MCR1 MEMORY CARD READER

May 3, 1993

CAMPBELL SCIENTIFIC, LTD.

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CAMPBELL SCIENTIFIC, INC.
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Non-warranty products returned for repair should be accompanied by a purchase order to cover the repair.

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MCR1 MEMORY CARD READER

The MCR1 Memory Card Reader is a modified version of the CSM1 Card Storage Module. This manual only outlines the differences between these two devices, as operation is similar to the CSM1.

1. INTRODUCTION

The MCR1 Memory Card Reader is designed to read and configure cards used with CSM1 Card Storage Modules. A typical application is in a data processing office where it is used to read cards sent in from one or more stations which have permanently-installed CSM1 units.

The two main differences between the MCR1 and CSM1 are:

1. The MCR1 has a 25-pin RS232 interface instead of the 9-pin datalogger interface.

2. The MCR1 has a AC adaptor to supply power.

In function the MCR1 is identical to the combination of a CSM1 and SC532 interface, but it offers a more compact and cost effective solution for card reading alone.

The MCR1 has the same operating software as the CSM1. However, with the RS232 interface, it can only operate in the telecommunications mode of the CSM1, for communication with a computer. Using either Campbell Scientific's CSMCOM program or user-written software it can read, configure and erase cards. It can also write datalogger programs from a computer into a memory card for loading into a datalogger in the field.

2. SPECIFICATIONS

Please refer to the CSM1 manual for specifications of the memory cards supported.

Operating temperature:	-25°C to +50°C
Power supply:[1]	6-20 VDC supplied by attached 110/120 AC adaptor.
Typical current from DC supply	
Inactive (RTS low):	16 mA maximum
Active:	30 mA average
Interface type:	25-pin, D-type sub-miniature socket, RS232C DCE interface.
Baud Rate:[2]	Supports all standard rates in the range of 300 to 38400 baud.
RS232 Output levels:	± 5 V minimum, with 3000W load.
RS232 Input levels	
Low threshold:	0.8 V maximum
High threshold:	2.0 V minimum
Maximum input limit:	±30 V
Input resistance:	3500 W minimum
Dimensions:	155 x 90 x 32 mm
Weight w/o AC adaptor:	350 g
Construction:	Anodized aluminium case. Two LEDs in case top indicate power-up status and data write operations.

[1]If required, the AC adapter can be replaced with a battery (Section 4).

[2]Serial data format for telecommunications is one start bit, eight data bits, no parity and one stop bit. Potential data read speed using CSMCOM on a 25 MHz 386 PC, at 38400 baud, (to hard disk in comma delineated format) is 1500 data values per second.

3. OPERATING INSTRUCTIONS

The MCR1 is used in exactly the same way as the combination of CSM1 and SC532. It is connected to a PC serial port using either an SC25PS or 7026 cable, for connection to computers with 25-pin and 9-pin connectors respectively. These cables are suitable for connecting to computers with DTE serial interfaces (such as an IBM PC). The MCR1 can also be connected to a PC201 serial card using

the 34 to 25-pin ribbon cable provided with the PC201 card.

Please refer to the CSM1 manual for further details of operation. The most relevant sections of the CSM1 manual are Section 3 (Getting Started) and Section 7 (Telecommunications).

4. POWERING WITH BATTERY

The MCR1 is supplied with an AC adapter which allows the unit to be powered from a 110/120V, 60Hz supply. The output from this transformer is 8V DC (nominal).

If required the adapter can be replaced by cutting the cable and connecting a battery in the range of 6-20 VDC, (e.g. a 12 V battery). The conductor with the white stripe or raised ridge is the positive connection. The battery must be capable of supplying 100 mA peak current.

APPENDIX A. RS232 D-CONNECTOR PIN FUNCTIONS

Pin Number	Function
1	Protective ground, internally connected to pin 7
2	Tx receive data line, from DTE
3	Rx transmit data line, to DTE
4	RTS request to send, input from DTE
5	CTS clear to send, to DTE, normally held high by the MCR1
6*	DSR data set ready, to DTE, held high at +5 V
7	Signal ground
8*	DCD data carrier detect, to DTE, held high at +5 V

* directly connected to the internal 5V supply, do not short to ground.

1. Unlike the CSM1/ SC532, only RTS is required for telecommunications mode; the DTR line is not used.
2. Only pins 2, 3, 4 and 7 need to be connected for use with the CSMCOM program. For connection to a PC these pins should be connected to the equivalent function pins on the PC's DTE interface.