

Using the Serial Communications Port on the MC-1000

The MC-1000 calibrator is equipped with a DB-15 RS-232 serial communications port, located on the top of the calibrator.

Note: The user will require a special RS-232 cable to connect the calibrator to a computer or terminal.

Communication

Once the cable is attached, set the communications program settings as follows:

Baud Rate	=	9600
Data Bits	=	8
Stop Bits	=	1
Parity	=	None
Flow Control	=	Xon/Xoff

The MC-1000 calibrator can be used with virtually any terminal emulation software. (i.e. Procomm or HyperTerminal).

Serial Communications Procedure for HyperTerminal Program

- From the Windows® desktop, click on "Start".
- Click on "All Programs". Click on "Accessories."
- Under the category "Communications", click on "Hyper Terminal".
- Next appears a screen labeled: CONNECTION DESCRIPTION. In the box titled: Name, enter a name for your program settings... example: "MC Connection". In a box titled: Icon, click on the you want to use. Click on the OK box to accept these entries.
- Next appears a screen labeled: CONNECT TO. In the box titled: Connect Using, select the serial port that corresponds to the computer serial port that you'll be using to communicate to the MC-1000 calibrator. Click on the OK box to accept this entry.
- Next appears a screen labeled: COM X PROPERTIES (where X corresponds to the serial port selected in step # 6). Enter port settings as follows:

(A.)	Bits per second:	9600
(B.)	Data bits:	8
(C.)	Parity:	None
(D.)	Stop Bits:	1
(E.)	Flow Control:	Xon/Xoff

 Click OK box to accept these entries.
- Hook up the MC-1000 calibrator to the PC utilizing the special Martel Electronics RS-232 cable as follows:
 - Plug the 9 pin connector end of the cable to the appropriate serial port on the computer.
 - With the MC-1000 calibrator switched off, plug the other end of the cable to the DB-15 RS-232 port on the top of the MC-1000 calibrator.
- Power up the MC-1000 calibrator per the instruction manual. You can now interact with the calibrator using the commands shown in the table on the right.

Note: You may wish to save the communications settings when exiting HyperTerminal. If so, click on the OK box when prompted "Do you want to save X?", where X corresponds to the name entered in Step # 4.

Computer Controlled Operation

The MC-1000 calibrator can be operated remotely via a computer or terminal. When connected to a computer, via the RS-232 serial data port and appropriate cabling, the user may control the calibrator functions remotely by utilizing simple computer keyboard commands.

The following chart details which computer keys control which MC-1000 calibrator functions:

Serial Input	Description
A	mA measurement
a	mA source
I	mA loop
i	mA 2W Sim
V	Volts measurement
v	Volts source
M	mV measurement
m	mV source
E	HVAC measure
e	HVDC measure
K	Khz measurement
k	Khz source
H	Hz measurement
h	Hz source
P	CPM measurement
p	CPM source
W	2-wire measurement (Ohms and RTDs)
X	3-wire measurement (Ohms and RTDs)
Y	4-wire measurement (Ohms and RTDs)
T	Thermocouple measurement (default Type J) use "S" command to select sensor type
t	Thermocouple source (default Type J) use "S" command to select sensor type
C	Selects Centigrade (T/C - RTD)
F	Selects Fahrenheit (T/C - RTD)
R	RTD measurement mode (default Pt 100 385) use "S" command to select sensor type
r	RTD source mode (default Pt 100 385) use "S" command to select sensor type
0-9	Enter a source value using ascii characters
-, <CR>	0,1,2,...,9,-,.,terminated by < CR> (carriage return)
D	Single Broadcast of most recent display value and units
d	Single Broadcast of most recent display value

"S" COMMANDS SELECT SENSOR TYPE

Serial Input	Selection Entry	Description
S	No.	Thermocouple Type
	1	J
	2	K
	3	T
	4	E
	5	R
	6	S
	7	B
	8	L
	9	U
A	N	OHMS
B	mV	