



Lloyd's
Register

Type Approval Certificate Extension

This is to certify that Certificate No. 11/10016(E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER	LSIS Co., Ltd.
PLACE OF PRODUCTION	95, Baekbong-ro, Heungdeok-gu, 28439, Chengju-si, Chengcheongbuk-do, Republic of Korea
DESCRIPTION	Magnetic Contactors
TYPE	MC Series Contactor: MC-6a, MC-9a, MC-12a, MC-18a, MC-9b, MC-12b, MC-18b, MC-22b, MC-32a, MC-40a, MC-50a, MC-65a, MC-75a, MC-85a, MC-100a, MC-130a, MC-150a, MC-185a, MC-225a, MC-265a, MC-330a, MC-400a, MC-500a, MC-630a, MC-800a
APPLICATION	Marine, offshore and industrial application for use in environmental categories ENV2 and EVN3 as defined in LR Type Approval System Test Specification No.1-2015 where the Test Specification is satisfactory for the intended operation.
STANDARD	IEC60947-1(2007, A1:2010) IEC60947-4-1(2009 3 rd Edition, A1:2012) IEC60947-5-1(2003, A1:2009)

Certificate No.	16/40036(E2)
Issue Date	22 July 2016
Expiry Date	21 July 2021
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Busan Technical Support Office
Lloyd's Register Asia

*Lloyd's Register Asia
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RATINGS

Type	Utilisation Category	Rated Operational Power/Current Ie amperes at rated operational voltage Ue							
		220/240V		380/440V		500/550V		690V	
		Amp	kW	Amp	kW	Amp	kW	Amp	kW
MC-6a	AC-3	9	2.2	7	3	6	3	4	3
MC-9a	AC-3	11	2.5	9	4	7	4	5	4
MC-12a	AC-3	13	3.5	12	5.5	12	7.5	9	7.5
MC-18a	AC-3	18	4.5	18	7.5	13	7.5	9	7.5
MC-9b	AC-3	11	2.5	9	4	7	4	6	4
MC-12b	AC-3	13	3.5	12	5.5	12	7.5	9	7.5
MC-18b	AC-3	18	4.5	18	7.5	13	7.5	9	7.5
MC-22b	AC-3	22	5.5	22	11	18	15	15	15
MC-32a	AC-3	32	7.5	32	15	28	18.5	20	18.5
MC-40a	AC-3	40	11	40	18.5	32	22	-	-
MC-50a	AC-3	55	15	50	22	43	30	28	30
MC-65a	AC-3	65	18.5	65	30	60	33	-	-
MC-75a	AC-3	75	22	75	37	64	37	42	37
MC-85a	AC-3	85	25	85	45	75	45	45	45
MC-100a	AC-3	105	30	105	55	85	55	-	-
MC-130a	AC-3	130	37	130	60	90	60	60	55
MC-150a	AC-3	150	45	150	75	100	70	60	55
MC-185a	AC-3	185	55	185	90	180	110	120	110
MC-225a	AC-3	225	75	225	132	200	132	150	140
MC-265a	AC-3	265	80	265	147	225	147	185	160
MC-330a	AC-3	330	90	330	160	250	160	220	200
MC-400a	AC-3	400	125	400	200	350	225	300	250
MC-500a	AC-3	500	147	500	265	400	265	380	300
MC-630a	AC-3	630	190	630	330	500	330	420	400
MC-800a	AC-3	800	220	800	440	720	500	630	500

Operating Coil : 600V 50/60Hz or less, 250V d.c. or less

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Type	Utilisation Category	Rated Operational Power/Current Ie amperes at rated operational voltage Ue				Thermal Current Ith (=AC-1)	Combination with Thermal Overload Relay Type:
		220/240V		380/440V			
		Amp	kW	Amp	kW	Amp	
MC-6a	AC-4	7	1.5	5	2.2	25	MT-12
MC-9a	AC-4	8	1.5	6	2.2	25	MT-12
MC-12a	AC-4	11	2.2	9	4	25	MT-12
MC-18a	AC-4	16	3.7	11	4	32	MT-12
MC-9b	AC-4	8	1.5	6	2.2	25	MT-32
MC-12b	AC-4	11	2.2	9	4	25	MT-32
MC-18b	AC-4	16	3.7	11	4	40	MT-32
MC-22b	AC-4	18	3.7	13	5.5	40	MT-32
MC-32a	AC-4	20	4.5	17	7.5	50	MT-32
MC-40a	AC-4	25	5.5	24	11	60	MT-32
MC-50a	AC-4	35	7.5	32	15	70	MT-63
MC-65a	AC-4	50	11	47	22	100	MT-63
MC-75a	AC-4	55	13	52	25	110	MT-95
MC-85a	AC-4	65	15	62	30	135	MT-95
MC-100a	AC-4	80	19	75	37	160	MT-95
MC-130a	AC-4	93	22	90	45	160	MT-150
MC-150a	AC-4	120	30	110	55	210	MT-150
MC-185a	AC-4	150	37	150	75	230	MT-225
MC-225a	AC-4	180	45	180	90	275	MT-225
MC-265a	AC-4	200	50	200	102	300	MT-400
MC-330a	AC-4	220	55	220	110	350	MT-400
MC-400a	AC-4	300	75	300	150	450	MT-400
MC-500a	AC-4	350	90	350	176	580	MT-800
MC-630a	AC-4	400	110	400	200	660	MT-800
MC-800a	AC-4	630	160	630	300	900	MT-800

Operating Coil : 600V 50/60Hz or less, 250V d.c. or less

Certificate No. 16/40036(E2)
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OTHER CONDITION

The system or device incorporating these relays shall be subject to the electromagnetic compatibility tests specified for the zone on which it is intended to operate

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amend during the validity of this certificates, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

(In case of applications other than Marine) The application of this Type-Approval Certificate will be limited to the relevant scope of the Specified Standards and acceptance thereof by the local authorities.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Asia of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. 16/40036(E2) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 11/10016(E1) to which this extension should be attached.

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DESIGN APPRAISAL DOCUMENT

Date 22 July 2016	Quote this reference on all future communications BTS/ETS/E161985
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LLOYD'S REGISTER TYPE APPROVAL SYSTEM, 2014.

Issued to: **LSIS CO., LTD.**

for: **MAGNETIC CONTACTORS, MC SERIES**
TYPE APPROVAL CERTIFICATE No. 16/40036(E2)

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System, 2014 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Request for Marine Services	From 2502TA	06 January 2016
Production Quality Assessment Form		07 April 2016
Declaration of Identity		06 January 2016

TEST REPORTS

Test Report by PT&T	R416-0511~9	07 April 2016
Test Report by DEKRA	2163435.57~65	26 July 2014
CB Test Certificate by DEKRA	NL-31652/A3	03 March 2016

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register Asia reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.



LR031.1.2015.12

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Part 2
Contactors (Part 2)

Producer/Licence No.	Type	Rating 3 phase, 50/60Hz a.c.					Category Additional Tests	Remarks	Cert. No.
		Standard	Utilisation Category	Operational Voltage Ue	Operational Current Ie Amperes	Thermal Current Ith Amperes			
LSIS Co., Ltd. 95, Baekbong-ro, Heungdeok-gu, Chengju-si, Chengcheongbuk-do, Korea, Republic of.	Magnetic Contactors MC Series:	IEC60047-1(2007, A1:2010) IEC60947-4-1(2009, A1:2012) IEC60947-5-1(2003, A1:2009)	AC3/AC4	220/240V 380/440V 500/550V 690V	(AC3)	(AC4)	(AC-1) 25	ENV2 ENV3 (2015) Expires: 21 July 2016 Combination with Thermal Overload Relay Type: MT-12	16/40036(E2)
	MC-6a				9	7			
	MC-9a				11	8			
	MC-12a				13	11			
	MC-18a				18	16			
	MC-9b				11	8			
	MC-12b				13	11			



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Part 2
Contactors (Part 2)

Producer/Licence No.	Type	Rating 3 phase, 50/60Hz a.c.					Category Additional Tests	Remarks	Cert. No.
		Standard	Utilisation Category	Operational Voltage Ue	Operational Current Ie Amperes	Thermal Current Ith Amperes			
	MC-18b		AC3/AC4	220/240V 380/440V 500/550V 690V	18 18 13 9	16 11 - -	40	MT-32	
	MC-22b		AC3/4	220/240V 380/440V 500/550V 690V	22 22 18 15	18 13 - -	40	MT-32	
	MC-32a		AC3/AC4	220/240V 380/440V 500/550V 690V	32 32 28 20	20 17 - -	50	MT-32	
	MC-40a		AC3/4	220/240V 380/440V 500/550V 690V	40 40 32 -	25 24 - -	60	MT-32	
	MC-50a		AC3/AC4	220/240V 380/440V 500/550V 690V	55 50 43 28	35 32 - -	70	MT-63	
	MC-65a		AC3/4	220/240V 380/440V 500/550V 690V	65 65 60 -	50 47 - -	100	MT-63	
	MC-75a		AC3/AC4	220/240V 380/440V 500/550V 690V	75 75 64 42	55 52 - -	110	MT-95	
	MC-85a		AC3/4	220/240V 380/440V 500/550V 690V	85 85 75 45	65 62 - -	135	MT-95	

Part 2
Contactors (Part 2)

Producer/Licence No.	Type	Rating 3 phase, 50/60Hz a.c.					Category Additional Tests	Remarks	Cert. No.
		Standard	Utilisation Category	Operational Voltage Ue	Operational Current Ie Amperes	Thermal Current Ith Amperes			
	MC-100a		AC3/AC4	220/240V 380/440V 500/550V 690V	105 105 85 -	80 75 - -	160	MT-95	
	MC-130a		AC3/4	220/240V 380/440V 500/550V 690V	130 130 90 60	93 90 - -	160	MT-150	
	MC150a		AC3/AC4	220/240V 380/440V 500/550V 690V	150 150 100 60	120 110 - -	210	MT-150	
	MC-185a		AC3/4	220/240V 380/440V 500/550V 690V	185 185 180 120	150 150 - -	230	MT-225	
	MC-225a		AC3/AC4	220/240V 380/440V 500/550V 690V	225 225 200 150	180 180 - -	275	MT-225	
	MC-265a		AC3/4	220/240V 380/440V 500/550V 690V	265 265 225 185	200 200 - -	300	MT-400	
	MC-330a		AC3/AC4	220/240V 380/440V 500/550V 690V	330 330 250 220	220 220 - -	350	MT-400	
	MC-400a		AC3/4	220/240V 380/440V 500/550V 690V	400 400 350 300	300 300 - -	450	MT-400	

Part 2
Contactors (Part 2)

Producer/Licence No.	Type	Rating 3 phase, 50/60Hz a.c.					Category Additional Tests	Remarks	Cert. No.
		Standard	Utilisation Category	Operational Voltage Ue	Operational Current Ie Amperes	Thermal Current Ith Amperes			
	MC-500a		AC3/AC4	220/240V 380/440V 500/550V 690V	500 350 500 350 400 - 380 -	580		MT-800	
	MC-630a		AC3/4	220/240V 380/440V 500/550V 690V	630 400 630 400 500 - 420 -	660		MT-800	
	MC-800a		AC3/4	220/240V 380/440V 500/550V 690V	800 630 800 630 720 - 630 -	900		MT-800	