

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

Certificate No:
MRE000000F
Revision No:
1

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 LC1-D __ / LC2-D __

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) 9-38
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**

for **DNV GL**

DNV GL local station: **France CMC**

Approval Engineer: **Nicolay Horn**

Marta Alonso Pontes
Head of Section

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.4-000142-1**
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Product description

Electric contactors with ac or dc control circuit with electromechanical or electronic coils of type LC1-D __ and LC2-D __ reversing / pole-changing contactors with 3 poles and 4 poles and auxiliary contact blocks. Contactor equipped with 1 NO and one NC contact.

3 poles contactors (LC1) and reversing contactors (LC2):

Reference	Ith	Ue Ie Utilization category	230V	400V	440V	500V	690V
LC1/LC2-D09 (a)	25A	Ie (AC-3)	8.5A	8.5A	9A	9.2A	6.7A
		Ie (AC-4)	7.1A	7.1A	7.5A	7.7A	5.6A
LC1/LC2-D12(a)	25A	Ie (AC-3)	11.3A	11.5A	12A	12.4A	8.9A
		Ie (AC-4)	9.42A	9.6A	10A	10.34A	7.42A
LC1/LC2-D18	32A	Ie (AC-3)	15A	15.5A	18A	16A	11.7A
		Ie (AC-4)	12.5A	12.92A	15A	13.42A	9.75A
LC1/LC2-D183	25A	Ie (AC-3)	15A	15.5A	18A	16 A	11.7A
		Ie (AC-4)	12.5A	12.92A	15A	13.42A	9.75A
LC1/LC2-D25(b)	40A	Ie (AC-3)	20A	22A	25A	23A	17A
		Ie (AC-4)	16.7A	18.34A	20.84A	19.2A	14.2A
LC1/LC2-D32	50A	Ie (AC-3)	27A	29A	32A	28A	21A
		Ie (AC-4)	22.5A	24.2A	20.84A	19.2A	14.2A
LC1/LC2-D323	40A	Ie (AC-3)	20A	22A	25A	23A	17A
		Ie (AC-4)	16.7A	18.34A	20.84A	19.2A	14.2A
LC1/LC2-D38	50A	Ie (AC-3)	31.7A	35A	38A	28A	21A
		Ie (AC-4)	26.42A	29.2A	20.84A	19.2A	14.2A
LC1/LC2-D09(a)	25A	Ie (AC-4)	7.1A	7.1A	7.5A	7.7A	5.6A
		Ie (AC-3)	11.3A	11.5A	12A	12.4A	8.9A

(a) except for D093, D123 : Ith = 20A

(b) except for LC1/LC2-D253 : Ith = 25A

4 poles contactors (LC1) and reversing contactors (LC2):

Reference	Ith	Ue Ie Utilization category	230V	400V	440V	500V	690V
LC1-D098, LC1/LC2-DT20	20A	Ie (AC-3)	8.5A	8.5A	9A	9.2A	6.7A
		Ie (AC-4)	7.1A	7.1A	7.5A	7.7A	5.6A
LC1-D128, LC1/LC2-DT25	25A (c)	Ie (AC-3)	11.3A	11.5A	12A	12.4A	8.9A
		Ie (AC-4)	9.42A	9.6A	10A	10.34A	7.42A
LC1-D188, LC1/LC2-DT32	32A	Ie (AC-3)	15A	15.5A	18A	16.1A	11.7A
		Ie (AC-4)	12.5A	12.92A	15A	13.42A	9.75A
LC1-D258, LC1/LC2-DT40	40A	Ie (AC-3)	20A	22A	25A	23A	17A
		Ie (AC-4)	16.7A	18.34A	20.84A	19.2A	14.2A

(c) except for D1283, DT253 : Ith = 20A

Accessories:

Auxiliary contactor	CAD-32... and CAD-50...
Aux contacts blocks and Accessories	LAD-N, LAD-C, LAD-8N LAD-T, LAD-S, LAD-R LAD-6K10, LAD-4, LAD-9

May be followed by: Suffix 3 = Spring terminals
 Suffix 6 = Lug connections
 Suffix 9 = Faston connections

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Manufactured by

Contactors and auxiliary contactors:
Schneider Electric Industries SAS
27109 Le Vaudreuil, France

Auxiliary contact blocks and accessories:
Schneider Electric Industries SA
Chasseneuil du Poitou, France

PT. Schneider Electric Manufacturing Batam
Batamindo Industrial Park, Lot 4, Muka Kuning
Batam, 29433, Indonesia

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

Technical documentation:

«TeSys D, D Green, SK, K, SKGC, GC, GY, GF – Technical Data for Designers» part of catalogue.
Product description : Size 1 contactors 3 poles, 4 poles & Product description Size 2 contactors 3 poles, , 4 poles. Catalogue "Tesys offer Motor starters 0.1 to 75 kW /400 A, Power applications 0.1 à 250 A", January 2000.

Test reports:

Electrical type tests test after IEC 60947-4-1 & IEC60947-5-1: VDE test reports TFR 242646-1 and 2 dated 2017-12-20, VDE test reports no. 234353 issued 2017-10-10, VDE test report no. 246224 issued 2018-03-20.

Environmental tests: F- Lab test report no. TFR_201703851_002, TFR_201703851_003 and RI_201703851_004 dated 2017-09-01, Volta test report no. TFR_201604 dated 2017-02-23, Schneider test reports nos. 545-00 dated April 2001, 546-00 and 548-00 dated June 2001, 547-00 dated October 2001, G0010077A, G0010078A and G0010080A dated October 2000, and GV 10058B dated 2001-05-31.

Marking of product

Telemecanique / Schneider Electric – Type designation

Other Conditions

Electrical tests after IEC 60947, Environmental tests after DNVGL-CG-0339 November 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