

Beijer Electronics GT-3928 Analog Input Module User Manual

Home » Beijer ELECTRONICS » Beijer Electronics GT-3928 Analog Input Module User Manual



Contents

- 1 Beijer Electronics GT-3928 Analog Input Module
- **2 Product Usage Instructions**
- 3 About This Manual
- 4 Safety
- 5 About the G-series System
- **6 Specifications**
- 7 Dimensions
- 8 Wiring Diagram
- 9 LED Indicator
- 10 Data Value / Voltage
- 11 Mapping Data Into the Image Table
- 12 Parameter Data
- 13 Hardware Setup
- **14 Frequently Asked Questions**
- 15 Documents / Resources
 - 15.1 References
- **16 Related Posts**



Beijer Electronics GT-3928 Analog Input Module



Specifications

• Model: GT-3928 Analog Input Module

• Analog Inputs: 8 differential

• Voltage Ranges: 0 - 5 V / -5 - 5 V / 0 - 10 V / -10 - 10 V

• Resolution: 12 bit

• Terminal Type: Cage Clamp, 18 pt removable terminal

Product Usage Instructions

Installation

- 1. Ensure power to the system is turned off before installation.
- 2. Mount the GT-3928 Analog Input Module securely in a suitable location.
- 3. Connect the analog input signals to the respective terminals following the specified voltage ranges.
- 4. Double-check all connections for accuracy before applying power.

Setup

- 1. Refer to the G-series System documentation for configuring the module within the system.
- 2. Set the appropriate voltage range based on your application requirements.
- 3. Calibrate the module if necessary to ensure accurate readings.

Usage

- 1. Power on the system and monitor the analog input signals on the connected interface.
- 2. Regularly check for any abnormal behavior or fluctuations in readings.
- 3. Refer to the LED indicator for status information.

About This Manual

This manual contains information on the software and hardware features of the Beijer Electronics GT-3928 Analog Input Module. It provides in-depth specifications, and guidance on the installation, setup, and usage of the product.

Symbols Used in This Manual

This publication includes Warning, Caution, Note, and Important icons where appropriate, to point out safety-related, or other important information. The corresponding symbols should be interpreted as follows:



The Warning icon indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury and major damage to the product.

. $\triangle_{\mathsf{CAUTION}}$

The Caution icon indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, and moderate damage to the product.



The Note icon alerts the reader to relevant facts and conditions.



The Important icon highlights important information.

Safety

- Before using this product, please read this manual and other relevant manuals carefully. Pay full attention to safety instructions!
- In no event will Beijer Electronics be responsible or liable for damages resulting from the use of this product?
- The images, examples, and diagrams in this manual are included for illustrative purposes. Because of the
 many variables and requirements associated with any particular installation, Beijer Electronics cannot take
 responsibility or liability for actual use based on the examples and diagrams.

Product Certifications

The product has the following product certifications.







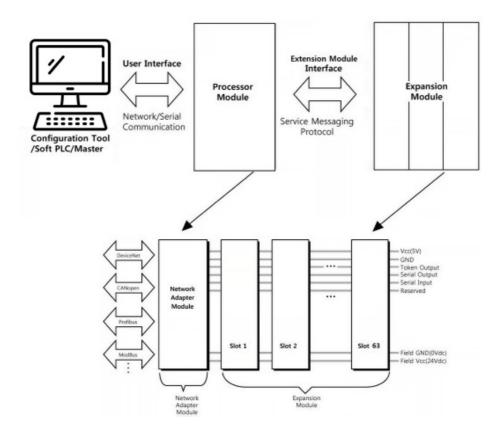
General Safety Requirements

- Do not assemble the products and wires with power connected to the system. Doing socausese an "arc flash", which can result in unexpected dangerous events (burns, fire, flying objects, blast pressure, sound blast, heat).
- Do not touch terminal blocks or IO modules when the system is running. Doing so may cause electric shock, short circuit, or malfunction of the device.
- Never let external metallic objects touch the product when the system is running. Doing so may cause electric shock, short circ, it, or malfunction of the device.
- Do not place the product near inflammable material. Doing so may cause a fire.
- All wiring work should be performed by an electrical engineer.
- When handling the modules, ensure that all persons, the workplace and the packing are well grounded. Avoid
 touching conductive components, the modules contain electronic components that may be destroyed by
 electrostatic discharge.

CAUTION

- Never use the product in environments with wtemperaturesture over 60°C. Avoid placing the product in direct sunlight.
- Never use the product in environments with over 90% humidity.
- Always use the product in environments with pollution degree 1 or 2.
- · Use standard cables for wiring.

About the G-series System



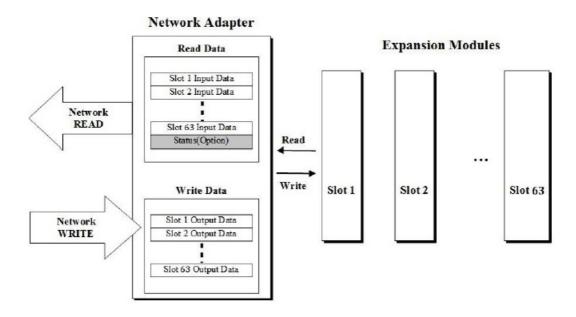
Overview

 Network Adapter Module – The network adapter module forms the link between the field bus and the field devices with the expansion modules. The connection to different field bus systems can be established by each of the corresponding network adapter modules, e.g., for MODBUS TCP, Ethernet IP, EtherCAT, PROFINET, CC-Link IE Field, PROFIBUS, CANopen, DeviceNet, CC-Link, MODBUS/Seria, I etc.

- Expansion Module Expansion module types: Digital IO, Analog IO, and Special modules.
- Messaging The system uses two types of messaging: Service messaging and IO messaging.

IO Process Data Mapping

An expansion module has three types of data: IO data, configuration parameter, and memory register. The data
exchange between the network adapter and the expansion modules is made via IO process image data by
internal protocol.



- Data flow between network adapter (63 slots) and expansion modules
- The input and output image data depend on the slot position and the data type of the expansion slot. The ordering of input and output process image data is based on the expansion slot position. Calculations for this arrangement are included in the manuals for networadapterser and programmable IO modules.
- Valid parameter data depends on the modules in use. For example, analog modules have settings
 of either 0-20 mA or 4-20 mA, and temperature modules have settings such as PT100, PT200, and PT500.
- The documentation for each modudescribes of the parameter data.

Specifications

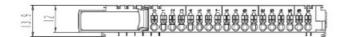
Environmental Specifications

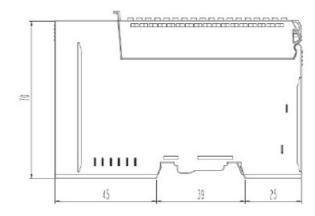
Operating temperature	-20°C – 60°C
UL temperature	-20°C – 60°C
Storage temperature	-40°C – 85°C
Relative humidity	5% – 90% non-condensing
Mounting	DIN rail
Shock operating	IEC 60068-2-27 (15G)
Vibration resistance	IEC 60068-2-6 (4 g)
Industrial emissions	EN 61000-6-4: 2019
Industrial immunity	EN 61000-6-2: 2019
Installation position	Vertical and horizontal
Product certifications	CE, FCC, UL, cUL

General Specifications

Power dissipation	Max. 200 mA @ 5 VDC
Isolation	I/O to logic: Photocoupler isolation Field power: Not connected
UL field power	Supply voltage: 24 VDC nominal, class2
Field power	Not used (field power bypass to next expansion module)
Single wiring	I/O cable max. 1.0mm2 (AWG 14)
Weight	63 g
Module size	12 mm x 109 mm x 70 mm

Dimensions





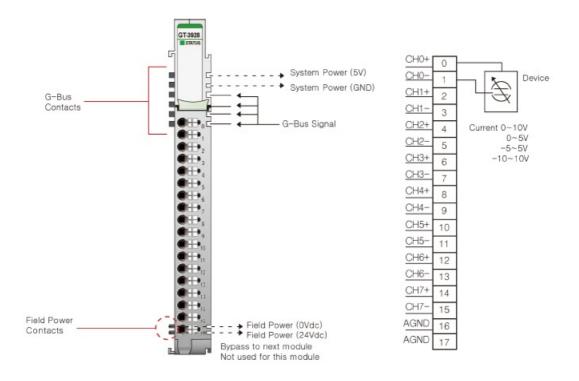


Module dimensions (mm)

Input Specifications

Inputs per module	8 channels differential, non-isolated between channel		
Indicators	1 green G-bus status		
	12 bits: 2.44 mV/bit (0 – 10 V)		
	12 bits: 1.22 mV/bit (0 – 5 V)		
Resolution in ranges	12 bits: 4.88 mV/Bit (-10 – 10 V)		
	12 bits: 2.44 mV/bit (-5 – 5 V)		
Input range	0 – 10 VDC, 0 – 5 VDC, -10 – 10 VDC, -5 – 5 VDC		
Data format	16 bits integer (2' compliment)		
	±0.1 % full scale @ 25 °C ambient		
Module error	±0.3 % full scale @ -40 °C, 70 °C		
Input impedance	667 kΩ		
Conversion time	2 ms / all channels		
Calibration	Not required		

Wiring Diagram



Pin no.	Signal description
0	Input channel 0(+)
1	Input channel 0(-)
2	Input channel 1(+)
3	Input channel 1(-)
4	Input channel 2(+)
5	Input channel 2(-)
6	Input channel 3(+)
7	Input channel 3(-)
8	Input channel 4(+)
9	Input channel 4(-)
10	Input channel 5(+)
11	Input channel 5(-)
12	Input channel 6(+)
13	Input channel 6(-)
14	Input channel 7(+)
15	Input channel 7(-)
16	Input channel common (AGND)
17	Input channel common (AGND)

LED Indicator



LED no.	LED function/description	LED color
0	Status LED	Green

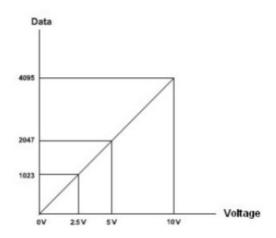
LED Channel Status

Status LED		Indicates
	OFF	Disconnection
G-Bus Status	Green	Connection

Data Value / Voltage

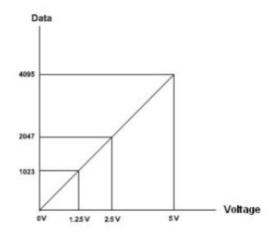
Voltage range: 0 – 10 V

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



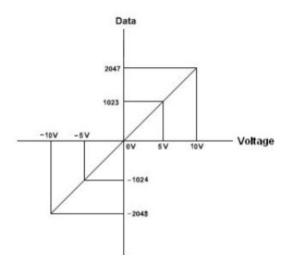
Voltage range: $0-5\ V$

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



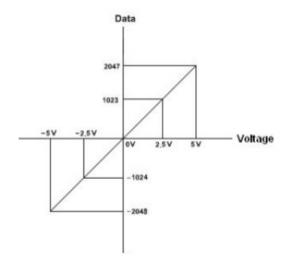
Voltage range: -10 - 10 V

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



Voltage range: -5 – 5 V

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



Mapping Data Into the Image Table

Input module data

Analog input Ch 0	
Analog input Ch 1	
Analog input Ch 2	
Analog input Ch 3	
Analog input Ch 4	
Analog input Ch 5	
Analog input Ch 6	
Analog input Ch 7	



Input image value

But no.	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Analog input Ch 0 low byte							
Byte 1	Analog inp	Analog input Ch 0 high byte						
Byte 2	Analog inp	ut Ch 1 low b	oyte					
Byte 3	Analog inp	ut Ch 1 high	byte					
Byte 4	Analog inp	ut Ch 2 low b	oyte					
Byte 5	Analog inp	ut Ch 2 high	byte					
Byte 6	Analog inp	ut Ch 3 low b	oyte					
Byte 7	Analog inp	ut Ch 3 high	byte					
Byte 8	Analog inp	ut Ch 4 low b	oyte					
Byte 9	Analog inp	ut Ch 4 high	byte					
Byte 10	Analog inp	ut Ch 5 low b	oyte					
Byte 11	Analog inp	ut Ch 5 high	byte					
Byte 12	Analog inp	Analog input Ch 6 low byte						
Byte 13	Analog inp	Analog input Ch 6 high byte						
Byte 14	Analog inp	Analog input Ch 7 low byte						
Byte 15	Analog inp	ut Ch 7 high	byte					

Parameter Data

Valid parameter length: 6 bytes

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Ch#0 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
1	Ch#1 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
2	Ch#2 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
3	Ch#3 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
4	Ch#4 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
5	Ch#5 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
6	Ch#6 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
7	Ch#7 Command (H00: 0 – 10 V, H01: 0 – 5 V, H02: -10 – 10 V, H03: -5 – 5 V)							
8	Filter time (H00: Default filter (20), H01: Fastest – H3E: Slowest)							
9	Reserved							

Hardware Setup

CAUTION

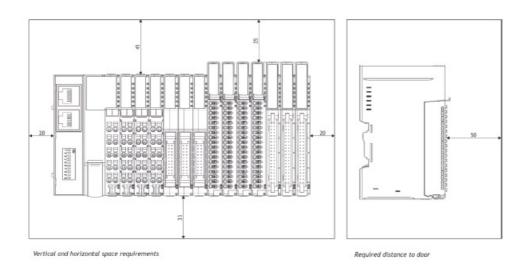
- Always read this chapter before installing the module!
- Hot surface! The surface of the housing can become hot during operation. If the device is used in high ambient temperatures, always let the device cool down before touching it.
- Working on energized devices can damage the equipment! Always turn off the power supply before working on the device.

Space Requirements

The following drawings show the space requirements when installing the G-series modules. The spacing creates space for ventilation and prevents conducted electromagnetic interference from influencing the operation. The installation position is valid vertical and horizontal. The drawings are illustrative and may be out of proportion.

CAUTION

NOT following the space requirements may result in damaging the product.



Mount Module to DIN Rail

The following chapters describe how to mount the module to the DIN rail.

CAUTION

The module must be fixed to the DIN rail with the locking levers.

Mount GL-9XXX or GT-XXXX Module

The following instructions apply to these module types:

- GL-9XXX
- GT-1XXX
- GT-2XXX
- GT-3XXX
- GT-4XXX
- GT-5XXX
- GT-7XXX

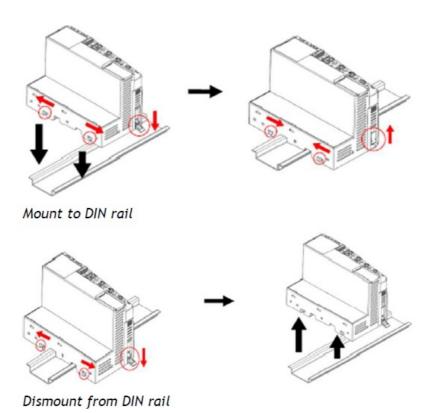
GN-9XXX modules have three locking levers, one at the bottom and two on the side. For mounting instructions, refer to Mount GN-9XXX Module.



Dismount from DIN rail

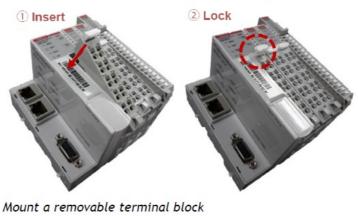
Mount GN-9XXX Module

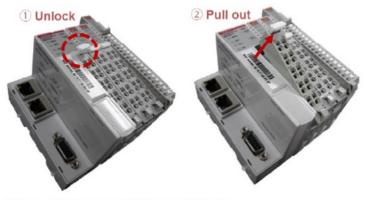
To mount or dismount a network adapter or programmable IO module with the product name GN-9XXX, for example, GN-9251 or GN-9371, see the following instructions:



Mount Removable Terminal Block

To mount or dismount a removable terminal block (RTB), see the instructions below.





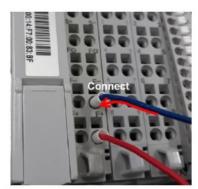
Dismount a removable terminal block

Connect Cables to Removable Terminal Block

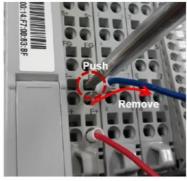
To connect/disconnect cables to/from the removable terminal block (RTB), see the instructions below.

WARNING

Always use the recommended supply voltage and frequency to prevent damage to the equipment and ensure optimal performance.



Connect cable



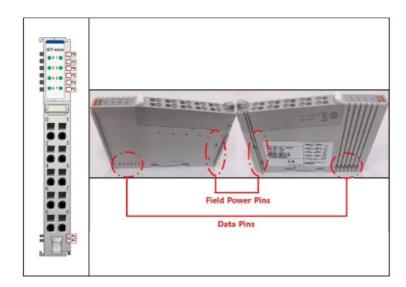
Disconnect cable

Field Power and Data Pins

Communication between the G-series network adapter and the expansion module, as well as the system /field power supply of the bus modules, is carried out via the internal bus. It is comprised of 2 Field Power Pins and 6 Data Pins.

WARNING

Do not touch the data and field power pins! Touching can result in soiling and damage by ESD noise.



Pin no.	Name	Description
P1	System VCC	System supply voltage (5 VDC)
P2	System GND	System ground
P3	Token output	Token output port of processor module
P4	Serial output	Transmitter output port of processor module
P5	Serial input	Receiver input port of processor module
P6	Reserved	Reserved for bypass token
P7	Field GND	Field ground
P8	Field VCC	Field supply voltage (24 VDC)

Copyright © 2025 Beijer Electronics AB. All rights reserved.

- The information in this document is subject to change without notice and is provided as available at the time of printing. Beijer Electronics AB reserves the right to change any information without updating this publication. Beijer
- Electronics AB assumes no responsibility for any errors that may appear in this document. All examples in this document are only intended to improve understanding of the functionality and handling of the equipment. Beijer
- Electronics AB cannot assume any liability if these examples are used in real applications.
- Given the wide range of applications for this software, users must acquire sufficient knowledge to ensure that it
 is correctly used in their specific application. Persons responsible for the application and the equipment must
 themselves ensure that each application complies with all relevant requirements, standards, and legislation to
 configuration and safety. Beijer Electronics AB will accept no liability for any damage incurred during the

installation or use of equipment mentioned in this document.

• Beijer Electronics AB prohibits all modification, changes, or conversion of the equipment.

Head Office

- · Beijer Electronics AB
- Box 426
- 201 24 Malmö, Sweden
- www.beijerelectronics.com
- +46 40 358600

Frequently Asked Questions

Q: What should I do if I encounter an error code on the LED indicator?

A: If you see an error code, refer to the user manual for troubleshooting steps. Check the connections and power supply to ensure proper functionality.

• Q: Can I use this module with voltage ranges outside of the specified ranges?

A: It is recommended to stay within the specified voltage ranges to avoid damage to the module and ensure accurate readings.

Documents / Resources



Beijer Electronics GT-3928 Analog Input Module [pdf] User Manual GT-3928 Analog Input Module, GT-3928, Analog Input Module, Input Module

References

• User Manual

Manuals+, Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.