



## Increases Communication Options

Adds data link possibilities among dataloggers, PCs, and sensors

### Overview

The 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 1200 m. This interface also supports datalogger-to-datalogger communication,

callback from a remote datalogger, PC-to-printer communications, and digital camera-to-datalogger connections.

### Benefits and Features

- › Compatible with most Campbell Scientific data loggers
- › Can be used with a phone modem, Ethernet link, or spread spectrum radio to extend the distance between the data logger and PC
- › Increases the distance allowed between a CC5MPX digital camera and a PakBus data logger
- › Extends the distance between AWW200 Vibrating-Wire Interfaces for situations where wireless communication is impractical
- › Internal buffering ensures that data is not 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
- › Communicates at rates up to 115.2 kbps

### Technical Description

The MD485 includes three ports (RS-232, CS I/O, RS-485) for connecting a PC, a data logger, or another MD485. Any two ports can be used at a time.

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 data loggers to use the PakBus communications protocol. PC400 or LoggerNet software is used to initiate and control the communications link.

### Required Equipment

The MD485 is shipped with the 10873 cable and SC12 cable for connecting it to a PC or data logger. Point-to-point and point-to-multipoint networks use the following equipment:

1. PC running PC400 or LoggerNet software
2. At the computer site, an MD485 is connected to the computer via a pn 10873 cable.
3. At each data logger site, an MD485 is connected either to the data logger's CS I/O port (not compatible with the CR200(X)-series) or the data logger's RS-232 port (not compatible with the CR510



or CR10X). The SC12 serial cable connects an MD485 modem to the CS I/O port. The pn 18663 9-pin pin (male) to 9-pin pin (male) null modem cable connects the MD485 to the RS-232 port.

4. The CABLE2TP-L Two-Twisted-Pair 22-AWG Cable connects an MD485 to another MD485. *Please note that when communicating at maximum distances and high data rates, a cable with polyethylene insulation is recommended.*
5. CR200(X)-series, CR510, CR800, CR850, CR10X, CR1000, or CR3000 datalogger.
6. Power supply
7. Environmental enclosure. At each field site, the data logger, power supply, and MD485 should be housed

in the enclosure if the equipment is not located in a building.

### Powering the MD485

AC power is typically used at the computer site; a pn 15966 wall charger is required. At the field site, the MD485 is powered by the data logger through its CS I/O port. If the MD485 is connected to the data logger's RS-232 port instead of the CS I/O port, or if the data logger was purchased before 12/97, a pn 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. An A100 adapter used with a PS150 or PS200 power supply provides this capability. The PS150 or PS200 is recharged via a wall charger or a solar panel.

## Specifications

Function	Permits a PC to address and communicate with one or more data loggers over a distance of up to 1,200 m.
Transmission Distance or Area	1,219 m (4,000 ft) Can increase distance by using more MD485s or combining with spread-spectrum radios, Ethernet, or phone.
Baud Rates	1200, 9600, 19.2k, 38.4k, 57.6k, 115.2k bps
Voltage	12 Vdc (from data logger or pn 15966 wall charger)
Surge	Complies with IEC61000-4-5, test level 3 ( $\pm 2$ kV, 2 $\Omega$ coupling impedance)
Operating Temperature	<ul style="list-style-type: none"> <li>› -25° to +50°C (standard)</li> <li>› -55° to 85°C (extended)</li> </ul>
Service Requirements	CABLE2TP two-twisted pair cables must be installed

	between networked data loggers and base.
Maximum Cable Length	1,219 m (4,000 ft)
Dimensions	15.88 x 6.35 x 1.91 cm (6.25 x 2.5 x 0.75 in.)
Weight	127.6 g (4.5 oz)

### Current Drain

Standby Mode	1.2 mA
Communicating	2 to 7 mA

### Power

Standby Mode	14.4 mW
Communicating	24 to 84 mW

### 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)

For comprehensive details, visit: [www.campbellsci.eu/md485](http://www.campbellsci.eu/md485) 



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