



CERTIFICATE NUMBER
17-YO1599107-PDA

DATE
01 Feb 2017

ABS TECHNICAL OFFICE
Yokohama Engineering Services

CERTIFICATE OF DESIGN ASSESSMENT

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

DIGITAL ELECTRONICS CORPORATION

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: **Monitor, Graphic Panels**

Model: **Pro-face GP4000 Series / LT4000 Series**

This Product Design Assessment (PDA) Certificate 17-YO1599107-PDA, dated 01/Feb/2017 remains valid until 31/Jan/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Motohiro Tamura
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 the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

DIGITAL ELECTRONICS CORPORATION

4-4-9 KITAHAMA, CHUO-KU

OSAKA-SHI OSAKA

Japan 541-0041

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Web: www.pro-face.co.jp

Tier: 2 - PDA Issued

Product: Monitor, Graphic Panels**Model:** Pro-face GP4000 Series / LT4000 Series**Intended Service:**

Human Machine Interface for monitoring and control systems in marine applications.

Description:

This product is indicated of propulsion engine shaft revolution.

The product has a digital input, a digital output for monitoring system.

Rating:

Rated Input Voltage

24VDC

Surrounding Air Temperature

0 to 55 degree C or less

Service Restriction:

1. Unit Certification is not required for DIGITAL ELECTRONICS CORPORATION as the original supplier. However, unit certification in accordance with 4-9-3/Table 2 of the Steel Vessel Rules is required by the user to customize this equipment where this equipment is used for Category II or III services in 4-9-3/Table 1 in presence of the Surveyor after assemblage. The tests are to be carried out preferably at the assembled plant before installation on-board. However, if it is impracticable, the tests may be carried out after installation on-board.
2. Failure analysis for safety related functions only and Analysis regarding existence and fulfillment of programming procedures for safety related functions in association with 4-9-3/Table 2 is to be additionally submitted when this component is used for systems assigned as Category III.

Comments:

- 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- 2) The computer-based system for the subject equipment is assigned to Category II.
- 3) Evidence is required to be kept by the manufacturer in accordance with 4-9-3/Table 2 of the Rules regarding the computer-based system.

Notes/Drawing/Documentation:

1. ISO 9001:2008/JIS Q 9001:2008 Certification Doc. No. JQA-1367.
2. Flame Retardance documented on NSH-11032-07 dated 27 October 2011.
3. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
4. Environmental Test Report Doc.No.NSH-11032-TR dated 06 March 2012.
5. Surveyor Report Doc.No.KO2089642 dated 31 January 2012.
6. Technical document Doc. No. 16RT-4RE00213 dated 4 November 2016
7. Technical document Doc. No. 16RT-4RE00214 dated 4 November 2016
8. Test Report Doc. No. 16RT-4VE00137 dated 4 November 2016
9. Test Report Doc. No. 16RT-4VE00138 dated 4 November 2016
10. GP4100 Series Hardware Manual Doc. No. GP4100 Series Hardware Manual
11. LT4000 Series Hardware Manual Doc. No. LT4000 Series Hardware Manual
12. Vibration Endurance Test (Marine) and Power Supply Variation Test (Marine) Report Doc. No. 17RT-4VB21736 dated 26 January 2017

Terms of Validity:

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STANDARDS

ABS Rules:

2017 Steel Vessel Rules 1-1-4/7.7, 1-1-A3 & A4, 4-9-3 (Category II), 4-9-8/13;

2017 Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-A2 & A3, 4-3-4/5;

2017 Steel Vessels Under 90 Meters in Length 1-1-4/7.7, 1-1-A3 & A4, 4-7-2/9;

2017 Offshore Support Vessels 1-1-4/7.7, 1-1-A3 & A4, 4-9-3 (Category II), 4-9-8/13;

2017 High-Speed Craft 1-1-4/11.9, 1-1-A2 & A3, 4-7-8 (Category II), 4-7-9/15;

National:

NA

International:

IACS UR E10 (2014) and E22 (2016)

Government:

NA

EUMED:

NA

OTHERS:

NA

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 17-YO1599107-PDA

Entry Date: 1 February 2017

Expire Date: 31 January 2022

Company: Digital Electronics Corporation

Product/Equipment: Monitor, Graphic Panels

Model: Pro-Face GP4000 Series / LT4000 Series

Description

| Model | | Descriptions |
|----------------|---------------|---|
| GP-4600 Series | PFXGP4601TAD | 12.1" SVGA TFT color LCD, analog touch panel, DC type, with / without coating on PCBA |
| | PFXGP4601TMD | 12.1" SVGA TFT color LCD, matrix touch panel, DC type, with / without coating on PCBA |
| | PFXGP4603TAD | 12.1" SVGA TFT color LCD, analog touch panel, DC type, isolated RS-485, with / without coating on PCBA |
| GP-4500 Series | PFXGP4501TADW | 10.4" VGA TFT color LCD, analog touch panel, DC type, small memory, with / without coating on PCBA |
| | PFXGP4501TAD | 10.4" VGA TFT color LCD, analog touch panel, DC type, with / without coating on PCBA |
| | PFXGP4501TMD | 10.4" VGA TFT color LCD, matrix touch panel, DC type, with / without coating on PCBA |
| | PFXGP4503TAD | 10.4" VGA TFT color LCD, analog touch panel, DC type, isolated RS-485, with / without coating on PCBA |
| GP-4400 Series | PFXGP4401TAD | 7.5" VGA TFT color LCD, analog touch panel, DC type, with / without coating on PCBA |
| | PFXGP4401WADW | 7.0" WVGA Wide TFT color LCD, analog touch panel, DC type, small memory, with / without coating on PCBA |
| GP-4300 Series | PFXGP4301TAD | 5.7" QVGA TFT color LCD, analog touch panel, DC type, with / without coating on PCBA |
| | PFXGP4303TAD | 5.7" QVGA TFT color LCD, analog touch panel, DC type, isolated RS-485, with / without coating on PCBA |
| | PFXGP4301TADW | 5.7" QVGA TFT color LCD, analog touch panel, DC type, small memory, with / without coating on PCBA |
| GP-4200 Series | PFXGP4201TAD | 3.5" QVGA TFT color LCD, analog touch panel, DC type, with / without coating on PCBA |
| | PFXGP4203TAD | 3.5" QVGA TFT color LCD, analog touch panel, DC type, isolated RS-485, with / without coating on PCBA |
| | PFXGP4201TADW | 3.5" QVGA TFT color LCD, analog touch panel, DC type, small memory, with / without coating on PCB |
| GP-4100 Series | PFXGP4114T*D | 4.3 inch display with Ethernet |
| | PFXGP4115T*D | 4.3 inch display with Ethernet (RS-232) |
| | PFXGP4116T*D | 4.3 inch display with COM (RS-422/485) |

Remarks

All models may be followed by any letter or number that indicates PCBA coating or software combinations.

*Any alphanumeric characters for software difference or memory size.

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Model: Pro-Face GP4000 Series / LT4000 Series

Description

| | | |
|-----------------------------|-----------------|---|
| LT-4000 Series | PFXLM4201TADD\$ | 3.5 inch display and box module with DIO |
| | PFXLM4301TADD\$ | 5.7 inch display and box module with DIO |
| | PFXLM4B01DD\$ | Box module with DIO |
| | PFXLM4201TADA\$ | 3.5 inch display and box module with DIO and AIO |
| | PFXLM4301TADA\$ | 5.7 inch display and box module with DIO and AIO |
| | PFXLM4B01DA\$ | Box module with DIO and AIO |
| | PFXXM4200TP | 3.5 inch display module |
| | PFXXM4300TP | 5.7 inch display module |
| Accessory for LT4000 | PFXZXMADSM31 | Accessory of 3m separation cable at display and box |
| | PFXZXMADSM51 | Accessory of 5m separation cable at display and box |

Remarks

All models may be followed by any letter or number that indicates PCBA coating or software combinations.
\$ Source or Sink output type

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Model: Pro-Face GP4000 Series / LT4000 Series

Ratings and General Specifications

| | GP-4600 Series | GP-4500 Series | GP-4400 Series | GP-4300 Series | GP-4200 Series |
|------------------------------------|--|---|--|---|---|
| Rated Input Voltage | 24 VDC | 24 VDC | 24 VDC | 24 VDC | 24 VDC |
| Input Voltage Limits | 19.2 to 28.8 VDC | 19.2 to 28.8 VDC | 19.2 to 28.8 VDC | 19.2 to 28.8 VDC | 19.2 to 28.8 VDC |
| Power Consumption | 17 W or less | 17 W or less | 12 W or less | 10.5 W or less | 9.6 W or less |
| Surrounding Air Temperature | 0 to 55 °C (32 to 131 °F) | PFXGP4501TAD, PFXGP4501TMD, PFXGP4503TAD: 0 to 55 °C (32 to 131 °F) PFXGP4501TADW: 0 to 50 °C (32 to 122 °F) | PFXGP4401TAD: 0 to 55 °C (32 to 131 °F) PFXGP4401WADW: 0 to 50 °C (32 to 122 °F) | PFXGP4301TAD, PFXGP4303TAD: 0 to 55 °C (32 °F to 131 °F) PFXGP4301TADW: 0 to 50 °C (32 to 122 °F) | 0 to 50 °C (32 to 122 °F) |
| Storage Temperature | -20 to 60 °C (-4 to 140 °F) | -20 to 60 °C (-4 to 140 °F) | -20 to 60 °C (-4 to 140 °F) | -20 to 60 °C (-4 to 140 °F) | -20 to 60 °C (-4 to 140 °F) |
| External Dimensions | W315 x H241 x D56 mm (W12.40 x H9.49 x D2.20 in.) | PFXGP4501TAD, PFXGP4501TMD, PFXGP4503TAD: W272.5 x H214.5 x D57 mm (W10.73 x H8.44 x D2.24 in.) PFXGP4501TADW: W315 x H241 x D56 mm (W12.40 x H9.49 x D2.20 in.) | W218 x H173 x D60 mm (W8.58 x H6.81 x D2.36 in.) | W169.5 x H137 x D59.5 mm (W6.67 x H5.39 x D2.34 in.) | W132 x H106 x D42 mm (W5.20 x H4.17 x D1.65 in.) |
| Weight | 2.5 kg (5.5 lb) or less (main unit only) | PFXGP4501TAD, PFXGP4501TMD, PFXGP4503TAD: 2.0 kg (4.4 lb) or less (main unit only) PFXGP4501TADW: 2.5 kg (5.5 lb) or less (main unit only) | 1.2 kg (2.6 lb) or less (main unit only) | 0.8 kg (1.8 lb) or less (main unit only) | 0.4 kg (0.9 lb) or less (main unit only) |

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Model: Pro-Face GP4000 Series / LT4000 Series

Ratings and General Specifications

| | GP-4100 Series | LT-4000 Series |
|------------------------------------|--|--|
| Rated Input Voltage | 24 VDC | 24 VDC |
| Input Voltage Limits | 10.2 to 28.8 VDC | 20.4 to 28.8 VDC |
| Power Consumption | 8.1 W or less | 13 W or less |
| Surrounding Air Temperature | 0 to 50 °C (32 to 122 °F) | Horizontal installation 0 to 50 °C (32 to 122 °F) Vertical installation 0 to 40 °C (32 to 104 °F) |
| Storage Temperature | -20 to 60 °C (-4 to 140 °F) | -20 to 60 °C (-4 to 140 °F) |
| External Dimensions | W124.9 x H90.4 x D38.8 mm (W4.92 x H3.56 x D1.53 in.) | PFXXM4200TP W97.6 x H80 x D31.5 mm (W3.84 x H3.15 x D1.24 in.) PFXXM4300TP W163 x H129.4 x D32.8 mm (W6.42 x H5.09 x D1.29 in.) |
| Weight | 0.22 kg (0.49 lb) or less (main unit only) | LT-4201TM (Modular Type DIO): 496 g (17.49 oz) LT-4301TM (Modular Type DIO): 749 g (26.41 oz) LT-4201TM (Modular Type Analog): 531 g (18.73 oz) LT-4301TM (Modular Type Analog): 784 g (27.65 oz) (main unit only) |