

# **FnIO G – Series :**

## ***GT-3C38***

***GT-3C38(4 Channels Voltage Input 0~10Vdc / 0~5Vdc / 1~5Vdc,  
4 Channels Current Input 0~20mA / 4~20mA, 16bit)***

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History

Rev	Pages	Remarks	Date	Editor
1.00			2025/04/16	Suna, Hwang

# 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, UL, UKCA

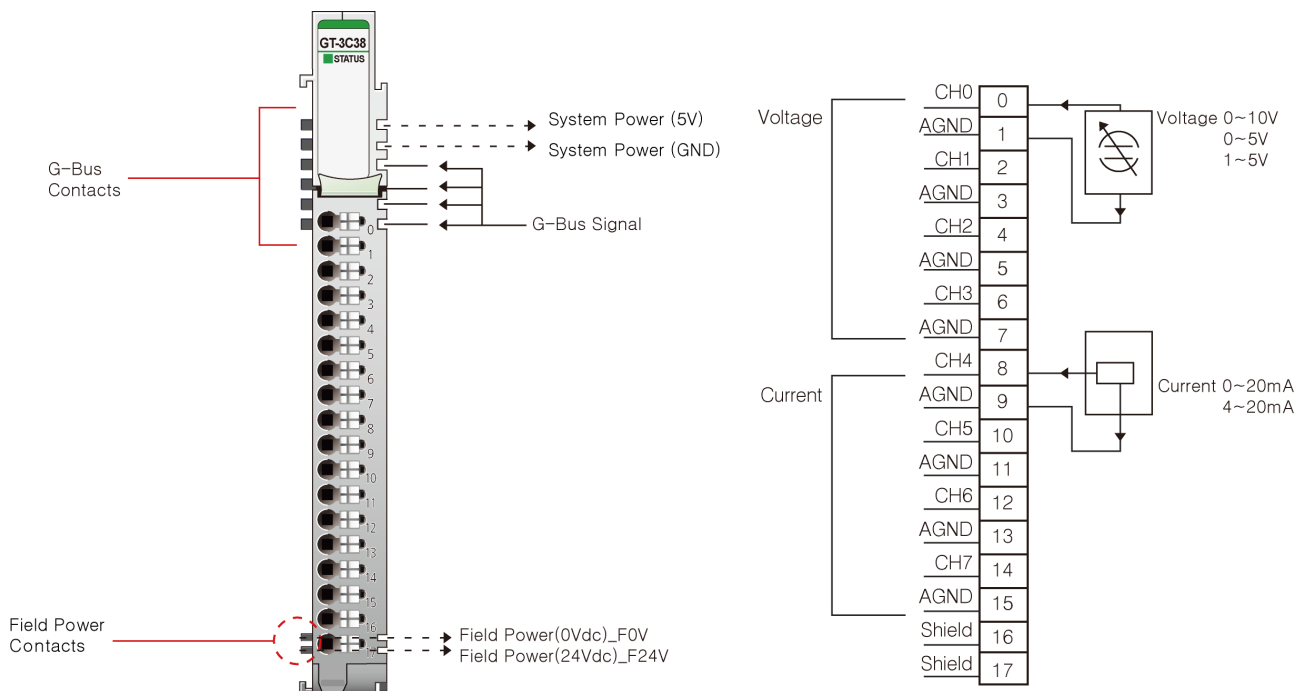
# Specification

## 2. GT-3C38 (4 Channels Voltage Input 0~10Vdc / 0~5Vdc / 1~5Vdc, 4 Channels Current Input 0~20mA / 4~20mA, 16bit)

### 2.1. GT-3C38 Specification

Items	Specification	
Input Specification		
Inputs Per Module	8 Channels single ended, non-isolated between channel	
Input Unit	Voltage (4 Channels)	Current (4 Channels)
Resolution in Ranges	16 bit (Include Sign)	16 bit (Include Sign)
	15 bits : 0.31mV/Bit(0~10V)	15bits : 0.61uA/Bit(0~20mA)
	15 bits : 0.15mV/Bit(0~5V)	15bits : 0.49uA/Bit(4~20mA)
	15 bits : 0.12mV/Bit(1~5V)	
Input Range	0~10Vdc, 0~5Vdc, 1~5Vdc	0~20mA, 4~20mA
Input Impedance	500kΩ	60Ω
Data Format	16bits Integer	
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	1.0msec / All channel	
Calibration	Not Required	
Common Type	8 Common, Field Power 0V is Common(AGND)	
General Specification		
Power Dissipation	Max. 30mA @ 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. 20mA@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’	

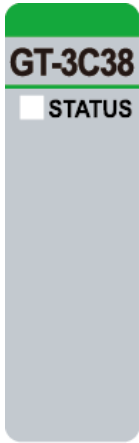
## 2.2. GT-3C38 Wiring Diagram



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

2.3. GT-3C38 LED Indicator

2.3.1. LED Indicator



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

2.3.2. Channel Status LED

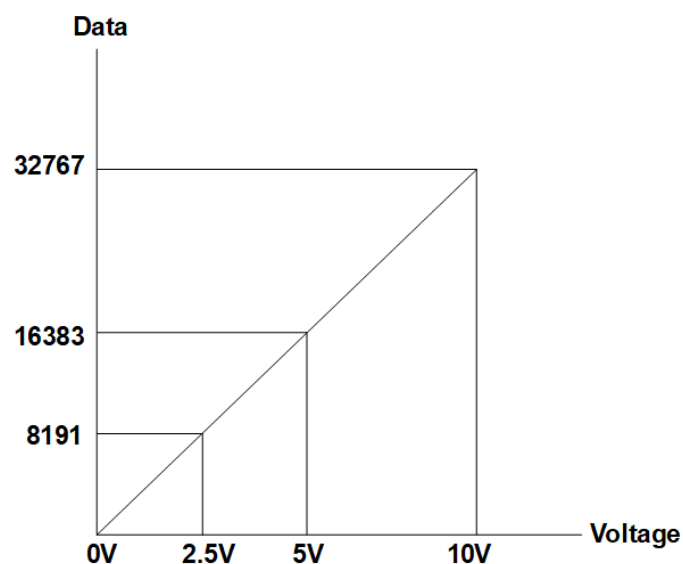
Status	LED	To indicate
G-Bus Status	Off	Disconnection
	Green	Connection
Field Power Error	Status Channel Repeat the Green and Off	Field power is unconnected.

## 2.4. Data Value / Voltage & Current

### 2.4.1. Voltage Operating Range

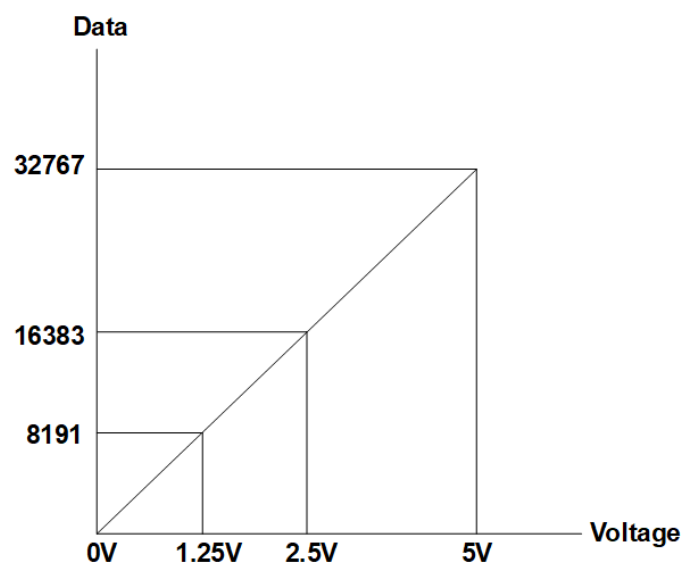
Voltage Range : 0~10V

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



Voltage Range : 0~5V

Voltage	0.0V	1.25V	2.5V	5.0V
Data(Hex)	H0000	H1FFF	H3FFF	H7FFF

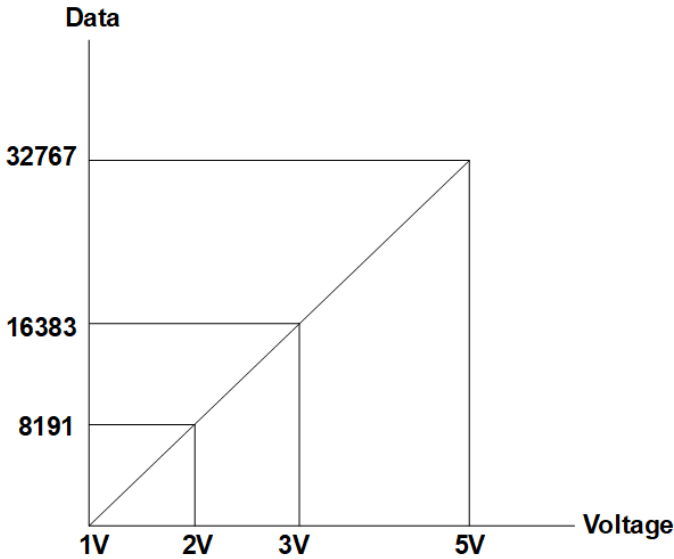




Specification

Voltage Range : 1~5V

Voltage	1.0V	2.0V	3.0V	5.0V
Data(Hex)	H0000	H1FFF	H3FFF	H7FFF



2.4.2. Voltage Underrun / Overrun Range

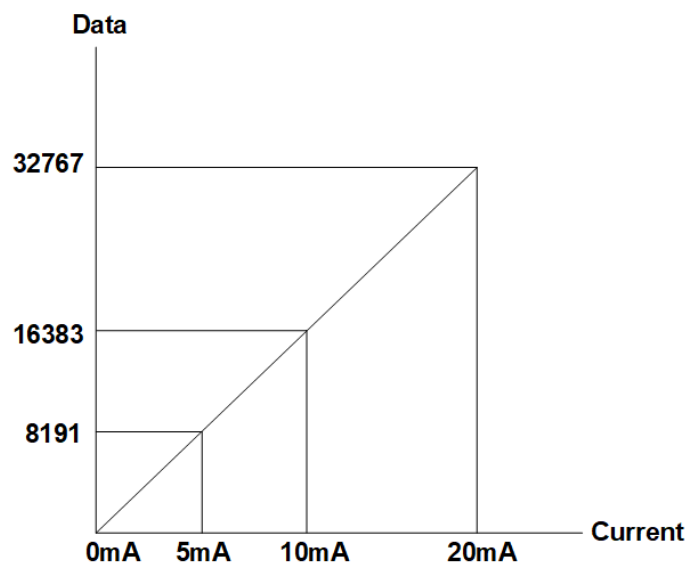
Current	Voltage Range : 0~10V		Voltage Range : 0~5V		Voltage Range : 1~5V	
	<0.0V	>10.0V	<0.0V	>6.0V	<1.0V	>6.0V
Data(Hex)	-	-	-	H7FFF	H8000	H7FFF

# Specification

## 2.4.3. Current Operating Range

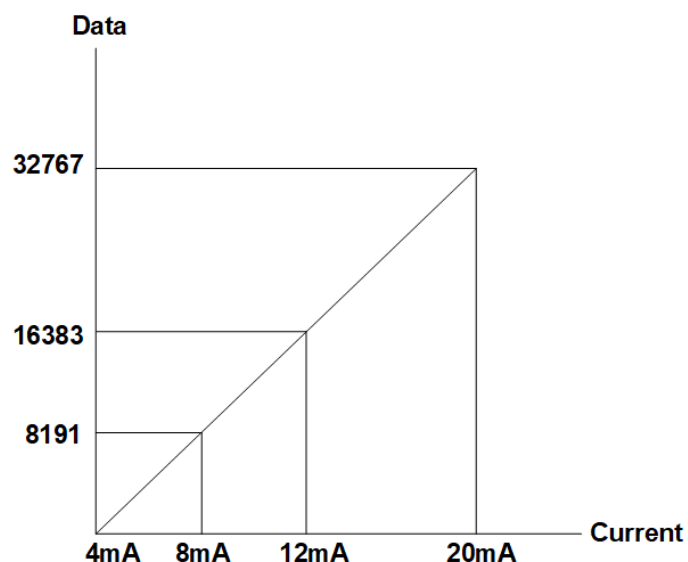
### Current Range : 0~20mA

Current	0.0mA	5.0mA	10.0mA	20.0mA
Data(Hex)	H0000	H1FFF	H3FFF	H7FFF



### Current Range : 4~20mA

Current	4.0mA	8.0mA	12.0mA	20.0mA
Data(Hex)	H0000	H1FFF	H3FFF	H7FFF



## 2.4.4. Current Underrun / Overrun Range

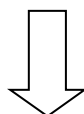
Current	Current Range : 0~20mA		Current Range : 4~20mA	
	<0.0mA	>21.0mA	<3.0mA	>21.0mA
Data(Hex)	-	H7FFF	H8000	H7FFF

# Specification

## 2.5. Mapping Data into the Image Table

### ● Input Module Data

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



### ● 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							
Byte8	Analog Input Ch4 Low byte							
Byte9	Analog Input Ch4 High byte							
Byte10	Analog Input Ch5 Low byte							
Byte11	Analog Input Ch5 High byte							
Byte12	Analog Input Ch6 Low byte							
Byte13	Analog Input Ch6 High byte							
Byte14	Analog Input Ch7 Low byte							
Byte15	Analog Input Ch7 High byte							

## 2.6. Parameter Data

- Valid Parameter length: 4 Bytes
- Parameter Data

Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte0	Voltage Range for Channel 3		Voltage Range for Channel 2		Voltage Range for Channel 1		Voltage Range for Channel 0	
	00 : 0~10Vdc / 01 : 0~5Vdc / 10 : 1~5Vdc (Others : Default (00))							
Byte1	Current Range for Channel 7		Current Range for Channel 6		Current Range for Channel 5		Current Range for Channel 4	
	00 : 0~20mA / 01 : 4~20mA (Others : Default (00))							
Byte2	Filter Time ( H00 : Default Filter(20) / H01 : Fastest ~ / H3E : Slowest / HFF : Filter OFF )							
Byte3	Reserved							