



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAE00003EG**  
Revision No:  
**2**

**This is to certify:**  
**that the Contactor**

with type designation(s)  
**MC Type Contactor**

issued to  
**LS ELECTRIC Co., Ltd. (Cheong-ju Plant)**  
**Cheongju-si, 04, Korea, Republic of**

is found to comply with  
**DNV rules for classification – Ships, offshore units, and high speed and light craft**

## Application:

**For installation inside switchboard/enclosures onboard ships and offshore units.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

**Rated voltage (V) Up to 690**  
**Rated current (A) 9 to 800**  
**Frequency (Hz) 50/60**

Issued at **Busan** on **2024-05-02**

for **DNV**

This Certificate is valid until **2028-12-31**.

DNV local unit: **Seoul**

Approval Engineer: **Eun Sook Kim**

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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.



### Product description

3-pole electromagnetic contactor that controls the switches of electric circuit, the thermal overload relay that protects the overload of motor according to utilization category as listed below.

#### A. Utilization category AC-2 and AC-3:

TYPE	ELECTRICAL RATINGS			
	200 - 240 V (A)	380 - 440V (A)	500 - 550V (A)	690V (A)
MC – 6a	9	7	6	4
MC – 9a	11	9	7	5
MC – 12a	13	12	12	9
MC – 18a	18	18	13	9
MC – 9b	11	9	7	6
MC – 12b	13	12	12	9
MC – 18b	18	18	13	9
MC – 22b	22	22	20	18
MC – 32a	32	32	28	20
MC – 40a	40	40	32	23
MC – 50a	55	50	43	28
MC – 65a	65	65	60	35
MC – 75a	75	75	64	42
MC – 85a	85	85	75	45
MC – 100a	105	105	85	65
MC – 130a	130	130	90	60
MC – 150a	150	150	100	60
MC – 185a	185	185	180	120
MC – 225a	225	225	200	150
MC – 265a	265	265	225	185
MC – 330a	330	330	250	220
MC – 400a	400	400	350	300
MC – 500a	500	500	400	380
MC – 630a	630	630	500	420
MC – 800a	800	800	720	630

#### B. Utilization category AC- 4:

TYPE	ELECTRICAL RATINGS(A)	
	200 - 240 V (A)	380 - 440V (A)
MC – 6a	7	5
MC – 9a	8	6
MC – 12a	11	9
MC – 18a	16	11
MC – 9b	8	6
MC – 12b	11	9
MC – 18b	16	11
MC – 22b	18	13
MC – 32a	20	17
MC – 40a	25	24
MC – 50a	35	32
MC – 65a	50	47
MC – 75a	55	52
MC – 85a	65	62
MC – 100a	80	75

MC – 130a	93	90
MC – 150a	120	110
MC –185a	150	150
MC – 225a	180	180
MC – 265a	200	200
MC – 330a	220	220
MC – 400a	300	300
MC – 500a	350	350
MC – 630a	400	400
MC –800a	630	630

C. Utilization category AC-1

Type	Electrical Ratings
	380 - 440 V (A)
MC – 6a	25
MC – 9a	25
MC – 12a	25
MC – 18a	32
MC – 9b	25
MC – 12b	27
MC – 18b	32
MC – 22b	45
MC – 32a	55
MC – 40a	60
MC – 50a	100
MC – 65a	115
MC – 75a	125
MC – 85a	135
MC – 100a	160
MC – 130a	200
MC – 150a	250
MC – 185a	300
MC – 225a	350
MC – 265a	400
MC – 330a	500
MC – 400a	520
MC – 500a	700
MC – 630a	900
MC – 800a	1050

**Application/Limitation**

For installation inside switchboards/ enclosures onboard ships and mobile offshore unit.

**Type Approval documentation**

Specification for magnetic contactor, MS-623-694 dated 2010-07-15

Test reports: R410-1282 MC-6a, 9a, 12a, 18a dated 2010-08-27  
 R410-1283 MC-9b, 12b, 18b, 22b dated 2010-08-27  
 R410-1284 MC-32a, 40a dated 2010-08-27  
 R410-1285 MC-50a, 65a dated 2010-08-27  
 R410-1286 MC-75a, 85a, 100a dated 2010-08-27  
 R410-1287 MC-130a, 150a dated 2010-08-27

R410-1289 MC-265a, 330a, 400a dated 2010-08-27  
R410-1290 MC-500a, 630a, 800a dated 2010-08-27

2163435.57, -58, -59, -60, -61 dated 2014-06-26  
2194774.50, -51, -52, -53 dated 2016-11-11

Type assessment report for retention dated 2014-11-27  
Retention survey report dated 2018-12-12

Type approval assessment report dated 2023-12-08

### Tests carried out

Type tests according to IEC 60947-4-1. Environmental tests including dry heat, damp heat, vibration, high voltage, cold, inclination and insulation resistance test.

### Marking of product

- Manufacturer name
- Model name
- Serial number
- Power supply ratings

### 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) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall 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