

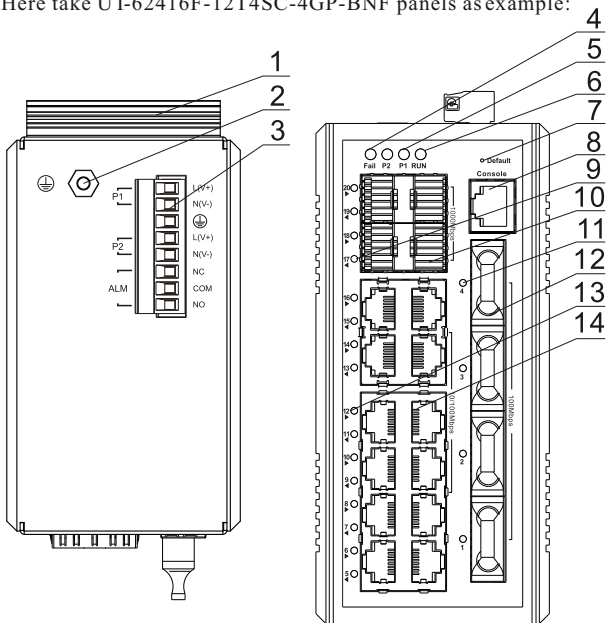
UT-62416F Series Managed Ethernet Switch User Manual

I. Overview

UT-62416F series are managed industrial Ethernet switches. It supports various combinations of RJ45/fiber ports; it supports up to 20 ports, with 4 Gigabit fiber ports; this ensures the network stability. This switch supports port mirroring, VLAN, IGMP, QoS, stp/Rstp and other layer 2 software features and management, such as Console, Telnet, Web, SNMP, relay alarm output. These make the switch provides safe and reliable solution for industrial automation, intelligent transportation, video monitoring, and other industrial application networking access.

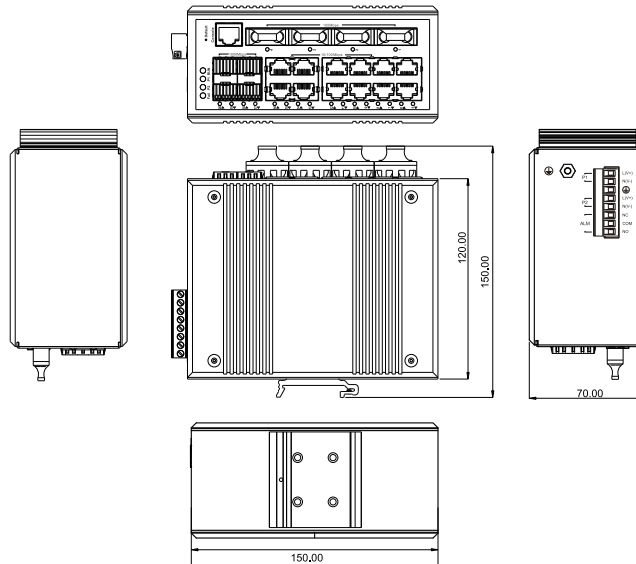
II. Panel Description

Here take UT-62416F-12T4SC-4GP-BNF panels as example:



- | | |
|---|-----------------------------------|
| 1. DIN-Rail | 8. Console port |
| 2. Ground screw | 9. Gigabit fiberport indicator |
| 3. Power input & relay alarm terminal block | 10. Gigabit fiberport |
| 4. Relay alarm indicator | 11. 100M fiberport indicator |
| 5. Power input indicator | 12. 100M fiberport |
| 6. System running indicator | 13. Ethernet port indicator |
| 7. Default setting | 14. 10/100Base-T(X) Ethernet port |

Dimension(unit: mm)



III. Features

- Supports multiple combination of RJ45 ports and fiber ports (ST/FC/SC/SFP slot)
- Supports IGMP Snooping and GMRP filter multicast packet
- Supports port-based VLAN, IEEE 802.1Q VLAN and GVRP
- Supports QoS(IEEE 802.1p/1Q) and TOS/DiffServ
- Supports STP/RSTP, SNMPv1/v2/v3
- Adopts RMON to improve network monitor forecast ability
- Supports UT-ring (single ring and cross ring)
- Support port mirroring, convenient for online debug
- Supports port transmission rate limitation, broadcast/multicast/uncertain unicast storm relieving
- Supports power, port, UT-ring temperature abnormal status relay output alarm function
- Operating temperature: -40~75℃

IV. Hardware Specification

4.1 Standards & protocols

Standards: IEEE802.3, IEEE802.3u, IEEE802.3z, IEEE802.1Q, IEEE802.1p, IEEE802.1D, IEEE802.1W

Protocols: ICMP, TCP, HTTP, Telnet, UT-Ring, STP/RSTP, SNMP, LLDP, IGMP-Snooping, GMRP

Flow control: IEEE802.3x flow control, backpressure flow control

4.2 Ports

Fiber port: 100Base-FX(SC/FC/ST)
1000Base-X(SFP slot)

RJ45 port: 10/100Base-T(X), auto MDI/MDI-X

4.3 Transmission Distance

Cat.5e: 100m

Fiber module

Single-mode: 1310nm 20/40/60Km

1550nm 20/40/60/80/100/120Km

Multi-mode: 1310nm 2Km

4.4 Switching Performance

Forwarding rate:

100M ports: 148810pps

1000M ports: 1488095pps

Transmission mode: store-and-forward

MAC address buffer: 8K

Switching bandwidth: 11.2G

4.5 Power Requirement

Voltage input: 12/24/48VDC(10.8~52.8VDC), supports redundant dual power input

4.6 Power Consumption

Max. input power consumption: 830mA@24Vmax(check details on label)

4.7 Mechanical Characteristics

IP rating: IP40

Weight: <2000g

Installation: DIN-Rail

4.8 Dimension

Size (W × H × D) : 70mm × 150mm × 120mm

4.9 Environment

Operating temperature: -40℃~75℃

Storage temperature: -40℃~85℃

Relative humidity: 0~95%(non-condensing)

4.10 Industrial Standards

EMI :

FCC Part 15, CISPR (EN55022) class A

EMS:

IEC(EN)61000-4-2(ESD)

IEC(EN)61000-4-3(RS)

IEC(EN)61000-4-4(EFT)

IEC(EN)61000-4-5(Surge)

IEC(EN)61000-4-6(CS)

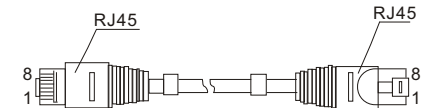
IEC 60068-2-27(Shock)

IEC 60068-2-32(Freefall)

V. Port definition

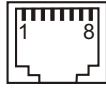
5.1 10/100Base-T(X) Ethernet port

This series switch 10/100Base-T(X) ports support auto MDI/MDI-X. User can build the connection between RJ45 port of switch and other Ethernet terminal devices via cable (director or cross connection). RJ45 pin assignment is as below.



RJ45 ports support auto MDI/MDI-X, it can be connected with PCs, servers other switches or hubs by MDI. When use MDI connection, relative pin 1, 2, 3, 6 to be connected directly. For MDI-X port of switch or hub, it adopts cross connection: 1->3, 2->6, 3->1, 6->2. 10/100Base-T(X) MDI/MDI-X pin assignment is as below:

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



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

5.2 100/1000Base-F(X) fiber port
This series switch provides 100/1000Base-(F)X fiber ports; when using RJ45 ports, it can be connected with other Ethernet terminal devices through fiber port by fiber patch cord.

5.2.1 Fiber patch cord

According to the transmission mode of light on fiber, there are multi-mode fiber and single-mode fiber. The central glass core of multi-mode fiber is thick (50 or 62.5 μm); it can transmit light in different mode. The chromatic dispersion is big, and this causes limitation on frequency of transmission digital signal. With this, the transmission distance of multi-mode fiber is short (mostly few kms). The central glass core of single-mode is thin (9 or 10 μm), and it can transmit single mode light. The chromatic dispersion is small, it is good for long distance communication. Normally, the orange cable is multi-mode; the yellow cable is single-mode.

5.2.2 Fiber port

Fiber port is a physical interface for fiber cable connection. It adopts the principle that when light enter optically thinner medium from optically denser medium, the light will total reflection. There are four types fiber port: **FC port**: FC port is a round port with thread, metal style; it adopts metal cover outside, use thread and nut to match and fix.

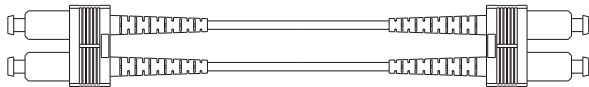
SC port: SC port is a standard square style port; it adopts engineer plastics, high temperature resistance, hard to oxidate.

LC port: LC port is similar to SC port, but smaller than SC port; it adopts modular jack, easy to operate.

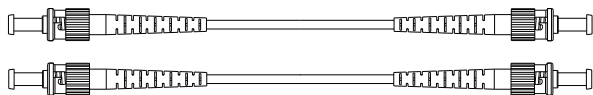
ST port: ST port is a clip-on round port.

5.2.3 Fiber patch cord use

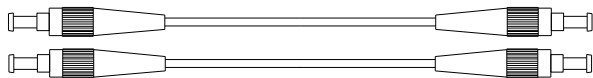
SC port to SC port fiber patchcord



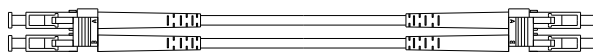
ST port to ST port fiber patch cord



FC port to FC port fiber patchcord



LC port to LC port fiber patchcord



Remarks: please don't bend the fiber patch cord when using.

VI. LED indicator

LED	Status	Description
P1~P2	green light on	power normal
	green light off	power breakdown or no power
Network port indicator	green light on	link connection normal
	green light blinking	link communication normal
	green light off	link without connection or breakdown
ALM	red light on	with alarm signal output
	red light off	without alarm signal output
Fail	green light on/off	system running breakdown
	green light blinking	system running regular

VII. Installation

7.1 Attention

To avoid device damage causing by wrong operation and personal injury, please follow below steps:

- ◎ To avoid device damage by falling down, please put the device on stable surface.
- ◎ When the device is ready to power on, please make sure the voltage input is wide voltage range, and the positive/negative anodes of the power.
- ◎ To avoid the electric shock, make sure the device is in good ground connection when operating.
- ◎ Please do not open the device case at any time.
- ◎ Please keep away from dusty and strong electromagnetism interference environment.

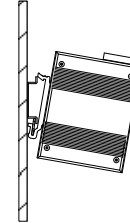
7.2 DIN-Rail installation

Install the switch on guide rail, and then follow below steps:

Step 1: Check the rail stability; put the switch rail slot into the guide rail;

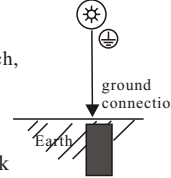
Step 2: rotate the fix screw of the rail from center to both sides in turn tightly, to make the guide rail plying-up the vertical install cover slightly.

Step 3: Fix the rail on the guiderail by screw, make sure the rail and the switch is vertical and stable.



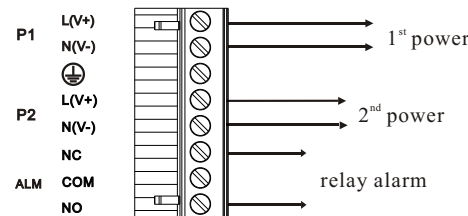
7.3 Ground connection

Fix the ground wire on the ground screw of the switch, make sure good connection.



7.4 Power input

Plug the power wire into the right position of 8-pin terminal block, then plug the terminal block into standard power input port (1st power is P1 L(V+), N(V-) input, 2nd power is P2 L(V+), N(V-) input, supports V+, V- power voltage range 12/24/48VDC (10.8~52.8VDC))

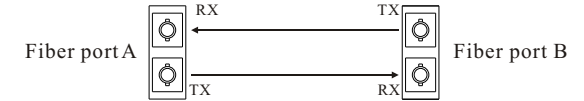


7.5 Relay alarm

Relay alarm is 3-pin of the terminal block; it provides power breakdown alarm output; when the device is breakdown, NC means "short circuit"; otherwise it means "open circuit". NO means "open circuit", otherwise it means "short circuit".

7.6 Network port connection

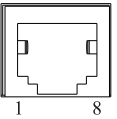
Connect the fiber cord or network cable with relative network port, please pay attention on RX & TX when fiber connection; the relative indicators will be on or blinking.



Notice: when connect fiber port A with fiber port B by fiber patch cord, please connect TX of fiber port A with RX of fiber port B, and connect RX of fiber port A with TX of fiber port B.

VIII. Management system log in

- 1、Console port: 115200 8-N-1
PIN3—TXD PIN4/5—GND PIN6—RXD
- 2、Web: IP address: 192.168.1.254
Admin: admin
Password: admin



IX. Packing list

Item	Qty(pcs)
Switch	1PCS
User manual	1PCS
CD	1PCS
Warranty card	1PCS
Certificate of approval	1PCS

X. Ordering

Model No.	Port description			Fiber port type	
	100 Base-FX	1000 Base-X	10/100 Base-T(X)	100 Base-FX	1000 Base-X
UT-62416F-16T-BNF	-	-	16	-	-
UT-62416F-12T4SC-BNF	4	-	12	SC	-
UT-62416F-16T4GP-BNF	-	4	16	-	SFP
UT-62416F-12T4SC-4GP-BNF	4	4	12	SC	SFP

1. Single-mode SC port is a standard configuration for products above mentioned, with optional ST/FC.
2. The suffix "F" in "BNF" means 12/24/48VDC (10.8~52.8VDC) power input.
3. If there is no model under requirement, or any questions about the models, please contact UTEK.