

# PAC-4010

## Industrial Linux-based Programmable Automation Controller



- ▶ 8 x 2500Vrms opto-isolated digital inputs
- ▶ 8 x up-to-500mA high-drive digital outputs
- ▶ 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

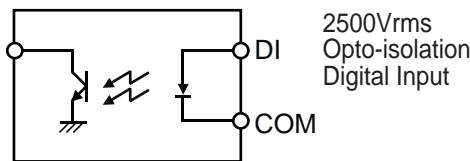
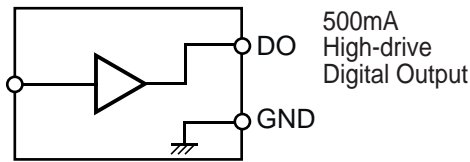
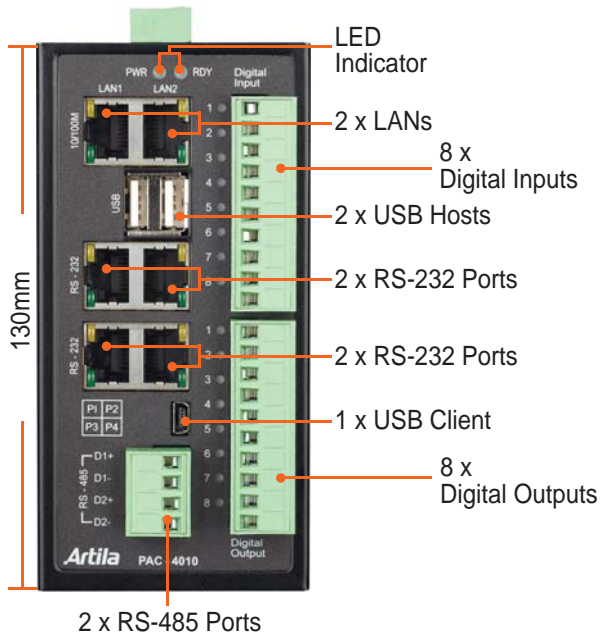
- ▶ Small form factor (LxWxH): 130 x 65 x 102.5mm
- ▶ Free C/C++ tool chain included for user program



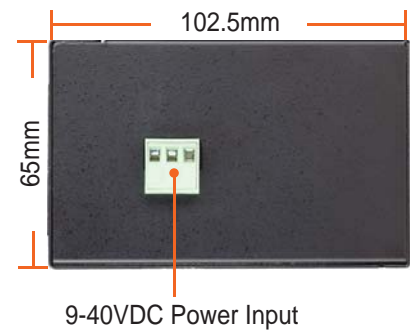
### Overview

PAC-4010 is a Linux-based programmable automation controller. PAC-4010 incorporates Artila's PAC-4000 box computer and sophisticated industrial-grade I/O interface to make it ideal for control/monitor via LAN/WAN/Web applications. PAC-4010 can be easily mounted to a standard 35mm DIN Rails.

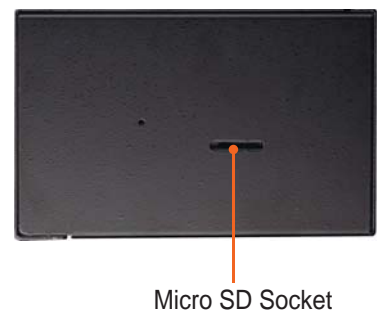
#### Front View of PAC-4010



#### Top of PAC-4010



#### Bottom of PAC-4010



## 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

### Isolated Digital Input

No. of Channels: 8  
Logical High: 5 ~ 24VDC  
Logical Low: 0 ~ 1.5VDC  
Input Resistance: 1.2k ohms@0.5W  
Response Time: 20us  
Opto-isolation: 2500Vrms

### Digital Output

No. of Channels: 8  
Source Driver: UDN2981A (Allegro)  
Source Voltage (VDD): 5~50VDC  
Output Current: 500mA max.  
Isolation: 2500Vrms

### 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 65 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/securetty), 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-4010

DIN-Rail Mountable Programmable Automation  
Controller with 2 x Ethernet, 2 x RS-232 and 2 x  
RS-232 or isolated RS-485 Ports, 8 x digital  
inputs, 8 x digital outputs

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