Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

Task – T2225329
Product Design Assessment (PDA)
Input/Output Module, FnIO M-Series
PDA No. 21-2173855-2-PDA

Attention: Mr. C. W. Seo, CREVIS (WCN: 425297)

The documents shown in the attached list are reviewed in accordance with the applicable requirement indicated in the PDA along with the service restrictions and comments.

We recommend that you monitor the ABS Rules, Guides and other standards used in the Assessment. These Rules, Guides and standards often change on an annual basis, and you must comply with the new Rules, Guides and standards in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules, Guides or specifications.

Additionally, we acknowledge the PDA request form warranting that the materials used in the product are free from asbestos.

For any clarifications, contact Mr. Jae-Hoon Kim at +82-51-460-4134 or (jaehoonkim@eagle.org).

Very truly yours,

Jang-Ho Yoon
Director of Engineering

Electronically Signed by: Young-Keun Park

ABS GLOBAL ENGINEERING
8th Floor Kyobo Life Insurance Bldg., 7, Chungjang-daero, Jung-gu, Busan, 48939, Republic of Korea

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

Documents List

Drawing No.	Rev. No.	Title	Status
CVS-NWS-2107001	-	M-Series Module Drawing	Approved
CVS-NWS-2107002	-	M-Series Module Drawing	Approved
CVS-NWS-2106001	-	M-Series Specification	Approved
CVS-NWS-2106002	-	M-Series Specification	Approved
OT-218-RRD-015	-	Type Test Report	Reviewed
OT-217-RED-115	-	Type Test Report	Reviewed
OT-221-RRD-030	-	Type Test Report	Reviewed
OT-209-RRD-003	-	Type Test Report	Reviewed
OT-207-RED-150	-	Type Test Report	Reviewed
ECU-2020-007985	-	Type Test Report	Reviewed
-	-	Manufacturer performance test report	Reviewed
-	-	Test Report for power supply variation, vibration and inclination test	Reviewed
		ABS survey report (Work order: 4741540-A)	Reviewed

Electronic copies of the documents, appropriately stamped, are available in the ABS Client Portal.

Include: PDA Certificate

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

CERTIFICATE NUMBER	21-2173855-2-PDA
EFFECTIVE DATE	22-Mar-2022
EXPIRY DATE	06-Oct-2026
ABS TECHNICAL OFFICE	Busan Engineering Services

CERTIFICATE OF

Product Design Assessment

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

CREVIS

located at

29-4, GIGOK-RO, GIHEUNG-GU, YONGIN, Korea, Republic of

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:	**Input/Output Module**
Model:	**FnIO M-Series**
Endorsements:	
Tier:	**3 - Type Approved, unit certification not required**

This Product Design Assessment (PDA) Certificate remains valid until 06/Oct/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

Seong-Ju Kang,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)

Sensitivity: Internal & Restricted

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

CREVIS
29-4, GIGOK-RO
GIHEUNG-GU
YONGIN
Korea, Republic of
Telephone: 82-7630-1036
Fax: 82-31-899-4599
Email: cwseo@crevis.co.kr
Web: www.crevis.co.kr

Tier: 3 - Type Approved, unit certification not required

Product: **Input/Output Module**
Model: **FnIO M-Series**
Endorsements:

Intended Service:
ABS Classed Vessels and Offshore Installations

Description:
The subject I/O Module "M-Series" used for programmable I/O, RS485 Network Adapter, AC Input Terminal, Relay Output Terminal, RTD/Resistance Input, TC/mV Input, Differential Current Input, and RS-232/422/485 Serial Interfaces. (Embedded software version: CODESYS V3.5 SP11)

Rating:
See attachment.

Service Restriction:
1. Unit Certification is not required for the product or products covered in this certificate. However, unit certification in accordance with MVR 4-9-3/9.5 Table 2 and MVR 4-9-9/15.7 Table 2 is required by the user to use this equipment, where this equipment is part of Category II or III computer-based systems as described in MVR 4-9-3/7.1 Table 1.
2. 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. This approval is limited to the hardware only. Each particular application/installation and the used application software is to be specifically approved in conjunction with the relevant system in which the units are being used in accordance with MVR 4-9-3 and other application specific requirements.
2. The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
4. Dry heat was conducted for 16 hrs at 70 °C.
5. Vibration test was conducted for the severe vibration condition (2.0 to 25.0 Hz – amplitude +/- 1.6mm and 25.0 to 100.0 Hz – acceleration 4.0 m/s2).
6. Radiated emission and conducted emission tests were carried out for the general power distribution zone according to 4-9-9/Table 1 of the Marine Vessels Rules.
7. Power supply variation, vibration and inclination tests were conducted in the presence of ABS Surveyor.

Notes/Drawing/Documentation:
1. Manufacturer's Type Approval Documentation:
- Drawing (document nos. CVS-NWS-2107001 and CVS-NWS-2107002)
- Product Specification (document nos. CVS-NWS-2106001 and CVS-NWS-216002)
2. Test Reports:
- ONETECH: OT-221-RRD-030 (issued on 25 Jan 2022)
- ONETECH: OT-218-RRD-015 (issued on 12 Aug 2021)
- ONETECH: OT-217-RED-115 (issued on 29 July 2021)
- ONETECH: OT-209-RRD-003 (issued on 02 Sep 2020)
- ONETECH: OT-207-RED-150 (issued on 24 July 2020)
- Korea Testing & Research Institute: ECU-2020-007985 (issued on 03 Sep 2020)
3. Manufacturer performance test report conducted in the presence of ABS Surveyor (issued on 30 July 2021)
4. Test Report for power supply variation, vibration and inclination test (ABS survey report (Work order: 4741540-A))

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 06/Oct/2026 or until the Rules and/or

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

CREVIS
29-4, GIGOK-RO
GIHEUNG-GU
YONGIN
Korea, Republic of
Telephone: 82-7630-1036
Fax: 82-31-899-4599
Email: cwseo@crevis.co.kr
Web: www.crevis.co.kr

Tier: 3 - Type Approved, unit certification not required

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:
2022 Marine Vessels Rules: 1-1-4/7.7, 1-1-A3 & 1-1-A4, 4-9-9/13 & 15, 4-9-9/Table 1 & Table 2
2022 Mobile Offshore Units Rules: 1-1-4/9.7, 1-1-A2 & 1-1-A3
2022 Facilities on Offshore Installations: 1-1-4/9.7, 1-1-A2 & 1-1-A3

National:
NA

International:
IACS UR E10 (Rev.7)

Government:
NA

EUMED:
NA

OTHERS:
NA

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

Total Product List

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

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

38	M4218	8 Channels Current Output, 4~20mA, 12bit, 18RTB
39	M4258	8 Channels Current Output, 4~20mA, 16bit, 18RTB
40	M4428	8 Channels Voltage Output, 0~10V, 12bit,18RTB
41	M4468	8 Channels Voltage Output, 0~10V, 16bit, 18RTB
42	M5914	4 Channels Current Input, 4~20mA, 16bit with Hart, 18RTB

1. M9371/M9372/M9373 (M-SERIES PROGRAMMABLE I/O)

a) Supply voltage: 24Vdc nominal

b) Supply voltage range: 15~28.8Vdc

c) Protection: Output current limit/Reverse polarity protection

d) Power Dissipation

- Network Adapter: 80mA typical @ 24Vdc

- M7001 Module: 20mA typical @ 24Vdc

e) Current: 2.0A @ 5Vdc

f) Adapter type: Master & Slave Node (Modbus TCP, Modbus RTU)

g) Max. Expansion Module: 63 slots (Max 128Byte each slot)

h) Wiring: 0.205~1.3mm^2(24-16 AWG)

i) Weight & Size: 179g, 54x110x75mm

2. M9273 (MODBUS RS485 Network Adapter(Single Type))

a) Supply voltage: 24Vdc nominal

b) Supply voltage range: 15~28.8Vdc

c) Protection: Output current limit/Reverse polarity protection

d) Power Dissipation: 70mA typical @ 24Vdc

e) Current: 2.0A @ 5Vdc

f) Adapter type: Slave Node (Modbus serial RTU/ASCII Server)

g) Max. Expansion Module: 63 slots (Max 128Byte each slot)

h) Wiring: 0.205~1.3mm^2(24-16 AWG)

i) Weight & Size: 179g, 54x110x75mm

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

3. M1808 (8 Points, AC Input Terminal, 120Vac)

a) On-state voltage: 120Vac nominal

b) On-state current: 7.5mA/point @ 120Vac

c) Off-state voltage: Max. 45Vac

d) Input delay time

- Operate time (off to on): 23ms @ 120Vac

- Release time (on to off): 123ms @ 120Vac

e) Nominal input impedance: 17.5Kohm typical

f) Frequency range: 60Hz

g) Power Dissipation: Max. 35mA @ 5Vdc

h) Wiring: 0.205~1.3mm^2(24-16 AWG)

i) Weight & Size: 72g, 12x110x75mm

4. M1908 (8 Points, AC Input Terminal, 240Vac)

a) On-state voltage: 240Vac nominal

b) On-state current: 10mA/point @ 240Vac

c) Off-state voltage: Max. 115Vac

d) Input delay time

- Operate time (off to on): 23ms @ 120Vac

- Release time (on to off): 123ms @ 120Vac

e) Nominal input impedance: 26.5Kohm typical

f) Frequency range: 60Hz

g) Power Dissipation: Max. 30mA @ 5Vdc

h) Wiring: 0.205~1.3mm^2(24-16 AWG)

i) Weight & Size: 72g, 12x110x75mm

5. M2738 (8 Points, Relay Output Terminal, 240Vdc/ac, 0.5A)

a) Output voltage range: Max. 240Vac/240Vdc @ 0.5A

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

b) Output current rating: Max. 0.5A per channel

c) Output delay time

- Operate time (off to on): Max. 0.5ms

- Release time (on to off): Max. 3ms

d) Frequency range: 47~63Hz

e) Power Dissipation: Max. 130mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

6. M2744 (4 Points, Relay Output Terminal, 24Vdc/2A, 240Vac/2A)

a) Output voltage range: Max. 24Vac/240Vdc @ 2.0A

b) Output current rating: Max. 2.0A per channel

c) Output delay time

- Operate time (off to on): Max. 7ms @ 24Vdc/240Vac

- Release time (on to off): Max. 7ms/14ms @ 24Vdc/240Vac

d) Frequency range: 47~63Hz

e) Power Dissipation: Max. 35mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 77g, 12x110x75mm

7. M2768 (8 Points, Relay Output Terminal, 24Vdc/ac, 2A)

a) Output voltage range: Max. 24Vac/24Vdc @ 2.0A

b) Output current rating: Max. 2.0A per channel

c) Output delay time

- Operate time (off to on): Max. 1ms

- Release time (on to off): Max. 3ms

d) Frequency range: 47~63Hz

e) Power Dissipation: Max. 130mA @ 5Vdc

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

8. M2774 (4 Points, Relay Output Terminal, 24Vdc/2A, 240Vac/2A)

a) Output voltage range: Max. 24Vac/240Vdc @ 2.0A

b) Output current rating: Max. 2.0A per channel

c) Output delay time

- Operate time (off to on): Max. 8ms @ 24Vac/240Vdc

- Release time (on to off): Max. 14ms @ 240Vac

d) Frequency range: 47~63Hz

e) Power Dissipation: Max. 35mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 84g, 12x110x75mm

9. M2788 (8 Points, Relay Output Terminal, 110Vdc/ac, 1A)

a) Output voltage range: Max. 110Vac/110Vdc @ 1.0A

b) Output current rating: Max. 1.0A per channel

c) Output delay time

- Operate time (off to on): Max. 0.6ms

- Release time (on to off): Max. 3ms

d) Frequency range: 47~63Hz

e) Power Dissipation: Max. 130mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

10. M3708 (8 Channels, RTD/Resistance Input)

a) Sensor types & input range

RTD Input	Input Range

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

PT100, PT200, PT500, PT50	-200~850°c
PT1000	-200~350°c
JPT100, JPT200, JPT500, JPT50	-200~640°c
JPT1000	-200~350°c
NI100, NI200, NI500	-60~250°c
NI1000	-60~180°c
NI120	-80~260°c
NI1000LG	-50~120°c
Resistance Input	Input Range
100mΩ/bit	0~2000Ω
10mΩ/bit	0~327Ω
20mΩ/bit	0~620Ω
50mΩ/bit	0~1200Ω

b) Excitation current: about 1mA

c) Connection method: 3-Wire

d) Conversion time: <280ms

e) Power Dissipation: Max. 120mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

11. M3808 (8 Channels, TC/mV Input)

a) Sensor types & input range

Type	Maximum Input Range	Recommended Input Range
K	-270~1372°c	-200~1200°c
J	-210~1200°c	-40-1100°c
T	-270~400°c	-200~350°c
B	30~1820°c	600~1700°c
R	-50~1768°c	0~1600°c
S	-50~1768°c	0~1600°c
E	-270~1000°c	-200~800°c
N	-270~1300°c	-200~1250°c
L	-200~900°c	-100~850°c
U	-200~600°c	-100~550°c
C	0~2310°c	100~2100°c
D	0~2490°c	100~2200°c
10uV Input	-81.0~81.0mV, 10uV/1 Count	
1uV Input	-32.7~32.7mV, 1uV/1 Count	
2uV Input	-65.5~65.5mV, 2uV/1 Count	

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

b) Connection method: 2-Wire

c) Conversion time: <50ms

d) Power Dissipation: Max. 150mA @ 5Vdc

e) Wiring: 0.205~1.3mm^2(24-16 AWG)

f) Weight & Size: 72g, 12x110x75mm

12. M3918 (8 Channels, Differential Current Input, 0~20mA / 4~20mA / -20~20mA, 12bits),

a) Input range: 0~20mA, 4~20mA, -20~20mA

b) Resolution in ranges

- 12 bits: 4.88uA/bit(0~20mA)

- 12 bits: 3.91uA/bit(4~20mA)

- 12 bits: 9.77uA/bit(-20~20mA)

c) Data format: 16bits Integer (2' compliment)

d) Conversion time: 2.4ms

e) Power Dissipation: Max. 200mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

13. M3928 (8 Channels, Differential Voltage Input, 0~10V / 0~5V / -10~10V / -5~5V, 12bits)

a) Input range: 0~10Vdc, 0~5Vdc, -10~10Vdc, -5~5Vdc

b) Resolution in ranges

- 12 bits : 2.44mV/Bit(0~10V)

- 12 bits : 1.22mV/Bit(0~5V)

- 12 bits : 4.88mV/Bit(-10~10V)

- 12 bits : 2.44mV/Bit(-5~5V)

c) Data format: 16bits Integer (2' compliment)

d) Conversion time: 2.2ms

e) Power Dissipation: Max. 200mA @ 5Vdc

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

14. M3938 (8 Channels, Differential Current Input, 0~20mA / 4~20mA / -20~20mA, 16bits)

a) Input range: 0~20mA, 4~20mA, -20~20mA

b) Resolution in ranges

16bit(Include Sign)

- 15 bits : 0.61uA/Bit(0~20mA)

- 15 bits : 0.49uA/Bit(4~20mA)

15bit(Include Sign)

- 15 bits : 1.22uA/Bit(-20~20mA)

c) Data format: 16bits Integer (2' compliment)

d) Conversion time: 2.4ms

e) Power Dissipation: Max. 200mA @ 5Vdc

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

15. M3948 (8 Channels, Differential Voltage Input, 0~10V / 0~5V / -10~10V / -5~5V, 16bits)

a) Input range: 0~10Vdc, 0~5Vdc, -10~10Vdc, -5~5Vdc

b) Resolution in ranges

16bit(Include Sign)

- 15 bits : 0.31mV/Bit(0~10V)

- 15 bits : 0.15mV/Bit(0~5V)

15bit(Include Sign)

- 15 bits : 0.61mV/Bit(-10~10V

c) Data format: 16bits Integer (2' compliment)

d) Conversion time: 2.5ms

e) Power Dissipation: Max. 200mA @ 5Vdc

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

f) Wiring: 0.205~1.3mm^2(24-16 AWG)

g) Weight & Size: 72g, 12x110x75mm

16. M5212 (2 Channels, RS-232 Serial Interface)

a) Transfer channels: TxD, RxD, Full Duplex

b) Transfer rate: 1200bps~115200bps

c) Data bit: 8bit, 9bit

d) Flow control: RTS,CTS

e) Bit distortion: <1.6%

f) Cable length: Max.15m (Shield Cable Recommended)

g) Low/High signal voltage: -18V~-3V/3V~18V

17. M5222 (2 Channels, RS-422 Serial Interface)

a) Transfer channels: TxD, RxD, Full Duplex

b) Transfer rate: 1200bps~115200bps

c) Data bit: 8bit, 9bit

d) Flow control: N/A

e) Bit distortion: N/A

f) Cable length: 1km twisted pair (Shield Cable Recommended)

g) Low/High signal voltage: N/A

18. M5232 (2 Channels, RS-485 Serial Interface)

a) Transfer channels: TxD, RxD, Half Duplex

b) Transfer rate: 1200bps~115200bps

c) Data bit: 8bit, 9bit

d) Flow control: N/A

e) Bit distortion: N/A

f) Cable length: 1km twisted pair (Shield Cable Recommended)

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

g) Low/High signal voltage: N/A

19. MD9289 (MODBUS TCP Network Adapter(Dual Type))

a) Adapter type: Slave node, Dual

b) Supply voltage: 24Vdc nominal (15~28.8Vdc)

c) Power dissipation: 150mA typical @ 24Vdc

d) Current for I/O module: 2.0A @ 5Vdc

e) Max. data size: Max 128 bytes each slot (63 slots)

20. M9289 (MODBUS TCP Network Adapter(Single Type))

a) Adapter type: Slave node, Single

b) Supply voltage: 24Vdc nominal (15~28.8Vdc)

c) Power dissipation: 90mA typical @ 24Vdc

d) Current for I/O module: 2.0A @ 5Vdc

e) Max. data size: Max 128 bytes each slot (63 slots)

21. M9386 (EtherCAT ID Type Network Adapter(Single Type))

a) Adapter type: Slave node (EtherCAT)

b) Supply voltage: 24Vdc nominal (15~28.8Vdc)

c) Power dissipation: 70mA typical @ 24Vdc

d) Current for I/O module: 2.0A @ 5Vdc

e) I/O data size: Max 128 bytes each slot (63 slots)

22. M7001 (System, Field Distribution Module)

a) Supply voltage: 24Vdc nominal (15~28.8Vdc)

b) Power dissipation: Max. 30mA @ 24Vdc

c) Current for I/O module: 2.0A @ 5Vdc

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

23. M12DF (Digital Input 16 Point, Universal (Sink or Source), 24Vdc, 18RTB)

a) On-state voltage: 24Vdc nominal (9~28.8Vdc)

b) Off-state voltage: 6Vdc

c) On-state current: 3.05mA max/point @ 28.8Vdc

d) Power dissipation: Max. 40mA @ 5Vdc

24. M1418 (Digital Input 8 Points, Sink, 24Vdc, Diagnostic, 18RTB)

a) On-state voltage: 24Vdc nominal (9~28.8Vdc)

b) Off-state voltage: 6Vdc

c) On-state current: 5.75mA max/point @ 28.8Vdc

d) Power dissipation: Max. 45mA @ 5Vdc

25. M1428 (Digital Input 8 Points, Source, 24Vdc, Diagnostic, 18RTB)

a) On-state voltage: 24Vdc nominal (9~28.8Vdc)

b) Off-state voltage: 6Vdc

c) On-state current: 5.75mA max/point @ 28.8Vdc

d) Power dissipation: Max. 45mA @ 5Vdc

26. M225F (Digital Output 16 Point, Sink, 24Vdc/0.3A, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 0.5Vdc

c) On-state current: 1mA per channel

d) Power dissipation: Max. 40mA @ 5Vdc

27. M226F (Digital Output 16 Point, Source, 24Vdc/0.3A, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 0.3Vdc

c) On-state current: 1mA per channel

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

d) Power dissipation: Max. 40mA @ 5Vdc

28. M2418 (Digital Output 8 Points, Sink, 24Vdc, Diagnostic, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 0.5Vdc

c) On-state current: 1mA per channel

d) Power dissipation: Max. 50mA @ 5Vdc

29. M2428 (Digital Output 8 Points, Source, 24Vdc, Diagnostic, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 0.5Vdc

c) On-state current: 1mA per channel

d) Power dissipation: Max. 45mA @ 5Vdc

30. M2618 (Digital Output 8 Point, Sink, 24Vdc/2A, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 1.0Vdc

c) On-state current: 1mA per channel

d) Power dissipation: Max. 40mA @ 5Vdc

31. M2628 (Digital Output 8 Points, Source, 24Vdc, Diagnostic, 18RTB)

a) Output voltage range: 24Vdc nominal (15~28.8Vdc)

b) On-state voltage drop: Max. 1.0Vdc

c) On-state current: 1mA per channel

d) Power dissipation: Max. 40mA @ 5Vdc

32. M317F (16 Channels Current Input, 0~20mA/4~20mA, 12bit, 18RTB)

a) Input range: 0~20mA, 4~20mA

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

b) Data format: 16bits Integer

c) Resolution in ranges: 12bits [4.88uA/Bit(0.20mA), 3.91uA/Bit(4~20mA)]

d) Conversion time: Max. 3.2msec (all channel)

e) Power dissipation: Max. 200mA @ 5Vdc

33. M319F (16 Channels Current Input, 0~20mA/4~20mA, 16bit, 18RTB)

a) Input range: 0~20mA, 4~20mA

b) Data format: 16bits Integer

c) Resolution in ranges: 16bit, 15bits [0.61uA/Bit(0.20mA), 0.49uA/Bit(4~20mA)]

d) Conversion time: Max. 3.2msec (all channel)

e) Power dissipation: Max. 200mA @ 5Vdc

34. M347F (16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 12bit, 18RTB)

a) Input range: 0~10Vdc, 0~5Vdc, 1~5Vdc

b) Data format: 16bits Integer

c) Resolution in ranges: 12bit [2.44mV/Bit(0~10V), 1.22mV/Bit(0~5V), 0.98mV/Bit(1~5V)]

d) Conversion time: Max. 1.3msec (all channel)

e) Power dissipation: Max. 200mA @ 5Vdc

35. M347F (16 Channels Voltage Input, 0~10Vdc/0~5Vdc/1~5Vdc, 16bit, 18RTB)

a) Input range: 0~10Vdc, 0~5Vdc, 1~5Vdc

b) Data format: 16bits Integer

c) Resolution in ranges: 16bit, 15bits [0.31mV/Bit(0~10V), 0.15mV/Bit(0~5V), 0.12mV/Bit(1~5V)]

d) Conversion time: Max. 1.3msec (all channel)

e) Power dissipation: Max. 200mA @ 5Vdc

36. M4118 (8 Channels Current Output, 0~20mA, 12bit, 18RTB

a) Input range: 0~20mA

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

b) Data format: 16bits Integer

c) Resolution in ranges: 12bit (4.88uA/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

37. M4158 (8 Channels Current Output, 0~20mA, 16bit, 18RTB)

a) Input range: 0~20mA

b) Data format: 16bits Integer

c) Resolution in ranges: 16bit, 15bit (0.61uA/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

38. M4218 (8 Channels Current Output, 4~20mA, 12bit, 18RTB)

a) Input range: 4~20mA

b) Data format: 16bits Integer

c) Resolution in ranges: 12bit (3.91uA/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

39. M4258 (8 Channels Current Output, 4~20mA, 16bit, 18RTB)

a) Input range: 4~20mA

b) Data format: 16bits Integer

c) Resolution in ranges: 16bit, 15bit (0.49uA/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

40. M4428 (8 Channels Voltage Output, 0~10V, 12bit,18RTB)

a) Input range: 0~10Vdc

Electronically published by ABS Busan.
Reference T2225329, dated 22-MAR-2022.

- Company Information: CREVIS (WCN: 425297)
- Model: FnIO M-Series
- ABS PDA Certificate No. 21-2173855-2-PDA dated 22-Mar-2022 remains valid until 06-Oct-2026

b) Data format: 16bits Integer

c) Resolution in ranges: 12bit (2.44mV/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

41. M4468 (8 Channels Voltage Output, 0~10V, 16bit, 18RTB)

a) Input range: 0~10Vdc

b) Data format: 16bits Integer

c) Resolution in ranges: 16bit, 15bit (0.31mV/Bit)

d) Conversion time: Max. 250usec (all channel)

e) Power dissipation: Max. 30mA @ 5Vdc

42. M5914 (4 Channels Current Input, 4~20mA, 16bit with Hart, 18RTB)

a) Input range: 4~20mA

b) Resolution in ranges: 16bit, 15bit (0.49uA/Bit)

c) Conversion time: Max. 30msec (all channel)

d) Power dissipation: Max. 30mA @ 5Vdc