sylvac

User's manual

Sylvac RS232 Connectic Systems for Hand Tools

Opto-RS 232 C simplex
Opto-RS 232 C duplex
RS-232 C simplex
USB Serial adapter

SYLVAC S.A. ch. du closalet 16 / CH- 1023 Crissier / Swizerland / Tel.+41 21 637 67 57 – Fax +41 21 637 67 40 – e-mail sales@sylvac.ch - www.sylvac.ch

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CONTENTS

1. Introduction

OPTO-RS CABLE

The OPTO-RS cable enables a direct connection with most of measuring instruments to a personal computer or a dedicated printer.

It is not only a cable, but an interface which converts the data output of the instrument to a compatible RS232 signal. The periphery instrument connection must be able to supply power to the OPTO-RS plug.

Two different types of OPTO-RS plug connections are available : Simplex and Duplex

Simplex cable

First generation of OPTO-RS cable connection, designed for instruments which were not able to receive RS232 commands. Data requests are made by LED status change (e.g. by turning off the DTR signal for a minimum of 110ms.
The OPTO-RS simplex cable can also be used with duplex instruments, however remote commands will be ignored.

Duplex cable

The duplex cable allows a 2 – way communication between an instrument an a PC in half-duplex mode (e.g. 2 way communication but not simultaneously).
Important : Only Duplex instruments have the ability to receive RS232 commands. If you use a Duplex cable with a simplex instrument, all commands other than "?" will be seen as a data request.
The pin assignment of a duplex cable is different to the one of a simplex cable.

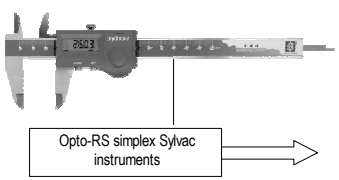
RS 232 connection + power supply

The RS232 cable enables a power supply and a direct connection with most of the Sylvac measuring instrument to a personal computer, a dedicated printer or to a Sylvac display unit.
It is not only a cable, but an interface witch converts the Data output of the instrument to a compatible RS 232 signal. The periphery instrument connection must be able to supply power to the RS 232 plug.

2. Opto – Simplex instrument / Opto – Simplex cable

2.1 How to use Opto-RS232 simplex Sylvac instrument with an Opto-RS232 simplex cable :

In both **SIMPLEX instrument** and **SIMPLEX cable**, data can only be sent from the instrument to the data acquisition system (e.g. PC). No data can be sent from the PC to the instrument.



Opto-RS simplex Sylvac instruments

Opto-RS232 simplex cable
Order N° : **926.5521**

Cable technical specifications
Opto-RS232 simplex cable

White (V+)
Yellow (Rxd)
Green (Txd)
Brown (V-)

Phototransistor
(data receipt)

LED for
Data request

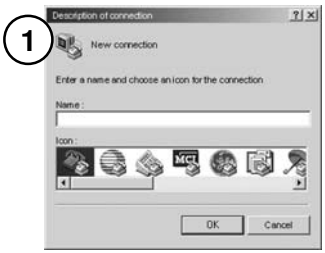
Connection PC side

2 Rxd (Data Out)
3 Txd (V-)
4 DTR (Data Request)
7 RTS (V+)

2.2 Connection with the Hyper Terminal Windows Software

This program is available as standard with Windows 95,98,2000, Me, and XP. It can only be used with a **simplex cable** and as data transmission from the instrument.

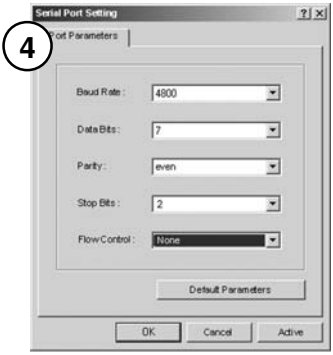
STEP#1
Open the Hyper-Terminal Windows Software.



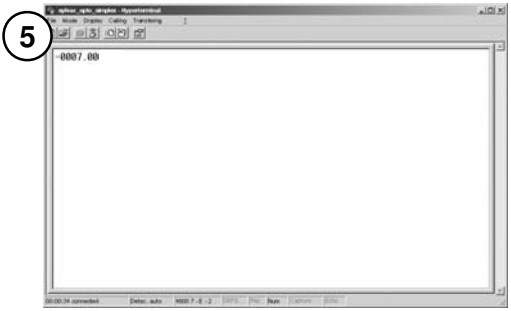
STEP#2
Enter a name for this connection then click OK.

STEP#3
Select the COM port that your measuring instrument is connected

STEP#4
Select the port parameters.
(**4800** bauds rate, **7** bits, **even** parity, **2** stops bit
Flow Control **None**, then click ok.)



STEP#5
On digital caliper **S235**, press the set button, then the value is displayed on the screen.



Troubleshooting

a) The Dsub9 connector of Opto-RS cable is not connected to the corresponding COM port number.
b) The port parameters are not correct. (**4800**bd, **7**bits, **even** parity, **2** stop bits)
c) The Opto-RS cable is defective. (on the Opto-RS cable, the red light should be on when Hyper-Terminal is active).
d) The Opto-RS instrument is defective.

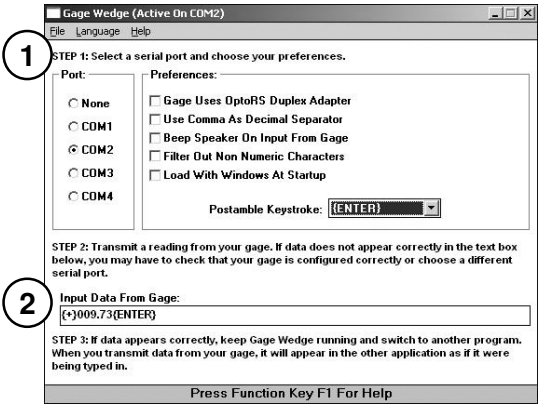
2.3 Connection with the GageWedge Software

Gage Wedge was designed to be extremely easy to configure for all instruments using the Sylvac measuring instrument chipset.
(free on www.sylvac.ch)

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 either an Enter keystroke, a Tab keystroke or any if 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.



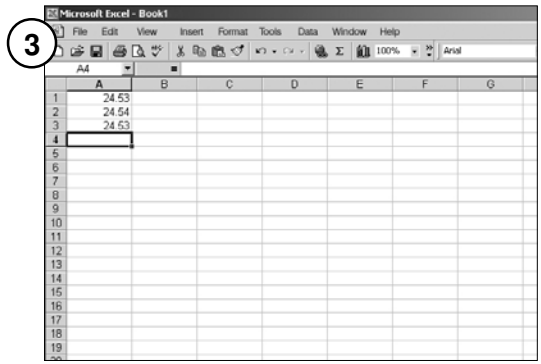
Step #2

Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted 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

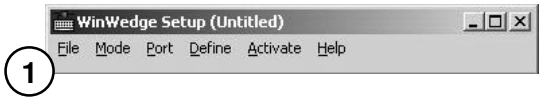
If your measurement data appears correctly in the Gage Wedge Window then everything is working correctly and all you have to do is switch to another Windows application (leave Gage Wedge running) and take measurements. The instrument data should appear in the other application just as if it were being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

Note: You can minimize the Gage Wedge Window and it will continue to function correctly.

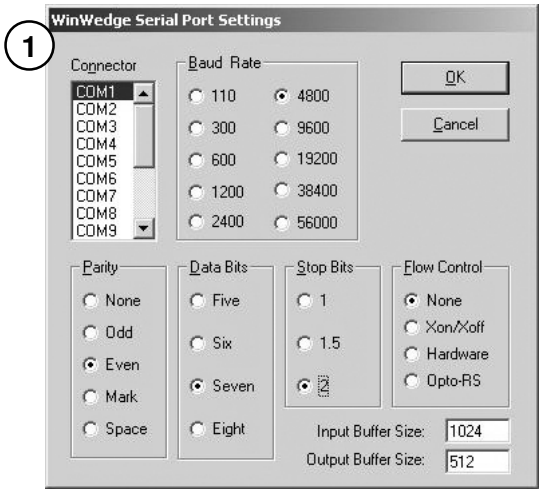


2.4 Connection with the Winwedge 32 Software

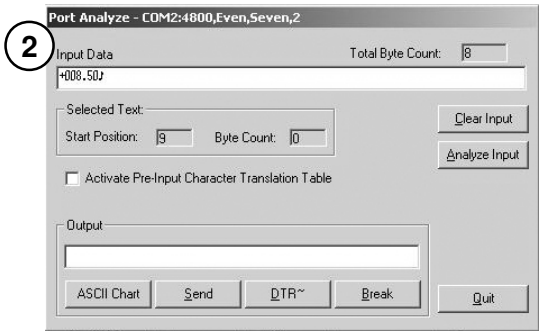
WinWedge is primarily designed as a tool for interfacing typical RS232 devices (scales, bar code/mag stripe readers, measuring tools, GPS devices, sensors, pH meters and many different types of laboratory and industrial instruments) to a PC. You can think of WinWedge as a "user configurable serial device 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 to.
Select the Parity (*Even*) that your measuring instrument use.
Select the Baud Rate (*4800*) that your measuring instrument use.
Select the Data Bits (*Seven*) that your measuring instrument use.
Select the Stop Bits (*2*) that your measuring instrument use.
Select the Flow Control (*None*) that your measuring instrument use. (Simplex)
Click OK.



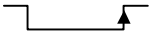
Step #2
Click the **Analyse** sub-menu in **Port** menu.
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data”
Note : When clicking the icon DTR, a measurement is taken from the instrument.
The text box marked “Output” cannot be used because this is for duplex connection.



2.5 Connection with Standard Basic program

Simplex cable

Serial port opening and parameters	OPEN "COM1:4800,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.

2.6 Connection with Visual Basic program

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

Simplex cable

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	' Simplex Cable' Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = True
Data request	' Simplex Cable ' MSComm1.DTREnable = False Timer1.Interval = 150 Timer1.Enabled = True
Data reading	InString = Comm1.Input

2.7 Specifications

Connection……..	RS232 compatible, Dsub 9p female or open
Plug's power supply……	From peripherical equipment, with TXD, DTR and RTS lines
Data transmission parameters……..	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length……	15 m according to IEC standards
Number of transmissions/sec……	4-8/sec.(depends on the instrument connected)
Data transmission format……..	[Sign ¦ E1-En ¦ "." ¦ F1-Fn ¦ CR] ["ERR" ¦ Number ¦ CR]

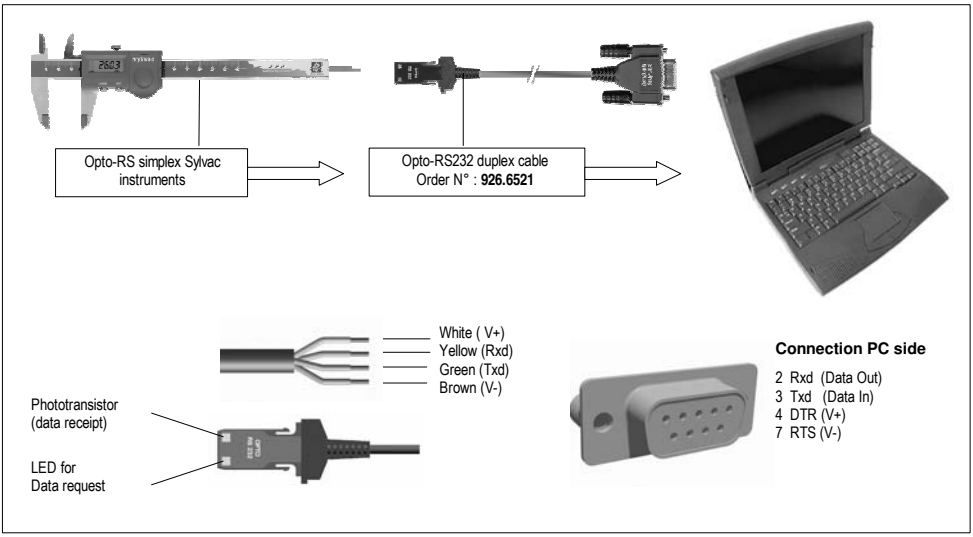
2.8 Accessories

USB to RS232 converter cable	Order N° **925.1142**
Gagewedge for WINDOWS 1- way serial communication capabilities to other windows applications (Excel, Word)	Order N° **981.7141** (free on www.sylvac.ch)
Winwedge for WINDOWS Extremely powerful utility designed to add complete 2 way serial communication capabilities to other windows applications (Excel, Word..)	Order N° **981.7140**

3. Opto – Simplex instrument / Opto – Duplex cable

3.1 How to use Opto-RS232 simplex Sylvac instrument with an Opto-RS232 duplex cable :

In both **SIMPLEX instrument** and **Duplex cable**, data can be sent from the instrument to the data acquisition system (e.g. PC), and the command "**?**" from the PC to the instrument as a data request.



3.2 Connection with the Hyper Terminal Windows Software

This program is available as standard with Windows 95,98,2000, Me, and XP. **It cannot be used** with a **duplex cable**.

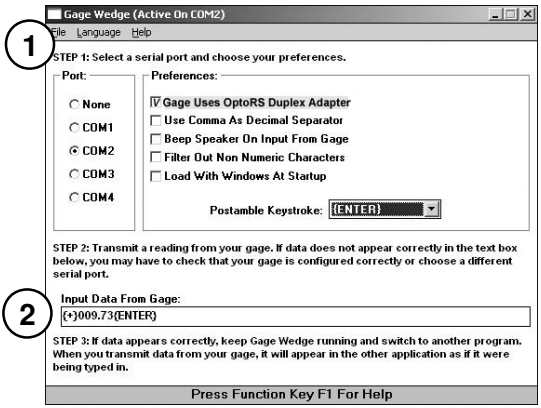
Cannot be used because,
Power supply RTS = V- (not available)

Possibility :
By using the Booster n° 925.1150

3.3 Connection with the GageWedge Software

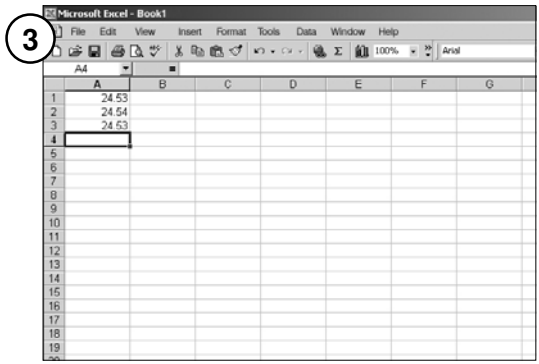
Gage Wedge was designed to be extremely easy to configure for all instruments using the Sylvac measuring instrument chipset.

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.
Select the Preferences (**Gage Uses OptoRS Duplex Adapter**).
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 either an Enter keystroke, a Tab keystroke or any if 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.



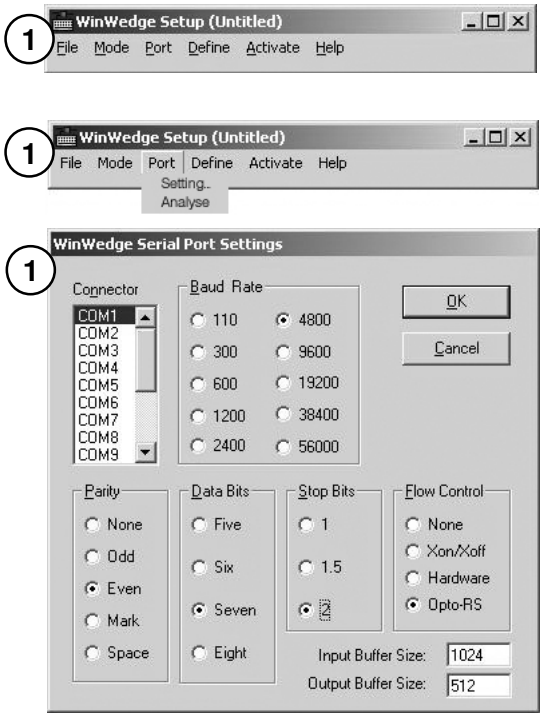
Step #2
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data From Gage”, in the Gage Wedge Window.

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.



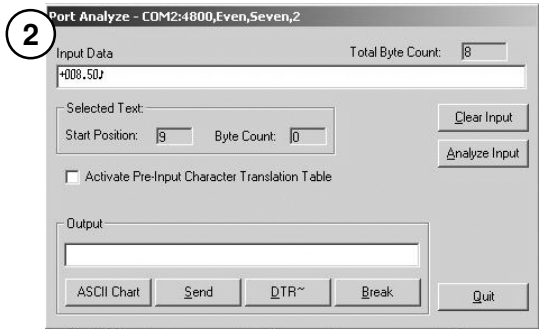
3.4 Connection with the Winwedge 32 Software

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).

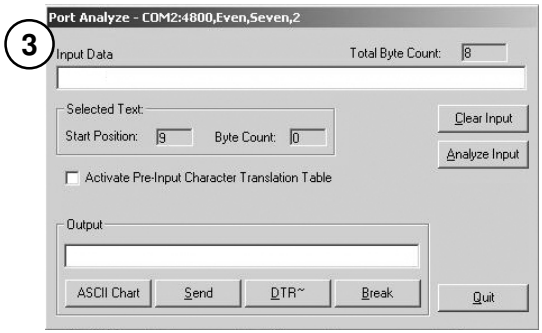


Step #1
Click the **Setting** sub-menu menu in **Port** menu
Select the COM port that your measuring instrument is connected to.
Select the Parity (*Even*) that your measuring instrument use.
Select the Baud Rate (*4800*) that your measuring instrument use.
Select the Data Bits (*Seven*) that your measuring instrument use.
Select the Stop Bits (*2*) that your measuring instrument use.
Select the Flow Control (***Opto-RS***) that your measuring instrument use. (***Duplex***)
Click OK.

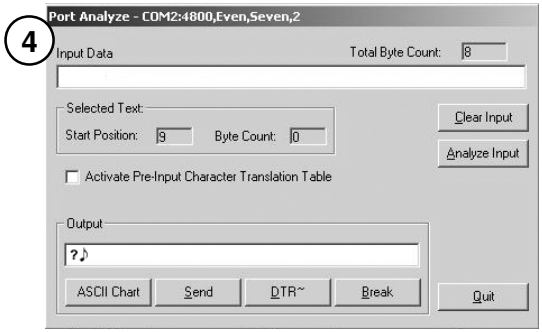
Step #2
Click the **Analyse** sub-menu in **Port** menu.
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data”



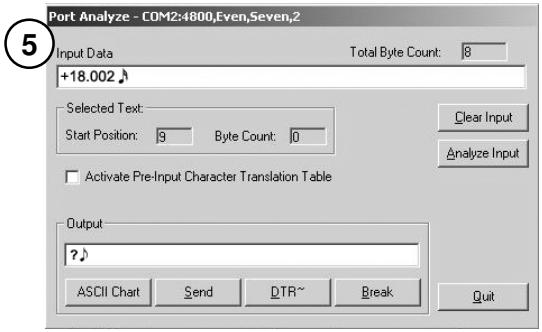
Step#3
Click the "**Clear Input**" Icon to empty the buffer .



Step#4
Enter in the text box marked "Output",
the character "?" then click the icon
"**ASCII Chart**" to select the ASCII code
(13 ♪ CR (Carriage Return)) then click OK



Step#5
Click the "**Send**" icon, this is a request from the PC to send the displayed value on the instrument to PC .
The measurement data from the instrument should appear in the text box marked "**Input Data**"
This is the only remote command that you can use with a Simplex instrument connected with a Duplex Cable.



3.5 Connection with Standard Basic program

duplex cable

Serial port opening and parameters	OPEN "COM1:4800,E,7,2,PE"
Power supply setting *(RTS = OFF, DTR = ON)* *&H3FC register address (COM2: &H2FC)*	OUT &H3FC,&H09
Data request (<CR> will be automatic using this command)	Print #1,"?"
Data reading	Line input#1,a$

3.6 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	' Duplex Cable' Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = False
Data request	' Duplex Cable + simplex instrument 'instruments PM200,201 old generation' MSComm1.Break = True ' Incremente Timer1.Interval in case of no trans' Timer1.Interval = 10 Timer1.Enabled = True MSComm 1.Break = False ou 'instruments from S225 new generation' ' Duplex Cable + simplex instrument ' MSComm1.Output = '' ?" + Chr$(13)
Data reading	InString$ = Comm1.Input

3.7 Specifications

Connection……..	RS232 compatible, Dsub 9p female or open
Plug's power supply……	From peripherical equipment, with TXD, DTR and RTS lines
Data transmission parameters……..	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length……	15 m according to IEC standards
Number of transmissions/sec……	4-8/sec.(depends on the instrument connected)
Data transmission format……..	[Sign ¦ E1-En ¦ "." ¦ F1-Fn ¦ CR] ["ERR" ¦ Number ¦ CR]

3.8 Accessories

Press the foot pedal to send the displayed value on the instrument to the PC . Adapter and foot pedal	Order N° **925.1143** (for Duplex Cable only)
USB to RS232 converter cable	Order N° **925.1142**
Gagewedge for WINDOWS 1- way serial communication capabilities to other windows applications (Excel, Word)	Order N° **981.7141** (free on www.sylvac.ch)
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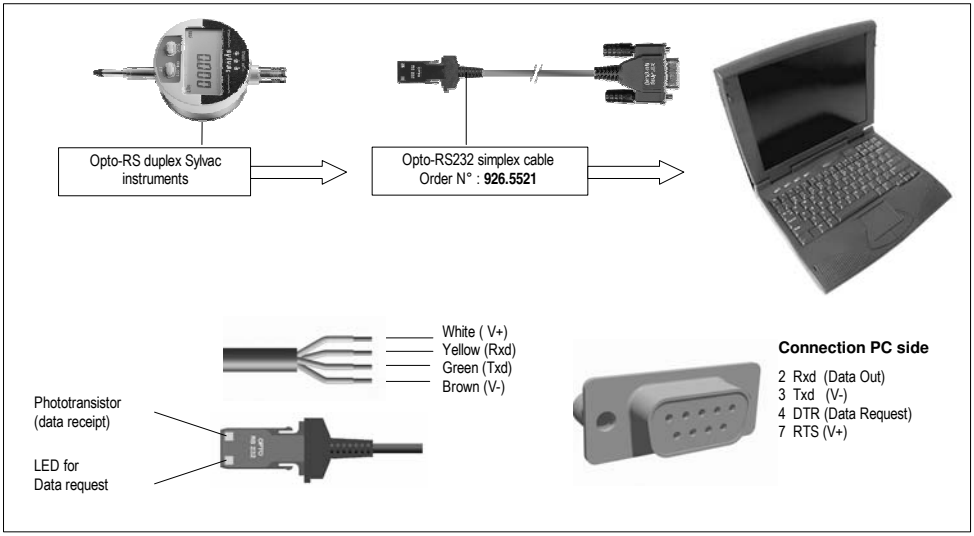
4. Opto – Duplex instrument / Opto – Simplex cable

4.1 How to use Opto-RS232 duplex Sylvac instrument with an Opto-RS232 simplex cable :

In both **Duplex instrument** and **SIMPLEX cable**, data can only be sent from the instrument to the data acquisition system (e.g. PC). No data can be sent from the PC to the instrument.



4.2 Connection with the Hyper Terminal Windows Software

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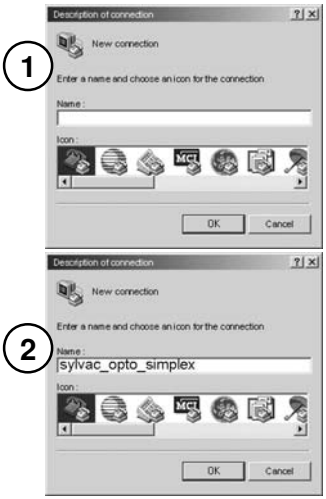


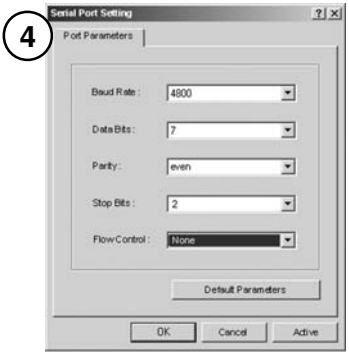
STEP#1
Open the Hyper-Terminal Windows Software.

STEP#2
Enter a name for this connection then click OK.

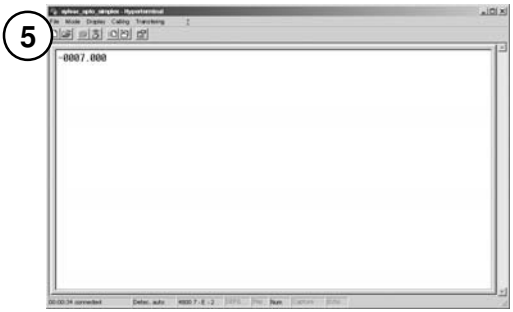
STEP#3
Select the COM port that your measuring instrument is connected

STEP#4
Select the port parameters.

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



STEP#5
On digital gauge **S213**, press the set button, then the value is displayed on the screen.

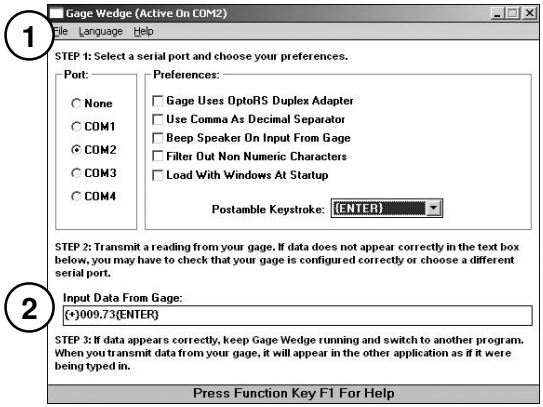


Troubleshooting

e) The Dsub9 connector of Opto-RS cable is not connected to the corresponding COM port number.
f) The port parameters are not correct. (**4800**bd, **7**bits, **even** parity, **2** stop bits)
g) The Opto-RS cable is defective. (on the Opto-RS cable, the red light should be on when Hyper-Terminal is active).
h) The Opto-RS instrument is defective.

4.3 Connection with the GageWedge Software

Gage Wedge was designed to be extremely easy to configure for all instruments using the Sylvac measuring instrument chipset.



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 either an Enter keystroke, a Tab keystroke or any if 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
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In the Gage Wedge Window.

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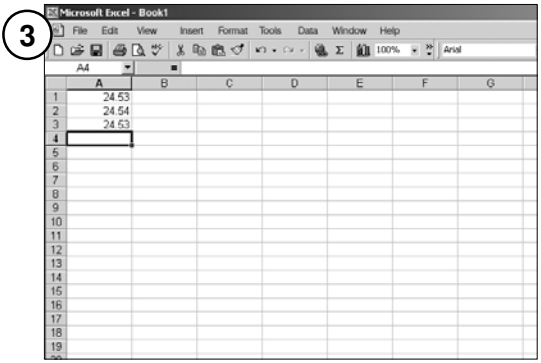

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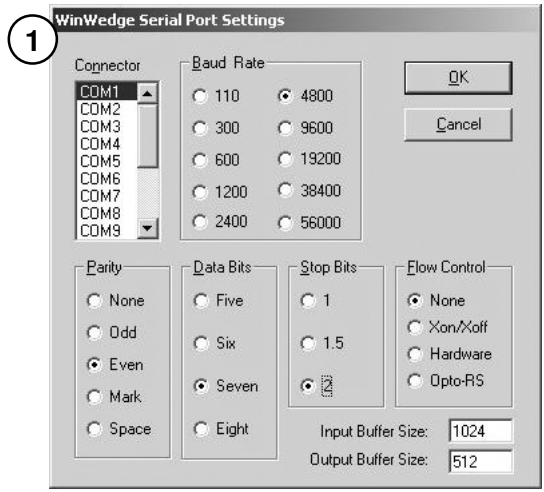
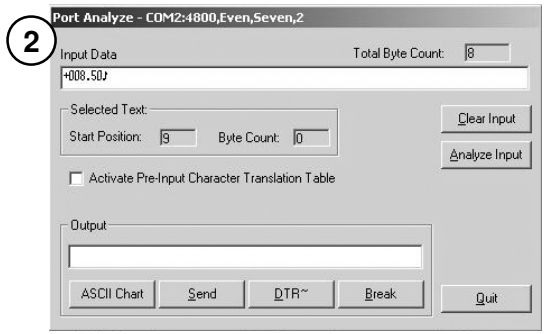
WinWedge is primarily designed as a tool for interfacing typical RS232 devices (scales, bar code/mag stripe readers, measuring tools, GPS devices, sensors, pH meters and many different types of laboratory and industrial instruments) to a PC. You can think of WinWedge as a "user configurable serial device 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 to.
Select the Parity (*Even*) that your measuring instrument use.
Select the Baud Rate (*4800*) that your measuring instrument use.
Select the Data Bits (*Seven*) that your measuring instrument use.
Select the Stop Bits (*2*) that your measuring instrument use.
Select the Flow Control (*None*) that your measuring instrument use. (Simplex)
Click OK.



Step #2
Click the **Analyse** sub-menu in Port menu.
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data”
Note : When clicking the icon DTR, a measurement is taken from the instrument.
The text box marked “Output” cannot be used because this is for duplex connection.



4.5 Connection with Standard Basic program

Simplex cable

Serial port opening and parameters	OPEN "COM1:4800,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$

4.6 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	' Simplex Cable' Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = True
Data request	' Simplex Cable ' MSComm1.DTREnable = False Timer1.Interval = 150 Timer1.Enabled = True
Data reading	InString = Comm1.Input

4.7 Specifications

Connection……..	RS232 compatible, Dsub 9p female or open
Plug's power supply……	From peripherical equipment, with TXD, DTR and RTS lines
Data transmission parameters……..	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length……	15 m according to IEC standards
Number of transmissions/sec……	4-8/sec.(depends on the instrument connected)
Data transmission format……..	[Sign ¦ E1-En ¦ "." ¦ F1-Fn ¦ CR] ["ERR" ¦ Number ¦ CR]

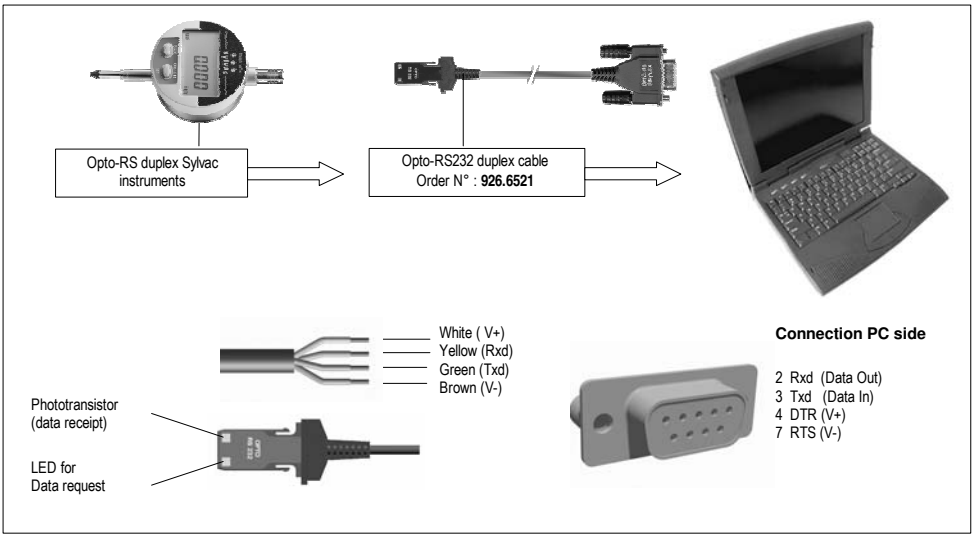
4.8 Accessories

USB to RS232 converter cable	Order N° **925.1142**
Gagewedge for WINDOWS 1- way serial communication capabilities to other windows applications (Excel, Word)	Order N° **981.7141** (free on www.sylvac.ch)
Winwedge for WINDOWS Extremely powerful utility designed to add complete 2 way serial communication capabilities to other windows applications (Excel, Word..)	Order N° **981.7140**

5. Opto – Duplex instrument / Opto – Duplex cable

5.1 How to use Opto-RS232 duplex Sylvac instrument with an Opto-RS232 duplex cable :

In both **Duplex instrument** and **duplex cable**, data can be sent from the instrument to the data acquisition system (eg PC), and the command "**?**" from the PC to the instrument as a data request.
* Other commands are available, depending on connected instrument. (see user's manual of instrument.)



5.2 Connection with the Hyper Terminal Windows Software

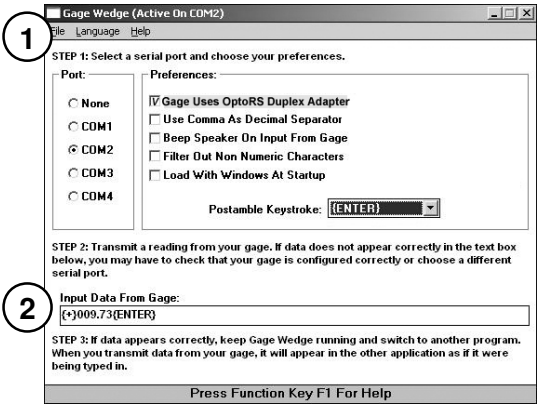
This program is available as standard with Windows 95,98,2000, Me, and XP. **It cannot be used** with a **duplex cable**.

Cannot be used because,
Power supply RTS = V- (not available)

Possibility :
By using the Booster n° 925.1150

5.3 Connection with the GageWedge Software

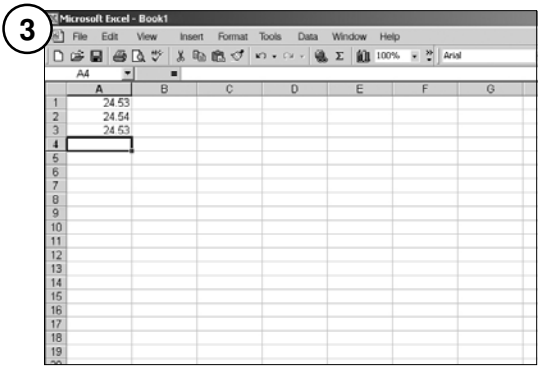
Gage Wedge was designed to be extremely easy to configure for all instruments using the Sylvac measuring instrument chipset.



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.
Select the Preferences (**Gage Uses OptoRS Duplex Adapter**).
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 either an Enter keystroke, a Tab keystroke or any if 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 inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data From Gage”
In the Gage Wedge Window.

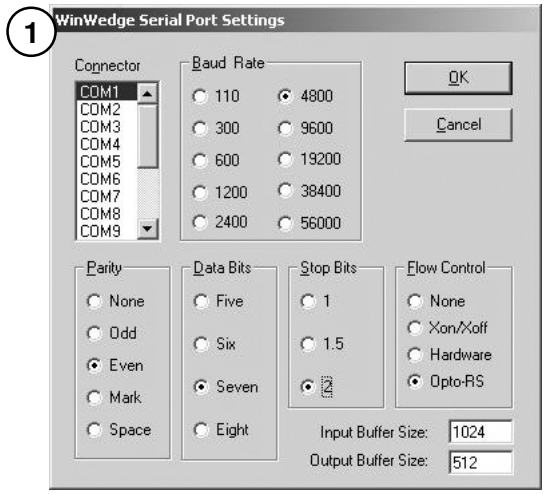
Step #3
If your measurement data appears correctly in the Gage Wedge Window then everything is working correctly and all you have to do is switch to another Windows application (leave Gage Wedge running) and take measurements. The instrument data should appear in the other application just as if it were being typed in on the keyboard.
Note: You can minimize the Gage Wedge Window and it will continue to function correctly.



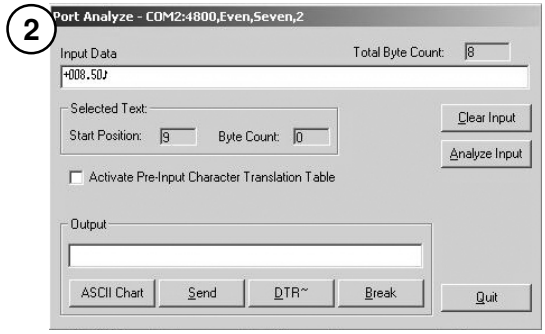
5.4 Connection with the Winwedge 32 Software

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).

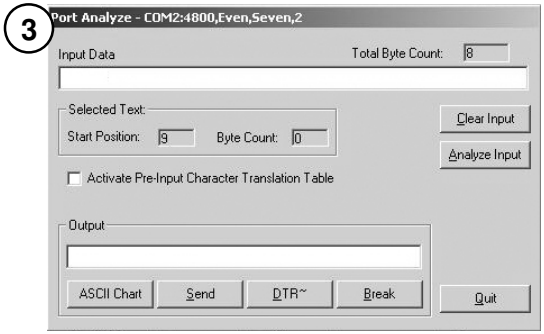
Step #1
Click the **Setting** sub-menu menu in **Port** menu
Select the COM port that your measuring instrument is connected to.
Select the Parity (*Even*) that your measuring instrument use.
Select the Baud Rate (*4800*) that your measuring instrument use.
Select the Data Bits (*Seven*) that your measuring instrument use.
Select the Stop Bits (*2*) that your measuring instrument use.
Select the Flow Control (***Opto-RS***) that your measuring instrument use. (***Duplex***)
Click OK.



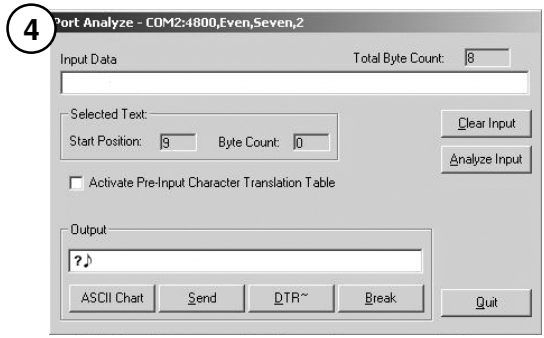
Step #2
Click the **Analyse** sub-menu in **Port** menu.
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data”



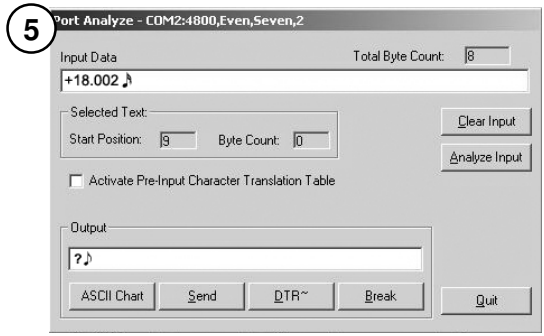
Step#3
Click the "**Clear Input**" Icon to empty the buffer .



Step#4
Enter in the text box marked "Output",
the character "**?**" then click the icon
"**ASCII Chart**" to select the ASCII code
(13 ♪ CR (Carriage Return)) then click OK



Step#5
Click the "**Send**" icon, this is a request from the PC to send the displayed value on the instrument to PC .
The measurement data from the instrument should appear in the text box marked "**Input Data**"



The full remote commands of the connected instrument can be used.
(See the instruction for use of the connected instrument)

5.5 Connection with Standard Basic program

duplex cable

Serial port opening and parameters	OPEN "COM1:4800,E,7,2,PE"
Power supply setting *(RTS = OFF, DTR = ON)* *&H3FC register address (COM2: &H2FC)*	OUT &H3FC,&H09
Data request (<CR> will be automatic using this command)	Print #1,"?"
Data reading	Line input#1,a$

5.6 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	' Duplex Cable' Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = False
Data request	' Duplex Cable + simplex instrument 'instruments PM200,201 old generation' MSComm1.Break = True ' Incremente Timer1.Interval in case of no trans' Timer1.Interval = 10 Timer1.Enabled = True MSComm 1.Break = False ou 'instruments from S225 new generation' ' Duplex Cable + simplex instrument ' MSComm1.Output = '' ?" + Chr$(13)
Data reading	InString$ = Comm1.Input

5.7 Specifications

Connection……..	RS232 compatible, Dsub 9p female or open
Plug's power supply……	From peripherical equipment, with TXD, DTR and RTS lines
Data transmission parameters……..	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length……	15 m according to IEC standards
Number of transmissions/sec……	4-8/sec.(depends on the instrument connected)
Data transmission format……..	[Sign ¦ E1-En ¦ "." ¦ F1-Fn ¦ CR] ["ERR" ¦ Number ¦ CR]

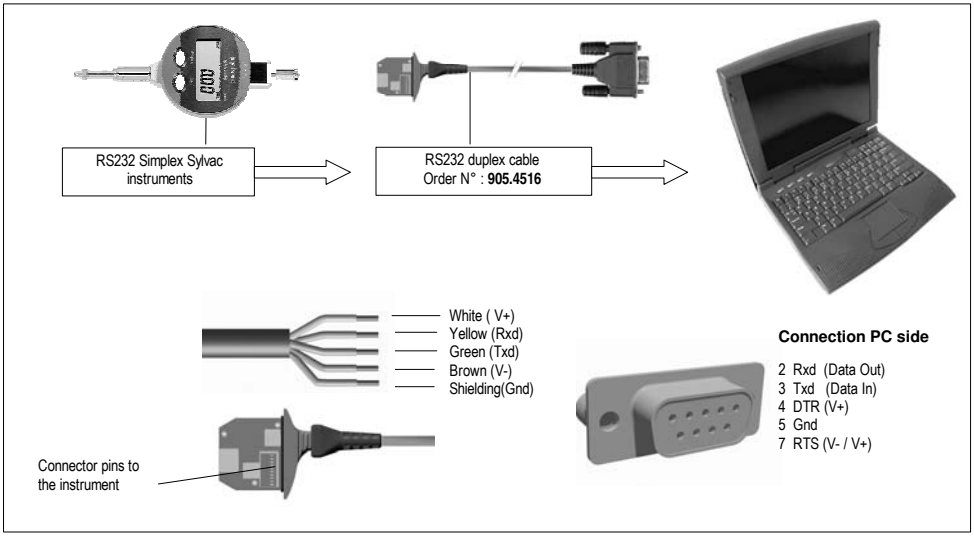
5.8 Accessories

Press the foot pedal to send the displayed value on the instrument to the PC . Adapter and foot pedal	Order N° **925.1143** (for Duplex Cable only)
USB to RS232 converter cable	Order N° **925.1142**
Gagewedge for WINDOWS 1- way serial communication capabilities to other windows applications (Excel, Word)	Order N° **981.7141** (free on www.sylvac.ch)
Winwedge for WINDOWS Extremely powerful utility designed to add complete 2 way serial communication capabilities to other windows applications (Excel, Word..)	Order N° **981.7140**

6. RS Simplex instrument / Duplex connection + power cable

6.1 How to use RS Simplex instrument with Duplex connection + power supply cable

In both **RS Simplex instrument** and **duplex connection**, data can be sent from the instrument to the data acquisition system (eg PC), and data can be requested from the PC with the remote command "?"



6.2 Connection with the Hyper Terminal Windows Software

This program is available as standard with Windows 95,98,2000, Me, and XP. It can only be used as data transmission from the instrument.

STEP#1
Open the Hyper-Terminal Windows Software.

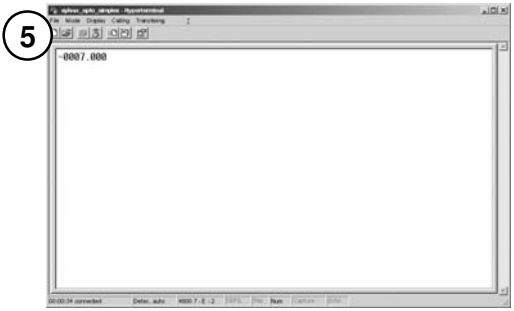
STEP#2
Enter a name for this connection then click OK.
(similar as sylvac_opto_simplex)

STEP#3
Select the COM port that your measuring instrument is connected

STEP#4
Select the port parameters.

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

STEP#5
The instrument identification will appear on screen (if S233, SY233.12)
Select MM or IN resolution on digital gauge **S233**, press the set button, then the value is displayed on the screen.
Press once again the set button to release the Hold/Print function.
Press once again the set button to send a new value…
*to send a value at each pressure, the foot pedal n°925.1143 is necessary.

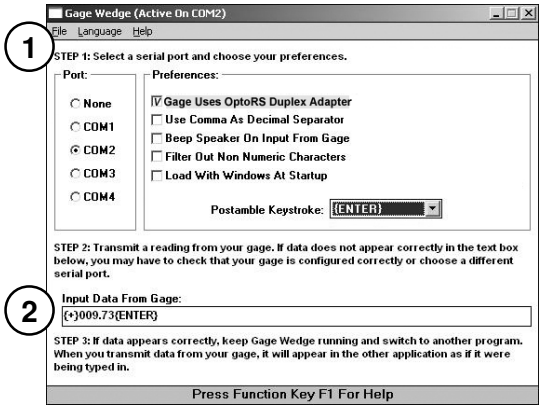


Troubleshooting

i) The Dsub9 connector of RS cable is not connected to the corresponding COM port number.
j) The port parameters are not correct. (**4800**bd, **7**bits, **even** parity, **2** stop bits)
k) The RS cable is defective.
l) The RS instrument is defective.

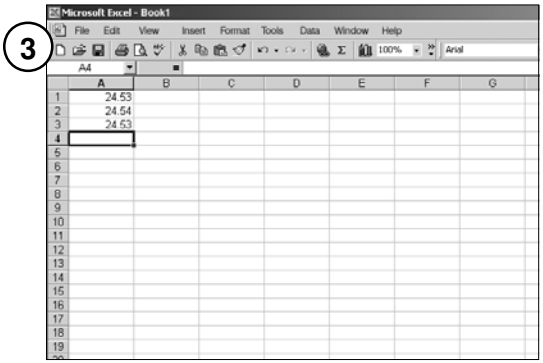
6.3 Connection with the GageWedge Software

Gage Wedge was designed to be extremely easy to configure for all instruments using the Sylvac measuring instrument chipset.



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.
Select the Preferences (**Gage Uses OptoRS Duplex Adapter**).
Note : The standard simplex can be used as well, but the Set key as to be pressed twice to send one value.
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 either an Enter keystroke, a Tab keystroke or any if 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
Select MM or IN resolution,
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked "Input Data From Gage"
In the Gage Wedge Window.



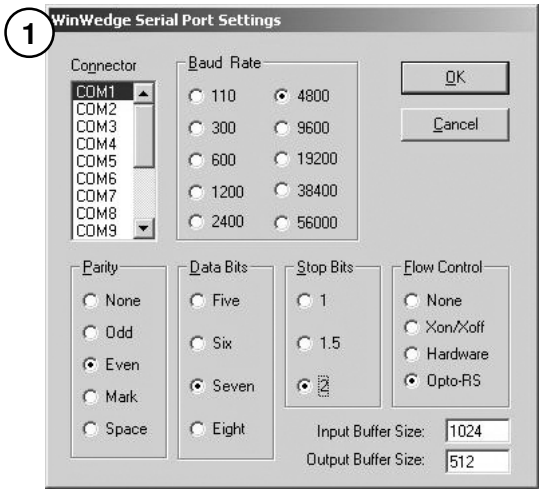
Step #3
If your measurement data appears correctly in the Gage Wedge Window then everything is working correctly and all you have to do is switch to another Windows application (leave Gage Wedge running) and take measurements. The instrument data should appear in the other application just as if it were being typed in on the keyboard.
Note: You can minimize the Gage Wedge Window and it will continue to function correctly.

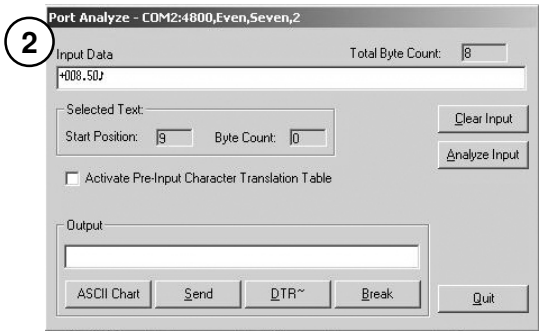
6.4 Connection with the Winwedge 32 Software

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).

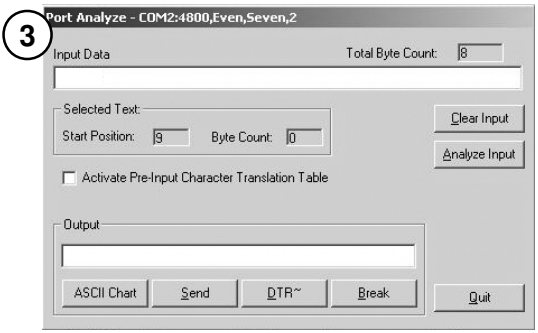
Step #1
Click the **Setting** sub-menu menu in **Port** menu
Select the COM port that your measuring instrument is connected to.
Select the Parity (*Even*) that your measuring instrument use.
Select the Baud Rate (*4800*) that your measuring instrument use.
Select the Data Bits (*Seven*) that your measuring instrument use.
Select the Stop Bits (*2*) that your measuring instrument use.
Select the Flow Control (***Opto-RS***) that your measuring instrument use. (***Duplex***)
Click OK.
Note : the Flow Control (None) can be use
as well but the Set key as to be pressed twice to send one value. (***Simplex***)

Step #2
Click the **Analyse** sub-menu in **Port** menu.
Select MM or IN on your instrument.
Transmit a measurement from your measuring instrument to make sure that the data from the instrument is being inputted correctly. The measurement data from the instrument should appear in the text box marked “Input Data”

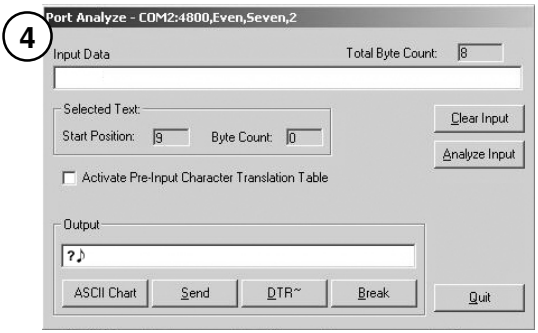




Step#3
Click the "**Clear Input**" Icon to empty the buffer .

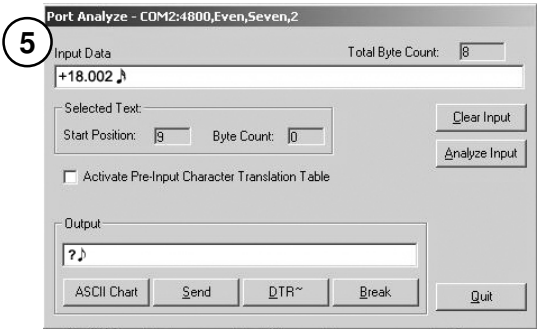


Step#4
Enter in the text box marked "Output",
the character "?" then click the icon
"**ASCII Chart**" to select the ASCII code
(13 ♪CR (Carriage Return)) then click OK



Step#5
Click the "**Send**" icon, this is a request from the PC to send the displayed value on the instrument to PC .

The measurement data from the instrument should appear in the text box marked "**Input Data**"
This is the only remote command that you can use with a Simplex instrument connected with a Duplex Cable.



6.5 Connection with Standard Basic program

duplex cable

Serial port opening and parameters	OPEN "COM1:4800,E,7,2,PE"
Power supply setting *(RTS = OFF, DTR = ON)* *&H3FC register address (COM2: &H2FC)*	OUT &H3FC,&H09
Data request (<CR> will be automatic using this command)	Print #1,"?"
Data reading	Line input#1,a$

6.6 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	' Duplex Cable' Form1.MsComm1.DTREnable = True Form1.MSComm1.RTSEnable = False
Data request	' Duplex Cable + simplex instrument 'instruments PM200,201 old generation' MSComm1.Break = True ' Incremente Timer1.Interval in case of no trans' Timer1.Interval = 10 Timer1.Enabled = True MSComm 1.Break = False ou 'instruments from S225 new generation' ' Duplex Cable + simplex instrument ' MSComm1.Output = '' ?" + Chr$(13)
Data reading	InString$ = Comm1.Input

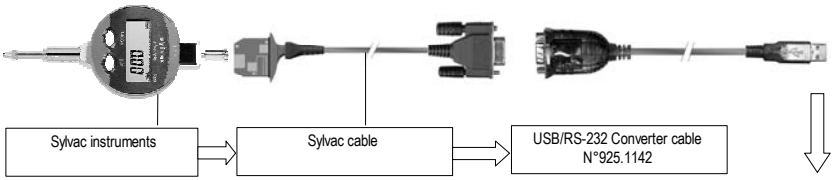
6.7 Specifications

Connection……..	RS232 compatible, Dsub 9p female or open
Plug's power supply……	From peripherical equipment, with TXD, DTR and RTS lines
Data transmission parameters……..	4800 bds, even parity, 7 data bits, 2 stop bits
Max. cable length……	15 m according to IEC standards
Number of transmissions/sec……	4-8/sec.(depends on the instrument connected)
Data transmission format……..	[Sign ¦ E1-En ¦ "." ¦ F1-Fn ¦ CR] ["ERR" ¦ Number ¦ CR]

6.8 Accessories

Press the foot pedal to send the displayed value on the instrument to the PC . Adapter and foot pedal	Order N° **925.1143** (for Duplex Cable only)
USB to RS232 converter cable	Order N° **925.1142**
Gagewedge for WINDOWS 1- way serial communication capabilities to other windows applications (Excel, Word)	Order N° **981.7141** (free on www.sylvac.ch)
Winwedge for WINDOWS Extremely powerful utility designed to add complete 2 way serial communication capabilities to other windows applications (Excel, Word..)	Order N° **981.7140**

7. How to use the USB-RS232 converter cable



USB/RS-232 Converter cable
The USB/RS-232 converter cable provides a very cost effective solution for everybody who owns a standard PC or Notebook PC and requires an additional RS-232 port. Just connect the cable to the USB port of the PC, install the included driver for Windows 98/200/XP and the PC offers an additional RS-232 port. Installation of several USB/RS-232 converter cables in using a USB Hub provides a cheap multi serial port solution.

Setup (e.g. Windows XP)

Step#1
Switch ON your computer

Step#2
Plug the cable into a free USB port on your computer.

Step#3
The "**Welcome to the Found New Hardware Wizard**" should appear. If it doesn't, go to step#10.

Step#4
Ensure the product driver CD (Included with package) has been inserted in your CD-ROM drive.

Step#5
Select the option "**Install the software automatically(Recommended)**"

Step#6
Click "**Next**"

Step#7
Windows should find the "**Prolific USB-to-Serial Comm Port**" driver.

Step#8
You will probably see a message indicating the driver has not passed Windows Logo testing, click "Continue anyway. This warning can be safely ignored because the driver does work on XP.

Step#9
Press "**Finish**" when prompted by Windows to complete the installation.

Step#10
Open Device Manager by doing the following :
a) Click on "**Start**" and then "**Control Panel**"
b) Double click on "**System**"
c) Select the Hardware tab.
d) Click the "Device Manager"
e) Click on Com / LPT
f) Click on Prolific USB-to-Serial
g) Select Port Parameters
h) Select 4800 bds, 7 bits, even parity, 2 stop bits, flux none.
I) Click on advanced icon then select the virtual COM available.
J) Click OK on all open menu to quit the setup Configuration.

8. Compatibility

			Send Data			
Code N°	Type of instrument	Type of cable	From instrument	By DTR	By Foot-pedal	By remote commands
Calipers						
S 235	Opto-RS simplex	Opto Simplex	Yes, direct	Yes	No	No
		Opto duplex	Yes, Hold ABS	No	Yes,direct	PRI / ?
ULIII	Opto-RS duplex	Opto simplex	Yes, Ref Hold	Yes	No	No
		Opto Duplex	Yes, Mode REF	No	Yes,direct	Yes
Microcal	Opto-RS simplex	Opto simplex	Yes, Ref Hold	Yes	No	No
		Opto Duplex	Yes, Ref Hold	No	Yes,direct	PRI / ?
Dial Gauges						
S229	Opto-RS simplex	Opto Simplex	Yes, Mode REF	Yes	No	No
		Opto Duplex	Yes, Ref Hold	Non	Yes,direct	PRI / ?
S213	Opto-RS duplex	Opto Simplex	Yes, Mode REF	Yes	No	No
		Opto Duplex	Yes, Mode REF	No	Yes,direct	Yes
S233	RS 232 simplex	RS Duplex	Yes ABS/hold	No	Yes,direct	Pri/?
S233 ana	RS 232 simplex	RS Duplex	No	No	Yes,direct	Pri/?
S234	RS 232 simplex	RS Duplex	No	No	Yes,direct	Pri/?
Protractor						
S239	Opto-RS simplex	Opto Simplex	Yes, Mode REF	Yes	No	No
		Opto Duplex	Yes, Ref Hold	No	Yes,direct	Pri/?
Bore Gauges						
XT/XTH	Opto-RS duplex	Opto Simplex	Yes, Mode REF	Yes	No	No
		Opto Duplex	Yes, Mode REF	No	Yes,direct	Yes
Digital micrometer screws						
S246	RS 232 simplex	RS Duplex	Yes ABS/hold	No	Yes,direct	Pri/?

Note :

To use software such as Labview or others, where RTS & DTR line cannot be set individually.
It is recommended to connect the booster (below) which will generate the V- power supply.

Booster N° 925.1150

SYLVAC S.A. ch. du closalet 16 / CH- 1023 Crissier / Swizerland / Tel.+41 21 637 67 57 – Fax +41 21 637 67 40 – e-mail sales@sylvac.ch - www.sylvac.ch