

No 271102 V1.0

Data Acquisition System WinX

The screenshot shows the WinX-MASTER software interface. The window title is "WinX-MASTER" and the menu bar includes "Login", "Setup", "Tools", "View", "Print", and "Help".

Left Panel (Nokeval):

- Run (checked)
- Demo
- Error
- Alarm
- Log
- Statistics
- Trends
- BarDisp
- TCP
- GSM

Configuration Fields:

- Start Date: 07.06.2002
- Start Time: 10:00:02
- Updated: 10:00:14
- Loop Time: 0.01
- Interval: 2
- User: Everybody

Main Data Grid:

1: Temp 1	2: Temp 2	3: Temp 3	4: Flow 1	5: Flow 2	6: Flow 3	7: Level 1	8: Level 2
19.42	49.7	50.361	70.06	18.80	39	52	81
9: Level 3	10: Channel	11: Channel	12: Channel	13: Channel	14: Channel	15: Channel	16: Channel
20	33.74	64.50	88	28	35	55	72
17: Channel	18: Channel	19: Channel	20: Channel	21: Channel	22: Channel	23: Channel	24: Channel
18.0	48	62	74	25	32	53	73
25: Channel	26: Channel	27: Channel	28: Channel	29: Channel	30: Channel	31: Channel	32: Channel
10	33	53	87	23	34	69	76
33: Channel	34: Channel	35: Channel	36: Channel	37: Channel	38: Channel	39: Channel	40: Channel
25	37	61	81	20	41	57	88
41: Channel	42: Channel	43: Channel	44: Channel	45: Channel	46: Channel	47: Channel	48: Channel
17	42	59	81	18	46	52	84
49: Channel	50: Channel	51: Channel	52: Channel	53: Channel	54: Channel	55: Channel	56: Channel
27	44	69	89	24	37	67	75
57: Channel	58: Channel	59: Channel	60: Channel	61: Channel	62: Channel	63: Channel	64: Channel
26	50	64	71	29	34	69	79
65: Channel	66: Channel	67: Channel	68: Channel	69: Channel	70: Channel	71: Channel	72: Channel
12	47	66	86	15	40	55	87
73: Channel	74: Channel	75: Channel	76: Channel	77: Channel	78: Channel	79: Channel	80: Channel
26	49	59	78	24	43	64	75
81: Channel	82: Channel	83: Channel	84: Channel	85: Channel	86: Channel	87: Channel	88: Channel
17	49	57	78	12	47	59	89
89: Channel	90: Channel	91: Channel	92: Channel	93: Channel	94: Channel	95: Channel	96: Channel
20	44	51	84	25	42	58	79

Right Panel (Controls):

- Start
- Stop
- Sound Off
- Alarms Off
- Reset Alarm
- Statistics
- Trends
- Logger
- BarDisp
- Quit

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Introduction

WinX program can communicate with all Nokeval devices supporting SCL-protocol, such as the 16-channel transmitter 5020SC, or the one-channel transmitter 7100.

Connections

Nokeval devices support RS-232 or RS-485 interface with the data acquisition system. RS-485 is recommended.

RS-232:

- *Point-to-point bus.*
- *Only one device can be connected to the bus.*
- *Maximum cable length 15 m.*

RS-485:

- Multipoint bus.
- Up to 31 devices can be connected to the bus segment.
- Maximum cable length without repeaters 1200 m.

WinX supports serial (RS-232) ports and TCP (Ethernet) ports (option) directly.

You can use different kinds of converters with WinX if they act as serial or TCP ports to the computer.

- RS-232/RS-485 converters (Nokeval 711 and 721)
- USB/RS-232 or RS-485 converters (ATEN UC-232A).
- Ethernet / RS-232 or RS-485 converters (W&T ComServer).

Data import

WinX can import data from analog and digital input devices and other computers running WinX in the Slave mode (option).

WinX inquires for measuring and digital input data from the devices by sending a command string to a device and then it waits for a response.

Data can be imported from a device by one channel at a time or by groups of several consecutive channels.

Data presentation

Collected data can be presented on digital displays, bargraph displays or on trend graphs.

Data save

Collected data can be saved to files by data loggers.

Data export (Option)

WinX can export data to analog and digital output devices and to displays (a future feature).

Demo program

Without a software protection dongle, WinX will only run in demo mode. Random values will be generated instead of imported values. This way you can try and use the program without any devices.

You can change the demo program to a real data acquisition system by ordering measuring instruments and the dongle (software security key).

Versions

Standard WinX includes

8, 16, ... or 96 channels

Digital displays

Trend plots

Bar displays

Data loggers

Statistical tracking

Options

Modem communication

TCP/IP communication

Slave mode, allows other WinX programs to read data.

Data export

GSM functions

Software Package

Nokeval Software CD

WinX-program

Drivers for software security key

Configuration programs MekuWin and WinConf

Set of utility programs

Software security key

Parallel port key as default

USB-port key available

Hardware Requirements

Minimum

Pentium 90 MHz

Windows 95

32 MB RAM

5 MB hard disk space

CD-drive

display 1024*768

1 Parallel- or USB-port

1 serial port (RS-232)

Recommendation

Pentium 200 MHz or faster

Windows 2000 or newer

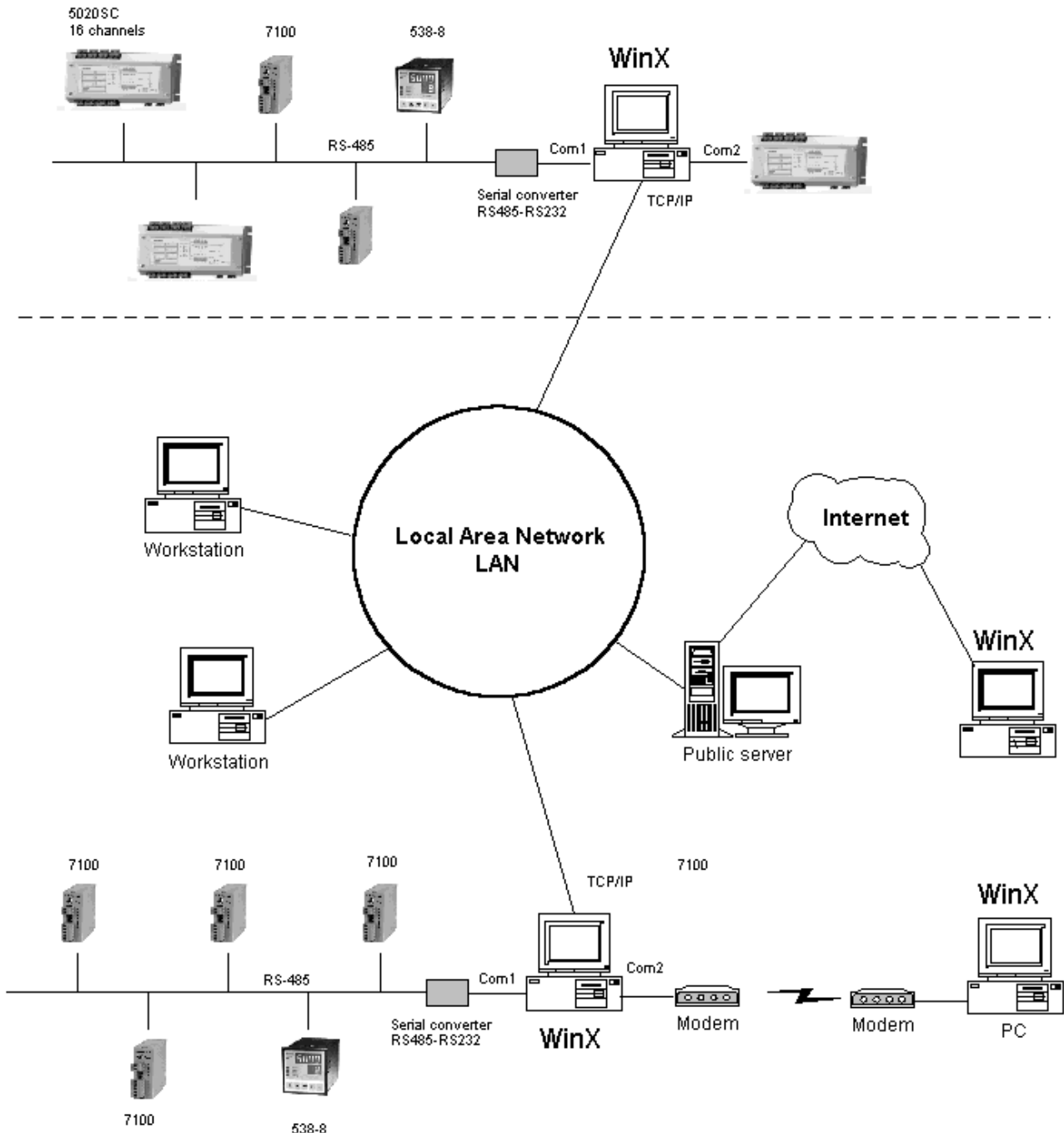
64 MB RAM or more

Network Communication

WinX can be connected to external devices or other computers via a serial port (RS-232), modem or TCP port. WinX accepts eight serial ports and four TCP ports.

WinX can also read measuring data from other computers and allow other computers to read its own measurement values.

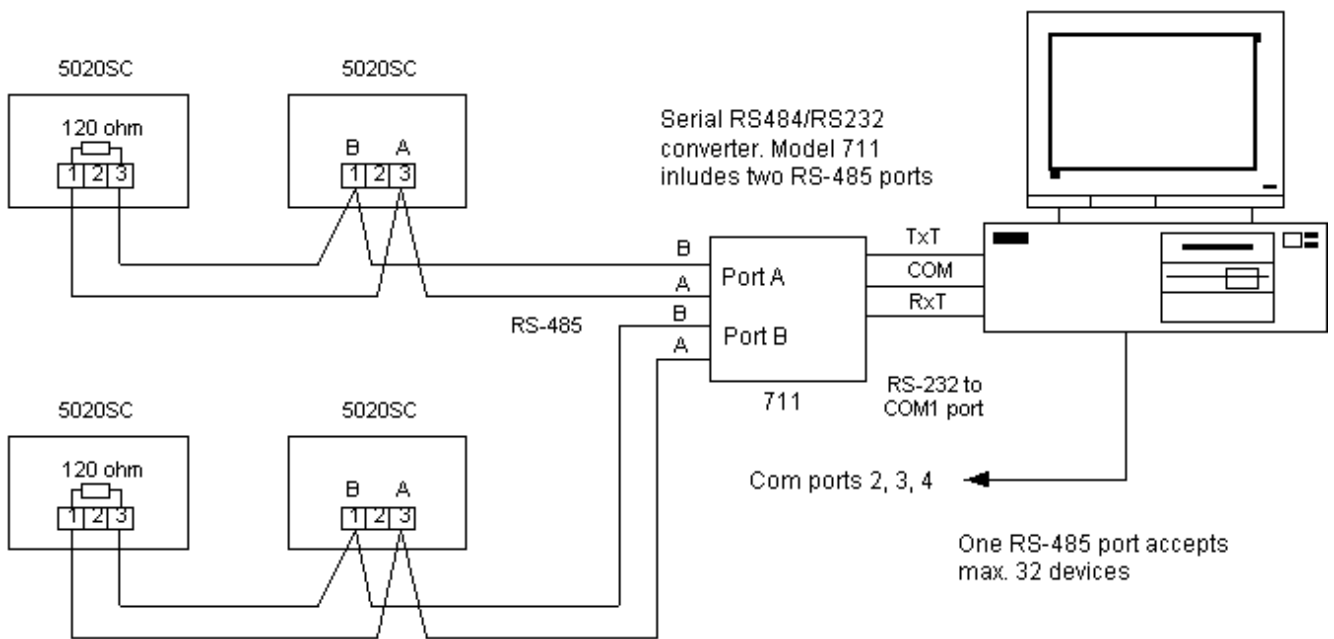
The RS-232 port only accepts the connection of one device. With the help of a serial converter RS232-RS485, it is possible to increase the number of devices that can be connected to the port. The standard RS-485 port accepts 31 devices. Nokeval serial converters 711 and 721 have two RS-485 ports which enables the connection of as many as 62 devices to one RS-232 port of a PC.



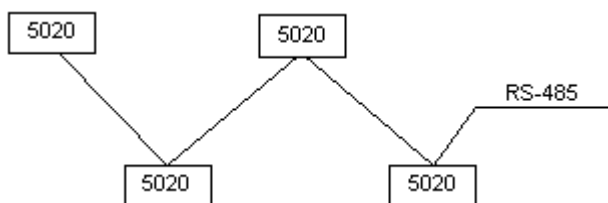
Connecting Devices to Serial Bus RS-485

The RS-485 bus is a chain by topology. A termination resistor 100-120 ohm has to be installed at both ends of the chain. Additionally, it is recommended to have *Fail safe* resistors on the bus, which will keep the bus in the desired mode when there is no communication on the bus. The best result will be reached by using shielded twisted wire.

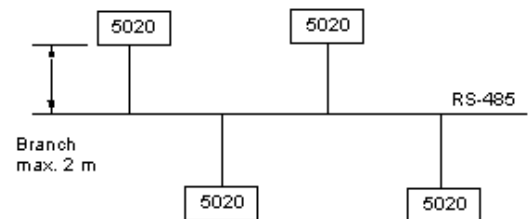
The easiest way to create a RS-485 bus for a standard PC is to use an RS-232/RS-485 converter, for example the Nokeval models 711 or 721. These models have built-in termination and *Fail safe* resistors. Add-on RS-485 cards to the PC are not recommended as Nokeval cannot guarantee their compatibility with the WinX software.



Typical connections for multi-channel transmitters (16 channels / transmitter 5020SC)



RS-485 cable is connected from device to device (chain topology).



Only short branches of cable, less than 2 m, are acceptable.

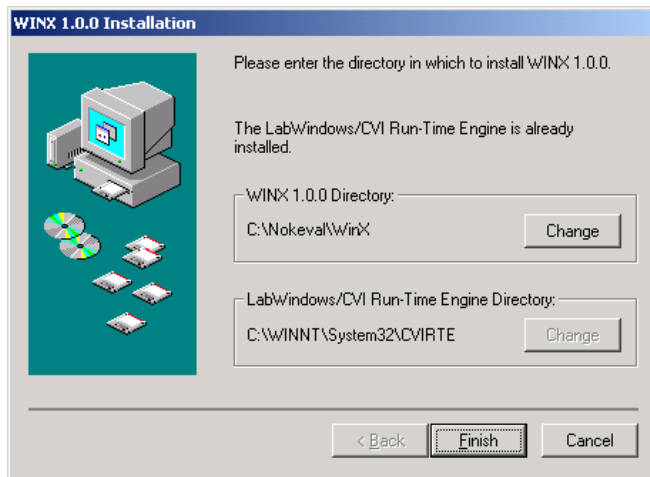
Installation

The installation program starts automatically when **Nokeval Software CD** is inserted into the CD drive. If not, start installation program *startup.exe* directly from the CD-ROM. Select WinX 1.0.xx by option buttons.



Installing WinX

Click the **WinX** button to start the WinX installation program. A dialog window appears as below.



If necessary, you can change the installation directory. Click the **Finish** button to complete the installation.

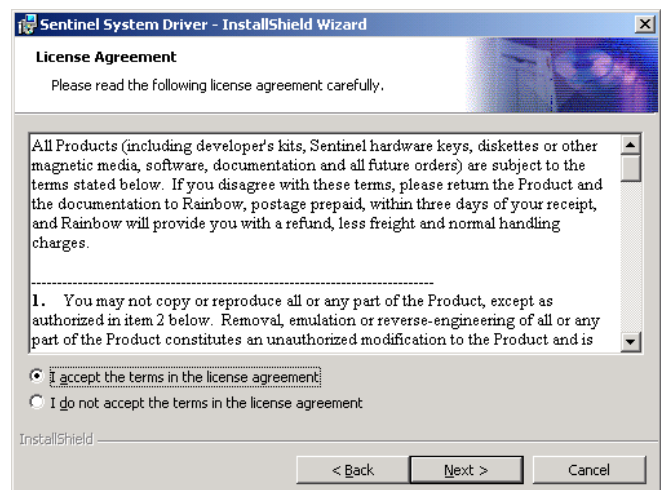
You are able to run WinX in demo mode without the software security key and also without installing SuperPro Drivers. The demo mode is otherwise fully functional, but measuring values are generated by the software instead of reading actual devices.

Installing SuperPro Drivers

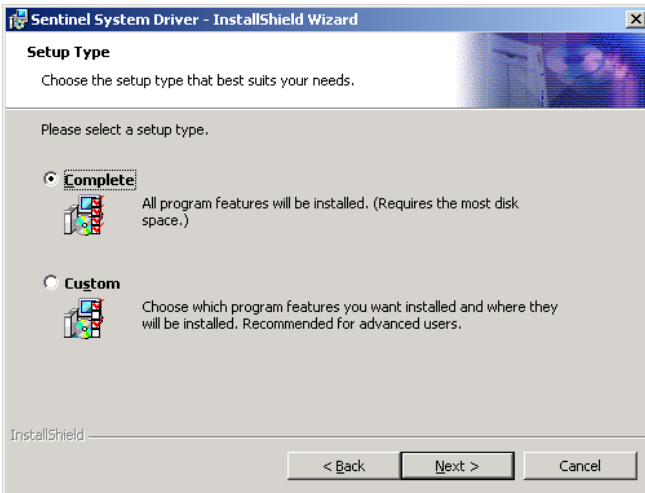
Press the **SuperPro Drivers** button to start the Sentinel System Driver installation program. A dialog window opens as below.



Continue by clicking **Next >**. This will open the *License agreement* window.



Accept the terms in the license agreement and click **Next >**. This will open the *Setup Type* window.

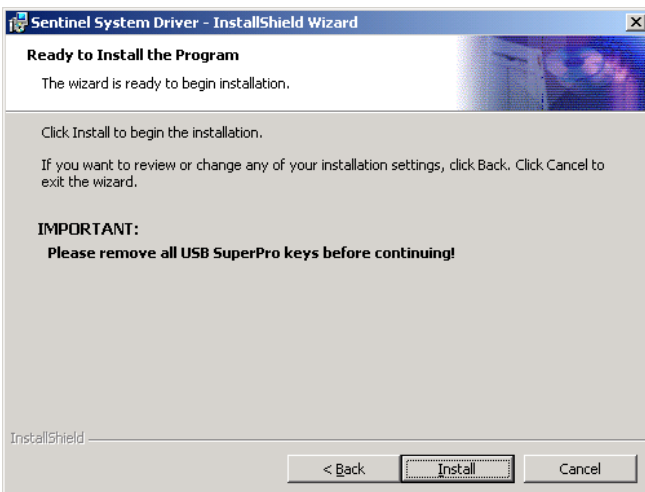


Select the setup type:

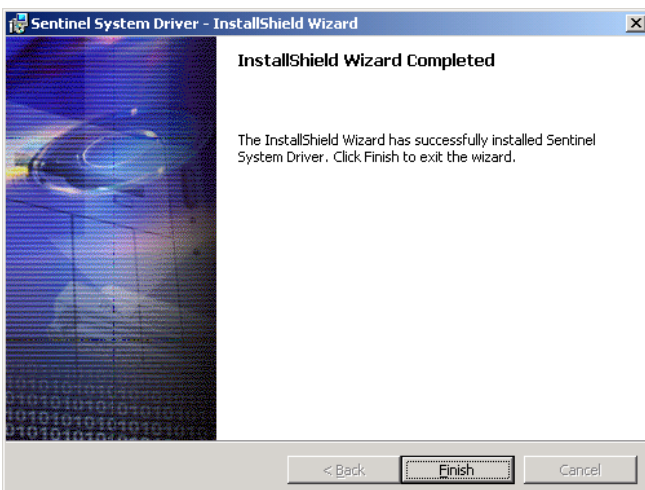
Complete will install drivers for the *Parallel port* and *USB port* dongles.

Custom will allow you to select which driver to install.

Continue by clicking **Next >**. This will open the *Ready to install* window.



Start to install Sentinel SuperPro drivers by clicking **Install**.



After the installation is completed, exit InstallShield Wizard by clicking **Finish**.

Using WinX

Start WinX

Make sure you have a software protection dongle installed on a parallel port or USB port. Click the **Start** button on the Windows toolbar, select **Programs > Nokeval > WinX**. WinX will check the existence of SuperPro drivers and dongle.



If the driver cannot be found, you will see the message box above. You can continue in Demo mode, install the missing drivers or exit the WinX program. If you select Install, you will be asked to place the WinX CD into your CD-ROM drive. See section *Installing SuperPro Drivers* for detailed instructions.

If the dongle cannot be found you will see the message box below. You can continue in Demo mode, search for the dongle again, or exit the WinX program.

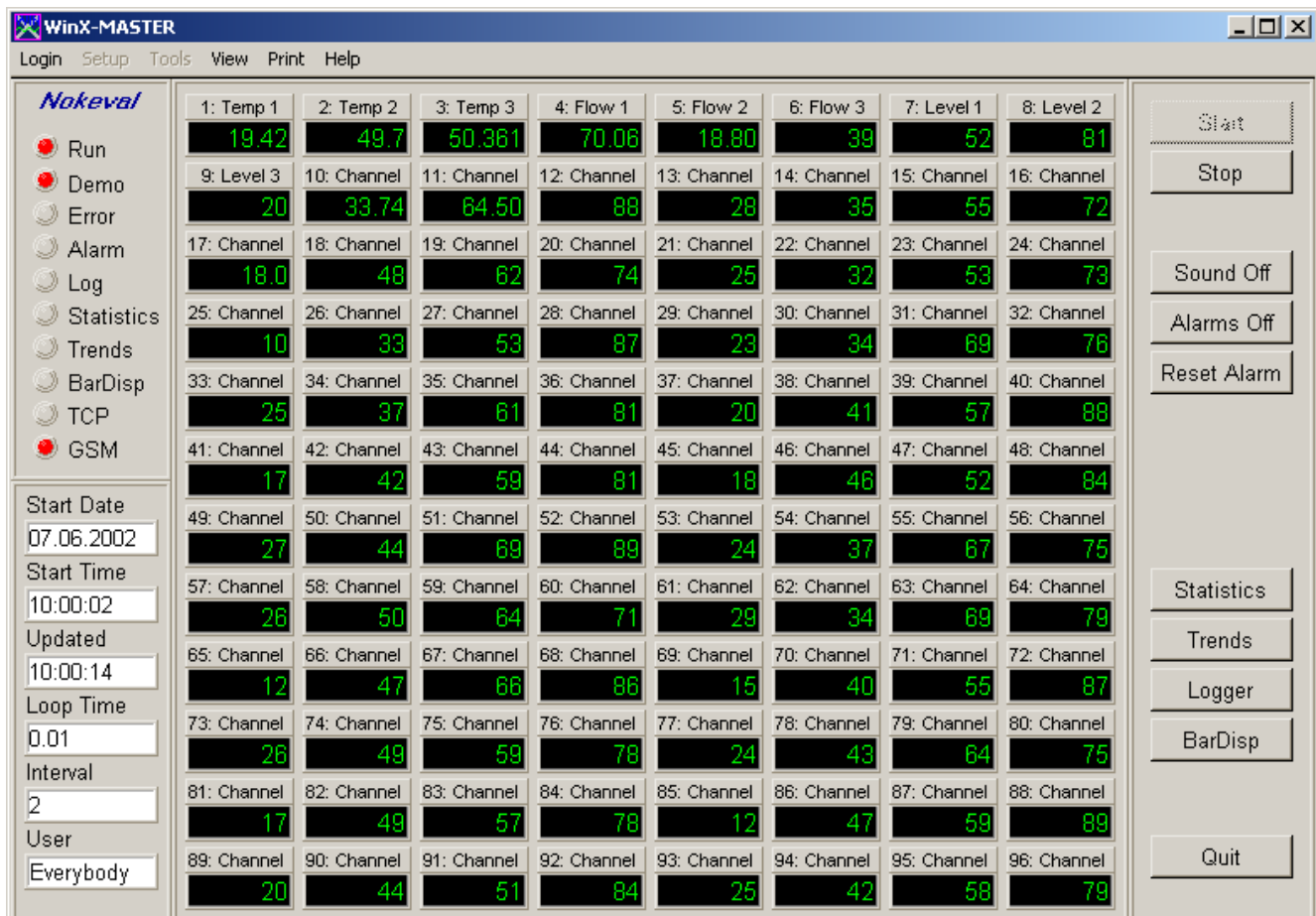


If you choose to search for the dongle again, you will be asked to check that your dongle is connected to the parallel or USB port.

When starting up, WinX will load initialization files from the directory *settings*. If the initialization files cannot be found, WinX will create them with default settings.

WinX will start in the same mode where it was when it was closed, also in case of a power failure.

WinX Main Window



Menu Bar

Login

Here you can login with a password or logout to become a standard user (Everybody). *See **User login***.

Setup

Here you can configure the WinX software. *See **Setup WinX***.

Tools

Here you can configure or use your special tools. *See **Tools***.

View

Here you can view Digital I/O Registers, Log files or Logger files. *See **View***.

Print

Here you can print setting and measuring values. *See **Print***.

Help

Here you can open the Help file, view information about your WinX or order more options to your WinX license. *See **Help***.

Indicator Bar

Run

Data acquisition in progress.

Demo

Demo mode.

Error

Communication error.

Alarm

Alarms in use.

Logger

Logging to file in progress.

Statistics

Statistical tracking in progress.

Trends

Trend plotting in use.

BarDisp

Bar graph displays in use.

TCP

A TCP connection to the program.

GSM

GSM modem initialized and ready.

Info Bar

Start Date

Start date of data acquisition.

Start Time

Start time of data acquisition.

Updated

Start time of the latest data acquisition loop.

Loop Time

Duration of the data acquisition loop.

Interval

Interval between data acquisition loops.

User

Current user.

Digital Displays

Buttons

Start

Starts data acquisition.

Stop

Stops data acquisition.

Sound On/Off

Enables/Disables the use of a sound card in alarms.

Alarms On/Off

Enables/Disables alarms.

Reset Alarms

Resets all alarms.

Statistics

Opens the window for statistical tracking.

Trends

Opens the trend plot window.

Logger

Opens the data logger window.

BarDisp

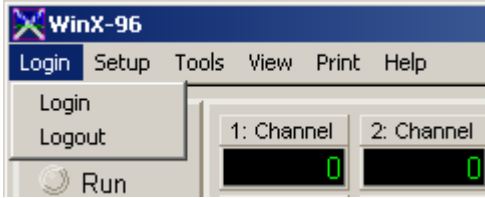
Opens the bar display window.

Quit

Exits the WinX program.

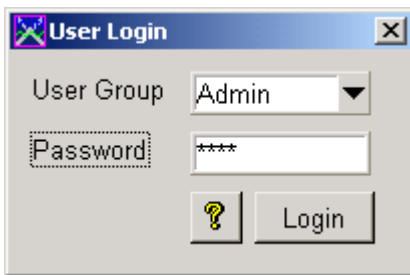
User Login

With WinX it is possible to form users/ user groups with different kinds of user rights to the WinX software. When you start WinX, you have the default user rights "Everybody". You can login as an Admin user, (default password "0000"), who has the right to add and remove users, change their passwords and user rights.



Login with a password

Click **Login menu > Login**. Select the user or user group to login, type the password into Password and Click the **Login** button.



Logout to become a default user

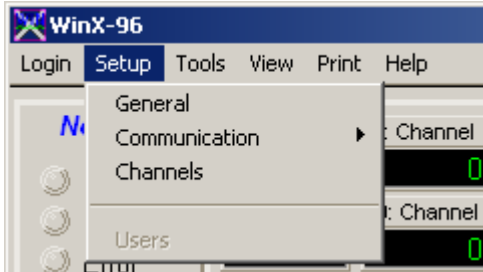
Click **Login menu > Logout**.

Setup WinX

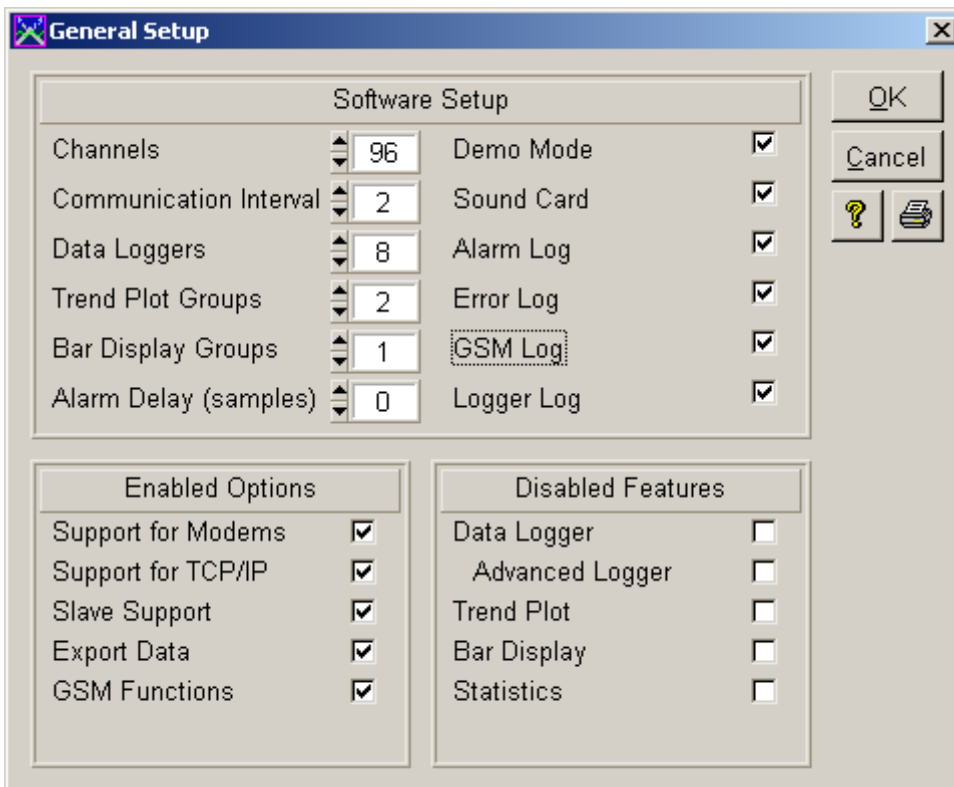
Before you can use WinX, you have to set up some parameters for the program.

General Setup

You can enter general settings by selecting **Setup > General** on the WinX menu bar. Please note that you cannot open the Setup menu when data acquisition is running.



In the General Setup window you can select how many channels, loggers, trends plot groups, and bar displays are in use, the alarm delay etc. If other software is used in the computer simultaneously, it is not recommendable to select more features than necessary.



Channels

The number of channels you want to use. The maximum number of channels is limited by your license.

If you need more channels than you can select, fill in a license expansion form and send it to your supplier or Nokeval Oy.

Communication Interval

Communication Interval expresses the time in seconds how often WinX performs communication loops with the external devices. The interval can be selected from 1 to 60 seconds. A typical acquisition time from the 5020SC is about 0.9 sec. Do not set a shorter interval than necessary.

If your mouse stops working or it works slower than normally, the communication interval may be too short, the computer acquiring data from the devices continuously, and there is no time for other functions.

Data Loggers

You can select the number of data loggers to be used from 0 to 8, i.e. you can use as many as 8 loggers at the same time. You can log the same data in different ways. For example one logger may log all the channels, the second logger only the channels of one furnace and the third logger the channels of another furnace.

Trend Plot Groups

You can select the number of trend plot groups you need from 0 to 12. One group can show up to 8 trends. The maximum number of trend plot groups depends on your license.

Bar Display Groups

You can select the number of bar display groups you need from 0 to 6. Each group can have up to 16 bar graphs. The maximum number of bar display groups depends on your license.

Alarm Delay (samples)

You can set a delay of 0 - 8 samples to alarms. This means that the value must stay in the alarm area for the time of maximum 8 extra samples before the alarm occurs.

Demo Mode

You can use WinX in demo mode by selecting this check box.

Sound Card

You can take a sound card into use by this check box. The sound card can be used to express alarms. For a new sound effect, replace the *Wowo.wav* file by a file of your own choice.

Alarm Log

When **Alarm Log** is selected, all the events related to alarms are logged to *AlarmLog.txt* file, which is situated in the WinX subdirectory *List*. You can view this file by selecting the **View** menu > **Alarm List**.

Error Log

When **Error Log** is selected, all communication errors are logged to *ErrorLog.txt* file, which is situated in the WinX subdirectory *List*. You can view this file by selecting the **View** menu > **Error List**.

GSM Log

When **GSM Log** is selected, all the events related to GSM communication are logged to *GsmLog.txt* file, which is situated in the WinX subdirectory *List*. You can view this file by selecting the **View** menu > **GSM List**.

Logger Log

When **Logger Log** is selected, all logger activities are logged to *LoggerLog.txt* file, which is situated in the WinX subdirectory *List*. You can view this file by selecting the **View** menu > **Logger List**.

Enabled Options

Support for Modems

Enables communication through a telephone network.

Support for TCP/IP

Enables communication e.g. in a local network.

Slave Support

Makes it possible for other computers to read the data in this computer.

Export Data

Allows data to be transmitted to external devices. Measuring data can be converted to analog signals for example with the 4-channel transmitter 7470RS.

GSM Functions

Support for GSM functions, enables e.g. the transmission of an alarm as a text message.

Disabled Features

Data Logger

Prevents the use of data loggers.

Advanced Logger

Prevents the use of advanced data loggers (trigger start, etc.).

Trend Plot

Prevents the use of trend plots.

Bar Display

Prevents the use of bar displays.

Staristics Display

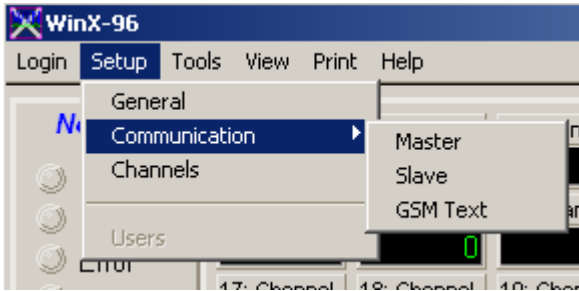
Prevents the use of statistics tracking.

The subdued color of the check box indicates that the option or feature is disabled by your license.

Communication Setup

WinX program communicates with external devices and programs through a serial communication port (RS-232, RS-485) or through a network (TCP/IP).

WinX communication can be divided into three categories:



Master Communication

When WinX wants to communicate with external devices or computers, it functions as the Master.

Slave Communication

When an external device or a computer wants to communicate with the WinX software, the WinX has to support the Slave function.

GSM Communication

GSM communication function is applied when WinX sends/ receives an SMS message or makes a sound call through a GSM modem.

Master Communication Setup

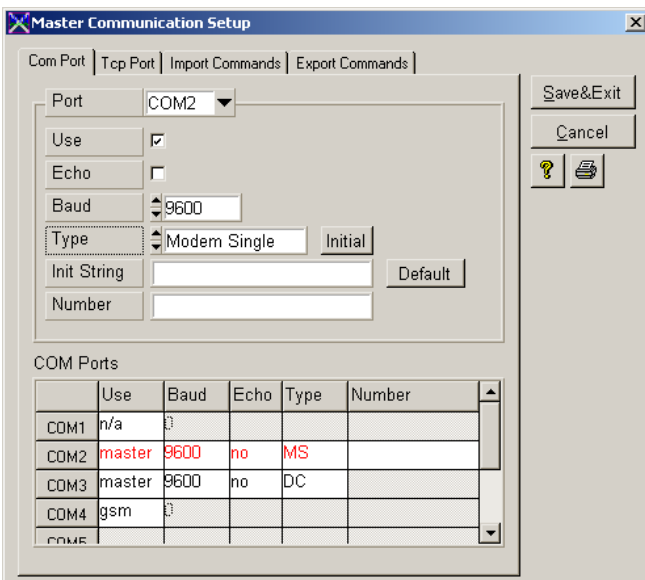
When WinX works as the Master, it sends a command string to an external device or computer and remains waiting for a respond string. WinX can use as many as 8 serial ports and 4 TCP/IP ports for communication.

You have to define the *Com Ports* and *Tcp Ports* WinX uses for Master communication.

You also have to define *Import Commands* to read data from devices and *Export Commands* to send data to devices.

Com Port

Here you can set up serial ports for Master operations. You can set maximum 8 serial ports.



How to set a COM port for Master use:

First select the **Port** you want to add and activate the **Use** check box.

When using an RS-232/RS-485 converter which echoes back the marks you send, activate the **Echo** check box. Then WinX will remove the echoed marks from its receive buffer.

Select the **Baud** rate for communication and connection **Type**. Alternatives for the **Type** are as follows:

Direct Cable The devices are connected to the computer with a cable.

Modem Single The devices are connected to the computer with modems over the telephone network. A call will be made to one number only.

Modem Multiple The devices are connected to the computer with modems over the telephone network. Calls can be made to several numbers.

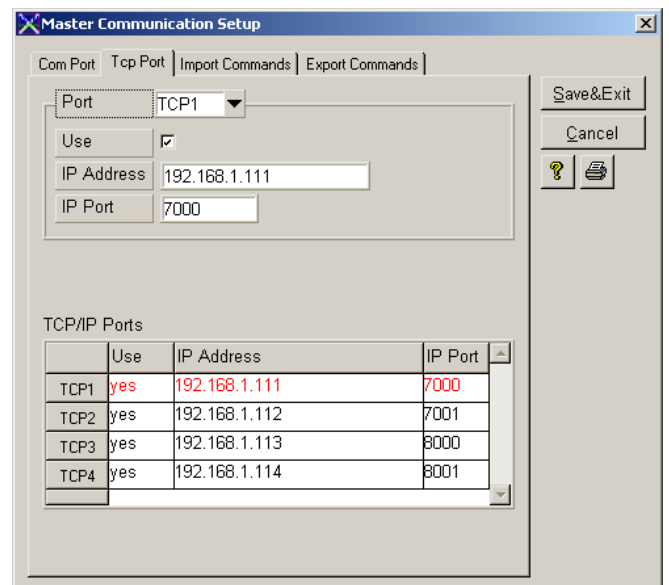
If you are using any of the modem options, you have to define the initialization string (**Init String**) for your modem. In case you use a single dial modem, you also have to define the **Number** you want to dial.

How to release a COM port from Master operation:

First select the **Port** you want to release and deselect the **Use** check box.

Tcp Port

Here you can set up TCP ports for Master operations. You can use up to 4 TCP ports.



How to set a TCP port for Master operation:

First select the **Port** you want to set and then activate the **Use** check box.

Type the **IP Address** and the **IP Port** of the external device or computer.

How to release a TCP port from Master operation:

Select the **Port** you want to release and deselect the **Use** check box.

Import Commands

Data can be imported from many different sources, transmitters, digital input units, or other computers running the WinX software. Data can be imported through a serial port or a TCP port. Before you define the import commands, make sure you have set up all the necessary COM and TCP ports.

You can set up the command strings for measuring data (**Input Channel**) and binary data (**Digital Inputs**) in their own windows.

WinX first performs the command strings for measuring data in the order in which they appear in the **Command String List** and then continues performing the command strings for binary data similarly.

Command String Generator forms the commands to be sent to the devices according to your choices. The generated command string will be displayed in the *Command String* text box where you can check it before moving it over to the **Command String List**.

How to add a command to the list:

Set up the values related to the command. See the sections *Measuring inputs* and *Binary inputs* for details. Press **Add** in order to add the command at the bottom of the list or **Ins** to insert the command just before an activated row in the list.

How to edit a command:

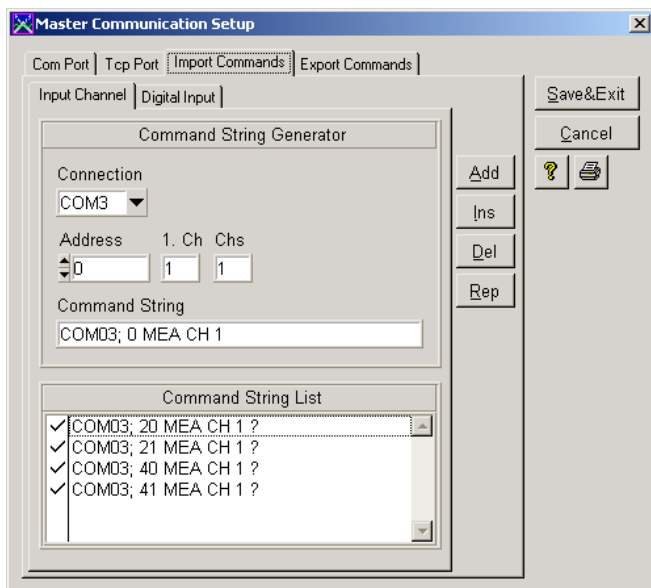
Double-click the row that you want to change, make the corrections, and press **Rep**.

How to remove a command:

Select the row that you want to delete and press **Del**.

Measuring inputs (Input Channel)

WinX starts reading the measuring data in the order the commands appear in the **Command String List**. The first read channel in the first row will be displayed in channel 1 in the WinX main window.



Command String Generator fields for measuring inputs:

Connection *The port through which communication with the device occurs.*

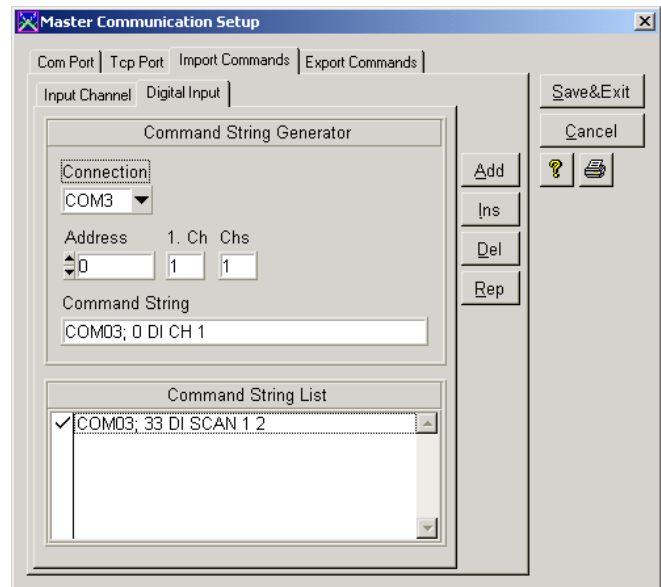
Address *The serial communication address of the device.*

1. Ch *The 1st channel of the device from which data is imported.*

Chs *The number of the channels from which data is imported.*

Binary inputs (Digital Input)

WinX starts reading the binary data in the order the commands appear in the **Command String List**. The first read channel in the first row will come to the **Digital Input** channel 1 in WinX Digital I/O registers. See **View/Digital I/O**.



Command String Generator fields for binary inputs:

Connection *The port through which communication with the device occurs.*

Address *The serial communication address of the device.*

1. Ch *The 1st channel of the device from which data is imported.*

Chs *The number of the channels from which data is imported.*

Export Commands

Data can be exported to several different targets, transmitters, digital output units, or digital displays via different ports. Before you define the export commands, make sure you have set up all communication ports according to the structure of your hardware.

You can set up the export commands for measuring data (**Output Channel**), binary data (**Digital Output**) and display data (**External Display**) in their own windows.

WinX first performs the command strings for measuring data in the order in which they appear in the **Command String List** and then continues performing the command strings for binary data and display data similarly.

Command String Generator forms the commands to be sent to the devices according to your choices. The generated command string will be displayed in the *Command String* text box where you can check it before moving it over to the **Command String List**.

How to add a command to the list:

Set up the values related to the command. See *Measuring Outputs, Binary Outputs and External Display*. Press **Add** in order to add the command at the bottom of the list or **Ins** to insert the command just before an activated row in the list.

How to edit a command:

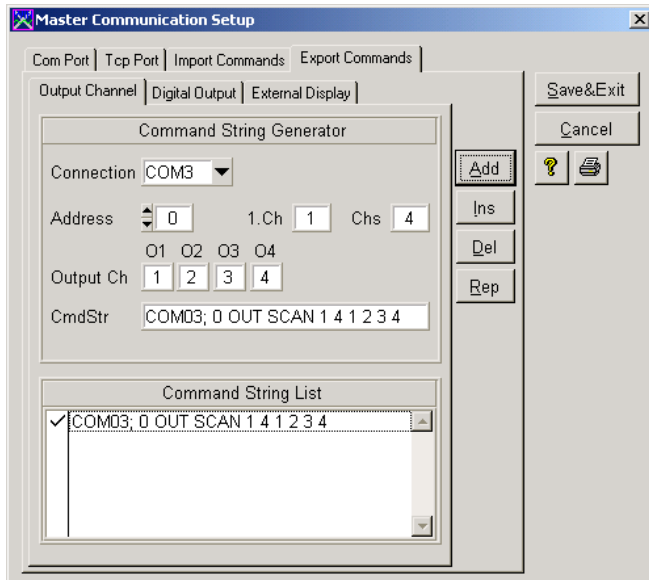
Double-click the row that you want to change, make the corrections, and press **Rep**.

How to remove a command:

Select the row that you want to delete and press **Del**.

Measuring Outputs (Output Channel)

WinX starts reading the measuring data in the order the commands appear in the **Command String List**.



Command String Generator fields for measuring outputs:

Connection The port through which communication with the device occurs.

Address The serial communication address of the device.

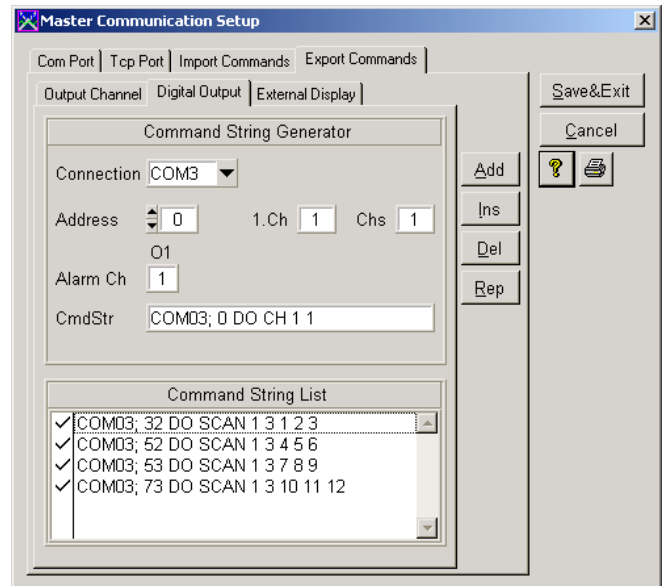
1. Ch The 1st channel of the device to which data is exported.

Chs The number of the channels to which data is exported.

Output Ch 01-08 WinX measuring channels to be exported.

Binary outputs (Digital Output)

WinX starts reading measuring data in the order the commands appear in the **Command String List**.



Command String Generator fields for binary outputs:

Connection The port through which communication with the device occurs.

Address The serial communication address of the device.

1. Ch The 1st channel of the device to which data is exported.

Chs The number of the channels to which data is exported.

Output Ch 01-08 WinX binary channels to be exported.

External Display

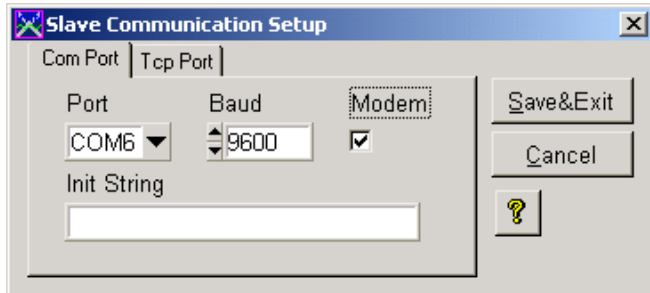
This feature not yet available.

Slave Communication Setup

If WinX is in slave mode it waits for a command sent by an external device or a computer and responds to it. Slave communication can be established via a serial or TCP port. You have to set up the port for Slave communication.

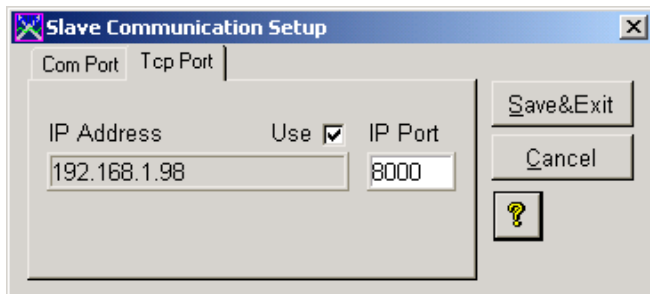
Serial Port

If you want to share data of the WinX software via a serial port, select the **Port** and **Baud** rate. Otherwise select "None" to the **Port**. If you use a modem, activate the **Modem** check box and type the initialization string.



TCP Port

If you want to share WinX data via an ethernet network, activate the **Use** check box and type the **IP Port**. Otherwise deselect the **Use** box.



Use free IP ports. Ports 0-1024 are generally in use and it is not recommended to use them. Ports 49152-65535 are mostly free. It is advisable to select the IP port within this range to make the use of a reserved port as unlikely as possible.

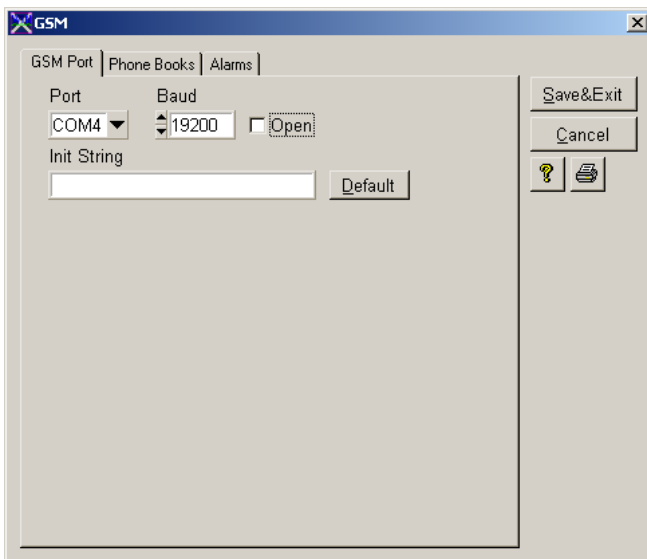
GSM Communication Setup

In WinX it is possible to send alarms by text messages (SMS) or by recorded sound messages. This option requires a GSM modem.

To use this option you first have to set up a serial port (**GSM Port**) which you want to reserve for GSM communication. Additionally, you have to create the **Phone Books** on the basis of which the numbers are selected to which the alarms are sent. You also have to create the actual alarm messages (**Alarms**).

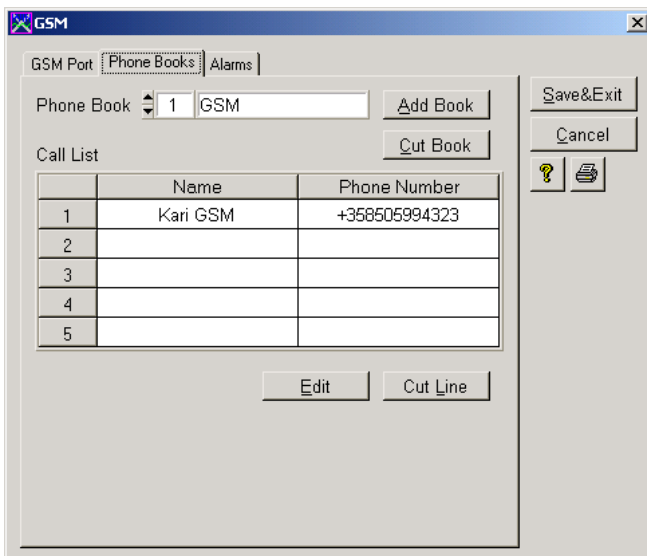
GSM Port

Select the com **Port** you want to allocate to the GSM modem. Or select "None" if you do not need any GSM function. Also select the **Baud** rate and type the initialization string (**Init String**) if needed. Activate the **Open** check box when you want to open the selected port. Deselect the **Open** box when you want to close the port.



Phone Books

These books list the numbers to which GSM alarms are sent.

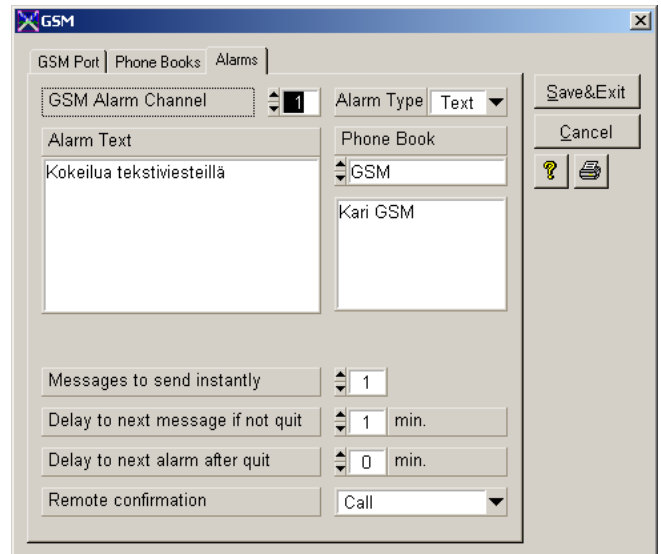


To create a new book click the **Add Book** button. Give a name to the book and fill in names and numbers in the **Call List**. You can edit the book by making changes in the **Call List** text boxes. To delete a book, click the **Cut Book** button.

Alarms

GSM Alarm Channel

Select the GSM Alarm channel that you want to set up.



Alarm Type

Select the type of GSM Alarm:

- None *No alarm is sent.*
- Text *A text message **AlarmText** is sent.*
- Voice *A recorded sound message is sent. Note that this option requires a cable between the sound card and GSM modem.*

Phone Book

Select the phone book that is used with this GSM alarm. In the text box below this selector you can see the names listed in the selected phone book.

Messages to send instantly

To how many numbers this alarm is sent instantly.

Delay to next message if not quit

How long will be waited for a response before the alarm is sent to the next receiver in the list.

Delay to next alarm after quit

How long will be waited after a response before the alarm is sent again.

Remote confirmation

Select how this alarm can be confirmed by the user:

- Not allowed *Alarm cannot be acknowledged this way.*
- SMS + password *Alarm can be acknowledged by sending a text message containing a password.*
- SMS *Alarm can be acknowledged by sending a text message.*
- Call *Alarm can be acknowledged by making a call.*

Channel Setup

Channel setup can be performed either in the *Channel Setup Window* or in the *Display Setup Window*.

Channel Parameters

Name

The name of the channel, max 20 characters.

Text *

A longer description of the channel. You can see the description by double clicking the digital display in the WinX main window.

Decimals

Display accuracy of the channel. Please notice that the real measuring accuracy depends on the device that is read.

Alarm1 Text *

Description of the 1st alarm of the channel.

Alarm1 Value

Alarm value of the 1st alarm of the channel.

Alarm1 Hysteresis

Hysteresis of the 1st alarm of the channel.

Alarm1 Alarm Register

Alarm register for the 1st alarm of the channel. In WinX there are 16 alarm registers through which alarm information can be directed to external devices such as 7180.

Alarm1 GSM Register

GSM register for the 1st alarm of the channel. In the WinX there are 16 GSM registers through which alarm information can be directed via a GSM modem as text or sound messages.

Alarm1 Type

Type of the 1st alarm of the channel.

- LO_M** Low limit with manual reset.
- LO_A** Low limit with automatic reset.
- OFF** Alarm off.
- HI_A** High limit with automatic reset.
- HI_M** High limit with manual reset.

Alarm2 Text *

A description of the 2nd alarm of the channel.

Alarm2 Value

Alarm value of the 2nd alarm of the channel.

Alarm2 Hysteresis

Hysteresis of the 2nd alarm of the channel.

Alarm2 Alarm Register

Alarm register of the 2nd alarm of the channel. See *Alarm1 Alarm Register* for further information.

Alarm2 GSM Register

GSM register of the 2nd alarm of the channel. See *Alarm1 GSM Register* for further information.

Alarm2 Type

Type of the 2nd alarm of the channel. See *Alarm1 Type* for further information.

Offset

Offset correction for the value of the channel. Default 0.0

Multiplier

Multiplier for the value of the channel. Default 1.0

Note! You can set parameters marked by * only in the *Display Setup Window*.

Channel Setup Window

Channel Setup window appears by selecting **Setup > Channel** on the WinX menu bar. Note that you cannot open the Setup menu when data communication is running.

Changing settings:

Activate the edit mode by double-clicking the cell or select the cell with the mouse and press F2. In the edit mode you can change the value in the cell. When editing, you can move from cell to cell by CTRL + arrow key.

	Name	Dec	Alarm 1	Hyst 1	Areg1	Greg1	Type1	Alarm 2	Hyst 2	Areg2	Greg2	Type2	Offset	Multiplier
CH 1	Temp 1	1	30.0	1.00	1	1	LO_M	100.0	0.00	1	1	HI_M	0.00000	1.00000
CH 2	Temp 2	1	30.0	1.00	1	2	LO_M	100.0	0.00	1	2	HI_M	0.00000	1.00000
CH 3	Temp 3	1	30.0	1.00	1	3	LO_M	100.0	0.00	1	3	HI_M	0.00000	1.00000
CH 4	Flow 1	2	80.00	2.00	2	1	LO_A	120.00	0.00	2	1	HI_A	0.00000	1.00000
CH 5	Flow 2	2	100.00	2.00	2	2	LO_A	140.00	0.00	2	2	HI_A	0.00000	1.00000
CH 6	Flow 3	2	120.00	2.00	2	3	LO_A	160.00	0.00	2	3	HI_A	0.00000	1.00000
CH 7	Level 1	1	75.0	1.00	3	1	LO_A	575.0	0.00	3	1	HI_A	0.00000	1.00000
CH 8	Level 2	1	85.0	1.00	3	2	LO_A	685.0	0.00	3	2	HI_A	0.00000	1.00000
CH 9	Level 3	1	95.0	1.00	3	3	LO_A	785.0	0.00	3	3	HI_A	0.00000	1.00000
CH 10	Channel 10	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 11	Channel 11	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 12	Channel 12	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 13	Channel 13	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 14	Channel 14	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 15	Channel 15	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000
CH 16	Channel 16	0	0	0.00	0	0	OFF	0	0.00	0	0	OFF	0.00000	1.00000

Press F2 to edit mode, move to next cell by CTRL+arrow key

Use keys H, h, L, l and o to change alarm type

?

OK

Cancel

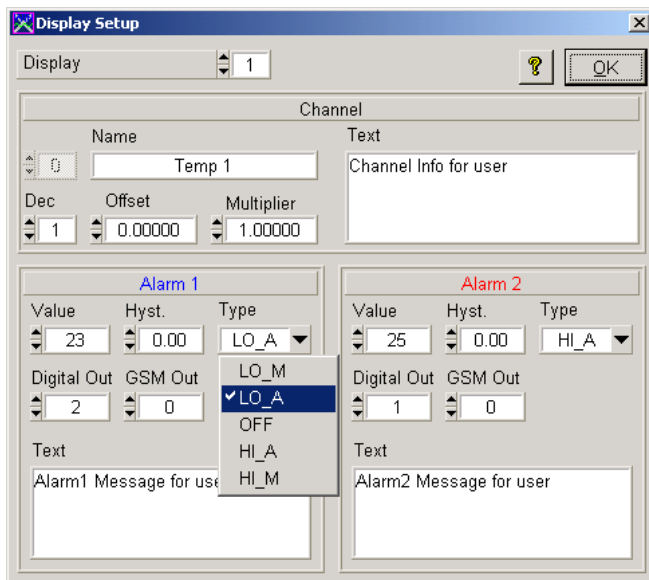
In the columns **Type1** or **Type2** you cannot enter the edit mode. To change the values in the cells, use the following keys:

- L for LO_M
- l for LO_A
- o for OFF
- h for HI_A
- H for HI_M

Display Setup Window

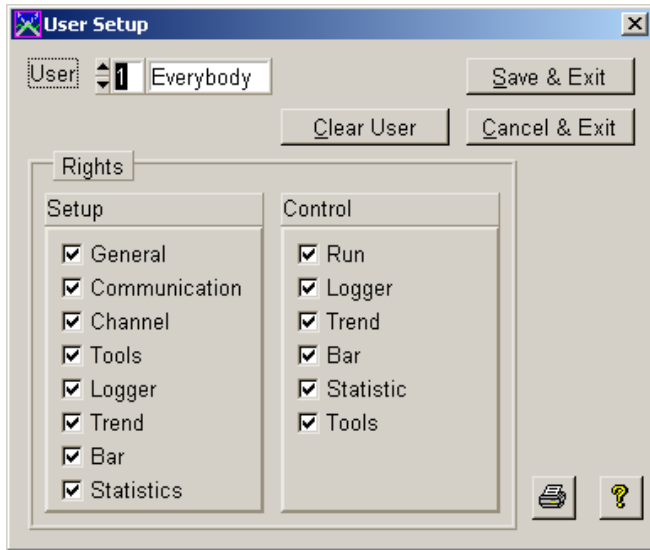
The *Display Setup* window opens by right-clicking a digital display in the WinX main window.

You can change the display to be set up by selecting the **Display** number. Set the parameter values, and select a new display, or click **OK** to exit.



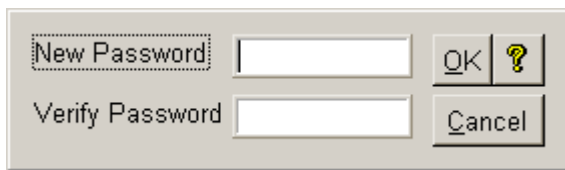
User Setup

Users/ user groups can be added or deleted and user rights can be determined in the *User Setup* window. The window appears when you select **Setup > Users**. Please note that it is only the “Admin” user who has the right to open this window.



How to add a new user/ user group:

Select a **User** number with no name. Type the name of the user or user group, click **Set Password**, and type the passwords.



How to change user rights:

Select the number of the **User** whose rights you want to change. Add or remove the rights.

Setup Rights

General

Right to set up general settings.

Communication

Right to set up communication settings.

Channels

Right to set up channel settings.

Tools

Right to set up the **Tools** menu.

Logger

Right to set up data logger settings.

Trend

Right to set up trend plot settings.

Bar

Right to set up bar display settings.

Statistics

Right to set up statistics settings.

Control Rights

Run

Right to start and stop data acquisition.

Logger

Right to start and stop loggers.

Trend

Right to start and stop trend plotting.

Bar

Right to start and stop bargraph displays.

Statistics

Right to start and stop statistical tracking.

Tools

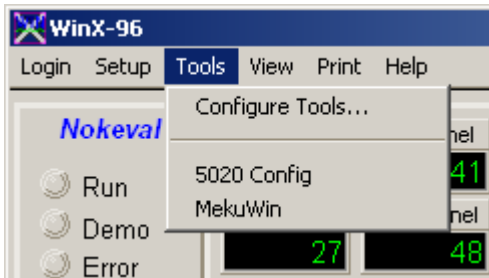
Right to open the **Tools** menu.

How to remove a user/ user group:

Select the number of the **User** you want to remove. Click **Clear User** to remove the selected user.

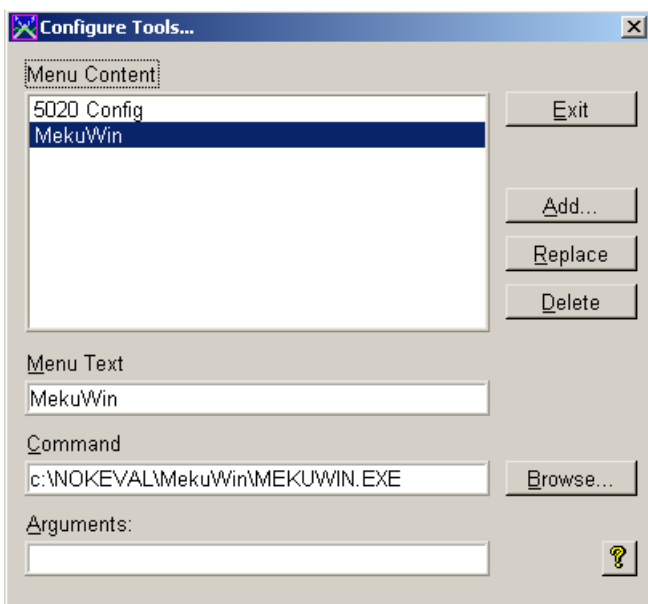
Tools

From the **Tools** menu you can start utility programs like the configuration program MekuWin. You can create your own menu by selecting **Configure Tools...**



Configure Tools Menu

In this window you can customize your Tools menu by creating, modifying or deleting items.



Adding a menu line:

Write in the **Menu Text** text box the text you want to see in the **Tools** menu. Write the full path to the utility program in the **Command** text box or select it by the **Browse** button. Write the arguments of your utility program in the field **Arguments** if any. Add the menu line into the **Menu Content** list by pressing the **Add** button.

Editing a menu line:

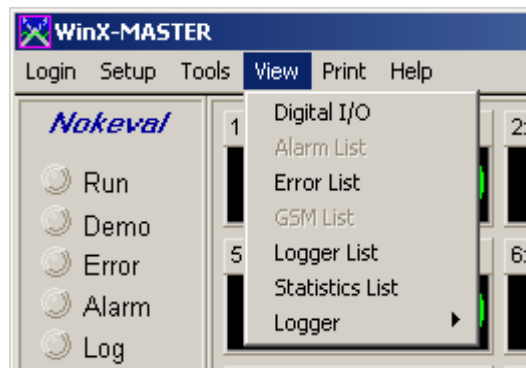
Select the menu line you want to change by selecting it from the **Menu Content** list. Make the changes as needed and press the **Replace** button.

Deleting a menu line:

Select the menu line you want to remove from the **Menu Content** list and press the **Delete** button.

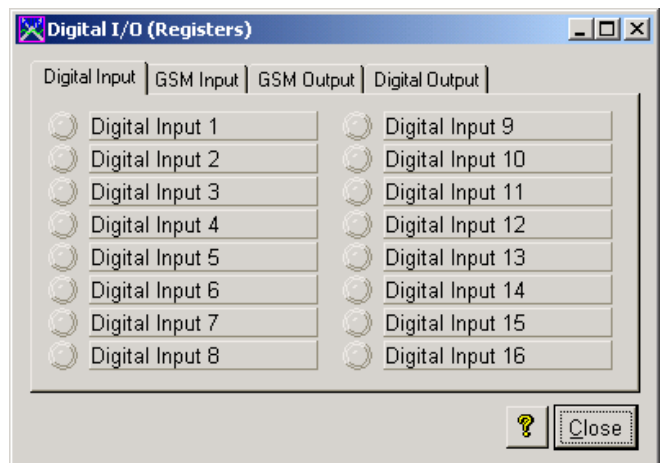
View

Here you can view the I/O registers, log files and logger files.



Digital I/O

You can view the status of the I/O registers by selecting the **Digital I/O** from the **View** menu.



The registers are:

Digital Input

The import commands of binary inputs place the imported values in this register. These registers are used, among other things, for controlling the loggers.

Digital Output

The export commands of binary outputs take the values they send from this register. This register is used by the **Alarm Register**, for example.

GSM Input

This register is not currently in use.

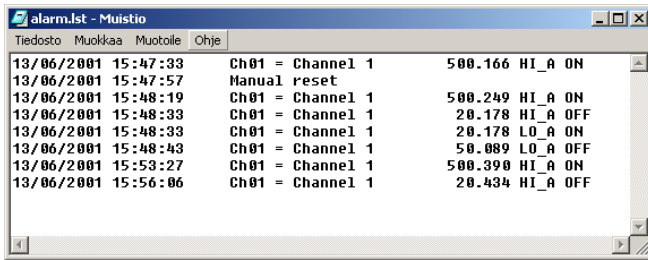
GSM Output

GSM alarms occur on the basis of this register. If the register switches on, an alarm is sent. This register is controlled by the **GSM register** of the alarm function.

Alarm Log (Alarm List)

If you have enabled the **AlarmLog** function in *General Setup*, all changes in alarm states are logged to the file *List\AlarmLog.txt*.

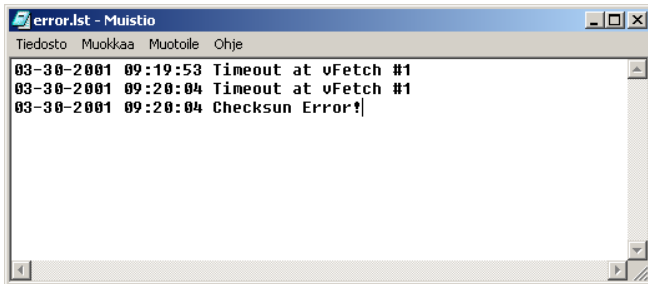
When you select the **Alarm List** from the **View** menu, the file in question is opened in *NotePad*.



Error Log (Error List)

If you have enabled the **ErrorLog** function in *General Setup*, all errors in data communication are logged to the file *List\ErrorLog.txt*.

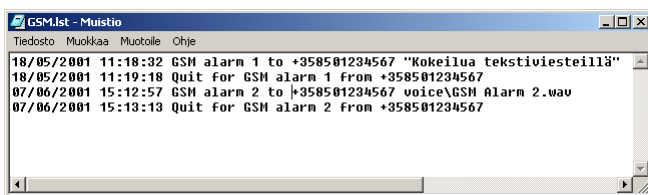
When you select the **Error List** from the **View** menu, the file in question is opened in *NotePad*.



GSM Log (GSM List)

If you have enabled the **GSM Log** function in *General Setup*, all GSM events are logged to the file *List\GSMLog.txt*.

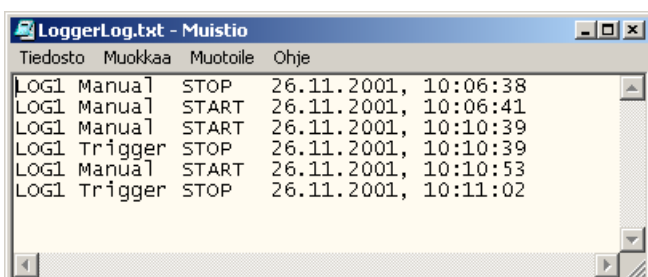
When you select the **GSM List** from the **View** menu, the file in question is opened in *NotePad*.



Logger Log (Logger List)

If you have enabled the **LoggerLog** function in *General Setup*, all changes in logger states are logged to the file *List\LoggerLog.txt*.

When you select the **LoggerList** from the **View** menu, the file in question is opened in *NotePad*.



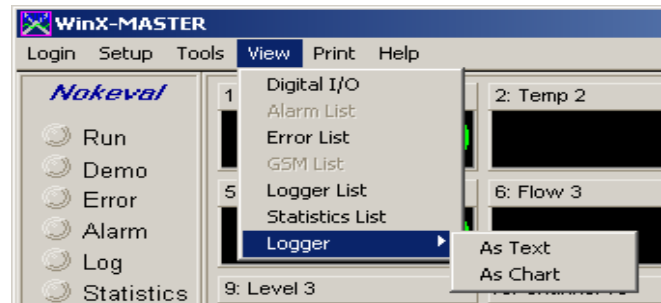
Statistics Log (Statistics List)

If the statistical tracking is on, the file *List\StatisticsLog.txt* is updated every time the tracking is stopped, or a new statistical tracking period starts.

When you select the **Statistics List** from the **View** menu, the file in question is opened in *NotePad*.

CHANNEL	MIN VALUES	TIME	MAX VALUES	TIME	MEAN
Temp 1	10.02	@ 10:53:42	30.00	@ 10:19:07	20.09
Temp 2	30.0	@ 10:38:51	50.0	@ 10:08:27	40.1
Temp 3	50.009	@ 10:51:36	69.999	@ 10:26:57	60.062
Flow 1	70.01	@ 10:13:53	90.00	@ 10:13:55	80.04
Flow 2	10.02	@ 10:17:55	29.98	@ 10:08:07	19.87
Flow 3	30	@ 10:48:22	50	@ 10:36:19	40
Level 1	50	@ 10:23:09	70	@ 10:16:01	60
Level 2	70	@ 10:39:27	90	@ 10:10:37	80
Level 3	10	@ 10:46:52	30	@ 10:32:21	20
Channel 10	30.01	@ 10:28:27	50.00	@ 10:16:25	40.12
Channel 11	50.01	@ 10:52:04	69.99	@ 10:55:06	59.98

Logger Files



As Text

A logger file appears on the screen in ASCII format when you choose **Logger > As Text** from the **View** menu. A window opens where you can choose a file to be opened in *NotePad*.

The logger file appears in *NotePad* as in the picture below.

Date	Time	Temperature TR1	Temperature TR2	Vessel AMI
27.10.2000	00:37:39	25.10	38.14	54.44
27.10.2000	00:37:49	16.79	36.06	67.25
27.10.2000	00:37:59	15.08	47.90	58.71
27.10.2000	00:38:09	11.89	32.41	62.28
27.10.2000	00:38:19	21.88	38.15	56.55
27.10.2000	00:38:29	23.53	48.76	64.34
27.10.2000	00:38:39	19.49	40.94	68.35
27.10.2000	00:38:49	17.84	37.44	55.03

As Chart

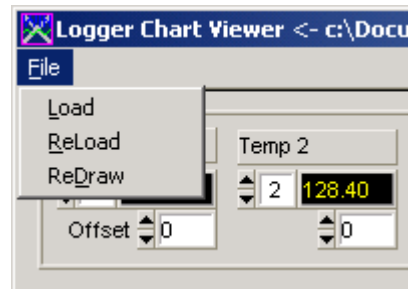
A Logger file can be displayed as a graphic chart when you choose **Logger > As Chart** from the **View** menu. A window opens where you can select the file to be viewed. After the selection, press the **LOAD** button. A *Logger Chart Viewer* window will appear on the screen, see the picture at the bottom of the page.

You can view up to 8 logged channels simultaneously by selecting each channel by the *ChNumber* selector. *ChName* shows the name of the selected channel and the digital display to the right of *ChNumber* shows the value of the channel at the cursor. With the **Offset** arrows you can move the graph of the channel upwards or downwards on the screen.

You can move the cursor by clicking the chart. When the chart is selected, the cursor is highlighted. You can also use the arrow-keys of the keyboard to move the cursor. If all of your data is not shown in the chart, you can scroll the chart by moving the vertical and horizontal scroll bars.

At the bottom of the chart window you can see time stamps for samples at the left and right edge of the chart and for the sample at the cursor.

From the menu **File** you can select



Load

Imports a new logger file to Chart Viewer.

Reload

Updates the current logger file to Chart Viewer. If you are viewing the same file you are logging in, you will have the latest data in the chart as well.

ReDraw

Replots the chart using the data that has already been loaded to the chart.



-button

Opens the Help file.



-button

Prints the *Chart Viewer* window to a printer.



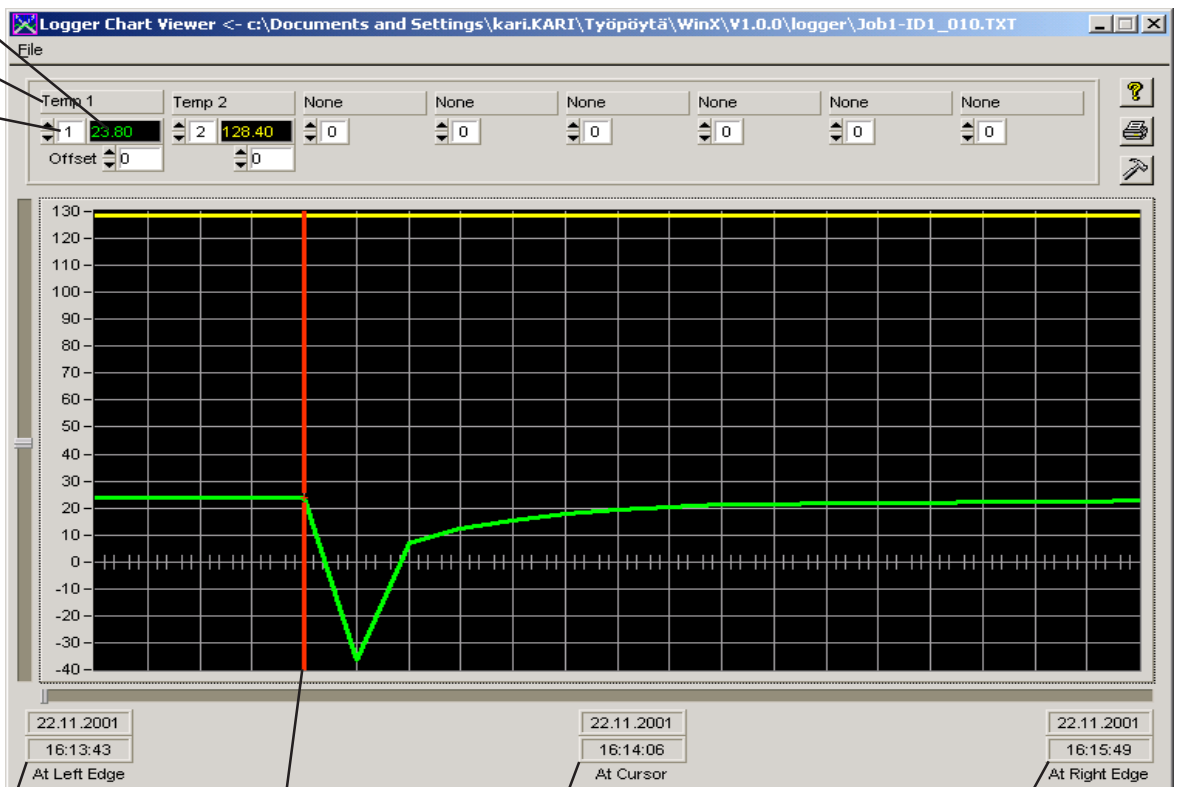
-button

Opens the *Chart Viewer Setup* Window.

Ch value
at the cursor

Ch Name

Ch Number



Time stamp at the
left edge of the chart

Cursor

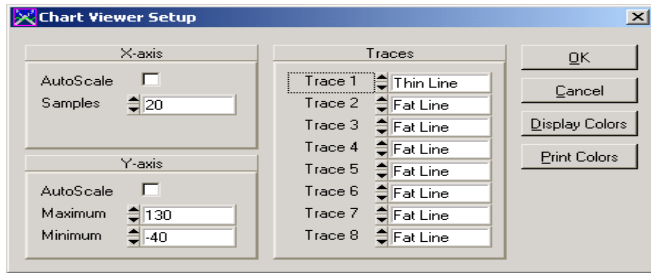
Time stamp at
the cursor

Time stamp at the
right edge of the chart

Chart Viewer Setup

You can set up the X-axis to **AutoScale** mode, in which case all the samples are shown on the X-axis. You can also determine the number of samples to be displayed on the X-axis. The Y-axis can also be set to **AutoScale** mode. In this mode the Y-axis is scaled automatically so that all the minimum and maximum values of the selected channels will fit into the Y-axis. Alternatively, you can set the **Maximum** and **Minimum** values to the Y-axis.

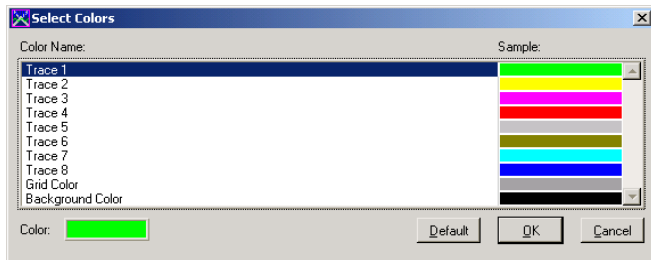
You can individually select the type of each trace to be either *Thin Line* or *Fat Line*.



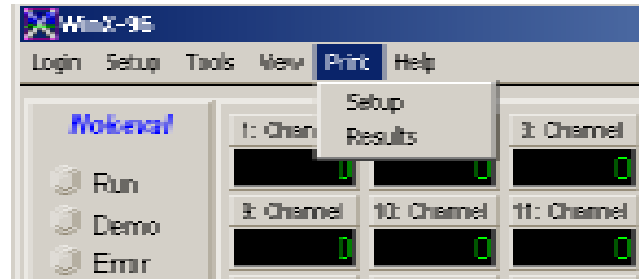
By clicking the **Display Colors** or **Print Colors** buttons, the **Select Colors** window will appear allowing you to choose the colors of the chart on the screen and for the printer.

Selecting colors for Chart Viewer

Select the item whose color you want to change from the list. Click the **Color** box in the bottom left corner to open the color palette. Select a color by clicking it. For the default colors, click **Default**. Accept the color changes by clicking **OK** or reject the changes by clicking **Cancel**.



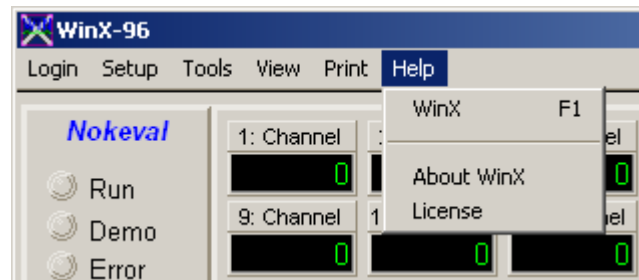
Print




You can print out general settings by clicking **Print > Setup**.

To print measuring values click **Print > Results**.

Help



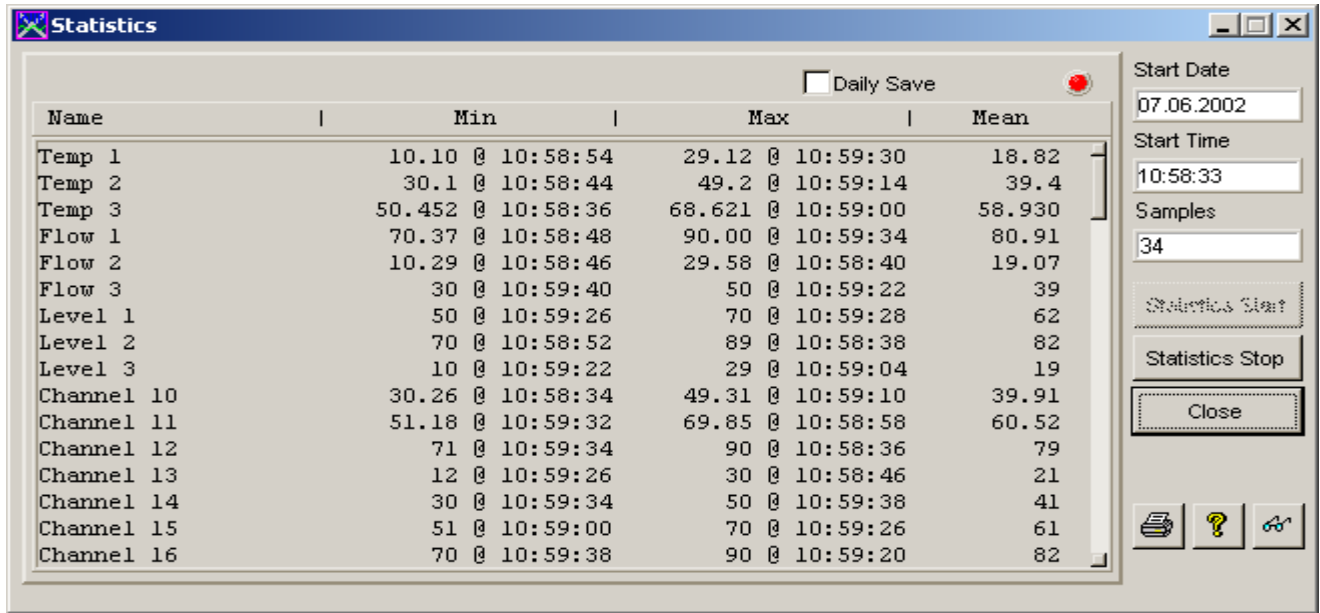
WinX has online help. You can open Context sensitive help by clicking  button (if there is one), the **F1** key, or by selecting **Help > WinX**.

Statistics

You can keep track of the statistical values of the channels. The statistical values available are **Min**, **Max** and **Mean**.

Tracking begins when the **Statistics Start** button is pressed and stops when the **Statistics Stop** button is pressed. The statistical values are saved to a file called *StatisticsLog.txt* on disk whenever the tracking is stopped.

If **Daily Save** is selected, the Statistics values are always saved to the file at midnight. At the same time a new tracking period is also started.



Contents of the Statistics Window

Informative fields:

Start Date

Start date of statistical tracking.

Start Time

Start time of statistical tracking.

Samples

The number of samples during the statistical tracking.

Selectors:

Daily Save

Statistical values are saved to disk and a new tracking period is started every midnight.

Buttons:

Start

Starts Statistics tracking.

Stop

Stops Statistics tracking.

Close

Closes the *Statistics* window.



Prints the current statistical values.



Opens the Help topic.

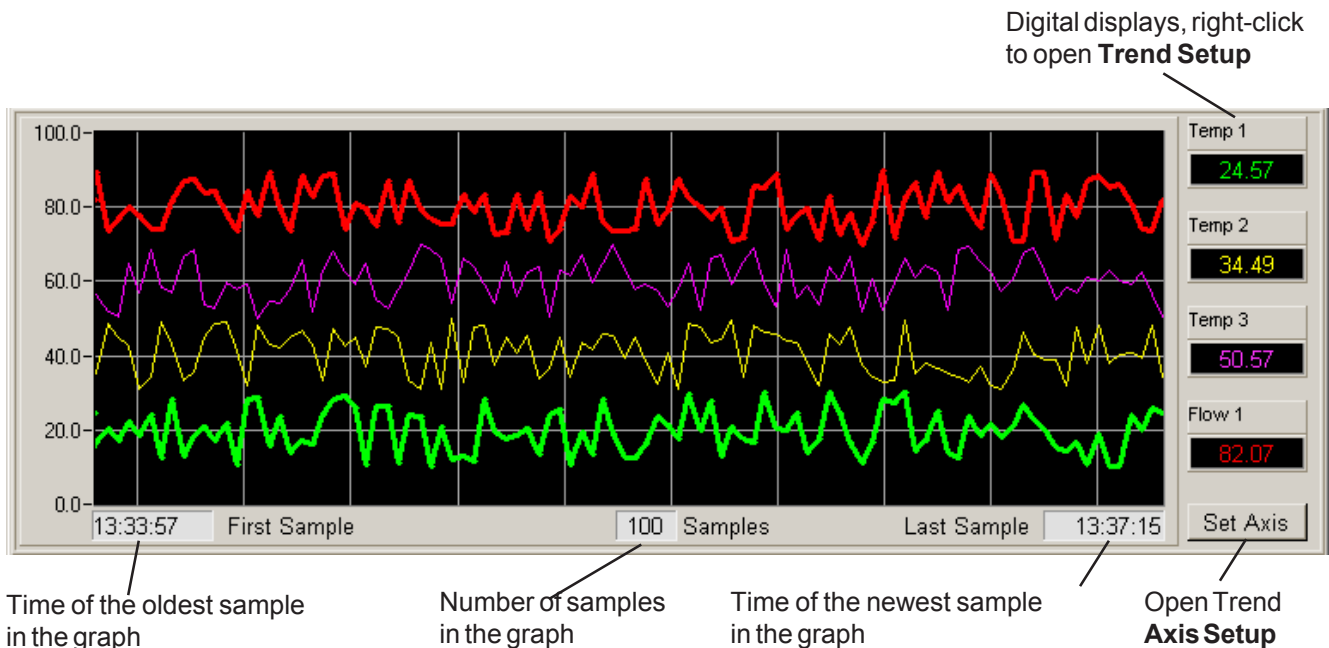
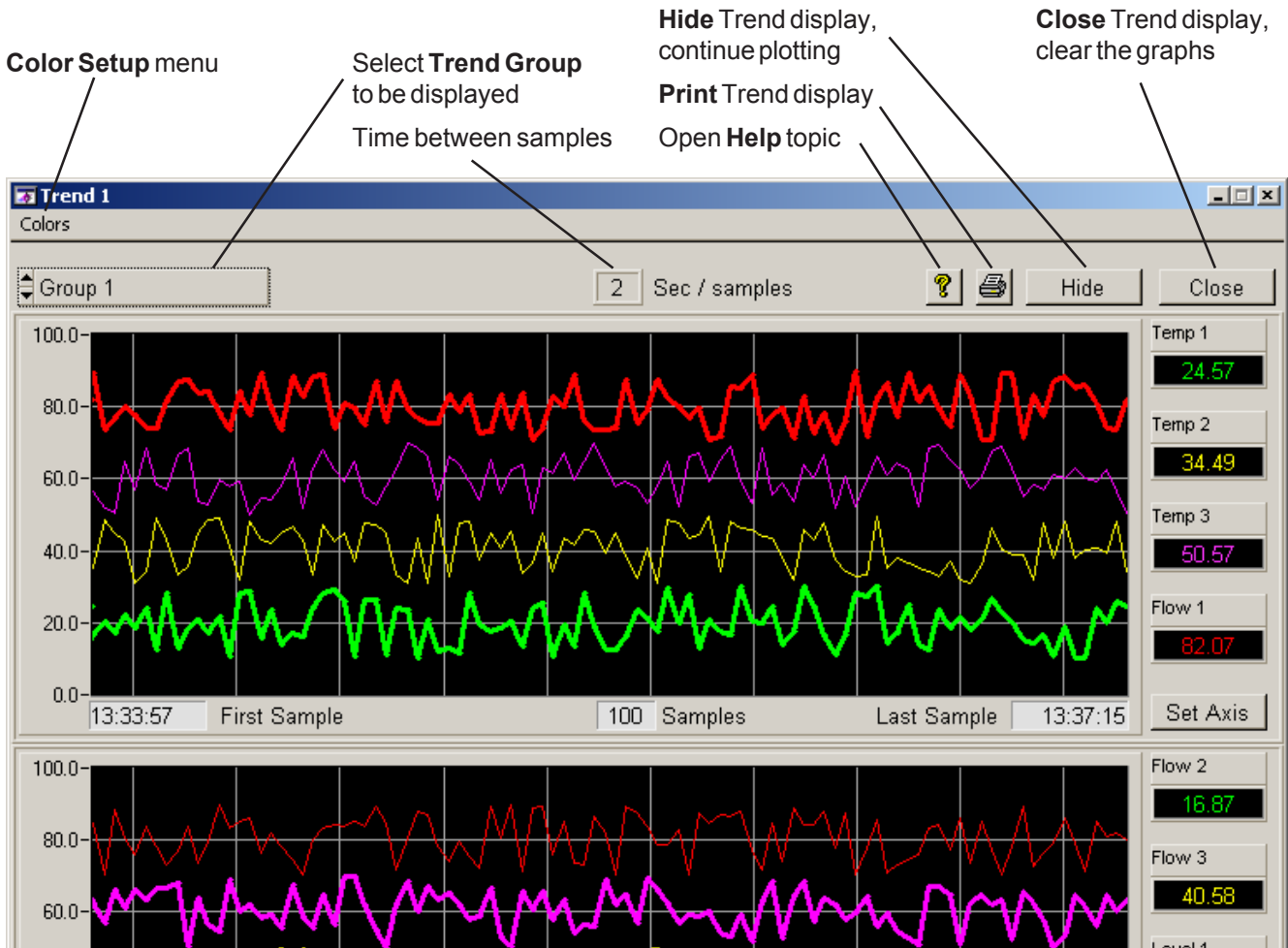


Opens the *StatisticsLog.txt* file in *NotePad*.

Trend Plotter

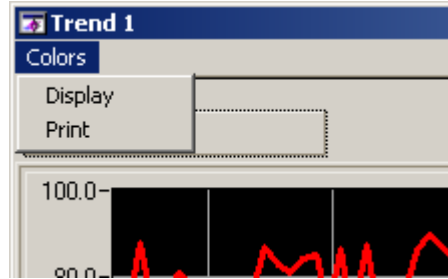
You can open the trend plot window by pressing the **Trends** button in the WinX window. Trends are shown in groups of two graphs each containing maximum four trends. The number of available trend groups depends on the number of channels in your license. For example in a 32-channel- version there are 4 groups. You can move from one group to another by selecting **Trend Group** in the upper-left corner.

You can hide windows with the **Hide** button. **Hide** doesn't end drawing but it closes the window onto the background. If you close the trend window by the **Close** button, drawing will start from the beginning when you open the **Trends** again.



Trend Color Setup

From the **Colors** menu, you can change Trend graph colors separately for the display (**Display**) and the printer (**Print**). Especially with black and white printers, it is important to select suitable colors to achieve the best possible readability.



Select the item for color change

Current color for the item

Open *color palette* to choose the color.

Use default colors

Accept color changes

Cancel color changes

Trend Setup

You can freely select any channel for any trend. Select the **Trend Number** you want to set up. Trends 1-4 are situated in the upper plotter and trends 5-8 in the lower plotter. Select the **Channel** number to be displayed in that trend and the style of the line (**Trace Style**).

You can set up all the trends of the **Trend Group** at the same time, one after another, by changing the **Trend** number as required. Accept the settings by clicking the **OK** button.

Select **Trend number**.

Select **Trace Style**.

Select the channel number.

Name of the selected channel

Open Help topic

Accept the settings

Trend Axis Setup

You can set up the axes for each trend graph independently from each other. Define the maximum and minimum values for the Y-axis and the number of samples to be fitted onto the X-axis. Accept the settings by clicking the **Set Axis** button. Reject the new settings by clicking the **Cancel** button.

Minimum value of Y-axis

Maximum value of Y-axis

Open Help topic

Accept the settings

Reject the settings

Samples on X-axis

Loggers

Logger function saves measuring data to disk in ASCII-format for later survey. Data can be read into spreadsheet programs (Excel, Lotus, etc.) or it may be viewed in graphic format (*ChartViewer*).

You can save measuring data by eight independent loggers. The channels which will be logged can be freely selected for each of the loggers. A particular channel can be selected for several loggers at the same time. The loggers can be started and stopped manually, on the basis of a trigger or timer. The Log Interval can be set as a multiple of the communication interval.

Log Manager

Status

Indicates the status of the logger. Possible statuses are:

Stopped

Logger is inactive.

Idle

Logger is active and waits for a trigger or timer event.

Running

Logger is active and saving data into file.

Paused

Logger is active but saving data into file is temporarily interrupted.

Under the Status Box there is a ProgressBar indicating how full the current logger file is.

Open Help file

Start/Stop

Logger Number	Logger Name	Job Name	Job ID	Worker	Open Logger Setup	button File Status	LoggerStatus
LOG1	Logger 1	Job1	ID1	Smith		Running	ON
LOG2	Logger 2	Job2	ID2	Jones		Idle	ON
LOG3	Logger 3	Job3	ID3			Paused	ON
LOG4	Logger 4	Job4	ID4			Stopped	OFF
LOG5	Logger 5	Job5	ID5			Stopped	OFF
LOG6	Logger 6	Job6	ID6			Stopped	OFF
LOG7	Logger 7	Job7	ID7			Stopped	OFF
LOG8	Logger 8	Job8	ID8			Stopped	OFF

Name

Name of the logger, e.g. Annealing furnace 1.

Job Name

Name of the job, e.g. Propeller.

Job ID

Identification code of the job, e.g. 1234-9999.

Worker

Name of the worker.



-button

Opens the **Log Setup** window. See the next page.

Start/Stop

Start / Stop the logger. **Note;** you cannot start or stop logger unless at least 1 channel has been selected for the logger.

Logger Setup

Select the logger for setup

The screenshot shows the 'Log Setup' dialog box for 'Logger 1'. The 'Settings' section contains fields for Path, File Name, First File Number, Log Period, Log Interval, Samples/File, and File Size. The 'Start Control' section has 'Trigger' selected. The 'Stop Control' section has 'FileFull' selected. The 'Pause' and 'Average' sections have 'Active' selected. The 'Start Condition' is 'DI 1: 1 AND CH 1: over 50.000'. The 'Stop Condition' is 'DI 1: 0'. The 'Pause Condition' is 'CH 1: under 50.000'. The 'Start Timer' is set to 12:23:59 on 19/12/2001. The 'Stop Timer' is set to 12:24:00 on 20/12/2001. The 'Average' is set to 2 Samples/Result. The 'Channels' list on the right includes Temp 1, Temp 2, Flow 1, Flow 2, Flow 3, Level 1, Level 2, Level 3, Channel 10, Channel 11, and Channel 12.

Path Name

The directory where logger files are saved. Change directories by clicking the button on the right side of the Path Name text box.

File Name

Type the File Name without the file extension. A 4-number index and the file extension (.TXT) will be automatically added to the file name.

By selecting the **Use default** check box the file name is created automatically from the **Log Manager** fields *Job Name* & *Job ID*.

First File Number (index)

Select the index (0-9999) for the first logger file. When the first file is full, the next file is created with index increment by one.

Log Period

The multiplier for **Log Interval**. Log Interval can only be a multiple of the **Communication Interval**. The real log interval is shown in the **Log Interval** box.

$$\text{LogInterval} = \text{LogPeriod} * \text{CommunicationInterval}$$

Samples / File

You can select the number of samples (1-99999) to be saved to one file. The file size depends on the number of samples and channels. An estimation of the file size is shown on the right side of the text box **Samples/File**.

Start Control

Starting the Logger:

Direct

Logging starts instantly when the logger is started.

Trigger

Logging starts after the logger has been started and the **Start Condition** is true.

Timer

Logging starts after the logger has been started and the time set for the **Start Timer** is reached.

Stop Control

Stopping the Logger:

Direct

Logging stops instantly when the logger is stopped.

Trigger

Logging stops instantly when the logger is stopped or the **Stop Condition** is true.

Timer

Logging stops instantly when the logger is stopped or the time set for the **Stop Timer** is reached.

FileFull

Logging stop instantly when the logger is stopped or the current logging file becomes full.

Pause

Logging is interrupted until the **Pause Condition** is true.

Average

Average function can be activated if **Log Period** > 1. The mean value is calculated from the samples after the last saving.

Start Condition

Active if **Start Control** = *Trigger*. Click with the mouse to open **Trigger Setup**.

Stop Condition

Active if **Stop Control** = *Trigger*. Click with the mouse to open **Trigger Setup**.

Pause Condition

Active if **Pause** is selected as Active. Click with the mouse to open **Trigger Setup**.

Start Timer

Active if **Start Control** = *Timer*. Starts the logging at the desired time on the desired date. Enter the day, month, year, hours, minutes and seconds. As the WinX uses the PC's internal clock, make sure the time is right and remember the summer time (daylight saving time).

Stop Timer

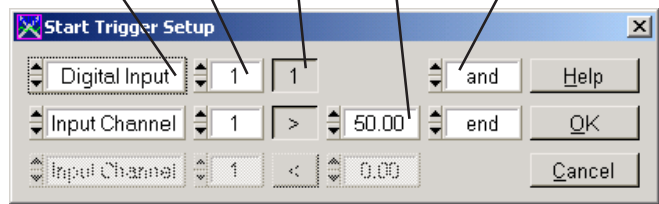
Active if **Stop Control** = *Timer*. Stops the logging at the desired time on the desired date. Enter the day, month, year, hours, minutes and seconds. As WinX uses the PC's internal clock, make sure the time is right and remember the summer time (daylight saving time).

Channels

Here you can select the channels you want to include in this logger. You can select or deselect a sequence of several channels from the logger at a time. Choose the first and the last channel whose selection you want to change, choose whether you want select or remove the channels and click the **DO** button.

Trigger Setup

Channel Number Compare Logic Operation
Channel Type Value



Channel Type

Select the type of the trigger channel: *Digital Input* (binary input) or *Input Channel* (measuring input).

Channel Number

Select the number of the trigger channel.

Compare

Digital Input = 0 or 1.
Input channel < Or > than the comparison **Value**.

Value

The value to which the **Input Channel** is compared.

Logic Operation

Logic operation between expressions. The operations available are:

END

No more expressions are included in the trigger function

AND

The next expression is included in the trigger function with logical AND.

OR

The next expression is included in the trigger function with logical OR.

XOR

Next expression is included to trigger function with logical XOR.

Help button

Opens the Help file.

OKbutton

Accepts the changes made in **Trigger Setup**.

Cancel button

Rejects the changes made in **Trigger Setup**.

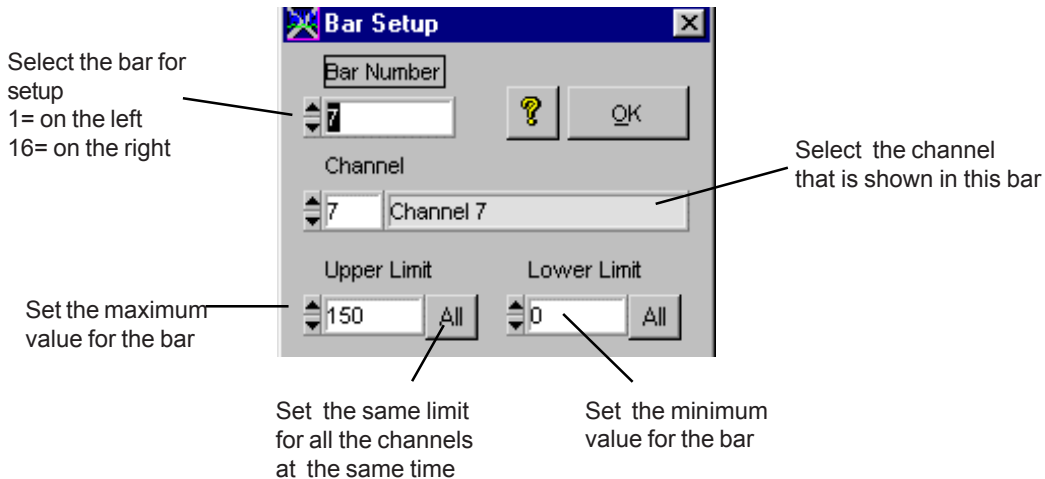
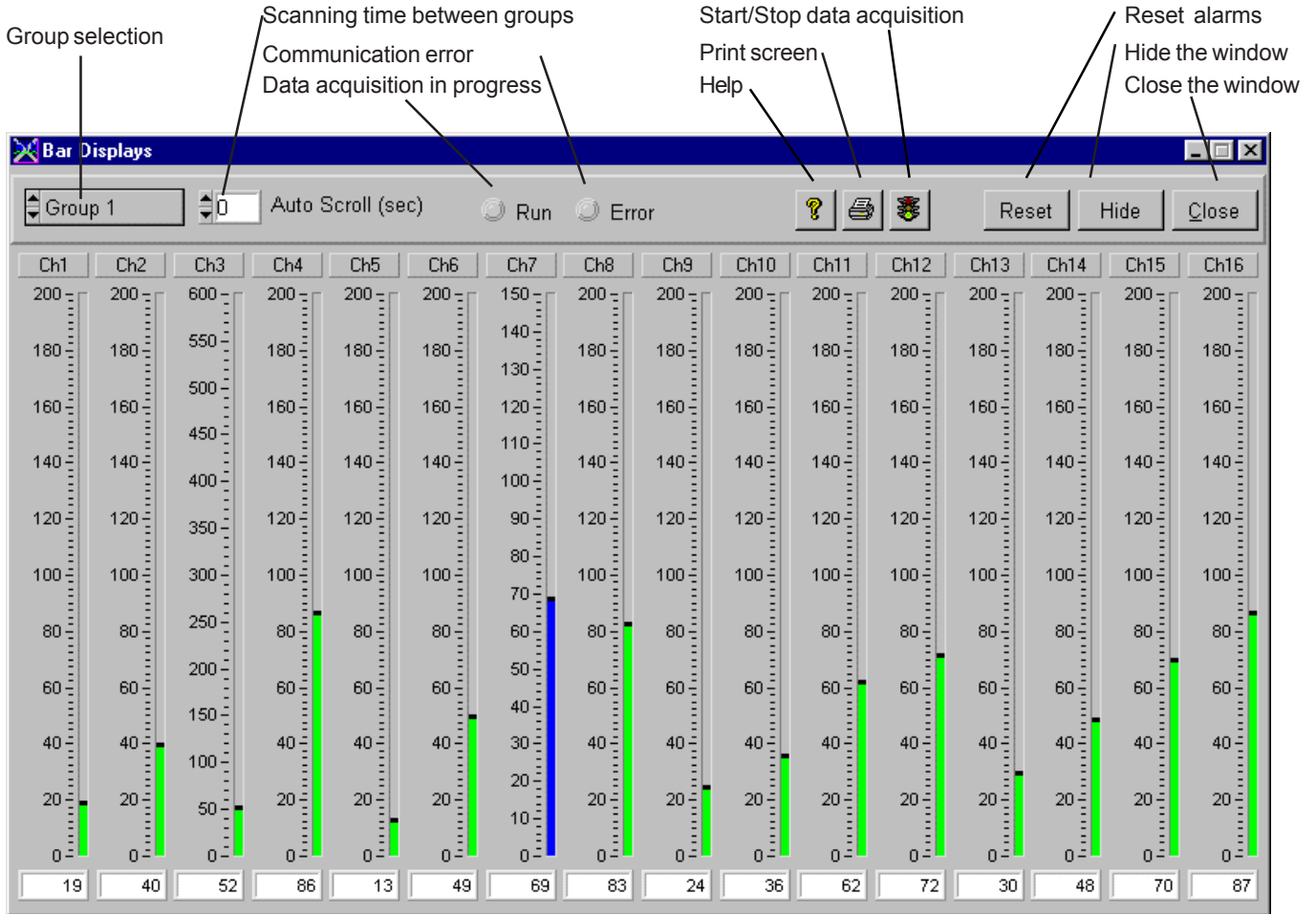
Bargraph Display

The bargraph display window will appear when you press the **BarDisp** button in the WinX window. The bars are displayed in groups of 16 bars. The number of the groups available depends on the number of channels in your license. For example in the 32-channel version there are 2 groups available. You can move from one group to another through the **Group** selection spin box.

Bar graph displays can visualize e.g. the temperature

profile in a zone furnace. Temperature sensors are installed at regular distances from each other in the furnace. The bargraph shows the real time distribution of temperature in the furnace. Below each bar there is a digital display indicating the exact value of the channel. The channel to be displayed can be freely selected for each of the bars and the bars can be scaled independently from each other.

In case of an alarm, the bar turns either blue or red depending on which alarm occurs. The alarms can be reset with the **Reset** button.



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