



WEBS-8910



User's Manual

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You will find the specifications, interface definition and how to use the product from this quick guide. Please read and learn this guide carefully before power on, for the I/O development Kit, please contact sales or local reseller. Please keep this guide properly for future reference and be sure to share for the end user.

1 、 Safety Precautions

- 1 、 Please read and follow the safety precautions before you are going to use it.
- 2 、 Pay attention to the labels on the product.
- 3 、 The “Tips”, “Warnings” and “Danger” items in the following table don't represent all safety precautions to be followed, but only the supplementary.
- 4 、 Make sure to use in an environment that meets the design specifications, otherwise, malfunction or partial damage caused by non-compliance with relevant regulations is not covered under the product quality guarantee.
- 5 、 Please unplug the power cord and do not use liquids to clean the PC.
- 6 、 Please keep the PC in a safe space to prevent it from falling and damaging its components.
- 7 、 Please keep the power cord in a safe location to avoid causing personal injury.
- 8 、 Please do not bundle control wires, communication cables and power wires together, it would be better to keep a distance of at least 100mm between them to avoid mutual interference.
- 9 、 It is recommended to use wires with isolation, especially in environments with severe electromagnetic interference.
- 10 Please disconnect it from the power socket if the PC is not used for a long time.
- 11 Please make sure that no liquids enter the device to avoid the risk of fire or short circuit.
- 12 、 Please disconnect the power cord before opening the computer case.
- 13 、 Please clean the dust regularly.
- 14 、 Please ask for technical support and return the PC to RMA:
 - The power cord or plug is damaged;
 - Liquid has entered the interior of the PC;
 - PC doesn't work;
 - PC is damaged;
 - Physical damage on the PC

Safety Instrcutons

Symbols	Description
	Warning: There are potentially dangerous situations that If not avoided will result in death, serious injury or significant property damage.
	Danger: There are imminently dangerous situation that If not avoided will result in death, serious injury or significant property damage.
	Tip: There are important information tips.

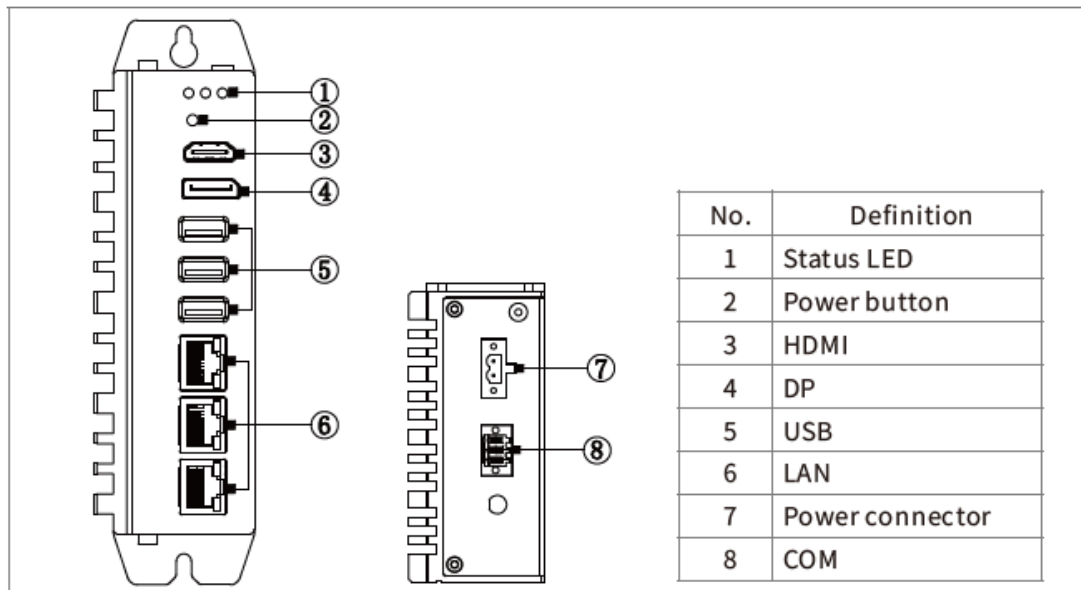
警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

2.1 Specification

Model Name	WEBS-89IO
CPU	Intel ®Celeron J6412,2.0-2.6GHz, 4 Cores,4 Threads , 1.5MB L2 Cache
TDP	10W
BIOS	AMI UEFI 256Mbit
Memory	1 x SO-DIMM DDR4-3200MHz, Support up to 32GB
Storage	1 x M.2-2242 M key SSD Slot , SATA3.0
USB	3 x USB3.1
COM	1 x RS-232, 1 x RS-485
Ethernet	3x RJ45 GbE (Intel i210AT)
DP	Support up to 4096 x 2160 @60Hz
HDMI	Support up to 3840 x 2160 @60Hz
Expansions	1x Full-size miniPCle slot 1 x SIM card holder on bottom side for easy access
DO	1 x Programmable LED
Watch Dog	1~255 levels programmable
Voltage Input	DC12~24V ±10%(DC input) If using AC Adapter DC12V (AC input) *Power Adapter is Optional overcurrent, overvoltage and polarity inverse protection
Power Consumption	Max.60W
Dimensions	(L)138mm x (W)102mm x (H)48mm
Net Weight	1.06Kg
Work Temperature	-20℃ ~ 60℃ (DC input) -20℃ ~ 40℃ (AC input) *Power adapter is for optional
Stroage Temperature	-40℃ ~ 80℃
Relative Humidity	5~95%(Non-condensing)
Operating Vibration	5~500Hz,1.5Grms@with SSD,Follow IEC60068-2-64
Operating Shock	20G peak acceleration(11ms duration)with SSD, Follw IEC60068-2-27
EMC	CE/FCC Class A

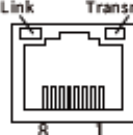
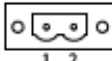
Product information

2.2 Interface specifications



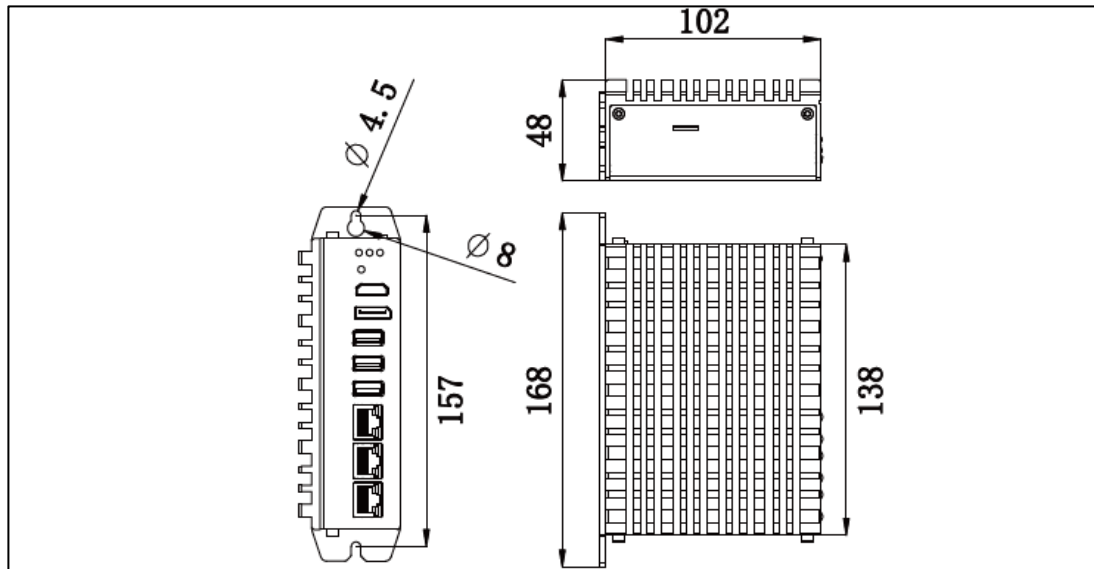
2.3 Interface description

No.	Name	Functional definition		Description					
1	Status LED	The status indicator are Power led, HDD led and PL LED.							
		LED Name	status	Description					
		Power LED	off	The product is power off					
			on (Green)	The product is power on					
		PL LED	Red/Green/off	Use programmable led					
HDD LED	blink (Orange)	The disk is being read or wrote							
2	Power button	It is used to turn on or turn off .							
3	HDMI	HDMI display port		Type-A					
		HDMI Connector							
		Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
		1	DATA2+	6	DATA1-	11	CLK SHIELD	16	DATA
		2	DATA2 SHIELD	7	DATA0+	12	CLK-	17	GND
		3	DATA2-	8	DATA0 SHIELD	13	CEC	18	+5V
		4	DATA1+	9	DATA0-	14	N.C.	19	HPD
		5	DATA1 SHIELD	10	CLK+	15	CLK		
		 : HDMI to VGA converter can be used when VGA display is required.							

4	DP	DP display port			
		DP Connector			
					
		Pin No.	Signal	Pin No.	Signal
		1	DATA0+	6	DATA1-
		2	DATA0 GND	7	DATA2+
		3	DATA0-	8	DATA2 GND
		4	DATA1+	9	DATA2-
		5	DATA1 GND	10	DATA3+
		11	DATA3 GND	16	AUX GND
5	USB	USB3.1/USB3.0 Connector Type A			
					
		Pin No.	Signal	Pin No.	Signal
		1	VCC5	6	SSRX+
		2	DATA-	7	GND
		3	DATA+	8	SSTX-
		4	GND	9	SSTX+
		5	SSRX-		
		USB2.0 Connector Type A			
					
Pin No. Signal Pin No. Signal					
1 VCC5 3 DATA+					
2 DATA- 4 GND					
6	LAN	RJ 45 Connector 3 LAN prots			
		LAN			
					
		Pin No.	Signal	Pin No.	Signal
		1	DA+	5	DC-
		2	DA-	6	DB-
		3	DB+	7	DD+
		4	DC+	8	DD-
		Name Color Description			
		Link Yellow off: Unconnected on: Connected blink: Connected and the data is reading or writing			
Transmit Orange on: 1000Mbps connected Green on: 100Mbps connected					
7	Power connector	Phoenix Connector (5.08mm)		12-24V DC IN	
		Power			
					
		Pin No.	Signal	Pin No.	Signal
1 GND 2 DC12-24V					
8	COM	Phoenix Connector (3.5mm)			
		COM			
					
		Pin No.	RS-232 Signal	Pin No.	RS-485 Signal
		1	GND	2	GND
		3	TXD	4	485D-
		5	RXD	6	485D+

Note: COM1 is RS232, COM2 is RS485

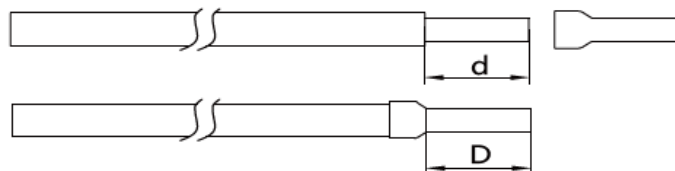
2.4 Dimension



2.5 Connection and use

2.5.1 Phoenix terminal wiring

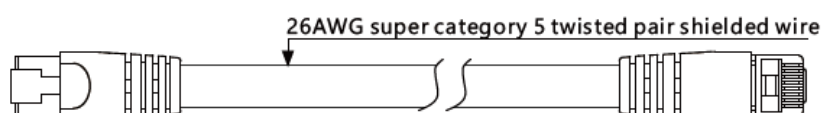
The power input interface and serial communication interface of WEBS-8910 adopt spring-type pressing terminals. Please connect according to the parameters in the table when using, otherwise it may lead to loose wiring, falling off or unstable communication.



Name	d(mm)	D(mm)	Rigid wire(mm ²)	Flexibly wire(mm ²)
DC IN Connector	10-11	12	0.5-2.5	0.5-2.5
COM Connector	7-8	10	0.2-1.0	0.2-1.5

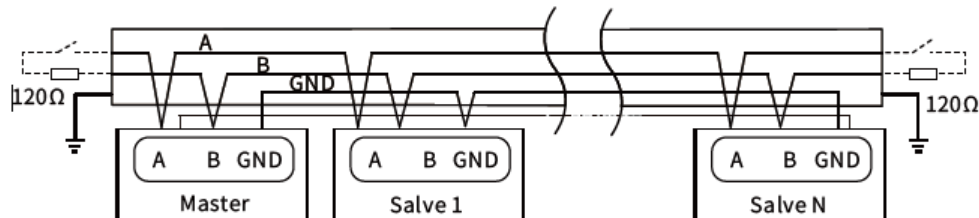
2.5.2 Ethernet

WEBS-8910 have 3 Ethernet ports, standard RJ-45 connector. The network cable is recommended to use a shielded network cable of Category 5 or above to ensure its working stability.



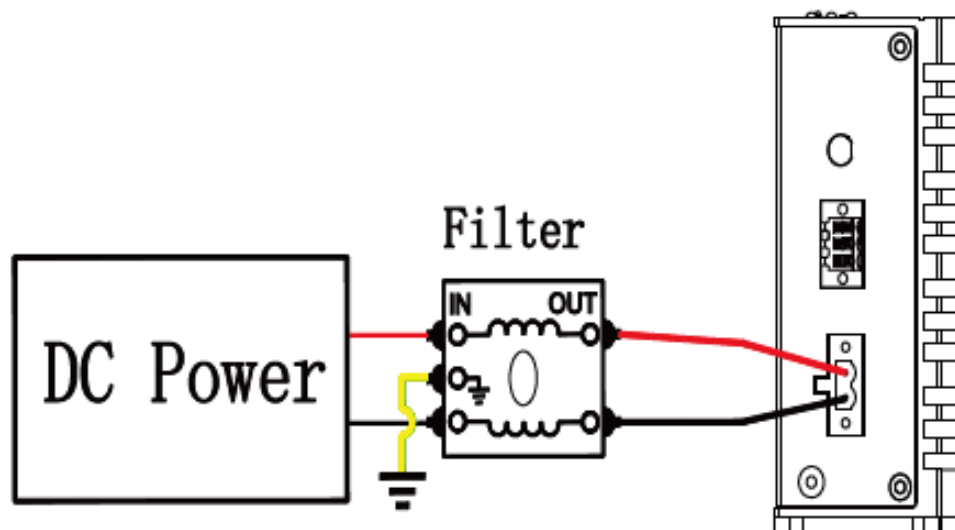
2.5.3 RS-485 communications

The WEBS-8910 have 1 channel of RS-485 with phoenix terminal. The cable is recommended to use a shielded twisted pair and the shield should be connected to the ground properly by the single point. A 120 ohm terminal resistor should be placed at the end of the cable for limiting bus reflections.



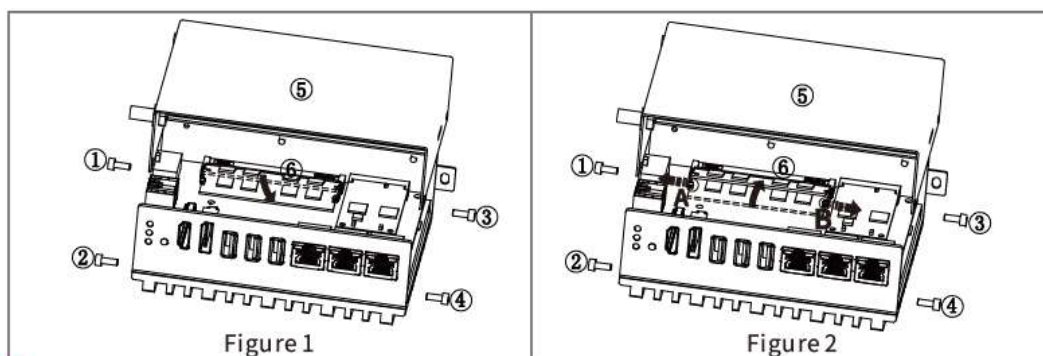
2.5.4 Power supply

In order to make the IPC work more reliably, it is recommended to add a DC power filter between the IPC and the input power supply, and ensure that the filter and the IPC must be well grounded to prevent some interference problems.



2.5.5 Memory card installation

Use a hexagonal screwdriver to remove the four screws (position 1-4 in Figure 1), open the rear case (position 5 in Figure 1), and insert the memory card into the slot (position 6 in Figure 1) at an angle of 30° , then press it in the direction of the arrow (Figure 1) until the card audibly latches into place. Lift up in the direction of the arrow (Figure 2) to remove the memory.



⚠ : If the IPC is equipped with a SIM card, please remove the SIM card firstly, and then disassemble other parts.

2.6 IPC installation

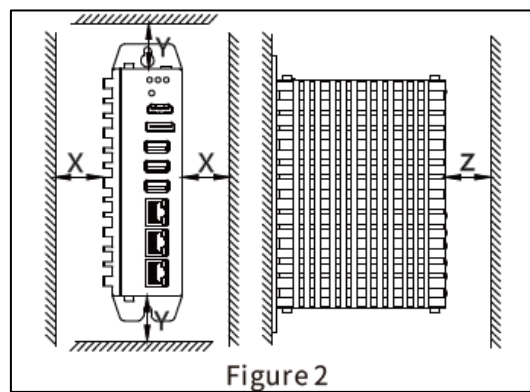
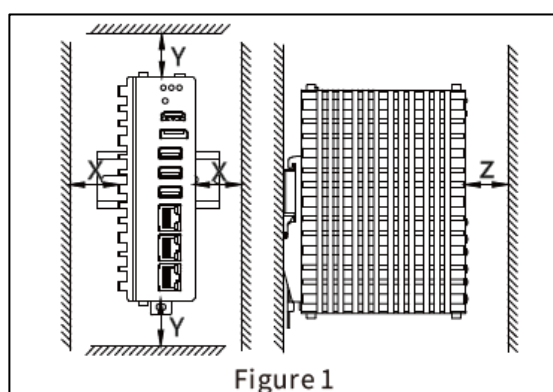
WEBS-8910 support wall mounted in default, and DIN-rail mounted is an option.

2.6.1 Ground wiring

WEBS-8910 have a ground screw on the side of the power terminal, it is recommended to use thicker and shorter cable to connect to the ground nearby properly.

2.6.2 IPC installation

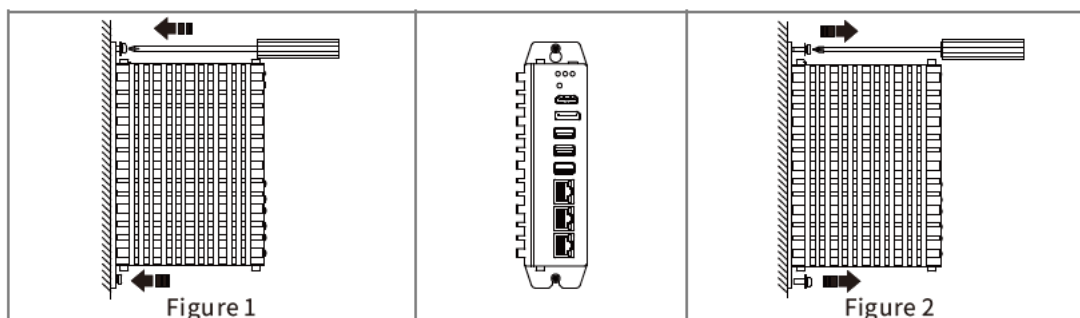
In order to facilitate the installation and heat dissipation and ventilation of the IPC, a sufficient distance should be left between the IPC and the surrounding components. Figures of two installation methods:



Direction	Minimum size (mm)
X	50
Y	100
Z	50

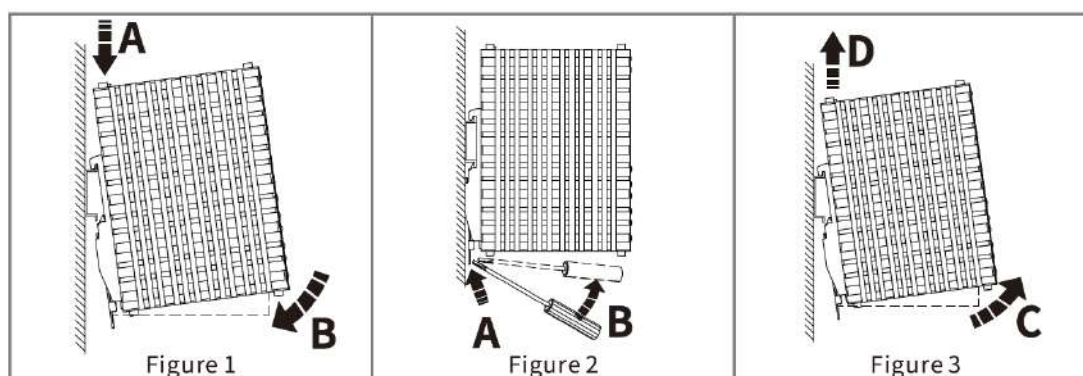
2.6.3 Wall mounted installation

There is a hanging plate on the back of the IPC, and there is a hole on the upper and lower sides of the hanging plate. The IPC can be fixed on the backboard through screws to realize the wall-mounted structure(Refer to Figure 1). Please refer to Figure 2 during disassembly. Please pay attention that the mounting screw pan head needs to be less than 8mm and greater than 4.5mm, screw length not less than 8mm.



2.6.4 DIN-Rail mounted installation

WEBS-8910 also support DIN-Rail mounted as an option. Put the IPC in the normal mounting position, the IPC is mounted on the DIN rail from above. Make sure that the universal DIN rail adapter is in the correct position behind the DIN rail (A in Figure 1). Then press the IPC down until the universal DIN rail adapter audibly latches into place (B in Figure 1). Please make sure that the IPC is securely attached to the DIN rail. When disassembling, the steps are reversed, please refer to Figure 2 and Figure 3.



Unit	Restricted substances and their chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr+6)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ehters (PBDE)
PCB components	○	○	○	○	○	○
I/O components	○	○	○	○	○	○
Chassis components	○	○	○	○	○	○
Power storage components	○	○	○	○	○	○
Remark 1. "exceeds 0.1 wt % " and "exceeds 0.01 wt % " Refers to the percentage content of restricted substances exceeding the percentage content threshold						
Remark 2.○ Refers to the percentage content of the restricted substance not exceeding the percentage content threshold						
Remark 3.— Indicates that the restricted substance is an excluded item						

設備名稱 : 工控機

型號 : WEBS-89I0

單元Unit	限用物質及其化學符號					
	鉛	汞	鎘	六價鉻	多溴聯苯	多溴二苯醚
電路板組件	○	○	○	○	○	○
I/O組件	○	○	○	○	○	○
外殼組件	○	○	○	○	○	○
蓄電組件	○	○	○	○	○	○

備註 1.”超出 0.1 wt % “ 及 “超出 0.01 wt% “ 係指限用物質之百分比含量基準值

備註 2. “○ “ 係指該項限用物質之百分比含量未超出百分比含量基準值

備註 3. “— “ 係指該項限用物質為排除項目

- 使用者欲使用此產品，請自行購置下列零件：

AVL List
Description
Adapter Option for WEBS-89I0
60W 12V/5A power adapter . DC plug
DDR4 SODIMM Option for WEBS-89I0
4GB DDR4 SO-DIMM 2666MT/s DRAM Module
8GB DDR4 SO-DIMM 2400 MT/s DRAM Module
16GB DDR4/PC4-2666.2Gx64
32 GB DDR4/2666 SO-DIMM DRAM Module
M.2 SSD 2242 Option for WEBS-89I0
128GB M2 2242 SATA 3D TLC (BiCS 5) 3TE7 SSD.
256GB M2 2242 SATA 3D TLC (BICS 5) 3TE7 SSD.
512GB M2 2242 SATA 3D TLC (BiCS 5) 3TE7 SSD.
1TB M2 2242 SATA 3D TLC (BiCS 5) 3TE7 SSD.
Power cord Option for WEBS-89I0
power cord .歐規線
AC Power Cord.USA Type.美式
PSE-mark AC Power Cord.日式線
Mounting Options for WEBS-89I0
DIN-Rail Kit
OS Options for WEBS-89I0
Win 10 IoT Ent 2019 LTSC MultiLang ESD OEI Entry EPKEA
Hailo module Options for WEBS-89I0
Hailo-8R mPCIe AI Acceleration module