

FnIO M – Series : ***M4428***

M4428 (8 Channels, Voltage Output, 0~10V, 12bit)

Date: 2018.06.19

Specification Preliminary

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History

REV.	PAGES	REMARKS	DATE	Editor
1.00		Preliminary	Jun 19, 2018	BS HA

1. Environment Specification

Environmental specification	
Operating Temperature	-20°C to 60°C
Storage Temperature	-40°C~85°C
Relative Humidity	5% ~ 90% non-condensing
Mounting	DIN rail
General specification	
Shock Operating	IEC 60068-2-27
Vibration Resistance	Based on IEC 60068-2-6 Sine Vibration 5 ~ 25Hz : 1.6mm 25 ~ 300Hz : 4g Sweep Rate : 1 Oct/min, 20 cycles Random Vibration 10 ~ 40Hz : 0.0125g ² /Hz 40 ~ 100Hz : 0.0125 → 0.002g ² /Hz 100 ~ 500Hz : 0.002g ² /Hz 500 ~ 2000Hz : 0.002 → 1.3 x 10 ⁻⁴ g ² /Hz Test time : 1hrs for each test
EMC Resistance Burst/ESD	EN 61000-6-2 : 2005 EN 61000-6-4/A11 : 2011
Installation Pos. / Protect. Class	Variable/IP20
Product Certifications	CE, UL TBD

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2. M4428 (8 Channels Voltage Output, 0~10V, 12Bit)

2.1. M4428 Specification

Items	Specification
Input Specification	
Outputs per module	8 Channels single ended
Indicators(Logic side)	8 Green Output status
Resolution in Ranges	12 bits : 2.44mV/Bit
Output Range	0 ~ 10Vdc
Data Format	16bits Integer (2' compliment)
Module Error	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ -20°C, 60°C
Load Resistance	Min. 2KΩ
Conversion Time	Max. 250usec / All channel
Diagnostic	Field Power Off: LED Blinking Field Power On: No Output LED Off Field Power On: Output LED On
Calibration	Not Required
Common Type	2 Common, Field Power 0V is Common(AGND)
General specification	
Power dissipation	Max. 30mA @ 5.0Vdc
Isolation	I/O to Logic : Isolation Field power : Non-Isolation
Field Power	Supply Voltage : 24Vdc nominal Voltage Range : 18~32Vdc Power Dissipation : Max. 70mA @ 24Vdc
Wiring	I/O Cable Max. 2.0mm ² (AWG 14)
Weight	72g
Module Size	12mm x 110mm x 75mm
Hot Swap	Possible
Environment Condition	Refer to '1. Environment Specification'

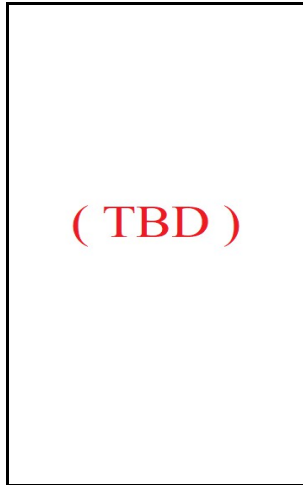
2.2. M4428 Wiring Diagram

(TBD)

Pin No.	Signal Description
0	Output Channel 0
1	Output Channel 1
2	Output Channel 2
3	Output Channel 3
4	Output Channel 4
5	Output Channel 5
6	Output Channel 6
7	Output Channel 7
8	Output Channel 8
9	Output Channel 9
10	Output Channel 10
11	Output Channel 11
12	Output Channel 12
13	Output Channel 13
14	Output Channel 14
15	Output Channel 15
16	Output Channel Common(AGND)
17	Output Channel Common(AGND)

2.3. M4428 LED Indicator

2.3.1. LED Indicator



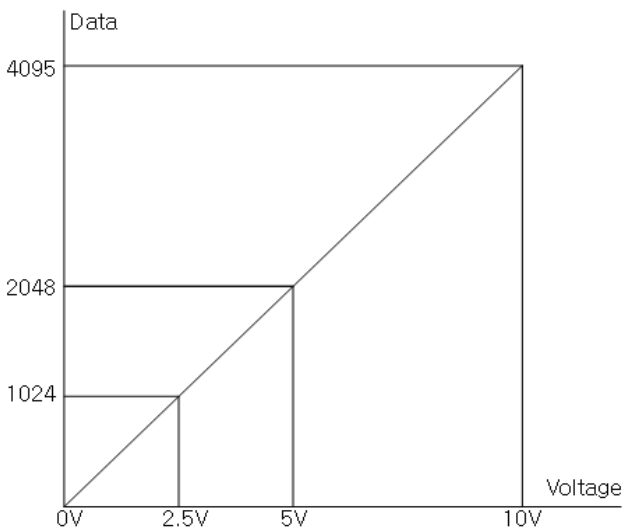
LED No.	LED Function / Description	LED Color
0	Status LED	Green

2.3.2. Channel Status LED

Status	LED	To indicate
Normal Operation	No Output Channel Off Output Channel Green	No Output Output
Field Power Error	All Channel Repeat the Green and Off	Field power is unconnected.

2.3.3. Data value / Voltage

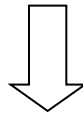
Voltage	0.0V	2.5V	5.0V	10.0V
Data(Hex)	H0000	H03FF	H07FF	H0FFF



2.4. Mapping data from the image table

- **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0								Analog Output Ch0 Low byte
Byte 1								Analog Output Ch0 High byte
Byte 2								Analog Output Ch1 Low byte
Byte 3								Analog Output Ch1 High byte
Byte 4								Analog Output Ch2 Low byte
Byte 5								Analog Output Ch2 High byte
Byte 6								Analog Output Ch3 Low byte
Byte 7								Analog Output Ch3 High byte
Byte 8								Analog Output Ch4 Low byte
Byte 9								Analog Output Ch4 High byte
Byte 10								Analog Output Ch5 Low byte
Byte 11								Analog Output Ch5 High byte
Byte 12								Analog Output Ch6 Low byte
Byte 13								Analog Output Ch6 High byte
Byte 14								Analog Output Ch7 Low byte
Byte 15								Analog Output Ch7 High byte



- **Output Module Data -16byte Output Data**

Analog Output Ch0
Analog Output Ch1
Analog Output Ch2
Analog Output Ch3
Analog Output Ch4
Analog Output Ch5
Analog Output Ch6
Analog Output Ch7

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2.5. Parameter Data

- **Valid Parameter length: 4 Bytes**
- **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action for channel 3		Fault Action for channel 2		Fault Action for channel 1		Fault Action for channel 0	
	00: Fault Value 01: Hold last state 10: Low Limit 11:High Limit							
Byte1	Fault Action for channel 7		Fault Action for channel 6		Fault Action for channel 5		Fault Action for channel 4	
Byte2	Fault Value Low Byte							
Byte3	Not used				Fault Value High Byte			