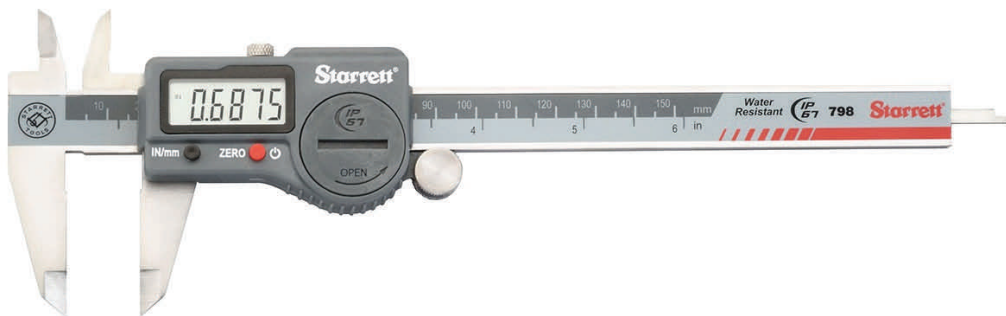




User's Manual

Starrett RS232 Connection System for Hand Tools

USB Serial Adapter





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1. Introduction

Inductive Cable

The Inductive cable enables a direct connection to a personal computer or a dedicated printer.

Data Request

The inductive hand held tools are designed to send data when a status change is detected on the request line. The data request is made by driving the RX line to a minimum of -1.0 Volts for 110ms.

Power supply via RS232 connection

The cable must be externally powered by the instrument requesting data such as a personal computer, a dedicated printer or a compatible display. It is an interface that converts the data output of the instrument to a compatible RS232 signal.

Installation of the USB Drivers

Refer to the USB driver product CD included with the tool.

Connection to the Peripheral Device

Attach the USB plug to the computer

Attach the Inductive plug to the 798 Caliper

If the drivers have been loaded correctly the computer will automatically detect the instrument and assign a COM port. To reassign the COM port refer to the Quick Start Installation Guide.

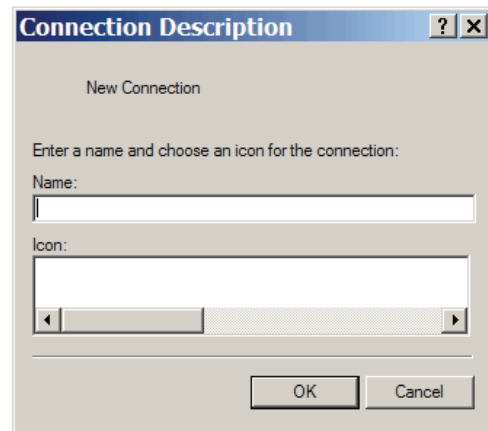


2. HyperTerminal Windows Software Connection

This program is available as standard with Windows 95, 98, 2000, Me, and XP. To request data HyperTerminal toggles the RX line of the tool. The tool responds to the change in state by sending data.

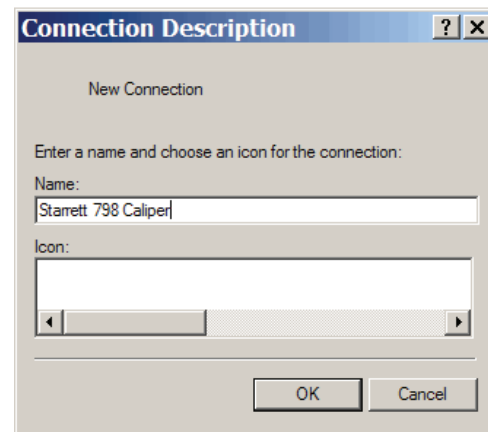
STEP # 1

Open the HyperTerminal Windows Software.

A screenshot of the 'Connection Description' dialog box in HyperTerminal. The title bar is blue with the text 'Connection Description' and standard window controls. The main area is light gray and contains the text 'New Connection'. Below this, it says 'Enter a name and choose an icon for the connection:'. There are two input fields: 'Name:' and 'Icon:'. The 'Name' field is empty, and the 'Icon' field is empty with a scroll bar. At the bottom right are 'OK' and 'Cancel' buttons.

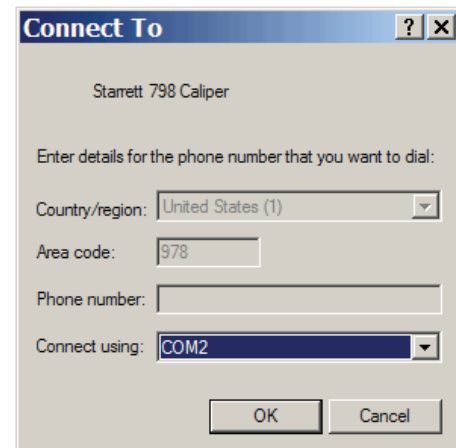
STEP # 2

Enter a name for this connection then click OK.

A screenshot of the 'Connection Description' dialog box. The 'Name' field now contains the text 'Starrett 798 Caliper'. The 'Icon' field remains empty. The 'OK' and 'Cancel' buttons are at the bottom right.

STEP # 3

Select the COM port that your measuring instrument is connected.

A screenshot of the 'Connect To' dialog box. The title bar is blue with the text 'Connect To' and standard window controls. The main area is light gray and contains the text 'Starrett 798 Caliper'. Below this, it says 'Enter details for the phone number that you want to dial:'. There are four input fields: 'Country/region:' with a dropdown menu showing 'United States (1)', 'Area code:' with the value '978', 'Phone number:' which is empty, and 'Connect using:' with a dropdown menu showing 'COM2'. At the bottom right are 'OK' and 'Cancel' buttons.

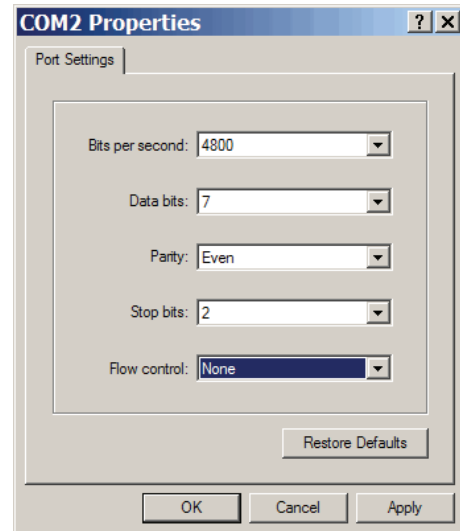


STEP # 4

Select the port parameters.

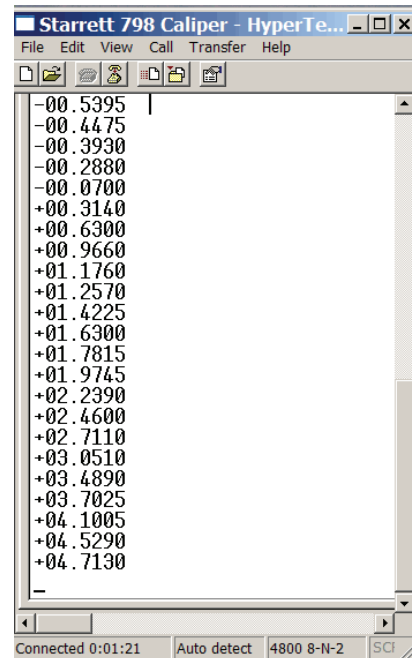
(**4800** bauds rate, **7** bits, **even** parity, **2** stops bit, Flow Control **None**)

Then click OK.



STEP # 5

Press the IN/mm button on the tool to send data. The value will be displayed on the screen. Alternately, press any key on the computer keyboard to request data.



Troubleshooting

- * The USB cable is not connected to the corresponding COM port number.
- * The port parameters are not set correctly (**4800** bd, **7** bits, **even** parity, **2** stop bits)
- * The USB cable is defective or not receiving power (the blue light should be on)
- * The tool is not transmitting data.

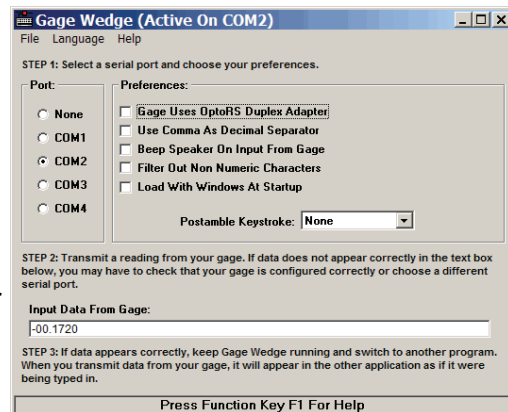


3. Connection with the GageWedge Software

Gage Wedge was designed to be extremely easy to configure when connected to the 798 caliper.

Step # 1

Select the COM port that your measuring instrument is connected to and choose the preferences that you would like to use from the options available in the Gage Wedge Window. Note : The Postamble Keystroke option in the Preferences group allows you to select an additional keystroke that you would like Gage Wedge to issue after each input from your measuring instrument. You can choose the Enter keystroke, a Tab keystroke or any of the four arrow keys (Up, Down, Left or Right). You should select the keystroke that you would normally type after a gage reading if you were typing the data manually.

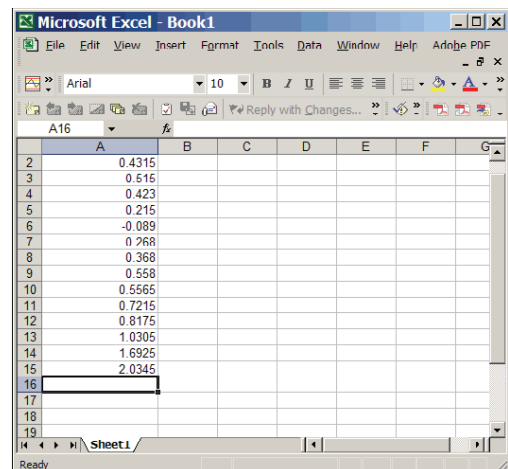


Step # 2

Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being sent correctly. The measurement data from the instrument should appear in the text box marked "Input Data From Gage", in the Gage Wedge Window.

Step # 3

If your measurement data appears correctly in the Gage Wedge Window then everything is working correctly and all you have to do is switch to another Windows application (leave Gage Wedge running) and take measurements. The instrument data should appear in the other application just as if it were being typed in on the keyboard. Note: You can minimize the Gage Wedge Window and it will continue to function correctly.





4. Connection with the Winwedge 32 Software

WinWedge is primarily designed as a tool for interfacing typical RS232 devices (scales, bar code/mag stripe readers, measuring tools, GPS devices, sensors, pH meters and many different types of laboratory and industrial instruments) to a PC. You can think of WinWedge as a "user configurable serial device driver". WinWedge is designed to run in the background and input data through the serial port and immediately feed that data directly to another program either by converting the data to "keystrokes" so that the data appears in the other application as if it were being typed in on the keyboard or it can also pass data to another program using a feature of Windows called Dynamic Data Exchange (DDE).

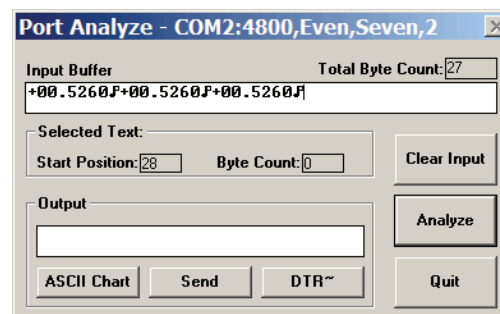
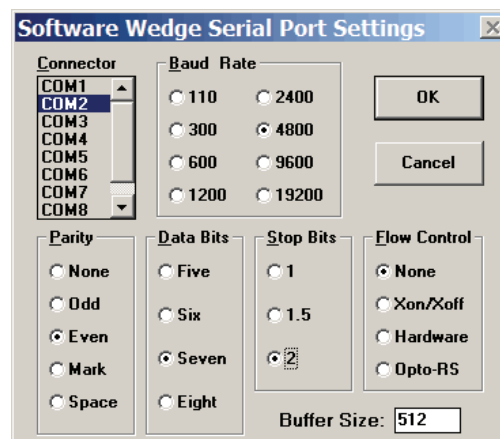
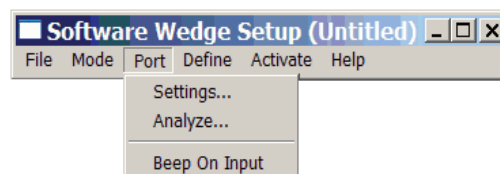
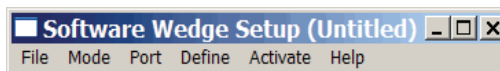
Step #1

Click the **Setting** sub-menu menu in **Port** menu. Select the COM port that your measuring instrument is connected. Set the communication protocol: Parity (Even), Baud Rate (4800), Data Bits (Seven), Stop Bits (2), Flow Control (None). Click OK.

Step #2

Click the **Analyze** sub-menu in **Port** menu. Press the **In/mm** button on the tool to transmit a measurement to WinWedge. The measurement data should appear in the text box marked "Input Buffer"

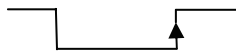
Note : To request data from WinWedge enter any keyboard character in the Output text box. Click the **Send** button in WinWedge to request a measurement. The buffer will hold up to 256 characters. To reset the buffer click on the **Clear Input** button.





5. Connection with Standard Basic program

Serial port opening and parameters	Open "COM1,E,7,2,PE"
Power supply setting (RTS = ON, DTR = ON) &H3FC register address (COM2: &H2FC)	OUT &H3FC,&H0B
Set DTR line OFF (RTS = ON, DTR = OFF)	OUT &H3FC,&H0A
Data reading	Line input#1,a\$
* Data Request = DTR	150 m/sec



6. Connection with Visual Basic program

The communication control (MsComm) of Visual Basic must be applied :

Port opening	' Use COM1 Comm1.CommPort = 1 ' 4800 baud, even parity, 7 data, and 2 stop bit. Comm1.Settings = "4800,E,7,2" ' Open the port Comm1.PortOpen = True
Power supply setting	Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = True
Data request	MSComm1.DTREnable = False Timer1.Interval = 150 Timer1.Enabled = True
Data reading	InString = Comm1.Input



7. Specifications

Connection	Compatible USB 1.0
Plug's power supply	From peripheral equipment, +5V DC
Data transmission parameters	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length	3 m
Number of transmissions/sec	4-8/sec.(depends on the instrument connected)
Data transmission format	[Sign E1-En ". " F1-Fn CR] ["ERR" Number CR]