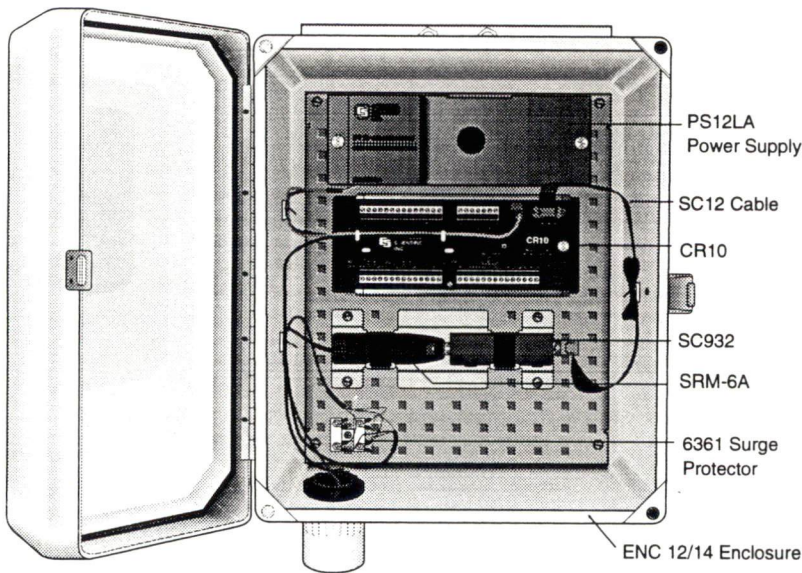
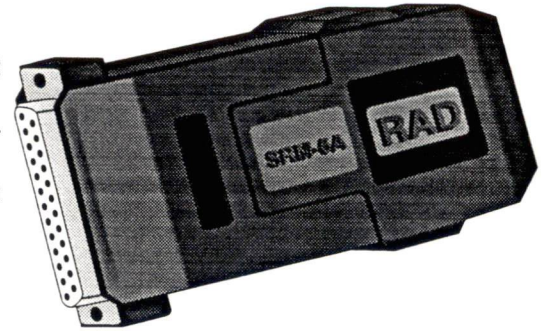


# Short Haul RAD<sup>®</sup> Modems

## Model SRM-6A

RAD's SRM-6A asynchronous Short Haul Modems are used for local communication between Campbell Scientific dataloggers and a computer with an RS-232 serial port. The RAD modem uses unconditioned 4-wire telephone lines for transmission; data rates up to 9,600 bps are possible. The low voltage transmission levels minimize cross-talk between adjacent lines within the same cable. Data are transmitted and received at a balanced impedance, providing excellent immunity to circuit noise.

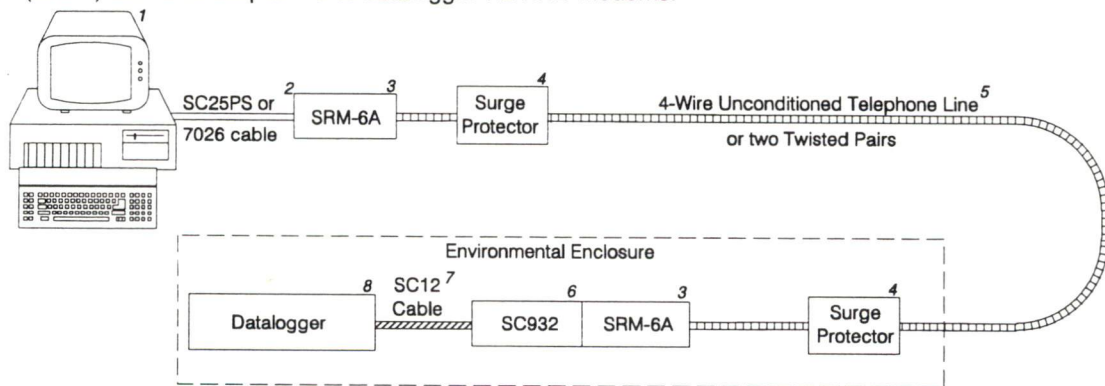
PC208 Datalogger Support Software, installed on an IBM-PC<sup>®</sup> or compatible computer, provides software support for data retrieval, datalogger program upload/download, and remote monitoring.



### Features

- Asynchronous transmission up to 9,600 bps
- Transmission range up to 11.2 miles (18.0 km - See Table 1)
- No AC Power required
- Transformer isolated
- Compact, lightweight
- Easy to install

Block diagram (below) shows hookup of PC to datalogger via RAD modems.



- 1) User-supplied IBM-compatible computer, model -PC or greater running CSI's PC208 Software.
- 2) Serial cable; CSI's model SC25PS. DB-25 male to DB-25 male and female. Computers with 9-pin serial ports require a 9-to-25-pin adapter (model 7026 or equivalent).
- 3) RAD modem. Two required.
- 4) Joslyn 4-wire surge protector model 6361 for use in environmental enclosure, or 5563.
- 5) User-supplied 4-wire unconditioned telephone line (two twisted pairs). Direct burial, rodent-proof cable (Part number F-02P22BPN) is available from Anixter, (708) 677-2600.
- 6) Model SC932 9-pin to RS-232 DCE Interface. Shipped with bracket to mount SC932/SRM-6A to the backplate of an ENC 12/14 or ENC 16/18 enclosure.
- 7) SC12 ribbon cable; provided with SC932.
- 8) CR10, 21X, or CR7.

## Specifications

- **Data Rates**  
Up to 9,600 bps
- **Transmission Mode**  
Asynchronous, full duplex, 4-wire operation
- **Transmission Range**  
Up to 11.2 miles (18.0 km) See Table 1
- **Line Interface**  
5-screw (4-wire and ground) connector block with cable strain relief inside plastic cover
- **Transmission Line**  
4-wire unconditioned telephone line (two twisted pairs)
- **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
- **Physical**  
Length: 4.3 in (110 mm)  
Width: 2.1 in (52 mm)  
Height: 0.9 in (22 mm)  
Weight: 2.5 oz (72 gm)
- **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 SC932 and RAD modem is 2.2 mA quiescent; 10-15 mA active.  
Protection: AC/DC overvoltage connected via isolation transformers rated at 1,500 V RMS

**Table 1 - Approximate Range, Miles and km**

Data Rate bps	19 Gauge (0.9 mm)		24 Gauge (0.5 mm)		26 Gauge (0.4 mm)	
	Miles	km	Miles	km	Miles	km
9,600	8.4	13.5	3.7	6.0	2.8	4.5
1,200	11.2	18.0	11.2	18.0	3.7	6.0

## Warranty/Repair

Application support and trouble-shooting assistance for Campbell Scientific systems equipped with RAD modems is offered by CSI. 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.

IBM is a registered trademark of International Business Machines, Inc.  
RAD is a registered trademark of RAD Data Communications, Inc., Rochelle Park, NJ



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