

# **FnIO G – Series :**

## ***GT-3154***

***GT-3154 (4 Channels, Current Input, 0~20mA / 4~20mA, 16bit)***

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**History**

<b>REV.</b>	<b>PAGES</b>	<b>REMARKS</b>	<b>DATE</b>	<b>Editor</b>
1.00		Preliminary	Mar 09, 2018	Soyeong, Park
1.01	5	Power Dissipation	May 17, 2018	Hongseok Kim
1.02	5, 7	Edit Channel Status LED, Resolution in Range	June 14, 2018	Soyeong, Park

# Specification

## 1. ENVIRONMENT SPECIFICATION

<b>Environmental specification</b>	
Operating Temperature	-40 °C ~ 70 °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 Sine Vibration 5 ~ 25Hz : 1.6mm 25 ~ 300Hz : 4g Sweep Rate : 1 Oct/min, 20 cycles Random Vibration 10 ~ 40Hz : 0.0125g <sup>2</sup> /Hz 40 ~ 100Hz : 0.0125 → 0.002g <sup>2</sup> /Hz 100 ~ 500Hz : 0.002g <sup>2</sup> /Hz 500 ~ 2000Hz : 0.002 → 1.3 x 10 <sup>-4</sup> g <sup>2</sup> /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

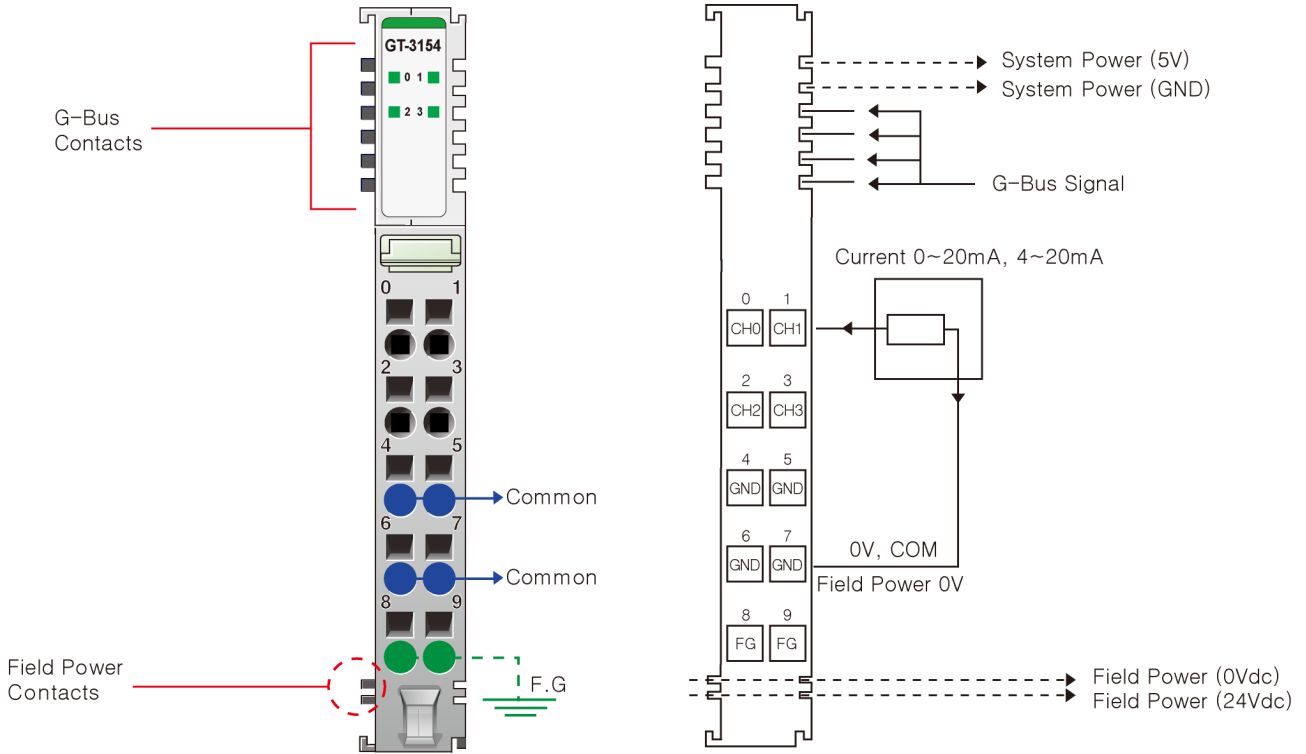
# Specification

## 2. GT-3154 (4 CHANNELS CURRENT INPUT, 0~20mA / 4~20mA, 16BIT)

### 2.1. GT-3154 Specification

Items	Specification
<b>Input Specification</b>	
Inputs per module	4 Channels single ended, non-isolated between channels
Indicators(Logic side )	4 Green Input status
Resolution in Ranges	16 bit (Include Sign) 15 bits : 0.61uA/Bit(0~20mA), 0.49uA/Bit(4~20mA)
Input Range	0~20mA, 4~20mA
Data Format	16bits Integer (2' compliment)
Module Error	±0.1% Full Scale @ 25°C ambient ±0.3% Full Scale @ -40°C, 70°C
Input Impedance	121.5Ω
Diagnostic	Diagnostic Field Power Off : LED Blinking Field Power On : LED Off < 0.5% (Maximum Input Value) Field Power On : LED On > 0.5% (Maximum Input Value) Minimum Range Over : LED Off < 3mA ( 4 ~ 20mA)
Conversion Time	650usec / All channel
Field calibration	Not Required
Common Type	4 Common, Field Power 0V is Common(AGND)
<b>General Specification</b>	
Power dissipation	Max. 25mA @ 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. 20mA@24Vdc
Wiring	I/O Cable Max. 2.0mm <sup>2</sup> (AWG 14)
Weight	58g
Module Size	12mm x 99mm x 70mm
<b>Environment Condition</b>	<b>Refer to 'Environment Specification'</b>

## 2.2. GT-3154 Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Input Channel 0	Input Channel 1	1
2	Input Channel 2	Input Channel 3	3
4	Input Channel Common(AGND)	Input Channel Common(AGND)	5
6	Input Channel Common(AGND)	Input Channel Common(AGND)	7
8	Field Ground	Field Ground	9

## 2.3. GT-3154 LED Indicator

### 2.3.1. LED Indicator



LED No.	LED Function / Description	LED Color
0	INPUT Channel 0	Green
1	INPUT Channel 1	Green
2	INPUT Channel 2	Green
3	INPUT Channel 3	Green

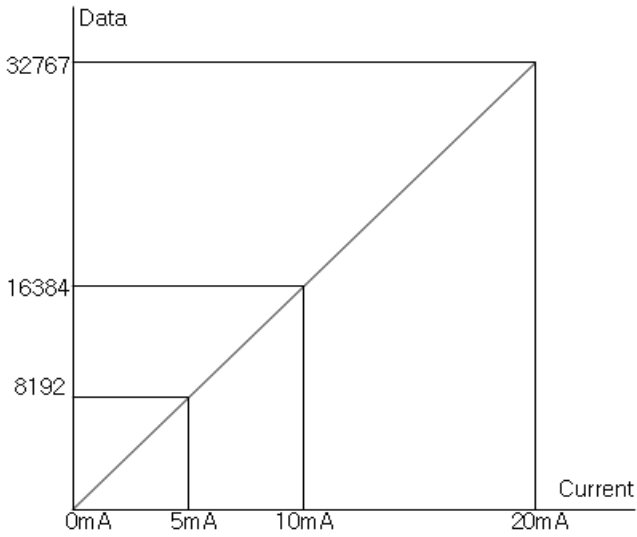
### 2.3.2. Channel Status LED

Status	LED	To indicate
Normal Operation	[LED Off < 0.5% (Maximum Input Value)] - Channel OFF [LED On > 0.5% (Maximum Input Value)] - Channel Green	Normal Operation
Overrun/Underrun	[LED Off < 3mA (Minimum Range Over , 4 ~ 20mA)] - Channel OFF	range Check
Field Power Error	All Channel Repeat the Green and OFF	Field Power is unconnected

### 2.3.3. Data value / Current

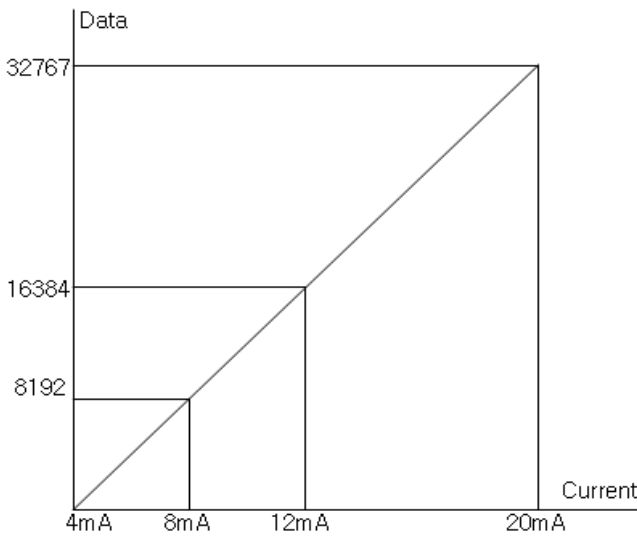
#### Current Range : 0~20mA

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

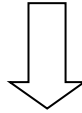




## 2.4. Mapping data into the image table

- **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
Byte 0	Analog Input Ch0 Low byte							
Byte 1	Analog Input Ch0 High byte							
Byte 2	Analog Input Ch1 Low byte							
Byte 3	Analog Input Ch1 High byte							
Byte 4	Analog Input Ch2 Low byte							
Byte 5	Analog Input Ch2 High byte							
Byte 6	Analog Input Ch3 Low byte							
Byte 7	Analog Input Ch3 High byte							

## 2.5. Parameter Data

- **Valid Parameter length: 6 Bytes**
- **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0	Current Range for Channel 0 (H00: 0~20mA, H01: 4~20mA)							
Byte 1	Current Range for Channel 1 (H00: 0~20mA, H01: 4~20mA)							
Byte 2	Current Range for Channel 2 (H00: 0~20mA, H01: 4~20mA)							
Byte 3	Current Range for Channel 3 (H00: 0~20mA, H01: 4~20mA)							
Byte 4	Filter Time ( H00: Default Filter(=20) / H01: Fastest ~ / H62: Slowest )							
Byte 5	Not used(=00)							