

# **FnIO G – Series :**

## ***GT-5352***

***GT-5352 (2Ch, Synchronous Serial Interface Module)***

# Specification

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# Specification

## History

REV.	PAGES	REMARKS	DATE	Editor
Rev 1.00	10	PRELIMINARY	Nov,11, 2016	Jun, seokhyun

# 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	Sine Vibration (Based on IEC 60068-2-6) 5 ~ 25Hz : ±1.6mm 25 ~ 300Hz : 4g Sweep Rate : 1 Oct/min, 20 Sweeps Random Vibration (Based on IEC 60068-2-64) 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	EN 61000-6-2 : 2005 EN 61000-6-4 : 2007+A1:2011
Installation Pos. / Protect. Class	Variable/IP20
Product Certifications	CE, UL

# Specification

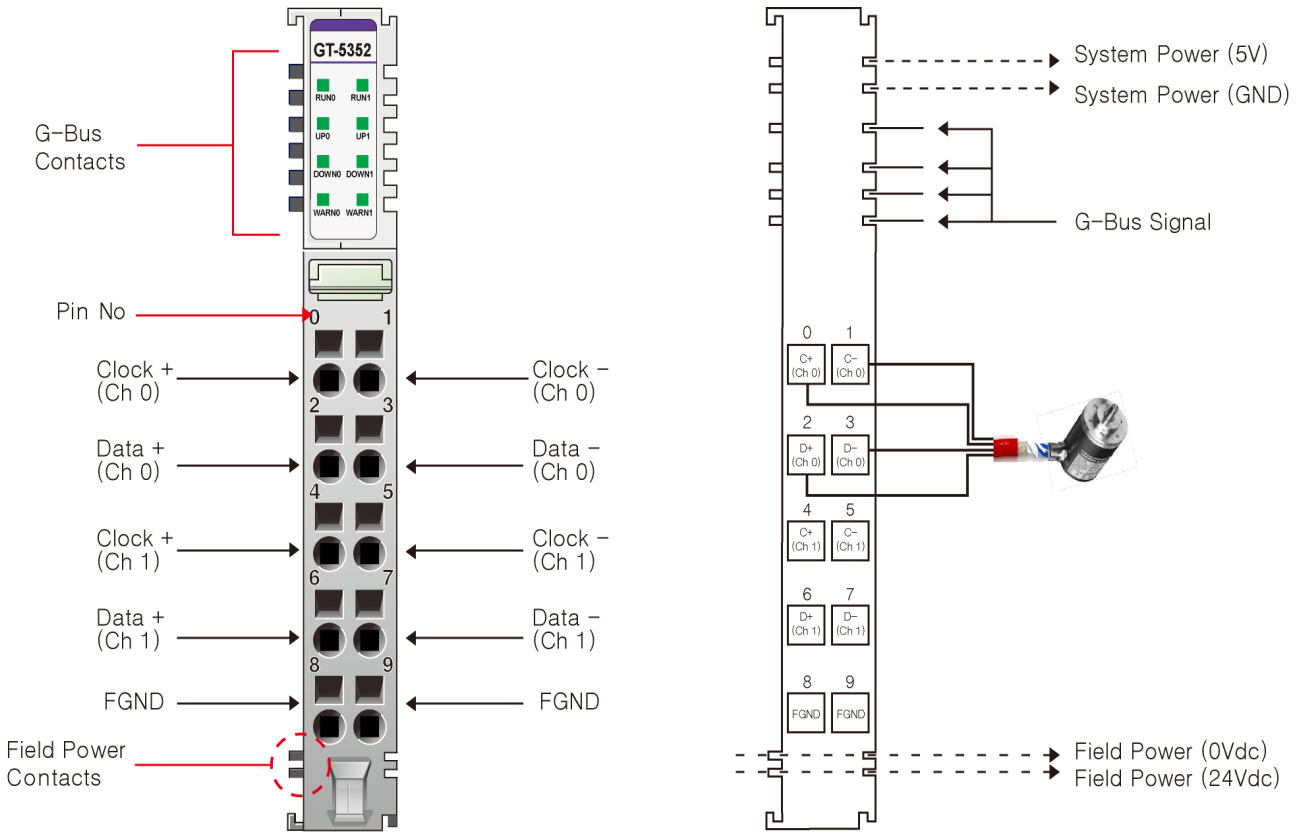
## 2. GT-5352 (2 Channels Synchronous Serial Interface Module)

### 2.1. GT-5352 Specification

Items	Specification
<b>Input Specification</b>	
Number of Channel	2 Channel - Synchronous Serial Interface Module
Indicators	8 Green LEDs RUN0, RUN1, UP0, UP1, DOWN0, DOWN1, WARN0, WARN1
SSI Data Rate	Channel 0, 1 – 125K, 250K, 500K, 1M, 2M(default 250K)
SSI Data Width	Max. 30bit
SSI Data Delay Time	100usec ~ 10msec(default 200us)
SSI Output	C+, C- : Ch0,1 RS422 Differential Output
SSI Input	D+, D- : Ch0,1 RS422 Differential Input
SSI Data Code Type	Gray Code or Natural Binary
Receiver Common Mode Input Voltage (Data Input Voltage)	-7~7Vdc
Output Voltage (Clock Output Voltage)	-0.5~4.3Vdc
Special features	Adjustable baud rate, delay and data length
<b>General specification</b>	
Power Dissipation	60mA maximum @ 5.0Vdc
Isolation	I/O to Logic : Photo coupler isolation I/O to Field Power : Non-Isolation
Field Power	Supply voltage : 24Vdc nominal Voltage range : 70°C 18~26.4Vdc 60°C 18~32Vdc Power Dissipation : Max. 30mA @ 24Vdc
Wiring	I/O Cable Max. 2.0mm <sup>2</sup> (AWG 14)
Weight	60g
Module Size	12mm x 90.5mm x 65mm
<b>Environment Condition</b>	<b>Refer to '1. Environment Specification'</b>

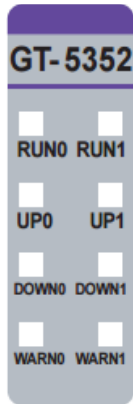
## 2.2. GT-5352 Wiring Diagram

### 2.2.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Pulse Output + Ch# 0	Pulse Output - Ch# 0	1
2	Input Data + Ch# 0	Input Data - Ch# 0	3
4	Pulse Output + Ch# 1	Pulse Output - Ch# 1	5
6	Input Data + Ch# 1	Input Data - Ch# 1	7
8	Field Ground	Field Ground	9

## 2.3. GT-5352 LED Indicator



LED No.	LED Function / Description	LED Color
RUN0	Run state Ch#0	Green
RUN1	Run state Ch#1	Green
UP0	Encoder is rotating counter clockwise. Ch#0	Green
UP1	Encoder is rotating counter clockwise. Ch#1	Green
DOWN0	Encoder is rotating clockwise. Ch#0	Green
DOWN1	Encoder is rotating clockwise. Ch#1	Green
WARN0	Warning state (WFP, WSSIF, WSSID) Ch#0	Green
WARN1	Warning state (WFP, WSSIF, WSSID) Ch#1	Green

## 2.4. GT-5352 IO Input Image Data – 10byte

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	SSI Data LL Ch#0							
1	SSI Data LH Ch#0							
2	SSI Data HL Ch#0							
3	SSI Data HH Ch#0							
4	SSI Data LL Ch#1							
5	SSI Data LH Ch#1							
6	SSI Data HL Ch#1							
7	SSI Data HH Ch#1							
8	RUN Ch#0	WARN Ch#0	DEC Ch#0	INC Ch#0	--	WFP Ch#0	WSSIF Ch#0	WSSID Ch#0
9	RUN Ch#1	WARN Ch#1	DEC Ch#1	INC Ch#1	--	WFP Ch#1	WSSIF Ch#1	WSSID Ch#1

- SSI Data word is a 32bit-wide data. Ch#0,1
- RUN : SSI Clock Output Enabled Flag
- WARN : Warning. Any warning has occurred, WFP, WSSIF or WSSID.
- DEC : SSI Data Decrement. It was set, it lasts until INC.
- INC : SSI Data Increment. It was set, it lasts DEC.
- WFP : Warning of Field Power (SSI Power).
- WSSIF : Warning of SSI Frame. The last bit of frame data is not trailed with 0.
- WSSID : Warning of SSI Data. SSI Data is 0 during gap of frames. Generally when invalid wiring or cross wiring.

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## 2.5. GT-5352 IO Output Image Data – 4byte

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	RUN Ch#0	GRAY Ch#0	--	SSI Data Length (0~30) Ch#0				
1	SSI Data Delay Time Selection Ch#0				SSI Data Rate Selection Ch#0			
2	RUN Ch#1	GRAY Ch#1	--	SSI Data Length (0~30) Ch#1				
3	SSI Data Delay Time Selection Ch#1				SSI Data Rate Selection Ch#1			

- RUN : SSI Clock Output Command, 1:Run, 0:Stop

- GRAY : Conversion Binary to Gray code. 1:Gray, 0:Binary (It has effect on Current SSI Data.)

- SSI Data Length : Sensor Resolution Bit + Sensor Number of turn Bit.

Example) Sensor Resolution (Step/Revolution)=8192 => 13bit, Sensor Number of turn=4092 => 12bit

SSI Data Length must be 25 (13bit + 12bit).

### ■ SSI Data Rate Selection Ch#0, Ch#1

Value	Description	
	Ch#0	Ch#1
0(B`0000)	250Kbps (Default)	
1(B`0001)	125Kbps	
2(B`0010)	250Kbps	
3(B`0011)	500Kbps	
4(B`0100)	1Mbps	
5(B`0101)	2Mbps	

### ■ SSI Data Delay Time Selection

Value	Description	Value	Description
0(B`0000)	200usec (Default)	8(B`1000)	800usec
1(B`0001)	100usec	9(B`1001)	900usec
2(B`0010)	200usec	10(B`1010)	1msec
3(B`0011)	300usec	11(B`1011)	2msec
4(B`0100)	400usec	12(B`1100)	3msec
5(B`0101)	500usec	13(B`1101)	4msec
6(B`0110)	600usec	14(B`1110)	5msec
7(B`0111)	700usec	15(B`1111)	10msec



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## 2.6. GT-5352 Configuration Parameter Data – 8byte

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0								Reserved
1								Reserved
2								Reserved
3								Reserved
4								Reserved
5								Reserved
6								Reserved
7								Reserved