

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 supports 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 3G 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.

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

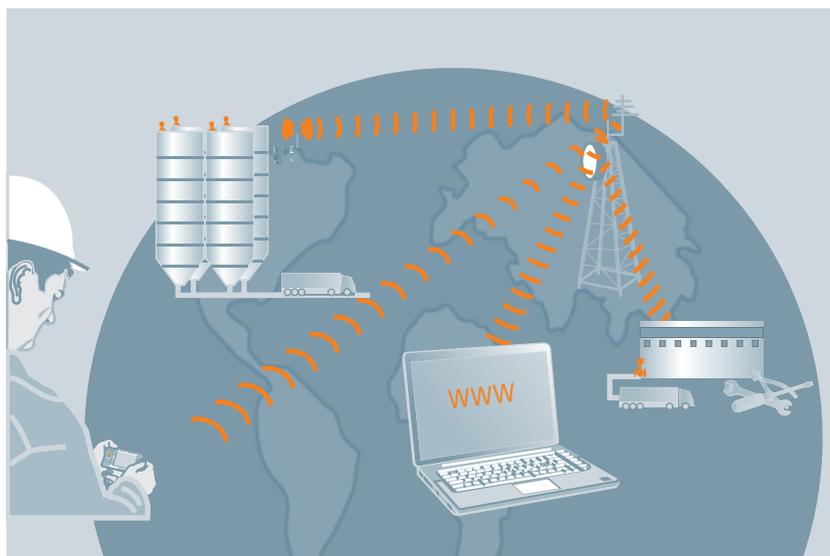
recipients to ensure that appropriate actions are taken by personnel.

The RD500 supports modems, providing flexibility for applications in which GSM/GPRS/3G 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 remote configuration and maintenance devices



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.

Supplementary Components

Remote data manager

SITRANS RD500

Technical specifications

Mode of operation

Measuring principle	Remote data monitor
Measuring points	<ul style="list-style-type: none"> Up to 128 standard input/outputs Addressing for Modbus serial devices

Input See table on page 7/21

Output See table on page 7/21

Accuracy See table on page 7/21

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	<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 Mbytes of non-volatile Flash memory
On-board SDRAM	2 Mbytes
Memory card	CompactFlash Type II slot for Type I and Type II cards; 1 Gbytes (optional 2 Gbytes)

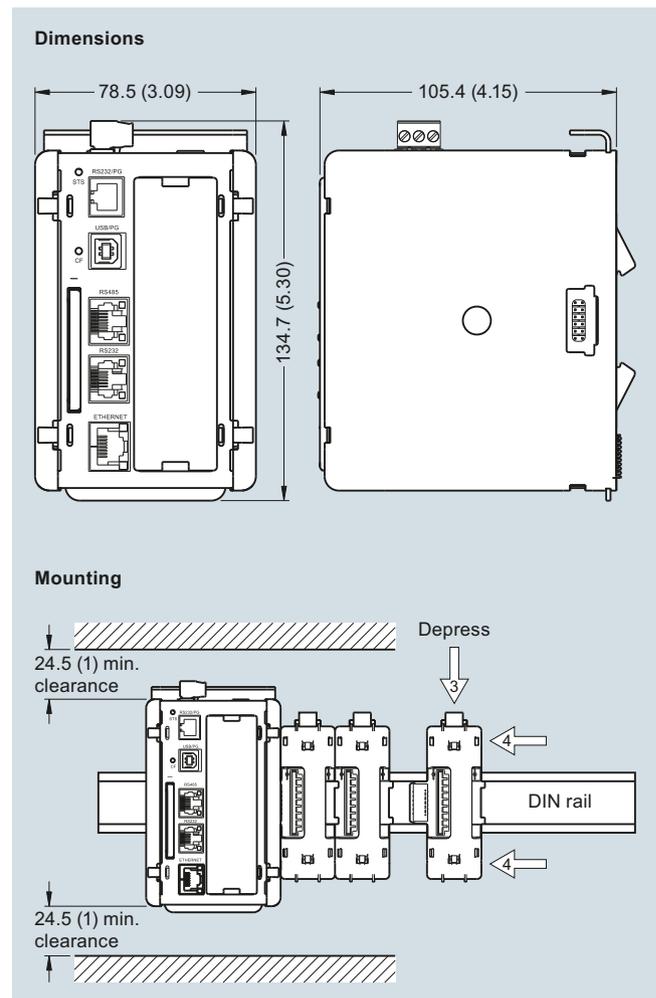
Certificates and approvals

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, 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
RS 232/PG port	RS 232 port via RJ12
Comms ports	RS 422/485 port via RJ45 and RS 232 port via RJ 12
Ethernet port	10 BASE-T/100 BASE-TX; RJ45 jack is wired as a NIC (Network Interface Card)

Dimensional drawings



SITRANS RD500, dimensions in mm (inch)

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
Article 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 Amps at 30 V DC/125 V AC resistive 1/10 HP at 125 V AC	Not applicable	Not applicable	Not applicable	Not applicable

Note:

To ensure the secure operation of a plant or machine it is necessary to take additional, suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Please find further information at: <http://www.siemens.com/industrialsecurity>

Supplementary Components

Remote data manager

SITRANS RD500

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

¹⁾ Configuration limited to 16 modules.

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

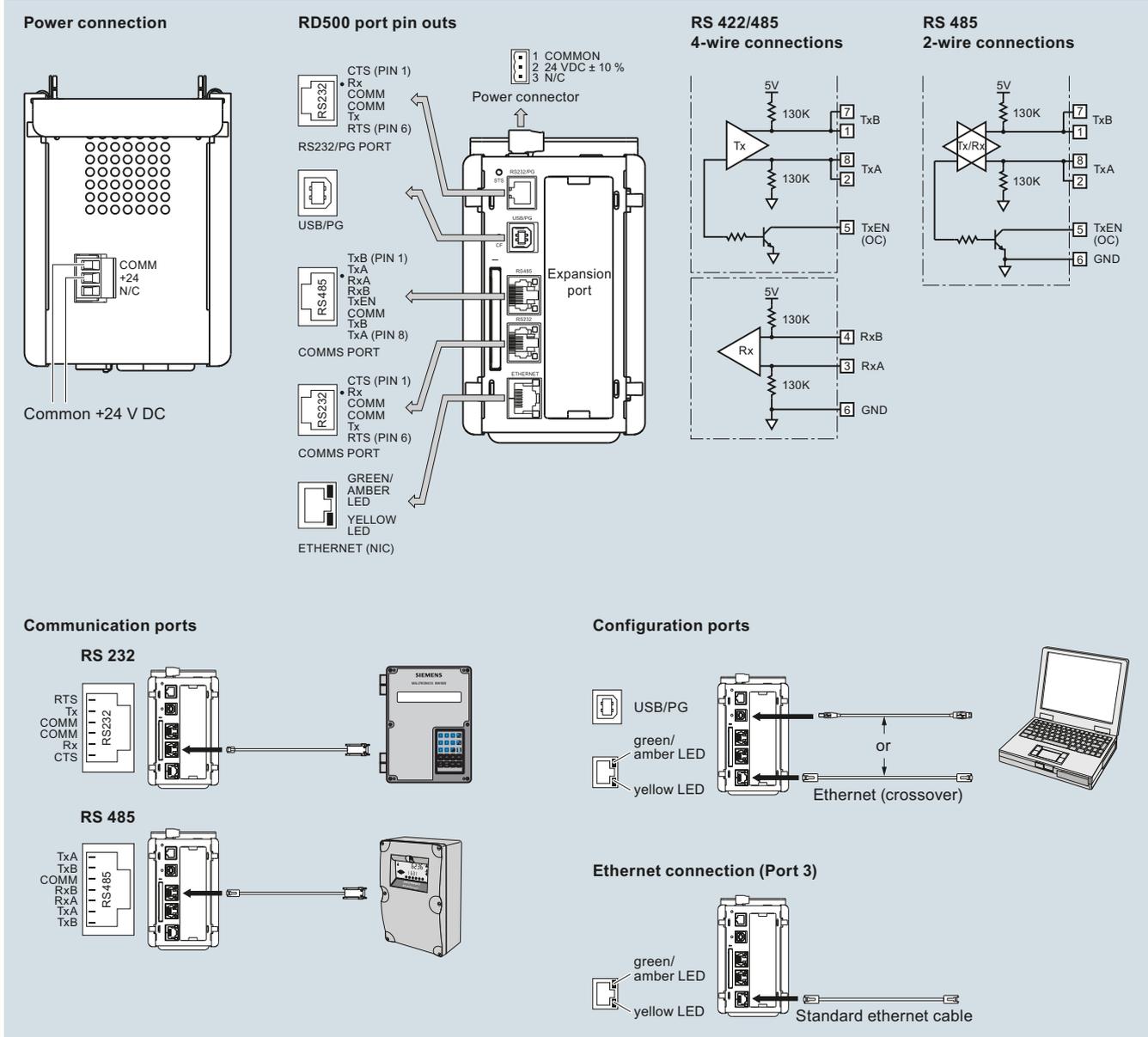
Selection and Ordering data	Article No.
Input configuration modules	
Note: one RD500 supports 16 input modules maximum	
RD500 8 channel 0 (4) ... 20 mA input module	◆ 7ML1930-1EP
RD500 8 channel ± 10 V input module	◆ 7ML1930-1EQ
RD500 8 digital inputs/pulse counters, 6 relay outputs module	◆ 7ML1930-1ER
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
Multitech GPRS modem, internal (including antennae)	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
GPRS Spare 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
Remote mount external antenna 17 ft (5 m)	7ML1930-1FY
Operating Instructions	
Application manual, English	7ML1998-5MA01
Application manual, German	7ML1998-5MA31
Note: Additional Operating Instructions should be ordered as a separate line item. This device is shipped with the Siemens Milltronics manual DVD containing Quick Starts and Operating Instructions.	

Selection and Ordering data	Article No.
Other Operating Instructions	
RD500 Remote Data Manager manual, English: web access, alarm event handling, and data capture	7ML1998-5MK01
RD500 Remote Data Manager manual, German: web access, alarm event handling, and data capture	7ML1998-5MK31
RD500 8 channel 0 (4) ... 20 mA input module manual, English	7ML1998-5MB01
RD500 8 channel 0 (4) ... 20 mA input module manual, German	7ML1998-5MB31
RD500 8 channel ± 10 V input module manual, English	7ML1998-5MC01
RD500 8 channel ± 10 V input module manual, German	7ML1998-5MC31
RD500 8 inputs, 6 relay outputs module manual, English	7ML1998-5MD01
RD500 8 inputs, 6 relay outputs module manual, German	7ML1998-5MD31
RD500 8 inputs, 6 solid state outputs module manual, English	7ML1998-5ME01
RD500 8 inputs, 6 solid state outputs module manual, German	7ML1998-5ME31
RD500 6 channel input, RTD module manual, English	7ML1998-5MF01
RD500 6 channel input, RTD module manual, German	7ML1998-5MF31
RD500 8 channel thermocouple module manual, English	7ML1998-5MJ01
RD500 8 channel thermocouple module manual, German	7ML1998-5MJ31
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

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Schematics



SITRANS RD500 connections