

V-BOX Installation Manual

Part 1 General Note

- ALL communication ports of V-BOX support RS232 and RS485 and RS422.
- The power ground must be connected to make the V-BOX run correctly.
- The communication ground must be connected to make the V-BOX communicate correctly.

Part 2 Safety Precautions

Notice following safety precautions at any moment when installing, wiring, operating, maintenance and examining.

Installation

- Please set up the V-BOX according to this manual otherwise it may cause device damage.
- It's forbidden to uncover the product in the environment that has water vapor, corrosive gas or combustible gas, otherwise it may cause short circuit or fire.

Wiring

- Please connect the grounding terminal with class-3 ground, otherwise it may cause short circuit or fire.
- V-BOX use 24-volt power supply. Any connection of non-standard power supply will lead to machine damage.

Operation

- V-BOX need V-NET Client software to design project picture. V-BOX not designed may lead to run abnormally.
- Do not change wiring while the power is ON, otherwise it may cause short circuit or device damage.
- Please do not touch panel with sharp objects, otherwise it may lead to panel depressed, thereby make V-BOX run abnormality.

Maintenance

- It's forbidden to touch inside V-BOX, or else it may lead to short circuit or device damage.
- When power on, it's forbidden to dismantle V-BOX panel, otherwise it may lead to short circuit or device damage.
- Do not touch connection terminal in 10 minutes of turning off power, otherwise residual voltage may lead to short circuit or device damage.
- When operating, exhaust vent should not be sealed, otherwise it may lead to failure easily.

Communication

- Please connect to the communication wire according to this manual.
- The length of communication wire should meet the requirement.
- Use the correct ground loops in order to avoid abnormal communication.

Part 3 Work Environment

The product must be placed in the pack box before installation, If not in use, in order to make the product accord with the warranty of our company and future maintenance, be sure to notice the following items when stored.

- Storage environment must be dry and dust-free.
- Storage ambient temperature must refer to "Specifications".
- Storage humidity must refer to "Specifications".
- Avoid corrosive gases and liquids in the storage environment.
- Avoid placing the product directly on the ground.

Part 4 Basic Inspection

Please do following basic checking before using V-BOX.

General inspection

- Check if each screw is loose.
- The vent hole should be protected from oil, water and metal powder, and the chip powder of the drill should be prevented from falling into the V-BOX.
- If there are harmful gases or dust in the V-BOX operating environment, please take protective measures.

Checking before installation (Unpowered)

- Please deal with connection division of wiring terminal insulated.
- Communication wiring should be correct, otherwise abnormal operation may occur.
- Check for foreign matter entering the interior of the V-BOX, especially for flammable substances and conductive materials such as screws, metal sheets, etc.
- Please regulate instrument to reduce electromagnetism interference.
- Check V-BOX supply voltage.

Checking before running (powered)

- Check the status of the power indicator.
- Check if the communication between the V-BOX and the device is normal.
- If there is any abnormality in the V-BOX interface, please contact the manufacturer.

Part 5 Product Installation

Notes:

- The installation direction must be in accordance, otherwise it may lead to fault.
- In order to make circle effect greatly, adjacent objects and baffle should be kept on enough space when installation, otherwise it will cause bad cooling.
- Used in crust plane of Type 4X indoor grade.

Installation steps:

- V-BOX has two modes of installation: DIN-Rail Mounting and Wall Mount Installation.
- Make sure the fixed piece screw is cased, and then hitch front cover screw to withstand inside control box.
- Please tighten the screw with a suitable torque, remember not to exceed this torque, otherwise it will cause damage to the plastic shell. Torque: 6.17lb-inch9(0.7N-M)

Part 6 Specifications

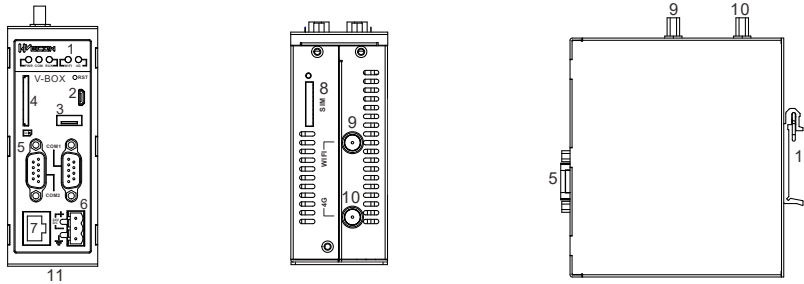
Module Content	S Series	E Series	H Series	L Series
Power voltage	DC24V			
Power voltage range	DC12V-DC28V			
Permissible instantaneous power failure time	< 5ms			
Power consumption	< 10W		< 8W	
Operating ambient temperature	-10°C~+60°C		-10°C~+55°C	

Module Content	S Series	E Series	H Series	L Series
Storage ambient temperature	-20°C~+70°C			
Operating ambient humidity	10%~85%RH (Non-condensing)		10%~90%RH (Non-condensing)	
Storage ambient humidity	10%~85%RH (Non-condensing)		10%~90%RH (Non-condensing)	
Vibration resistance	Conforms to IEC61131-2 standard: Continuous vibration:10Hz~57Hz 0.0755mm,57Hz~150Hz 9.8m/s ² Intermittent vibration:10Hz~57Hz 0.0035mm,57Hz~150Hz 4.9 m/s ² in each X, Y, Z direction 10 times (80 minutes)			
Corrosion resistance	Avoid corrosive gas			
Cooling method	Natural air cooling			

The list of V-BOX models

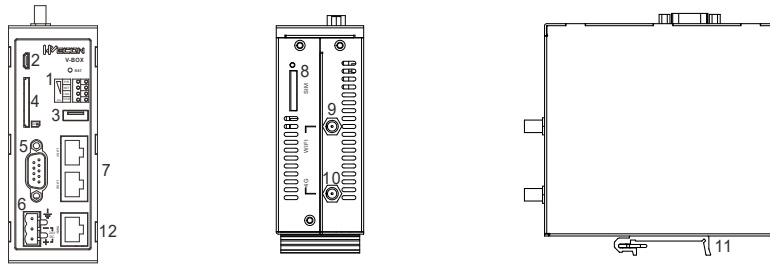
Series	Model	Description
S Series	V - BOX S -00	1 Ethernet port, 2 serial, support WiFi
	V - BOX S -4G	1 Ethernet port, 2 serial, support WiFi, 4G
	V - BOX S -AG	1 Ethernet port, 2 serial, support WiFi, 4G(global)
	V - BOX S -3N	3 Ethernet ports,1 serial, support WiFi
	V - BOX S -NG	3 Ethernet ports,1 serial, support WiFi, 4G
E Series	V - BOX E -00	1 Ethernet port,1 serial
	V - BOX E -4G	1 Ethernet port, 1 serial, support 4G
H Series	V - BOX H -00	3 Ethernet ports,1 serial, 2 RS485 terminals 2 inputs with optocoupler isolation, 2 relay outputs
	V - BOX H -WF	3 Ethernet ports, 1 serial,2 RS485 terminals, WIFI, 2 inputs with optocoupler isolation ,2 relay outputs
	V - BOX H -4G	3 Ethernet ports, 1 serial,2 RS485 terminals,4G, 2 inputs with optocoupler isolation ,2 relay outputs
	V - BOX H -AG	3 Ethernet ports, 1 serial,2 RS485 terminals,4G(global), 2 inputs with optocoupler isolation ,2 relay outputs
	V - BOX H -SG	3 Ethernet ports, 1 serial,2 RS485 terminals,4G, 2 inputs with optocoupler isolation ,2 relay outputs, GPS
L Series	V - BOX L -00	1 Ethernet port, 1 RS232 terminals, 1 RS485 terminals
	V - BOX L -WF	1 Ethernet port, 1 RS232 terminals, 1 RS485 terminals, WiFi
	V - BOX L -G	1 Ethernet port, 1 RS232 terminals, 1 RS485 terminals, 4G

Part 7 Parts and Function



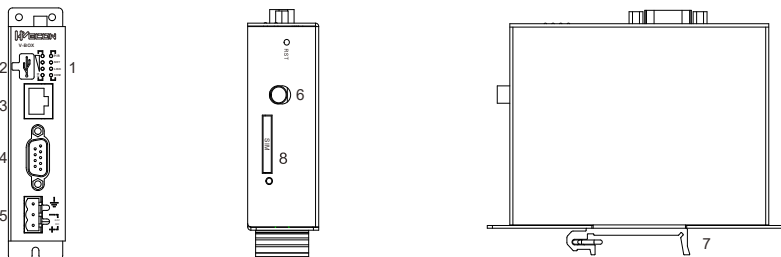
S-00 / S-4G / S-AG Components description

1	LED	2	Micro-USB	3	USB-A	4	SD card slot
5	COM	6	Power terminal	7	Ethernet	8	SIM card slot (optional)
9	WIFI antenna	10	4G antenna (optional)	11	Fixed buckle		



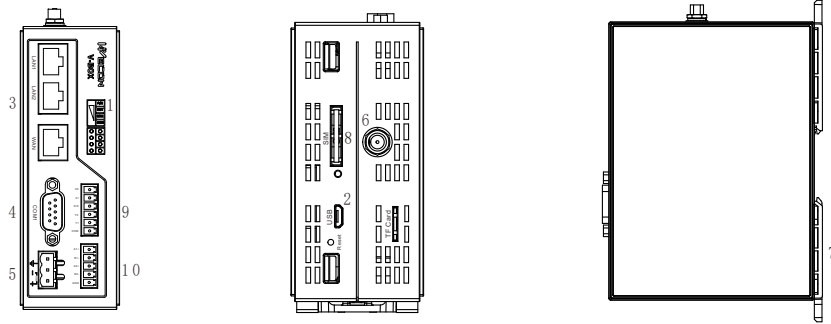
S-3N / S-NG Components description

1	LED	2	Micro-USB	3	USB-A	4	SD card slot
5	COM	6	Power terminal	7	LAN	8	SIM card slot (optional)
9	WIFI antenna	10	4G antenna (optional)	11	Fixed buckle	12	WAN



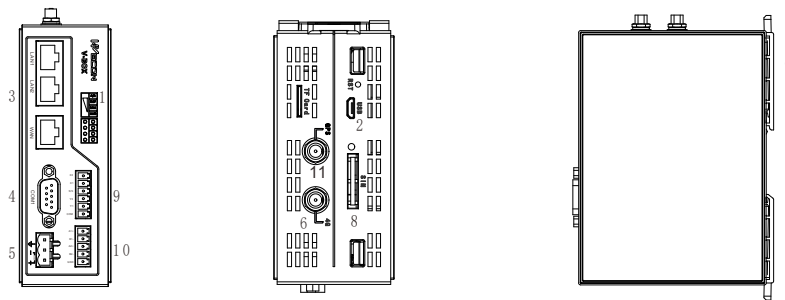
E-00 / E-4G Components description

1	LED	2	Micro-USB	3	Ethernet	4	COM
5	Power terminal	6	4G antenna (optional)	7	Fixed buckle	8	SIM card slot (optional)



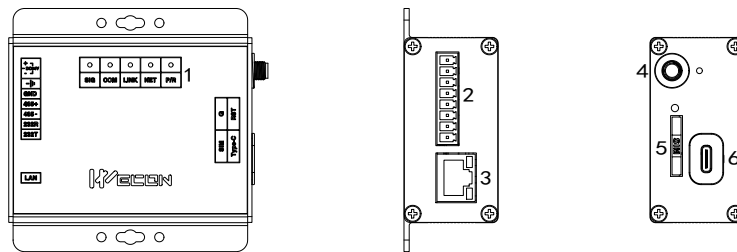
H-00 / H-WF / H-4G / H-AG Components description

1	LED	2	Micro-USB	3	Ethernet	4	COM
5	Power terminal	6	4G/WIFI antenna (optional)	7	Fixed buckle	8	SIM card slot (optional)
9	I/O port	10	RS 485 terminals				



H-SG Components description

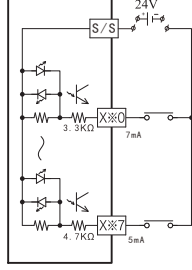
1	LED	2	Micro-USB	3	Ethernet	4	COM
5	Power terminal	6	4G antenna (optional)	7	Fixed buckle	8	SIM card slot (optional)
9	I/O port	10	RS 485 terminals	11	GPS antenna		

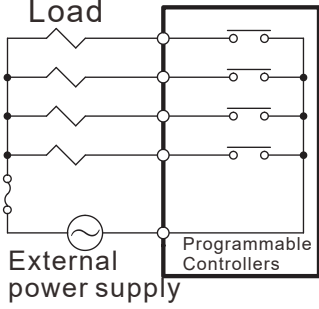


L-00 / L-WF / L-G 外观部件说明

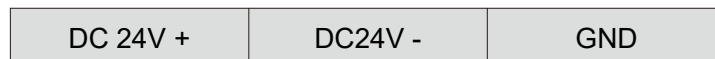
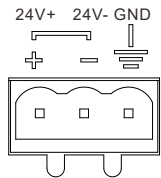
1	LED	2	Terminal port	3	Ethernet	4	4G/WIFI antenna (optional)
5	SIM card slot (optional)	6	TYPE-C				

I / O Specification:

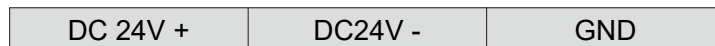
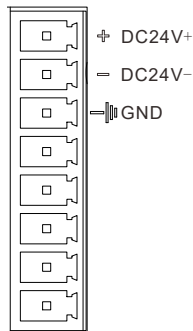
Power supply	DC input	Input circuit components
Input signal voltage	DC24V ±10%	 <p>The picture is NPN connection, if S / S connection 24V negative, X then Positive, namely PNP connection.</p>
Input signal current	5mA/DC24V	
Input ON current	3.5mA/DC24V	
Input OFF current	< 1.5mA	
Input responding time	About 10ms	
Input signal type	Contact input or NPN, PNP Open electrode transistor input	
Circuit insulation	Optocoupler insulation	

Output type	Relay	Output circuit components	
Power supply	< AC250V/<DC30V		
Circuit insulation	Mechanical insulation		
Maximum load	Resistive		2A/1 point, 8A/4 points
	Inductive		80VA
	General		100W
Leak current	--		
Minimum load	DC5V 2mA (Reference)		
Response time	About 10ms		
Output signal mode	--		
Output type	Relay		

The power interface is defined as follows (from left to right):

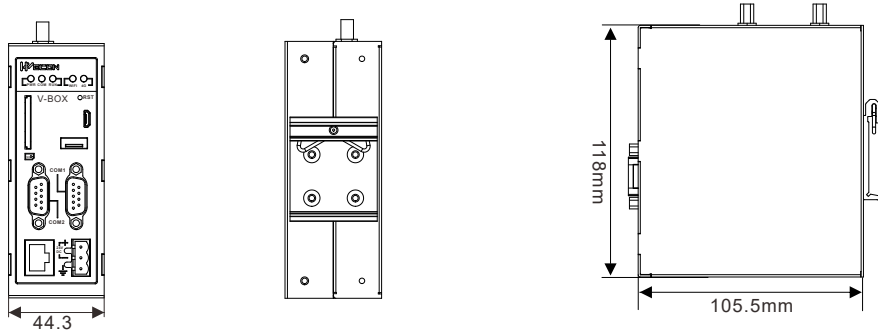


L-series the power interface is defined as follows (from top to bottom):

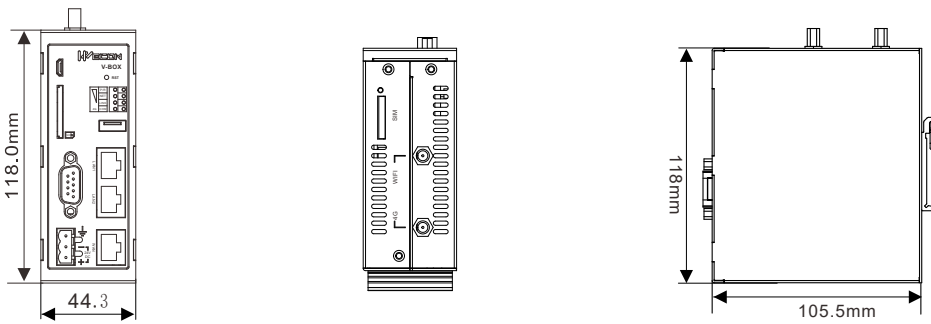


Part8 The Size of Product

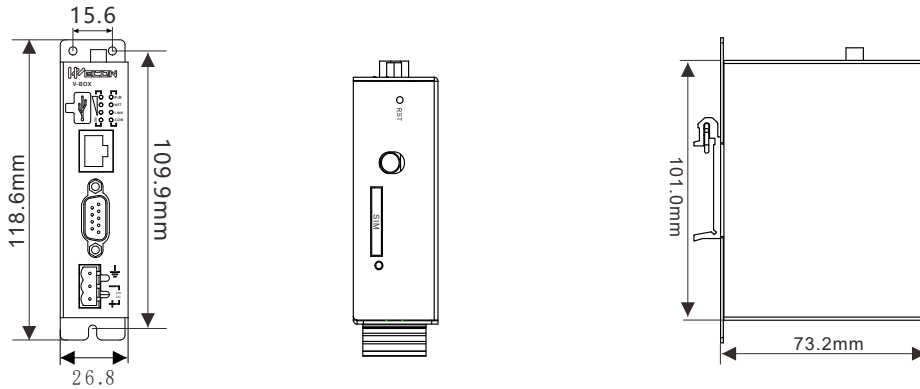
Unit : mm , error range: ±0.5mm



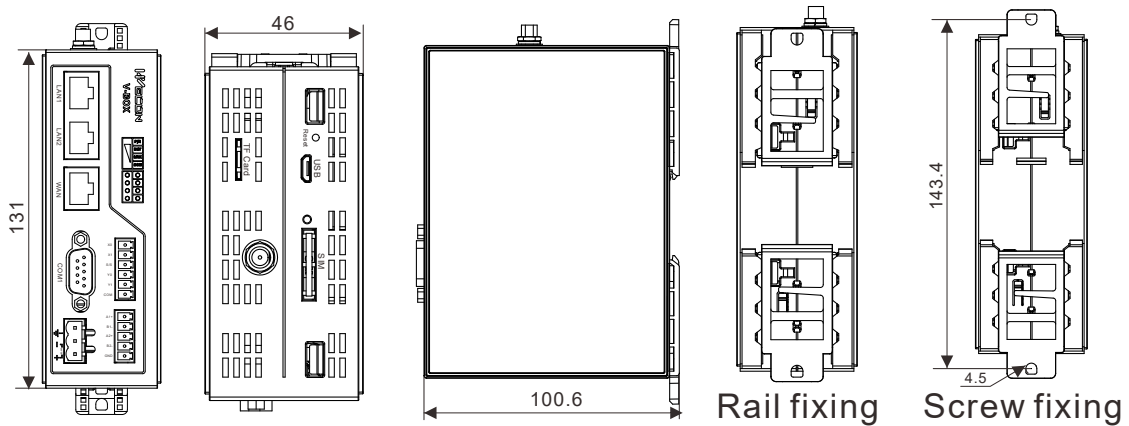
S -00 / S -4G / S -AG Installation size



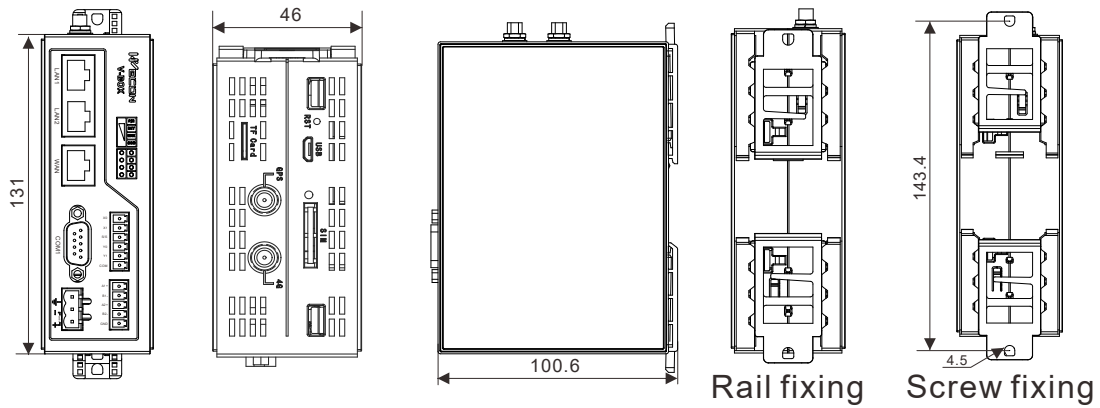
S - 3N / S - NG Installation size



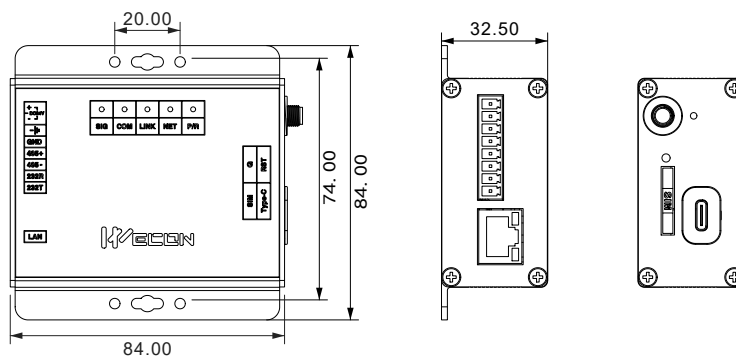
E -00 / E -4G Installation size



H-00 / H-WF / H-4G / H-AG Installation size



H-SG Installation size



L-00 / L-WF / L-G Installation size

Part 9 Interface Definition

S-00 / S-4G / S-AG series interfaces

COM1 definition:

Pin	Definition	Pin	Definition
1	RS422 TX+/RS485 A +	2	RS232 RXD
3	RS232 TXD	5	GND
6	RS422 TX-/RS485 B-	8	RS422 RX-
9	RS422 RX+		

COM2 definition:

Pin	Definition	Pin	Definition
1	RS485 A +	2	RS232 RXD
3	RS232 TXD	5	GND
6	RS485 B-	7	COM3 RS485 A+
8	COM3 RS485 B-		

▲ Note: The COM1 port of S-00 / S-4G / S-AG can only support one communication party at the same time.

S-3N / S-NG / E-00 / E-4G series interfaces

COM1 definition:

Pin	Definition	Pin	Definition
1	RS422 TX+/RS485 A +	2	RS232 RXD
3	RS232 TXD	5	GND
6	RS422 TX-/RS485 B-	8	RS422 RX-
9	RS422 RX+		

▲ Note: RS422 and RS485 cannot be used in COM1 port of S-3N / S-NG / E-00 / E-4 series V-BOX at the same time.

H-00 / H-WF / H-4G / H-AG / H-SG series interfaces

COM1 definition:

Pin	Definition	Pin	Definition
1	RS422 TX+/RS485 A +	2	RS232 RXD
3	RS232 TXD	5	GND
6	RS422 TX-/RS485 B-	8	RS422 RX-
9	RS422 RX+		

▲ Note: RS422 and RS485 cannot be used in COM1 port of H-00 / H-WF / H-4G / H-AG / H-SG series V-BOX at the same time.

H series terminal interface definition

COM			I/O Port		
	COM2			X n	Input terminal
	A1+	RS485+		Y n	Relay output terminal
	B1-	RS485-		S/S	Support NPN input (Connected to 24V+) or PNP input (Connected to 24V-)
	COM3				
	A2+	RS485+			
	B2-	RS485-		COM	Output common
GND	GND				

L-00 / L-WF / L-G terminal interface definition

Interface	Definition
	DC24V+
	DC24V-
	GND
	GND
	RS485+
	RS485-
	RS232R
	RS232T

Notice

The contents of this manual are subject to change without notice.



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