



COMBOX zero feed-in and consumption monitoring system **INSTALLATION GUIDE**



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General instructions

This manual contains important safety precautions that must be followed and observed during the installation and maintenance of the equipment.

Please keep these instructions!

This manual must be considered an integral part of the equipment, and must be available at all times to everyone who interacts with the equipment. The manual must always accompany the equipment, even when it is transferred to another user or plant.

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Technical support

ZCS offers a technical support and advice service that can be accessed by making a request directly from the website <u>https://www.zcsazzurro.com/it/support</u>.

The following toll-free number is available for Italy: 800 72 74 64.

Preface

General information

Please read this manually carefully before proceeding with installation, operation or maintenance. This manual contains important safety precautions that must be followed and observed during the installation and maintenance of the equipment.

• Recipients

This manual is intended for qualified technical personnel (installers, technicians, electricians, technical support personnel or anyone who is qualified and certified to operate a photovoltaic system), who are responsible for installing and starting up the inverter in the photovoltaic system, and also for operators of the system.





1. Introduction



If you have problems or doubts in reading and understanding the following information, please contact Zucchetti Centro Sistemi S.p.A. through the appropriate channels.

1.1. Scope

This manual describes the installation and configuration procedures of the ComBox product in combination with one or more inverters, in order to perform the zero feed-in function:

Inverter Model	Minimum version of inverter FW	Protocol Model
3PH 3.3KTL/12KTL V3	V100011_10_14	3PH V3 or HYBRID
3PH 15000/24000 V3	V100004_03_14	3PH V3 or HYBRID
3PH 25KTL/50KTL V3	V040014_L02_I28	3PH V3 or HYBRID
3PH 60KTL/80KTL V3	V010007_06_07	3PH V3 or HYBRID
3PH 80KTL/110KTL-LV	V40006_06_11	3PH V3 or HYBRID
3PH 100KTL/136KTL-HV	V40006_06_11	3PH V3 or HYBRID
3PH HYD 5000/20000 ZSS	V100013_13_10	3PH V3 or HYBRID
3PH 50KTL/60KTL-V1	V2.52	50/60KTL-V1
3PH 100KTL-V4/110KTL-V4	V600002_01_01	3PH V3 or HYBRID

When combined with the ZSM-METER-DTSU three-phase meter, the product can also monitor consumption on systems with ZCS inverters.

Before configuring the ComBox, check that the inverters are up to date with the latest Firmware available on the ZCS website. If they are not, proceed with the update by following the procedure outlined on the product's website page. Before installing the product, it is recommended to always update the FW and safety standards.

This guide is for ComBox devices updated to Firmware version **0.4.28.20230523** or higher. The FW version can be checked by following the steps in section 2.4.

If the version is older or not shown, please contact ZCS for further assistance.





1.2. Safety precautions

Read all instructions, precautions and warnings in this manual before installing and adjusting the product.

Before connecting the production equipment to the power grid, contact your local energy provider for quotas. Furthermore, the connection should only be carried out by a qualified electrician.

Qualified personnel

During operation, inverters develop lethal voltages and overheat in some areas. Improper installation or malfunctioning could lead to serious damage and injury. To reduce the risk of personal injury and to ensure safe installation and operation of the product, the transport, installation, commissioning and maintenance operations should only be carried out by a qualified electrician. Zucchetti Centro Sistemi S.p.A. accepts no liability or responsibility for the destruction of property and personal injury resulting from improper use.

Electrical connection

Make sure to comply with the current electrical regulations on accident prevention when handling the inverter.

2. Cabling and connection to the COMBOX

To install the ComBox, carry out the following preparatory activities:

- ComBox cabling
- DTSU meter configuration
- Direct connection via MINI-USB cable
- Digital output





2.1. COMBOX cabling



Make the following connections:

- 5 VDC power supply (use included power supply unit or micro USB port)
- The COM (COM1-COM2 and DO ports) are located in the part highlighted in green
- The Ethernet connection of the ComBox does not require static IP





2.2. DTSU meter configuration

NOTE: power <u>IMPORTED</u> from the grid must be <u>NEGATIVE</u> (check that Pa, Pb, Pc are negative with the inverter off)

Install the DTSU meter at the system's exchange point, as shown in the following diagram.



Cabling instructions of the meter and current probes



Connect PINs 24/25 of the Meter to ports A1/B1 of the ComBox, as shown in the following table:







	Signal + (blue)	Signal - (white-blue)
ComBox connector	A1	B1
Meter	24	25

DTSU meter configuration

To configure the Meter, enter the settings menu as shown below:

- Press SET, the word CODE will appear;
- Press SET again;
- Enter the number "701";
- From the first screen where the number "600" appears, press the " \rightarrow " key once to write the number "601".
- Press "SET" twice to move the cursor left, highlighting "601";
- Press the " \rightarrow " key once more to write the number "701"
- In case of an error, press "ESC" and then "SET" again to reset the required code.





- Confirm by pressing SET until you enter the settings menu.
- Enter into the following menus and set the parameters indicated:

1. **CT**:

a. Press SET to enter the menu

b. Write "40"

c. From the first screen where the number "1" appears, press the " \rightarrow " key several times until the number "10" is written.

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d. Press SET once to move the cursor left, highlighting "10"

e. Press the " \rightarrow " key several times until the number "40" is written

f. Press "ESC" to confirm and " \rightarrow " to scroll to the next setting.

Note:

- In case of error, press "SET" until the thousand digit is highlighted and then press "→" until only the number "1" is displayed; at this point, repeat the above procedure.
- The transformation ratio "40" is indicated when using the standard probes supplied with the meter. If probes other than those supplied are used, this value must be set correctly.

CHNT	三相四线电子式电量表(导和)	CHNT	三相西标电子式电梯表(导机)
* D O 3X220/380V 3X5/80/A 56Hz 400/mg/kWb	СТ	* 🖬 🛈 3X220/380V 3X5/801 A 50Hz 400/mg/kWh	_40
	n set esc →		SET ESC 🔿

2. ADDRESS:

a. Press SET to enter the menu

b. Set Address "01" for Meter on exchange

c. d. Press "ESC" to confirm.



2.3. Connection via LAN

To complete the configuration of the ComBox, the devices (Inverter/meters) must be entered in the web configuration page.

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The ComBox with factory settings in DHCP mode and the IP address will be assigned automatically by the gateway of the host network. Check that the router is in DHCP mode.

The ComBox configuration page can be accessed via a browser by typing its IP address into the address bar and pressing ENTER. (The credentials for standard access are **user: admin and password: password**)



2.4. Direct connection via MINI-USB cable

As an alternative to what is specified in section 2.3, a PC can be connected directly to the ComBox using the MINI-USB cable supplied with this guide.



If it is difficult to find the IP address of the ComBox due to network restrictions, simply run the "ncpa.cpl" application from the "run" window. This will open the "network connections" window:





💷 Eseg	Jui	×
	Digitare il nome del programma, della cartella, del documento o della risorsa Internet da aprire.	
<u>A</u> pri:	ncpa.cpl	~
	OK Annulla S <u>f</u> oglia	

Disconnect the PC from all active connections (Ethernet/Wi-Fi), then connect the ComBox to the PC via the mini-USB (wait approx. 5 minutes after switching on the ComBox to allow the device to boot up completely) using the cable supplied. A new connection will appear:



Right-click on the connection and select "properties," the following window will open:





🏺 Proprietà - Ethernet 4	\times
Rete Condivisione	
Connetti tramite:	
Remote NDIS Compatible Device #2	
Configura	
La connessione utilizza gli elementi seguenti:	
Condivisione file e stampanti per reti Microsoft Condivisione file e stampanti per reti Microsoft Utilità di pianificazione pacchetti QoS Protocollo Internet versione 4 (TCP/IPv4) Protocollo Microsoft Network Adapter Multiplexor Driver protocollo LLDP Microsoft Protocollo Internet versione 6 (TCP/IPv6)	
Installa Disinstalla Proprietà	
Descrizione TCP/IP. Protocollo predefinito per le WAN che permette la comunicazione tra diverse reti interconnesse.	
OK Annu	la

Select Internet Protocol Version 4 (TVP/IPv4) and click on "properties." Customise the connection as follows:

Proprietà - Protocollo Internet version	e 4 (TCP/IPv4)	\times
Generale		
È possibile ottenere l'assegnazione aut rete supporta tale caratteristica. In cas richiedere all'amministratore di rete le ir	omatica delle impostazioni IP se la so contrario, sarà necessario npostazioni IP corrette.	
Ottieni automaticamente un indiriz	zzo IP	
O Utilizza il seguente indirizzo IP:		
Indirizzo IP:	192.168.7.1	
Subnet mask:	255 . 255 . 255 . 0	
Gateway predefinito:	192.168.7.10	
Ottieni indirizzo server DNS autom	aticamente	
O Utilizza i seguenti indirizzi server D	NS:	
Server DNS preferito:	8.8.8.8	
Server DNS alternativo:	8 . 8 . 4 . 10	
Convalida impostazioni all'uscita	Avanzate	
	OK Annulla	•

It is now possible to access the ComBox configuration page via a browser at the address 192.168.7.2.





Go to the configuration WebServer by entering the IP address of the ComBox into a browser. Enter User: admin; password: password. Click "login" to enter



After entering the credentials, the Firmware version and serial number of the ComBox will be displayed at the bottom left of the screen.

2.5. Digital output

The ComBox device is equipped with a dry contact (NO/NC) for piloting external systems to disconnect the system from the AC mains (e.g. relay or contactor).





This contact (which is found in the "COM" part of the ComBox) will change status if communication with the inverters fails or the regulation is not working properly.

3. Installation and configuration

Depending on the specific characteristics of the system, one of the following installation schemes/logics can be chosen. After installation, it will be necessary to configure the ComBox connecting to it via a PC:

- COMBOX and PV system via Ethernet dongle (ZSM-ETH-USB / ZSM-ETH-EXT)
- COMBOX and PV system via RS485 interface
- COMBOX and PV+HYD system via Ethernet dongle (ZSM-ETH-USB / ZSM-ETH-EXT)
- COMBOX system and PV+HYD system via RS485 interface
- COMBOX and ZSM-METER-DTSU via RS485 interface
- Activation of the Zero Feed-In function

Installation can be carried out using the ETH dongles (ZSM-ETH-USB, one per inverter) or using the RS485 port of the Inverter.

Before configuring the ComBox, check that the inverters are up to date with the latest Firmware available on the ZCS website. If they are not, proceed with the update by following the procedure outlined on the product's website page. Before installing the product, it is recommended to always update the FW and safety standards.

In addition to being able to control the power produced by the inverters, the ComBox module can also monitor the system's consumption (in combination with the ZSM-METER-DTSU meter).

3.1. COMBOX and PV system with Ethernet dongle (ZSM-ETH-USB / ZSM-

ETH-EXT)

Materials required for installation:

- Compatible ZCS inverter (section 1.1 of this guide)
- ETH Dongle (ZSM-ETH-USB), one for each inverter in the system
- DTSU meter (ZSM-METER-DTSU)

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- ComBox
- Two terminating resistors 120 Ohm (not supplied with the ComBox)

System diagram:



NOTE:

- Inverters must be configured with <u>static IP (contact the administrator of the network hosting the</u> <u>system for details)</u>
- Check that router ports 80 and 8899 are open within the Local Area Network (LAN).
- Insert 2 terminating resistors of 120Ω on pins 24-25 of the meter and on COM1 of the ComBox if the cable length exceeds 20 meters.

Once the hardware has been configured, proceed with configuring the software of the device as follows (for connection details, see section 2.3/2.4):





+ + C (A Method NUME/25opt)	
	Liamana.
	8
	Patiensed
	Sente

Go to the configuration WebServer by entering the IP address of the ComBox into a browser. Enter User: admin; password: password. Press "login" to enter

	Devices	Buses						
EN +		Name	Device	Address	Protocol	Brand/Model	Bus	Active
① General information								
@ Configuration								
Ø Network								
Add Device								

Press "Add Device" to add a new device





Device type	
loverter	ų.
Name	
inverter A 2051234557855	
Enable control	
Power	50
 Advanced setup 	
	MAR

Enter the name of the Inverter (to eliminate any ambiguity, we recommend that you also enter the inverter's SN), enable the power control and enter the rated power of the Inverter (in KW). Press "Next" to continue.

Inverter	Eventer A2CS012348878089
Protocol type	
modbustco	
Previous	Next

Select the communication protocol "modbustcp" and press "Next" to continue





LTTLANAF GAVE	Inventor & W.Schulssellinfox
Protocol	moda.etc
OT.	
DI	

Enter address "01" and press "Next" to continue. NB: keep address "01" for all inverters to be entered.

🕑 Inverter	Internet A (250)	34807
Protocol		odiu
Select the bus/connects	on where the device is to	ocate
Select a bus	÷	Ē
Previous	Next	
New Connection	•••	
New Connection	Wener A ZCSoszałow	67999
New Connection	www.eterAZCScuz.449 tcP	67899
New Connection Same Connection Type	Wwenter A ZCSota3480 1620 188216561304	67899
New Connection Name Connection Type Ip	Wwenter A.ZC.Sol.23400 1000 1002 1065 1 204 1002 1065 1 204	67998

Enter the name of the Inverter (to eliminate any ambiguity, we recommend that you also enter the SN of the Inverter), connection type "TCP." Enter the static IP address previously assigned to the inverter, port "8899." Press "Accept" to continue and then confirm with "OK."

Canopl

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Press "+" to create a new bus

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	inverter		Peorte A2C502	34/120
0	Protocol		15	vebun
Solo	ct the bus	/connection	where the device is i	ocated
Inve	rt er A 2CS	0123456789	9 - 192 168 1 104 8899	+
[Prate	loas	Next	
		0.0	•••	
		0.0		
			•••	_
		0.0	•••	
		0.0	•••	_
		0.0		
		0.0	• • •	
			• • •	
			• • •	
			•••	
		0.0	•••	
		0.0	•••	
	Add Devi	ice	•••	
•	Add Devi	ice	•••	
•	Add Devi	ice	•••	
•	Add Devi	ice	Number A 2020cat	
	Add Devi Invertor Protocol	ice	niene AyoSca	ant fair

.....

....

Press Next.

|--|

50/60KTL-V1 (AZZURRÖ-50/60KTL-V1)

.....

Previdue

Azzurro

Model





werter A 20501234552099 wide Summary	
Device/Protocol	
Inventer / modbuiltip / Adump- W221990-sp/SoRTUVp	go/bcRTLV1
Bus/Connection	🛞 Device address
Eventer A 2025-base (1995) spr.000 i mat0055 g6oc.010	(8)
	ALCONTAC.

Press "Create" to confirm the data entered, and then "OK."

Enter the other inverters following the same procedure (ATTENTION: create a bus for each inverter in the system, entering the static IP address previously set for each inverter in each bus)

():There	anı imişişi	ul changes							epty Cha	ngić
Devices	Buses									
		Narre	Device	AMBRE	Protocol	Brand/Wedni	Bett	Active		
	**	Inventer A 205xt234501030	Intertar	- 65	modburlop	Accurry / ga/30471,-Va	igi alƙasa Miye	~	×	

Press "Apply Changes."

				U				
Devices Bus	8							
4	Name	Device	Addresse	Protocol	Brand/Histoil	But	Active	
	Inventer & 20Setato4867800	internet.	. iq.	modisintep	Addurm / 50/824TL-Vs	tpt:sfillssse@llipp		10 N

Following Apply Changes the connection status of the inverter should change to green.





To ensure that no inappropriate disconnection states are displayed, it is advisable to disable the "Autolink" function. This can be accessed via the menu "Configuration/General/Advanced setup."

← General	
Time Zone	
& Advanced setup	V
Autoliek The system sparse the communication port areas a It sum checked, such time the system made the de	ed above most version it is well the construction array halo. T where it operate and classes the construction part
Save to storage	d
Save most data revisionage receiving Erables (Ne oph	ne-infects year smallel like commen state where all largest





3.2. COMBOX and PV system with RS485 interface

Materials required for installation:

- Compatible ZCS inverter (section 1.1 of this guide)
- DTSU meter (ZSM-METER-DTSU)
- ComBox
- Four terminating resistors 120 Ohm (not supplied with the ComBox)

System outline diagram:



NOTE:

- Insert terminating resistors of 120Ω on pins 24-25 of the meter, on pin pairs A1-B1 and A2-B2 of the ComBox and on the RS485 port pins of the inverter if the cable length exceeds 20 meters.
- Assign a different RS485 address to each inverter in the Daisy Chain

Once the hardware has been configured, proceed with configuring the software of the device as follows (for connection details, see section 2.3/2.4):





Once the hardware has been configured, proceed with configuring the software of the device as follows (for connection details, see section 2.3/2.4):

Lamana
Passeed
Serie

Go to the configuration WebServer by entering the IP address of the ComBox into a browser. Enter User: admin; password: password. Press "login" to enter

	Devices	Buses						
Ð4 ÷		Name	Device	Address	Protocol	Bund/Model	Bus	Active
@ Configuration								
Add Device								

Press "Add Device" to add a new device





Device type	
Inverter	ų.
Name	
Inverter A ZC51234957899	
Enable control	•
Power	50
 Advanced setup 	
	MAG

Enter the name of the Inverter (to eliminate any ambiguity, we recommend that you also enter the inverter's SN), enable the power control and enter the rated power of the Inverter (in KW). Press "Next" to continue.

🕗 inverter	Here's A255 (Section)
Protocol type	
modbusrtu	
12782.2.7	No. of Concern

Select the "modbusrtu" communication protocol, and press "Next" to continue.





Inverter	Inverter A 20Stopestinikes
Protocol	maxishi
Link address	
01	

Enter the RS485 address of the inverter. This address must coincide with the one visible on the display and selectable directly on the inverter (ATTENTION! there must not be more than one inverter on the same address)

	O Add Device	
	invertor	Instite A2Cliczygitzbyg
	O Protocol	modounte
	Select the bus/connecti	ion where the device is located
	Select a bus	۰ (+
	Previous	News
	0.0	
Press "+" to create a new bus		
	New Connection	×
	Norme	BUS - INVERTER
	Committion Syste	Same v
	Part	Right-Port 2 ~
	Configuration	
	Speed glass ~	Delatets 8 ×
	Party Norm v	Skep htts 1 v
	Carecol	Accept

Enter the name of the Bus on which the inverters will communicate (in this case, BUS - INVERTER), "Series" connection type, select the "RS485-Port 2" port (always for these inverters). Press "Accept" to continue and then confirm with "OK."

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0	Inverter	1940	r A.3CSiz3(6/1/10)
0	Protocol		mothush
Solo	ct the bus/conne	ction where the d	evice is located
BUS	5 - INVERTER - RS	i485 - Port 2	× +
	Previous		Not.
	3		
	Add Device		
	Add Device	not h	r X-2554 (46770)
0	Add Device Inverter Protocol	north	A 2012 Jacoban
	Add Device Inverter Protocol Bus	1000 0.5-1005	r A.ZCSucjack.Moj rockanta 1951 PS455 Parts
O P	Add Device Inverter Protocol Bus	0.45-190457	r A.205.r.jugenoj rozdantu TER PSAS Purta
 Ø Ø	Add Device Inverter Protocol Bus di	D.S. WAR	r A.2002 jugit 400 modunta Tali 19545, Parta
Iran Azzi Modi	Add Device Inverter Protocol Bue d umo	D.S. WAR	r A 2002 jack 400 modulata Taki 4045 - Part 2
O O Drun Azz Modu So/	Add Device Inverter Protocol Bue d aurro ol 50KTL-V1 (A22U	ILUS - INVER ILUS - INVER IRO - 50/60KTL - VI	r A 27 Surjace rega modelanti Tali - PSAS - Porta

Select "Azzurro" as the brand and the correct Inverter model (essential to ensure communication between the COMBOX and Inverter). Press "Next" to continue.

Press Next.







Press "Create" to confirm the data entered, and then "OK."

Follow the same procedure to enter the other inverters.

ATTENTION: the bus (in this case BUS – INVERTER – RS485 Port 2) will also be the same for the other inverters in the system.

There	are unxpp9	ed changes		Apply Ch	miline .		ა			
Devices	Buses	ê.								
		Name	Device	Address	Pentucol	Brand/Modul	thaid	Active		
	H.	Motor	Heatanolis Amelyzee	m	energiants)	Chini / Analizada Cwini _01010686	RS485 - Port a	2	\otimes	
	m	Invention # 20512345678pp	envention	111.	reductor	Ansare / go/6ostTL-Vs	R5485 - Port a	1	18	

Press "Apply Changes."

					c					
Device	s Buses	/								
		Name	Device	Address	Protocol	Brand/Madel	Bas	Active		
۰	-1	Motor	Hetwork Analyzan	94	midoutta	Chiel / Analization D-INT_0750666	Malty Ports	90 -	121	÷.
	H	Inventer A 205a2345R7890	invertee	01	modountru	Azzunn / gö/őekTL-Va	RSale - Port 2	~	8	

After the changes have been applied, the connection status of the inverter should change to green. NB: the "Bus" column confirms that the Meter and Inverter communicate on two separate buses.





3.3. COMBOX and PV + HYD system with Ethernet dongle (ZSM-ETH-USB / ZSM-

ETH-EXT)







NOTE:

- Inverters must be configured with <u>static IP (contact the administrator of the network hosting the</u> <u>system for details)</u>
- Check that router ports 80 and 8899 are open within the Local Area Network (LAN).

Once the hardware has been configured, proceed with configuring the software of the device as per section 3.1.

NOTE: during SW configuration, if there are multiple hybrid inverters in a master/slave configuration, enter the Master inverter only, assigning it with the power of the entire hybrid section and a feed-in threshold of 0.1KW.





3.4. COMBOX and PV+HYD system with RS485 interface



NOTE:

- Insert terminating resistors of 120Ω on pins 24-25 of the meter, on pin pairs A1-B1 and A2-B2 of the ComBox and on the RS485 port pins of the inverter if the cable length exceeds 20 meters
- Assign a different RS485 address to each inverter in the Daisy Chain
- For configuration of the hybrid section, refer to the inverter's quick guide.





Once the hardware has been configured, proceed with configuring the software of the device as per section 3.1.

NOTE: during SW configuration, if there are multiple hybrid inverters in a master/slave configuration, enter the Master inverter only, assigning it with the power of the entire hybrid section and a feed-in threshold of 0.1KW.





3.5. COMBOX and Meter (ZSM-METER-DTSU)

Materials required for installation:

- DTSU meter (ZSM-METER-DTSU)
- ComBox
- Two terminating resistors of 120 Ohm (not supplied with the ComBox)

Proceed with the software configuration of the device as per section 3.2, up to the "add device" step. From here, proceed as follows:

19479478S	
Device type	
Network Analyzer	×
Name	
Motor	
	Next

Select "Network Analyzer," choose the device name, in this case "Meter", and then press Next.

Network Analyzer	Previous	Next
Network Analyzer	madbusrtu	
Network Analyzer	hotocol type	
	Network Analyzer	blater

Select Protocol Type "modbusrtu" (equivalent to RS485), and then press Next.





 Network Analyzer 	Nasa
Protocol	modbuir
Link address	
01	

Enter Link address "01" (not different addresses). Press Next.

[] N	abounds Amaloiner	
	erware scaryzer	14 and
() P	locol	restant
Select a	r bus	× 11

Add a new bus using the + key.

Cancel	Active	ii.
ipeed 9800 -	Deta bita 8	ι.
Configuration		
fort.	SS485 - Port 1	τ.
ЈултасБен Турн	Sens	×
lares.	Meter	
New Connection		

Populate the first three fields as shown above (RS485-Port1 is compulsory for Meters). Leave the other fields unchanged. Press "Accept" followed by "OK"





 Network Analyzer 	Tolana
Protocol	modium
ielect the bus/connection where	the device is located
Meter - RSa8s - Port 1	* +
1.5	

Press Next after creating the BUS.

and approximate programmers	
Network Analyzer	Philip
Protocol	(WORKS)
😔 Bus	Nete - PSalg - Part
Briand	
Chint	
Model	
Analizador CHINT_DTSU666 (Ana	Reador CHINT_DTSU66
1000 and 10	THEMAS

Select the Brand "Chint" and the model "CHINT_DTSU666", then press Next.





wor Summery	
Device / Protucal	
Network Analyzer / monthanet	a / Chart - Analizador ;
CHINT-DTSUBBOW anador	2HWT, 215(3000)
Bus/Connection	🛞 Device address
Mener - HSulla - Port I generalitik	

Press "create" and then "OK".

Devices	Buses									
		teame	Device	Address	Protocni	@rand/Model	Bat	Active		
	-	Inserter A 205zszp4p6y9pe	byverber-	34	vioduatta	Azzume / 50/004TL-Vs	494.108.1164.8935	96. 	$\underline{\mathbf{N}}$	π
•		Madar	haatuezek Arsalyzme		modificantu	Chini / Availandor CHINT_DTSU606	RS485 - Port a	ų.	8	π

The image above shows an example of how the list of devices may appear after the meter has been configured.





3.6. Activation of the Zero Feed-In function

On the left-hand side of the configuration page, select the "Configuration" tab.

Configuration General
MOTT Enconnected
Self-consumption
Maintenance

Select the "General" menu.

- General		
Time Zone	Europe/Amsterdam	
K Advanced setup 🔸		

Select the correct "Time Zone" and save, if necessary.

Return to the Configuration menu and use the "Self-Consumption" field to access the menu for managing the feed-in power.



Press "Advanced Setup."

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Configuration				
€- Self-consumption				
Zaru injection				•
Grist Point Meters				Meter 🌑
🗙 Advanced setup 🔹				
Logic to do Self-consumption	minimum 🛩	Term-off time Constant of the system points of any design		30
Enable power to export	(CD) (er seconda
		Reconnect. The processed after a time of data	•	5 seconds
				Sor

The above is the correct configuration for setting the grid feed-in to ZERO.

NB: In systems where there is also a hybrid section, if the batteries do not start charging, set a feed-in value of 0.1KW on the ComBox.

If a specific feed-in power must be maintained, this can be done by using the "Enable power to export" command.

Configuration				
Self-consumption				
Zero injection				•
Grid Point Maters				Meter 🐔
X Advanced setup -				
Logic to do Self-consumption	minimum 👻	Turn-off time from to fair of the spectrum targets of any director memory incomes	•	10
Enable power to export				seconds
Penner to soper:	30	Reconnect They're to connect allor i form off state	•	5 wconde
				-811-1
			3	Sin

In the example above, the system was configured to export a maximum of 10 KW, entered in the "Power to export" field. Press "Save."





Plasse review the changes cards	uity before committing
Enable power to export	0
Power to export	30 K
Note that if you try to send a will will be replaced with the closest v	e outside of the allowed range, nitct values
	-

In the summary above press "Confirm."

NB: Whenever the "Apply Changes" key appears, press it.

- It may be necessary to restart the ComBox the first time this function is activated, press the "Reset" button at the top of the device for one second to restart.
- If the "Zero Injection" function is disabled, it will be necessary to restart all the inverters to make the change effective
- If the system has a hybrid section consisting of multiple inverters, enable the "zero feed-in" function on the master hybrid and set the power to 0.1 kW (refer to the hybrid inverter's quick guide for further details).

3.7. Checking the Zero Feed-In function

If solar production is not sufficient to generate feed-in, and it is not possible to turn off the utility loads, you can still check that the ComBox is able to modulate production by simply reversing a Ct reading.

This operation will switch the phase power reading from negative (withdrawal) to positive (feed-in).

On sensing the feed-in power, the ComBox will limit the production of the inverters, even down to zero, without disconnecting them from the grid.





4. Monitoring systems with COMBOX

The ComBox device can be used to monitor system consumption via the "Azzurro Systems" APP, provided that the following conditions are met:

- The meter must be correctly installed and configured (see sections 2 and 3 for details)
- The ComBox must have a connection with appropriate ports open (see section 3 for details)
- Follow the instructions below according to the type of system to be monitored.

4.1. System with PV inverters

PV inverters must be monitored in order to be able to display the production (using traditional loggers/dataloggers). Create a new system and enter the inverters by clicking "+" present in the "devices" section.

The ComBox device can then be added to the system ("Azzurro Systems" APP) by entering the serial number present on the device (BBBIVC......) and clicking "+" present in the "devices" section of the system.





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4.2. System with PV + HYD inverter

In this case, the system can be monitored without the ComBox device.

It will be sufficient to monitor all the Hybrid and PV Inverters in the system (using traditional loggers/dataloggers) for complete monitoring (on mobile APP and WEB Portal) of the system's production and consumption.