Overview

The SITRANS RD500 is a remote data manager providing remote monitoring through 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 using a standard web browser, 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 input, output and counter
- 10 base-TI 100 Base-TX Ethernet and support for GSM, GPRS, 3G, and PSTN provide flexible remote communications options
- Supports up to 128 devices with the flexible I/O modules and supports addressing for Modbus serial devices via RS 232 and RS 485 serial ports
- Integrated FTP server and client support FTP data synchronization to central servers
- Compact flash slot supports up to 2 gigabytes of expandable memory for data capture and storage, 1 gigabyte industrial compact flash card included
- 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
- Optional cellular modem offers VPN support

Application

The RD500 is an easy-to-use remote data monitoring solution, 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 Modbus RTU devices and Modbus TCP via EtherNet.

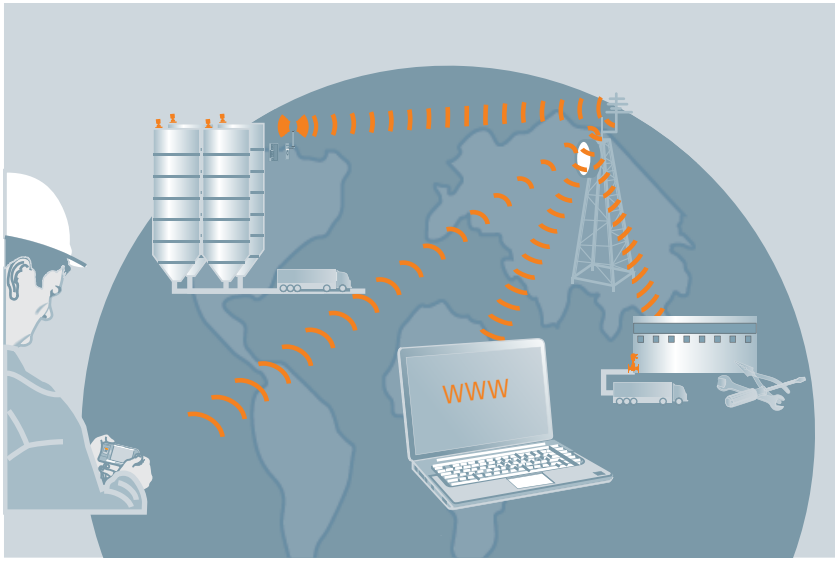
The RD500 comprises a master communications module, and up to 16 slave modules. Various module types are available, allowing up to a maximum of 128 conventional inputs and outputs. The RD500's serial ports can support addressing for Modbus RTU slave devices including field instruments.

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 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 of inventory, process, and maintenance applications, with web access to field instrumentation



With SITRANS RD500, monitor inventory levels, process, environmental, and remote maintenance applications, and get web access to most types of field instrumentation, including flow, level, pressure, temperature measurement, and weighing.

Technical specifications

Mode of operation	
Measuring principle	Remote data monitor
Measuring points	• Up to 128 standard inputs (conventional IO, see optional IO modules) • Addressing for Modbus devices (Modbus RTU and Modbus TCP)
Input	See SITRANS RD500 module specifications table
Output	See SITRANS RD500 module specifications table
Accuracy	See SITRANS RD500 module specifications table
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	I
Pollution degree	2
Weight	456.4 g (15.1 oz)
Mounting	Snaps onto standard DIN style top hat (T) profile mounting rails according to EN 50022 – 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	• 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	CompactFlash Type II slot for Type I and Type II cards; 1 GB (optional 2 GB)
Certificates and approvals	
Safety	• UL listed to U.S. and Canadian safety standards for use in Class I, II, and III, Division 1 and 2 hazardous locations • CE, RCM
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)

SITRANS RD500

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 minutes 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 EN 50022 – 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 ms 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 ms depending on number of enabled inputs	• 6 single-ended resolution: full 16-bit • Sample time: 67 … 400 ms depending on number of enabled inputs	• 8 single-ended resolution: full 16-bit • Sample time: 50 … 400 ms 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 A at 30 V DC/125 V AC resistive 1/10 HP at 125 V AC	Not applicable	Not applicable	Not applicable	Not applicable

Note: in order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept. For more information about industrial security, http://www.siemens.com/industrialsecurity

Selection and Ordering data	Article No.
SITRANS RD500 The SITRANS RD500 is a remote data manager providing integrated web access, alarm event handling and data capture for instrumentation. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	↗ **7ML5750-** ■■**A 0 0 - 0**
Communications Connection Ethernet[1]	**1**
Digital Communications to Instruments RS 485 Modbus RTU and Modbus TCP	**A**

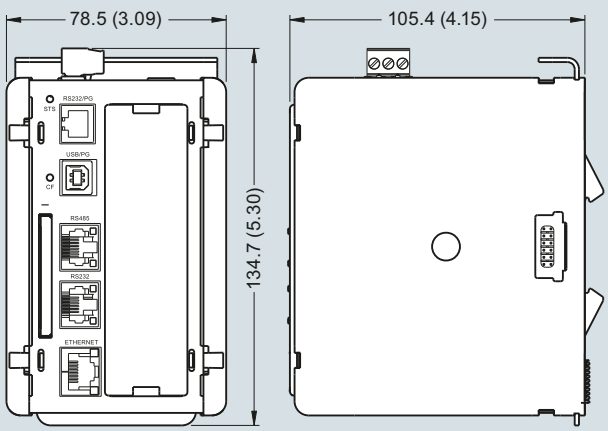
[1] Configuration limited to 16 modules.

Selection and Ordering data	Article No.
Input configuration modules	
Note: one RD500 supports 16 input modules maximum	
RD500 8 channel 0 (4) ... 20 mA input module	**7ML1930-1EP**
RD500 8 channel ± 10 V input module	**7ML1930-1EQ**
RD500 8 digital inputs/pulse counters, 6 relay outputs module	**7ML1930-1ER**
RD500 8 digital inputs/pulse counters, 6 solid state outputs module[1]	**7ML1930-1ES**
RD500 6 channel input, RTD module	**7ML1930-1ET**
RD500 8 channel thermocouple module	**7ML1930-1EU**
Optional equipment	
External cellular modem	**7ML1930-1GJ**
Internal modem card with antenna	**7ML1930-1EY**
Industrial CompactFlash card, 2 GB	**7ML1930-1FB**
Industrial CompactFlash card, 1 GB	**7ML1930-1FC**
RJ11 serial to terminal block RS 232	**7ML1930-1FD**
RJ45 serial to terminal block RS 485	**7ML1930-1FE**
Modem antenna	**7ML1930-1FF**
RD500 Spare Module base	**7ML1930-1FG**
RD500 Spare End terminator	**7ML1930-1FH**
Ethernet Cat 5e Red X/O cable for configuration, 1.52 m (5 ft)	**7ML1930-1FM**
USB cable type A/B	**7ML1930-1FN**
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	
SITRANS RD100, loop powered display - see page 7/10	**7ML5741-...**
SITRANS RD200, universal input display with Modbus conversion - see page 7/12	**7ML5740-...**
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see page 7/16	**7ML5744-...**

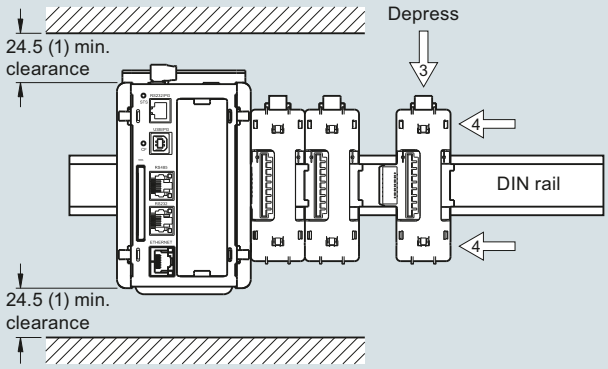
[1] Configuration limited to 16 modules

Dimensional drawings

Dimensions

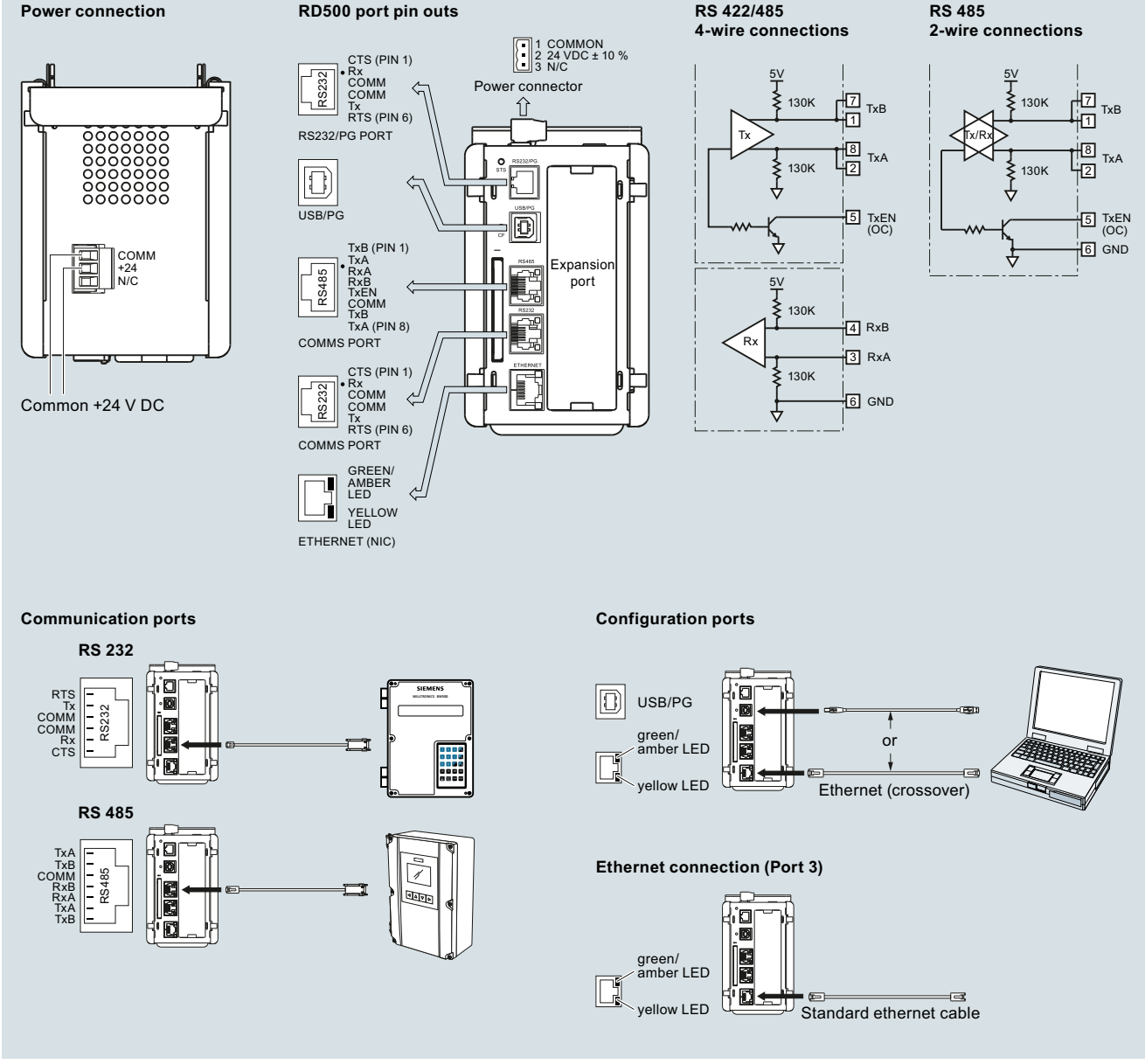


Mounting



SITRANS RD500, dimensions in mm (inch)

Circuit diagrams



SITRANS RD500 connections