

LP-9221/LP-9421/LP-9821

2/4/8-slot Linux Based PAC with
Cortex-A8 CPU Metal Case

Features

- Cortex-A8 (1.0 GHz) CPU
- Linux kernel 3.2.14 Inside
- 512 MB RAM and 512 MB Flash
- Hard Real-Time Capability (RTC)
- 64-bit Hardware Serial Number
- 2 10/100/1000M Ethernet Ports
- Rich I/O Expansion Ability (RS-232, RS-485, USB, CAN)
- Redundant Power Input
- Operating Temperature: -25 ~ +75 °C

Introduction

The LP-9000 is the new generation Linux based PAC (Programmable Automation Controller) of ICP DAS. Each LP-9000 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 or USB mass storage device.

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.

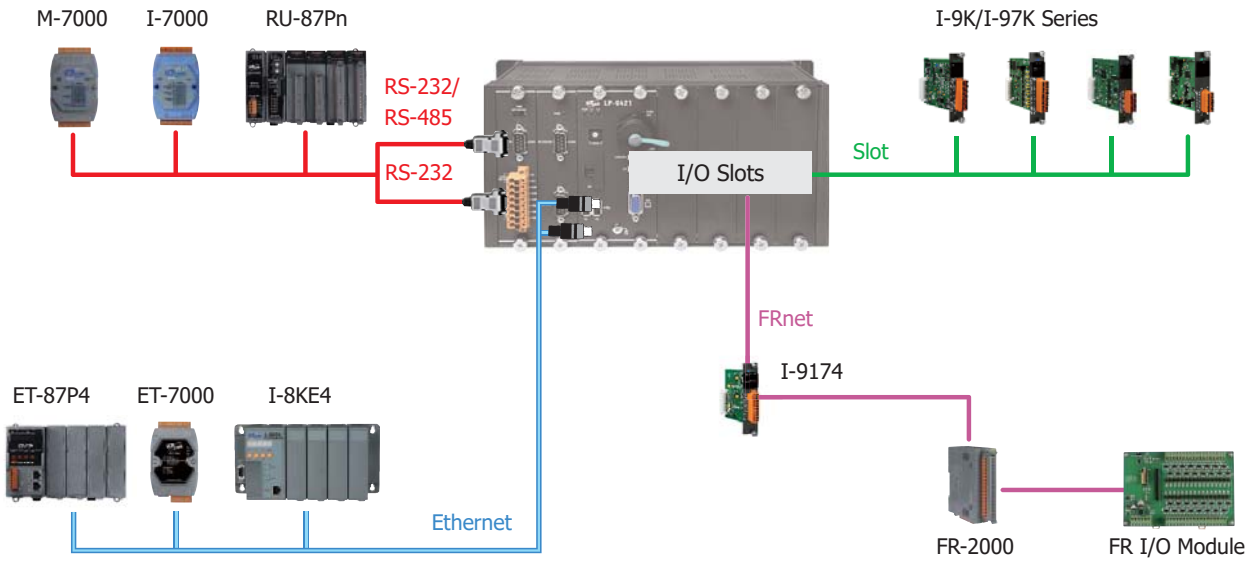
Linux Kernel OS



Main advantage of the LP-9000 is its high quality control system, including its stably properties, open source and the standard LinPAC SDK for Windows and Linux using the GNU C language, GUI software. The main purpose of LP-9000 is to allow the numerous enthusiastic Linux users to control their own embedded system easily within the Linux environment.

- LinPAC SDK for Windows and Linux
- Support for GNU C Language
- Support for GUI: Using GTK + Library
- Support for USB to Serial Converter
- Support for DCON, Modbus and SNMP Protocols

Appications

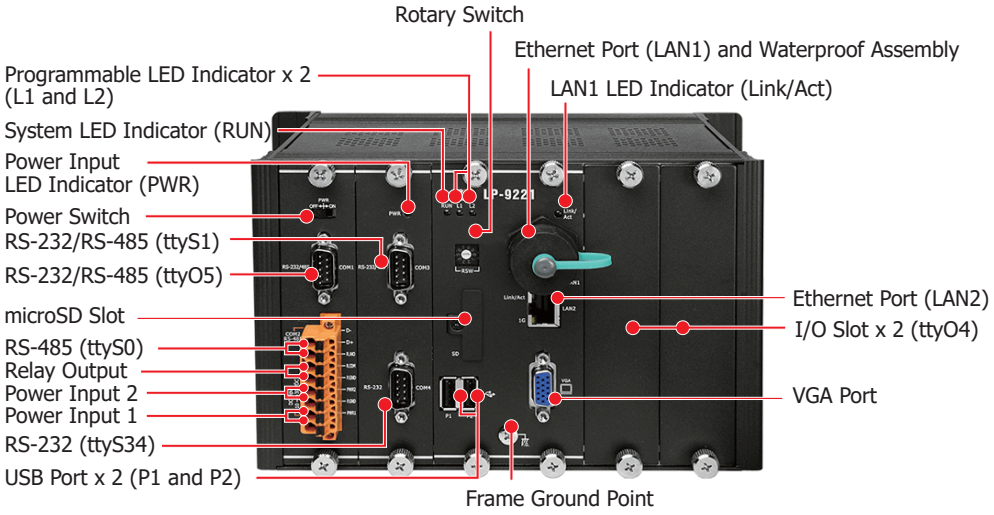


Specifications

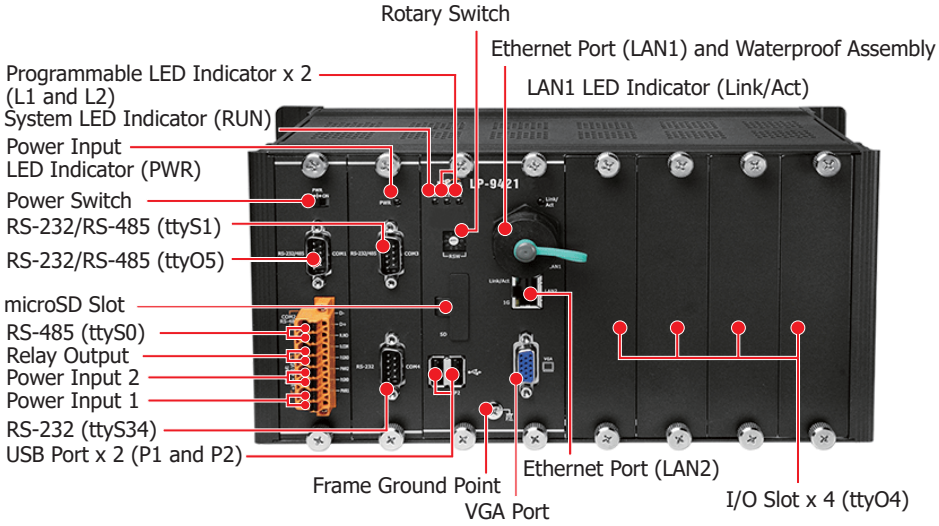
Model	LP-9221	LP-9421	LP-9821
System Software			
OS	Linux kernel 3.2.14 Inside		
Embedded Service	FTP server, Web server (supports VB script, JAVA script), Embedded SQL server		
SDK	LinPAC SDK (GCC based toolchain and LinPAC Libraries)		
Main Unit			
CPU	Cortex-A8 (1.0 GHz) CPU		
SDRAM	512 MB DDR3		
MRAM	128 KB		
EEPROM	16 KB (Data Retention: 40 years; 1,000,000 erase/write cycles)		
Flash	512 MB		
Storage	microSD 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		
Watchdog Timer	Dual Watchdog Timers		
HMI			
Power Switch	Yes		
Rotary Switch	Yes (0 ~ 9)		
LED Indicator	1 x Power, 1 x Run, 2 x Programmable		
Display			
VGA	1 (Analog RGB), Resolution: Up to 1280 x 1024		
I/O Expansion			
I/O Type	I-9K, I-97K series		
Slots	2	4	8
Communication Ports			
Ethernet	2 x RJ-45, 10/100/1000M Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)		
USB	2 x USB 2.0		
ttyO4	Internal communication with the I-97K series modules in slots		
ttyO5	RS-232/485 (RxD, TxD and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
ttyS0	RS-485 (Data+, Data-); 3000 VDC isolated		
ttyS1	RS-232/485 (RxD, TxD, CTS, RTS and GND for RS-232; Data+, Data- for RS-485); 3000 VDC isolated		
ttyS34	RS-232 (RxD, TxD, CTS, RTS, DSR, DTR, CD, RI and GND); 3000 VDC isolated		
Mechanical			
Dimensions (W x L x H)	239 mm x 164 mm x 133 mm	300 mm x 164 mm x 133 mm	422 mm x 164 mm x 133 mm
Ingress Protection Rating	IP30 (Aluminum)		
Installation	DIN-Rail Mounting/Wall Mounting		
Environmental			
Operating Temperature	-25 ~ +75 °C		
Storage Temperature	-30 ~ +80 °C		
Ambient Relative Humidity	10 ~ 90 % RH (non-condensing)		
Power			
Input Range	+10 ~ 30 VDC (1 kV Isolated)		
Redundant Power Input	Yes, with one power relay (1A @ 24 VDC) 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 VDC)		

Appearance

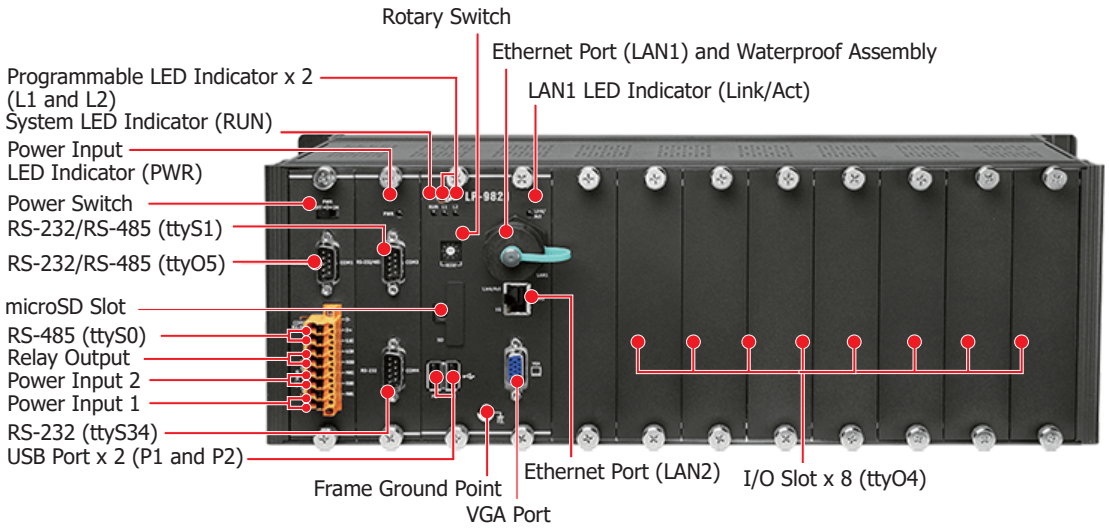
LP-9221



LP-9421

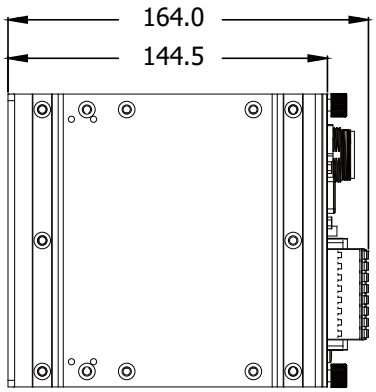


LP-9821



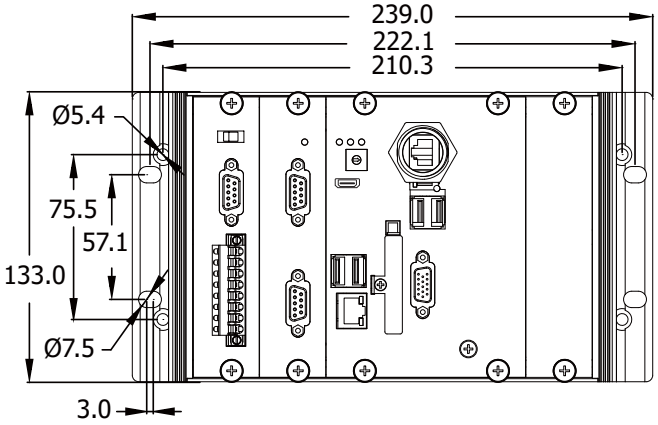
Dimensions (Units: mm)

LP-9221/LP-9421/LP-9821



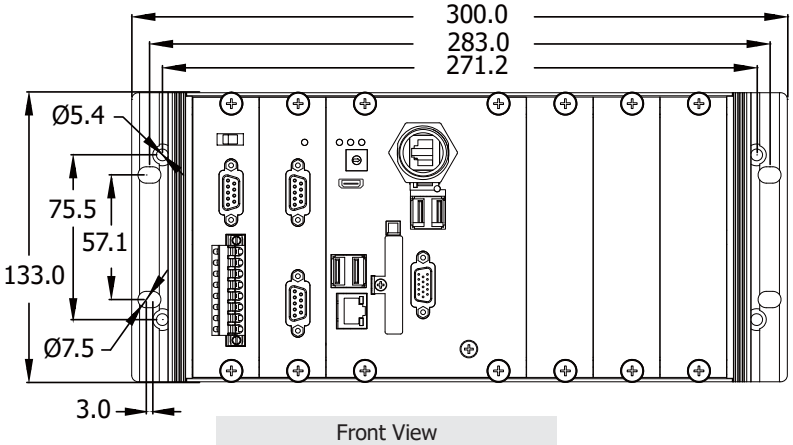
Left Side View

LP-9221



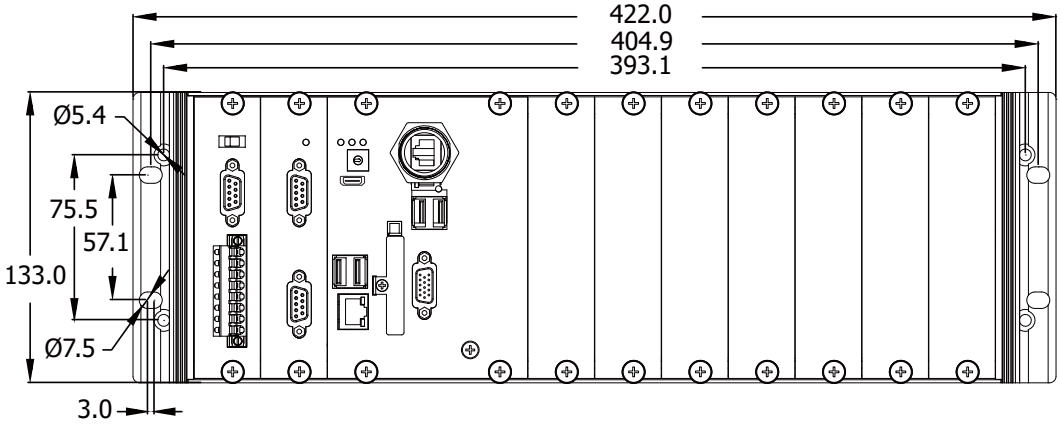
Front View

LP-9421



Front View

LP-9821



Front View

Ordering Information

LP-9221 CR	2-slot Linux Based PAC with Cortex-A8 CPU, Metal Case (RoHS)
LP-9421 CR	4-slot Linux Based PAC with Cortex-A8 CPU, Metal Case (RoHS)
LP-9821 CR	8-slot Linux Based PAC with Cortex-A8 CPU, Metal Case (RoHS)