User's manual

CONFIGURATION TOOL

<u>W500</u> ({



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HW REQUIREMENTS

Processor: Pentium 3 Intel or higher Communication port: RS232 serial/ USB port: Adapter:.../RS485 Operating system: Windows XP, Windows 2000 Recommended screen resolution: 1280 x 1024. => Character Height = large Alternative video resolution 1024 x 768. => Character Height = small

PC CONNECTION \rightarrow W500

If the PC has a serial port, use a RS232 / RS485 converter (LIB or LIBO type).

NOTE: it is necessary to provide an outside power supply if an optoisolated converter is used.



If the PC has an USB port, use an USB / RS485 converter.

NOTA: If any USB converter is used, it is not necessary to provide an outside power supply because the device is supplied directly by the USB port of the PC.

The USB port must be virtualised using a previously installed driver (VCP).



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PROGRAMME INSTALLATION

The programme installation will be supplied by a self-extracting zip file. It is necessary to copy it in a temporary directory and launch it: specify the temporary directory (e.g. C:\temp) where the 3 files have to be unzipped

📥 X:\Ricerca & Sviluppo\EE	\EE_Progetti\Reg	jolatori\W500	_light-ConfigTool\install co	nfiguratore W50	
<u>File M</u> odifica <u>V</u> isualizza	<u>Preferiti S</u> trument	i <u>?</u>			1
🗢 Indietro 🔹 🔿 👻 🗎	🗟 Cerca 🛛 🖓 Carte	ile 🎯 📴 🛙	$\mathbb{C} \times \mathfrak{O} \equiv \mathbb{I}$		
Indirizzo 🔁 X:\Ricerca & Svilu	ppo\EE\EE_Progetti\	Regolatori\W500	_light-ConfigTool\install configu	ratore W500	💌 🧬 Vai
Nome 🛆	Dimensione	Tipo	Ultima modifica		
🕵 setup.exe	137 KB	Applicazione	14/07/2000 23:00		
Q Configuratore W500.CAB	2,713 KB	WinZip File	27/11/2006 16:10		
SETUP.LST	6 KB	File LST	27/11/2006 16:10		
Tipo: Applicazione Dimensione: 1	36 KB		136 KB	武 Intranet locale	

Launch the **setup.exe** programme.

The following "Configuratore W500 Setup" window will be displayed:

1	Configuratore W500 Setup	×
	Welcome to the Configuratore W500 installation program.	
	Setup cannot install system files or update shared files if they are in use. Before proceeding, we recommend that you close any applications you may be running.	
-	OK Exit Setup	_

Select OK

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The following window will be displayed:

😼 Configuratore V	/500 Setup	×
Begin the installati	on by clicking the button below.	
Ð	Click this button to install Configuratore W500 destination directory.	software to the specified
Directory:		1
C:\Programmi\Sup!	W500ModBus\	Change Directory
	E <u>x</u> it Setup	

A default directory appears; it can be changed if required Push the **PC** [] icon to start the installation

Then programme group can be selected: Select the required group and press the **Continue** to go on.

🛃 Configuratore W500 - Choose Program Group	×
Setup will add items to the group shown in the Program Group box. You can enter a new group name or select one from the Existing Groups list.	
Program Group: W500 Tools	
Existing Groups:	
Accessori Atmel AVR Tools Esecuzione automatica HP JetAdmin Utilities Lantronix Startup	
W500 Tools	
⊆ontinue Cancel	-

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A "Progressive Bar" appears: it shows the file installation phases.

🚽 Configuratore W500 Setup	×
Destination File:	
C:\Programmi\SupW500ModBus\bmp\SondaComp.bmp	
-	
5%	_
Cancel	

The following window may appear while copying the files:

Version Conflict	×
A file being copied is not newer than the file currently on your system. It is recommended that you keep your existing file.	
File name: 'C:\WINNT\system32\mscomctl.ocx'	
Description: 'Windows Common Controls ActiveX Control DLL	
Your version: '6.1.95.45'	
Do you want to keep this file?	
Yes No to All	

It means that the PC contains a file, which is more updated than the one to be installed. Select **YES**, as proposed to keep the existing file.

The following window will appear at the end of the installation

Configuratore W500 Setup	4
Configuratore W500 Setup was completed successfully.	
OK	

Push **OK** to finish installation.

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UNINSTALL

It is necessary to enter the **"Application installation"** window (in the Windows Control panel) to uninstall the programme.

Select "C uninstall.	Configuratore	W500″	and	push	"Change/re	move	te
🖬 Installazio	ne applicazioni					_ []	×
1 de la companya de l	Programmi attualmer	nte installati:			Ordina per: Nome	•	1
Cambia/Rimuovi	👸 Aggiornamento) rapido per Windo	ws 2000 - Kl	3896727		_	-
programmi	🚽 🔂 Aggiornamento) rapido per Windo	ws 2000 - Kl	8897715			
	👸 Aggiornamento) rapido per Windo	ws 2000 - Kl	8905495			
	👸 Aggiornamento) rapido per Windo	ws 2000 - Kl	8905915			
Aggiungi nuovi programmi	👸 Aggiornamento) rapido per Windo	ws 2000 - Kl	8911567			
	👸 Aggiornamento) rapido per Windo	ws 2000 - Kl	3912812			
	📄 AVR Studio 4				Dimensione	32.0 MB	
Installazione componenti di Windows	🙀 Configurator	e ₩500					
S24.	Per cambiare o scegliere Camb	rimuovere il progr ia/Rimuovi.	amma dal co	mputer,	<u>C</u> ambia/F	limuovi	
1	📄 DeviceInstaller				Dimensione	8.39 MB	
Impostazioni	🛃 DG2KIO				Dimensione	7.28 MB	
programmi	🛃 Disinstallazione	della stampante h	np LaserJet S	5100	Dimensione	6.22 MB	
	🛃 FTDI USB Seria	l Converter Driver	s				
	📑 Hitex x51 Drive	er for µVision2			Dimensione	1.42 MB	
	IAR Embedded	Workbench for Al	mel AVR V2.	28 A	Dimensione	1.39 MB	
	del IRM Screen Sa	Jor				•	

Follow the instructions.

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PROGRAMME START-UP

The programme is launched by selecting **"W500 CONFIG"** inside the group specified during the installation, default is "W500 Tools".



PRELIMINARY NOTES:

W500 controllers are factory set with ModBus address = 1 and Link bus address = 1.

For the connection to a controller on a ModBus network or local Link bus subnet, check the address and then specify it on the configuration tool main page.

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PROGRAMME EXECUTION

The following page appears for 5 seconds when the programme is launched:



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The following page appears after 5 seconds or after clicking on the previous window:

It is a display page showing graphically the controller inputs and outputs, which are continuously polled.

Sensors are not displayed, if they are not physically connected.

Data are updated cyclically by changing them one by one every 400 ms.

Select the **ModBus address** (1-255) and the **Link Bus address** (1-4) in the proper box. The controller model is detected automatically and consequently displayed (W500T, W500H, W501T).

NOTE:

It will not be possible to enter the functions until the controller type is identified.

Moreover, when the controller address is changed, all data are initialised and then updated.

If the address of an inexistent controller is set, the communication status will display alternately "busy" and "Slave Device Time-Out".

Pay attention to the Link Bus address! It is possible to know whether the controller exists by reading the I/O data values (Master RAM data) not the Communication Status.

If the master doesn't receive any response from the slave when other data are required (Slave EEPROM data), it will send a special message and the Communication Status will display alternately "busy" and "Slave Device Exception Response".

In this case it is necessary to disconnect communication and successively re-connect it. The fourth sensor (H) is displayed, if enthalpy is enabled.

The **CONTROLLER STATUS** box shows the controller status: COMFORT, STOP or ECONOMY.

The **SENSOR LEGEND** displays the sensor description according to the type of controller selected.

It is possible to select configuration of the 4 loops of the connected controller by pushing the key "**READ** / **UPDATE CONFIGURATION LOOP** ". A text box shows when update is in progress and when the process ends.

The operating mode is indicated by the icons.

Icon description:



н

Heating Loop

Cooling Loop



Heating/Cooling Loop (S/W changeover)



Heating/cooling sequence loop (1-5 and 6-9 range)



Switch on/off delay



Humidity Loop



De-humid. Loop

Enthalpy

Note: if the functions are not available for the selected controller type are displayed in grey.

Down on the left is shown the controller communication status. In case of problems it helps to trace the eventual reasons why data are not updated.

<u>STATUS</u>		<u>DESCRIPTION</u>
"Busy"	→	waiting a response
"OK"	→	correct response
"Slave Device Exception Response"	→	the controller has replied, but not at the request
"Message Overrun"	→	a new request has been made before obtaining a response
"Slave Device Time-Out"	→	the response has not arrived within the set Time out
"Invalid CRC In Slave Response" "Invalid Slave Response"	→ →	checksum error. The response can be wrong. controller response not valid

The following functions are currently possible using the toolbar:

- 1. to exit the programme (File -> exit)
- 2. to configure the serial port (Communication -> Configure)
- 3. to start communication (Communication -> Start)
- 4. to disconnect communication (Communication -> Disconnect)
- 5. to configure the compensation curve (Configuration -> Compensation)
- 6. to configure time schedules (Configuration -> schedule programs)
- 7. to read and write all controller parameters individually (Configuration -> Parameters)
- 8. to load and store controller EEprom data in one file (Configuration -> EEprom -> Load Storage)
- 9. to read from a file and download controller EEprom data (Configuration -> EEprom -> Read __Download)

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- 10. to select the Enthalpy simulator accessories (Accessories -> Enthalpy)
- 11. to display the W controller data sheets (Help -> Data Sheets...)
- 12. to display the W controller product manuals (Help -> controller product manuals...)
- 13. to display an information page (Help -> product information)

1 Exit the Programme

The "File" - "Exit" menu ends the programme.

<u>2 Serial Port Configuration</u> The "Communication - Configure" menu displays the following window:

💐 Serial Port Confi	iguration	
Port Com	2	Select Free Serial Port
Baude Rate	9600	9600 baud
Parity	0	No Parity
Data Bits	8	8 bit
Stop Bits	0	one stop bit
Time Out	400	Delay Time to have a response mS.
Trasmission Mode	1	RTU
LANGUAGE	C ITALIAN	10 © ENGLISH
SAVE CONFIGURATIO	ИС	EXIT WITHOUT SAVE

It is possible to set all parameters typical of a serial communication, but it is necessary to set only the serial port, to which the RS232/RS485 converter or USB/485 port (USB port will be combined to a COMx virtual port) is connected, to interface with W500 controllers.

The Time Out is changeable but it is not necessary to modify it. The serial port is configured with the following values:

Baud Rate = 9600 Data Bit = <u>8</u> Parity = 0 - No Parity Stop Bit = 0 – one stop bit *Time Out* = 400 mS. Transmission Mode = <u>1 – RTU</u>

In this window is possible to set the language (Italian or English).

Set data can be saved ("SAVE CONFIGURATION" button) so that h they can be used at re-start.

3 Communication Start-up

It is possible to start data request by selecting the "Start" menu. It is not possible to start the menu, if communication is already ON.

|--|

<u>**4**</u> Communication Disconnection</u> It is possible to end data request by selecting "Disconnect". The menu is not selectable, if communication is already OFF.

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5 Compensation Curve Configuration

The following window is displayed by selecting "Configuration - Compensation " menu:



In this page it is possible to set the compensation curves related to the various Loops. Moreover, the "CONTROLLER ADDRESS", "CONTROLLER TYPE" and "COMMUNICATION STATUS" are also displayed (read only).

When the page is entered, are updated in sequence all the values related to the controller type. In fact, only the W501T provides a 3-point curve only for the Heating Loop, while the other models have a 2-point curve.

Pushing "READ" key on request, all data are updated.

If one or more W500 controller data must be changed, act on the sliders the value will be displayed in the relevant box.

Set values are automatically checked in function of other values, and then the visualisation is updated. Pushing **"WRITE**" key, all data are transferred as a whole into the controller overwriting old data. This action is indicated by the "LOADING" writing on red background followed by "READING END" on a green background. A confirm window will be displayed after pushing the EXIT key.

To exit the page push YES; when it is necessary to store changed data, push NO.

NOTE:

Writing on a Slave controller it will take more time, because communication is carried out through the Link Bus.

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6 Schedule Programme Configuration

The following window will be displayed by selecting "Configuration – Clock and Schedule":

CONTRO	ILLER ADDF	RESS CONNECT	Controller Type –		CLOCK W500		
ModBus •	1	LinkBus= 1	W500T		Day Week FRID	AY	
Weekly	schedule				Hour: 9		
Day		State			Minute: 23		
Monda	ay .	Program PG1	•		Set		
Tuesd	ay	Program PG1	▼		~?		
Wedne	esday	Program PG1					
Thurse	, Jav	Program PG1	-		REGULATION		
Friday		Program PG1			COMFORT		
Sature	lav	Program PG3			END READING	!	
Sunda							
Sunua	y	jeu	_		READ TIME SCHEDULE FROM CONTROLLER	SCHEDULE TO CONTROLLER	
Daily S	chedule						
Daily 0			Time	State			
	DC2	CHANGE-OVER 1	08:00	Comfort		EXIT	
001	TOZ	CHANGE-OVER 2	12:00	Off			
FGI	0.00	CHANGE-OVER 3	12:01	Comfort	<u> </u>		
	PG3	CHANGE-OVER 4	19:00	Off			
COMUNI		TE					
OK	o, montaria						

In this page it is possible to set the **weekly**, **daily schedule and clock** for the selected controller.

Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed (read only). When the page is entered, all controller values are updated in sequence. Then only clock data are updated.

Pushing **"READ CONTROLLER DATA"** key on request, all data are updated. Under request, by pushing **"WRITE TIME SCHEDULE TO CONTROLLER"** all data are updated.

To change one or more data of W500 controller schedule programmes, it is necessary to set the ones in the proper boxes and push "**WRITE CONTROLLER DATA**" key. Therefore, all data are transferred to the controller; overwriting the existing ones. This action is showed by a "LOADING" writing on red background; followed by the writing on green background "READING END". A confirm window will be displayed after pushing the EXIT key.

To set/edit the controller time it is necessary to select the pushbutton "**SET**". This displays the cursors which enable data change. Push the button "CONFIRM" to write data on the controller.

By pushing "EXIT" a confirmation window appears. To exit the page push **YES**; push **NO** to save changed data.

NOTE:

Writing on a Slave controller it will take more time, because communication is carried out through the Link Bus.

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<u>7 Reading and Writing all Controller Parameters</u> The following page will be displayed by selecting the "Configuration - Parameters" menu:

🛋 W500 Controller Paramete	r		_ 🗆 ×
Analog Loop 1	CONTROLLER ADDRESS CONNECT	Controller Type	
Label	Description	Value	
Reg1_StC	A01 Heating Loop Set	21,5 <u>Modify</u>	
Analog Loop 2			
Label	Description	Value	
Reg2_StC	AO2 Heating Loop Set		
<u>Digital Loop 1</u>			
Label	Description	Value	
Reg3_StC 🗨	D01 Heating ON/OFF Set	O 34 Modify	
<u>Digital Loop 2</u>			
Label	Description	Value	
Reg4_StC	D02 Heating ON/OFF Set	33 Modify	
Clock Function			
Label	Description	Value Start Request	
PS_LUN	MON Mod / Sched (On-Eco-OFF / Pr1-Pr2-Pr3)	Stop Request	
Other Parameters			
Label	Description	Value	
ndL	Number of devices on LinkBus (1 - 4)	2 Modify Exit	
RAM Data			
Label	Description	Value COMUNICATION STATE	
RAM_AI[0]	SR sensor	ОК	

In this page it is possible to display and set individually all the parameters of the selected controller. Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE" and "COMMUNICATION STATUS" are also displayed (read only).

When the page is entered, data are updated. A red dot shows that data is going to be updated. For each of the 7 groups it is possible to select, in the proper combo box, the variable to be displayed.

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It is necessary to stop communication by pushing the "**REQUEST STOP**" key to change a value. Select the variable to be changed: the variable will be updated and the following window will appear:

Set Data	×
Input value between -50 and 150	ОК
	Cancel
25,5	

The inserted value must be included within the proper range.

NOTE: if the value has a decimal number, it is necessary to use the comma as a separator.

It is necessary to start communication again the by "START REQUEST" key to restart updating.

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8 Loading and Saving Controller EEprom Data in one File

The following window will be displayed by selecting	g "Configuration – EEprom	- Upload/Save", menu:
S. UPLOAD FROM CONTROLLER		<u>_ ×</u>
CONTROLLER ADDRESS CONNECT ModBus = 1 LinkBus= 1 W500T		
UPLOAD		
0 %		
Exit]	
COMUNICATION STATE		

This menu allows to save the configuration carried out on the connected controller in one single file. Storage is useful if such configuration is required on other controllers.

It is always necessary to read all data from the controller by uploading them, before saving them in a file.

This page allows to load on the PC all configuration parameters of a connected controller, to upload and create the configuration file and download it on the other controllers.

Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed.

Therefore:

Pushing the "**UPLOAD**" button data reading starts. The following window appears when the loading has finished:

Caricam	ento Dati	x
٩	UPLOAD COMPLETAT	01
	ОК	

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The following window appear	s by pushing "Ok" ; it	t is then possible to save	data into one file:
-----------------------------	------------------------	----------------------------	---------------------

Salva con nome		? ×
Salva <u>i</u> n:	🔁 Dati 💌 🖛 🖻 📸 🎟 🔻	
Cronologia Cronologia Desktop Documenti Documenti Risorse del co	COmp_reg.bat Conf tipo 1.txt conf8-11-06.txt letto.txt reg1_1.txt reg1_2tris.txt reg1_2trisb.txt scritto.txt w500H_read.txt w500H_read2.txt	
Risorse di rete	Nome file: Salva come: txt ✓ Ar	alva nnulla

Insert the file name and select the "SAVE" key.

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9 Reading from a File and Downloading Data into the Controller EEprom

UNANCARA TOCUMENT Controller Type Meddias - i Inteller States State UE will not be Meddias - i Inteller States States UE will not be Meddias - i Inteller States States UE will not be Meddias - i Inteller States States UE will not be Meddias - i Inteller States UE states UE will not be Meddias - i Inteller States UE states UE will not be Meddias - i Inteller States UE states UE will not be Meddias - i Inteller States UE states UE states UE will not be Meddias - i Inteller States UE sta	he following window is displayed	by selecting the Configuration – Eprom - Read /Downi	
Image: Section of the sec	CONTROLLER ADDRESS CONNECT	VDTE OT The data ndL, idL, ibS, SSr, SSc, SSe, USE will not be written because are typical for each controller The Download Time for SLAVE controller is more then MASTER controller because the comunication must pass through the Linkbus	_10).
COMUNICATION STATE			
COMUNICATION STATE OK		O %	
	OMUNICATION STATE		

It is possible to download on a connected controller all configuration parameters saved in a file.

Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed.

Push the "Open file" button to select the file to download; the following page will be displayed.

Apri					<u>? ×</u>
Cerca <u>i</u> n:	🔁 Dati		•	← 🗈 💣 🎟▼	
Cronologia Cronologia Desktop Documenti Documenti Risorse del co	COmp_reg.bd Conf tipo 1.b Conf8-11-06. Hetto.txt reg1_2tris.txt reg1_2tris.txt cg1_2trisb.tt scritto.txt w500H_read.	at kt txt : kt txt 2.txt			
Risorse di rete	<u>N</u> ome file:	reg1_1.txt		•	Apri
	<u>T</u> ipo file:	txt		•	Annulla
		🗖 Ap <u>r</u> i in sola lettura			
					11.

In this window, select an existing file and push "open".

The programme will close the window and load the file, the button "**DOWNLOAD**" will become active.

Pushing the " **DOWNLOAD** " button data writing on the controller starts.

The following window appears when loading has finished:



NOTE:

The ndL, idL, ibS, SSr, SSc, SSL, SSE parameters are not written; this setting has to be carried out in the "parameters" page or manually on the controller.

Writing on a Slave controller it will take more time because the communication is carried out by Link Bus.

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10 Tools Selection



The following window will be displayed by selecting the "**Tools – Enthalpy** " menu:

It is possible to carry out a simulation of the damper positioning according to the enthalpy calculation.

Calculation is carried out in real time.

Set the parameter values and simulate the sensor value: damper positioning follows automatically (the diagram helps to understand the result).

ATTENTION!

In order to avoid damper hunting, the W500H controller checks whether a situation persists for at least 15 minutes, so that the controller can determine whether is more convenient inside or outside enthalpy.

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<u>11 Viewing Controller Data Sheets</u>

The following window will be displayed by selecting "Help – W500 Data sheets (pdf) – W..." menu:

🗟 Data Sheet 📃 🗆 🗙				
Double click on Document				
W500 TMB Bollettin				
CLOSE				

Double-click the Pdf icon to open the documents.

12 Viewing Controller User Manuals

The following window will be displayed by selecting "Help – W500 User manual (pdf) – W..." menu:



Double-click the Pdf icon to open the document.

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<u>13 Viewing the Configuration Tool Manual</u> The following window will be displayed by selecting "Help – Configuration tool manual (pdf) – W...":



Double-click the Pdf icon to open the document.

14 Viewing the Information Page Visualisation

The following window will be displayed by selecting "Help – Product information" menu:

🗟. W500	Configuration Tool Information	×		
*	W500 Configuration Tool			
	Versione 1.3.3			
	Copyrigth: CONTROLLI / t.a.c. Via Carlo Levi, 52 Sant'Olcese - 16010 - GENOVA Tel. 010/73061 - Fax 010/7306870-871 Sito: www.controlli.org E-mail: info@controlli.r	org		
Warning: This program is protected by copyrigth law and international treaties. Unauthorized reproduction or distribution of this program, or any portions of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law				