

SCADAPack³³⁰ | 334

Features:

- High performance 32-Bit processor
- 10/100BaseT Ethernet port
- Two USB 2.0 compliant ports (host and peripheral)
- Configurable power saving modes (12mW in sleep mode)
- Three serial ports (RS-232, two RS-232/RS-485)
- Optional 5607 lower I/O module
- Optional integrated spread spectrum radio
- 2 or 4 run custody flow computer using RealFLO 6
- Support for 32 independent C/C++ applications
- Class I, Division 2 Hazardous Area Rating
- ATEX II 3G and IECEx: Ex nA IIC T4 per EN 60079-15, protection type n (Zone 2) *
- 3-year warranty on parts and labor.



The Control Microsystems SCADAPack^{330/334} is the latest offering in the 300 series of programmable logic controllers. This controller packs the same I/O punch as the original SCADAPack, but with the advantages of the 300 series platform, there's more: high-performance 32-bit processing, high speed LAN and USB communication and advanced power-saving features – all this in the smallest footprint yet. Additionally, the product has an integrated power supply, analog and digital I/O, serial communication capabilities, and turbine flow meter counter inputs. The SCADAPack^{330/334} uses industry-standard Modbus and DNP3 serial protocols as well as Modbus TCP and UDP-based Ethernet protocols, and can be programmed locally or remotely through a choice of flexible programming languages.

Overview:

Compact and Powerful - The SCADAPack^{330/334} Programmable Logic Controller provides Remote Terminal Unit (RTU) functionality with flexible programming options. The unit is programmable in either TelePACE Relay Ladder Logic or the IEC 61131-3 family of languages and provides sophisticated control functionality such as flow calculation and PID control. Additionally, up to 32 independent C/C++ applications can be loaded, executed and deleted in parallel with standard controller logic to provide maximum flexibility and performance. The central processing unit includes a 32-bit microprocessor with 16MB FLASH ROM, and 4MB CMOS RAM for use in firmware and application programming. Custom power-saving features include configurable power modes, such as Reduced Power Mode and Sleep Mode, and control over power consumption by serial/LAN/USB ports. The basic SCADAPack³³⁰ comes with 3 counter inputs (including two turbine meter inputs)

and an internal analog input measuring incoming power supply voltage for solar applications. With the addition of the optional 5607 lower I/O module, the SCADAPack³³⁴ features an extra 16 digital inputs, 10 digital outputs, 8 analog inputs and 2 analog outputs, and support for Control Microsystems Series 5000 I/O expansion modules further increases the controller's I/O capacity and versatility. With all these features, the SCADAPack^{330/334} is the right controller for a wide variety of process control and metering connections.

Flexible Communications - As with all SCADAPack controllers, the SCADAPack^{330/334} offers a variety of communication modes making it one of the most communication-rich controllers on the market. The SCADAPack^{330/334} includes two USB 2.0 compliant ports providing low speed (1.5MB/s) and full speed (12MB/s) communication: a peripheral port to connect the SCADAPack^{330/334} to PC-based applications, and a powered host port to attach third-party hardware such as mass storage devices (memory sticks). Two RS-232/485 and one RS-232 serial communication port offer Modbus RTU, Modbus ASCII and DNP3 communication protocols. For applications requiring high-speed Ethernet LAN or WAN communication, a fully integrated 10/100BaseT Ethernet port furnishes Modbus/TCP, Modbus RTU/ASCII in UDP, DNP in TCP, DNP in UDP and ICMP (ping). For those challenging remote applications, a fully integrated, license-free spread spectrum wireless module is available at 900 MHz and 2.4 GHz. The SCADAPack^{330/334} also supports external radios and dial-up modem communication.

Applications and Benefits:

The SCADAPack^{330/334} is designed with power conservation in mind. It's a natural

choice for applications that require low power operation in tandem with a varied mix of analog and digital I/O as well as multiple communication ports. When coupled with industry-standard Modbus and DNP protocols, the SCADAPack^{330/334} integrates easily with ClearSCADA SCADA management software and Vision operator interface terminals, as well as a wide range of third-party SCADA software, MMIs, DCS systems, intelligent instrumentation and remote I/O control applications.

A flexible controller that can be used in both Modbus master and slave configurations, the SCADAPack^{330/334} supports report-by-exception and store and forward messaging and can also make the most of DNP's advanced protocol functionality, including maintenance polling, unsolicited messaging and data-backfilling. For oil and gas applications, the RealFLO enabled SCADAPack^{330/334} flow computer furnishes two or four run custody transfer options. In the water and wastewater sector, the SCADAPack^{330/334} is well suited for use in lift and pump stations, dam control systems and environmental monitoring solutions. In solar powered applications the SCADAPack^{330/334} offers further cost reduction by allowing smaller solar panels and batteries to be used. The overall small footprint also enables the use of compact mounting enclosures for those applications where space is at a premium.

Similar in manufacture to all SCADAPack products, the SCADAPack^{330/334} has conformal coating, and zinc-plated steel system components. Regardless of the specific need, the SCADAPack^{330/334} can provide reliable and compact stand-alone performance in the hazardous environments so often found in SCADA applications.

* 334-based 24V DI/Solid State Relay version only, Wireless versions pending approval

Specifications **(P330: 5210 controller board only)**

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	3, internal, measure incoming power supply voltage for solar applications, battery voltage, and controller temperature
Counter Inputs	1, 0-10Hz or 0-5kHz (dry contact) 2, 0-10kHz (turbine or dry contact)
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
Serial Port COM3	RS-232 port, 8-pin modular RJ45 jack, full or half duplex with RTS/CTS control and Vision OIT power control
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
Ethernet Port	RJ45, 10/100BaseT
Ethernet Protocols	Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Network Protocols	IP, ARP, TCP, TFTP, UDP and ICMP
USB Host Port	USB 2.0 compliant "A"-type receptacle, provides up to 100mA at 5V
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	6-pole removable terminal block, 12 to 22AWG, 15A contacts
Dimensions	5.65 inch (144mm) wide, 5.00 inch (127mm) high, 1.80 inch (45mm) 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 Input	11 - 30VDC, 12mW at 12V during Sleep 510mW at 12V during normal operation. 32MHz, LEDs off, no expansion, LAN and USB disabled 320mW at 12V during reduced power mode operation. 12MHz, LEDs off, no expansion, LAN and USB disabled 1.2W at 12V during normal operation. 32MHz, LEDs off, no expansion, LAN enabled and USB disabled Add 25 to 100mW when enabling the LEDs 8.5W at 24V maximum, 5V supply fully loaded
Warranty	3 years on parts and labor

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

² Not applicable in all countries.

Specifications (P334: 5210 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, 0-20/4-20mA / 0-5/0-10V (15-bit) software configurable 3, internal, measure incoming power supply voltage for solar applications, battery voltage, and controller temperature
Analog Outputs	Standard: None 2, 0-20/4-20mA (12-bit) with optional 5305 on 5607 I/O board
Digital I/O	16, 12/24V, 48V, 115/125V, 240V digital inputs 10, relay outputs (dry contact or DC solid state)
Counter Inputs	1, 0-10Hz or 0-5kHz (dry contact); 2, 0-10kHz (turbine or dry contact)
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
Serial Port COM3	RS-232 port, 8-pin modular RJ45 jack, full or half duplex with RTS/CTS control and Vision OIT power control
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
Ethernet Port	RJ45, 10/100BaseT
Ethernet Protocols	Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Network Protocols	IP, ARP, TCP, TFTP, UDP and ICMP
USB Host Port	USB 2.0 compliant "A"-type receptacle, provides up to 100mA at 5V
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: 5210 Controller Board:	11 - 30VDC, 12mW at 12V during Sleep 510mW at 12V during normal operation. 32MHz, LEDs off, no expansion, LAN and USB disabled 320mW at 12V during reduced power mode operation. 12MHz, LEDs off, no expansion, LAN and USB disabled 1.2W at 12V during normal operation. 32MHz, LEDs off, no expansion, LAN enabled and USB disabled Add 25 to 100mW when enabling the LEDs 8.5W at 24V maximum, 5V supply fully loaded
Power: 5607 I/O Module:	11 - 30VDC, 10.3mA plus analog outputs 325mA (max.) at 5V required from 5210 controller board
Warranty	3 years on parts and labor

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

2 Not applicable in all countries.

Model Code

P334-1A00-AB00 represents a sample code for a SCADAPack³³⁴, 5607 I/O board and Modbus protocol emulation

Model	Select: Controller
P330	SCADAPack ³³⁰ comes with 3 Counter Inputs
P334	SCADAPack ³³⁴ , with Model 5607 I/O board, comes with 8 AI, 16 DI, 10 DO and 3 Counter Inputs
Code	Select: Communication Ports
1	6 Communication Ports: 2 RS232/RS485 (RJ45), 1 RS232 (RJ45), 2 USB (A & B Type), 1 Ethernet (RJ45)
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	P330: None – P334: 8 selectable as 0-20, 4-20mA, 0-5V or 0-10V
Code	Select: Digital Inputs/Outputs
A	P330 - None
B	P334 - 16 DI (12/24V) and 10 dry contact relays
C	P334 - 16 DI (48V) and 10 dry contact relays
D	P334 - 16 DI (120V) and 10 dry contact relays
E	P334 - 16 DI (240V) and 10 dry contact relays
F	P334 - 16 DI (12/24V) and 10 DC solid state relays, ATEX and IECEx certification
G	P334 - 16 DI (48V) and 10 solid state relays
H	P334 - 16 DI (120V) and 10 solid state relays
I	P334 - 16 DI (240V) and 10 solid state relays
Code	Select: Analog Outputs
0	None
1	P334 only - 2 channel analog output option, 0 - 20mA
Code	Select: Integrated Communication Interfaces
0	None

FreeWave & MDS Radios

1	900Mhz FreeWave Spread Spectrum Radio *Consult CMI for availability in your market area
2	2.4GHz FreeWave Spread Spectrum Radio *Consult CMI for availability in your market area
A	900MHz MDS Spread Spectrum Radio *Consult CMI for availability in your market area

Integrated SCADAWave Radio

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)