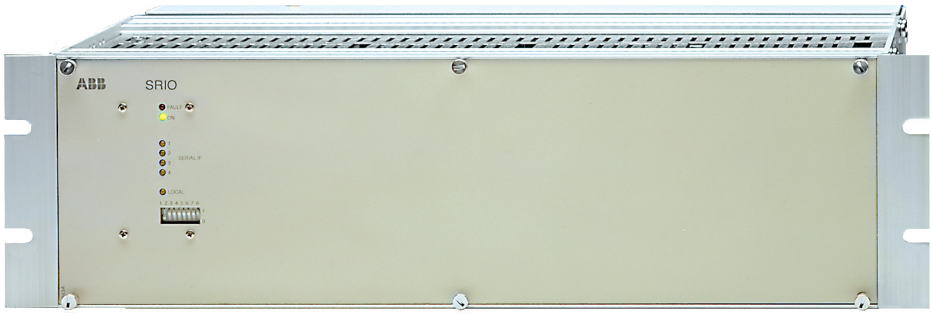
Data Communication and Reporting Unit

SRIO 500M

Product Guide



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Features

- Interface unit between a host level system and the SPACOM system
- Host interface unit using the ANSI X3.28 or SACO 100M protocol
- Data base for max. 500 data items
- Event buffer for max. 500 events
- Three serial interfaces: (1) host computer or programming terminal interface, (2) SPA-bus interface, (3) programming terminal or event printer interface
- Member of the SPACOM product family and ABB's Distribution Automation system.

Application

SRIO 500M is a data communication and reporting unit for use in the SPACOM system. The SPACOM system may incorporate slave devices such as protection relays, feeder terminals, control units and annunciator units, capable of communicating via the SPA bus.

The SRIO 500M unit acts as a master unit in the SPA bus system. It connects the SPACOM system to a host system and reports event data to an event printer.

The SRIO 500M unit connects to the host computer via the ANSI X3.28 or the SACO 100M protocol. The ANSI X3.28 protocol is used with a Substation Control System or with a MicroSCADA control system. The SACO 100M protocol can be used for the communication with, for example, a personal computer or a control system of a foreign manufacturer.

Design

The data communication and reporting unit polls the slaves connected to the SPA bus for event data and time markings using the SACO 100 M protocol. The events are sorted in time order and stored in the event buffer. From the buffer the events are delivered to the host computer or listed to a local event printer.

The SRIO unit also performs data acquisition functions. The operator can define as much as 500 data items for the data base. Several types of data items are possible: digital input data (DI), analog input data (AI), digital output data (DO), analog output data (AO) and event data (EV). The DI and AI data are acquired through cyclic polling. The EV data are acquired by converting slave event codes into analog data values.

The SRIO 500M unit includes a real-time clock. The clock contains the current time from years to milliseconds. A battery back-up clock chip is used to maintain time during power off situations.

The clock can be set by the user through the programming terminal or host interface. The clock can also be synchronized with an external minute pulse.

The SRIO 500M unit can be programmed to give local event reporting on one or two event printer devices. The event report may consist of time tag, event text and data values. The priority of an event can be indicated with a special character in front of the event report.

Data communication

The rear plate of the SRIO 500M unit contains 3 connectors for three serial interfaces. Serial interface 1 includes one 25-pin connector and interfaces 2 one 9-pin connector and interface 4 one 25-pin connector.

Self-supervision

If the self-supervision system detects a fault on one of the serial interfaces, the fault relay is activated and the "FAULT" indicator on the front panel and one of the "SERIAL IF" indicators are lit. The LED indicators on the front panel facilitate fault location.

Auxiliary supply voltage

The data communication and reporting unit can be supplied from two independent power sources at the same time:
Supply 1: 80…265 V dc or 17…70 V dc.
Supply 2: 80…265 V ac or dc.

Technical data

Table 1: Serial interfaces

Serial interface 1: Interface to host computer or programming terminal	RS 232 C, max. 9600 b/s (also current loop if used as programming terminal)
Serial interface 2: Interface to SPA bus	RS 485, max. 9600 b/s
Serial interface 4: Interface to programming terminal or event printer	RS 232 C or current loop, max. 9600 b/s

Table 2: Event polling

Maximum number of units in the event poll list	100
Capacity of event buffer	500 events
Accuracy of time markings	1 ms
Time resolution between events from one serial interface	10 ms
Time resolution between events from two different serial interfaces	50 ms

Table 3: Data acquisition

Capacity of data base		500 data items
System response time	EV data from high priority slaves	amount of high priority slaves × 70 ms
	EV data from normal priority slaves	amount of slaves × 200 ms
	AI or DI data from slaves	amount of cyclically polled data items × 200 ms

Table 4: Output contact

Rated contact current/max. breaking voltage of the relay outputs	3 A/250 V, 50 Hz

Table 5: Weight

Weight	about 8 kg

Table 6: Power sources

Supply No. 1	80…265 V dc or 17…70 V dc
Supply No. 2	80…265 V ac/dc
Power consumption	30 W

Table 7: Tests and standards

Between power supply inputs and chassis, relay outputs and chassis, opto-isolated inputs and chassis		
Test voltages	Dielectric test voltage (IEC 60255-5 and SS 436 15 03)	2 kV, 50 Hz, 1 min
	Impulse test voltage (IEC 60255-5 and SS 436 15 03)	5 kV, 1.2/50 μs, 0.5 J
	High frequency test voltage (IEC 60255-5 and SS 436 15 03)	2.5 kV, 1 MHz
Environmental conditions	Service temperature range	0…+55°C
	Storage temperature range	-40…+70°C
	Maximum relative humidity (without condensation)	95%

Block diagram

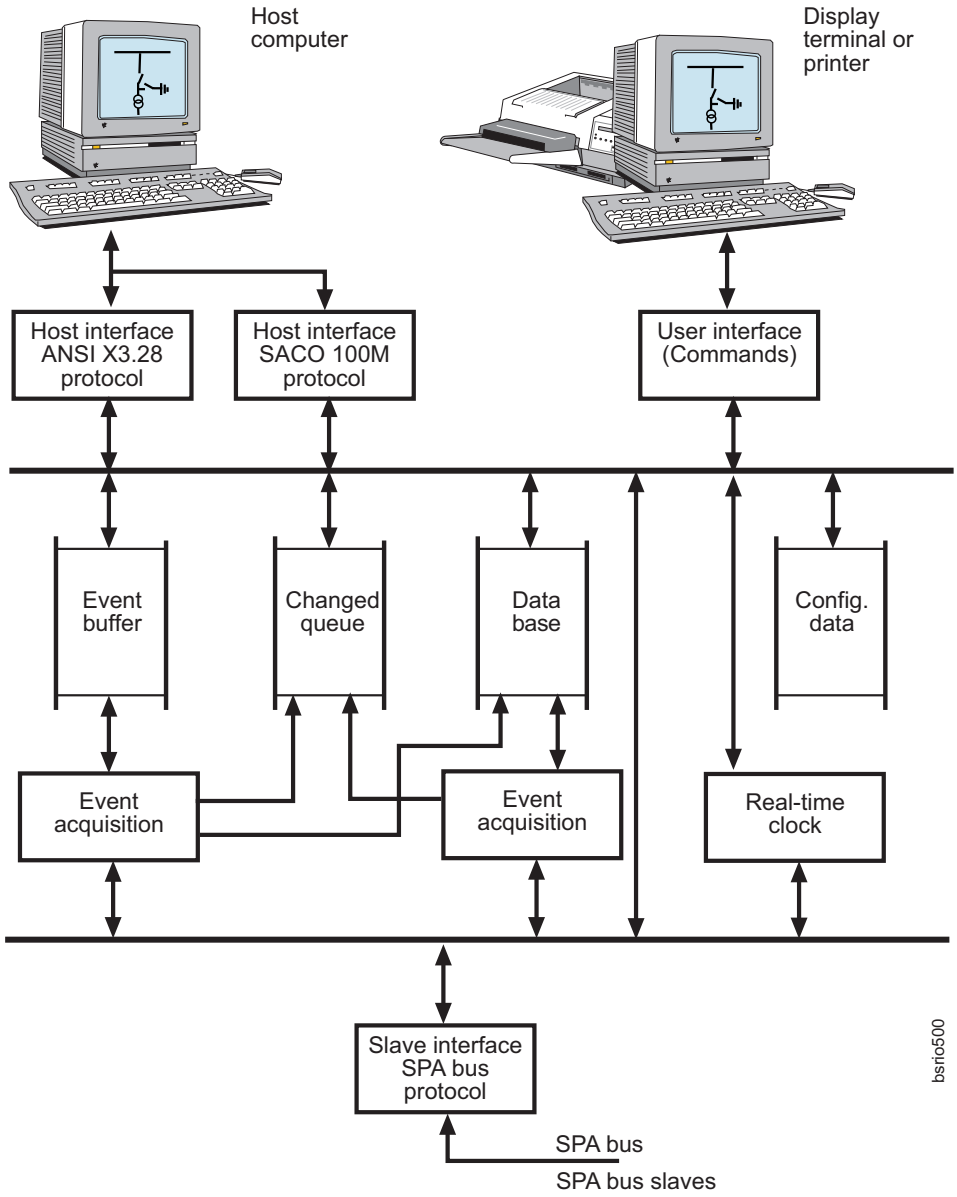

Fig. 1 Functions of the SRIO 500M unit

Mounting and dimensions

19” subrack

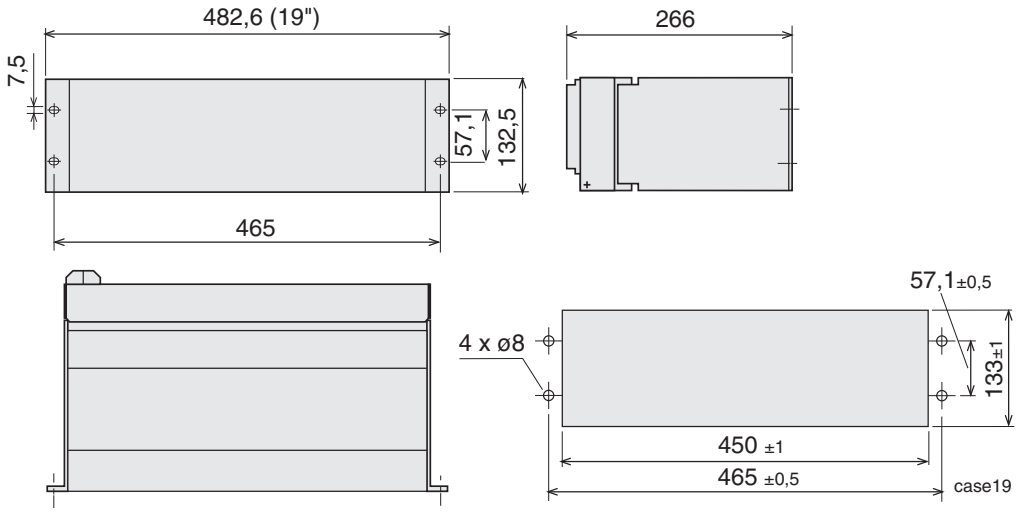

Fig. 2 Subrack mounting dimensions in mm

Panel mounting

The data communication and reporting unit can also be flush mounted in doors and panels. The relevant panel cut-out and drilling pattern for the fixing screws are illustrated above.

Ordering

When ordering, please specify:

Ordering information	Ordering example
1. Type designation and quantity	SRIO 500M
2. Order number	RS 822 002-AB
3. Auxiliary voltage	Supply voltage no. 1 = 110 V dc, supply voltage no. 2 = 220 V ac
4. Accessories	-
5. Special requirements	-

Order numbers

Data communication and reporting unit SRIO 500M Auxiliary supply 1: 80…265 V dc Auxiliary supply 2: 80…265 V ac/dc	RS 822 002-AB
Data communication and reporting unit SRIO 500M Auxiliary supply 1: 17…70 V dc Auxiliary supply 2: 80…265 V ac/dc	RS 822 002-BB

References

Additional information

User's manual and technical description "Data communication and reporting unit SRIO 500M"	1MRS 750540-MUM EN
Programming manual "Data communication and reporting unit SRIO 500M, SRIO 1000M"	1MRS 750885-MUM EN

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