

# LP-8081/8381/8781 *Linux*

Linux kernel 2.6.33 Inside

LinPAC-8000 Series Programmable Automation Controller LP-8081/LP-8381/LP-8781



**Highlight Information**

- Linux kernel 2.6.33 Inside
- Embedded Service: Web Server, Telnet Server , SSH Server
- AMD LX 800 CPU (32-bit and 500 MHz)
- 1 GB DDR SDRAM, 4 GB Flash, 8 GB CF Card
- 0/3/7 Slots for High Profile I/O Modules
- Dual 10/100M Ethernet Ports
- 4/5 Serial Ports (RS-232/RS-485)
- 2 USB & 1 VGA Ports
- 64 bits Serial Number for Software Protection
- Operating Temperature: -25 ~ +75 °C

## ● Introduction

LinPAC-8081/8381/8781 is the second generation Linux based PAC (Programmable Automation Controller) of ICP DAS. They equip a LX 800 CPU (500 MHz) running a Linux kernel 2.6.33 Operating System, variant connectivity (VGA, USB, Ethernet, RS-232/485) and 0/3/7 slots for high performance parallel I/O modules (high profile I-8K series) and serial-type I/O modules (high profile I-87K I/O modules).

User's programs can be saved in external storage device, such as CF Card, USB device or RAM via Ethernet. LinPAC SDK is provided for users to develop LinPAC I/O applications rapidly and easily when I-7000/8000/87K 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. With LP-8x81 Serial, users can achieve the redundancy function and it will make the whole control system safer.

## ● Features

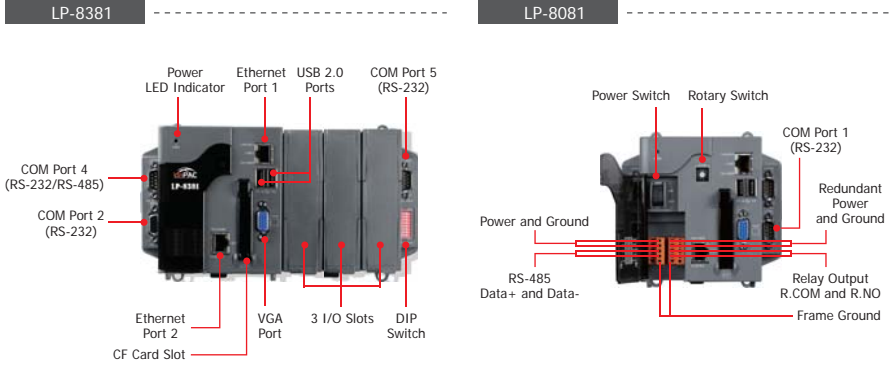
- Software
- OS: Linux kernel 2.6.33: Open Source
  - Development
    - Provide LinPAC SDK
    - Support GNU C Language, GUI (Using GTK+ Library)
  - GUI Desktop:
    - X-Window + GNOME
  - Supported Server:
    - Web Server
    - Telnet Server
    - SSH Server
  - Security: Unique Serial Number
  - Interpret: Perl, PHP
  - MySQL Database

- Hardware
- Powerful CPU Module
    - AMD LX 800 CPU (32-bit and 500 MHz)
  - Rich Memories
    - DDR SDRAM (1 GB), Built-in Flash Disk (4 GB), EEPROM (16 KB), Dual Battery Backup SRAM (512 KB), CF Card (8 GB)
  - VGA Port (640 x 480 – 1024 x 768) x 1, USB 2.0 Ports x 2
  - 64-bit Hardware Serial Number
    - Unique to Avoid Software Pirating
  - Dual Watchdog Timers
  - 4/5 Serial Ports (RS-232/RS-485)
  - Dual Ethernet Ports (10/100M)
  - Redundant Power Inputs
  - Operating Temperature: -25 ~ +75 °C

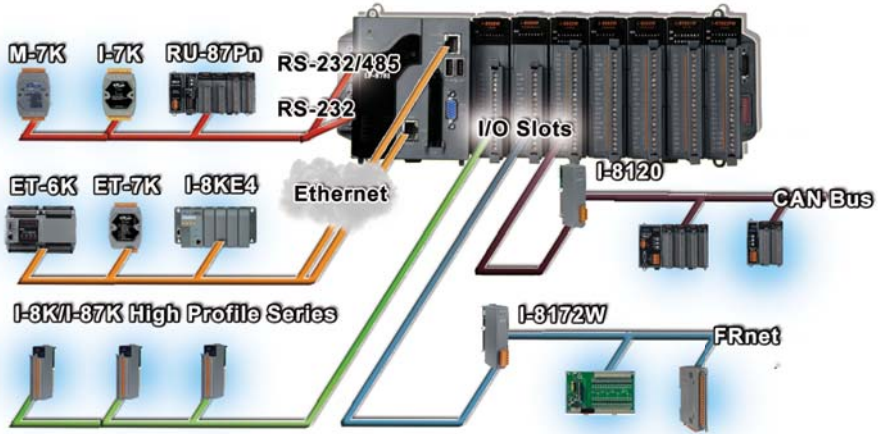
## ● Specifications

Models	LP-8081	LP-8381	LP-8781
<b>System Software</b>			
OS	Linux kernel 2.6.33		
Embedded Service	Web Server, Telnet Server, SSH Server		
SDK Provided	Standard LinPAC SDK for Linux by GNU C language		
<b>CPU Module</b>			
CPU	AMD LX 800 processor (32-bit and 500 MHz)		
System Memory	1 GB DDR SDRAM		
Dual Battery Backup SRAM	512 KB (for 5 years data retention)		
Flash	4 GB as IDE Master		
EEPROM	16 KB Data Retention: 40 years; 1,000,000 erase/write cycles		
CF Card	8 GB (support up to 32 GB)		
64-bit Hardware Serial Number	Yes		
Dual Watchdog Timers	Yes		
Programmable LED Indicator	1		
Rotary Switch	Yes (0 – 9)		
DIP Switch	-	Yes (8 bits)	Yes (8 bits)
<b>VGA &amp; Communication Ports</b>			
VGA	Yes (resolution: 640 x 480 ~ 1024 x 768)		
Ethernet	RJ-45 x 2, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)		
USB 2.0	2		
COM1	RS-232 (Rx/D, Tx/D and GND); Non-isolated	Internal communication with I-87K modules in slots	
COM2	RS-232 (Rx/D, Tx/D and GND); Non-isolated		
COM3	RS-485	D2+, D2-; self-tuner ASIC inside	
	Isolated	3000 V <sub>oc</sub>	
COM4	RS-232/RS-485 (Rx/D, Tx/D, CTS, RTS and GND for RS-232, Data+ and Data- for RS-485); Non-isolated		
COM5	RS-232 (Rx/D, Tx/D, CTS, RTS, DSR, DTR, CD, RI and GND); Non-isolated		
<b>I/O Expansion Slots</b>			
Slot Number	0 slot	3 slots	7 slots
	(Supports high profile I-8K and I-87K modules only)		
Hot Swap *will be available	I/O Module Hot Swap Ability for High Profile I-87K Modules Only		
<b>Mechanical</b>			
Dimensions (W x L x H, Unit: mm)	137 x 132 x 125	231 x 132 x 125	355 x 132 x 125
Installation	DIN-Rail or Wall Mounting		
<b>Environmental</b>			
Operating Temperature	-25 ~ +75 °C		
Storage Temperature	-30 ~ +85 °C		
Ambient Relative Humidity	5 ~ 90% RH, non-condensing		
<b>Power</b>			
Input Range	+10 ~ +30 V <sub>DC</sub>		
Isolated	1 kV		
Redundant Power Inputs	Yes, with one power relay (1 A @ 24 V <sub>DC</sub> ) for alarm		
Capacity	1.8 A, 5 V supply to CPU and backplane, total 15 W	1.8 A, 5 V supply to CPU and backplane, 5.2 A, 5 V supply to I/O expansion slots, total 35 W	2.0 A, 5 V supply to CPU and backplane, 5.0 A, 5 V supply to I/O expansion slots, total 35 W
Consumption	14.4 W (0.6 A @ 24 V <sub>DC</sub> )	14.4 W (0.6 A @ 24 V <sub>DC</sub> )	16.8 W (0.7 A @ 24 V <sub>DC</sub> )

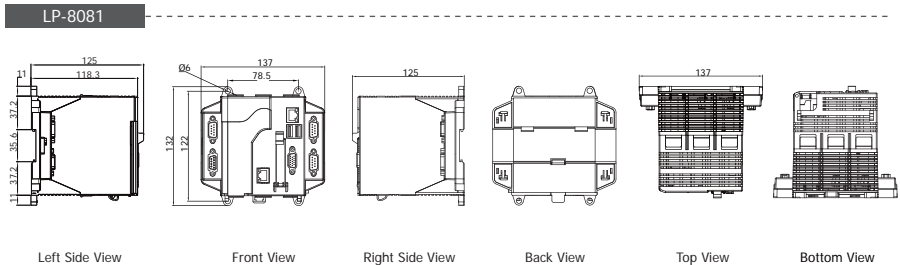
● Appearance



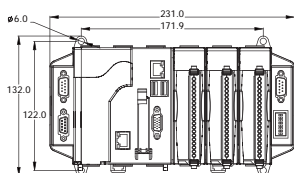
● Rich I/O Expansion Ability



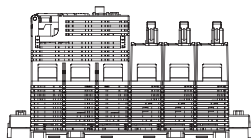
● Dimensions (Unit: mm)



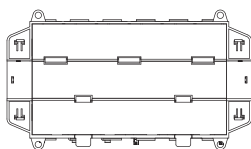
LP-8381



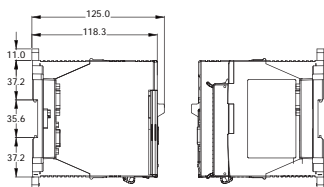
Front View



Bottom View



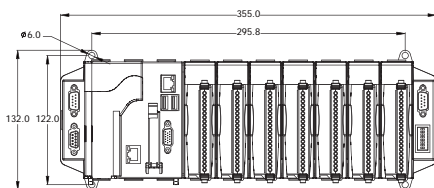
Back View



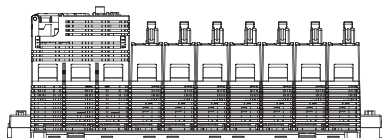
Left Side View

Right Side View

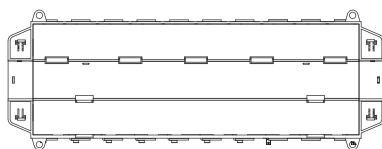
LP-8781



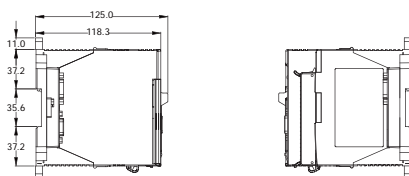
Front View



Bottom View



Back View



Left Side View

Right Side View

## Ordering Information

LP-8081-EN CR	Standard LinPAC-8000 with 0 I/O slot (English version of OS) (RoHS)
LP-8381-EN CR	Standard LinPAC-8000 with 3 I/O slots (English version of OS) (RoHS)
LP-8781-EN CR	Standard LinPAC-8000 with 7 I/O slots (English version of OS) (RoHS)

## Accessories

USB-2560 CR	4-Port Industrial USB 2.0 Hub (RoHS)
NS-208 CR	8-Port Unmanaged Industrial 10/100 Base-TX Ethernet Switch (RoHS)
MDR-20-24	24 V <sub>DC</sub> /1.0 A, 24 W Power Supply with DIN-Rail Mounting
MDR-60-24	24 V <sub>DC</sub> /2.5 A, 60 W Power Supply with DIN-Rail Mounting