



CERTIFICATE NUMBER 23-2395447-PDA

EFFECTIVE DATE 10-May-2023

EXPIRATION DATE 9-May-2028

ABS TECHNICAL OFFICE Yokohama Engineering Services

CERTIFICATE OF

Product Design Assessment

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

SCHNEIDER ELECTRIC AUTOMATION GMBH

located at

MARKTHEIDENFELD, Germany

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 Programmable Logic Controller

Model Modicon M241/M251

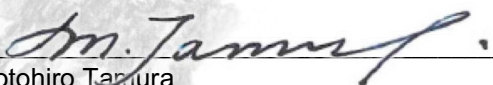
Endorsement Other

This Product Design Assessment (PDA) Certificate remains valid until 9/May/2028 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


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 ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

SCHNEIDER ELECTRIC AUTOMATION GMBH

SCHNEIDERPLATZ 1

MARKTHEIDENFELD

Germany 97828

Telephone: +49 (0) 9391 606 0

Fax: +49 (0) 9391 606 4000

Email:

Web: www.schneider-electric.com

Tier: 5 - Unit Certification Required

Product: Programmable Logic Controller

Model: Modicon M241/M251

Endorsements:

Intended Service:

Programmable Logic Controllers (PLC) for controlling and monitoring of industrial processes for machine room use.

Description:

Application: Control of simple motion/Control of control loops.

Controller type: TM241C24T (with serial links), TM241CE24T (with embedded Ethernet port and serial links),
TM241CEC24T (with embedded Ethernet and CANopen ports, and serial links)

Inputs/Outputs: 24 logic inputs/outputs with removable screw terminal block (14 sink/source 24V inputs, inc. 8 high-speed inputs, 10 source transistor outputs, inc. 4 high-speed outputs)

Controller type: TM241C24U (with serial links), TM241CE24U (with embedded Ethernet port and serial links),
TM241CEC24U (with embedded Ethernet and CANopen ports, and serial links)

Inputs/Outputs: 24 logic inputs/outputs with removable screw terminal block (14 sink/source 24V inputs, inc. 8 high-speed inputs, 10 sink transistor outputs, inc. 4 high-speed outputs)

Controller type: TM241C40T (with serial links), TM241CE40T (with embedded Ethernet port and serial links)

Inputs/Outputs: 40 logic inputs/outputs with removable screw terminal block (24 sink/source 24V inputs, inc. 8 high-speed inputs, 16 source transistor outputs, inc. 4 high-speed outputs)

Controller type: TM241C40U (with serial links), TM241CE40U (with embedded Ethernet port and serial links)

Inputs/Outputs: 40 logic inputs/outputs with removable screw terminal block (24 sink/source 24V inputs, inc. 8 high-speed inputs, 16 sink transistor outputs, inc. 4 high-speed outputs)

Controller type: TM241C24R (with serial links), TM241CE24R (with embedded Ethernet port and serial links),
TM241CEC24R (with embedded Ethernet and CANopen ports, and serial links)

Inputs/Outputs: AC 100V-240V power supply, 24 logic inputs/outputs with removable screw terminal block (14 sink/source 24V inputs, inc. 8 high-speed inputs, 10 outputs, inc. 4 high-speed outputs and 6 relay outputs)

Controller type: TM241C40R (with serial links), TM241CE40R (with embedded Ethernet port and serial links)

Inputs/Outputs: AC 100V-240V power supply, 40 logic inputs/outputs with removable screw terminal block (24 sink/source 24V inputs, inc. 8 high-speed inputs, 16 outputs, inc. 4 high-speed outputs and 12 relay outputs)

I/O Cartridges and communication accessory type:

TMC4AI2, I/O Cartridge, 2 analog inputs, 0-10V/0-20mA/4-20mA

TMC4AQ2, I/O Cartridge, 2 analog outputs, 0-10V/0-20mA/4-20mA

TMC4TI2, I/O Cartridge, 2 Thermocouple or RTD input

TM4ES4, 4 ports Ethernet switch module,

TM3XTRA1, TM3 Transmitter with Ethernet

TM3XREC1, TM3 Receiver with Ethernet

TM4PDPS1, Profibus DP slave module

TMC4HOIS01, Cartridge for Hoisting application with 2 analog inputs

TMC4PACK01, Cartridge for Packaging application with 2 analog inputs

Application: Controlling modular machine on distributed architectures.

Controller type: TM251MESE

Embedded communication:

1) Ethernet link

Ethernet 1: 2 ports connected by a switch "Machine" or "Factory" (2 RJ 45 connectors)

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Tier: 5 - Unit Certification Required

Ethernet 2: 1 "fieldbus" Ethernet port (1 RJ 45 connector with Industrial Ethernet manager service (EtherNet/IP and TCP IU/O Scanner)

2) CANopen link: ---

3) Serial link

1 serial link port (RJ 45) RS 232/RS 485 with +5 V supply

Controller type: TM251MESC

Embedded communication:

1) Ethernet link

Ethernet : 2 ports connected by a switch "Machine" or "Factory" (2 RJ 45 connectors)

2) CANopen link: 1 port for CANopen fieldbus (1* 9-way SUB-D connector) with CANopen (Master) and SAE J1939 Request Manager protocols

3) Serial link

1 serial link port (RJ 45) RS 232/RS 485 with +5 V supply

M241/M251 logic controllers are programmed with SoMachine software (please refer to www.schneider-electric.com).

Rating:

24V DC, or 100V – 240V AC (TM241xxR models); Operating Ambient Temperature: 0-55°C

Service Restriction:

1. Unit Certification is required for this product. However, the Unit Certification for the switchboard, panel board and/or console may cover this product in lieu of the individual Unit Certification where they contain this product provided the tests required by 4-9-3/Table 2 and 3 of the Marine Vessels Rules are carried out when their shop testing is witnessed by the Surveyor.
2. Not intended for equipment installed in the bridge and deck zone since radiated emission and conducted emission has only been carried out for equipment installed in the general power distribution zone.
3. Unless specially directed by the Administration, this approval is not to be construed as a substitute for flag Administration's approval.

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Please note that the following items are applicable regarding the computer-based system of this equipment.

(a) This equipment has been reviewed as System Category II services in 4-9-3/Table 1 of the Marine Vessels Rules,

(b) The evidence is required to be kept by the manufacturer in accordance with 4-9-3/Table 2 and 3 of the Marine Vessels Rules, and

(c) The tests required in 4-9-3/Table 2 and 3 of the Marine Vessels Rules, are to be witnessed by the attending Surveyor.

Notes/Drawing/Documentation:

*See attachment.

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 09/May/2028 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.

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Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:

2023 Marine Vessel Rules 1-1-4/7.7, 1-1-A3 & A4, 4-9-3 (Cat II) and 4-9-9/3 and 13;

2023 High-Speed Craft 1-1-4/11.9, 1-1-A2 & A3, 4-7-8 (Cat II) and 4-7-9/15,

2023 Mobile Offshore Units 1-1-4/9.7, 1-1-A2 & A3 and 4-3-4/5;

National:

N/A

International:

N/A

Government:

N/A

EUMED:

N/A

OTHERS:

IACS UR E10 (Rev.7 Oct. 2018 & Rev.8 Feb 2021)

IACS UR E22 (Rev.2 June 2016 Complete Revision)

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 23-2395447-PDA
Effective Date: 10 May 2023
Expire Date: 9 May 2028
Company: Schneider Electric Automation GMBH.
Product/Equipment: Programmable Logic Controller
Model: Modicon M241/M251
Revision No: 2

Documents List

Drawing No. 201301-041-046_M2xx step1 C1-C6 High Frequency, High Frequency Test, Revision: 0, Pages: 103
Drawing No. 201301-051-056_M2xx step1 C1-C6 Safety, Safety Test, Revision: 0, Pages: 100
Drawing No. 201301-061-066_M2xx step1 C1-C6 Mechanical, Mechanical Test, Revision: 0, Pages: 104
Drawing No. 201301-071-076_M2xx step1 C1-C6 Climatic, Climatic Test, Revision: 0, Pages: 129
Drawing No. 201301-081-086_M2xx step1 C1-C6 Low frequency, Low Frequency Test, Revision: 0, Pages: 59
Drawing No. 201301-091-096_M2xx step1 C1-C6 PTS, C1 PTS File, Revision: 0, Pages: 60
Drawing No. 201301-431-436_M2xx step1 C1-C6 Configuration, C1 Test Configuration, Revision: 0, Pages: 36
Drawing No. 201301-441-446_M2xx step1 C1-C6 Emission, Emission Test, Revision: 0, Pages: 100
Drawing No. C13-179-WT, ADT test Report, Revision: 0, Pages: 35
Drawing No. CPU24, CPU 24, Revision: 1, Pages: 19
Drawing No. CPU40, CPU 40, Revision: 1, Pages: 21
Drawing No. E316433-20130906, UL Description Report, Revision: 1, Pages: 26
Drawing No. Equivalence IACS-SE-ABS-DNV-V05-HC, Synthesys IACS-ABS Test Reports, Revision: 0, Pages: 4
Drawing No. IO 24, IO 24, Revision: 1, Pages: 13
Drawing No. IO 40, IO 40, Revision: 1, Pages: 15
Drawing No. QFO 07 004 SEMB, Incoming Inspection, Revision: 2, Pages: 4
Drawing No. Lexan925, Material Datasheet Lexan 925, Revision: 1, Pages: 1
Drawing No. M221-241-251, Documents for Computer-based System, Revision: 0, Pages: 27
Drawing No. Catalogue 2014, Modicon M241 Logic Controllers, Revision: 0, Pages: 27
Drawing No. M2XXOOUTL001, Dimension Drawing TM241 PLC, Revision: 1, Pages: 1
Drawing No. Part List, Parts list, Revision: 1, Pages: 10
Drawing No. Power supply 230VAC, Power 230V, Revision: 1, Pages: 1
Drawing No. SDEC13JY0069VNTY, SITIIAS Test Report, Revision: 0, Pages: 34
Drawing No. 201304-041-046, C1-C6 High Frequency, Revision: 1, Pages: 113, dated 17 January 2014
Drawing No. 201304-051-056, C1-C6 Safety, Revision: 1, Pages: 138, dated 12 January 2014
Drawing No. 201304-061-066, C1-C6 Mechanical, Revision: 1, Pages: 89, dated 12 January 2014
Drawing No. 201304-071-076, C1-C6 Climatic, Revision: 1, Pages: 150, dated 17 January 2014
Drawing No. 201304-081-086, C1-C6 Low Frequency, Revision: 1, Pages: 62, dated 17 January 2014
Drawing No. 201304-091-096, C1-C6 PTS, Revision: 1, Pages: 60, dated 21 November 2013
Drawing No. 201304-431-436, C1-C6 Configuration, Revision: 1, Pages: 38, dated 17 January 2013
Drawing No. 201304-441-446, C1-C6 Emission, Revision: 1, Pages: 98, dated 10 January 2014
Drawing No. 201501-010, C7 SIQ PTS, Revision: 1, Pages: 10, dated 28 January 2015
Drawing No. C13-381-WT, CITIIAS Test Report, Revision: 0, Pages: 39, dated 10 January 2014
Drawing No. CNAS L5315, IOCC-LAB CNAS 2014- 2017, Revision: 0, Pages: 1, dated 21 October 2014
Drawing No. DIA3ED2140107EN, DIA3ED2140107EN_TM241, Revision: 0, Pages: 16, dated June 2017
Drawing No. DIA3ED2140108EN, DIA3ED2140108EN_TM251, Revision: 0, Pages: 16, dated June 2017
Drawing No. EAV1331002_A70_02, TM241CEC24R PB Layout, Revision: 0, Pages: 1,
Drawing No. HRB5444802_A70_01, TM4PDPS1 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB2912803_A71_02, TM251MESC PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3347703_A71_01, TMC4AI2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB2912702_A70_03, TM251MESE PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB2912802_A70_02, TM251MESC PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3347702_A70_01, TMC4AI2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. EAV3586602_A70_00, TMC4PACK01 PCB Layout, Revision: 0, Pages: 1,
Drawing No. S1B9578404_A70_05, TM4ES4 PCB Layout, Revision: 0, Pages: 1,
Drawing No. S1B9578405_A71_05, TM4ES4 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3348702_A70_01, TMC4AQ2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. EAV3586603_A71_00, TMC4PACK01 PCB Layout, Revision: 0, Pages: 1,

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Company: Schneider Electric Automation GMBH.
Product/Equipment: Programmable Logic Controller
Model: Modicon M241/M251
Revision No: 2

Drawing No. HRB5431103_A71_01, TM3XTRA1 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3348303_A71_01, TMC4TI2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. EAV1331003_A71_02, TM241CEC24R PB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3348302_A70_01, TMC4TI2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB3348703_A71_01, TMC4AQ2 PCB Layout, Revision: 0, Pages: 1,
Drawing No. EAV3586502_A70_00, TMC4HOIS01 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB5436802_A71_03, TM3XREC1 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB2912703_A71_03, TM251MESE PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB5431102_A70_01, TM3XTRA1 PCB Layout, Revision: 0, Pages: 1,
Drawing No. HRB5444803_A71_01, TM4PDPS1 PCB Layout, Revision: 0, Pages: 1,
Drawing No. EAV3586503_A71_00, TMC4HOIS01 PCB Layout, Revision: 0, Pages: 1,
Drawing No. SDEC13DE0069VNTY, BV Test Report, Revision: 0, Pages: 34, dated 25 December 2013,
Drawing No. EIO0000001426.04, Hardware Guide TM3X, Revision: 0, Pages: 72,
Drawing No. EIO0000001486.04, Hardware Guide TM251, Revision: 0, Pages: 112,
Drawing No. NHA5337200.00, Instruction Sheet Marine, Revision: 0, Pages: 3,
Drawing No. EIO0000001796.03, Hardware Guide TM4, Revision: 0, Pages: 66, dated October 2016,
Drawing No. EIO0000001776.04, Hardware Guide TMC4, Revision: 0, Pages: 86, dated April 2017,
Drawing No. EIO0000001456.06, Hardware Guide TM241, Revision: 0, Pages: 248, dated April 2017,
Drawing No. ISO9001 Factory, ISO9001-2015_SE_Manufacturing_Batam, Revision: 0, Pages: 1,
Drawing No. ISO9001 Applicant, ISO9001-2008_SE-MachineSolutions_OfferCreationCenter, Revision: 0,
Pages: 2, dated 18 July 2000,
Drawing No. EAV1331004_A72_03, TM241CEC24R Schematic, Revision: 0, Pages: 12,
Drawing No. S1B9578403_A72_05, TM4ES4 Schematic, Revision: 0, Pages: 7,
Drawing No. HRB3348304_A72_01, TMC4TI2 Schematic, Revision: 0, Pages: 8,
Drawing No. HRB5431104_A72_01, TM3XTRA1 Schematic, Revision: 0, Pages: 1,
Drawing No. HRB2912704_A72_03, TM251MESE Schematic, Revision: 0, Pages: 16,
Drawing No. HRB5444804_A72_01, TM4PDPS1 Schematic, Revision: 0, Pages: 6,
Drawing No. EAV3586604_A72_00, TMC4PACK01 Schematic, Revision: 0, Pages: 6,
Drawing No. HRB2912804_A72_04, TM251MESC Schematic, Revision: 0, Pages: 16,
Drawing No. HRB5436803_A72_03, TM3XREC1 Schematic, Revision: 0, Pages: 3,
Drawing No. HRB3348704_A72_02, TMC4AQ2 Schematic, Revision: 0, Pages: 6,
Drawing No. HRB3347704_A72_02, TMC4AI2 Schematic, Revision: 0, Pages: 6,
Drawing No. EAV3586504_A72_00, TMC4HOIS01 Schematic, Revision: 0, Pages: 6,
Drawing No. T223-0081-14, SIQ-TCR_M2xx_Safety_Marine_Env_TM3Expander_TM4PROFIBUS,
Revision: 0, Pages: 69, dated 4 March 2014,
Drawing No. T251-0918-13, SIQ-TCR_M2xx EMC_TM3Expander_TM4PROFIBUS_T251-0918_13,
Revision: 0, Pages: 205, dated 27 March 2014,
Drawing No. Mapping_DUT_Configuration, Mapping_DUT_Configuration, Revision: 0, Pages: 1,
Drawing No. ReleaseNotes.EN, ReleaseNotes.EN, Revision: 0, Pages: 29, dated 21 June 2017,
Drawing No. M2xx - Qua00 Project Quality Plan SW v5, M2xx - Qua00 Project Quality Plan SW v5, Revision:
0, Pages: 17, dated 15 December 2013,
Drawing No. SITIIAS-CNAS-L0130-2010-2016, SITIIAS-CNAS-L0130-2010-2016, Revision: 0, Pages: 578,
Drawing No. M241-M251offer-Marine Certification v1, M241-M251offer-Marine Certification v1, Revision: 0,
Pages: 34, dated 16 June 2015
Drawing No. JYT5318702, Specification for AC Power Board, Revision: G, Pages: 39, dated 27 July 2022,
Drawing No. JYT5318707, AC power supply board of TM241xxxR, Revision: 0, Pages: 1, dated 4 August
2022,
Drawing No. T251-0060_23, Testing report of TM241 DC version, Revision: 0, Pages: 35, dated 13 February
2023, issued by SIQ Ljubljana,
Drawing No. T251-0061_23, Testing report of TM241 DC version, Revision: 0, Pages: 35, dated 13 February
2023, issued by SIQ Ljubljana,
Drawing No. T251-0062_23, Testing report of TM241 DC version, Revision: 0, Pages: 35, dated 13 February
2023, issued by SIQ Ljubljana,

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Product/Equipment: Programmable Logic Controller
Model: Modicon M241/M251
Revision No: 2

Drawing No. T251-0758_21, Testing report of TM241xxxR models, Revision: 0, Pages: 82, dated 20 January 2022, issued by SIQ Ljubljana,