

# Ship switchgear S404

The Siemens ship switchgear S404 is a low voltage switchgear in compact format for power distribution and motor control centre specially designed for use on board ships.

The construction and equipment, together with the electrical layout of the system complies with the regulations of the classification companies ABS, BV, DNV, GL, LRS, etc.

The modular and panel system enables the formation of normal main control panels with generator, feeder and starter panels, together with the delivery of separate starter panels.



## Framework layout

The S404 consists of free-standing panels, divided into sections, with a common base frame as the transport unit. Each panel is built on a galvanised base frame with perforated tubes, which are linked together with special corner connections. High strength, together with flexibility essential for shipping, is achieved by this means.

All metal parts are galvanised so that good earthing of all iron components is achieved.

Doors, roof and side covers are made of painted sheet metal.

## Busbar system

The system is equipped with a main busbar system with up to max. 2 parallel busbars 120 x 10 mm (special design up to 4 busbars 120 x 10 mm, parallel). These busbars are mounted horizontally in the rear section of the system under the roof. The busbars are connected between the transport units with specially designed longitudinal terminals which can be used as separation points in case of breakdowns.

The power supply for the switchgear is fed through vertical busbars up to 60 x 6 mm in the rear section of the panel.

## Technical data/Regulations

Rated voltage: up to 660 V, 50/60 Hz

### Main busbars:

up to 2 buses in parallel 120 x 10 mm per phase equals busbar current up to 3375 A, a 4 x busbar system is used for higher values.

### Feeder busbars:

up to 60 x 6 mm per phase equals operating current up to 915A per panel.

### Generator panel:

Circuit-breaker up to 3150 A (1), permanent installation with separation point or as plug-in switch, 250 A permanent installation only.

Panels for greater generator outputs are available with special add-ons.

### Feeder panel:

Load switch with fuses 25 – 320 A,

Circuit-breaker over 320 A to 3150 A, permanent installation or as plug-in switch.

### Starter panel:

Starter plug-ins: Fully removable up to 320 A (up to 170 kW at 380 V 1 200 kW at 440 V)

### Isolation:

Test voltage 2.5 kV

Ambient temperature: max. 50°C

### Short circuit capacity:

Dynamic short circuit current (peak value)

$I_s > 200$  kA at  $\cos \phi = 0.2$

$I_s - 140$  kA at  $\cos \phi = 0.22$ ) Symmetrical short circuit current (effective value)

$IK'' > 90$  kA

$IK'' - 64$  kA2)

Thermal busbar capacity (1 sec. current as per IEC Publ. 439)

$I_{therm} > 90$  k.A

$I_{therm} = 45$  kA2)

Protection class: (as per IEC 144)

Roof IP 22

Front side IP 21

Rear side with door IP 21

Rear side without door IP 00

Complete board with doors front and back IP 22

Colour: Pale grey RAL 7032

Framework and components: galvanized.

### Regulations:

The construction and equipment, together with the device selection, complies with the regulations of the classification companies ABS, BV, DNV, GL, LRS, etc.

The short circuit capacities listed here are proven by switching tests.

1) Current data as nominal values for the devices as per IEC

2) Applies only to vertical panel busbars without current limitation