

# **FnIO M – Series :**

## ***M4468***

***M4468 (8 Channels, Voltage Output, 0~10V, 16bit)***

# Specification

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# Specification

## History

REV.	PAGES	REMARKS	DATE	Editor
-	10	New Document	Jan 31, 2020	bs, HA
1.01		Image, Torque, Hotswap Function	2020/04/21	CW SEO
1.02		Vibration specification, Product certification changed	2020/04/27	CW SEO
1.03	11~15	Added ATEX certificate	2020/05/07	bs, HA

# Specification

## 1. ENVIRONMENT SPECIFICATION

<b>Environmental specification</b>	
Operating Temperature	-25°C~60°C
UL Temperature	-20°C~60°C
Storage Temperature	-40°C~85°C
Relative Humidity	5% ~ 90% non-condensing
Mounting	DIN rail
<b>General specification</b>	
Shock Operating	IEC 60068-2-27
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN 61000-6-4/A11 : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL, ATEX, DNV

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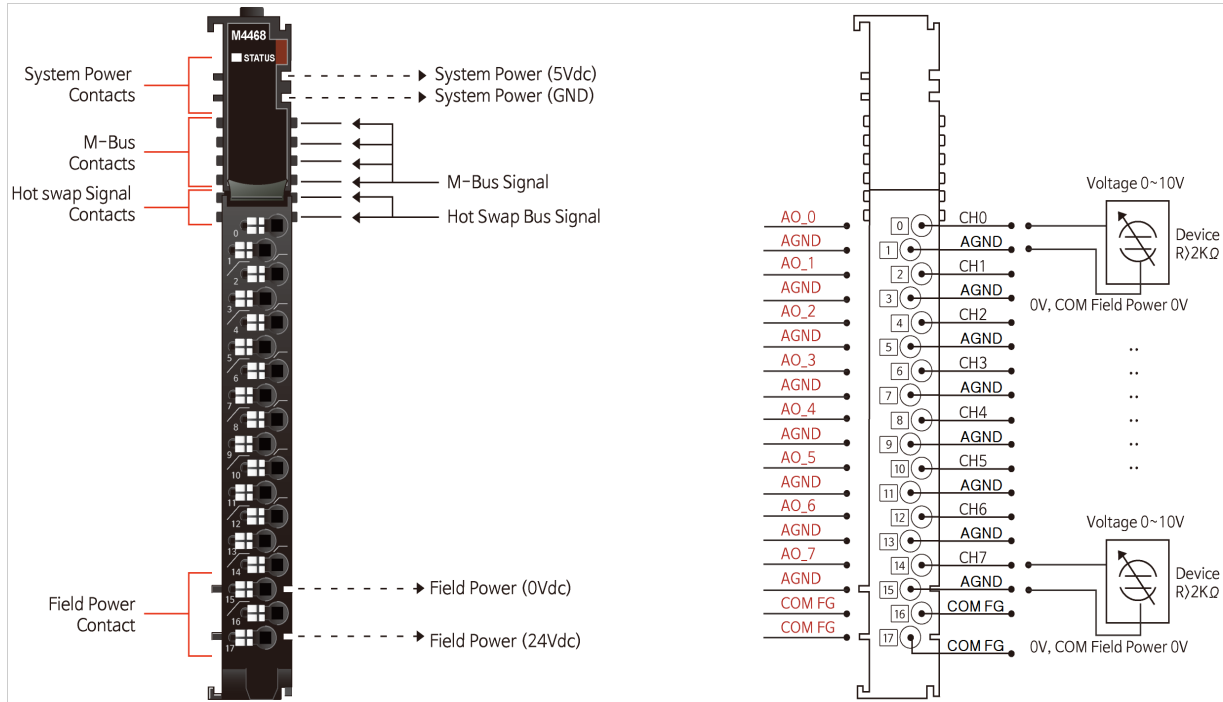
## 2. M4468 (8 CHANNELS VOLTAGE OUTPUT, 0~10V, 16BIT)

### 2.1. M4468 Specification

Items	Specification
<b>Output Specification</b>	
Outputs per module	8 Channels single ended
Indicators(Logic side )	1 Green M-Bus status
Resolution in Ranges	16 bit (Include Sign) 15 bits : 0.31mV/bit
Output Range	0 ~ 10Vdc
Data Format	16bits Integer (2' compliment)
Module Error	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ -25°C, 60°C
Load Resistance	Min. 2KΩ
Conversion Time	Max. 250usec / All channel
Diagnostic	Field Power Off : LED Blinking Field Power On : LED On
Calibration	Not Required
Common Type	8 Common, Field Power 0V is Common(AGND)
<b>General Specification</b>	
Power dissipation	Max. 30mA @ 5.0Vdc
Isolation	I/O to Logic : Isolation Field power : Non-Isolation
UL Field Power	Supply voltage : 24Vdc nominal, Class 2
Field Power	Supply Voltage : 24Vdc nominal Voltage Range : 18~28.8Vdc Power Dissipation : Max. 70mA @ 24Vdc
Single Wire	0.205mm <sup>2</sup> - 1.3mm <sup>2</sup> (24-16 AWG)
Torque	0.8Nm(7 lb-in)
Weight	72g
Module Size	12mm x 110mm x 75mm
Hot Swap	Possible
<b>Environment Condition</b>	<b>Refer to '1. Environment Specification'</b>

\* Class 2, adjacent to voltage rating (30Vmax)

## 2.2. M4468Wiring Diagram



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

Series No	Through Air	Over Surface	CTI
RTB18C	1.5mm	1.5mm	175≤CTI≤400

Spacings : The following minimum spacing in inches(millimeters) shall be maintained between uninsulated live parts of opposite polarity; and between an uninsulated live part and a grounded Part including any mounting surface or exposed metal part.

## 2.3. M4468 LED Indicator

### 2.3.1. LED Indicator



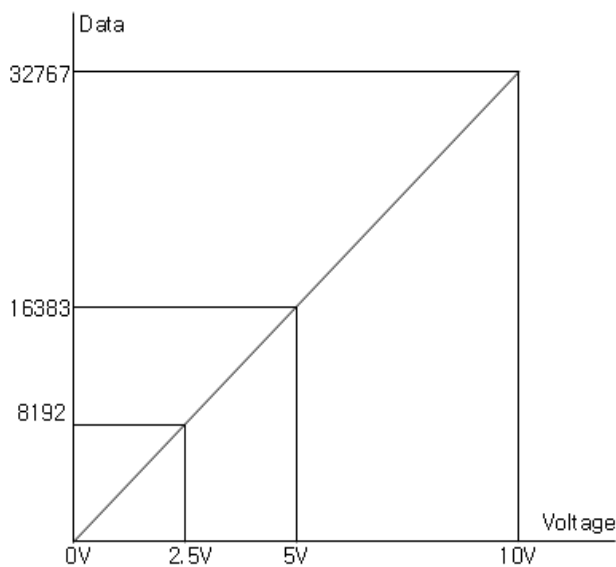
LED No.	LED Function / Description	LED Color
STATUS	M-bus Status	Green

### 2.3.2. Channel Status LED

Status	LED	To indicate
M-Bus Status	Off Green	Disconnection Connection
Field Power Error	All Channel Repeat the Green and Off	Field power is unconnected.

### 2.3.3. Data value / Voltage

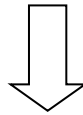
Voltage	0.0V	2.5V	5.0V	10.0V
Data(Hex)	H0000	H1FFF	H3FFF	H7FFF



## 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
<b>Byte0</b>	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							
<b>Byte1</b>	Fault Action for channel 7		Fault Action for channel 6		Fault Action for channel 5		Fault Action for channel 4	
<b>Byte2</b>	Fault Value Low Byte							
<b>Byte3</b>	Fault Value High Byte							