

**$\mu$ PAC-5001(D)     $\mu$ PAC-5001P(D)     $\mu$ PAC-5001(D)-FD**  
 **$\mu$ PAC-5002(D)     $\mu$ PAC-5002(D)-FD     $\mu$ PAC-5002(D)-NV**  
 **$\mu$ PAC-5002(D)-SM**

**Features**

- MiniOS7 Inside
- C Language Programming
- TCP/IP Library
- Modbus Library
- Various Storage Media
- 512 KB Flash
- 16 KB EEPROM
- microSD
- 1 MB NVRAM
- 256 MB NAND Flash Disk
- 512 KB Battery Backup SRAM
- Various Communication Interfaces
- 10/100 Base-TX Ethernet
- RS-232/485
- 64-bit Hardware Serial Number
- I/O Expansion Bus
- Redundant Power Inputs
- Operating Temperature: -25 ~ +75°C



**Introduction**

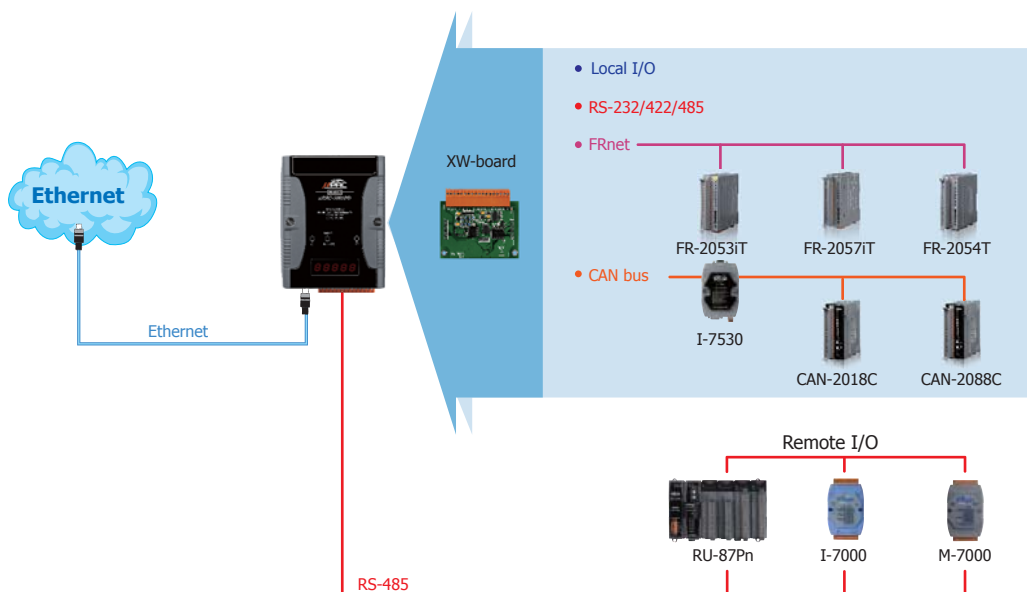
The  $\mu$ PAC-5000 series is a palm-size programmable automation controller. It has a 80186 CPU, SRAM, Flash, Ethernet port, RS-232 and RS-485 port. With a DOS-like OS (MiniOS7) and a developed firmware running inside, it can act like a small PC.

ICP DAS provides easy-to-use software development tool kits (Xserver, MiniOS7 framework, VxComm, Modbus libraries). Users can use them to easily integrate serial devices to have Ethernet/Internet communication ability and through the standard Modbus protocol to communicate with SCADA software (Indusoft, ISaGARF, DasyLab, Trace Mode, Citect, iFix, etc.).

For hardware expansion, it also supports an I/O expansion bus. The I/O expansion bus can be used to implement various I/O functions such as D/I, D/O, A/D, D/A, Timer/Counter, UART, and other I/O functions. Nearly all kinds of I/O functions can be implemented by this bus. But the bus can support only one board. There are more than 10 boards available for  $\mu$ PAC-5000 series, you can choose one of them to expand hardware features.

**Applications**

Rich I/O Expansion Ability



## Specifications

Models	μPAC-5001(D)	μPAC-5001(D)-FD	μPAC-5002(D)	μPAC-5002(D)-FD	μPAC-5002(D)-NV	μPAC-5002(D)-SM
	μPAC-5001P(D)					
OS	MiniOS7 (DOS-like embedded operating system)					
Program Download Interface	RS-232 (COM1) or Ethernet					
Programming Language	C language					
Compilers to create.exe Files	TC++ 1.01 (Freeware) TC 2.01 (Freeware) BC++3.1 ~ 5.2x MSC 6.0 MSVC++ (before version 1.5.2)					
<b>CPU Module</b>						
CPU	80186 or compatible (16-bit and 80 MHz)					
SRAM	512 KB		768 KB			
Flash	512 KB; Erase unit is one sector (64 K bytes); 100,000 erase/write cycles					
microSD Expansion	Yes, can support 1 or 2 GB microSD					
256 MB NAND Flash Disk	-	Yes	-	Yes	-	
1 MB NVRAM	-				Yes	-
512 KB Battery Backup SRAM	-				Yes	
EEPROM	16 KB					
NVRAM	31 Bytes (battery backup, data valid up to 5 year)					
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 Timers	Yes (0.8 second)					
<b>Communication Ports</b>						
Ethernet	RJ-45 x 1, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)					
COM 1	RS-232 (TxD, RxD, RTS, CTS, GND), non-isolated, Speed: 115200 bps max.					
COM 2	RS-485 (D2+, D2-), self-tuner ASIC inside, non-isolated, Speed: 115200 bps max.					
<b>LED Indicator</b>						
Programmable LED Indicators	2					
LED Display	5-digit 7-segment LED display for (D) versions					
<b>Hardware Expansion</b>						
I/O Expansion Bus	Yes					
<b>Mechanical</b>						
Dimensions (W x H x D)	91 mm x 123 mm x 52 mm					
Installation	DIN-Rail					
<b>Environmental</b>						
Operating Temperature	-25 ~ +75°C					
Storage Temperature	-30 ~ +80°C					
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)					
<b>Power</b>						
Protection	Power reverse polarity protection					
Frame Ground	Yes (for ESD Protection)					
Input Range	+12 ~ +48 V <sub>bc</sub>					
Isolation	-					
Redundant Power Inputs	Yes					
Power Consumption	2 W; 2.5 W for (D) version					

## Ordering Information

Models						Description
μPAC-5001(D)	μPAC-5001(D)-FD	μPAC-5002(D)	μPAC-5002(D)-FD	μPAC-5002(D)-NV	μPAC-5002(D)-SM	MiniOS7 based Ethernet μPAC
μPAC-5001P(D)						MiniOS7 based PoE μPAC

Note: (D) means with 7-Segment LED Display.

## Option Accessories

NS-205 CR	Unmanaged Industrial 5-Port Ethernet Switch	DIN-KA52F	24V / 1.04A, 25 W Power Supply with DIN-Rail Mounting
MDR-20-24	24V / 1A, 24 W Power Supply with DIN-Rail Mounting	3LMSD-2000	2 GB microSD card