



Beijer Electronics GT-1278 Digital Input Module User Manual

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Beijer Electronics GT-1278 Digital Input Module



Specifications

• Model: GT-1278

• Type: Digital Input Module

• Channels: 8

• Sensor Type: Proximity

• Input Type: Sink

• Power Supply: 24 VDC

• Current: 6 mA

• Terminal Type: 18 pt removable terminal

Product Usage Instructions

· Installation and Setup

Before starting, ensure that the power supply is switched off. Connect the module to the power supply using the provided 18-point removable terminal. Follow the wiring diagram in the user manual for correct installation.

Configuration

Once installed, configure the module according to your requirements. Refer to the Parameter Data section in the manual for guidance on setting up parameters for optimal performance.

Usage

To use the GT-1278 Digital Input Module, connect your proximity sensors to the designated channels. Ensure that the input signals match the specifications mentioned in the manual. The LED indicators will show channel status for easy monitoring.

Maintenance

Regularly check for any loose connections or signs of wear. Keep the module clean and free from dust to ensure proper functionality.

About This Manual

This manual contains information on the software and hardware features of the Beijer Electronics GT-1278 Digital 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:

. A WARNING

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.

. $\triangle_{\text{CAUTION}}$

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

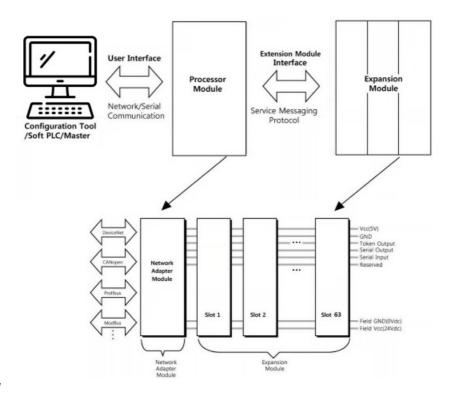
WARNING

- Do not assemble the products and wires with power connected to the system. Doing so causes 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 circuit, 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 temperatures 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



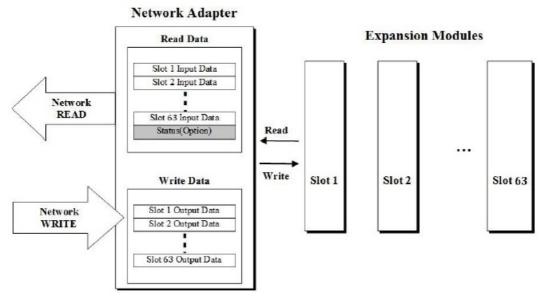
System Overview

- 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, CCLink IE Field, PROFIBUS, CANopen, DeviceNet, CC-Link, MODBUS/Serial, 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 network adapters 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 module describes the parameter data.

Specifications

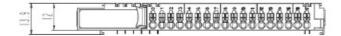
Environmental Specifications

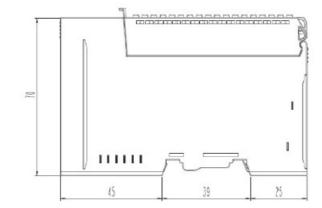
Operating temperature	-20°C – 60°C
UL temperature	-20°C – 60°C
Storage temperature	-40°C – 85°C
Relative humidity	5% – 90% non-condensing
Mounting	DIN rail
Shock operating	IEC 60068-2-27 (15G)
Vibration resistance	IEC 60068-2-6 (4 g)
Industrial emissions	EN 61000-6-4: 2019
Industrial immunity	EN 61000-6-2: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

General Specifications

Power dissipation	Max. 40 mA @ 5 VDC			
Isolation	I/O to logic: Photocoupler isolation			
Field power	Supply voltage: 24 VDC nominal Voltage range: 18 – 30 VDC Power dissipation: 10 mA @ 24 VDC			
Wiring	I/O cable max. 0.823 mm ² (AWG 18)			
Weight	63 g			
Module size	12 mm x 109 mm x 70 mm			

Dimensions





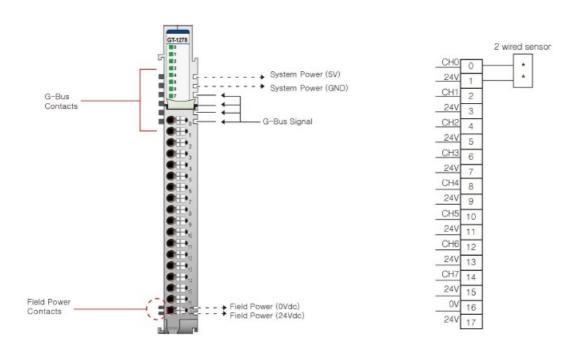


Module dimensions (mm)

Input Specifications

Inputs per module	8 points sink type
Sensor Connection	2-wire proximity sensor
Indicators	8 green input status
	24 VDC nominal
On-state voltage	15 – 30 VDC @ 60 °C
On-state current	About 6 mA @ 18 – 30 VDC
Off-state voltage	9.8 VDC @ 25 °C
	OFF to ON: Max. 0.3 ms
Input signal delay	ON to OFF: Max. 0.3 ms
Input filter	Adjustable, up to 10 ms
Common type	8 points / 1 COM (sink)

Wiring Diagram



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

LED Indicator



LED no.	LED function/description	LED color
0	INPUT channel 0	Green
1	INPUT channel 1	Green
2	INPUT channel 2	Green
3	INPUT channel 3	Green
4	INPUT channel 4	Green
5	INPUT channel 5	Green
6	INPUT channel 6	Green
7	INPUT channel 7	Green

LED Channel Status

Status	LED	Indication
No signal	Off	No input signal
On signal Green		Input signal detected

Mapping Data Into the Image Table

Input module data

D	7 D6	D5	D4	D3	D2	D1	D0	
---	------	----	----	----	----	----	----	--



Input image value

But no.	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	D7	D6	D5	D4	D3	D2	D1	D0

Parameter Data

Valid parameter length: 2 bytes

But no.	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Input filter	Input filter value: 0 – 10 (unit: ms)						
Byte 1	Reserved							

Hardware Setup

CAUTION

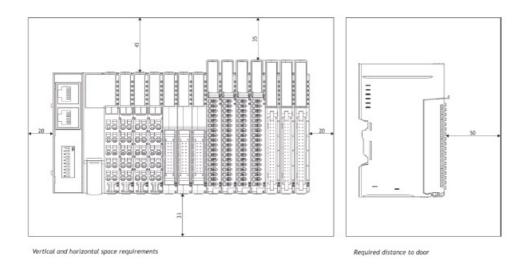
- Always read this chapter before installing the module!
- Hot surface! The surface of the housing can become hot during operation. If the device is used in high ambient temperatures, always let the device cool down before touching it.
- Working on energized devices can damage the equipment! Always turn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

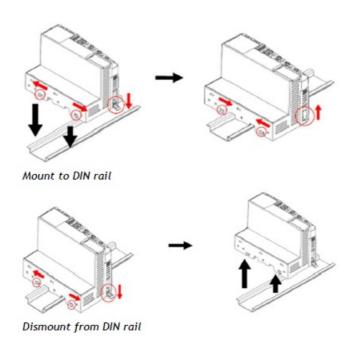
GN-9XXX modules have three locking levers, one at the bottom and two on the side. For mounting instructions, refer to Mount GN-9XXX Module.



Dismount from DIN rail

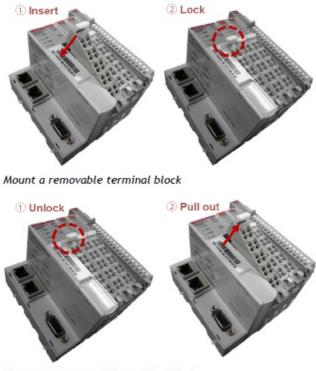
Mount GN-9XXX Module

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.



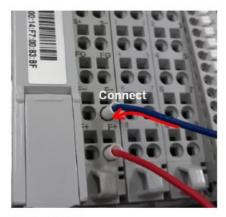
Dismount a removable terminal block

Connect Cables to Removable Terminal Block

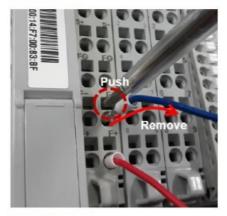
To connect/disconnect cables to/from the removable terminal block (RTB), see the instructions below.

WARNING

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



Connect cable



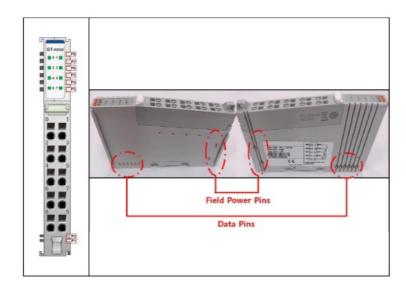
Disconnect cable

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)		

FAQs

- Q: What do the LED indicators on the module signify?
 - A: The LED indicators show the status of each channel, indicating whether the input signal is active or not.
- Q: Can I use this module with sensors other than proximity sensors?

A: It is recommended to use proximity sensors as per the specifications provided for optimal performance and compatibility.

Documents / Resources



Beijer Electronics GT-1278 Digital Input Module [pdf] User Manual GT-1278 Digital Input Module, GT-1278, Digital Input Module, Input Module

References

• User Manual

Manuals+, Privacy Policy

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