Marine & Offshore

Certificate number: 64971/A0 BV
File number: MPA2100861
Product code: 4501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

CREVIS

Yongin (Gyeonggi-do) - KOREA (REPUBLIC OF)

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

FnIO M-Series

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 33/43B

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 04 Mar 2027

For Bureau Veritas Marine & Offshore,
At BV PUSAN, on 04 Mar 2022,
Chang-Uk HONG

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

FnIO M-Serires Network Adapter and I/O Module comprise following modules:

No.	Type	Catalog Number	Description
1	Network Adapter	M9371	CODESYS, Programmable IO, Economic type
2	Network Adapter	M9372	CODESYS, Programmable IO, Standard type
3	Network Adapter	M9373	CODESYS, Programmable IO, Web visualization type
4	Network Adapter	M9273	MODBUS RS485 Network Adapter
5	Network Adapter	MD9289	MODBUS TCP Network Adapter (Dual Type)
6	Network Adapter	M9289	MODBUS TCP Network Adapter (Single Type)
7	Network Adapter	M9386	Ether CAT ID Type Network Adapter (Single Type)
8	I/O Module	M1808	Digital Input 8 Points, 120Vac, 18RTB
9	I/O Module	M1908	Digital Input 8 Points, 240Vac, 18RTB
10	I/O Module	M2738	MOS Relay, 8 Points, 240Vdc/ac, 0.5A, 18RTB
11	I/O Module	M2744	Relay Output 4 Points, 24Vdc/2A, 240Vac/2A, 18RTB
12	I/O Module	M2768	MOS Relay, 8 Points, 24Vdc/ac, 2A, 18RTB
13	I/O Module	M2774	Form C, Relay Output 4 Points, 24Vdc/2A, 240Vac/2A, 18RTB
14	I/O Module	M2788	MOS Relay, 8 Points, 120Vdc/ac, 1A, 18RTB
15	I/O Module	M3708	Analog Input, 8 Channels, RTD/Resistance Input, 18RTB
16	I/O Module	M3808	Analog Input, 8 Channels, Thermocouple/mV Input, 18RTB
17	I/O Module	M3918	Analog Input, Differential type, 8 Channels, 0-20, 4-20, ±20mA, 12 Bit 18RTB
18	I/O Module	M3928	Analog Input, Differential type, 8 Channels, 0-5, 0-10, ±10V, 12 Bit 18RTB
19	I/O Module	M3938	Analog Input, Differential type, 8 Channels, 0-20, 4-20, ±20mA, 16 Bit 18RTB
20	I/O Module	M3948	Analog Input, Differential type, 8 Channels, 0-5, 0-10, ±10V, 16 Bit 18RTB
21	I/O Module	M5212	RS232 Serial Interface, 2 Channels, Full Duplex Type, 18RTB
22	I/O Module	M5222	RS422 Serial Interface, 2 Channels, Full Duplex Type, 18RTB
23	I/O Module	M5232	RS485 Serial Interface, 2 Channels, Half Duplex Type, 18RTB
24	I/O Module	M7001	Redundancy Power
25	I/O Module	M12DF	Digital Input 16 Point, Universal (Sink or Source), 24Vdc, 18RTB
26	I/O Module	M1418	Digital Input 8 Points, Sink, 24Vdc, Diagnostic, 18RTB
27	I/O Module	M1428	Digital Input 8 Points, Source, 24Vdc, Diagnostic, 18RTB
28	I/O Module	M225F	Digital Output 16 Point, Sink, 24Vdc/0.3A, 18RTB
29	I/O Module	M226F	Digital Output 16 Point, Source, 24Vdc/0.3A, 18RTB
30	I/O Module	M2418	Digital Output 8 Points, Sink, 24Vdc, Diagnostic, 18RTB
31	I/O Module	M2428	Digital Output 8 Points, Source, 24Vdc, Diagnostic, 18RTB
32	I/O Module	M2618	Digital Output 8 Point, Sink, 24Vdc/2A, 18RTB
33	I/O Module	M2628	Digital Output 8 Point, Source, 24Vdc/2A, 18RTB
34	I/O Module	M317F	16 Channels Current Input, 0~20mA/4~20mA, 12bit, 18RTB
35	I/O Module	M319F	16 Channels Current Input, 0~20mA/4~20mA, 16bit, 18RTB
36	I/O Module	M347F	16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 12bit, 18RTB
37	I/O Module	M349F	16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 16bit, 18RTB
38	I/O Module	M4118	8 Channels Current Output, 0~20mA, 12bit, 18RTB
39	I/O Module	M4158	8 Channels Current Output, 0~20mA, 16bit, 18RTB
40	I/O Module	M4218	8 Channels Current Output, 4~20mA, 12bit, 18RTB
41	I/O Module	M4258	8 Channels Current Output, 4~20mA, 16bit, 18RTB
42	I/O Module	M4428	8 Channels Voltage Output, 0~10V, 12bit,18RTB
43	I/O Module	M4468	8 Channels Voltage Output, 0~10V, 16bit, 18RTB
44	I/O Module	M5914	4 Channels Current Input, 4~20mA, 16bit with Hart, 18RTB

2. DOCUMENTS AND DRAWINGS :

CREVIS:

- M-Series Specification, No. CVS-NWS-2106001 Rev.1.00, dated 22-01-2020.
- M-Series Specification, No. CVS-NWS-2106002 Rev.1.00, dated 22-10-2020.
- M-Series Drawing, No. CVS-NWS-2107001 Rev.1.00, dated 22-01-2020.
- M-Series Drawing, No. CVS-NWS-2107002 Rev.1.00, dated 22-10-2020.
- M-Series Part List, No. CVS-NWS-2108001 Rev.1.00, dated 22-01-2020.
- Test Program for FnIO M-Series, No. CVS-NWT-214001 Rev.1.001, dated 02-03-2021.

3. TEST REPORTS :

ONETECH:

- Environmental Test Report No. OT-218-RRD-015, dated 02-09-2020.
- Environmental Test Report No. OT-209-RRD-003, dated 12-08-2021.
- EMC Test Report No. OT-217-RED-115, dated 29-07-2021.
- EMC Test Report No. OT-207-RED-150, dated 24-07-2020.
- Environmental Test Report No. OT-221-RRD-030, dated 25-01-2022.

KTP:

- Test Report No. ECU-2020-007985, dated 03-09-2020.

4. APPLICATION / LIMITATION :

4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships/ Offshore Units/ Yachts.
4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT** and **AUT-IMS**.
4.3 - Bureau Veritas Environmental Category, **EC Code: 33/43 B**
4.4 - The equipment fulfils the EMC requirements for installation in bridge and deck zone.
4.5 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:
- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.
- Inspection and testing before installation onboard is to be performed under the surveillance of the Society.
4.6 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev7

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products listed under Product description are to be supplied by **CREVIS** in compliance with the type described in this certificate.
5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
5.3 - **CREVIS** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
5.4 - For information, **CREVIS** has declared to Bureau Veritas the following production site(s):

CREVIS
157-1, Hagal-dong, Giheung-gu
Yongin (Gyeonggi-do)
KOREA (REPUBLIC OF)

6. MARKING OF PRODUCT :

- Maker's name or trade mark.
- Catalogue Number and Serial Number.
- Equipment type number or model identification under which it was type-tested.

7. OTHERS :

It is **CREVIS**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****