



Task – T2028859  
Product Design Assessment (PDA)  
Graphic Display Terminal (iXP2 series)  
PDA No. 20-2028859-PDA

Attention: Ms. Haelim Shin, LS ELECTRIC CO., LTD. – CHEONAN PLANT  
(WCN: 404333)

The documents shown in the attached list are reviewed in accordance with the applicable requirements indicated in the PDA along with the service restrictions and comments.

We recommend that you monitor the ABS Rules, Guides and other standards used in the Assessment. These Rules, Guides and standards often change on an annual basis, and you must comply with the new Rules, Guides and standards in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules, Guides or specifications.

For any clarifications, contact Mr. Young-Keun Park at +82 51 460 4156 or [ykpark@eagle.org](mailto:ykpark@eagle.org).

Very truly yours,

Jang-Ho Yoon  
Director of Engineering

Electronically Signed by: Sung-Moon Kim

Documents List

Drawing No.	Rev. No.	Title	Status
2019-KD007-630-0003	1.2	Technical Specification	Approved
2019-KD007-630-005.01	1.2	Drawings	Approved
2019-KD007-630-005.02	1.2		
2019-KD007-630-005.03	1.2		
2019-KD007-630-005.04	1.2		
-	V1.3	User Manual	Reviewed
2020-KD007-630-0040	1.0	SDLC in accordance with System Category II for Basic Software	Reviewed
DRCREL2007-0562	-	DT&C Type Test Report	Reviewed
DRCREL2007-0565	-		
DREETC2007-0100	-		
DREETC2007-0099	-		
4286949-A	-	ABS Prototype Testing Report	Reviewed

Electronic copies of the documents, appropriately stamped, are available in the ABS Client Portal.

Include: PDA Certificate



CERTIFICATE NUMBER  
EFFECTIVE DATE  
EXPIRY DATE  
ABS TECHNICAL OFFICE

20-2028859-PDA  
08-Sep-2020  
07-Sep-2025  
Busan Engineering Services

## CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**LS ELECTRIC CO., LTD. CHEONAN FACTORY**

located at

**56, SAMSEONG 4-GIL, MOCKCHEON-EUP, DONGNAM-GU,  
CHEONAN-SI, Korea, Republic of, 31226**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product Graphic Display Terminal**

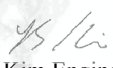
**Model iXP2-0800D,MR / iXP2-1000D,MR / iXP2-1200D,MR / iXP2-1500D,MR**

This Product Design Assessment (PDA) Certificate remains valid until 07/Sep/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

  
Yun-Sung Kim,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**LS ELECTRIC CO.**

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Web: <http://www.lsis.com>

**Tier: 2 - PDA Issued**

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**Product:** Graphic Display Terminal

**Model:** iXP2-0800D,MR / iXP2-1000D,MR / iXP2-1200D,MR / iXP2-1500D,MR

**Intended Service:**

Application for marine and offshore installation – operator interface device for controlling and monitoring of the system/equipment through programmable logic controllers

**Description:**

iXP2 series are panel mount type human machine interfaces that offer keyboard/mouse or touch-screen options for operator input. This graphic terminal is 8.4, 10.4, 12.1 and 15 inch size TFD color display with 1 GHz dual core processor.

**Rating:**

- a) Input power: 24VDC (DC 19.2~28.8V)
- b) Protection degree: IP66 for front side
- c) Installation: panel mount type
- d) Operating temperature: 5~70 °C
- e) Basic software: Window CE 7.0
- f) See the attached sheet for more details

**Service Restriction:**

- a) Unit certification is not required for this product. Where this product is used for Computer-Based Systems Category II or III services in 4-9-3/Table 1 of the Marine Vessels Rules or control, monitoring and safety systems of propulsion machinery, propulsion boilers, vital auxiliary pumps and the electrical power generating plant including its prime mover for vessels assigned with ACC, ACCU and ABCU notations, unit certification is required.
- b) If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- c) This product is not to be installed in the navigation bridge deck.

**Comments:**

- a) Application and use are to be in accordance with the manufacturer's instructions.
- b) The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- c) Testing and assessment are for hardware only. Functionality and application software are not covered by this certificate.
- d) Dry heat and cold tests were conducted for 16 h at 70 °C and 2 h at 5 °C.
- e) Inclination test was conducted at 30 ° for static and dynamic conditions.
- f) Power supply variation, power supply failure, vibration and inclination tests were conducted in the presence of ABS Surveyor.
- g) The required evidence for the application software in accordance with 4-9-3/Table 2 of the Marine Vessels Rules is to be submitted by manufacturer/vendor assembling the unit.

**Notes/Drawing/Documentation:**

- a) Manufacturer technical specification no. 2019-KD007-630-0003-Version 1.2 dated of 06/Apr/2020
- b) Manufacturer drawing nos. 2019-KD007-630-005.01-Version 1.2, 2019-KD007-630-005.02-Version 1.2, 2019-KD007-630-005.03-Version 1.2 and 2019-KD007-630-005.04-Version 1.2 dated of 06/Apr/2020
- c) Manufacturer user manual version no. V1.3 dated of April 2020.
- d) SDLC for basic software in accordance with System Category II 2020-KD007-630-0040-Version 1.0 dated of 06/Apr/2020
- e) DT&C test report nos. DRCREL2007-0562 and DRCREL2007-0565 dated of 15/Jul/2020
- f) DT&C test report nos. DREETC2007-0100 and DREETC2007-0099 dated of 16/Jul/2020
- g) ABS prototype testing report no. 4286949-A dated of 11/Aug/2020

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**Terms of Validity:**

This Product Design Assessment (PDA) Certificate remains valid until 07/Sep/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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**STANDARDS**

**ABS Rules:**

- a)2020 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-9-3, 4-9-9/13 and Table 1
- b)2020 Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-3-4/5
- c)2020 Facilities on Offshore Installations 1-1-4/9.7, 1-1/A2, 1-1/A3, 3-7/15

**National:**

NA

**International:**

IACS UR E10:2018

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA



- Company Information: LS ELECTRIC CO., LTD – CHEONAN PLANT (WCN: 404333)
- Model: iXP2-0800D,MR / iXP2-1000D,MR / iXP2-1200D,MR / iXP2-1500D,MR
- ABS PDA Certificate No. 20-2028859-PDA dated 08/Sep/2020 remains valid until 07/Sep/2025

Item		iXP2-0800D,MR	iXP2-1000D,MR	iXP2-1200D,MR	iXP2-1500D,MR
Display type		TFT color LCD			
Screen size		8.4 "	10.4 "	12.1 "	15 "
Display resolution		800 x 600	1024 x 768		
Color indication		24-bit color (16.7M colors)			
Indication degree		Right and left: 80 deg. Top: 80 deg. Bottom: 60 deg.	Right: 75 deg. Top: 75 deg. Bottom: 75 deg.	Right and left: 80 deg. Top: 80 deg. Bottom: 80 deg.	
Backlight		LED method, automatic On / Off support			
Backlight lifetime		50,000 hour			
Touch panel		Capacitive Touch			
Audio Output		Magnetic Buzzer (85dB)			
Processor		1GHz, Dual core			
Memory	Flash	1GB			
	Operating RAM	1GB			
	Backup RAM	1 Mbyte			
Backup data		Date / Time data, Logging / Alarm / Recipe data, Non-volatile devices			
Battery		CR2032(3.0V/210mAh, About 3years/25°C)			
Video Output		1 x HDMI (Marine is not supported)			
Ethernet		1 x 10Base-T / 100Base-TX, 1 x 10Base-T / 100Base-TX / 1000Base-T			
USB host		3 x USB 2.0 (Front x 1, Rear x 2)			
USB device		1 x USB 2.0 (Send / Receive front, PC and project data etc.)			
RS-232C		1 x RS-232C (DSUB 9 / Male type)			
RS-422/485		1 x RS-422/485 (Terminal Block)			
Multi-language		Can display 12 languages simultaneously			
Animation		GIF format support			

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Item	iXP2-0800D,MR	iXP2-1000D,MR	iXP2-1200D,MR	iXP2-1500D,MR
Recipe	Support			
Data logging	Support			
Script Launcher	Support			
Standard Certification	CE, KC, UL			
Protection standard	IP66(Front)			
Dimensions (mm)	240 × 180 × 60	271 × 212 × 60	313 × 239 × 60	395 × 294 × 66
Panel Cut (mm)	228.5 × 158.5	259.0 × 201.0	301.5 × 227.5	383.5 × 282.5
Power	Rated voltage: DC24V (input range: DC19.2~28.8V)			
Power consumption (W)	25	25	30	30
Weight (Kg)	1.87	2.35	3.0	4.6