invt EC-TX809 PROFINET I-O Communication Expansion Module User Manual

Contents

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Product Information

EC-TX809 PROFINET I/O communication expansion module
The EC-TX809 PROFINET I/O communication expansion module is a communication module designed for use with the control box. It allows for PROFINET communication and can be installed in expansion slots of the control box. The module provides various indicators and interfaces for easy monitoring and connection.

Specifications

Parameters	Working temperature	Storage temperature	Relative humidity	Running environment	Installation method	Ingress protection (IP) rating	Heat dissipation method	Communication rate	Network topology
Value	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Product Usage Instructions

Installation and Wiring

Before installing the EC-TX809 PROFINET I/O communication expansion module, ensure that the device is powered off. Follow the instructions below:

Installation Precautions

- There are 3 expansion module interfaces on the control box (expansion slot 1, expansion slot 2, expansion slot 3). You can use any of these slots according to the actual wiring.
- It is recommended to install the PROFINET I/O expansion module in expansion slot 3.
- Required tools: Phillips screwdriver PH1, straight screwdriver SL3

Installation Instructions

1. Place the expansion module in the corresponding position of the control box expansion slot 3, align it with the slot, and then buckle it together.
2. Align the expansion module positioning hole with the positioning stud.
3. Fix with a M3 screw. The installation is complete.

Note: The expansion module and control box are electrically connected through slots. Please install them in place. To ensure the reliable operation of the expansion module and meet EMC requirements, please tighten the screws according to the recommended torque for reliable grounding.

Preface

Thank you for choosing INVT EC-TX809 PROFINET I/O communication expansion modules.
EC-TX809 is a PROFINET I/O industrial Ethernet communication module that needs to be used with the GD880 series VFD control box. It communicates with the Ethernet master node through the PROFINET communication protocol.
This manual describes the product overview, installation, wiring, and commissioning instructions. Before installing the VFD, read this manual carefully to ensure the proper installation and running with excellent performance and powerful functions into full play.

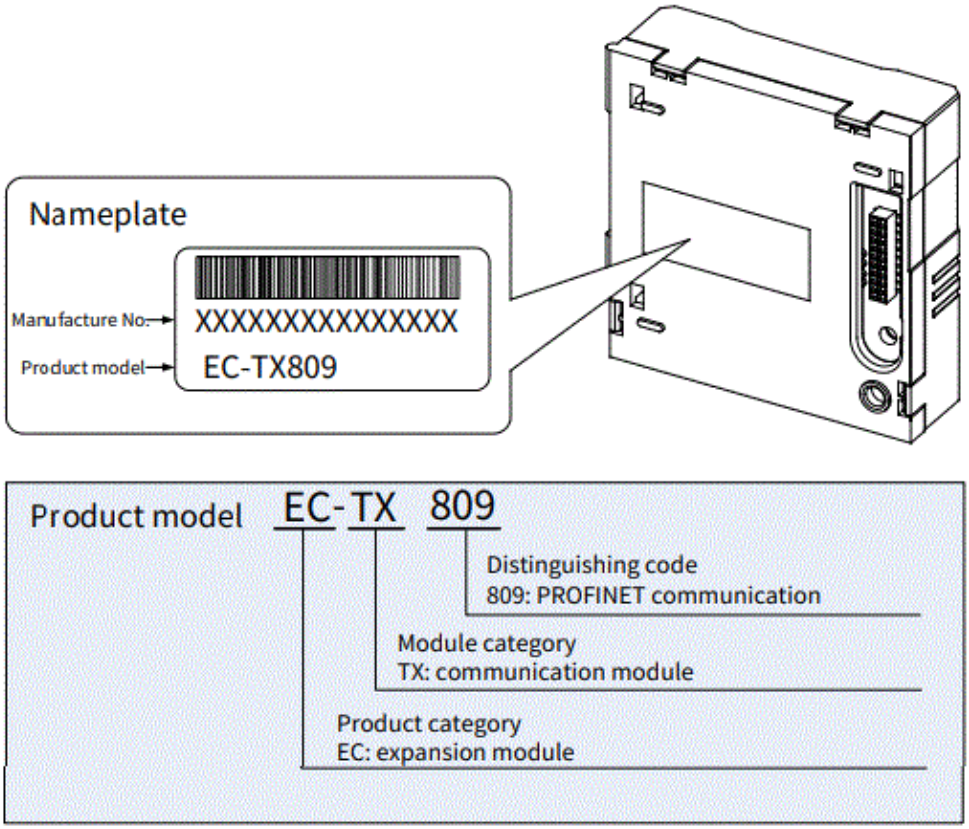
Product Features

- Supporting the PROFINET protocol and PROFINET I/O devices.
- Has two PROFINET I/O ports
- With a communication rate up to 100Mbit/s, and a short communication cycle
- Supporting line and star network topologies

Product Overview

Model description

Figure 1-1 Product nameplate and model



Specifications

Table 1-1 Specifications

Parameters	**Specification**
Working temperature	-10–50ºC
Storage temperature	-20–60ºC
Relative humidity	5%–95% (No condensation)
Running environment	No corrosive gas
Installation method	Fixed with snap-fits and screws
Ingress protection (IP) rating	IP20
Heat dissipation method	Natural air cooling
Communication rate	100M bit/s
Network topology	Supporting line and star network topologies

Structure

Figure 1-2 Component diagram

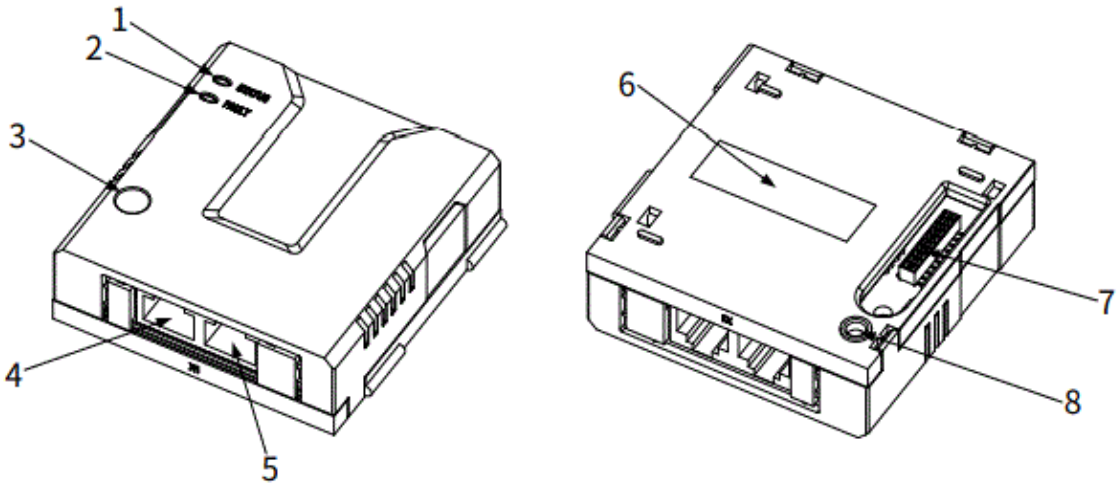


Table 1-2 Component description

No.	Name	Description
1	STATUS Bus status indicator (green)	On: No network connection Blinking (On: 500ms; Off: 500ms): Network connection with PROFINET controller is normal, but the communication is not established. Off: The communication with the PROFINET controller has been established.
2	FAULT Fault indicator (red)	On: PROFINET diagnosis exists. Off: No PROFINET diagnosis.
3	Installation fixing hole	To fix the expansion module and maintain a good connection of the PE l ayer.
4	X1-PROFINET communication interface	Communication interface 1
5	X2-PROFINET communication interface	Communication interface 2
6	Nameplate	Including the model and sequence number of the expansion module
7	Connection port	For electrical connection with the control box.
8	Positioning hole	To align the expansion module and control box for easy installation

Installation and wiring

Installation precautions

WARNING	Make sure the device have been powered off before installation.
Note	l There are 3 expansion module interfaces on the control box (expansion slot 1, expansion slot 2, expansion slot 3). You can use any of these slots according to the actual wiring. l It is recommended to install the PROFINET I/O expansion module in the expansion slot 3.

Required tools: Phillips screwdriver PH1, straight screwdriver SL3

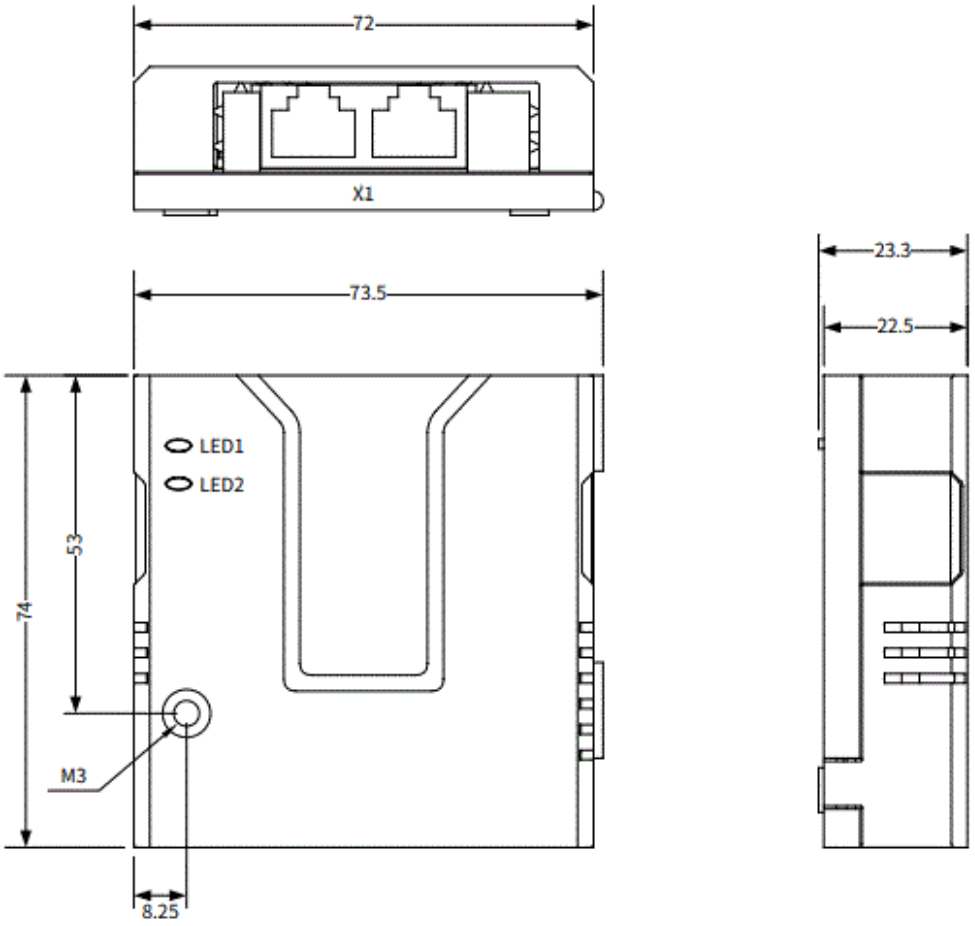
Table 2-1 Screw torque requirements

Screw size	Fastening torque
M3	0.55 N·m

Dimensions

The size of the PROFINET I/O expansion module is 73.5×74×23.3 mm (W*H*D), as shown in Figure 2-1.

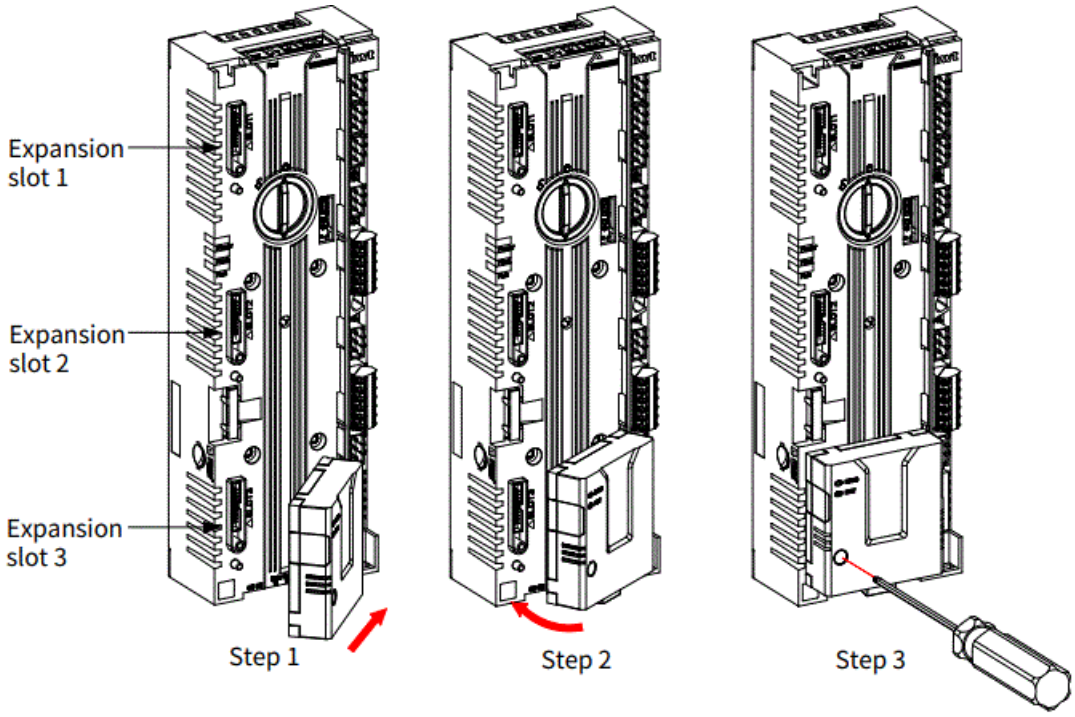
Figure 2-1 Product outline and mounting dimensions diagram (unit: mm)



Installation instructions

It is recommended to place the PROFINET I/O expansion module at expansion slot 3 of the control box. The following is an example of the installation at slot 3.

- Step 1 Place the expansion module in the corresponding position of the control box expansion slot 3, align it with the slot, and then buckle it together.
- Step 2 Align the expansion module positioning hole with the positioning stud.
- Step 3 Fix with a M3 screw. The installation is complete.



Note:

- The expansion module and control box are electrically connected through slots. Please install them in place.
- To ensure the reliable operation of the expansion module and meet EMC requirements, please tighten the screws according to the recommended torque for reliable grounding.

Disassembly instructions

You can disassemble the module by reversing the order of steps described in section 2.3 Installation instructions.

- Step 1 Disconnect the power supply and disassemble all cables connected to the expansion module.
- Step 2 Use a Phillips screwdriver to remove the grounding screw of the module.
- Step 3 Pull the module out to a suitable position.

User's wiring terminal

Figure 2-2 Terminal diagram

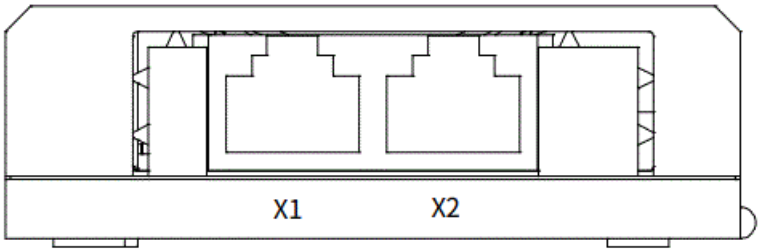
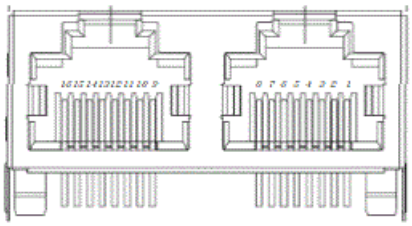


Table 2-2 Function definition of RJ45 interfaces

X1–X2 terminals	Pin	Definition	Description
 1615 141312 11 10 9 8 7 6 5 4 3 2 1	1, 9	TX+	Transmit Data+
	2, 10	TX-	Transmit Data-
	3, 11	RX+	Receive Data+
	4, 12	n/c	Not connected
	5, 13	n/c	Not connected
	6, 14	RX-	Receive Data-
	7, 15	n/c	Not connected
	8, 16	n/c	Not connected

Wiring precautions

The PROFINET I/O communication expansion module adopts standard RJ45 interfaces, which can be used in a linear network topology and a star network topology. The electrical connection diagrams are shown in Figure 2-3 and Figure 2-4.

Figure 2-3 Linear network topology electrical connection

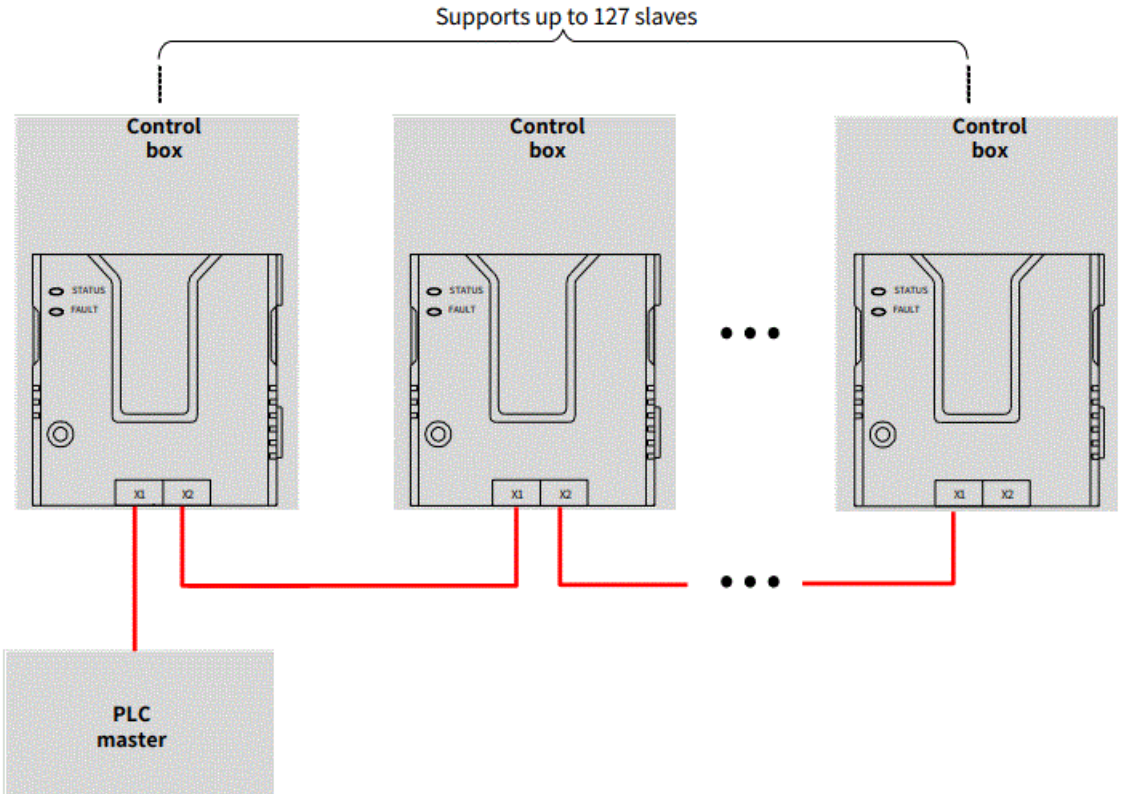
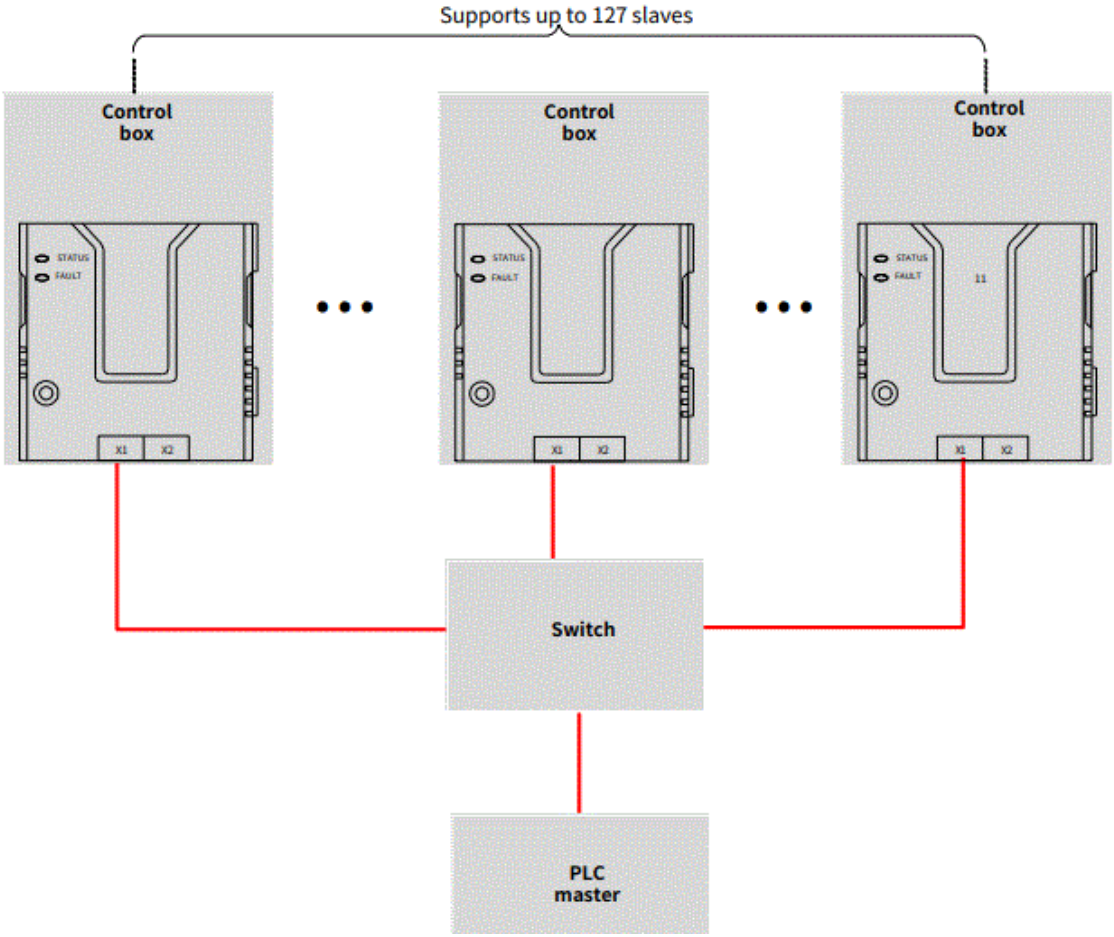


Figure 2-4 Star network topology electrical connection



Note: For the star network topology, you need to prepare PROFINET switches.

Commissioning instruction

Figure 3-1 PROFINET I/O expansion module configuration flowchart

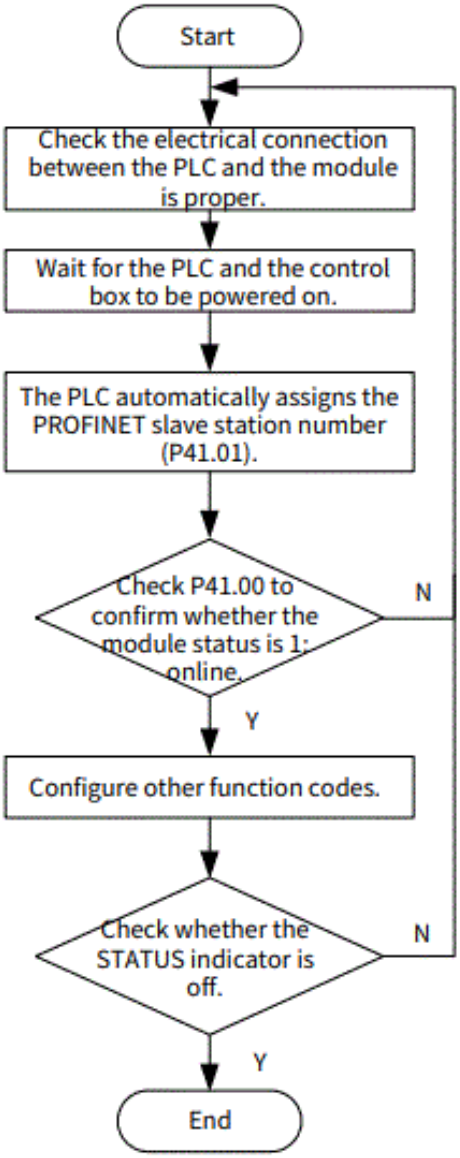


Table 3-1 Function code parameters related to the PROFINET expansion module

Function code	Name	Description		Setting range	Default
P41.00	Module online status	Bit0–Bit8	Online status of modules in expansion slots (0: Offline 1: Online)	0–1	0
P41.01	PROFINET slave station number	1–125 This variable is automatically assigned by the PLC.		1–125	1
P38.00	Bus adapter supporting bus type	0: None 1: PROFIBUS-DP module 2: PROFINET I/O module 3: CANopen module 4: EtherNET module 5: EtherCAT module 6: DeviceNet module		0–6	2
P02.00	Remote control channel selection	Remote control channel selection 0: Bus adapter A 1: Bus adapter B 2: Modbus (addresses 0x4200, 0x4201) 3: Terminal start/stop module (IN1, IN2, IN3)		0–3	0

Note:

- When two identical communication expansion modules are mounted at the same time, only the expansion module at the slot with a small label number is functional, while the other expansion module is used for redundancy. For example, when two PROFINET expansion modules are inserted at slot 1 and slot 2 respectively, the PROFINET module at slot 1 is valid.
- For other parameter settings of the EC-TX809 PROFINET expansion module, see the software manuals of the GD880 series products.

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Documents / Resources

	invt EC-TX809 PROFINET I-O Communication Expansion Module [pdf] User Manual EC-TX809, EC-TX809 PROFINET I-O Communication Expansion Module, PROFINET I-O Communication Expansion Module, I-O Communication Expansion Module, Communication Expansion Module, Expansion Module, Module