

SCADAPackER Programmable Automation Controller

Features:

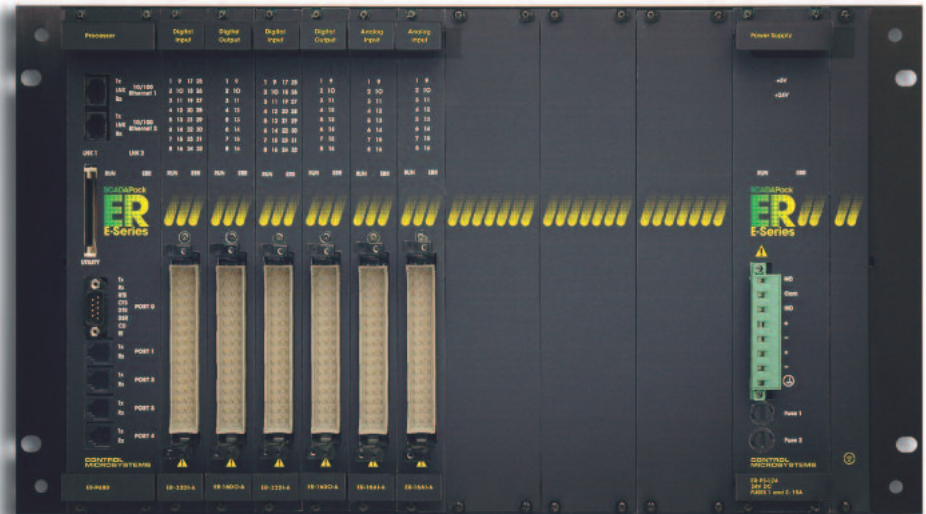
- Flexible Rack-Mount Design
- Native DNP3 Architecture
- Embedded Sequence of Events
- Data Concentrator Functionality
- Hot Swappable I/O Modules
- Dual 100Mbps Ethernet

The SCADAPackER is the first rack-mount system in the SCADAPack E-Series family of controllers. Offering flexible solutions in applications requiring high-speed control and monitoring, the SCADAPackER satisfies a wide range of I/O requirements. The product combines native DNP3 protocol, embedded Sequence of Events (SOE) logging and data concentrator functionality to provide cost-effective solutions for the management of critical real-time processes. With hot-swappable I/O modules and industry standard IEC61131-3 programming tools, the SCADAPackER is flexible and easy to use.

The SCADAPackER is backed by a three-year warranty and a comprehensive customer support program.

Rack-Mount Automation Controller

With its rack-mount design the SCADAPackER brings an enhanced level of flexibility and I/O density to SCADA system control panels. The communications/ processor, power supply and optional I/O modules are consolidated within a single 19" rack, providing high-speed control and



monitoring facilities with high I/O point concentration. This configuration is well suited for applications with a large number of rapidly processed I/O points, such as today's demanding power substation and distribution systems.

Hardware features include:

- 19" (483mm) rack, 16 unit width
- 32-bit embedded processor module
- 14 slots available for I/O and power supply modules
- Three types of hot-swappable I/O modules are available:
 - Digital Input: 32 input points per module
 - Digital Output: 16 relay output points per module
 - Analog Input: 16 input points per module
 - Analog Output: 4 output points per module

Flexible, Intelligent Communications

With a selection of communication ports and industry-proven protocols, the SCADAPackER effortlessly meets the communication requirements of today's sophisticated SCADA systems. Using Ethernet or serial based media the SCADAPackER efficiently transports large quantities of reliable process data from field-based controllers to collection and archiving sites. Using the highly intelligent DNP3 protocol, the SCADAPackER seamlessly integrates into existing communication infrastructure while guaranteeing data sent to the host is of the highest quality.

Communication highlights include:

- DNP3 (Subset Level2), TCP/IP, Modbus, IEC60870-5-101 and IEC60870-5-103 protocols
- Ethernet, radio, dial-up and direct-wired serial connections
- Dual 10/100 BaseT Ethernet ports
- Five serial ports (RS-232 and/or RS485)

User Friendly Programming Environment

The SCADAPacker provides automated logic control facilities through the use of industry-standard IEC61131-3 programming tools. Complex control algorithms, which are efficiently developed using any of the five IEC61131-3 languages, execute at high speed with the built-in IEEE floating-point processor. Applications originally developed for other controllers with IEC61131-3 tools are readily ported over and adapted for use with the SCADAPacker.

Programming features include:

- Support for IEC61131-3 standard languages: LD, FBD, SFC, ST and IL
- Re-useable custom functions and function blocks
- PID control, raw ASCII character handling and other functions included

- Offline logic simulation mode
- Remote or local diagnostics, configuration, programming and debugging through all supported communication paths

Built-in Versatility and Reliability

The SCADAPacker stands out as one of the SCADA industry's most versatile controller. Powerful features, such as DNP3, TCP/IP and source/destination routing, make the SCADAPacker an essential component in a wide variety of applications containing third-party software and hardware elements.

Features include:

- **Sequence of Events:** With DNP3, data is time-stamped and buffered locally with a resolution of 1mS. DNP3 hosts can retrieve this data at timed intervals or have the data sent as unsolicited messages. When teamed with ClearSCADA SCADA Management Software, DNP3 provides automatic data back-filling of buffered data into the historian.

Multi-Master and Data Concentrator:

By simultaneously supporting up to three DNP3 masters on a network and by concentrating data from other DNP3 and 60870-5-103 devices, network data is reliably and efficiently managed.

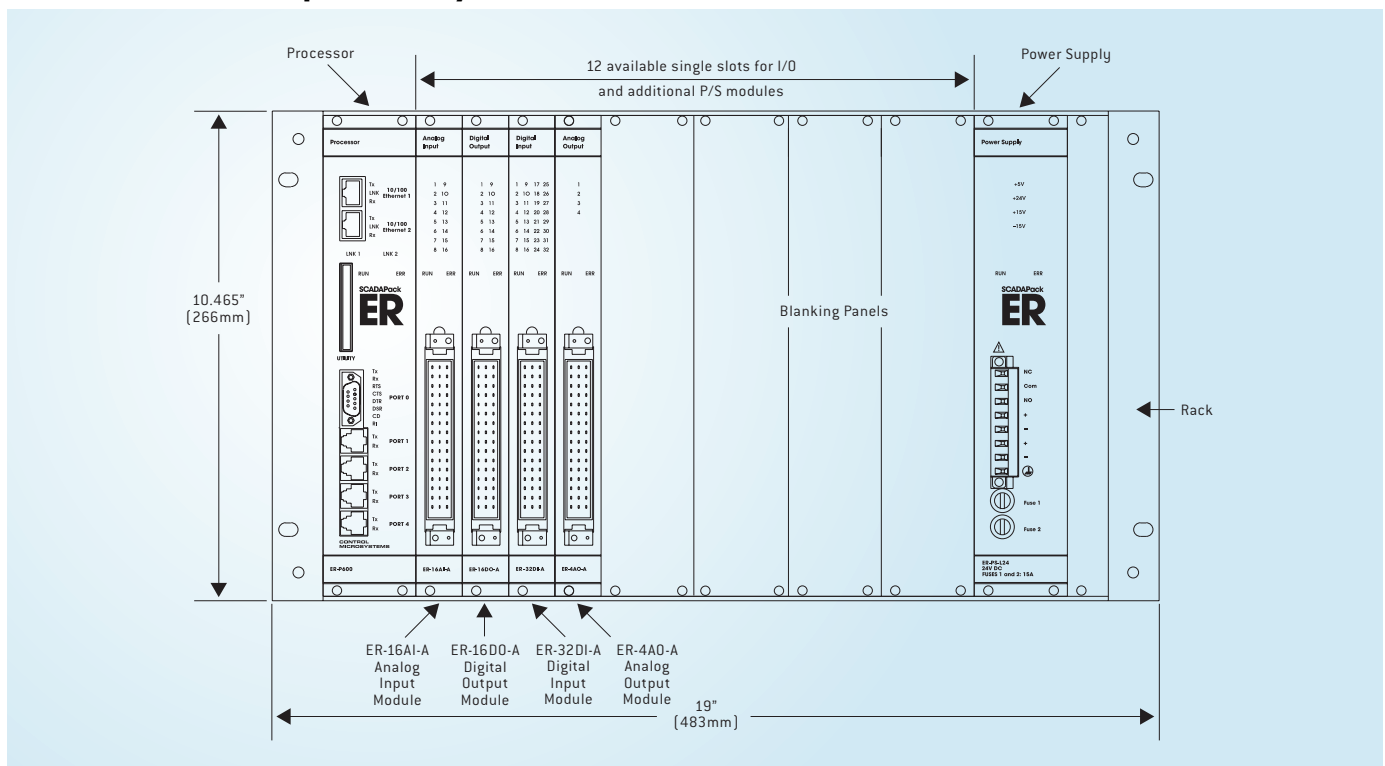
Source/Destination Routing:

Intrinsic source/destination routing functions ensure that the SCADAPacker easily integrates into complex communication networks, with area filtering, message forwarding and other techniques being employed to minimize network traffic.

TCP/IP Communications:

A large suite of TCP/IP communications is supported, including NTP time synch and NYP GPS receiver, BOOTP for remote I/O, TELNET for administration and FTP for remote file management.

SCADAPacker Component Layout



Specifications

General	
Installation	19" (483mm) rack-mount chassis, housing processor and I/O modules
Number of Modules	Processor, power supply and 12 I/O modules
Operating Temperature	14°F to 140/149°F [-10°C to 60/65°C] (refer to individual module specifications)
Humidity	10 to 95% RH (non-condensing)
Processor Module:	
ER-P600	
Processor	AMD Elan™ SC520 32-bit embedded processor, 100MHz Memory: 128MB SDRAM, 32MB Flash ROM, 2MB SRAM (battery-backed), 512KB Boot ROM
Communication Ports	5 serial ports. All default RS-232 Port 0: RS-232 (DB9 with full hardware flow control) Ports 1, 4: RS-232 Ports 2, 3: RS-232 / RS-422 / RS-485 Ethernet: Dual 10/100BaseT UTP
Utility Port	Compact Flash Utility Socket 1
Power Supply Modules:	
Module Types	ER-PS-L24, ER-PS-L48, ER-PS-L110, ER-PS-N24
Input Voltage	ER-PS-L24: Isolated 24Volt DC (18-36VDC) ER-PS-L48: Isolated 48Volt DC (36-72VDC) ER-PS-L110: Isolated 110Volt DC (82-182VDC) ER-PS-N24: Non-Isolated 24Volt DC only
Power Rating	ER-PS-L24: 100W ER-PS-L48, ER-PS-L110, ER-PS-N24: 150W
Isolation	ER-PS-L24, ER-PS-L48, ER-PS-L110: 2.5kV ER-PS-N24: None
Replacement Mode	Hot-Swap - All models except ER-PS-N24
Digital Input Module	
ER-32DI-A	
Number of Inputs	32
Type of Input	Current sink, 3mA per channel
Input Voltage Range	24 - 150VDC
Isolation	2.5kVrms minimum
Sequence of Events Detection	100µS
Input Types Supported	Single point, double point, BCD inputs and Counter inputs (configured from RTU processor)
Channels Per Common	8
Digital State Recording	State inversion, configured per input
Debounce	Adjustable per channel
Counter Resolution	16-bit hardware counter per channel 16-bit or 32-bit software counter derived from hardware counter
Max. Counter Frequency	5kHz - every input
Replacement Mode	Hot-Swap

Specifications

Digital Output Module

ER-16DO-A

Number of Outputs	16
Type of Output	Mechanical relay, 3-terminal connection (NO/Common/NC)
Contact Rating	Max. switch voltage: 150VDC, 130VAC ; Max. switch current: 1.75A resistive, 1A inductive
Isolation	2.5kVrms channel to backplane ; 1.5kVrms channel to channel
Operational Mode	Latched or Pulsed (software controlled)
Feedback	Coil current sensor activates LEDs and reports output channel quality via software
Replacement Mode	Hot-Swap

Analog Input Module

ER-16AI-A

Number of Inputs	16
Type of Input	Individual, isolated current or voltage
Ranges	0-20mA, 4-20mA, +/-10mA ; 0-5V, 1-5V, 0-10V, +/-10V
Isolation	200Vrms channel to channel ; 1kVDC each channel to RTU logic 2.5kVrms each channel to RTU logic (optional)
Resolution	16-bit (uni-polar modes); 15-bit plus sign (bi-polar modes)
Accuracy	0.05% initial accuracy ; Max. of 0.05% drift across temperature range (1-5V mode)
Calibration	Independent Current mode / Voltage mode calibration stored on the module
Default Factory Calibration	4-20mA (Current mode) ; 1-5V (Voltage mode)
Replacement Mode	Hot-Swap

Analog Output Module

ER-4AO-A

Number of Outputs	4
Type of Outputs	Individually isolated, current or voltage
Ranges	4-20mA, 1-5V
Isolation	2.5kVrms channel to channel 2.5kVrms I/O terminals to internal electronics (tested for 1 minute)
Resolution	16-bit (uni-polar modes); 15-bit plus sign (bi-polar modes)
Accuracy	0.05% Initial accuracy Maximum of 0.1% drift across temperature range
Calibration	Independent Current mode / Voltage mode calibration stored on the module
Default Factory Calibration	4-20mA (Current mode) ; 1-5V (Voltage mode)
Replacement Mode	Hot-Swap