

4600 SERIAL INTERFACE

The YSI 4600 Precision Thermometer may be connected to a host computer via an RS-232 serial port. YSI has made the use of this feature very easy with Thermal View software which is offered as an accessory for the 4600. The 4600 has a female DB9 socket and is connected using a straight RS-232 cable (not a null modem cable). If you did not purchase Thermal View software, you may use any standard communications program; however, the functions will be limited.

PIN CONNECTIONS

The following list shows the pin connections.

4600 Pin	4600 Signal	Direction	Host Pin	Host Signal
1	No Connection		1	Not Used
2	TX (Transmit Data)	to Host	2	RX (Receive Data)
3	RX (Receive Data)	from Host	3	TX (Transmit Data)
4	No Connection		4	Not Used
5	Ground		5	Ground
6	No Connection		6	Not Used
7	CTS (Clear to Send)	from Host	7	RTS (Request to Send)
8	No Connection		8	Not Used
9	No Connection		9	Not Used

RS-232 SETTINGS

The communications parameters are fixed as follows:

Baud Rate:	9600
Data Length:	8 Bits
Parity:	None
Stop Bits:	1

COMMANDS

Whenever the 4600 detects that the CTS line is true it will enter the "RS-232" mode. The 4600 display will read H2.32 and it will transmit the ">" character followed by a "space" to the host computer. The 4600 is then ready to receive commands. Each command must be followed by a carriage return/line feed (enter).

The following is a list of available commands:

Command	Name	Description
H	HELP	Displays the help menu.
P	POWER-DOWN time-out	Sets the number of minutes that the 4600 will wait before automatically turning off. This value can be 3 to 999 or can be disabled by entering 0.
R	RANGES	Programs the 4600 to operate in °C, °F or both. This function only effects the 4600 when NOT in the RS-232 mode. It does NOT effect the 4600 RS-232 data.

Command	Name	Description
S	SERIAL number	Displays the serial number of the 4600.
T	TEMPERATURE	Places the 4600 in data output mode. The 4600 will output the current temperature (in degrees C) every 524 milliseconds. The 4600 will continue to output data until you exit the RS-232 mode.

To exit RS-232 mode, remove RS-232 cable or disable the CTS line. The line must be held false for at least 600 milliseconds.

NOTE: The 4600 will automatically turn off as soon as the CTS line is disabled if the Power-down time has expired. To prevent automatic turn off, set the Power-down time to 0 (disabled).

WARNING: The 4600 will NOT display HI or LO errors while in the Data Output Mode. Temperatures above +150°C or below -40°C are out of range (above +70°C or below 0°C for model 4610).

DATA FORMAT

When the 4600 is placed in data output mode, it transmits the current temperature (in degrees C) every 524 milliseconds. The format is as follows:

Data	Description
“space”12.345CRLF	Positive temperature (CR= carriage return, LF= line feed)
“-”12.345CRLF	Negative temperature



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Call YSI for additional information on temperature applications.

