SCADAPack 32
Smart RTU

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Compared to the SCADAPack 300 platform, the SCADAPack 32 is a higher performance Smart RTU built to meet the demands of larger applications including support for up to 10 gas flow runs. This product offers built-in Ethernet, four serial ports, 8 Mb of SDRAM, an integrated power supply, and a wide range of analog and digital I/O options. Featuring industry-standard Modbus and DNP3 serial protocols, and Modbus TCP and UDP-based Ethernet protocols, the SCADAPack 32 can be programmed locally or remotely through a choice of flexible programming languages. As with all SCADAPack products the SCADAPack 32 is based on a multiprocessor architecture with a coprocessor used for handling on-board input/output channels.

Product Data Sheet SCADAPack 32
Specifications

>	P4A, integrated 5604 I/O board
Controller	
Processor	Hitachi SH-3 32-bit CMOS microcontroller, 120MHz clock, integrated watchdog timer
Memory	8 Mb SDRAM, 4 Mb FLASH, 1 Mb CMOS RAM
Non Volatile RAM	CMOS RAM with lithium battery retains contents for 2 years with no power
I/O	
Analog Inputs	• 8, user selectable 0 - 10V (15 bit) or 0 - 20mA (14 bit) • 1, 0 - 32.678V (10 bit)
Analog Outputs	2 with optional 5305 analog output module, output range 0-20mA
Digital Inputs	4 on controller board - 3 Digital Input/Counter, 1 Interrupt with optical isolation
Digital Outputs	1, 30V / 60mA (used as status output)
Digital I/O (5604 I/O board)	32 configurable as input or output (1 Amp DC max output / dry contact input)
Communications	
Serial Port COM1	Configurable RS-232 or RS-485, 2 wire half duplex or 4 wire full/half duplex
Serial Ports COM2, COM4	• RS-232, DTE, 8 pin modular jack, full or half duplex with RTS/CTS control • Implemented Td, Rd, CTS, RTS, DCD, DTR, +5V
Serial Port COM3	Located on 5604 I/O module. Same specifications as COM2 and COM4
Baud Rates COM1, COM2, COM4	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Baud Rate COM3	1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Serial Protocols	Modbus RTU, Modbus ASCII, DNP3, DF1, PPP
Ethernet Port	RJ45, 10BaseT
Network Protocols	IP: ARP, TCP, TFTP, UDP, ICMP
Ethernet Port Protocols	Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Wireless[1]	Spread spectrum radio at 900MHz[2] and 2.4GHz[2]
General	
I/O Terminations	6, 8, 9 and 10 pole, removable terminal blocks, 12 to 22 AWG, 15A contacts
Dimensions	8.40 inch (213mm) wide, 6.13 inch (155mm) high, 2.80 inch (72mm) deep
Packaging	Corrosion resistant zinc plated steel with black enamel paint
Environment	5% RH to 95% RH, non-condensing, –40°C (–40°F) to 70°C (158°F)
Power Input	11 - 30 VDC, 4.3W typical (10.8W full I/O capacity in use)
Warranty	3 years on parts and labor
Certifications	
Hazardous Locations North America	Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. Temperature Code T4 CSA certified to the requirements of: • CSA Std. C22.2 No. 213-M1987 - Hazardous Locations • UL Std. No. 1604 - Hazardous (Classified) Locations
Safety	CSA ($_c$CSA$_{US}$) certified to the requirements of: CSA C22.2 No. 142-M1987 and UL508. (Process Control Equipment, Industrial Control Equipment) UL ($_c$UL$_{US}$) listed: UL508 (Industrial Control Equipment)

1 Available only with optional integrated wireless modules or with stand-alone wireless modules.
2 Not applicable in all countries.

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Product Data Sheet SCADAPack 32
Specifications

>	P4, integrated 5601A I/O board
Controller	
Processor	Hitachi SH-3 32-bit CMOS microcontroller, 120MHz clock, integrated watchdog timer
Memory	8 Mb SDRAM, 4 Mb FLASH, 1 Mb CMOS RAM
Non Volatile RAM	CMOS RAM with lithium battery retains contents for 2 years with no power
I/O	
Analog Inputs	8, user selectable 0 - 5V (15 bit) or 0 - 20mA (14 bit)
Analog Outputs	2 with optional 5303 analog output module, output range 0-20mA
Digital Inputs	• 4 on controller board - 3 Digital Input/Counter, 1 Interrupt with optical isolation • 16 on 5601A I/O module - 6.5mA typical at 24V and 3.5mA typical at 115V

Digital Outputs	• 1 on controller board , 30V, 60mA (used as status output)
	• 12 on 5601A I/O module - Sealed mechanical relay:
	  • 0.4A at 125 Vrms, 2A at 30V resistive loads
	  • 1.0A at 30V, 0.2A at 125Vrms inductive load with pf=0.4, L/R=7ms
	  • 250Vrms, 220V maximum operating voltage

Communications	
Serial Port COM1	Configurable RS-232 or RS-485, 2 wire half duplex or 4 wire full/half duplex
Serial Ports COM2, COM4	RS-232, DTE, 8 pin modular jack, full or half duplex with RTS/CTS control. Implemented Td, Rd, CTS, RTS, DCD, DTR, +5V
Serial Port COM3	Located on 5601A I/O module. Same specifications as COM2 and COM4
Baud Rates COM1, COM2, COM4	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Baud Rate COM3	1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Serial Protocols	Modbus RTU, Modbus ASCII, DNP3, DF1, PPP
Ethernet Port	10BaseT, RJ45
Network Protocols	IP:ARP, TCP, TFTP, UDP, ICMP
Ethernet Port Protocols	Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Wireless[1]	Spread spectrum radio at 900MHz[2] and 2.4 GHz[2]
General	
I/O Terminations	6, 8, 9 and 10 pole, removable terminal blocks, 12 to 22 AWG, 15A contacts
Dimensions	8.40 inch (213mm) wide, 6.13 inch (155mm) high, 2.80 inch (72mm) deep
Packaging	Corrosion resistant zinc plated steel with black enamel paint
Environment	5% RH to 95% RH, non-condensing, –40°C (–40°F) to 70°C (158°F)
Power Input:	11 - 30 VDC, 3.5W typical all relays off, 6.5W typical all relays on
Warranty	3 years on parts and labor
Certifications	
Hazardous Locations North America	Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. Temperature Code T4 CSA certified to the requirements of: • CSA Std. C22.2 No. 213-M1987 - Hazardous Locations • UL Std. No. 1604 - Hazardous (Classified) Locations
Safety	CSA (cCSA$_{US}$) certified to the requirements of: CSA C22.2 No. 142-M1987 and UL508. (Process Control Equipment, Industrial Control Equipment) UL (cUL$_{US}$) listed: UL508 (Industrial Control Equipment)

1 Available only with optional integrated wireless modules or with stand-alone wireless modules.
2 Not applicable in all countries.

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Product Data Sheet SCADAPack 32
Specifications

>	P4B, integrated 5606 I/O board
Controller	
Processor	Hitachi SH-3 32-bit CMOS microcontroller, 120MHz clock, integrated watchdog timer
Memory	8 Mb SDRAM, 4 Mb FLASH, 1 Mb CMOS RAM
Non Volatile RAM	CMOS RAM with lithium battery retains contents for 2 years with no power
I/O	
Analog Inputs	8, single-ended, software selectable 0-5V / 0-10 V or 0-20mA / 4-20mA (15 bit resolution)
Analog Outputs	2 with optional 5305 analog output module, output range 0-20mA
Digital Inputs	4 on controller board - 3 Digital Input/Counter, 1 Interrupt with optical isolation, 32 on 5606 I/O module: • 0.67 mA typical at 24V on the 12/24V range • 0.37 mA typical at 48V on the 48V range • 0.35 mA typical at 120V on the 115/125V range • 0.35 mA typical at 240V on the 240V range
Digital Outputs	1 on controller board, 30V, 60mA (used as status output) 16 relay outputs on 5606 I/O module - dry contact or DC solid state: • Dry contact rating: 3A, 30VDC or 240VAC (Resistive) • DC solid state rating: 3A, 60 VDC
Communications	
Serial Port COM1	Configurable RS-232 or RS-485, 2 wire half duplex or 4 wire full/half duplex
Serial Ports COM2, COM4	RS-232, DTE, 8 pin modular jack, full or half duplex with RTS/CTS control Implemented Td, Rd, CTS, RTS, DCD, DTR, +5V
Baud Rates COM1, COM2, COM4	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Serial Protocols	Modbus RTU, Modbus ASCII, DNP3, DF1, PPP
Ethernet Port	RJ45, 10BaseT
Network Protocols	IP: ARP, TCP, TFTP, UDP, ICMP
Ethernet Port Protocols	Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Wireless[1]	Spread spectrum radio at 900MHz[2] and 2.4 GHz[2]
General	
I/O Terminations	5, 6, 8, 9 and 10 pole, removable terminal blocks, 12 to 22 AWG, 15A contacts
Dimensions	8.40 inch (213mm) wide, 6.48 inch (164mm) high, 2.80 inch (72mm) deep
Packaging	Corrosion resistant zinc plated steel with black enamel paint
Environment	5% RH to 95% RH, non-condensing, –40°C (–40°F) to 70°C (158°F)
Power Input:	11 - 30 VDC, 4.3W typical (10.8W full I/O capacity in use)
Warranty	3 years on parts and labor
Certifications	
Hazardous Locations North America	Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. Temperature Code T4 UL Listed and CSA certified to the following standards: • CSA Std. C22.2 No. 213-M1987 - Hazardous Locations • UL Std. No. 1604 - Hazardous (Classified) Locations
Hazardous Locations Europe	Model "5606 SSR, 24DI version only" ATEX II 3G, Ex nA IIC T4 per EN 60079-15, protection type n (Zone 2) Does not include Wireless versions.
Hazardous Locations	Model "5606 SSR version only" IECEx, Ex nA IIC T4 per IEC 60079-15, protection type n (Zone 2) Does not include Wireless versions.

1 Available only with optional integrated wireless modules or with stand-alone wireless modules.
2 Not applicable in all countries.

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Product Data Sheet SCADAPack 32
Model Code

	TBUP4-102-02-0-0 represents a sample code for a P4 with DNP, 0-5V inputs, 12-24V outputs
Model	**Select: Controller**
TBUP4	SCADAPack 32, 32 Bit controller with Integrated Ethernet Port
Code	**Select: Lower I/O Module**
	5601A lower I/O module, includes 16 Digital Inputs, 12 Digital Outputs and 8 Analog Inputs (see options below)
A	5604 lower I/O module, includes 32 configurable Digital I/O and 8 selectable Analog Inputs (0-10v or 0-20mA)
B	5606 lower I/O module, includes 32 D/I, 16 Dry Contact D/O and 8 software configurable A/I
C	5606-A lower I/O module, includes 32 D/I, 16 Solid State Relay D/O and 8 software configurable A/I
C	No lower I/O module (provides controller module only)
Code	**Select: Communications Serial Ports**
1	TBUP4/P4A/P4N: 3 RS232, 1 RS232/485, 1 Ethernet TBUP4B/P4C: 2 RS232, 1 RS232/485, 1 Ethernet
	Integrated FreeWave & MDS Radios
A	900Mhz FreeWave Spread Spectrum Radio Consult CMI for availability in your market area
3	900MHz MDS Spread Spectrum Radio Consult CMI for availability in your market area
	Trio Radios - 900MHz (requires one RS232 port)
B	900MHz Trio Spread Spectrum Radio with encryption, 902-928MHz (FCC / IC)
C	900MHz Trio Spread Spectrum Radio with encryption, 915-928MHz (AUS)
D	900MHz Trio Spread Spectrum Radio, 915-928MHz (BRAZIL)
E	900MHz Trio Spread Spectrum Radio, 921-928MHz (NZ)
	Trio Radios - 2.4GHz (requires one RS232 port)
J	2.4GHz Trio Spread Spectrum Radio, ETSI/100mW, ATEX (EUROPE)
K	2.4GHz Trio Spread Spectrum Radio with Encryption, 500mW (CANADA, USA & AUSTRALIA)
L	2.4GHz Trio Spread Spectrum Radio, 500mW (OUTSIDE OF EUROPE, CANADA, USA & AUSTRALIA)
Code	**Select: Gas Flow Run-time Option**
0	None
	Flow Computer Runs
G	2 Run Gas Flow
F	4 Run Gas Flow
T	10 Run Gas Flow
	Flow Computer Runs - Gas Transmission Version (Requires Realflo 6.72+)
V	2 Run Gas Flow
W	4 Run Gas Flow
Code	**Select: Protocol Option/Programming Environment**
2	Modbus and DNP 3.0 (Level 2) protocol with Telepace Ladder Logic and C Language firmware loaded - IEC enabled
5	Modbus and DNP 3.0 (Level 2) protocol with IEC 61131-3 and C Language firmware loaded - Telepace enabled
Code	**Select: Analog Inputs**
01	0-20mA, single ended (On TBUP4 & TBUP4A, Default on TBUP4B which is software configurable to 0-5v or 0-10v)
02	0-5 volt, single ended (TBUP4 Only)
03	0-10 volt, single ended (TBUP4A Only)
Code	**Select: Digital Inputs/Outputs**
0	24 volt D/I TBUP4 & TBUP4B: Dry Contact D/O TBUP4C: SS Relay D/O TBUP4A: Config I/O TBUP4N: No I/O
1	120 volt D/I TBUP4 & TBUP4B: Dry Contact D/O TBUP4C: Solid State Relay D/O (Not for TBUP4A or TBUP4N)
Code	**Select: Analog Outputs**
0	None (required for TBUP4N)
1	2 channel Analog Output option, 0-20 mA