
FnIO G - Series:

GL-9087

GL-9087 (Profinet Network Adapter)

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| | | | | |

1. Environment Specification

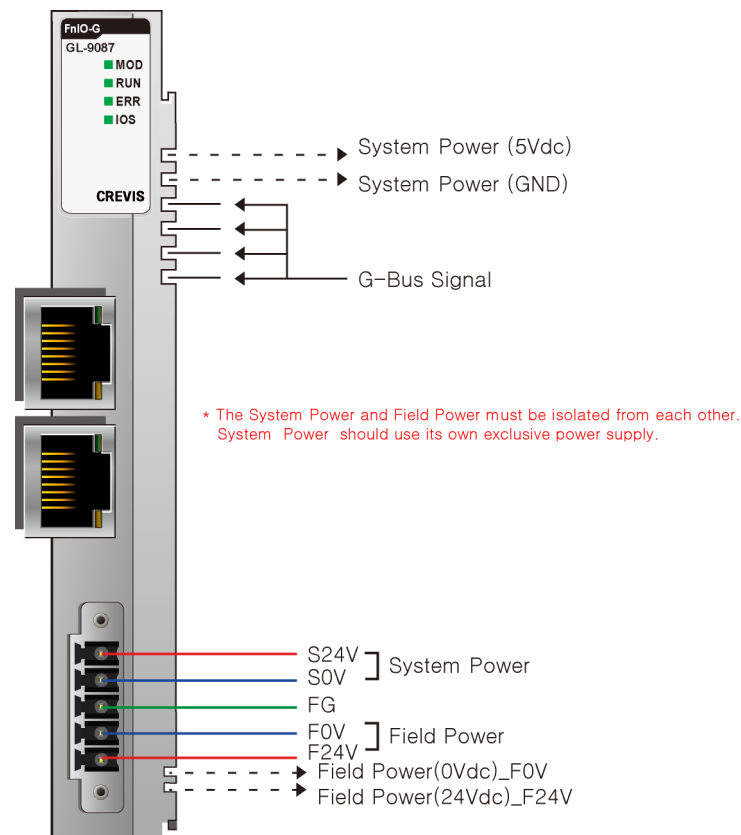
| Test Equipment | |
|------------------------|--|
| Operating Temperature | -20°C ~ 60°C : 1.0A full load is allowed. |
| UL Temperature | -20°C~60°C |
| Storage Temperature | -40°C~85°C |
| Relative Humidity | 5% ~ 90% non-condensing |
| Mounting | DIN rail |
| General specification | |
| Shock Operating | IEC 60068-2-27 |
| Vibration Resistance | IEC 60068-2-6, 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 |

2. GL-9087 (ProfiNet Network Adapter)

2.1. GL-9087 Specification

| Items | Specification |
|--|---|
| Communication Interface Specification | |
| Adapter Type | Slave node (Profinet) |
| Protocol | Profinet |
| Max. Expansion Module | 10 slots |
| Max. Input / Output Data Size | Max. Input 128 bytes / Output 128 bytes |
| Max Length Bus Line | Up to 100m from Ethernet Hub/Switch with twisted CAT5 FTP/STP |
| Max. Nodes | Limited by Profinet Specification. |
| Baud Rate | 100Mbps, Auto-negotiation, Full duplex |
| Interface Connector | RJ-45 socket * 2pcs |
| IP-Address Setup | Via Master Device Software |
| IAP Mode | When DIP Switch 1 to 8 setting is 254 or 255 (Using only Internet Explorer / recommended version 11) |
| Indicator | 4 LEDs 1 Green/Red, Module Status(MOD) 1 Green/Red, Network Status(NET) 1 Green/Red, Error Status(ERROR) 1 Green/Red Expansion I/O Module Status(IOS) 2 LEDs (each RJ45 Connector) 1 Yellow, Link/Active 1 Green, Not used |
| Module Location | Starter module left side of G-Series system |
| General specification | |
| UL System Power | Supply voltage : 24Vdc nominal, Class 2 |
| System Power | Supply voltage : 24Vdc nominal Supply voltage range : 15~28.8Vdc Protection : Reverse polarity protection |
| Power Dissipation | 55mA typical @ 24Vdc |
| Current for I/O Module | 1.0A @ 5Vdc |
| Isolation | System power to internal logic : Non-isolation System power I/O driver : Isolation |
| UL Field Power | Supply voltage : 24Vdc nominal, Class 2 |
| Field Power | Supply voltage : 24Vdc typical (Max. 28.8Vdc) * Field Power Range is different depending on IO Module series. Refer to IO Module's Specification. |
| Max. Current Field Power Contact | DC 8A Max |
| Wiring | I/O Cable Max. 2.0mm ² (AWG 14) |
| Weight | 76g |
| Module Size | 22mm x 109mm x 70mm |
| Environment Condition | Refer to '1. Environment Specification' |

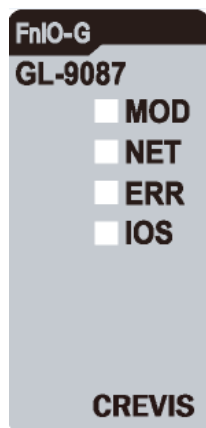
2.2. GL-9087 Wiring Diagram



| Pin No. | Signal Description |
|---------|----------------------|
| 1 | System Power, 24V |
| 2 | System Power, Ground |
| 3 | F.G |
| 4 | Field Power, Ground |
| 5 | Field Power, 24V |

2.3. GL-9087 LED Indicator

2.3.1. LED Indicator



| LED No. | LED Function / Description | LED Color |
|---------|----------------------------|-----------|
| MOD | Module Status | Green/Red |
| NET | Communication Status | Green/Red |
| ERR | Error Status (Profinet) | Red |
| IOS | Extension Module Status | Green/Red |

2.3.2. MOD (Module Status LED)

| Status | LED | To indicate |
|------------------------|--------------------------|---|
| No Powered | OFF | No power is supplied to the unit. |
| Device Operational | Green | The unit is operating in normal condition. |
| Error Slot Indication* | Flashing Green (N times) | Flashing Green led in N times (N = faulty IO position). For 5 seconds the led will be off then this process repeats. |
| Unrecoverable Fault | Red | The device has an unrecoverable fault. - Memory error or CPU watchdog error. |

* During normal operation, only one slot where an error initially occurred is detected.

2.3.3. NET (Communication Status LED)

| Status | LED | To indicate |
|-----------------------|----------------|---|
| No Powered | OFF | No power is supplied to the unit. |
| Communication | Green | Normal communication. |
| Communication Ready | Flashing Green | Communication identification. |
| Invalid Configuration | Flashing Red | DCP Communication error(Invalid Configuration). |

2.3.4. ERR (Error Status LED)

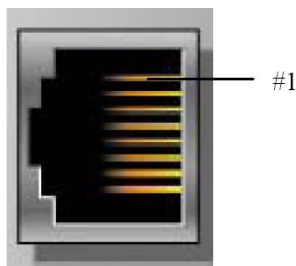
| Status | LED | To indicate |
|------------------|-----|---------------------------------|
| No Error | OFF | No Error. |
| Connection error | Red | Communication connection error. |

2.3.5. IOS LED (Extension Module Status LED)

| Status | LED | To indicate |
|---|--------------|--|
| Not Powered | OFF | Adapter may not be powered. |
| No Expansion Module | Flashing Red | Adapter has no expansion module |
| Internal Bus Connection, Run Exchanging I/O | Green | Exchanging I/O data. |
| Expansion Configuration Failed | Red | One or more expansion module occurred in fault state. - Detected invalid expansion module ID. - Overflowed Input/Output Size - Too many expansion module - Initialization failure - Communication failure. - Changed expansion module configuration. - Mismatch vendor code between adapter and expansion module. |

2.4. GL-9087 Electrical Interface

2.4.1. RJ-45 Socket



| RJ-45 | Signal Name | Description |
|-------|-------------|---------------------|
| 1 | TD+ | Transmit + |
| 2 | TD- | Transmit - |
| 3 | RD+ | Receive + |
| 4 | - | |
| 5 | - | |
| 6 | RD- | Receive - |
| 7 | - | |
| 8 | - | |
| Case | Shield | Shield RJ-45 Socket |

2.4.2. Dip Switch



| DIP Pole# | Description |
|-----------|------------------------------|
| 1 | IP DIP bit#0 |
| 2 | IP DIP bit#1 |
| 3 | IP DIP bit#2 |
| 4 | IP DIP bit#3 |
| 5 | IP DIP bit#4 |
| 6 | IP DIP bit#5 |
| 7 | IP DIP bit#6 |
| 8 | Reserve |
| 9 | IP Address (By Master) |
| 10 | Node ID : Flash Memory Value |

• **When the dip switch is not set to non-zero (1~99):**

If the decimal value of the dip switch is not zero (0), the name of device will be fixed as "GL9087-xx" (xx: 1~99). You must put the fixed device name.

• **When the dip switch "9 pole" is set to switch ON:**

When the GL-9087 device is powered on, the IP Address, Gateway, and Subnet mask values stored in the EEPROM are set as default values.(Regardless of the dip switch value).

If the IP address, Gateway and Subnet mask values assigned from the master device are different from the stored EEPROM values, The value that assigned from the master are written to the EEPROM.

• **When the dip switch "10 pole" is set to switch ON:**

GL-9087 Devices on a PROFINET subnet must have unique names. The device names must satisfy DNS naming conventions. This means that the following rules must be observed:

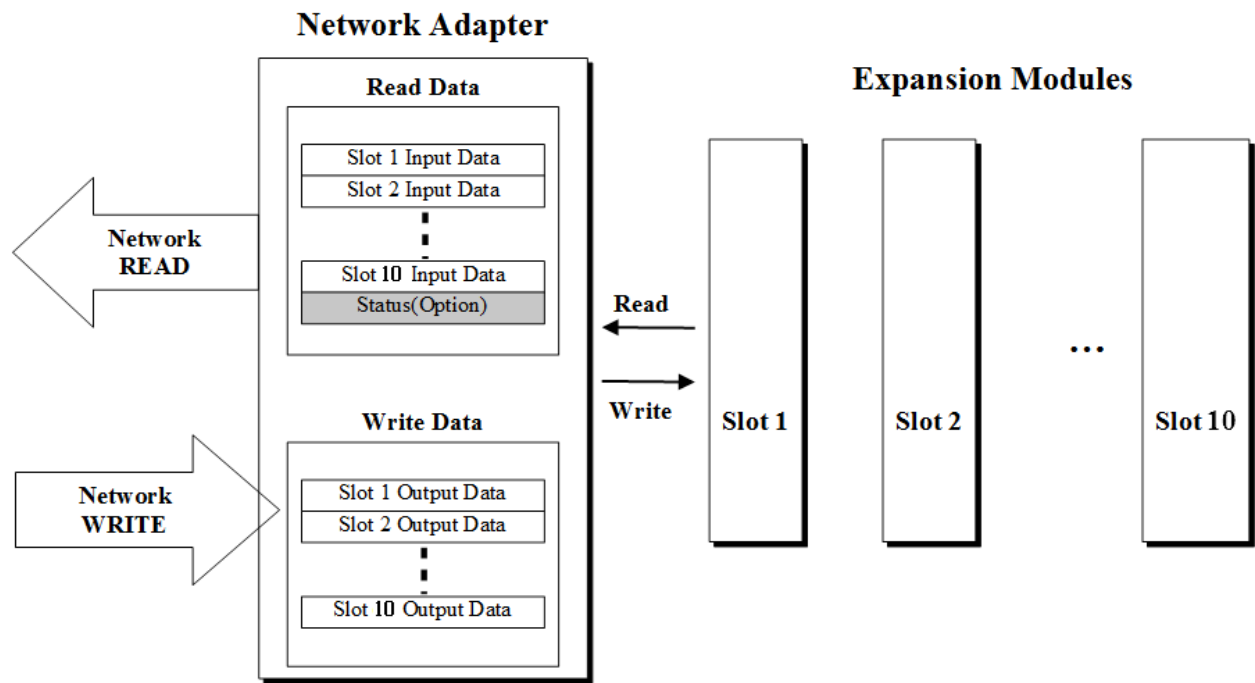
- Names are limited to a total of 127 characters (letters, numbers, dashes or dots)
- Any component part (that is, a character string between two dots) of the device name may only be up to 63 characters long.
- Names cannot contain any special characters such as umlauts, parentheses, underscores, forward or backward slashes, empty spaces, etc. The dash is the only special character allowed.
- Names must not begin or end with the "-" or "." characters.
- Names must not have the format n.n.n.n (where n = 0...999).
- The device name must not start with numbers.

Device names are assigned to PROFINET IO device when the device is being set up and placed in operation for the first time ("commissioned").

The default name is "GL9087-address".

3. I/O Process Image Map

An expansion module may have 3 types of data as I/O data, configuration parameter and memory register. The data exchange between network adapter and expansion modules is done via an I/O process image data by G-Series protocol. The following figure shows the data flow of process image between network adapter and expansion modules.



3.1. Mapping Data into Image Table

3.1.1. Discrete Input Module

- 4 Point Input Module

Input Module Data

| | | | |
|----|----|----|----|
| D3 | D2 | D1 | D0 |
|----|----|----|----|



Input Image Value

| Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
|--------|----------|------|------|------|------|------|------|------|
| Byte 0 | Reserved | | | | D3 | D2 | D1 | D0 |

- 8 Point Input Module

Input Module Data

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
|----|----|----|----|----|----|----|----|



Input Image Value

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

- 16 Point Input Module

Input Image Value

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

Input Module Data

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

- 32 Point Input Module

| | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Input 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 |



| | | | | | | | | | |
|-------------------|--------|------|------|------|------|------|------|------|------|
| Input Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
| | Byte 1 | D15 | D14 | D13 | D12 | D11 | D10 | D9 | D8 |
| | Byte 2 | D23 | D22 | D21 | D20 | D19 | D18 | D17 | D16 |
| | Byte 3 | D31 | D30 | D29 | D28 | D27 | D26 | D25 | D24 |

3.1.2. Discrete Output Module

• 4 Point Input Module

| | | | | | | | | | |
|--------------------|--------|----------|------|------|------|------|------|------|------|
| Output Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | Reserved | | | | D3 | D2 | D1 | D0 |



| | | | | |
|--------------------|----|----|----|----|
| Output Module Data | D3 | D2 | D1 | D0 |
|--------------------|----|----|----|----|

• 8 Point Output Module

| | | | | | | | | | |
|--------------------|--------|------|------|------|------|------|------|------|------|
| 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 |
|--------------------|----|----|----|----|----|----|----|----|

• 16 Point Output Module

| | | | | | | | | | |
|--------------------|--------|------|------|------|------|------|------|------|------|
| Output Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
| | Byte 1 | 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 |

• 32 Point Output Module

| | | | | | | | | | |
|--------------------|--------|------|------|------|------|------|------|------|------|
| Output Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
| | Byte 1 | D15 | D14 | D13 | D12 | D11 | D10 | D9 | D8 |
| | Byte 2 | D23 | D22 | D21 | D20 | D19 | D18 | D17 | D16 |
| | Byte 3 | 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 |

3.1.3. Analog Input Module

• 4 Channel Analog Input Module

Input Module Data

| |
|------------------|
| Analog Input Ch0 |
| Analog Input Ch1 |
| Analog Input Ch2 |
| Analog Input Ch3 |



Input Image Value

| Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
|--------|----------------------------|------|------|------|------|------|------|------|
| Byte 0 | Analog Input Ch0 low byte | | | | | | | |
| Byte 1 | Analog Input Ch0 high byte | | | | | | | |
| Byte 2 | Analog Input Ch1 low byte | | | | | | | |
| Byte 3 | Analog Input Ch1 high byte | | | | | | | |
| Byte 4 | Analog Input Ch2 low byte | | | | | | | |
| Byte 5 | Analog Input Ch2 high byte | | | | | | | |
| Byte 6 | Analog Input Ch3 low byte | | | | | | | |
| Byte 7 | Analog Input Ch3 high byte | | | | | | | |

• 8 Channel Analog Input Module

Input Module Data

| |
|------------------|
| Analog Input Ch0 |
| Analog Input Ch1 |
| Analog Input Ch2 |
| Analog Input Ch3 |
| Analog Input Ch4 |
| Analog Input Ch5 |
| Analog Input Ch6 |
| Analog Input Ch7 |



Input Image Value

| Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
|---------|----------------------------|------|------|------|------|------|------|------|
| Byte 0 | Analog Input Ch0 low byte | | | | | | | |
| Byte 1 | Analog Input Ch0 high byte | | | | | | | |
| Byte 2 | Analog Input Ch1 low byte | | | | | | | |
| Byte 3 | Analog Input Ch1 high byte | | | | | | | |
| Byte 4 | Analog Input Ch2 low byte | | | | | | | |
| Byte 5 | Analog Input Ch2 high byte | | | | | | | |
| Byte 6 | Analog Input Ch3 low byte | | | | | | | |
| Byte 7 | Analog Input Ch3 high byte | | | | | | | |
| Byte 8 | Analog Input Ch0 low byte | | | | | | | |
| Byte 9 | Analog Input Ch0 high byte | | | | | | | |
| Byte 10 | Analog Input Ch1 low byte | | | | | | | |
| Byte 11 | Analog Input Ch1 high byte | | | | | | | |
| Byte 12 | Analog Input Ch2 low byte | | | | | | | |
| Byte 13 | Analog Input Ch2 high byte | | | | | | | |
| Byte 14 | Analog Input Ch3 low byte | | | | | | | |
| Byte 15 | Analog Input Ch3 high byte | | | | | | | |

3.1.4. Analog Output Module

• 4 Channel Analog Input Module

| | | | | | | | | | |
|--------------------|--------|-----------------------------|------|------|------|------|------|------|------|
| Output Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | Analog Output Ch0 low byte | | | | | | | |
| | Byte 1 | Analog Output Ch0 high byte | | | | | | | |
| | Byte 2 | Analog Output Ch1 low byte | | | | | | | |
| | Byte 3 | Analog Output Ch1 high byte | | | | | | | |
| | Byte 4 | Analog Output Ch2 low byte | | | | | | | |
| | Byte 5 | Analog Output Ch2 high byte | | | | | | | |
| | Byte 6 | Analog Output Ch3 low byte | | | | | | | |
| | Byte 7 | Analog Output Ch3 high byte | | | | | | | |



| | |
|--------------------|-------------------|
| Output Module Data | Analog Output Ch0 |
| | Analog Output Ch1 |
| | Analog Output Ch2 |
| | Analog Output Ch3 |

• 8 Channel Analog Input Module

| | | | | | | | | | |
|--------------------|---------|-----------------------------|------|------|------|------|------|------|------|
| Output Image Value | Bit No | Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
| | Byte 0 | Analog Output Ch0 low byte | | | | | | | |
| | Byte 1 | Analog Output Ch0 high byte | | | | | | | |
| | Byte 2 | Analog Output Ch1 low byte | | | | | | | |
| | Byte 3 | Analog Output Ch1 high byte | | | | | | | |
| | Byte 4 | Analog Output Ch2 low byte | | | | | | | |
| | Byte 5 | Analog Output Ch2 high byte | | | | | | | |
| | Byte 6 | Analog Output Ch3 low byte | | | | | | | |
| | Byte 7 | Analog Output Ch3 high byte | | | | | | | |
| | Byte 8 | Analog Output Ch4 low byte | | | | | | | |
| | Byte 9 | Analog Output Ch4 high byte | | | | | | | |
| | Byte 10 | Analog Output Ch5 low byte | | | | | | | |
| | Byte 11 | Analog Output Ch5 high byte | | | | | | | |
| | Byte 12 | Analog Output Ch6 low byte | | | | | | | |
| | Byte 13 | Analog Output Ch6 high byte | | | | | | | |
| | Byte 14 | Analog Output Ch7 low byte | | | | | | | |
| | Byte 15 | Analog Output Ch7 high byte | | | | | | | |

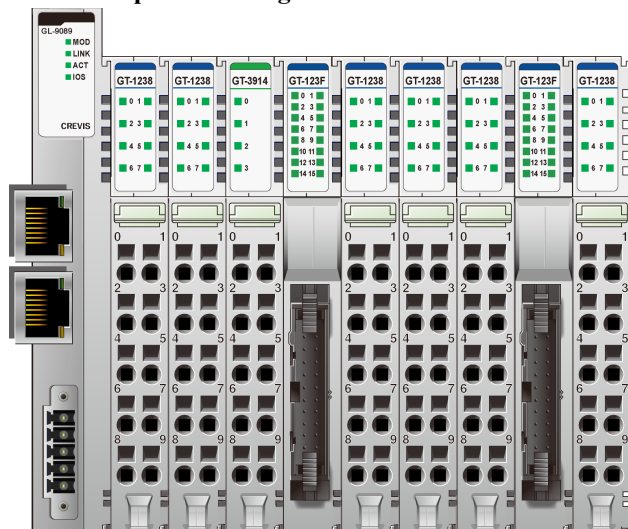


| | |
|--------------------|-------------------|
| Output Module Data | Analog Output Ch0 |
| | Analog Output Ch1 |
| | Analog Output Ch2 |
| | Analog Output Ch3 |
| | Analog Output Ch4 |
| | Analog Output Ch5 |
| | Analog Output Ch6 |
| | Analog Output Ch7 |

3.2. Example of Input Process Image (Input Register) Map

Input image data depends on slot position and expansion slot data type. Input process image data is only ordered by expansion slot position .

• For example slot configuration



| Slot No. | Module Description |
|----------|--------------------|
| #0 | ProfiNet Adapter |
| #1 | 8-discrete input |
| #2 | 8-discrete input |
| #3 | 4-analog input |
| #4 | 16-discrete input |
| #5 | 8-discrete input |
| #6 | 8-discrete input |
| #7 | 8-discrete input |
| #8 | 16-discrete input |
| #9 | 8-discrete input |

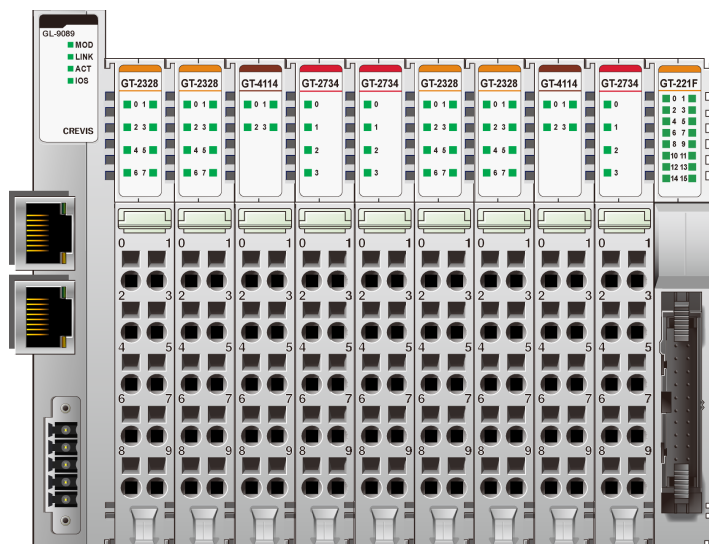
• Input Process Image

| Address | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---------|-------------------------------------|-----|-----|-----|-----|-----|----|----|------------------------------------|----|----|----|----|----|----|----|
| 0x0000 | Discrete Input 8 pts (Slot#2) | | | | | | | | Discrete Input 8 pts (Slot#1) | | | | | | | |
| 0x0001 | Analog Input Ch0 high byte (Slot#3) | | | | | | | | Analog Input Ch0 low byte (Slot#3) | | | | | | | |
| 0x0002 | Analog Input Ch1 high byte (Slot#3) | | | | | | | | Analog Input Ch1 low byte (Slot#3) | | | | | | | |
| 0x0003 | Analog Input Ch2 high byte (Slot#3) | | | | | | | | Analog Input Ch2 low byte (Slot#3) | | | | | | | |
| 0x0004 | Analog Input Ch3 high byte (Slot#3) | | | | | | | | Analog Input Ch3 low byte (Slot#3) | | | | | | | |
| 0x0005 | Discrete Input 8 pts (Slot#4) | | | | | | | | Discrete Input 8 pts (Slot#4) | | | | | | | |
| 0x0006 | Discrete Input 8 pts (Slot#6) | | | | | | | | Discrete Input 8 pts (Slot#5) | | | | | | | |
| 0x0007 | Discrete Input 8 pts (Slot#8) | | | | | | | | Discrete Input 8 pts (Slot#7) | | | | | | | |
| 0x0008 | Discrete Input 8 pts (Slot#9) | | | | | | | | Discrete Input 8 pts (Slot#8) | | | | | | | |

3.3. Example of Output Process Image (Output Register) Map

Output image data depends on slot position and expansion slot data type. Output process image data is only ordered by expansion slot position.

• For example slot configuration



| Slot No. | Module Description |
|----------|--------------------|
| #0 | MODBUS/TCP Adapter |
| #1 | 8-discrete output |
| #2 | 8-discrete output |
| #3 | 4-analog output |
| #4 | 4- relay output |
| #5 | 4-relay output |
| #6 | 8-discrete output |
| #7 | 8-discrete output |
| #8 | 4-analog output |
| #9 | 4-relay output |
| #10 | 16-discrete output |

• Output Process Image

| Address | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---------|--------------------------------------|-----|-----|-----|-----------------------------|-----|----|----|--------------------------------------|----|----|----|-----------------------------|----|----|----|
| 0x0800 | Discrete Output 8 pts (Slot#2) | | | | | | | | Discrete Output 8 pts (Slot#1) | | | | | | | |
| 0x0801 | Analog Output Ch0 high byte (Slot#3) | | | | | | | | Analog Output Ch0 low byte (Slot#3) | | | | | | | |
| 0x0802 | Analog Output Ch1 high byte (Slot#3) | | | | | | | | Analog Output Ch1 low byte (Slot#3) | | | | | | | |
| 0x0803 | Analog Output Ch2 high byte (Slot#3) | | | | | | | | Analog Output Ch2 low byte (Slot#3) | | | | | | | |
| 0x0804 | Analog Output Ch3 high byte (Slot#3) | | | | | | | | Analog Output Ch3 low byte (Slot#3) | | | | | | | |
| 0x0805 | Empty, Don't Care | | | | Discrete Out 4 pts (Slot#5) | | | | Empty, Don't Care | | | | Discrete Out 4 pts (Slot#4) | | | |
| 0x0806 | Discrete Output low 8 pts (Slot#7) | | | | | | | | Discrete Output low 8 pts (Slot#6) | | | | | | | |
| 0x0807 | Analog Output Ch0 high byte (Slot#8) | | | | | | | | Analog Output Ch0 low byte (Slot#8) | | | | | | | |
| 0x0808 | Analog Output Ch1 high byte (Slot#8) | | | | | | | | Analog Output Ch1 low byte (Slot#8) | | | | | | | |
| 0x0809 | Analog Output Ch2 high byte (Slot#8) | | | | | | | | Analog Output Ch2 low byte (Slot#8) | | | | | | | |
| 0x080A | Analog Output Ch3 high byte (Slot#8) | | | | | | | | Analog Output Ch3 low byte (Slot#8) | | | | | | | |
| 0x080B | Discrete Output low 8 pts (Slot#10) | | | | | | | | Empty, Don't Care | | | | Discrete Out 4 pts (Slot#9) | | | |
| 0x080C | Empty, Don't Care | | | | | | | | Discrete Output high 8 pts (Slot#10) | | | | | | | |

4. Parameter

4.1. GL-9087 Parameter

| Parameter | Setting | Description |
|------------------|------------------------------|--|
| Word data type | All type | Little Endian format(LSB-MSB) |
| Stop action | Clear output image to 0 * | All outputs are set to 0. |
| | Hold last valid output image | All outputs are remain the last value. |
| Stop action Mode | General Mode | For SIEMENS PLC |
| | Special Mode | For Soft PLC(ex-CoDeSys) |

* Default setting

4.2. GL-9087 PROFINET IO Characteristics

4.2.1. Device Identity

| Item | Value |
|----------------|---------------------------|
| Vendor | CREVIS |
| Vendor ID | 0x0140 |
| Product family | CREVIS FnIO System |
| Device ID | 0x9087 |
| Details | GL9087 PROFINET IO Device |

4.2.2. Device Access Point

| Item | Value |
|---|---------------------------|
| Module Ident Number | 0x00009087 |
| Details | GL9087 PROFINET IO Device |
| Vendor Name | CREVIS |
| Order Number | GL-9087 |
| Category | CREVIS PROFINET I/O |
| Software Version | V1.0 |
| Hardware Version | V1.0 |
| Maximal Input Length | 1440 Bytes |
| Maximal Output Length | 1440 Bytes |
| Physical Slots | 0..32 |
| Minimal Device Interval | 4msec |
| Based on | portStack |
| DNS Compliant Name | GL9087-xx |
| Supports Extended Assignment of IP Address | No |
| Fixed in Slots | 0 |
| Instance Field of the Object UUID | 1 |
| Supports Multiple Write | Yes |
| Requires IOPS/IOCS | Yes |
| Requires Engineering tool which supports at least GSDML Version | V2.32 |

4.2.3. Sub-slot of GL-9087

| Item | Value |
|-----------------|----------------|
| Sub-slot Numver | Sub-slot Label |
| 32768 (0x8000) | X1 |
| 32769 (0x8001) | P1 |

| Sub-module | | | | | | | | |
|---|------------------|----------------|---------------|---------------|-----------------------------|----------------|------------|---------|
| Sub-module Ident Number | 0x00000001 | | | | | | | |
| GL-9087 Parameter (Index : 1, Length : 3Bytes, Transfer sequence : 0) | | | | | | | | |
| Byte Offset | Data | | | | | | | |
| 0 | 0x00, 0x00, 0x00 | | | | | | | |
| Name of Parameter | Data Type | Byte Offset | Bit Offset | Bit Length | Default Value | Value Range | Changeable | Visible |
| Word data format | Bit Area | 0 | 0 | 1 | MOTOROLA | 0..1 | Yes | Yes |
| Stop action | Bit Area | 1 | 0 | 1 | Clear output images to 0 | 0..1 | Yes | Yes |
| Stop action mode | Bit Area | 2 | 0 | 1 | General mode | 0..1 | Yes | Yes |

| Interface : GL-9087 | |
|---|------------------------------|
| Sub-module Ident Number | 0x0002 |
| Sub-slot Number | 32768 (0x8000) |
| Supports Real time Class | Class 1 |
| Supports Isochronous Mode | NO |
| Number of Additional Input CRs | 0 |
| Number of Additional Output CRs | 0 |
| Number of Additional Multicast Provider CRs | 0 |
| Number of Multicast Consumer CRs | 0 |
| Supported Send-clock Factors (Base 31.25us) | 32 64 128 |
| Supported Reduction Ratios | 1 2 4 8 16 32 64 128 256 512 |
| Port 1 : Prot 1 | |
| Sub-module Ident Number | 0x0003 |
| Sub-slot Number | 32769 (0x8001) |
| MAU Type | 100BASETXFD |