LP-9221/LP-9421/LP-9821

Highlight Information

- Linux kernel 3.2.14 Inside
- Cortex-A8 (1.0 GHz)
- Embedded Service: Web Server, FTP Server, Telnet Server, SSH Server
- 64-bit Hardware Serial Number
- Rich I/O Expansion Ability: RS-232/RS-485, USB, FRnet, CAN
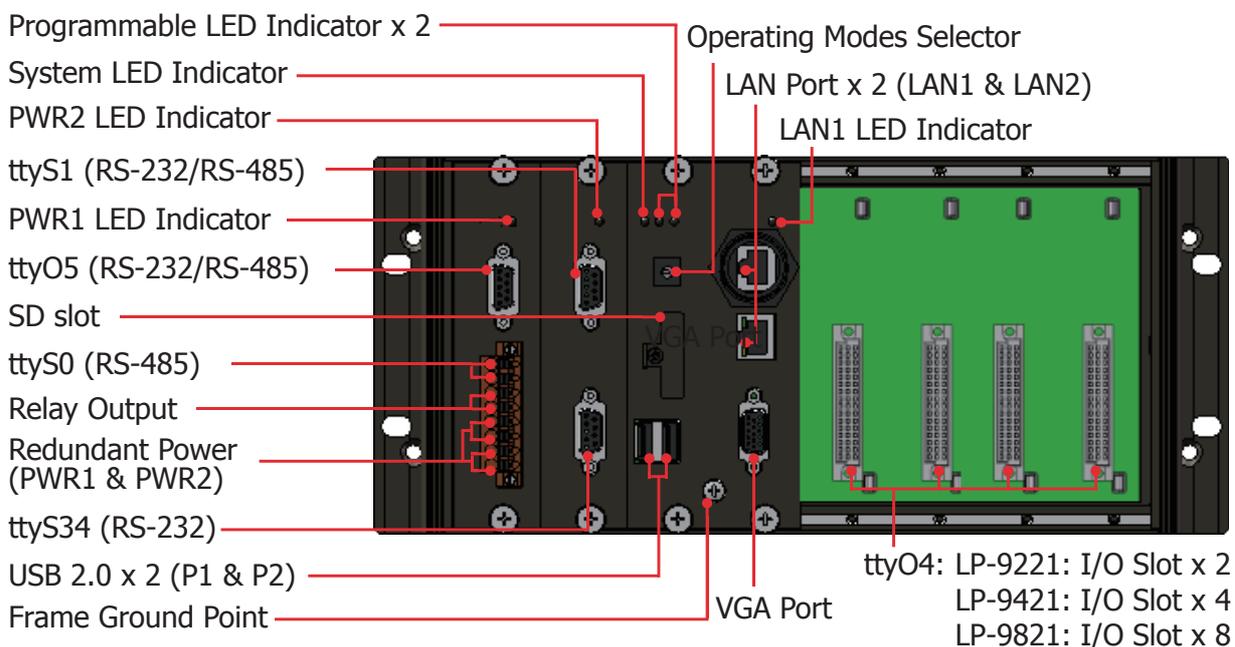- Redundant Power Inputs
- Operating Temperature: -25 ~ +75 °C

Introduction

The LP-9x21 is the new generation Linux based PAC (Programmable Automation Controller) of ICP DAS. Each LP-9x21 is equipped with a Cortex-A8 (1.0 GHz) CPU running a Linux operating system, a variant of input/output ports (VGA, USB, Ethernet, RS-232/485), and 2/4/8 expansion I/O slots that can be used to integrate high performance I-9K (parallel-type) and I-97K (serial-type) series I/O modules.

User's programs can be saved in external storage device, such as SD Card, USB device or RAM via ethernet. LinPAC SDK is provided for users to develop LinPAC I/O applications rapidly and easily when I-7000/9000/97k series I/O modules are used in the LinPAC. Users can develop LinPAC applications by using GNU C Language. In the meanwhile, all kinds of servers and functions built-in make the LinPAC more powerful and users will be able to operate LinPAC to achieve their own project smoothly.
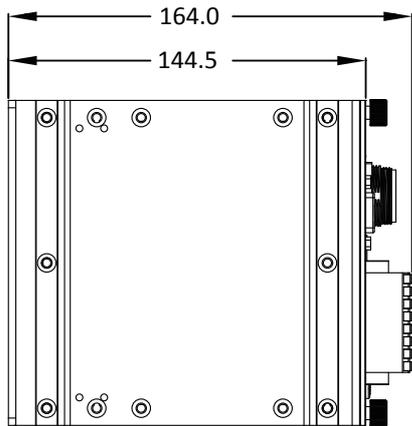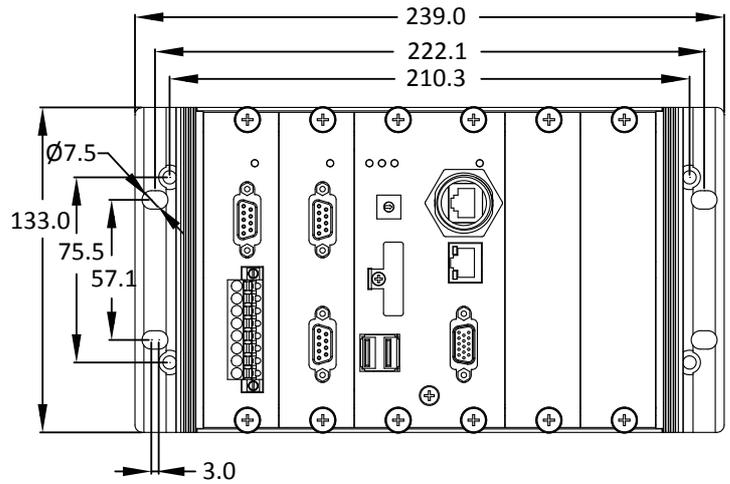
Appearance

Programmable LED Indicator x 2
System LED Indicator
PWR2 LED Indicator
ttyS1 (RS-232/RS-485)
PWR1 LED Indicator
ttyO5 (RS-232/RS-485)
SD slot
ttyS0 (RS-485)
Relay Output
Redundant Power (PWR1 & PWR2)
ttyS34 (RS-232)
USB 2.0 x 2 (P1 & P2)
Frame Ground Point

Operating Modes Selector
LAN Port x 2 (LAN1 & LAN2)
LAN1 LED Indicator

VGA Port

ttyO4: LP-9221: I/O Slot x 2
LP-9421: I/O Slot x 4
LP-9821: I/O Slot x 8

Specifications

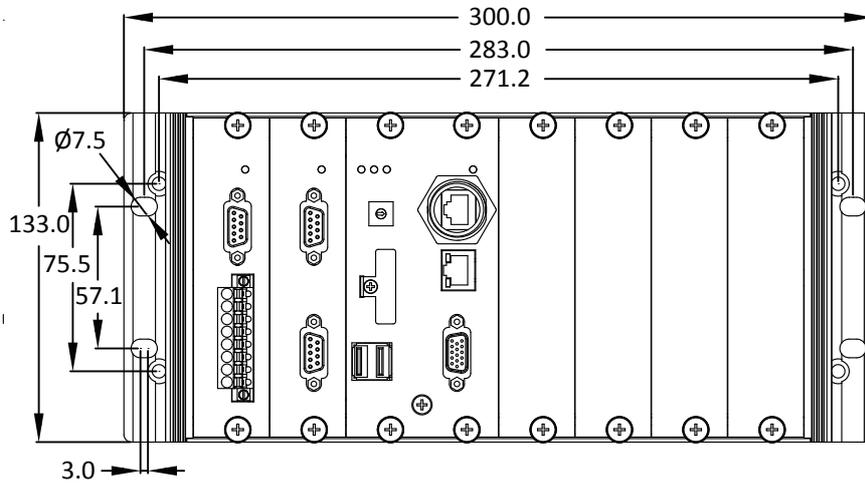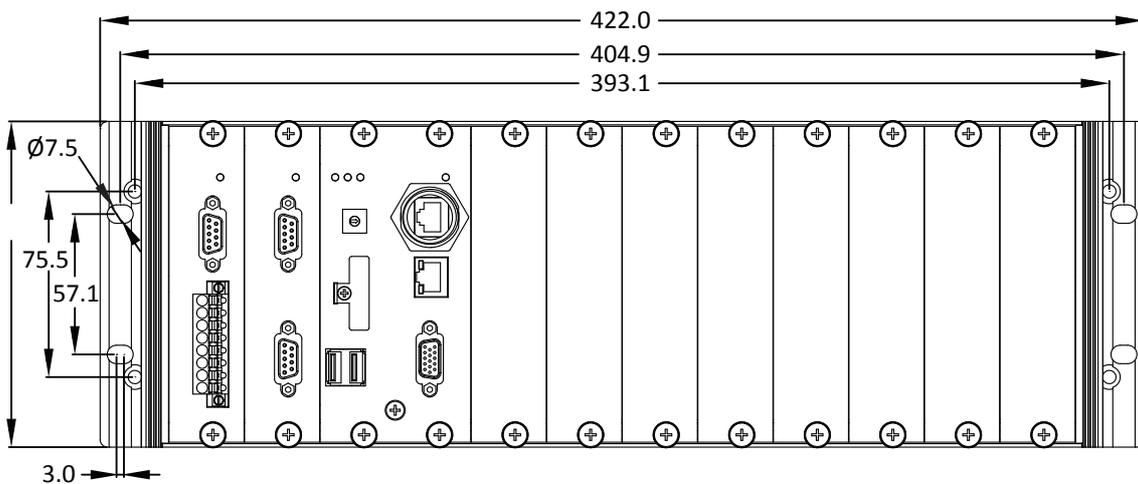| Models	LP-9221	LP-9421	LP-9821
System Software			
OS	Linux kernel 3.2.14		
Embedded Service	Web Server, FTP Server, Telnet Server, SSH Server		
SDK Provided	Standard LinPAC SDK for Windows and Linux by GNU C language		
CPU Module			
CPU	Cortex-A8 (1.0 GHz)		
SDRAM	512 MB DDR3		
MRAM	128 KB		
Flash	512 MB		
EEPROM	16 KB		
SD	SD slot with one SD card (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	2 (L1, L2)		
Rotary Switch	Yes (0 to 9)		
VGA & Communication Ports			
VGA Resolution	800 x 600		
Ethernet Port	RJ-45 x 2, 10/100/1000M Base-T		
USB 2.0	2		
ttyO4	Internal communication with the high profile I-97K series modules in slots		
ttyO5	RS-232/485 (RxD, TxD and GND for RS-232; Data+, Data- for RS-485); 3000 V_{DC} isolated		
ttyS0	RS-485 (Data+, Data-); 3000 V_{DC} isolated		
ttyS1	RS-232/485 (RxD, TxD, CTS, RTS and GND for RS-232; Data+, Data- for RS-485); 3000 V_{DC} isolated		
ttyS34	RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); 3000 V_{DC} isolated		
I/O Expansion Slots	2	4	8
Mechanical			
Dimensions (W x L x H)	239 mm x 133 mm x 164 mm	300 mm x 133 mm x 164 mm	422 mm x 133 mm x 164 mm
Installation	Wall Mounting		
Environmental			
Operating Temperature	-25 to +75 °C		
Storage Temperature	-30 to +80 °C		
Ambient Relative Humidity	10 to 90% RH (non-condensing)		
Power			
Input Range	+10 to +30 V_{DC}		
Isolation	1 kV		
Redundant Power Inputs	Yes, with one power relay (1 A @ 24 V_{DC}) for alarm		
Capacity	1.5 A, 5 V supply to CPU and backplane; 6.5 A, 5 V supply to I/O expansion slots, total 40 W		
Consumption	10.8 W (0.45 A @ 24 V_{DC})		

LinPAC-9000 Series

◢ Dimensions

Top View

Front View — LP-9221

164.0
144.5

239.0
222.1
210.3

Ø7.5
133.0
75.5
57.1
3.0

Front View — LP-9421

300.0
283.0
271.2

Ø7.5
133.0
75.5
57.1
3.0

Front View — LP-9821

422.0
404.9
393.1

Ø7.5
75.5
57.1
3.0

◢ Ordering Information

LP-9221	Standard LinPAC-9000 with 2 I/O Slots
LP-9421	Standard LinPAC-9000 with 4 I/O Slots
LP-9821	Standard LinPAC-9000 with 8 I/O Slots