

Remote access to the inverter via web user interface

Application instructions

for installers

Application instructions - Remote access to the inverter

via web user interface



1 Application

We have provided you with an intuitive web-based user interface for remote configuration of a KACO inverter which is connected to a network.

ACO New energy.	1 Serial number:	Network address: Software version: V3.26	MAC address: Data received: 1	
Daily view	Monthly view	365 Yearly view	* General view	Zeonfiguration
	Daily view 1. March 201	6 🕨 🗰 🔟	State Plausibility fault	temperature
1.0 Netsielstung P (KW)			Live values Generator power	2,76 2,72 kw 2,81 kw
0.8		\sim	Grid power	8,19 kW
0.6			Yields	
		$\boldsymbol{\mathcal{A}}$	Today	33,3 kWh
24			Choose view Grid power	
			Generator powe Generator volta	

Figure 1. Web-based user interface - data view

Enter the unit's IP address (e.g. http://192.168.100.13) into the address bar of a common internet browser to gain access to the user interface.

The web user interface is split into three sections and separated by a selection bar. The area above the selection bar is used to display the unit and network data. The graphical interface of the inverter is simulated below the selection bar on the left hand side. The current performance and operating data are displayed on the right hand side. There is also the option to export data in csv format.



Figure 2. Selection bar with remote config deactivated

System data (e.g. yield data, charts, inverter status) can be displayed in the selection bar using <u>links to</u> different views (daily/monthly/annual/general view).

It is possible to move back and forward in time by clicking the arrow and double arrow buttons. The calendar button allows you to enter a specific date.

*We recommend using Internet Explorer, Firefox, Google Chrome or Mobile Safari for optimum display.



It is <u>only</u> possible to configure the inverter remotely if this function has been activated locally via the inverter's webserver menu on the unit.

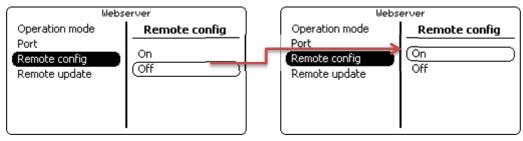


Figure 3. Access to remote config via the webserver menu interface on the inverter

Daily view	Monthly view	365 Yearly view	General view	7 Configuration

Figure 4. Selection bar with remote config activated

Following activation, the link "Configuration" is available in the selection bar on the web user interface.

If you are planning to update the unit remotely, this function must also be activated in the inverter's webserver menu. This is only possible if the function has been activated locally via the inverter's webserver menu on the unit.

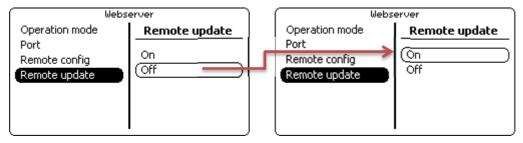


Figure 5. Remote update activation via the webserver menu interface on the inverter

2 Safety

CA	UTION
Set	ting parameters incorrectly can cause damage
Cha	anges to software parameters can seriously impair the functionality of the unit.
>	 The activities described in the document may only be carried out by specially trained personnel with the following qualifications: Knowledge about how an inverter functions and operates Training in the handling of hazards and risks during the installation and operation of electrical units and systems Education concerning the installation and start-up of electrical units and systems Knowledge of applicable standards and directives Knowledge and adherence to this document with all safety notices.

CAUTION

Unauthorised access can lead to damage

If unauthorised persons gain access to the system, unit settings could be manipulated which could seriously impair the functionality and safety of the unit and lead to damage.

> The following functions must only be used on the local network or via a secure VPN connection.





NOTE

The update can take several minutes. The "Operating" LED flashes during the update process. The inverter may restart several times.

The following message appears if the DC power supply is too low: "DC power supply too low! Perform update anyway?".

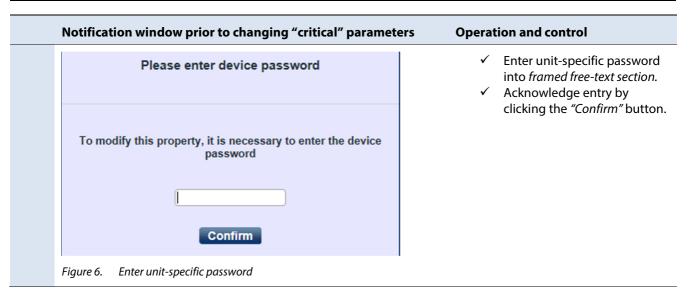
In this case, select "No" and perform the update with a stable voltage supply.



NOTE

The unit-specific and serial number dependent password is required to set "critical" parameters. The unit-specific password can be obtained from KACO customer service, if necessary.

Login data must be stored in a location which is not accessible to third parties.



ACCESS DATA *)

The two accounts "user" (restricted configuration options) and "installer" (advanced configuration options) are available for remote access to the unit:

User name: user

Password: Da_3u1B! (initial setting)

User name: installer

Password: Mo_g010rP! (initial setting)

^{*)} **Important**: Following initial start-up, you must change the access data via one of the menu items "Change user password" or "Change installer password" in the *Main menu* under *Functions*.



NOTE

The functions described in the following chapter are only available on the inverters listed and with the existing software package (see chapter 5.1).

Configurations and software updates may only be carried out if there is a suitable DC power supply.

(i)

DEVICE-SPECIFIC NOTE

Modified parameters in the device series blueplanet 15.0-20.0TL3 from Software Version V4.x are only adopted when the device is restarted, but at the latest on the next day.

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3 Navigation

The following table will support you during the remote config process using the web user interface and shows you the input screens behind the "Configuration" link.

Input screens that are marked on the side(user) are only available to installers, service partners and technicians and can not be accessed by system operators.

Note: In the case of inactive entry or use, the interface is made available for 10 minutes for configuration purposes. Once this time has elapsed, you must log in again.

User	Inverter inpu	ıt screen					Operat	ion and navigation
	Configuration							
	KACO 📚	Device name: Powador 39.0 TL3 R5485 address: 1 Serial number:	Type: 33,30 kW nominal power, three-phas Network address: Software version: V3.26	MAC as	ddress:		v	Access data: Enter user name and password into the <i>framed</i> <i>free-text sections</i> .
	Daily view	Monthly view	🐷 Yearly view	🐨 General	l view 🛛 🛛 🖉 Configu	ration	\checkmark	Confirm the entry with the <i>"Login"</i> button.
	Please enter username	e and password to	login	_	State Plausibility fault temperature		\checkmark	Clicking the "Back" button will
	Password				Live values	2,76 2,72 kW		take you back to the previous input screen at any time.
					Generator power Grid power	2,81 kW 8,19 kW	Note: If	f you move your <i>cursor</i> over a
					Yields Today	33,3 kWh	button,	further information regarding
					242 	► Data export	entry o be disp	r relevant warning messages will laved.
	Login		c.	Back			Login	,
						~	O Der	name and password are transmitted and checked.
	Figure 7. Con	figuration lo	nain screen					configuration is allowed only after conect login.
	Configuration assistant					\checkmark	Select the display language via the <i>dropdown menu</i> " \checkmark " field.	
	Language	Language		En	glish	~	\checkmark	The language can be set
	Save language p	persistent				Active		permanently via the <i>active checkbox</i> on the inverter.
	Country					~		
	Grid/Directive					~		f the checkbox is disabled, the ge of the web user interface will
	Nominal grid volt	tage				~		set for the current session.
	Neutral conducto	Neutral conductor				\checkmark	\checkmark	Confirm both actions by
	Date [dd.mm.yyy	Y]		12.	09.2016		1	clicking the <i>"Next step"</i> button.
	Time [hh:mm]			+	- 13]:[48	+ -	v	Select the user country and

Next step

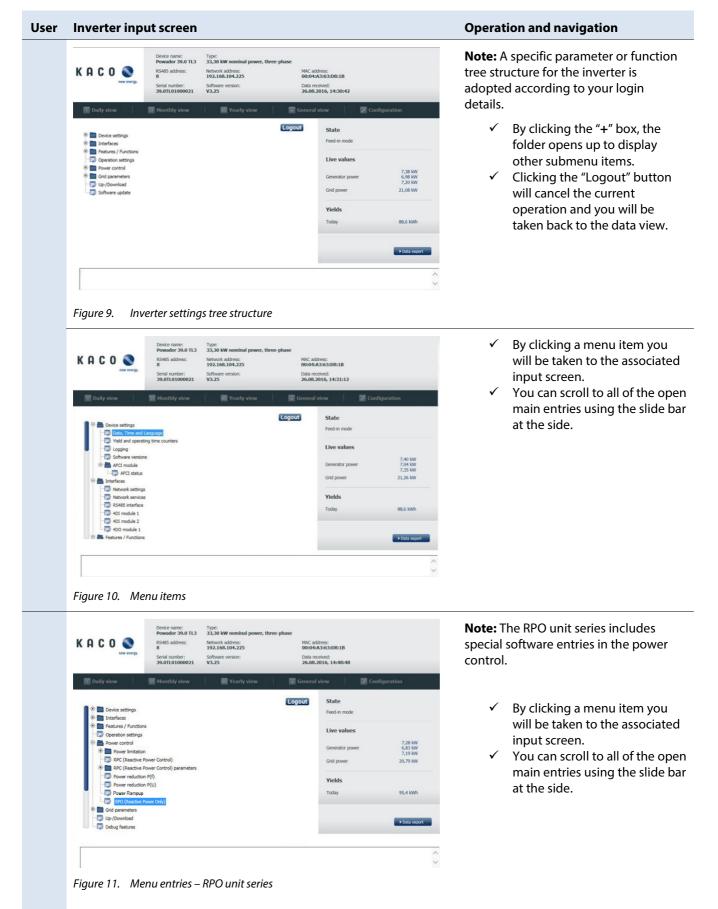
Figure 8. Configuration assistant

Back

- ✓ Select the user country and network-specific country requirements <u>step-by-step</u> via the dropdown menu "√" field and acknowledge them by clicking the "Next step" button.
- ✓ Set the time and date for the user country.

Note: No entry is possible or permitted in the fields with a grey background.







٢	Inverter input	t screen					Operat	ion and navigation	
	Submenu items	s - unit se	ttings						
	KACO N	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, thre Network address: 192.168.104.225 Software version: V3.25	MAC a 00:04 Data r	ddress: :A3:63:D8:1B ecelved: .2016, 14:44:18		√ √	Select the date using the "calendar" button. Enter the time into the framed	
	Daily view	Monthly view	555 Yearly view	😿 Genera	il view 🛛 🖉 Con	figuration		free-text section or set the time	
	Date, time and language	nd language State	State		/	using the "+/-" buttons.			
	Date [dd.mm.yyyy]		26.08.2016		Feed-in mode		\checkmark	Set the language via the dropdown menu "√" field.	
	Time [hh:mm]		- 14:44	•••	Live values	7.25 /44			
	Language Save language persistent		English	Active	Generator power Grid power Vields	7,35 kW 6,91 kW 7,26 kW 21,01 kW		he language can be set ently via the <i>active checkbox</i> on	
					Today	95,4 kWh			
						► Data export	✓	Set the entries by clicking the <i>"Set"</i> button.	
	Set			Back			Note T	he plausibility of the	
						~		ation is checked before it is	
	L						saved.		
	Figure 12. Set d	ate, time, l	language						
		Device name: Powador 39.0 TL3	Type: 33,30 kW nominal power, thre					necessary, the unit-specific	
	KACO New energy.	RS485 address: 8 Serial number: 39.0TL01000021	192.168.104.225 Software version: V3.25	00:04 Data n	ddress: :A3:63:D8:1B ecelved: .2016, 14:44:48			rd is requested via an additiona lialogue.	
	1 Daily view	1 Monthly view	SS Yearly view	🐺 Genera	l view 🛛 🖗 Con	figuration	\checkmark	Values for the yield and	
	Yield and operating tim	e counters			State			operation counters can be set	
	Yield today		99) kW	h	Feed-in mode			to 0 using the " <i>Reset" button</i> .	
	Total yield		118160 kW	h	Live values		\checkmark	You can enter the total yield	
	Yield counter		90553 KW	h Reset	Generator power	7,34 kW 6,87 kW 7,32 kW		you have achieved thus far int	
	Operation time today		14:44 h:m		Grid power	21,01 kW		the free-text field itself or set i	
	Total operation time Operation hours counter		20652:39) h:m 16447:35) h:n		Yields			using the "+/-" buttons.	
	Set Total yield		10447.30 min	0 kWh	Today	95,4 kWh	\checkmark	Set the entries by clicking the <i>"Set"</i> button.	
						► Data export		Set button.	
	Set			Back					
						\sim			
	Figure 13. View	and edit t	he yield and op	erating c	ounters				
-		Device name:	Туре:				✓	The logging interval for yield	
	касо 📎	Powador 39.0 TL3 RS485 address:	33,30 kW nominal power, three Network address: 192.168.104.225	MAC a	iddress: I:A3:63:D8:18			and operating data can be	
	new energy.	Serial number: 39.0TL01000021	Software version: V3.25	Data r	received: 3.2016, 14:45:18			changed via the dropdown	
	Daily view	Monthly view	365 Yearly view	🐺 Genera	al view 🛛 🔽 Cor	ifiguration		menu "~" field.	
			i man county cross				\checkmark	When the log data backup	
	Logging		5	V	State Feed-in mode			checkbox is selected, the daily	
	Log data backup			Active 🖌	Live values			log data from the previous da	
					Generator power	7,32 kW 6,79 kW		is saved onto a USB stick at	
					Grid power	7,26 kW 20,90 kW	,	midnight.	
					Yields		\checkmark	Set the entries by clicking the	
					Today	95,4 kWh		<i>"Set"</i> button.	
						► Data export			
	Set			Back					



er	Inverter inpu	ut screen		Operation and navigation
	KACO Source of the second	8	C-Afresse: tentand: Gesamtansicht // Konfiguration	Note: Following every software update check that the version number of the installed software component corresponds to the software package.
	Software versions	and the second to the second to the second	Status	\checkmark The current software versions
	Component	Vers. (Checksum)	Einspeisebetrieb	installed for each component
	PKT	V9.99	Momentanwerte	can be viewed via the
	ARM	V3.76 (2627)	7,71 kW Generatorleistung 7,68 kW	submenu item "Software
	CFG	V5.1630 (96DA)	7,71 kW Netzleistung 22,69 kW	versions".
	DSP	V2.14 (1260)	Ertragswerte	versions .
	WEBGUI2	V2.04	Heute 33,3 kWh	
		Back	Datenexport	
		Dav		_

A C O 📎	8 Serial number: 39.0TL01000021	192.168.104.225 Software version: V3.25	Data	4:A3:63:D8:18 received: 8.2016, 14:31:12	
1 Daily view	Monthly view	Yearly view	Genera	al view 🕴 🔛 Con	figuration
AFCI status				State	
Ionitored trackers			2	Feed-in mode	
Parameter			V1.02	Live values	
Self-test			OK	Generator power	7,40 kW 7,04 kW
Status			ок	Grid power	7,35 kW 21,26 kW
				Yields	-
				Today	88,6 kWh
			_		Data export
			Back		

Note: The following status can be seen in the "AFCI status" screen when the residual current circuit breaker is installed:

- ✓ Number of monitored MPP trackers
- ✓ Parameter version
- ✓ Self-test status
- ✓ Activation status
- Clicking the "Back" button will take you back to the previous input screen at any time.

Figure 16. Viewing the AFCI status

Submenu items - interfaces

ACO New energy.	RS485 address: 8 Serial number: 39.0TL01000021	Network address: 192.168.104.225 Software version: V3.25	Data re	A3:63:D8:1B	
1 Daily view	31 Monthly view	SS Yearly view	* General	view 🕴 🗭 Cor	nfiguration
Network settings				State	
DHCP			Active 📃	Feed-in mode	
IP address		192.168.	104 . 225	Live values	
Subnet mask		255 . 255 .	0.0	Generator power	7,26 kW 6,80 kW 7,18 kW
Gateway		192 . 168 .	100 . 254	Grid power	20,74 kW
DNS server		192 . 168 .	100 . 157	Yields	
				Today	95,4 kWh
					Data export
Set			Back		
Changes to these propertie	es can lead to the termina	tion of the connection			

Figure 17. Configure the network settings

 ✓ Automatic IP address assignment can be activated by clicking the "Active" button.

Note: The following fields will be hidden when the DHCP is activated.

- ✓ IP address
- ✓ Subnet mask
- ✓ Gateway
- ✓ DNS server

Note: Warning messages[†] are highlighted in the comments box below.

 ✓ Set the entries by clicking the "Set" button.

^{*)} Changing these properties can result in the connection being terminated.



<complex-block><complex-block><complex-block></complex-block></complex-block></complex-block>	<complex-block><complex-block><complex-block></complex-block></complex-block></complex-block>	<complex-block><complex-block><complex-block></complex-block></complex-block></complex-block>		Device name: Powador 39.0 TL3	Type: 33,30 kW nominal power,	three-phase		
<form><complex-block></complex-block></form>	<form><complex-block></complex-block></form>	<form><complex-block></complex-block></form>		R5485 address: 8	Network address: 192.168.104.225	MAC a 00:04		
<form></form>	<form></form>	<form></form>		Serial number:	Software version: V3.25	Data / 26.08	received: 3.2016, 14:48:48	
<form></form>	<form></form>	<form></form>	Daily view	Monthly view	Yearly view	Genera	al view 🛛 📰 Cor	afiguration
<form></form>	<form></form>	<form></form>	Network services	5			State	
<form></form>	<form></form>	<form></form>	Webserver		Active 🖌 💽 💼	80 Port	Feed-in mode	
<form></form>	<form></form>	<form></form>	Modbus TCP		Active 🖌 💽 💼	502 Port	Live values	
<form></form>	<form></form>	<form></form>	Modbus TCP write a	iccess		Active	Generator power	7,28 kW 6,83 kW 7,19 kW
Pretaipendie werke access allows system critical in a clivation of the comparison	Pretaipendie werke access allows system critical in a clivation of the comparison	Pretaipendie werke access allows system critical in a clivation of the comparison					Grid power	
Subta message Subta message Image methods for conceptor Figure 13. Configure network services Figure 13. Configure network services Image methods for methods for conceptor Image methods for	Subta message Subta message Image methods for conceptor Figure 13. Configure network services Figure 13. Configure network services Image methods for methods for conceptor Image methods for	Subta message Subta message Image methods for conceptor Figure 13. Configure network services Figure 13. Configure network services Image methods for methods for conceptor Image methods for						
<complex-block></complex-block>	<complex-block></complex-block>	<complex-block></complex-block>			Comp		Today	95,4 kWh
<form></form>	<form></form>	<form></form>						h Data exect
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Figure 18. Configure network services	Figure 18. Configure network services	Figure 18. Configure network services		perties can lead to the termina	ation of the connection			
KACONNE Environmental statements Microsoftements Statements Statements Statements Statements Statements No Statements Statements Forgues to these properties can lead to the termination of the connection Statements Statements Figure 19. Confirmation prompt when activating the Modbus TCP	KACONNE Senserses	KAC O O O O O O O O O O O O O O O O O O O						
Network services State Webserve Enabling the write access allows system critical settings to be changed over Modbus TCP. Webserve Reality enable write access? Portal pro Status me Status me No Changes to these properties can lead to the termination of the connection Figure 19. Confirmation prompt when activating the Modbus TCP	Network services State Webserve Enabling the write access allows system critical settings to be changed over Modbus TCP. Powador- Really enable write access? Portal pro Status me Status me No Changes to these properties can lead to the termination of the connection	Network services State Webserve Enabling the write access allows system critical settings to be changed over Modbus TCP. Powador- Really enable write access? Portal pro Status me Status me No Changes to these properties can lead to the termination of the connection						
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Notobus	Modebus	Modebus	To baily view	Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Network address: 192.168.104.225 Software version: V3.25	MAC a 00:04 Data r 26.08	143:36:31:08:18 received: 5.2016, 14:48:48 al view 2007 Cor State	ifiguration
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Portal Portal pro	Portal Portal pro	Portal Portal pro	Network services Webserve Modbus T	Powador 39-0 TL3 Powador 39-0	Network address: 192.168.104.225 Software version: V3.25 Rearly view	Genera 0:04 26.08 Genera 0 Port 2 Port	IA365320618 Coolectual L2016, 14/48/48 State Feed-In mode Live values	
Portal pro Status me Status me Changes to these properties can lead to the termination of the connection Figure 19. Confirmation prompt when activating the Modbus TCP	Portal pro Status me Status me Changes to these properties can lead to the termination of the connection Figure 19. Confirmation prompt when activating the Modbus TCP	Portal pro Status me Status me Changes to these properties can lead to the termination of the connection Figure 19. Confirmation prompt when activating the Modbus TCP	Network services Webserve Modbus T Modbus T	Powado 30.0 11.3 Powa	Network eddrea: 192.166.104.225 Software version: V3.25 Wearly view allows system critic over Modbus TCP.	Mic a onioh Data i 26.08 Context Call 0 Port Active _	International State Freed-in mode Etive values Generator power	7,28 kW 6,83 kW 7,19 kW
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East East Figure 19. Confirmation prompt when activating the Modbus TCP	East East Figure 19. Confirmation prompt when activating the Modbus TCP	East East Figure 19. Confirmation prompt when activating the Modbus TCP	Webserve Modbus T Modbus T Powador- Portal	Pewado 30.0 IL3 R6495 address: 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Network eddrea: 192.106.104.225 Software version: V3.25 Weathy view allows system critici Jover Modbus TCP.	al Port Active _ Active _	In To State In Top State Feed an mode Live values Generator power Grid power Yields	7.28 kw 6.83 kw 7,19 kw 20,79 kw
Changes to these properties can lead to the termination of the connection C Figure 19. Confirmation prompt when activating the Modbus TCP	Changes to these properties can lead to the termination of the connection C Figure 19. Confirmation prompt when activating the Modbus TCP	Changes to these properties can lead to the termination of the connection C Figure 19. Confirmation prompt when activating the Modbus TCP	Webserve Modbus T Powador- Portal Potal pro	Pewado 30.0 IL3 R6495 address: 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Network eddrea: 192.106.104.225 Software version: V3.25 Weathy view allows system critici Jover Modbus TCP.	al Port Active _ Active _	In To State In Top State Feed an mode Live values Generator power Grid power Yields	7.28 kw 6.83 kw 7,19 kw 20,79 kw
Figure 19. Confirmation prompt when activating the Modbus TCP	<i>Figure 19. Confirmation prompt when activating the Modbus TCP</i>	Figure 19. Confirmation prompt when activating the Modbus TCP	Webserve Modbus T Powador- Portal Potal pro	Pewado 30.0 IL3 R6495 address: 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Network eddrea: 192.106.104.225 Software version: V3.25 Weathy view allows system critici Jover Modbus TCP.	al Port Active _ Active _	In To State In Top State Feed an mode Live values Generator power Grid power Yields	7,28 kw 6,83 kw 7,19 kw 26,79 kw 95,4 kwh
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Operation and navigation

Caution: If you deactivate the webserver, the connection to the unit will be interrupted. In this case, it will only be possible to activate the webserver via the user interface on the unit's display.

- ✓ The features "Webserver", "Modbus TCP", "Modbus TCP write access" and "Powadorweb" can be activated by ticking the boxes.
- ✓ Either enter the port for the webserver or use the "+/-" buttons to set it.
- ✓ Either enter the port for the Modbus TCP or use the "+/-" buttons to set it.
- ✓ Select the portal for system monitoring.
- Carry out the configuration of the portal profile using the "Configuration" button (see Figure 20).
- ✓ The status message shows the portal connection status.

Note: Warning messages are highlighted in the comments box below.

 Set the entries by clicking the "Set" button.

Note An additional confirmation is required to activate the write access on Modbus TCP.

 ✓ Permit Modbus TCP write access by clicking the "Yes" button.



User Inverter input screen

The portal configuration submenu item

Operation and navigation

	Device name: Powador 39.0 TL3	Type: 33,30 kW nomina	l power, three-phase		
Portal configuration				address: 4:A3:63:D8:1B	
Description			Meteocontrol	received: 5.2016, 14:46:48	
Server address			ws.meteocontrol.de	al view 🛛 🕅 Con	figuration
Fall back IP address		213).	179].[128].[169]	al view	inguration
Port			80 Port	State	
Server invdata path			/api/import/inverterdata)	Feed-in mode	
Server time path			/api/time	Live values	
Server connection test pat	h		/api/connectiontest)	Generator power	7,28 kW 6,79 kW
Login username:password			******	Grid power	7,23 kW 20,77 kW
Logging interval			15 Min		
Transfer interval			60 Min	Yields	
Reset portal profile		_	Reset	Today	95,4 kwf
Status message			Not connected		► Data en
Set Save	parameter set	Load parameter	Back		

Figure 20. Configuring the portal

Note: Standard portal profiles have already been pre-defined. User-defined portal profiles require the following settings.

- ✓ Enter the user name for portal configuration.
- ✓ Enter the server address.
- ✓ Enter the fall back IP address (if the server jumps to an incorrect server address)
- ✓ Enter the port number or set it using the "+/-" buttons.
- Enter the interface paths for inverter data, time, connection test.
- ✓ Enter the password for the login username.
- ✓ Enter the time for the access and transfer interval or set it using the "+/-" buttons.

Note: You can reset the configuration to the default settings by clicking the "Reset" button.

 Export the portal settings to a file by clicking the "Save parameter set" button.

Note: Saved profiles can be loaded by clicking "Load parameter set".

✓ Set the entries by clicking the "Set" button.

Note: By allocating an RS485 address, you address the inverter in the unit compound.

✓ Enter the RS485 address or set it using the "+/-" buttons.

Note: Bus termination is only available on units that allow software-based configuration.

- The first and last unit in a group of equipment are specified via bus termination.
- ✓ Set the entries by clicking the *"Set"* button.

Type: 33,30 kW nominal power, three-phase Device name: Powador 39.0 TL3 КАСО 🔇 RS485 address Network address: 192.168.104.225 MAC address: 00:04:A3:63:D8:1B Data received: 26.08.2016, 14:47:18 Softwar V3.25 RS485-Interface State RS485 address Bus termination Active 🗌 Live value 7,30 kW 6,77 kW 7,23 kW **Yields** 95,4 kW ▶ Data e Set Back Figure 21. Configuring the RS485 interface



r	Inverter input screen						Operation and navigation
	KACO	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, thre Network address: 192.168.104.225 Software version: V3.25 Yearly view	MAC 00:0 Data	address: H:A3:63:08:18 Freceived: 8.2016, 14:46:48	nfiguration	Note: Extension module(s) for digital inputs can be obtained from KACO service. (e.g. for connecting a ripple control receiver)
	4DI module 1 Status message		Found 4DI mo	dule on slot 1	State Feed-in mode		 The module status can be viewed via the status message
	Digital Input 1 Digital Input 2 Digital Input 3		Active low Active low Active low	v v v	Live values Generator power Grid power	7,28 kW 6,79 kW 7,23 kW 20,77 kW	 ✓ If the module is available: - Fo each input channel, select the activation level "Active low" fo
	Digital Input 4		Active low		Yields Today	95,4 kWh	0-1V or "Active high" for 5-40\
	Set			Back		€ Data export	 ✓ Set the selection by clicking the "Set" button.

MAC address: 54:10:EC:66:FA:60

Data received: 08.03.2019, 09:33:18

State

Active

Feed-in mo

Live values

7,06 kW

13,91 kW

Figure 22. Configuring 1 or 2 extension modules for digital inputs

Device name: Type: blueplanet 20.0 TL3 20,00 kW nominal power, three-phase

Network address: 10.50.0.171

Software version: V5.50

Submenu items - characteristics/functions

RS485 address:

KACO 📎

Password protection

Password protection

Set

Note: The password protection

functions protect the access to following Parameters.

- ✓ The Password protection can be activated by ticking the boxes.
- ✓ Set the selection by clicking the "Set" button.

	Grid power
	Vields
	Today
Back	

Figure 23. Activate Password protection

ACO New energy.	8 Serial number: 39.0TL01000021	192.168.104.225 Software version: V3.25	Data	4:A3:63:D8:1B received: B.2016, 14:47:48	
1 Daily view	I Monthly view	SSS Yearly view	😿 Gener	al view 🕴 📝 Co	onfiguration
Priwatt				State	
Activation mode		Continuously	~	Feed-in mode	
Monitoring time			5 Min	Live values	
Activation threshold			2.00 kW	Generator power	7,32 kW 6,79 kW 7,25 kW
Operation mode		Time-dependent	~	Grid power	20,88 kW
Operation time			300 Min	Yields	
				Today	95,4 kWh
					Data export
Set			Back		

Note: The priwatt function is not available for RPO inverters

- \checkmark Set the priwatt function activation mode via the dropdown menu " \checkmark " field.
- \checkmark Enter the monitoring time and activation threshold or set them using the "+/-" buttons.
- \checkmark Set the operating mode via the dropdown menu " \checkmark " field.

Note: The operation time can only be set in the time-dependent operating mode. Otherwise, the input field is hidden.

> Set the entries by clicking the ✓ "Set" button.



Inverter inj	out screen				Operation and navigation
KACO 🔊	Device name: Powador 39.0 TL3 R5485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, three-phas Network address: 192.168.104.225 Software version: V3.25	e MAC address: 00:04:A3:63:08:18 Data received: 26.08.2016, 14:48:18		Note: The behaviour of the inverter when an optional "Powador-protect" connected can be configured in this
T Daily view	31 Monthly view	SS Yearly view	🐺 General view 🛛 🗭 Co	nfiguration	screen.
Powador-protect Operation		On	State Feed-In mode Live values Generator power Grid power Vields Today	7,26 kW 6,80 kW 7,22 kW 20,81 kW 95,4 kWh	 ✓ Set the Powador-protect operation mode via the dropdown menu "√" field. ✓ Set the selection by clicking the "Set" button.
Set Figure 25. Co	onfigure Pow	ador-protect mode	Back	► Data export	
	Device name: Powador 39.0 TL3 RS485 address: 8	Type: 33,30 KW nominal power, three-phas Network address: 1921.166.104.225	e MAC.address: 00:04:A3:03:08:18		Note: This function is only available supported by the inverter family.
Figure 25. Co	Device name: Powador 39.0 TL3 R5485 address: 8 Serial number: 39.0TL01000021	Ador-protect mode	e MCC address: 00:04:A3:53:30:18 Data received: 26:06:2016, 14:48:48	0	supported by the inverter family. ✓ The function can be activate
Figure 25. Co KACO E Daily view SPI (System Protect	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	Ador-protect mode	e MAC_sddrese: 00:04:A3:503:D8:18 Data received: 26.08:2016, 14:48:48 General view State Feed-in mode	Alguration	supported by the inverter family.
Figure 25. Co KACO	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	Ador-protect mode	e MAC address: 00:04:A3:03:08:18 Data received: 24:06:2016, 14:48:48 General view State Feed-in mode Live values	Afguration	 supported by the inverter family. The function can be activate by ticking the boxes. The available module is reported by way of a status message.
Figure 25. Co KACO Co Co Co Co Co Co Co Co Co Co	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	ador-protect mode	e MAC address: 00:04:A3:03:08:18 Data received: 24:06:2016, 14:48:48 General view State Feed-in mode Live values	0	 supported by the inverter family. The function can be activated by ticking the boxes. The available module is reported by way of a status message. Set the logic level "Active logic
Figure 25. Co KACO KACO E Daily view SPI (System Protect Activation Status message	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	Addor-protect model Type: 33,30 KW nominal power, three-phase Network address: 192106.104.225 Software version: V3.25 Vourly view Acte Found Modul on S	e MC_addrest: 00:04.03:03:08:18 Data received: 26.08.2016, 14:48:48 Central view C Con State Feed-in mode Live values Iot 1 Constitute received	Afguration	 supported by the inverter family. ✓ The function can be activat by ticking the boxes. ✓ The available module is reported by way of a status message. ✓ Set the logic level "Active logic
Figure 25. Co KACO KACO Example Tably view SPI (System Protect Activation Status message Remote tripping	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	Active low	e MC_addrest: 00:04.A3:03:08:18 Data received: 26.08.2016, 14:48:48 Central view Codemonal view	Afguration 7,28 kw 6,83 kw 7,19 kw	 supported by the inverter family. ✓ The function can be activat by ticking the boxes. ✓ The available module is reported by way of a status message. ✓ Set the logic level "Active lof for 0-1V or "Active high" for 40V via the dropdown men
Figure 25. Co KACO KACO Exercise Bally view SPI (System Protect Activation Status message Renote tripping External signal	Device name: Powador 39.0 TL3 RS465 address: 8 Serai number: 30.0TL01000021	Active low Active low	e MMC_addrest: 00:04:A3:63:D8:1B Data received: 26.06.2016, 14:48:48 Central view C Cor Control view C Control view C Cor Control view C Control view C Co	Afguration 728 kW 648 kW 7,39 kW 20,79 kW	 supported by the inverter family. The function can be activate by ticking the boxes. The available module is reported by way of a status message.

Figure 26. Configuring the SPI function



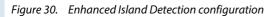
Note: The screen may differ depending on the hardware. The S0 output can be configured if the hardware supports this.

Configure the S0 function

- ✓ Activate/deactivate the S0 function
- ✓ Set the pulse rate.
- ✓ Set the selection by clicking the "Set" button.



 Note: The user password protects you against unauthorised access to the network. Chart the current password of the user password of the user who is currently logged in. Enter a new user password. Confirm the new user password of the user password of the user who is currently logged in. Set the entries by clicking the "set" button. Set the entries that are connected to the network. Inter the current password protects you against unauthorised access to the intervert that are connected to the network. Set the entries by clicking the "set" button. Enter a new user password. Confirm the new user password or the user who is currently logged on. Enter a new installer password protects you against unauthorised access to the intervert that are connected to the network. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Enter a new installer password or the user who is currently logged on. Set the entries by clicking the "set" button. 				Operat	ion and navigation
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 "Set" button. "Set" button. "Set" button. 			Today	95,4 kWh	
<form></form>					, ,
Figure 28. Changing the user password Figure 28. Changing the user password protects you against unauthorised access to the inverters that are connected to the network. • Enter the current password or the user who is currently logged on. • Enter a new installer password or the user who is currently logged on. • Enter a new installer password or the user who is currently logged on. • Enter a new installer password or the user who is currently logged on. • Set the entries by clicking the "set" button. • Set the entries by clicking the "set" button. • Set the entries by clicking the "set" button. • Set the enhanced island detection mode via the dropdown menu "v" field • Set the selection by clicking the "set" buttons. • Set the selection by clicking the "set" buttons. • Set the selection by clicking the "set" buttons. • Set the selection by clicking the "set" buttons.				Data export	
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 Here index tables account We password for indake account Confirm new installer password Confirm the new installer password Confirm the new installer password by re-entering it. Set the entries by clicking the "Set" button. Figure 29. Changing the installer password Wote: Grid operators require shutdows of the device with standalone grid detection. Set the enhanced island detection Instanced island Detection Set active box of selected mode via the dropdown menu "~" field Set active box of selected mode via the dropdown menu "~" field Set active box of selected mode via the dropdown menu "~" field Set the selection by clicking the "+/-" buttons. Set the selection by clicking the "+/-" buttons. Set the selection by clicking the "+/-" buttons. Set the selection by clicking the "** of the selection by cli			Chala		Enter the current password of
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 Set the entries by clicking the "Set" button. Figure 29. Changing the installer password KACO Correct memory between the staller password Note: Grid operators require shutdow of the device with standalone grid detection. Set active box of selected mode via the dropdown menu "~" field Set active box of selected mode or configure it using the "+/-" buttons. Set the selection by clicking the "+/-" buttons. 			Yields		
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KAC 0 No Notesting	Figure 29. Changing the inst	taller password			
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Enhanced Island Detection State Mode Off Pulse period repetition time • ① 0000 ms ROCOF threshold stage 1 value • ② 0.100 s ROCOF threshold stage 2 value • ③ 0.100 s ROCOF threshold stage 2 value • ○ 0.00 s Pulse period repetition time • ○ 0.100 s Generator poner • 1,72 kW • 1,74 kW ROCOF threshold stage 1 time • ○ 0.100 s ROCOF threshold stage 2 value • ○ 0.100 s Yields • ✓ Set the selection by clicking the "\$-0.000 s There 12019 152.1 kWh	Cervice name: T blueplanet 20.0 TL3 2 R 5485 address: N	ype: 20,00 kW nominal power, three-phase Network address:	MAC address: 54:10#C066FA:60		· ·
Enhanced Island Detection State detection mode via the Mode Off Fed+ mode dropdown menu "√" field Pulse period repetition time Image: State Set active box of selected ROCOF threshold stage 1 time Image: State 4,72kW ROCOF threshold stage 2 value Image: State 4,72kW ROCOF threshold stage 2 value Image: State 4,72kW ROCOF threshold stage 2 value Image: State 1000 ms Vietds Vietds Set the selection by clicking the "State" 7. Mech 2019 152,11Mh The "State"	KACO reverently. KACO Series transition KACO Key estign Serial number: Serial number: Series transition KACO Series transition KACO	yps: 20,00 kW nominal power, three-phase letwork address: 10.50.0.171	54:10:EC:66:FA:60 Data received:	of the c	levice with standalone grid
Mode Off Feed+mode dropdown menu "√" field Puise period repetition time + - 1000 ms Live values ✓ Set active box of selected ROCOF threshold stage 1 value + - 2.5 Hz/s Generator power 472 kW ✓ Set active box of selected ROCOF threshold stage 2 value + - 6.0 Hz/s Grid power 9.32 kW '' huttons. ROCOF threshold stage 2 time + - 5.00 s 7. Merd 3019 152.1 kMh ✓ Set the selection by clicking the "Sot" huttons.	KACO reve entry: Revelopment 20.0 TL3 2 Revelopment	yps: 20,00 kW nominal power, three-phase lebrok address: 0.50.0.171 Joftware version: 15.50	54:10:EC:66:FA:60 Data received: 08.03.2019, 08:59:29	of the c detecti	levice with standalone grid on.
Puise period repetition time Puise period repetition time 2.3 H2/5 ROCOF threshold stage 1 value 2.3 H2/5 Generator power 4,72 kW Grid power 9,32 kW "+/-" buttons. Set the selection by clicking the "Like values " Set the selection by clicking the "Sou" buttons " "	KACO ver entry Daily view	yps: 20,00 kW nominal power, three-phase lebrok address: 0.50.0.171 Joftware version: 15.50	54:10:EC:66:FA:60 Data received: 08:03:2019, 08:59:29 eral view Z Configurati	of the c detecti	levice with standalone grid on. Select the enhanced island
ROCOF threshold stage 1 value + - 2.5)H2/s Generator power 4,72kW mode or configure it using th ROCOF threshold stage 1 time + - 0.010 s Grid power 9,32kW "+/-" buttons. ROCOF threshold stage 2 value + - 5.00 s 7. Merd 3019 152,1kWh ✓ Set tactive box of selected	Contraction of the second seco	Vyce: 20,00 WM nominal power, three-phase iework adviss: 10,500,171 Joffware version: 55,50 K Vearly view	S41:0E(:C66:FA60 Data received: 06:03.2019,08:59:29 eral view Configuration State	of the c detecti	levice with standalone grid on. Select the enhanced island detection mode via the
ROCOF threshold stage 1 time + - 0.10]s Grid power 9,32kw "+/-" buttons. ROCOF threshold stage 2 value + - 6.0 Hz/s Yields ✓ Set the selection by clicking the "Cet" buttons. ROCOF threshold stage 2 time + - 5.00 s 7. Merch 2019 152,1 kWh the "Cet" buttons	Control of the second s	Vyce: 20,00 KW nominal power, three-phase Henot address: 10,50,0,171 Software version: 5x,50 Wearly view C C C C C C C C C C C C C C C C C C C	S4106C66FA60 Data received: 08.03.2019; 08:59:29 eral view Z Configuration State Feed-in mode	of the c detecti	levice with standalone grid on. Select the enhanced island detection mode via the dropdown menu "√" field
ROCOF threshold stage 2 value + - 6.0 H/5 Yields ROCOF threshold stage 2 time + - 5.00 s 7. Merch 2019 152,1 kWh	Control of the second s	rype: 20,00 W nominal power, three-phase Hends address: 10:50.0.171 ioftware version: 55.50	S4105C66FA60 Data received: 08.03.2019, 08:59:29 eral view Z Configurab State Feed in mode Live values	n of the c detecti	levice with standalone grid on. Select the enhanced island detection mode via the dropdown menu "\>" field Set active box of selected
7. March 2019 152,1 kWh tho "Cot" button	Control of the short of the sho	Type: 80,00 KW nominal power, three-phase Hende address: 10:50.0.171 10:50.0.172 10:50.0.173 10:50.0.174 10:50.0.174 10:50.0.174 10:50.0.174 10:50.0.174 10:50.0.174 10:50.0.174 10:60 ms + 10:00 ms + 2.51.475	S4:105:C66:FA:60 Data received 08:03:2019; 08:59:29 eral View I Configurabl Exact Feed-In mode Live values Generator power	of the c detecti √ 4,72 kW 4,74 kW	levice with standalone grid on. Select the enhanced island detection mode via the dropdown menu "√" field Set active box of selected mode or configure it using th
ROCOF proportionality factor +	Control of the second stage 1 value ROCOF threshold stage 1 value	Vpe: 80,00 KW nominal power, three-phase Hende address: 10:50.0.171 10:50.0.172 10:50.0.173 10:50.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174 10:60.0.174	State: Configuration Bases: State Freed-in mode Live values Generator power Grid power	a,72kW a,72k	levice with standalone grid on. Select the enhanced island detection mode via the dropdown menu "√" field Set active box of selected mode or configure it using th "+/-" buttons.
	Control Contro Control Control Control Control Control Control Control Control Co	Vype: 82,00 kW nominal power, three-phase Hends address: 10.50.0171 Jachsare version: 5.50 Woarly view Off + - 10.00 + - 0.10 + -	State: Configuration State Feed-in mode Cenerator power Grid power Viekds	4,72kW 4,72kW 4,74W √	levice with standalone grid on. Select the enhanced island detection mode via the dropdown menu "√" field Set active box of selected mode or configure it using th "+/-" buttons. Set the selection by clicking



ed in user, the

e for the

in the comments box below.

Set

Gray

Back



r	Inverter inp	ut screen					Operation and navigation
	Submenu iten	ns - operat	tion settings	5			
	KACO S	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power Network address: 192,166,104,225 Software version: V3.25	С	MC address: 0:04;A3;63:DB;1B lata received: 6.08;2016, 14;49:18		 Enter the DC starting voltage or configure it using the "+/-" buttons.
	Daily view	Monthly view	🐹 Yearly view	e Ge	neral view 🛛 🛃 Cor State	figuration	 When activating the constant voltage control, set the voltage
	DC starting voltage			250 V	Feed-in mode		or configure it using the "+/-" buttons.
	Constant voltage control		+ -	200) V	Live values		
	Insulation resistance Grid monitoring 3-phase			200) kOhm Active 🛃	Generator power Grid power	7,27 kW 6,80 kW 7,27 kW 20,84 kW	 Set the insulation resistance of configure it using the "+/-" buttons.
					Yields Today	95,4 kWh	 Activate 3-phase monitoring for hardware support by
						Data export	ticking the checkbox.
	Set Grayed entries are not avail	uble for the logged in u	ser, the current country se	Back etting or the device t	уре	^	 Set the entries by clicking the "Set" button.
	Figure 31. Cor	nfigure the	operation set	ttings		v	<i>Note:</i> Observe the further information in the comments box below.

MAC address: 00:04:A3:63:D8:1B Data received: 26.08.2016, 14:49:48

State

Grid n

Yields

00 kW

Active

Back

Feed-in m

Live values

7,28 kW 6,74 kW 7,21 kW

► Data

✓ During activation you can enter the internal power limitation or configure it using the "+/-" buttons according to the specified range.

- When activating password protection, a change can only be made if the unit-specific password is entered.
- ✓ Set the entries by clicking the *"Set"* button.

Figure 32. Configure the internal power limitation name: Type: or 39.0 TL3 33,30 kW nominal power, three КАСО 🔇 Network address: 192.168.104.225 MAC address: 00:04:A3:63:D8:1B Data received: 26.08.2016, 14:48:48 Software V3.25 xer: I Monthly Wei Power control over 4DI activation State Feed-in mod Activation Active 🗌 Status message Found Modul on Slot 1 Live value 7,28 kW 6,83 kW 7,19 kW Yields 95,4 kW Set Back Figure 33. Configuring the external power limitation

name: Type: lor 39.0 TL3 33,30 kW nominal power, three-phase

Network address: 192.168.104.225

Software V3.25

RS485 address

Serial number:

Note: External power limitation is only possible if the extension module is installed and when it is supported by the hardware. You can obtain this from KACO service.

- ✓ Activate the feature by clicking the checkbox.
- ✓ Note the status message with available extension module.
- ✓ Set the activation by clicking the "Set" button.

KACO 🔇

Power limitation

Set

Power limitation internal

Power lim. password protection

State

Live values

7,28 kW 6,83 kW 7,19 kW

95,4 kW

Back



User	Inverter inp	ut screen			
	Submenu iter	m – Externo	l power	limitatio	า
Ś	К А С О 📎	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal Network address: 192.168.104.225 Software version: V3.25	l power, three-phase	MAC addre 00:04:A3: Data receiv 26.08.201
& service partners	Dally view	Monthly view	Vearly	view 🛛	General vie
pai	Power control over	4DI power stage 0.	.3		
e		C	011234	Power	
Š	Power stage 0			100	5
sei	Power stage 1	6		60	%
	Power stage 2			30	5
sii	Power stage 3	5	1200	0	5
Installers					
Ist					
-					

Set

Operation and navigation

Note: When the extension module is installed, the individual power stages can be defined.

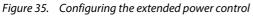
- Enter the power value in % or ✓ configure it using the "+/-" buttons.
- Repeat the configuration for every other channel.

Figure 34. Defining input channels 0 ... 15 for power limitation

ACO New energy.	8 Serial number: 39.0TL01000021	192.168.104.225 Software version: V3.25	Da	:04:A3:63:D8:1B ta received: .08.2016, 14:48:48	
Daily view	Monthly view	Yearly view	Gen	eral view 🕴 🎏 Cor	ifiguration
EPC (Enhanced Pov	ver Control)			State	
Fallback power			1000 %	Feed-in mode	
Timeout			300 s	Live values	
				Generator power	7,28 kW 6,83 kW 7,19 kW
				Grid power	20,79 kW
				Yields	
				Today	95,4 kWh
					► Data export
Set			Back		

Note: The EPC function contains a quick power measurement output.

- \checkmark Enter the fallback power in ⁰/00 or configure it using the "+/-" buttons.
- ✓ Enter the timeout in seconds or configure it using the "+/-" buttons.
- \checkmark Set the entries by clicking the "Set" button.



KACO New energy.	1 Serial number: 173305	10.50.0.123 Software version: V3.06	00:04:A3:35:29:87 Data received: 26.08.2016, 08:26:52	
1 Daily view	Monthly view	Vearly view		F Configuration
Reactive Power Cont	rol	cos-phi const. Q const.	State	
RPC (Reactive Power Con	ntrol)	Cos-phi(P/Pn) Q(U) 5 Samples Q(U) 2-State	Schutzabschaltung	Einbruch 2.5V
			Live values	
			Generator power	0,00
			Grid power	0,00
			Yields	
			Today	0,0
				► Da
Set			Back	

Note: The reactive power mode can be selected in accordance with the set country configuration.

- Select the reactive power \checkmark mode via the dropdown menu " \checkmark " field.
- \checkmark Set the selection by clicking the "Set" button.

Note: This mask is not available for RPO inverters



-	ter inp	ut screen				Operation and navigation
КАС	0 Solution	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 KW nominal power, three-phase Network address: 192,166,104,225 Software version: V3.25	MAC address: 00:04A33:63:D8:18 Data received: 26.08.2016, 14:48:48		Note: The RPO unit series include pre-defined setting for reactive p supply during twilight and at nig
Q fix pari Q fix pari Faliback	Reactive Power ameter ameter excitation time		So 0 %(QPn) under excited ♥ So 0 5	State Freed-in mode Live values Generator power Grid power Vields Today	fguration 7,28 kW 6,33 kW 7,19 kW 20,79 kW 20,79 kW 95,4 kWh € € Data report	 ✓ Enter the Q-Fix parameter configure it using the "+, buttons. ✓ Select Q-Fix parameter excitation via the dropdor menu "√" field. ✓ Enter the fallback time o configure it using the "+, buttons. ✓ Set the selection by click the "Set" button.
Subme KAC		Device name: Powador 39.0 TL3 R5485 address: 8 Serial number:	type: 33,30 KW nominal power, three-phase Network address: 192.108.104.225 Software verso:	MAC address: 0004043363308:18 Data recoved:	(Not for RPC	<i>O-inverters)</i> Note: The following screens relat the reactive power mode shown Figure 36.
Cos-phi Cos-phi	view constant	Monthly view		General view Con State Feed in mode Live values Generator power Grid power Vields Today	figuration 7,24 kW 6,76 kW 7,17 kW 20,67 kW 95,4 kWh	 ✓ Configure the cos-phi vaset it using the "+/-" butt ✓ If necessary, specify as "cexcited" or "underexcited the dropdown menu "√ ✓ Set the entries by clickin <i>"Set"</i> button.
Figure	38. Cor	nfiguring th	∎ e "cos-phi constant"		bala orgont	
кос	O O	Device name: Powador 39.0 TL3 R5485 address: 1 Serial number: 173305	Type: 33,30 kW nominal power, three-phase Network address: 10.50.0.144 55/hure version: V4.03	MAC address: 00:1E:C0AC3F73 Data received: 28:02.2017, 11:44:03 Gameral view	figuration	 ✓ Configure the Q value or using the "+/-" buttons. ✓ Select the excitation via dropdown menu "√" fiel ✓ Set the entries by clickin
Q Const Q Excitation	tant	Monthly view	under excited	State Generator voltage too low Live values Generator power Grid power Vields	0,00 kW 0,00 kW 0,00 kW 0,00 kW	<i>"Set"</i> button.

Figure 39. Configuring the "Q constant" reactive power mode



Inverter i	nput screen				Operation and navigation
	Device name: Powador 39.0 TL3	Type: 33,30 kW nominal power, three-phas	e		Configure the cos-phi (P/Pn)
KACO	1	Network address: 10.50.0.144	MAC address: 00:1E:C0:AC:3F:73		✓ Enter the PT1 behaviour
	Serial number: 173305	Software version: V4.03	Data received: 28.02.2017, 11:46:03		(constant K, time) or set it
Daily view	Monthly view	Vearly view	😨 General view 🕴 📝 Cor	afiguration	using the "+/-" buttons.
Cos-phi (P/Pn)			State		✓ Enter the lock-in/lock-out
PT1 element K		1000 1/100	0 Generator voltage too low		voltage or set it using the "+/
PT1 constant time		5000 m	s Live values		buttons.
Lock-In voltage		184 V	Generator power	0,00 kW 0,00 kW	✓ Select the node of the
Lock-Out voltage		184 V	Grid power	0,00 kW 0,00 kW	characteristic or set it using t
Characteristic		Node 💽	Yields		"+/-" buttons.
Active	Cos Phi Ex	citation Powe		0,0 kWh	 ✓ If necessary, activate the nod
Ø	1.000	08	0		of the characteristic and
Set	Save parameter set	oad parameter set	Back		specify other parameters.
Grayed entries are n	not available for the logged in use	er, the current country setting or the d	evice type	^	Note: Only the last active node can b
					 ✓ Set the entries by clicking the "Set" button.
					<i>Note:</i> Observe the further information in the comments box below.
KACO	0	Network address: 192.168.104.225 Software version: V3.25	MAC address: 00:04:A3:63:D8:18 Data received: 26.08.2016, 14:48:48	ifiguration	time constants or set them using the "+/-" buttons. ✓ Enter the lock-in/lock-out
Q(U)10 Samples			State		voltage or specify it using the
PT1 element K	•	* - 1000 1/100	Feed-in mode		"+/-" buttons.
Settling time		2 5	Live values		✓ Enter the lock-in/lock-out tin
Lock-In power		20 %	Sn Generator power	7,28 kW 6,83 kW	or set it using the "+/-"
Lock-Out power		5 %	Sn Grid power	7,19 kW 20,79 kW	buttons.
Lock in time		30 s	Yields		 ✓ Enter the dead time or set it
Lock out time		30 s	Today	95,4 kWh	using the "+/-" buttons.
Dead time		0 m			 ✓ Enter the limit for the rising
Output gradient lim		60000 %/mir	· ·	Data export	output gradient in %/min or
Set		oad parameter set	Back		set it using the "+/-" buttons.
				\sim	
Figure 41.	Configuring the	e "Q(U) 10 nodes" r	eactive power mod	le	
Output gradient lim	itation increment	60000 %/mir		7,28 kW 6,83 kW	✓ Enter the limitation for the
Output gradient lim	itation decrement	60000 %/mir	Generator power	6,83 kW 7,19 kW 20,79 kW	falling output gradient in
Minimum cos-phi G		0.000			%/min or set it using the "+/-
Minimum cos-phi G		0.000	Yields	95,4 kWh	buttons.
Minimum cos-phi G		0.000	i way	20/7 WWI	✓ Enter the minimum cos-phi
Minimum cos-phi G	24	0.000		Data export	factor for quadrants 1 or 4 or
Figure 42.	Configuring the	e "Q(U) 10 nodes" r	eactive power mod		set it using the "+/-" buttons (2-3 only available for
					bluestorage inverters) ✓ Set the priority mode (priorit

 ✓ Set the priority mode (priority is given to either reactive power Q or active power P)

APL_remoteaccess_via_ WebGui_Installer_190603



	screen			Operation and navigation
КАСО	Device name: Type: Vowador 39.0 TL3 33,30 kW nominal pow S5465 address: 192.108.104.225 ierial number: Software version: 19.0TL01000021 V3.25	er, three-phase MAC address: 00:04:A3:63:08:18 Data received: 26.08.2016, 14:48:48		 ✓ Select the active curve for Q(U) via the dropdown menu "√" field.
Q(U)10 Samples	Monthly view 📃 Yearly view	State	Configuration	Note: The active curve configuration can be reset using the "Reset" button.
Minimum cos-phi Q4 Priority mode Active curve Characteristic Active Reactive	C-Priorität Artive Kurve 1 Node te Q [%] Excitation 43.6 over-excited(o) ¥	Coop Coop	7,38 kW 6,33 kW 7,19 kW 20,79 kW 95,4 kWh	 ✓ Select the node of the characteristic or set it using the "+/-" buttons. ✓ If necessary, activate the node of the characteristic by ticking the checkbox and specify othe parameters.
	ameter set [Load parameter set]	Back	0 ode	Note: Only the last active node can be deactivated, or, only the first inactive node can be activated.
				 ✓ Export the Q(U) parameters to a file by clicking the "Save parameter set" button.
				<i>Note:</i> Saved parameters can be imported from a file by clicking the "Load parameter set" button.
				 ✓ Set the entries by clicking the "Set" button.
KACO S	Device name: Type: Powador 93.0 11.33,30 Wn nominal pow 5456 address: Network address: 1 10.50.0.144 Software version: 74.33 Monthly view	MAC address: 00:1E:C0:AC:3F:73 Data received: 28.02.2017, 11:48:33	Configuration	, ,
KACO Sevents	Powador 39.0 TL3 33,30 kW nominal pow Powador 39.0 TL3 View Nominal pow Rester Advances Network Advances 1 10.50.0.144 Schware version: View Monthly view Image: Vacarly view	MAC softras: 00:1E:CO:AC:3F:73 Data received: 28:02:2017, 11:48:33	Configuration	 <i>"Set"</i> button. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Enter the activation threshold
KACO Construction P(f) Operation mode Activation threshold	Powader 39.0 TL3 33.30 kW nominal pow RS485 address: Network address: 10.50.0.144 10.50.0.144 Serial number: Software version: V4.03 Worthly view Mode 2	MAC address: 00:LEC0:ACC3F:73 Data received: 28.02.2017, 11:48:33 Ceneral view State Generator voltage to: 50:20 Hz Live values	s low	 <i>"Set"</i> button. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Enter the activation threshold or set it using the "+/-" buttons. ✓ Enter the minimum and maximum deactivation
KACO E E E E E E E E E E E E E E E E E E E	d	MGC address: 00:1EC0CACG-F73 Data received: 28.02.2017, 11:48:33		 <i>"Set"</i> button. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Enter the activation threshold or set it using the "+/-" buttons. ✓ Enter the minimum and maximum deactivation threshold or set them using the "+/-"
KACO CONNECTION OF CONNECTION	Algorithm Constraints of the second sec	MGC address: 00:11EC60-ACSP:73 Data received: 22.02.2017, 11:48:33 Centrator voltage too So 20 Hz 47:50 Hz 0 S 0 %Hz 0 0 %Hz 0.00 S	0,00 kW 0,00 kW 0,00 kW	 <i>"Set"</i> button. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Enter the activation threshold or set it using the "+/-" buttons. ✓ Enter the minimum and maximum deactivation threshold or set them using the "+/-" buttons. ✓ Enter the deactivation time or set it using the "+/-" buttons.
K A C O Secury (1997)	Powsder 39.0 TL3 33.30 kW nominal pow Powsder 39.0 TL3 Newski additional pow Passe address: Passe additin pow Passe	MAC address: 00:1EC0:ACC-SF-73 Data received: 28.02.2017, 11:48:33 Cenerator volume Cenerator volume to 50:20 Hz 40 %/Hz 0:00 s 0 ms Cancel view Vields Today 0:00 s 0 ms	0,00 KW 0,00 KW 0,00 KW 0,00 KW 0,00 KW	 <i>"Set"</i> button. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Enter the activation threshold or set it using the "+/-" buttons. ✓ Enter the minimum and maximum deactivation threshold or set them using the "+/-" buttons. ✓ Enter the deactivation time or



r	Inverter inpu	t screen					Operatio	n and navigation
-	KACO	Device name: Powador 39.0 TL3 RS485 address: 1 Serial number: 173305	Type: 33,30 kW nominal power, Network address: 10.50.0.144 Software version: V4.03	N O	MC address: 00:1E:C0:AC:3F:73 Jata received: 8.02.2017, 11:49:03		i	Enter the transient time or se t using the "+/-" buttons. Enter the rising output
	Daily view	21 Monthly view	Vearly view			guration		gradient or set it using the "+
								buttons.
	Power reduction P(f)	51014		30.10J112	State Generator voltage too low		✓ E	Enter the falling output
	Deactivation time		*	0 s	^		C	gradient or set it using the "+
	Gradient			40 %/Hz	Live values	0,00 kW 0,00 kW		buttons.
	Intentional delay			0.00 s	Generator power	0,00 kW 0,00 kW 0,00 kW	✓ E	Enter the deactivation gradie
	Settling time			0 ms	Gild power	0,00 kW		or set it using the "+/-"
	Output gradient increase		60	0000 %/Min	Yields			outtons.
	Output gradient decrease			0000 %/Min	Today	0,0 kWh		Set the entries by clicking the
	Deactivation gradient			10 %/Min	~			<i>Set</i> button.
	Set			Back			Note: Ob	serve the further informatio
	Grayed entries are not availat	ble for the logged in us	er, the current country setti	ng or the device I	ype	\sim		nments box below.
	Figure 45. Con	figuring po	wer reductior	n P(f)				
		Device name: blueplanet 20.0 TL	Type: 3 20,00 kW nominal po	wer, three-phase	6		√ <u>s</u>	Select the operating mode v
	KACO 📎	RS485 address:	Network address: 10.50.0.171		MAC address: 54:10:EC:66:FA:60			he dropdown menu " \checkmark " field
	new energy.	Serial number:	Software version:		Data received:			Select the reference power v
	E p. t	173305	V5.50		08.03.2019, 10:01:50	anfigunation		the dropdown menu " \sim " field
	1 Daily view	31 Monthly view	Vearly view		General view 🛛 🔛 C	onfiguration		Select the evaluated voltage
	Power reduction P(U)				State			node via the dropdown mer
	Mode		Off		Feed-in mode			field.
	Reference power		Nominal power		Live values			
	Evaluated voltage		Pos. seq. voltag	je	Generator power	8,43 kW 8,45 kW		Select the Hysteresis mode vi
	Hysteresis mode		Off		Grid power	16,59 kW		he dropdown menu " \checkmark " field
	Deactivation gradient			100 %/min	Yields		✓	
	Deactivation time			0 ms	Today	153,0 kWh		Enter the deactivation gradie
	Output gradient limitation i	ncrease		65534 %/min				or using the "+/-" buttons.
	Output gradient limitation of	decrease	•••	65534 %/min				Enter the deactivation time o
	Set			Bao	k		ι	using the "+/-" buttons.
_	Figure 46. Con	figuring po	wer reductior	n P(U) I			*	
	касо 🔊	Device name: blueplanet 20.0 TL		wer, three-phase				Enter the increase and
	RHGU werergy.	RS485 address: 1	Network address: 10.50.0.171		MAC address: 54:10:EC:66:FA:60			decrease output gradient
		Serial number: 173305	Software version: V5.50		Data received: 08.03.2019, 10:04:20			imitation or using the "+/-"
	1 Daily view	31 Monthly view	385 Yearly view		General view 🛛 📝 C			outtons.
	Power reduction P(U)				State			Enter the setting time or usin
				100 Of Insis	 Feed-in mode 			he "+/-" buttons.
	Deactivation gradient		00	100 %/min	Live values			Select the characteristic node
	Deactivation time			0 ms		8,40 kw	C	or using toe "+/-" buttons.
	Output gradient limitation i			65534 %/min	Generator power Grid power	8,43 kW 16,61 kW		Activate curve and set voltag
	Output gradient limitation of Settling time	Jeciedase	88	65534 %/min 2000 ms			[% U _{nom}] and power limitation
	Characteristic		Node		Yields			% _{Pref}] by using the "+/-"-
			NOUE			153,0 kWh		outtons.
		age [% Unom]		Power [% Pre	enj			Set the entries by clicking the
		- 110.0			00 -			<i>Set"</i> button.
	Set			Bao	:k		-	
								serve the further informatio



	ut screen				Operation and navigation
KACO 🔊	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, three-phase Network address: 192.168.104.225 Software version: V3.25	MAC address: 00:04:A3:63:D8:18 Data received: 26.08.2016, 14:48:48		 ✓ Specify the gradient in % /mi or set it using the "+/-" buttons.
T Daily view	Monthly view			Configuration	✓ Activate the enabling
	an monthly view	Bas reany view	General view	Configuration	condition for the selected
Power rampup			State		gradient.
Gradient		10.0 %/Mir			-
After every connect			tive Live values		Note: Multiple selections possible.
After first connect			Generator power	7,28 kW 6,83 kW 7,19 kW	Cot the entries by disking the
After grid error			Grid power	20,79 kW	✓ Set the entries by clicking the
After P(f)		A	Yields		<i>"Set"</i> button.
			Today	95,4 kWh	
			-		
				► Data export	
Set			Back		
				\bigcirc	
Figure 48. Co	nfiguring po	wer rampup			
Grid paramet	ers				
	Device name:	Tune			✓ Select the user country via th
касо 🔊	Powador 39.0 TL3 R5485 address:	33,30 kW nominal power, three-phase Network address:	MAC address:		•
KACO New energy.	8 Serial number:	192.168.104.225 Software version:	MAC address: 00:04:A3:63:D8:1B Data received:		dropdown menu " \checkmark " field.
	39.0TL01000021	V3.25	26.08.2016, 14:55:25		 Acknowledge by clicking the
Daily view	Monthly view	🐷 Yearly view	General view 🛛 📝	Configuration	"Next step" button.
Country/Directive			State		 Specify further selection via
Country		Germany (DE)	Einspeisebetrieb		the dropdown fields and
Grid/Directive			Live values		acknowledge them step-by-
Nominal grid voltage			-	7,16 kW 6,67 kW	step by clicking the "Next step
Neutral conductor			Generator power Grid power	6,67 kW 7,10 kW 20,48 kW	button.
				20,40 KW	
			Yields	102.6 kWh	
			Today	102,6 KWN	
				► Data export	
		_		Data export	
		Ba	ck		
Next step		er, the current country setting or the devi	ce type		
	lable for the logged in use			0	
	ilable for the logged in use			$\hat{\downarrow}$	
Grayed entries are not avai		e country and grid t		\sim	
Grayed entries are not avai				¢	
Grayed entries are not avai	Device name: blueplanet 20.0 TL3	e country and grid ty	vpe/directive	Ŷ	<i>Note:</i> This function is available if the
Grayed entries are not avai	nfiguring the	e country and grid ty		¢	<i>Note:</i> This function is available if the software package supports it.
Grayed entries are not avai	Device name: blueplanet 20.0 TL3 R5485 address:	e country and grid ty Type: 20,00 kW nominal power, three-phase Network address:	ype/directive	¢	software package supports it.
Grayed entries are not avai	Device name: Device name: biografiant 20.0 TL3 PS485 address: 1 Serial number:	Type: 20,00 KW nominal power, three phase 20,00 KW nominal power, three phase 10.50.0.171 Software version: VS.50	ype/directive MAC address: 54:104C0667A60 Data record: 08.03.2019, 10:33:30	Configuration	software package supports it. ✓ Select the operating mode vi
Grayed entries are not avail Figure 49. Co KACO Sector	Device name: blueplanet 20.0 TL3 R5485 address: 1 Serial number: 173305 Monthly view	Type: 20,00 KW nominal power, three phase 20,00 KW nominal power, three phase 10.50.0.171 Software version: VS.50	MAC address: S4:10fCC667A:60 Data received: 06:03:20109, 10:30:30 General View	~	software package supports it. ✓ Select the operating mode vi the dropdown menu "√" field
Figure 49. Co	Device name: blueplanet 20.0 TL3 R5485 address: 1 Serial number: 173305 Monthly view	Type: 20,00 KM mominal power, three-phase Network address: 10,500,171 Software version: VS.50 Yearly view	MAC address: 54:10:ECG65FA:G0 Data received: 0:0:33:30 General view State	~	 software package supports it. ✓ Select the operating mode vi the dropdown menu "√" field ✓ Select the mode via the
Figure 49. Co	Device name: blueplanet 20.0 TL3 R5485 address: 1 Serial number: 173305 Monthly view	Provide the second seco	MAC address: S4:104Cc66FA.60 Data received: 06.03.2010 1033:30 General View C C State Feed-in mode	~	 software package supports it. ✓ Select the operating mode vi the dropdown menu "√" field ✓ Select the mode via the dropdown menu "√" field.
Figure 49. Co KACO Second	Device name: blueplanet 20.0 TL3 R5485 address: 1 Serial number: 173305 Monthly view	Provide the second seco	MAC address: StildCC66FA60 Data recived: 08.03.2019, 10:33:30 General view State Feed-in mode Live values	Configuration	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the
Figure 49. Co KACO Second KACO Second FRT (Fault Ride Thro Operation mode Setting Priority	Device name: blueplanet 20.0 TL3 R5485 address: 1 Serial number: 173305 Monthly view	Provide the sector of the sect	MAC address: 54:104C66F460 Data recover: 06.03.2019, 10:33:30 General view C C State Feed-in mode Live values Generator power	Configuration 8,40 kW 8,46 kW	 software package supports it. ✓ Select the operating mode vi the dropdown menu "√" field ✓ Select the mode via the dropdown menu "√" field.
Grayed entries are not avail Grayed entries are not avail Grayed entries are not avail Figure 49. Co K A C O Co K A C O Co Figure 49.	Device name: biosplanet 20.0 TL3 R5483 softes: 1 Serial number: 173305	Provide the second seco	MAC address: S4:104C:667460 Data recovering 08:03:2019, 10:33:30 General View I I C Feed-in mode Uve values Generator power Grid power	Configuration	 software package supports it. ✓ Select the operating mode vi the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field.
Grayed entries are not avail Grayed entries are not avail Grayed entries are not avail Figure 49. Co K A C O Correction mode Setting Priority Reference voltage Constant K positive seque	Device name: biosplanet 20.0 TL3 R5463 defess: 1 Serial number: 173305 Monthly view Dugh)	Con Nanual Con Con Con Con Con Con Con Con Con Con	MAC address: S4:104C:667460 Data recoved: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grd power Viekds	Configuration 8,40 kW 8,46 kW	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage of the select the reference voltage of the select the select
Grayed entries are not avail	Device name: biosplanet 28.0 TL3 R5483 defees: 1 Serial number: 173305 Monthly view Dugh)	Con Manual Con Manual Con Con Con Con Con Con Con Con Con Con	MAC address: Stil04C66FA60 Data received: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grd power Viekds Today	Configuration 8,40 kW 8,46 kW	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage or set it using the "+/-" buttons.
Grayed entries are not avail Constant R positive sequ Constant K positive sequ Constant K negative sequ	Device name: biosplanet 28.0 TL3 R5483 defees: 1 Serial number: 173305 Monthly view bugh)	Con Manual React. curr. priority	MAC address: Stil04C66FA60 Data received: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grd power Viekds Today	Configuration 8,40 kw 8,46 kw 16,60 kw	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage of set it using the "+/-" buttons. ✓ Enter constant K positive-
Grayed entries are not avail Constant R constant K positive sequ Constant K negative sequ	Device name: biosplanet 28.0 TL3 R5483 defees: 1 Serial number: 173305 Monthly view bugh)	Country and grid ty Type: 20,00 km ominial power, three-phase Picture address: 10,500,171 Software version: V5,50 Vearly visuv On Manual React. curr. priority Co On	MAC address: Stil04C66FA60 Data received: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grd power Viekds Today	Configuration 8,40 kw 8,46 kw 16,60 kw	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage of set it using the "+/-" buttons. ✓ Enter constant K positive-phase system drop/increase
Grayed entries are not avail Constant R constant K nogative sequ	Device name: biosplanet 28.0 TL3 R5483 defees: 1 Serial number: 173305 Monthly view bugh)	Country and grid ty Type: 20,00 km ominial power, three-phase Pictrock address: 10,500,171 Sys.50 Vearly visuv On Manual React. curr. priority Curr 0	AC address: Stil02C66FA60 Data received: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grid power Viekds Today	Configuration 8,40 kw 8,46 kw 16,60 kw	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage of set it using the "+/-" buttons. ✓ Enter constant K positive-phase system drop/increase set it using the "+/-" buttons.
Grayed entries are not avail Constant R constant K positive sequ Constant K negative sequ	Device name: biosplanet.28.0 113 R5483 defess: 1 Serial number: 173305 Monthly view Dugh)	Construction of the second sec	AC address: Stil02C66FA60 Data received: 08.03.2019, 10:33:30 General View State Feed-in mode Live values Generator power Grid power Viekds Today	Configuration 8,40 kw 8,46 kw 16,60 kw	 software package supports it. ✓ Select the operating mode via the dropdown menu "√" field. ✓ Select the mode via the dropdown menu "√" field. ✓ Select the priority the dropdown menu "√" field. ✓ Enter the reference voltage or set it using the "+/-" buttons. ✓ Enter constant K positive-

✓ Enter the dead band in % or set it using the "+/-" buttons.



Inverter i	nput screen				Operation and navigation
KACO Control Control	A and a number: 173305 Monthly view Monthly view voltage voltage urrent only	Type: S0,00 kW nominal power, three phase Network address: 10.500.019 Software version: V5.57 V tearly view Center 192 V 264 V Off V Mode 2 V 2 2 V 2 2 V	MAC address: 54.10.FC:66:FA:60 Data roce/red: 03.06.2019, 09:22:26 al View @ Configura State Fead-in mode Live values Generator power Grid power Vields	tion 35,46 kW 34,82 kW	 ✓ Enter the minimum/maximu operating voltage or set it using the "+/-" buttons. ✓ Switch "dynamic reactive power only" on or off via the dropdown menu "√" field. ✓ Select the dead band mode withe dropdown menu "√" field. ✓ Enter zero current threshold for under and over voltage or set it is a set of the drop over set of the drop over set over the drop o
Zero current thresh Reactive current lim Minimum support tin	old over voltage itation ne	RT (Fault Ride Throug	Today	\$	 set it using the "+/-" buttons. ✓ Enter reactive current limitation in % I_{max} or set it using. ✓ Enter maximum support time or using the "+/-" buttons. ✓ Set the entries by clicking the "Set" button.
K A C O	RS485 address: Ne 8 19 Serial number: Sol	2.168.104.225 00:0 tware version: Data	address: 443.363:E08:18 received: 		<i>Note:</i> The following screens can be configured to meet country-specific requirements.
Connection com Maximum grid volta Maximum grid volta Maximum grid frequ Connection time Set Figure 52.	ge je ency	Vearly view Cener 284 V 294 V 294 V 299 V 295 0010 Hz 9010 Hz 47.50 Hz 1 s	Al View Configure	xtion 7,28 kw 6,83 kw 7,19 kw 20,79 kw 95,4 kwh ● Cuta export	 ✓ Enter the maximum and minimum restart voltage or sit using the "+/-" buttons. ✓ Enter the maximum and minimum restart frequency of set it using the "+/-" buttons. ✓ Enter the restart time in sec. ✓ Set the entries by clicking the "Set"-button.
KACO	Device name: blueplanet 20.0 TL3 RS485 address: 1 serial number:	ype: 80,00 kW nominal power, three-phase letwork address: Mi 10.50.0.149 00 Ordiware version: Da	C address: 04043352987 ta received: 032019, 135534 al view Z Configure	tion	<i>Note:</i> The following screens for 1- or 2 stage trip limits are not displayed if Powador-protect are activated.
Device settings Device settings Device settings Device settings Transfaces Device control Device c	sns s Marthrough) Anditons s I stage 2 stage 2 stage 2 stage 2 stage 2 stage 9	Logout	State Temperature in unit too high Live values Generator power Grid power Vields Today	0,00 kW 0,00 kW 0,00 kW 0,0 kWh	



Inverter inp	ut screen				Operat	ion and navigation
К А С О 📎	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 KW nominal power, three-pl Network address: 192.106.104.225 Software version: V3.25	ase MAC address: 00:04:4.316.31DB:1B Data received: 26.08.2016, 14:48:48		√	Configure the undervoltage trip-off value or set it using the "+/-" buttons.
Daily view	Monthly view	Yearly view	📰 General view 🛛 🕅 Co	nfiguration	\checkmark	Configure the undervoltage
Undervoltage trip-of	f		State			trip-off time or set it using the "+/-" buttons.
Undervoltage		20	V Feed-In mode		\checkmark	
Undervoltage time	ndervoltage time 2.00 s	s Live values	Live values		Set the entries by clicking the <i>"Set"</i> button.	
			Generator power	7,28 kW 6,83 kW 7,19 kW		Set button.
			Grid power	20,79 kW		
			Yields			
			Today	95,4 kWh		
				Contraction of the local division of the loc		
				Data export		
Set			Back	Data export		
	Device name: Powador 39.0 TL3 R545 address: 8 S340 runber: 39.0 TL01000021	Type: 33,30 kW nominal power, three-pi 192,108.104.225 Software version: V3.25	ase MAC address: 000404.3163.008:18 Data record: 26.081.2016, 1448048 General View State	^	✓ ✓	Configure the overvoltage trip- off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons
Figure 54. Co KACO Second	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, three-pl Network address: 192.106.104.225 Software version: V3.25	ase MAC address: 00014/33/53/2018/18 Data recovers: 26.08.2016, 14-181-18 General View State	0	✓	off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons.
Figure 54. Co KACO Second Duly view Overvoltage trip-off	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Tips: 33,30 kW nominal power, three-pl Network addmic: 192,168,104,225 Software version: V3,25	ase MAC address: 00604A3503DB:1B Deta recover1: 26.0B.2016, 144804B Comparison of the second of	ofiguration		off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons. Set the entries by clicking the
Figure 54. Co KACO Server Daty view Overvoltage trip-off Overvoltage	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 KM nominal power, three-pl Helenoid address: 192,164,104-225 Software version: V3,25 Va.25 Varity view 264	ase MAC address: 0004/A2163.100:18 Data received: 26.08.2016, 14.40:40 Co General view State Feed in mode Live values Generator power	oflypration 7,28 SW 6,83 SW 7,19 SW	✓	off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons.
Figure 54. Co KACO Server Daty view Overvoltage trip-off Overvoltage	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 KM nominal power, three-pl Helenoid address: 192,164,104-225 Software version: V3,25 Va.25 Varity view 264	ase HAC address: 00:014:A3:63:00:18 Data received: 36.08.2016, 14-10:40 General view State Feed in mode Live values	oflyuration 728 SW 283 SW	✓	off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons. Set the entries by clicking the
Figure 54. Co KACO Server Daty view Overvoltage trip-off Overvoltage	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 KM nominal power, three-pl Helenoid address: 192,164,104-225 Software version: V3,25 Va.25 Varity view 264	ase MAC address: 0004/A2163.100:18 Data received: 26.08.2016, 14.40:40 Co General view State Feed in mode Live values Generator power	oflypration 7,28 SW 6,83 SW 7,19 SW	✓	off value or set it using the "+/- " buttons. Configure the overvoltage trip- off time or set it using the "+/-" buttons. Set the entries by clicking the

Figure 55. Configuring 1-stage overvoltage trip-off



Back

- ✓ Configure the underfrequency trip-off value or set it using the "+/-" buttons.
- ✓ Configure the underfrequency trip-off time or set it using the "+/-" buttons.
- ✓ Set the entries by clicking the "Set" button.

Set



User	Inverter input	screen			Operat	ion and navigation	
	K A C O 📎	8 192.168.104.225 00:0 Serial number: Software version: Data		MAC address: 00:04:43:5:03:108:18 Data received: 26:08:2016, 14:48:48	53:D8:18 sd:		Configure the overfrequency trip-off value or set it using the "+/-" buttons.
	Daily view	Monthly view Searly view Gener		General view 🛛 🔛 Cor	ral view 🛛 🖉 Configuration		Configure the overfrequency trip-off time or set it using the
	Overfrequency trip-off			State			"+/-" buttons.
	Overfrequency	52.00 Hz		Feed-in mode		\checkmark	Set the entries by clicking the
	Overfrequency time		200) S		7,26 KW 6,33 KW 7,19 KW 20,79 KW 95,4 KWh P Data report	·	<i>"Set"</i> button.
	Figure 57. Confi	guring 1-	stage overfrequency	/ trip-off			
	К А С О 📎	Device name: Powador 39.0 TL3 RS485 address: 8 Serial number: 39.0TL01000021	Type: 33,30 kW nominal power, three-phase Network address: 192.108.104.225 Software version: V3.25	r, three-phase MAC address: 00:04:153:03:00:18 Data reconved: 26:06:2016. 19:480:18		✓	Enter the parameters for fast undervoltage trip-off or set it using the "+/-" buttons.
	Daily view	Monthly view Searly view Searly view		General view 🛛 📰 Co	Configuration		Enter the parameters for slow
	Undervoltage trip-off			State			undervoltage trip-off or set it

State

Live va

Yields

MAC address: 00:04:A3:63:D8:18

Data received: 26.08.2016, 14:48:48

State

Feed-in m

Live values

Grid po Yields 7,28 kW 6,83 kW 7,19 kW

95,4 kW

184 V

0.20 s

184 V

0.20 s

Back

264 V

0.10 s

264 V

0.10 S

-

.....

....

Figure 58. Configuring 2-stage undervoltage trip-off

RS485 address:

Device name: Type: Powador 39.0 TL3 33,30 kW nominal power, three-phase

Network address: 192.168.104.225

.....

.

Software V3.25

using the "+/-" buttons. Set the entries by clicking the "Set" button.

APL_remoteaccess_via_ WebGui_Installer_190603

Undervoltage trip-off

Undervoltage fast

Undervoltage time fast

Undervoltage slow

Set

KACO 🔇

Overvoltage trip-off

Overvoltage time fast

Overvoltage slow

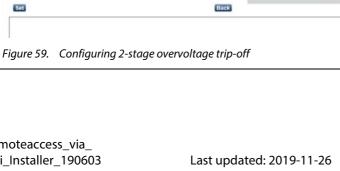
Set

Overvoltage time slow

Overvoltage fast

Installers

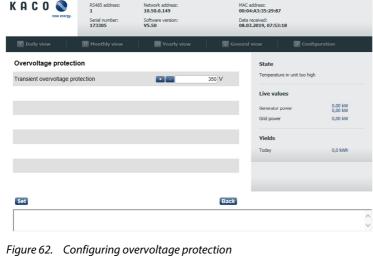
Undervoltage time slow



- \checkmark Enter the parameters for fast overvoltage trip-off or set it using the "+/-" buttons.
- \checkmark Enter the parameters for slow overvoltage trip-off or set it using the "+/-" buttons.
- Set the entries by clicking the ✓ "Set" button.



Inverter inp						
	ut screen				Operation	on and navigation
KACO rev energy. RS485 address: 8 Serial number:	Powador 39.0 TL3 RS485 address: 8	Type: 33,30 kW nominal power, three Network address: 192.168.104.225 Software version: V3.25	-phase MAC address: 00:04:A3:63:D8:18 Data received: 26:08.2016, 14:48:4			Enter the parameters for fast underfrequency trip-off or se it using the "+/-" buttons.
Daily view	Monthly view	🔜 Yearly view	General view	M Configuration		Enter the parameters for slow underfrequency trip-off or se
Underfrequency trip)-off		State			it using the "+/-" buttons.
Underfrequency fast		4	50 Hz Feed-in mo	de		Set the entries by clicking t
Underfrequency time fas	st		20 s Live val	ies		"Set" button.
Underfrequency slow		4	50 Hz Generator	7,28 kW 6,83 kW 7,19 kW		Set button.
Underfrequency time sk	w		20 S Grid power	20,79 kW		
			Yields			
			Today	95,4 kWh		
				Data export		
Set			Back			
				^		
KACO New energy.	RS485 address: 1 Serial number: 173305	Network address: 10.50.0.171 Software version: V5.50	MAC address: 54:10:EC:66:FA:60 Data received: 08.03.2019, 10:50	40		overfrequency trip-off or set using the "+/-" buttons.
Daily view	Monthly view	SS Yearly view	🗑 General view	Z Configuration	\checkmark	Enter the parameters for fast
Overfrequency trip-	off		State			time overfrequency trip-of o
Overfrequency fast	511	+ - 51	.50 Hz Feed-in mo	le		set it using the "+/-"-buttons
Overfrequency time fast	l.		.10 S Live val	105		Enter the parameters for slov
			.50 HZ Generator	8,43 kW		
Overfrequency slow				8,40 kW		overfrequency trip-off or set
Overfrequency slow	v		.10 S Grid power	16,60 kW		overfrequency trip-off or set using the "+/-" buttons.
	v	•••	.10 S Grid power	0,70 KW		using the "+/-" buttons.
	v		.10 S Grid power Yields	0,70 KW	✓	using the "+/-" buttons. Enter the parameters for slow
	v		.10 S Grid power	16,60 kW	\checkmark	using the "+/-" buttons. Enter the parameters for slow time overfrequency trip-of o
	v		.10 S Grid power Yields	16,60 kW	\checkmark	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons
	W		.10 S Grid power Yields	16,60 kW	✓ ✓	using the "+/-" buttons. Enter the parameters for slow time overfrequency trip-of o set it using the "+/-"-buttons
Overfrequency time slow	N		10 s Grid power Vields Today	16,60 kW	✓ ✓	using the "+/-" buttons. Enter the parameters for slo time overfrequency trip-of c set it using the "+/-"-buttons Set the entries by clicking th
Overfrequency time slow	W		10 s Grid power Vields Today	16,60 kW	✓ ✓	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th
Overfrequency time slov		stage overfreque	10 S Grid power Vields Today Back	16,60 kW	✓ ✓	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th
Overfrequency time slov	onfiguring 2-s	stage overfreque	Back	16,60 kW	*	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th <i>"Set"</i> button.
Overfrequency time slow	onfiguring 2-s	Stage overfreque	erphase	16,60 kW	✓ ✓ ✓	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th <i>"Set"</i> button. Enter the parameter for
Overfrequency time slov	Device name: bueplanet 20.0 TL3 R9458 address: 1 Serbi number:	Type: 20,00 kW nominal power, the Network address: 10.500.149 Software version:	Contempose	153,0 kWh	✓ ✓ ✓	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th <i>"Set"</i> button. Enter the parameter for transient overvoltage
Overfrequency time slow	Denfiguring 2-s Device name: blueplanet 20.0 TL3 R5455 address: 1	Type: 20,90 KW nominal power, the Network address: 10,500,149	IO S Grid power Vields Today Back Back Pency trip-off MC address: 00:04-A3:35:29:87	153,0 kWh	√ √ √	Enter the parameters for slow time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking the "Set" button. Enter the parameter for transient overvoltage protection or set it using the
Overfrequency time slow	Device name: bueplanet 20.0 TL3 R9458 address: 1 Serbi number:	Type: 20,00 kW nominal power, the Network address: 10.500.149 Software version:	Contempose	153,0 kWh	√ √	using the "+/-" buttons. Enter the parameters for slov time overfrequency trip-of o set it using the "+/-"-buttons Set the entries by clicking th <i>"Set"</i> button. Enter the parameter for transient overvoltage



"Set" button.



r_	Inverter inp	ut screen	Operation and navigation
	KACO Area comp.	Device name: Type: Powedor 39.0 TL3 33,30 KW nominal power, three-phase Powedor 39.0 TL3 Set advess: NAC advess: 1 10.50.0.144 OniECOAC39:73 Set anumber: Software version: Data received: 13305 V4.03 Vearly view Casteral view Configuration	 ✓ Enter the upper threshold for the 10 minute mean value or set it using the "+/-" buttons. ✓ Enter the shutdown value for the voltage drop between the
	10 min. average 10 min. average Votage drop meter/invert Overvot: average passw 	ord protection Active C Generator power 0.0 Grid power 0.0 Vields	 with a voltage drop between the inverter and the feed-in meter or set it using the "+/-" buttons. ✓ Set the entries by clicking the <i>"Set"</i> button.
	K A C O 📎	Device name: Type: Powador 30.011 333,30 kW nominal power, three-phase RS485 address: Network address: 8 192,166,104,225 90:0414,353,308:18 Setal number: Software version: 39.011.01000021 V3.25 26.08,2016, 144,4848	Warning: This dialogue window is used to return all of the modified parameters to their factory defaults.
	T Daily view	Monthly view Stearly view General view Z Configuration	✓ Reset the parameters using the "Set" button.

Feed-in mo

Live val

Yields

Back

7,28 kW 6,83 kW 7,19 kW 20,79 kW

95,4 kWh

▶ Data e

Installers

Set para

neters back to factory defaults

Figure 64. Restoring the factory defaults

Application instructions - Remote access to the inverter vi



Inver	ter inp	ut screen				
Uploa	d/down	load				
КАС	O New energy.	Device name: blueplanet 20.0 TL3 RS485 address: 1 Serial number: 173305	Type: 20,00 kW nominal powe Network address: 10.50.0.171 Software version: V5.50	МА 54 Da	AC address: k:10:EC:66:FA:60 ta received: 803.2019, 11:02:53	
1 Daily	view	31 Monthly view	Searly view	Final Senera	al view 🕴 📝 Cor	nfiguration
Up-/Dov	vnload				State	
	I service logfiles	;	Down	load	Feed-in mode	
	service logfiles		Down	lload	Live values	
	- I parameter set		Dowr	nload	Generator power	9,51 kW
Documen	tation of a para	meter set	Dowr	nload	Grid power	9,53 kW 18,69 kW
Upload pa	arameter set		Brow	/se		
					Yields Today	153,0 kWh
					rouay	100,0 KWIT
				Back		
Figure	65. Per	forming an	upload/down	nload		
Figure	65. Per	forming an	upload/down	lload		
_		Device name: Pevwador 39.0 11.3	Type: 33,30 KW nominal power,	three-phase		
Figure K A C		Device name: Pevwador 39.0 11.3 R5415 dddess: 8	Type: 33,30 kW nominal power, Network address: 1921.108.104.225	three-phase MAC 0000	xážres: rA3.05106:18	
_	0 🔇	Device name: Powador 33-0 FL3 R5485 address:	Type: 33,30 KW nominal power,	three-phase 0000 Data	xddress: 6407e33308:18 6403:033308:18 8:2016, 14:48:48	
_	0 Q	Device name: Powador 39.0 FL3 Posta Subiess: 8 Senal number:	Type: 33,30 KW nominal power, Network address: 192.108.104.225 Software versor:	three-phase 0000 Data	received: 8.2016, 14:48:48	Aguration
K A C	O er range	Device name: Powador 39.0 TL3 R5455 Sabies: 8 Senta number: 39.0TL81000021	Type: 33,30 KW nominal power, Network siddess: 1921.168.10-223 Software version: V3.25	three-phase MACC 0000 Data 26.00	received: 8.2016, 14:48:48 al view 🛛 🖉 Cor	Afguration
K A C	O er range	Device name: Powador 39.0 TL3 R5455 Sabies: 8 Senta number: 39.0TL81000021	Type: 33,30 KW nominal power, Network siddess: 1921.168.10-223 Software version: V3.25	three-phase MACC 0000 Data 26.00	received: 8.2016, 14:48:48	Afguration
K A C	O er range	Device name: Powador 39.0 TL3 R5455 Sabies: 8 Senta number: 39.0TL81000021	Type: 33,30 KW nominal power, Network address: 1921.06.01.04.225 Software version: V3.23 Yearly view	three-phase MACC 0000 Data 26.00	received: 5,2016, 14:48:48 al view State Feed-in mode	afiguration
KAC Datly Up-/Do Downk	O er range	Device name: Powador 39.0 TL3 R9458 Sadress: 8 Sensi number: 39.0TL01000021	Type: 33,30 KW nominal power, Network address: 1921.06.01.04.225 Software version: V3.23 Yearly view	three-phase MACC 0000 Data 26.00	received: L2016, 14-48:48 al vitew 2 2 Cor State Feed-in mode Live values	7.28 kW
KAC Downk Downk Downk	0 See eegs.	Deven name: Powador 39.0 ft3 RS485 address: B Serial number: 39.0110.1000021	Type: 33,30 kW nominal power, Network address: 1921.06.104.235 Software version: V3.25 V0.275	three-phase MAC:0 Data 26.00 Reference ad ad ad	received: 5,2016, 14:48:48 al view State Feed-in mode	
KAC Downk Downk Downk	0 See eegs.	Device name: Powador 39.0 FL3 Rostla sadoss: 8 Social number: 3 Stortholy view Upload parameter ou want to overwrite	Type: 33,30 kW nominal power, Network address: 1921.06.104.235 Software version: V3.25 V0.275	three-phase MAC:0 Data 26.00 Reference ad ad ad	Received: B.2016, 14:48:48 Il view Received Control State Feed-in mode Live values Generator power	7,28 kW 6,83 kW 7,19 kW

APL_remoteaccess_via_

WebGui_Installer_190603

Figure 66. Upload/download – warning message

peration and navigation

lote: This feature allows you to save g files and parameters. In addition, arameters can also be imported.

- \checkmark Download service log files by clicking the button.
- \checkmark Download service log files without yield data by clicking the button.
- \checkmark Download a parameter set by clicking the button.
- View Documentation of parameter for Print or PDF-Export by clicking the Button
- \checkmark Load a parameter set by clicking the button.

Note: Before transferring the parameter set, the same country setting must be set on all devices.

- \checkmark Parameters that affect each other during the first import can lead to an error message. In case of error repeat import.
- \checkmark After importing a parameter set, the correctness of all parameters must be checked.

/arning: Parameters are overwritten uring an upload process. **lote:** Backup the active parameters efore performing an upload.

- \checkmark Confirm that you wish to upload the parameters by clicking the "Confirm" button.
- \checkmark You can return to the previous selection screen by clicking the "Back" button.



User	Inverter input screen	Operation and navigation
	Software update	
	Device name: Powador 39.0 TL3 Type: 33.30 KW nominal power, three-phase KAC QUE Setsi Address: 8 Network address: 192.166.104.225 MAC address: 0004043/633.001:18 Setsi Aurber: 39.0TL01000021 System version: V3.25 Date reserved: 26.0B.2016, 14:55:33	Note: Please note the info to Software- Update package below V5.50 via Web- GUI*
	Daily view Monthly view Software update State	✓ By activating "Switch to SW update mode", the changeover
	Software update Switch to SW update mode Peed in mode Update mode state SW update possible Live values Generator power Grid power	to the inverter's own update menu will take place. ✓ The update mode state message indicates whether a
	Vields Today	software update is currently possible.
	Bask	Note: After updating the device, delete the browser cache and the Java cache and restart your web browser.
	Figure 67. Performing the software update	Note: Refer to the update steps detailed in chapter 4.

* In the Software update for packages < V5.50 via WEBGUI, the update with the Google Chrome browser from versions > V64 can be reported to the following error "Another user is logged to the system. Only one session is supported by the system.", in this case, another browser, such as Firefox, Microsoft Internet Explorer or the Microsoft Edge, should be used.

4 Carrying out a single update

i

NOTE

Ensure that the inverter has an active DC power supply when remote access is active. It is only possible to update all of the inverter's components to the most current software version in this operating state. Furthermore, any USB storage media which may be connected to the unit must be removed.

Preparing for the software update

- 1. Download the software update file (.KUF) from the KACO web site and store it on your hard disk.
- » Perform software update.



NOTE

The update can take several minutes. The "Operating" LED flashes during the update process. The inverter may restart several times.

The following message appears if the DC power supply is too low: "DC power supply too low! Perform update anyway?".

Application instructions - Remote access to the inverter

via web user interface



	ACCESS DATA
i	For the remote update, use the user-dependent access data: User name: user Password: 000000 (default setting) User name: admin
(i)	Bootloader below V3.28:4-digit, serial number dependent password*Bootloader V3.28 and higher:8-digit, serial number dependent password**) This password is required to reset the password for the user account "user" to 000000 (default).

Inverter input screen × 🖹 KACO new energy ← → C 🗋 10.50.0.113 ೦☆ = Checksum: F99D Login as Version: 3.20 КАСО 🔇 Networ DHCP IP Address: 010.050.000.113 MAC Address: 00:1E:C0:AD:F7:3A Serial nur 173305 Login Please input username and password to login user Password: Login

Operation and navigation

- ✓ The access data stated above: Enter user name and password into the *framed free-text* sections.
- ✓ Confirm the entry with the *"Login"* button.

Figure 68. Authorisation dialogue

KA	CO N	DHCP	configuration:	Checksum: F99D IP Address: 010.050.000.113	Login as: user MAC Address: 00:1E:C0:AD:F7:3A	
Ŀ	.ogout Sc	ftware Update	Network Conf	figuration Password	Configuration	
Inverte	ers to be upd	ated				
Inverte Index	Address		Software Version	Device Type	Serial Number	
	-		Software Version	Device Type 1TL200	Serial Number 173305	
Index 1	Address 010.050.000 select softwar			1TL200		

- ✓ Open the folder containing the saved software-update file by clicking the "Choose file" button.
- ✓ Run the update by clicking the "Start" button.



Inverter input screen

касо	New energy.	Version: 3.20 Network cor DHCP Serial numb- 173305		Checksum: 8873 IP Address: 010.050.000.113	Login as: user MAC Address: 00:1E:C0:AD:F7:3A	
Logout	Start	Application	Software Update	Network Configuration	n Password Configuration	1
		Software Device				
Index Address		Version Type	Serial Number	Update Sta	itus	

Operation and navigation

✓ Check the status display of the completed software update for each software component.

Note: Once the software update is complete, you can switch to the main page (inverter file view) by clicking the "Reload" button. This switch takes place automatically after a while.

Note: The error (red) displayed in the figure on the left is the rule for all units without an AFCI module.

Check the software version

1. Once the update has been completed successfully, check the current software version of all installed components.

» The inverter displays the version of the software that is currently loaded in the upper area of user interface.

5 More information



NOTE

Information concerning the specific functionality of menu entries can be found in the operation manuals on our homepage.

5.1 Available functions

Inverter - series	Available fu	unctions according	to software package
	WEBGUI2 9 Year 2019 -	Single update via web-interface	
Powador 6.0 - 20.0 TL3 blueplanet 15.0 - 20.0 TL3	V5.50	V4.00	-
Powador 30.0 -72.0 TL3	V5.54	V4.00	V3.25
blueplanet 50.0 TL3 WM	V5.54	V4.00	V3.34
blueplanet 3.0 -10.0 TL3	V5.50	V4.00	-

Table 1. KACO inverter series that support all of the functions described

Key		
V5.x	new Features	Features / Functions' / Password protection; Features / Functions' / Enhanced Island Detection /Up-/Download' / Documentation of a parameter set / Grid parameters / Overvoltage protection
x.yz	released	
-	in preparation	Single update Remote update of the inverter possible

new energy.



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