CS141 User Manual English

UPS WEB/SNMP MANAGER

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1. Introduction

The CS141 line is a series for special administration of systems in critical resource management for technical institutions. All devices maintain the same core functions as devices with SNMP properties.

CS141 devices get UPS status messages via SNMP and execute information messages and warnings. These are delivered to specific clients and are also displayed in the web browser for verification.
It is also possible to shut down and reboot configured clients. This is performed by RCCMD – A Software which hast to be installed separately on a client.

Additional informations about RCCMD are stored on our website www.generex.de if you navigate to products -> Software -> RCCMD or in the download area to documentation -> Software -> RCCMD.

This manual describes the core functions and the functions of additional hardware as well.

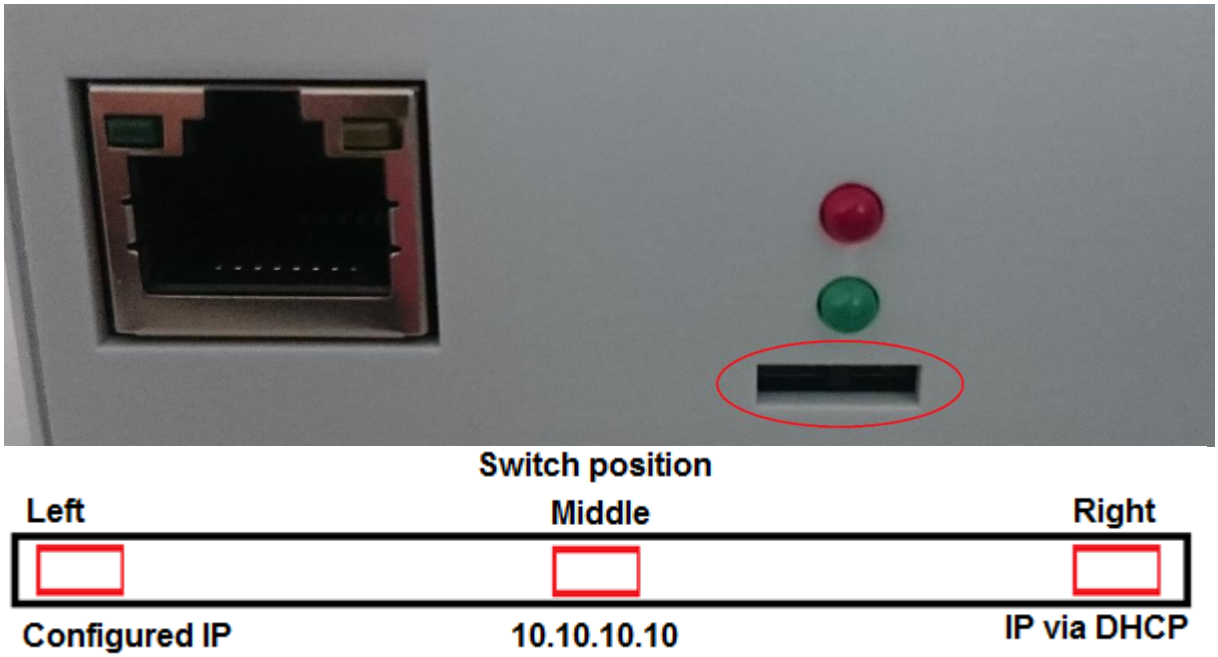
The structure and configuration of CS141 are universal. The adaptation and configuration has to be done similar to the UPS models of worldwide leading manufacturers, which all use different professional terminology. Therefore, this manual can't describe all different variants. Different expressions, screens and described details may have to be interpreted correspondingly.

The CS141 is the successor of the triumphant CS121. Beside an upgraded technology more functions and possibilities are added to the devices.

2. Changes in comparison to predecessor CS121

The menu architecture was remodeled completely. The easier-to-handle-interface allows a massive performance boost in comparison.
While the CS121 needed a reboot after changing the configuration, it is no longer necessary with the CS141. Changes in configuration will be written in the system within seconds.

The CS141 has two additional user accounts, engineer and guest. These accounts have restricted rights. The engineer may change the UPS model, create jobs but cannot change system settings like email settings, time server or network configuration. He can look at the log files. The guest can only view the UPS status, firmware and uptime.
Both DIP-Switches have been removed. Instead there is only one Switch on the device on the front. If the position of the switch is changed, a reboot has to be initialized. For slot cards it is not necessary to remove the card for changing the switch position.



A Firmware update can now be done via Drag & Drop in the browser. It is not longer necessary to use a Windows environment with activated FTP services. A user-initiated reboot is also not necessary.
If there occur problems with the firmware, an update can be performed without a login. Enter the IP address of the device followed by /update. After successful admin authentication you may update the firmware and also perform a factory reset. This will **not set back** the configured IP address.

The default password for **admin** is **cs141-snmp**. Use this account for first setup.
The default password for **engineer** is **engineer**.
The default password for **guest** is **guest**.

Default Auto-Logout is enabled (15 min). After this time spawn of inactivity the user will be logged out. If you want to change these settings go to Setup -> System -> Settings.
The power consumption is less compared to the predecessor despite being 10 times faster.

3. Modell overview

Modell overview:

Device	Function	Remarks
CS141L	SNMP adapter	external adapter
CS141SC	SNMP adapter	Slot Adapter for UPS with slot
CS141LM	SNMP adapter	External adapter with MODBUS output (RS485)
CS141SCM	SNMP adapter	Slot adapter with MODBUS output (RS485)
CS141BL	SNMP adapter	External adapter BUDGET-Modell (No COM2- and AUX-port)
CS141BSC	SNMP adapter	Slot adapter BUDGET-Modell (No COM2- und AUX-port)
CS141R_2	SNMP adapter	Slot adapter for PILLER/CTA/RIELLO/AROS UPS Italy
CS141MINI	SNMP adapter	Slot adapter for UPS models with MINI Slot

Additional devices based on CS141:

Device	Function	Remarks
BACSKIT_B4	Battery management	External adapter
BACSKIT_BSC4	Battery management	Slot adapter

Device	Features	Supported UPS devices
CS141L	Additional Mini DIN 8 COM Port for RS232. AUX Port for Digital Input/Output. Remote RAS Management optional.	Over 1400 UPS modells from over 80 different manufacturers are supported
CS141SC	Additional Mini DIN 8 COM Port for RS232. AUX Port for Digital Inpuit/ Output. Remote RAS Management optional.	All devices with basic slot SC
CS141LM	Additional Mini device. AUX Port for Digital Input/ Output.. Remote RAS Management optional.	Over 1400 UPS modells from over 80 different manufacturers are supported
CS141SCM	Additional RS485. AUX Port for Digital Input/ Output. Remote RAS Management optional.	All devices with basic Slot SC
CS141BL	Slot Budget variant of the CS141. UPS Management via LAN. No AUX Port for floating contacts. No COM2 Port for Pipe-through, sensors, etc.	Over 1400 UPS modells from over 80 different manufacturers are supported
CS141BSC	Slot Budget variant of the CS141. UPS Management via LAN. No AUX Port for floating contacts. No COM2 Port for Pipe-through, sensors, etc.	All devices with basic Slot SC
CS141R_2	Additional Mini DIN 8 COM Port for RS232..	Riello and Aros UPS with Netman Slot
CS141MINI	Additional Mini DIN 8 COM Port for RS232.	UPS devices with MINI Slot (Soltec, Voltronic, etc)

All CS141 are able to manage UPS deviceswhich are deposited in the nativ serialprotocol and are easy to implement in already existing SNMP systèms. All models maintain an own web server with customizable event management for automatical job execution based on the UPS status. This includes emailing, RCCMD messages and shutdown commands, log file entries, shutdown the UPS, graphical log files and wake up commands for already sutted downed clients (Wake On Lan).

Additionally, all devices can be customized individually for scheduling events and job executions (f.e. Battery Tests, calibration, shutdown/ restore). A wide selection of network management features for informing and alerting users and also configuration of other SNMP devices and power ressource management with RCCMD are possible.

Every adapter has two years of guarantee and free updates for three years.

4. Delivery content

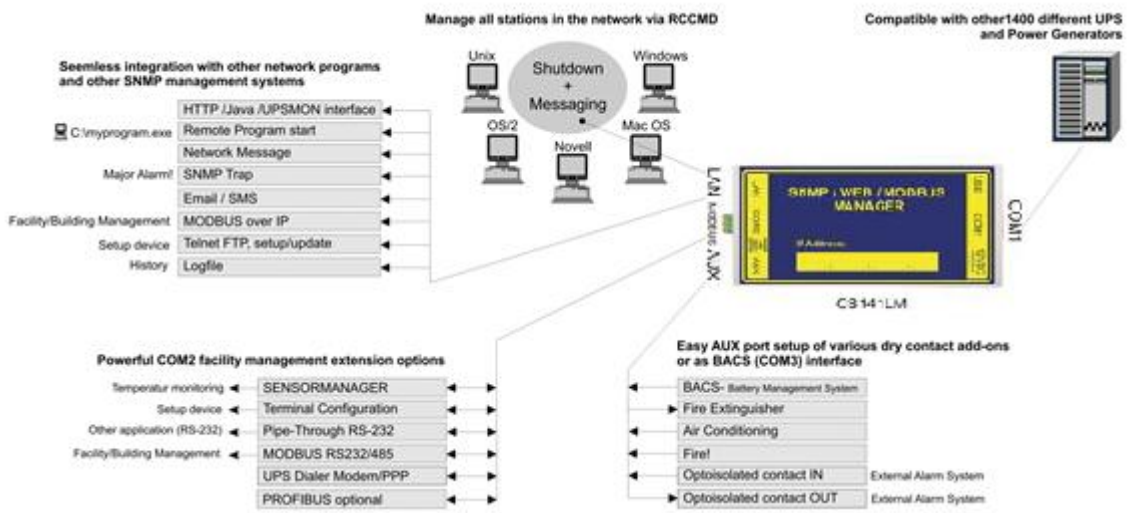
The CS141 adapter comesdefault with a network adapter unit with additional hard- and software (Please note that not all features are included in the BUDGET version).

Product	**Included components**				
	External power supply	User manual on CD	Mini-DIN-8 Connector (MODBUS)	RS-485 Via COM2	Rescue Jumper
CS141L	X	X	X		X
CS141SC		X	X		X
CS141LM	X	X		X	X
CS141SCM		X		X	X
CS141BL	X	X			X
CS141BSC		X			X
CS141R_2		X	X		
CS141MINI		X	X		

5. Function overview

In SNMP mode the CS141 uses an inbuild Simple Network Management Protocol (SNMP) Software Agent. This agent exchanges get/set-commands and forwards trap messages to preconfigured receipents. These trap messages can inform the user about critical situations of the UPS (f.e. switching on battery mode). Additionally, the adapter is able to send RCCMD signals (Remote Control Commands). Clients, which have installed RCCMD can execute certain jobs. Especially the Shutdown and Restore are essential.

Also, controlling the UPS is via web uinterface is possible (f.e. switching to Bypass mode). RCCMD is a seperate licensed software.



6. Scope of functions of CS141

SNMP Adapter: The SNMP adapter is a compact unit requiring minimal workspace (28x69x126 mm for the external adapter). The slot card versions of the adapter get inserted into the extension slots of UPS models supporting such a card type.

SNMP-Traps for remote monitoring and pre-alarming: The main function of the SNMP-adapter is the transmission of alarm conditions of the UPS to the monitoring station (SNMP traps and RCCMD traps/commands). It also makes UPS data for users in the network upon request available. With this function, it is possible to retrieve and monitor e. g. battery capacity of an UPS from a SNMP management station. The event settings configuration menu also allows for SNMP trap testing.

Remote Control: With this function it is possible to switch the UPS to Bypass (depending on the model) or start battery tests. This remote command is executed either via the Network Management Station or the UPS Management Software or any web-browser.

Works with all major NMS: The CS141 works with most, widely used Network Management Systems. All SNMP systems, which either allow the compilation of the MIB or already incorporate MIB RFC 1628 for UPS Systems, can be used with the adapter.

Multiserver shutdown via RCCMD: The CS141 is able to initiate a network shutdown with any RCCMD modules from the UPS-Management Software. A TCP/IP based RCCMD signal will be send to all RCCMD clients in the network. This enables the remote shutdown of practically an unlimited number of client computers, independent of the operating systems of the clients. RCCMD is an optional part of the UPS-Management Software. Your UPS dealer is able to provide you with license keys for the RCCMD Software.

RS232 UPS Protocol Router – Pipe- through: The CS141 is able to transfer the UPS RS232 protocol on COM1 directly to COM2. This allows the use of additional monitoring software on COM2, while making extra hardware (RS232 Multiplexer) to multiply the UPS comport unnecessary.

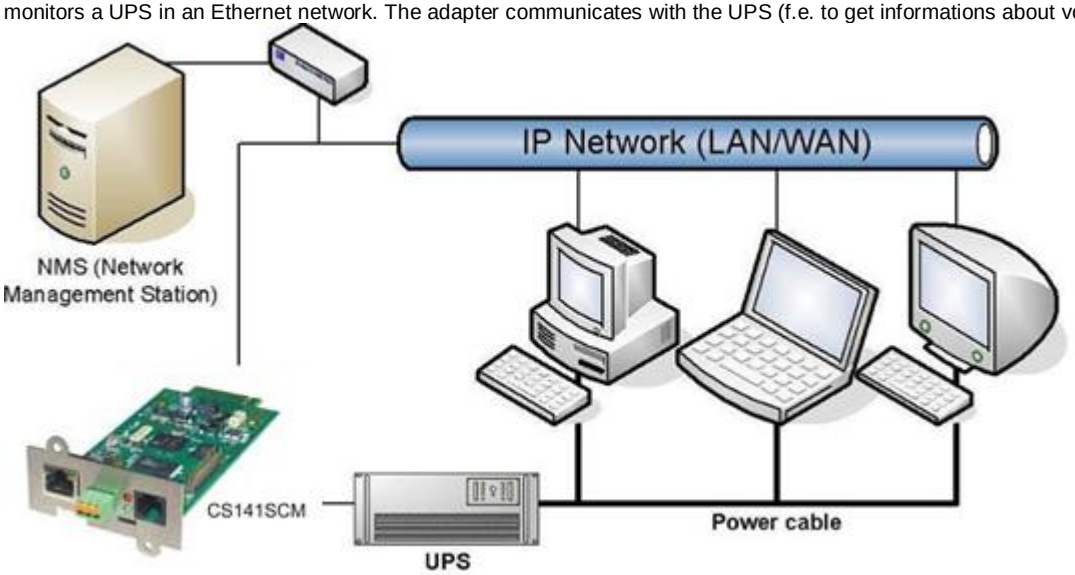
UPS cable: Please use the serial cable delivered by the UPS manufacturer to connect the CS141 with the UPS. If you use a contact-UPS use the specified cable. On any questions about the cables contact your UPS dealer.

Precisely log file: The CS141 maintains several own log files which (if you use a time server) records all events and alerts. This log file may be accessed through UNMS, UPSMAN, WebGUI and FTP. Also sorting the log and export as CSV-file is possible.

Email Client: The CS141 models include a Simple Mail Transfer Protocol (SMTP) compatible Email Client which is able to send emails automatically when an event occurs.

Web-server: The CS141 models maintain an own web server which shows all informations of the device. With UPSView also a graphic display of the data is possible. Accessing the web interface is possible with all common browsers (Internet Explorer / Edge, Firefox, Chrome, Safari etc.).

Network connection: A possible usage of the SNMP adapter is shown on the following picture where the SNMP adapter monitors a UPS in an Ethernet network. The adapter communicates with the UPS (f.e. to get informations about voltage).



MODBUS: Modbus is the de facto standard protocol in industry, which is used in facility management. All CS141 include a MODBUS over IP interface and MODBUS over RS232 (CS141L, SC) and RS485 (141L, SCM). The CS141 MODBUS device types possess a RS485 interface at COM2.

SNMP: The SNMP (Simple Network Management Protocol) is an Internet standard protocol to monitor devices over IP networks and is defined and standardized in RFC specifications. UPS devices are generally using as MIB the RFC 1628 specification which defines UPS specific devices.

The adapter communicates via SNMP per UPS standard MIB RFC 1628. This MIB is supported by almost every SNMP software products. Therefore it is not necessary to insert an own MIB into the SNMP software. Systems which do not include this basic MIB can compilate the MIB RFC1628 which you can download from our website.

For this you copy the MIB file into the MIB folder of your SNMP station and compile this file. Before that, search for a UPSMIB in the MIB2 tree. This should be a RFC1628 standard MIB.

UPSTCP: The easiest way to communicate with the adapter is TCP. The CS141 includes UPSTCP, which provides a complete API interface for integrating the adapter into your network. This interface is delivered on request to software manufacturers to

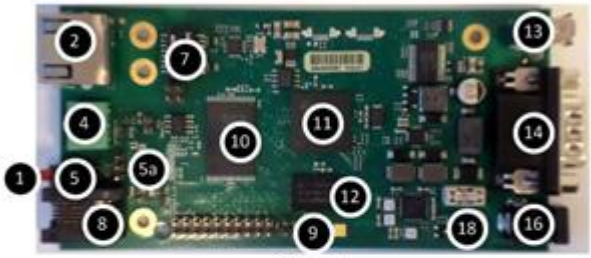
enable own integration. All other users utilize TCP for accessing the web interface (UPSVIEW, UPSMON, UNMS) or SNMP or MODBUS over IP.

7. Port occupancy

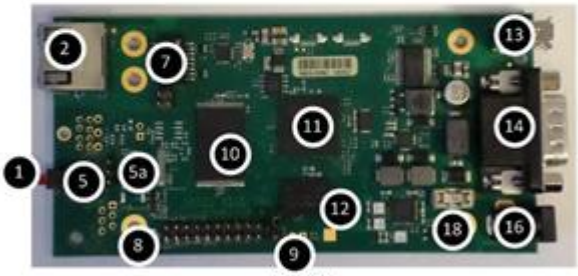
1. Slide-Switch for network configuration
2. Network Interface
3. COM2 MINIDIN Connector for RS232
4. COM2 Phoenix Connector for RS485
5. Green and Red Status LED
6. AUX Interface
7. PoE Header
8. Debug Adapter
9. Rescue Jumper: Open = Normal Boot, Close = Rescue Boot
10. NAND Flash
11. CPU
12. RAM
13. USB Interface
14. COM1
15. Slot Interface
16. Power Supply
17. DIP Switch
18. Fuse

CS141L

CS141SC


CS141LM

CS141SCM


CS141BL

CS141BSC

CS141MINI / CS141_R2

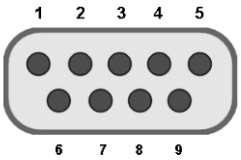
CS141MINI / CS141_R2

Important is here (9) – The Rescue jumper. If the system does not start correctly respectively does not show the web UI, several models offer to set here a jumper. If you do so, the adapter will boot another UI where you can reset the device to factory settings or perform a firmware upgrade.

More informations are found on 26) Rescue System.

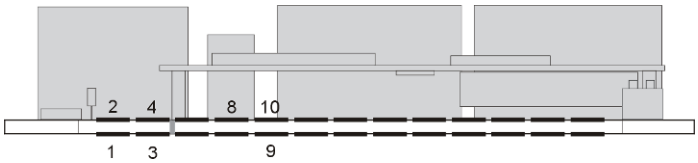
8. Port Description

Pin Layout CS121 COM1:



External D-SUB 9-polig male

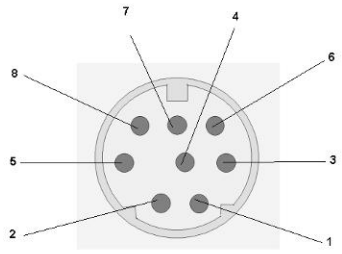
Pin1:	DCD	Pin6:	DSR
Pin2:	RxD	Pin7:	RTS
Pin3	TxD	Pin8:	CTS
Pin4	DTR	Pin9:	RI
Pin5	GND		



Slot version: Circuit board connection

Pin	Signal name	Pegel	Function
1	GND		Power Ground
2	8 – 34V DC		Power Input
3	COM1 TXD	V24	COM1 Transmit Data
4	COM1 RXD	V24	COM1 Receive Data
5	SW_GPIO_1 1) 2)	3,3V TTL	CS141DMINI: Funktionalität von DIP-Switch 1
6	SW_GPIO_2 1) 2)	3,3V TTL	CS141DMINI: Funktionalität von DIP-Switch 2
7	POW# Input 1)	3,3V TTL	Enable des Netzteils (active low)
8	Bridged with Pin 10		
9	GND		Signal Ground
10	Bridged with Pin 8		
11	COM1 DTR 1)	V24	COM1 Data Transmit Ready
12	COM1 RI 1)	V24	COM1 Ring Indicator
13	COM3 RXD 1) 2)	5V TTL	COM3 Receive Data
14	COM3 TXD 1) 2)	5V TTL	COM3 Transmit Data
15	COM2 TXD 1) 2)	3,3V TTL	COM2 Transmit Data
16	COM2 RXD 1) 2)	3,3V TTL	COM2 Receive Data
17-26	-		n.c.

1) Connectable with solder bridge (MINI: resistor bridge)
2) Input with Pull-Up



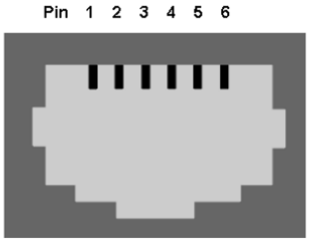
[redacted]Pin COM2 Mini-DIN 8 pol

Mini DIN 8 socket RS-232:

Pin1: -> DCD
Pin2: -> RxD
Pin3: -> TxD
Pin4: -> DTR
Pin5: -> DSR
Pin6: -> RTS
Pin7: -> CTS
Pin8: -> RI
ISO -> GND

RS-485 (optional):

Pin1 → GND
Pin2: -> RS485/A
Pin3: -> RS485/B(-)



[redacted]AUX-Port (Hardware Revision 1.1 = from Serial numbers 0121-1203, 0122-00198, 0123-00564 onwards) RJ11 6-pol

Pin1: -> +3,3V
Pin2: ->
Pin3: ->
Pin4: -> RxD (COM3 Input)
Pin5: -> TxD (COM3 Output)
Pin6: -> GND

9. LED status

Green LED	Red LED	Adapter
Off	Off	No power
Off	On	Booting
Off	Slow flashing	Updating
Off	Fast flashing	Update fault
On	On	Connection to UPS (external device) lost
Slow flashing	Off	Normal operation

On top of the physical LED status, you can have a look at the status bar. Here are several status informations shown – including the exact warning:

UPS: Ready

Green means everything is fine, communication is established and noproblems occur. If youdo not set a UPS model, the LED will also flash green.

UPS: Initializing

While establishing the connection, the LED will change to yeloow. Also,several warnings will switch the color to yellow.

UPS: Not Available

If the LED is grey, there is no communcation established. Check the cable and if you have set the correct UPS modell.

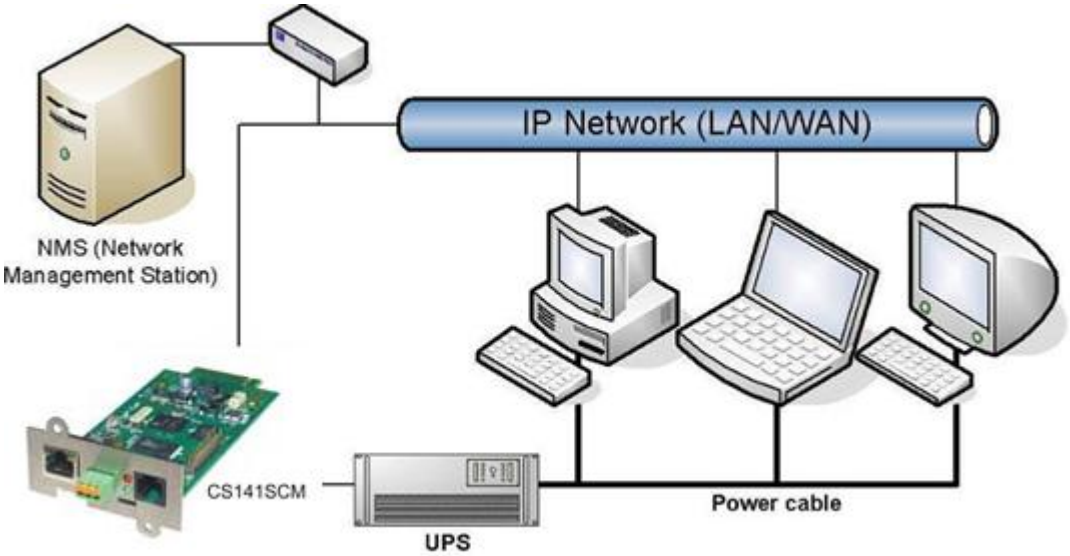
UPS: Temperature Bad

A red LED means there is an alert or critical condition. All kinds of alerts are shown here. Also, if the connection to the UPS is lost.

10. Integration of the CS141 in the network

Configuring the CS141 is only possible via web GUI of the adapter and via browser (Internet Explorer/ Edge, Chrome, Mozilla, Safari). Deactivate Proxys and Plugins which could interfere with the web GUI.

The typical integration of the CS141 into your network is seen on the picture below:



For configuration you may use a LAN cable or a cross cable, according to the PC/Notebook network adapter. For first installation we recommend to not use any hub or switch.
Recommended settings of the client for configuring the CS141:

IP address	10.10.10.11
Subnet mask	255.255.255.0
Gateway	10.10.10.11 (will be removed automatically afterwards)
DNS	empty

When the adapter answers a PING command, you can open the preconfigured IP address in your browser.

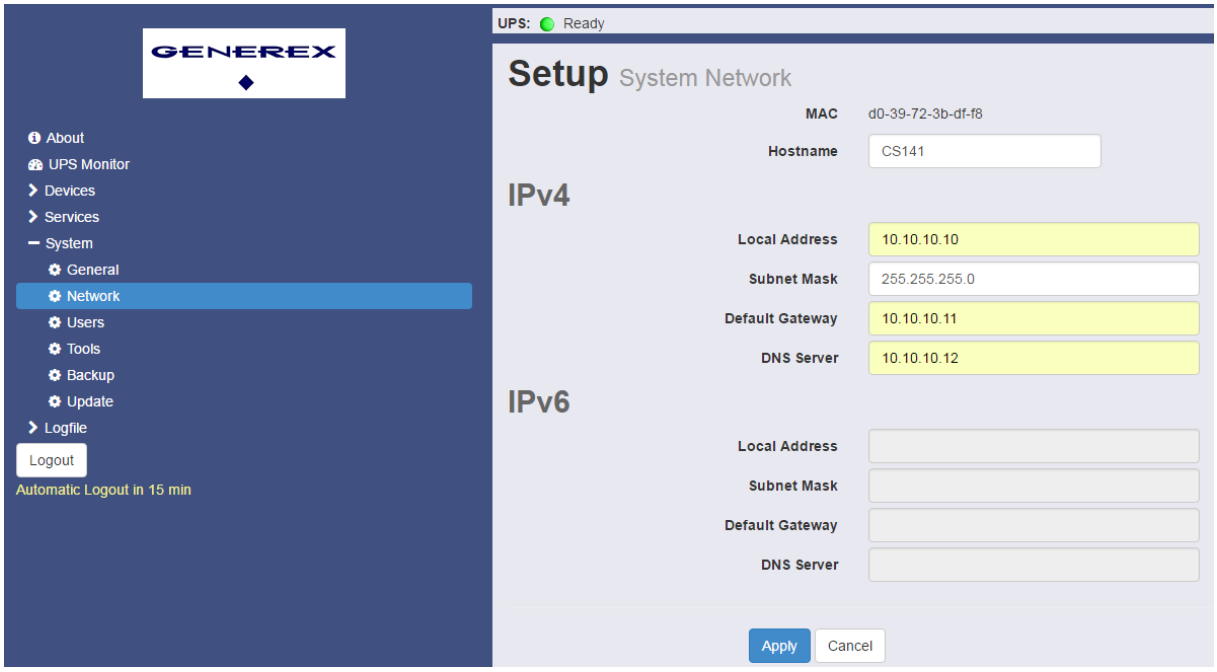
Different response intervals do not show an issue. Because of differently designed UPS protocols the adapter will not answer every PING with the same priority. Only if a permanent timeout occurs it is an issue.

Setting a static IP is explicitly recommended, because the adapter may be configured for multiple server shutdowns with RCCMD and it may happen that the DHCP server stops working. Also, it is possible to restrict sending RCCMD messages to specified IP addresses.

To access the system, login with admin user and password (Default: cs141-snmp). Go to Setup, then System and then network. Here you must enter a hostname. You can now enter the IP address, subnet mask and gateway as well. Optional you may enter a DNS server.

After changing the values, click on apply. If the Dip switch on the device has been changed, the CS141 will try to forward you to the new address. Perhaps you need to change the client IP.
If you want to change the switch later, you will have to use the reboot button in the web interface or disconnect the power supply of the CS141 for 5 seconds.

Important: All settings will be directly applied when you click on Apply. If you change the website or click on another menu entry, all changes you have made will be lost.



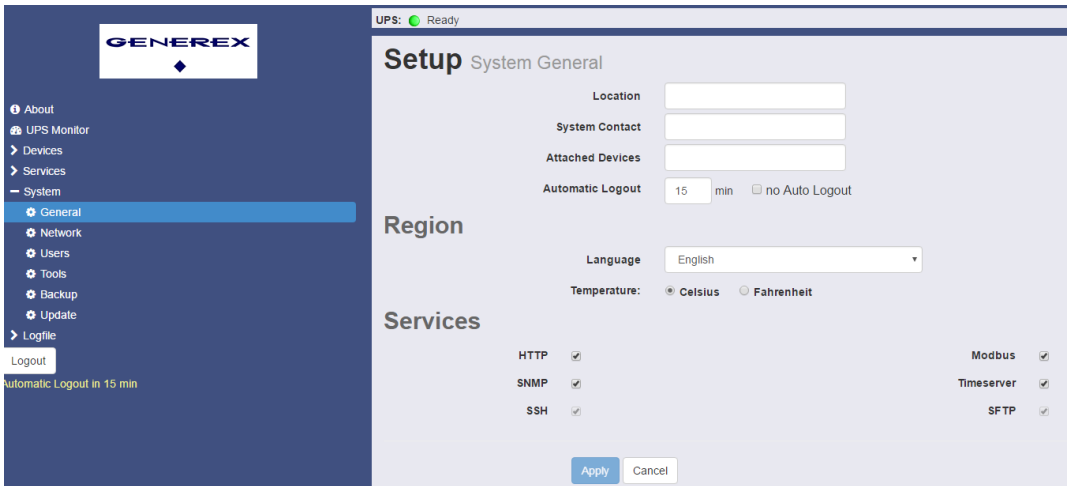
In Setup > System -> Settings you may enter informations for every user. These informations may also be received by UNMS.

a) Location means the exact location of your UPS device
b) System Contact is the administrator of the device.
c) In attached devices you enter the additional devices connected to the CS141 (f.e. BACS).

The marks at the services can be enabled or disabled. It is recommended to disable all services you do not want to use. All these services can be used to connect to the CS141.

The following languages are supported:

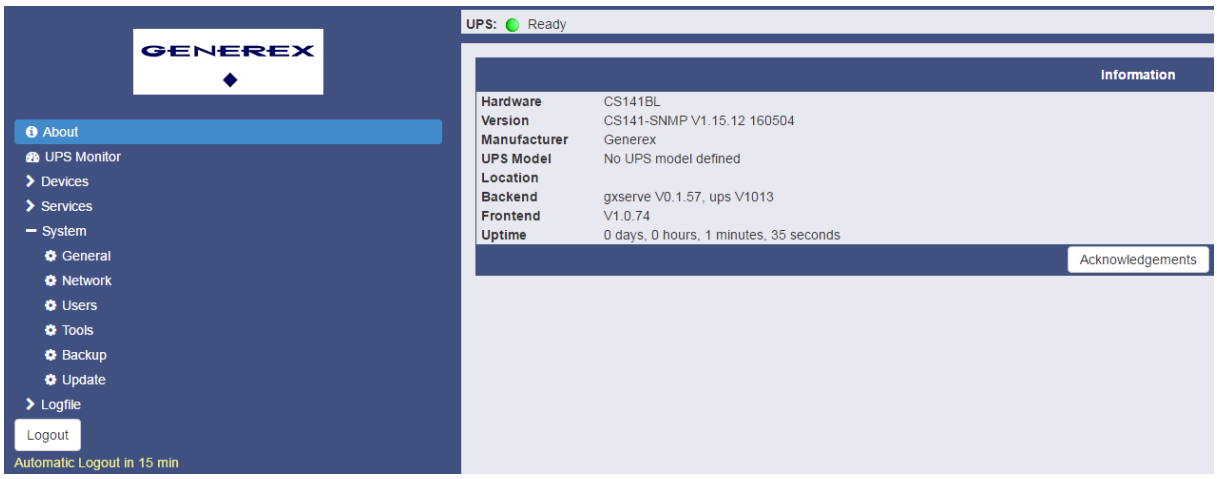
German, English, Chinese (Simple), French, Spanish, Polish, Portuguese
Terms that are not translated in the respective language appear in English. The display of the languages is accorded to your web browser.



11. Hardware and Firmware Informations

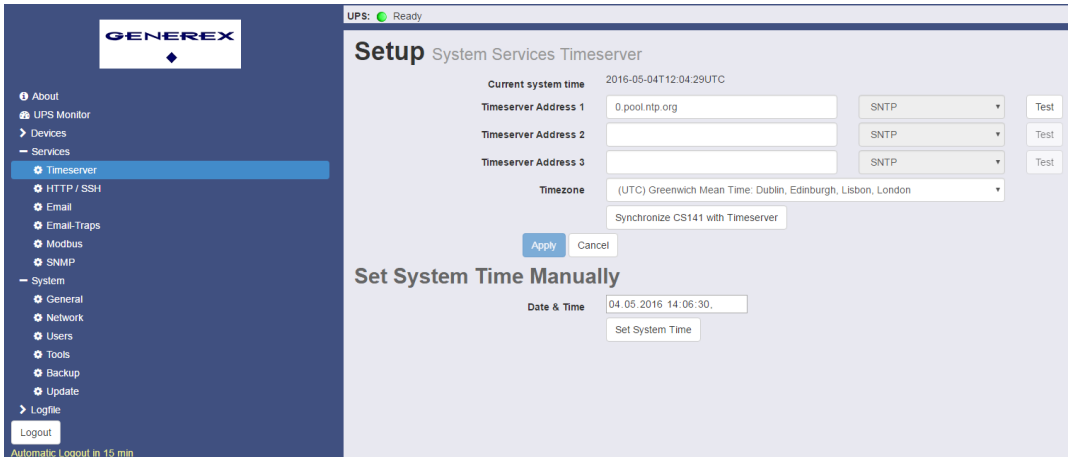
In case of (support) requests the informations from the **About** page are essential. Beside model and firmware version you may also see how long the device is running without interruption. On the Generex homepage you find in the download area the current version. The V-reference number shows the stable version, the six digit number the version date (yymmdd).

Note: If you boot the rescue system, you may recognize the **RESCUE** behind the version.



12. Timeserver configuration

In Setup -> System -> Services you can configure the time server. The current system time is displayed above. In the three fields you may enter up to three different time servers. They can be entered as addresses or IP addresses. You can also change the time zone. After that click on apply and afterwards on synchronize for applying all changes you have made. Alternatively you can set the system time manually.



If the CS141 is not connected to the internet or a time server in the network, you can also use a windows client as a time server:

a) Open **Run** via shortcut or **Windows-Key + R**.
b) Type in **regedit** and click OK.
c) Go to the following entry: *KEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32TimeConfig*
d) Set the value **AnnounceFlags** from **10** (alternative **a** in hex) to **5**.
e) Go to the following entry: *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer*
f) Set the value **enabled** on **1**
g) Close regedit and open run again. Type in **cmd** and click OK.
h) Enter the following command: *net stop w32time && net start w32time*
i) If you see any data, the client is ready for acting as NTP server. Maybe you have to open **UDP port 123 in the client firewall**. Afterwards, the client IP can be used as a time server.

Note: If you use a Windows client (Vista, 7, 8, 10) as a time server you have to download and install the NTP fix from Microsoft. If you use the server version, this is not necessary.

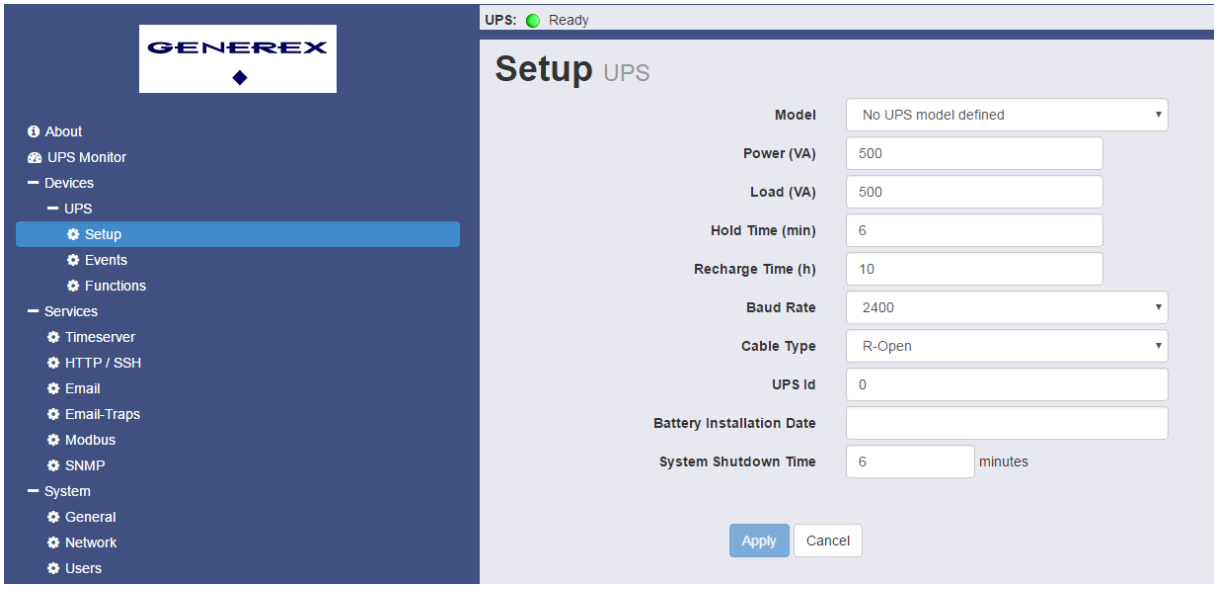
13. UPS selection

Go to Setup -> Devices -> UPS -> Setup. Choose your UPS model according to the list. If your UPS is not listed please contact your manufacturer who can give you an alternate model that you can choose from the list. If you haven't got any different informations about the baud rate do not change the values.
The value on system shutdown time shows the amount of time a system shutdown will be performed in case of powerfail.

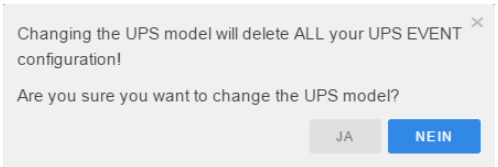
Important: If the wrong cable type is used **no communication** to the UPS will be established.

Warning: If you have a UPS with multiple modules the boot process may take a while (up to 5 minutes). The startup process **Initializing** must not be interrupted.

Please note the entry **System Shutdown time.** This value determines how many minutes before a complete battery discharge the event **System Shutdown** will be executed. This event us the last job which can be executed before the UPS will shut down. Do **not** use this event for sending RCCMD commands because the remaining time is not secure enough. Please use the event "**powerfail**" for this case.

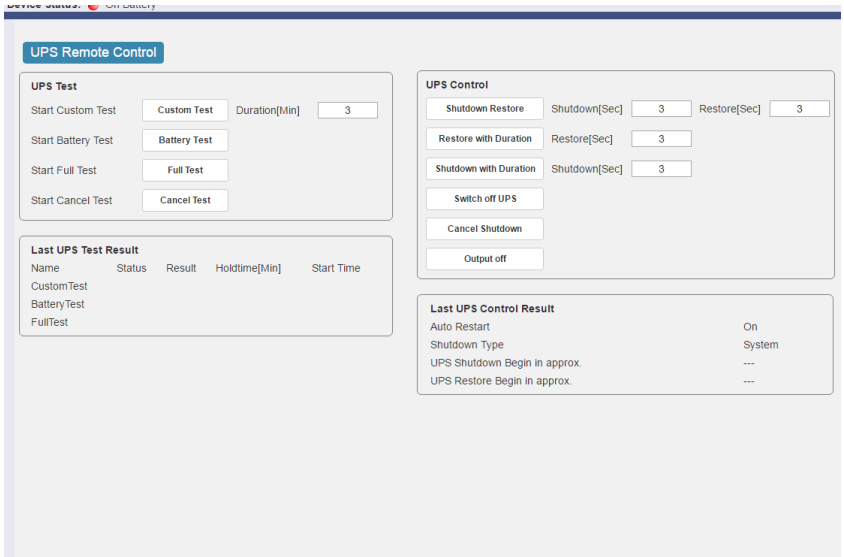


Note: If you change the model and you have configured events, all changes you made are lost.



14. UPS functions

The CS141 can be used as a remote control to initiate supported commands and tests. Please note that all shown functions and screens may differ from one model to another and can only be executed if the manufacturer has activated these for the device.



15. Email configuration

If you wish sending emails when specific events occur, you may go to System -> Services -> Email and configure the CS141 for these scenarios.

Enter the mail server as host name or IP. Choose the port and type of encryption. You may choose between *none*, *if available* and *forced*.

Enter a meaningful subject. This subject will be used for each email.
The CS141 admin account is optional. If you enter an address here, all emails will be additionally sent to this address.

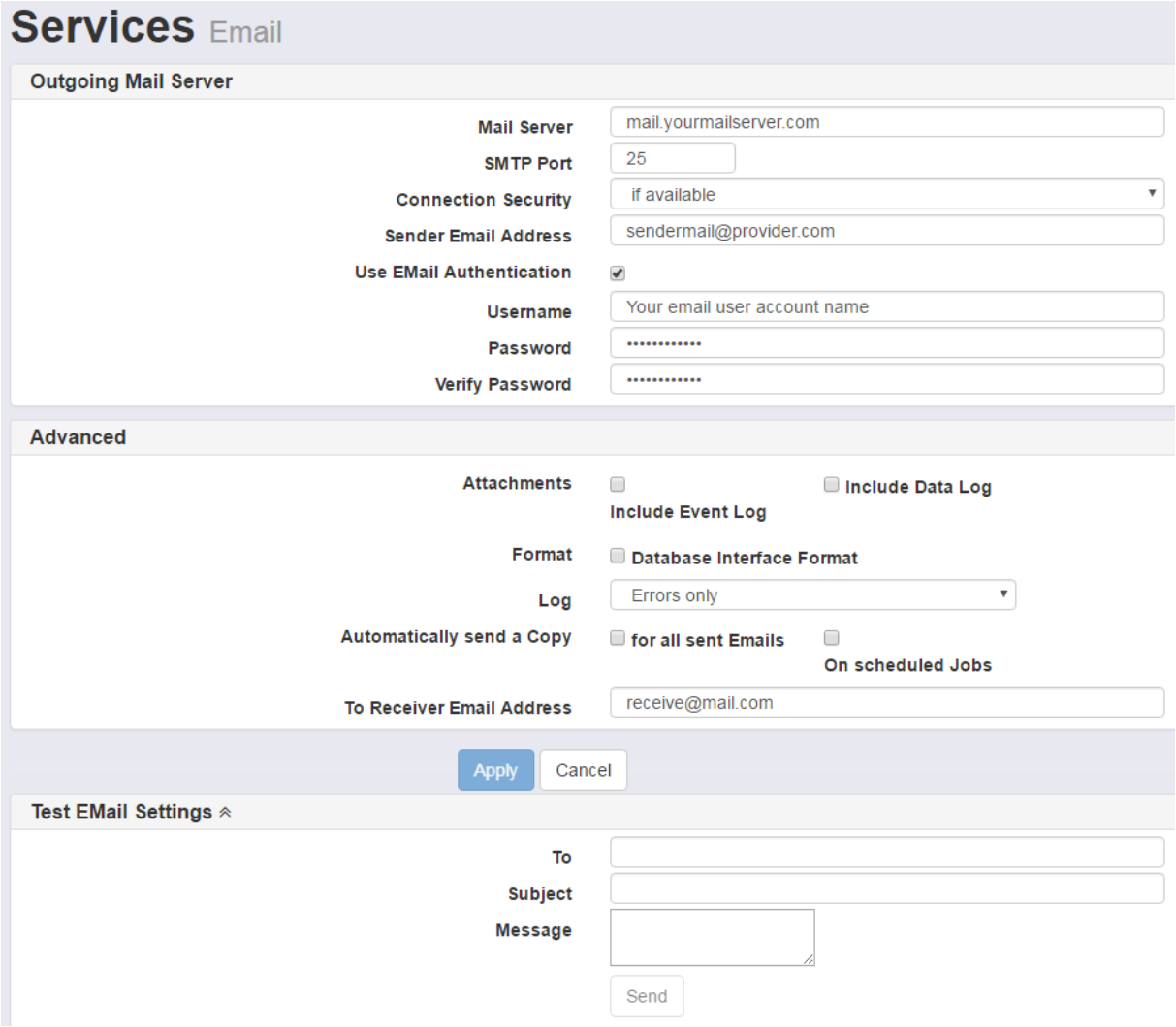
With the mark **Attach AlarmLog** the AlarmLog and UPSDataLog will be attached to every mail (as .csv-file). Additionally the mail includes the MAC-Address, UPS Model, UPS Location, IP address of CS141, system time and the executed event.

If you set the mark for Attach **DataLog to Email** all DataLogs will be attached to the mail. Optional, you can send the mails in the email database format.

You can choose to log all sent emails. You have the options to log *always*, *never* and *on errors*.

If you set the mark for Email Authentication, you have to enter validated user and password. The CS141 will check if you entered the password correct.

Now click on apply. You can now send a test email. Enter a recipient and a subject. Optional is sending a body text and attaching the log files.



16. Email traps

Email traps allows devices to transfer data over POP protocol to UNMS.

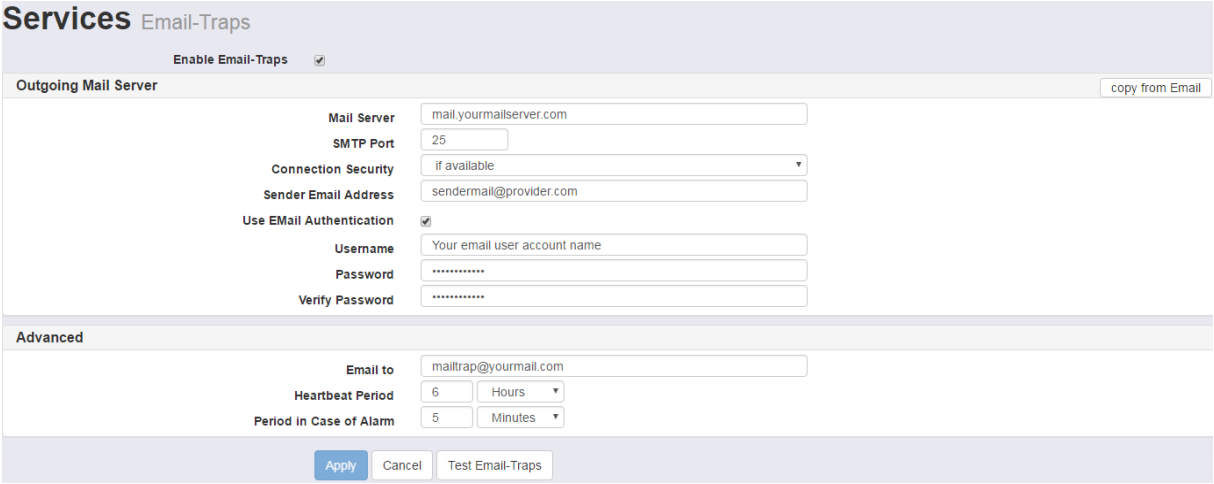
UNMS II is a web server based customizable software for monitoring and schematic viewing of different UPS devices and network based systems. The software shows the current status of integrated devices and systems (f.e. CS141 or BACS).

In the UNMS II Admin Console the connection type can be set per device (UPSTCP, SNMP, RAS) and make a remote monitoring of a CS141 possible. The difference to other remote software is the email trap restriction to send emails; a reply or intervention is **not** possible.

- Transfer-Protocol : POP
- Payloads : IDP, VDP, proprietary Data
- Data format : JSON (as Attachment)
- Configuration Mail Server : Global for all connections, in UNMS II Admin Console
- Configuration Mail Client : By device as connection type in UNMS II Admin Console
- An Email inbox/ user for all devices. Distinguished via IP and MAC address

If you want to adopt the email settings clock on **copy from Email**. We suggest to use a separate account for email traps which is only used by TeleService from UNMS. So, you have to adjust the parameters.

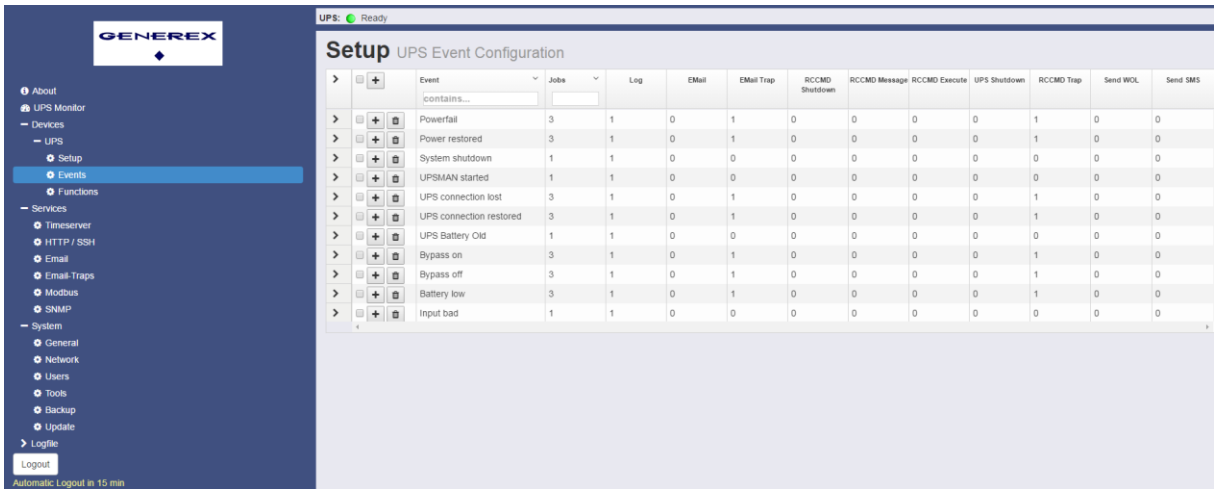
If email traps are configured and UNMS has a TeleService license every device can be monitored over emails. In UNMS every device will be shown on a schematic screen where all values are displayed with a time stamp since the last update. As soon as a status change occurs the values are immediately updated. If no change occurs, the values will be updated in the heartbeat interval.
The **Heartbeat Period** defines the time span how long the CS141 waits until an alert will be executed if the heartbeat does not work anymore. The **Period in case of alarm** defines the time span for transmission in case of alert.



17. Events and alerts

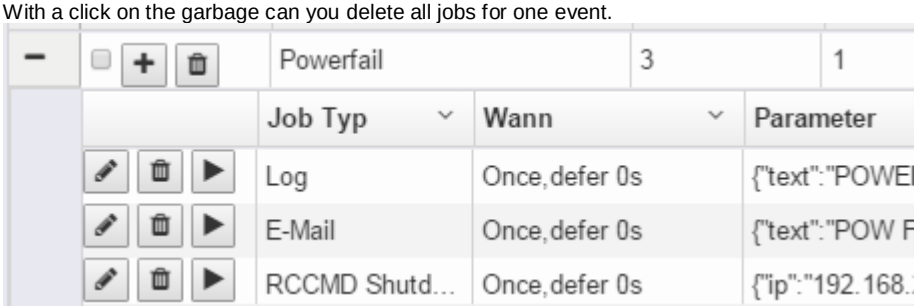
The CS141 allows to execute event based jobs. These events are triggered by UPS or additional devices connected to CS141. It is possible to create several jobs for each event. These jobs may be RCCMD shutdowns, emails, log entries. Also you can set when and how often a job shall be executed.

You find the events in Devices -> UPS -> Events.



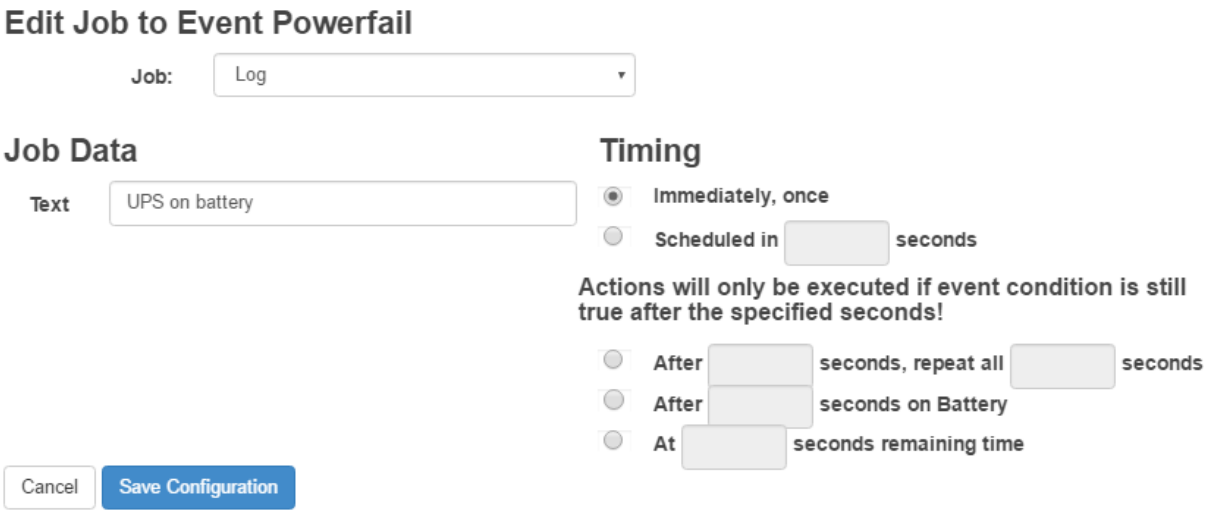
Please note that the events may differ from one UPS to another.

Click on the arrow > to display the configured jobs for the specified event.
With a click on Plus + you can add new jobs.
With a click on the garbage can you delete all jobs for one event.



When you expand the job list you can edit jobs with a click on the pen. If you click on the garbage can here you can delete a single job. If you click on Play, you execute the job instantly. Warning: RCCMD shutdowns will be also executed directly!

With a click on the down arrow next to the column you can fade out columns or sort the view by that column. If you change the site and go back to events all columns are set back to normal.



Additional informations about RCCMD are on our website:
http://www.generex.de/generex/download/manuals/manual_RCCMD_Win_Unix_Mac_en.pdf

For each event you can create the following jobs:

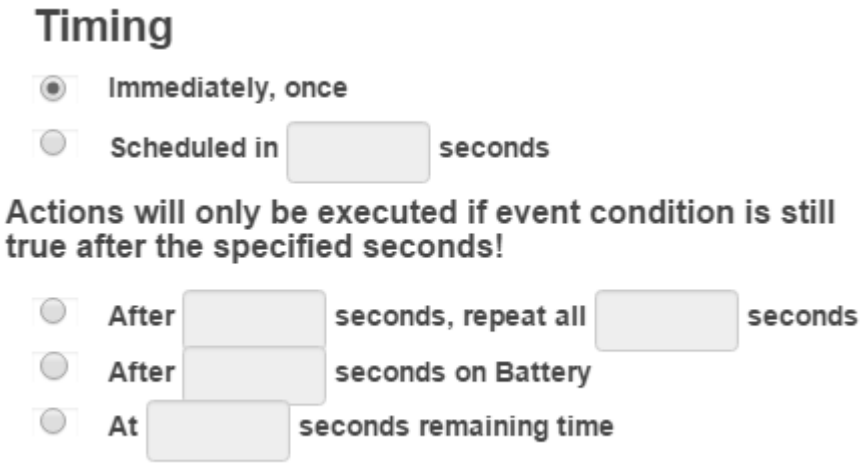
- Log: Writes a log entry in alert log of the CS141. This setting is default for each job.
- Email: Enter recipient and a meaningful text. Optional you can attach AlarmLog and DataLog.
- EmailTrap: Send an email trap. Here, you do not have to enter any additional parameters.
- RCCMD Shutdown: Executes a shutdown via RCCMD. Enter IP address of the client and port (Default 6003).
- RCCMD Message: Sends a message to a RCCMD client. Additionally to IP and ports you have to enter the text. You can view the text in the client log file.

- RCCMD Execute: Send a specific command to a RCCMD client. Enter IP, port and the command.
- UPS Shutdown: Enter shutdown and restore time. Type should only be changed if the manufacturer requires this. (Default setting: 1).
- RCCMD Trap: Send a RCCMD trap. Here you can enter the text which the trap includes.
- Send WOL: Send a Wake on LAN command. Enter MAC address of the target and optionally a password.
- Send SMS: If you have connected a modem you can enter a recipient of a SMS and the displayed text.

Timing:

Timing sets when the job will be executed:

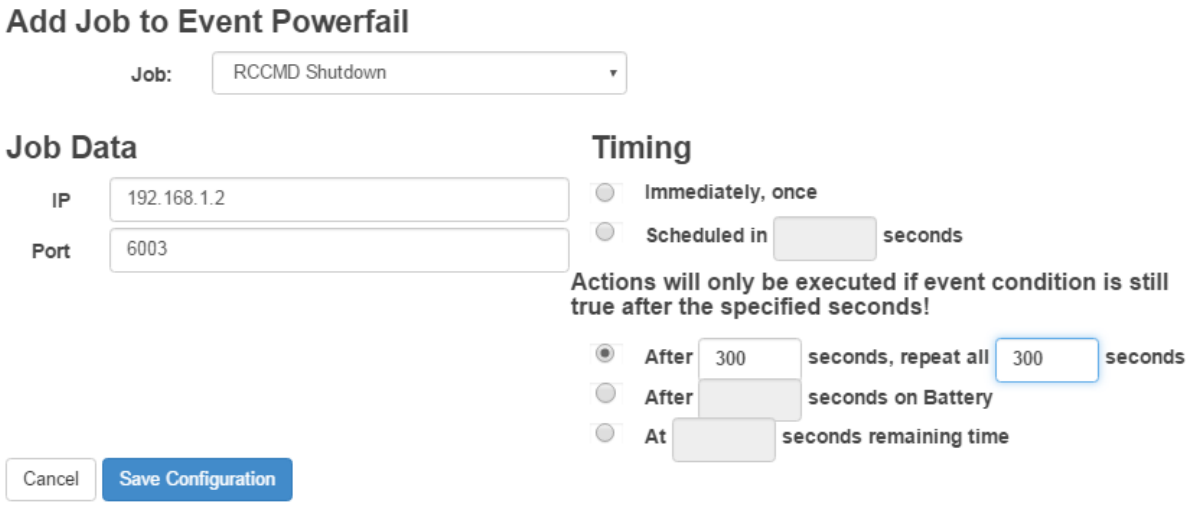
- Immediately, once: Direct execution. Recommended for log entries.
- Scheduled in X seconds: Execution after the specified time. Note that the job will still be executed after this amount of time even when the event does not longer occur.
- After X seconds, repeat all Y seconds: Executes the job after X seconds if the event still occurs and will be repeated every Y seconds.
- After X seconds on Battery: Will be executed if UPS is X seconds on battery operation.
- At X seconds remaining time: Will be executed if hold time reaches X seconds.



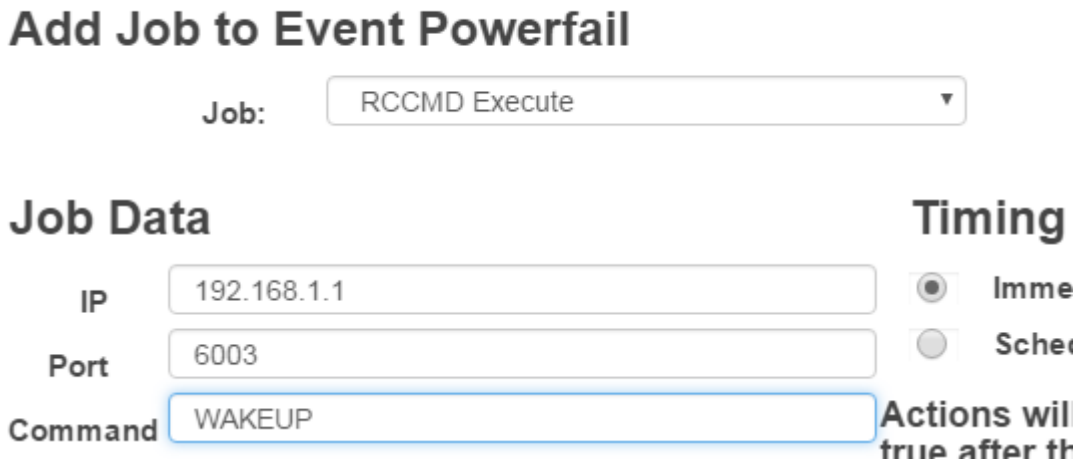
18. RCCMD signals

Each physical host needs a valid license for RCCMD. Otherwise the functionality of the software will be removed after **30 days**. The license key can only be used once per installation.
RCCMD communicates default on port 6003. As a test it is recommended to edit the shutdown script on client side and remove the shutdown command. If you send now a test shutdown, the client will not shutdown but show a log entry for shutting down the machine will be generated. Please make sure to enable the shutdown in the script afterwards. If the test fails, look into the alert log for accurate details.

In this example the CS141 would wait for 5 minutes after a powerfail and execute a RCCMD shutdown. If power is restored before 5 minutes are reached, the shutdown will not be sent.



If you use redundancy (two or more UPS devices) and the devices secure a single client, it is possible to negate sent RCCMD shutdown commands. Create a new job „Execute RCCMD command“ and enter as a command WAKEUP.



Therefore, the RCCMD shutdown will be removed and redundancy level increases by one.

Additional informations about RCCMD are available on our website:
http://www.generex.de/generex/download/manuals/manual_RCCMD_Win_Unix_Mac_en.pdf

19. SNMP

In this menu you can set the access rights for SNMP communities. The CS141 supports SNMPv2 and v3 as well, but only one at a time (not both simultaneously).

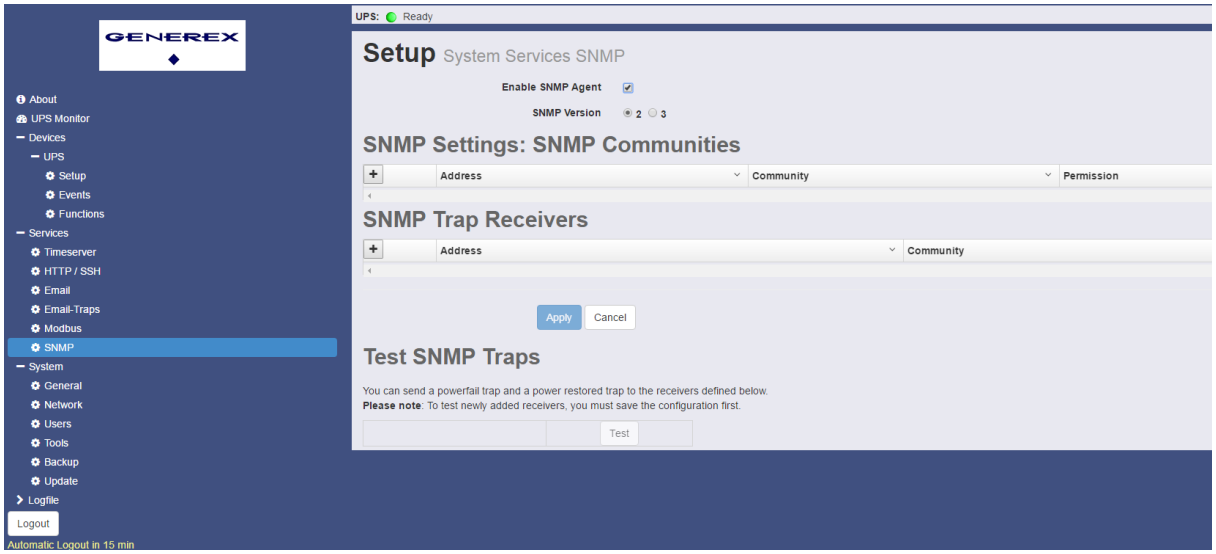
In v2 you have to set only 3 values. These are IP address, SNMP community (Default: public) and the permission (Read only or Read/ Write).

In v3 you have the three known methods:

- No security: No authentication and no privacy only user is needed.

- Authentication: Authentication (SNMP v3 user and password), but no privacy
- Authentication and privacy: Authentication (SNMP v3 user and password) and v3 privacy password.

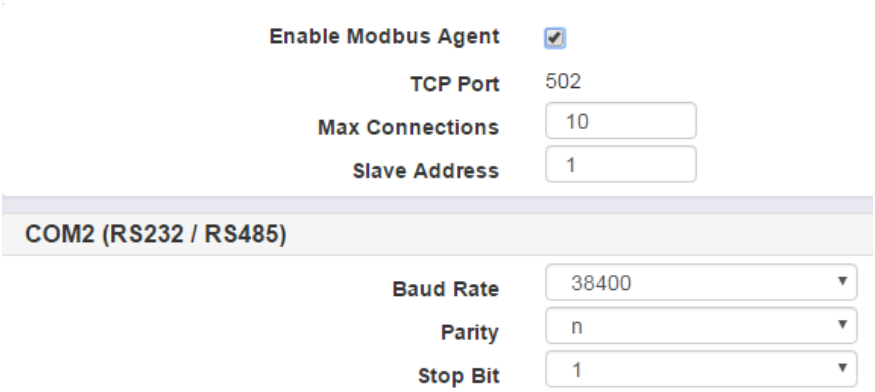
The possible authentication algorithms are MD5 and SHA. Privacy algorithm must be DES or AES.
Afterwards you can check your settings:



20. MODBUS

MODBUS is a serial communication protocol which is used with programmable logic controllers (PLCs). It allows communication between several devices connected in the same network, f.e. a system which measures temperature and humidity and reports the results to a computer. MODBUS is often used to connect a monitoring computer with a Remote Terminal Unit (RTU) with a Supervisory Control and Data Acquisition system (SCADA).
You can set the parameters in Setup -> Services -> Modbus. Enable the service and set the maximum amount of allowed connections to the device. The field for Modbus Slave address sets the Slave address on which the CS141 transmits the data.

The CS141 series supports general MODBUS over IP and MODBUS over RS232, as well the modell CS141LM/SCM. Instead of RS232, MODBUS will be provided via RS485. Requests, which are not supported by UPS or other devices are displayed with the values -9999 or -1. So unsupportet values can be easily identified. The Modbus addresses are found in the manual of CS121 (Predecessor version) or in the Modbus manual for CS141.

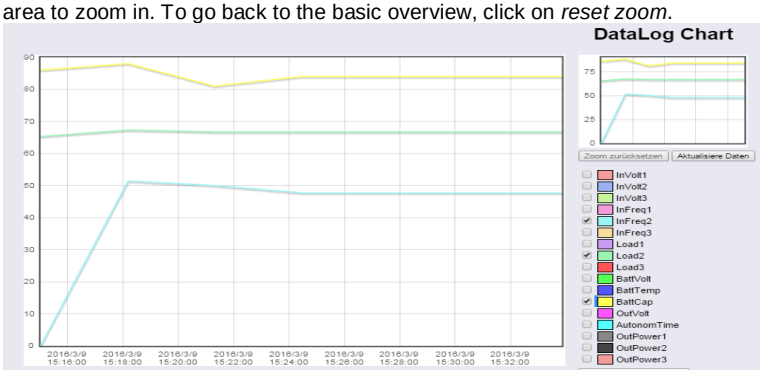


You find the MODUS settings in Services -> Modbus. You may change here the values maxmimum allowed connections, the slave address, parity and the stiop bit. Also, you can change the baud rate (Default 38400).

21. Log files

The CS141 maintains two different log files, the alert log and the data log.
In the alert log, all actions done or recognized by CS141 are displayed. This includes f.e. sending emails and RCCMD signals, UPS status changes, starting and stopping services on the CS141 etc. These informations can be downloaded as a CSV file.
If an event occurs (f.e. powerfail) it is displayed and also all executed jobs and events are shown. With the powerfail example, if you have configured sending an email, a RCCMD signal and generate a log entry, you will find four new entries in the alert log.
You can refresh each log file page with a click on this button: **Event Log**

The data log shows (beginning with the date) the different measurements. These values are detailed and can also be downloaded as a CSV file. For an easier view, you can also take the data log chart. Here you can deselect non-required values and get an actual overview.
If you click on a coordinate in the Datalog Chart, you activate the zoom function. You may also drag the mouse over a certain area to zoom in. To go back to the basic overview, click on *reset zoom*.

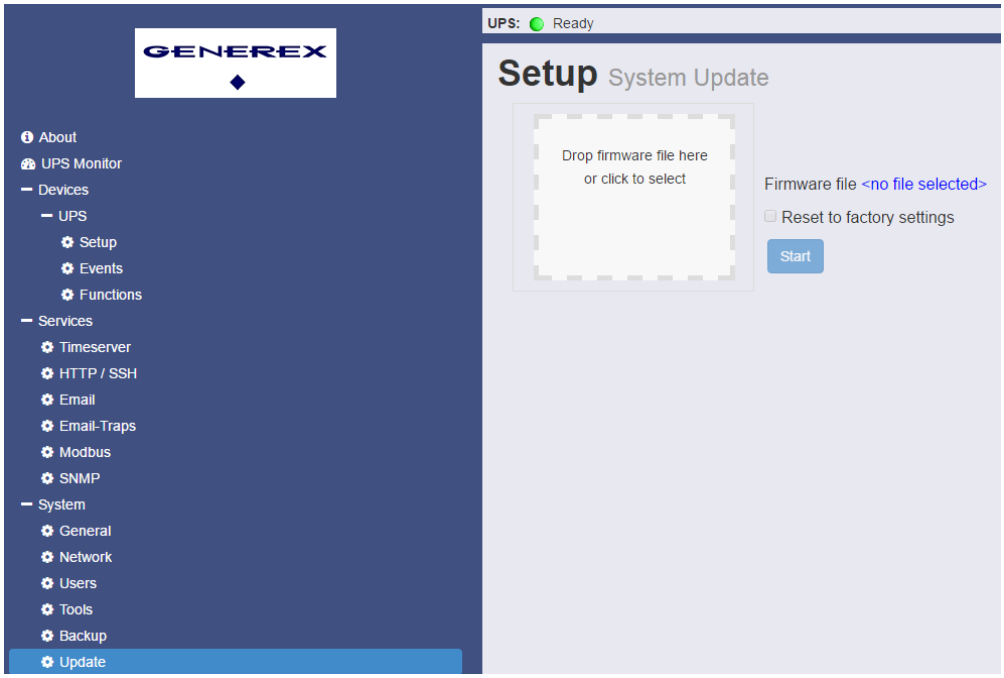


The log file may store over 4000 entries. If the log file is full, you will find an entry “Logfiles rotated”. When you go to archived Logfiles, you can download the old entries as a CSV-file.

22. Firmware update

In Setup -> System -> Update you can update the firmware of the CS141. Drag the update file with Drag & Drop in the dotted square or click on the square and search your local computer or available memory for the downloaded update. Extracting the file is NOT necessary.
You can also perform a factory reset. If you want, set the mark before you start the update procedure. The preconfigured IP address will be retained.

To update the firmware it is not necessary to login on the web interface. Enter the IP address of your adapter, followed by /update. Enter as user **admin** followed by the affiliated password and start the progress.
After updating it is recommended to delete the browser cache once (CTRL+F5).



If you change the OEM, it is recommended to perform a factory reset. The configured IP address will be taken over. If you do not perform a factory reset while changing the OEM it may result in an error (depending on the previous configuration).

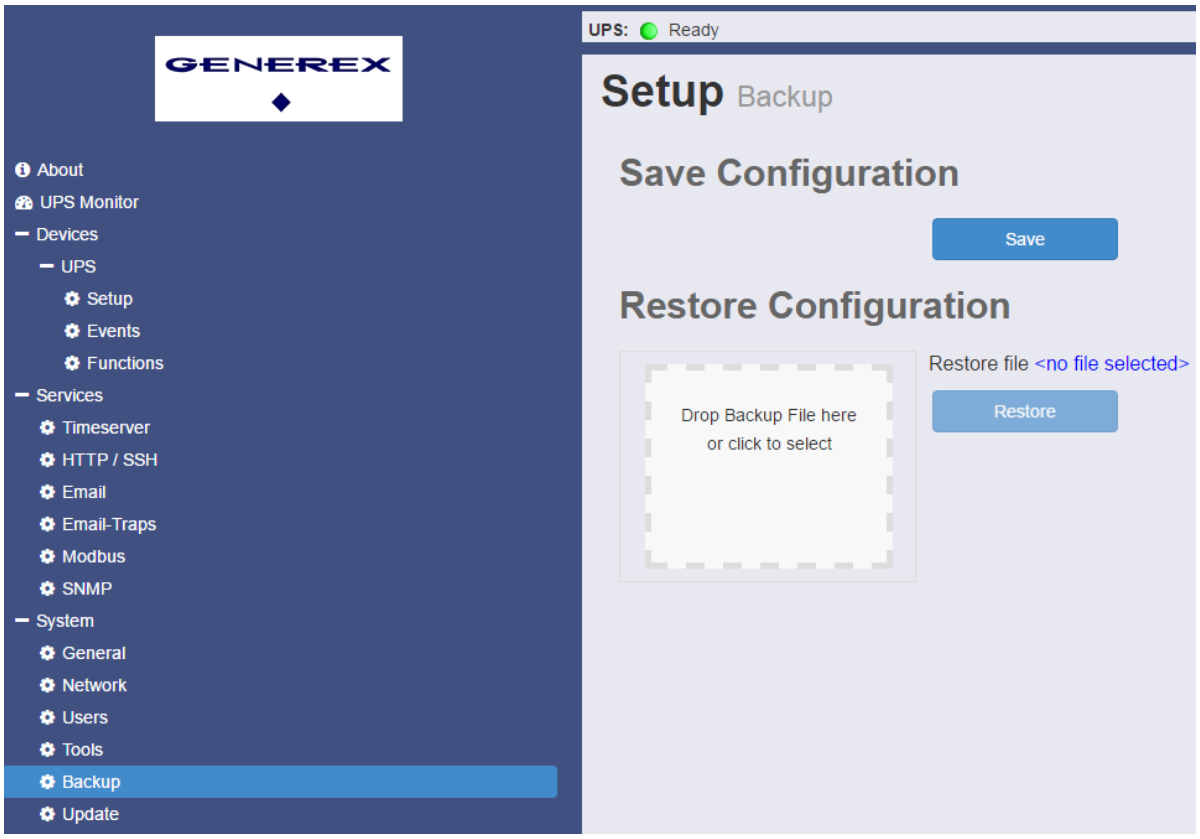
You can download the latest firmware here.

23. Backup & Restore

The CS141 offers to save and restore your configuration. You find the Backup option in Setup -> System -> Backup. Click on Save and download the configuration from your device. If you want to restore your configuration you may proceed here the same way you do like performing a firmware update.

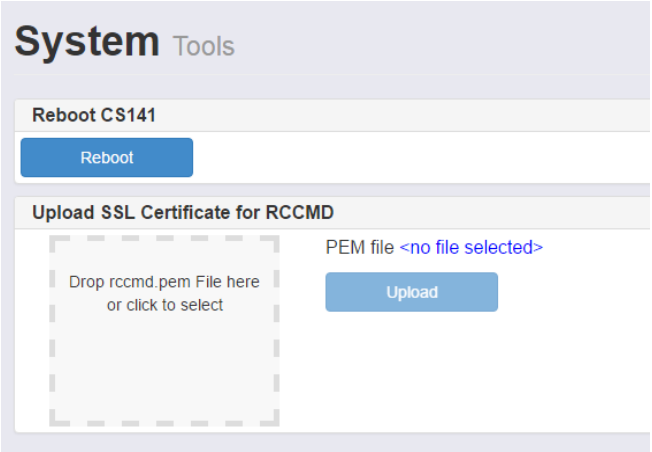
It is possible to prepare a configuration for using it as a template for other adapters (Configuration of identical CS141/BACS for mass distribution). Simply save your configuration and restore it on another adapter.

Caution: Both adapters have to be on the same firmware version; otherwise, errors may occur!
Note: The IP settings do not change by the restore process, after the restore has finished, you have to configure the new IP setting manually!



24. Tools

With the Tools (System -> Tools) you may reboot the adapter and you can also use own RCCMD certificates.Some configuration changes need a soft reboot, eg. If you change the IP address but did not set the DIP switch to another position and change additional parameters. To access this page it is necessary to entert he admin password again.



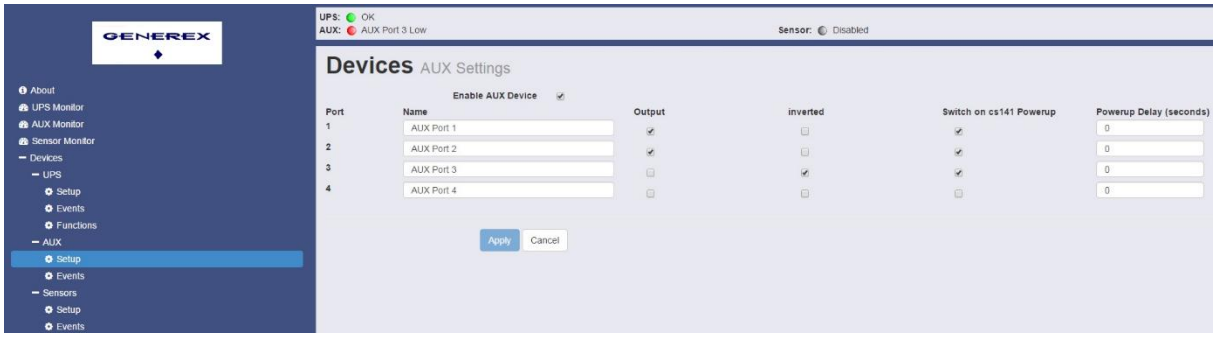
Alternatively you may reboot the device without logging in if you entert he IP address of the device, followed by /reboot. Again, you have to entert he password here.
To use own certificates for RCCMD you need to upload them here. After this, reboot the device (on the same page) to enable using own certificates.
Note: The certificate must be named *RCCMD.pem*, otherwise the device will deny the upload.

25. External devices

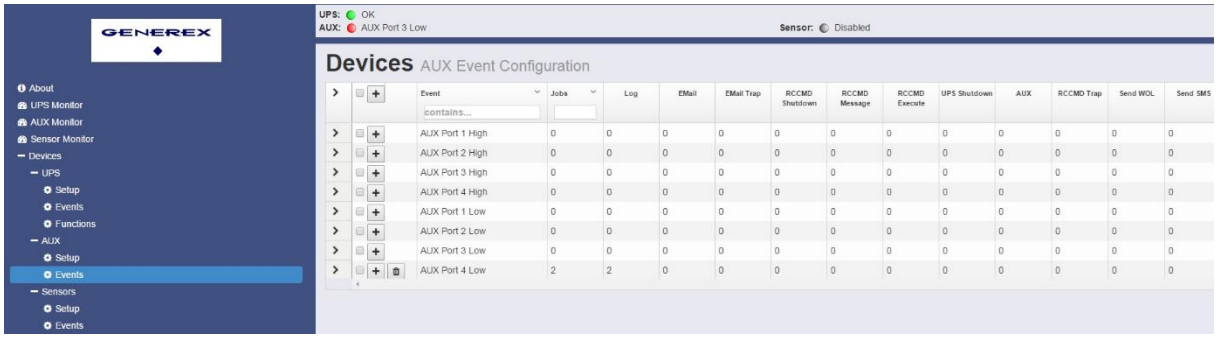
If you use a CS141 professional series adapter, you may connect additional devices such as SM_T_COM, Sensormanager and CON_R_AUX. You will notice that you have an enlarged status bar on top of the screen.

If you change the settings of the ports, the service will restart – same like an UPS modell change.

The AUX setup s available on Devices -> Aux -> Setup. At first, you have to enable the device with setting the mark. After that, you can set the ports as Input (no change), Output (first row mark), Inverted (second row mark) and switch ON when adapter boots (third row). Also, you can set a delay for switching on the port after boot.

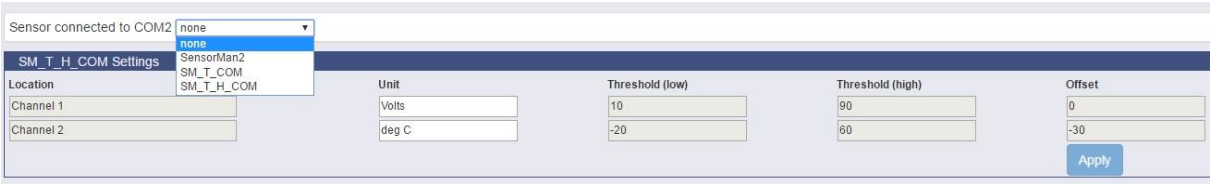


You can also configure certain jobs for each port, which is like configuring jobs for the UPS. Go to Devices -> AUX - > Events to configure the jobs. You have the same options in all event configuration menus.



If you click on the AUX monitor, you may manually set the Output ports ON and OFF.

For the COM2 port the sensor menu and monitor are used. Go to devices -> Sensors -> Setup to choose the connected device.



When choosing a device, the available options will change and you can set the different values, eg. Sensortype and NC contacts. If you do not set a device or the communication is not established, you will get an error when opening the monitoring page.

Of course you can configure jobs for the sensor behaviour, open Devices -> Sensors -> Events to configure.

Additional information is available on our website in the Accessories section on our website and as well on the external devices page.

26. Rescue System

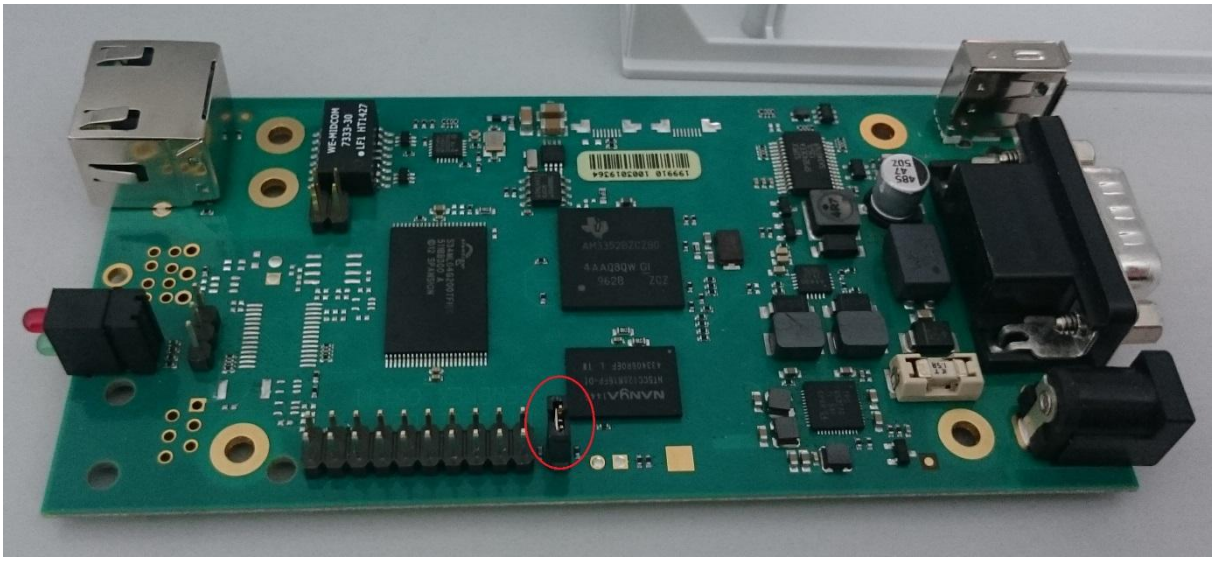
The CS141 comes with two options to initiate the firmware again respectively reset the device to factory settings.

If the CS141 denies a login or the GUI shows corrupt screens, you can enter the IP address followed by /update to install another firmware version or set the option reset to factory settings. Example:

http://10.10.10.10./update

Now you can drag & drop the favored firmware or browse by clicking in the panel. Before you click on start, you may optionally set the mark on *reset to factory settings*. Enter now the password for the administrator account (Default: cs141-snmp). The progress will start and after successful installation the login page will appear.

The second option is to boot a different firmware version. This is recommended if you can't access via GUI but ping the device or if an update fails. For this you will need a jumper which has to be set according to the picture followed. If you go to 7) Port occupancy you can check which version of the adapter you have and where to set the jumper.



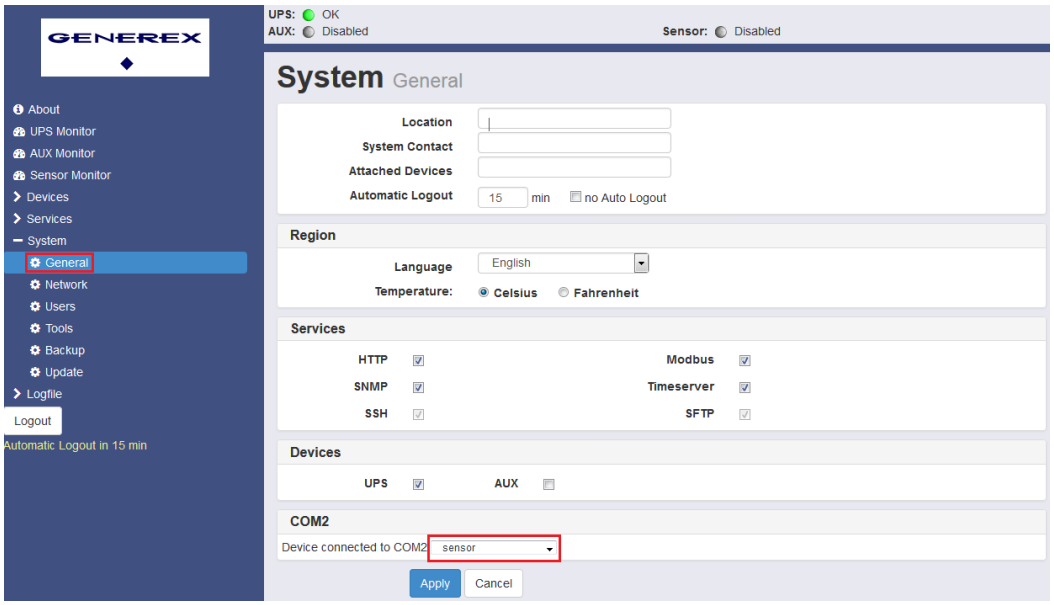
When the jumper is set and the adapter has booted, you can recognize the rescue system when you click on about. The firmware version is followed by (RESCUE). You can now update the adapter or reset the device to factory settings. Remove the jumper afterwards and reboot the device.

For the case you forgot the password you may reset the device. Please note that all settings and configurations are lost.
Set the DIP switch to the middle (10.10.10.10). Enter the IP followed by /update in your browser. Upload the desired firmware, and set the mark *Reset to factory settings* before you start – all settings including the password will be reset. In contrast to the normal update the adapter will not ask for a password in this position. After finishing the progress you may login with the default password (cs141-snmp) and configure the device again.

27. Sensors

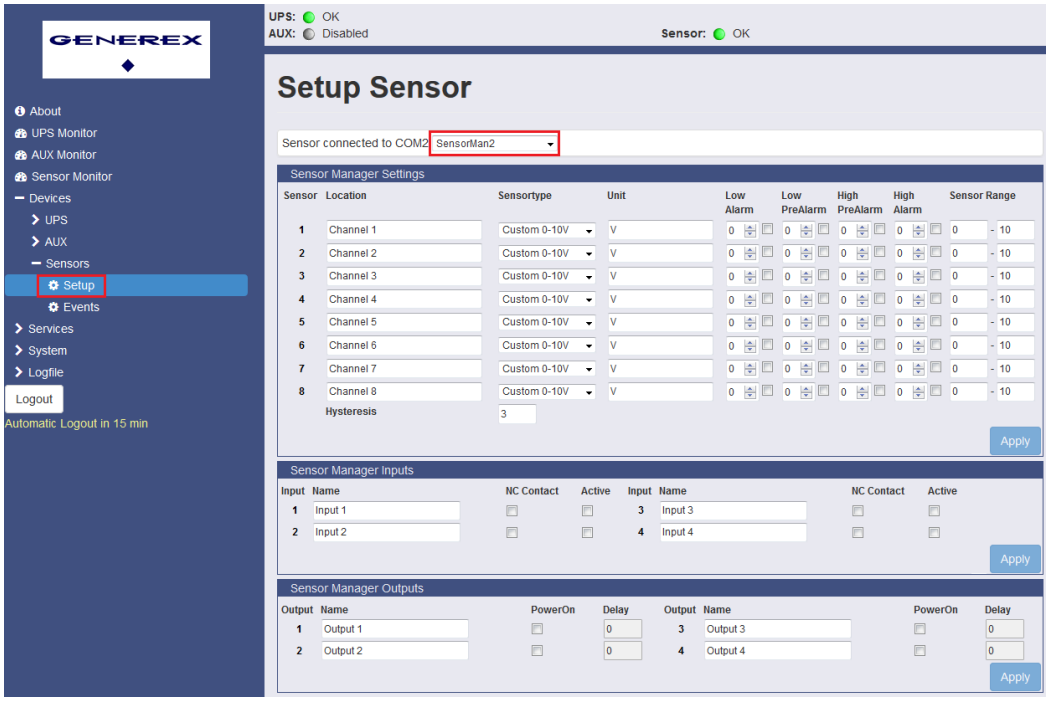
The CS141L/SC/R/MINI offers to connect external sensors. It is possible to connect them directly (SM_T_COM or SM_T_H_COM) or with the SENSORMANAGER2 on COM2 port.

Choose *Sensor* in the menu System -> General -> COM2.



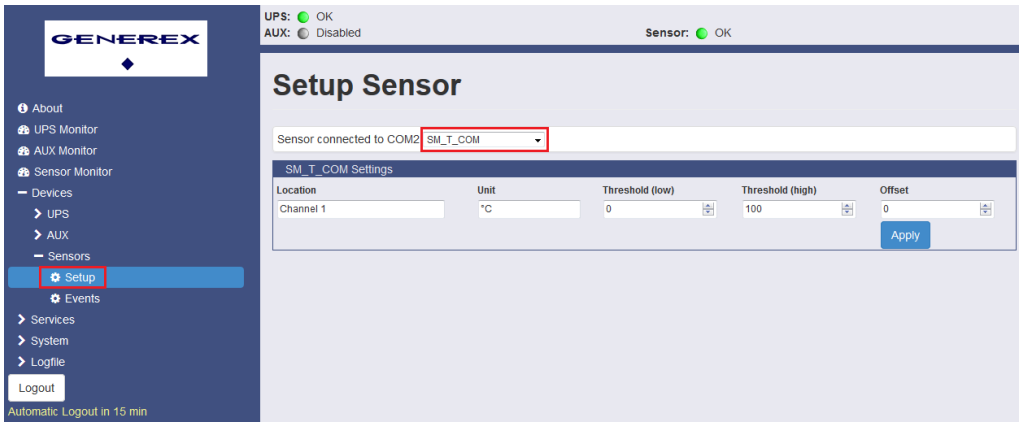
Choose the connected type in Sensors -> Setup -> *Sensor connected to COM*.

If you have connected the Sensorman2:



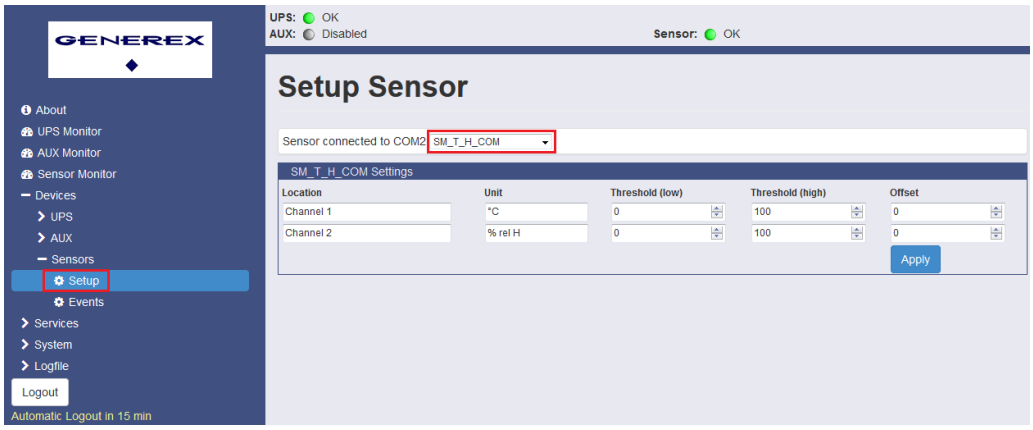
The configuration of Inputs and Outputs and further informations can be found in the SENSORMANAGER manual:
http://www.generex.de/generex/download/manuals/manual_SENSORMANAGER_en.pdf

If SM_T_COM is connected:



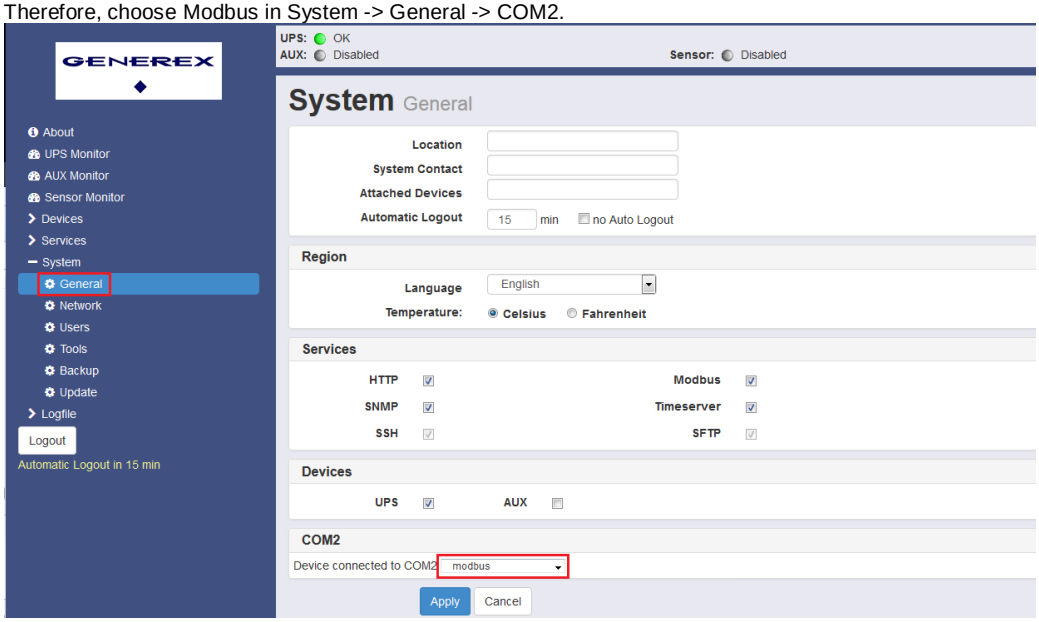
The configuration and further informations can be found in the SM_T_COM manual:
http://www.generex.de/generex/download/datasheets/datasheet_SM_T_COM_en.pdf

If SM_T_H_COM is connected:



The configuration and further informations can be found in the SM_T_H_COM manual:
http://www.generex.de/generex/download/datasheets/datasheet_SM_T_H_COM_de.pdf

CS141 MODBUS RS232 configuration:
The CS141L/SC/R/MINI offers the possibility to output MODBUS RS232 at COM2 Port.
Therefore, choose Modbus in System -> General -> COM2.



Further informations about MODBUS can be found here:
http://www.generex.de/generex/download/manuals/manual_MODBUS_CS141_en.pdf

28. Diagnostics

The CS141 has an inbuilt Diagnostics tool (Since firmware 1.40) which can analyze the data traffic directly on the serial port.

Open a new tab and enter the IP address of the adapter, followed by **/trace/ups**. On this page you see the raw data of the connection on the serial port. Blue values are sent from the CS141, red values shows data from the UPS device. If the connection is interrupted (for example, reboot or changing the UPS model) you will see „Connection closed“. If you refresh the page the trace will be restarted then.

This diagnostics tool uses few resources of CS141. It is recommended to use the tool only if any errors are present and to close the tab after analyzing.

```
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 05 00 4d       | ..C...M
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 0a 00 52       | ..C...R
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 0c 00 54       | ..C...T
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 0d 00 55       | ..C...U
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 0e 00 56       | ..C...V
02 04 43 4b 6f 01          | ..CKo.
02 05 43 00 16 00 5e       | ..C...^
02 04 43 4b 6f 01          | ..CKo.
```

29. FAQ – Frequently asked questions

30. What is Error 503?
    This error occurs when the web server on the CS141 encountered a problem. If the issue is still present after rebooting the device, the firmware needs to be updated or transferred again. Recommended is here the factory reset option.
31. What is Error 422?
    This Error occurs when you try to change some paramters of the configuration in an older firmware. Please update to the latest version.
32. What is Error 400 / 420?
    This problem may occur after a firmware update, but the browser uses cached data. Press CTRL + F5 or delete your browser cache. Reboot the device afterwards.
33. The UPS Status is (temporary) on „Paused“.
    If you open the UPS alert history it is necessary to pause the connection between adapter and UPS for a couple of seconds. Go to another page and press F5 to restore the correct status (if not done automatically).
34. What is Error -1?
    This error occurs when there is no connection to the adapter (for example after a reboot) but the configuration opage is still open. Wait for the adapter to switch back to normal operation mode andopen the IP address of the adapter again.
35. I have lost my password.
    Have a look at the rescue system section, there is a description how to retrieve a lost password.
36. Why do I get logged out after deactivating the http tooltips on services?
    The tooltips are connected with the http service. Changing anything requires the adapter to forward you on the new address / port.

If you have additional questions contact us per mail on support@generex.de !

30. Manual Version

04.10.16	-	1.6.1	Minor change at Trace
28.09.16	-	1.6	Diagnostic & FAQ added, features extended, logfile size added
01.09.16	-	1.52	Links updated, pictures exchanged, Modbus extended
22.08.16	-	1.51	Minor changes
02.08.16	-	1.5	Sensors added
27.06.16	-	1.4	
04.05.16	-	1.3	
19.04.16	-	1.2	
07.04.16	-	1.1.3	
05.04.16	-	1.1.2	
01.04.16	-	1.1.1	
18.03.16	-	1.1	
09.03.16	-	1.0	