EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to Schneider Electric Industries S.A.S. Eybens, Isere, France

for **Contactors**

with type designation(s) Tesys D LC1/ LC2

The product is found to comply with **EU RO Mutual Recognition Technical Requirements for Contactors**

Intended service

Contactors and reversing / pole-changing contactors with ac control circuit for installation in enclosures onboard ship and mobile offshore units.

 Rated Voltage (V)
 600 / 690

 Rated Current (A)
 60-80

 Frequency (Hz)
 50 / 60

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2023-10-22**. Issued at **Høvik** on **2020-03-27**

DNV GL local station: France CMC

Approval Engineer: Nicolay Horn

Marta Alonso Pontes Head of Section

for DNV GL

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Form code: MRTA 201

Revision: 2020-01

Page 1 of 4

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Certificate No: MRE000000G Revision No: 1

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

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.

 Job Id:
 262.4-000142-1

 Certificate No:
 MRE000000G

 Revision No:
 1

Product description

Single contactors (LC1) and reversing contactor (LC2) with ac or dc coils electromechanical or electronic. Contactor equipped with one NO and one NC contact.

Rated insulation voltage (Ui):600/690V *Rated impulse voltage (Uimp):6kV

Electrical ratings:

Туре	Ith	Ue	230 V	400V	440V	500V	690V*
designation		Utilization category			_		
LC1/LC2-D40A	60 A	Ie (AC-3)	38 A	35 A	40 A	33 A	32 A
		Ie (AC-4)	38 A	35 A	40 A	33 A	21 A
		Ie (AC-1)			60 A		
LC1/LC2-D50A	80 A	Ie (AC-3)	51 A	41 A	50 A	44 A	35 A
		Ie (AC-4)	51 A	41 A	50 A	33 A	21 A
		Ie (AC-1)			80 A		
LC1/LC2-D65A	80 A	Ie (AC-3)	61 A	55 A	65 A	53 A	39 A
		Ie (AC-4)	61 A	55 A	50 A	33 A	21 A
		Ie (AC-1)			80 A		
LC1/LC2-D80A	80 A	Ie (AC-3)	80 A	80 A	65 A	53 A	39 A
		Ie (AC-4)	61 A	55 A	50 A	33 A	21 A
		Ie (AC-1)			80 A		
LC1-DT60A	60 A	Ie (AC-1)	60 A				
LC1-DT80A	80 A	Ie (AC-1)	80 A				

Rated conditional short-circuit current:

Type designation	Prospective short	SCPD		
LC1/LC2-D40A	Ir (440V)	3	40 A aM fuse	
	Iq (440V)	50		
	Ir (690V)*	3		
	Iq (690 V)*	3		
LC1/LC2-D50A	Ir (440V)	3	63 A aM fuse	
	Iq (440V)	50		
	Ir (690V)*	3		
	Iq (690 V)*	3		
LC1/LC2-D65A	Ir (440V)	3	63 A aM fuse	
LC1/LC2-D80A	Iq (440V)	50	80 A aM fuse	
	Ir (690V)*	3		
	Iq (690 V)*	3		
LC1-DT60A	Iq (690V)	3	125 A gG fuse	
	Ir (690V)*	3		
LC1-DT80A	Iq (690V)	5	125 A gG fuse	
	Ir (690V)*	5		

* See application / limitation

Manufactured by

Schneider Electric Industries SAS Le Vaudreuil, France PT. Schneider Electric Manufacturing Batam Batamindo Industrial Park, Lot 4, Muka Kuning Batam, 29433, Indonesia

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Application/Limitation

With Uimp = 6 kV the max. rated voltage is 600 V when used in a IT (ship) net. It can be used in applications with directly earthed systems with rated voltage of 400/690 V.

Type Approval documentation

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Technical documentation:
«TeSys D, D Green, SK, K, SKGC, GC, GY, GF – Technical Data for Designers» part of cataloge.
«TeSys d contactors - Marine certification file" part 1, item 3 "Electrical ratings" dated 2008-11-26.
Test reports:
"TeSys d contactors – Marine certification file" dated 2008-11-26, part 4 (binder 1/1 & 1 / 2).
Test reports No. :
Nos. 201703851_002, 003, & 004 dated 2017-09-01
Nos. 201604841_061,_062, &_63 dated 2017-01-12 & 13
No. 201604841 016 dated 2017-02-24
Nos. 2426-46-TL3-1 & 2426-46-TL3-2 dated 2017-12-20
No. 143029-688903A2 dated 2016-11-30 & 143029-688903B2 dated 2016-11-30
No. 144414-692749 dated 2017-01-16
No. 146109-698338 dated 2017-01-16
No. 150529-710258 dated 2018-01-24 & 155413-720935 dated 2018-07-02
No. 150698-710269 dated 2018-01-24
No. 150697-709694 dated 2018-01-24
No. 128422-665184-B00 dated 2014-03-03
No. 128422-665184-B01 to -B07 dated 2015-03-03
No. 128422-665184-A00 dated 2014-03-03
No. 128422-665184-A01 to -A07 dated 2015-03-03
Certif No. FR 665184B M2 and FR 665184A M2 issued 2018-03-20
Certif No. FR 700311 M2 issued 2018-08-29
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Marking of product

Telemecanique / Schneider Electric – Type designation

Other Conditions

Electrical tests after IEC 60947, Environmental tests after DNVGL-CG-0339 Novemberl 2015 (Power supply variation, power supply failor, dielectric, insulation, inclination, vibration, cold, dry heat and damp heat).

Periodical assessment

The scope of the periodical assessment 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 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.
- Ensure traceability between manufacturer's product marking and the DNVGL EU MR Type Approval Certificate.

Assessment to be performed annually and at renewal.

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Generic Statement for EU RO MR Type Approval Certificate

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In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV GL;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).

END OF CERTIFICATE