LP-8x8x vs. LX-8000/9000

Hardware Comparison

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Specifications

|	LP-8x8x/8x8x-Atom	LX-8000	LX-9000
CPU			
CPU	LX 800, 500 MHz or Atom 1.33 GHz	X86 dual-core (1.0 GHz)	E3827 (1.75 GHz, 64-bit dual core), E3845 (1.91 GHz, quad core) or compatible
SDRAM	1 GB DDR	2 GB DDR3	
Flash	4 GB as IDE Master	mSATA slot with one 32 GB SSD	
Non-volatile Memory	Dual Battery Backup SRAM: 512KB	**MRAM:** 512 KB	
EEPROM	16 KB		
CF	8 GB (support up to 32 GB)	16 GB (support up to 32 GB)	
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year		
64-bit Hardware Serial Number	Yes, for software copy protection		
Dual Watchdog Timers	Yes		
Programmable LED Indicator	1	3	
DIP Switch	8 bits	-	
Rotary Switch (0 ~ 9)	Yes		
VGA & Communication Ports			
VGA Resolution	640 x 480 ~ 1024 x 768	1280 x 1024 to 1920 x 1080 for 16:9 display; 640 x 480 to 1024 x 768 for 4:3 display	
Ethernet — Connector	RJ-45 x 2		
Ethernet — Type	10/100 Base-TX	10/100/**1000** Base-TX	
USB 2.0	LP-8x8x: 2 LP-8x8x-Atom: 4	4	
COM1/ttySA0	For I-87K series modules in slots		For I-97K series modules in slots

VGA & Communication Ports			
COM2/Console	RS-232, Non-isolation	LX-8x31: RS-232, **3000 V$_{DC}$ Isolation** LX-9x71/9x81: RS-232/485, **3000 V$_{DC}$ Isolation**	
COM3/ttyS0	RS-485 **3000 V$_{DC}$ Isolation**		
COM4/ttyS1	RS-232/RS-485, Non-isolation	RS-232/RS-485, **3000 V$_{DC}$ Isolation**	
COM5/ttyS34	RS-232, Non-isolation	RS-232, **3000 V$_{DC}$ Isolation**	
Audio (Microphone-in and Earphone-out)	LP-8x8x: no support LP-8x8x-Atom: Yes	Yes	
I/O Expansion Slots			
Number of I/O slots	LP-8x8x: 0 / 3 / 7 LP-8x8x-Atom: 1 / 3 / 7	LX-8000: 0 / 1 / 3 / 7 LX-9000: 1 / 3 / 7	
Supported types of I/O modules	I-8K and I-87K series I/O Modules		I-9K and I-97K series I/O Modules
Mechanical			
Dimensions (W x H x D unit: mm)	137 x 125 x 132 (0 Slot) 231 x 125 x 132 (3 Slots) 355 x 125 x 132 (7 Slots)	137 x 125 x 132 (0 Slot) 169 x 125 x 132 (1 Slot) 231 x 125 x 132 (3 Slots) 355 x 125 x 132 (7 Slots)	239 x 133 x 164 (1 Slot) 300 x 133 x 164 (3 Slots) 422 x 133 x 164 (7 Slots)
Enclosures	Plastic		**Metal**
Installation	DIN-Rail or Wall mounting		
Environmental			
Operating Temperature	-25 °C ~ +75 °C		
Storage Temperature	-30 °C ~ + 80 °C		
Ambient Relative Humidity	10 % ~ 90 % RH (Non-condensing)		
Input Range	+10 V$_{DC}$ ~ +30 V$_{DC}$		
Redundant Power Inputs	Yes		
Isolation	1 kV		
Power Consumption	14.4 W (0 Slot) 14.6 W (3 Slots) 16.8 W (7 Slots)	12 W (0 Slot) 14.4 W (1 Slot) 15.6 W (3 Slots) 16.8 W (7 Slots)	15.6 W (1 Slot) 16.8 W (3 Slots) 18.0 W (7 Slots)

Features comparison

1. Rugged RJ-45 connector for LAN1

The LX-9000 is equipped with a rugged and dustproof RJ-45 connector on the LAN1 port that is able to provide protection against both liquid and dust contaminants in harsh industrial environments, as well as protection against vibration and shock.
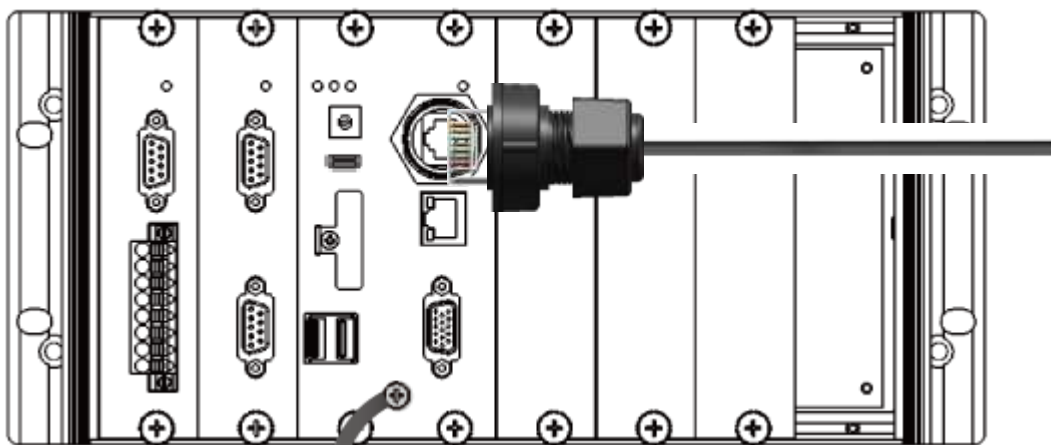

2. Non-volatile Memory (SRAM & MRAM)

The LX-9000 is equipped with 128 KB MRAM (Magnetoresistive RAM) which is non-volatile memory that is not subject to degradation over time and removes any limits on the stored data, even when power is lost.

The LP-8x8x series included 512 MB Dual BB SRAM. However, BB SRAM requires batteries in order to retain data. In addition, SRAM with dual battery backup only retains data for 5 years and requires maintenance in order to replace exhausted batteries. In contrast, MRAM doesn't require batteries.

3. Power/Communication spring clamp terminal connector

Compared to screw terminals, the spring clamp terminal block that is used for the Power/Communication connector in the LX-9000 offers advantages including anti-vibration, stable clamping, and easier installation
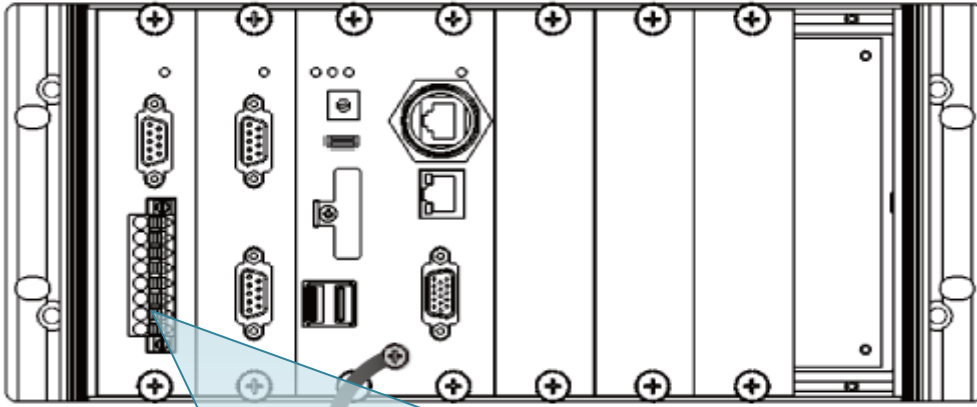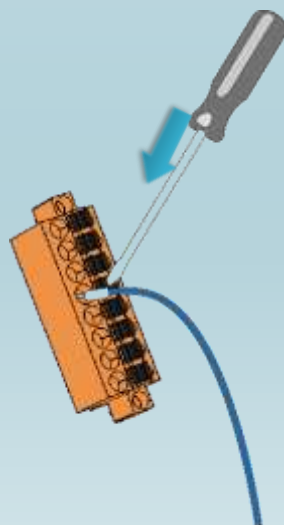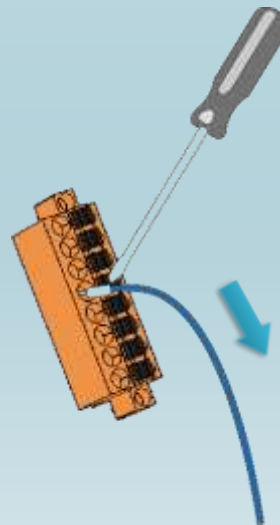
Wire connection

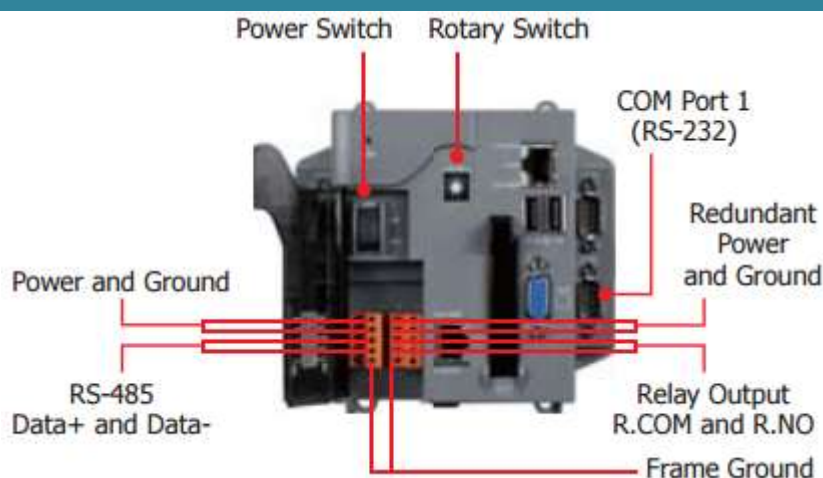**The cord end on the wire can be directly connected to the terminal**

Cord End Teminal
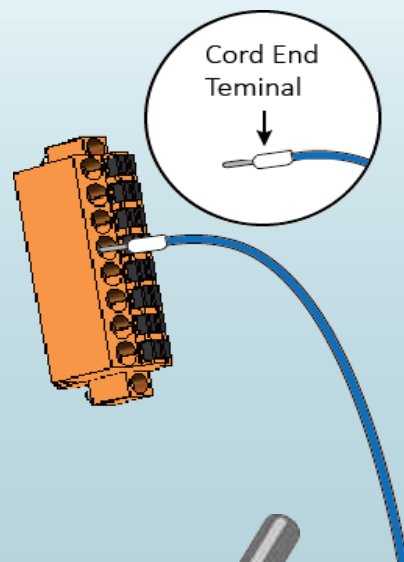
Wire disconnection

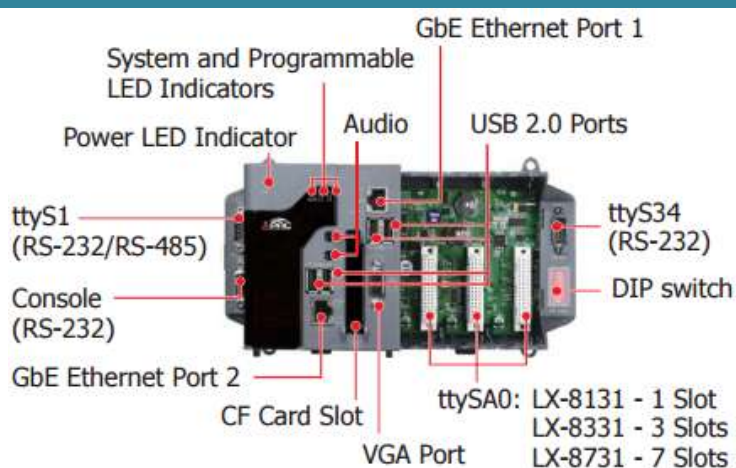**Use a screwdriver to press down the black clip.**
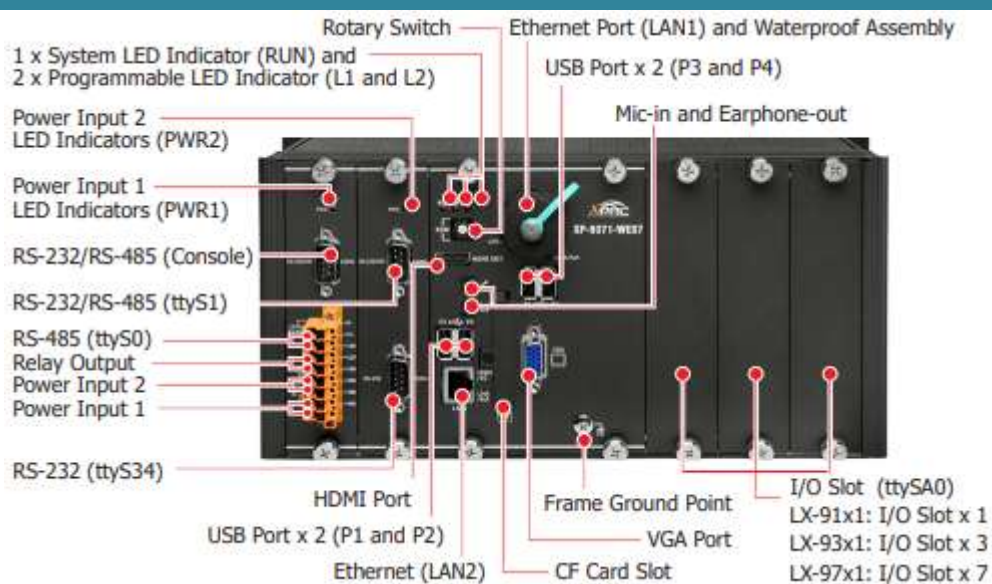
Remove the wire from the terminal block

Overviews

LP-8081

Power Switch   Rotary Switch

COM Port 1 (RS-232)

Redundant Power and Ground

Power and Ground

RS-485 Data+ and Data-

Relay Output R.COM and R.NO

Frame Ground

LX-8331

System and Programmable LED Indicators

GbE Ethernet Port 1

Power LED Indicator   Audio   USB 2.0 Ports

ttyS1 (RS-232/RS-485)

ttyS34 (RS-232)

Console (RS-232)

DIP switch

GbE Ethernet Port 2

CF Card Slot

VGA Port

ttySA0: LX-8131 - 1 Slot
LX-8331 - 3 Slots
LX-8731 - 7 Slots

LX-9xx1

Rotary Switch   Ethernet Port (LAN1) and Waterproof Assembly

1 x System LED Indicator (RUN) and
2 x Programmable LED Indicator (L1 and L2)

USB Port x 2 (P3 and P4)

Power Input 2 LED Indicators (PWR2)

Mic-in and Earphone-out

Power Input 1 LED Indicators (PWR1)

RS-232/RS-485 (Console)

RS-232/RS-485 (ttyS1)

RS-485 (ttyS0)
Relay Output
Power Input 2
Power Input 1

RS-232 (ttyS34)

HDMI Port

USB Port x 2 (P1 and P2)

Ethernet (LAN2)

Frame Ground Point

VGA Port

CF Card Slot

I/O Slot (ttySA0)
LX-91x1: I/O Slot x 1
LX-93x1: I/O Slot x 3
LX-97x1: I/O Slot x 7

Dimensions (Units: mm)

LP-8081/8381/8781/8181-Atom/8381-Atom/8781-Atom; LX-8131/8331/8731

Left Side View

```
           125.0
           118.3
   11.0
   37.2
   35.6
   37.2
```
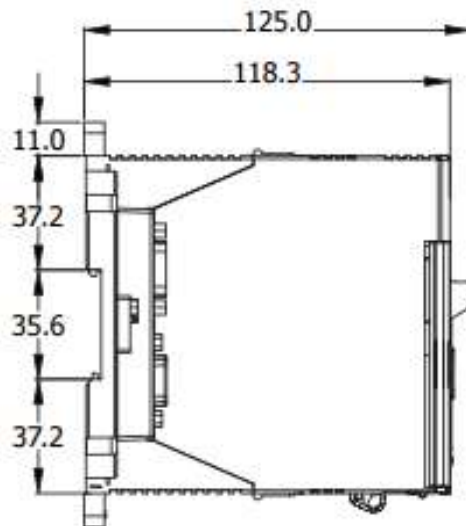
LX-9000

Left Side View

```
   164.0
   144.5
```
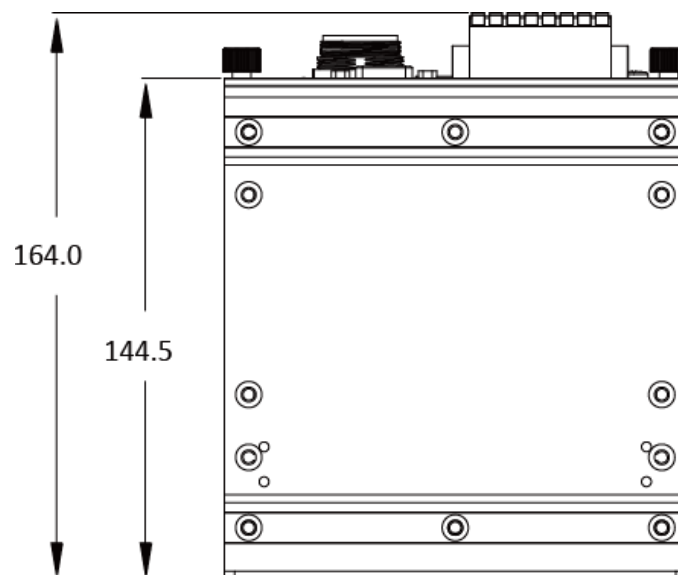
LP-8081/8181-Atom

Front View
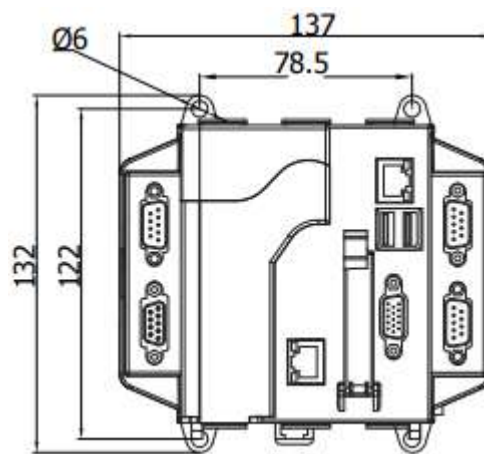
LX-8131

Front View
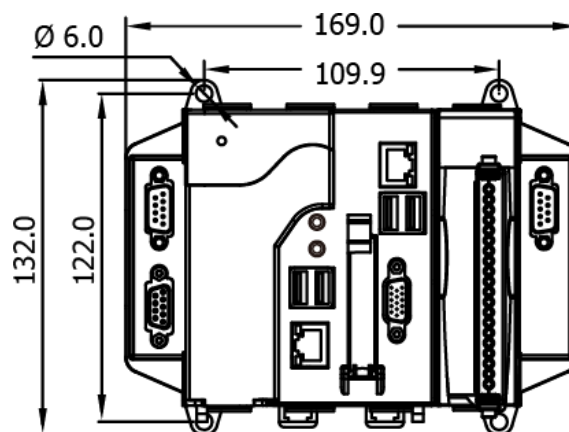
LX-9171/9181

Front View
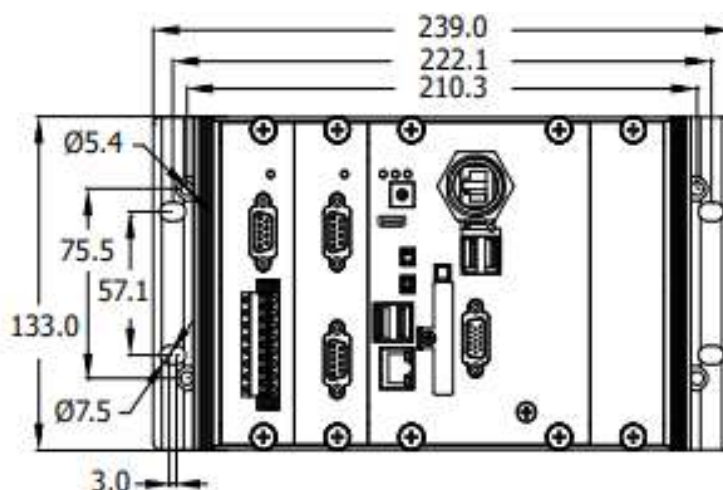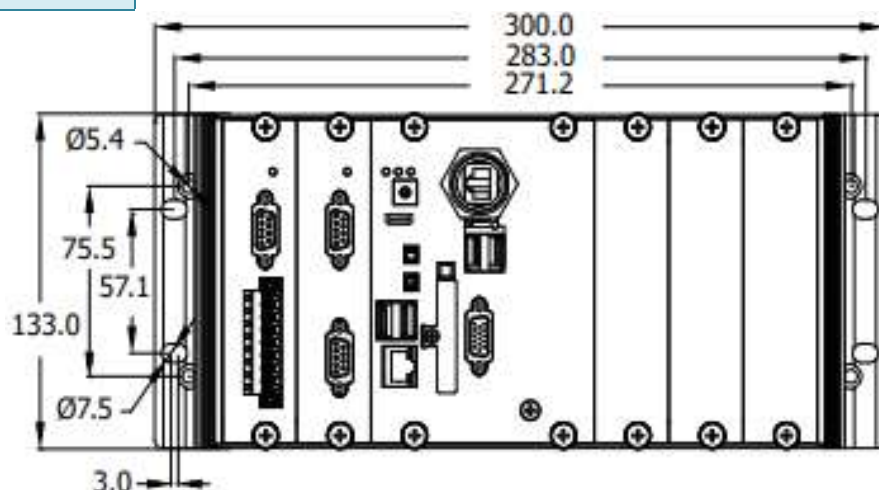
LP-8381/8381-Atom

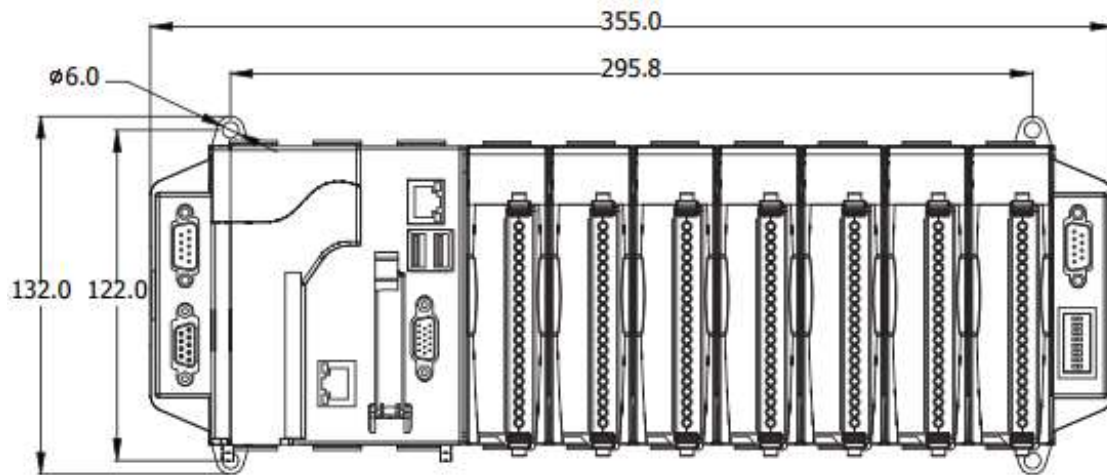**Front View**
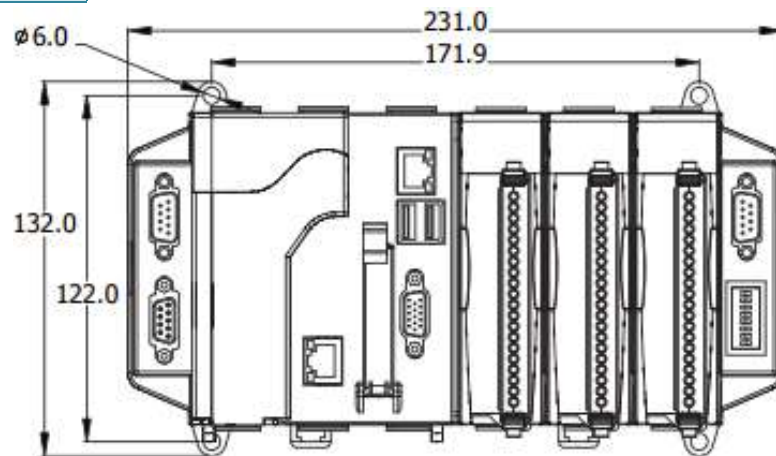
LX-8331

Front View
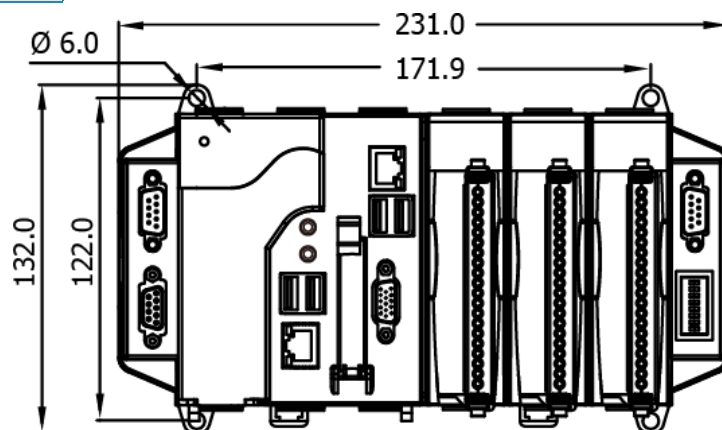
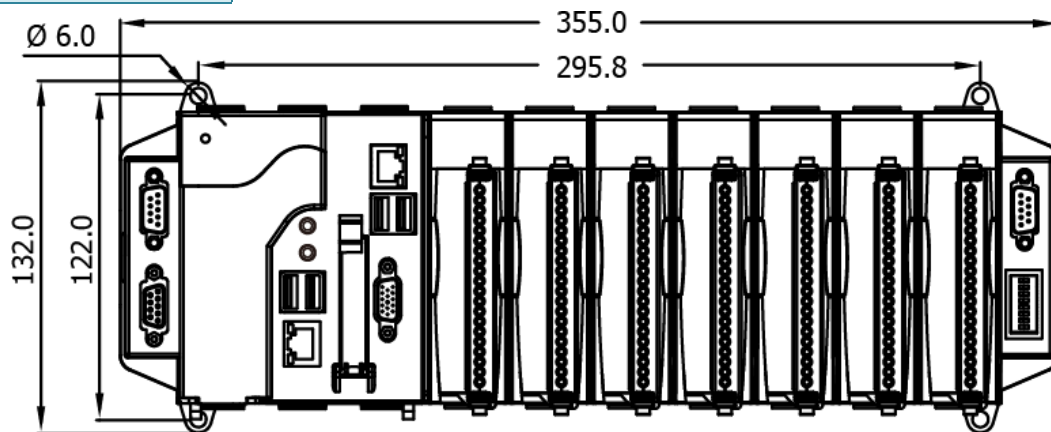

LX-9371/9381

Front View

LP-8781/8781-Atom

Front View

LX-8731

Front View

LX-9771/9781

Front View