

# SCADAPack100

## Features:

- 4 analog inputs and 6 digital I/O
- Includes one turbine meter/counter input
- 1, RS-232 and 1 configurable RS-232/485 port
- Optional integrated spread spectrum radio
- cULus Class 1, Division 2 Hazardous Area Rating
- RealFLO 6 single run custody transfer flow computer
- 3 year warranty on parts and labor



The Control Microsystems SCADAPack100 controller is one of five available models in the SCADAPack series of programmable logic controllers. As the most compact model in the series, the SCADAPack100 offers high performance with both analog inputs and digital I/O. The product offers Modbus RTU, Modbus ASCII and DNP3 as native protocols and is remotely programmable through a choice of flexible programming languages. As with all SCADAPack products the SCADAPack100 is based on a multiprocessor architecture with a co-processor used for handling the on-board input/output channels.

## Overview:

**Compact and Powerful** - The Control Microsystems SCADAPack 100 PLC provides Remote Terminal Unit (RTU) functionality with flexible programming options. The unit is programmable in Relay Ladder Logic, IEC 61131-3 and multitasking C languages and provides an unlimited number of PID controllers for use in feedback control applications. The central processing unit includes a 16-bit CMOS microprocessor with 1 MB CMOS RAM and 512 kB Flash ROM for use in firmware and application programming. The unit offers a flexible set of mixed process input/outputs including: 6 universal digital I/Os, 1 pulse counter

input, 3 selectable analog inputs, and measurement of voltage applied to the power input terminals (0-32VDC).

**Flexible Communications** - The SCADAPack100 provides one RS-232 and one RS-232/485 serial communication ports offering Modbus RTU, Modbus ASCII and DNP3 communication protocols. For those challenging remote applications a fully integrated, license-free spread spectrum wireless module is available at 900 MHz and 2.4 GHz. The SCADAPack100 also supports external radios and modems using Hayes AT commands, and can be programmed using powerful C tools for application specific protocols.

## Applications and Benefits:

As a stand-alone product, the SCADAPack100 offers a cost effective and powerful logic controller that can be used in either Master or Slave configurations. Special features include report-by-exception and store and forward capabilities. Real time communications using industry standard Modbus protocols simplifies integration with SCADA software, MMIs, DCS systems, intelligent instrumentation and remote I/O control applications.

With its compact footprint and low power consumption, the

SCADAPack100 is a natural choice for applications where periodic measurements of process variables or a limited number of control loops are required. As a low cost solution this product can be deployed in a wide variety of applications including use in water and wastewater pumping station controls, metering stations and valve chambers. In treatment plants the SCADAPack100 can be applied to filters, clarifiers and chemical injection systems. Examples of Oil and Gas applications include use with tertiary injection controllers and turbine flow meter sensors. Using the optional RealFLO 6 software this unit is ideal as a low power gas flow computer capable of calculating a single flow run.

Similar in design to all other SCADAPack products, the SCADAPack100 is fabricated with conformal coatings, gold-plated machined sockets and zinc plated steel system components. Regardless of the specific need, the SCADAPack100 can provide reliable and compact stand-alone performance in the hazardous environments so often found in SCADA applications.

## Specifications

Controller	
<b>Processor</b>	CPU: 16-bit CMOS, 14.74MHz clock, integrated watchdog timer CPU co-processor: 14.74MHz clock (used for I/O processing)
<b>Memory</b>	1 MB CMOS RAM, 512kBytes flash ROM
<b>Non Volatile RAM</b>	CMOS RAM with lithium battery retains contents for 2 years with no power
I/O	
<b>Analog Inputs</b>	3 voltage or current selectable 5V / 20mA, 12 bit resolution 1 internal at 32.768VDC, 12 bit resolution
<b>Digital I/O</b>	6 points, dry contact input, 1.0A max output rating
<b>Counter Inputs</b>	1, maximum 5kHz, jumper selectable dry contact or turbine input
Communications	
<b>Communication Port COM1</b>	RS-485 serial port, 2 pole removable terminal block, 2 wire half duplex or RS-232 serial port, Data Terminal Equipment (DTE), 8 pin modular jack Full or half duplex, Implemented Td, Rd, +5V
<b>Communication Port COM2</b>	RS-232 serial port, Data Terminal Equipment (DTE), 8 pin modular jack Full or half duplex with RTS/CTS control. Implemented Td, Rd, CTS, RTS, DCD, DTR, +5V
<b>Baud Rates COM1 &amp; COM2</b>	300, 600, 1200, 2400, 4800, 9600, 19200, 38400
<b>Serial Protocols</b>	Modbus RTU, Modbus ASCII, DNP3, DF1
<b>Serial Protocol Modes</b>	Slave, master, master/slave, store and forward
<b>Wireless <sup>1</sup></b>	Spread spectrum radio at 900MHz <sup>2</sup> and 2.4 GHz <sup>2</sup>
General	
<b>I/O Terminations</b>	5 and 12 pole, removable terminal blocks. 12 to 22 AWG. 15A contacts
<b>Dimensions</b>	5.65 inch (144mm) wide, 5.00 inch (127mm) high, 1.80 inch (45mm) deep
<b>Packaging</b>	Corrosion resistant zinc plated steel with black enamel paint
<b>Environment</b>	5% RH to 95% RH, non-condensing -40°F (-40°C) to 158°F (70°C)
<b>Power Input:</b>	11 - 30 VDC, 2.9W max
<b>Warranty</b>	3 years on parts and labor

<sup>1</sup> Available only with optional integrated wireless modules or with stand-alone wireless modules.

<sup>2</sup> Not applicable in all countries.

## Model Code

**P100-1A20-AA00** represents a sample code for a P100 with DNP, 0-5V inputs

<b>Model</b>	<b>Select: Controller</b>
<b>P100</b>	SCADAPack 100, comes with 3 Analog Inputs, 6 configurable Digital I/O, 1 Accumulator
<b>Code</b>	<b>Select: Communication Serial Ports</b>
<b>1</b>	2 Communication Ports (RJ45 Type) : 1 RS-232 and 1 RS232/485
<b>Code</b>	<b>Select: Memory Configuration</b>
<b>A</b>	1 MB CMOS RAM (512K OS, 512K APP), 512K FLASH ROM
<b>Code</b>	<b>Select: Protocol Option</b>
<b>0</b>	Modbus protocol emulation
<b>1</b>	Modbus and DF1 protocol emulation
<b>2</b>	Modbus and DNP 3.0 (Level 2) protocol emulation
<b>Code</b>	<b>Select: Programming Environment</b>
<b>0</b>	TelePACE Ladder Logic and C Language firmware loaded - IEC enabled (Programming Tools sold separately)
<b>1</b>	IEC 61131-3 and C Language firmware loaded - TelePACE enabled (Programming Tools sold separately)
<b>Code</b>	<b>Select: Analog Inputs</b>
<b>A</b>	3 Analog Inputs, individually selectable as 0-20mA or 0-5 volts
<b>Code</b>	<b>Select: Digital Inputs/Outputs</b>
<b>A</b>	6 configurable Digital I/O, individually selectable as Digital Input (Dry Contact) or Digital Output (Open Drain)
<b>Code</b>	<b>Select: Analog Outputs</b>
<b>0</b>	None
<b>Code</b>	<b>Select: Integrated Communication Interfaces</b>
<b>0</b>	None
<b>1</b>	900Mhz FreeWave Spread Spectrum Radio * Not available in all areas – consult CMI for availability in your market area
<b>A</b>	900 MHz MDS Spread Spectrum Radio * Not available in all areas - consult CMI for availability in your market area
<b>2</b>	2.4GHz FreeWave Spread Spectrum Radio * Not available in all areas – consult CMI for availability in your market area

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[www.controlmicrosystems.com](http://www.controlmicrosystems.com)

Within North America: (888) 267-2232 ■ Outside North America: (613) 591-1943 ■ Ottawa ■ Calgary ■ Denver ■ Houston ■ Melbourne ■ Leiden

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