

# LP-8081/8381/8781 *Linux*

Linux kernel 2.6.33 Inside



**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

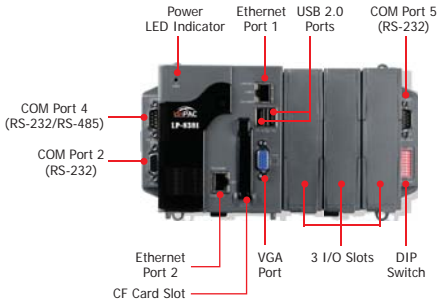
- | Software  | Hardware   |
|---|--|
| <ul style="list-style-type: none"> <li>■ OS: Linux kernel 2.6.33: Open Source</li> <li>■ Development                             <ul style="list-style-type: none"> <li>□ Provide LinPAC SDK</li> <li>□ Support GNU C Language, GUI (Using GTK+ Library)</li> </ul> </li> <li>■ GUI Desktop:                             <ul style="list-style-type: none"> <li>□ X-Window + GNOME</li> </ul> </li> <li>■ Supported Server:                             <ul style="list-style-type: none"> <li>□ Web Server</li> <li>□ Telnet Server</li> <li>□ SSH Server</li> </ul> </li> <li>■ Security: Unique Serial Number</li> <li>■ Interpret: Perl, PHP</li> <li>■ MySQL Database</li> </ul> | <ul style="list-style-type: none"> <li>■ Powerful CPU Module                             <ul style="list-style-type: none"> <li>□ AMD LX 800 CPU (32-bit and 500 MHz)</li> </ul> </li> <li>■ Rich Memories                             <ul style="list-style-type: none"> <li>□ DDR SDRAM (1 GB), Built-in Flash Disk (4 GB), EEPROM (16 KB), Dual Battery Backup SRAM (512 KB), CF Card (8 GB)</li> </ul> </li> <li>■ VGA Port (640 x 480 – 1024 x 768) x 1, USB 2.0 Ports x 2</li> <li>■ 64-bit Hardware Serial Number                             <ul style="list-style-type: none"> <li>□ Unique to Avoid Software Pirating</li> </ul> </li> <li>■ Dual Watchdog Timers</li> <li>■ 4/5 Serial Ports (RS-232/RS-485)</li> <li>■ Dual Ethernet Ports (10/100M)</li> <li>■ Redundant Power Inputs</li> <li>■ Operating Temperature: -25 ~ +75 °C</li> </ul> |

## ● Specifications

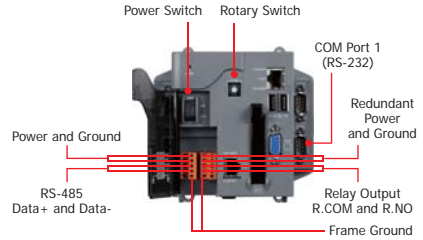
Models	LP-8081	LP-8381	LP-8781
<b>System Software</b>			
OS	Linux kernel 2.6.33		
Embedded Service	Web Server, Telnet Server, SSH Server		
SDK Provided	Standard LinPAC SDK for Linux by GNU C language		
<b>CPU Module</b>			
CPU	AMD LX 800 processor (32-bit and 500 MHz)		
System Memory	1 GB DDR SDRAM		
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
	<i>(Supports high profile I-8K and I-87K modules only)</i>		
Hot Swap <i>*will be available</i>	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

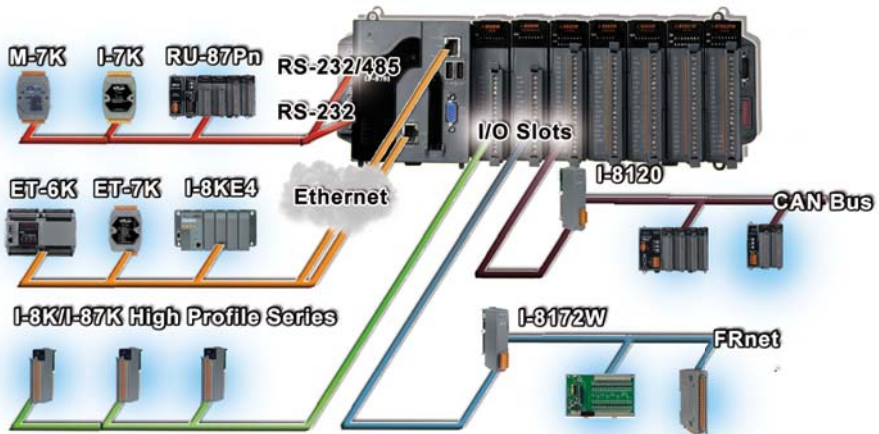
LP-8381



LP-8081

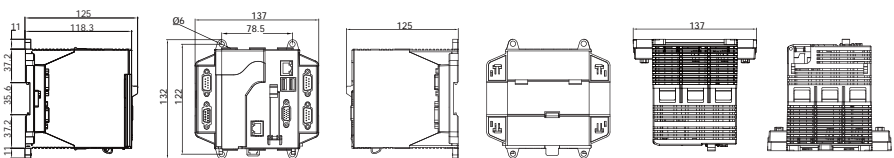


● Rich I/O Expansion Ability



● Dimensions (Unit: mm)

LP-8081



Left Side View

Front View

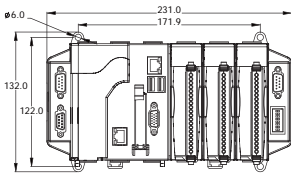
Right Side View

Back View

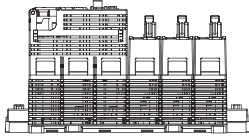
Top View

Bottom View

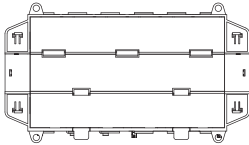
LP-8381



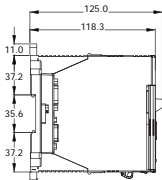
Front View



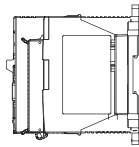
Bottom View



Back View

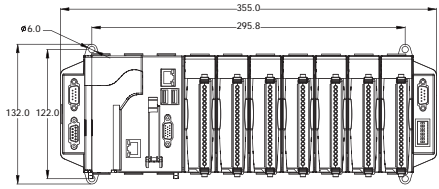


Left Side View

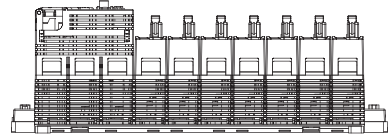


Right Side View

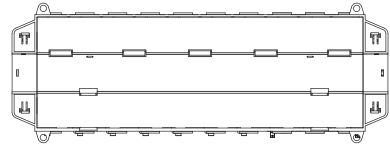
LP-8781



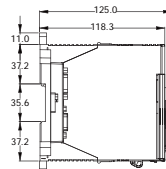
Front View



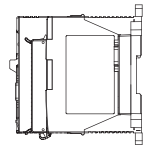
Bottom View



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