



NIPPON KAIJI KYOKAI

**TYPE APPROVAL CERTIFICATE
FOR AUTOMATIC DEVICES AND EQUIPMENT**

Certificate No. TA20484M

This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" and the relevant Society's Rules.

This certificate is issued to

Manufacturer:

LS ELECTRIC Co., Ltd.

Place of Manufacturing:

**56 Samsung 4-Gil, Mockcheon-Eup,
Dongnam-gu, Cheonan-si, Chungcheongnam-Do
31226, Republic of Korea**

Product description:

Human Machine Interface

Model:

iXP2 Series

Approval No.:

20A030

Valid until:

4 October 2025

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 5 October 2020.

T. Shimada
General Manager
Machinery Department

Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

Specification & documents:

1. Particulars: Power supply: DC24V

2. Components and reference drawings:

(1) CPU, Power, Base modules

Model Components	iXP2-0800D,MR	iXP2-1000D,MR	iXP2-1200D,MR	iXP2-1500D,MR
Display	M084GNS1 R1 (IVO)	M104GNX1 R1 (IVO)	M121GNX2 R1 (IVO)	M150GNN2 R1 (IVO)
CPU	MCIMX6U5EVM10AC(NXP)			
Flash Memory	S34ML08G101TFI000(CYPRESS)			
DDR3 SDRAM	K4B4G1646E-BCNB(SAMSUNG)			
SRAM	CS16LV81923xGIR55(Chiplus)			
Ethernet Port	Ethernet 0: JXD1-0001NL(Pulse), Ethernet 1: J1011F01PNL/Tab-Top(Pulse))			
RS-232 Port	5504F1-09P-02A-01/Right Angle(Neltron)			
RS-422/485 Port	ECH350VM-06P(Dinkle)			
DC-DC Converter	HNP-0230DD(HU&POWER)			

3. Documentation and Test Reports:

XGT Panel Manual_iXP2

HMI_iXP2-0800D,MR (Dwg No. iXP2-0800D,MR-M001)

HMI_iXP2-1000D,MR (Dwg No. iXP2-1000D,MR-M001)

HMI_iXP2-1200D,MR (Dwg No. iXP2-1200D,MR-M001)

HMI_iXP2-1500D,MR (Dwg No. iXP2-1500D,MR-M001)

EMC TEST REPORT for iXP2-0800D,MR (Report No. DREETC2007-0100)

EMC TEST REPORT for iXP2-1500D,MR (Report No. DREETC2007-0099)

TEST REPORT (Environmental tests) for iXP2-0800D,MR (DRCREL2007-0563)

TEST REPORT (Environmental tests) for iXP2-1500D,MR (DRCREL2007-0566)

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.7 basis)		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		--
Dry heat test (Temperature 70°C × 16 hours)		X
Damp heat test		X
Vibration test (Acceleration $\pm 0.7g \times 1.5$ hours)		X
Inclination test		X
Cold test (Temperature 5°C × 2 hours)		X
Salt mist test		--
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test (Note: 1)		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test (Note: 1)		X
Conducted emission test (Note: 1)		X
Flame retardant test		--

Note: 1. Testing condition for equipment installed in the bridge or open deck is not applied.

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