

SRM-5A

Short Haul RAD[®] Modems



Two SRM-5A RAD¹ Short Haul Modems support local communications between Campbell Scientific dataloggers and a computer with an RS-232 serial port. These asynchronous modems use a 4-wire unconditioned telephone line or the CABLE2TP-L cable for transmission; data rates up to 9,600 bps are possible. Their 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.

PC400 or LoggerNet Datalogger Support Software, installed on a computer, provides software support for data retrieval, datalogger program upload/download, and remote monitoring.

Features

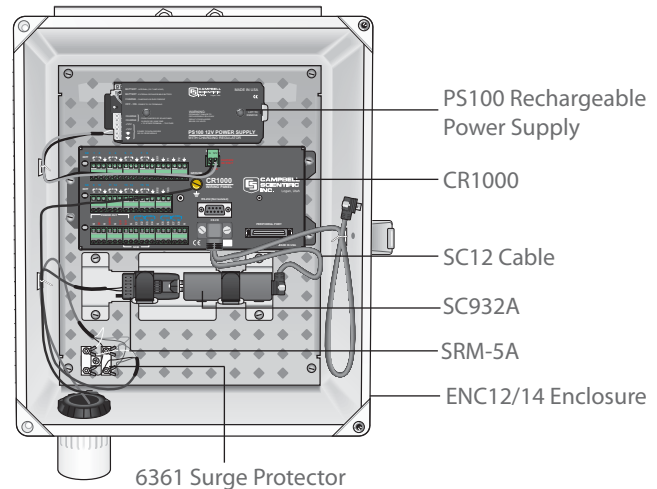
- Asynchronous transmission of up to 9,600 bps
- Transmission range of up to 7.6 miles (12.2 km—see Table 1 on back page)
- No ac power required
- Transformer isolated
- Compact, lightweight
- Easy to install



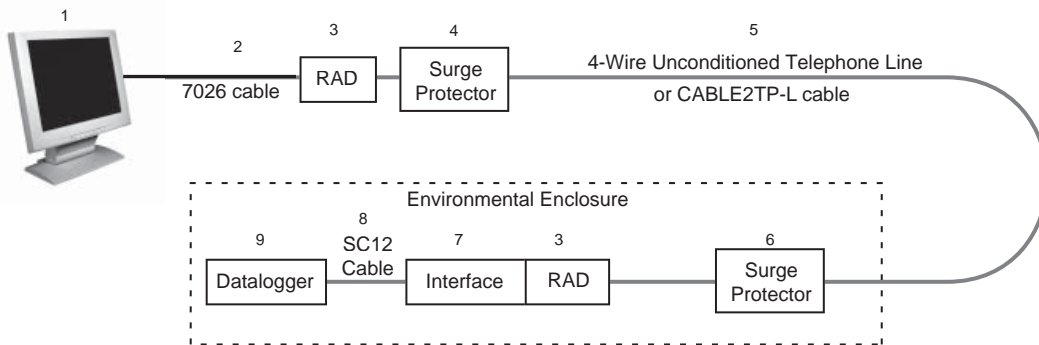
Top View



Bottom view



PC-to-Datalogger Hookup



- (1) PC running 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 telephone 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 Interface² 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

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

²The 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 7.6 miles (12.2 km); see Table 1
Line Interface:	5-screw (4-wire and ground) connector block with cable strain relief inside plastic cover
Transmission Line:	unconditioned, 4-wire telephone line; or CABLE2TP-L for short RS-232 or prewired systems)
Transmission Level:	6 dBm
Terminal Interface:	EIA RS-232-C/CCITT V.24, female integral 25-pin connector

Environment

Temperature:	0° to 60°C (32° to 140°F)
Altitude:	up to 10,000 ft (3000 m)
Humidity:	up to 95% non-condensing

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 SC932A and RAD modem is 2.2 mA quiescent; 10 to 15 mA active.
Protection:	ac/dc over voltage connected via isolation transformers rated at 1,500 V RMS

Physical

Length:	2.1 in (5.2 cm)
Width:	2.1 in (5.2 cm)
Height:	0.7 in (1.8 cm)
Weight:	1.3 oz (38 g)

Warranty/Repair

Application support and troubleshooting assistance for Campbell Scientific systems equipped with RAD modems are offered by Campbell Scientific. Repair and warranty service for RAD modems is extended by RAD Data Communications through their distributor, Pacific Data Com. If repair of a RAD modem becomes necessary, please call (213) 494-2121 for a returned merchandise authorization (RMA).

Table 1: Approximate Range, miles and km

Data Rate	19 Gauge (0.9 mm)		24 Gauge (0.5 mm)		26 Gauge (0.4 mm)	
	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

