

SCADAPack 314 | 330 | 334

Smart Remote Terminal Units



Built on the proven SCADAPack™ 300 controller platform that adheres to open standards and can operate in the harsh demands of a remote environment, the SCADAPack 314/330/334 Smart RTUs feature various communication links, a wide range of analog and digital I/O and a 12...30 Vdc supply.

The SCADAPack 314/330/334 Smart RTU helps to ease operations with:

- Simple ladder logic option (Telepace™ Studio)
- 28,192 permanent Modbus™ registers for use with logic and C++ applications
- USB host port (on SCADAPack 330/334) for data logging to USB memory stick
- Up to 39 integrated digital/analog inputs/outputs, and more with I/O expansion modules
- Advanced power management
- Tool-less DIN rail mounting system
- IP2x terminal blocks

- Operation from -40...+70 °C (-40...+158 °F)

- Cost-effective, compact form factor

And provides powerful software tools and firmware features:

- ClearSCADA™ driver for Realflo™ remote configuration and data acquisition
- Optional open-standard IEC 61131-3 programming environment
- C/C++ programming support
- Open-standard industrial protocols Modbus RTU/TCP/UDP and DF1 master/slave, and open-standard telemetry protocol DNP3 level 2
- Store & forward mechanism between upstream and downstream SCADAPack 300 controllers
- Realflo flow computer for gas and liquids (including specific protocols used for Flow Measurement: Realflo Modbus and Enron Modbus)

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Specifications – General characteristics

Controller

Processor	<ul style="list-style-type: none"> 32-bit ARM7 microcontroller, 32 MHz clock, integrated watchdog timer Microcontroller, co-processor, 20 MHz clock
Memory	<ul style="list-style-type: none"> 16 MB FLASH ROM, 4 MB CMOS RAM, 4 kB EEPROM CMOS SRAM with lithium battery retains contents for 2 years with no power
Datalog Capacity	465,000 words
File system Typical storage	Internal: 6 MB, external : up to 32 GB on USB memory stick

Communications

Serial Port : COM1, COM2	RS-232 port, 8-pin modular RJ45 jack, full or half duplex, or RS-485 port, 2-wire, half-duplex, supports baud rates up to 115,200 bps in RS-232 mode
Serial Port : COM3	P330/P334 only, RS-232 port, 8-pin modular RJ45 jack, full or half duplex with RTS/CTS control and operator interface power control, supports baud rates up to 115,200 bps
Embedded Wireless	The controller may be equipped with an embedded license-free radio module (different options in 900 Mhz or 2.4 Ghz) that uses one of the serial ports
Serial Protocols	Modbus slave/master, DF1 master/slave, DNP3 level 2 slave
Ethernet port (330/334 only)	8-pin modular RJ45 jack, 10/100 Mbps UTP (10/100Base-T), transformer-isolated
IP Protocols (330/334 only)	<ul style="list-style-type: none"> Modbus/TCP Server, Modbus/TCP Client, Modbus RTU in TCP Client , DNP3 level 2 in TCP Slave FTP Server
Store & Forward	Stores & forwards frames between upstream and downstream SCADAPack 300 Smart RTUs
USB Device	USB 2.0 compliant "B"-type receptacle, for local configuration
USB Host	330/334 only: USB 2.0 compliant "A"-type receptacle, supports USB devices up to 32 GB (specific memory sticks supported)

General

Logic Control	SCADAPack Telepace Studio ladder logic or IEC 61131-3 SCADAPack Workbench programming suite (LD, ST, FBD & SFC)
I/O Terminations	SCADAPack 330: 6-pole connector, 0.0810...3.31 mm ² (28...12 AWG), solid or stranded SCADAPack 314/334: 5, 6, 7, 9-pole connectors, 0.0810...3.31 mm ² (28...12 AWG), solid or stranded
Dimensions	SCADAPack 330: 144.0 mm x 140.04 mm x 46.5 mm (5.65 in. wide x 5.53 in. high x 1.83 in. deep) SCADAPack 314/334: 144.0 mm x 181.0 mm x 66.0 mm (5.65 in. wide x 7.13 in. high x 2.60 in. deep)
Enclosure	Corrosion resistant zinc-plated steel with black enamel paint
Environment	<ul style="list-style-type: none"> Conformal coated; 5% RH to 95% RH, non-condensing -40...+70 °C (-40...+158 °F) operating, -40...+85 °C (-40...+185 °F) storage
Shock & Vibration	IEC 60068-2-27 (tested up to 15 g), IEC 60068-2-6
Warranty	3 years on parts and labor

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Specifications – General characteristics

Power Supply

Rated Voltage 12...30 Vdc. Limit voltage: 11.5...32 Vdc; turn on voltage: 10...11.5 Vdc; turn off voltage: 9...10 Vdc

Maximum Power 7 W at 24 Vdc (internal 5 Vdc supply fully loaded)

SCADAPack 330, 314 and 334 support 3 power modes: sleep, normal clock speed and reduced clock speed

• typical power consumption (at 20 °C/ 68 °F):

SCADAPack Model	Ethernet/ USB	DO Relays	At normal clock speed		At reduced clock speed	
			12 Vdc	24 Vdc	12 Vdc	24 Vdc
Sleep mode			80 mW	240 mW	80 mW	240 mW
330	OFF		0.7 W	0.9 W	0.5 W	0.7 W
	ON	—	1.8 W	2.0 W	1.6 W	1.8 W
314	—	OFF	0.9 W	1.2 W	0.7 W	1.0 W
	—	ON	2.9 W	3.4 W	2.7 W	3.2 W
334	OFF		0.9 W	1.2 W	0.7 W	1.0 W
	OFF	ON	2.9 W	3.4 W	2.7 W	3.2 W
	ON	OFF	2.4 W	2.8 W	2.3 W	2.6 W
	ON		4.0 W	4.5 W	3.8 W	4.3 W

Certifications

EMC and Radio Frequency

- ICES-003 Issue 5 August 2012
- CE and RCM markings

General Safety UL 508

Hazardous Locations cCSA_{US} Non-incendive Electrical Equipment for use in Class I, Division 2, Groups A, B, C and D
IECEX/ATEX Class I, Zone 2 (does not include embedded wireless versions)

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Specifications – Digital and Analog Inputs/Outputs

Controller Board

Counter Inputs	<ul style="list-style-type: none"> 1, 0...10 Hz (dry contact) 2, 0...10 kHz (turbine or dry contact)
Internal Power monitor	Power input - analog input and low indication, onboard lithium battery - low indication
Internal Temperature Monitor	Controller temperature range -40...+75 °C (-40...+167 °F)

I/O board (314/334 only)

Analog Inputs	<p>8, software-configurable to 0...20, 4...20 mA , 0...5 or 0...10 V, plus over range</p> <ul style="list-style-type: none"> Resolution: 15-bit ADC (15-bit over the measurement range in 10 V, 14-bit in 20 mA) Accuracy: $\pm 0.1\%$ of full scale at 25 °C (77 °F), $\pm 0.2\%$ over temperature range Input Resistance: 250 Ω or 20 kΩ in 20 mA or 10 V configurations (60 kΩ for 32.768 V) Normal rejection mode: 27 dB at 60 Hz Sampling rate: 170 ms Isolation: 500 Vac from logic and chassis
Analog Outputs	<p>2 (optional), 0...20/4...20 mA, voltage output may be accomplished with external precision resistor</p> <p>Same features as for the analog outputs located on the controller board</p>
Digital Inputs	<p>16, 12...24 Vdc</p> <ul style="list-style-type: none"> Turn on voltage: 9 Vdc (minimum), Turn off voltage: 4 Vdc (maximum) Over-voltage tolerance: 150% sustained over-voltage without foreseeable damage DC input current: 0.67 mA at 24 Vdc Time stamping : 170 ms Isolation: in group of 8, 1500 Vac from logic supply and chassis
Digital Outputs	<p>10, dry-contact relays or solid-state relays (Form A - normally open)</p> <ul style="list-style-type: none"> 5 contacts share one common Isolation: Chassis or logic to contact 1500 Vac (1 min.) <p>Dry-contact relays:</p> <ul style="list-style-type: none"> Contact rating 3 A, 30 Vdc (resistive), 12 A maximum per common <p>Solid state relays:</p> <ul style="list-style-type: none"> Load voltage 60 Vdc maximum Load current 3 A continuous max at 50 °C (122 °F) or 2 A at 70 °C (158 °F)

Additional I/O

I/O Expansion	<p>Supported modules:</p> <ul style="list-style-type: none"> Current 5000 modules (except 5608 and 5610 models) <p>Maximum number of modules per unit:</p> <ul style="list-style-type: none"> SCADAPack 330: 8 (*) SCADAPack 314/334: 7 (*) <p>(*): to reach this limit, additional power supply modules (reference: 5103) are required</p>
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Model Code

SCADAPack 314/330/334

Model	Select: Controller
TBUP314	SCADAPack 314, Controller 32-bit, 8 Analog Inputs, 2 Analog Outputs, 26 Digital I/O, 3 High Speed Counter Inputs
TBUP330	SCADAPack 330, Controller 32-bit, comes with 3 high speed CTR
TBUP334	SCADAPack 334, Controller 32-bit, comes with the above plus additional inputs/outputs

Code	Select: Future Option
1	None

Code	Select: Gas & Liquids Flow Run-Time Option
A	none

Gas Only Flow Computer Options

G	2 Run Gas Flow
F	4 Run Gas Flow
V	2 Run Gas Flow - Gas Transmission Version (Requires Reaflo 6.72+)
W	4 Run Gas Flow - Gas Transmission Version (Requires Reaflo 6.72+)
X	Gas Flow Controller with 3 Pemex Gas Transmission flow runs (requires Reaflo 6.82+)

Gas & Liquids Flow Computer Options

L	Gas & Liq 1: Supports 1 Gas run, 1 Liquid run, and 1 Water run
M	Gas & Liq. 2: Supports 2 Gas runs, 2 Liquid runs, and 2 Water runs
N	Gas & Liq. 3: Supports 3 Gas runs, 3 Liquid runs, and 3 Water runs
P	Liq. 4: Supports 4 Liquid runs and 4 Water runs

Code	Select: Protocol Option
2	Modbus and DNP3 level 2 protocol emulation

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Model Code

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Code	Select: Programming Environment
0	Telepace Ladder logic and C language firmware loaded – IEC 61131-3-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. P314/334 : 8 selectable as 0...20 mA, 4...20 mA, 0...5 Vdc or 0...10 Vdc

Code	Select: Digital Inputs/Outputs
A	P330 only: none
B	P314/334 only: adds 32 16 digital inputs (12...24 Vdc), 10 digital outputs (Dry Contact relay for Class I Div 2, Solid State relay for IECEx/ATEX)

Code	Select: Analog Outputs
0	None
1	P314/334 only: 2 channel Analog Output, 0...20 mA, external DC supply

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Code	Select: Integrated Communications Interfaces
0	None
FreeWave™ & MDS™ Radios (requires one RS232 port)	
1	900 Mhz FreeWave Spread Spectrum Radio (not RoHS compliant)
A	900 MHz MDS Spread Spectrum Radio (not RoHS compliant)
Trio™ Radios - 900 MHz (requires one RS232 port)	
B	900 MHz Trio Spread Spectrum Radio with encryption, 902-928 MHz (FCC / IC)
C	900 MHz Trio Spread Spectrum Radio with encryption, 915-928 MHz (AUS)
D	900 MHz Trio Spread Spectrum Radio, 915-928 MHz (BRAZIL)
E	900 MHz Trio Spread Spectrum Radio, 921-928 MHz (NZ)
Trio Radios - 2.4 GHz (requires one RS232 port)	
J	2.4 GHz Trio Spread Spectrum Radio, ETSI/100 mW, ATEX (EUROPE)
K	2.4 GHz Trio Spread Spectrum Radio with Encryption, 500 mW (CANADA, USA & AUSTRALIA)
L	2.4 GHz Trio Spread Spectrum Radio, 500 mW (OUTSIDE OF EUROPE, CANADA, USA & AUSTRALIA)
Code	
Select: Certifications	
S	With FCC, UL508, CE marking and RCM
X	Adds IECEx/ATEX Class I, Zone 2
U	Adds cCSA _{US} Nonincendive Electrical Equipment for use in Class I, Division 2, Groups A, B, C and D

Note: Accessories sold separately. This product is RoHS-compliant. FreeWave & MDS radios are not RoHS-compliant.

Disclaimer: Schneider Electric reserves the right to change product specifications. For ordering information call direct worldwide: +1 (613) 591-1943; Toll Free within North America: +1 (888) 267-2232 or Email: orderstrss@se.com. For more information visit www.se.com.

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