

CERTIFICATE NUMBER 21-2160772-PDA-DUP

EFFECTIVE DATE 12-October-2022 EXPIRATION DATE 07-September-2026

ABS TECHNICAL OFFICE Singapore Engineering Services

CERTIFICATE OF

Product Design Assessment

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

DELTA ELECTRONICS INDIA PRIVATE LIMITED – SEZ UNIT

located at

SY NO 16/1B2B PART AND 16/1B2A PART, PLOT NO 1
INDUSTRIAL PARK KURUBARAPALLI VILLAGE KRISHNAGIRI
DIST, TAMIL NADU, INDIA, 635115

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 Power Supply Unit

Model DRM-24V80W1PX(y), DRM-24V240W1PX(y), DRM-24V480W1PX(y)

This Product Design Assessment (PDA) Certificate remains valid until 07-September-2026 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

Vibin Chandrabose, Senior Engineer

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

ENG-ATT-00797 Revision 0 Page 1 of 1

DELTA ELECTRONICS INDIA PRIVATE LIMITED - SEZ UNIT

SY NO 16/1B2B PART AND 16/1B2A PART

PLOT NO 1 INDUSTRIAL PARK KURUBARAPALLI VILLAGE KRISHNAGIRI DIST

India 635115 Telephone:

Fax: Email: Web:

Tier: 2 - PDA Issued

Product: Power Supply Unit

Model: DRM-24V80W1PX(y), DRM-24V240W1PX(y), DRM-24V480W1PX(y)

Endorsements:

Intended Service:

CliQ M DIN-rail mounting power supply units for automation systems on Ships and Offshore Units.

DIN-rail mounted power supply modules for installation in consoles and cabinets, located in general power distribution zones.

Rating:

Nominal Input Voltage: single-phase: 100-240VAC/110-300VDC

Nominal Input Frequency: 50-60Hz Nominal Output Voltage: 24VDC Output Continuous Current:

1. 3.4A at 24VDC for Model: DRM-24V80W1PX(y) 2. 10A at 24VDC for Model: DRM-24V240W1PX(y) 3. 20A at 24VDC for Model: DRM-24V480W1PX(y)

Degree of Protection: IP 20

Service Restriction:

Unit Certification is not required for this product.

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.

Comments:

- 1. Safe area application only, not to be used in hazardous location.
- 2. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. DRM-24V240W1PX(Y), ABS Witness For Prototype Environmental Testing, Revision: 00, Pages: 23, dated 31 August 2016

Drawing No. DRM-24V240W1PX(Y) 10, Delta Environment Test (In-House), Revision: S3, Pages: 14, dated 22 December 2015

Drawing No. DRM-24V240W1PX(Y)_2, Schematic Circuit, Revision: S2, Pages: 1

Drawing No. DRM-24V240W1PX(Y) 3, Mechanical Drawing, Revision: S0, Pages: 1 Drawing No. DRM-24V240W1PX(Y) 4, Label Drawing, Revision: S0, Pages: 1

Drawing No. DRM-24V240W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1

Drawing No. DRM-24V240W1PX(Y)_6, Insulator Drawing, Revision: 00, Pages: 1
Drawing No. DRM-24V240W1PX(Y)_7, Heat Sink Drawing, Revision: 00, Pages: 1
Drawing No. DRM-24V240W1PX(Y)_8.1, Instruction Manual - DECA, Revision: 01, Pages: 1
Drawing No. DRM-24V240W1PX(Y)_8.2, Instruction Manual - DINKLE, Revision: 01, Pages: 1

Drawing No. DRM-24V240W1PX(Y) 9, Electrical Functional Test (In-House), Revision: S3, Pages: 295, dated 20 November 2015

Drawing No. DRM-24V480W1PX(Y), ABS Witness For Prototype Environment Testing, Revision: 00, Pages: 23,

dated 31 August 2016 Drawing No. DRM-24V480W1PX(Y) 10, Delta Environment Test (In-House), Revision: S3, Pages: 13, dated 04

Drawing No. DRM-24V480W1PX(Y)_2, Schematic Circuit, Revision: S2, Pages: 1 Drawing No. DRM-24V480W1PX(Y)_3, Mechanical Drawing, Revision: 00, Pages: 1 Drawing No. DRM-24V480W1PX(Y)_4, Label Drawing, Revision: 00, Pages: 1 Drawing No. DRM-24V480W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1

DELTA ELECTRONICS INDIA PRIVATE LIMITED - SEZ UNIT

SY NO 16/1B2B PART AND 16/1B2A PART

PLOT NO 1 INDUSTRIAL PARK KURUBARAPALLI VILLAGE KRISHNAGIRI DIST

India 635115

Telephone:

Fax:

Email:

Web:

Tier: 2 - PDA Issued

Drawing No. DRM-24V480W1PX(Y) 6, Insulator Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_7, Heat Sink Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_8.1, Instruction Manual - DINKLE, Revision: 00, Pages: 1 Drawing No. DRM-24V480W1PX(Y)_8.2, Instruction Manual - DECA, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y) 9, Electrical Functional Test (In-House), Revision: S3, Pages: 217, dated 17 February 2016

Drawing No. DRM-24V480W1PX(Y) T211-0323/16, GL - Functional And Environment Test Report, Revision: 00, Pages: 23, dated 12 May 2016

Drawing No. DRM-24V480W1PX(Y) T251-0526/16, GL - EMC Test Report, Revision: 00, Pages: 42, dated 12 May 2016

Drawing No. DRM-24V80W1PX(Y), ABS Witness For Prototype Environmental Testing, Revision: 00, Pages: 23, dated 21 August 2016

Drawing No. DRM-24V80W1PX(Y) 10, Delta Environment Test (In-House), Revision: S3, Pages: 11, dated 15 December 2015

Drawing No. DRM-24V80W1PX(Y)_2, Schematic Circuit, Revision: S2, Pages: 1

Drawing No. DRM-24V80W1PX(Y) 3, Mechanical Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y) 4, Label Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1 Drawing No. DRM-24V80W1PX(Y)_6, Heat Sink Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y) 8, Instruction Manual, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y) 9, Electrical Functional Test (In-House)1, Revision: S4, Pages: 237, dated 29 February 2016

Drawing No. DRM-24v80w1pxy And DRM-24v240w1pxy_T211-0504, GL - Function And Environment Test

Report, Revision: 00, Pages: 30, dated 17 August 2015

Drawing No. DRM-24v80w1pxy And DRM-24v240w1pxy T251-0568, GL - EMC Test Report, Revision: 00, Pages: 113, dated 12 August 2015

Drawing No. T251-0439/21 - DRM-24V480W1PX(y) GL - EMC test report, Revision: 01, Pages: 21, dated 14 July 2021

Drawing No. T251-0435/21 - DRM-24V80W1PXy and DRM-24V240W1PXy GL - EMC test report, Revision: 01, Pages: 30, dated 14 July 2021

Drawing No. DRM-24V80W1PX(Y) 1, Technical Datasheet, Revision: 00, Pages: 20

Drawing No. DRM-24V240W1PX(Y) 1, Technical Datasheet, Revision: 00, Pages: 20

Drawing No. DRM-24V480W1PX(Y) 1, Technical Datasheet, Revision: 00, Pages: 20

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 07/Sep/2026 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.

STANDARDS

ABS Rules:

2021 Rules for Conditions of Classification – 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Rules for Building and Classing Marine Vessels Rules: 4-9-2/5.3, 4-9-3/11.9, 4-9-9/7, 4-9-9/13, 4-9-9/Table 1

DELTA ELECTRONICS INDIA PRIVATE LIMITED - SEZ UNIT

SY NO 16/1B2B PART AND 16/1B2A PART

PLOT NO 1 INDUSTRIAL PARK KURUBARAPALLI VILLAGE KRISHNAGIRI DIST

India 635115 Telephone:

Fax: Email: Web:

Tier: 2 - PDA Issued

2021 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units: 4-3-4/5

2021 Rules for Conditions of Classification – High Speed Craft 1-1-4/11.9, 1-1-A2, 1-1-A3, which cover the following:

2021 Rules for Building and Classing High Speed-Craft: 4-7-9/7, 4-7-9/15, 4-7-9/Table 9

National:

NA

International:

IACS UR E10 Rev.7

Government:

NA

EUMED:

NA

OTHERS:

NA



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

21-2160772-PDA-DUP 08-Sep-2021 07-Sep-2026 Singapore Engineering Services

CERTIFICATE OF

Product Design Assessment

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

DELTA ELECTRONICS (DONGGUAN) CO., LTD.

located at

NO. 33, PANTAO ROAD, SHIJIE TOWN, DONGGUAN, GUANGDONG, , China

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: Power Supply Unit

Model: DRM-24V80W1PX(y), DRM-24V240W1PX(y), DRM-24V480W1PX(y)

Endorsements:

Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 07/Sep/2026 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.

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American Bureau Of Shipping

Guanying Wu, 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)

DELTA ELECTRONICS (DONGGUAN) CO., LTD.

NO. 33, PANTAO ROAD, SHIJIE TOWN, DONGGUAN, GUANGDONG

China

Telephone: +86 769-8663-9008 Ext: 3785, 2095

Fax:

Email: PEAR.LI@deltaww.com

Web: www.deltaww.com Tier: 2 - PDA Issued

Power Supply Unit Product:

Model: DRM-24V80W1PX(y), DRM-24V240W1PX(y), DRM-24V480W1PX(y)

Endorsements:

Intended Service:

CliQ M DIN-rail mounting power supply units for automation systems on Ships and Offshore Units.

Description:

DIN-rail mounted power supply modules for installation in consoles and cabinets, located in general power distribution zones.

Rating:

Nominal Input Voltage: single-phase: 100-240VAC/110-300VDC

Nominal Input Frequency: 50-60Hz Nominal Output Voltage: 24VDC Output Continuous Current:

1. 3.4A at 24VDC for Model: DRM-24V80W1PX(y) 2. 10A at 24VDC for Model: DRM-24V240W1PX(y)3. 20A at 24VDC for Model: DRM-24V480W1PX(y)

Degree of Protection: IP 20

Service Restriction:

Unit Certification is not required for this product.

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.

Comments:

- 1. Safe area application only, not to be used in hazardous location.
- 2. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. DRM-24V240W1PX(Y), ABS Witness For Prototype Environmental Testing, Revision: 00, Pages: 23, dated 31 August 2016

Drawing No. DRM-24V240W1PX(Y) 10, Delta Environment Test (In-House), Revision: S3, Pages: 14, dated 22 December 2015

Drawing No. DRM-24V240W1PX(Y)_2, Schematic Circuit, Revision: S2, Pages: 1 Drawing No. DRM-24V240W1PX(Y)_3, Mechanical Drawing, Revision: S0, Pages: 1

Drawing No. DRM-24V240W1PX(Y)_4, Label Drawing, Revision: S0, Pages: 1 Drawing No. DRM-24V240W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1

Drawing No. DRM-24V240W1PX(Y)_6, Insulator Drawing, Revision: 00, Pages: 1 Drawing No. DRM-24V240W1PX(Y) 7, Heat Sink Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V240W1PX(Y) 8.1, Instruction Manual - DECA, Revision: 01, Pages: 1 Drawing No. DRM-24V240W1PX(Y) 8.2, Instruction Manual - DINKLE, Revision: 01, Pages: 1

Drawing No. DRM-24V240W1PX(Y) 9, Electrical Functional Test (In-House), Revision: S3, Pages: 295, dated 20 November 2015

Drawing No. DRM-24V480W1PX(Y), ABS Witness For Prototype Environment Testing, Revision: 00, Pages: 23, dated 31 August 2016

Drawing No. DRM-24V480W1PX(Y)_10, Delta Environment Test (In-House), Revision: S3, Pages: 13, dated 04 May 2016

Drawing No. DRM-24V480W1PX(Y) 2, Schematic Circuit, Revision: S2, Pages: 1

Drawing No. DRM-24V480W1PX(Y) 3, Mechanical Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_4, Label Drawing, Revision: 00, Pages: 1 Drawing No. DRM-24V480W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y) 6, Insulator Drawing, Revision: 00, Pages: 1

DELTA ELECTRONICS (DONGGUAN) CO., LTD.

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Fax:

Email: PEAR.LI@deltaww.com

Web: www.deltaww.com
Tier: 2 - PDA Issued

Drawing No. DRM-24V480W1PX(Y)_7, Heat Sink Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_8.1, Instruction Manual - DINKLE, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_8.2, Instuction Manual - DECA, Revision: 00, Pages: 1

Drawing No. DRM-24V480W1PX(Y)_9, Electrical Functional Test (In-House), Revision: S3, Pages: 217, dated 17 February 2016

Drawing No. DRM-24V480W1PX(Y)_T211-0323/16, GL - Functional And Environment Test Report, Revision: 00, Pages: 23, dated 12 May 2016

Drawing No. DRM-24V480W1PX(Y)_T251-0526/16, GL - EMC Test Report, Revision: 00, Pages: 42, dated 12 May 2016

Drawing No. DRM-24V80W1PX(Y), ABS Witness For Prototype Environmental Testing, Revision: 00, Pages: 23, dated 21 August 2016

Drawing No. DRM-24V80W1PX(Y)_10, Delta Environment Test (In-House), Revision: S3, Pages: 11, dated 15 December 2015

Drawing No. DRM-24V80W1PX(Y)_2, Schematic Circuit, Revision: S2, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_3, Mechanical Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_4, Label Drawing, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_5, PCB Layout, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_6, Heat Sink Drawing, Revision: 00, Pages: 1 Drawing No. DRM-24V80W1PX(Y)_8, Instruction Manual, Revision: 00, Pages: 1

Drawing No. DRM-24V80W1PX(Y)_9, Electrical Functional Test (In-House)1, Revision: S4, Pages: 237, dated 29

February 2016
Drawing No. DRM-24v80w1pxy And DRM-24v240w1pxy_T211-0504, GL - Function And Environment Test Report, Revision: 00, Pages: 30, dated 17 August 2015

Drawing No. DRM-24v80w1pxy And DRM-24v240w1pxy_T251-0568, GL - EMC Test Report, Revision: 00, Pages: 113, dated 12 August 2015

Drawing No. T251-0439/21 - DRM-24V480W1PX(y)_GL - EMC test report, Revision: 01, Pages: 21, dated 14 July 2021

Drawing No. T251-0435/21 - DRM-24V80W1PXy and DRM-24V240W1PXy_GL - EMC test report, Revision: 01, Pages: 30, dated 14 July 2021

Drawing No. DRM-24V80W1PX(Y)_1, Technical Datasheet, Revision: 00, Pages: 20 Drawing No. DRM-24V240W1PX(Y)_1, Technical Datasheet, Revision: 00, Pages: 20

Drawing No. DRM-24V480W1PX(Y) 1, Technical Datasheet, Revision: 00, Pages: 20

Terms of Validity:

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STANDARDS

ABS Rules:

2021 Rules for Conditions of Classification – 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Rules for Building and Classing Marine Vessels Rules: 4-9-2/5.3, 4-9-3/11.9, 4-9-9/7, 4-9-9/13, 4-9-9/Table 1

2021 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

Electronically published by ABS Singapore. Reference T2492045, dated 22-DEC-2023.

DELTA ELECTRONICS (DONGGUAN) CO., LTD.

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Email: PEAR.LI@deltaww.com

Web: www.deltaww.com
Tier: 2 - PDA Issued

2021 Rules for Building and Classing Mobile Offshore Units: 4-3-4/5

2021 Rules for Conditions of Classification – High Speed Craft 1-1-4/11.9, 1-1-A2, 1-1-A3, which cover the following:

2021 Rules for Building and Classing High Speed-Craft: 4-7-9/7, 4-7-9/15, 4-7-9/Table 9

National:

NA

International:

IACS UR E10 Rev.7

Government:

NA

EUMED:

NA

OTHERS:

NA