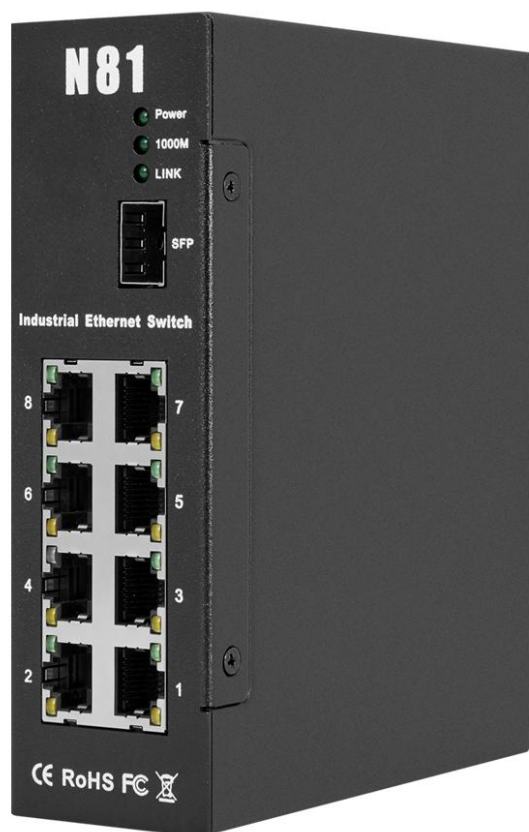


# Industrial Ethernet Switch



## N80/N81 User Manual

Ver 1.0

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King Pigeon Hi-Tech. Co., Ltd.

[www.IOT-Solution.com](http://www.IOT-Solution.com)



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This manual is intended as a guide to the installation and operation of the N40 / N41 Industrial Ethernet Switch. The statements contained in this manual are general guidelines only and should not supersede the instructions contained in other products.

We recommend seeking a registered electrician's advice before any installation work begins.

King Pigeon Hi-Tech Co., Ltd. and its employees and distributors are not responsible for any loss or damage (including damages) resulting from any reliance on any of the contents of this manual.

### 【UPGRADE HISTORY】

DATE	FIRMWARE VERSION	HARDWARE VERSION	DESCRIPTION
2020.12.10	V 25	V1.3	First edition

### Model List

Model	Electrical Port	Fiber Optical Port	POE
N80	8	0	Optional, default disable
N81	8	1	



## 1. Brief introduction

The N80/N81 series is an industrial Ethernet switch, designed for Ethernet access and PoE applications. It provides 8 electrical ports, 1 fibre optical port and PoE port. Hardware adopts fanless, voltage design and industrial standard tests which can suit for the industrial application as smart grid, new energy fields. These make the switch provides safe and reliable solution for industrial automation, intelligent transportation, video monitoring, and other industrial application networking access.

## 2. Features and Specification

### 2.1 Main Features

- Support full duplex or half duplex mode with automatic negotiation ability.
- 10/100M Base-T(X) at the same time automatically adapt, full/half duplex MDI/MDI-X automatically adapt, no manual adjustment.
- Surge protection, support 4KV common mode, 1KV differential mode surge shock.
- Inside take a store-and-forward mechanism, cache 8 K.
- Support industrial grade IP30 protection level, can work in -40-85°C environment.
- Redundant dual power supply, working power supply 9-60VDC.

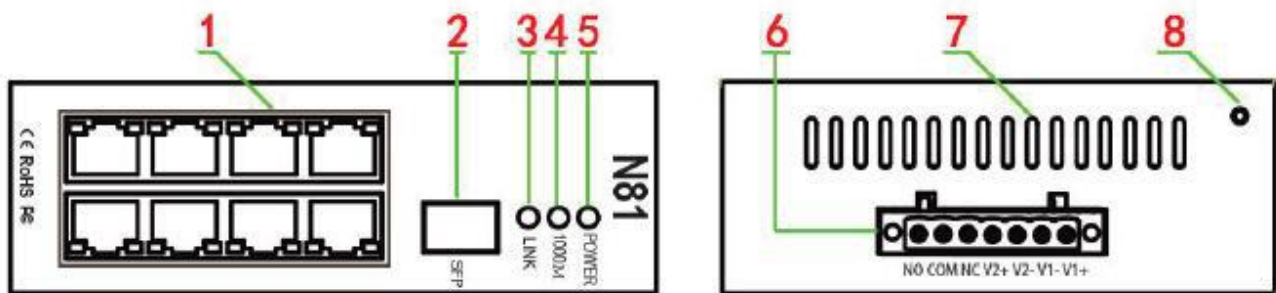
### 2.2 Specifications

Item	Parameter	Description
Standard	Protocol Standard	IEEE 802.3 10Base-T IEEE 802.3u 100Base-T(X) IEEE 802.3x Flow Control IEEE 802.3z 1000Base-T IEEE 802.3af PoE(12.95W) IEEE 802.3at PoE(30W)
Port	SFP	100/1000Base-X port, SFP slot
	RJ45 port	10/100Base-T(X) port, MDI/MDI-X automatically adapt
	PoE pin	V+, V+, V-, V- corresponding pin 1, 2, 3, 6
Transmission Distance	Cat 5e	100m
	Single Mode Fiber	1310nm: 20/40/60Km
		1550nm: 80/100/120Km
Multimode optical fiber	1310nm: 2Km	
Transmission Performance	Transmission Rate	4.0864Mpps
	Transmission Mode	Store-and-forward mechanism
	MAC cache	8K
Power requirement	Voltage Input	9~60VDC, redundant dual power input

	Current Input	40mA@12V
	Overload protection	Yes
	Terminal Block	1 pluggable 4-pin
	Reverse Polarity Protection	Yes
Characteristics	IP Rating	IP30
	Dimension	145x125x45mm
	Weight	450g
Environment	Operating Temperature	-40°C ~ 85°C
	Storage Temperature	-40°C ~ 105°C
	Relative Humidity	5%-95%(Non-condensing)
Industrial Standards	EMI	EN55022: 2006/A1: 2007
	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(EN)61000-4-8

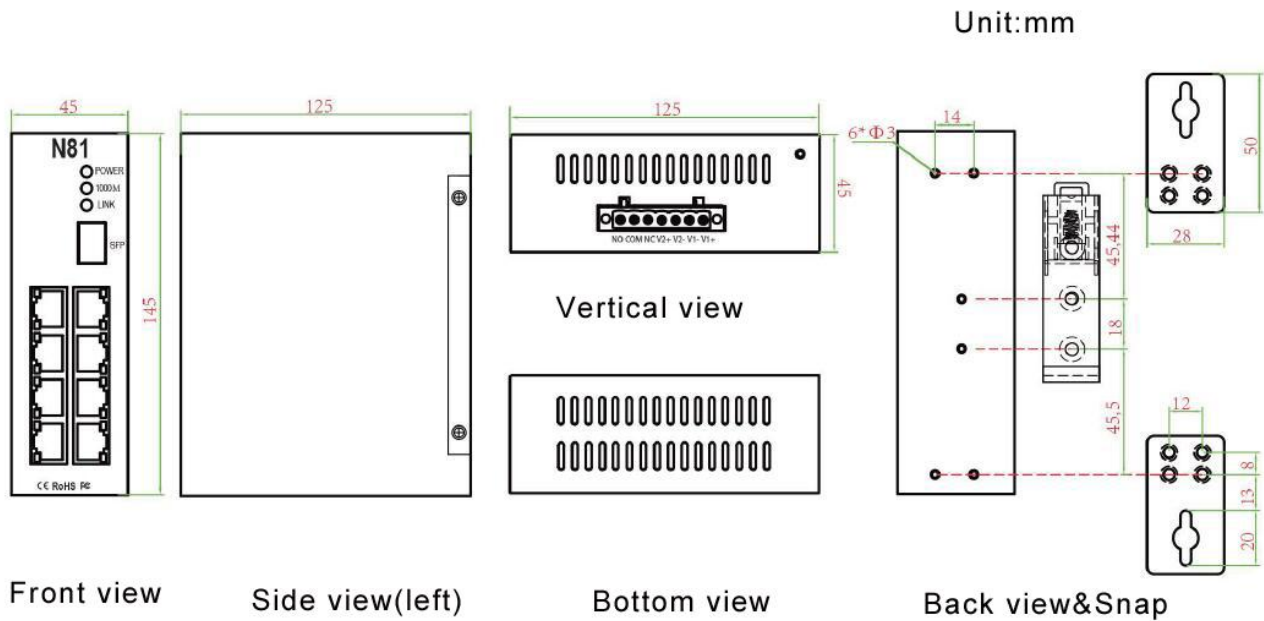
### 3.Appearance and Dimension

#### 3.1 Appearance



- 1. Ethernet port(RJ45)
- 2. SFP card slot
- 3. Fiber optical port indicator
- 4. Gigabit indicator
- 5. Power Indicator
- 6. Power input and relay output terminal
- 7. Ventilation hole
- 8. Ground screw

## 3.2 Dimension



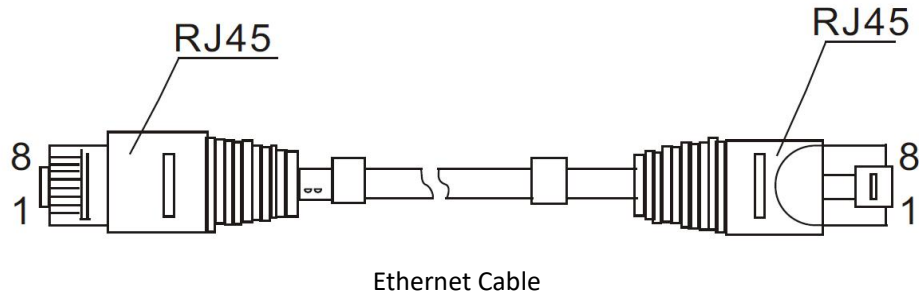
## 3.3 Standard Packing List

Item	Qty(pcs)
Ethernet Switch	1 pcs
7PIN terminals	1 pcs
Wall-mounted buckle	1 set
DIN-Rail fixed bracket	1 set
User manual	1 pcs
Warranty card	1 pcs
Certificate of approval	1 pcs

## 4.Interface definition

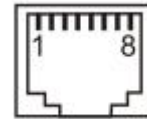
### 4.1 10/100Base-T(X)Ethernet Port

Ethernet switch N80/N81 10/100Base-T(X) Ethernet Port support auto MDI/MDI-X. User can build the connection between RJ45 port of switch and other Ethernet terminal devices via cable (direct 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.

## 4.2 100/1000Base-X Fibre Optical Port

N80/N81 Ethernet switch provides 100/1000Base-(F)X fiber optical ports; when using RJ45 ports, it can be connected with other Ethernet terminal devices through fiber port by fiber patch cord.

### 4.2.1 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 m); 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 m), 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.

### 4.2.2 Fiber optical port

Fiber optical 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.

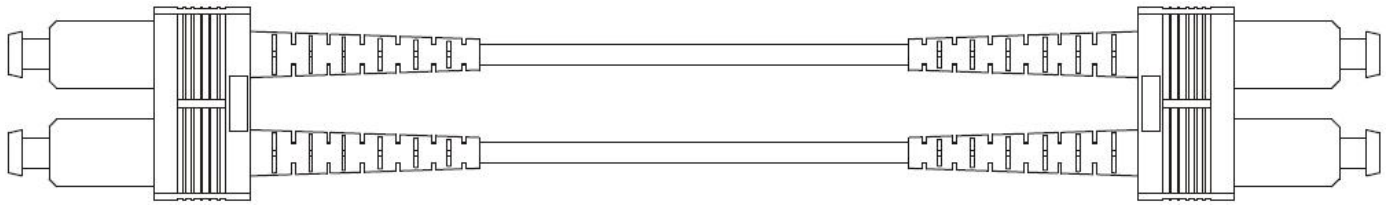
**SC port:** SC port is a standard square style port; it adopts engineer plastics, high temperature resistance, hard to oxidate.

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

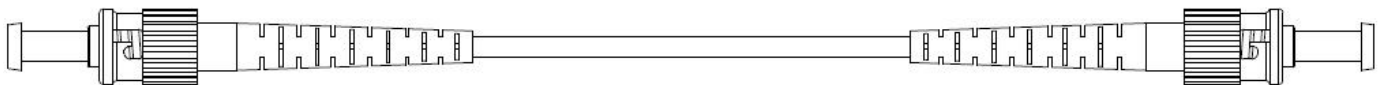
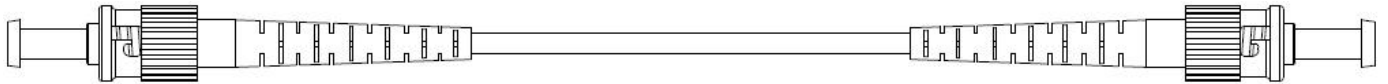
**ST port:** ST port is a clip-on round port.

### 4.2.3 Fiber patch cord use

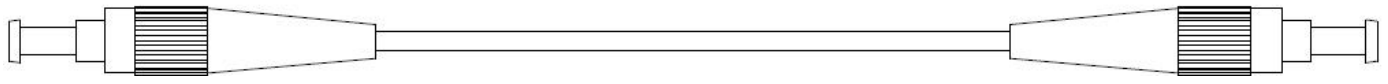
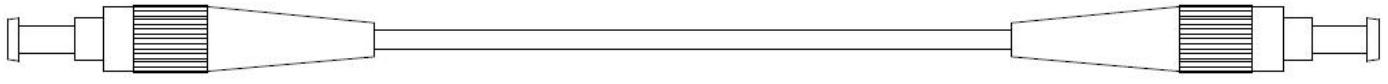
SC port to SC port fiber patch cord



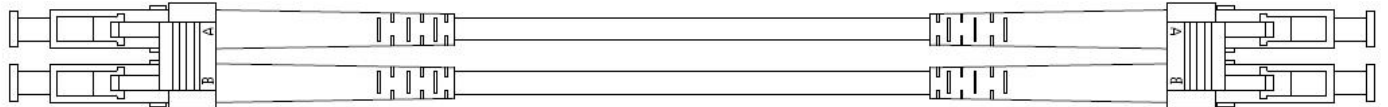
ST port to ST port fiber patch cord



FC port to FC port fiber patch cord



LC port to LC port fiber patch cord



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

## 5.LED indicator

LED	Color	Status	Description
Power	Green	Always on	power normal
		off	power breakdown or no power
1000M	Green	Always on	Gigabit network
		off	Non Gigabit network
LINK	Green	Blinking	Optical port communication is normal
		off	Optical port communication is normal

## 6.Installation

### 6.1 Attention

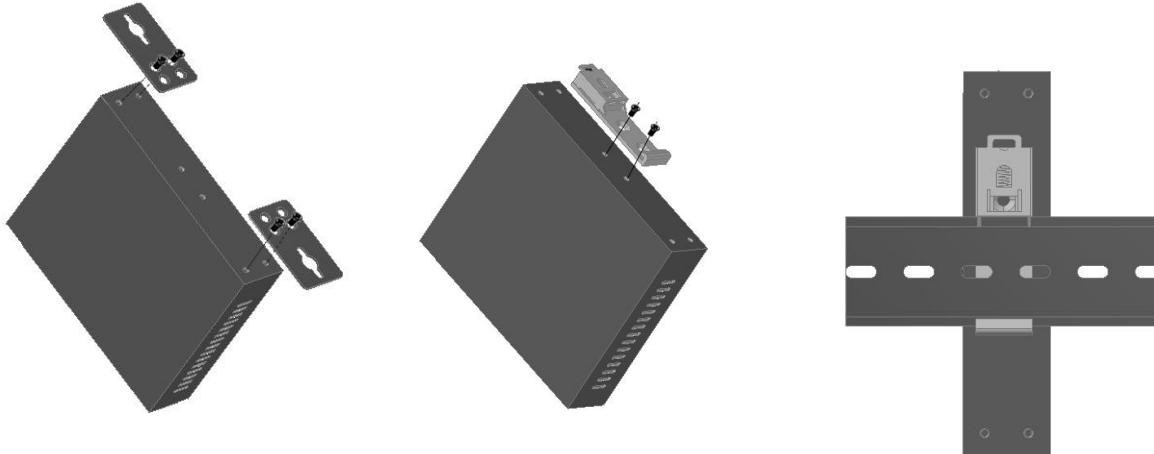
To avoid device damage causing by wrong operation and personal injury,please follow below steps:

- To avoid device damage by falling down, please put the device on stable surface.



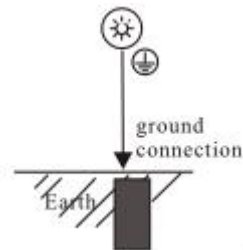
- When the device is ready to power on, please make sure the voltage input is wide voltage range, and the positive/negative anodes of the power.
- To avoid the electric shock, make sure the device is in good ground connection when operating.
- Please do not open the device case at any time.
- Please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

## 6.2 DIN-Rail&wall-mounted installation



## 6.3 Ground connection

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



## 6.4 Power input

The Industrial Ethernet Switch provide an additional power supply to ensure it continue work while normal power supply failure. Plug the power wire into the right position of 7-pin terminal block, then plug the terminal block into standard power input port. The first power supply is V1+, V1-, the second power supply is V2+, V2-, power voltage support 9~60VDC. One relay output, After the loss of a power input, the relay alarm output, Support NO and NC.

## 7. Warranty

- 1) This system is warranted to be free of defects in material and workmanship for one year.
- 2) This warranty does not extend to any defect, malfunction or failure caused by abuse or misuse by the Operating Instructions. In no event shall the manufacturer be liable for any alarm system altered by purchasers.

The End!

Any questions please help to contact us feel free.

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