



DIGITUS Industrial Gigabit Media Converter RJ45



Manual

DN-652101-1&DN-652102-1

DN-652103-1&DN-652104-1

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1. Introduction

This series of industrial media converter with 1-port 10/100/1000Mbps RJ45 +1 port 1000Mbps Optical meets CE and RoHS standards. With operating temperature of $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$, the switches can be adapted to all kinds of harsh environment and also placed in the compact space of the control box. The installation characteristics of the guide rail, wide temperature operation, IP40 protection class housing and LED indicator light make the media convertor a plug and play industrial grade device, providing a reliable and convenient solution for users to network their Ethernet devices.

2. Features

1. The use of high quality photoelectric integration module to provide good optical and electrical characteristics
2. Ensure reliable data transmission and long working life
3. Support full duplex or half duplex mode, with automatic negotiation capability
4. Network port support automatic cross identification
5. Internal storage and forwarding mechanism, support a variety of protocols
6. In line with industrial operating standards, the average trouble-free work in more than 300,000 hours
7. Working power supply:
DC 12-48V to provide reverse protection
DC 48-57V for PoE version DN- DN-652104-1

3. Package Contents

- Industrial switch 1pcs
- User manual 1pcs

4. Specifications

Standard	IEEE802.3i 10Base-T; IEEE802.3u; 100Base-TX/FX; IEEE802.3ab1000Base-T; IEEE802.3z1000Base-X; IEEE802.3x IEEE802.3af, IEEE802.3at (DN-652104-1)
Interface	1-Port 10/100/1000Mbps RJ45 1 Port 1000Mbps Optical SC or SFP slot

Work environment	Working: -40~80 °C Storage: -40~80 °C
Switch	Bandwidth: 14Gbps Packet Buffer Memory: 1.2Mbit Packet Forwarding Rate: 10.5Mpps MAC Address Table: 2K
Power supply	Input voltage: DC12-48V Input voltage: DC48-57V (DN-652104-1) (two-way power redundancy backup) Access terminal: Phoenix terminal Support dual power redundancy Support reverse connecting protection. Max Power consumption: 3W
Mechanical characteristic	IP40 aluminum housing DIN rail installation Natural colling, no fan Weight: 0.4Kgs Measurement: 118 x 92.4 x 40mm
Industrial standard	
EN55032	Class A
IEC61000-4-2 (ESD):	±8kV(contact), ±12kV (air)
IEC61000-4-3 (RS):	10V/m (80~1000MHz)
IEC61000-4-4 (EFT):	Power Port: ±2kV; Data Port: ±1kV
IEC61000-4-5 (Surge):	Power Port: ±2kV/CM, ±1kV/DM; Data Port: ±4kV/CM, ±2kV/DM

IEC61000-4-6 (CS):	3V (10kHz-150kHz); 10V (150kHz-80MHz)
IEC61000-4-16 (Common mode conduction):	30V (cont.), 300V (1s)
Frequency range:	150kHz-80MHz
Impact:	IEC 60068-2-27
Free Fall:	IEC 60068-2-32
Vibration:	IEC 60068-2-6

5. Switch Panel

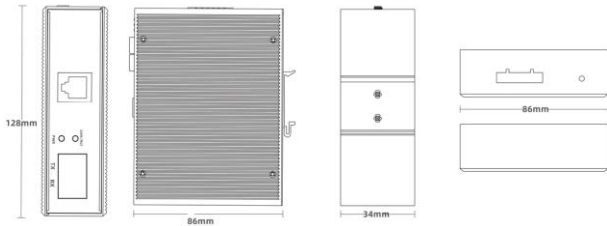


Side panel: P1 and P2 are the number of connecting terminals, P+1 and P-1 are respectively to the positive and negative poles to be connected; Earthing screw, used for earthing equipment.



Front panel: The yellow LED on the RJ45 port is the LINK light, which is on when the connection is established and the data transmission is flashing. The green light on the RJ45 port is PoE light, which is only on when the switch port is supplying power to the PD devices (PoE DN-652104-1 only) Link/Act is green color when optical connection. Power indicator light is on when connecting with Power.

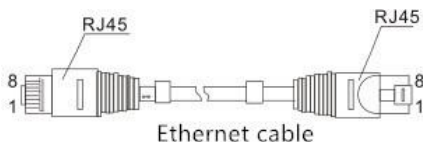
Switch size (mm)



6. Interface Definition

6.1 10/100/1000Base-TX ethernet interface

This series of switches provides MDI/MDI-X self-identification with cable support on all 10/100/1000Base-TX ports. In use, the Ethernet port of the switch can be connected with other Ethernet terminal devices through network cables (direct or cross). Please use Class 5 shielded twisted pair. The Ethernet port pin definition is shown in the following figure:



RJ45 port supports automatic MDI/MDI-X operation, you can use a straight line to connect to the PC or server, connect to other switches or hubs. In the through line (MDI), pins 1, 2, 3, 4, 5, 6, 7, 8 correspond to the connection; For the MDI-X port of a switch or hub, cross lines are used: 1-3, 2-6, 3-1, 6-2, 4-7, 5-8, 7-4, 8-5. 10Base-T/100Base-T (X) pins are defined as follows:

Pin No.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4,5,7,8	-	-

Note: "Tx ±" refers to send data ±, "Rx ±" refers to received data ±, and "-" refers to unused data.

6.2 1000base-FX ethernet interface

DN-652101-1: 1000Base multi-mode dual-fiber SC module, 850nm, 2Km cabling.

DN-652102-1: 1000Base single-mode dual-fiber SC module, 1310nm, 20Km cabling.

DN-652103-1: 1000Base SFP module.

DN-652104-1: 1000Base SFP module.

6.2.1 Patch cord classification

According to the transmission mode of light in the fiber, it can be divided into multi-mode fiber and single-mode fiber. Multimode fiber has a thick glass core (50 or 62.5µm), which can transmit light in various modes. However, the high inter-mode dispersion limits the frequency at which digital signals can be transmitted, so multimode fibers can be transmitted over relatively close distances (typically only a few kilometers).

The single-mode fiber has a very thin glass core (core diameter, usually 9 or 10µm) and can transmit only one mode of light. Therefore, its inter - module dispersion is very small, and it is suitable for remote communication. Under normal circumstances, the skin is orange for multi-mode, yellow for single mode.

7. LED Indicator

LED indicator		Status	Definition
Power		Red LED on	Power supplying in normal
		Red LED off	Power supply abnormal or no powering
Link/ Act	RJ45	Yellow LED on	Network connection in normal
		Yellow LED flashing	Link communication in normal
	Optical	Green LED flashing	Optical link communication in normal
		Green LED off	Optical no communication
PoE		Green LED on (RJ45)	PoE work in normal
		Green LED off (RJ45)	No PoE work

8. Installation caution

8.1 Installation precautions

In order to avoid damage to equipment and personal injury caused by improper use, please follow the following precautions:

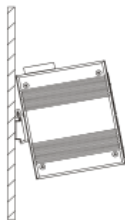
- In order to avoid damage caused by falling of the equipment, please put the equipment in a stable environment.
- When supplying power to the equipment, pay attention

to confirm the range of power supply voltage, as well as the positive and negative poles of the power supply, so as not to damage the equipment by wrong operation.

- In order to reduce the risk of electric shock, ensure that the equipment is well grounded in the working environment.
- No matter when, please do not arbitrarily remove the equipment shell.
- When placing the switch, please avoid the area with dust and strong electromagnetic interference

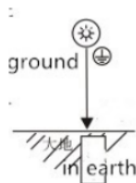
8.2 Din rail installation

The first step is to check the grounding and stability of the guide rail: the guide rail slot of the switch is clamped into the guide rail; the second step: from the center to both sides of the guide rail positioning screws in order. Step 3: Use screws to fix the mounting rail card slot on the fixed guide groove at both ends of the guide rail to ensure that the guide rail and the switch are fixed on the guide rail vertically and stably.



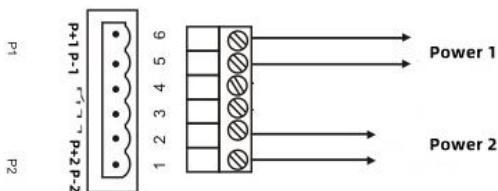
8.3 Grounding

Fix the grounding wire to the grounding screw above the switch, and ensure good reliable connection of the grounding system.



8.4 Power Connection

Insert the power cord into the specified position of the 6-core terminal and insert the terminal into the standard power supply inlet (P+1 and P-1 input corresponding to the first power supply P1, and P+2 and P-2 input corresponding to the second power supply P2). The available voltage standard of the power supply is supported from 12VDC to 48VDC (48VDC to 57VDC for DN-652104 PoE support)



This is a Class A product. In home environment, this product may cause radio interference. In this case, the user may be required to take appropriate measures.

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