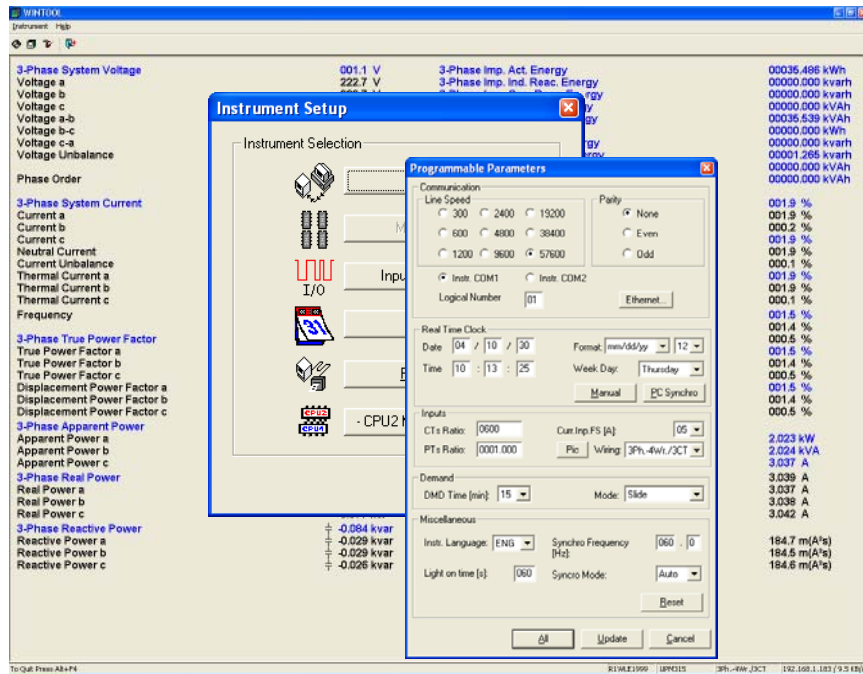


WINTOOL



USER'S MANUAL

1UXUDEDAL002

WINTOOL

Power Meter Management Software

USER'S MANUAL

(STANDARD & MODBUS Protocol)
Version 3.00 or Later

EDITION: DECEMBER 2004

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1 INTRODUCTION

The function of this application is to program the analysers in the work-area, monitoring the electrical measurement.

The software allows:

- monitoring of the electrical parameters acquired by the instrument
- programming of the most important functioning parameters

WINTOOL works on a IBM-compatible PC in a Microsoft Windows® 95 / 98 / 2000 / NT™ 4.0 / XP environment.

WINTOOL can manage the UPM / UPT and similar series instruments.

1.1 HOW TO USE THIS MANUAL

This user's manual has been prepared for a correct use of the **WINTOOL** monitoring software.

In the first part there is a detailed description of the hardware features and the procedures to follow for the installation of the software.

The following part describes the software use.

2 INSTALLATION

Before starting to use **WINTOOL** on the computer, it is important to carry out the whole installation procedure.

In this chapter the PC hardware requirements and the installation procedure are described.

2.1 HARDWARE REQUIREMENTS

Before using **WINTOOL** it is necessary to verify if the computer is compatible with the software.

Suggested configuration:

- IBM-compatible PC (Pentium 2 or higher recommended)
- Operating system Microsoft Windows® 95, 98 , 2000, NT™ 4.0 Workstation or XP
- At least 10 MB of free space on the hard disk
- SVGA graphic boards
- Mouse and keyboard
- Serial RS232 communication port and/or LAN connection

2.2 INSTALLATION ON HARD-DISK

Procedure for the installation of the program on the hard-disk.

1. Turn on the computer and wait until Microsoft Windows® environment has been loaded.
2. Insert the provided Disk into your system's CD Reader.
3. Select Run from the Windows START button.
4. Type "**X:\SETUP**" and press <ENTER>, where **X** is the computer CD-ROM drive letter where the disk was inserted.
It will automatically carry out the installation program.
5. At the end of the setup the **WINTOOL** program group will appear.
6. To start the program double-click on the **WINTOOL** icon.

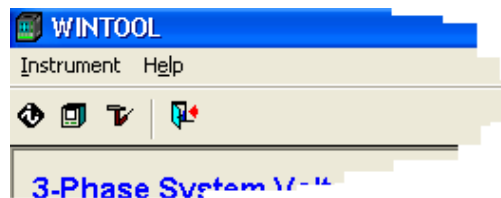
2.3 RUN AND BRIEF DESCRIPTION

For the connection modes of the **WINTOOL** it is necessary to refer to the user's manual of the instrument. Our advice is to use isolated converters to avoid ground loop occurrences that could damage the computer.

The window which appears automatically at the moment of the program activation allows the selection of the communication parameters. For more details, see section 4.1

2.3.1 MAIN MENU

The main menu bar items are the following:



Instrument
Help

Different setup functions.
Help and about functions.

Instrument menu

The Instrument menu offers the following items:

Connection Setup...	Shift+F1
Ethernet Interface	
Setup...	Shift+F9
Information ...	Shift+F10
Language	▶
Exit	Alt+F4

Connection Setup

Displays the window which enables the setup of the communication parameters (the logical number of the connected meter, the TCP/IP connection parameters and the protocol type)

Ethernet Interface

Displays the window that enables the setup of the Ethernet interface parameters for a desired instrument

Setup	Displays the window that enables to program the instrument connected to WINTOOL
Information	Displays information about the connected instrument and the connection status
Language	Allows to select one of the available languages
Exit	Exit from WINTOOL

Help menu





The Help menu offers the following items, which provide you with assistance about this application:



Index	Index to topics on which you can get help.
Help	Help about the currently displayed page.
About	Information about WINTOOL (version and copyright).

2.3.2 TOOLBAR

The toolbar is displayed on the top of the main window, under the main menu bar. The toolbar provides quick mouse access to **WINTOOL** functions.

Short cut	Button	Operation
[Shift + F10]		"Information" window
[Shift + F9]		"Instrument Setup" window
[Shift + F1]		"Connection Setup" window
[Alt + F4]		Exit from WINTOOL

2.3.3 STATUS BAR

The status bar is displayed at the bottom of the **WINTOOL** window.

The left area of the status bar describes the actions of menu items, when keyboard is used to select menu items. This area similarly shows messages that describe the actions of toolbar buttons as you press them, before releasing.

The right area of the status bar gives different information on the connected instrument:

- serial number
- instrument type
- wiring diagram
- used communication port
- communication speed

3 INSTANTANEOUS VALUES PAGE

The main page is displayed automatically at the start of the program, it displays all the variables measured by the connected instrument in realtime. The displayed variables depend on measurements carried out by the connected instrument.

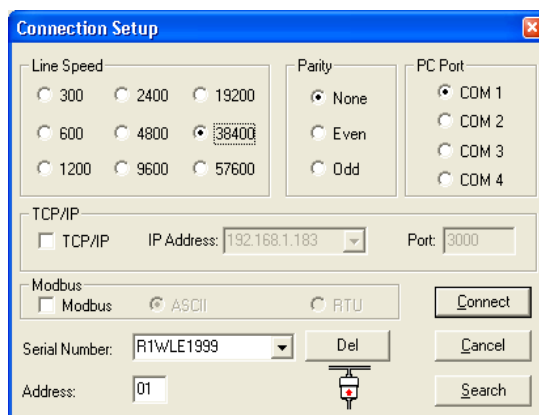
3-Phase System Voltage	001.1 V	3-Phase Imp. Act. Energy	00036.486 kWh
Voltage a	222.7 V	3-Phase Imp. Ind. React. Energy	00000.000 kvarh
Voltage b	222.7 V	3-Phase Imp. Cap. React. Energy	00000.000 kvarh
Voltage c	222.7 V	3-Phase Imp. Ind. App. Energy	00000.000 kVAh
Voltage a-b	001.7 V	3-Phase Imp. Cap. App. Energy	00036.539 kVAh
Voltage b-c	000.0 V	3-Phase Exp. Act. Energy	00000.000 kWh
Voltage c-a	001.5 V	3-Phase Exp. Ind. React. Energy	00000.000 kvarh
Voltage Unbalance	100.0 %	3-Phase Exp. Cap. React. Energy	00001.266 kvarh
Phase Order	---	3-Phase Exp. Ind. App. Energy	00000.000 kVAh
		3-Phase Exp. Cap. App. Energy	00000.000 kVAh
3-Phase System Current	3.044 A	THD Voltage a	001.9 %
Current a	3.045 A	THDo Voltage a	001.9 %
Current b	3.043 A	THDe Voltage a	000.2 %
Current c	3.044 A	THD Voltage b	001.9 %
Neutral Current	3.047 A	THDo Voltage b	001.9 %
Current Unbalance	000.0 %	THDe Voltage b	000.1 %
Thermal Current a	185.9 m(A's)	THD Voltage c	001.9 %
Thermal Current b	185.6 m(A's)	THDo Voltage c	001.9 %
Thermal Current c	185.7 m(A's)	THDe Voltage c	000.1 %
Frequency	049.9 Hz	THD Current a	001.5 %
		THDo Current a	001.4 %
3-Phase True Power Factor	± 0.999	THDe Current a	000.6 %
True Power Factor a	± 0.999	THD Current b	001.5 %
True Power Factor b	± 0.999	THDo Current b	001.4 %
True Power Factor c	± 0.999	THDe Current b	000.6 %
Displacement Power Factor a	± 0.996	THD Current c	001.5 %
Displacement Power Factor b	± 0.996	THDo Current c	001.4 %
Displacement Power Factor c	± 0.997	THDe Current c	000.6 %
3-Phase Apparent Power	2.033 kVA	3-Phase Demand Power	2.023 kW
Apparent Power a	0.678 kVA	3-Phase Demand App. Power	2.024 kVA
Apparent Power b	0.678 kVA	3-Phase Demand Current	3.037 A
Apparent Power c	0.678 kVA	Demand Current a	3.039 A
3-Phase Real Power	2.032 kW	Demand Current b	3.037 A
Real Power a	0.677 kW	Demand Current c	3.038 A
Real Power b	0.677 kW	Neutral Demand Current	3.042 A
Real Power c	0.677 kW		
3-Phase Reactive Power	± 0.084 kvar	Demand Thermal Current a	184.7 m(A's)
Reactive Power a	± 0.029 kvar	Demand Thermal Current b	184.5 m(A's)
Reactive Power b	± 0.029 kvar	Demand Thermal Current c	184.6 m(A's)
Reactive Power c	± 0.026 kvar		

The refresh time of the values depends on the communication speed between the PC and the instrument.

4 MAIN WINTOOL FUNCTIONS

4.1 CONNECTION SETUP

This window enables to setup all the communication parameters between the PC and the instrument.



Fields description:

Line Speed

Communication speed selection in case of COM Port connection: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400 or 57600 baud

Parity

Parity bit: None, Even, Odd

PC Port

PC communication port used for the connection

TCP/IP

Select this field in case of communication via Ethernet port

IP Address

IP Address of the instrument to be connected

Port

Reserved (set always on 3000)

Modbus

Set this checkbox in case of MODBUS protocol and select ASCII or RTU mode. If this box is not checked, **WINTOOL** will use STANDARD protocol

Serial Number

Serial number of the instrument to be connected, disabled in case of MODBUS protocol

Address

Logical number of the instrument to be connected. Needed only for MODBUS protocol.

4.1.1 HOW TO CONNECT THE INSTRUMENT

The UPM / UPT and similar series instruments are provided with a RS232 and / or RS485, and/or Ethernet communication port.

The instruments with RS232 port can be connected directly to the PC COM port.

The instruments with RS485 port cannot be connected directly to the PC COM port, a converter module (eg. CV3285M) must be inserted.

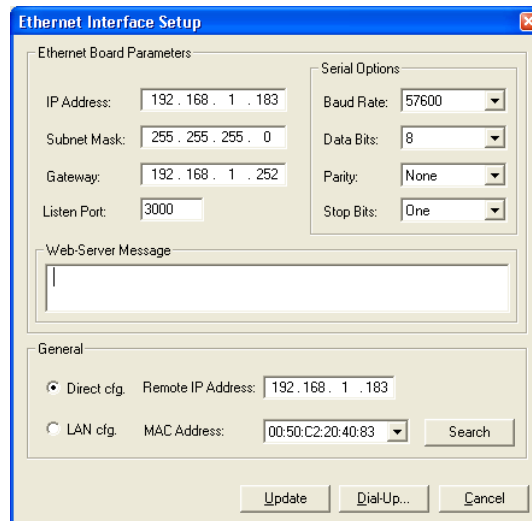
The instruments with Ethernet interface must be connected with a CROSS LAN cable directly to PC, or via a HUB or SWITCH.

To run the search function in STANDARD protocol, cancel the Serial Number field and press **Search** button. **WINTOOL** starts to search the connected instrument, scanning all baudrates started with the value set when the search was started. This function is not available for MODBUS protocol.

The serial number, which appears in the **Serial Number** field, is the one relative to the last connected instrument, and to connect a new one the old serial number must be cancelled or changed.

4.2 ETHERNET INTERFACE

This window allows to set the parameters of Ethernet interface for a selected instrument. This setup will not change the parameters of the PC's LAN interface.



Fields and buttons description:

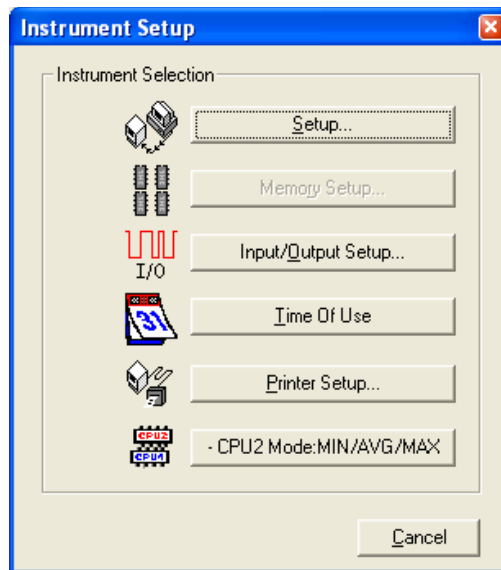
IP Address	IP Address for the selected interface (selection made by the MAC address field).
Subnet Mask	Subnet Mask according to the local network setup.
Gateway	Gateway IP Address.
Listen Port	Reserved, always on 3000.
Serial options	Communication parameters between the Ethernet interface and the instrument.
Web-Server Message	Text message (max.50 characters) displayed in the HTML web page in case of enabled webserver function.
Direct cfg	Set this checkbox, in case the interface is not connected in the local network, but is available via a gateway. For example, if a NAT function is available for gatewaying to the internet, the interface can be reached setting in the Address field the NAT-ed and IP Address.
LAN cfg	Set this checkbox, if the interface is connected to the local network (LAN). In this case after a Search, MAC Addresses for all the interfaces will be available.

ATTENTION! The communication parameters in this field must be set to the same values set in the instrument. Otherwise, the interface cannot communicate with the instrument.

Search button	Search the available interfaces in the local network, or search the interface in case of direct connection. After the board is found, all actual setup parameters will be displayed in the fields.
Update button	Updates the new parameters in the interface.
Dial-Up button	Start a dial-up connection to internet, if Dial-up connections are already enabled on the PC.
Cancel button	Exit from this window.

4.3 INSTRUMENT SETUP

This window allows the programming of the main parameters of the connected instrument.



Buttons description:

Setup button	Open the main parameters setup window for the connected instrument.
Input/Output Setup button	Open the I/O setup window for the connected instrument (eg. digital outputs, analog outputs, digital inputs..).
Time of Use button	Open the timebands setup window for the connected instrument, defining the 3 tariffs setup for the whole year for the tariffar energy counting. The button is enabled only when the meter is equipped with this function.
CPU2 Mode.. button	Refer to the specific "VDROP/VMAX" manual of the instrument (optional)

Note. The disabled buttons are available only in DEDALO SP program.

4.3.1 SETUP PARAMETERS WINDOW

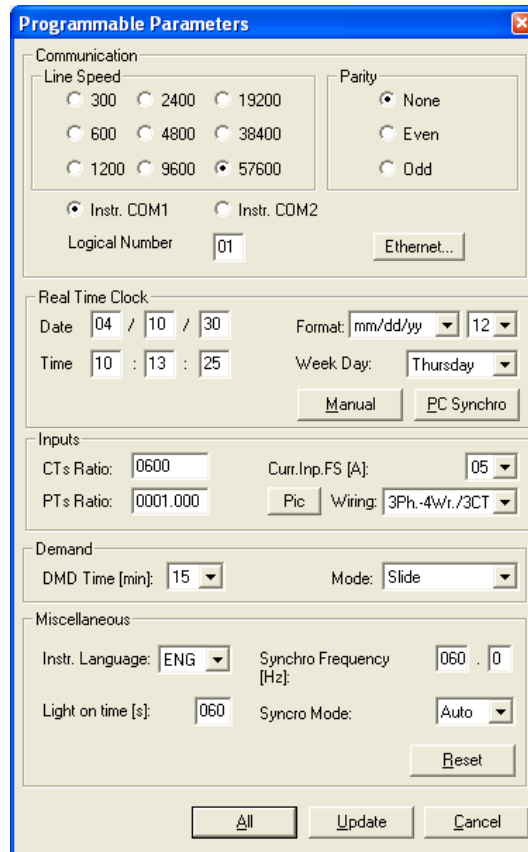
Note: the fields present in all different setup windows depend on the connected instrument model.

The **Setup** button is active when an instrument is connected and allows the main parameters setup.

See the instrument User's Manual for the complete description of the parameters setup by the user through serial port.

Please note that if you change the Serial line parameters or the logical number of the connected instrument, **WINTOOL** automatically updates the PC serial line parameters settings, to maintain the connection with the instrument.

This window enables the setup of the main parameters of the connected instrument.



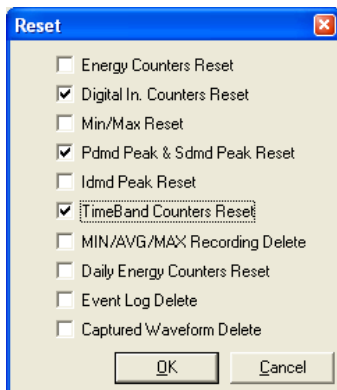
Fields and buttons description:

Line speed	Communication speed of the connected instrument.
Parity	Parity bit.
Instr. COM1/2	Select the instrument COM port.
Logical Number	The logical number of the connected instrument.
Ethernet button	Open the Ethernet Interface window.
Date	Date of the connected instrument realtime clock.
Time	Time of the connected instrument realtime clock.
Format	Date and time format.
Week Day	Day of the week.
Manual	Pressing this button, the manually set data and time fields content will be programmed.
PC Synchro	Pressing this button, the date and time of the PC will be programmed.
	Note. If the connected instrument does not have RTC, the date and time fields are disabled.
CTs Ratio	External current transformer ratio.

PTs Ratio	External power transformer ratio.
Curr. Inp. FS [A]	Instrument current input fullscale value.
Wiring	Wiring mode.
Pic	Wiring mode diagram.
DMD Time [min]	Select the integration time for demand values calculation, in minutes, valid only for Fixed and Slide modes. In case of COM or DIx modes EXT will be displayed (EXTERNAL SYNCHRO), and this field is disabled.
Mode	Select the demand values calculation mode. <ul style="list-style-type: none"> Fixed demand values calculated with a fixed window; the values are recalculated each time at the end of the time period set by DMDTime Slide demand values calculated with a sliding window; the values are recalculated after each minute using a sliding integration window set by DMD Time COM demand values calculation synchronized by a serial command DI1 demand values calculation synchronized by a pulse on digital input1 DI2 demand values calculation synchronized by a pulse on digital input2 DI3 demand values calculation synchronized by a pulse on digital input3 DI4 demand values calculation synchronized by a pulse on digital input4
Instr. Language	Select the instrument language.
Light ON time [s]	Instrument backlight.
THD Mode	THD mode. Available choices: USA, EUROPA.
Synchro Frequency [s]	Synchronization of the measurement with the mains frequency.
Synchro Mode	Synchronization Mode. <ul style="list-style-type: none"> • AUTO: the instrument is automatically hooked to the mains frequency measured on phase L1 (when the frequency and voltage values are within the measuring range) • FIXED: Set a fixed frequency value for the measurement

Reset button

The Reset window will be opened, containing a list with the items to be cleared.



Fields and buttons description:

- Energy counters reset** Select this checkbox to clear the energy counters.
- Digital In. Counters reset** Select this checkbox to clear the digital input counters.
- Min/Max Reset** Select this checkbox to clear the minimum and maximum values.
- Pdmd Peak & Sdmd Peak R..** Select this checkbox to clear the demand peak values of active and apparent power.
- Idmd Peak Reset** Select this checkbox to clear the demand peak values of system current.
- Timeband Counters reset** Select this checkbox to clear the timeband counters.
- MIN/AVG/MAX Recording Delete** Select this checkbox to clear all the recordings.
- Daily Energy Counters Reset** Select this checkbox to clear the daily energy counters
- Event LOG Delete** Select this checkbox to clear the Event LOG recordings.
- Captured Waveform Delete** Select this checkbox to clear the captured waveform.

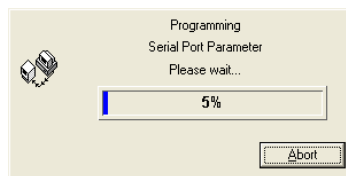
This window can change according to the instrument type/model. Here below a description of the missing items which are displayed only with another instrument type connected:

- Delete Data Profiles** Select this checkbox to clear the profile pages.
- Reset Recorded VDROPEvents** Select this checkbox to clear the recorded VDROPEvents.

After **OK** button is pressed, a confirmation window will be displayed. If this warning message is confirmed, the selected items will be erased.

- All** button All set values in the fields are uploaded to the instrument.
- Update** button The instrument is updated only with the values that have been modified
- Cancel** button Exit from the setup window without changing the instrument setup

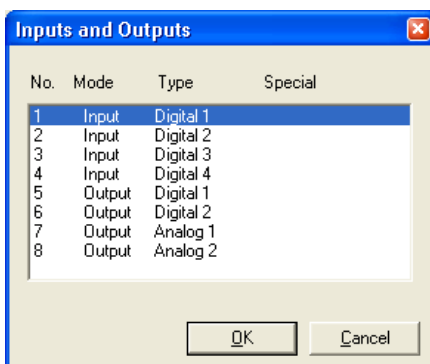
By clicking on **All** or **Update** button an upload progress bar will be displayed.



4.3.2 INPUTS AND OUTPUTS SETUP

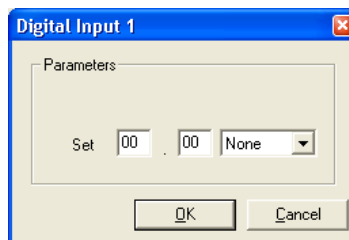
Please refer to the instrument user's manual for a full description of the parameters the user can program by using the serial port.

The **Input/Output Setup** button accesses to the I/O channel selection window.



To program the parameters of any one of the listed items, just select it by double-clicking or by marking it with the mouse or the arrow keys and confirming with **OK** button.

Digital inputs setup



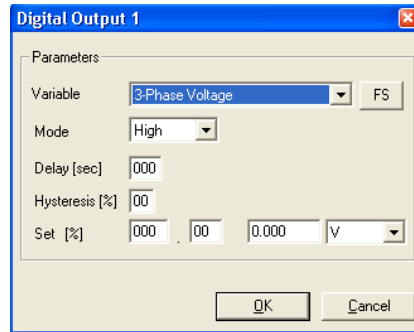
Fields description:

Set

The weight of the input pulse value

Once the setup is carried out, press **OK** button, and the new values will be uploaded in the instrument.

Digital outputs setup



Fields and buttons description:

Variable

Measurement variable to be associated with the Digital Output.

Mode

- 1) Pulse - in case of energy type variables
- 2) High - high threshold alarm mode
- 3) Low - low threshold alarm mode

Delay

If pulse mode is selected, it sets the length of the pulse (max 250 ms).

If the High/Low mode is selected, it sets the delay time, starting from the moment when the threshold has been overtaken, and the moment when the output changes state.

Hysteresis

Only for High/Low mode and sets the percentage value of the hysteresis referred to the threshold value (max. 99 %).

Set

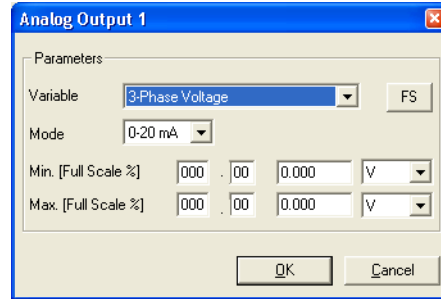
If pulse mode is selected this value sets the weight of each emitted pulse. If the High/Low mode is selected, it sets the threshold value.

FS button

The threshold value can be set in two modes, by setting the percentage value referred to the fullscale of the selected variable, or by setting the absolute value.

Opens an Information window with full scale values of the connected instrument (Voltage, Current, Power).

Analog outputs setup



Fields and buttons description:

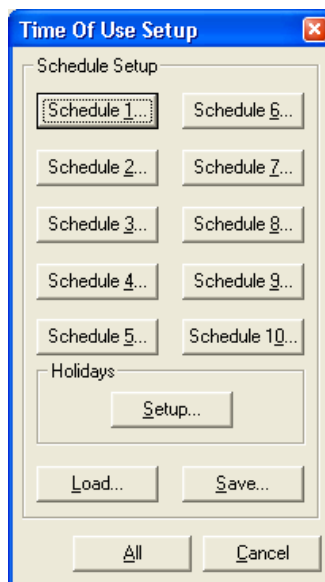
Variable	Measurement variable to be associated with the Analog Output.
Mode	<ol style="list-style-type: none"> 1) Monodirectional 0-20 mA 2) Monodirectional 4-20 mA 3) Bidirectional 0-20 mA 4) Bidirectional 4-20 mA
Min	Minimum value of the selected variable to be associated to the minimum output current of the Analog Output (0 or 4 mA).
Max	<p>Maximum value of the selected variable to be associated to the maximum output current of the Analog Output (20 mA).</p> <p>Opens an Information window with full scale values of the connected instrument (Voltage, Current, Power).</p>

Example.

Variable = V_1
 Mode = Monodirectional 0 ÷ 20 mA
 FS = 433 V
 Min = 50% (50% x 433V = 216,5V)
 Max = 70% (70% x 433V = 303,1V)
 For 216,5V * V_1 * 303,1V the Analog Output current will be in range 0 ÷ 20 mA.

4.3.3 TIME OF USE SETUP WINDOW

The **Time of Use** button accesses to the timebands setup window.



Buttons description:

Schedule 1..10 buttons
Setup button
Load button
Save button

All button
Cancel button

Setup tariff schedule 1...10.

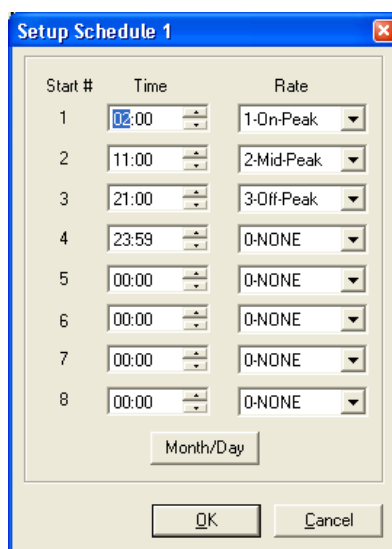
Holidays setup.

The timebands saved in a profile are loaded.

The timebands setup is saved in a profile that can be re-loaded.

Uploads the Timebands setup in the instrument.

Leaves timebands setup without saving the modifications.



Fields description:

Time 1...8

Defines the start time (hh : mm) of each tariff time interval within a day. Up to eight variations in a day can be set.

Rate For each time interval it is possible to setup three tariff levels (1, 2, 3). Select tariff level 0 to end the daily programming. If tariff level 0 was selected, all the following programmed values are not considered.
 Note. The tariff level 3 is attributed entirely to the days not selected into a tariff period.


Month/Day button Open a window where it is possible to assign a schedule for each day of the month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monday	1	0	0	0	0	0	0	0	0	0	0	0
Tuesday	1	1	1	1	0	0	0	0	0	0	0	0
Wednesday	0	0	0	1	0	0	0	0	0	0	0	0
Thursday	0	0	0	1	1	1	0	0	0	0	0	0
Friday	0	0	0	0	0	1	1	1	0	0	0	0
Saturday	0	0	0	0	0	0	0	1	0	0	0	0
Sunday	0	0	0	0	0	0	0	1	0	0	0	0

4.4 INFORMATION WINDOW

This button displays a window where information about the connected instrument is reported.

Model: UPM315
 Outputs: 4 Dig. In; 2 Dig. Out; 2 An. Out
 Harmonics: Yes (31)
 Memory: 2 MB
 Address: 01
 COM/IP: 192.168.1.177
 Serial number: R1WLE1999
 Firmware Rel.: 2.00
 Build Year: 2004

Communication status: 

Button and fields description:

Model
Outputs

Connected instrument type or model.

Type and number of inputs and outputs mounted on the instrument (if available).

Harmonics

Measured harmonics order (if available).

Memory Address Com/IP	Memory quantity of the instrument (if available). Logical number of the connected instrument. COM port and Baudrate of the PC when the instrument is connected or the IP Address.
Serial Number	Serial number of the connected instrument.
Firmware Rel.	Firmware release of the instrument.
Build Year	Built year.
Comm. status	GREEN = communication ok; RED = not connected.
Cancel button	Exit from this window.

4.5 LANGUAGE

Select the display language for **WINTOOL**.

4.6 EXIT

Use this button to exit from **WINTOOL**.

5 CONNECTION CABLES

For the connection cables refer to the User's Manual of the instrument.



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