

SCADAPack ES

Smart RTU





Meeting the demands for high-speed distributed control and automation systems, Schneider Electric offers the SCADAPack ES as an advanced Smart RTU. Our highest performance Smart RTU built on a native DNP3 architecture, the SCADAPack ES is ideally suited to applications requiring medium to large I/O counts, high speed time stamping and data capture. This product provides 10mS sequence of events (SOE) monitoring capability, two high-speed LAN ports, five serial ports, and support for industry standard protocols including DNP3, Modbus, and IEC60807-5. The SCADAPack ES offers two user-programmable applications in the IEC61131-3 programming standard, and is optionally configurable directly from ClearSCADA host software.

IEC60870-5 protocol is KEMA-certified for both IEC60870-5-101 and IEC60870-5-104.

Product Data Sheet SCADAPack ES

Specifications



SCADAPack ES

Controller

Processor	AMD 586 Elan SC520 32-bit embedded processor, 100MHz
Memory	128MB SDRAM, 32MB Flash, 2048KB SRAM, 512KB Boot Flash
Event Logging Capacity	40,000 events
Maximum Database Points	20,000 typical
Temperature	-40°C (-40°F) to 65°C (150°F) operating, -40°C (-40°F) to 70°C (158°F) storage
Humidity	10 to 95% RH (non-condensing)
Input Voltage Range	10 to 30VDC
Power Requirements	<ul style="list-style-type: none"> • 6.3W at 24VDC minimum • Add 3.0W with all relays energized • Add 6.5W for fully loaded auxiliary power supply • Add .72W per analog output
Auxiliary Output Supply	<ul style="list-style-type: none"> • Isolated 24VDC 200mA max. (optional) • Isolated 10VDC 500mA max. (optional) • Isolated 5VDC 1.0A max. (optional, required for I/O Expansion modules or Operator Interface Terminal)
Isolation	Power input and Auxiliary Output are functionally isolated from each other and all IO points
Communication Ports	<ul style="list-style-type: none"> • Port 0, Port 1 and Port 4: RS-232; Port 2 and Port 3: RS-232/RS-422/RS-485 (software selectable) • Ethernet: Dual 10/100Base-T UTP ports (transformer isolated) Note: All RS-232 ports are static protected to ±15kV (IEC 801-2, Air-gap discharge)
Protocols	<ul style="list-style-type: none"> • Modbus, DNP3, Secure Authentication (optional), AGA-12 Encryption (optional), Modbus/TCP, TCP/IP (standard) • IEC60870-5-103 (serial master), -101 (serial slave), -104 (Ethernet slave) optional
Removable Memory Socket	Compact Flash Type 1: buffered, hot-swap capable. Supports up to 4GB card (compact flash card not included)
Dimensions	11.81 inch (300mm) wide, 6.89 inch (175mm) high, 1.57 inch (40mm) deep

Digital Inputs

Configuration	16 or 32 inputs
Normal Operation Range	10 - 30VDC
Sequence of Events Detection	10mS
Channels Per Common	8
Inversion	State inversion per channel
Debounce	Adjustable per channel
Counters	0-40Hz and 0-1kHz counter channels (shared with digital inputs)

Digital Outputs

Configuration	8 or 16 outputs
Type	Form C SPDT relay, 3-terminal connection (NO/Common/NC), Non-latching
Isolation	500VAC minimum to RTU electronics
Max switching voltage	30 VDC, 25VAC
Max switching load	60W / 50VA (2A)

Specifications continue on the next page

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Specifications



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Analog Inputs

Configuration	6 or 12 inputs
Type	Unipolar
Resolution	12-bit, 0.1% of full scale at 77°F (25°C), ±0.3% over temperature range
Isolation	Isolated from channel to channel and from RTU electronics. Analog inputs must be within 50 Vac or 7 VDC of chassis or earth
Range	4-20mA or 1-5V switch selectable

Analog Outputs

Configuration	2 or 4 outputs
Type	Unipolar
Resolution	12 bit ±0.1% at 77°F (25°C) with 250ohm load, ±0.5% over temperature range
Isolation	Optical. 500Vac minimum to RTU electronics
Range	4-20mA (voltage output available with external precision resistor)
Load Range	<ul style="list-style-type: none"> • 0-100 ohms with 9V supply • 150-1150 ohms with 30V supply

Additional I/O

I/O Expansion	Supported modules: 5304, 5405, 5411, 5505, 5506 and 5606
SCADAPack ES	Support for additional multi-dropped ES Smart RTU, via serial or Ethernet links

Certifications

Safety	c(CSA)us. CAN/CSA-C22.2 No. 61010-1. Requires the use of SELV power supplies on all power and IO points for compliance
Hazardous Locations	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Groups A, B, C and D (optional)

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.

Product Data Sheet SCADAPack ES

Model Code

	TBUP500-1A00-AE00N represents a sample code for a SCADAPack ES with 16 D/I, 8 D/O, 6 A/I and 2 A/O			
Model	Select: Controller			
TBUP500	SCADAPack ES			
Code	Select: Communication Ports			
1	3 RS232, 2 RS232/485, 2 Ethernet 10/100 BaseT, 1 Compact Flash socket (compact Flash card sold separately)			
Code	Select: Processor/Memory			
A	AMD Elan SC520 CPU, 100MHz, 32MB Operating System FLASH, 128MB volatile SDRAM, 2MB Battery Backed SRAM			
Code	Select: Protocol Option			
0	Modbus, DNP3, DF1, Modbus/TCP, TCP/IP, IEC 60870-5-101/104 Slave (included in all Smart RTUs)			
1	Adds IEC 60870-5-103 Master, Protection Relay Protocol (for data transmission with IEDs)			
Code	Select: SCADA Security			
0	None			
1	AGA-12 Encryption for DNP3			
2	DNP3 Secure Authentication SAV2			
3	DNP3 Secure Authentication with AGA-12			
	Note: The Security Administrator Application must be purchased to generate and manage security keys for Secure Authentication and/or Encryption (AGA-12)			
Code	Select: License Option			
A	None (all units come standard with support for multiple DNP3 Masters - up to 3 Masters)			
B	DNP3 Data Concentrator License - SCADAPack ES acts as a DNP master to collect data from multiple slaves			
Code	Select: I/O Configuration			
	D/I	D/O	A/I	A/O (Some I/O Expansion modules supported)
B	0	0	0	0
E	16	8	6	2
A	32	16	12	4
Code	Select: Power Supply			
0	10-30 Vdc Wide Range Power input, no auxiliary power supply			
1	10-30 Vdc Wide Range Power input, auxiliary power supply with 5 Vdc output (required to power Vision Displays)			
2	10-30 Vdc Wide Range Power input, auxiliary power supply with 10 Vdc output			
3	10-30 Vdc Wide Range Power input, auxiliary power supply with 24 Vdc output			
Code	Select: Approvals			
0	c(CSA) _{US} . CAN/CSA-C22.2 No. 61010-1. Approved - Non-Hazardous Locations			
1	c(CSA) _{US} . CAN/CSA-C22.2 No. 61010-1, Class 1 - Div 2 (Groups A,B,C,D). Approved - Hazardous Locations			
Code	Select: Custom Options			
N	None			
V	Analog Input range set for 1-5v (default range is 4-20mA)			