

# MD485

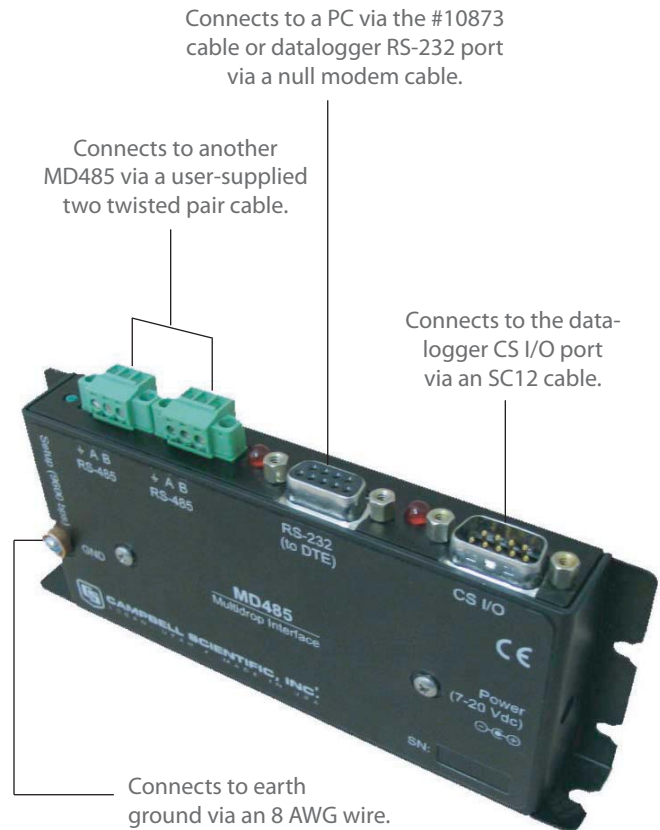
## RS-485 Multidrop Interface

Campbell Scientific's MD485 is an intelligent RS-485 interface that permits a PC to address and communicate with one or more dataloggers over a distance of up to 4000 ft. This interface also supports datalogger-to-datalogger communications, callback from a remote datalogger, PC-to-printer communications, and CC640 digital camera-to-datalogger connections. PC400 or LoggerNet software is used to initiate and control the communications link.

The MD485 can be configured to provide transparent communications, MD9 emulation, and PakBus® networking. Although the MD485 can emulate an MD9, the MD485 can not be added to an existing MD9 network. PakBus networking requires the dataloggers to use the PakBus communications protocol.

### Powering the MD485

AC power is typically used at the computer site; a #15966 wall charger is required. At the field site, the MD485 is powered by the datalogger through its CS I/O port. If the MD485 is connected to the datalogger's RS-232 port instead of the CS I/O port, or if the datalogger was purchased before 12/97, a #14291 Field Power Cable is required. Phone-to-MD485 and spread spectrum radio-to-MD485 networks also require a power supply with a null modem port (see examples on page 4). An A100 adapter used with a PS100 power supply provides this capability. The PS100 is recharged via a wall charger or a solar panel.



You can configure any two types of interface ports (RS-485, RS-232, and CS I/O) to be used at a time.

### Features

- Uses an inexpensive two twisted pair shielded cable to connect multiple MD485 interfaces within a network
- Communicates at rates up to 115.2 kbps (see specifications)
- Provides internal buffering that ensures no data is lost during transmission and allows each side to operate at different baud rates
- Includes gas tubes on the RS-485 ports and a ground lug for better surge protection
- Extends the distance between AVW200 Vibrating Wire Interfaces for situations where wireless communication is impractical
- Increases the distance allowed between a CC640 digital camera and a PakBus datalogger
- Compatible with other communication devices including our phone modems, Ethernet links, and spread spectrum radios. This allows the distance between datalogger and PC to be extended

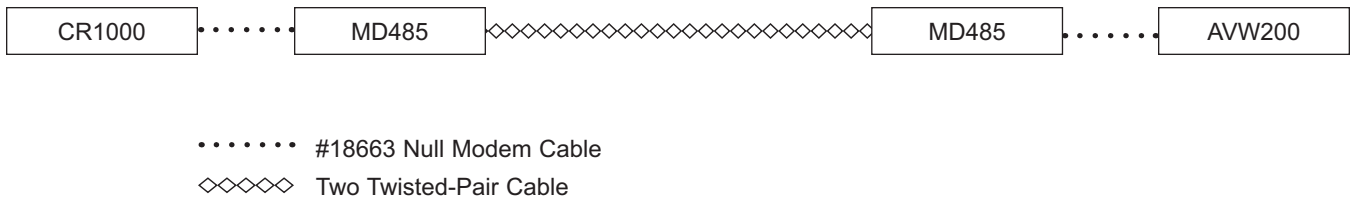


## Combining with Other Devices

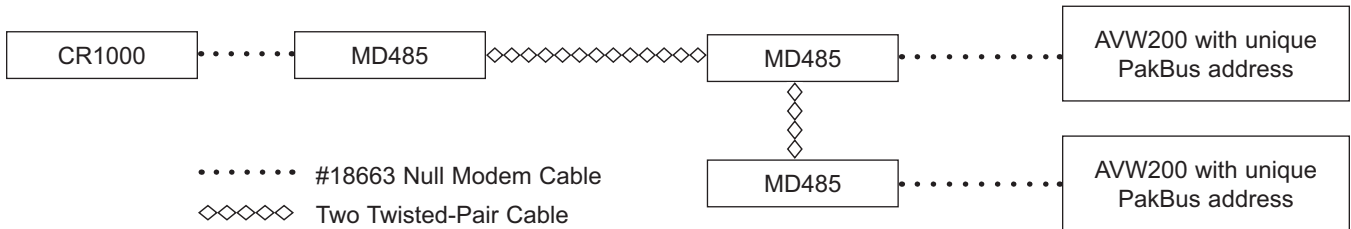
The MD485 can be combined with our AVW2000-series Vibrating Wire Interfaces, CC640 Digital Camera, Ethernet links, phone modems (including cellular), and spread spectrum radios.

The examples that follow indicate the required equipment for these systems. Field site equipment should be housed in an environmental enclosure. Information about configuring the other devices is provided in the user manuals.

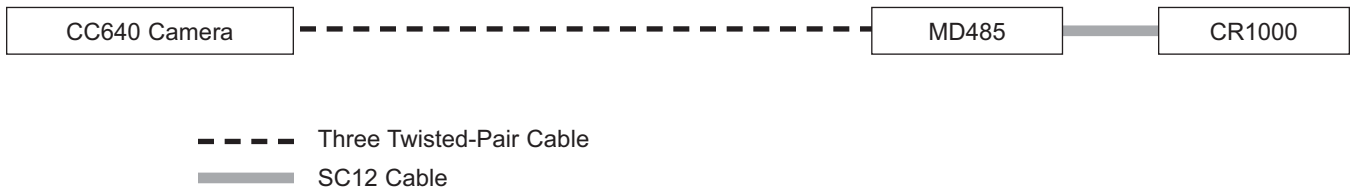
### Point-to-Point AVW200-to-MD485 Example



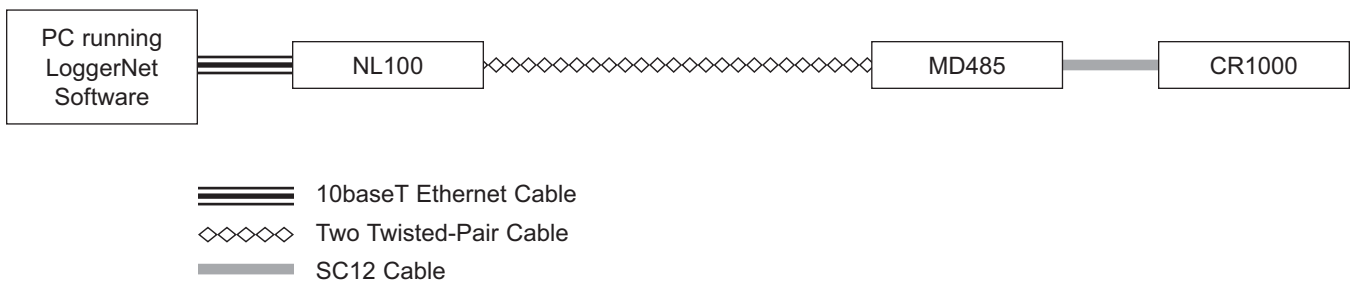
### Point-to-Multipoint AVW200-to-MD485 Example



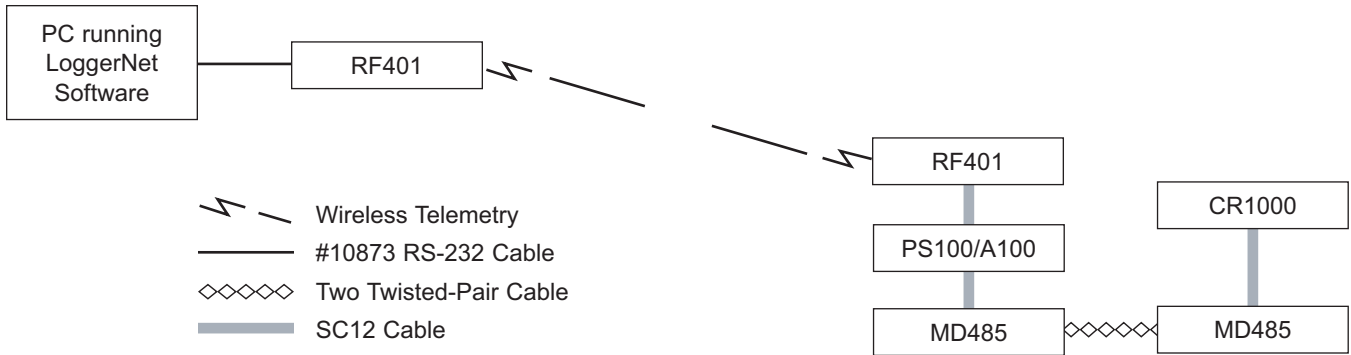
### CC640 Camera-to-MD485 Example



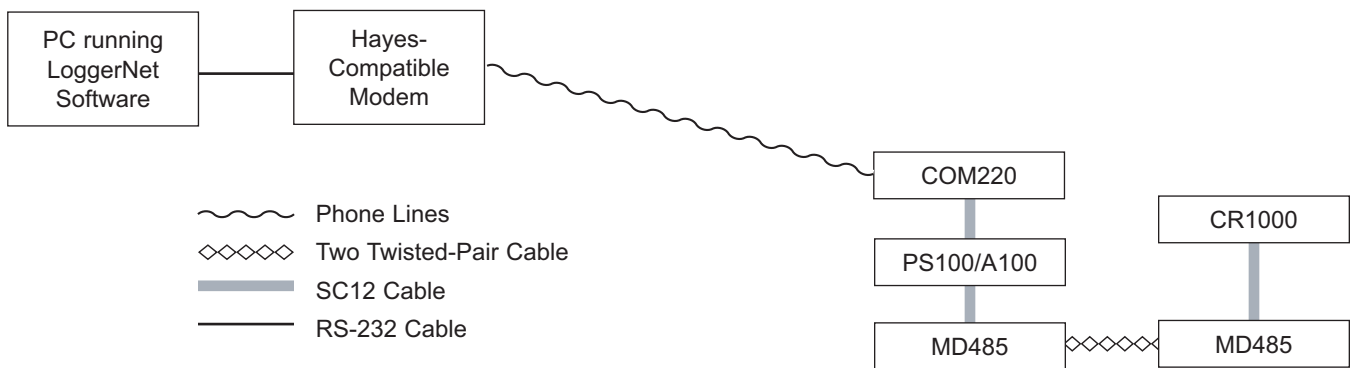
### NL100 Ethernet-to-MD485 Example



## RF401 Spread Spectrum Radio-to-MD485 Example



## COM220 Phone Modem-to-MD485 Example



**Note:** If your telephone company has not installed a surge protector, Campbell Scientific recommends connecting either a #6362 or #4330 surge protector to the COM220.

## Specifications

Baud rate: 1200, 9600, 19.2 k, 38.4 k, 57.6 k, 115.2 k

Voltage: 12 Vdc from datalogger or #15966 wall charger

Current drain: 1.2 mA in standby mode; 2 to 7 mA while communicating

Power: 14.4 mW in standby mode; 24 to 84 mW while communicating

### ESD

Air Discharge: Complies with IEC61000-4-2, test level 4 ( $\pm 15$  kV)

Contact Discharge: Complies with IEC61000-4-2, test level 4 ( $\pm 8$  kV)

Surge: Complies with IEC61000-4-5, test level 3 ( $\pm 2$  kV, 2 ohms coupling impedance)

Maximum cable length: 4000 feet

### Temperature range:

-25° to +50°C standard; -55° to 85°C extended

*Note: The push button that allows customers to check/edit programmable settings while the MD485 is connected to a computer may not operate at temperatures colder than -25°C.*

### Dimensions:

6.25" x 2.5" x 0.75" (15.88 x 6.35 x 1.91 cm)

Weight: 4.5 oz. (127.6 g)

