UPS

Central Supply Systems

The CSS (Central Supply System) range by Riello UPS is designed in compliance with standard EN 50171 and is therefore the ideal solution for installation in buildings subject to fire safety regulations and in particular for the power supply of emergency lighting systems. In addition the CSS range by Riello UPS is also suitable for supplying power to other emergency systems such as automatic fire extinguishing systems, alarm systems and emergency detection systems, smoke extraction equipment and carbon monoxide detection devices as well as dedicated security systems in sensitive areas.
The use of centralised supply systems (CSS) ensures a significant reduction in system set-up and maintenance costs as well as making periodical checks simpler and faster to perform.

DUAL INPUT

The Riello UPS CSS range is equipped with DUAL INPUT as standard on all models.
This important feature allows the mandatory scheduled checks on system operation and autonomy to be carried out with extreme ease and in complete safety by simply operating an input switch. This switch interrupts the power supply to the machine without interrupting the bypass line, which is able to support the load in the event of test failure.

HIGH RECHARGE CURRENT AND BATTERY CARE SYSTEM

Proper battery care is critical to ensuring correct CSS operation in emergency conditions.
The Riello UPS battery care system consists of a series of features and capabilities designed to obtain the best performance, extend operating life and satisfy the recharge times imposed by the standard.
The Riello UPS CSS range is designed in compliance with standard EN 50171 and ensures high current levels are available for the batteries, allowing recharge of up to 80% of full autonomy within 12 hours.
Riello UPS CSS are suitable for use with hermetically sealed lead-acid (VRLA), AGM and GEL batteries and Open Vent and Nickel Cadmium batteries. Different charging methods are available depending on the battery type.
The recharge voltage compensation function based on temperature prevents excessive battery charges and overheating.
The deep discharge protection prevents reduced battery performance and battery damage.

HIGH OVERLOAD CAPACITY

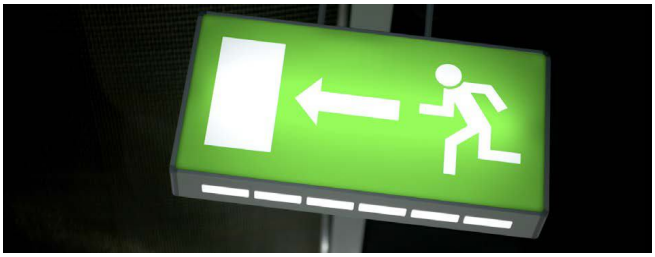
As required by standard EN 50171, the Riello UPS CSS range is designed and sized to support continuous overloads (with no time limits) of up to 120% of the machine's nominal power rating.

PROTECTION AGAINST BATTERY INVERSION

Mandatory in line with standard EN 50171, protection against battery inversion ensures the safety of those carrying out maintenance operations on the devices and at the same time prevents damage to the system in the event that the batteries are inadvertently connected with the wrong polarity.

GENERAL FEATURES

In addition to the features mentioned here, the Riello UPS CSS range has all the features of reliability and flexibility common to the UPS range it derives from, as well as offering compatibility with the main options and accessories.



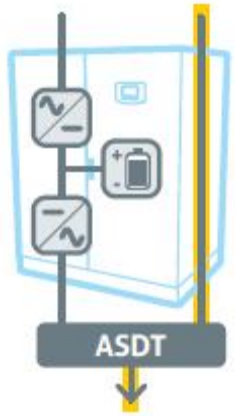
MODELS

The Riello UPS CSS range is based on both single-phase and three-phase models divided into two product families, 1h and 3h, optimised to offer maximum runtimes of 1 hour and 3 hours respectively at nominal load in accordance with the parameters set out in standard EN 50171.
In particular the models in the 3h range feature transformer-based technology and provide maximum protection for the connected load.
The models in the 3h range are based on transformer-less technology, therefore providing improved efficiency and reduced footprints.

OPERATING MODE

Every Riello CSS model supports all the operating modes set out and described in standard EN 50171, as below:

A Changeover mode



The load is supplied via the CSS bypass line (always supplied output “AS”).
In the event of power supply failure the internal automatic device (ATSD) transfers the load to the inverter. The battery provides power to the inverter, ensuring the required runtime.

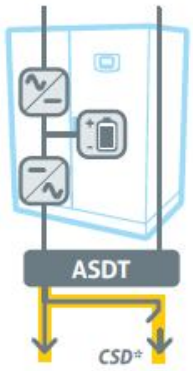
B Mode without interruption

The load is supplied constantly by the CSS inverter (always supplied output “AS”).
In the event of power supply failure the battery provides power to the inverter, ensuring the required runtime with no interruption at all.

C Changeover mode with additional control switching device for control switching of the loadIn addi

In addition to that described in points A and B, the equipment includes one or more switching devices (CSD), which rely on the availability of the normal power supply. On power supply failure the CSD device connects the load that up until the moment was not supplied (emergency only output “EO”)

D Changeover mode with additional control switching device for partial switching of the load



Differently to that described in point C, part of the load is supplied without interruption whilst the remaining part is only supplied upon power supply failure thanks to the CSD device (always supplied + emergency only output “AS+EO”).

EOS optional accessory

The EOS (Emergency Only Switch) accessory is required whenever one part of the load must always be supplied (always supplied output “AS ”), and one part must be supplied only when mains power fails (emergency only output “EO ”), in order to create the operating mode described in point D. By connecting

several EOS accessories in a cascade configuration it is also possible to provide for the sequential delayed switching on of loads in order to reduce inrush switching on currents.

Technical specification

Models CSS1h	6 1ph	10 1ph	15 1ph	10 3 ph	15 3 ph	20 3 ph	30 3 ph	40 3 ph	60 3 ph	80 3 ph	100 3 ph
Input	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal voltage	220-230-240 V_{AC} 1-ph 380-400-415 V_{AC} 3-ph+N			380-400-415 V_{AC} 3-ph+N							
Nominal frequency	50/60 Hz										
Frequency tolerance	40-72 Hz										
Bypass	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal voltage	220-230-240 V_{AC} 1-ph			380-400-415 V_{AC} 3-ph+N							
Number of phases	1			3+N							
Voltage tolerance	180-264V (selectable)										
Nominal frequency	50 or 60 Hz (selectable)										
Frequency tolerance	±5% (selectable)										
Output	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal power (kVA)	6	10	15	10	15	20	30	40	60	80	100
Active power (kW)	5,4	9	13,5	9	13,5	18	27	36	54	72	90
Power factor	0,9										
Number of phases	1			3+N							
Nominal voltage	220-230-240 V_{AC} 1-ph			380-400-415 V_{AC} 3-ph+N							
Static variation	±1%										
Dynamic variation	±3%										
Crest factor	3:1 Ipeack/Irms										
Voltage distortion	<1% with linear load/<3% with non-linear load										
Frequency	50/60 Hz										
Frequency stability during battery operation	0,05%										
Overload	120% continuous @ Pf 0,9										
Batteries	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Type	VRLA AGM/GEL 10 years (external)										
Recharge time	80% full autonomy in 12 hours										
Typical recharge current	0,2xC_{10}										
Temperature compensation	-0,5V/ ºC										
Other features	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Weight without batteries (kg)	105	110	120	110	120	135	145	190	200	220	380
Dimensions (w x d x h) (mm)	440x850x1320							500x850x1600			750x 855x 1900
Communications	3 slots for communications interface/USB/RS232										

Operating temperature	0°C/+40ºC				
Relative humidity	90% non-condensing				
Colour	Dark grey RAL 7016				
Noise level at 1 m	<52dBA	<48dBA	<56dBA	<58 dBA	<70 dBA
IP rate	IP20				
Smart Active efficiency	up to99%				
Standards	EN 50171-European Directives: L V 2006/95/CE low voltage Directives EMC 2004/108/CE electromagnetic compatibility Directives Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2 C2 Classification in accordance with IEC 62040-3 (Voltage Frequency Independent) VFI-SS-111				

Technical specification

Models CSS3h	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Input	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal voltage	380-400-415 V_{AC} 3-ph+N										
Nominal frequency	50/60 Hz										
Frequency tolerance	40-72 Hz										
Bypass	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal voltage	220-230-240 V_{AC} 1-ph			380-400-415 V_{AC} 3-ph+N							
Number of phases	1			3+N							
Voltage tolerance	±5%-±25%										
Nominal frequency	50 or 60 Hz (selectable)										
Frequency tolerance	±1% - ±6%										
Output	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Nominal power (kVA)	6	10	15	10	15	20	30	40	60	80	100
Active power (kW)	5,4	9	13,5	9	13,5	18	27	36	54	72	90
Power factor	0,9										
Number of phases	1			3+N							
Nominal voltage	220-230-240 V_{AC} 1-ph			380-400-415 V_{AC} 3-ph+N							
Static variations	±1%										
Dynamic variations	±3%										
Crest factor	3:1 Ipeack/Irms										
Voltage distortion	<1% with linear load/<3% with non-linear load										
Frequency	50/60 Hz										
Frequency stability during battery operation	0,05%										
Overload	120% continuous @ Pf 0,9										
Batteries	**6 1ph**	**10 1ph**	**15 1ph**	**10 3 ph**	**15 3 ph**	**20 3 ph**	**30 3 ph**	**40 3 ph**	**60 3 ph**	**80 3 ph**	**100 3 ph**
Type	VRLA AGM/GEL; NiCd; Li-ion 10 years (external)										
Recharge time	80% full autonomy in 12 hours										
Typical recharge current	0,2xC_{10}										
Temperature compensation	-0,5V/ºC										

Other features	6 1ph	10 1ph	15 1ph	10 3 ph	15 3 ph	20 3 ph	30 3 ph	40 3 ph	60 3 ph	80 3 ph	100 3 ph
Weight without batteries (kg)	200	220	230	241	256	315	335	460	540	600	610
Dimensions (w x d x h) (mm)	555x740x1400							800x740x 1400		800x800x 1900	
Communications	2 slots for communications interface/bezpotenciálové kontakty/2 RS232										
Operating temperature	0°C/+40ºC										
Relative humidity	90% non-condensing										
Colour	Dark grey RAL 7016										
Noise level at 1 m	60dBA						62dBA			65dB A	68 dBA
IP rate	IP20										
Smart Active efficiency	up to98%										
Standards	EN 50171-European Directives: L V 2006/95/CE low voltage Directives EMC 2004/108/CE electromagnetic compatibility Directives Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2 C2 Classification in accordance with IEC 62040-3 (Voltage Frequency Independent) VFI-SS-111										

A2B, s.r.o. reserves the right to change any specifications without prior notice (V012014)