

PAC-4000

Industrial Linux-based Programmable Automation Controller



- ▶ ATMEL 400MHz AT91SAM9G20 CPU w/ MMU
- ▶ Linux kernel 2.6.29 with file system
- ▶ 64MB SDRAM/128MB NAND Flash
- ▶ 2MB DataFlash for system recovery
- ▶ On-board real-time clock
- ▶ 2 x 10/100Mbps Ethernet ports
- ▶ 2 x RS-232 ports
- ▶ 2 x isolated RS-485 ports
- ▶ 2 x USB 2.0 Hosts supporting full speed of 12Mbps
- ▶ 1 x micro SD socket

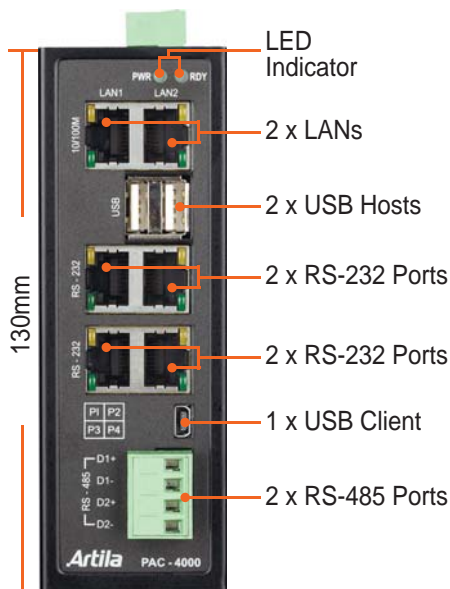
- ▶ Small form factor (LxWxH): 130 x 45 x 102.5mm
- ▶ Free C/C++ tool chain included for user program



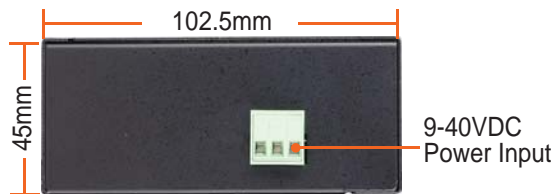
Overview

PAC-4000 is a Linux-based ARM9 DIN-Rail Box Computer. PAC-4000 is powered by 400MHz AT91SAM9G20 ARM Thumb Processor with memory management unit, and equipped with 64MB SDRAM, 128MB NAND Flash, and 2MB DATAFlash. PAC-4000 is also pre-installed with Linux 2.6.29 OS, busybox utility collection, lighttpd Web server, and various hardware device drivers. PAC-4000 comes with two 10/100Mbps Ethernet, two USB 2.0 hosts, two RS-232 ports, and two isolated RS-485 ports. PAC-4000 is a reliable box computer designed for applications where low power consumption and 24/7 non-stop operation are crucial factors. PAC-4000 is ideal for all kinds of industrial applications, including direct digital control, building automation, energy-saving system, and remote device management.

Front View of PAC-4000



Top of PAC-4000



Bottom of PAC-4000



Hardware Specifications

CPU/Memory

CPU: ATMEL 400MHz AT91SAM9G20 w/MMU
SDRAM: 64MB
NAND Flash: 128MB
DataFlash®: 2MB, for system backup

Network Interface

No. of Ports: 2
Type: 10/100Mbps Ethernet, RJ-45 connector
Protection: 1.5KV magnetic isolation

Serial Ports

2 x RS-232 (Port 3 and Port 4)
2 x RS-485 or RS-232 (Port 1 and Port 2)
Protection: 15KV ESD for RS-232
2500Vrms isolation and 15KV ESD for RS-485
Connector: RJ-45 for RS-232
Terminal Block for RS-485

Serial Port Parameters

Baud Rate: up to 921.6Kbps
Parity: None, Even, Odd, Mark, Space
Data Bits: 5, 6, 7, 8
Stop Bit: 1, 1.5, 2
Flow Control: RTS/CTS, XON/XOFF, None
RS-485 Direction Control: auto, by hardware

USB Ports

Hosts: Two, USB 2.0 compliant
Client: One, reserved
Speed: low speed (1.5Mbps) and full speed (12Mbps)

SD Socket

MicroSD x 1

General

Watch Dog Timer: Yes
Real Time Clock: Yes, with backup battery
Buzzer: Yes
Power Input: 9-40VDC
Power Consumption: 300mA@12VDC
Dimensions: 130 x 45 x 102.5mm
Operating Temperature: 0 to 70°C (32 to 158°F)
Regulation: CE Class A, FCC Class A

Software Specifications

General

OS: Linux, Kernel 2.6.29
Boot Loader: U-Boot 1.1.2
File Systems: UBI, JFFS2, ETX2/ETX3, VFAT/FAT, NFS
Internet Protocol:
TCP, UDP, IPv4, SNMPv1/v2/v3, ICMP, ARP, HTTP, CHAP, PAP, DHCP, NTP,
NFS, SMTP, Telnet, FTP, TFTP, PPP, PPPoE
Internet Security: OpenVPN, iptable

Pre-installed Utilities

bash, busybox, sysvinit, wget, ipkg, procps (for webmin), psmics, lighttpd, vsftpd,
iptables, ppp, ssh, wireless_tools, util-linux-mount/umount, usbutils, artila utility and
more

Daemons started by default

ssh (secured shell) with sftp, syslog/klogd (system and kernel log), telnet server
(disable root with /etc/security), ftp server (vsftp), web server (lighttpd),
amgrd (Artila broadcast search daemon)

Package Management & System Administration

Supports ipkg to manage the package installation, upgrade and removal
Supports webmin for Web-based system administration

Tool Chain for Linux

GCC: C/C++ PC cross compiler
GLIBC: POSIX Library

USB Host Drivers

Generic Flash drive
RS-232 adaptors (for Prolific PL-2303 compatibles)
WiFi dongles (for Ralink RT73 compatibles and more)

Ordering Information

PAC-4000

DIN-Rail Mountable Industrial Linux-based ARM9
Programmable Automation Controller with 2 x
Ethernet, 2 x RS-232 and 2 x RS-232 or isolated
RS-485 Ports