DIGITUS®

8-Port 10/100Base-TX to 100Base-FX Industrial Ethernet (PoE) Switch

Quick Installation Guide
DN-651132 & DN-651133
DN-651146 & DN-651147

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1. Overview

Industrial Ethernet switch with 8-Port 10/100Mbps RJ45 + 100Mbps / 1000Mbps base-FX, the Product meet CE, RoHS standards. Switch has the operating temperature of -40°C ~ 80°C, has the super firmness can adapt to all kinds of harsh environment, can also be conveniently 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 switch a plug and play industrial grade device, providing a reliable and convenient solution for users to network their Ethernet devices.

2. Features

- The use of high quality photoelectric integration module to provide good optical and electrical characteristics
- Ensure reliable data transmission and long working life
- Support full duplex or half duplex mode, with automatic negotiation capability
- Network port support automatic cross identification
- Internal storage and forwarding mechanism, support a variety of protocols
- In line with industrial operating standards, the average trouble-free work in more than 300,000 hours
- Working power supply:
  DN-651132/DN-651146:   DC 12-48V
  DN-651133/DN-651147 (PoE): DC 48-57V

3. Specification

3.1 Standard:
IEEE802.3i 10Base-T; IEEE802.3u; 100Base-TX/FX

3.2 Interface:
8-Port 10/100Mbps RJ45+1 Port 100Mbps Base-FX Industrial Switch
8-Port 10/100Mbps RJ45+2 Port 1000Mbps Base-FX Industrial Switch

3.3 Work environment:
Working: -40 ~ 80 °C, Storage: -40 ~ 80 °C

3.4 Power supply:
Input voltage: DC12-48V (two-way power redundancy backup)
Input voltage: DC48-57V for PoE version
Access terminal: terminal block;
Support dual power redundancy;
Support built-in over current 4.0A protection;
Support reverse connection protection

3.6 Mechanical characteristic:
IP40 aluminum housing
DIN rail install
Natural cooling, no fan

3.7 Industrial standard:
FCC Part 15 Subpart B, 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/DC;
Data Port: ±4Kv/ CM, ±42Kv/ DM
IEC61000-4-6 (CS): 3V (10 kHz-150 kHz); 10V (150 kHz-80 MHz)
IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)
Frequency range: 150kHz-80MHz
Impact: IEC60068-2-27
Free Fall: IEC60068-2-32
Vibration: IEC60068-2-6

3.8 Spec table:

Model No	DN-651132	DN-651133
Network port	8x 100Mbps	8x 100Mbps
SFP slot	1x 100Mbps	1x 100Mbps
PoE Spec.	NA	IEEE802.3af/ IEEE802.3at
Power Pin Assignment	NA	1/2+;3/6-
Bandwidth	1.8G	1.8G
Packet Buffer Memory	1.25Mbit	1.25Mbit
Forwarding rate	1.4Mpps	1.4Mpps
Mac address table	2K	2K
Max. Frame Size	9000bytes	9000bytes
Power consumption	< 8 watts	< 8 watts (excluded PoE)
Surge protection	4KV	4KV
Enclosure	IP40	IP40
Power Supply	DC12-48V	DC48-57V
MTBF	300,000 hours	300,000 hours
Working Temp.	-40 to 80C	-40 to 80C

| Model No	DN-651146	DN-651147
Network port	8x 100Mbps	8x 100Mbps
SFP slot	2x 1000Mpbs	2x 1000Mpbs
PoE Spec.	NA	IEEE802.3af/ IEEE802.3at
Power Pin Assignment	NA	1/2+;3/6-
Bandwidth	5.6Gbps	5.6Gbps
Packet Buffer Memory	1.2Mbit	1.2Mbit
Forwarding rate	4.2Mpps	4.2Mpps
Mac address table	2K	2K
Max. Frame Size	9000bytes	9000bytes
Power consumption	< 8 watts	< 8 watts (excluded PoE)
Surge protection	4KV	4KV
Enclosure	IP40	IP40
Power Supply	DC12-48V	DC48-57V
MTBF	300,000 hours	300,000 hours
Working Temp.	-40 to 80C	-40 to 80C

4. Packages

- Industrial switch 1pcs
- User manual 1pcs

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.
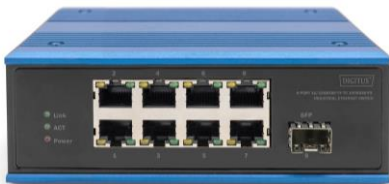
Front panel: The orange light on the port is the LINK light, which is on when the connection is established and the data transmission is flashing.
The green light is PoE light, which is only on when the switch port is supplying power to the PD devices (Only DN-651133/DN-651147 support PoE); Power indicator light is on when connecting with Power.

Switch size (mm)
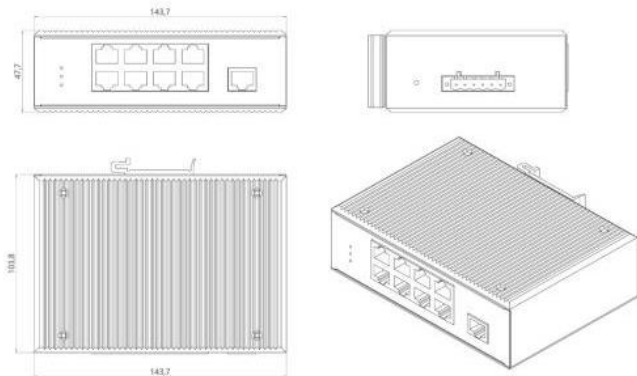
6. Interface Definition

6.1 10/100Base-TX Ethernet interface:

This series of switches provides MDI/MDI-X self-identification with cable support on all 10/100Basc-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:
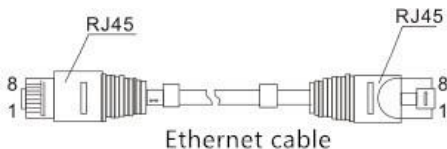
RJ45 port supports automatic MDI/MDI-X operation, you can use a straight line to connect to the PC or server, connect to other switches or hubs. In the through line (MDI), pins 1, 2, 3, 4, 5, 6, 7, 8 correspond to the connection;

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 100base-FX / 1000base-FX Ethernet interface
This device provides 100Base-FX or 1000Base-FX SFP slot.

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, it's 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.

6.2.2 Patch cord overview
LC to LC patch cord
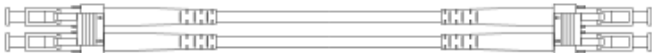
7. LED Indicator

LED indicator	Status	Definition
Power	LED on	Power supplying in normal
	LED off	Power supply abnormal or no powering
RJ45 indicator	Yellow LED on	Network connection in normal
	Yellow LED flashing	Link communication in normal
	Green LED on	PoE feeding in normal
	Yellow/Green LED off	No connection at port
LINK	Green flashing	Optical work in normal
ACT	Green flashing	Switch work in normal

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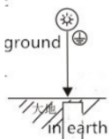
Fix the grounding wire to the grounding screw above the switch and ensure good reliable connection of the grounding system.

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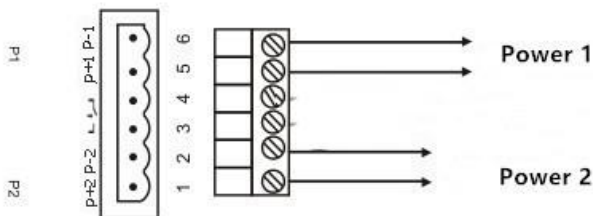
This is a Class A product. In home environment, this product may cause radio interference. In this case, the user may be required to take appropriate measures.

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