

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Low Voltage Switchgear and Control Gear Assemblies**with type designation(s)
RM6 - Marine Version

Issued to

Schneider Electric Industries S.A.S.
Eybens Isere, France

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Gas insulated Medium voltage switchboard for use onboard ships and offshore units.****Type approval covers system design principle****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Rated voltage (V) 7.2, 12, 17.5 kV & 24 kV****Rated current (A) up to 630****Rated frequency (Hz) 50 / 60****Degree of protection**Issued at **Høvik** on **2017-06-19**This Certificate is valid until **2022-06-30**.for **DNV GL**DNV GL local station: **Marseille**Approval Engineer: **Marta Alonso Pontes**

Andreas Kristoffersen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Name and place of manufacturer

SFCME (Societe Francaise Constructions Mecanique)
Z.I. Ballastiere
Libourne, France

SBMLV (Schneider Beijing Medium & Low Voltage)
No .2 Liang Shui He 2 nd .Street
BJ Economic Technological Development Area
Beijing, China

Product description

SF6 gas filled medium voltage switchboard of partitioned type with 2 separate compartments for high voltage (busbar/switching compartment & outgoing circuit) and 1 separate compartment for control/auxiliary devices.

The type approval covers SF6 circuit breaker, switch disconnector with or without fuse combination, VIP protection relay with short-circuit, earth fault and thermal overload relays (ANSI 50/51 - 50N/51N - AN49).

List of protection relays : VIP40, VIP45, VIP400 and VIP410.

The type approval covers:

- Network Switch (function "I"),
- Switch Fuse Combination (function "Q").
- Circuit Breaker (function "D" 200A and "B" 630A),
- Cable connexion (function "O").

Equipped with pressure relief ducts.

RM6 cubicle function combinations

Standard Range			
1 function	2 functions	3 functions	4 functions
NE-I	NE-II	NE-III	NE-III
NE-D	NE-QI	NE-IQI	NE-IIQI
NE-B	NE-DI	NE-IDI	NE-QIQI
	NE-BI	NE-IBI	NE-IIDI
			NE-DIDI
			NE-IIBI
			NE-BIBI

Free Combination Range	
2 functions	3 functions
NE-XX	NE-XXX

NE : compact cubicle (Non Extensible)

X : all functions I, Q, D, B or O are possible (Free Combination Range)

Cubicle dimensions (*)

Standard Range				
	1 function	2 functions	3 functions	4 functions
Width:	552 or 652 mm (**)	909 mm	1266 mm	1699 mm
Depth:	874 mm			
Height:	1660 mm			

Job Id: **262.1-003043-3**
Certificate No: **TAE000020H**

Free Combination Range		
	2 functions	3 functions
Width:	1132 mm	1612 mm
Depth:	874 mm	
Height:	1660 mm	

(*) with pressure duct and low voltage box

(**) (NE-I or NE-D/B)

Technical data for RM6

Rated insulation voltage [kV]			12	17.5	24
Rated Insulation level [kV]	Lighting impulse	Common value	75	95	125
		Across the isolating distance	85	110	145
	Power frequency	Common value	28	38	50
		Across the isolating distance	32	45	60
Rated current [A]			630	630	630
Arc test 1 s. [kA]			20	20	20
IP rating:			22C	22C	22C
Network switch:		Rated current [A]	630	630	630
		Breaking capacity [A]	630	630	630
		Rated short-time withstand current 1 s. [kA]	25	21	12.5, 16, 20
		Rated short-time withstand current 3 s. [kA]	=	21	-
Transformer feeder:		Rated current [A] (Function "D")	200	200	200
		Rated current [A] (Function "B")	630	630	630
		Short-circuit breaking capacity [kA]	25	21	20

Application/Limitation

Medium voltage switchboard systems of partly partitioned type for use onboard ships and mobile offshore units.

Type approval regards system design principle.

Final design and selection of equipment and components to be made in accordance with the applicable Rules for the actual case.

RM6 medium voltage switchboard IP22C cubicle must be used in protected access areas accessible only for qualified personnel.

The type approval covers system design principle in accordance with IEC 62271-100 / 200.

This type approval certificate does not replace the requirement for a DNV GL product certificate. Documents and drawings for the actual application as stated in the Rules Pt.4, Ch.8, Sec. 1, Table 2 except E150, shall be submitted for approval in each case by the end manufacturer.

Use of 17.5 & 24 kV must be in accordance with our DNV GL rules Pt.4, Ch.8, Sec. 2, [1.2.2].

Type Approval documentation

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Tests carried out

Type Testing according to 60271-1, IEC 62271-100 / 102/ 105 / 200, IEC 60265 and IEC 60271-1:
Temperature rise test, internal arc test, dielectric test, short time withstand test, short circuit test.
Vibration test, EMC tests and IP testing.

Marking of product

Makers name plate with type and key data in accordance with the DNV GL rules Pt.4, Ch.8, Sec.4 [1.1.7].

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE