Digital Output Module

GT-2xxx

User Manual

Version 1.02

2020 CREVIS Co.,Ltd

DOCUMENT CHANGE SUMMARY				
REV	PAGE	REMARKS	DATE	EDITOR
1.00	New Document		18/07/30	Rachel
1.01	84 - 108	Added new products ‘GT-2418, 2428, 2738, 2768, 2788’	20/08/05	Rachel
1.02	13, 18, 23, 28, 33, 38, 60, 85, 90	Channel Status LED	20/09/10	Rachel

Table of Contents

1. Important Notes

Solid state equipment has operational characteristics differing from those of electromechanical equipment.

Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls describes some important differences between solid state equipment and hard-wired electromechanical devices.

Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will CREVIS be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, CREVIS cannot assume responsibility or liability for actual use based on the examples and diagrams.

Warning!

✓ **If you don't follow the directions, it could cause a personal injury, damage to the equipment or explosion**

- Do not assemble the products and wire with power applied to the system. Else it may cause an electric arc, which can result into unexpected and potentially dangerous action by field devices. Arching is explosion risk in hazardous locations. Be sure that the area is non-hazardous or remove system power appropriately before assembling or wiring the modules.
- Do not touch any terminal blocks or IO modules when system is running. Else it may cause the unit to an electric shock or malfunction.
- Keep away from the strange metallic materials not related to the unit and wiring works should be controlled by the electric expert engineer. Else it may cause the unit to a fire, electric shock or malfunction.

Caution!

✓ **If you disobey the instructions, there may be possibility of personal injury, damage to equipment or explosion. Please follow below Instructions.**

- Check the rated voltage and terminal array before wiring. Avoid the circumstances over 50℃ of temperature. Avoid placing it directly in the sunlight.
- Avoid the place under circumstances over 85% of humidity.
- Do not place Modules near by the inflammable material. Else it may cause a fire.
- Do not permit any vibration approaching it directly.
- Go through module specification carefully, ensure inputs, output connections are made with the specifications. Use standard cables for wiring.
- Use Product under pollution degree 2 environment.

1.1. Safety Instruction

1.1.1. Symbols

DANGER 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury, property damage, or economic loss. Attentions help you to identity a hazard, avoid a hazard, and recognize the consequences

1.1.2. Safety Notes

DANGER 	The modules are equipped with electronic components that may be destroyed by electrostatic discharge. When handling the modules, ensure that the environment (persons, workplace and packing) is well grounded. Avoid touching conductive components, GBUS Pin.

1.1.3. Certification

c-UL-us UL Listed Industrial Control Equipment, certified for U.S. and Canada

See UL File E235505

CE Certificate

EN 61000-6-2; Industrial Immunity

EN 61000-6-4; Industrial Emissions

Reach, RoHS (EU, CHINA)

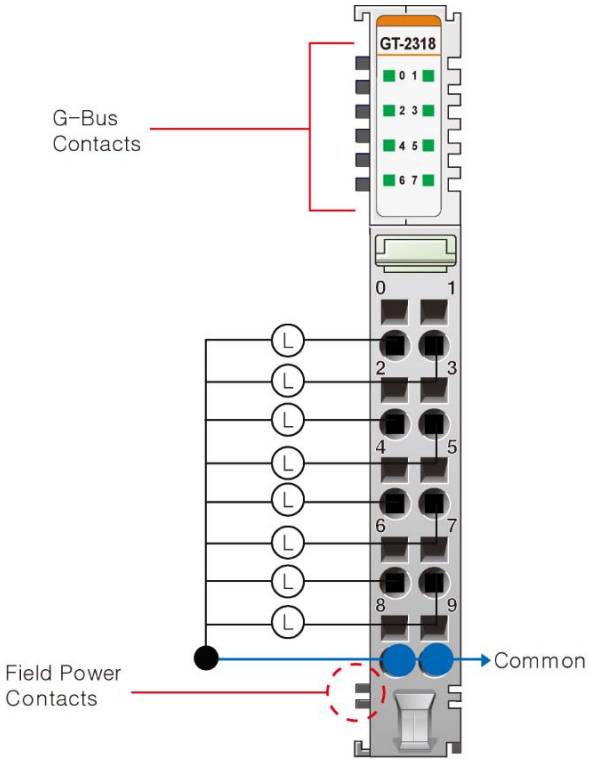
2. Digital Output Module List

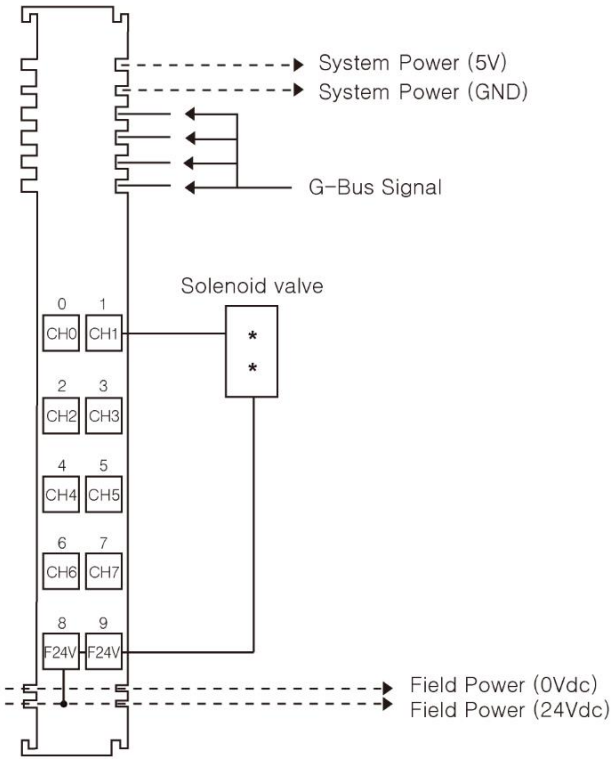
GT-Number	Description	ID	Production Status
GT-2318	Digital Output, 8 Points, Sink(Negative), 24VDC, 0.5A, 10 RTB	2318	Active
GT-2328	Digital Output, 8 Points, Source(Positive), 24VDC, 0.5A, 10 RTB	2328	Active
GT-221F	Digital Output, 16 Points, Sink(Negative), 24VDC, 0.3A, 20P Connector	221F	Active
GT-222F	Digital Output, 16 Points, Source(Positive), 24VDC, 0.3A, 20P Connector	222F	Active
GT-225F	Digital Output 16POINTS, SINK, 18RTB	225F	Active
GT-226F	Digital Output 16POINTS, SOURCE, 18RTB	226F	Active
GT-22BA	Digital Output, 32 Points, Sink(Negative), 24VDC, 0.3A, 40P Connector	22BA	Active
GT-22CA	Digital Output, 32 Points, Source(Positive), 24VDC, 0.3A, 40P Connector	22CA	Active
GT-2618	Digital Output, 8 Points, Sink(Negative), 24VDC, 2A, 10RTB	2618	Active
GT-2628	Digital Output, 8 Points, Source(Positive), 24VDC, 2A, 10RTB	2628	Active
GT-2734	Digital Output, 4 Points, MOS Relay(Solid State Relay), 240V (AC/DC), 0.5A, 10 RTB	2734	Active
GT-2744	Digital Output, 4 Points, Relay, 24VDC/ 220VAC, 2.0A, 10 RTB	2744	Active
GT-2764	Digital Output, 4 Points, MOS Relay(Solid State Relay), 24V (AC/DC), 2.0A, 10 RTB	2764	Active
GT-2784	Digital Output, 4 Points, MOS Relay(Solid State Relay), 110V(AC/DC), 1A, 10 RTB	2748	Active
GT-2418	Digital Output, 8 Channels, Sink Output With Diagnostics, 24Vdc/0.5A	2418	Active
GT-2428	Digital Output, 8 Channels, Source Output With Diagnostics, 24Vdc/0.5A	2428	Active
GT-2738	Digital Output, 8 Points, Relay Output Terminal, 240Vdc/ac, 0.5A	2738	Active
GT-2768	Digital Output, 8 Points, Relay Output Terminal, 24Vdc/ac, 2A	2768	Active
GT-2788	Digital Output, 8 Points, Relay Output Terminal, 110Vdc/ac, 1A	2788	Active

3. Specification

3.1. GT-2318

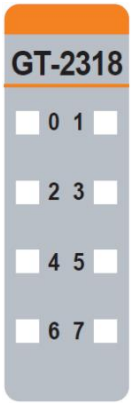
3.1.1. Wiring Diagram





Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Common(Field Power 24V)	Common(Field Power 24V)	9

3.1.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.1.3. Channel Status LED

Status	LED is	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.1.4. Environment Specification

Environmental specification	
Operating Temperature	-40℃~70℃
UL Temperature	-20℃~60℃
Storage Temperature	-40℃~85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL, FCC

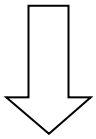
3.1.5. Specification

GT-2318	Specification
Output specification	
Outputs per module	8 Points, Sink type
Indicators	8 Green Output status
Output Voltage Range	24Vdc nominal 15Vdc ~ 30Vdc @ 70℃
ON-state voltage drop	0.3 Vdc @ 25℃ 0.5 Vdc @ 70℃
ON-State Min. Current	Min, 1mA
OFF-State Leakage current	Max. 25uA
Output Signal Delay	OFF to ON : 0.3ms maximum ON to OFF : 0.3ms maximum
Output Current Rating	Max. 0.5A per channel / Max. 4A per unit
Protection	Over Current limit: Min. 3.5A@ 25℃per each channels Thermal Shutdown : Min 3A@ 25℃per each channels Short circuit protection
COMMON Type	8 points / 2Com
General Specification	
Power dissipation	50mA maximum @ 5Vdc
Isolation	I/O to Logic : photocoupler isolation Field power : Non-isolation
UL field power	Supply voltage : 24 Vdc nominal, Class 2
Field Power	Supply voltage : 24Vdc nominal Voltage range : 15V to 30V Power dissipation: 5mA @24Vdc
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	57g
Module Size	12mm x 99mm x 70mm

3.1.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0

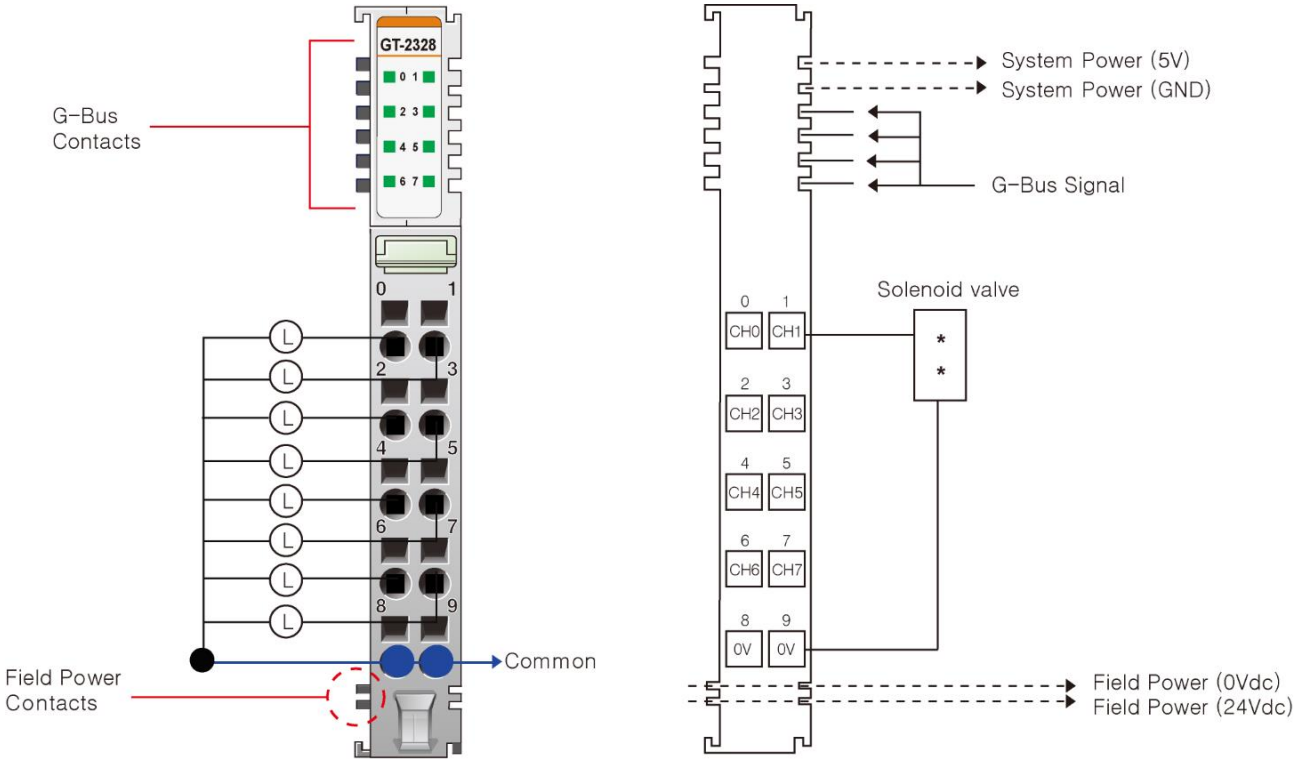
3.1.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0:Fault value, 1:Hold last state							
Byte1	Fault Value (ch0~ch7) 0:Off, 1:On							

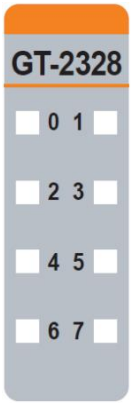
3.2. GT-2328

3.2.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Common (Field Power 0V)	Common (Field Power 0V)	9

3.2.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.2.3.Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.2.4. Environment Specification

Environmental specification	
Operating Temperature	-40℃~70℃
UL Temperature	-20℃~60℃
Storage Temperature	-40℃~85℃
Relative Humidity	5% ~ 90% non-condensing
Mounting	DIN rail
General specification	
Shock Operating	IEC 60068-2-27 : 2008/15g, 11ms
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN 61000-6-4 : 2007 +A1 : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL

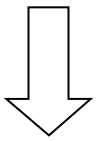
3.2.5. Specification

GT-2328	Specification
Output Specification	
Output per module	8 Points Source type
Indicators (Logic side)	8 Green output state
Output Voltage Range	24Vdc Nominal Min. 15Vdc to Max. 30Vdc
ON-state voltage drop	0.3Vdc @ 25℃ 0.5Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage current	Max. 5uA
Output Signal Delay	OFF to ON : 0.3ms maximum ON to OFF : 0.3ms maximum
Output Current Rating	Max. 0.5A per channel / Max. 4A per unit
Protection	Over Current limit : Min 6.5A@ 25℃ per each channels Thermal Shutdown : Min 4A@ 25℃ per each channels Short circuit protection
COMMON Type	8 points / 2COM
General specification	
Power dissipation	40mA maximum @ 5.0Vdc
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 Voltage range : 15 to 30Vdc Power dissipation: 10mA @ 24Vdc
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	60g
Module Size	12mm x 99mm x 70mm

3.2.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0

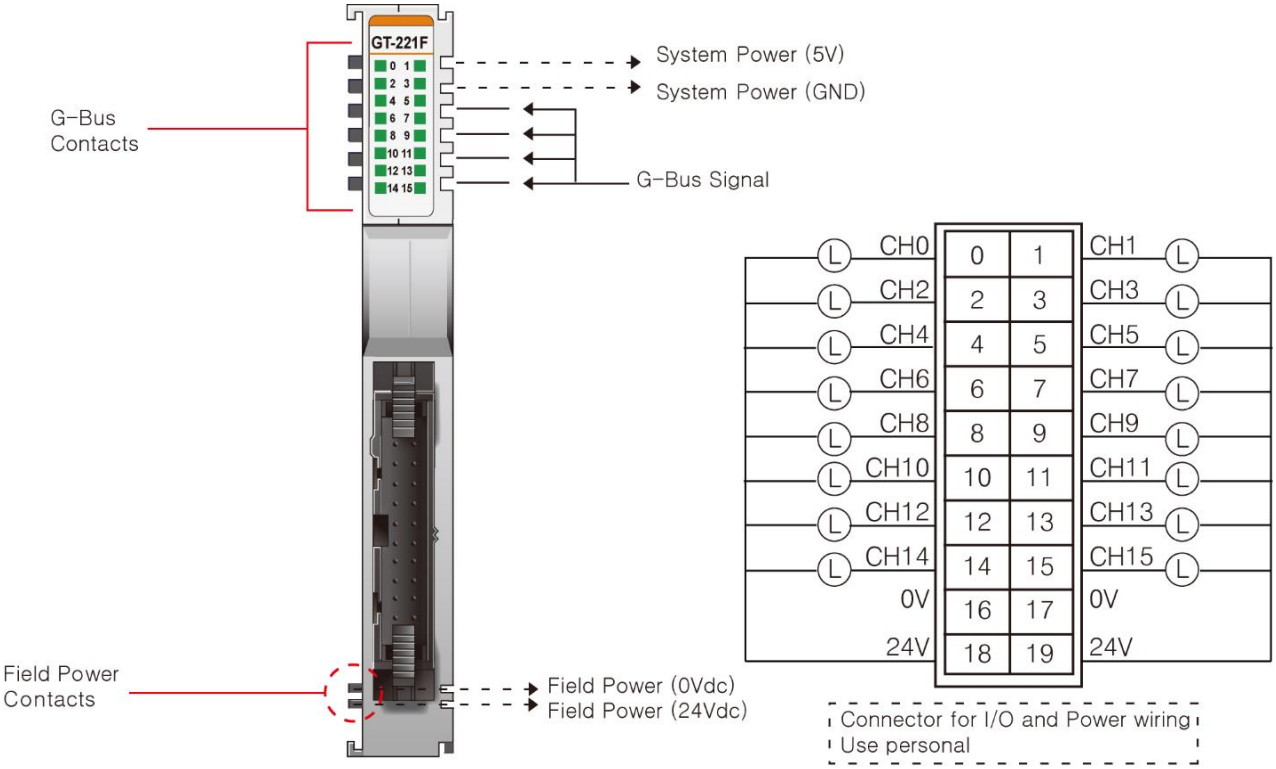
3.2.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault value (ch0~ch7) 0:Off, 1:On							

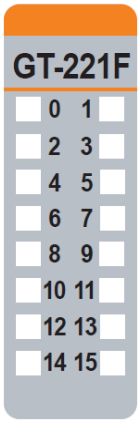
3.3. GT-221F

3.3.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Output Channel 8	Output Channel 9	9
10	Output Channel 10	Output Channel 11	11
12	Output Channel 12	Output Channel 13	13
14	Output Channel 14	Output Channel 15	15
16	Common (Field Power 0V)	Common (Field Power 0V)	17
18	Common (Field Power 24V)	Common (Field Power 24V)	19

3.3.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green
8	Output Channel 8	Green
9	Output Channel 9	Green
10	Output Channel 10	Green
11	Output Channel 11	Green
12	Output Channel 12	Green
13	Output Channel 13	Green
14	Output Channel 14	Green
15	Output Channel 15	Green

3.3.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.3.4. Environment Specification

Environmental specification	
Operating Temperature	-40℃~70℃
UL Temperature	-20℃~60℃
Storage Temperature	-40℃~85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL, FCC

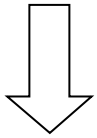
3.3.5. Specification

GT-221F	Specification
Output Specification	
Output per module	16 Points Sink type
Indicators	16 Green output state
Output Voltage Range	24Vdc Nominal 15Vdc ~ 30Vdc @ 70℃
ON-state voltage drop	0.3Vdc @ 25℃ 0.5Vdc @ 70℃
ON-State Min. Current	Min, 1mA
OFF-State Leakage current	Max. 30uA
Output Signal Delay	OFF to ON : 0.5ms maximum ON to OFF : 0.5ms maximum
Output Current Rating	Max. 0.3A per channel / Max. 4.8A per unit
Protection	Over Current limit: Min. 3.5A@ 25℃ per each channels Thermal Shutdown : Min 3A@ 25℃ per each channels Short circuit protection
COMMON Type	16 points / 2 COM
General specification	
Power dissipation	50mA maximum @ 5.0Vdc
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 Voltage range : 15~30Vdc Power dissipation: 10mA @24Vdc
Wiring	Module connector : HIF3BA-20D-2.54R
Weight	53g
Module Size	12mm x 99mm x 70mm

3.3.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8



" **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8

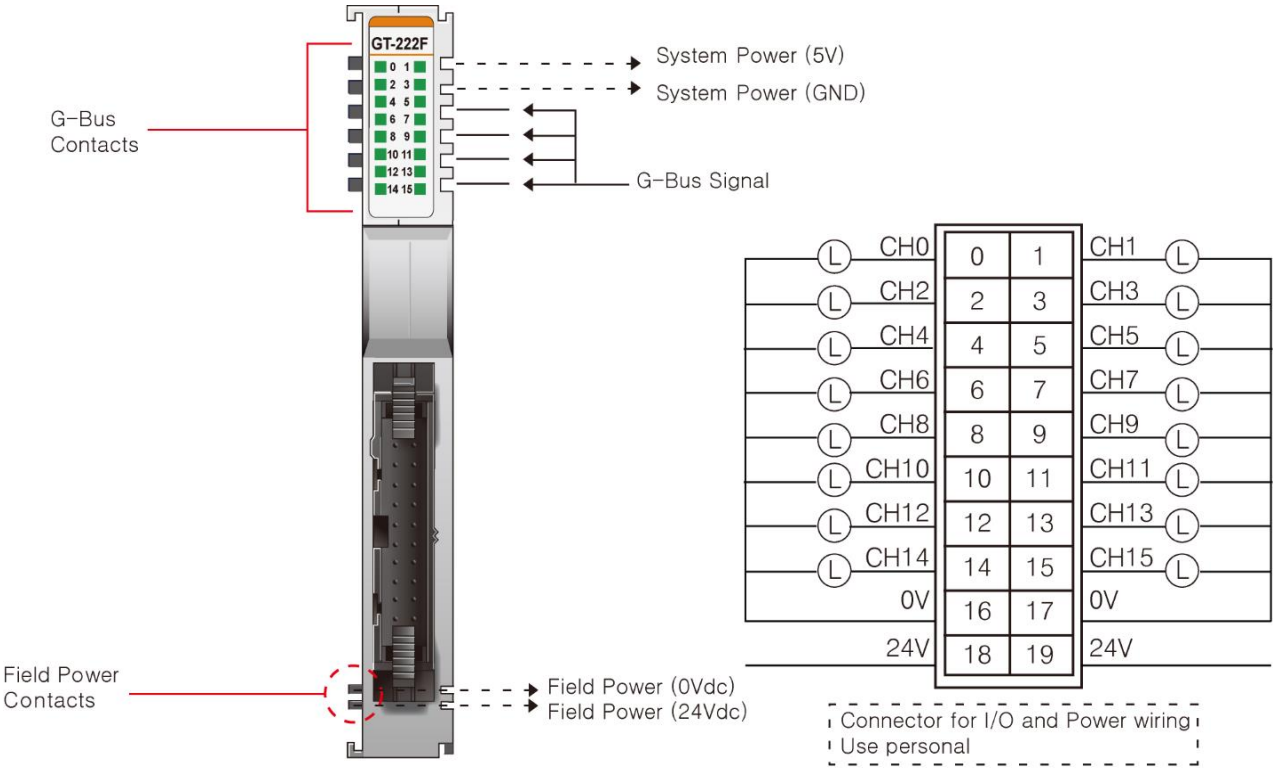
3.3.7. Parameter Data

" **Valid Parameter length : 4 Bytes**
" **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault value (ch0~ch7) 0:Off, 1:On							
Byte3	Fault value (ch8~ch15) 0:Off, 1:On							

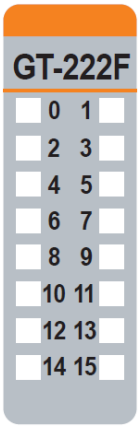
3.4. GT-222F

3.4.1.Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Output Channel 8	Output Channel 9	9
10	Output Channel 10	Output Channel 11	11
12	Output Channel 12	Output Channel 13	13
14	Output Channel 14	Output Channel 15	15
16	Common (Field Power 0V)	Common (Field Power 0V)	17
18	Common (Field Power 24V)	Common (Field Power 24V)	19

3.4.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green
8	Output Channel 8	Green
9	Output Channel 9	Green
10	Output Channel 10	Green
11	Output Channel 11	Green
12	Output Channel 12	Green
13	Output Channel 13	Green
14	Output Channel 14	Green
15	Output Channel 15	Green

3.4.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.4.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Protection Class	Variable/IP20
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL, FCC

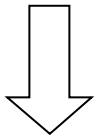
3.4.5. Specification

GT-222F	Specification
Output Specification	
Output Per Module	16 Points Source Type
Indicators	16 Green Output Status
Output Voltage Range	Nominal 24Vdc 15Vdc ~ 30Vdc @ 70℃
ON-state Voltage Drop	0.3Vdc @ 25℃ 0.5Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage Current	Max. 5uA
Output Signal Delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.3ms
Output Current Rating	Max. 0.3A / Channel, Max. 3.6A Per Unit
Protection	Over Current limit : Min. 6.5A @ 25℃ / Channel Thermal Shutdown : Min. 4A @ 25℃/ Channel Short Circuit Protection
Common Type	16 points / 2 Common
General Specification	
Power Dissipation	Max. 50mA @ 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 Voltage Range : 15~30Vdc Power Dissipation : 20mA @ 24Vdc
Wiring	Module connector : HIF3BA-20D-2.54R
Weight	52g
Module Size	12mm x 99mm x 70mm

3.4.6. Mapping Data into the Image Table

Output Image Value

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8



Output Module Data

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8

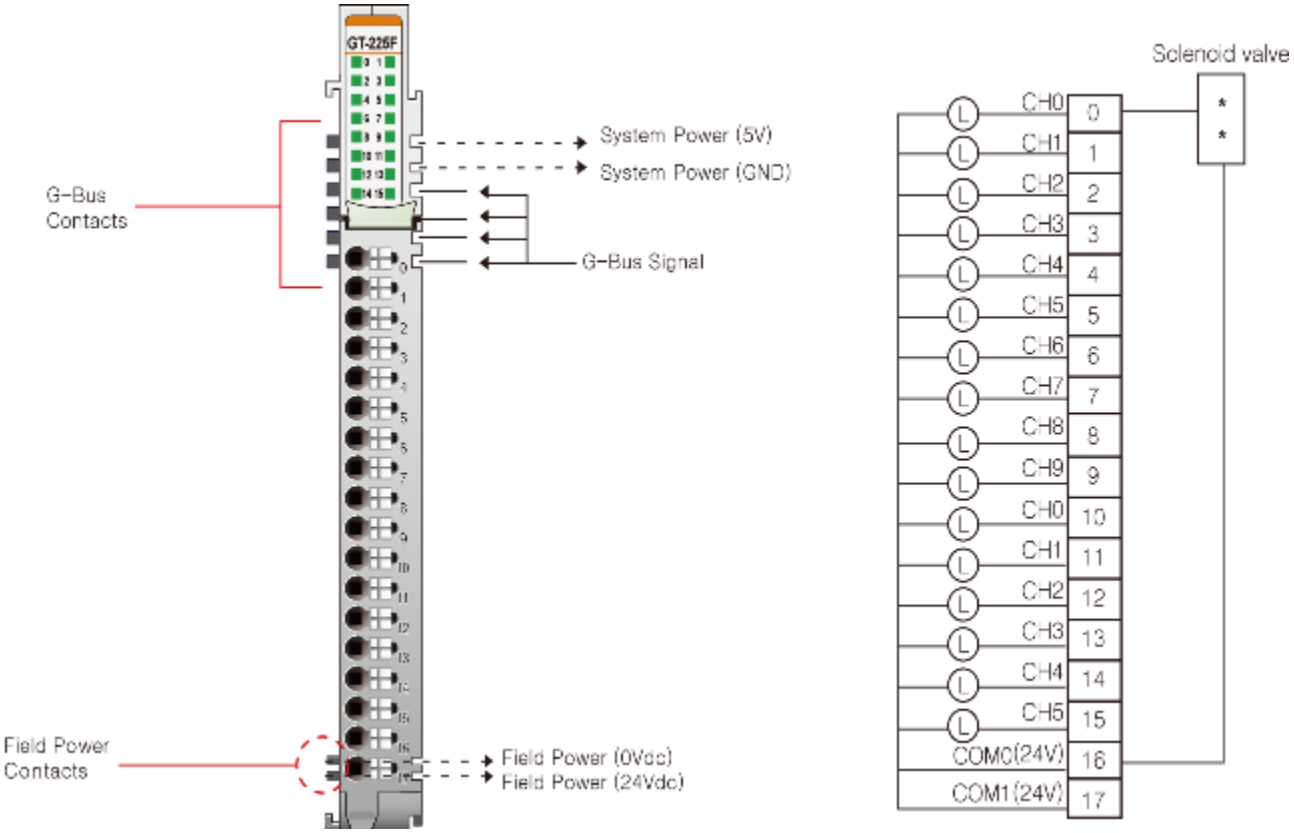
3.4.7. Parameter Data

Valid Parameter length : 4 Bytes
Parameter Data

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault value (ch0~ch7) 0:Off, 1:On							
Byte3	Fault value (ch8~ch15) 0:Off, 1:On							

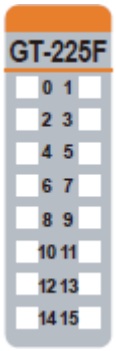
3.5. GT-225F

3.5.1 Wiring Diagram



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

3.5.2 LED Indicator



LEDNo.	LED Function / Description	LED Color
0	OUTPUT Channel 0	Green
1	OUTPUT Channel 1	Green
2	OUTPUT Channel 2	Green
3	OUTPUT Channel 3	Green
4	OUTPUT Channel 4	Green
5	OUTPUT Channel 5	Green
6	OUTPUT Channel 6	Green
7	OUTPUT Channel 7	Green
8	OUTPUT Channel 8	Green
9	OUTPUT Channel 9	Green
10	OUTPUT Channel 10	Green
11	OUTPUT Channel 11	Green
12	OUTPUT Channel 12	Green
13	OUTPUT Channel 13	Green
14	OUTPUT Channel 14	Green
15	OUTPUT Channel 15	Green

3.5.3 Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.5.4 Environment Specification

Environmental specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
StorageTemperature	-40℃ ~ 85℃
Relative Humidity	5% to 95% Non-condensing
Mounting	DIN Rail
General specification	
Shock Operating	IEC 60068-2-27
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL, FCC

3.5.5 Specification

GT-225F	Specification
Output Specification	
Output per module	16 Points Sink type
Indicators	16 Green output state
Output Voltage Range	24Vdc Nominal 15Vdc ~ 30Vdc @ 70℃
ON-state voltage drop	0.3Vdc @ 25℃ 0.5Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage current	Max. 20uA
Output Signal Delay	OFF to ON : 0.3mS maximum ON to OFF : 0.5mS maximum
Output Current Rating	Max. 0.3A per channel / Max. 4.8A per unit
Protection	Over Current limit: Min. 3.5A@ 25℃ per each channels Thermal Shutdown : Min 3A@ 25℃ per each channels Short circuit protection
COMMON Type	16 points / 2COM
General specification	
Power dissipation	50mA maximum @ 5.0Vdc
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 Voltage range : 15~30Vdc Power dissipation: 30mA @ 24Vdc
Single Wiring	I/O Cable Max. 0.75mm²(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.5.6 Mapping Data into the Image Table

- **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8

- **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8

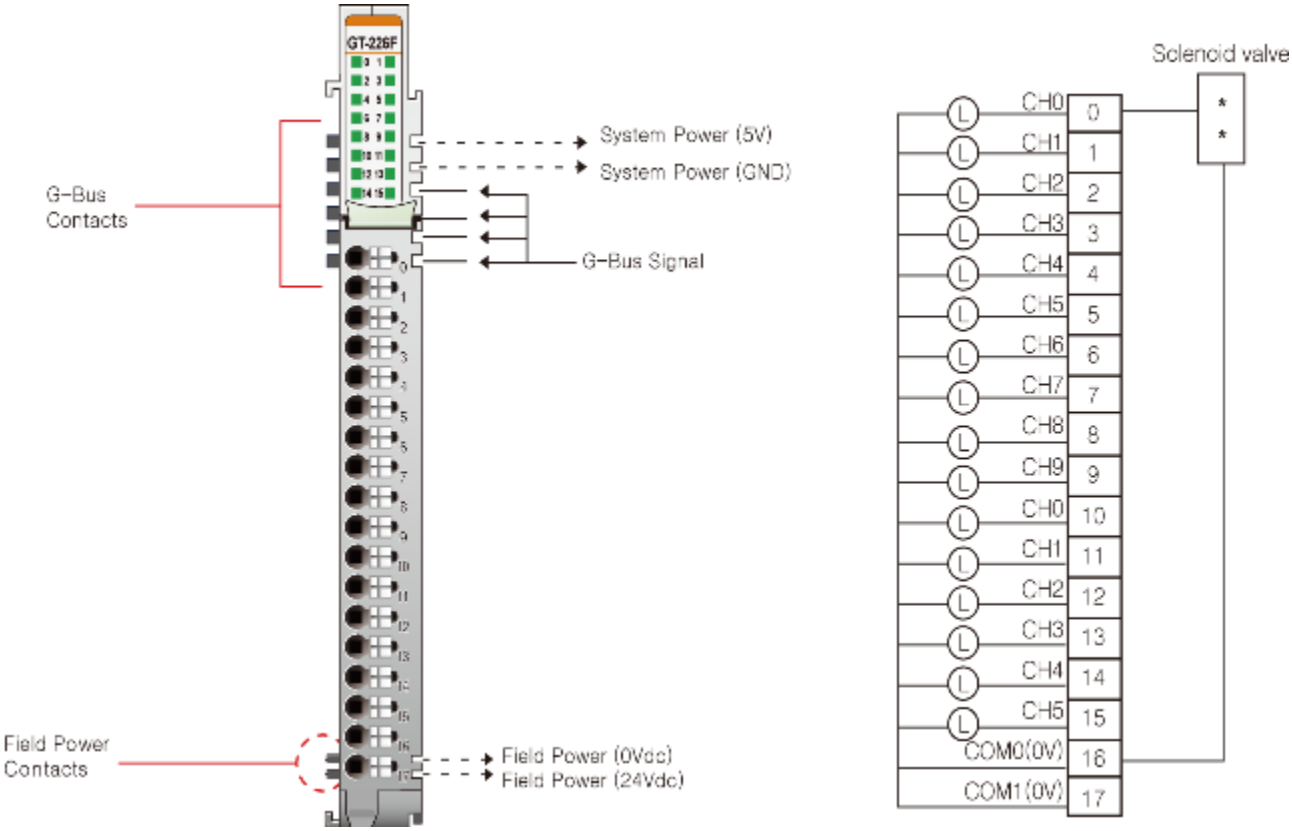
3.5.7 Parameter Data

- **Valid Parameter length :4 Bytes**
- **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault value (ch0~ch7) 0:Off, 1:On							
Byte3	Fault value (ch8~ch15) 0:Off, 1:On							

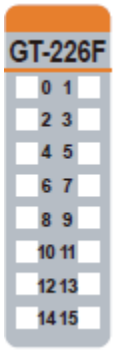
3.6 GT-226F

3.6.1 Wiring Diagram



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

3.6.2 LED Indicator



LEDNo.	LED Function / Description	LED Color
0	OUTPUT Channel 0	Green
1	OUTPUT Channel 1	Green
2	OUTPUT Channel 2	Green
3	OUTPUT Channel 3	Green
4	OUTPUT Channel 4	Green
5	OUTPUT Channel 5	Green
6	OUTPUT Channel 6	Green
7	OUTPUT Channel 7	Green
8	OUTPUT Channel 8	Green
9	OUTPUT Channel 9	Green
10	OUTPUT Channel 10	Green
11	OUTPUT Channel 11	Green
12	OUTPUT Channel 12	Green
13	OUTPUT Channel 13	Green
14	OUTPUT Channel 14	Green
15	OUTPUT Channel 15	Green

3.6.3 Cannel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.6.4 Environment Specification

Environmental specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Non-Operating Temperature	-40℃ ~ 85℃
Relative Humidity	5% to 95% Non-condensing
Mounting	DIN Rail
General specification	
Shock Operating	IEC 60068-2-27
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN 61000-6-4 /A11 : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available.
Product Certifications	CE, UL, FCC

3.6.5 Specification

GT-226F	Specification
Output Specification	
Output per module	16 Points Source type
Indicators	16 Green output state
Output Voltage Range	24Vdc Nominal Min. 15Vdc ~ Max. 32Vdc
ON-state voltage drop	0.3Vdc @ 25℃ 0.5Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage current	Max. 5uA
Output Signal Delay	OFF to ON : 0.3ms maximum ON to OFF : 0.3ms maximum
Output Current Rating	Max. 0.3A per channel / Max. 4.8A per unit
Protection (ITS716G)	Over Current limit : Min 6.5A@ 25℃ per each channels Thermal Shutdown : Min 4A@ 25℃ per each channels Short circuit protection
COMMON Type	16 points / 2COM
General specification	
Power dissipation	Max. 50mA @ 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 Voltage range : 15~30Vdc Power dissipation: 40mA @ 24Vdc
Wiring	I/O Cable Max. 0.75mm²(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.6.6 Mapping Data intothe Image Table

- **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8

- **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8

3.6.7 Parameter Data

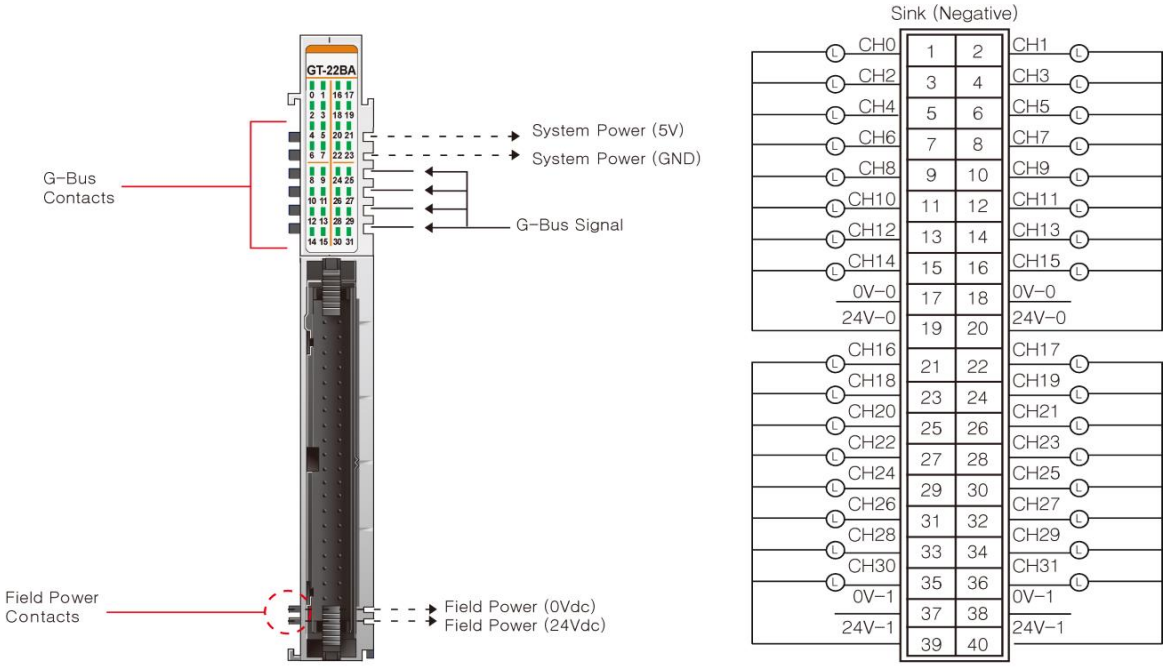
Valid Parameter length: 4 Bytes

Parameter Data

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault value (ch0~ch7) 0:Off, 1:On							
Byte3	Fault value (ch8~ch15) 0:Off, 1:On							

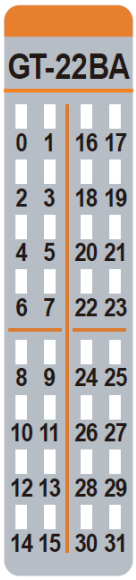
3.7. GT-22BA

3.7.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Output Channel 8	Output Channel 9	9
10	Output Channel 10	Output Channel 11	11
12	Output Channel 12	Output Channel 13	13
14	Output Channel 14	Output Channel 15	15
16	Common (Field Power 0V)	Common (Field Power 0V)	17
18	Common (Field Power 24V)	Common (Field Power 24V)	19
20	Output Channel 16	Output Channel 17	21
22	Output Channel 18	Output Channel 19	23
24	Output Channel 20	Output Channel 21	25
26	Output Channel 22	Output Channel 23	27
28	Output Channel 24	Output Channel 25	29
30	Output Channel 26	Output Channel 27	31
32	Output Channel 28	Output Channel 29	33
34	Output Channel 30	Output Channel 31	35
36	Common (Field Power 0V)	Common (Field Power 0V)	37
38	Common (Field Power 24V)	Common (Field Power 24V)	39

3.7.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
...	...	...
31	Output Channel 31	Green

3.7.3. Channel Status LED

Status	LED	To indicate
Off	Off	No output Signal
On	Green	Normal Operation

3.7.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL, FCC

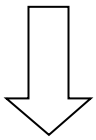
3.7.5. Specification

GT-22BA	Specification
Output Specification	
Output Per Module	32 Points Sink Type
Indicators	32 Green Output Status LEDs
Output Voltage Range	24Vdc nominal 15Vdc ~ 32Vdc @ 60℃
ON-state voltage drop	0.3Vdc @ 25℃ 0.5Vdc @ 60℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage current	Max. 25uA
Output Signal Delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.5ms
Output Current Rating	Max. 0.3A / Channel, Max. 6.0A Per Unit
Protection	Over Current limit : Min. 3.5A @ 25℃ per each channels Thermal Shutdown : Min. 3A @ 25℃ per each channels Short Circuit Protection
Common Type	32 points / 8 Common
General Specification	
Power Dissipation	Max. 65mA @ 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 Voltage Range : 15~30Vdc Power Dissipation : 30mA @ 24Vdc
Wiring	Module Connector : HIF3BA-40D-2.54R
Weight	59g
Module Size	12mm x 109mm x 70mm

3.7.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8
Byte2	D23	D22	D21	D20	D19	D18	D17	D16
Byte3	D31	D30	D29	D28	D27	D26	D25	D24



" **Output Module Data**

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8
D23	D22	D21	D20	D19	D18	D17	D16
D31	D30	D29	D28	D27	D26	D25	D24

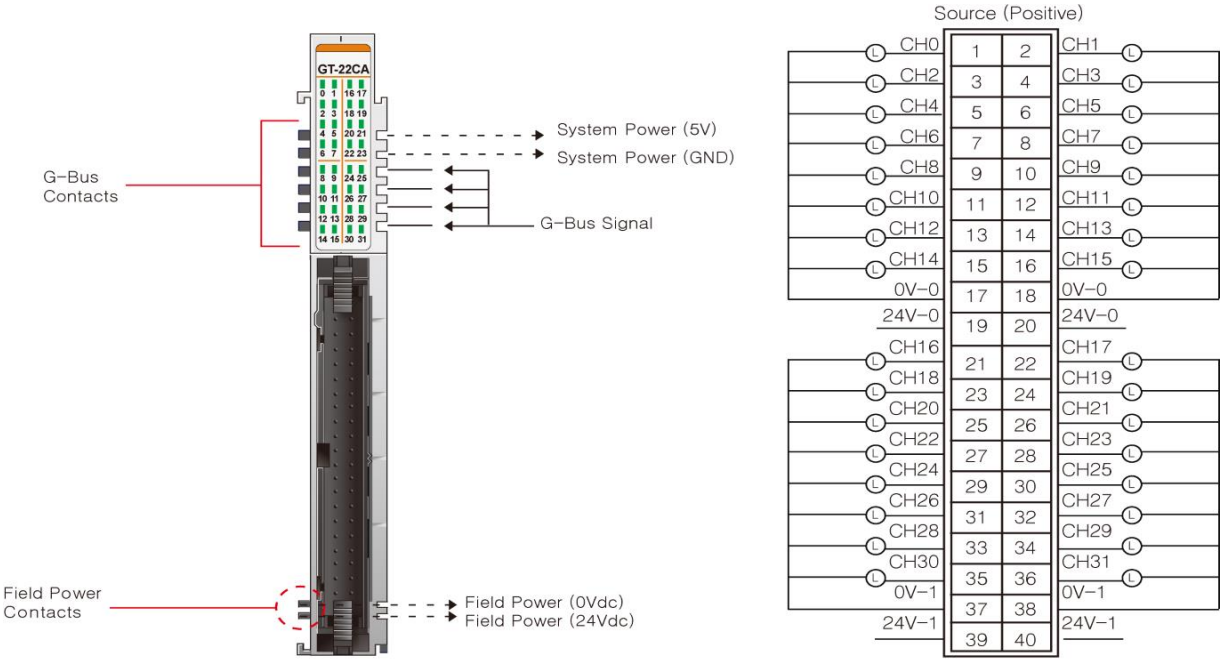
3.7.7. Parameter Data

- **Valid Parameter length : 8 Bytes**
- **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault Action (ch16~ch23) 0: Fault value, 1:Hold last state							
Byte3	Fault Action (ch24~ch31) 0: Fault value, 1:Hold last state							
Byte4	Fault value (ch0~ch7) 0:Off, 1:On							
Byte5	Fault value (ch8~ch15) 0:Off, 1:On							
Byte6	Fault value (ch16~ch23) 0:Off, 1:On							
Byte7	Fault value (ch24~ch31) 0:Off, 1:On							

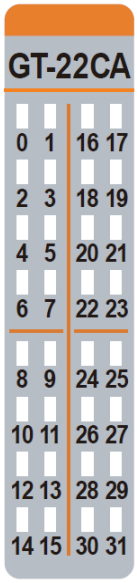
3.8. GT-22CA

3.8.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Output Channel 8	Output Channel 9	9
10	Output Channel 10	Output Channel 11	11
12	Output Channel 12	Output Channel 13	13
14	Output Channel 14	Output Channel 15	15
16	Common (Field Power 0V)	Common (Field Power 0V)	17
18	Common (Field Power 24V)	Common (Field Power 24V)	19
20	Output Channel 16	Output Channel 17	21
22	Output Channel 18	Output Channel 19	23
24	Output Channel 20	Output Channel 21	25
26	Output Channel 22	Output Channel 23	27
28	Output Channel 24	Output Channel 25	29
30	Output Channel 26	Output Channel 27	31
32	Output Channel 28	Output Channel 29	33
34	Output Channel 30	Output Channel 31	35
36	Common (Field Power 0V)	Common (Field Power 0V)	37
38	Common (Field Power 24V)	Common (Field Power 24V)	39

3.8.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
...	...	...
31	Output Channel 31	Green

3.8.3. Channel Status LED

Status	LED	To indicate
Off Signal	Off	No output Signal
On Signal	Green	Normal Operation

3.8.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL, FCC

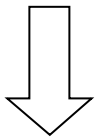
3.8.5. Specification

GT-22CA	Specification
Output Specification	
Output Per Module	32 Points Source type
Indicators	32 Green Output Status
Output Voltage Range	24Vdc nominal 15Vdc ~ 30Vdc @ 60℃
ON-state Voltage Drop	0.3Vdc @ 25℃ 0.5Vdc @ 60℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage Current	Max. 5uA
Output Signal Delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.5ms
Output Current Rating	Max. 0.3A / Channel, Max. 6.0A Per Unit
Protection	Over Current limit : Min. 6.5A @ 25℃ per each channels Thermal Shutdown : Min. 4A @ 25℃ per each channels Short Circuit Protection
Common Type	32 points / 8 Common
General Specification	
Power Dissipation	Max. 65mA @ 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 Voltage Range : 15~30Vdc Power Dissipation : 30mA @ 24Vdc
Wiring	Module Connector : HIF3BA-40D-2.54R
Weight	63g
Module Size	12mm x 109mm x 70mm

3.8.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0
Byte1	D15	D14	D13	D12	D11	D10	D9	D8
Byte2	D23	D22	D21	D20	D19	D18	D17	D16
Byte3	D31	D30	D29	D28	D27	D26	D25	D24



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0
D15	D14	D13	D12	D11	D10	D9	D8
D23	D22	D21	D20	D19	D18	D17	D16
D31	D30	D29	D28	D27	D26	D25	D24

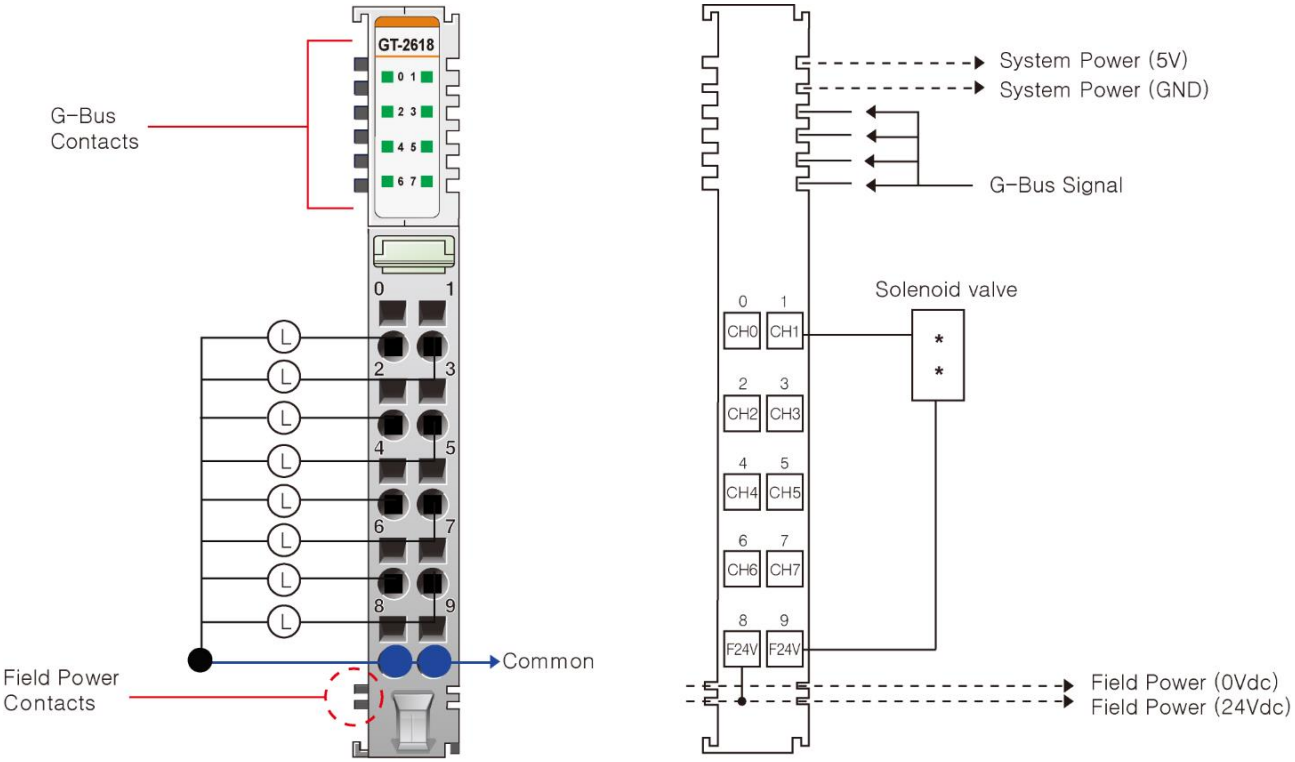
3.8.7. Parameter Data

- **Valid Parameter Length : 8 Bytes**
- **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault Action (ch8~ch15) 0: Fault value, 1:Hold last state							
Byte2	Fault Action (ch16~ch23) 0: Fault value, 1:Hold last state							
Byte3	Fault Action (ch24~ch31) 0: Fault value, 1:Hold last state							
Byte4	Fault value (ch0~ch7) 0:Off, 1:On							
Byte5	Fault value (ch8~ch15) 0:Off, 1:On							
Byte6	Fault value (ch16~ch23) 0:Off, 1:On							
Byte7	Fault value (ch24~ch31) 0:Off, 1:On							

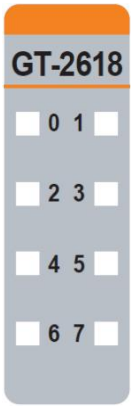
3.9. GT-2618

3.9.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Common (Field Power 24V)	Common (Field Power 24V)	9

3.9.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.9.3. Channel Status LED

Status	LED	To indicate
Off	Off	No output Signal
On	Green	Output signal transmitted

3.9.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN 61000-6-4 : 2007+AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

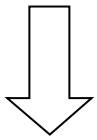
3.9.5. Specification

GT-2618	Specification
Output Specification	
Output Per Module	8 Points Sink type
Indicators	8 Green Output Status
Output Voltage Range	24Vdc nominal 15Vdc ~ 32Vdc @ 70℃
ON-state Voltage Drop	0.3Vdc @ 25℃ 0.3Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage Current	Max. 5uA
Output Signal Delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.3ms
Output Current Rating	Max. 2A / Channel Operating Temperature -40℃~50℃ : Max. 10A Per Unit 50℃~60℃ : Max. 7A Per Unit 60℃~70℃ : Max. 4.8A Per Unit
Common Type	8 points / 2 Com
General Specification	
Power Dissipation	Max. 50mA @ 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 Voltage Range : 15~30Vdc Power Dissipation : 30mA @ 24Vdc
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	70g
Module Size	12mm x 99mm x 70mm

3.9.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

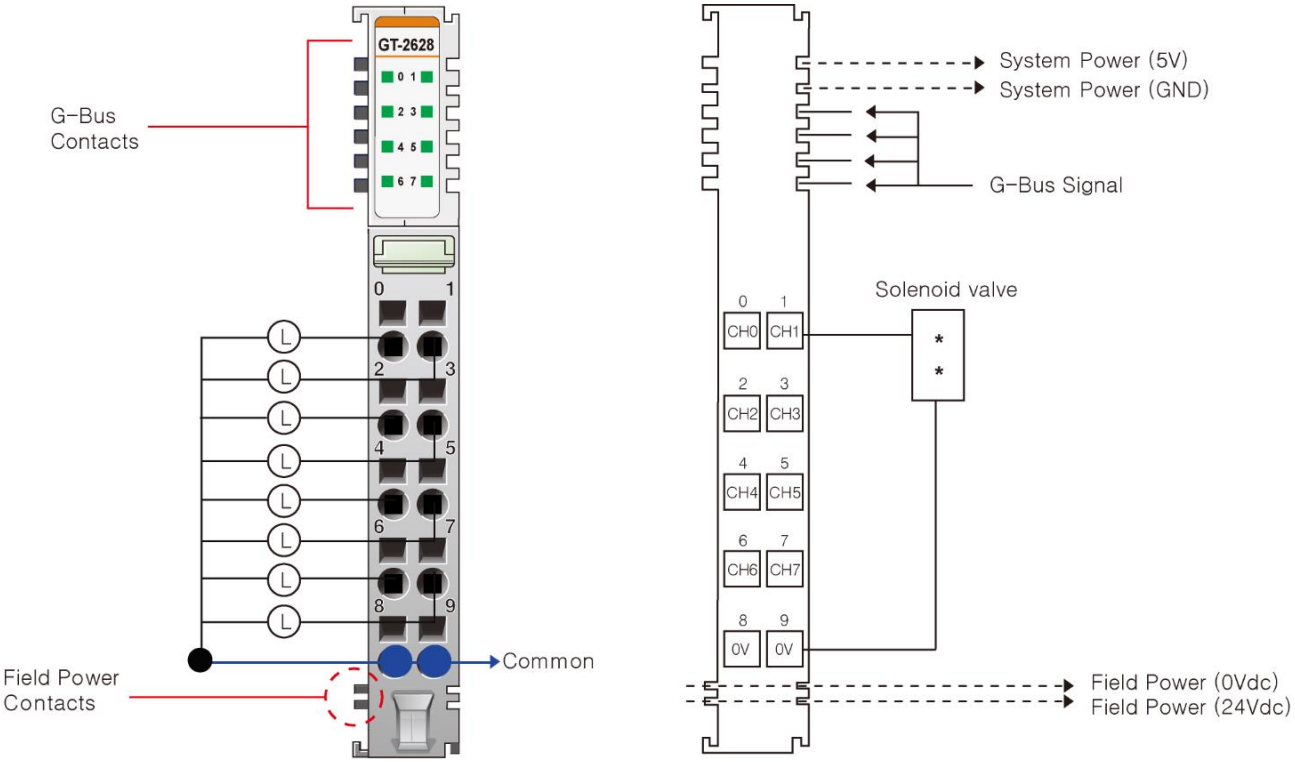
3.9.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1: Hold last state							
Byte1	Fault Action (ch0~ch7) 0: Off, 1: On							

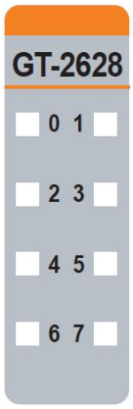
3.10. GT-2628

3.10.1 Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	Output Channel 1	1
2	Output Channel 2	Output Channel 3	3
4	Output Channel 4	Output Channel 5	5
6	Output Channel 6	Output Channel 7	7
8	Common (Field Power 0V)	Common (Field Power 0V)	9

3.10.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.10.3. Channel Status LED

Status	LED	To indicate
Not signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.10.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN 61000-6-4 : 2007 +A1 : 2011
Industiral Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

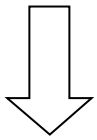
3.10.5. Specification

GT-2628	Specification
Output Specification	
Output Per Module	8 Points Source type
Indicators	8 Green Output Status
Output Voltage Range	24Vdc nominal Min. 15Vdc ~ Max. 30Vdc
ON-state Voltage Drop	0.3Vdc @ 25℃ 0.3Vdc @ 70℃
ON-State Min. Current	Min. 1mA
OFF-State Leakage Current	Max. 5uA
Output Signal Delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.3ms
Output Current Rating	Max. 2A / Channel Operating Temperature -40℃~50℃ : Max. 10A Per Unit 50℃~60℃ : Max. 7A Per Unit 60℃~70℃ : Max. 4.8A Per Unit
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 45mA @ 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 Voltage Range : 15~30Vdc Power Dissipation : 10mA @ 24Vdc
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	70g
Module Size	12mm x 99mm x 70mm

3.10.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

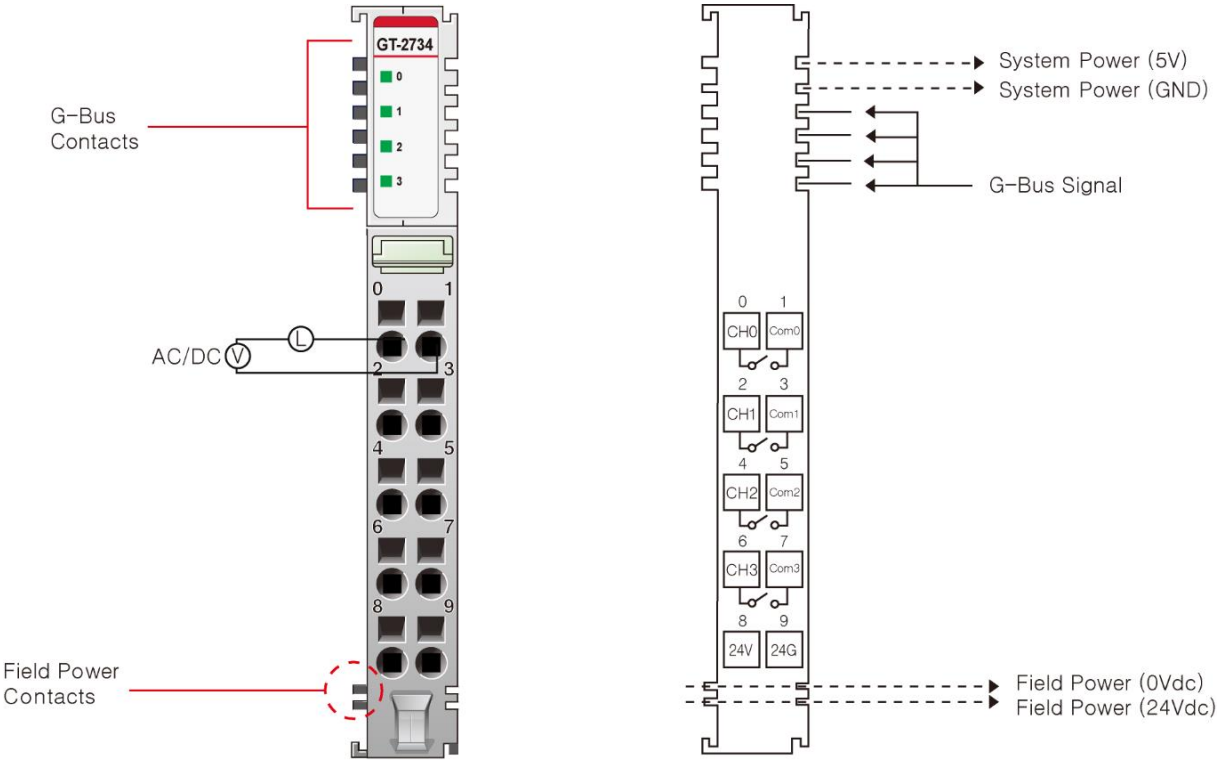
3.10.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1: Hold last state							
Byte1	Fault Action (ch0~ch7) 0: Off, 1: On							

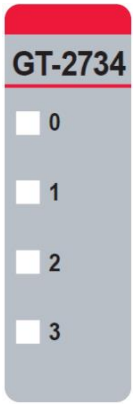
3.11. GT-2734

3.11.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	COM 0	1
2	Output Channel 1	COM 1	3
4	Output Channel 2	COM 2	5
6	Output Channel 3	COM 3	7
8	Common (Field Power 24V)	Common (Field Power 0V)	9

3.11.2. LED Indicator



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

3.11.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No output Signal
On Signal	Green	Normal Operation

3.11.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 70℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : Vibration Class B, 4g
Industrial Emissions	EN61000-6-4/All : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL, FCC

3.11.5. Specification

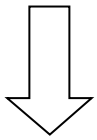
GT-2734	Specification
Output Specification	
Output Per Module	4 Points Bi-directional
Indicators	4 Green Output Status LEDs
Relay Type	MOS Relay (Solid State Relay)
Output Voltage Range (Load Dependent)	Max. 240Vac @ 0.5A resistive Max. 240Vdc @ 0.5A resistive
Output Delay Time (Resistive Load)	Max. 240Vac / 240Vdc OFF to ON : Max. 0.6ms ON to OFF : Max. 3ms
Output Current Rating	Max. 0.5A / Channel
Frequency Range(Vac)	47 ~ 63Hz
Common Type	4 points / 2 Common
General Specification	
Power Dissipation	80mA @ 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 : 15~30Vdc (AC Power not used)
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Torque	0.8Nm(7 lb-in)
Weight	58g
Module Size	12mm x 99mm x 70mm

3.11.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Reserved				D3	D2	D1	D0

" **Output Module data**



D3	D2	D1	D0

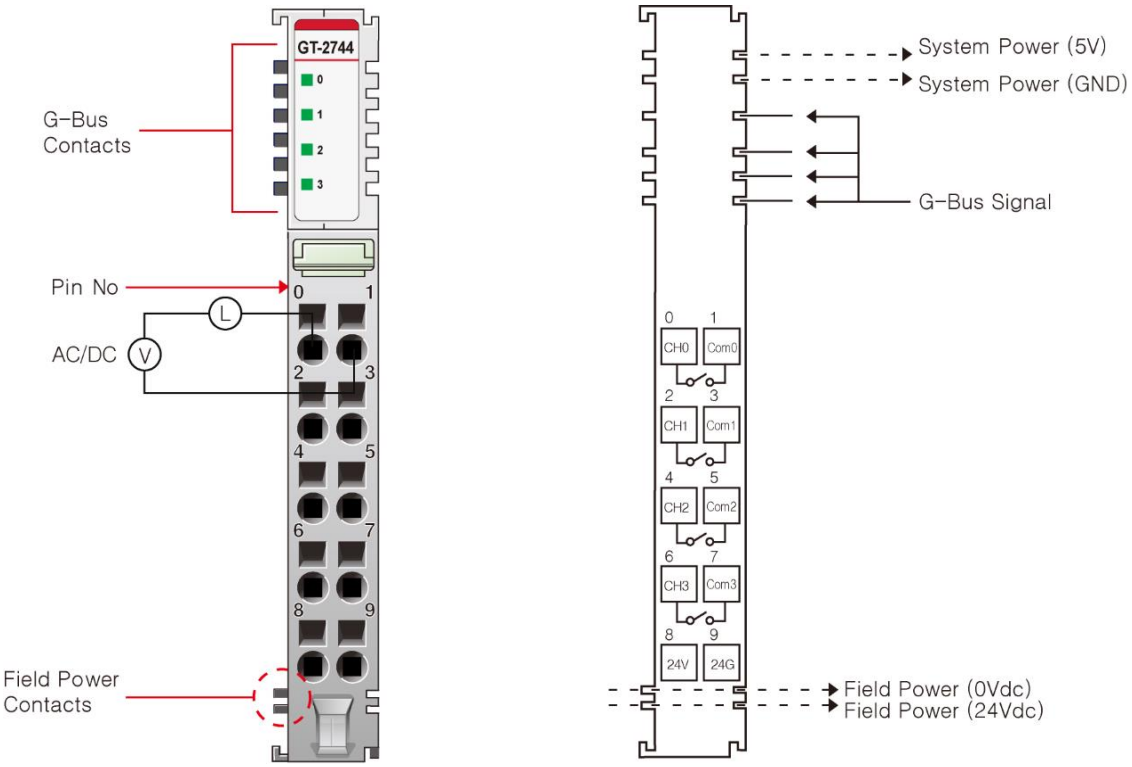
3.11.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Decimal Bit	Description	Default Value
Byte0	00-03	Fault Action(0~3) 0: Fault value, 1: Hold last state	0(Fault value)
Byte1	00-03	Fault value(0~3) 0: Off, 1: On	0(Off)

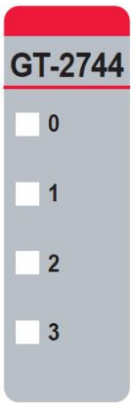
3.12. GT-2744

3.12.1 Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	COM 0	1
2	Output Channel 1	COM 1	3
4	Output Channel 2	COM 2	5
6	Output Channel 3	COM 3	7
8	Common (Field Power 24V)	Common (Field Power 0V)	9

3.12.2 LED Indicator



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

3.12.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No output Signal
On Signal	Green	Normal Operation

3.12.4 Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

3.12.5. Specification

GT-2744	Specification
Output Specification	
Output Per Module	4 Points Bi-directional
Indicators	4 Green Output Status LEDs
Relay Type	Form A, Single Pole Single Throw(SPST)
Output Voltage Range (Load Dependent)	0~32Vdc @ 2A resistive 48Vdc @ 0.8A resistive 110Vdc @ 0.5A resistive Max. 240Vac @ 2A resistive
Output Delay Time (Resistive Load)	OFF to ON : Max. 5ms @ 24Vdc ON to OFF : Max. 8ms @ 24Vdc OFF to ON : Max. 5ms @ 220Vac ON to OFF : Max. 15ms @ 220Vac
Output Current Rating (At Rated Power)	2.0A @ 0~32Vdc 0.8A @ 48Vdc 0.5A @ 110Vdc 2A @ 240Vac -40℃~70℃(2A Load 2ch) -40℃~60℃(2A Load 4ch)
Expected Contact Life	20M Cycles(Resistive)
Max. On-State Voltage Drop	0.5V @ 2A, Resistive Load, 24Vdc
Frequency Range(Vac)	47 ~ 63Hz
Common Type	4 points / 2 COM
General Specification	
Power Dissipation	Max. 35mA @ 5Vdc
Isolation	I/O to Logic : Photocoupler Isolation Field Power : Non-Isolation
Field Power	Supply Voltage : 24Vdc nominal Voltage Range : 22~26Vdc Power dissipation : 30mA @ 24Vdc (AC Power not used)
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	58g
Module Size	12mm x 99mm x 70mm

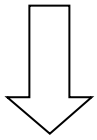
* Voltage Drop specification is dependent on the cable length due to the high load.

3.12.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Reserved				D3	D2	D1	D0

" **Output Module data**



D3	D2	D1	D0

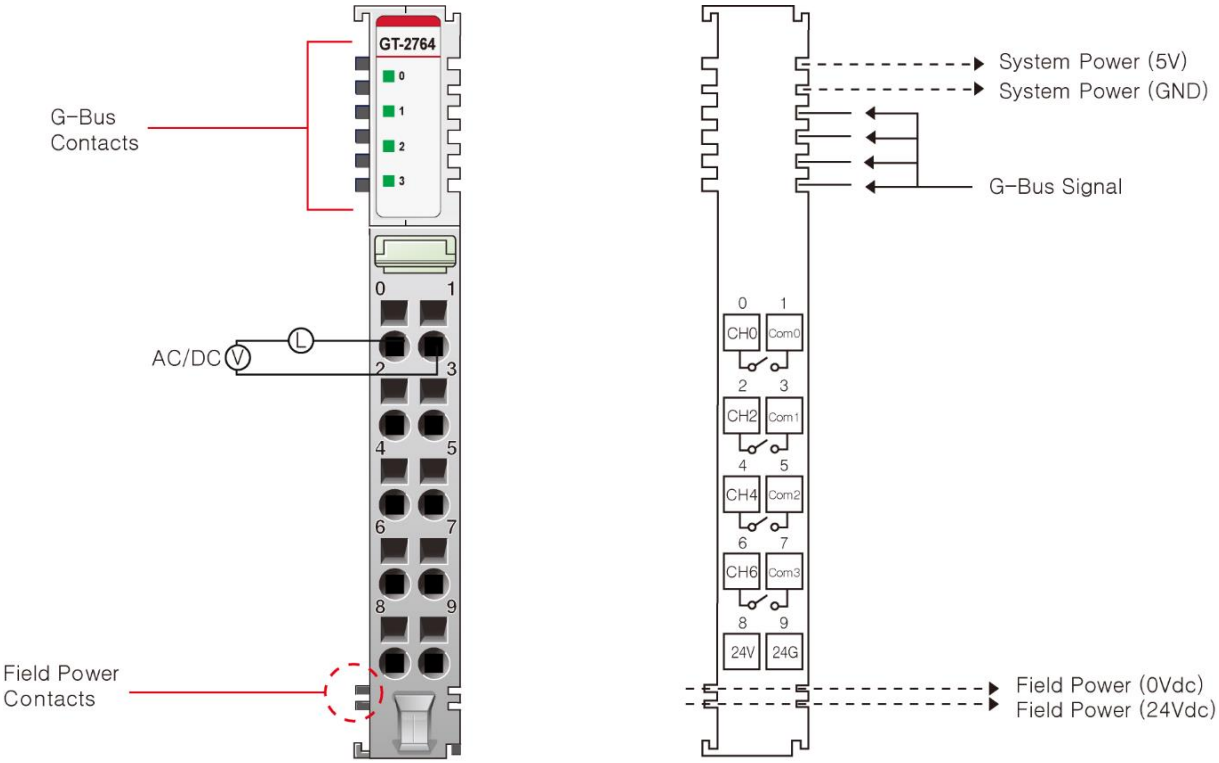
3.12.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Decimal Bit	Description	Default Value
Byte0	00-03	Fault Action(0~3) 0: Fault value, 1: Hold last state	0(Fault value)
Byte1	00-03	Fault value(0~3) 0: Off, 1: On	0(Off)

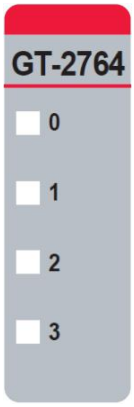
3.13. GT-2764

3.13.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	COM 0	1
2	Output Channel 1	COM 1	3
4	Output Channel 2	COM 2	5
6	Output Channel 3	COM 3	7
8	Field Power 24V	Field Power 0V	9

3.13.2. LED Indicator



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

3.13.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No output Signal
On Signal	Green	Normal Operation

3.13.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

3.13.5. Specification

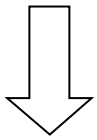
GT-2764	Specification
Output Specification	
Output Per Module	4 Points Bi-directional
Indicators	4 Green Output Status LEDs
Relay Type	MOS Relay (Solid State Relay)
Output Voltage Range (Load Dependent)	24Vac @ 2A resistive 24Vdc @ 2A resistive
Output Delay Time (Resistive Load)	Max. AC/DC: 24V OFF to ON : Max. 1ms @ 24Vac ON to OFF : Max. 3.5ms @ 24Vac OFF to ON : Max. 1ms @ 24Vdc ON to OFF : Max. 3ms @ 24Vdc
Output Current Rating (At Rated Power)	Max. 2A / Channel Operating Temperature -40℃~70℃ : Max. 7A / Unit -40℃~50℃ : Max. 8A / Unit
Frequency Range(Vac)	47 ~ 63Hz
Open-state leakage current	Max. 0.1uA
Common Type	4 points / 2 Common
General Specification	
Power Dissipation	Max. 80mA @ 5Vdc
Isolation	I/O to Logic : Photocoupler Isolation Field Power : Non-Isolation
UL field power	Supply voltage : 24Vdc nominal, Class 2
Field Power	Field Power passes through to the next module Supply Voltage : 24Vdc nominal Voltage Range : 15~30Vdc (AC Power not used)
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	58g
Module Size	12mm x 99mm x 70mm

3.13.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Reserved				D3	D2	D1	D0

" **Output Module data**



D3	D2	D1	D0

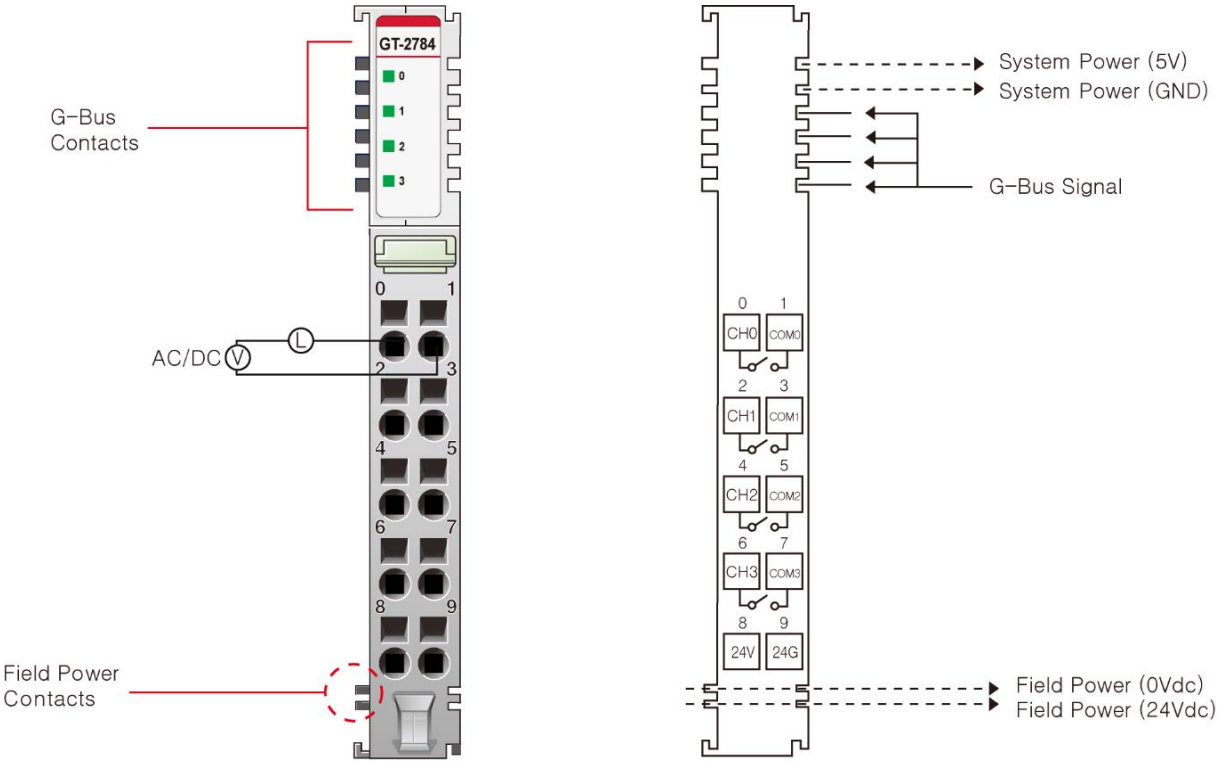
3.13.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Decimal Bit	Description	Default Value
0	00-03	Fault Action(0~3) 0: Fault value, 1: Hold last state	0 (Fault value)
1	00-03	Fault value(0~3) 0: Off, 1: On	0 (Off)

3.14. GT-2784

3.14.1. Wiring Diagram



Pin No.	Signal Description	Signal Description	Pin No.
0	Output Channel 0	COM 0	1
2	Output Channel 1	COM 1	3
4	Output Channel 2	COM 2	5
6	Output Channel 3	COM 3	7
8	Field Power 24V	Field Power 0V	9

3.14.2. LED Indicator

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

3.14.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No output Signal
On Signal	Green	Normal Operation

3.14.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

3.14.5. Specification

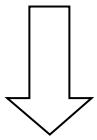
GT-2784	Specification
Output Specification	
Output Per Module	4 Points Bi-directional
Indicators	4 Green Output State
Relay Type	MOS Relay (Solid State Relay)
Output Voltage Range (Load Dependent)	110Vac @ 1A resistive 110Vdc @ 1A resistive
Output Delay Time (Resistive Load)	Max. AC/DC : 110V OFF to ON : Max. 1ms @ 110Vac ON to OFF : Max. 3ms @ 110Vac OFF to ON : Max. 1.5ms @ 110Vdc ON to OFF : Max. 3ms @ 110Vdc
Output Current Rating	Max. 1A / Channel 60℃ : 0.8A / Channel 50℃ : 1A / Channel
Frequency Range(Vac)	47 ~ 63Hz
Open-state leakage current	Max. 10uA
Common Type	4 points / 4 COM
General Specification	
Power Dissipation	Max. 80mA @ 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 : 15~30Vdc (AC Power not used)
Wiring	I/O Cable Max. 2.0mm^2(AWG 14)
Weight	58g
Module Size	12mm x 99mm x 70mm

3.14.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Reserved				D3	D2	D1	D0

" **Output Module data**



D3	D2	D1	D0

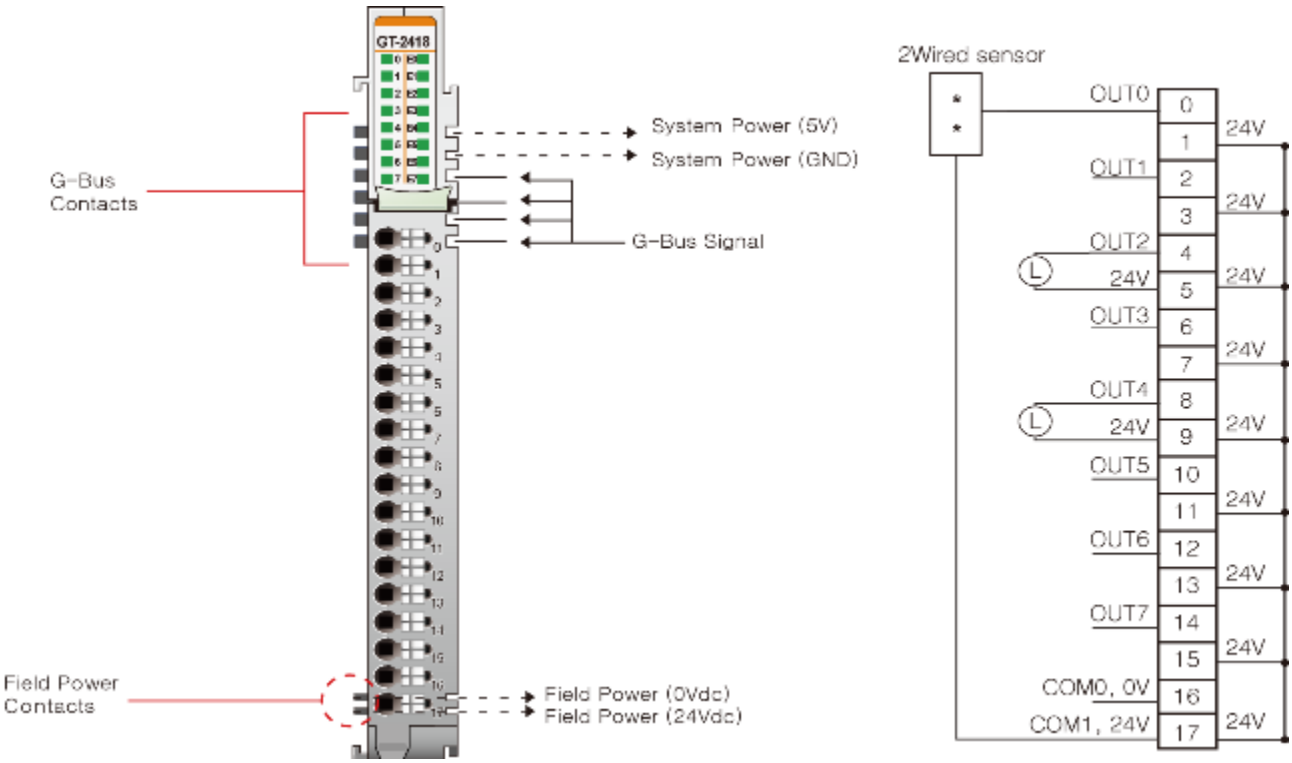
3.14.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Decimal Bit	Description	Default Value
Byte0	00-03	Fault Action(0~3) 0: Fault value, 1: Hold last state	0(Fault value)
Byte1	00-03	Fault value(0~3) 0: Off, 1: On	0(Off)

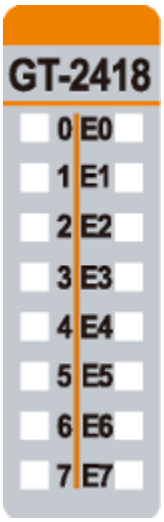
3.15. GT-2418

3.15.1. Wiring Diagram



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

3.15.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green
E0	Channel 0 Diagnostic	Red
E1	Channel 0 Diagnostic	Red
E2	Channel 0 Diagnostic	Red
E3	Channel 0 Diagnostic	Red
E4	Channel 0 Diagnostic	Red
E5	Channel 0 Diagnostic	Red
E6	Channel 0 Diagnostic	Red
E7	Channel 0 Diagnostic	Red

3.15.3. Channel Status LED

• LED No. 0~7

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

• LED No. 0~7

Status	LED	To indicate
Bus Fault	RED (All Leds)	G-Bus Fault
Channel Fault	RED	Field Power Off
		Short to VCC
		Overtemperature
		Current Limitation

3.15.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
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 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

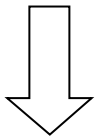
3.15.5. Specification

GT-2418	Specification
Output Specification	
Output Per Module	8 points sink type
Indicators	8 Green Output State, 8 red diagnostic state
Output Voltage Range	24Vdc nominal 15Vdc ~ 30Vdc @ 60℃
On-state voltage drop	Max. 0.3Vdc @ 25℃ Max. 0.5Vdc @ 60℃
On-state min. current	Min. 1mA
Off-state leakage current	Max. 20uA
Output signal delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.4ms
Output current rating	Max. 0.5A per channel / Max. 4A per unit
Protection	Over current limit: Min. 3.5A@ 25℃per each channels Thermal shutdown : 175℃ Short circuit protection
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 55mA @ 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 Voltage Range : 15~30Vdc Power dissipation : 30mA @ 24Vdc
Wiring	I/O Cable Max. 0.75mm^2(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.15.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

" **Input Module data**
"

D7	D6	D5	D4	D3	D2	D1	D0

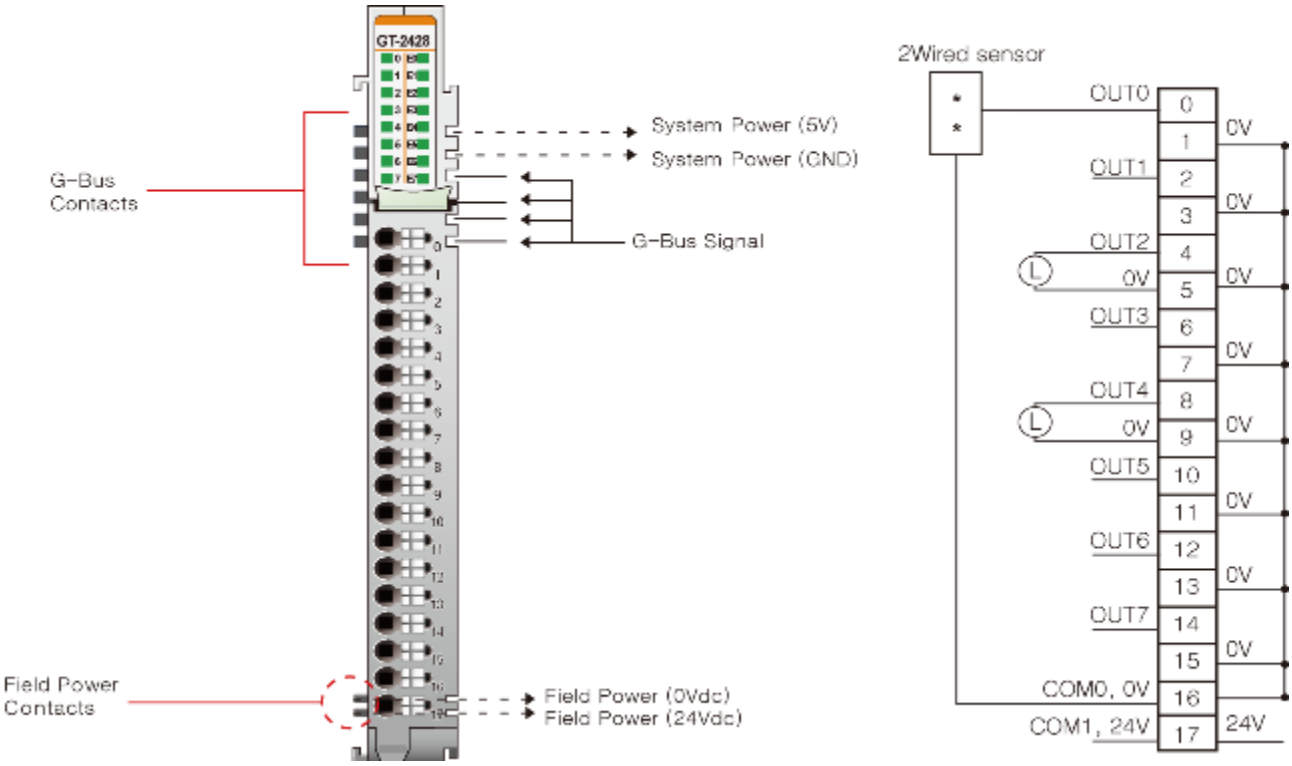
3.15.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault value (ch0~ch7) 0:Off, 1:On							

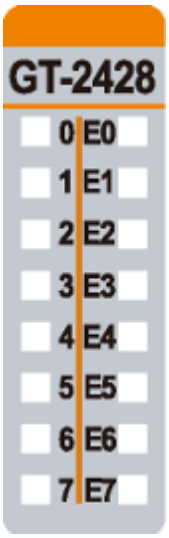
3.16. GT-2428

3.16.1. Wiring Diagram



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

3.16.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green
E0	Channel 0 Diagnostic	Red
E1	Channel 0 Diagnostic	Red
E2	Channel 0 Diagnostic	Red
E3	Channel 0 Diagnostic	Red
E4	Channel 0 Diagnostic	Red
E5	Channel 0 Diagnostic	Red
E6	Channel 0 Diagnostic	Red
E7	Channel 0 Diagnostic	Red

3.16.3. Channel Status LED

• LED No. 0~7

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

• LED No. 0~7

Status	LED	To indicate
Bus Fault	RED (All Leds)	G-Bus Fault
Channel Fault	RED	Field Power Off (Off State)
		Short to GND
		Short to VCC(Off state)
		Overtemperature
		Current Limitation

3.16.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
Relative Humidity	5% ~ 90% Non-condensing
Mounting	DIN Rail
General Specification	
Shock Operating	IEC 60068-2-27 : 2008/15g, 11ms
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +Al : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

3.16.5. Specification

GT-2428	Specification
Output Specification	
Output Per Module	8 points source type
Indicators	8 Green Output State, 8 red diagnostic state
Output Voltage Range	24Vdc nominal 15Vdc ~ 30Vdc
On-state voltage drop	Max. 0.3Vdc @ 25℃ Max. 0.5Vdc @ 60℃
On-state min. current	Min. 1mA
Off-state leakage current	Max. 20uA
Output signal delay	OFF to ON : Max. 0.3ms ON to OFF : Max. 0.5ms
Output current rating	Max. 0.5A per channel / Max. 4A per unit
Protection	Over current limit: Min. 3.5A@ 25℃per each channels Thermal shutdown : 175℃ Short circuit protection
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 35mA @ 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 Voltage Range : 15~30Vdc Power dissipation : 35mA @ 24Vdc
Wiring	I/O Cable Max. 0.75mm^2(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.16.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0

" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

" **Input Module data**
"

D7	D6	D5	D4	D3	D2	D1	D0

" **Input Module data**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0

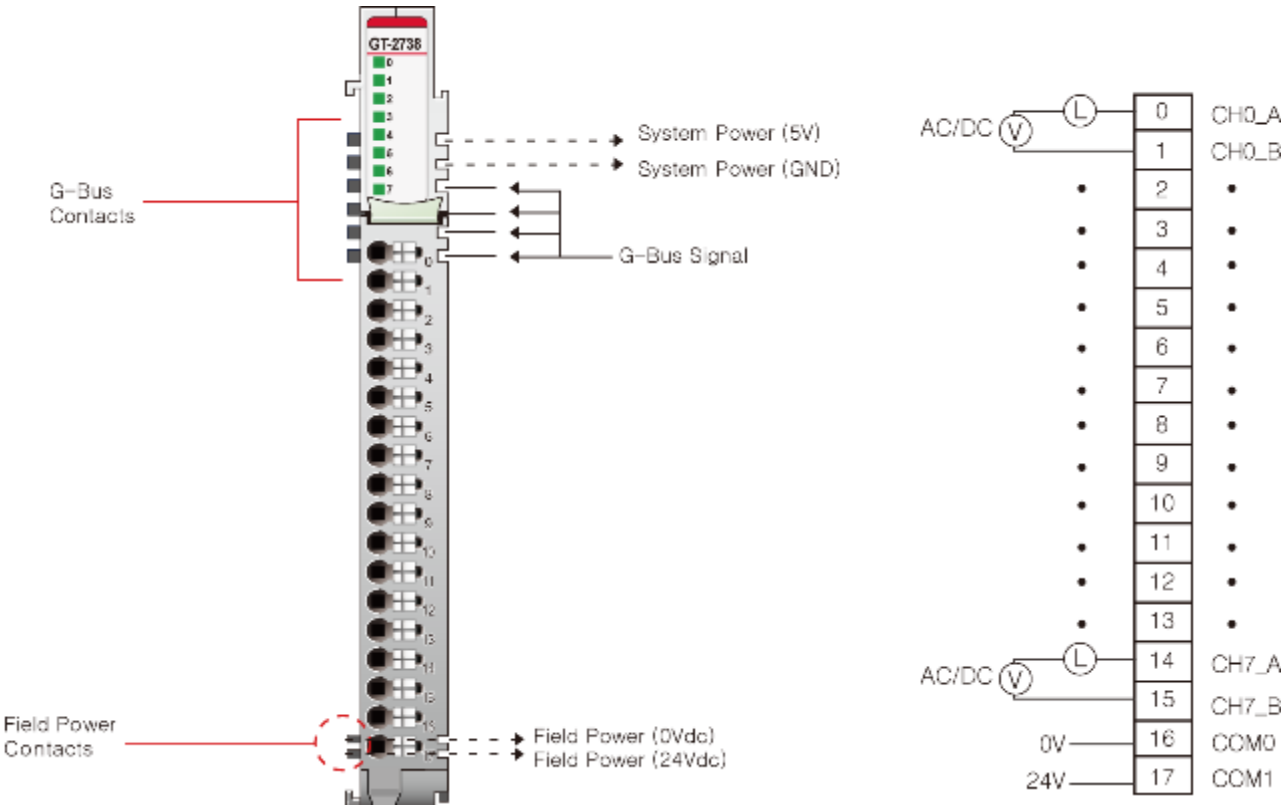
3.16.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	Fault Action (ch0~ch7) 0: Fault value, 1:Hold last state							
Byte1	Fault value (ch0~ch7) 0:Off, 1:On							

3.17. GT-2738

3.17.1. Wiring Diagram



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

3.17.2. LED Indicator

LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.17.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.17.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
Relative Humidity	5% ~ 90% Non-condensing
Mounting	DIN Rail
General Specification	
Shock Operating	IEC 60068-2-27 : 2008/15g, 11ms
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

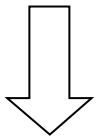
3.17.5. Specification

GT-2738	Specification
Output Specification	
Output Per Module	8 points bi-directional
Indicators	8 Green Output State
Relay type	MOS Relay (solid state relay)
Output Voltage Range (load dependent)	240Vac @ 0.5A resistive 240Vdc @ 0.5A resistive
Output delay time (resistive load)	Max. AC/DC : 240V OFF to ON : Max. 0.5ms ON to OFF : Max. 2.5ms
Output current rating	Max. 0.5A per channel
Frequency range (Vac)	47 ~ 63Hz
Open-state leakage current	Max. 40uA
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 130mA @ 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 : 15~30Vdc (AC Power Not Used)
Wiring	I/O Cable Max. 0.75mm^2(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.17.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

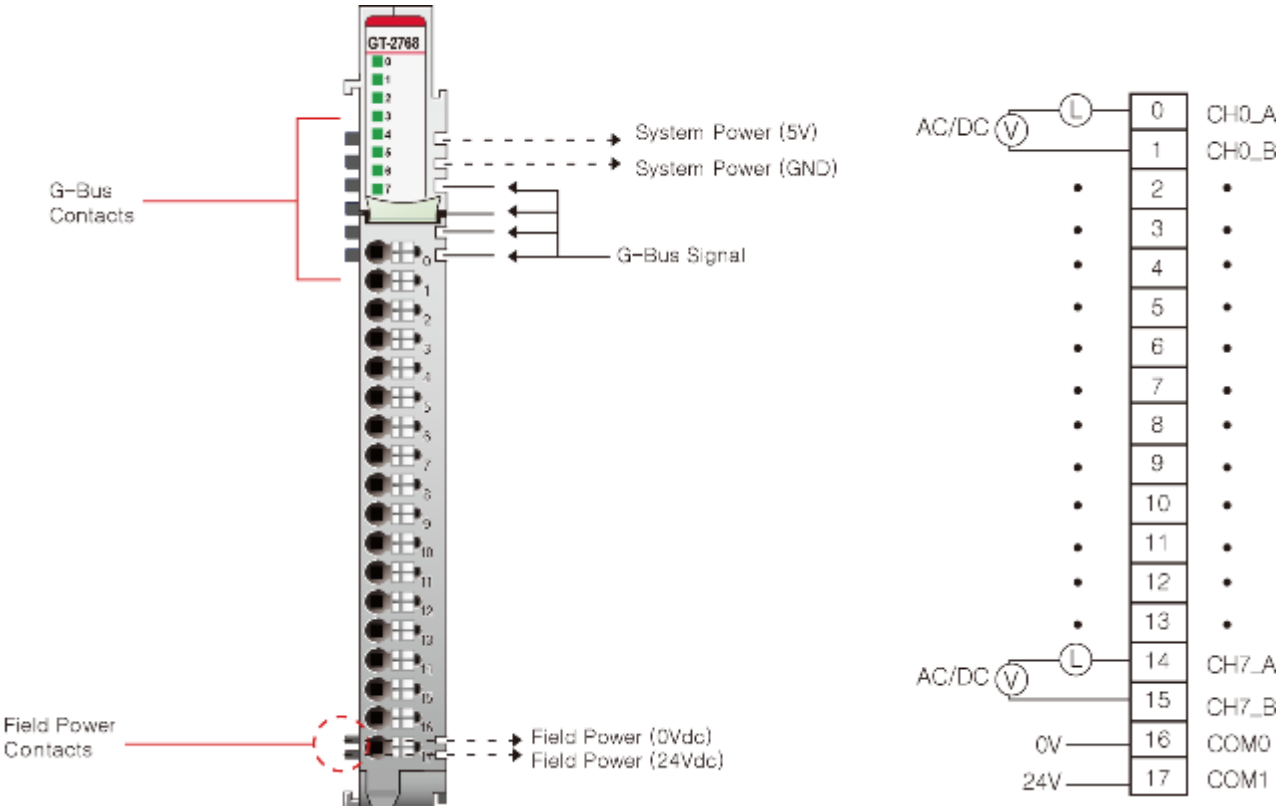
3.17.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	DecimalBit	Description	Default Value
0	00-07	Fault Action (0~7) 0 : Falut Value, 1 : Hold last state	0 (Fault Value)
1	00-07	Fault Value (0~7) : off, 1 : on	0 (off)

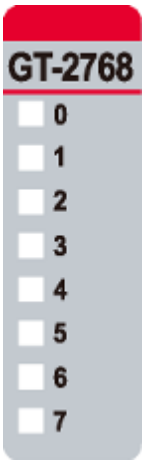
3.18. GT-2768

3.18.1. Wiring Diagram



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

3.18.2. LED Indicator



LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.18.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.18.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
Relative Humidity	5% ~ 90% Non-condensing
Mounting	DIN Rail
General Specification	
Shock Operating	IEC 60068-2-27 : 2008/15g, 11ms
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

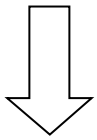
3.18.5. Specification

GT-2768	Specification
Output Specification	
Output Per Module	8 points bi-directional
Indicators	8 Green Output State
Relay type	MOS Relay (solid state relay)
Output Voltage Range (load dependent)	24Vac @ 2A resistive 24Vdc @ 2A resistive
Output delay time (resistive load)	Max. AC/DC : 240V OFF to ON : Max. 0.5ms @ 24Vdc ON to OFF : Max. 3ms @ 24Vdc OFF to ON : Max. 0.5ms @ 24Vdc ON to OFF : Max. 3ms @ 24Vdc
Output current rating	Max. 2A per channel Operating temperature -40℃~60℃ : Max. 1.5A per channel -40℃~50℃ : Max. 2A per channel
Frequency range (Vac)	47 ~ 63Hz
Open-state leakage current	Max. 0.1uA
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 130mA @ 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 : 15~30Vdc (AC Power Not Used)
Wiring	I/O Cable Max. 0.75mm^2(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.18.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

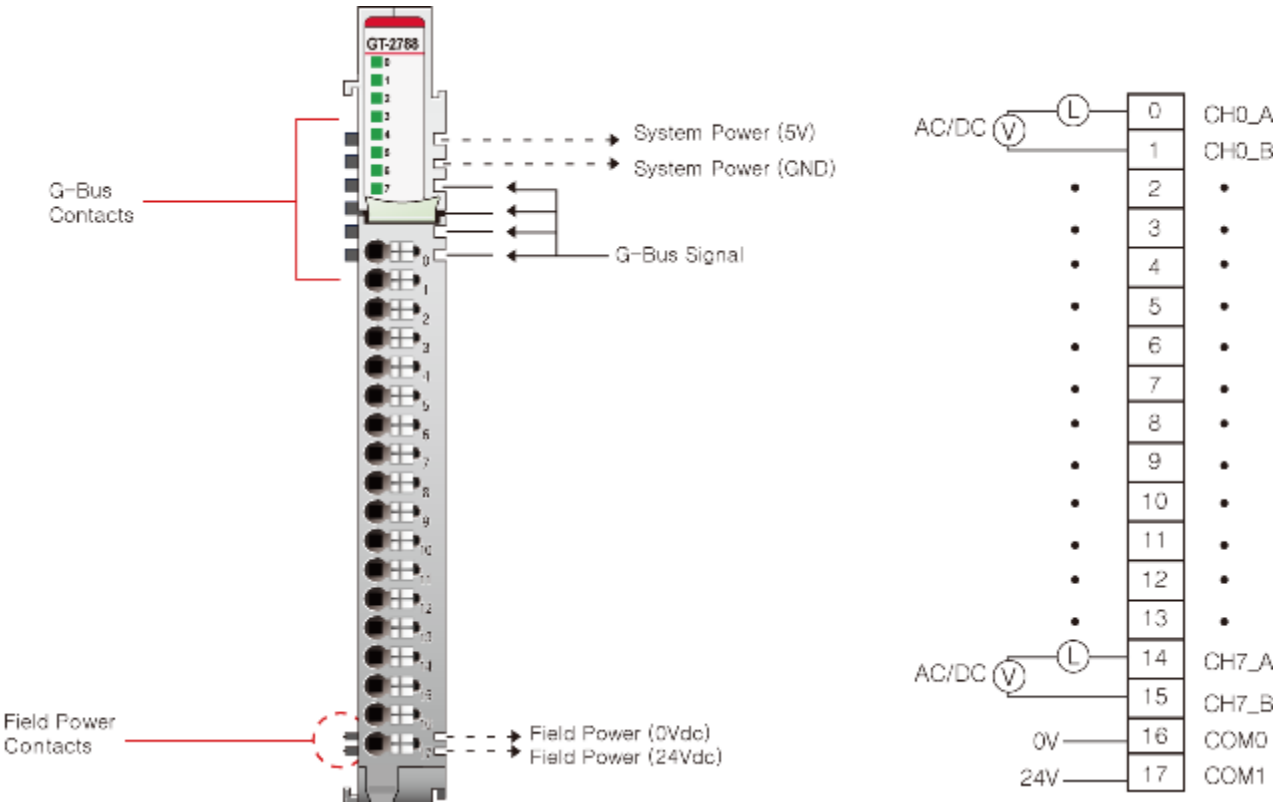
3.18.7. Parameter Data

" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

Offset	DecimalBit	Description	Default Value
0	00-07	Fault Action (0~7) 0 : Falut Value, 1 : Hold last state	0 (Fault Value)
1	00-07	Fault Value (0~7) : off, 1 : on	0 (off)

3.19. GT-2788

3.19.1. Wiring Diagram



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

3.19.2. LED Indicator

LED No.	LED Function / Description	LED Color
0	Output Channel 0	Green
1	Output Channel 1	Green
2	Output Channel 2	Green
3	Output Channel 3	Green
4	Output Channel 4	Green
5	Output Channel 5	Green
6	Output Channel 6	Green
7	Output Channel 7	Green

3.19.3. Channel Status LED

Status	LED	To indicate
Not Signal	Off	No Output Signal
On Signal	Green	Normal Operation

3.19.4. Environment Specification

Environmental Specification	
Operation Temperature	-40℃ ~ 60℃
UL Temperature	-20℃ ~ 60℃
Storage Temperature	-40℃ ~ 85℃
Relative Humidity	5% ~ 90% Non-condensing
Mounting	DIN Rail
General Specification	
Shock Operating	IEC 60068-2-27 : 2008/15g, 11ms
Vibration Resistance	Based on IEC 60068-2-6 DNVGL-CG-0039 : 2016/6 Vibration Class B, 4g
Industrial Emissions	EN61000-6-4 : 2007 +AI : 2011
Industrial Immunity	EN 61000-6-2 : 2005
Installation Position	Vertical and horizontal installation is available
Product Certifications	CE, UL

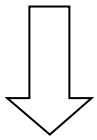
3.19.5. Specification

GT-2788	Specification
Output Specification	
Output Per Module	8 points bi-directional
Indicators	8 Green Output State
Relay type	MOS Relay (solid state relay)
Output Voltage Range (load dependent)	110Vac @ 1A resistive 110Vdc @ 1A resistive
Output delay time (resistive load)	Max. AC/DC : 240V OFF to ON : Max. 1ms @ 24Vdc ON to OFF : Max. 3.5ms @ 24Vdc OFF to ON : Max. 1ms @ 24Vdc ON to OFF : Max. 3.5ms @ 24Vdc
Output current rating	Max. 1A per channel 60℃ : 0.8A per channel 50℃ : 1A per channel
Frequency range (Vac)	47 ~ 63Hz
Open-state leakage current	Max. 10uA
Common Type	8 points / 2 COM
General Specification	
Power Dissipation	Max. 130mA @ 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 : 15~30Vdc (AC Power Not Used)
Wiring	I/O Cable Max. 0.75mm^2(AWG 18)
Weight	63g
Module Size	12mm x 109mm x 70mm

3.19.6. Mapping Data into the Image Table

" **Output Image Value**

Bit No	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	D7	D6	D5	D4	D3	D2	D1	D0



" **Output Module data**

D7	D6	D5	D4	D3	D2	D1	D0

3.19.7. Parameter Data

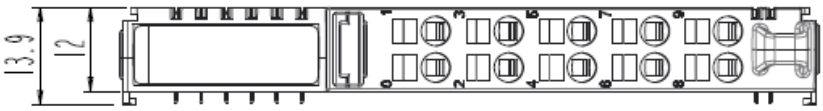
" **Valid Parameter Length : 2 Bytes**
" **Parameter Data**

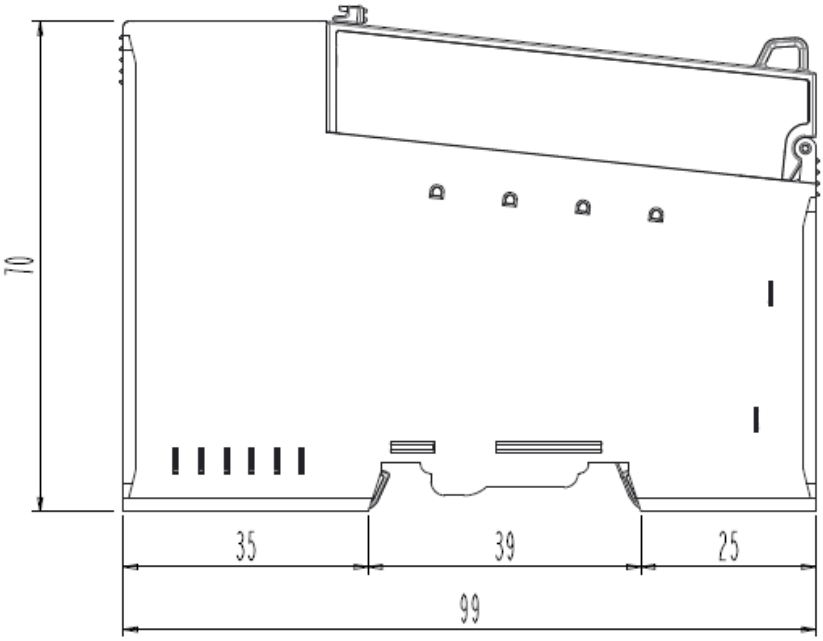
Offset	DecimalBit	Description	Default Value
0	00-07	Fault Action (0~7) 0 : Falut Value, 1 : Hold last state	0 (Fault Value)
1	00-07	Fault Value (0~7) : off, 1 : on	0 (off)

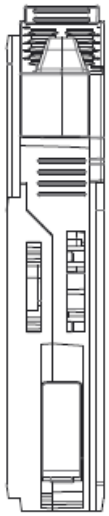
4.Dimension

4.1. GT-2xx4(RTB), GT-2xx8(RTB)

(mm)

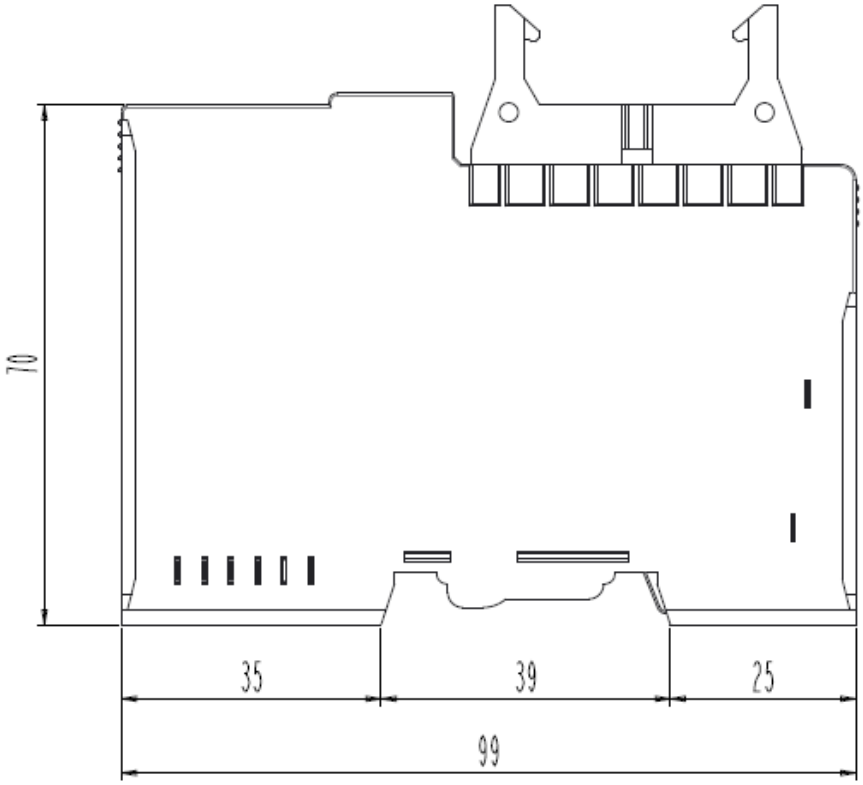


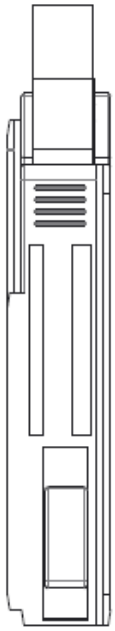




4.2. GT-2xxF(20P Connector)

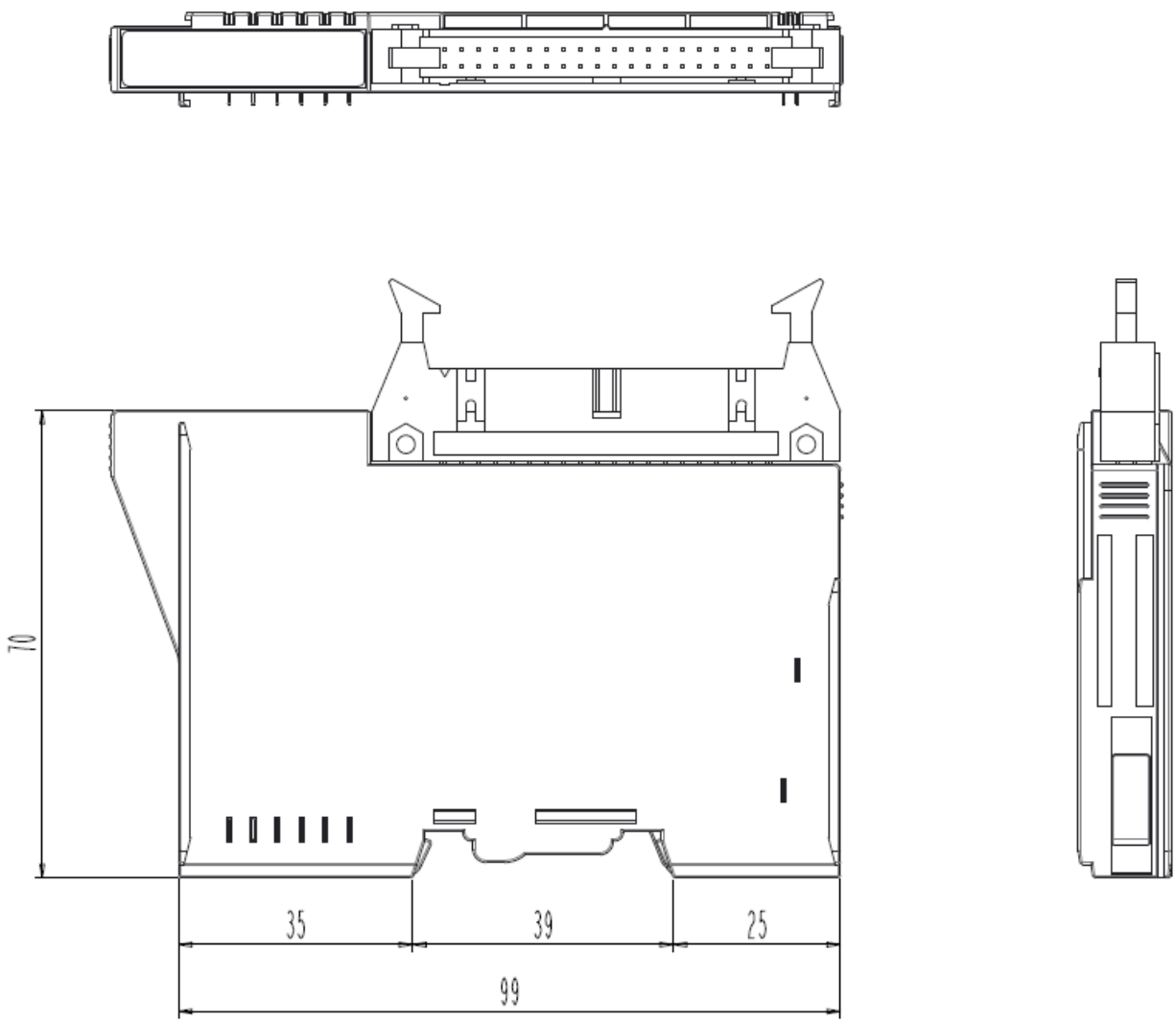
(mm)





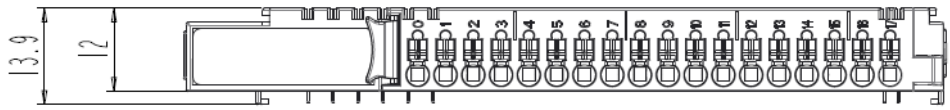
4.3. GT-2xxA (40P Connector)

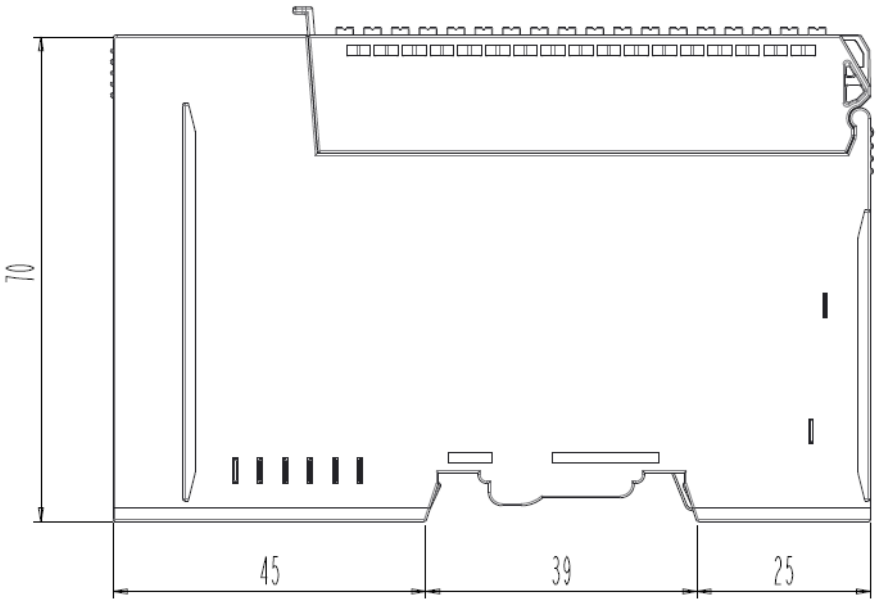
(mm)

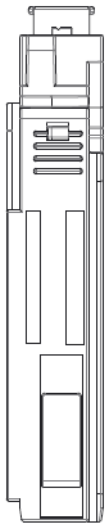


4.4. GT-225F/226F(18RTB)

(mm)







5. Mounting

Caution!

" **Hot surface!**

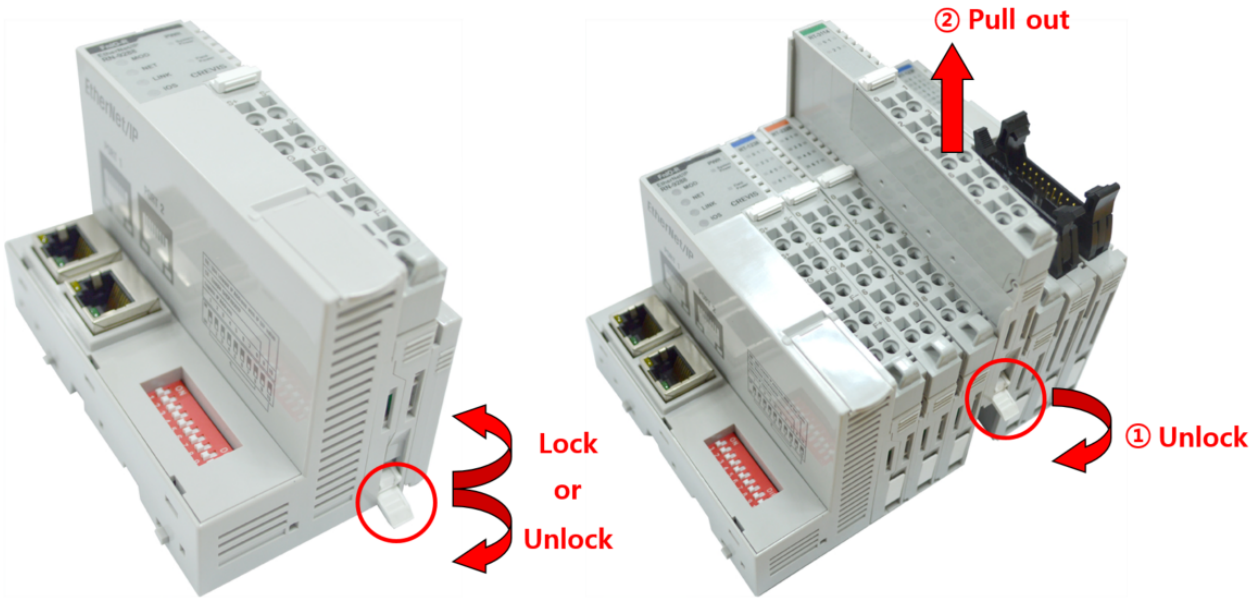
The surface of the housing can become hot during operation. If the device was operated at high ambient temperatures, allow it to be cool before touching it.

Notice!

" **Perform work on devices only if they are de-energized!**

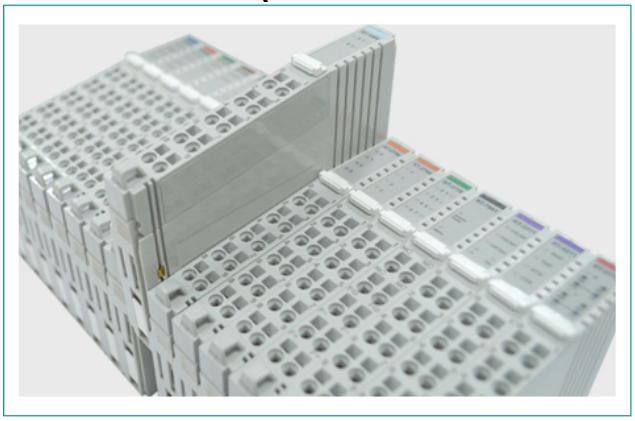
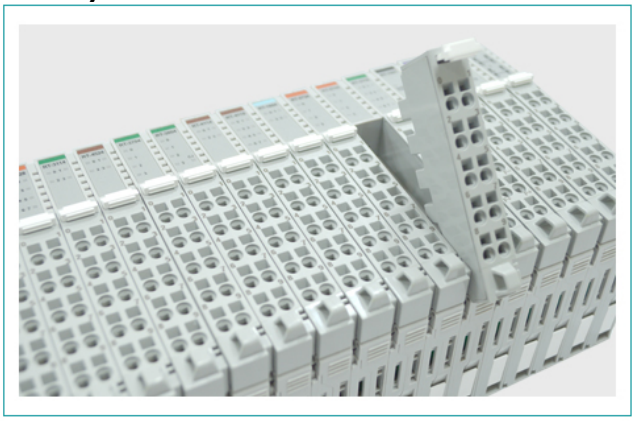
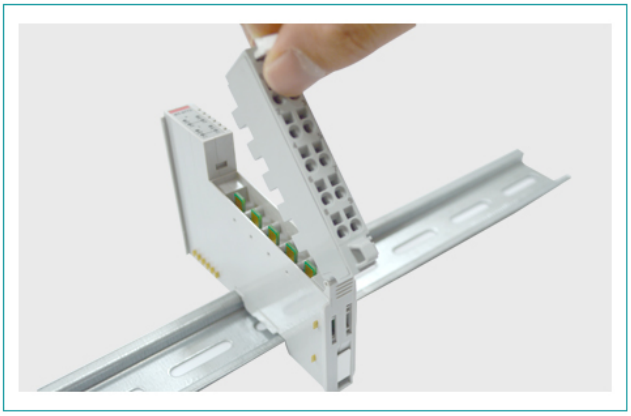
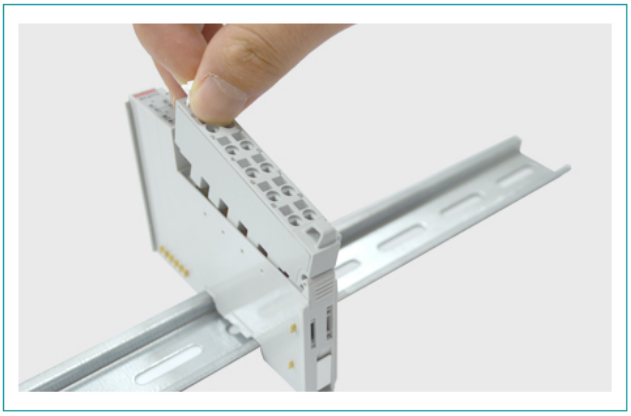
Working on energized devices can damage them. Therefore, turn off the power supply before working on the devices.

5.1. I/O Inserting and Removing Devices



- As above figure in order to safeguard the G-Series module from jamming, it should be fixed onto the DIN rail with locking level. To do so, fold on the upper of the locking lever.
  To pull out the G-Series module, unfold the locking lever as below figure.

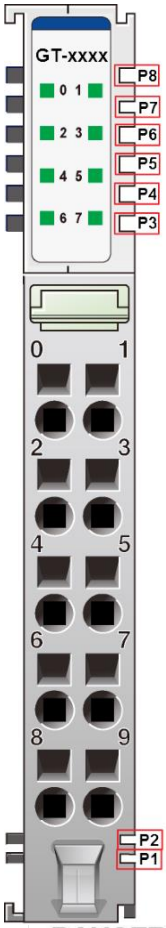
5.2. RTB (Removable Terminal Block)

- Whole terminal block can be combined and removed for the convenience.
- There is a locking switch on the RTB for the easy combination and easy removal.
- Easy combination and easy removal for IO modules on the din rail through One Touch Locking Switch.

6. GBus Pin Description

Communication between the GN series and the expansion module as well as system / field power supply of the bus modules is carried out via the internal bus. It is comprised of 6 data pin and 2 field power pin.



*Please refer to the table below regarding the pin description from P1 to P8.

No.	Description
P1	Field Power (VCC)
P2	Field Power (GND)
P3	GBUS CLK
P4	GBUS MISO
P5	GBUS MOSI
P6	GBUS Token
P7	System Power (GND)
P8	System Power (VCC)

Do not touch data and field power pins in order to avoid soiling and damage by ESD noise.

APPENDIX A

A.1 Product List

No.	GT-Number	Description	ID(hex)
Digital Input Module			
1	GT-1238	8 Points, Universal, 24Vdc, 10RTB	1238
2	GT-123F	16 Points, Universal, 24Vdc, 20P connector	123F
3	GT-12DF	16 Points, Universal, 24Vdc, 18RTB	12DF
4	GT-12FA	32 Points, Universal, 24Vdc, 40P connector	12FA
5	GT-1428	8 Sink Input / 8 Source Output with Diagnostic, 24Vdc	1428
6	GT-1804	4 Points, 120Vac, 10RTB	1804
7	GT-1904	4 Points, 240Vac, 10RTB	1904
Digital Output Module			
8	GT-2318	8 Points, Sink, 24Vdc/0.5A, 10RTB	2318
9	GT-2328	8 Points, Source, 24Vdc/0.5A, 10RTB	2328
10	GT-221F	16 Points, Sink, 24Vdc/0.3A, 20P connector	221F
11	GT-222F	16 Points, Source, 24Vdc/0.3A, 20P connector	222F
12	GT-225F	16 Points, Sink, 24Vdc/0.3A, 18RTB	225F
13	GT-226F	16 Points, Source, 24Vdc/0.3A, 18RTB	226F
14	GT-22BA	32 Points, Sink, 24Vdc/0.3A, 40P connector	22BA
15	GT-22CA	32 Points, Source, 24Vdc/0.3A, 40P connector	22CA
16	GT-2418	8 Channels Sink Output with Diagnostics	2418
17	GT-2428	8 Channels Source Output with Diagnostics	2428
18	GT-2618	8 Points, Sink, 24Vdc/2A, 10RTB	2618
19	GT-2628	8 Points, Source, 24Vdc/2A, 10RTB	2628
20	GT-2734	4 Points, MOS Relay, 240Vdc/ac, 0.5A, 10RTB	2734
21	GT-2738	8 Points, MOS Relay Output Terminal, 240Vdc, 0.5A	2738
22	GT-2744	4 Points, Relay, 24Vdc/2A, 240Vac/2A, 10RTB	2744
23	GT-2764	4 Points, MOS Relay, 24Vdc/ac, 2A, 10RTB	2764
24	GT-2768	8 Points, Relay Output Terminal, 24Vdc/ac, 2A	2768
25	GT-2784	4 Points, MOS Relay, 110Vdc/ac, 1A, 10RTB	2784
26	GT-2788	8 Points, Relay Output Terminal, 110Vdc/ac, 1A	2788
Analog Input Module			
27	GT-3002	2ch load cell input unit, strain gauge	3002
28	GT-3114	4 Channels, 0~20, 4~20mA, 12bits, 10RTB	3114
29	GT-3154	4 Channels, 0~20, 4~20mA, 16bits, 10RTB	3154
30	GT-3118	8 Channels, 0~20, 4~20mA, 12bits, 10RTB	3118
31	GT-3158	8 Channels, 0~20, 4~20mA, 16bits, 10RTB	3158
32	GT-311F	16 Channels, 0~20, 4~20mA, 12bits, 20P connector	311F
33	GT-315F	16 Channels, 0~20, 4~20mA, 16bits, 20P connector	315F
34	GT-317F	16 Channels, 0~20, 4~20mA, 12bits, 18RTB	317F
35	GT-319F	16 Channels, 0~20, 4~20mA, 16bits, 18RTB	319F
36	GT-3424	4 Channels, 0~10, 0~5, 1~5Vdc, 12bits, 10RTB	3424
37	GT-3464	4 Channels, 0~10, 0~5, 1~5Vdc, 16bits, 10RTB	3464

38	GT-3428	8 Channels, 0~10, 0~5, 1~5Vdc, 12bits, 10RTB	3428
39	GT-3468	8 Channels, 0~10, 0~5, 1~5Vdc, 16bits, 10RTB	3468
40	GT-342F	16 Channels, 0~10, 0~5, 1~5Vdc, 12bits, 20P connector	342F
41	GT-346F	16 Channels, 0~10, 0~5, 1~5Vdc, 16bits, 20P connector	346F
42	GT-347F	16 Channels, 0~10, 0~5, 1~5Vdc, 12bits, 18RTB	347F
43	GT-349F	16 Channels, 0~10, 0~5, 1~5Vdc, 16bits, 18RTB	349F
44	GT-3704	4 Channels, RTD, 10RTB	3704
45	GT-3708	8 Channels, RTD, 20P connector	3708
46	GT-3804	4 Channels, Thermocouple, 10RTB	3804
47	GT-3808	8 Channels, Thermocouple, 20P connector	3808
48	GT-3714	4 Channels, TEMP. Controller, RTD Input, SSR Output	3714
49	GT-3734	4 Channels, TEMP. Controller, RTD Input, Current Output	3734
50	GT-3814	4 Channels, TEMP. Controller, TC Input, SSR Output	3814
51	GT-3834	4 Channels, TEMP. Controller, TC Input, Current Output	3834
52	GT-3901	AC Measurement	3901
53	GT-3914	4 Channels, Differential, 0~20, 4~20, +/-20mA, 12Bits, 10RTB	3914
54	GT-3934	4 Channels, Differential, 0~20, 4~20, +/-20mA, 16Bits, 10RTB	3934
55	GT-3918	8 Channels, Differential, 0~20, 4~20, +/-20mA, 12Bits, 18RTB	3918
56	GT-3938	8 Channels, Differential, 0~20, 4~20, +/-20mA, 16Bits, 18RTB	3938
57	GT-3924	4 Channels, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 12Bits, 10RTB	3924
58	GT-3944	4 Channels, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 16Bits, 10RTB	3944
59	GT-3928	8 Channels, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 12Bits, 18RTB	3928
60	GT-3948	8 Channels, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 16Bits, 18RTB	3948
Analog Output Module			
61	GT-4114	4CH, 0~20mA, 12Bits, 10RTB	4114
62	GT-4154	4CH, 0~20mA, 16Bits, 10RTB	4154
63	GT-4118	8CH, 0~20mA, 12Bits, 10RTB	4118
64	GT-4158	8CH, 0~20mA, 16Bits, 10RTB	4158
65	GT-4214	4 Channels, Current Output, 4~20mA, 12bits	4214
66	GT-4254	4 Channels, Current Output, 4~20mA, 16bits	4254
67	GT-4218	8 CHANNELS CURRENT OUTPUT, 4~20mA, 12BIT	4218
68	GT-4258	8 CHANNELS CURRENT OUTPUT, 4~20mA, 16BIT	4258
69	GT-4424	4CH, 0~10Vdc, 12Bits, 10RTB	4424
70	GT-4464	4CH, 0~10Vdc, 16Bits, 10RTB	4464
71	GT-4428	8CH, 0~10Vdc, 12Bits, 10RTB	4428
72	GT-4468	8CH, 0~10Vdc, 16Bits, 10RTB	4468
73	GT-442F	16CH, 0~10Vdc, 12Bits, 20P Connector	442F
74	GT-446F	6CH, 0~10Vdc, 16Bits, 20P Connector	446F
75	GT-447F	16CH, 0~10Vdc, 12Bits, 18RTB	447F
76	GT-449F	16CH, 0~10Vdc, 16Bits, 18RTB	449F
77	GT-4524	AO 4 CHs, ±10Vdc, 12Bits, 10RTB	4524
78	GT-4564	AO 4 CHs, ±10Vdc, 16Bits, 10RTB	4564
Special Module			
79	GT-5102	2CH, Encoder, Input, 5Vdc, 10RTB	5102
80	GT-5112	High Speed Counter, 2CHs, 24Vdc, Encoder Input, 10RTB	5112
81	GT-5114	High Speed Counter, 4CHs, 24Vdc, Encoder Input, 10RTB	5114
82	GT-5211	1CH, RS 232, RTS/CTS, Full Duplex Type, 10RTB	5211
83	GT-5212	2CH, RS 232, Full Duplex Type, 10RTB	5212

84	GT-5221	1CH, RS 485, Full Duplex Type, 10RTB	5221
85	GT-5231	1CH, RS 485, Half Full Duplex Type, 10RTB	5231
86	GT-5232	2CH, RS 485, Half Full Duplex Type, 10RTB	5232
87	GT-5352	2CH, Synchronous Serial Interface Input, 10RTB	5352
88	GT-5442	PWM Output, 2CHs, 0.5A/24Vdc, Source, 18RTB	5442
89	GT-5444	PWM Output, 4CHs, 0.5A/24Vdc, Source, 18RTB	5444
90	GT-5642	Pulse Output, 2CHs, 0.5A/24Vdc, Source, 18RTB	5642
91	GT-5652	Pulse Output, 2CHs, RS422 (Differential), 18RTB	5652
92	GT-5521	1CH, Stepper Module (TBD)	5521
Power Module			
93	GT-7408	Shield Module	7408
94	GT-7508	Common for 0Vdc	7508
95	GT-7511	Power Expansion, In 24Vdc, Out 1A/5Vdc	7511
96	GT-7518	Common for 24Vdc	7518
97	GT-7588	Common for 0Vdc, 24Vdc	7588
98	GT-7641	Field Power, 5/24/48 Vdc, 110/220 Vac	7641
99	GT-7151	Noise Filter Module, 18RTB, None ID Type	7151
100	GT-7851	Noise Filter Module, 18RTB, ID Type	7851

A.2. Glossary

- System Power : The power for starting up CPU.
- Field Power : The power for input and output line.
- Terminator Resistor : Resistor for prevention reflected wave.
- EDS : Electronic Data Sheet.
- Sink : The method of in/output power supply if a device has no power source.
- Source : The method of in/output power supply if a device has the power source.