

EC-TX823/821 Optical Fiber Expansion Module

User Manual



Preface

Thank you for choosing INVT EC-TX823/821 optical fiber expansion modules.

EC-TX823/821 optical fiber expansion module is mainly used for the expansion of functional modules. The EC-TX823 module includes three fiber optic interfaces, while the EC-TX821 module includes one fiber optic interface. The modules need to be used with the GD880 series VFD control box.

This manual describes the EC-TX823 module as an example. The EC-TX821 module only has 2 fewer fiber optic interfaces than the EC-TX823 module and will not be introduced separately.

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 the excellent performance and powerful functions into full play.

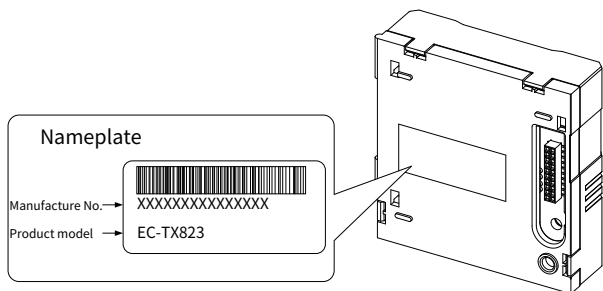
Product features:

- Directly installed on the expansion slot of the GD880 series VFD control box, powered by the control box without the need for an external power supply
- Used with the expansion extending board to enable slot expansion of the control box
- Used with the IVDM-10 module to achieve AC line voltage detection for GD880 series products such as active rectifier and regenerative rectifier
- Used with the IVDM-20 module to detect the input and output voltage and current of the system
- Includes three/one fiber optic interface(s), supporting a 50MBd fiber optic transmitting rate

1 Product overview

1.1 Model description

Figure 1-1 Product nameplate and model designation



Product model	EC - TX 823
Distinguishing code	821: indicates one optical-fiber communication 823: indicates three optical-fiber communication
Module category	TX: communication module
Product category	EC: expansion module

1.2 Specifications

Table 1-1 Specifications

Parameters	Specification
Working temperature	-10~50°C
Storage temperature	-20~60°C
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

1.3 Structure

Figure 1-2 Structure diagram

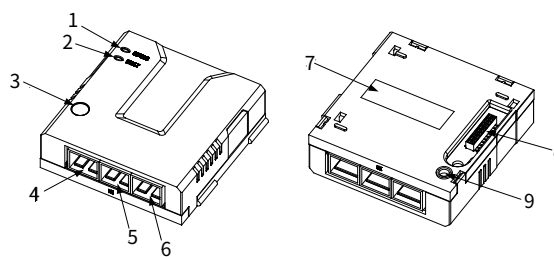


Table 1-2 Component description

No.	Name	Description
1	STATUS indicator	On: The power supply is normal. Off: The power supply is abnormal.
2	FAULT indicator	Standby
3	Installation fixing hole	To fix the expansion module and maintain a good connection of the PE layer
4	X1 fiber optic terminal	Fiber optic communication port 1
5	X2 fiber optic terminal	Fiber optic communication port 2
6	X3 fiber optic terminal	Fiber optic communication port 3
7	Nameplate	Including the model and sequence number of the expansion module
8	Connection port	To connect the expansion module to the control box
9	Positioning hole	To align the expansion module and control box for easy installation

2 Installation and wiring

2.1 Installation precautions

	Make sure the device have been powered off before installation.
Note	<ul style="list-style-type: none"> • There are 3 expansion module interfaces on the control box (expansion slot 1, expansion slot 2, expansion slot 3). You can use expansion slot 2 or expansion slot 3 according to the actual wiring. • It is recommended to install the fiber optic expansion module at expansion slot 3.

Required tools: Phillips screwdriver PH1, straight screwdriver SL3

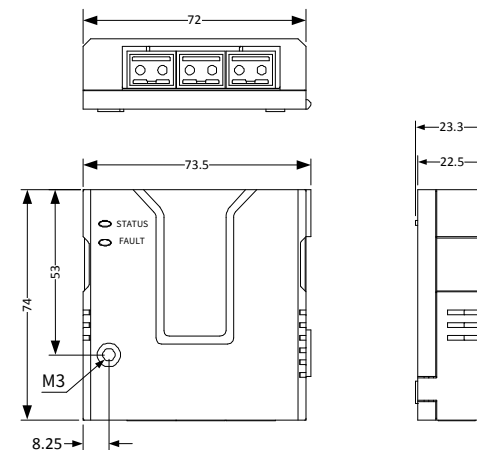
Table 2-1 Screw torque requirements

Screw size	Fastening torque
M3	0.55 N · m

2.2 Dimensions

The size of the EC-TX823 optical fiber expansion module is 73.5×74×23.3mm (W*H*D), as shown in Figure 2-1.

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



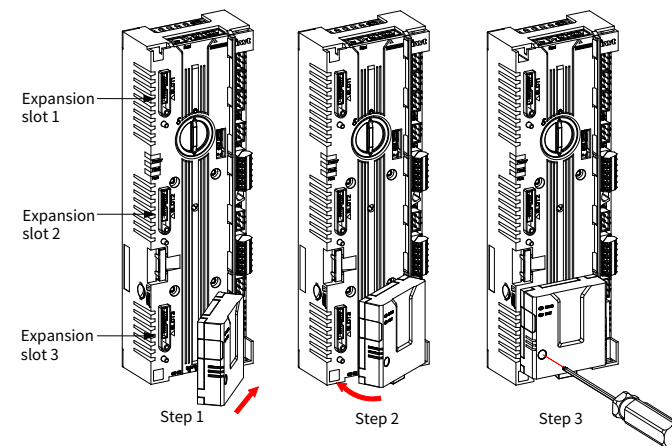
2.3 Installation instructions

It is recommended to place the EC-TX823 fiber optic 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.

2.4 Disassembly instructions

You can disassembly 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.

2.5 User's wiring terminal

Figure 2-2 Terminal diagram

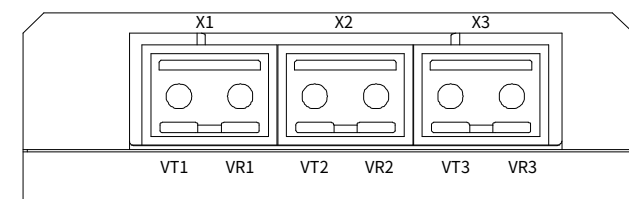


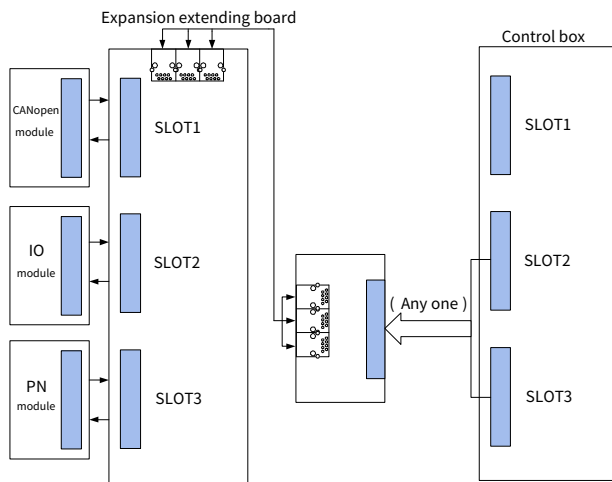
Table 2-2 Communication terminal function definition

Terminal name	Description
X1-VT1	Fiber optic communication 1 send interface Communication rate: 50MBd
X1-VR1	Fiber optic communication 1 receive interface Communication rate: 50MBd
X2-VT2	Fiber optic communication 2 send interface Communication rate: 50MBd
X2-VR2	Fiber optic communication 2 receive interface Communication rate: 50MBd
X3-VT3	Fiber optic communication 3 send interface Communication rate: 50MBd
X3-VR3	Fiber optic communication 3 receive interface Communication rate: 50MBd

2.6 Wiring precautions

By connecting the EC-TX823 optical fiber expansion module with the expansion extending board module, multiple functional modules can be extended, such as CANopen communication module, DP communication module, PN communication module, and IO module. The connection diagram is shown in Figure 2-3.

Figure 2-3 EC-TX823 module extending connection diagram



The EC-TX823 module can be used to detect the AC line voltage detection for GD880 series products such as active rectifier and regenerative rectifier when used with the IVDM-10 module and to detect the input and output voltage and current of the system when used with the IVDM-20 module. The connection diagram is shown in Figure 2-4.

Figure 2-4 Connection diagram between EC-TX823 and IVDM

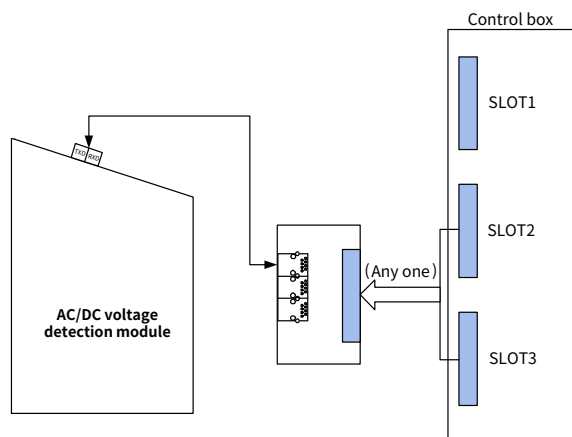
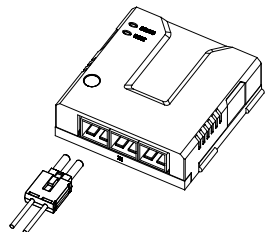


Figure 2-5 Optical fiber installation diagram



Note:

- Handle the optical fibers with care. Do not touch the ends of the fiber to prevent contamination. It is necessary to grip the connection terminals of the optical fiber when pulling out.
- Ensure that the direction of the connector is correct when installing. Align and insert the connector into the interface until the "click" sound is heard, indicating it has been installed.
- When disassembling, grip the optical fiber connector tightly and pull it out. Do not directly pull out the optical fiber cable.

Table 2-3 Optical fiber specifications

Parameters	Specifications	Parameters	Specifications
Material	Plastic optical fiber (POF)	Storage temperature	-55~85°C
Max. short-term tension	50N	Working temperature	-20~70°C
Min. short-term bend radius	25mm	Long-term bend radius	35mm
Max. long-term tension load	1N	Max. number of flexure	1000

