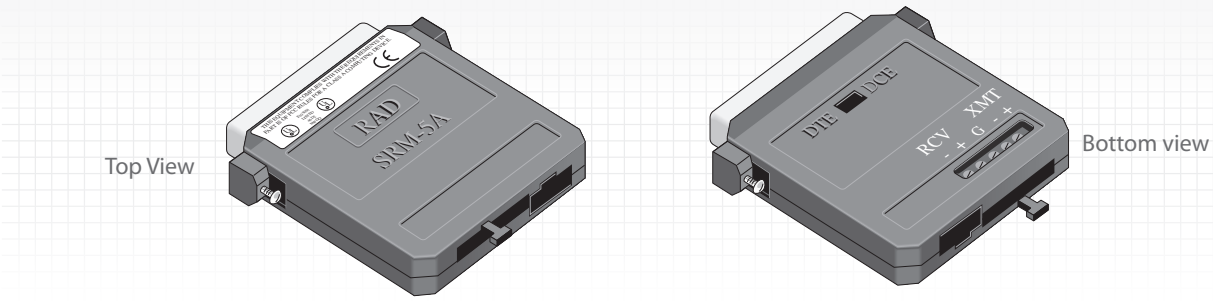
CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

SRM-5A

Short Haul RAD® Modem



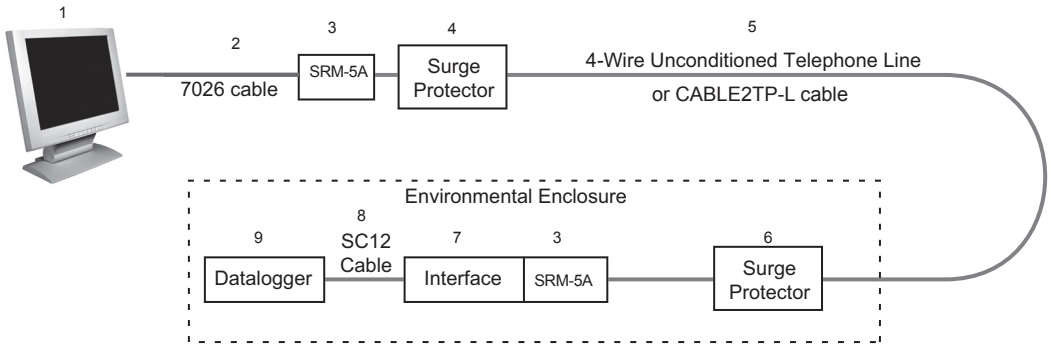
Overview

The SRM-5A is an asynchronous modem used for local communication between a datalogger and a computer. Two SRM-5A Short Haul RAD® Modems[1] are required; one at the datalogger end and one at the computer end. Each short haul modem transmits over an unconditioned 4-wire telephone line or the CABLE2TP two-twisted pair cable. Data rates up to 9,600 bps are possible.

Benefits and Features

- Provides the easiest link for communicating with one datalogger over longer distances
- Low voltage transmission levels minimize crosstalk between adjacent lines within the same cable
- Data are transmitted and received at a balanced impedance, providing excellent immunity to circuit noise
- Transmits up to 10 km (6.2 miles) at 9600 bps
- Transmits up to 12.2 km (7.6 miles) at 1200 bps

PC-to-Datalogger Hookup



(1) PC running PC200W, PC400, or LoggerNet Software.
(2) 7026 serial cable, which is a DB-25 male to DB-9 female.
(3) SRM-5A Short Haul modem, two required.
(4) Joslyn 4-wire surge protector model 6536 for use with PC.
(5) 4-wire unconditioned phone line or the CABLE2TP-L Santoprene-jacketed, 2-twisted-pair cable with shield.
(6) 6361 Joslyn 4-wire surge protector for use in an enclosure.
(7) SC932A DCE Interface[2] and a 9-to-25 pin adapter. The 15770 Rad Modem Interface Kit includes the SC932A, adapter, and a mounting bracket.
(8) SC12 cable (provided with SC932A).
(9) Campbell Scientific datalogger

[1]RAD is a registered trademark of RAD Data Communications, Inc. Rochelle Park, NJ.

[2]The SC932A is used to connect the modem to the datalogger's CS I/O port. Configuration is more complicated when connecting the modem to the datalogger's RS-232 port; contact Campbell Scientific for more information.

Specifications

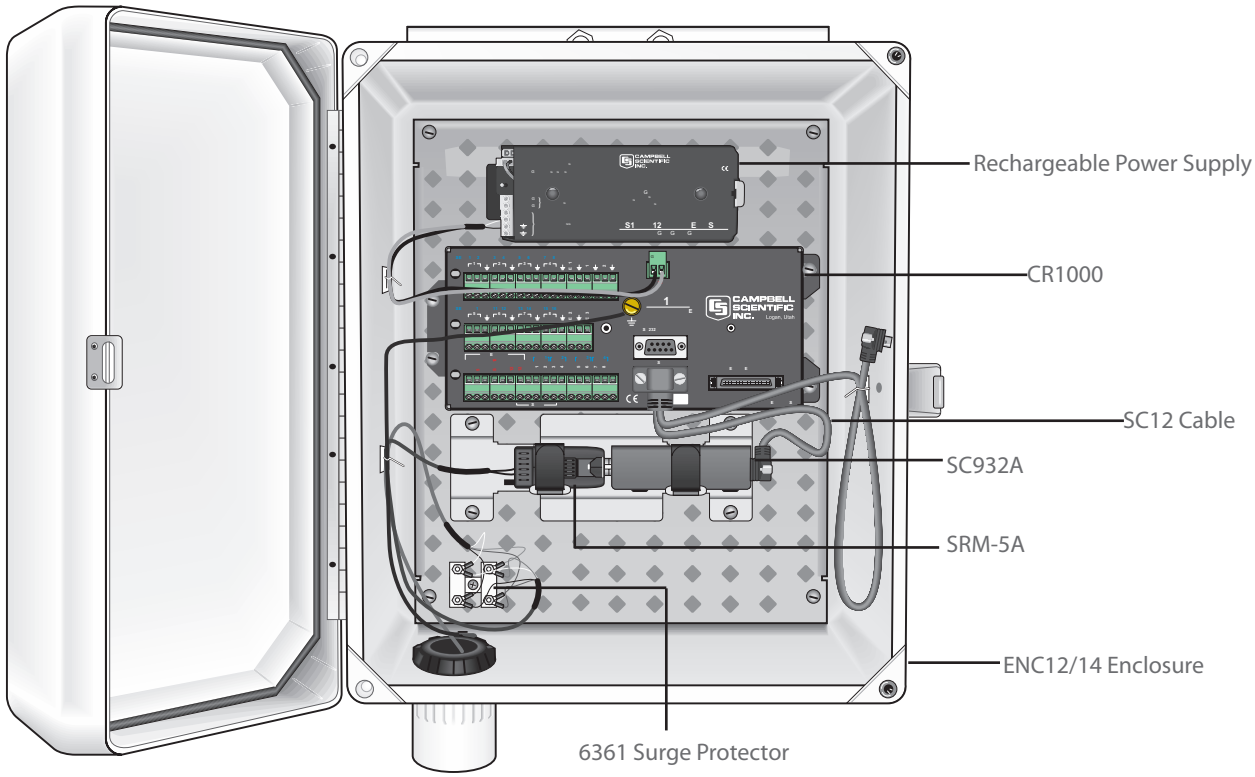
- Data Rates: up to 9,600 bps
- Transmission Mode: Asynchronous, full duplex, 4-wire operation
- Transmission Range: up to 12.2 km (7.6 miles) depending on data rate and wire gage; see Approximate Range Table
- Line Interface: 5-screw (4-wire and ground) connector block with cable strain relief inside plastic cover
- Transmission Line: CABLE2TP (for short RS-232 or prewired enclosures) or unconditioned, 4-wire telephone line
- Transmission Level: 6 dBm
- Terminal Interface: EIA RS-232-C/CCITT V.24, female integral 25-pin connector
- Operating Temperature Range[3]: 0° to 60°C
- Altitude: up to 3000 m (10,000 ft)
- Humidity: up to 95% non-condensing
- Length: 5.2 cm (2.1 in)
- Width: 5.2 cm (2.1 in)
- Height: 1.8 cm (0.7 in)
- Weight: 38 g (1.3 oz)

Power Requirements

- At Computer: uses low power from the EIA RS-232-C/CCITT V.24 data and control signals
- At Datalogger: combined current drain of the SRM-5A modem and SC932A, which is 2.2 mA quiescent, and 10 to 15 mA active
- Protection: ac/dc over voltage connected via isolation transformers rated at 1,500 V RMS

Approximate Range, miles and km

Data Rate	19 Gage (0.9 mm)		24 Gage (0.5 mm)		26 Gage (0.4 mm)	
bps	miles	km	miles	km	miles	km
9,600	6.2	10.0	2.8	4.5	2.0	3.3
1,200	7.6	12.2	3.4	5.5	2.5	4.0



[3]*Manufacturer's operating temperature range specification is listed. Limited tests conducted by Campbell Scientific has shown the SRM-5A to perform at temperatures over -25° to +50°C.*

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