

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Circuit Breaker**with type designation(s)  
**Evolis**

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 :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Rated voltage (V) 7200 - 17500****Rated current (A) 630 - 2500**Issued at **Høvik** on **2018-06-05**for **DNV GL**This Certificate is valid until **2022-12-31**.DNV GL local station: **Marseille**Approval Engineer: **Nicolay Horn**

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**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.



## Product description

Type: Evolis

Medium voltage vacuum circuit breakers. Withdrawable and fixed versions.

Technical data:

Types: Evolis	MC1	MC1	MC2	MC2
Rated insulation voltage (kV):	7.2	12	7.2	12
Rated operational voltage (kV):	7.2	12	7.2	12
Withstand voltage (kV):	20	28	20	28
Impulse withstand voltage (kV):	60	75	60	75
Rated current (A) <sup>3</sup> :	630/1250	630/1250	630/1250	630/1250
Rated frequency (Hz):	50-60	50-60	50-60	50-60
Rated service short circuit breaking cap. I <sub>sc</sub> (kA):	25 / 31.5	25 / 31.5	31.5 / 40	31.5 / 40
Rated short time withstand current (3 s) I <sub>k</sub> (kA):	25 / 31.5	25 / 31.5	31.5 / 40	31.5 / 40
Rated making capacity I <sub>p</sub> (kA):	65 / 82 <sup>2</sup>	65 / 82 <sup>2</sup>	82 / 104 <sup>2</sup>	82 / 104 <sup>2</sup>

Types: Evolis	MC2	MC3	MC3	MC3
Rated insulation voltage (kV):	17.5	7.2	12	17.5
Rated operational voltage (kV):	17.5	7.2	12	17.5
Withstand voltage (kV):	38	20	28	38
Impulse withstand voltage (kV):	95	60	75	95
Rated current (A) <sup>3</sup> :	630/1250	630-2500	630-2500	630-2500
Rated frequency (Hz):	50-60	50-60	50-60	50-60
Rated service short circuit breaking cap. I <sub>sc</sub> (kA):	31.5 / 40	25/31.5/40	25/31.5/40 <sup>1</sup>	25/31.5/40 <sup>1</sup>
Rated short time withstand current (3 s) I <sub>k</sub> (kA):	31.5 / 40	25/31.5/40 <sup>1</sup>	25/31.5/40 <sup>1</sup>	25/31.5/40 <sup>1</sup>
Rated making capacity I <sub>p</sub> (kA):	82 / 104 <sup>2</sup>	65/82/104 <sup>2</sup>	65/82/104 <sup>2</sup>	65/82/104 <sup>2</sup>

- 1: Breaker rated 630 and 1250 A not available with short circuit capacity of 25 and 31.5 kA.  
 2: Values given for 60 Hz.  
 3: See Application / limitation.

## Application/Limitation

Shall be installed and tested according to Veritas Rules for Ships/High Speed, Light Craft and Naval Surface Craft.

Current rating is given for 40 °C. To be derated with 5 % for ambient temperature of 45 °C

## Type Approval documentation

Technical information:

Merlin Gerin data sheet 2007 "Medium Voltage Distribution – Evolis 17.5 kV circuit breaker – Vacuum breaking".

Drawings:

C.B. assembly drawings: 51301205F002, 51301210F002 & 51301211F002.

Fixed part assembly drawing: 51236371F0, 51236397F0, 51236396F0.

Test reports:

Test report	Reference	Issued on
Vibration tests report	2006-0765-00A	01.12.2006
Dielectric tests	51250030EA	14.11.2000

Job Id: **262.1-005269-5**  
Certificate No: **TAE00002XR**

MC1	Temperature-rise tests	51249624EA	24.08.2000
	Short-time and peak withstand tests	20000033A	28.05.2002
	Mechanical operation test	51250206EA	28.03.2001
	Short-circuit current making and breaking tests	20000031A	27.05.2000
	Verification of the degree of protection	51249985EA	12.10.2000
	Electrical endurance tests	A20000114A	09.10.2000
MC2	Vibration tests report	RQ-06-68212-2/A	16.11.2006
	Dielectric tests	51249542EA	26.07.2000
	Temperature-rise tests	51249650EA	29.06.2000
	Short-time and peak withstand tests	20000033C	28.05.2002
	Mechanical operation test	51249519EA	13.10.2000
	Short-circuit current making and breaking tests	20000041B	28.05.2002
	Verification of the degree of protection	51249987EA	12.10.2000
Electrical endurance tests	20000083A	28.05.2002	
MC3	Vibration tests report	RQ-06-68212-1/A	16.11.2006
	Dielectric tests	51250463EA	21.05.2001
	Temperature-rise tests	51249824EA	18.12.2001
	Short-time and peak withstand tests	A20020158	09.09.2002
	Mechanical operation test	51249528EA	15.11.2001
	Short-circuit current making and breaking tests	GPS-A1/007381	05.03.2001
	Verification of the degree of protection	51249988EA	12.10.2000
Electrical endurance tests	20000083B	28.05.2002	

### Tests carried out

Type tests in accordance with IEC 62271-100: Dielectric performances, temperatur-rise, operation performances, mechanical endurance, and shorts-circuit making and breaking.

Environmental tests in accordance with DNV "Standard for Certification No. 2.4": Power supply variation, vibration, inclination, damp heat (humidity), and dry heat test.

### Marking of product

Evolis – Rated Voltage – Rated Frequency – Rated Current – Rated Breaking Capacity – Rated Making Capacity

### Periodical assessment

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

The main elements of the periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests 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.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE