

# **Newpre3200 Modular Controller Installation Manual**

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***KYLAND***

**Industrial Server Newpre3200 Series  
Hardware Installation Manual**

**Disclaimer:** Beijing Kyland Technology Co., Ltd. makes every effort to provide accurate and up-to-date information in this manual. Nevertheless, the company does not guarantee the absence of technical errors or typographical inaccuracies and reserves the right to revise this document without prior notice.

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## Safety Precautions

This product performs reliably within its designated operational range. However, to prevent potential damage or harm, users must adhere to the safety instructions outlined herein. Please read this manual carefully and retain it for future reference. The company will not assume liability for injuries or damages resulting from non-compliance.

- Do not install the device near water sources or in humid environments. Maintain a relative humidity of 5% to 95% around the device, ensuring no condensation occurs.
- Avoid locations with strong magnetic fields, high vibration, or elevated temperatures. Ensure that both operational and storage temperatures remain within the specified range.
- Secure the equipment to prevent slipping or falling.
- Maintain cleanliness around the equipment. When necessary, wipe it down with a soft, dry cotton cloth.
- Do not obstruct the device or its cables, ensuring efficient heat dissipation and smooth, knot-free cabling.
- Employ anti-static gloves or take equivalent precautions when handling the device.
- When wiring, ensure that metal wires are not exposed to prevent oxidation or short-circuits caused by high temperatures.
- Adhere to local and national electrical codes when installing the device.
- Prior to activation, verify the equipment's supported power specifications to avoid damage from voltage surges.
- Ensure secure connections for power plugs and other hardware interfaces to prevent issues related to poor contact.
- Do not manipulate power cords or touch equipment with wet hands.
- Remove jewelry and metallic items when working with live equipment to prevent electric shock or burns.
- Refrain from operating the equipment or connecting/disconnecting cables during thunderstorms.
- Use only company-approved connectors and cables, as instructed by our marketing or technical support teams.
- Do not attempt to disassemble the equipment. For troubleshooting, consult our sales or technical support teams.
- In case of missing or damaged components, procure replacements only under the guidance of our authorized personnel.
- Dispose of the equipment according to national environmental regulations. In the following situations, disconnect the power supply immediately and contact our company:
  - Water ingress into the device.
  - Physical damage or shell cracking.
  - Abnormal operation or performance alterations.
  - Unusual odors, smoke, or abnormal noise emanating from the device.

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## 1.Product Overview

The Newpre3200 series industrial server, developed by Beijing Kyland Technology Co., Ltd., is equipped with an Intel CORE i7-8665UE, a quad-core and eight-thread industrial controller. The robust and enclosed chassis design, efficient single-fin heat dissipation surface (fanless), power input terminals with overcurrent and overvoltage protection, as well as excellent EMC shielding and an IP40 protection rating, make this series highly suitable for a wide range of harsh industrial environments.

**Table 1: Configuration Table**

<b>Product number</b>	NewPre3200-P341-M4-D1-N0/NewPre3200-P341-M4-D1-N1
<b>Code definition</b>	Code selection
<b>PWR1-PWR2 : power input</b>	Terminal interface : L+-N- : 24VDC (18-36VDC , redundant input )
<b>Electrical interface</b>	4 individual 10 /100 /1000 Base - T ( X ) electrical port , RJ45
<b>Serial interface</b>	1 x RS232/1x485 ( The serial port mode can be set through the built-in dial )
<b>USB interface</b>	4 USB2.0 , 2xUSB3.0
<b>Video interface</b>	1 HDMI Interface ( support1080P HD display )
<b>Extension ports</b>	Located on the right side of the power module , it supports Kyland KYIO module
<b>Operating temperature</b>	-20 °C~ +70 °C

## 2 Structure and interface



**Notice:**

To maintain clean interfaces and ensure optimal device performance, it is advised to purchase separate interface dust covers (optional accessories) based on the equipment interface type.

### 2.1 Front panel

- Front Panel of Newpre3200 Series Industrial Server

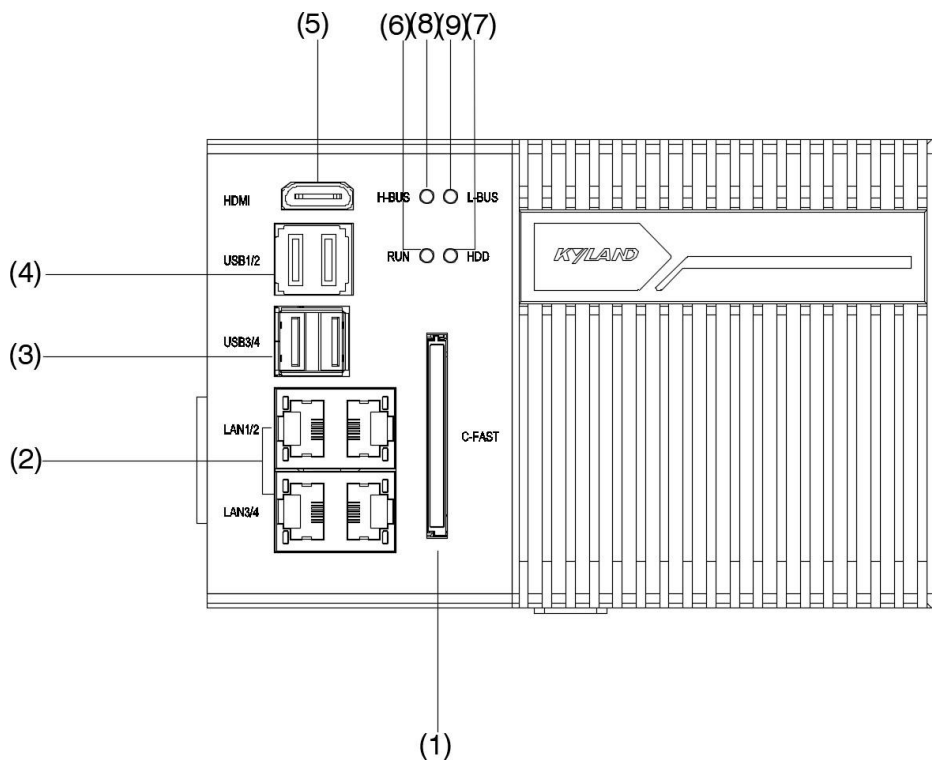


Figure 1: Front panel annotation diagram surface 2 Front panel labelling instructions

S/N	Panel identification	description
( 1 )	C-FAST	storage card

( 2 )	LAN(1/2/3/4)	LAN*4 Network port 10 / 100 / 1000 M
( 3 )	USB(3/4)	USB*2 USB3.0
( 4 )	USB(1/2)	USB*2 USB2.0
( 5 )	HDMI	HDMI display interface
( 6 )	RUN (LED)	Running status light (running normally, always on)

( 7 )	HDD(LED)	Hard disk status light (reading and writing, flashing)
( 8 )	H-BUS(LED)	H_BUS Status indicator light: high speedoeLh _ Bus communication status indication
( 9 )	L-BUS(LED)	L_BUS Status Indicator : Low Speed422 Bus communication status indication

**2.2 power supply**

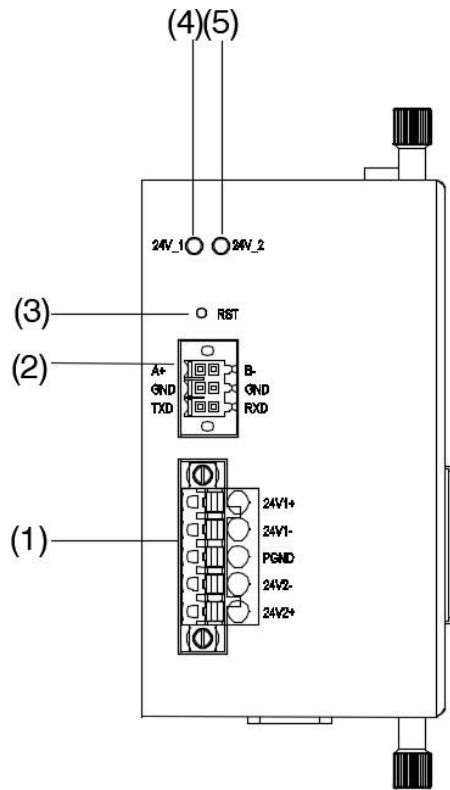


Figure 2: Annotations on the Power Supply Front Panel

Table 3: Explanatory Notes for Power Supply Front Panel

S/N	panel identification	description
( 1 )	PWR interface	Power interface
( 2 )	RS-232/485	RS-232 Interface (TX,RX,GND)/RS-485 Interface (A+,B-,GND)
( 3 )	RST	Reset key
( 4 )	24V_1	PWR 1 status indication LED lamp
( 5 )	24V_2	PWR 2 status indication LED lamp

### 3 Install

#### 3.1. Dimensions

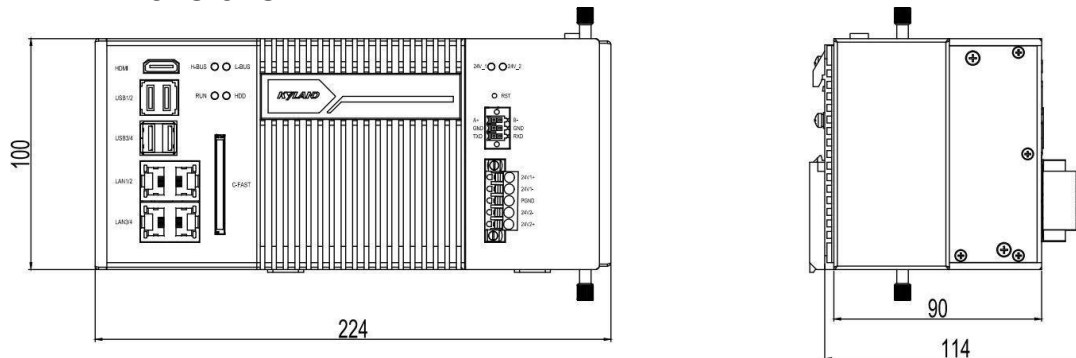


Figure 3 shows the dimensional drawing of the card track (unit: mm).



**Note :**

The equipment casing is an integral part of the overall cooling system. During normal operation, the casing may become hot. Do not obstruct the casing while the equipment is in operation.

#### 3.2 Installation method and steps

This equipment supports Din Rail Installation. Before commencing installation, please confirm the following:

- 1.Environmental requirements: Operating temperature range of -20°C to +70°C, relative humidity of 90% at 40°C, and no condensation for 24 hours.



- 2. Power requirements: Ensure that the equipment's operating voltage aligns with the specified voltage range on the device.
- 3. Ground resistance requirements: < 5Ω.
- 4. Installation should conform to authoritative regulatory requirements. Do not touch the equipment directly to prevent injury.
- 5. Only qualified or trained professionals are authorized to install, replace, or perform maintenance operations on this equipment.

**1 Warning :**



In high-temperature environments, the BIOS will enable temperature protection features, pausing all system processes to initiate protective mechanisms. In emergency situations, the BIOS temperature protection can be disabled through the BIOS settings menu.

**3.2.1 Rail installation**

- DIN Rail installation

**Step 1:** Choose the installation location for the device, ensuring sufficient installation space and adequate ventilation. (Dimensions: 250mm x 150mm x 150mm (WHD)).

**Step 2:** Lift the upper part of the WM DIN rail seat slightly upward, applying moderate force. Rotate the device as indicated by arrow 2 in the diagram, until the device is securely mounted on the WM rail, completing the installation process.

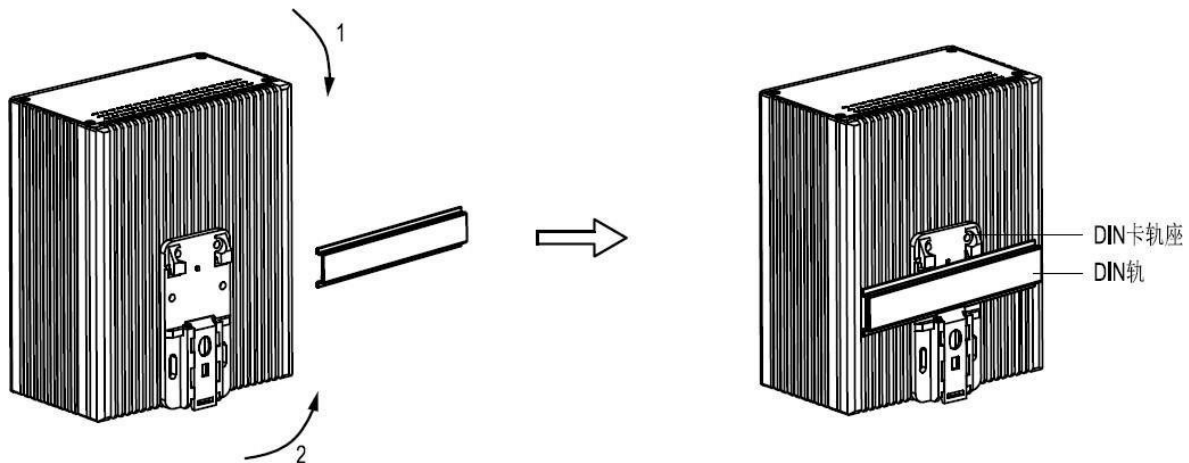


Figure 4: DIN Rail Installation Diagram

- DIN Rail removal

**Step 1:** Use a screwdriver to pry open the card rail seat limiting block. Rotate the device as indicated by arrow 1.

**Step 2:** Once the lower end of the device is detached from the DIN rail, rotate and lift the device upwards until it is released from the upper end of the DIN rail, completing the disassembly.

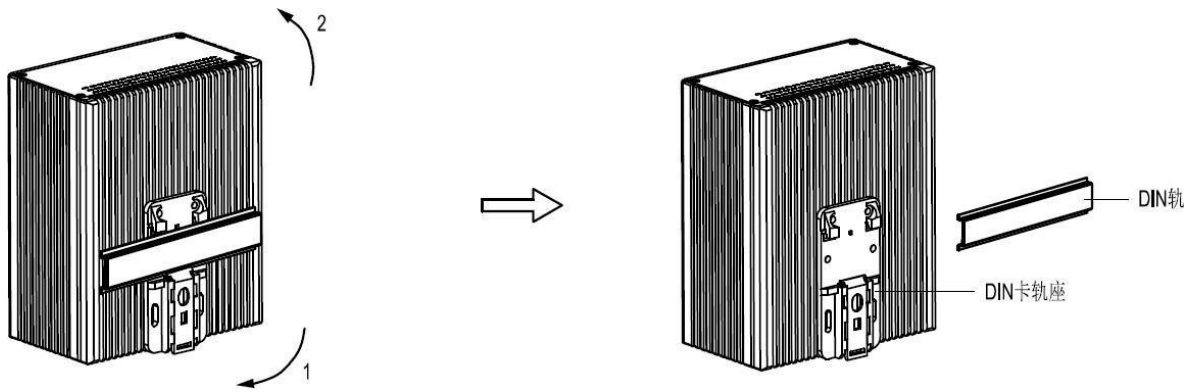


Figure 5: Rail removal diagram

### 3.2.2 Hard drive installation and replacement

- Hard drive installation

1 .MSATA disk installation

**Step 1:** Use a screwdriver to unscrew the fastening screws on the left side panel, and remove the left and upper panels of the device.

**Step 2:** Remove the display board and the storage board.

**Step 3:** Insert the MSATA hard drive into the MINI PCIe2 slot and secure it to the motherboard using screws.

2 .CFast disk installation

Directly insert into the left upper panel's silk-screened CFast hole for hard disk replacement (procedure as above).



**Note :**

Before installing, disassembling, or moving the device, ensure to cut off the power supply and unplug all cables.

## 4 wiring

### 4.1 10/100/1000Base-T(X) Ethernet interface

The 10/100/1000Base-T(X) Ethernet interface employs a standard RJ45 connector and features adaptive functionality. It can automatically configure to 10M/100M/1000M speeds as well as full-duplex and half-duplex operating modes. Additionally, it supports the MDI/MDI-X auto-detection functionality for cables, making it compatible with both straightthrough and crossover cables.

RJ45 interface are as shown in the figure below.

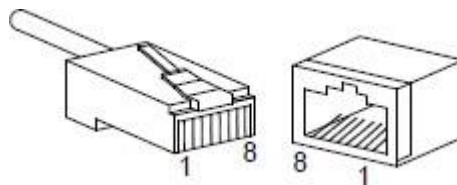


Figure 6: RJ45 Interface Pin Numbering

Table 4: 10/100/1000Base-T(X) RJ45 Interface Pin Definitions

pin	MDI-X	MDI
1	Send / receive data(TRD1+)	Send / receive data(TRD0+)
2	Send / receive data(TRD1-)	Send / receive data(TRD0-)
3	Send / receive data(TRD0+)	Send / receive data(TRD1+)
4	Send / receive data(TRD3+)	Send / receive data(TRD2+)
5	Send / receive data(TRD3-)	Send / receive data(TRD2-)
6	Send / receive data(TRD0-)	Send / receive data(TRD1-)
7	Send / receive data(TRD2+)	Send / receive data(TRD3+)
8	send / receive data(TRD2-)	send / receive data(TRD3-)



illustrate:

" + " and " - " represent the level polarity.

- Connector line sequence

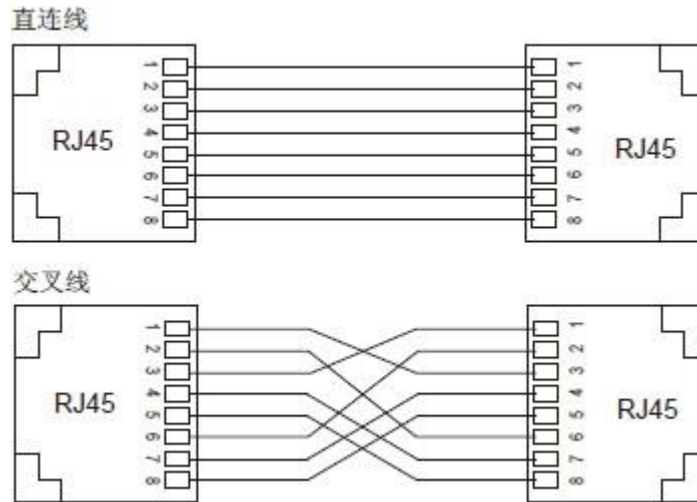


Figure 7: 10/100/1000Base-T(X) RJ45 Straight-through and Crossover Cable Interconnections

**Figure 7: 10/100/1000Base-T(X) RJ45 Straight-through and Crossover Cable Interconnections Note:**



The RJ45 connector follows the standard 568B wiring scheme (1-Orange/White, 2-Orange, 3Green/White, 4-Blue, 5-Blue/White, 6-Green, 7-Brown/White, 8-Brown).

**4.2 RS-232 /RS-485 interface**

The RS-232/RS-422/RS-485 interface employs a 6-pin terminal block connector. Pin definitions are indicated in the figure below.

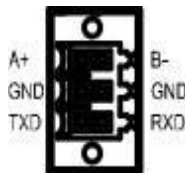


Figure 8: Interface Pin Definitions

Table 5: Serial Interface Pin Definitions

Pin	1	2	3
<b>RS-232</b>	+(TX)	-(RX)	GND
<b>RS-485</b>	Data+(A+)	Data-(B-)	GND

### 4.3 USB Interface

The USB interface is situated on the front panel of the device and includes 4 USB 2.0 ports and 2 USB 3.0 ports, all employing standard A female socket interfaces. The pin definitions for the USB interface are provided in the diagram below.

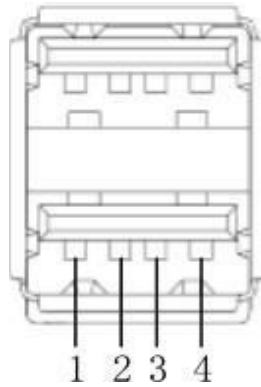


Figure 9: USB 2.0 Interface Pin Numbering

Table 6: USB 2.0 Interface Pin Definitions

USB pin	definition	USB pin	definition
1	VBUS	2	D-
3	D+	4	grounding

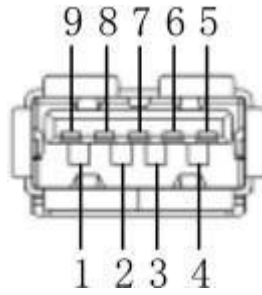


Figure 10: USB 3.0 Interface Pin Numbering

Table 7: USB 3.0 Interface Pin Definitions

USB pin	definition	USB pin	definition
1	VBUS	2	D-
3	D+	4	GND
5	SSRX-	6	SSRX+
7	GND	8	SSTX-
9	SSTX+		

### 4.3 Video interface

- HDMI interface

The HDMI interface utilizes a standard HDMI connector and is capable of supporting up to 1080P high-definition displays. The pin configuration for the HDMI interface is illustrated in the following diagram.

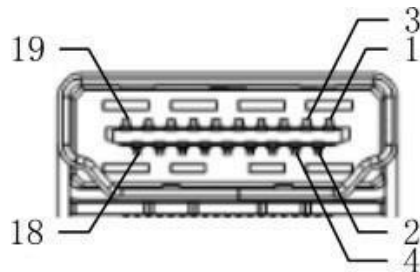


Figure 11: HDMI Interface Pin Numbering

Table 8: HDMI Interface Pin Definitions

HDMI pin	definition	HDMI pin	definition
1	TMDS_Data2+	2	GND
3	TMDS_Data2-	4	TMDS_Data1+
5	GND	6	TMDS_Data1-
7	TMDS_Data0+	8	GND
9	TMDS_Data0-	10	TMDS_Clock+
11	GND	12	TMDS_Clock-
13	NC	14	NC
15	SCL	16	SDA
17	DCC/CEC GND	18	+5V
19	Hot the plug detect		

## Grounding

Proper grounding of the equipment is crucial for lightning protection and electromagnetic interference mitigation. It is imperative that users establish a correct ground connection. Grounding should be performed before the equipment is powered on and disconnected once the equipment is powered off. The equipment cover features a grounding screw (refer to Figure 2), designated as the "chassis ground." One end of the grounding wire should be securely crimped to a cold-press terminal and fastened at the "chassis ground" using the grounding screw. The other end should be reliably connected to earth.



*Note:*

*The cross-sectional area of the grounding wire should be above 2.5mm<sup>2</sup>; the required grounding resistance is <5Ω.*

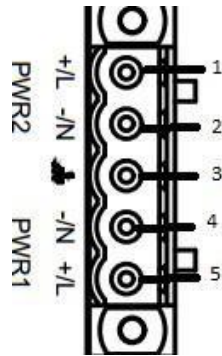
**Power Terminal**

The power terminal is situated on the equipment cover and serves to connect the power cord, thereby supplying electricity to the equipment. The series supports redundant power input and employs a 5-pin, 5.08mm pitch, pluggable terminal block. In case of a failure in any of the power pathways, the equipment can continue normal operations without interruption, thereby enhancing network reliability.



*Note:*

*The cross-sectional area of the power cord should be above 0.75mm<sup>2</sup> (maximum cross area of 2.5mm<sup>2</sup>); the required grounding resistance is <5Ω.*



*Figure 12: 5-pin, 5.08mm Pitch Connection Terminal*

*Table 9: 4-pin, 5.08mm Pitch Connection Terminal Definitions*

Terminal number	signal name	DC Power Definition
1	+/ L	PWR2 : +
2	-/N	PWR2 : -
3	GND	GND
4	+/ L	PWR1 : +
5	-/N	PWR1 : -



**Wiring and Installation**

- Step 1: Comply with procedure 4.5 to adequately ground the "chassis ground."
- Step 2: Detach the power terminal plug from the equipment.
- Step 3: Insert one end of the power cord and grounding wire into the power terminal plug as per the specifications in Table 5, and secure both.
- Step 4: Reinsert the power cord plug into the corresponding power terminal socket on the equipment.
- Step 5: In accordance with the equipment's power requirements, connect the other end of the power cord to an appropriate external power supply system. Verify whether the power indicator light illuminates, confirming correct power connection.

*Table 10: Wiring and Installation Specifications*

terminal type	Moment requirement	Wiring cross-sectional area range (AWG)
spring terminal _	DEGSON terminal	26-12



**Caution:**

Prior to establishing a power connection, confirm that the power source is compatible with the equipment's specified power requirements to prevent equipment damage.



**Warning:** Avoid contact with any exposed wires, terminals, and areas marked for electrical hazard to prevent personal injury. Do not disassemble components or disconnect connectors while the equipment is powered.

**5 LEDs Indicator status**

*Table 11: Front Panel LED Indicators Description*

led	state	describe
power supply1 Indicator light ( green light )	Bright	input power 1 Connected and running fine
	off	input power 1 Not connected or not working properly

power supply2 Indicator light ( green light )	Bright	input power 2 Connected and running fine
	off	input power 2 Not connected or not working properly
10/100/1000 Base - T( X ) Ethernet interface ACT Indicator light ( yellow light )	flashing	1000M/100M/10M working status
	off	no connection
10/100/1000Base-T(X) Ethernet interface Link status ( Link ) indicator light ( green light )	Bright	The port has established a valid network connection
	off	The port does not have a valid network connection
HDD ( green light )	shiny	Accessing HDD / SSD hard disk
	off	inaccessible or not HDD /SSD hard disk
RUN ( green light)	Long bright	The device is functioning normally
	off	The device is not running
H-BUS	Long bright	High-speed I / O connection status
	off	High-speed I / O not connected
L-BUS	Long bright	Low-speed I/ O connection status
	off	Low speed I / O not connected

**Basic Features and Specifications**

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**Power supply**

Power logo	Input rated voltage range	Input maximum voltage range
L5	18-24VDC	18-36VDC
Access terminal	5 core 5.08 mm _ Spacing pluggable terminal blocks	

**Rated power**

Rated power	75W
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**Mechanical structure**

Chassis	All-metal unibody
Degree of protection	IP40
Installation method	Rack type, guide rail type
Dimensions ( W × H × D)	224mm x 100mm x 114mm ( excluding connector protrusions ,DIN Rail and Wall Mount component size)
Weight	2.5Kg

**Environment**

Operating temperature	-20 °C ~ +70 °C
Storage temperature	-40 °C ~ +85 °C
Relative humidity	5% ~ 90% non-condensing

**Warranty period**

Warranty period	2 Years
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