B-2003 (0)



SX5E Series Entry-Level Industrial Ethernet Switch SX5Eシリーズ 取扱説明書

SX5E Series

SX5E 系列 使用说明书

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Notice for Safety Operation

The product performs reliably as long as it is used according to the guidance. Artificial damage or destruction of the device should be avoided. Before using the device, read this notice carefully for personal and equipment safety. Please keep the manual for further reference. IDEC is not liable to any personal or equipment damage caused by violation of this notice.

- Users must add backup or failsafe provisions to control systems use SX5E in applications where heavy damage or personal injury may be caused if SX5E should fail.
- Ensure the area where the device is used is clean and dry. Keep the ambient rela ive humidity within the range from 5% to 95% (non-condensing).
- Do not place the device in an environment with high magnetic field, strong shock, or high temperature. Keep the working and storage temperatures within the allowed range.
- Install and place the device securely and firmly.
- Please keep the device clean; if necessary, wipe it with a soft cotton cloth.
- Do not place any irrelevant materials on the device or cables. Ensure adequate heat dissipation and tidy cable layout without being entangled or knotted.
- Wear an istatic gloves or take other protective measures when operating the device.
- Avoid any exposed metal wires because they may be oxidized or electrified.
- Install the device in accordance with related national and local regulations.
- Before power-on, make sure the power supply is within the allowed range of the device. High voltage may damage the device.

- Power connectors and other connectors should be firmly interconnected.
- Do not plug in or out the power supply with wet hands. When the device is powered on, do not touch the device or any parts with wet hands.
- Before operating a device connected to a power cable, remove all jewelry (such as rings, bracelets, watches, and necklaces) or any other metal objects, because they may cause electric shock, burns, or welding.
- Do not operate the device or connect or disconnect cables during an electrical storm.
- Use compatible connectors and cables. If you are not sure, contact our sales or technical support personnel for confirmation.
- Do not disassemble, repair, or modify the SX5E Series.
- If any part is lost, contact our sales or technical support personnel to purchase a replacement. Do not purchase parts from other channels.
- Dispose of the device in accordance with relevant national provisions, preventing environmental pollution.

In the following cases, please immediately shut down your power supply and contact your IDEC representative:

- Water gets into the equipment.
- Equipment damage or shell damage.
- Equipment operation or performance has abnormally changed.
- The equipment emits odor, smoke or abnormal noise.

The following information applies when operating this device in hazardous locations:

Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations, or nonhazardous locations only.

Cet appareillage est utilisable dans les emplacements de Classe I, Division 2, Groupes A, B, C et D, ou dans les emplacements non dangereux seulement.

WARNING: EXPLOSION HAZARD

- Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.
- Substitution of any component may impair suitability for Class I, Division 2.

AVERTISSEMENT: RISQUE D'EXPLOSION

- Avant de deconnecter l'equipement, couper le courant ou s'assurer que l'emplacement est designe non dangereux.
- La substitution de composants peut rendre ce materiel inacceptable pour les emplacements de Classe I, Division 2.

1 Product Overview

SX5E includes a series of entry-level industrial Ethernet switches applicable to factory automation, wind power, distribution network automation, subway PIS, power SCADA, sewage treatment, metallurgy, intelligent transportation, rail transit, and many other industries.

Broadcast storm protection can be configured through DIP switch.

The series switches support DIN rail mounting. SX5E provides four 10/100Base-T(X) Ethernet ports. For details, see the following table.

Туре	SX5E-HU055B
Power Identifier	12/24/48VDC(9-60VDC)
	24VAC(18-30VAC, 50/60Hz)
Rated Power Consumption	3.4W (MAX)
Terminal Block	4-Pin 5.08mm-Spacing Plug-in Terminal
	Block
Housing	Metal, fanless
Protection Class	IP30
Installation	DIN-Rail Mounting
Dimensions(W×H×D)	29.6mm × 114.5mm × 68mm
	(excluding connectors, DIN rail)
Weight:	0.2kg
Ambient Temperature	-40°C~+75°C (without freezing)
Storage Temperature	-40°C~+85°C (without freezing)
Ambient Relative Humidity	5%~95% (without condensation)
MTBF	4500764h

Table1 Basic Features and Specifications



Note :

We reserve the right to amend the product information listed in this table without notice. To obtain the latest information, you can contact our sales or technical support personnel.

2 Structure and Interface





Figure 1 Front Panel

Figure 2 Top Panel

- (1) Power 1 LED
- (2) Power 2 LED
- (3) 10/100Base-T(X) Ethernet port
- (4) 10/100Base-T(X) Ethernet port connection status LED (green)
- (5) 10/100Base-T(X) Ethernet port speed LED (yellow)
- (6) Grounding screw
- (7) Power terminal block
- (8) DIP switches



Caution :

It is recommended to purchase the connector cover for RJ45 port (op ional) to keep ports clean and ensure switch performance.

3 Mounting

3.1 Dimension Drawing



Figure 3 SX5E Dimensions for DIN-Rail Mounting (unit: mm)



Caution :

- As part of the heat dissipation system, the switch housing becomes hot during operation. Please use caution when coming in contact and avoid covering the switch housing when the switch is running.
- The figures in this manual are only for reference.

3.2 Mounting Modes and Steps

The device supports DIN-rail mounting. Before installation, make sure that the following requirements are met.



Note :

- Devices are to be installed in IP54 enclosure and accessible only by the use of a tool.
- Use the SX5E Series in environments of pollution degree 2. (according to IEC 60664-1).
- Customer shall insure device working in the right ambient temperature, -40°C~+75°C (without freezing).
- No direct sunlight, distant from heat source and areas with strong electromagnetic interference.

3.2.1 DIN-Rail Mounting

- Step 1:Select the mounting position for the device and secure adequate space and heat dissipa ion.
- Step 2: Insert the connecting seat onto the top of the DIN rail, and push the bottom of the device inward and upward to ensure the DIN rail fits in the connecting seat. As shown in the following figure, make sure the device is firmly installed on the DIN rail, fitting the internal spring of DIN rail connecting seat into DIN rail correctly.





3.2.2 DIN-Rail Dismounting

- Step 1:As shown in the following figure, press the device downward and move the device in direction 1 until the bottom of the device is detached from the DIN rail.
- Step 2:Pull the device upward and move the device in direction 2 until the device is removed from the DIN rail completely.



Figure 5 DIN Rail Dismounting

4 Connection

4.1 Grounding

Grounding protects the device from lightning and interference. Therefore, you must ground the device properly. You need to ground the device before it is powered on and disconnect the grounding cable after the device is powered off.

There is a grounding screw (see Figure 2) on the top panel of the switch. The screw is for chassis grounding. After crimping one end of the grounding cable to a cold pressed terminal, secure the end of the grounding cable to the grounding screw and firmly connect he other end to ground.



Note :

Cross-sectional area of the chassis grounding cable>2.5mm²; Grounding resistance<5 Ω .

4.2 Power Terminal Block

There is a power terminal block on the top panel of the device. You need to connect the power wires to the terminal block to provide power for he device. The switch supports redundant power supply with 4-pin 5.08mm-spacing plug-in terminal block. When one power input is faulty, the switch can continue operating properly, thereby improving network reliability.



Note :

- Conductor suitable for use in an ambient temperature of 80°C must be used for the power input terminal.
- All field wiring intended for connection to the power terminal shall consist of copper conductors with the insulation locally removed. Additional intermediate connecting parts, other than ferrules, shall not be used.

• 4-Pin 5.08mm-Spacing Plug-in Terminal Block



Figure 6 4-Pin 5.08mm-Spacing Plug-in Terminal Block (socket)

Table 2 Pin Definitions of 4-Pin 5.08mm-Spacing Plug-in Terminal Block

Pin Number	DC Wiring Definition	AC Wiring Definition
1	PWR1: -	PWR1: N
2	PWR1: +	PWR1: L
3	PWR2: -	PWR2: N
4	PWR2: +	PWR2: L

- Wiring and Mounting
- Step 1: Ground the device properly according to section 4.1.
- Step 2: Remove the power terminal block from the device.
- Step 3:Insert the power wires into the power terminal block according to Table and secure the wires.
- Step 4:Insert the terminal block with the connected wires into the terminal block socket on the device.
- Step 5: Connect one end of the power cable to an external power supply system (with the allowed power range). If the power LED on the front panel of the switch turns on, the power supply is connected properly.

Wiring and mounting should meet following specifications.

Table 3 Wiring and	I Mounting	Specifications
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Terminal Type	Required Torque	Wire Range (AWG)
Terminal Block Plug	0.5 Nm	12-24



Caution :

 Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 140% of the rated voltage.

- Power adapter provide by end customer shall be non-sparking.
- Before connecing the device to power supply, make sure that the power input meets the power requirement. If connected to an incorrect power input, the device may be damaged.
- To comply with UL restrictions, this equipment must be powered from a source compliant with Class 2.



Warning :

- Do not touch any exposed conducting wire, terminal, or component with a voltage warning sign, because it may cause personal injury.
- Do not remove any part or plug in or out any connector when the device is powered on.

4.3 DIP Switches

There are two DIP switches on he top panel of the device, each switch has ON and OFF states, and the default state is OFF. The function of the DIP switches is shown in the following table.



OFF ON

Figure 7 DIP Switches

Table 4 Description of the DIP Switches

DIP Switches	State	Description	
т	ON	Enable broadcast storm protec ion	
1	OFF	Disable broadcast storm protection	
П	Reserved	1	

5 LEDs

LED	State	Description
Dower 1 ED	On	The power 1 is connected and
		operates properly.
TOWETTEED	Off	The power 1 is not connected or
		operates abnormally.
	On	The power 2 is connected and
Power 2 LED		operates properly.
Fower 2 LED	Off	The power 2 is not connected or
		operates abnormally.
	Speed	iction status green) (yellow)
10/100Base-T(X) Ethernet port speed LED (yellow)	On	100M working state (100Base-TX)
	Off	10M working state or no connection
10/100Base-T(X) Ethernet	On	Effective port connection
port connection status LED (green)	Blinking	Ongoing network activities
	Off	No effective port connec ion

Table 5 LEDs

6 Certificates Used for Compliance

Certificates Approvals		
EMC	CE,	
	FCC 47CFR Part2 and part15 Class A	
Safety	UL508, Class1 Div2, CSA C22.2 No.142	

7 Option

SX9Z-PMTD04PN02	Power Supply Terminal Block (2 pieces)
SX9Z-CAP2PN02	Connector cover for RJ45 port (2 pieces)
SX9Z-1A01	Direct mounting bracket (1piece)

• Direct moun ing bracket

Step 1: Unfix the DIN rail connecting seat after removing fixation screws. Step 2: See the figure as below, and fix the Direct moun ing bracket vertically with supplied two screws. (Tightening torque : 0.39-0.41Nm)



Figure 8 Direct mounting bracket