

FnIO G – Series :

GT-3B14

***GT-3B14 (4 Channels Omni-Function, Selectable AIO, Voltage Input /
Current Input / Voltage Output / Current Output, 12bit)***

Specification

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History

Rev	Pages	Remarks	Date	Editor
1.00			2025.03.12	Soyeong, Park

Specification

1. Environment Specification

Environmental Specification	
Operation Temperature	-40°C ~60°C
UL Temperature	-20°C ~60°C
Non-Operating 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, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2019
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UKCA, UL

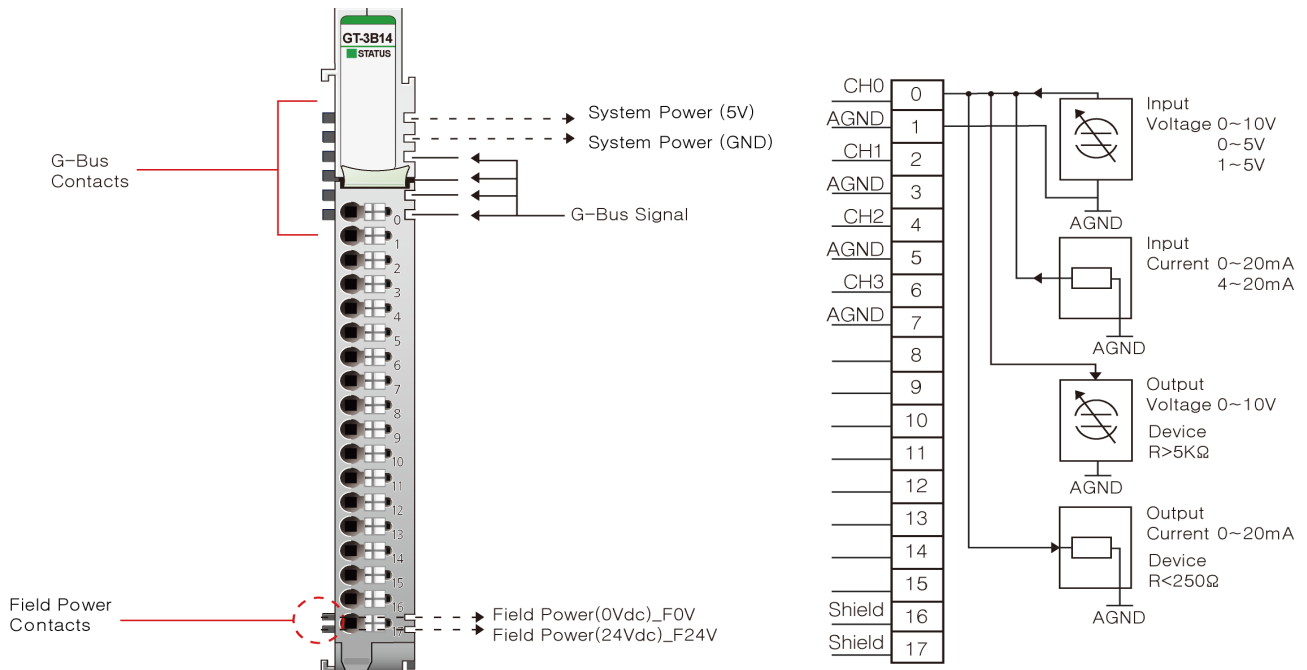
Specification

2. GT-3B14 (4 Channels Omni-Function, Selectable AIO, Voltage Input / Current Input / Voltage Output / Current Output, 12bit)

2.1. GT-3B14 Specification

Items	Specification			
Input/Output Specification				
Inputs/Outputs Per Module	4 Channels single ended, non-isolated between channel			
Unit	Voltage Input	Voltage Output	Current Input	Current Output
Resolution in Ranges	12 bits : 2.44mV/Bit(0~10V) : 1.22mV/Bit(0~5V) : 0.977mV/Bit(1~5V)	12bits : 2.44mV/Bit(0~10V)	12bits : 4.88uA/Bit(0~20mA) : 3.91uA/Bit(4~20mA)	12bits : 4.88uA/Bit(0~20mA)
Range	0 ~ 10Vdc, 0 ~ 5Vdc, 1 ~ 5Vdc	0 ~ 10Vdc	0 ~ 20mA, 4 ~ 20mA	0 ~ 20mA
Input Impedance	500kΩ	---	60Ω	---
Load Resistance	---	Min. 5kΩ	---	Max. 250Ω
Data Format	16bits Integer (2` compliment)			
Module Error	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ -40°C, 60°C			
Signal Common Specification				
Diagnostic	Diagnostic Field Power Off : LED Blinking			
Conversion Time	1msec / All channel			
Calibration	Not Required			
Common Type	4 Common, Field Power 0V is Common(AGND)			
General Specification				
Power Dissipation	Max. 35mA @ 5Vdc			
Isolation	I/O to Logic : Photocoupler Isolation Field power : Non-Isolation			
UL Field Power	Supply Voltage : 24Vdc nominal, Class 2			
Field Power	Supply Voltage : 24Vdc nominal Supply Voltage : 18~30Vdc Power Dissipation : Max. 100mA@24Vdc			
Wiring	I/O Cable Max. 0.823mm²(AWG 18)			
Weight	64g			
Module Size	12mm x 109mm x 70mm			
Environment Condition	Refer to ‘Environment Specification’			

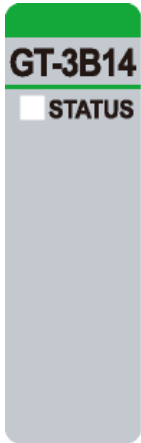
2.2. GT-3B14 Wiring Diagram



Pin No.	Signal Description
0	Analog Input Voltage / Input Current / Output Voltage / Output Current #Channel 0
1	Channel Common(AGND)
2	Analog Input Voltage / Input Current / Output Voltage / Output Current #Channel 1
3	Channel Common(AGND)
4	Analog Input Voltage / Input Current / Output Voltage / Output Current #Channel 2
5	Channel Common(AGND)
6	Analog Input Voltage / Input Current / Output Voltage / Output Current #Channel 3
7	Channel Common(AGND)
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	-
16	Shield
17	Shield

2.3. GT-3B14 LED Indicator

2.3.1. LED Indicator



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

2.3.2. Channel Status LED

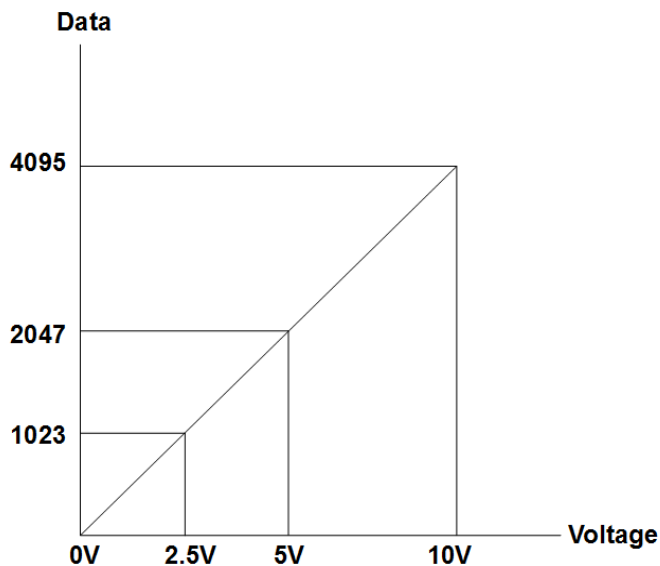
Status	LED	To indicate
G-Bus Status	Off	Disconnection
	Green	Connection
Field Power Error	Repeat the Green and OFF	Field Power is unconnected

2.4. Data Value / Voltage, Current

2.4.1. Operating Range

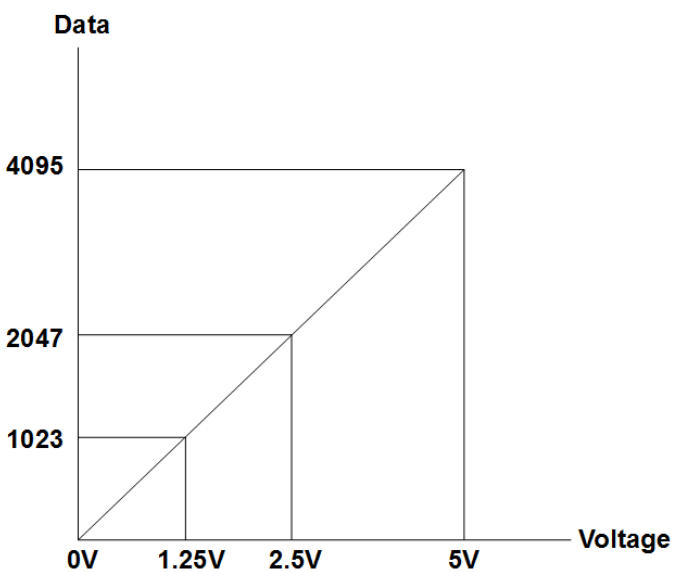
Voltage Range : 0~10V

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



Voltage Range : 0~5V

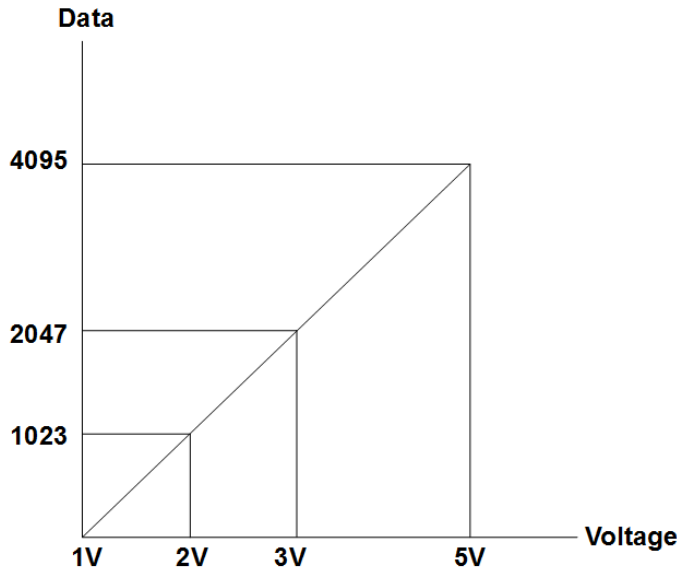
Voltage	0.0V	1.25V	2.5V	5.0V
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Specification

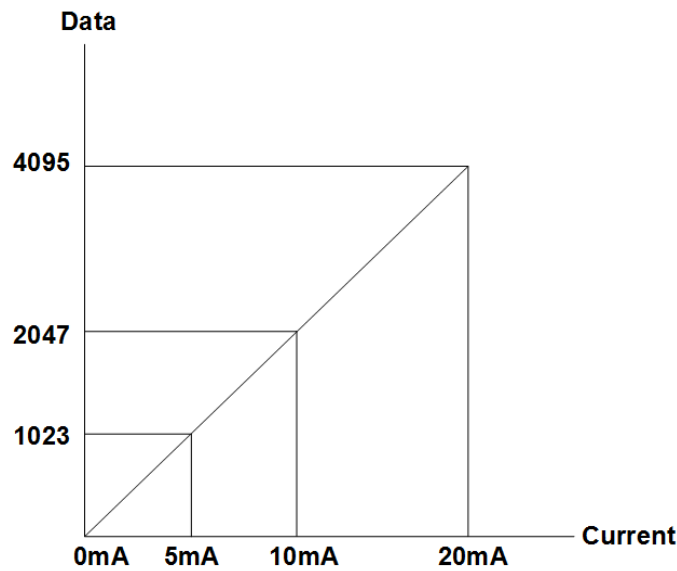
Voltage Range : 1~5V

Voltage	1.0V	2.0V	3.0V	5.0V
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Current Range : 0~20mA

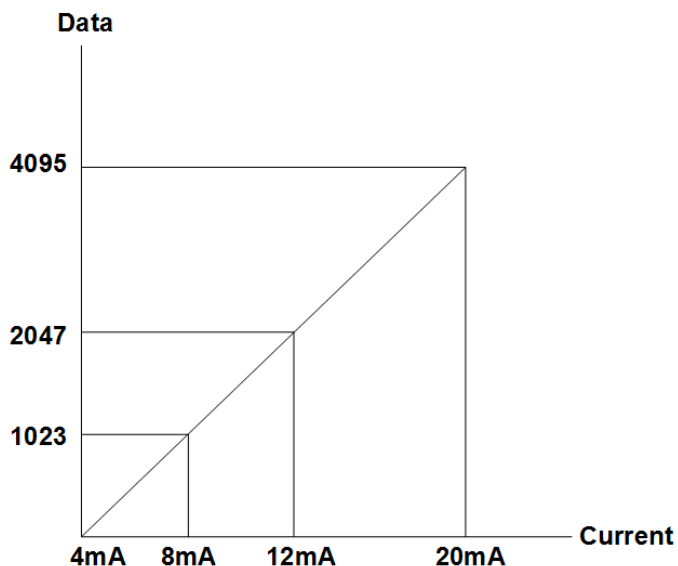
Current	0.0mA	5.0mA	10.0mA	20.0mA
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Specification

Current Range : 4~20mA

Current	4.0mA	8.0mA	12.0mA	20.0mA
Data(Hex)	H0000	H03FF	H07FF	H0FFF



2.4.2. Underrun / Overrun Range

Voltage	Voltage Range : 0~10V		Voltage Range : 0~5V		Voltage Range : 1~5V	
	<0.0V	>10.0V	<0.0V	>6.0V	<1.0V	>6.0V
Data(Hex)	-	-	-	H7FFF	H8000	H7FFF

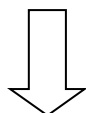
Current	Current Range : 0~20mA		Current Range : 4~20mA	
	<0.0mA	>21.0mA	<3.0mA	>21.0mA
Data(Hex)	-	H7FFF	H8000	H7FFF

Specification

2.5. Mapping Data into the Image Table

● Input Module Data

	Analog Input Ch0
	Analog Input Ch1
	Analog Input Ch2
	Analog Input Ch3

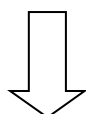


● Input Image Value

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Analog Input Ch0 Low byte							
Byte1	Analog Input Ch0 High byte							
Byte2	Analog Input Ch1 Low byte							
Byte3	Analog Input Ch1 High byte							
Byte4	Analog Input Ch2 Low byte							
Byte5	Analog Input Ch2 High byte							
Byte6	Analog Input Ch3 Low byte							
Byte7	Analog Input Ch3 High byte							

● Output Image Value

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Analog Output Ch0 Low byte							
Byte1	Analog Output Ch0 High byte							
Byte2	Analog Output Ch1 Low byte							
Byte3	Analog Output Ch1 High byte							
Byte4	Analog Output Ch2 Low byte							
Byte5	Analog Output Ch2 High byte							
Byte6	Analog Output Ch3 Low byte							
Byte7	Analog Output Ch3 High byte							



● Output Module Data

	Analog Output Ch0
	Analog Output Ch1
	Analog Output Ch2
	Analog Output Ch3

3. Parameter Data

- Valid Parameter length: 4 Bytes
- Parameter Data

	Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Common	Byte0	Omni-Function Select Channel 3*		Omni-Function Select Channel 2*		Omni-Function Select Channel 1*		Omni-Function Select Channel 0*	
		00 : Analog Input Voltage 10 : Analog Output Voltage				01 : Analog Input Current 11 : Analog Output Current			
	Byte1	Reserved							
AI	Byte2	Input Range for Channel 3**		Input Range for Channel 2**		Input Range for Channel 1**		Input Range for Channel 0**	
		Voltage = 00 : 0~10Vdc 01 : 0~5Vdc 10 : 1~5Vdc Current = 00 : 0~20mA 01 : 4~20mA (Others : Default (00))							
	Byte3	Filter Time (H00 : Default Filter(20) / H01 : Fastest ~ / H3E : Slowest)							

* After Changing the Omni-Function Select Channel item, you must turn the power on/off for it to take effect.

** The functionality of the Input Range for Channel changes according to the Omni-Function.