
FnIO G-Series

GT-3918, GT-3928

GT-3918 (8 Channels 18pt RTB, Differential Current Input)

0~20mA / 4~20mA / -20~20mA, 12bits

GT-3928 (8 Channels 18pt RTB, Differential Voltage Input)

0~10V / 0~5V / -10~10V / -5~5V, 12bits

History

REV.	PAGES	REMARKS	DATE	Editor
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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 Sine Vibration <ul style="list-style-type: none"> - 5 ~ 25Hz : ±1.6mm - 25 ~ 300Hz : 4g - Sweep Rate : 1 Oct/min, 20 cycles Random Vibration <ul style="list-style-type: none"> - 10 ~ 40 Hz : 0.0125 g²/Hz - 40 ~ 100 Hz : 0.0125 → 0.002 g²/Hz - 100 ~ 500 Hz : 0.002 g²/Hz - 500 ~ 2000 Hz : 0.002 → 1.3 x 10⁻⁴g²/Hz - Test time : 1hrs for each test
EMC Resistance	EN 61000-6-2 : 2005 EN 61000-6-4 : 2007+A1:2011
Installation Pos. / Protect. Class	Variable/IP20
Product Certifications	CE, UL

Specification

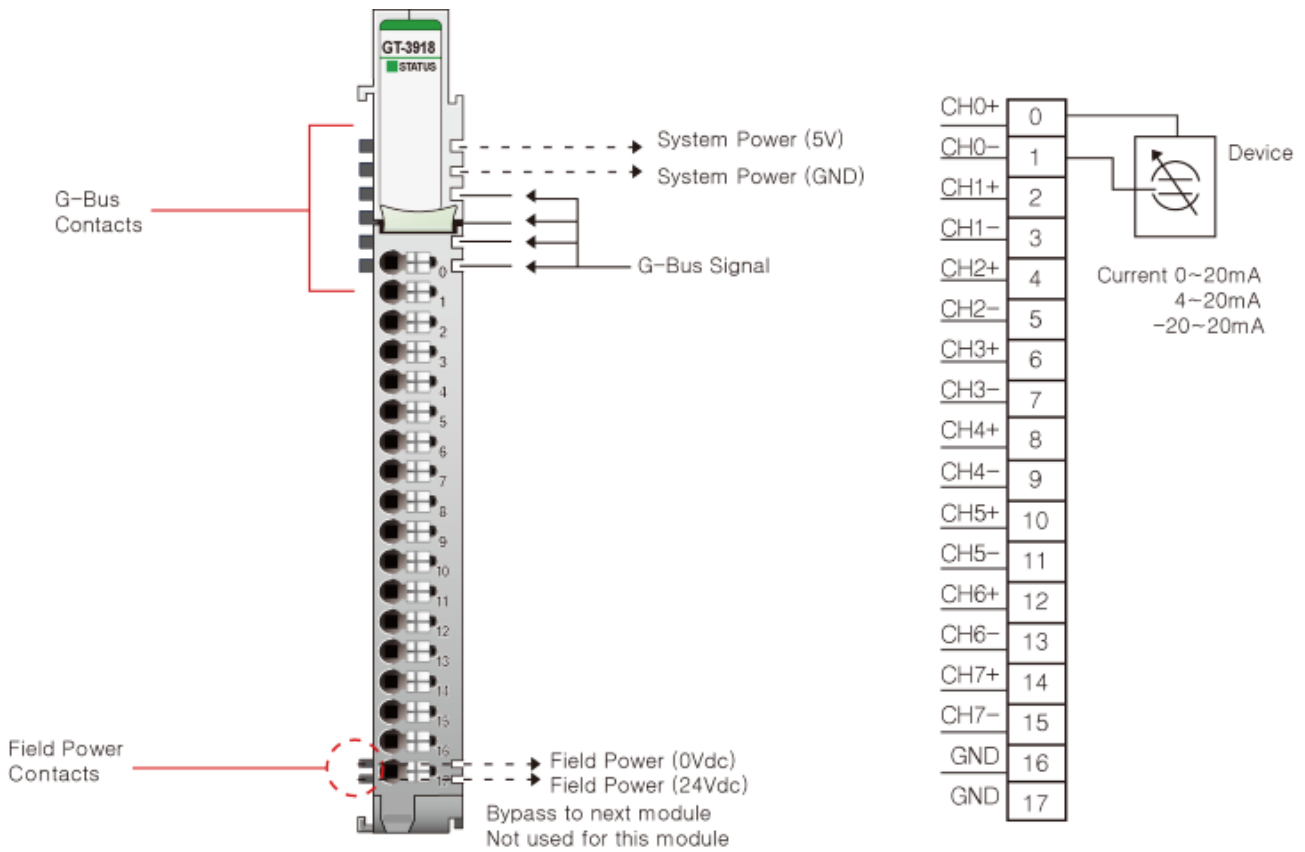
2. GT-3918 (8 Channels, Differential Current Input, 0~20mA / 4~20mA / -20~20mA, 12bits)

2.1. GT-3918 Specification

Items	Specification
Input Specification	
Inputs Per Module	8 Channels Differential, Non-isolated Between Channels
Indicators	1 Green G-Bus status LED
Resolution in Ranges	12 bits : 4.88uA/bit(0~20mA) 12 bits : 3.91uA/bit(4~20mA) 12 bits : 9.77uA/bit(-20~20mA)
Input Range	0~20mA, 4~20mA, -20~20mA
Data Format	16bits Integer (2' compliment)
Module Error	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ -40°C, 60°C
Input Impedance	121.5Ω
Conversion Time	Max. 2.4msec (All channel)
Calibration	Not Required
Common Type	2 Common, Field Power 0V is Common(AGND)
General Specification	
Power Dissipation	Max. 200mA @ 5.0Vdc
Isolation	I/O to Logic : Photocoupler Isolation Field power : Not Connected
Field Power	Not used, Field power bypass to next expansion module
Wiring	I/O Cable Max. 2.0mm ² (AWG 14)
Weight	63g
Module Size	12mm x 109mm x 70mm
Environment Condition	Refer to 'Environment Specification'

Specification

2.2. GT-3918 Wiring Diagram



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

2.3. GT-3918 LED Indicator

2.3.1. LED Indicator



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

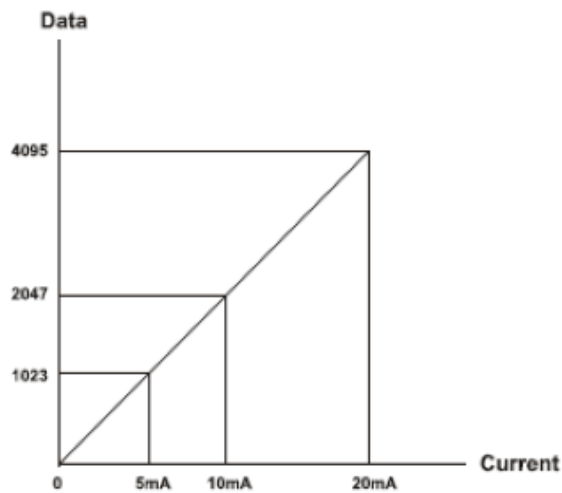
2.3.2. Channel Status LED

Status	LED	To indicate
G-Bus Status	Off Green	Disconnection Connection

2.4. Data Value / Current

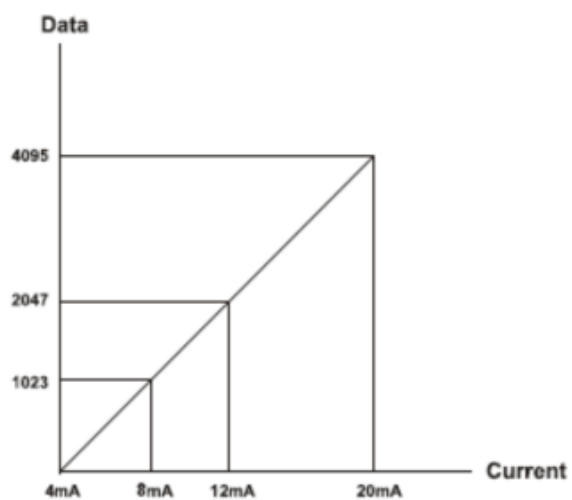
Current Range : 0~20mA

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



Current Range : 4~20mA

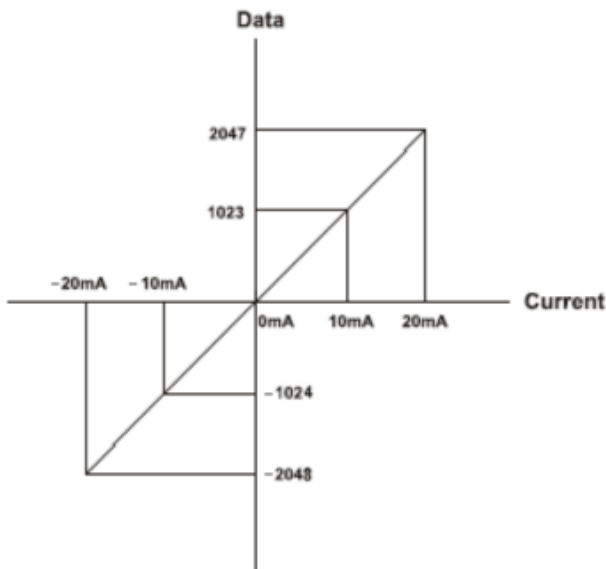
Current	4.0mA	8.0mA	12.0mA	20.0mA
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Specification

Current Range : -20~20mA

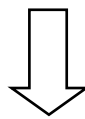
Current	-20.0mA	-10.0mA	0mA	+10.0mA	+20.mA
Data(Hex)	HF800	HFC00	H0000	H03FF	H07FF



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
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							
Byte 8	Analog Input Ch4 Low byte							
Byte 9	Analog Input Ch4 High byte							
Byte 10	Analog Input Ch5 Low byte							
Byte 11	Analog Input Ch5 High byte							
Byte 12	Analog Input Ch6 Low byte							
Byte 13	Analog Input Ch6 High byte							
Byte 14	Analog Input Ch7 Low byte							
Byte 15	Analog Input Ch7 High byte							

Specification

3. GT-3928 (8 Channels, Differential Voltage Input, 0~10V / 0~5V / -10~10V / -5~5V, 12bits)

3.1. GT-3928 Specification

Items	Specification
Input Specification	
Inputs Per Module	8 Channels Differential, Non-isolated Between Channels
Indicators	1 Green G-Bus status LED
Resolution in Ranges	12 bits : 2.44mV/Bit(0~10V) 12 bits : 1.22mV/Bit(0~5V) 12 bits : 4.88mV/Bit(-10~10V) 12 bits : 2.44mV/Bit(-5~5V)
Input Range	0~10Vdc, 0~5Vdc, -10~10Vdc, -5~5Vdc
Data Format	16bits Integer (2' compliment)
Module Error	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ -40°C, 60°C
Input Impedance	667kΩ
Conversion Time	Max. 2.2msec (All channel)
Calibration	Not Required
Common Type	2 Common, Field Power 0V is Common(AGND)
General Specification	
Power Dissipation	Max. 200mA @ 5.0Vdc
Isolation	I/O to Logic : Photocoupler Isolation Field power : Not Connected
Field Power	Not used Field power bypass to next expansion module
Wiring	I/O Cable Max. 2.0mm ² (AWG 14)
Weight	63g
Module Size	12mm x 109mm x 70mm
Environment Condition	Refer to 'Environment Specification'

3.3. GT-3928 LED Indicator

3.3.1. LED Indicator



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

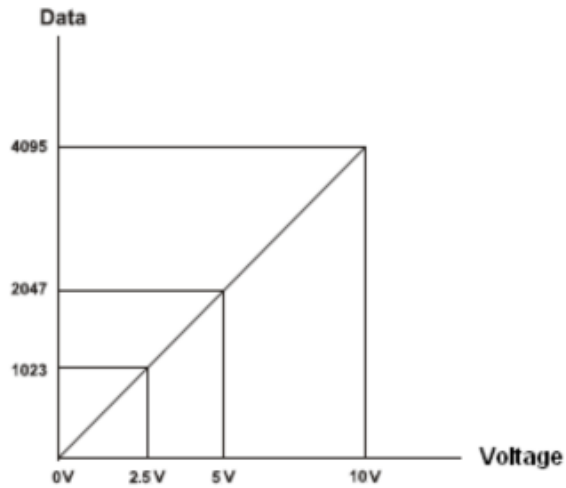
3.3.2. Channel Status LED

Status	LED	To indicate
G-Bus Status	Off Green	Disconnection Connection

3.4. Data Value / Voltage

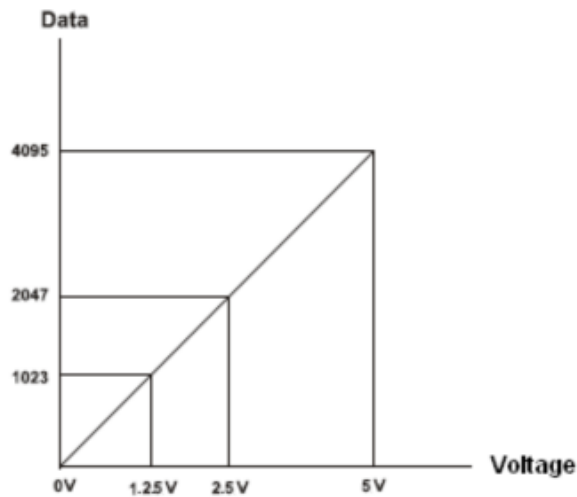
Voltage Range : 0~10V

Voltage	0V	2.5V	5.0V	10.0V
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Voltage Range : 0~5V

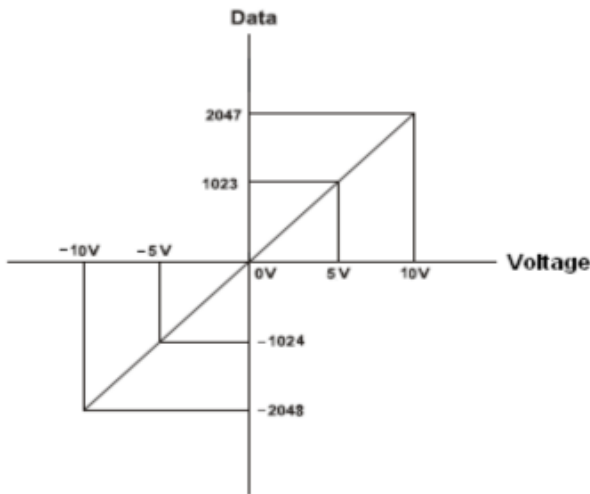
Current	0V	1.25V	2.5V	5.0V
Data(Hex)	H0000	H03FF	H07FF	H0FFF



Voltage Range : -10~10V

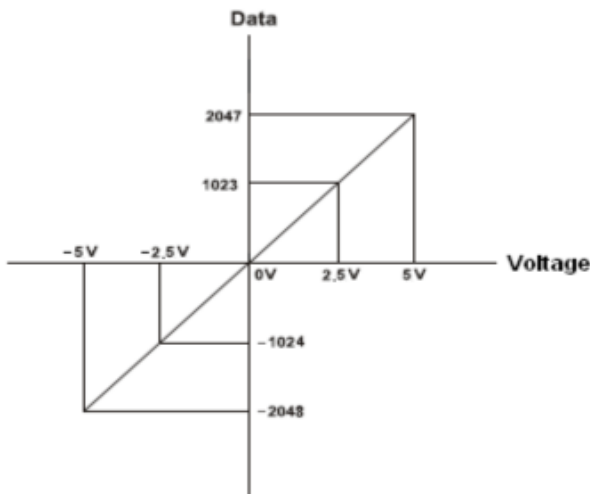
Current	-10V	-5V	0V	5.0V	10.0V
Data(Hex)	HF800	HFC00	H0000	H03FF	H07FF

Specification



Voltage Range : -5~5V

Current	-5V	-2.5V	0V	2.5V	5.0V
Data(Hex)	HF800	HFC00	H0000	H03FF	H07FF

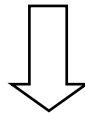


3.5. Mapping Data into the Image Table

- Input Module Data

Specification

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
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							
Byte 8	Analog Input Ch4 Low byte							
Byte 9	Analog Input Ch4 High byte							
Byte 10	Analog Input Ch5 Low byte							
Byte 11	Analog Input Ch5 High byte							
Byte 12	Analog Input Ch6 Low byte							
Byte 13	Analog Input Ch6 High byte							
Byte 14	Analog Input Ch7 Low byte							
Byte 15	Analog Input Ch7 High byte							

4. Input Range Setting & Conversion Time Setting

4.1. GT-3918

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Ch#0 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
1	Ch#1 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
2	Ch#2 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
3	Ch#3 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
4	Ch#4 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
5	Ch#5 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
6	Ch#6 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
7	Ch#7 Command(H00 : 0~20mA, H01 : 4~20mA, H02 : -20~20mA)							
8	Filter Time(H00 : Default Filter(=20), H01 : Fastest ~ H62 : Slowest)							
9	Reserve							

* ID_PARAMETER (10Byte)

4.2. GT-3928

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Ch#0 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
1	Ch#1 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
2	Ch#2 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
3	Ch#3 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
4	Ch#4 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
5	Ch#5 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
6	Ch#6 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
7	Ch#7 Command(H00 : 0~10V, H01 : 0~5V, H02 : -10~10V, H03 : -5~5V)							
8	Filter Time(H00 : Default Filter(=20), H01 : Fastest ~ H62 : Slowest)							
9	Reserve							

* ID_PARAMETER (10Byte)