# UTEK

UT-N6228GS-M-SFP
# Industrial Ethernet Switch
User manual

I. Overview

The UT-N6228GS-M-SFP is a managed industrial Ethernet switch that meets FCC, CE, and ROHS standards. It supports 2 Gigabit fiber ports and 8 Gigabit electrical ports, as well as one console port. It supports Ethernet layer 2 protocols required for industrial field use, ensuring the stability of communication networks. This series of switches adopts low power consumption and fanless design to ensure no noise interference. They also support a working temperature range of -40~70℃ and have excellent EMC electromagnetic compatibility performance, ensuring stable operation in harsh industrial environments. They provide a safe and reliable solution for building fast and stable network terminal access networks in industrial application fields such as factory automation, intelligent transportation, and video surveillance.

II. Panel description

UT-N6228GS-M-SFP Side Panel: P1 and P2 are the terminal numbers for connecting power; P+1 and P-1 correspond to the positive and negative poles of the power supply respectively; the ground screw is used for equipment grounding.
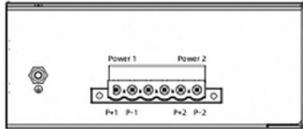
UT-N6228GS-M-SFP Front Panel: The green light on the port is the link indicator, which lights up when a connection is established and flashes when data is being transmitted; the power indicator light is labeled "Power" and displays whether the device is currently receiving power; the system indicator light is labeled "System" and displays the operational status of the device - slow flashing indicates normal operation.
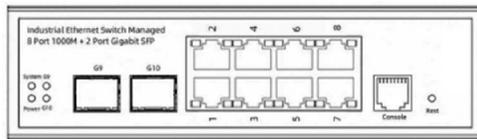
Dimension unit(mm)
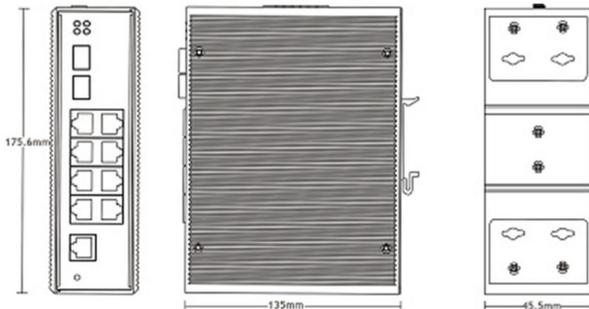
III. Major Functions & Features

◎Built-in watchdog technology, fault self-recovery, to ensure stable operation of the equipment
◎Data Control: Supports IEEE802.3X full-duplex flow control, supports network storm suppression
◎Redundant Network: Supports STP/RSTP/MSTP, supports ERPS (self-healing time <20ms)
◎Multicast Management: Supports IGMP Snooping V1/V2/V3
◎VLAN: Supports IEEE 802.1Q VLAN, effectively isolating broadcast domains
◎Link Aggregation: Supports static/dynamic link aggregation, providing comprehensive bandwidth utilization
◎QoS: Supports COS\DSCP, 8 queues, supports WRR\SP scheduling mode
◎Security Management: Supports ACL access control lists, supports 802.1X Management Functions: Supports WEB, CLI, SNMP management methods
◎Monitoring and Maintenance: Supports port mirroring, interface status monitoring, log management
◎IP40 protection level

IV. Hardware specifications

4.1 **Standards**

IEEE802.3-10BaseT；IEEE802.3u-100BaseTX；
IEEE802.3x-Flow Control；IEEE802.3z-1000BaseX；
IEEE802.3ab-1000BaseTX；IEEE802.1abLacp Protocol；
IEEE802.1D-Spanning Tree Protocol；IEEE802.1Q -VLAN Tagging；
IEEE802.1w-Rapid Spanning Tree Protoco；IEEE802.1p -Class of Service；
IEEE802.1X-Port Based Network Access Control, etc.

4.2 Interface: 8 Gigabit electrical ports + 2 Gigabit optical ports

4.3 **Operating environment**

Operating temperature:-40～70 °C(-40~158 °F)
Storage temperature: -40～85 °C(-40～185 °F)
Relative humidity: 5%～95% (non-condensing)

4.4 **Switch attributes**

Packet buffer:12 Mbit;   MAC address table:8 K；
Power consumption: < 10W;
Gigabit port packet conversion rate:1.488Mpps；
Backplane bandwidth:38G；   Multicast group number:512

4.5 **Power supply**

Input voltage ：DC12-52V(dual power redundant backup)；
Access terminals: Phoenix terminals; Supports dual power redundancy；
Supports built-in overcurrent protection of 4.0A.

4.6 **Mechanical characteristics**

Housing: IP40 protection level, metal housing;
Installation method: DIN-rail mounting, wall-mounting installation;
Cooling method: Natural cooling, no fan.
Weight: 0.82Kg;
Dimensions: 179×134×46mm;

4.7 **Industry standards**

IEC(EN)61000-4-2(ESD)：±8kVcontact discharge, ±12kVair discharge
IEC(EN)61000-4-3(RS)：10V/m(80～1000MHz)
IEC(EN)61000-4-4(EFT)：Ethernet port：±4kV CM//±2kV DM；
IEC(EN)61000-4-5(Surge)：Ethernet port：±4kV CM//±2kV DM；
IEC(EN)61000-4-6(RF conducted immunity)：
3V(10kHz～150kHz)，10V(150MHz～80MHz)
IEC(EN)61000-4-16(Common mode conduction)：30V cont. 300V,1s
Shock: IEC 60068-2-27
Free fall: IEC 60068-2-32
Vibration: IEC 60068-2-6
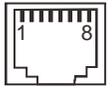
V. Interface Map

5.1 10/100/1000Base-TX Ethernet Interface:

This series of switches provide 10/100/1000Base-TX ports that support the MDI/MDI-X auto recognition function for cables. When in use, they can be connected to other Ethernet terminal devices via Ethernet ports on the switch through network cables (straight-through or crossover). Please use Category 5e shielded twisted-pair cable. The pin definitions for the Ethernet port are shown in the figure below.

Ethernet cable
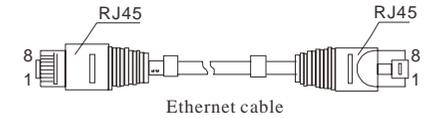
The RJ45 port supports automatic MDI/MDI-X operation and can be connected to PCs or servers using straight-through cables, or other switches or hubs using crossover cables. For straight-through (MDI) cables, the pins 1, 2, 3, 4, 5, 6, 7, and 8 correspond to their respective connections. For the MDI-X port on a switch or hub, the pin connections of the crossover cable are as follows: 1-3, 2-6, 3-1, 6-2, 4-7, 5+8, 7-4, 8-5. The pin definitions for 10Base-T/100Base-T(X) are shown in the table below:

Pin No	MDI Signal	MDI-X Signal
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/-	BI_DD+/-
5	BI_DC-/-	BI_DD-/-
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/-	BI_DC+/-
8	BI_DD-/-	BI_DC-/-

Remarks: "TX± " is "data transmit", "RX± " is "data receive", "-" is empty

5.2 1000Base-X Optical Port

This series of switches provides a 1000Base-X fiber optic port slot that supports SFP interface type gigabit fiber optic modules and hot-swappable functionality. Optional fiber optic modules include LC interface, SC interface, etc.

#### 5.2.1 Fiber Optic Jumper Classification

According to the transmission mode of light in the fiber optic cable, it can be divided into multimode fiber and single-mode fiber. The center glass core of multimode fiber is thicker (50 or 62.5 μm), and can transmit various modes of light. However, its intermodal dispersion is larger, which limits the frequency of transmission of digital signals. Therefore, the transmission distance of multimode fiber is relatively short (generally only a few kilometers).

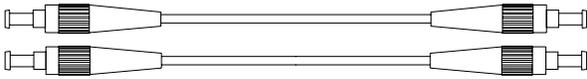#### 5.2.2 Common Fiber Optic Jumpers

SC to SC fiber optic jumper
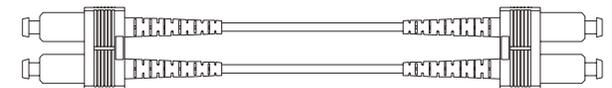
ST to ST fiber optic jumper
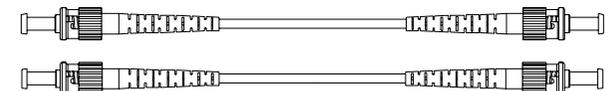
FC to FC fiber optic jumper

LC to LC fiber optic jumper

VI. LED Indicator

Indicator Light	Status	Description
Power	Solid red	Power supply is normal
	Red off	Power supply failure or not working
RJ45 Indicator Light	Green on	Network connection is normal
	Green flashing	Link communication is normal
	Green off	Port is not connected
System	Green slowly on	System has started running
G9, G10	Green constantly on	Fiber-optic port is normally connected
	Green flashing	Fiber-optic port communication is normal

VII. Installation Guide

7.1 Installation Precautions

To avoid damage to the equipment and harm to individuals due to improper use, please follow the precautions below:

◎To prevent damage caused by dropping the equipment, place it in a stable environment.

◎When supplying power to the equipment, pay attention to confirming the voltage range of the power supply and the positive and negative poles of the power supply to avoid damaging the equipment due to incorrect operation.

◎To reduce the risk of electric shock, ensure that the equipment is well grounded in the working environment.

◎Do not disassemble the equipment casing at will.

◎When placing the switch, avoid areas with excessive dust and strong electromagnetic interference.

7.2 DIN-rail Installation

To install the product on a DIN-rail, follow these steps:

Step 1: Check the grounding and stability of the DIN-rail; slide the switch's DIN-rail slot onto the DIN-rail.

Step 2: Insert the DIN-rail's locating screws from the center to both sides in order.

Step 3: Secure the DIN-rail card slot with screws to the fixed guide slots at both ends of the DIN-rail, ensuring that the DIN-rail is stably and vertically fixed to the DIN-rail.

7.3 Grounding

Fix the grounding wire to the grounding screw on the switch and ensure that the grounding system is reliably connected.

ground connection

Earth
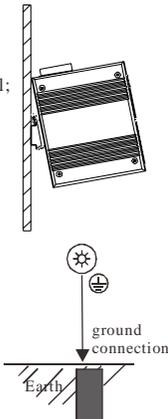
7.4 Power Connection

Insert the power cord into the designated position of the 6-core terminal block, and insert the terminal block into the standard power input port (the first power P1 corresponds to P+1 and P-1 input, and the second power P2 corresponds to P+2 and P-2 input), supporting power available voltage standards between 12VDC~52VDC.

2nd power

1st power
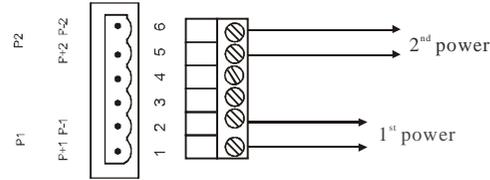
VIII. Management System Login

This series of products provides 1 serial port-based management system program debugging port, located on the side panel, and can be accessed through standard Cisco line login command line.

DB9 female   RJ45

Console Port: Baud Rate 115200

Web: IP Address: 192.168.10.12

User name: admin   Password: admin

IX. Accessories

Name	QTY(Unit)
Switch	1PCS
English user manual	1PCS
Chinese user manual	1PCS
Fiber optic module	2PCS
Product certification	1PCS
Warranty Card	1PCS
Power Connector	1PCS