
FnIO G – Series :

GT-1318

***GT-1318 (8 Points, Sink Input with Pulse Catch, Counter Input,
Encoder Input, Period Measurement, 24Vdc, 3-wire)***

Specification

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History

Rev	Pages	Remarks	Date	Editor
1.00			2025/02/26	Soyeong, Park

Specification

1. ENVIRONMENT SPECIFICATION

Environmental specification	
Operation Temperature	-40°C ~60°C
UL Temperature	-20°C ~60°C
Storage 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

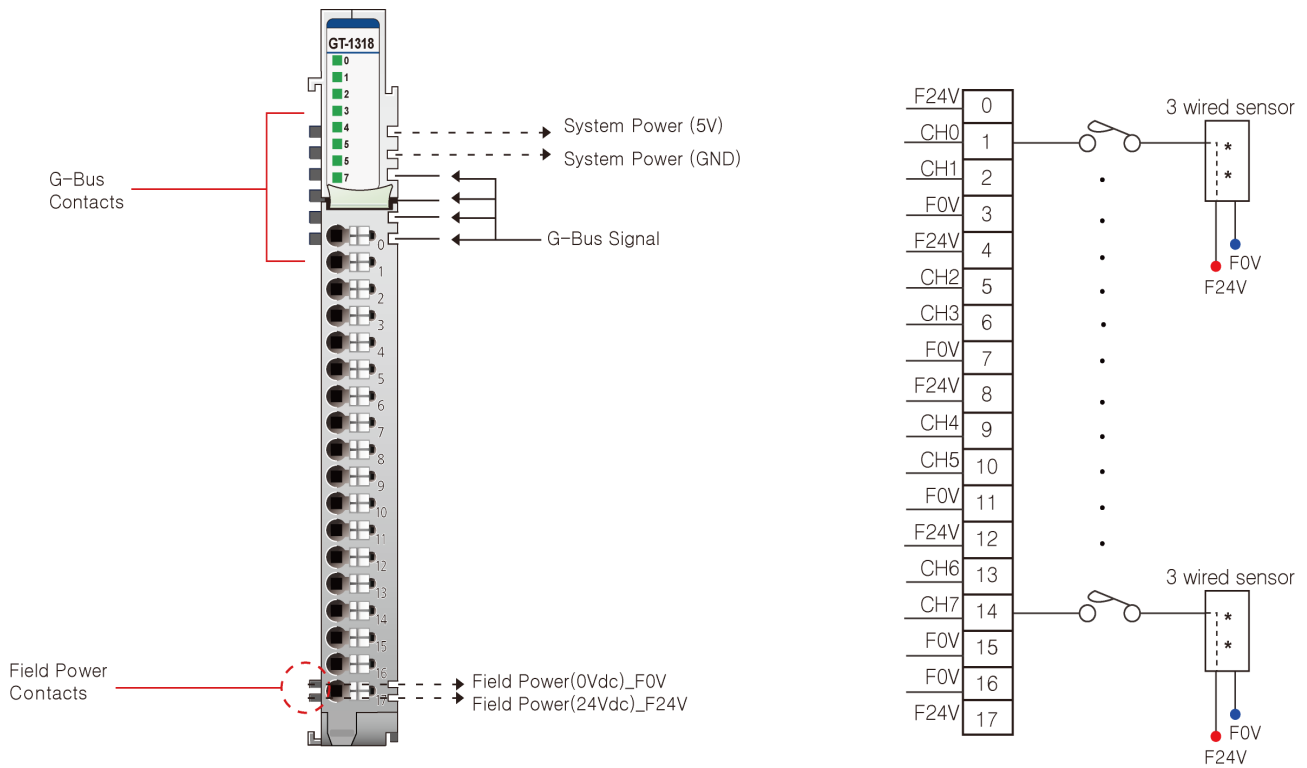
Specification

2. GT-1318 (8 Points, Sink Input with Pulse Catch, Counter Input, Encoder Input, Period Measurement)

2.1. GT-1318 Specification

Items	Specification			
Digital Input specification				
Inputs per module	8 points sink type			
Indicators	8 green input status			
ON-state voltage	24Vdc nominal 15 ~ 28.8Vdc @ 60°C			
ON-state current	2.7mA @ 24Vdc 3.3mA @ 28.8Vdc			
OFF-state voltage	12.0Vdc @ 25°C			
Input signal delay	OFF to ON : Max. 0.15ms ON to OFF : Max. 0.15ms			
Input filter	Adjustable, up to 10ms			
Nominal input impedance	8.4K ohm typical			
Common type	8 points / 5COM(Sink)			
Multi-Function specification				
Function	PulseCatch	Counter Input	2-Input Mode (Encoder/PUL+DIR)	Period Measurement
Number of channel	4 points sink type	4 channels sink type	2 channels sink type	2 channels sink type
Indicators	4 green terminal input			2 green terminal input
Input voltage	24Vdc nominal (Max 28.8Vdc)			
Input Frequency (Pulse Width)	30kHz (Min.33us) @24Vdc 10kHz (Min.100us) @15Vdc	0~10kHz	0~5kHz	1Hz~2kHz (1s~0.5ms)
Counter size	---	16bit-wide/channel (16bit-wide/channel)		---
General specification				
Power dissipation	Max. 40mA @ 5Vdc			
Isolation	I/O to Logic : photocoupler isolation			
UL field power	Supply voltage : 24Vdc nominal, Class 2			
Field power	Supply voltage : 24Vdc nominal Voltage range : 15~28.8Vdc Power dissipation: 0mA @ 24Vdc			
Wiring	I/O cable max. 0.823mm²(AWG 18)			
Weight	63g			
Module size	12mm x 109mm x 70mm			
Environment condition	Refer to ‘1. Environment specification’			

2.2. GT-1318 Wiring Diagram



Pin No.	Signal description
0	Field Power 24V
1	Input Channel 0
2	Input Channel 1
3	Common (Field Power 0V)
4	Field Power 24V
5	Input Channel 2
6	Input Channel 3
7	Common (Field Power 0V)
8	Field Power 24V
9	Input Channel 4
10	Input Channel 5
11	Common (Field Power 0V)
12	Field Power 24V
13	Input Channel 6
14	Input Channel 7
15	Common (Field Power 0V)
16	Common (Field Power 0V)
17	Field Power 24V

Specification

2.3. GT-1318 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
4	INPUT Channel 4	Green
5	INPUT Channel 5	Green
6	INPUT Channel 6	Green
7	INPUT Channel 7	Green

2.3.2. Channel Status LED

- DI Mode / Pulse Catch Mode

Status	LED	To indicate
No Signal	Off	No Input Signal
On Signal	Green	Input Signal detected (Pulse Signal Caught)

- Counter Mode / Encoder Mode

Status	LED	To indicate
No Signal	Off	No Input Signal
On Signal	Green	Input Signal detected

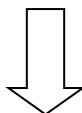
* Period Measurement Mode does not support LED display.

Specification

2.4. Mapping data into the image table

● Input Module Data (Byte 0)

D7	D6	D5	D4	D3	D2	D1	D0
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● Input Image Value

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	Reserved							
Byte2	Counter Value CH#0 L							
Byte3	Counter Value CH#0 H							
Byte4	Counter Value CH#1 L							
Byte5	Counter Value CH#1 H							
Byte6	Counter Value CH#2 L							
Byte7	Counter Value CH#2 H							
Byte8	Counter Value CH#3 L							
Byte9	Counter Value CH#3 H							

- In Digital Input Mode

: D0~D7 = Digital Input#0~7

- In PulseCatch Mode

: D0~D3 = PulseCatch#0~3 / D4~D7 = Digital Input#4~7

- Each Counter channel has 2-byte Input. (16bit-wide)

- Counter value represents counter, pulse period (0.1msec).

● Output Image Value

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	PR	Reserved			Operating Mode			
Byte1	CR 3	CR 2	CR 1	CR 0	CS 3	CS 2	CS 1	CS 0

- PR : Pulse Catch Reset for D0~D3

- CR : Counter Reset for Ch#0, Ch#1, Ch#2, Ch#3

- CS : Counter Stop for Ch#0, Ch#1, Ch#2, Ch#3

*** Operating Mode**

Value	Mode
B`0000 (0x0)	Digital Input Mode (Default)
B`0001 (0x1)	Pulse Catch Mode
B`0010 (0x2)	Counter Input UP Mode (1-Input)
B`0011 (0x3)	Counter Input DOWN Mode (1-Input)
B`0100 (0x4)	Counter+DIR Mode (2-Input)
B`0101 (0x5)	Encoder Input Mode (2x)
B`0110 (0x6)	Encoder Input Mode (4x)
B`0111 (0x7)	Pulse Period Measurement Mode
Others	Digital Input Mode (Default)

■ Digital Input Mode**Input Image Data → Input Byte0**

Input Channel	Function
0	Digital Input 0
1	Digital Input 1
2	Digital Input 2
3	Digital Input 3
4	Digital Input 4
5	Digital Input 5
6	Digital Input 6
7	Digital Input 7

■ Pulse Catch Mode**Input Image Data → Input Byte0**

Input Channel	Function
0	Pulse Catch Input 0
1	Pulse Catch Input 1
2	Pulse Catch Input 2
3	Pulse Catch Input 3
4	Digital Input 4
5	Digital Input 5
6	Digital Input 6
7	Digital Input 7

Specification

■ Count Input Mode (1-Input)

Input Image Data → CH0 = Input Byte2,3 / CH1 = Input Byte4,5 / CH2 = Input Byte 6,7 / CH3 = Input Byte 8,9

Input Channel	Function
0	Count Input 0
1	Count Input 1
2	Count Input 2
3	Count Input 3
4	---
5	---
6	---
7	---

■ Count+DIR Input Mode (2-Input)

Input Image Data → CH0 = Input Byte2,3 / CH1 = Input Byte 6,7

Input Channel	Function
0	Count Input 0
1	Direction 0
2	Count Input 1
3	Direction 1
4	---
5	---
6	---
7	---

■ Encoder Input Mode (2x / 4x)

Input Image Data → CH0 = Input Byte2,3 / CH1 = Input Byte 6,7

Input Channel	Function
0	Encoder Input 0 Aph
1	Encoder Input 0 Bph
2	Encoder Input 1 Aph
3	Encoder Input 1 Bph
4	---
5	---
6	---
7	---

Specification

■ Pulse Period Mode

Input Image Data → CH0 = Input Byte2,3 / CH1 = Input Byte 6,7

Input Channel	Function
0	Pulse Period Input 0
1	---
2	Pulse Period Input 1
3	---
4	---
5	---
6	---
7	---

2.5. Parameter Data

- Valid Parameter length: 2 Bytes
- Parameter Data

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Input Filter value : H00~C8 (Dec.00~200) (H00 : Default Filter(02) / H01 : Fastest ~ / HC8 : Slowest / HFF : Filter OFF)							
Byte1	Reserved							