and is functionally enclosed in the steel enclosure. Its purpose is for load control and protection of motors and other equipments in the low voltage distribution system.



■ Economical multi compartments

Up to eight (8) 240mm height units can be inserted (B-B wiring type).

■ Applicable standards

IEC 60439-1, JEM 1195, and NEMA ICS2-322

■ Maximum breaking capacity: 50kA at AC400V

- ① Handle equipped with mechanical interlocking device for enhancing safety
- ② Easy withdrawing by use of a crank handle Indication of Connected Position (C) and Disconnected Position (M)
- ③ Stab connection
- ④ Insulation protection of vertical busbar compartment
- ⑤ Isolated horizontal busbar compartment
- ⑥ Terminal compartment for easy connection
- ⑦ Detachable control circuit connector

STRUCTURE

ENCLOSURE

■ Cable compartment

Separating plate from top to bottom increases the strength of the panel and allows the cable compartment to be fully separated from the unit compartments therefore assuring the safe cable connection.

■ Common structure for both single-front and double-front types

Common enclosure is applied to both single-front and double-front types.

■ Enclosure for easy extension

The enclosure has connecting holes and busbar through-holes on the side for adding additional panel set.

Extension is easily possible by removing the closing plate.

■ Terminal compartment

B-C, C-B, and C-C wiring types have the terminal compartments. C-C type has the load terminals behind the control terminals; therefore, when wiring, control terminals should be pulled forward.

The terminals grouped by each unit are arranged vertically for easy wiring.

3 x 25 mm (250A) sized copper bar is used for earthing.

■ Door

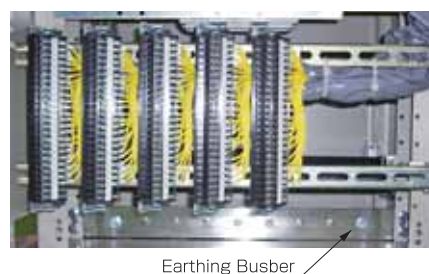
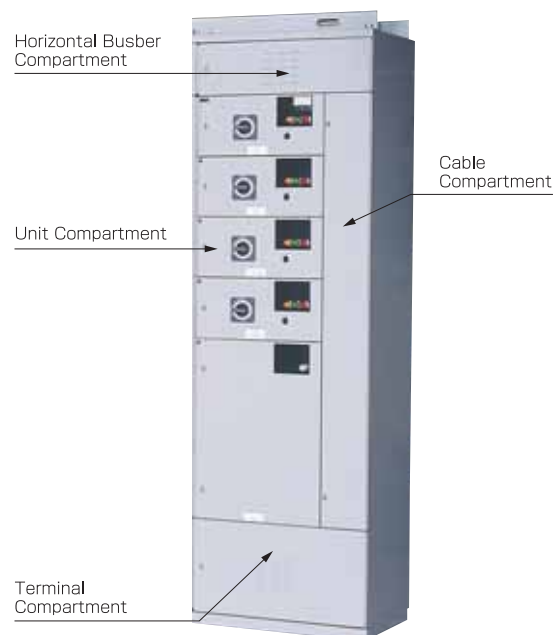
Nameplate and external operating handle of non-fused breaker as well as pilot light, push button, reset button, ammeter, etc. can be assembled on the door front.

■ External handle

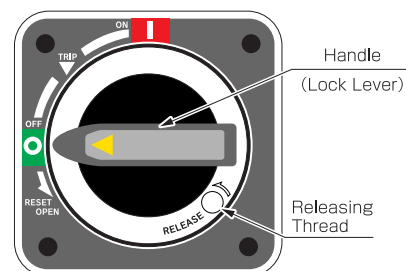
Mechanical interlock is equipped so as not to open the front door when the external handle points "ON". In order to open the door when the circuit breaker is "ON", remove the RELEASE cap and turn the releasing thread counterclockwise.

The handle has the lock lever to keep and padlock on either "ON" or "OFF" state.

■ Uninstalled compartment



Earthing Busbar



	Specification of door front			Wiring system to the bottom terminals	
	Opening for external operating handle	Opening for accessories (PL, PB, and COS)	Opening for ammeter	B	C
EMPTY	—	—	—	—	—
SPACE	Closing plate	Assembled	Closing plate	—	○

BUSBAR

■ Horizontal busbar

The horizontal busbars are placed in an isolated busbar compartment and fully separated from unit compartments.

- Standard specification : 600A~2000A
- Customized specification : 2500A or more



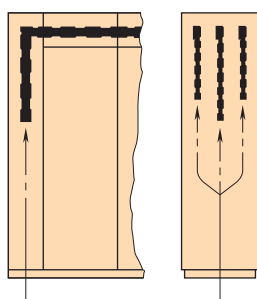
Insulation Tube (Option)

■ Vertical busbar

Vertical busbars diverged from the horizontal busbars are arranged in the back of unit compartments and between front and rear sections. Vertical busbars are 5 x 40 mm sized tin-plated copper bars. Busbars are fixed with the mold supporter which is excellent in arc and tracking resistance and keep an enhanced safety with the flame-retardant protection covers.

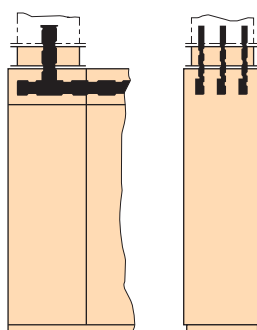


POWER SUPPLY



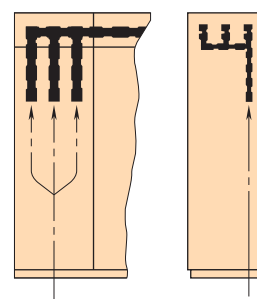
■ Cable leading from the side

When leading power with cable from the side, the cable duct will be provided. The cable duct is equipped with the connecting busbar and cable supporter.



■ Busbar leading from the top

When leading power with busbar from the top, the bus duct will be provided. The bus duct is equipped with the connecting busbar.

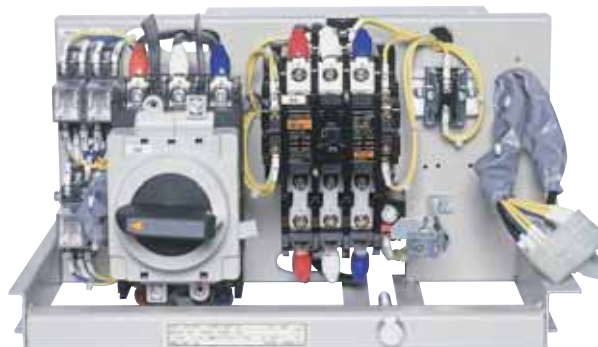


■ Cable leading from the back

Leading power with cable from the back is possible only when the power supply cable is 325mm² or less.

UNIT

Withdrawable type units range in size from 240mm to 720mm height. Non-fused breaker and magnetic contactor as well as auxiliary relay, earth leakage relay, fuse, etc. can be assembled on the front side of the unit.



Power and load contacts as well as current transformer, control transformer, time-delay relay, ZCT, etc. are assembled on the rear side of the unit.



■ Unit insertion

The unit is inserted easily by use of the crank handle.



■ Control circuit connector

Control circuits are connected by plug connectors.



COMPONENTS OF UNITS (maximum to be equipped)

■ Non-reversing combination starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor	Standard				Option		
	200V	400V			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer	Earth leakage relay	Time-delay relay
					PAK-8JS	50VA			15VA	ELR+ZCT	TDR
240	0.2 } 15	0.2 } 30	TN - H50B // - S100C // - H100B	PAK-26JTC } PAK-65JTC	○×2	○	○	○	○	○	○
480	19 } 26	37 } 55	TN - E225B // - S225B // - H225B	PAK-80JTC } PAK-125HTC	○×2	○	○	○	○	○	○
720	30 · 37	60 · 75	TN - E225B // - S225B // - H225B	PAK-125HTC PAK-150HTC	○×2	○	○	○	○	○	○
960 (Fixed)	45 · 55	90	TN - E400B // - S400B	PAK-220HTC	○×3	○	○	○	○	○	○
960 (Fixed)	60 · 75	95 · 150	TN - E400B // - S400B // - E600 // - S600	PAK-300HT	○×3	○	○	○	○	○	○

■ Reversing combination starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor	Standard				Option		
	200V	400V			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer	Earth leakage relay	Time-delay relay
					PAK-8JS	50VA			15VA	ELR+ZCT	TDR
360	0.2 } 7.5	0.2 } 15	TN - H50B // - S100C // - H100B	RSK-26JTC } RSK-35JTC	○×3	○	○	○	○	○	○
480	11 · 15	19 } 30	TN - S100C // - H100B	RSK-50JTC } RSK-65JTC	○×3	○	○	○	○	○	○
720	19 · 22	37 } 45	TN - S225B // - E225B // - H225B	RSK-80JTC } RSK-100HTC	○×3	○	○	○	○	○	○
960 (Mg part fixed)	30	50 · 55	↓	RSK-125HTC	○×3	○	○	○	○	○	○
1 set (Fixed)	37 } 75	60 } 150	TN - S225B // - E225B // - H225B } TN - S600 // - E600	RSK-150HTC } RSK-300HT	○×3	○	○	○	○	○	○

■ Star-delta starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor	Standard				Option		
	200V	400V			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer	Earth leakage relay	Time-delay relay
					PAK-8JS	50VA			15VA	ELR+ZCT	TDR
480	0.2 ∩ 7.5	0.2 ∩ 15	TN - H50B // - S100C	SD-25 SD-35	○×3	○	○	○	○	○	○
720	11 ∩ 22	19 ∩ 45	TN - S100C // - H100B // - S225B // - E225B // - H225B	SD-50 SD-100	○×3	○	○	○	○	○	○
960 (Fixed)	26 · 30	50 · 55	TN - S225B // - E225B // - H225B	SD-125	○×3	○	○	○	○	○	○
1440 (Fixed)	37	60 · 75	↓	SD-150	○×3	○	○	○	○	○	○
1 set (Fixed)	45	90 · 95	TN - E400B // - S400B	SD-220 SD-300	○×3	○	○	○	○	○	○

■ Circuit breaker

Height of unit (mm)	Circuit breaker		Standard				Option	
			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer	Earth leakage relay
			PAK-8JS	50VA			15VA	ELR+ZCT
240	TN - H50B // - S100C // - H100B	}...Up to RC75A	○×2	○	○	○	○	○
360	TN - S100C // - H100B	}...RC100A	○×2	○	○	○	○	○
480	TN - S225B // - E225B // - H225B		○×2	○	○	○	○	○
720 (Fixed)	TN - S400B // - E400B		○×2	○	○	○	○	○
960 (Fixed) ※1	TN - S600 // - E600		○×2	○	○	○	○	○

※1 The unit size shall be 1440mm (fixed type) if the circuit breaker of 600AF unit comes with earth leakage relay.

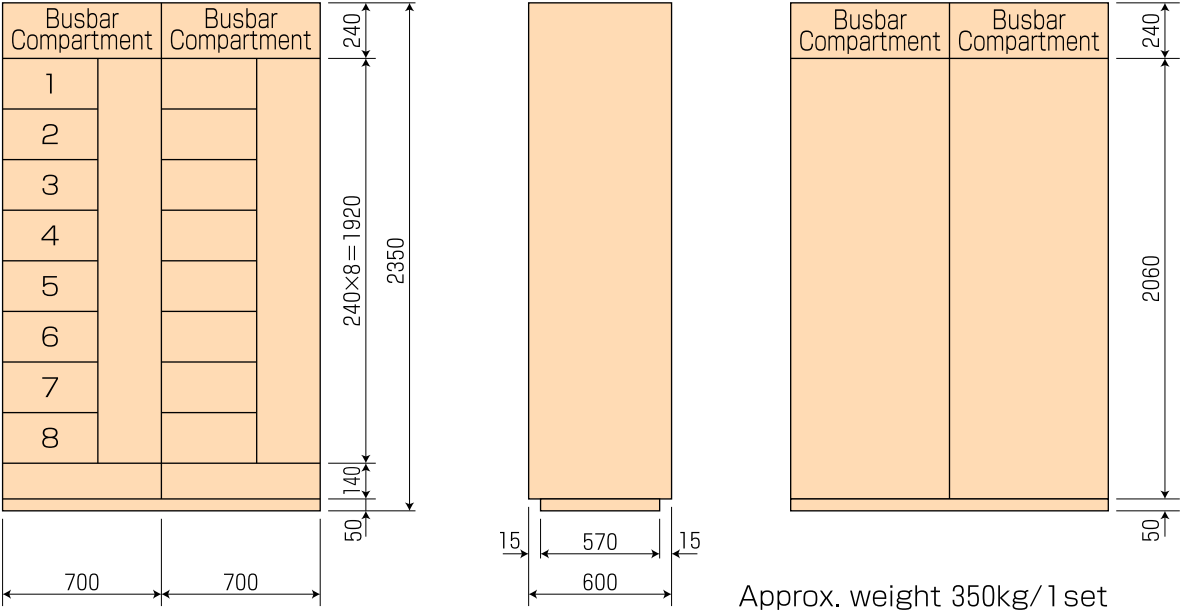
UNIT CONFIGURATION

Wiring System	B-B	B-C	C-B	C-C
Description	Main — Btype Control --- Btype	Main — Btype Control --- Ctype	Main — Ctype Control --- Btype	Main — Ctype Control --- Ctype
Single-front	Front 8	Front 7	Front 7	Front 7
Double-front	Front 8 Rear 8	Front 7 Rear 7	Front 7 Rear 7	Front 7 Rear 7
Scheme				

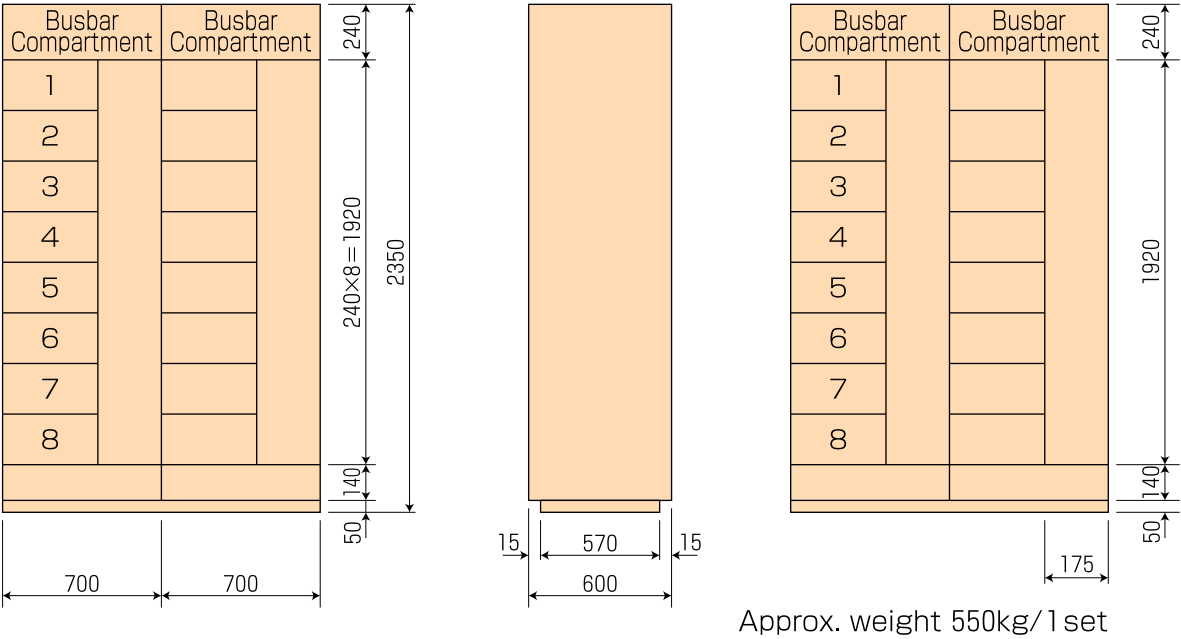
DIMENSIONS

The dimensions vary from wiring system (B-B, B-C, C-B, C-C) and single-front or double-front.

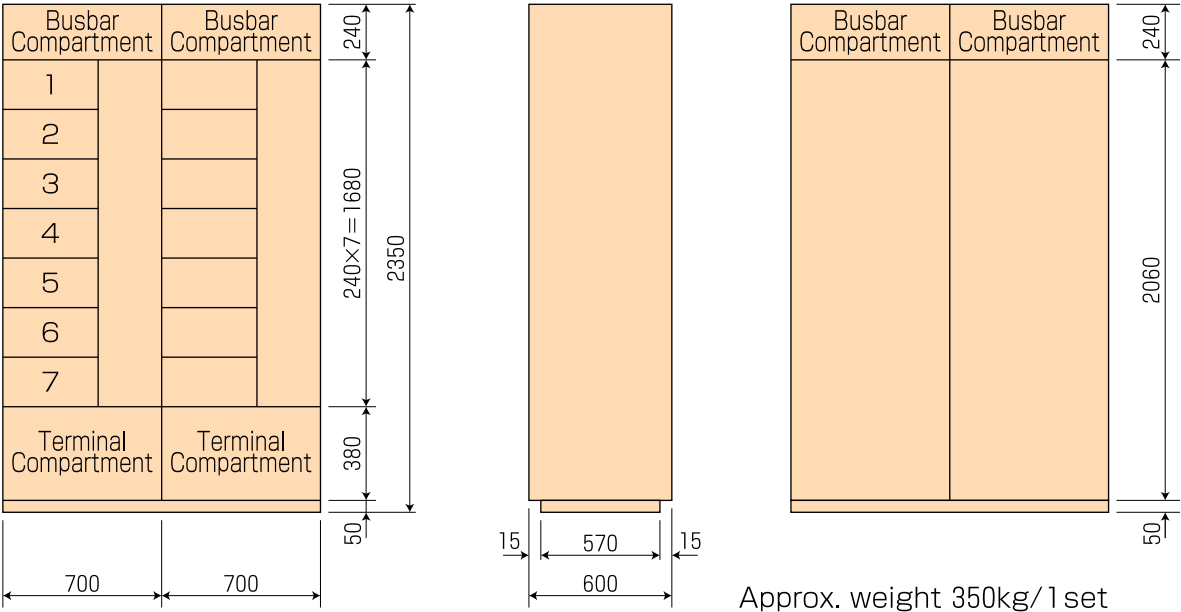
SINGLE-FRONT TYPE : B-B TYPE



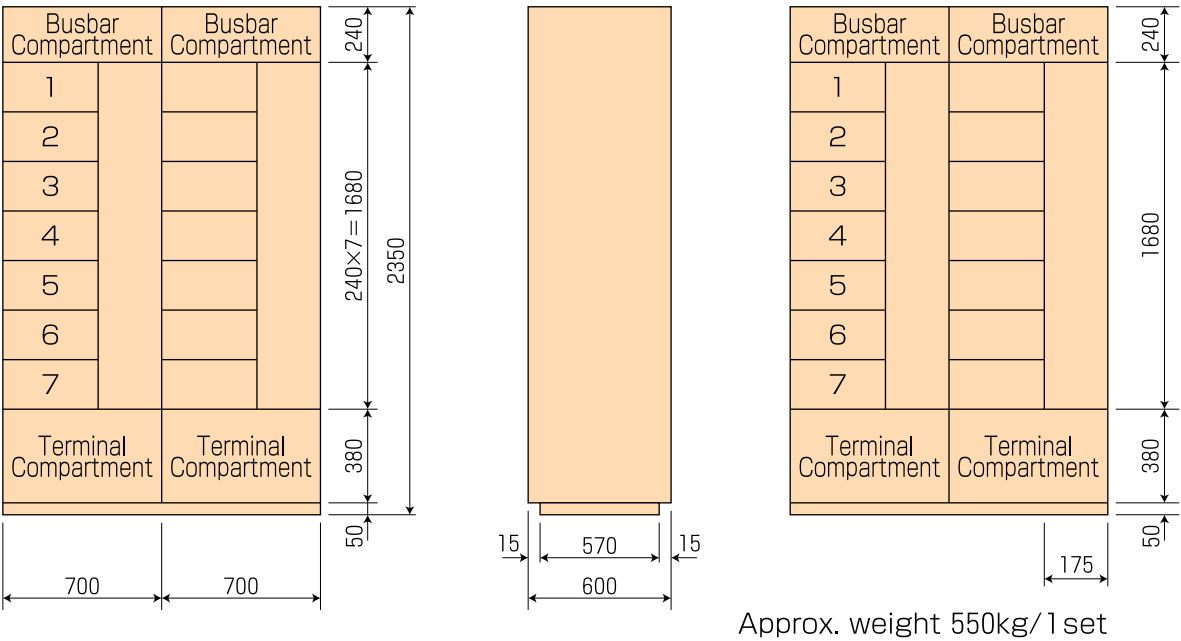
DOUBLE-FRONT TYPE : B-B TYPE



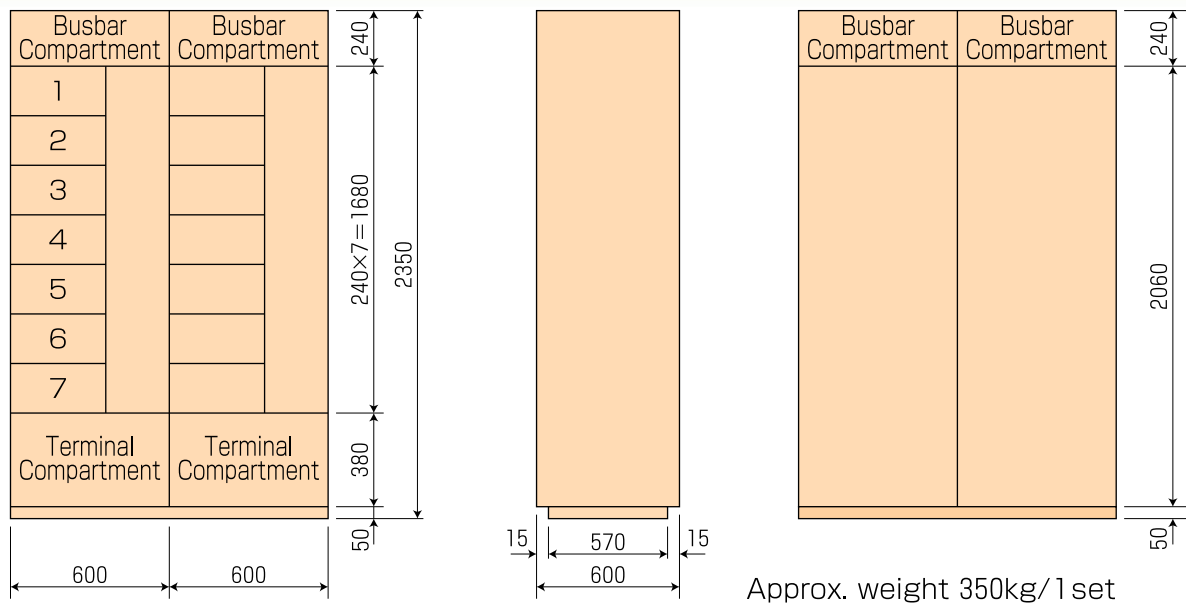
SINGLE-FRONT TYPE : B-C & C-B TYPE



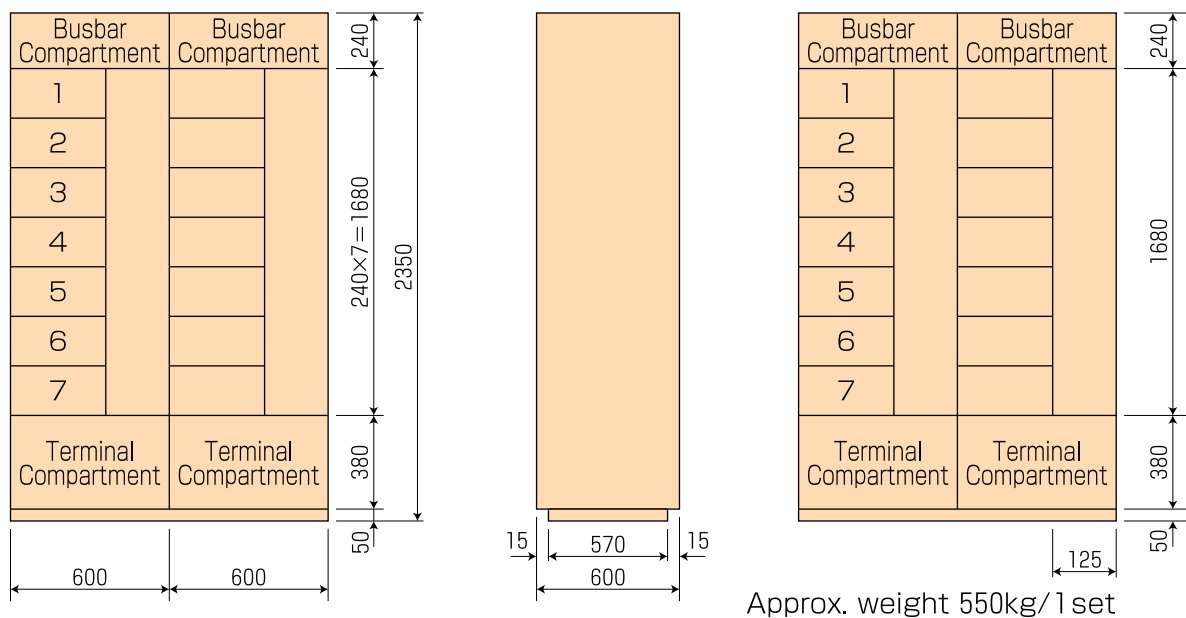
DOUBLE-FRONT TYPE : B-C & C-B TYPE



SINGLE-FRONT TYPE : C-C TYPE

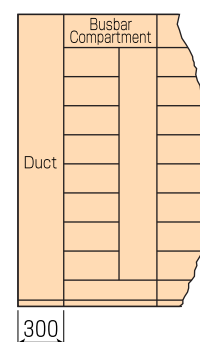


DOUBLE-FRONT TYPE : C-C TYPE



CABLE DUCT

When power cables are led through the side, the cable duct will be provided. The dimensions are shown as the illustration on the right. Doors are fixed on both front and rear sides.



Approx. weight 100kg

UNIT APPLICATION

NON-REVERSING UNIT



380-440V Control Center

Motor			MCCB		MC (PAK)		CT	A	Unit		Note
kW	HP	RC (A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	0.7	50	15	26	0.7	3/5	3/5	CU-05026	240	
0.4	1/2	1.3				1.2					
0.75	1	2.1				1.8					
1		2.5				2.3					
1.1	1 1/2	3									
1.5	2	3.7				3.6	5/5	5/5			
2.2	3	5				4.6					
3.7	5	8				7.5	10/5	10/5			
5.5	7 1/2	12.5		30		11	15/5	15/5			
7.5	10	16.5				15	20/5	20/5			
11	15	23.5		40		22	30/5	30/5			
15	20	31.5	100	60	35	30	50/5	50/5	CU-10035		
19	25	39		75	50	34			CU-10050		
22	30	45		100		42					
25		50			65	48	75/5	75/5	CU-10065		
26	35	51									
30	40	60				56					
37	50	73	225	125	80	68			CU-20080	480	
45	60	87		150	100	80	100/5	100/5	CU-20100		
50		98		175	125	90			CU-20125		
55	75	110				105	150/5	150/5			
60		116		225	150				CU-20150	720	
75	100	137				130					
90		165	400	300	220	160	200/5	200/5	CU-40220	960	Fixed type
95	125	171		350	300	240			CU-40300		
110	150	205		400			300/5	300/5			
150	200	274								1200	

200-220V Control Center

Motor			MCCB		MC (PAK)		CT	A	Unit		Note
kW	HP	RC (A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	1.4	50	15	26	1.2	3/5	3/5	CU-05026	240	
0.4	1/2	2.6				2.3					
0.75	1	4.2				3.6	5/5	5/5			
1		5				4.6	7.5/5	7.5/5			
1.1	1 1/2	6				5					
1.5	2	7.4				6.7					
2.2	3	10		20		9.2	10/5	10/5			
3.7	5	16		30		15	20/5	20/5			
5.5	7 1/2	25		50		22	30/5	30/5			
7.5	10	33	100	60	35	30	50/5	50/5	CU-10035		
11	15	47		100	50	42			CU-10050		
15	20	63			65	56	75/5	75/5	CU-10065		
19	25	78	225	125	80	68	100/5	100/5	CU-20080	480	
22	30	90		150	100	80			CU-20100		
26	35	102		175	125	105	150/5	150/5	CU-20125		
30	40	120		200							
37	50	146		225	150	130			CU-20150	720	
45	60	174	400	300	220	160	200/5	200/5	CU-40220	960	Fixed type
55	75	220		350		190	300/5	300/5			
60		232		400	300	240			CU-40300		
75	100	274									

REVERSING UNIT



380-440V Control Center

Motor			MCCB		MC (RSK)		CT	A	Unit		Note
kW	HP	RC (A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	0.7	50	15	26	0.7	3/5	3/5	CUR-05026	360	
0.4	1/2	1.3				1.2					
0.75	1	2.1				1.8					
1		2.5				2.3					
1.1	1 1/2	3									
1.5	2	3.7				3.6	5/5	5/5			
2.2	3	5				4.6					
3.7	5	8				7.5	10/5	10/5			
5.5	7 1/2	12.5		30		11	15/5	15/5			
7.5	10	16.5				15	20/5	20/5			
11	15	23.5		40		22	30/5	30/5			
15	20	31.5	100	60	35	30	50/5	50/5	CUR-10035		
19	25	39		75	50	34			CUR-10050	480	
22	30	45		100		42					
25		50			65	48	75/5	75/5	CUR-10065		
26	35	51									
30	40	60				56					
37	50	73	225	125	80	68			CUR-20080	720	
45	60	87		150	100	80	100/5	100/5	CUR-20100		
50		98		175	125	90			CUR-20125	960	Fixed type
55	75	110				105	150/5	150/5			
60		116		225	150				CUR-20150	1set	
75	100	137				130					
90		165	400	300	220	160	200/5	200/5	CUR-40220		
95	125	171		350	300	240			CUR-40300		
110	150	205		400			300/5	300/5			
150	200	274									

200-220V Control Center

Motor			MCCB		MC (RSK)		CT	A	Unit		Note
kW	HP	RC (A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	1.4	50	15	26	1.2	3/5	3/5	CUR-05026	360	
0.4	1/2	2.6				2.3					
0.75	1	4.2				3.6	5/5	5/5			
1		5				4.6	7.5/5	7.5/5			
1.1	1 1/2	6				5					
1.5	2	7.4				6.7					
2.2	3	10		20		9.2	10/5	10/5			
3.7	5	16		30		15	20/5	20/5			
5.5	7 1/2	25		50		22	30/5	30/5			
7.5	10	33	100	60	35	30	50/5	50/5	CUR-10035		
11	15	47		75	50	42			CUR-10050	480	
15	20	63		100	65	56	75/5	75/5	CUR-10065		
19	25	78	225	125	80	68	100/5	100/5	CUR-20080	720	
22	30	90		150	100	80			CUR-20100		
26	35	102		175	125	105	150/5	150/5	CUR-20125	960	Fixed type
30	40	120		200							
37	50	146		225	150	130			CUR-20150	1set	
45	60	174	400	350	220	160	200/5	200/5	CUR-40220		
55	75	220		400		190	300/5	300/5			
60		232			300	240			CUR-40300		
75	100	274							CUR-60300		

STAR-DELTA UNIT



380-440V Control Center

Motor			MCCB		MC (PAK·RSK)				CT (A)	A (A)	Unit		Note
kW	HP	RC (A)	AF	RC (A)	M	λ	Δ	Heater (A)			Model	Height	
0.2	1/4	0.7	50	15	26	26	26	0.7	3/5	3/5	CUSD-05026	480	
0.4	1/2	1.3						1.2					
0.75	1	2.1						1.8					
1		2.5						2.3					
1.1	1 1/2	3											
1.5	2	3.7						3.6	5/5	5/5			
2.2	3	5						4.6					
3.7	5	8						7.5	10/5	10/5			
5.5	7 1/2	12.5		30				11	15/5	15/5			
7.5	10	16.5						15	20/5	20/5			
11	15	23.5		60				22	30/5	30/5			
15	20	31.5	100		35			30	50/5	50/5	CUSD-10035		
19	25	39		75	50			34			CUSD-10050	720	
22	30	45		100		35	35	42					
25		50			65			48	75/5	75/5	CUSD-10065		
26	35	51											
30	40	60				50	50	56					
37	50	73	225	125	80			68			CUSD-20080		
45	60	87		150	100	65	65	80	100/5	100/5	CUSD-20100		
50		98		175	125			90			CUSD-20125	960	Fixed type
55	75	110						105	150/5	150/5			
60		116		225	150	100	100				CUSD-20150	1440	
75	100	137						130					
90		165	400	300	220	125	125	160	200/5	200/5	CUSD-40220	1set	
95	125	171		350	300	150	150	240			CUSD-40300		

200-220V Control Center

Motor			MCCB		MC (PAK·RSK)				CT (A)	A (A)	Unit		Note
kW	HP	RC (A)	AF	RC (A)	M	λ	Δ	Heater (A)			Model	Height	
0.2	1/4	1.4	50	15	26	26	26	1.2	3/5	3/5	CUSD-05026	480	
0.4	1/2	2.6						2.3					
0.75	1	4.2						3.6	5/5	5/5			
1		5						4.6	7.5/5	7.5/5			
1.1	1 1/2	6						5					
1.5	2	7.4						6.7					
2.2	3	10		20				9.2	10/5	10/5			
3.7	5	16		30				15	20/5	20/5			
5.5	7 1/2	25		50				22	30/5	30/5			
7.5	10	33	100	60	35			30	50/5	50/5	CUSD-10035		
11	15	47		100	50	35	35	42			CUSD-10050	720	
15	20	63			65	50	50	56	75/5	75/5	CUSD-10065		
19	25	78	225	125	80			68	100/5	100/5	CUSD-20080		
22	30	90		150	100	65	65	80			CUSD-20100		
26	35	102		175	125			105	150/5	150/5	CUSD-20125	960	Fixed type
30	40	120		200		80	80						
37	50	146		225	150	100	100	130			CUSD-20150	1440	
45	60	174	400	300	220	125	125	160	200/5	200/5	CUSD-40220	1set	

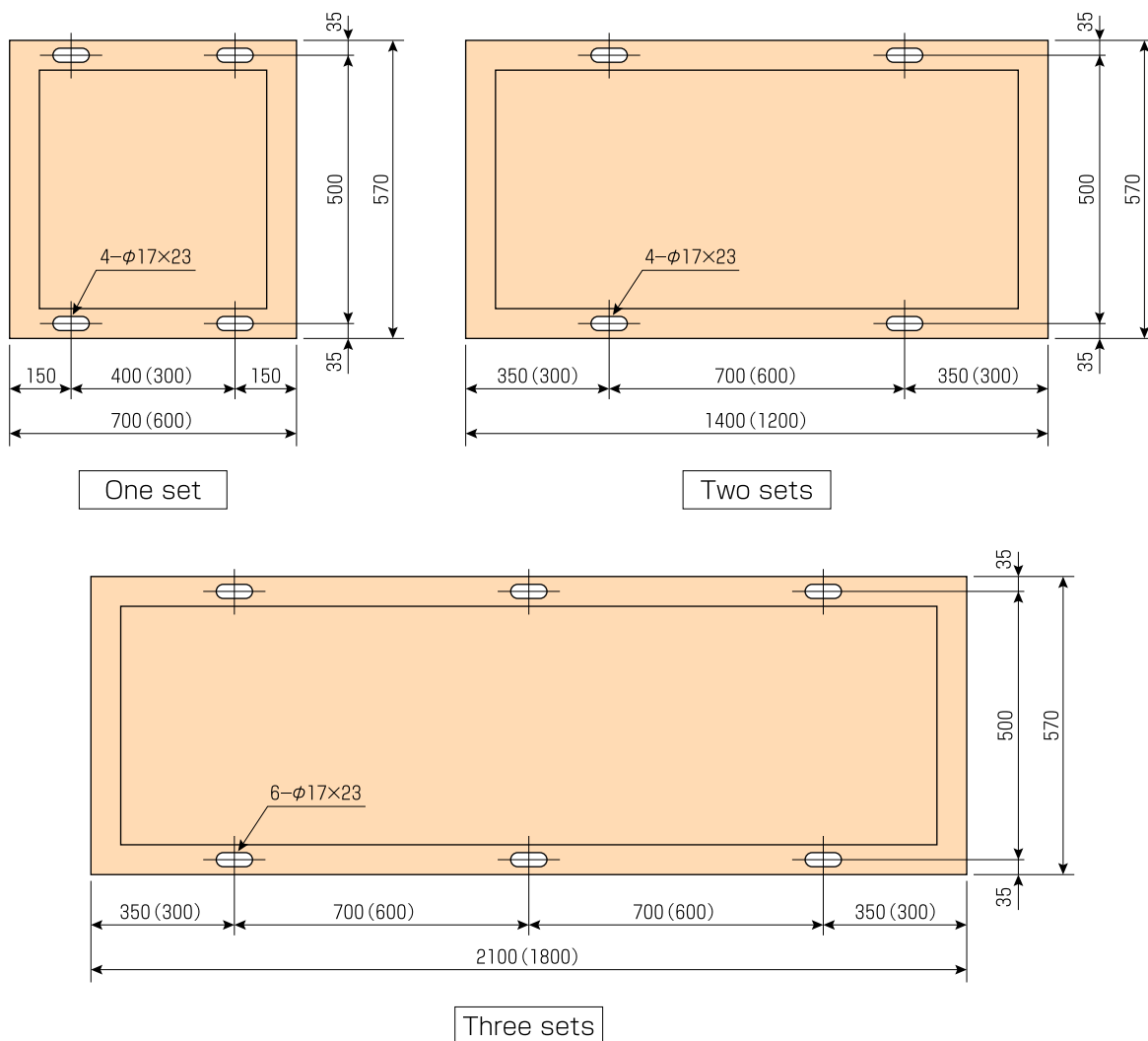
CIRCUIT BREAKER UNIT



Model	Rated Current						Unit Height
CUNF 50/100	15A	20A	30A	40A	50A/60A	75A	240mm
CUNF 100	100A						360mm
CUNF 225	125A	150A	175A	200A	225A		480mm
CUNF 400	250A	300A	350A	400A			720mm Fixed Type
CUNF 600	500A	600A					960mm ↓

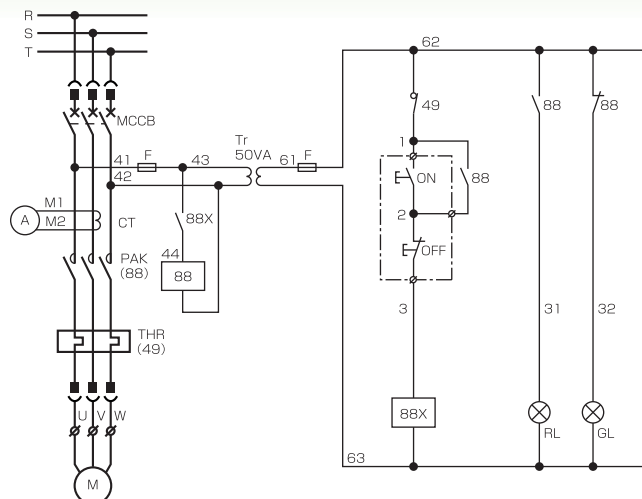
CANNEL BASE

※Parenthetical dimensions are for C-C type.



WIRING DIAGRAM

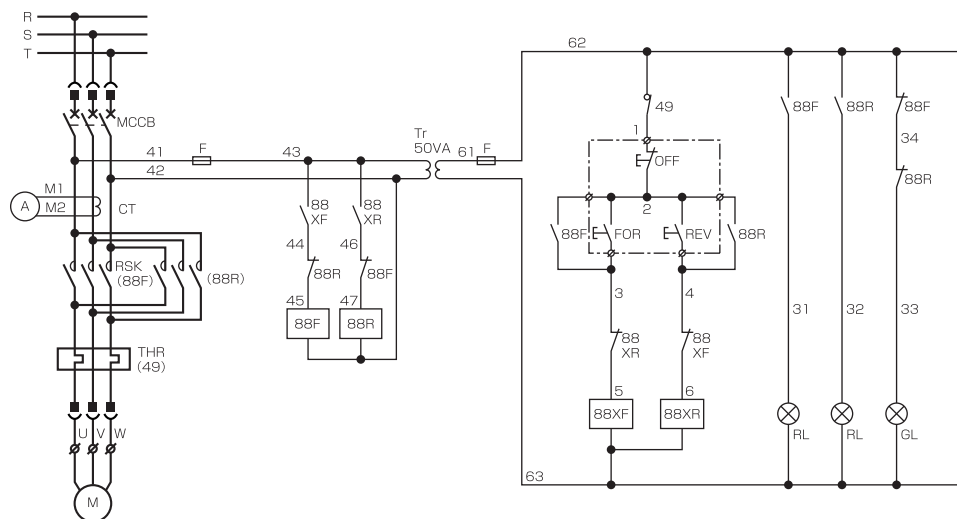
NON-REVERSING UNIT



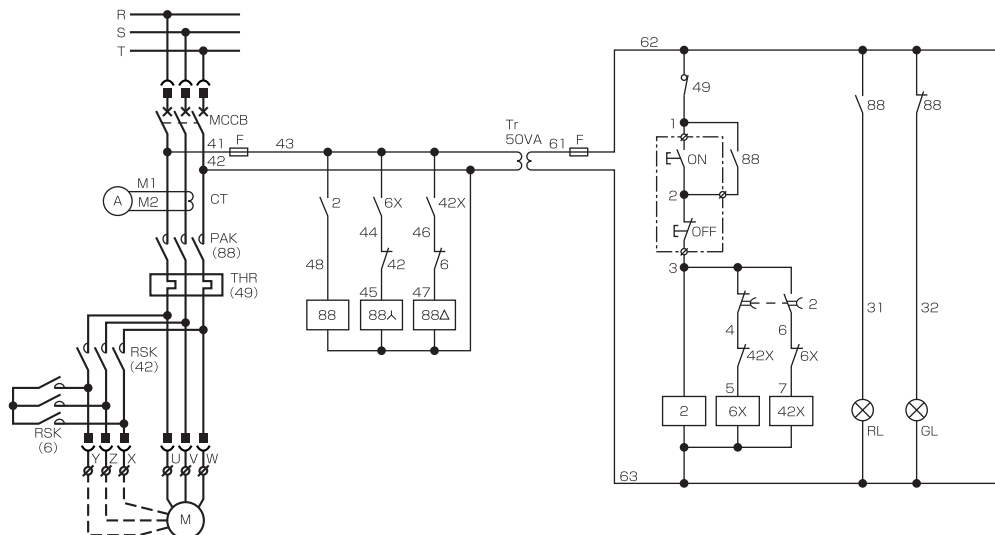
Symbols

- MCCB : Molded case circuit breaker
- PAK (88) : Electro-magnetic contactor
- RSK (88F, 88R) : Reversing type electro-magnetic contactor (42, 6)
- THR (49) : Thermal overload relay
- CT : Current transformer
- Tr : Control voltage transformer
- 88X : Auxiliary relay
- F : Fuse
- 49 : Thermal relay contact
- T : Timer
- RL·GL : Pilot light (LED)
- M : Motor

REVERSING UNIT



STAR-DELTA UNIT



ORDER SHEET

 Indicates standard specifications.

Customer's Name				End User's Name			
Item			Specifications				
Ratings	Main circuit rated insulating voltage		☐ 600V				
	Control circuit rated insulating voltage		☐ 250V				
Main Circuit	Distribution system		☐ 3-phase, 3-wire				
	Main circuit voltage		☐ AC200V ☐ AC220V ☐ AC400V ☐ AC440V				
	Frequency		☐ 50Hz ☐ 60Hz				
	Power transformer	Rated capacity	☐ kVA				
		Rated primary voltage	☐ V				
		Rated secondary voltage	☐ V				
		Rated current	☐ A				
		%Z	☐ %				
		Earthing system	☐ Direct earthing ☐ Other earthing system ☐ unearthing				
	Short-circuit capacity		☐ Calculated value at secondary side of transformer ☐ kA				
	Required breaking capacity		☐ 10kA ☐ 20kA ☐ 30kA ☐ 50kA ☐ kA				
	Rated short-time current		☐ 30kA 0.5sec ☐ 50kA 0.5sec				
	Horizontal busbar capacity		☐ 600A ☐ 1000A ☐ 1200A ☐ 1500A ☐ 2000A ☐ 2500A				
	Vertical busbar capacity		☐ 500A				
	Earthing busbar capacity		☐ 250A ☐ 600A				
Fault protection	Short-circuit	☐ Full capacity breaking ☐ Back-up breaking ☐ Selective breaking					
	Overload	☐ Thermal overcurrent relay					
	Earth	☐ Earth leakage relay (a relay/unit) ☐ Earth leakage relay (a relay/set)					
Control Circuit	Control circuit voltage		☐ AC100V ☐ AC110V ☐ AC200V ☐ AC220V ☐ DC V				
	Control transformer		☐ 50VA for each unit ☐ VA for common control power				
Structure	Installation site		☐ Indoor ☐ Outdoor				
	Enclosure type		☐ Enclosed ☐ Dust-proof (simplified)				
	Protection class		☐ IP20 ☐ IP40				
	Single-front/Double-front		☐ Single-front ☐ Double-front				
	Wiring method		☐ B-B ☐ B-C ☐ C-B ☐ C-C				
	Power leading		☐ Bus duct ☐ Side cable ☐ Rear cable (A) (Cable size mm ² · Cable type)				

Painting	Outside	☐ Munsell No. 5Y7/1 (semi-gloss)
	Inside	☐ Munsell No. 5Y7/1 (semi-gloss)
	Meter frame	☐ Munsell No. N1.5
	Breaker operating handle	☐ Munsell No. N1.5
Internal Wiring	Main circuit	☐ Black (600V HIV, WL 1) [Cable:Min 3.5mm ²]
	Main circuit terminal color	☐ Phase A: Red Phase B: White Phase C: Blue
	Control circuit	☐ Yellow (AC) ☐ Yellow (DC) [Cable:KIV 1.25mm ²]
	Voltage transformer - secondary side	☐ Yellow [Cable:KIV 2mm ²]
	Current transformer - secondary side	☐ Yellow [Cable:KIV 2mm ²]
	Earthing	☐ Green [Cable:KIV 2mm ²]
Unit	Main circuit supply side	☐ Stab connection
	Main circuit load side	☐ Stab connection
	Control circuit	☐ Plug connection
	Circuit breaker	☐ With thermal and instantaneous elements
	Magnetic contactor	Coil voltage ☐ AC100/110V ☐ AC200/220V ☐ 400/440V
	Thermal overcurrent relay	☐ Manual reset ☐ Automatic reset
	Auxiliary relay	Coil voltage ☐ AC100/110V ☐ AC200/220V
	Control voltage transformer	☐ 200/100V ☐ 220/110V ☐ 400/100V ☐ 440/110V ☐ 400/200V ☐ 440/220V
	Instrument current transformer	☐ 15VA-1.0class
	Time-delay relay	☐ 2±1 sec
	Earth leakage relay	☐ 30mA ☐ 100mA ☐ 200mA ☐ 500mA (0.1sec or 0.3sec selectable)
	Zero phase current transformer	☐ 50A ☐ 100A ☐ 200A ☐ 300A ☐ 400A ☐ 600A
	D-type fuse	☐ F=3A~30A
	Screw fuse	☐ F=1~10A
Door accessory	Pilot light	☐ ϕ 22 ON.OFF LED [Cable:KIV 1.25mm ²]
	Pilot light push button	☐ ϕ 22 with 1a1b LED [Cable:KIV 1.25mm ²]
	Thermal reset external push button	☐ ϕ 25 Button color: Black
	Change-over	☐ ϕ 22 2-notch/ 3-notch [Cable:KIV 1.25mm ²]
	Ammeter	☐ 60x60mm /5A Three times overload range [Cable:KIV 2mm ²]
	Unit nameplate	☐ White background and black letters

※Compression/crimp-type terminals for power leading part shall be prepared by customer.



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RATINGS AND STANDARD SPECIFICATIONS

Applicable standards	JEM1195, IEC60439
Ambient temperature	-5°C~40°C
Unit connection	Main : Automatic stab connection Control : Manual plug connection
Rated insulating voltage	AC600V
Rated voltage	Main : 200/220V 400/440V Control : 100/110V 200/220V
Rated busbar current	Horizontal : 630, 1000, 1250, 1600, 2000A Vertical : 500A
Rated short-time current	50kA r.m.s./0.5sec
Rated breaking current	50kA at 440V

FEATURES

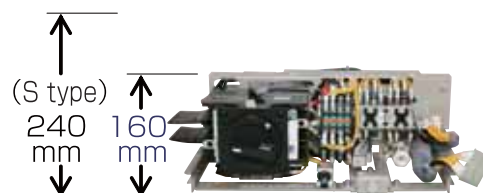
Space-Saving by multi-compartment

Adoption of circuit breaker with built-in leakage alarm has made the unit compact from 240mm of standard S type to **160mm**.

<Maximum units to insert>

Double-front B-B wiring : **24** (S type: 16)

Double-front B-C, C-B, or C-C wiring : **20** (S type: 14)



<Wiring types and number of units to insert>

Wiring Type	Number of Units/ Panel		Panel Dimensions(mm)					
			Single-front			Double-front		
	Single-front	Double-front	W	D	H	W	D	H
B-B	12	24	700	450	2350	700	700	2350
B-C	10	20	700	450	2350	700	700	2350
C-B	10	20	700	450	2350	700	700	2350
C-C	10	20	600	450	2350	600	700	2350

※ 160mm unit is usable up to motor capacity of 7.5kW (400V).

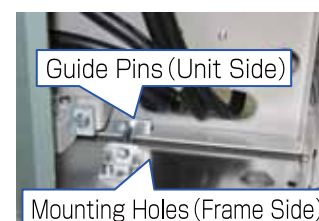
Improved economic efficiency

E TYPE has been pursued economic efficiency by reducing the number of parts.

Improved reliability and safety

Units can be inserted or removed by use of a crank handle, which allows simple and secure operation.

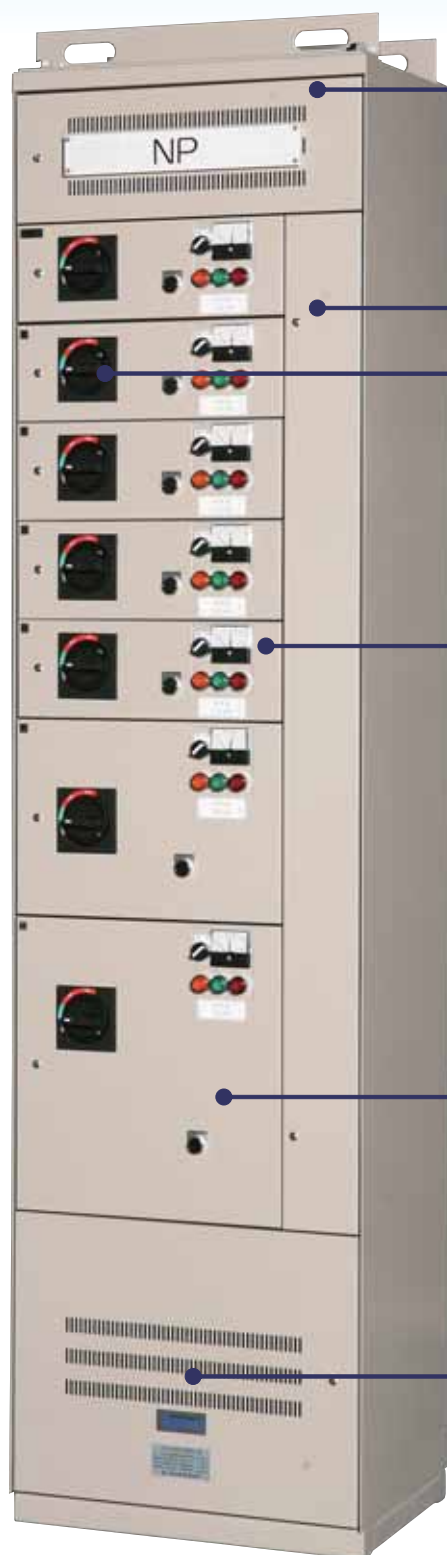
Two pairs of guide pins on the unit side and mounting holes on the frame side improves connecting reliability of vertical busbars and main circuit connecting parts of the unit.



Improved convenience

For double-front type, a set of vertical busbars are equipped in each side, which allows compatibility of units for each side.

STRUCTURE



◆ Rated busbar current
630~2000A (standard)

◆ Horizontal busbar cover
(option)

◆ Door interlocking
▪ Unable to open/close the door with the circuit breaker "ON"
▪ Unable to operate the circuit breaker with the door open

◆ Locking lever
Able to padlock the handle position when the circuit breaker is in the "ON" or "OFF" position

◆ Unit insertion and withdrawal with the crank handle

◆ Connecting method
Main circuit: Stab connection
Control circuit: Plug connection

◆ A set of independent vertical busbars for each side

◆ Flame retardant protection cover for vertical busbars

◆ Terminal compartment
B-C, C-B, and C-C type have their terminal compartments at the bottom.

◆ Earthing busbar
3 x 25mm (250A)

Horizontal Busbar Compartment

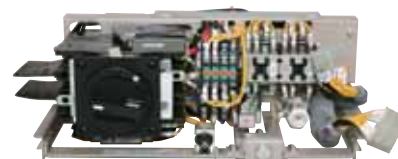


Cable Duct

Handle



Unit



Vertical Busbars



Terminal Compartment



COMPONENTS OF UNITS (maximum to be equipped)

■ Non-reversing combination starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor	Standard				Option	
	200V	400V			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer	Time-delay relay
					PAK-8JS	50VA			15VA	TDR
160	0.2 ∩ 3.7	0.2 ∩ 7.5	GF-100C	PAK-20JT	○×2	○	○	○	○	○
240	5.5 ∩ 19	11 ∩ 37	GF-100C	PAK-26JT ∩ PAK-80HT	○×2	○	○	○	○	○
320	22	45	GF-225C	PAK-100HT	○×2	○	○	○	○	○
480	26 ∩ 30	50 ∩ 55	GF-225C	PAK-125HT	○×2	○	○	○	○	○
720	37 ∩ 45	60 ∩ 90	GF-225C	PAK-150HT ∩ PAK-220HT	○×2	○	○	○	○	○
960 (Fixed)	55 ∩ 60	95 ∩ 110	GF-400C	PAK-220HT ∩ PAK-300HT	○×2	○	○	○	○	○
1280 (Fixed)	75	150	GFX600	PAK-300HT	○×2	○	○	○	○	○

■ Reversing combination starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor	Standard				Option
	200V	400V			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer
					PAK-8JS	50VA			15VA
320	0.2 ∩ 7.5	0.2 ∩ 15	GF-100C	RSK-20JT ∩ RSK-35JT	○×3	○	○	○	○
480	11 ∩ 19	19 ∩ 37	GF-100C	RSK-50HT ∩ RSK-80HT	○×3	○	○	○	○
720	22	45	GF-225C	RSK-100HT	○×3	○	○	○	○
960 (Fixed)	26 ∩ 30	50 ∩ 55	GF-225C	RSK-125HT	○×3	○	○	○	○
1set (Fixed)	37 ∩ 75	60 ∩ 150	GF-225C GF-400C GFX600	RSK-150HT ∩ RSK-300HT	○×3	○	○	○	○

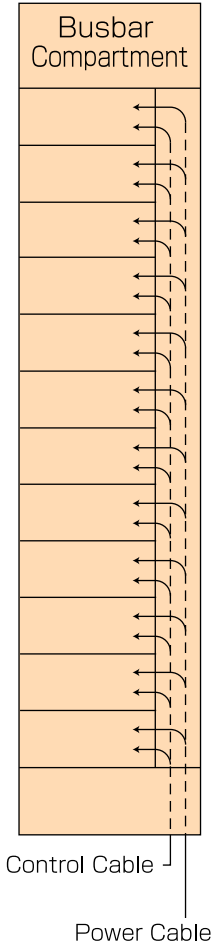
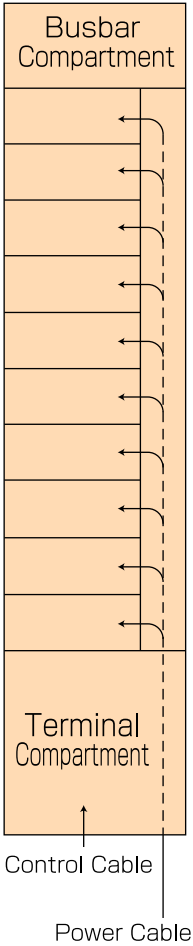
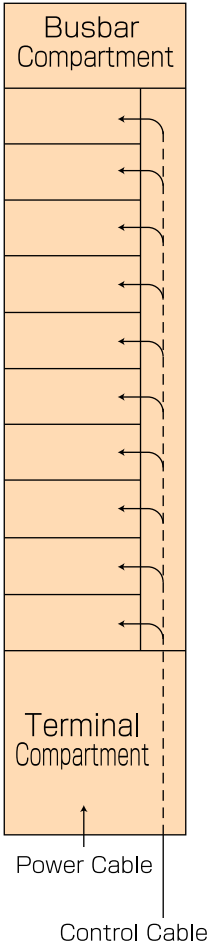
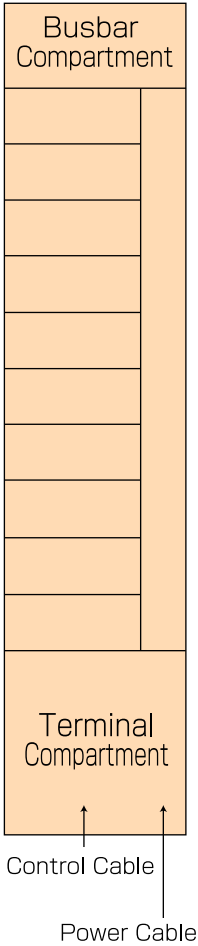
■ Star-delta starter

Height of unit (mm)	Capacity (kW)		Circuit breaker	Magnetic contactor		Standard					Option
	200V	400V		M	Λ Δ	Auxiliary relay	Star-delta timer	Control transformer	Primary fuse	Secondary fuse	Current transformer
						PAK-8JS		50VA			15VA
400	0.2 ∩ 3.7	0.2 ∩ 7.5	GF-100C	PAK-20JT	RSK-20J	○×4	○	○	○	○	○
480	5.5 ∩ 7.5	11 ∩ 15	GF-100C	PAK-26JT ∩ PAK-35JT	RSK-20J ∩ RSK-26J	○×4	○	○	○	○	○
720	11 ∩ 22	19 ∩ 45	GF-100C GF-225C	PAK-50HT ∩ PAK-100HT	RSK-26J ∩ RSK-65H	○×4	○	○	○	○	○
1120 (Fixed)	26 ∩ 30	50 ∩ 55	GF-225C	PAK-125HT	RSK-65H ∩ RSK-80H	○×4	○	○	○	○	○
1280 (Fixed)	37	60 ∩ 75	GF-225C	PAK-150HT	RSK-100H	○×4	○	○	○	○	○
1set (Fixed)	45	90 ∩ 95	GF-225C GF-400C	PAK-220HT ∩ PAK-300HT	RSK-125H ∩ RSK-150H	○×4	○	○	○	○	○

■ Circuit breaker

Height of unit (mm)	Circuit breaker		Standard				Option
			Auxiliary relay	Control transformer	Primary fuse	Secondary fuse	Current transformer
			PAK-8JS	50VA			15VA
160	GF-100C	Up to RC 30A	○×1	○	○	○	○
240	GF-100C	Up to RC 75A	○×1	○	○	○	○
320	GF-100C	RC 100A	○×1	○	○	○	○
480	GF-225C		○×1	○	○	○	○
720 (Fixed)	GF-400C		○×1	○	○	○	○
960 (Fixed)	GFX600		○×1	○	○	○	○

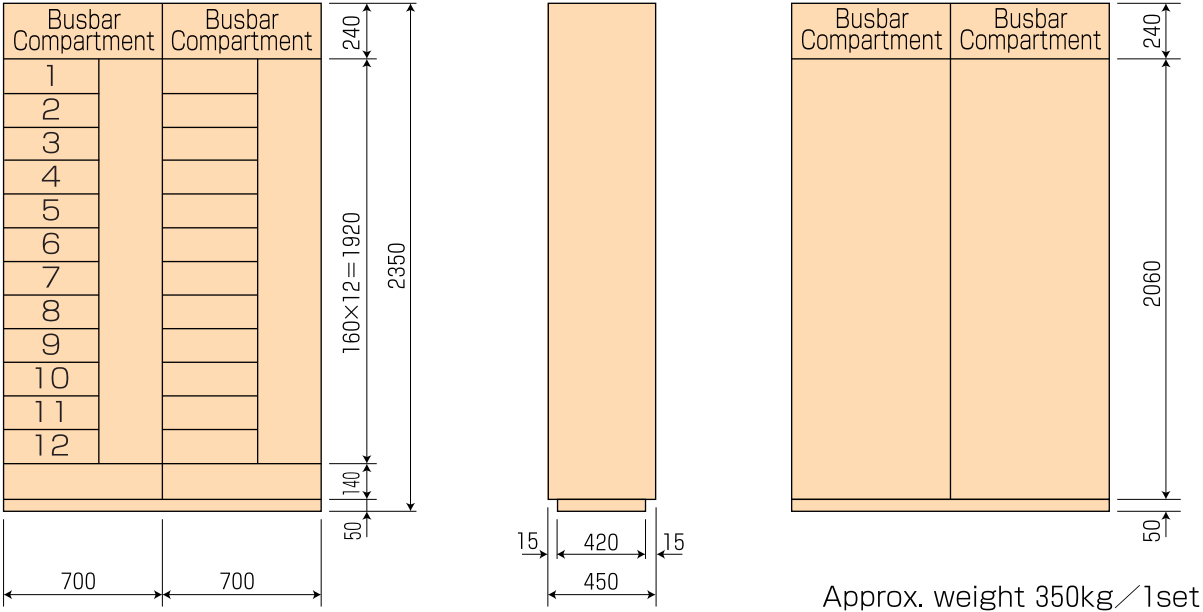
UNIT CONFIGURATIONS

Wiring System	B-B	B-C	C-B	C-C
Description	Main –B type Control…B type	Main –B type Control…C type	Main –C type Control…B type	Main –C type Control…C type
Single-front	Front 12	Front 10	Front 10	Front 10
Double-front	Front 12 Rear 12	Front 10 Rear 10	Front 10 Rear 10	Front 10 Rear 10
Scheme				

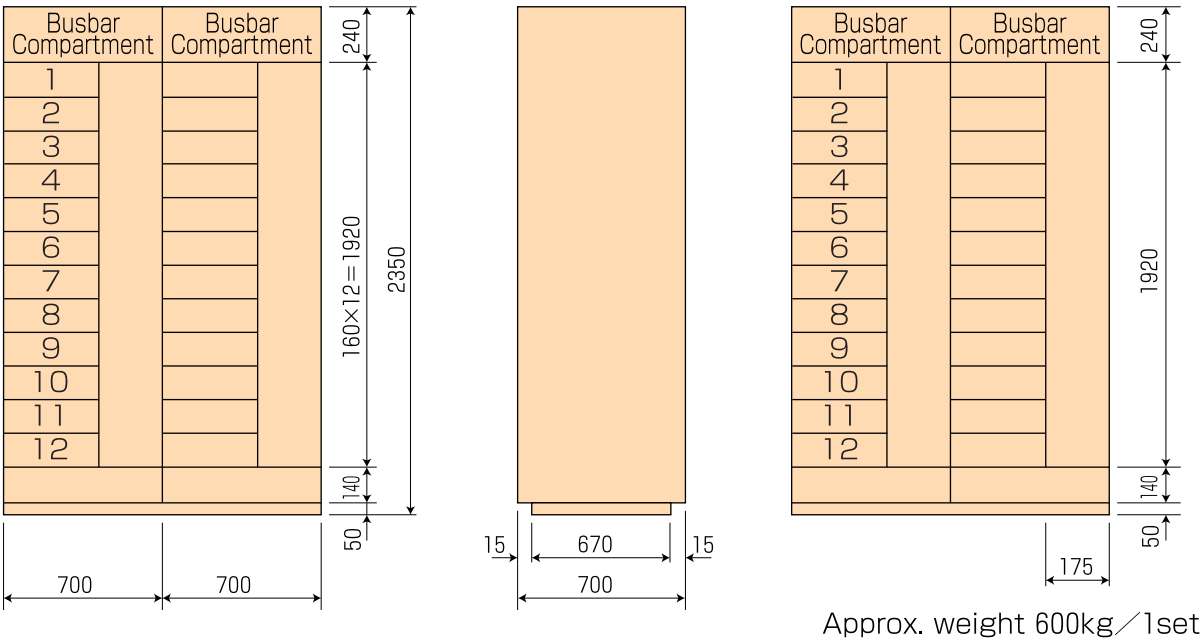
DIMENSIONS

The dimensions vary from wiring system (B-B, B-C, C-B, C-C) and single-front or double-front.

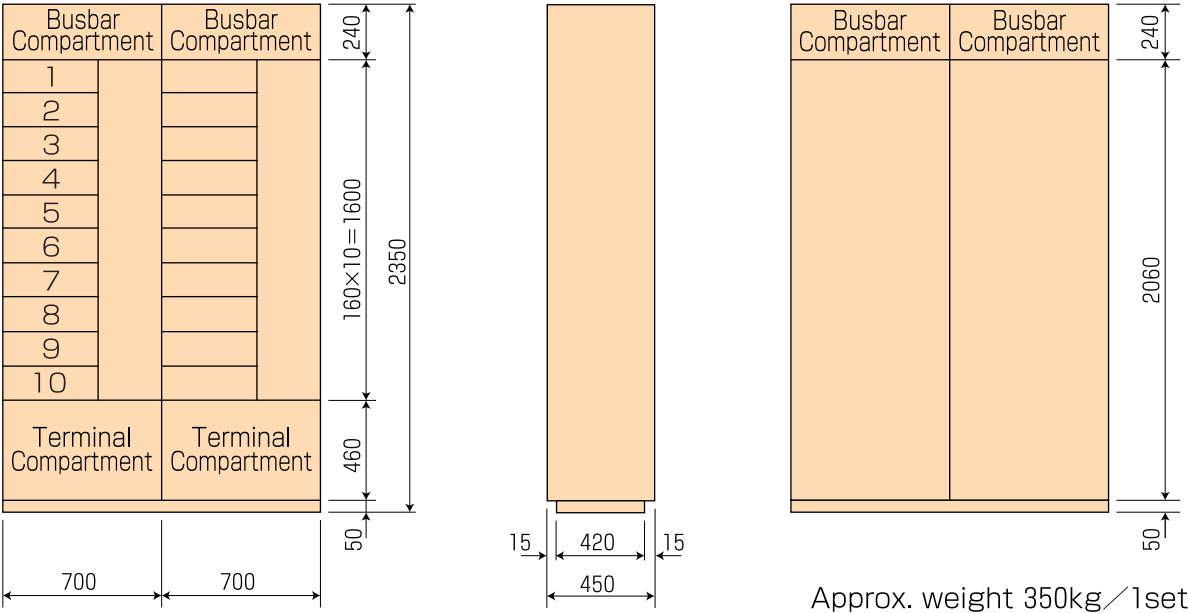
SINGLE-FRONT TYPE : B-B TYPE



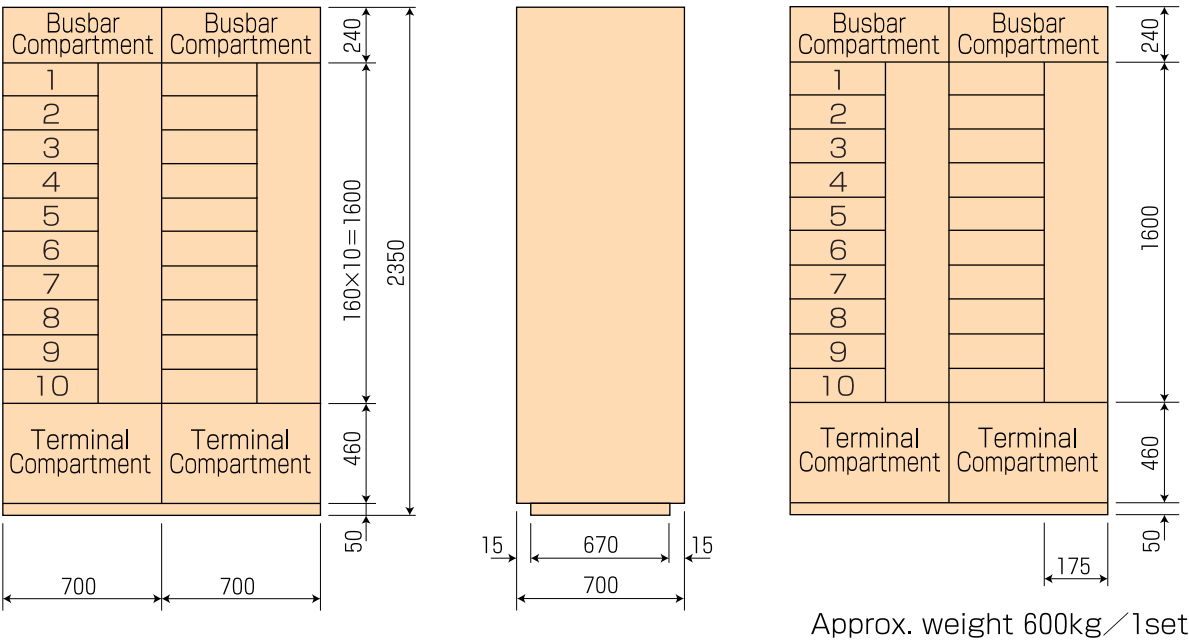
DOUBLE-FRONT TYPE : B-B TYPE



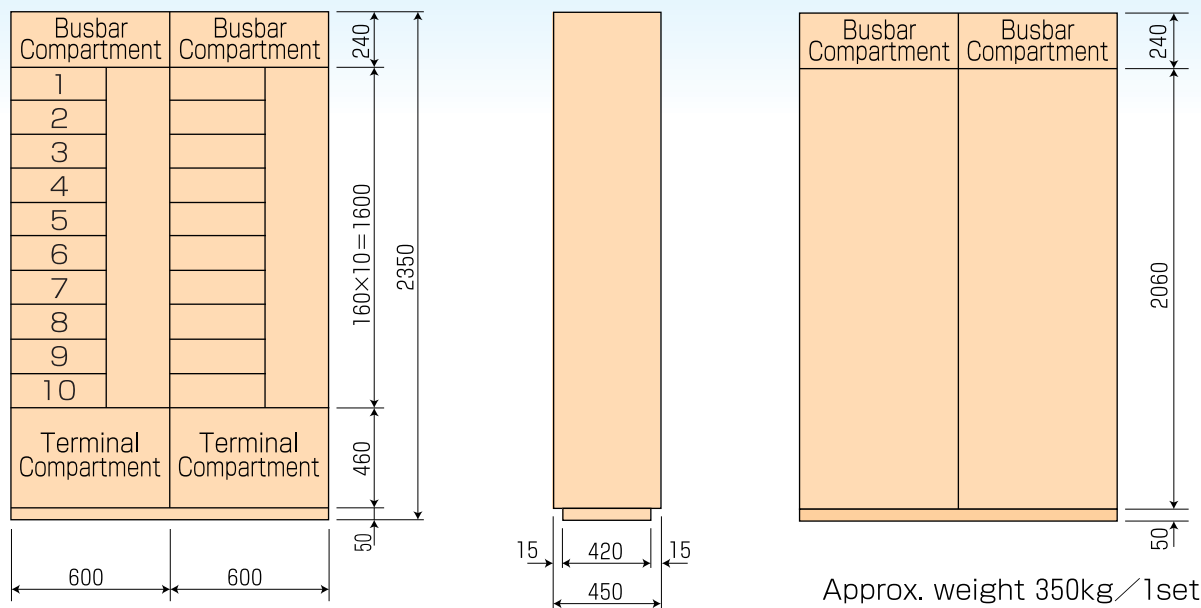
SINGLE-FRONT TYPE : B-C & C-B TYPE



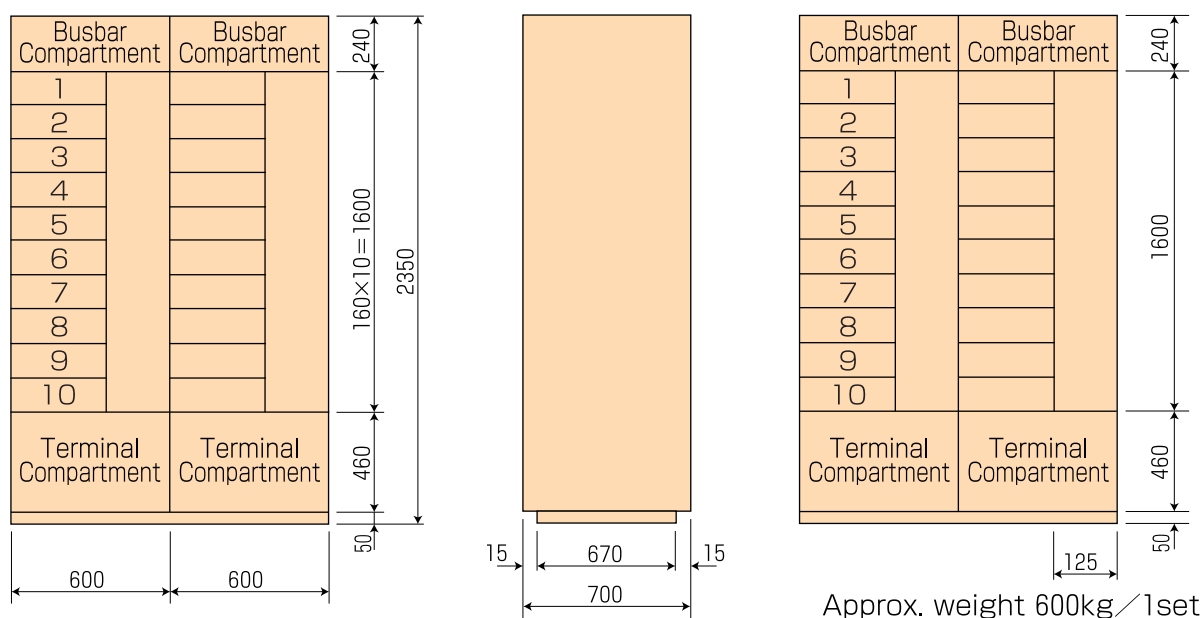
DOUBLE-FRONT TYPE : B-C & C-B TYPE



SINGLE-FRONT TYPE : C-C TYPE

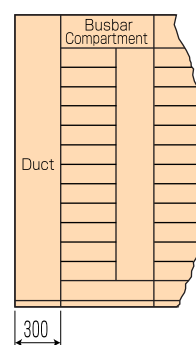


DOUBLE-FRONT TYPE : C-C TYPE



CABLE DUCT

When power cables are led through the side, the cable duct will be provided. The dimensions are shown as the illustration on the right. Doors are fixed on both front and rear sides.



Approx. weight 100kg

UNIT APPLICATION

NON-REVERSING UNIT



380-440V Control Center

Motor			MCCB		MC (PAK)		CT (A)	A (A)	Unit		Note
kW	HP	RC(A)	AF	RC (A)	Type	Heater (A)			Model	Height	
0.2	1/4	0.7	100	15	20	0.7	3/5	3/5	CU-10020	160	
0.4	1/2	1.3				1.2					
0.75	1	2.1				1.8					
1		2.5				2.3					
1.1	1 1/2	3									
1.5	2	3.7				3.6	5/5	5/5			
2.2	3	5				4.6					
3.7	5	8		20		7.5	10/5	10/5			
5.5	7 1/2	12.5		30		11	15/5	15/5			
7.5	10	16.5		40		15	20/5	20/5			
11	15	23.5		50	26	22	30/5	30/5	CU-10026	240	
15	20	31.5		60	35	30	50/5	50/5	CU-10035		
19	25	39		75	50	34			CU-10050		
22	30	45		100		42					
25		50			65	48	75/5	75/5	CU-10065		
26	35	51									
30	40	60				56					
37	50	73			80	68			CU-10080		
45	60	87	225	150	100	80	100/5	100/5	CU-20100	320	
50		98		175	125	90			CU-20125	480	
55	75	110		225		105	150/5	150/5			
60		116			150				CU-20150	720	
75	100	137				130					
90		165			220	160	200/5	200/5	CU-20220		
95	125	171	400	350	300	240			CU-40300	960	Fixed type
110	150	205		400			300/5	300/5			
150	200	274	600	500					CU-60300	1280	

200-220V Control Center

Motor			MCCB		MC (PAK)		CT (A)	A (A)	Unit		Note
kW	HP	RC(A)	AF	RC (A)	Type	Heater (A)			Model	Height	
0.2	1/4	1.4	100	15	20	1.2	3/5	3/5	CU-10020	160	
0.4	1/2	2.6				2.3					
0.75	1	4.2				3.6	5/5	5/5			
1		5				4.6	7.5/5	7.5/5			
1.1	1 1/2	6				5					
1.5	2	7.4		20		6.7					
2.2	3	10		30		9.2	10/5	10/5			
3.7	5	16		40		15	20/5	20/5			
5.5	7 1/2	25		50	26	22	30/5	30/5	CU-10026	240	
7.5	10	33		75	35	30	50/5	50/5	CU-10035		
11	15	47		100	50	42			CU-10050		
15	20	63			65	56	75/5	75/5	CU-10065		
19	25	78			80	68	100/5	100/5	CU-10080		
22	30	90	225	150	100	80			CU-20100	320	
26	35	102		175	125	105	150/5	150/5	CU-20125	480	
30	40	120		225							
37	50	146			150	130			CU-20150	720	
45	60	174			220	160	200/5	200/5	CU-20220		
55	75	220	400	400		190	300/5	300/5	CU-40220	960	Fixed type
60		232			300	240			CU-40300		
75	100	274	600	500					CU-60300	1280	

REVERSING UNIT



■ 380-440V Control Center

Motor			MCCB		MC (RSK)		CT	A	Unit		Note
kW	HP	RC(A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	0.7	100	15	20	0.7	3/5	3/5	CUR-10020	320	
0.4	1/2	1.3				1.2					
0.75	1	2.1				1.8					
1		2.5				2.3					
1.1	1 1/2	3									
1.5	2	3.7				3.6	5/5	5/5			
2.2	3	5				4.6					
3.7	5	8		20		7.5	10/5	10/5			
5.5	7 1/2	12.5		30		11	15/5	15/5			
7.5	10	16.5		40		15	20/5	20/5			
11	15	23.5		50	26	22	30/5	30/5	CUR-10026		
15	20	31.5		60	35	30	50/5	50/5	CUR-10035		
19	25	39		75	50	34			CUR-10050	480	
22	30	45		100		42					
25		50			65	48	75/5	75/5	CUR-10065		
26	35	51									
30	40	60				56					
37	50	73			80	68			CUR-10080		
45	60	87	225	150	100	80	100/5	100/5	CUR-20100	720	
50		98		175	125	90			CUR-20125	960	Fixed type
55	75	110		225		105	150/5	150/5			
60		116			150				CUR-20150	1set	
75	100	137				130					
90		165			220	160	200/5	200/5	CUR-20220		
95	125	171	400	350	300	240			CUR-40300		
110	150	205		400			300/5	300/5			
150	200	274	600	500					CUR-60300		

※The unit height of 240mm without pilot light push button can be applicable for motors of 0.2kW~7.5kW.

■ 200-220V Control Center

Motor			MCCB		MC (RSK)		CT	A	Unit		Note
kW	HP	RC(A)	AF	RC (A)	Type	Heater (A)	(A)	(A)	Model	Height	
0.2	1/4	1.4	100	15	20	1.2	3/5	3/5	CUR-10020	320	
0.4	1/2	2.6				2.3					
0.75	1	4.2				3.6	5/5	5/5			
1		5				4.6	7.5/5	7.5/5			
1.1	1 1/2	6				5					
1.5	2	7.4		20		6.7					
2.2	3	10		30		9.2	10/5	10/5			
3.7	5	16		40		15	20/5	20/5			
5.5	7 1/2	25		50	26	22	30/5	30/5	CUR-10026		
7.5	10	33		75	35	30	50/5	50/5	CUR-10035		
11	15	47		100	50	42			CUR-10050	480	
15	20	63			65	56	75/5	75/5	CUR-10065		
19	25	78			80	68	100/5	100/5	CUR-10080		
22	30	90	225	150	100	80			CUR-20100	720	
26	35	102		175	125	105	150/5	150/5	CUR-20125	960	Fixed type
30	40	120		225							
37	50	146			150	130			CUR-20150	1set	
45	60	174			220	160	200/5	200/5	CUR-20220		
55	75	220	400	400		190	300/5	300/5	CUR-40220		
60		232			300	240			CUR-40300		
75	100	274	600	500					CUR-60300		

※The unit height of 240mm without pilot light push button can be applicable for motors of 0.2kW~3.7kW.

STAR-DELTA UNIT



380-440V Control Center

Motor			MCCB		MC (PAK · RSK)				CT (A)	A (A)	Unit		Note
kW	HP	RC (A)	AF	RC (A)	M	λ	△	Heater(A)			Model	Height	
0.2	1/4	0.7	100	15	20	20	20	0.7	3/5	3/5	CUSD-10020	400	
0.4	1/2	1.3						1.2					
0.75	1	2.1						1.8					
1		2.5						2.3					
1.1	1 1/2	3											
1.5	2	3.7						3.6	5/5	5/5			
2.2	3	5						4.6					
3.7	5	8		20				7.5	10/5	10/5			
5.5	7 1/2	12.5		30				11	15/5	15/5			
7.5	10	16.5		40				15	20/5	20/5			
11	15	23.5		50	26			22	30/5	30/5	CUSD-10026	480	
15	20	31.5		60	35	26	26	30	50/5	50/5	CUSD-10035		
19	25	39		75	50			34			CUSD-10050	720	
22	30	45		100		35	35	42					
25		50			65			48	75/5	75/5	CUSD-10065		
26	35	51											
30	40	60				50	50	56					
37	50	73			80			68			CUSD-10080		
45	60	87	225	150	100	65	65	80	100/5	100/5	CUSD-20100		
50		98		175	125			90			CUSD-20125	1120	Fixed type
55	75	110		225				105	150/5	150/5			
60		116			150	100	100				CUSD-20150	1280	
75	100	137						130					
90		165			220	125	125	160	200/5	200/5	CUSD-20220	1set	
95	125	171	400	350	300	150	150	240			CUSD-40300		

200-220V Control Center

Motor			MCCB		MC (PAK · RSK)				CT (A)	A (A)	Unit		Note
kW	HP	RC (A)	AF	RC (A)	M	λ	△	Heater(A)			Model	Height	
0.2	1/4	1.4	100	15	20	20	20	1.2	3/5	3/5	CUSD-10020	400	
0.4	1/2	2.6						2.3					
0.75	1	4.2						3.6	5/5	5/5			
1		5						4.6	7.5/5	7.5/5			
1.1	1 1/2	6						5					
1.5	2	7.4		20				6.7					
2.2	3	10		30				9.2	10/5	10/5			
3.7	5	16		40				15	20/5	20/5			
5.5	7 1/2	25		50	26			22	30/5	30/5	CUSD-10026	480	
7.5	10	33		75	35	26	26	30	50/5	50/5	CUSD-10035		
11	15	47		100	50	35	35	42			CUSD-10050	720	
15	20	63			65	50	50	56	75/5	75/5	CUSD-10065		
19	25	78			80			68	100/5	100/5	CUSD-10080		
22	30	90	225	150	100	65	65	80			CUSD-20100		
26	35	102		175	125			105	150/5	150/5	CUSD-20125	1120	Fixed type
30	40	120		225		80	80						
37	50	146			150	100	100	130			CUSD-20150	1280	
45	60	174			220	125	125	160	200/5	200/5	CUSD-20220	1set	

CIRCUIT BREAKER UNIT

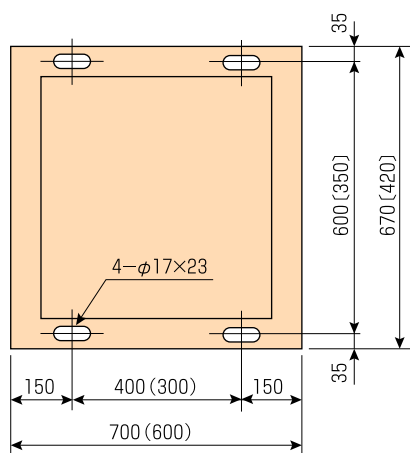


Model	Rated Current	Unit Height
CUNF – 10	15A 20A 30A	160 mm
CUNF – 10	40A 50A 60A 75A	240 mm
CUNF – 10	100A	320 mm
CUNF – 20	125A 150A 175A 200A 225A	480 mm
CUNF – 40	250A 300A 350A 400A	720 mm Fixed Type
CUNF – 60	500A 600A	960 mm

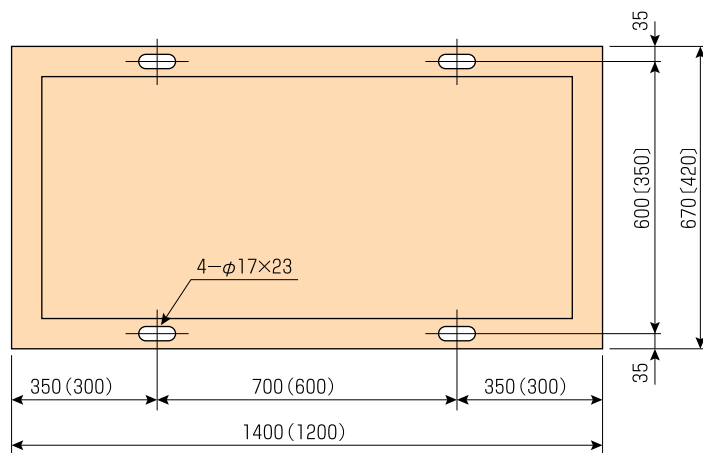
CANNEL BASE

※(Parenthetical) dimensions are for C-C type.

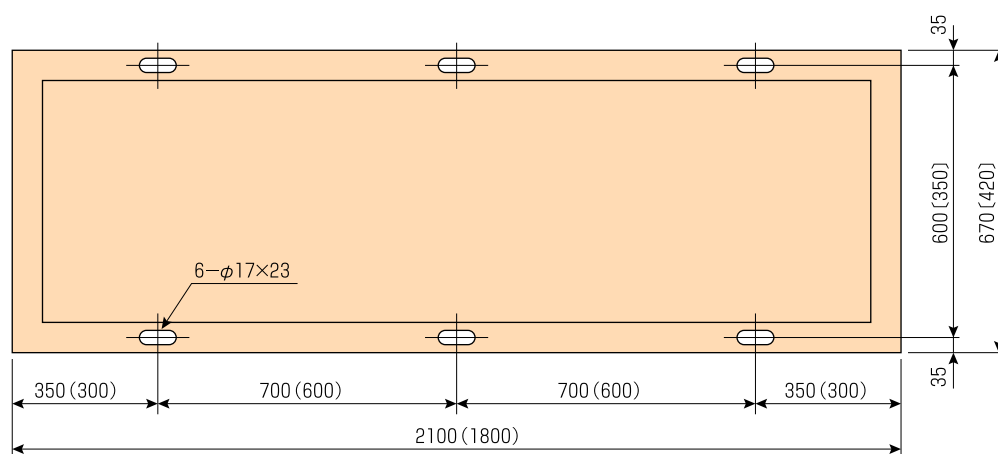
※[Parenthetical] dimensions are for single-front type.



One set



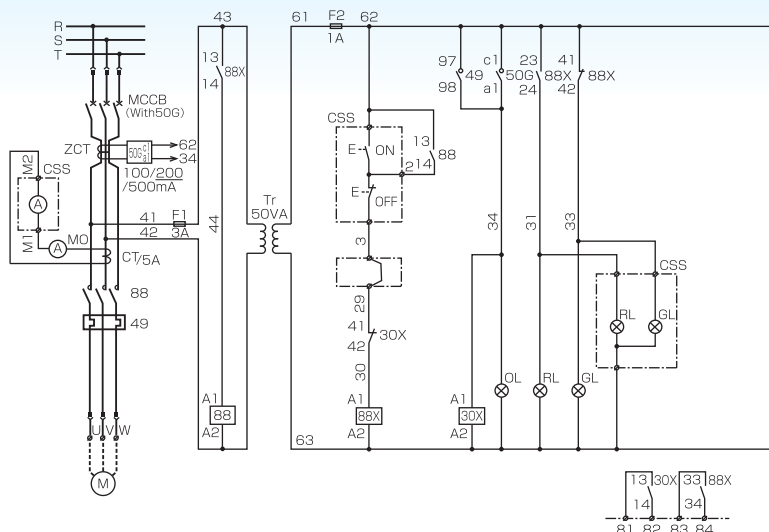
Two sets



Three sets

WIRING DIAGRAM

NON-REVERSING UNIT



Symbols

MCCB : Molded case circuit breaker
(with built-in leakage alarm)

PAK(88, 42, 6): Electro-magnetic contactor

RSK(88F, 88R): Reversing type electro-magnetic
contactor

THR(49) : Thermal overload relay

CT : Current transformer

Tr : Control voltage transformer

☐X : Auxiliary relay

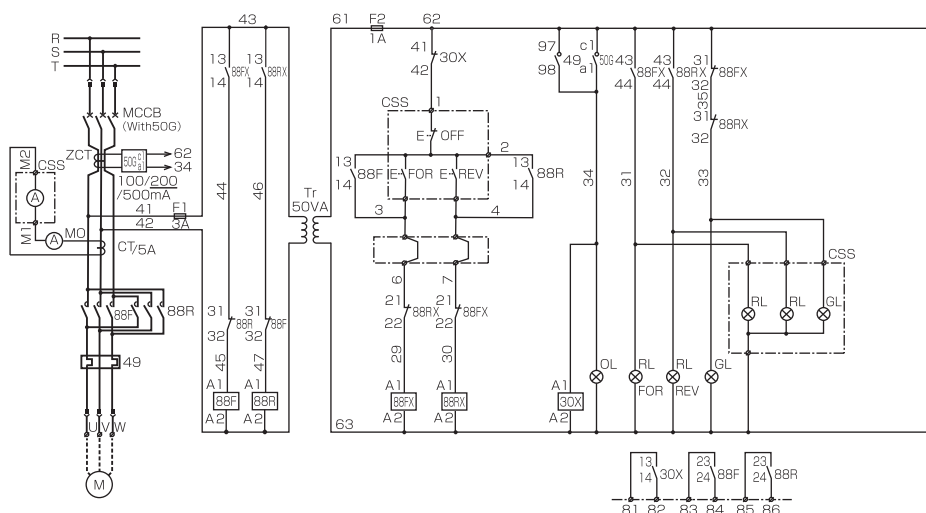
F□ : Fuse

2 : Star-delta timer

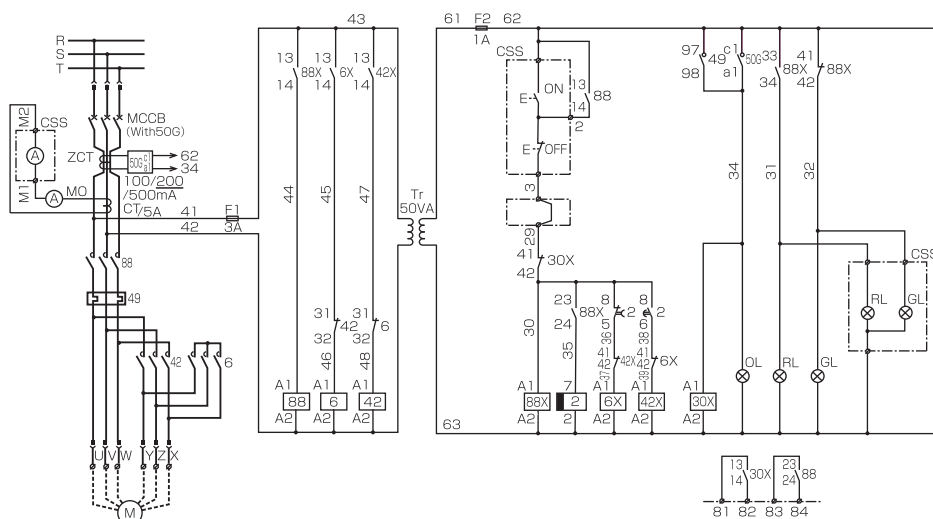
OL·RL·GL : Pilot light (LED)

M : Motor

REVERSING UNIT



STAR-DELTA UNIT



Component List

☐ Indicates option.

Item		
■ Circuit Breaker with Built-in Leakage Alarm (MCCB)	Rated voltage	AC600V
	Minimum breaking current	■50kA/440V ☐ __kA/240V
	Accessory	☐ Auxiliary contact (AX) ☐ Alarm contact (AL) ☐ Shunt trip (SHT)
	Model	■GF-100C, GF-225C, GF-400C, GFX600 ☐
	Sensed current	100–200–500mA selectable
	Operating time	0.1–0.3–1.2sec selectable
	Set value	■200mA 0.1sec
	Reset method	Manual (direct)
	Contact arrangement	2a
	Manufacturer	■Hitachi
■ Magnetic Contactor (88)	Rated voltage	AC 550V
	Coil voltage and frequency	■400V ☐ 200V ☐ 100V ☐ 50Hz ☐ 440V ☐ 220V ☐ 110V ■60Hz
	Model	■PAK ☐ RSK—22, 26, 35, 50, 65, 80, 100, 125, 150, 220, 300 _J _H
	Manufacturer	■Togami Electric
■ Thermal Relay (49)	Element	■2-heater ☐ 3-heater ☐ Phase failure
	Reset method	■Manual ☐ Automatic
	External reset mechanism	■without ☐ with (☐ mechanical ☐ electrical)
	Saturable reactor	■without ☐ with (designated circuit only)
	Manufacturer	■Togami Electric
■ Auxiliary Relay (88X) (30X)	Contact arrangement	■2a2b ■3a1b ☐ ☐
	Coil voltage and frequency	☐ 200V ■100V ☐ 50Hz ☐ 220V ☐ 110V ■60Hz
	Installation	■Fixed
	Model and manufacturer	■PAK—8JS22 ■PAK—8JS31 Togami Electric ☐ ☐
☐ Time-delay relay (79)	Model and manufacturer	☐ TDR—4S 2±1sec (short interruption time) Togami Electric ☐
☐ Timer (T) (for 人—△starter)	Coil voltage and frequency	☐ 200V ☐ 100V ☐ 50Hz ☐ 220V ☐ 110V ☐ 60Hz
	Contact arrangement	☐ 2c time-limit contacts ☐ 1c time limit and 1c instantaneous contacts ☐
	Model and manufacturer	☐ H3CR—G8L Omron
■ Control transformer (TR)	Ratio and frequency	☐ 440/220V ☐ 440/110V ☐ 220/110V ☐ 50Hz ☐ 400/200V ■400/100V ☐ 200/100V ■60Hz
	Capacity	■50VA
	Separating plate	■without
	Model	■USN-B
	Manufacturer	■Sao Electric
■ Instrument current transformer (CT)	Ratio	■/5A ☐ /1A
	Capacity	■15VA
	Model	■CW-15L.LP mold-type
	Manufacturer	■Mitsubishi Electric

Item						
■ Ammeter (A)	Scale	☐ Normal (100%) ■Three times overload range ☐ Red indication				
	Model	■YS—206NAA—B (60x60mm)				
	Manufacturer	■Mitsubishi Electric				
■ Protection Fuse (F)	Model and manufacturer	■AFaC—3 (3A) ☐ AFaC— (3 to 15A) ■F-4000 (1A) ☐ F-4000(1 to 10A)		Fuji Electric Sato Parts		
■ Pilot Light (PL)	Size	■22φ series				
	Light bulb	■LED				
	Color	■Red (ON) ■Green (OFF) ■Orange (FAULT)		☐ Milky white		
	Voltage	■100~110V ☐ 200~220V ☐				
	Model and manufacturer	■A22ILT100 ☐ ☐ LE		Maruyasu Dengyo		
☐ Pilot Light Push Button (PLPB)	Size	☐ 22φ series				
	Light bulb	☐ LED				
	Color	☐ Red (ON) ☐ Green (OFF) ☐ Orange (FAULT)				
	Voltage	☐ 100~110V ☐ 200~220V ☐				
	Model and manufacturer	■A22FT ☐ ☐		Maruyasu Dengyo		
☐ Push Button (PB)	Size	☐ 22φ series ☐ 25φ series				
	Color	☐ Red (ON) ☐ Green (OFF) ☐ Black(RESET) ☐ ☐ ☐				
	Model and manufacturer	☐ A22PF ☐ ☐ (22φ) ☐ RBA-25B (25φ) (Thermal reset button) ☐		Maruyasu Dengyo Maruyasu Dengyo		
☐ Change-over Switch (COS)	Size	☐ 22φ series				
	Contact arrangement	☐ 1a1b ☐ 2a2b ☐				
	Number of notch	☐ 2-notch ☐ 3-notch				
	Color	☐ Black ☐				
	Operation mode	☐ Automatic-Manual ☐ Remote-Direct ☐ ☐ ☐ ☐				
	Model and manufacturer	☐ A22SN ☐ ☐ (22φ)		Maruyasu Dengyo		
☐ Power Supply Unit	☐ Circuit breaker	TN—	AF	RC	A	Togami Electric
	☐ CT	CW—	/A	VA	1.0class	Mitsubishi Electric
	☐ VT	UPN—B	/V	VA	1.0class	Sao Electric
	☐ Ammeter	YS—208NAA-B	A	80x80mm		Mitsubishi Electric
	☐ Voltmeter	YS—208NAV-B	V	80x80mm		Mitsubishi Electric
	☐ WHM	M2LHM—V				Mitsubishi Electric
	☐ Voltmeter change-over switch	SP—V				Nakamura Electric
	☐ Ammeter change-over switch	SP—A				Nakamura Electric
	☐					

ORDER SHEET

Items			Standard Specifications	Optional Specifications
General	Applicable standard		☐ JEM1195	☐ IEC60439
	Ambient conditions	Installation site	☐ Indoor	☐ Outdoor
		Ambient temperature	☐ -5~+40℃	☐ Tropical climate
		Relative humidity	☐ 45%~85%	☐ Up to 100% at 25℃
		Altitude	☐ Up to 2000m	
Limitation on delivery or carry-in entrance		☐ No limit	☐ Carry-in entrance width: ___mm/ height: ___mm	
Painting	Material		☐ Melamine baking finish	☐ Polyurethane
	Thickness		☐ Inside 20μm Outside 50μm	☐ Required thickness inside: ___μm/ outside: ___μm
	Color	Outside	☐ Munsell No. 5Y7/1 (semi-gloss)	☐ Munsell
		Inside	☐ Munsell No. 5Y7/1 (semi-gloss)	☐ Munsell
		Meter frame	☐ Munsell No. N1.5	
Ratings	Rated insulating voltage	Main circuit	☐ 600V ☐ 250V	☐
		Control circuit	☐ 250V	☐
	Distribution system		☐ 3-phase, 3-wire	☐ 3-phase, 4-wire ☐ Single-phase, 3-wire
	Main circuit voltage		☐ AC200V ☐ AC220V ☐ AC400V ☐ AC440V	☐
	Control circuit voltage		☐ AC100V ☐ AC110V ☐ AC200V ☐ AC220V	☐ DC ___V
	Control transformer		☐ Individual powering (50VA) ☐ Common powering ___VA	☐ Individual powering (from 50VA) when magnetic contactor coil is connected to the secondary side of control transformer
	Frequency		☐ 50Hz ☐ 60Hz	
	Rated current	Horizontal busbar	☐ 630A ☐ 1000A ☐ 1250A ☐ 1600A ☐ 2000A	☐ with insulated tube ☐ Please contact if 2500A or more is required
		Vertical busbar	☐ 500A	☐ ___A
		Earthing busbar	☐ 250A	☐
		Busbar material	☐ Copper (Tin-plated except for earthing busbar)	
	Rated breaking current		☐ 50kA	
Rated short-time current		☐ 50kA (0.5 sec)		
Power	Power transformer	Capacity	☐ ___ kVA	
		Primary voltage	☐ ___ V	
		Secondary voltage	☐ ___ V	
		Rated current	☐ ___ A	
		%Z	☐ ___ %	
		Earthing system	☐ Direct earthing ☐ Unearthing ☐ Other earthing system	

Items			Standard Specifications	Optional specifications
Structure	Power leading	Method	☐ Cable duct	☐ Bus duct ☐ Rear cable (only double-front type)
		Cable	☐ Cable ____ core(s). ____mm ²	
			☐ Compression (not supplied)	☐ Compression(supplied) ☐ Crimp-type(supplied)
			☐ Crimp-type (not supplied)	Cable type
		Busbar connection	☐ Previously installed MCC	☐
	Wiring system		☐ B-B ☐ B-C ☐ C-B ☐ C-C	
	Single-front/double-front		☐ Single-front ☐ Double-front(vertical busbars in each side)	
	Enclosure type		☐ Enclosed	☐ Dust-proof
	Protection class		☐ IP20	☐ IP40
	Unit	Main circuit supply side	☐ Stab connection	
Main circuit load side		☐ Stab connection		
Control circuit		☐ Plug connection		
Wiring	Power circuit	Specification	☐ Black (600V HIV,WL1) Minimum cable diameter 3.5mm ²	☐
		Compression terminal	☐ Bare ring terminal	☐
	Control circuit	AC circuit	☐ Yellow (KIV 1.25mm ²)	☐
		DC circuit	☐ Yellow (KIV 1.25mm ²)	☐
		VT secondary side	☐ Yellow (KIV 2mm ²)	☐
		CT secondary side	☐ Yellow (KIV 2mm ²)	☐
		Earthing	☐ Green (KIV 2mm ²)	☐
		Compression terminal	☐ Bare ring terminal	☐
		Phase identification	3-phase circuit	☐ Phase R(red) Phase S(white) Phase T(blue)
	Single-phase circuit		☐ Phase R(red) Phase N(black) Phase T(blue)	☐
	DC circuit		☐ Phase P(red) Phase N(blue)	☐

HIGH FUNCTIONAL TYPE

Control center

NH-C TYPE

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FEATURES

Field-oriented Control Center assuring safety, operability, and maintainability.

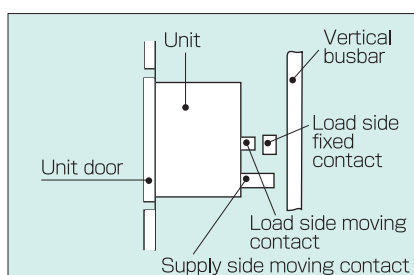
■ Easy insertion with the operating lever



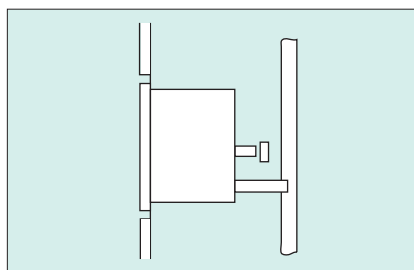
Note: The diagrams below show the automatic stab connection on the load side.

Disconnecting position

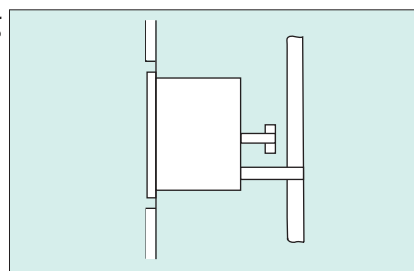
Complete insertion of unit



Testing position



Connecting position



Standard Specifications

1. Units can be stored with the door closed in all three positions (Disconnecting, Testing, and Connecting).
2. The main circuit contacts can be easily moved by operating lever.
3. Automatic locking system is equipped with all three positions in order to prevent incomplete connection and disconnection faults.
4. The units employ a mechanical interlocking mechanism which allows them to be inserted or withdrawn from the frame at the disconnecting position only.
5. The protection rating between horizontal and vertical busbars is IP40.
6. Easy connection and maintenance of the horizontal busbars are possible because of the isolated horizontal busbar connecting compartment.
7. Unit replacement is possible without power interruption.

■ Three position indicator

Disconnecting position



Testing position



Connecting position



Options

1. The control circuit can be tested by power to the MCC with the door closed.
2. Mechanical shutters can be equipped.
3. When the MCCB is "ON", the interlocking mechanism can prevent the three positions from changing.

OPERATION WITH OPERATING LEVER

(Example: Disconnecting position → Testing position → Connecting position)

Interlocking mechanism is employed so as not to insert and remove the operating lever at other than three positions.

This feature guarantees protection from incomplete connection and disconnection faults either at the supply or load side contacts.

Removing the operating lever will lock each position automatically, and doors can be closed.



Before inserting the operating lever



Removing the operating lever



Disconnecting position
Inserted the operating lever



Connecting position



Releasing the mechanical lock
at the disconnecting position
by complete insertion of the
lock collar



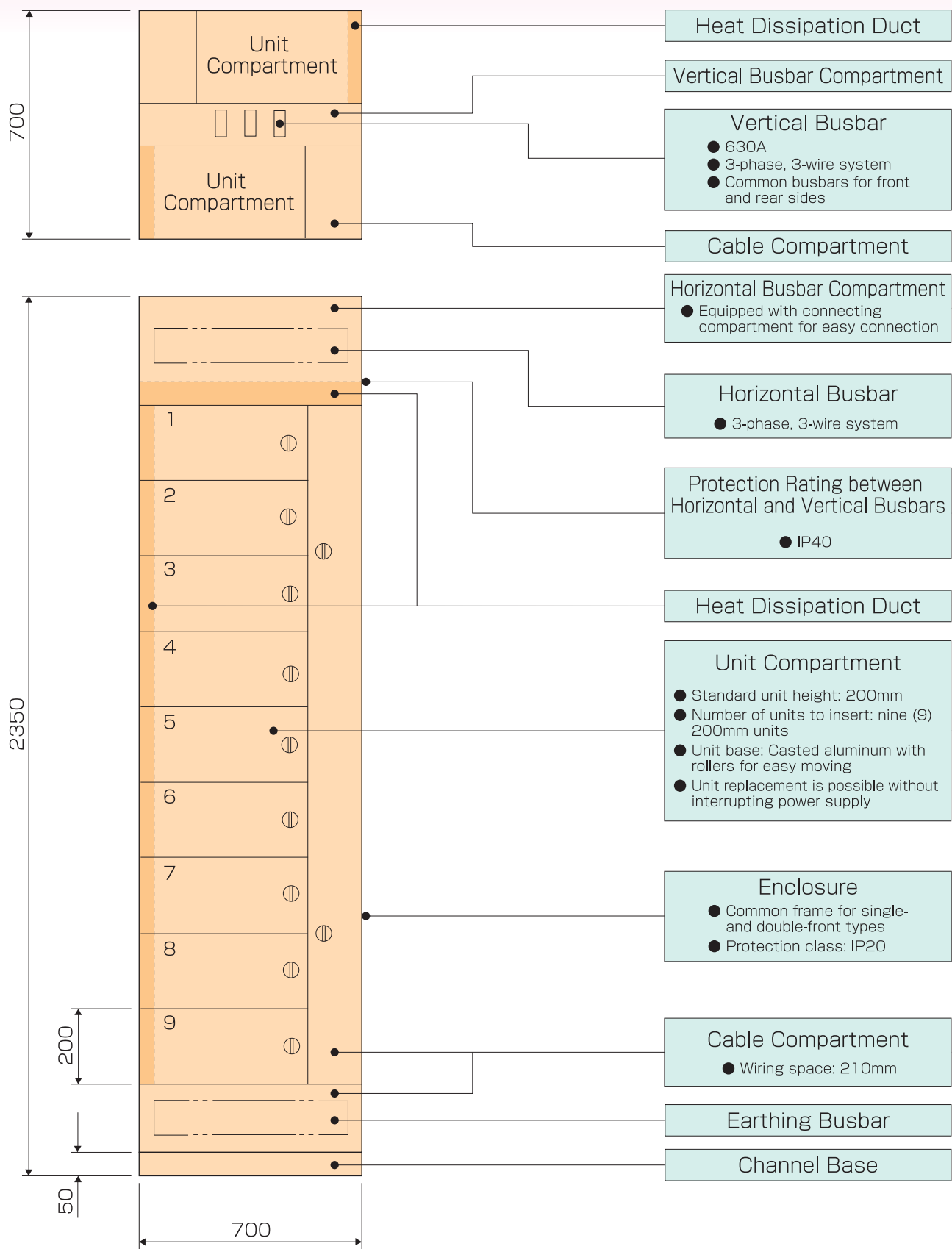
Moving the operating lever toward
the right while releasing the
operating lever stopper



Testing position

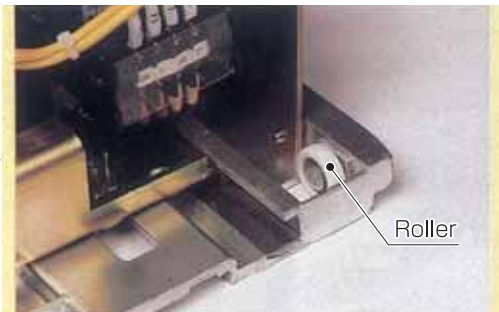
While pushing the operating lever and moving toward the right, the stopper stops the lever from moving. (By removing the operating lever, the lock collar protrudes forward, which is the automatic locking mechanism.)

STRUCTURE





Separator

Heat
dissipation
hole

Roller



APPLICABLE STANDARDS

- Industrial JEM 1195
- International IEC 60439-1
NEMA ICS2-322
- Enclosure protection IEC 529, JEM 1030

RATINGS AND SPECIFICATIONS

- Rated insulating voltage AC 660V
- Rated short-time current 30kA for 0.5sec for both horizontal and vertical busbars
- Horizontal busbar capacity 630·1000·1250·1600·2000·2500A
- Vertical busbar capacity 630A
- Enclosure protection class IP20(standard) IP40(custom)

Applicable motor capacity

Unit Height		Applicable Motor Capacity (interrupting capacity:50kA non-reversing type)	
		380~440V	200~220V
Withdrawable type	200mm	15kW	7.5kW
	300mm	30kW	15kW
	600mm	75kW	37kW
Fixed type	900mm	90kW	55kW
	1400mm	150kW	75kW

Components for units

Standard							Option		
MCCB	MS	AUX. Ry	Tr	CT	Fuse (Primary)	Fuse (Secondary)	Earth leakage relay	Time-delay relay	AUX. Ry
1	1	1	1	1	1	1	1	1	1

Accessories

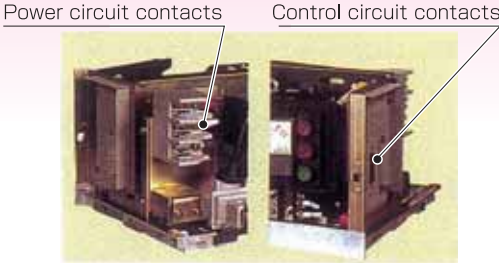
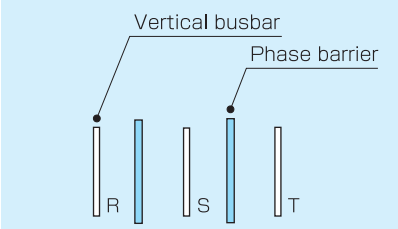
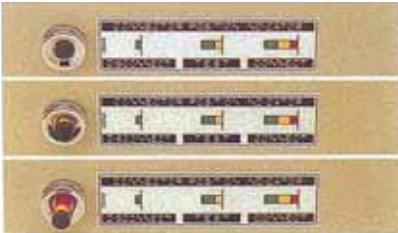
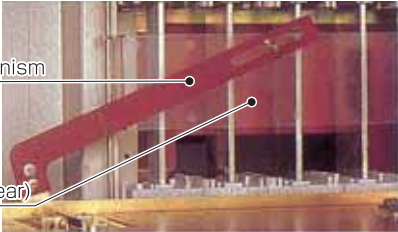
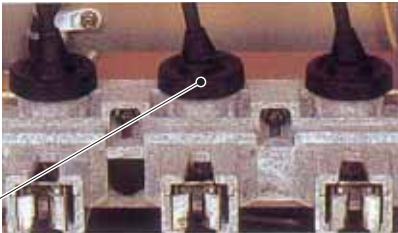
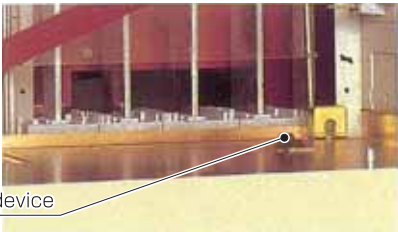
Standard	Option
P.L.:2	P.B.: 3(max.) P.L.: 3(max.) A: 1 C.O.S.: 1

DETAILED SPECIFICATIONS

Item		Standard Specifications	Optional Specifications
Structures	Wiring type	B-B	B-C·C-B·C-C
	Contact structure	Power : Stab connection Control: Plug connection	—
	Enclosure protection class	IP 20	IP 41
	Protection class between each compartment	—	IP 40
	Vertical busbar (plated)	3-phase, 3-wire	3-phase, 4-wire
	Insulation between vertical busbars	Phase barrier	—
	Horizontal busbar (plated)	1000A	Maximum 2500A
	Horizontal busbar shielded (UL224 comparable)	—	○
	Earthing busbar (plated)	3×25mm	6×50mm
	Dust-proof structure (equipped with gasket)	—	○
	Frame base plate	—	○
	Three-position indicator (Disconnecting/Testing/Connecting)	Common type	Independent type
	Mechanical automatic shutters	—	○
	Terminal cover (power terminals/control terminals)	—	○
	Uninstalled compartment	(NOTE) EMPTY	(NOTE) SPACE
Unit	Interlocking mechanism while MCCB is "ON"	—	○
	Control circuit test using power supply to the MCC	—	○
	Insulation cap on the power source contacts	—	○
	Unit earthing device	—	○
	Primary side protection cover for MCCB	—	○
	Danger plate	—	○
	Control circuit KIV	1.25mm ²	2mm ²
	Main circuit wire cap	—	○
	Wire identification mark (control circuit)	—	○
Functions	Short-time current (both horizontal and vertical busbars)	30kA 0.5sec	50kA 1sec
	Rated breaking current	30kA	50kA

(Note)

	Specification of door front			Wiring system to the bottom terminals	
	Position indicator	Opening for external operating handle	Opening for accessories	B	C
Empty	—	—	—	—	—
Space	○	Closing plate	Closing plate	—	○

Structure example	Standard	Option
Contact structure	 Power circuit contacts Control circuit contacts	
Insulation between vertical busbars	 Vertical busbar Phase barrier R S T	
Three-position indicator		
Mechanical automatic shutter		 Shutter mechanism Shutter (clear)
Interlocking mechanism while MCCB "ON"		 Interlock mechanism
Insulation cap on the power contacts		 Insulation cap
Unit earthing device		 Unit earthing device

■ Equipments on the door and accessory frame

In addition to the mechanical three-position indicator on the door front, which enables to see the state of contacts with the door closed, MCCB external operating mechanism, set button for thermal relay, nameplate, and accessory frame are assembled.

● Maximum number of equipments to be assembled on the accessory frame

	Ammeter	Push button	Pilot light	Change-over Switch
Non-Reversing Star-Delta	1	2	3	1
Reversing	1	3	3	0

※Pilot light push button can be assembled.



■ External operating mechanism and interlock for MCCB

● Interlock for unit

- Only when the door is completely closed, MCCB can be turned on.
- In case internal inspection should be conducted while MCCB is on, door can be opened by using releasing device. (Please be careful with the live part.) Additionally, handle can be equipped with a locking plate, which enables to maintain and lock either ON or OFF state with a padlock.



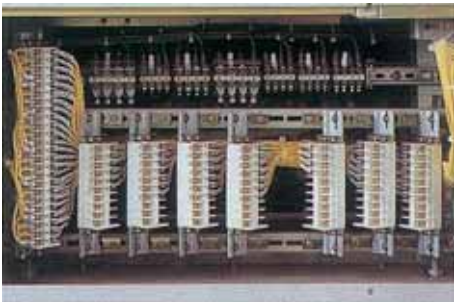
■ Cable compartment

- Cable compartment has enough connecting space with 210mm width. Terminal compartment can be equipped with the protection cover for electrical shock prevention as an option.
- Cable supporters are equipped.



■ Terminal compartment

- B-C, C-B, and C-C wiring types have the terminal compartment using one or two unit space at the bottom. The terminals grouped by each unit are arranged vertically for easy wire leading.
- 3 x 25 mm (250A) sized copper bar is used as the standard earthing busbar. However, IEC 60439-1 applicable product is equipped with 6 x 50 mm (50kA, 1 sec) earthing busbar.



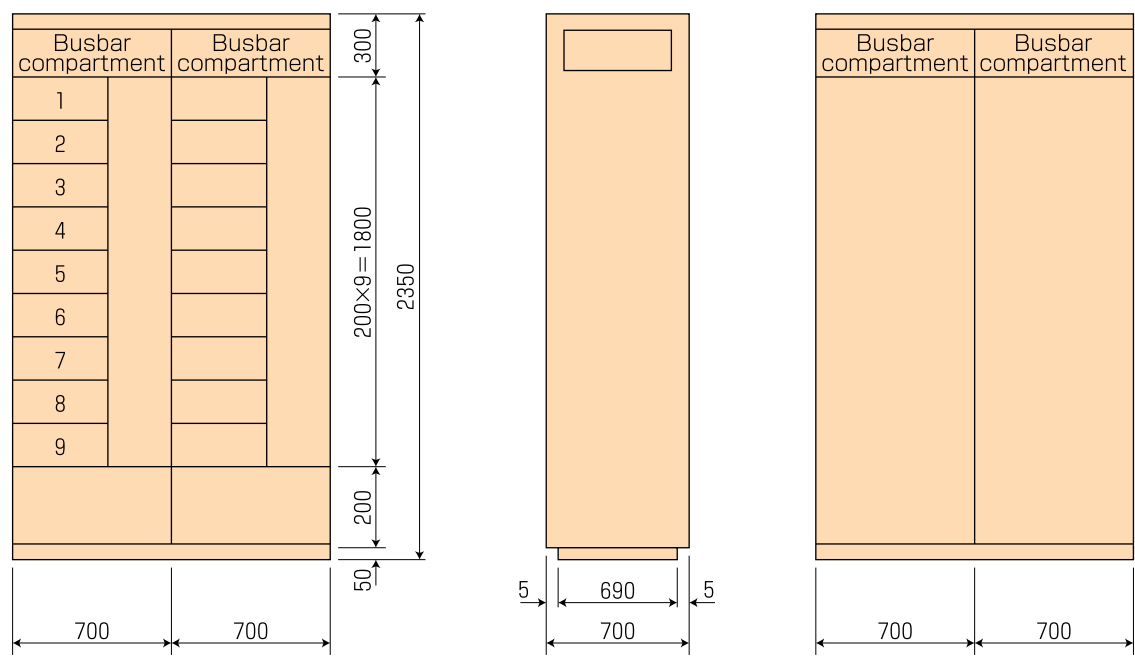
C-C Wiring Type

UNIT CONFIGURATIONS

Wiring System	B-B	B-C	C-B	C-C
Description	Main —B type Control---B type	Main —B type Control---C type	Main —C type Control---B type	Main —C type Control---C type
Single-front (Standard unit: 200mm)	Front 9	Front 8	Front 8	Front 7
Double-front (Standard unit: 200mm)	Front 9 Rear 9	Front 8 Rear 8	Front 8 Rear 8	Front 7 Rear 7
Scheme	Diagram of B-B wiring system scheme. It shows a vertical stack of 9 busbar compartments, numbered 1 to 9 from top to bottom. Below the busbar compartments is a terminal compartment. Arrows indicate cable connections from the bottom of the busbar compartments to the terminal compartment. A dashed line separates the busbar compartments from the terminal compartment. Labels at the bottom indicate 'Control Cable' and 'Power Cable' connections.	Diagram of B-C wiring system scheme. It shows a vertical stack of 8 busbar compartments, numbered 1 to 8 from top to bottom. Below the busbar compartments is a terminal compartment. Arrows indicate cable connections from the bottom of the busbar compartments to the terminal compartment. A dashed line separates the busbar compartments from the terminal compartment. Labels at the bottom indicate 'Control Cable' and 'Power Cable' connections.	Diagram of C-B wiring system scheme. It shows a vertical stack of 8 busbar compartments, numbered 1 to 8 from top to bottom. Below the busbar compartments is a terminal compartment. Arrows indicate cable connections from the bottom of the busbar compartments to the terminal compartment. A dashed line separates the busbar compartments from the terminal compartment. Labels at the bottom indicate 'Power Cable' and 'Control Cable' connections.	Diagram of C-C wiring system scheme. It shows a vertical stack of 7 busbar compartments, numbered 1 to 7 from top to bottom. Below the busbar compartments is a terminal compartment. Arrows indicate cable connections from the bottom of the busbar compartments to the terminal compartment. A dashed line separates the busbar compartments from the terminal compartment. Labels at the bottom indicate 'Control Cable' and 'Power Cable' connections.

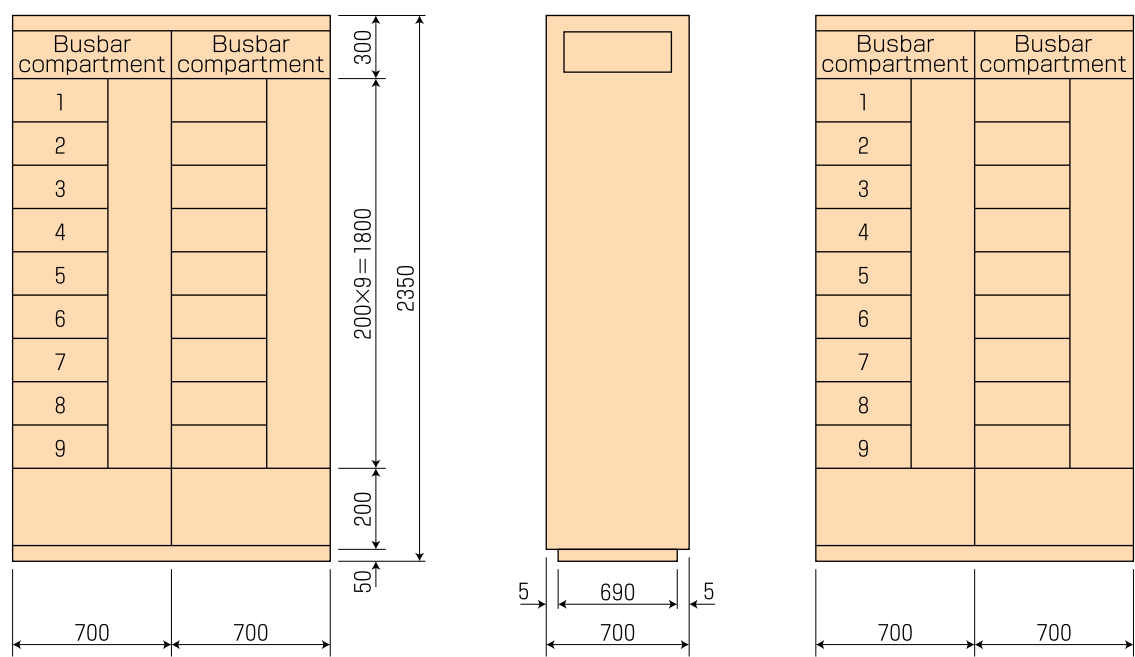
DIMENSIONS

SINGLE-FRONT TYPE : B-B TYPE



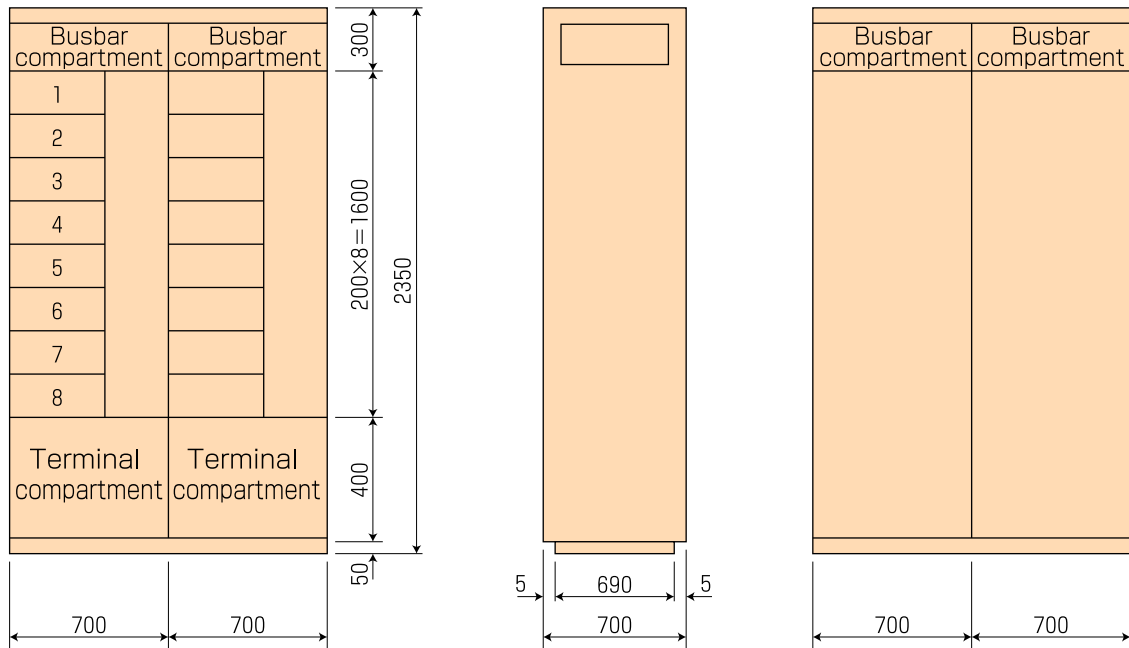
Approx. weight 500kg/set

DOUBLE-FRONT TYPE : B-B TYPE



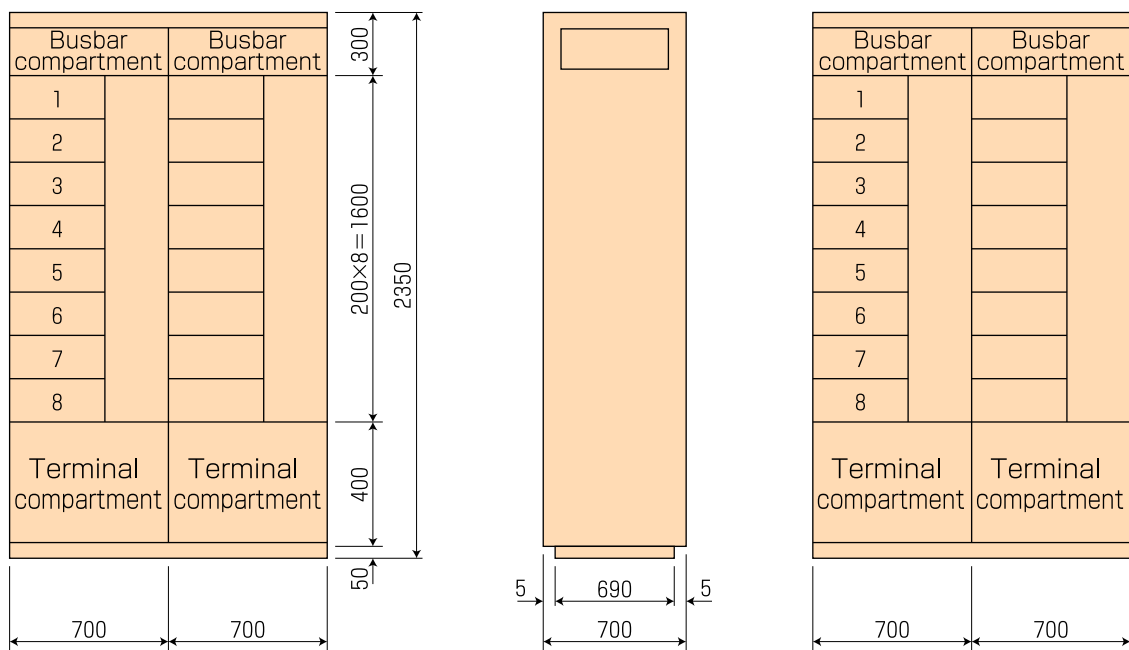
Approx. weight 620kg/set

SINGLE-FRONT TYPE : B-C & C-B TYPE



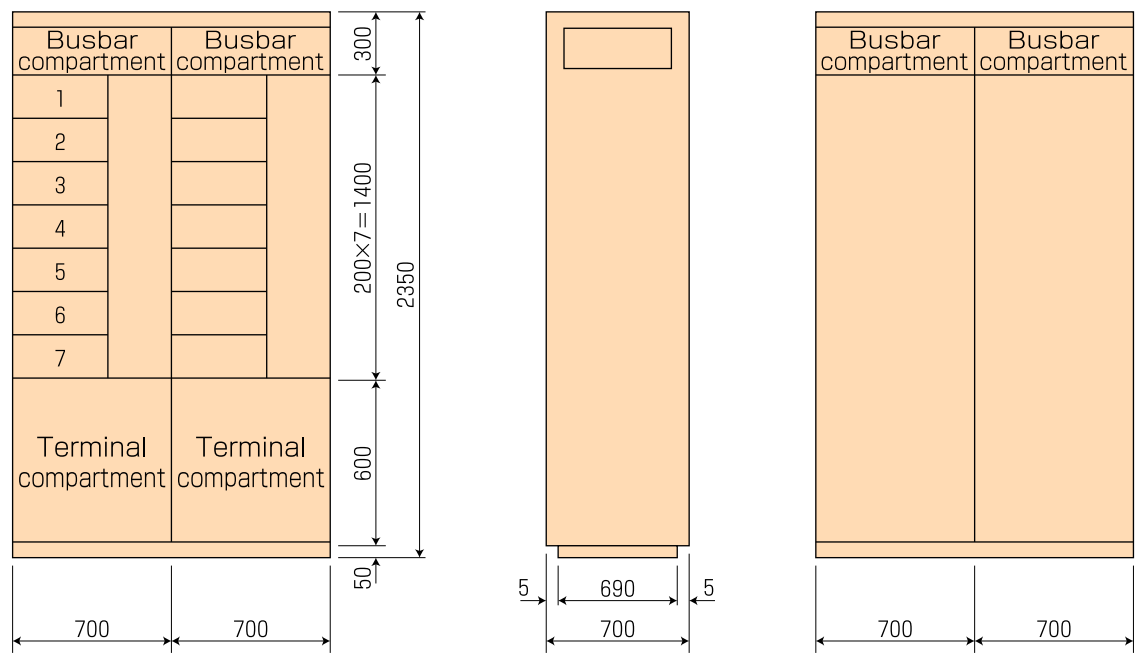
Approx. weight 470kg/set

DOUBLE-FRONT TYPE : B-C & C-B TYPE



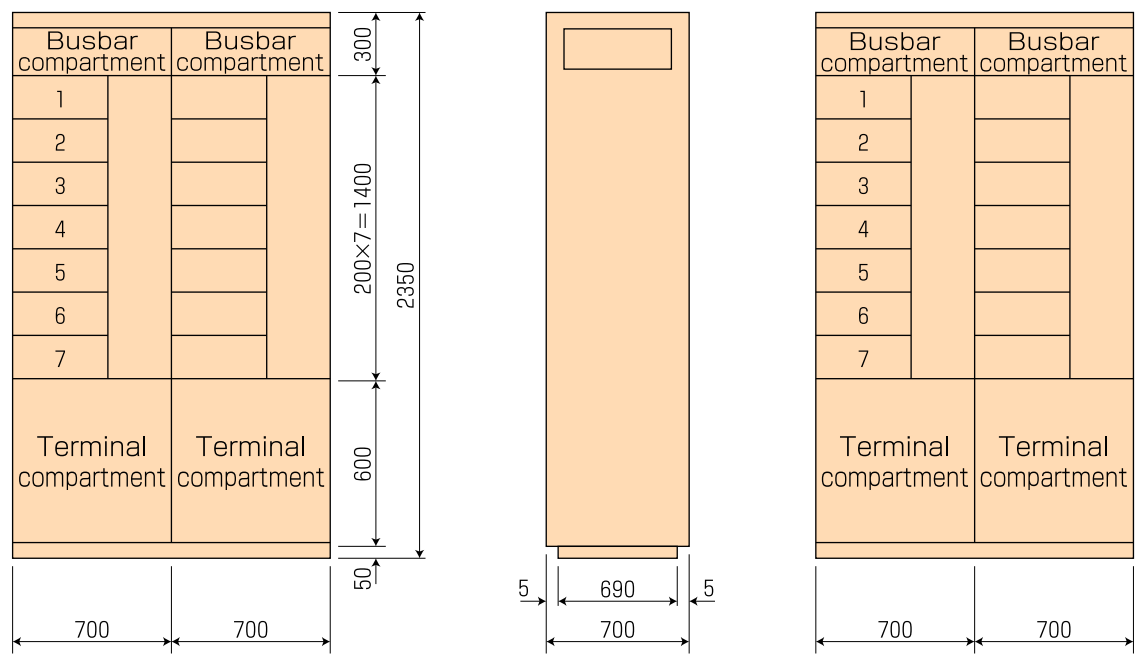
Approx. weight 600kg/set

SINGLE-FRONT TYPE : C-C TYPE



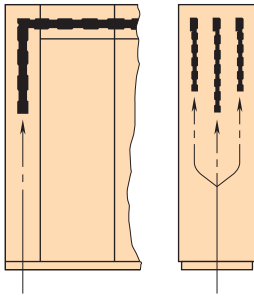
Approx. weight 450kg/set

DOUBLE-FRONT TYPE : C-C TYPE



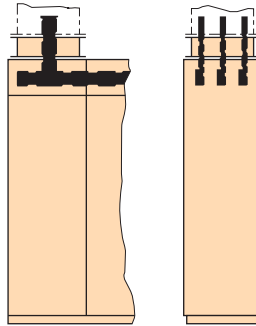
Approx. weight 560kg/set

POWER SUPPLY



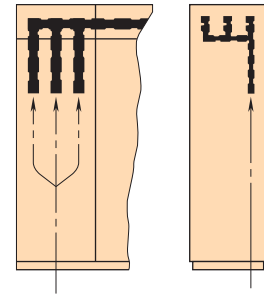
■ Cable leading from the side

When leading power with cable from the side, the cable duct will be provided. The cable duct is equipped with the connecting busbar and cable supporter.



■ Busbar leading from the top

When leading power with busbar from the top, the bus duct will be provided. The bus duct is equipped with the connecting busbar.



■ Cable leading from the back

Leading power with cable from the back is possible only when the power supply cable is 325mm² or less.

UNIT APPLICATION

NON-REVERSING UNIT



380-440V Control Center

Motor		MCCB			MC (PAK)		CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type	Heater (A)			Model	Height	
0.2	0.7	TN-S100C	TN-H50B	15	26	0.7	3/5	3/5	CU-05026 CU-10026	200	
0.4	1.3					1.2					
0.75	2.1					1.8					
1.1	3					2.3					
1.5	3.7					3.6	5/5	5/5			
2.2	5					4.6					
3.7	8					7.5	10/5	10/5			
5.5	12.5			30		11	15/5	15/5			
7.5	16.5					15	20/5	20/5			
11	23.5			40		22	30/5	30/5			
15	31.5		TN-H100B	60	35	30	50/5	50/5	CU-10035		
19	39			75	50	34			CU-10050	300	
22	45			100		42					
30	60				65	56	75/5	75/5	CU-10065		
37	73	TN-S225B	TN-H225B	125	80	68			CU-20080	600	
45	87			150	100	80	100/5	100/5	CU-20100		
55	110			175	125	105	150/5	150/5	CU-20125		
60	116			225	150				CU-20150		
75	137					130					
90	165	TN-E400B	TN-S400B	300	220	160	200/5	200/5	CU-40220	900	Fixed type
95	171			350	300	240			CU-40300	1400	
110	205			400			300/5	300/5			
125	225										

200-220V Control Center

Motor		MCCB			MC (PAK)		CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type	Heater (A)			Model	Height	
0.2	1.4	TN-S100C	TN-H50B	15	26	1.2	3/5	3/5	CU-05026 CU-10026	200	
0.4	2.6					2.3					
0.75	4.2					3.6	5/5	5/5			
1.1	6					5	7.5/5	7.5/5			
1.5	7.4					6.7					
2.2	10			20		9.2	10/5	10/5			
3.7	16			30		15	20/5	20/5			
5.5	25			50		22	30/5	30/5			
7.5	33		TN-H100B	60	35	30	50/5	50/5	CU-10035		
11	47			100	50	42			CU-10050	300	
15	63				65	56	75/5	75/5	CU-10065		
19	78	TN-S225B	TN-H225B	125	80	68	100/5	100/5	CU-20080	600	
22	90			150	100	80			CU-20100		
30	120			200	125	105	150/5	150/5	CU-20125		
37	146			225	150	130			CU-20150		
45	174	TN-S400B	TN-S400B	300	220	160	200/5	200/5	CU-40220	900	Fixed type
55	220			350		190	300/5	300/5			
60	232			400	300	240			CU-40300	1400	

REVERSING UNIT



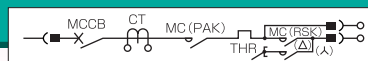
380-440V Control Center

Motor		MCCB			MC (RSK)		CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type	Heater (A)			Model	Height	
0.2	0.7	TN-S100C	TN-H50B	15	26	0.7	3/5	3/5	CUR-05026 CUR-10026	300	
0.4	1.3					1.2					
0.75	2.1					1.8					
1.1	3					2.3					
1.5	3.7					3.6	5/5	5/5			
2.2	5					4.6					
3.7	8					7.5	10/5	10/5			
5.5	12.5			30		11	15/5	15/5			
7.5	16.5					15	20/5	20/5			
11	23.5			40		22	30/5	30/5			
15	31.5		TN-H100B	60	35	30	50/5	50/5	CUR-10035		
19	39			75	50	34			CUR-10050	500	
22	45			100		42					
30	60				65	56	75/5	75/5	CUR-10065		
37	73	TN-S225B	TN-H225B	125	80	68			CUR-20080	900	Fixed type
45	87			150	100	80	100/5	100/5	CUR-20100		
55	110			175	125	105	150/5	150/5	CUR-20125		
60	116			225	150				CUR-20150		
75	137					130					
90	165	TN-E400B	TN-S400B	300	220	160	200/5	200/5	CUR-40220	1400	
95	171			350	300	240			CUR-40300	1600	
110	205			400			300/5	300/5			
125	225										

200-220V Control Center

Motor		MCCB			MC (RSK)		CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type	Heater (A)			Model	Height	
0.2	1.4	TN-S100C	TN-H50B	15	26	1.2	3/5	3/5	CUR-05026 CUR-10026	300	
0.4	2.6					2.3					
0.75	4.2					3.6	5/5	5/5			
1.1	6					5	7.5/5	7.5/5			
1.5	7.4					6.7					
2.2	10			20		9.2	10/5	10/5			
3.7	16			30		15	20/5	20/5			
5.5	25			50		22	30/5	30/5			
7.5	33		TN-H100B	60	35	30	50/5	50/5	CUR-10035		
11	47			100	50	42			CUR-10050	500	
15	63				65	56	75/5	75/5	CUR-10065		
19	78	TN-S225B	TN-H225B	125	80	68	100/5	100/5	CUR-20080	900	Fixed type
22	90			150	100	80			CUR-20100		
30	120			200	125	105	150/5	150/5	CUR-20125		
37	146			225	150	130			CUR-20150		
45	174	TN-S400B	TN-S400B	300	220	160	200/5	200/5	CUR-40220	1400	
55	220			350		190	300/5	300/5			
60	232			400	300	240			CUR-40300	1600	

STAR-DELTA UNIT



■ 380-440V Control Center

Motor		MCCB			MC (PAK·RSK)				CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type			Heater (A)			Model	Height	
		22kA	50kA		M	△	△						
0.2	0.7	TN-S100C	TN-H50B	15	26	26	26	0.7	3/5	3/5	CUSD-05026 CUSD-10026	400	
0.4	1.3							1.2					
0.75	2.1							1.8					
1.1	3							2.3					
1.5	3.7							3.6	5/5	5/5			
2.2	5							4.6					
3.7	8			↓				7.5	10/5	10/5			
5.5	12.5			30				11	15/5	15/5			
7.5	16.5			↓				15	20/5	20/5			
11	23.5			40	↓			22	30/5	30/5			
15	31.5		TN-H100B	60	35			30	50/5	50/5	CUSD-10035		
19	39			75	50			34			CUSD-10050	500	
22	45			100	↓	35	35	42					
30	60	↓	↓	↓	65	50	50	56	75/5	75/5	CUSD-10065	↓	
37	73	TN-S225B	TN-H225B	125	80	↓	↓	68	↓	↓	CUSD-20080	800	Fixed type
45	87			150	100	65	65	80	100/5	100/5	CUSD-20100	↓	
55	110			175	125	↓	↓	105	150/5	150/5	CUSD-20125	↓	
60	116			225	150	125	125	↓			CUSD-20150	1000	
75	137							130					
90	165	TN-E400B	TN-S400B	300	220	↓	↓	160	200/5	200/5	CUSD-40220	1400	
95	171	↓	↓	350	300	150	150	240	↓	↓	CUSD-40300	↓	↓

■ 200-220V Control Center

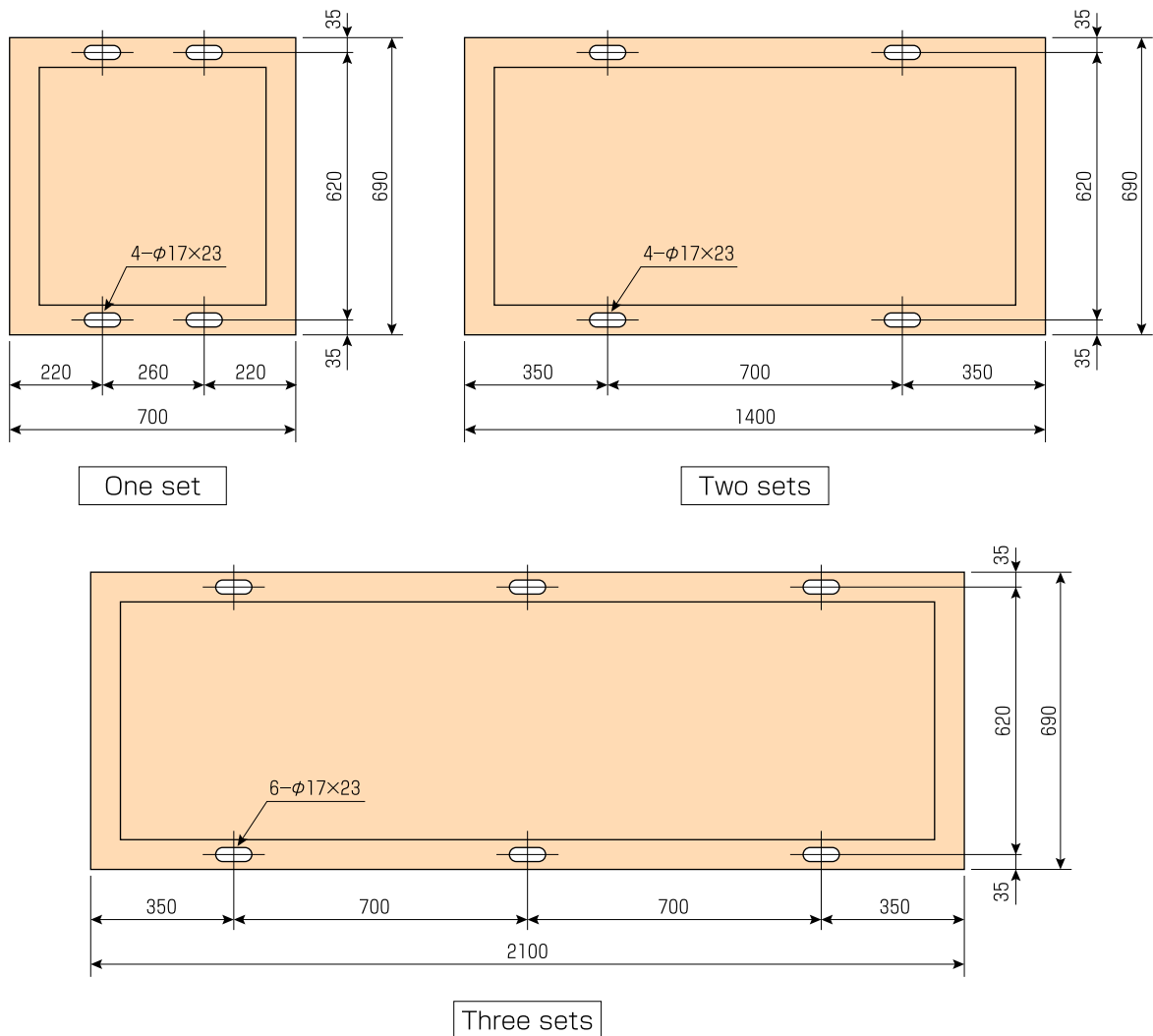
Motor		MCCB			MC (PAK·RSK)				CT (A)	A (A)	Unit		Note
kW	RC (A)	Model		RC (A)	Type			Heater (A)			Model	Height	
		50kA	85kA		M	λ	△						
0.2	1.4	TN-S100C	TN-H50B	15	26	26	26	1.2	3/5	3/5	CUSD-05026 CUSD-10026	400	
0.4	2.6							2.3	↓	↓			
0.75	4.2							3.6	5/5	5/5			
1.1	6							5	7.5/5	7.5/5			
1.5	7.4			↓				6.7	↓	↓			
2.2	10			20				9.2	10/5	10/5			
3.7	16			30				15	20/5	20/5			
5.5	25			50	↓		↓	22	30/5	30/5			
7.5	33		TN-H100B	60	35	↓	↓	30	50/5	50/5	CUSD-10035	↓	
11	47			100	50	35	35	42	↓	↓	CUSD-10050	500	
15	63	↓	↓	↓	65	50	50	56	75/5	75/5	CUSD-10065	↓	
19	78	TN-S225B	TN-H225B	125	80	↓	↓	68	100/5	100/5	CUSD-20080	800	Fixed type
22	90			150	100	65	65	80	↓	↓	CUSD-20100		
30	120			200	125	80	80	105	150/5	150/5	CUSD-20125	↓	
37	146	↓	↓	225	150	100	100	130	↓	↓	CUSD-20150	1000	
45	174	TN-S400B	TN-S400B	300	220	125	125	160	200/5	200/5	CUSD-40220	1400	↓

CIRCUIT BREAKER UNIT



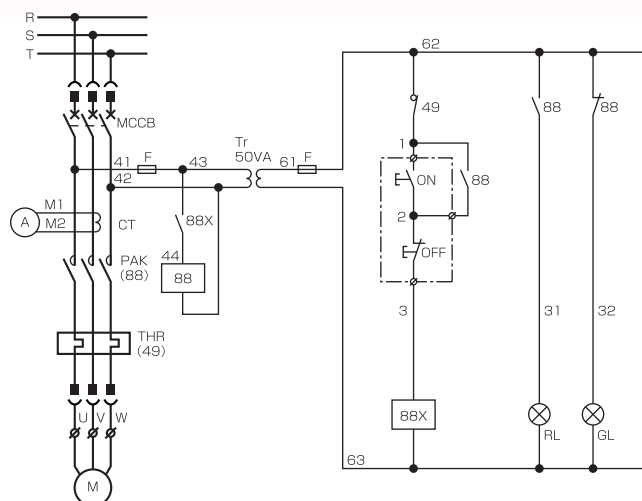
Model	Rated Current					Unit Height
CUNF 05	15A	20A	30A	40A	50A	200mm
CUNF 10	15A	20A	30A	40A	50A	200mm
CUNF 10	60A	75A	100A			300mm
CUNF 20	125A	150A	175A	200A	225A	600mm
CUNF 40	250A	300A	350A	400A		800mm Fixed Type
CUNF 60	500A	600A				800mm ↓

CHANNEL BASE



WIRING DIAGRAMS

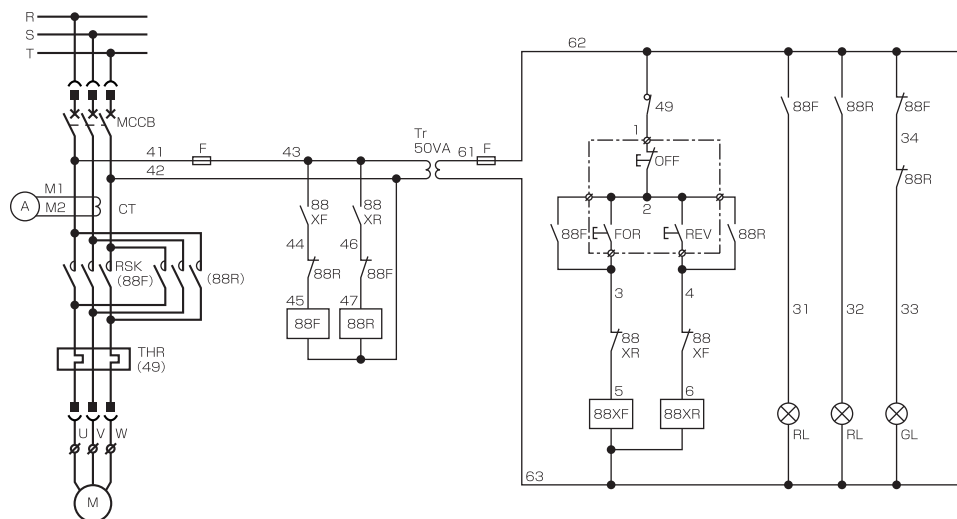
NON-REVERSING UNIT



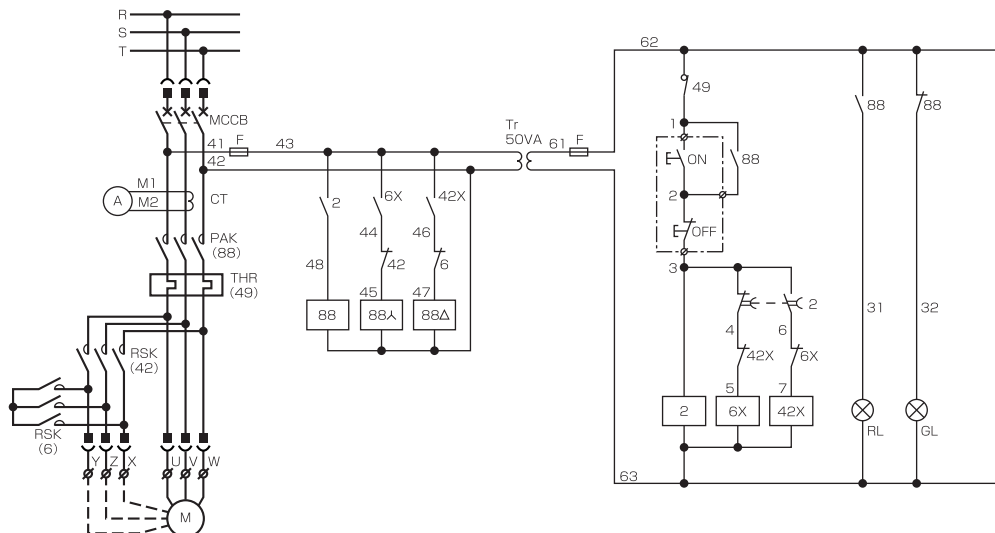
Symbols

- MCCB : Molded case circuit breaker
- PAK (88) : Electro-magnetic contactor
- RSK (88F, 88R) : Reversing type electro-magnetic contactor (42, 6)
- THR (49) : Thermal overload relay
- CT : Current transformer
- Tr : Control transformer
- 88X : Auxiliary relay
- F : Fuse
- 49 : Thermal relay contact
- T : Timer
- RL·GL : Pilot light (LED)
- M : Motor

REVERSING UNIT



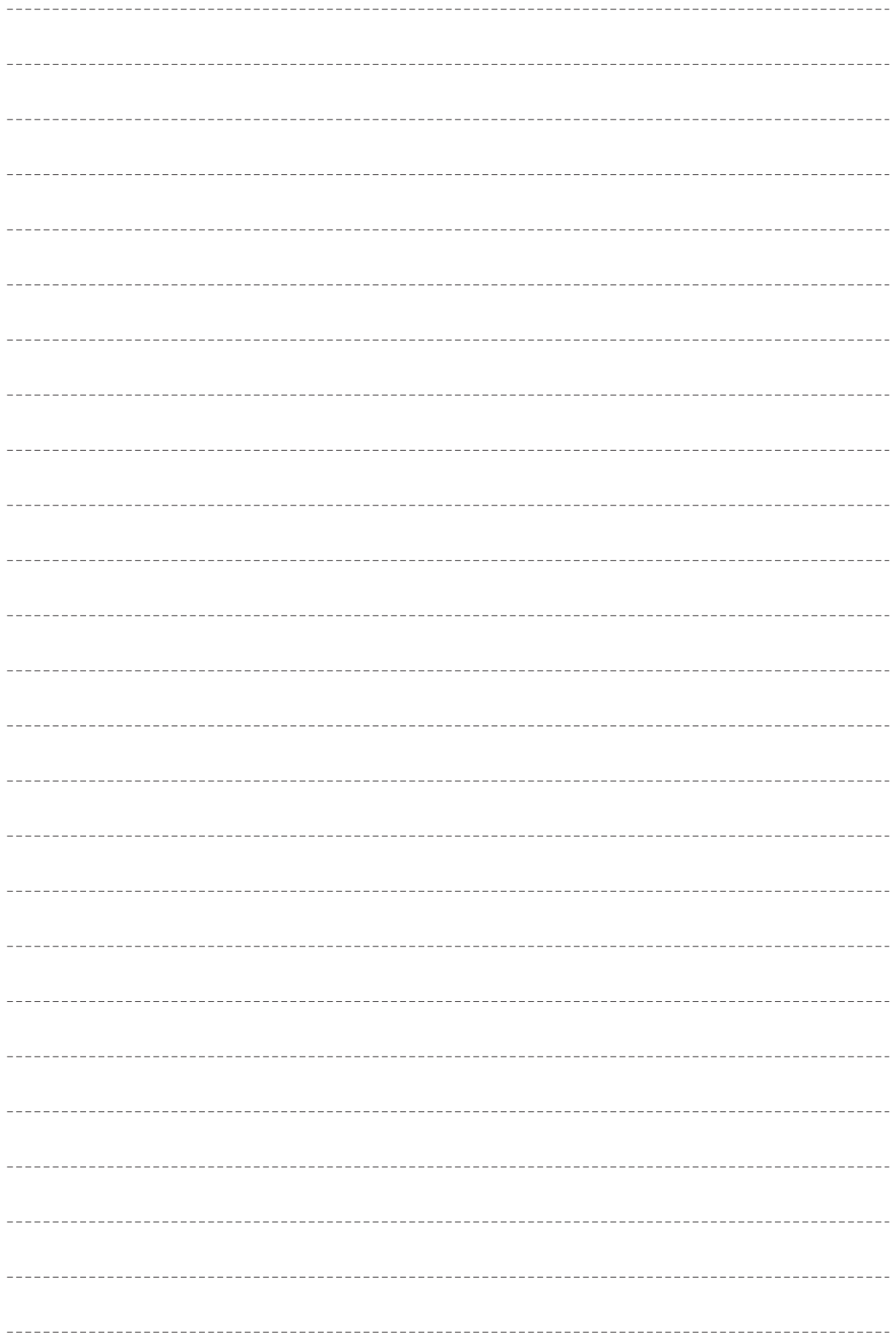
STAR-DELTA UNIT

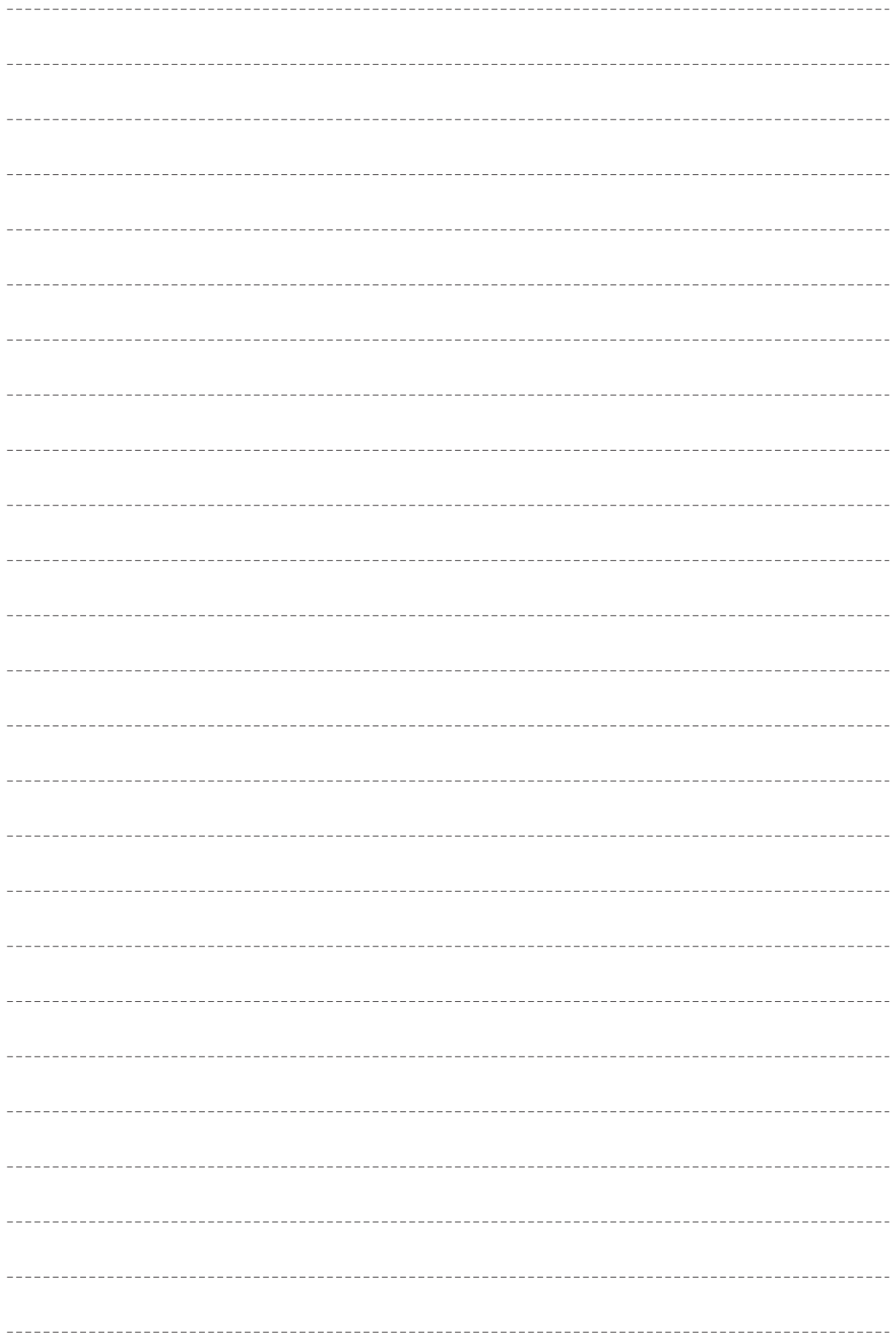


ORDER SHEET

 Indicates standard specifications.

Ratings	Main circuit rated insulating voltage	☐ 660V	
	Control circuit rated insulating voltage	☐ 250V	
	Rated frequency	☐ 50Hz ☐ 60Hz	
Specifications	Main Circuit	Distribution system	☐ 3-phase, 3-wire ☐ 3-phase, 4-wire
		Power transformer	
		Rated capacity	☐ kVA
		Rated primary voltage	☐ V
		Rated secondary voltage	☐ V
		Rated secondary current	☐ A
		%Z	☐ %
		Rated short-circuit capacity	☐ Calculated value at transformer secondary side kA
		Required breaking capacity	☐ 10kA ☐ 20kA ☐ 30kA ☐ 50kA ☐ kA
		Rated short-time current	☐ 30kA 0.5sec ☐ 50kA sec
		Horizontal busbar capacity	☐ 630A ☐ 1000A ☐ 1250A ☐ 1600A ☐ 2000A ☐ 2500A
		Vertical busbar capacity	☐ 630A
		Protection method	(Earth)
	(Overload)		☐ Overcurrent thermal relay
	(Short-circuit)		☐ Full capacity breaking ☐ Back-up breaking ☐ Selective breaking
	Control Circuit	Control circuit voltage	☐ AC100V/110V ☐ AC V ☐ DC V
		Control transformer	☐ 50VA for each unit ☐ VA for common control power
		Time-delay relay	☐ with ☐ without
	Structure	Installation site	☐ Indoor ☐ Outdoor
		Enclosure type	☐ Enclosed ☐ Dust-proof (simple)
		Protection class	☐ IP20 IP41
		Single-front/Double-front	☐ Single-front ☐ Double-front
		Wiring system	☐ B-B...Power& control circuit terminal blocks are equipped in the right side of unit compartments
			☐ B-B...Power& control circuit terminal blocks are equipped in the cable compartment
			☐ B-C ☐ C-B ☐ C-C
	Power leading	☐ Bus duct ☐ Side cable ☐ Rear cable (A) (Cable size mm ² , Cable type)	
Insulation between vertical busbars	☐ Phase barrier		
Painting	Outside (indoor/outdoor)	☐ Munsell No. 5Y7/1	
	Inside (indoor/outdoor)	☐ Munsell No. 5Y7/1	
	Meter frame	☐ Munsell No. N1.5	
	Breaker operating handle	☐ Munsell No. N1.5	
Internal Wiring Color	Main circuit	☐ Black	
	Main circuit terminal	☐ Phase R: Red Phase S: White Phase T: Blue Neutral: Black ☐	
	Control circuit (AC)	☐ Yellow ☐	
	Control circuit (DC)	☐ Blue ☐	
	VT secondary side	☐ Yellow ☐	
	CT secondary side	☐ Yellow ☐	
Standard	Applicable standards	☐ JEM 1195 ☐ IEC 60439-1 ☐ BS 5486 ☐ NEMA ICS2-322	
	Options and other indications		





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URL http://www.togami-elec.co.jp/index_en.html

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Tokyo 153-0042, Japan
TEL +81-3-3465-5324
FAX +81-3-5738-3622
E-MAIL global.info@togami-elec.co.jp

WARRANTY

Duration: Twelve (12) months from the date of delivery to your designated place.

Scope : We shall exchange or repair the faulted parts/components of equipments during the warranty period as long as the failure occurs at our responsibility.
We are not responsible for the secondary damages caused by the failure of supplied products since this warranty covers the supplied products only.

● Please note that information in this catalog is subject to change without notice.