CS141L

CS141SC

CS141 PROFESSIONAL

Control and Management of UPS, Inverters, Rectifiers, Environmental Sensors, Alarm Contacts and BACS

CS141LM

CS141SCM

CS141 MODBUS

With RS485 interface
Control and Management of UPS, Inverters, Rectifiers, Environmental Sensors, Alarm Contacts and BACS

CS141BL

BL: Discontinued

CS141BSC

CS141 BUDGET

Control and Management of UPS, Inverters and Rectifiers through Web, SNMP & Modbus

CS141R_2

CS141MINI

CS141 MINI & R2

Control and Management of UPS, Inverters, Rectifiers and Environmental Sensors

CS141 R_2:
Manager for NETMAN Slots

✓ *Made in Germany and the USA!*

Our CS141 is the most powerful UPS, SNMP and IT infrastructure solution on the market! The software architecture behind the WEBMANAGER is specially developed to meet the IT-compliance regulations in Germany and in North America.

✓ *Modern and flexible interface to ensure comfort and security*

Access the CS141 directly via the modern and intuitive web interface to manage all requisite functions. With the GENEREX API, the CS141 offers a powerful second interface to max out access options for developers and programmers:

Implement script-based solutions to integrate the CS141 to your infrastructure, use time shifting scripts to import basic configurations, export and save log files or even to create fully automatable backup and update scripting solution.

✓ **Ultimate flexibility - Combine the CS141 with nearly any device**

The CS141 Web Manager supports more than 1400 UPS models from over 120 manufacturers – either directly via native serial protocols or via system contacts:

Manage almost every device in a UPS solution with the CS141, including transfer switches, chargers, inverters, generators, fuel cells, and more!

✓ **1000 Mbit / s Gigabit Ethernet Adapter**

For maximum connection speed and data transfer stability, the CS141 will be equipped with a gigabit network interface - with this improvement, GENEREX will ensure the best possible connection to past and future IT infrastructures.

✓ **The Third-Party UPS Communication Assistant**

Combine the powerful management functions with any RFC 1628-compatible SNMP card solution:

The *Third-Party UPS Communication Assistant* integrates any SNMP card via TCP / IP using SNMP in accordance with the RFC1628 standard (or private MIBs from APC). The CS141 is the only device on the market that can manage via a network address UPS/transfer switch as well as other end devices that deal with the batteries of any UPS solution.

✓ **Fully automatable control of time-critical UPS and IT management devices**

The CS141 was designed on the principles of PLC system and expanded by many functions. Benefit from the possibilities made manifest through full integration of the CS141 as a comprehensive management system:

Use the Task Scheduler to plan recurring tasks such as UPS and battery tests, or use the IT management functions to harmonize general maintenance work such as system backups or restarts within the EDP with other system tests.

✓ **Multi server shutdown, emergency procedures and system start up control**

For a safe, secure system shutdown

In coordination with our globally popular RCCMD ("Remote Control and Command") software, the CS141 can trigger complex emergency procedures to reliably protect the IT infrastructure from damage, data loss and critical system errors. With the CS141 WEBMANAGER, prepare your data center for a fully automatic and script-controlled emergency shutdown: Create backups, shutdown sensitive program parts on servers, initiate server migration to redundant data center...the engineer can custom design their own ideal solution template!

With RCCMD, more than 40 different operating systems are supported to do whatever must be done.

For an organized, controlled system restart

As soon as the CS141 WEBMANAGER becomes reconnected to the mains power, even a restart of the entire IT infrastructure is a fully featured automatic procedure:

- time sensitive network restart: Define and structure time windows for actions such as outlets for electricity, WOL signals, initial startup scripts, and other stuff.
- Event controlled: In addition to the UPS, also integrate environmental and assistance systems via contacts and feedback contacts and start a complex network with mutual dependencies fully automatically.

✓ **Precise event and measurement logs**

The CS141 logs all measurement data and events with precise time stamps. The non-volatile memory-stored records can be used to reconstruct the time line in case of an incident. A build-in NTP client ensures precise time stamps for all collected data and helps to evaluate what happened.

✓ **Complex communication and notification system**

The CS141 WEBMANAGER collects system logs, process data and environmental sensor data and provides different options for communication with higher-level and subordinate systems:

E-Mail/SMS - Notification

the CS141 provides real time system-wide notification by e-mail for pending events and the fall back to normal system state. By doing so, emergency response management can be triggered as quickly and effectively as possible. The CS141 is compatible with all common mail systems, e.g. MS Exchange / Outlook Office 365, Lotus, etc, but can also deal with mail provider services like GMX, Google, yahoo, etc. With an optional GSM modem, the CS141 WEBMANAGER also provides emergency SMS service contacts to inform technical staff via cellular service about imminent system-critical events.

Email Trap for UNMS Remote Monitoring

With "Email Traps", each model of the CS141 product family offers an additional option for sending status information and measuring values of a UPS system to a UNMS server in parallel to internal monitoring via e-mail. With this function, a service partner is capable of offering additional maintenance services which include remote monitoring for UPS and battery systems, without requiring direct access to the customer's network.

MODBUS included

MODBUS over IP is a standard for all models of the CS141 family. As such, it is possible to connect to PLC devices, e.g. B. from Schneider or other MODBUS based PLC systems. The CS141 models with COM2 connection also provide MODBUS over RS232. The CS141 models CS141LM or CS141SCM support the MODBUS RS485 standard**.**

SNMP

The CS141 follows the RFC1628 standard completely– for special functions which are not defined by this standard, a customized RFC1628 MIB file is available to ensure complete integration into any existing management system that follows this standard or allows for importation of external MIB files.

PROFIBUS/LONBUS and more…

Additional fieldbus converters can be connected to enhance the scope of supported systems.

BACnet over IP industrial standard

Since BACnet over IP is a standard function, the CS141 WEBMANAGER can be integrated into any existing BACnet infrastructure. Customers with older firmware versions will gain access to this new feature automatically after updating to the latest firmware version.

Remote Syslog support

The event log can be sent to a syslog server for a fully automatic evaluation and error analysis by server-based intelligent search algorithms.

LDAP /und Radius Server Support

The CS141 WEBMANAGER fully supports RADIUS to configure a centralized and light-weight user access control according to local security policies for IT systems.

RADIUS 802.1X EAP Support

Networks secured by automatic port restrictions provide a very high level of protection. Devices that cannot legitimize themselves, simply get no open port needed to to access the network. The CS141 natively supports the necessary protocol standard 802.1X and can thus be integrated into highly secured IT environments

✓ **Network security and network services**

The CS141 WEBMANAGER supports all common network services and fits seamlessly into any existing IT infrastructure:

IPv4/I	SFTP	BACnet over IP
IPv6	DNS	RCCMD
SNMP V2/V3	DHCP	Remote syslog
HTTP/HTTPs	UPSTCP / UNMS	NTP
SMTP	MODBUS over IP	MODBUS/PROFIBUS over RS232/485

Security first!

- Use your own certificates

The network services implemented according to industry standards allow for use of customized certificates - invalid and expired certificates can be rejected automatically.

- Advanced tamper protection

To prevent any manipulation attempts within high security areas or very sensitive application access, the internal web server of the CS141 WEBMANAGER can be completely deactivated after configuration and force operating as configured. The CS141 WEBMANAGER also does not support ROOT access - as a consequence manipulation is nearly impossible.

- Intelligent system crash prevention

The system's internal "watch dog" regularly checks whether all services run as expected. If the CS141 WEBMANAGER stumbles due to unexpected network events, this watch dog will manage an internal system restart. Having restarted, the CS141 WEBMANAGER is back within a few seconds.

- Network Security Screening tools included

As a fully qualified IT management system, the CS141 provides a special feature to test your IT infrastructure to find security leaks, the CS141 offers network inspection tools to help administrators with communication issues as well as security audits.

- Digital signed firmware-updates

GENEREX ensures long-term product security by regular and digitally signed firmware updates: In addition to providing general bug fixes and product improvements, new functions and features, these firmware updates expand the scope of functions with dependable regularity.

- R801X / EAP

Port sharing access offers the possibility to keep unknown and not wanted devices out of a company network directly from the beginning. The CS141 supports 100% port-sharing level network access and thus fits transparently into an existing network protection concept with automatic port sharing.

✓ Expand and upgrade your own way – CS141's scope of functions grows as needed

SENSORMANAGER (Option)

With the optional SENSORMANAGER, the CS141 holds slots for up to 8 inputs for nearly any analog sensors on the market. In addition, the SENSORMANAGER provides 4 digital inputs for alarm sensors for smoke, fire, water, feedback contacts as well as 4 digital outputs for optical and visual alarm devices, wired communication ports, switches, and more!

Analog IN / Outputs

The AUX Port of the CS141 can be used with the interface relay board CON_AUX 4 / CON_R_AUX 4) – Use up to 4 inputs as well as switchable relay outputs for hot wires to upper/lower management systems as well as for direct control of 3rd party devices.

✓ BACS Battery Management System

This feature shows the uniqueness of the CS141 WEBMANAGER ithe market:

It is the only SNMP manager on the market that can be upgraded to the world's most popular battery management system BACS by default with a few simple steps:

Just connect a BACS BUS Converter via COM 3 and activate "BACS" in the interface setup. The CS141 becomes a full-fledged BACS WEBMANAGER and integrates all menus into the existing configuration.
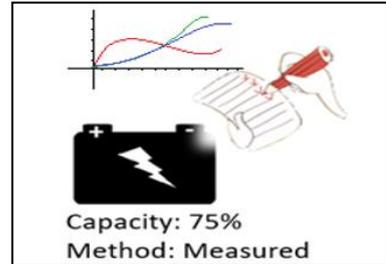
As a bonus you get a world novelty by the extension with BACS:

All over the world, BACS is the only system that can determine and display the capacity of each battery in its care in real time through a special measurement process.

Capacity: 75%
Method: Measured

BACS - Hamburg Testlab 1

🟡 Warning: Impedance High
🟢 Status: Charging

	String 1 LONG 5/2017							String 2 PANASONIC 9/2016							String 3 PANASONIC Mix 2/2014 and 2019							String 4 LONG 4/2017					
No.	Volt. [V]	Temp. [°C]	Ri. [mΩ]	Charge [%]	Equalize	Status	No.	Volt. [V]	Temp. [°C]	Ri. [mΩ]	Charge [%]	Equalize	Status	No.	Volt. [V]	Temp. [°C]	Ri. [mΩ]	Charge [%]	Equalize	Status	No.	Volt. [V]	Temp. [°C]	Ri. [mΩ]	Charge [%]	Equalize
1	13.59	24.5	21.48	100%		🟢	21	13.60	24.5	39.19	100%		🟢	41	13.59	25.0	57.72	100%		🟡	61	13.67	24.0	23.14	100%	
2	13.59	25.0	22.10	100%		🟢	22	13.60	25.5	44.72	100%		🟢	42	13.59	25.5	48.85	100%		🟢	62	13.67	24.5	24.76	100%	
3	13.59	25.5	21.16	100%		🟢	23	13.60	26.0	45.50	100%		🟢	43	13.59	26.0	17.27	100%		🟢	63	13.67	24.0	27.25	100%	
4	13.59	25.0	22.23	100%		🟢	24	13.60	25.5	17.15	100%		🟢	44	13.59	25.5	17.12	100%		🟢	64	13.67	25.5	30.06	100%	
5	13.59	25.0	21.18	100%		🟢	25	13.60	25.0	54.33	100%		🟡	45	13.59	26.3	16.94	100%		🟢	65	13.67	24.5	31.37	100%	
6	13.59	25.1	22.14	100%		🟢	26	13.60	25.5	46.75	100%		🟢	46	13.59	26.0	48.78	100%		🟢	66	13.67	25.0	30.39	100%	
7	13.59	25.5	21.93	100%		🟢	27	13.59	26.0	43.49	100%		🟢	47	13.59	26.1	48.15	100%		🟢	67	13.67	25.6	26.87	100%	
8	13.59	25.5	22.44	100%		🟢	28	13.60	25.8	54.59	100%		🟡	48	13.59	26.6	19.37	100%		🟢	68	13.67	25.4	26.81	100%	
9	13.59	25.5	22.21	100%		🟢	29	13.60	25.9	49.08	100%		🟢	49	13.59	26.5	16.68	100%		🟢	69	13.67	26.3	24.12	100%	
10	13.59	25.0	21.59	100%		🟢	30	13.60	26.0	44.78	100%		🟢	50	13.59	26.1	21.30	100%		🟢	70	13.67	26.5	29.37	100%	
11	13.59	24.1	21.95	100%		🟢	31	13.60	25.5	33.84	100%		🟢	51	13.59	25.0	21.97	100%		🟢	71	13.67	24.5	26.61	100%	
12	13.59	25.5	22.08	100%		🟢	32	13.60	25.1	21.67	100%		🟢	52	13.59	25.0	51.17	100%		🟡	72	13.67	25.5	24.95	100%	
13	13.59	25.6	21.85	100%		🟢	33	13.60	26.2	37.23	100%		🟢	53	13.59	25.2	16.94	100%		🟢	73	13.67	25.8	28.54	100%	
14	13.59	25.5	23.03	100%		🟢	34	13.60	25.5	41.82	100%		🟢	54	13.59	25.0	54.03	100%		🟡	74	13.67	25.0	24.97	100%	
15	13.59	25.4	21.43	100%		🟢	35	13.60	26.0	35.05	100%		🟢	55	13.59	25.5	16.97	100%		🟢	75	13.67	24.6	28.40	100%	
16	13.59	25.5	21.64	100%		🟢	36	13.60	26.5	50.37	100%		🟡	56	13.59	25.7	16.87	100%		🟢	76	13.67	25.1	29.75	100%	
17	13.59	26.0	21.57	100%		🟢	37	13.60	26.0	52.32	100%		🟡	57	13.59	25.3	36.54	100%		🟢	77	13.67	25.2	28.25	100%	
18	13.59	26.2	21.86	100%		🟢	38	13.60	27.0	21.75	100%		🟢	58	13.59	25.6	50.87	100%		🟡	78	13.67	26.7	31.42	100%	
19	13.59	25.5	21.90	100%		🟢	39	13.60	24.9	21.57	100%		🟢	59	13.59	25.8	23.73	100%		🟢	79	13.67	25.3	24.51	100%	
20	13.59	26.0	21.04	100%		🟢	40	13.60	26.0	55.99	100%		🟡	60	13.59	25.5	35.97	100%		🟢	80	13.67	25.5	25.27	100%	

String 1	String 2	String 3	String 4
Σ Voltage 271.86 V	Σ Voltage 271.90 V	Σ Voltage 271.88 V	Σ Voltage 273.34 V
13.59 [V] Target Voltage	13.60 [V] Target Voltage	13.59 [V] Target Voltage	13.67 [V] Target Voltage
0 [A] DC Current 0.00 [KW] Real Power	0 [A] DC Current 0.00 [KW] Real Power	0 [A] DC Current 0.00 [KW] Real Power	0 [A] DC Current 0.00 [KW] Real Power
0 [A] AC Current	0 [A] AC Current	0 [A] AC Current	0 [A] AC Current

Picture: he CS141 WEBMANAGER shows after the upgrade with BACS additionally all batteries of the UPS solution. Clearly visible is the world novelty: The capacity of the battery in percent!

No web manager on the market is so unique in the market with its powerful management features like the CS141 WEBMANAGER

GENEREX

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# CS141 & HW161 WEBMANAGER®

Intelligent UPS- and Infrastructure Management
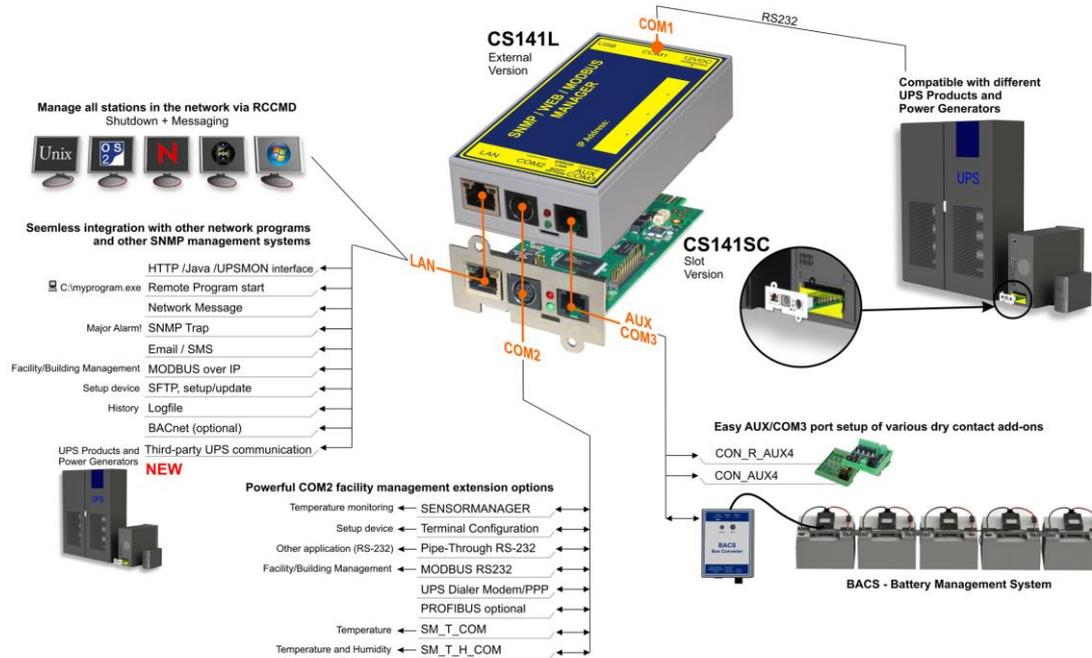
|	CS141L Professional External (all UPS vendors)	CS141SC Professional Slot (all UPS vendors with SC slot format)
Power consumption	12V (min. 9V, max. 30V DC), 150 mA	12V (min. 9V, max. 30V DC), 150 mA
Size (B x L x H), weight	69 x 126 x 35mm, 210 g	60 x 120 x 29mm, 66 g
Network / LAN	HW141: 10/ 100/ Mbit Base-T auto sense HW161: 1000 Mbit for (HW161)	HW141: 10/ 100/ Base-T auto sense HW161 1000 Mbit Base-T auto sense
RS-232 interface	2	2
RS-485 interface	-	-
RESET – Button	-	HW141: - HW161: 1
USB interface	1	-
AUX interface	1	1
MODBUS over IP	Standard	Standard
BACnet over IP	Standard	Standard
Remote syslog	Standard	Standard
Radius Server Support	Standard	Standard
Status LED's	normal green, boot/error red	normal green, boot/error red
User manual	German, Englisch	German, Englisch
MIB file available	RFC 1628 and private extentions	RFC 1628 and private extensions
Operating temperature.	0 – 45 °C	0 – 70 °C
Storage temperature	0 – 70 °C	0 – 70 °C
Max. operating ambient temperature	45 °C	55 °C
CPU	ARM Cortex A8 800 MHz	Cortex A8 800 MHz
Flash Memory	HW141: 512 MB HW161: 8 GB	HW141: 512 MB HW161: 8 GB
RAM	HW141: 128 MB DDR3 HW161: 512 MB DDR3	HW141: 128 MB DDR3 HW161: 512 MB DDR3

Humidity	20-95%, not condensing	20-95%, not condensing
Classified for	CE, UL/NEMKO	CE, UL/NEMKO
MTBF (EN/IEC 61709)	849.192 hours (96,9 years)	874080 hours (99,8 years)
Product warranty	2 years	2 years
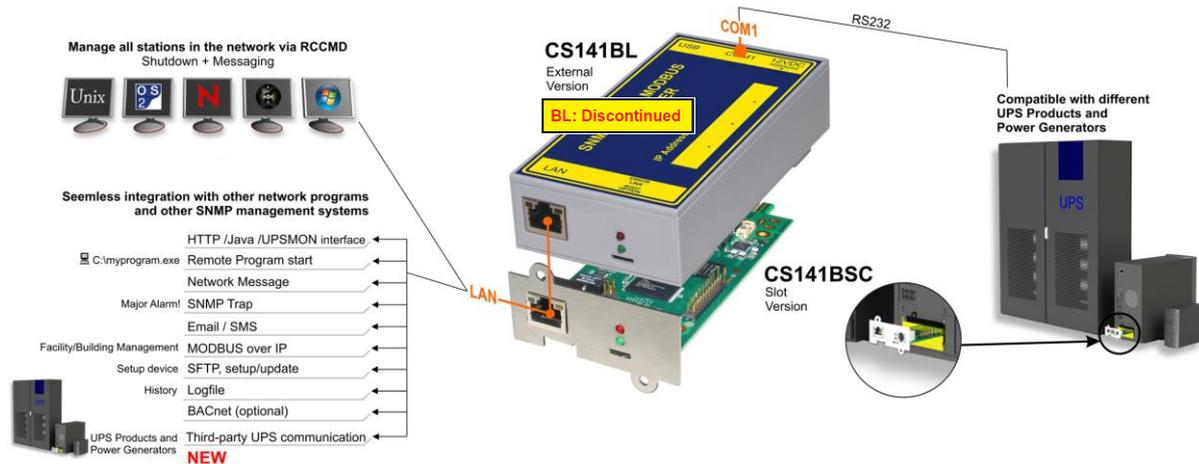
	CS141BSC Slot Card - all UPS vendors with SC slot format	CS141BSC_LC Slot Card - all UPS vendors with SC slot format - limited to 6 KVA
Power consumption	12V (min. 9V, max. 30V DC), 150 mA	12V (min. 9V, max. 30V DC), 150 mA
Size (W x L x H), weight	69 x 126 x 35mm, 210 g	60 x 120 x 29mm, 66 g
Network / LAN	HW141: 10/ 100/ Mbit Base-T auto sense HW161: 1000 Mbit Base-T auto sense	HW141: 10/ 100/ Mbit Base-T auto sense HW161: 1000 Mbit Base-T auto sense
RS-232 interface	1	1
RS-485 interface	-	-
Reset Button	HW141: - HW161: 1	HW141: - HW161: 1
USB Interface	-	-
AUX Interface	-	-
MODBUS over IP	Standard	Standard
BACnet over IP	Standard	Standard
Remote Syslog	Standard	Standard
Radius Server support	Standard	Standard
Status LED's	normal green, boot/error red	normal green, boot/error red
User manual	German, Englisch	German, Englisch
MIB file	RFC 1628 and private extentions	RFC 1628 and private extentions
Operating temperature.	0 – 45 °C	0 – 45 °C
Storage temperature	0 – 70 °C	0 – 70 °C
Max. operating ambient temperature	45 °C	45 °C
CPU	ARM Cortex A8 800 MHz	ARM Cortex A8 800 MHz
Flash Memory	HW141: 512 MB HW161: 8 GB	HW141: 512 MB HW161: 8 GB

CS141 & HW161 WEBMANAGER®

Intelligent UPS- and Infrastructure Management

RAM	HW141: 128 MB DDR3	HW141: 128 MB DDR3
	HW161: 512 MB DDR3	HW161: 512 MB DDR3
Humidity	20-95%, not condensing	20-95%, not condensing
Certification	CE, UL/NEMKO	CE, UL/NEMKO
MTBF (EN/IEC 61709)	849.192 hours (96,9 years)	849.192 hours (96,9 years)
Product warranty	2 years	2 years
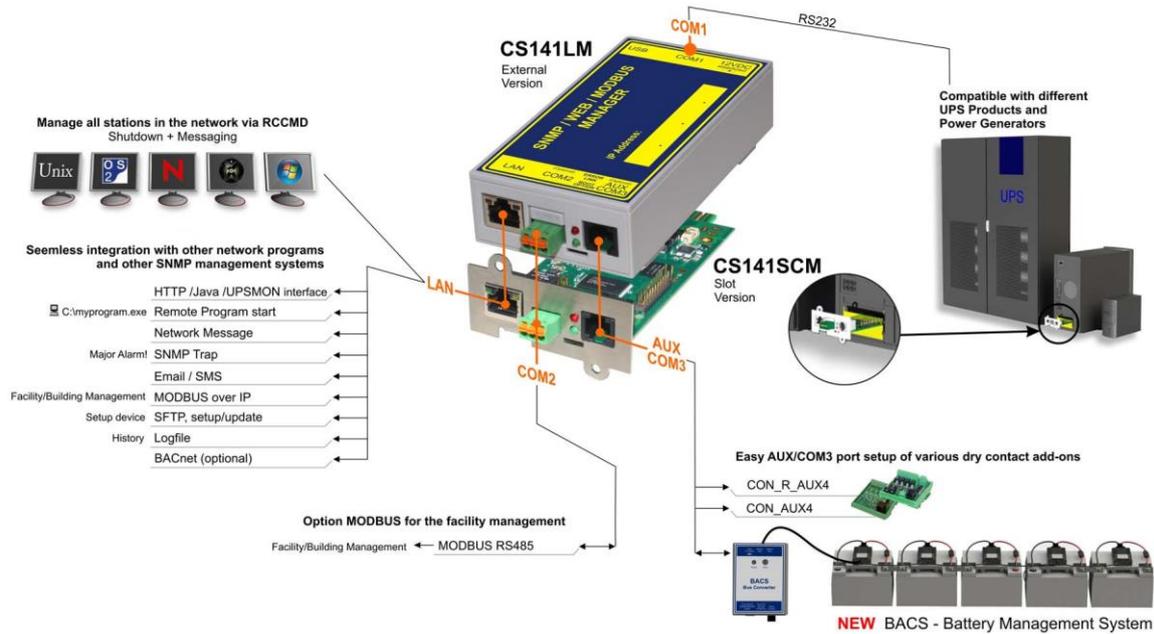
	CS141LM Modbus External RS485 (all UPS vendors)	CS141SCM Modbus Slot RS485 (all UPS vendors with SC slot format)
Power consumption	12V (min. 9V, max. 30V DC), 150 mA	12V (min. 9V, max. 30V DC), 150 mA
Size (B x L x H), weight	69 x 126 x 35mm, 210 g	60 x 120 x 29mm, 66 g
Network / LAN	10/ 100Mbit Base-T auto sense	10/ 100Mbit Base-T auto sense
RS-232 interface	1	1
RS-485 interface	1	1
USB interface	1	-
Reset Button	-	HW141: -
		HW161: 1
AUX interface	1	1
MODBUS over IP	Standard	Standard
BACnet over IP	Standard	Standard
Remote Syslog	Standard	Standard
Radius Server support	Standard	Standard
Status LED's	normal green, boot/error red	normal green, boot/error red
User manual	German, Englisch	German, Englisch
MIB file	RFC 1628 and private extentions	RFC 1628 and private extensions
Operating temperature.	0 – 45 °C	0 – 70 °C
Storage temperature	0 – 70 °C	0 – 70 °C
Max. operating ambient temperature	45 °C	55 °C

GENEREX

◆ # CS141 & HW161 WEBMANAGER®

Intelligent UPS- and Infrastructure Management

| CPU	ARM Cortex A8 800 MHz	Cortex A8 800 MHz
Flash Memory	HW141: 512 MB HW161: 8 GB	HW141: 512 MB HW161: 8 GB
RAM	HW141: 128 MB DDR3 HW161: 512 MB DDR3	HW141: 128 MB DDR3 HW161: 512 MB DDR3
Humidity	20-95%, not condensing	20-95%, not condensing
Certification	CE, UL/NEMKO	CE, UL/NEMKO
MTBF (EN/IEC 61709)	844.138 hours (96,4 years)	871.680 hours (99,5 years)
Product warranty	2 years	2 years
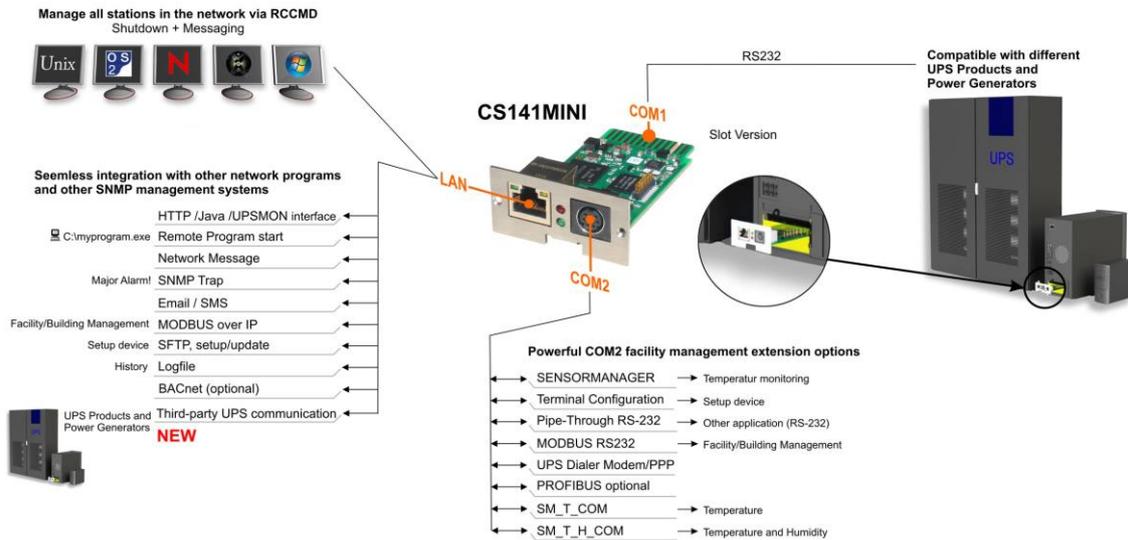
CS141MINI MINI Slot	
-all UPS vendors with Mini slot format -	
Power consumption	12V (min. 9V, max. 30V DC), 150 mA
Size (B x L x H), weight	42 x 80 x 26mm, 36 g
Network / LAN	10/ 100Mbit Base-T auto sense
RS-232 interface	2
RS-485 Interface	-
Reset Button	HW141: - HW161: 1
USB interface	-
AUX interface	-
MODBUS over IP	Standard
BACnet over IP	Standard
Remote Syslog	Standard
Radius Server support	Standard
Status LED's	normal grün, boot/error rot
User manual	German, English
MIB file available	RFC 1628 and private Extensions
Operating temperature.	0 – 70 °C
Storage temperature	0 – 70 °C
Max. operating ambient	55 °C

temperature	
CPU	Cortex A8 800 MHz
Flash Memory	HW141: 512 MB
	HW161: 8 GB
RAM	HW141: 128 MB DDR3
	HW161: 512 MB DDR3
Humidity	20-95%, not condensing
Certification	CE, UL/NEMKO
MTBF (EN/IEC 61709)	916.028 hours (104,6 years)
Product warranty	2 years
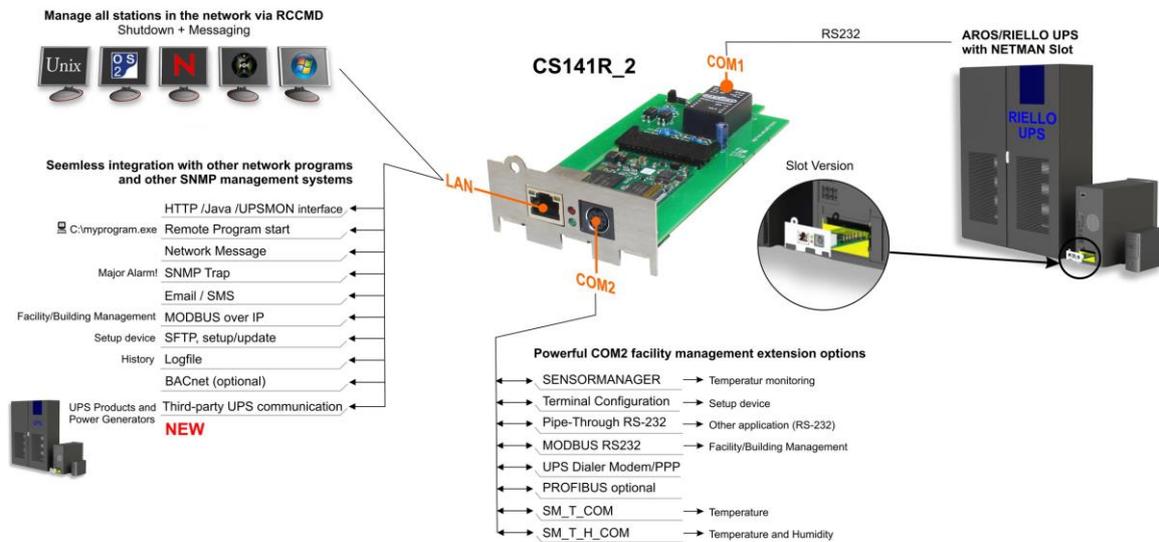
| CS141R_2 (all UPS vendors with RIELLO/AROS Netman slot format)	
Power consumption	12V (min. 9V, max. 30V DC), 150 mA
Size (B x L x H), weight	75 x 145 x 32mm, 92g
Network / LAN	10/ 100Mbit Base-T auto sense
RS-232 interface	2
RS-485 interface	-
RESET Button	HW141: -
	HW161: 1
USB interface	-
AUX interface	-
MODBUS over IP	Standard
BACnet over IP	Standard
Remote Syslog	Standard
Radius Server support	Standard
Status LED's	normal grün, boot/error rot
User manual	German, English
MIB file available	RFC 1628 and private Extensions
Operating temperature.	0 – 70 °C
Storage temperature	0 – 70 °C
Max. operating ambient temperature	55 °C

CPU	Cortex A8 800 MHz
Flash Memory	HW141: 512 MB
	HW161: 8 GB
RAM	HW141: 128 MB DDR3
	HW161: 512 MB DDR3
Humidity	20-95%, not condensing
Certification	CE, UL/NEMKO
MTBF (EN/IEC 61709)	916.028 hours (104,6 years)
Product warranty	2 years

CS141 Spower consumption
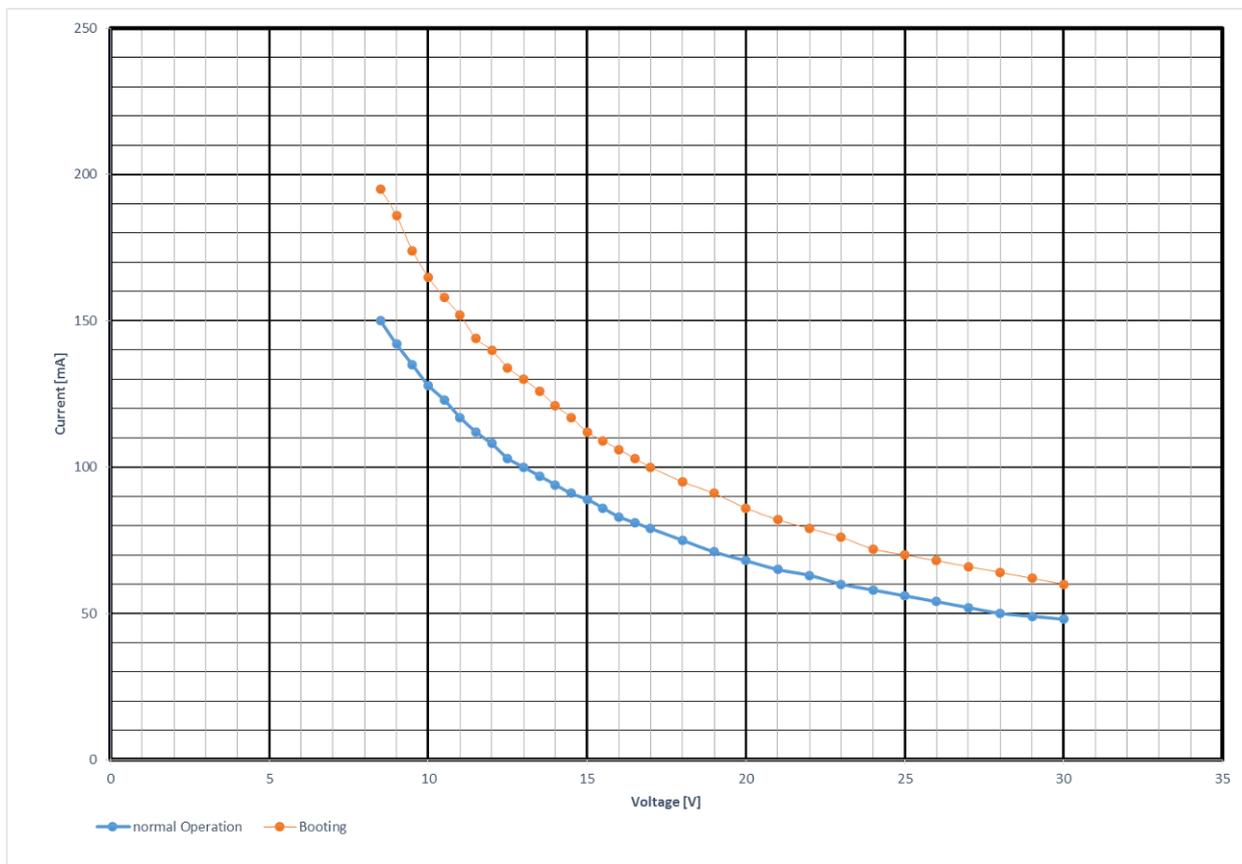
Power consumption of the CS141 during the start phase (orange curve) and the operating phase (blue curve)