



SAMYANG

ELECTRIC MARINE PARTS

[SAMYANG Engineering Serves The Best Solution And Quality]

SAMYANG



IMPROVEMENT OF CONTAINERIZATION

- Reefer plugs
- Receptacles
- Socket outlet Boxes
- Socket outlet Plugs



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ELECTRIC MARINE PARTS

IMPROVEMENT OF CONTAINERIZATION FOR GLOBAL VILLAGE

Containerization is one of the leading means for achieving gradually growth in world-wide distribution of goods. To meet the global demand created by economic activity, SAM YANG as a leading supplier of various reefer plugs, receptacles and socket outlet Boxes for refrigerated containers, supports the international distribution structure with many years experienced and advanced technologies.

SAM YANG has been supplying various marine electric equipment not only for ship builders but any-related manufactureres, also ship owners for maintenance needs during their voyage.

SAM YANG constantly endeavor to meet demand and satisfy our clients in various field of industries with high quality and sincerity.



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SOCKET - OUTLET PLUGS



APPROVALS



CE MARK
Low Voltage Directive 73/23/EEC
as last amended by EEC Directive 93/68/EEC



THE REEFER CONTAINER POWER SYSTEM

ELECTRICAL POWER SUPPLY SYSTEM FOR REFRIGERATED CONTAINERS

There are various voltage and ampere types of electrical power supply systems available, at present, for refrigerated containers. Furthermore, the type of socket outlets used in each system varies with the ship's nationality, shipowner and ship operational route as shown below are the socket outlets on the power supply side corresponding to correct plugs of a container.

Socket outlet	Plug	Container
Supply voltage in yard & terminal	Symbol rated voltage & ampere	Size / Countries in common use
Series I AC220V 3 φ	(250V 60A)	20 ft. FAR EAST U.S.A
AC440V 3 φ		40 ft. FAR EAST U.S.A
Series II AC380V to 440V 3 φ	(480V 60A)	20 & 40 ft. FAR EAST AUSTRALIA
AC415V 3 φ		40 ft. U.S.A
Series III AC380V to 440V 3 φ	(380V to 440V)	20 & 40 ft. FAR EAST EUROPE
AC415V 3 φ		20 & 40 ft. EUROPE
Series IV AC220V 3 φ	(500V 30A)	20 & 40 ft. FAR EAST AUSTRALIA
AC220V 3 φ		20 & 40 ft. U.S.A FAR EAST EUROPE
	(250V 30A)	20 ft. U.S.A FAR EAST EUROPE
	Female Plug	20 ft. FAR EAST U.S.A

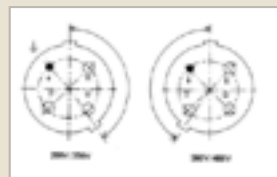
TYPE OF SOCKET-OUTLET

There are four types of socket outlets available. It is recommended the type suited to the ship operation route be selected. Socket outlets and plugs used for refrigerated containers should be internationally compatible.

SERIES I

250V AC 60V and 480V AC 60A (ISO) (Russel & Stoll type)

Series I socket conform to the ISO standards and JIS F 8837. But, the socket outlets can be used at two voltages. Therefore, to prevent plugs of different voltage from being connected to the socket outlets, a keyway is provided as shown below.

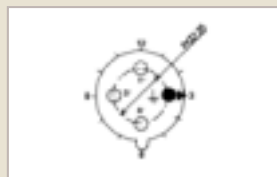


Front view of socket outlet

SERIES II

380V/440V AC 32A(3h) (ISO, IEC, CEE)

Series II socket outlets conform to the ISO, IEC and CEE standards and JIS F8837. To prevent rated plugs adapted to CEE from being connected to series II socket outlets, the earth pin is set at the position of 3 o'clock when the keyway is at the position of 6 o'clock.

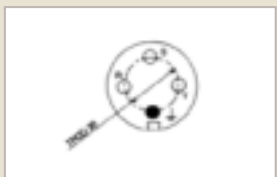


Front view of socket outlet

SERIES III

500V AC 30V (Australian Standard (Wilco type)

Series III socket outlets conform to the Australian Standards for container systems. The pin and keyway arrangement is as follows:

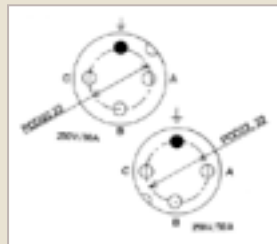


Front view of socket outlet

SERIES IV

250V AC 50A and 30A (ISO and USA Standard) (Russel & Stoll type)

Series IV socket outlets conform to ISO and USA standards. The rated current is 50A, though 30 A is sometimes used. The pin and keyway arrangement is as follows:



Front view of socket outlet

POWER CONNECTION SYSTEM

SAM YANG POWER CONNECTION PRODUCTS were developed to meet growing need for power connection system in the refrigerated container industry. Sam Yang Engineering is now the leading manufacturer in Korea supplying a comprehensive line of plugs and receptacles to meet all existing industry standards. Sam Yang supplies major manufacturers of refrigerated equipment as well as shipping lines and leasing companies in

domestic and international markets.

SAM YANG ENGINEERING PRODUCTS provide the highest level of reliability and safety to the user. SAM YANG Engineering continually updates its products to meet the always changing demands of the refrigerated container industry. The reliability is important to the protection of the dedicate cargo against loss.

Housing

All housing parts are molded high impact and high temperature plastic. The impact resistance provides repeated re-use after impact. The total insulating properties also prevent exposure to shock hazard.

Electrical

Pins and sleeve contacts are self-aligning heavy duty type, with set screw type wire termination's.

Water Proof

Assemblies are totally watertight even when not engaged. Internal wire termination's remain completely dry and safe while unplugged eliminating water damage.

Male Power Plugs

RATING	SAMYANG	KOKOSHA	MIPCO	C.E.E	WILCO
250VAC 60A	P-250-60	P-W4604P-A	634MP2		
480VAC 60A	P-480-60	P-W4613P-A	634MP4		
440VAC 32A	332SY	P-W4333P-3h	333MP	CEE17	
500VAC 30A	P-500-30	P-W4392P-A			WIP430

Female Receptacles

250VAC 60A	6034FMC or R-250-60	R6234M			
480VAC 60A	R-480-60	R6434M			
440VAC 32A	332CC			CEE17	

Adaptor

440VAC Plug : 440VAC 32A Receptacle : 500VAC 30A	4332W/CP				
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Cable Converters

Converters sets are factory assembled using plugs and connectors with one meter of four wire cable suitably rated. Longer wire measures available upon request.

Extension Cables

Extension cable are available in any length required.

Socket Outlet Receptacle Boxes with Circuit Breaker

Socket outlet receptacle boxes are 1, 2, 3, 4, 5 and 6 Gang models available upon request.

>> SOCKET - OUTLET BOXES

SERIES II

380V/440V AC 32A(3h)
3WIRE 3POLE + E
(ISO, IEC, CEE)



INSTRUCTION

1. General

The devices classified in equipment are designed in accordance with C.E.E. standards and I.E.C. as well as I.S.O. recommended specifications, featuring 380 to 440V A.C configuration with circuit breakers and C.E.E. 3H contact position. The monitor change ability of contacts of this equipment are, as shown on the clock face diagram below, obtained by constructionally setting the earth contact at 3 o' clock relative to the key which is always at 6 o' clock.

2. Has a perfect water-tight in grade IP67.

3. Operation

This equipment is designed and manufactured so that the plug can not be withdrawn unless the switch or circuit breaker is open, and the switch or circuit breaker can not be closed unless the plug is fully inserted.

4. Name plate

Name plate material is sus plate to be maker standard size and to be fitted with stainless steel screw.

* caution plate

"Only for use reefer container. Do not insert or remove plug unless switch is off position".

5. Action when the circuit breaker is tripped

The check procedure when the circuit breaker is tripped with the switch handle set to on is as follows:

- ① Turn the switch handle from trip or on to reset.
- ② Remove the plug from the receptacle, and check the surface.
If the surface is wet, wipe moisture out and clear the surface.
- ③ Open the box cover, and check the inside.
If the inside is wet, remove moisture.
Replace the circuit breaker of the inner parts, if necessary.
- ④ To find trip causes other than the above, check the refrigerated container.
- ⑤ When the repair operation necessary is finished, insert the plug into the receptacle and set the switch handle to on.
Check that the refrigerated container operates normally.

6. Maintenance

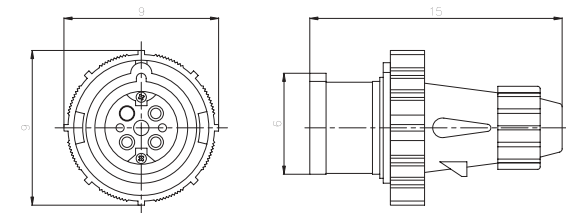
Take the following precautions on maintenance and inspection.

- ① To keep the plug securely in into the receptacle, tighten the ring nut of the plug.
- ② When the receptacle box is not in use, tighten the blind cap to make the box watertight.
- ③ Do not use a deformed or discolored plug or plug pin which may cause faults such as those mentioned above.
- ④ If the receptacle box is overheated, check it following parts.
Replace the inner parts, the circuit breaker, or the plug, if necessary.

>> SOCKET - OUTLET PLUGS & RECEPTACLES



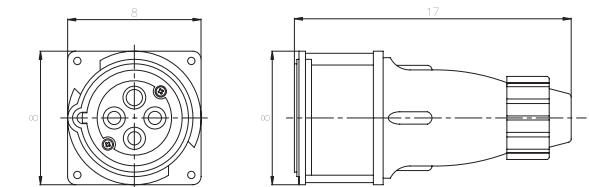
SERIES II 380/440V AC 32A



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32	332SY-E	0.4

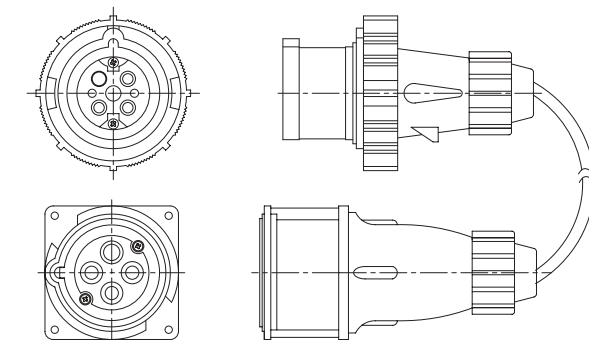
UL94-VO



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32	332CC-N	0.5

UL94-VO



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32		

UL94-VO

>> SOCKET - OUTLET PLUGS & RECEPTACLES



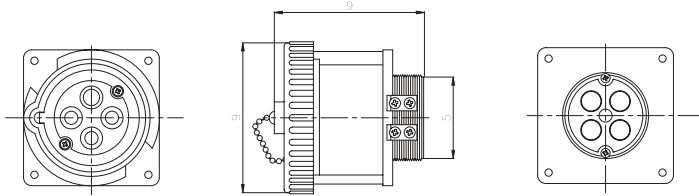
SERIES II 380/440V AC 32A



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32	R-440-32BF	2

Material : BRASS

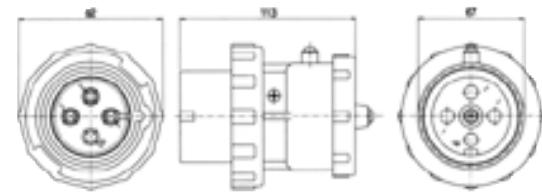


Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32	S332CC	0.5

UL94-V0

>> A DAP TORS



Particulars

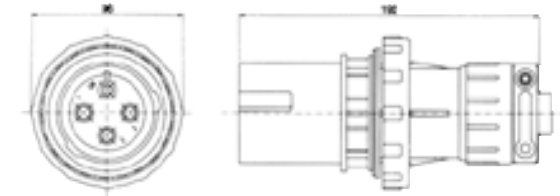
System Voltage	Rated Current (A)	Designation	Weight (kg)
380/440V	32	4332WS/CP	

Material : RESIN

- Remark
- Plug : 440V 32A
- Receptacle : 500V AC 30A
- Material : RESIN

>> SOCKET - OUTLET PLUGS & RECEPTACLES

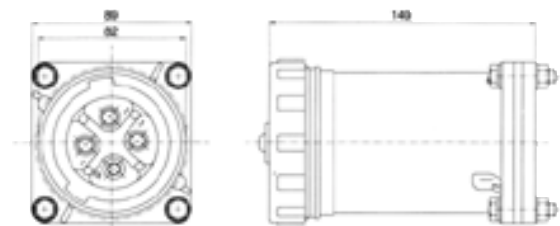
SERIES I 250V AC 60A



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
250V	60	P-250-60	0.5

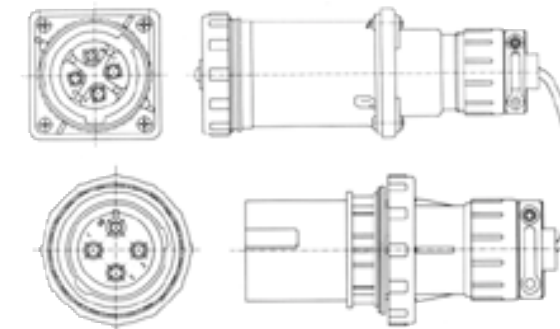
Material : RESIN



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
250V	60	6034FMC or R-250-60	0.7

Material : RESIN



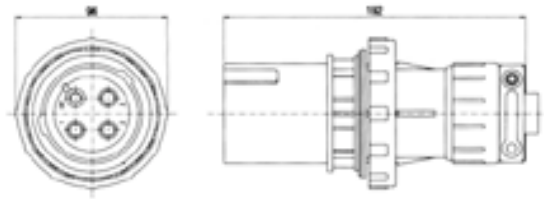
Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
250V	60		

Material : RESIN

>> SOCKET - OUTLET PLUGS & RECEPTACLES

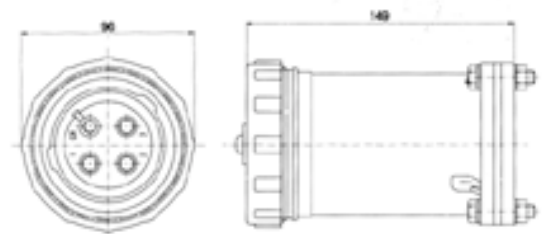
SERIES I 480V AC 60A



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
480V	60	P-480-60	0.5

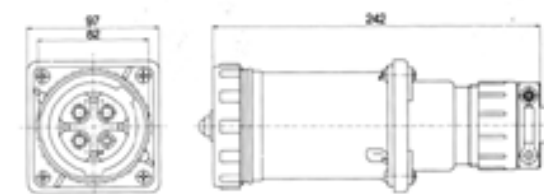
Material : RESIN



Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
480V	60	R-480-60	0.7

Material : RESIN



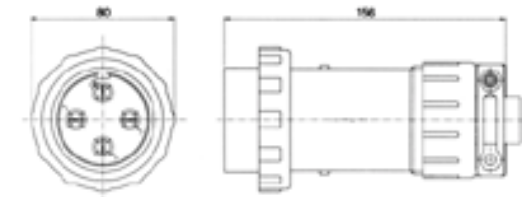
Particulars

System Voltage	Rated Current (A)	Designation	Weight (kg)
480V	60	R-480-60	0.8

Material : RESIN

>> SOCKET - OUTLET PLUGS

SERIES III

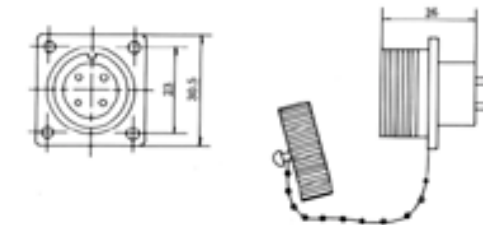


Watertight Plug (Plastic)
AC 500V 30A

System Voltage	Rated Current (A)	Designation	Weight (kg)
500V AC 3 Phase	30	P-500-30	0.4

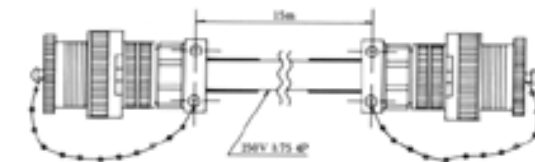
Material : RESIN

>> MONITORING SOCKET & PLUG



Monitoring socket

Cat. No.	SYE-MS
Rating	200V AC 10A
Contact	4 Poles, Female
Material	Nylon
Weight	0.03kg



Monitoring socket

Cat. No.	SYE-MP
Rating	200V AC 10A
Contact	4 Poles, Male
Material	Nylon
Weight	0.05kg

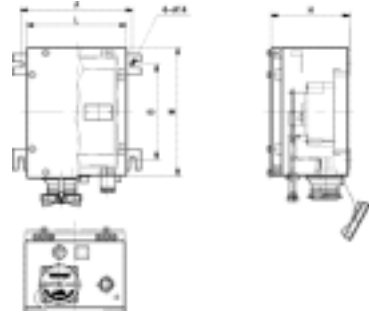
>> SOCKET - OUTLET BOXES



1 GANG TYPE



With circuit breaker and monitoring socket



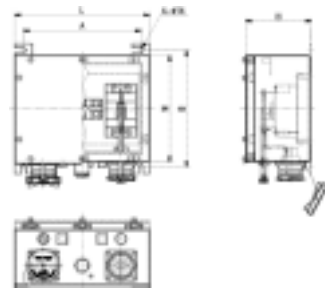
- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight
RCS2 - 321F	Not Applicable	Fixed	240	310	165	270	230	11.6 Kg
RCS2 - 321P	Not Applicable	Plug-in		360	175		230	12.5 Kg
RCS2M - 321F	ML Type	Fixed		310	165		230	11.7 Kg
RCS2M - 321P	ML Type	Plug-in		360	175		280	12.6 Kg
RCS2R - 321F	RML Type	Fixed		310	165		230	12.6 Kg
RCS2R - 321P	RML Type	Plug-in		360	175		280	12.6 Kg

2 GANG TYPE



With circuit breaker and monitoring socket



- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

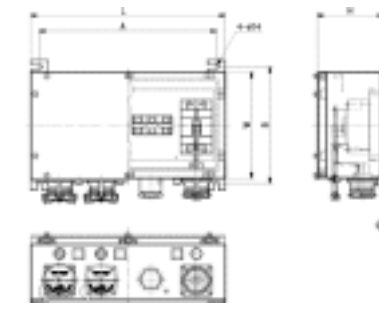
Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight
RCS2 - 322F	Not Applicable	Fixed	390	310	165	340	340	17.8 Kg
RCS2 - 322P	Not Applicable	Plug-in		360	175		405	19.6 Kg
RCS2M - 322F	ML Type	Fixed		310	165		340	17.9 Kg
RCS2M - 322P	ML Type	Plug-in		360	175		405	19.7 Kg
RCS2R - 322F	RML Type	Fixed	440	310	165	390	340	19.8 Kg
RCS2R - 322P	RML Type	Plug-in		360	175		405	21.5 Kg

>> SOCKET - OUTLET BOXES

3 GANG TYPE



With circuit breaker and monitoring socket



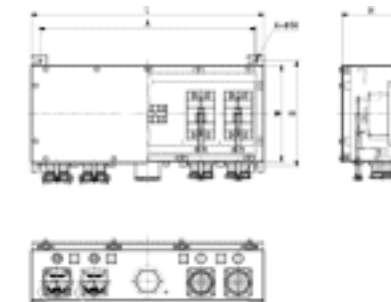
- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight		
RCS2 - 323F	Not Applicable	Fixed	510	310	165	460	340	23.5 Kg		
RCS2 - 323P	Not Applicable	Plug-in		360	175		405	26.2 Kg		
RCS2M - 323F	ML Type	Fixed		310	165		340	23.6 Kg		
RCS2M - 323P	ML Type	Plug-in		360	175		405	26.3 Kg		
RCS2R - 323F	RML Type	Fixed		560	310		165	510	340	25.6 Kg
RCS2R - 323P	RML Type	Plug-in			360		175		405	28.2 Kg

4 GANG TYPE



With circuit breaker and monitoring socket



- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight		
RCS2 - 324F	Not Applicable	Fixed	700	310	165	650	340	30.6 Kg		
RCS2 - 324P	Not Applicable	Plug-in		360	175		405	34.3 Kg		
RCS2M - 324F	ML Type	Fixed		310	165		340	30.7 Kg		
RCS2M - 324P	ML Type	Plug-in		360	175		405	34.4 Kg		
RCS2R - 324F	RML Type	Fixed		750	310		165	700	340	32.8 Kg
RCS2R - 324P	RML Type	Plug-in			360		175		405	36.4 Kg

>> SOCKET - OUTLET BOXES

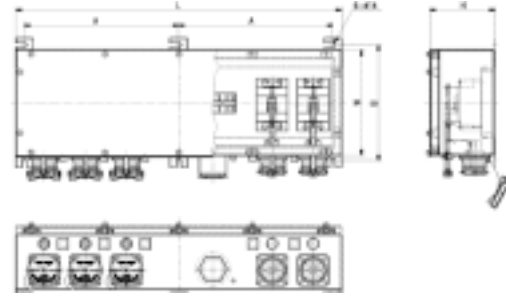


>> MAINTENANCE PARTS

5 GANG TYPE



With circuit breaker and monitoring socket



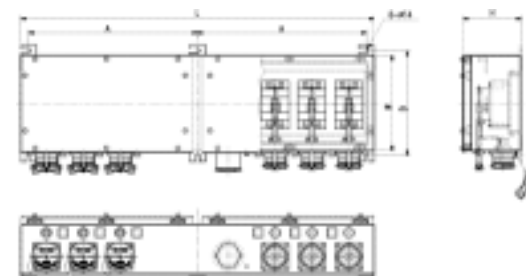
- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight
RCS2 - 325F	Not Applicable	Fixed	850	310	165	400	340	36.4 Kg
RCS2 - 325P	Not Applicable	Plug-in		360	175		405	40.9 Kg
RCS2M - 325F	ML Type	Fixed		310	165		340	36.5 Kg
RCS2M - 325P	ML Type	Plug-in		360	175		405	41.1 Kg
RCS2R - 325F	RML Type	Fixed	900	310	165	420	340	38.5 Kg
RCS2R - 325P	RML Type	Plug-in		360	175		405	43.0 Kg

6 GANG TYPE



With circuit breaker and monitoring socket



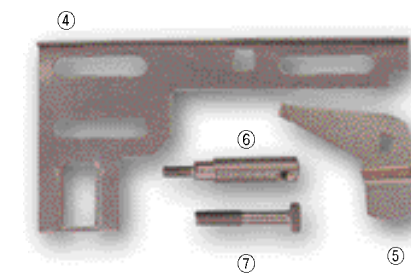
- Housing : Welded steel construction
- Ingress protection class : IP56 / IP67
- Finished Colour : 7.5BG 7/3 G40

Model No	Monitoring	MCCB Type	L	W	H	A	B	Weight
RCS2 - 326F	Not Applicable	Fixed	1050	310	165	500	340	46.1 Kg
RCS2 - 326P	Not Applicable	Plug-in		360	175		405	51.4 Kg
RCS2M - 326F	ML Type	Fixed		310	165		340	46.2 Kg
RCS2M - 326P	ML Type	Plug-in		360	175		405	51.6 Kg
RCS2R - 326F	RML Type	Fixed	1100	310	165	550	340	48.2 Kg
RCS2R - 326P	RML Type	Plug-in		360	175		405	53.6 Kg



SYE - SP

- ① Socket Cover
- ② Socket Body
- ③ Handle



SYE - SP

- ④ Locking Device
- ⑤ Locking Device
- ⑥ Handle Pin
- ⑦ Cover Bolt



SYE - SP

- ⑧ Molded Case Circuit Breaker (3P, 60/30~40A)



250V 60A



480V 60A



250/480V 60A



440V 32A



440V 32A



440V 32A



440V 32A



500VAC 30A



32/30A