

SCADAPack 314

Low-cost, high-performance programmable logic controller

Features

- High-performance 32-bit processor
- Two serial ports (RS-232/485), USB 2.0 peripheral port
- Optional integrated 900MHz or 2.4GHz spread-spectrum radio
- I/O: 16 digital inputs, 10 digital outputs; 8 configurable analog inputs; 3 counter inputs
- Low power consumption, user configurable power-saving modes
- Relay Ladder Logic, IEC 61131-3, and C/C++ programmable
- Class 1, Division 2 Hazardous Area Rating
- Three-year parts and labour warranty



Built on the proven SCADAPack 300-series platform, the SCADAPack 314 features high-performance 32-bit processing, high-speed serial communication, integrated power supply, advanced power-management, and a wide range of digital and analog I/O in a cost-effective, compact controller.

Featuring industry-standard Modbus and DNP3 serial protocols and a choice of flexible programming languages, the SCADAPack 314 is easy to integrate and deploy. Enhanced Integration with Control Microsystems' ClearSCADA SCADA host software provides even greater remote configuration, monitoring, and control features.

Applications include remote sensor locations, solar powered installations, process control, lift and pump stations, dam control systems, and environmental monitoring solutions.

Powerful Processor

The heart of the SCADAPack 314 is a powerful 32-bit microprocessor for responsive application performance. A 16MB flash ROM and 4MB CMOS RAM provide ample space for use in firmware and application programming.

Flexible Programming

SCADAPack 314 supports programming in Relay Ladder Logic, the IEC 61131-3 family of languages, and C++. Up to 32 independent C++ applications can be simultaneously loaded, executed, and deleted in parallel with standard controller logic to provide maximum flexibility and performance.

Customizable Power Saving Modes

With power consumption as low as 15mW in Sleep Mode, SCADAPack 314 features user-customizable power configurations which can be configured remotely or by the controller application itself. In solar powered applications, the SCADAPack 314's power-saving design allows smaller solar panels and batteries to be used to further reduce costs.

Versatile Analog and Digital I/O

SCADAPack 314 includes a wealth of I/O to meet the demands of your application with 16 digital inputs, 10 digital outputs, 8 analog inputs, 2 optional analog outputs, 3 counter inputs, and internal power supply voltage monitoring input for solar powered applications. SCADAPack 314 is compatible with select Control Microsystems 5000-series I/O Expansion Modules to increase the controller's I/O capacity and versatility.

Flexible Communications

SCADAPack 314 offers a wide range of connectivity and communication options. Two RS-232/485 serial communication ports support Modbus RTU, Modbus ASCII, and DNP3 communication protocols. A high-speed USB peripheral port allows for local configuration. For remote applications, SCADAPack 314 can be configured with optional integrated, license-free, spread spectrum 900MHz and 2.4GHz wireless modules, external radios, or dial-up modem.

Modbus and DNP3 Protocol Support for Easy Integration

SCADAPack 314 supports open Modbus and DNP3 protocols to ensure interoperability and compatibility with a wide range of SCADA equipment from third-party vendors. SCADAPack 314 supports both Modbus

master and slave configurations and advanced DNP3 protocol functionality like report-by-exception, store-and-forward messaging, maintenance, polling, unsolicited messaging, and data-backfilling.

Compact Chassis

A small footprint and low-profile chassis enables the SCADAPack 314 to use compact mounting enclosures and fit into dense equipment racks for applications where space is at a premium.

Built for Durability, Reliability, and Safety

SCADAPack 314 has conformal coatings, zinc-plated steel system components, and is certified to Class 1, Division 2 Hazardous Area Rating and ATEX II 3G and IECEx standards for performance in hazardous environments.

Enhanced Integration with Control Microsystems SCADA Products

Control Microsystems offers a comprehensive Sensor to Enterprise product portfolio. SCADAPack controllers feature pre-defined device profiles and configuration templates within Control Microsystems' SCADA host management software, ClearSCADA, to offer configuration and monitoring at the click of a button. Remote configuration, firmware upgrades, clock-synchronization, and data log retrieval directly to the host historian are some of the advanced features offered by Enhanced Integration that make it easier to manage your SCADA system.

Industry-leading Three-Year Warranty

All Control Microsystems products are manufactured to exacting standards and are backed by an industry-leading three-year parts and labour warranty.

Specifications (P314: 5212 controller board and integrated 5607 I/O board)

Controller	
Processors	CPU: 32-bit ARM7 microcontroller, 32 MHz clock, integrated watchdog timer Microcontroller co-processor, 20 MHz clock
Memory	4 MB SRAM, 16MB flash ROM
Non-Volatile	CMOS SRAM with lithium battery retains contents for 2-years with no power
Datalog Capacity	465k words
I/O	
Analog Inputs	8 software configurable: 0-20/4-20mA / 0-5/0-10V (15-bit) 3 internal: measure incoming power supply voltage for solar applications, battery voltage, and controller temperature
Analog Outputs	Standard: None 2 with optional 5305 on 5607 I/O board: 0-20/4-20mA (12-bit)
Digital I/O	16 digital inputs: 12/24V, 48V, 115/125V, 240V 10 relay outputs: dry contact or DC solid-state
Counter Inputs	1 dry contact: 0-10Hz or 0-5kHz 2 turbine or dry contact: 0-10kHz
Communications	
Serial Port COM1	RS-232 port, 8-pin modular RJ45 jack, full or half-duplex, or RS-485 port, 2-wire, half-duplex
Serial Port COM2	RS-232 port, 8-pin modular RJ45 jack, full or half-duplex, or RS-485 port, 2-wire, half-duplex
Baud Rates	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200
Serial Protocols	Modbus RTU, Modbus ASCII, DNP3, DF1
Serial Protocol Modes	Slave, Master, Master/Slave, Store and Forward
USB Peripheral Port	USB 2.0 compliant B-type receptacle
Wireless¹	Spread-spectrum radio at 900MHz ² and 2.4GHz ²
General	
I/O Terminations	5, 6, and 9-pole removable terminal blocks, 12 to 22AWG, 15A contacts
Dimensions	5.65 inch (144mm) wide, 6.50 inch (165mm) high, 2.80 inch (72mm) deep
Packaging	Corrosion resistant, zinc-plated steel with black enamel paint
Environment	5% RH to 95%, non-condensing, -40°F (-40°C) to 158°F (70°C)
Power:	<p>5212 Controller Board 11 - 30VDC, 15mW at 12V during sleep mode. (Note: The power consumption during sleep mode is affected by the number of serial ports connected to the RS-232 devices. There is a 2.4mW increase per connected port, for a maximum of 4.8mW with both ports connected.) 500mW at 12V during normal operation. 32MHz, LEDs off, no expansion, and USB disabled 300mW at 12V during reduced power mode operation. 2MHz, LEDs off, no expansion, USB disabled</p> <p>5607 I/O Module</p> <ul style="list-style-type: none"> • Add 190mW when enabling the USB port • Add 30 to 90mW when enabling the LEDs 8.5W at 24V maximum, 5V supply fully-loaded 11 - 30VDC, 10.3mA plus analog outputs 325mA (max.) at 5V required from 5212 controller board
Warranty	3-years on parts and labor

¹ Available only with optional integrated wireless modules or stand-alone wireless modules.

² Not applicable in all countries.

Model Code P314-1A00-AB00 represents a sample code for a SCADAPack 314, 5607 I/O board and Modbus protocol emulation

Model	Select: Controller
P314	SCADAPack314, with Model 5607 I/O board, includes 8 AI, 16 DI, 10 DO and 3 counter inputs
Code	Select: Communication Ports
1	3 communication ports: 2 RS-232/485 (RJ45), 1 USB Peripheral (B-Type)
Code	Select: Gas Flow Run-Time Option
A	None
G	2-run gas flow
F	4-run gas flow
Code	Select: Protocol Option
0	Modbus protocol emulation
1	Modbus and DF1 protocol emulation
2	Modbus and DNP 3.0 (Level 2) protocol emulation
3	Modbus, DF1 and DNP 3.0 (Level 2) protocol emulation
Code	Select: Programming Environment
0	TelePACE Ladder Logic and C Language firmware loaded - IEC enabled (programming tools sold separately)
1	IEC 61131-3 and C Language firmware loaded - TelePACE enabled (programming tools sold separately)
Code	Select: Analog Inputs
A	8 selectable as 0-20, 4-20mA, 0-5V or 0-10V
Code	Select: Digital Inputs/Outputs
B	16 DI (12/24V) and 10 dry contact relays
C	16 DI (48V) and 10 dry contact relays
D	16 DI (120V) and 10 dry contact relays
E	16 DI (240V) and 10 dry contact relays
F	16 DI (12/24V) and 10 DC solid-state relays, ATEX and IECEx certification
G	16 DI (48V) and 10 solid-state relays
H	16 DI (120V) and 10 solid-state relays
I	16 DI (240V) and 10 solid-state relays
Code	Select: Analog Outputs
0	None
1	2-channel analog output option, 0 - 20mA
Code	Select: Integrated Communication Interfaces
0	None
FreeWave & MDS Radios (requires one RS-232 port on controller)	
1	900MHz FreeWave spread-spectrum radio <i>Consult CMI for availability in your market area</i>
2	2.4GHz FreeWave spread-spectrum radio <i>Consult CMI for availability in your market area</i>
A	900MHz MDS spread-spectrum radio <i>Consult CMI for availability in your market area</i>
Integrated SCADAWave Radio (requires one RS-232 port on controller)	
B	900MHz SCADAWave spread-spectrum radio with encryption, 902-928MHz (FCC / IC)
C	900MHz SCADAWave spread-spectrum radio with encryption, 915-928MHz (AUS)
D	900MHz SCADAWave spread-spectrum radio 915-928MHz (BRAZIL)
E	900MHz SCADAWave spread-spectrum radio 921-928MHz (NZ)
J	2.4GHz SCADAWave spread-spectrum radio, ETSI/100mW, ATEX (EUROPE)
K	2.4GHz SCADAWave spread-spectrum radio with Encryption, 500mW (CANADA, USA & AUSTRALIA)
L	2.4GHz SCADAWave spread-spectrum radio, 500mW (OUTSIDE OF EUROPE, CANADA, USA & AUSTRALIA)