riello ups

Central Supply Systems

EMERGENCY

CSS

1:1 3:1 6-15 kVA

3:3 10-100 kVA

EN50171 CERTIFIED

PRODUCTS VERIFIED BY IMQ

HIGHLIGHTS

CERTIFIED COMPLIACE WITH STANDARD EN 50171
Ideal for emergency lighting and alarm systems.

DUAL INPUT
Simplicity and safety for the periodical system operation check.

PROTECTION AGAINST BATTERY INVERSION
Protection for emergency services and safety for operators.

HIGH RECHARGE CURRENT
Reduced recharge times.

CONTINUOUS OVERLOAD OF 120%
Large power reserve.

CASING COMPLIANT WITH STANDARD EN 60598-1
High mechanical protection.

BATTERIES WITH 10 YEAR LIFE
Long battery life.

The CSS (Central Supply Systems) range by Riello UPS is certified and 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

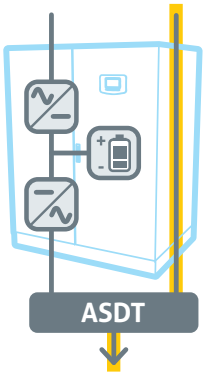
The Riello UPS CSS range is based on both single-phase and three-phase models divided into two product families, 1h and 3h, optimised to offer maximum runtimes of 1 hour and 3 hours respectively at nominal load in accordance with the parameters set out in standard EN 50171.
In particular the models in the 3h range feature transformer-based technology and provide maximum protection for the connected load.
The models in the 1h 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 EN50171, as below:

A Changeover mode

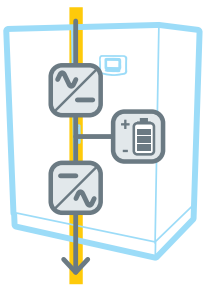
The load is supplied via the CSS bypass line (always supplied output "AS").



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

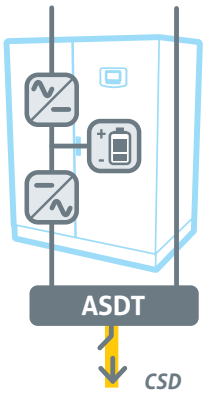
The load is supplied constantly by the CSS inverter (always supplied output "AS").



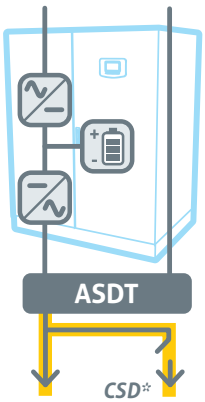
In the event of power supply failure the battery provides power to the inverter, ensuring the required runtime with no interruptions at all.

C Changeover mode with additional control switching device for control switching of the load

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 that 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").

**Requires EOS optional accessory*

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.

CSS 1h models	6 1 ph	10 1 ph	15 1 ph	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											
Nominal voltage	220 - 230 - 240 Vac 1 ph 380 - 400 - 415 Vac 3 ph + N			380 - 400 - 415 Vac 3 ph + N							
Nominal frequency	50/60 Hz										
Frequency tolerance	40 - 72 Hz										
BYPASS											
Nominal voltage	220 - 230 - 240 Vac 1 ph			380 - 400 - 415 Vac 3 ph + N							
Number of phases	1			3 + N							
Voltage tolerance	180 - 264 V (selectable)										
Nominal frequency	50 or 60 Hz (selectable)										
Frequency tolerance	±5 (selectable)										
OUTPUT											
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 Vac 1 ph			380 - 400 - 415 Vac 3 ph + N							
Static variation	± 1%										
Dynamic variation	± 3%										
Crest factor	3 : 1 Ipeak/Irms										
Voltage distortion	≤ 1% with linear load / ≤ 3% with non-linear load										
Frequency	50/60 Hz										
Frequency stability during battery operation	0,01%										
Overload	120% continuous, 132% 10 min, 160% 1 min, 180% 5 s										
BATTERIES											
Type	VRLA AGM/GEL 10 years (external)										
Recharge time	80% of full autonomy in 12 hours										
Typical recharge current	0,2 x C_{10}										
Temperature compensation	-0,5 V/°C										
INFO FOR INSTALLATION											
Weight without batteries (kg)	107	112	122	112	122	138	148	194	204	224	250
Dimensions (WxDxH) (mm)	440 x 850 x 1320							500 x 850 x 1600			650 x 840 x 1600
Communications	3 slots for communications interface / USB / RS232										
Operating temperature	0°C / +40°C										
Relative humidity	90% non-condensing										
Colour	Dark grey RAL 7016										
Noise level at 1 m [dBA±2] (Smart Active)	< 40 dBA							< 63 dBA			
IP rating	IP20										
Smart Active efficiency	up to 99%										
Standards	EN 50171 - European Directives: L V 2006/95/CE low voltage Directive EMC 2004/108/CE electromagnetic compatibility Directive 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										
Moving the CSS	castors (6 - 80 kVA) / transpallet (100 kVA)										

CSS 3h models	6 1 ph	10 1 ph	15 1 ph	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											
Nominal voltage	380 - 400 - 415 Vac three-phase										
Nominal frequency	50/60 Hz										
Frequency tolerance	40 - 72 Hz										
BYPASS											
Nominal voltage	220 - 230 - 240 Vac 1 ph			380 - 400 - 415 Vac 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											
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 Vac 1 ph			380 - 400 - 415 Vac 3 ph + N							
Static variation	± 1%										
Dynamic variation	± 3%										
Crest factor	3 : 1 Ipeak/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, 130% 60 min, 145% 10 min, 170% 1 s										
BATTERIES											
Type	VRLA AGM/GEL; NiCd; Li-ion 10 years (external)										
Recharge time	80% of full autonomy in 12 hours										
Typical recharge current	0.2 x C_{10}										
Temperature compensation	-0,5 V/°C										
INFO FOR INSTALLATION											
Weight without batteries (kg)	200	220	230	241	256	315	335	460	540	600	610
Dimensions (WxDxH) (mm)	555 x 740 x 1400							800 x 740 x 1400		800 x 800 x 1900	
Communications	2 slots for communications interface / 2 RS232 / dry contacts										
Operating temperature	0°C / +40°C										
Relative humidity	90% non-condensing										
Colour	Dark grey RAL 7016										
Noise level at 1 m	60 dBA						62 dBA			65 dBA	68 dBA
IP rating	IP20										
Smart Active efficiency	up to 98%										
Standards	EN 50171 - European Directives: L V 2006/95/CE low voltage Directive EMC 2004/108/CE electromagnetic compatibility Directive 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										
Moving the CSS	transpallet										