

Supplementary Components

Remote Data Manager

SITRANS RD500

Overview



The SITRANS RD500 is a remote data manager providing integrated web access, alarm event handling, and data capture for instrumentation and other devices.

Benefits

- RD500 supports report and alarm events via email, SMS, and FTP transfer
- Web provides worldwide access to instrument data and RD500 configuration and setup
- Simple configuration, no programming or additional software required
- Offers scalability with optional I/O modules for current (4 to 20 mA), voltage (0 to 10 V), thermocouple (TC), resistance temperature detector (RTD), and digital I/O
- 10 base-TI 100 Base-TX ethernet and support for GSM, GPRS, and PSTN provide flexible remote communications options
- Supports up to 128 devices with the flexible I/O modules and up to 247 Modbus serial devices
- Integrated FTP server and client supports FTP data synchronization to central servers
- Compact flash slot supports up to 2 Gigabytes of expandable memory for data capture and storage
- Log files formats are CSV (comma separated values) for data files and HTML for report files
- Supports modbus TCP via ethernet and GPRS for easy integration into control systems

Application

The RD500 is an easy-to-use remote data manager, using a web-based application and hardware modules. The unique modular approach allows a variety of process signals to be monitored, while the serial ports allow data to be collected from any Modbus RTU device.

The RD500 comprises a master communications module, and up to 16 slave modules. Various module types are available, allowing up to a maximum of 128 conventional inputs and outputs. The RD500's serial ports can collect data from up to 247 Modbus RTU slave devices including field instruments.

The RD500's built-in web server, FTP, and email client allows the process to be monitored remotely. Alarm notifications are communicated through email and SMS text messages to one or more recipients to ensure that appropriate actions are taken by personnel.

The RD500 supports modems, providing flexibility for applications in which GSM/GPRS cellular or landline connectivity is desired.

The RD500 is configured via a web-based interface - a standard browser is all the software you need to configure your system.

- Key Applications: Remote monitoring, inventory management, web enabled instrumentation or other devices

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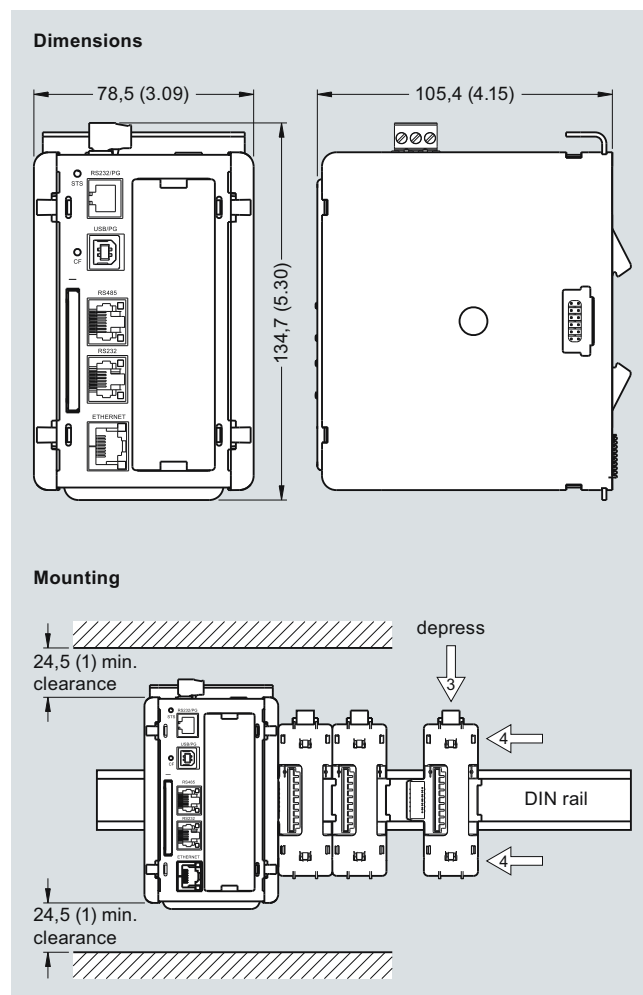
SITRANS RD500

Technical specifications

Mode of operation	
Measuring principle	Remote data manager
Measuring points	<ul style="list-style-type: none"> • up to 128 standard input/outputs • 247 Modbus serial devices
Input	See table on page 8/18
Output	See table on page 8/18
Accuracy	See table on page 8/18
Rated operating conditions	
Storage temperature range	-30 ... +70 °C (-22 ... +158 °F)
Operating temperature	0 ... 50 °C (32 ... 122 °F)
Operating and storage humidity	80 % max relative humidity, non-condensing, from 0 ... 50 °C (32 ... 122 °F)
Design	
Material (enclosure)	High impact plastic and stainless steel
Installation category	1
Pollution degree	2
Weight	456.4 g (15.1 oz)
Mounting	Snaps onto standard DIN style top hat (T) profile mounting rails according to EN50022 -35 x 7.5 and -35 x 15
Power	24 V DC ± 10 % 400 mA min. (1 module) 3.5 Amps max. (16 modules) Must use Class 2 or SELV-rated power supply
Display	
Status LEDs	<ul style="list-style-type: none"> • STS - Status LED indicates condition of master • TX/RX - Transmit/Receive LEDs show serial activity • Ethernet - Link and activity LEDs • CF - CompactFlash LED indicates card status and read/write activity
Memory	
On-board user memory	4 MB of non-volatile Flash memory
On-board SDRAM	2 MB
Memory card	Compact Flash Type II slot for Type I and Type II cards; 1 GB (optional 2 GB)
Certificates and approvals	
Safety	<ul style="list-style-type: none"> • UL Listed to U.S. and Canadian safety standards for use in Class I, II and III, Division 1 and 2 Hazardous Locations • CE, C-TICK
Communication	
USB/PG port	Adheres to USB specifications 1.1. Device only using Type B connection.
Serial ports	Format and baud rates for each port are individually software programmable up to 115, 200 baud
RS232/PG port	RS-232 port via RJ12
Comms ports	RS-422/485 port via RJ45 and RS-232 port via RJ12
Ethernet port	10 BASE-T/100 BASE-TX; RJ45 jack is wired as a NIC (Network Interface Card)

®Modbus is a registered trademark of Schneider Electric.

Dimensional drawings



SITRANS RD500, dimensions in mm (inch)

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Technical specifications

SITRANS RD500 Module Specifications

	8 Inputs, 6 Solid State Outputs	8 Inputs, 6 Relay Outputs	8 Channel, 4 ... 20 mA	8 Channel ± 10 V	6 Channel, RTD	8 Channel Thermocouple Module
Order number	7ML1930-1ES	7ML1930-1ER	7ML1930-1EP	7ML1930-1EQ	7ML1930-1ET	7ML1930-1EU
Application	8 inputs, 6 outputs used to monitor contact or sensor inputs	8 inputs, 6 outputs used to monitor contact or sensor inputs	16 bit analog input module provides high density signal measurement for data monitoring applications and accepts 0/4 ... 20 mA process signals	16 bit analog input module provides high density signal measurement for data monitoring applications and accepts ± 10 V process signals	16 bit analog input module provides high-density signal measurement for data acquisition applications and accepts various RTD inputs	16 bit thermocouple input module provides high density signal measurement for data acquisition applications and accepts wide range of thermocouple types
Accuracy	Not applicable	Not applicable	± 0.1 % of span	± 0.1 % of span	± (0.2 % of span, 1 °C) 0 ... 50 °C (32 ... 122 °F); ± (0.1 % of span, 1 °C) 18 ... 28 °C (64 ... 82 °F); includes NIST conformity, A/D conversion errors, temperature coefficient and linearization conformity at 23 °C after 20 minute warm-up	± (0.3 % of span, +1 °C); includes NIST conformity, cold junction effect, A/D conversion errors, temperature coefficient and linearization conformity at 23 °C after 20 minute warm-up
Mounting	Snaps onto standard DIN style top hat (T) profile mounting rails according to EN50022 -35 x 7.5 and -35 x 15					
Inputs	Dip switch selectable for sink or source	Dip switch selectable for sink or source Max. voltage: 30 V DC, reverse polarity protected Off voltage: < 1.2 V On voltage: > 3.8 V Input frequency: - Filter switch on: 50 Hz - Filter switch off: 300 Hz	8 single-ended Ranges: 0 ... 20 mA or 4 ... 20 mA Resolution: Full 16-bit Sample time: 50 ... 400 msec depending on number of enabled inputs	8 single-ended Ranges: 0 ... 10 V DC or ± 10 V DC Resolution: Full 16-bit Sample time: 50 ... 400 msec depending on number of enabled inputs	6 single-ended Resolution: Full 16-bit Sample time: 67 ... 400 msec depending on number of enabled inputs	8 single-ended Resolution: Full 16-bit Sample time: 50 ... 400 msec depending on number of enabled inputs
Outputs	Solid state output, switched DC, contact rating 1 A DC max.	Form A, NO Pairs share common terminals: 1&2, 3&4, 5&6 Current rating by pair: 3 Amps @ 30 V DC/125 V AC resistive 1/10 HP@125 V AC	Not applicable	Not applicable	Not applicable	Not applicable

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Selection and Ordering data	Order No.
SITRANS RD500 The SITRANS RD500 is a remote data manager providing integrated web access, alarm event handling and data capture for instrumentation.	K) 7ML5750-A000
Communications Connection Ethernet ¹⁾	1
Digital Communications to Instruments RS-485 Modbus [®] RTU	A

¹⁾ Configuration limited to 16 modules.

K) Subject to export regulations AL: N, ECCN: 5A991X

Selection and Ordering data	Order No.
Input configuration modules	
Note: one RD500 supports 16 input modules maximum	
RD500 8 channel 0 (4) ... 20 mA input module	C) 7ML1930-1EP
RD500 8 channel ± 10 V input module	C) 7ML1930-1EQ
RD500 8 digital inputs, 6 relay outputs module	C) 7ML1930-1ER
RD500 8 digital inputs, 6 solid state outputs module ¹⁾	C) 7ML1930-1ES
RD500 6 channel input, RTD module	C) 7ML1930-1ET
RD500 8 channel thermocouple module	C) 7ML1930-1EU
Optional equipment	
Multitech GPRS modem, external ¹⁾	N) 7ML1930-1EX
Multitech GPRS modem, internal	C) 7ML1930-1EY
Industrial CompactFlash card, 2 Gigabytes ²⁾	L) 7ML1930-1FB
Industrial CompactFlash card, 1 Gigabyte ²⁾	L) 7ML1930-1FC
RJ11 serial to terminal block RS-232	C) 7ML1930-1FD
RJ45 serial to terminal block RS-485	C) 7ML1930-1FE
GPRS Modem antenna	C) 7ML1930-1FF
RD500 Spare Module base	C) 7ML1930-1FG
RD500 Spare End terminator	C) 7ML1930-1FH
5' Ethernet Cat 5e Red X/O cable for configuration	7ML1930-1FM
USB cable type A to B	C) 7ML1930-1FN

Operating Instructions

Application manual, English	C) 7ML1998-5MA01
Application manual, German	C) 7ML1998-5MA31

Note: Additional Operating Instructions should be ordered as a separate line item.
This device is shipped with the Siemens Milltronics manual CD containing Quick Starts and Operating Instructions.

Other Operating Instructions

RD500 Remote Data Manager manual, English: web access, alarm event handling, and data capture	S) 7ML1998-5MK01
RD500 Remote Data Manager manual, German: web access, alarm event handling, and data capture	S) 7ML1998-5MK31
RD500 8 channel 0 (4) ... 20 mA input module manual, English	C) 7ML1998-5MB01
RD500 8 channel 0 (4) ... 20 mA input module manual, German	C) 7ML1998-5MB31
RD500 8 channel ±10 V input module manual, English	C) 7ML1998-5MC01
RD500 8 channel ±10 V input module manual, German	C) 7ML1998-5MC31
RD500 8 inputs, 6 relay outputs module manual, English	C) 7ML1998-5MD01
RD500, 8 inputs, 6 relay outputs module manual, German	C) 7ML1998-5MD31
RD500 8 inputs, 6 solid state outputs module manual, English	C) 7ML1998-5ME01
RD500 8 inputs, 6 solid state outputs module manual, German	C) 7ML1998-5ME31
RD500 6 channel input, RTD module manual, English	C) 7ML1998-5MF01
RD500 6 channel input, RTD module manual, German	C) 7ML1998-5MF31
RD500 8 channel thermocouple module manual, English	C) 7ML1998-5MJ01
RD500, 8 channel thermocouple module manual, German	C) 7ML1998-5MJ31

¹⁾ Antenna, power cord, and cable included

²⁾ Industrial CompactFlash card, 1 Gbyte, is included with RD500

C) Subject to export regulations AL: N, ECCN: EAR99

K) Subject to export regulations AL: N, ECCN: 5A991X

N) Subject to export regulations AL: N, ECCN: 5A992

L) Subject to export regulations AL: N, ECCN: 3A991X

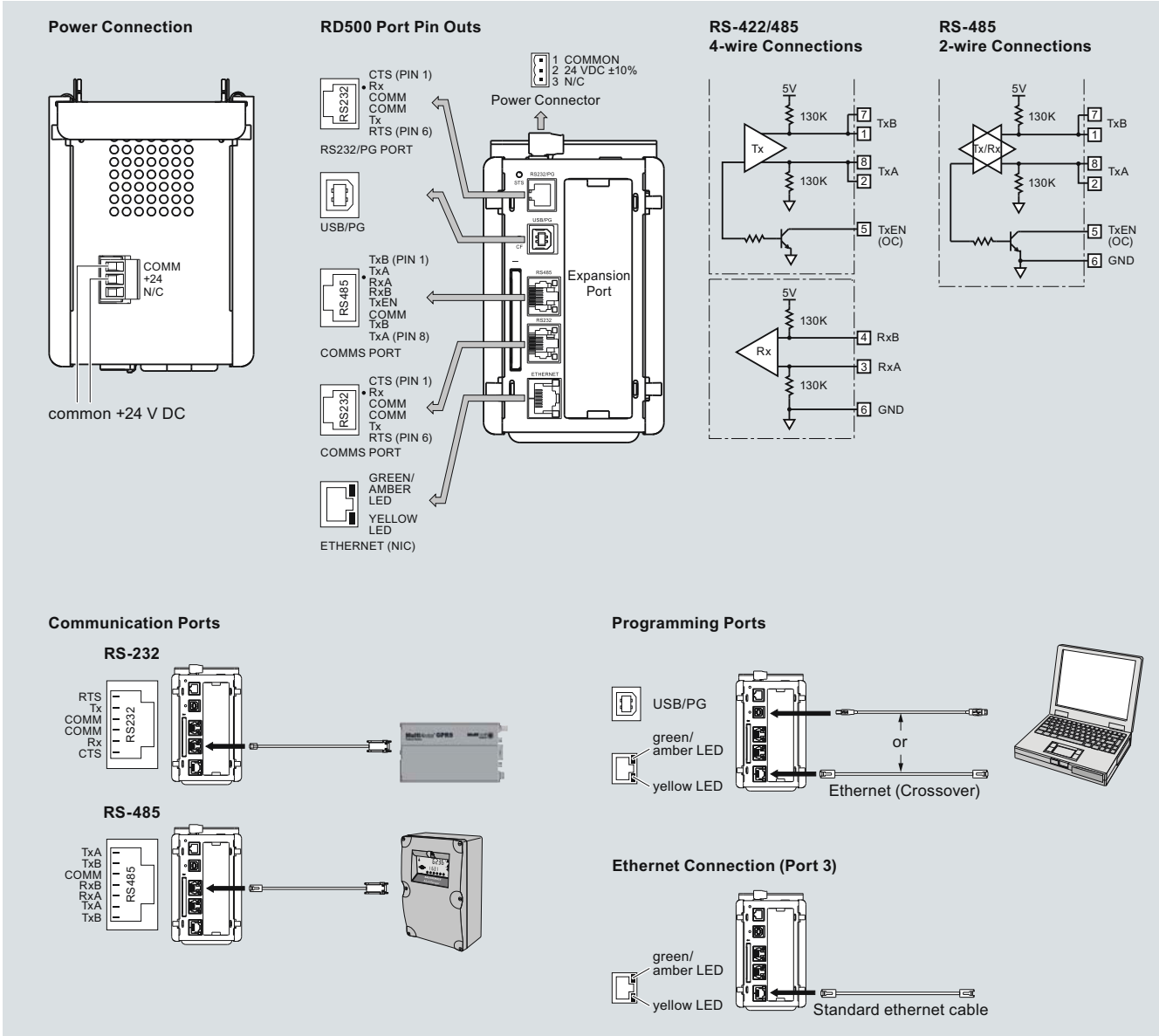
S) Subject to export regulations AL: N, ECCN: 5E991X

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Remote Data Manager

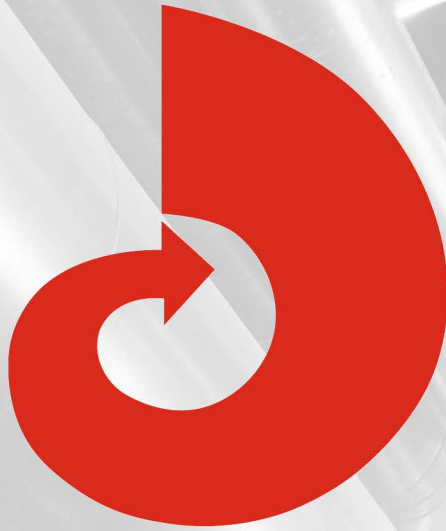
SITRANS RD500

Schematics



SITRANS RD500 connections

FINE CONTROLS (UK) LTD



Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product range representing leading technologies & brands:

Flow: Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

Temperature: Temperature Probes & Thermowells, Temperature transmitters, Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges & Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

Precision Pneumatics: Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

Valves: Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

Services: Repair, Calibration, Panel Build, System Design & Commissioning

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