Type Approval Certificate

[Programmable Logic controller]

Initial Approval 16th September, 2021

Manufacturer CREVIS CO., LTD.

29-4, Gigok-ro, Giheung-gu, Yongin-si, Gyeonggi-do, Rep. of Korea

Product Description Network Remote I/O system

Type : FnIO M-Series

″ See Appendix 1 ″

Approval Condition ″ See Appendix 1 ″

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 15th September, 2026

Reissued at Busan, Korea on 4th March, 2022

This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "http://e-cert.krs.co.kr" by using the tracking No(ME22005041940) and certificate No.(SEL39886-AC002).

KOREAN REGISTER

General Manager of
Marine & Ocean Equipment Team

Note : *1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.*
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 4th March, 2022

A. Product Description

1. Product Specification

Type	Module	Description
Network Adapter	M9371	CODESYS, Programmable IO, Economic type
	M9372	CODESYS, Programmable IO, Standard type
	M9373	CODESYS, Programmable IO, Web visualization type
	MD9289	MODBUS TCP Network Adapter(Dual Type)
	M9289	MODBUS TCP Network Adapter(Single Type)
	M9386	EtherCAT ID Type Network Adapter(Single Type)
	M9273	MODBUS RS485 Network Adapter
I/O Module	M1808	Digital Input 8 Points, 120Vac, 18RTB
	M1908	Digital Input 8 Points, 240Vac, 18RTB
	M2738	MOS Relay Output, 8 Points, 240Vdc/ac, 0.5A, 18RTB
	M2744	Relay Output 4 Points, 24Vdc/2A, 240Vac/2A, 18RTB
	M2768	MOS Relay Output, 8 Points, 24Vdc/ac, 2A, 18RTB
	M2774	Form C, Relay Output 4 Points, 24Vdc/2A, 240Vac/2A, 18RTB
	M2788	MOS Relay Output, 8 Points, 120Vdc/ac, 1A, 18RTB
	M3708	Analog Input, 8 Channels, RTD / Resistance Input, 18RTB
	M3808	Analog Input, 8 Channels, Thermocouple / mV Input, 18RTB
	M3918	Analog Input, Differential type, 8 Channels, 0~20, 4~20, +/-20mA, 12bit, 18RTB
	M3928	Analog Input, Differential type, 8 Channels, 0~5, 0~10, +/-10Vdc, 12bit, 18RTB
	M3938	Analog Input, Differential type, 8 Channels, 0~20, 4~20, +/-20mA, 16bit, 18RTB
	M3948	Analog Input, Differential type, 8 Channels, 0~5, 0~10, +/-10Vdc, 16bit, 18RTB
	M5212	RS232 Serial Interface, 2 Channels, Full Duplex Type, 18RTB
	M5222	RS422 Serial Interface, 2 Channels, Full Duplex Type, 18RTB
	M5232	RS485 Serial Interface, 2 Channels, Half Duplex Type, 18RTB
	M7001	System, Field Distribution Module
	M12DF	Digital Input 16 Point, Universal (Sink or Source), 24Vdc, 18RTB
	M1418	Digital Input 8 Points, Sink, 24Vdc, Diagnostic, 18RTB
	M1428	Digital Input 8 Points, Source, 24Vdc, Diagnostic, 18RTB
	M225F	Digital Output 16 Point, Sink, 24Vdc/0.3A, 18RTB
	M226F	Digital Output 16 Point, Source, 24Vdc/0.3A, 18RTB
	M2418	Digital Output 8 Points, Sink, 24Vdc, Diagnostic, 18RTB
	M2428	Digital Output 8 Points, Source, 24Vdc, Diagnostic, 18RTB
	M2618	Digital Output 8 Point, Sink, 24Vdc/2A, 18RTB
	M2628	Digital Output 8 Point, Source, 24Vdc/2A, 18RTB
	M317F	16 Channels Current Input, 0~20mA/4~20mA, 12bit, 18RTB
	M319F	16 Channels Current Input, 0~20mA/4~20mA, 16bit, 18RTB
	M347F	16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 12bit, 18RTB
	M349F	16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 16bit, 18RTB
	M4118	8 Channels Current Output, 0~20mA, 12bit, 18RTB
	M4158	8 Channels Current Output, 0~20mA, 16bit, 18RTB
	M4218	8 Channels Current Output, 4~20mA, 12bit, 18RTB
	M4258	8 Channels Current Output, 4~20mA, 16bit, 18RTB
	M4428	8 Channels Voltage Output, 0~10V, 12bit,18RTB
	M4468	8 Channels Voltage Output, 0~10V, 16bit, 18RTB
	M5914	4 Channels Current Input, 4~20mA, 16bit with Hart, 18RTB

2. Approved Drawings and Documents

1) Approved Drawings : CVS-NWS-2107001 Rev.1.00
CVS-NWS-2107002 Rev.1.00

2) Specification and Etc : CVS-NWS-2106001 Rev.1.00
CVS-NWS-2106002 Rev.1.00

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3. Test Reports, etc.

1) ENV Test Reports
   - OT-218-RRD-015 (2021.08.12)
   - OT-209-RRD-003 (2020.09.02)
   - ECU-2020-007985 (2020.09.03)
   - OT-221-RRD-030 (2022.01.25)

2) EMC Test Reports
   - OT-217-RED-115 (2021.07.29)
   - OT-207-RED-150 (2020.07.24)
   - 2001-01064-001 (2020.08.28)

B. Approval Condition

1. Application & Limitation

1) This approval is granted on the basis of the test reports and the approved documentation.
2) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2.(5).
3) The manufacturer should inform this Society of all kinds of revisions of the equipment. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
4) This certificate covers hardware listed under Product specification.
5) The products shall not be installed on open decks.
6) Each unit of equipment excluding Appendix.1 B.4.2) of this certificate to be installed in the vicinity of a standard or a steering magnetic compass shall be clearly marked with the minimum safe distance at which it may be mounted from such compasses.

2. Individual Product Cert. and Drawing Approval Requirement

1) Individual Product Certification is not required.

3. Marking

1) The product or packing is to be marked with manufacturer name and type designation on a suitable position.

4. Others

1) Test condition (IACS UR E10 Rev.8 basis)

Test	Condition	Remark
EMC	All locations excluding the bridge and deck zone	-
Temperature	-25 ~ +70℃	-
Vibration	Acceleration ±4.0g	-

2) Compass safety distance

Type	Standard Compass	Steering Compass	Remark
FnIO M-Series	130 cm 105 cm	75 cm 70 cm	- 1)

Remark 1) MD9289, M9289, M9386, M7001, M12DF, M1418, M1428, M225F, M226F, M2418, M2428, M2618, M2628, M317F, M319F, M347F, M349F, M4118, M4158, M4218, M4258, M4428, M4468, M5914

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