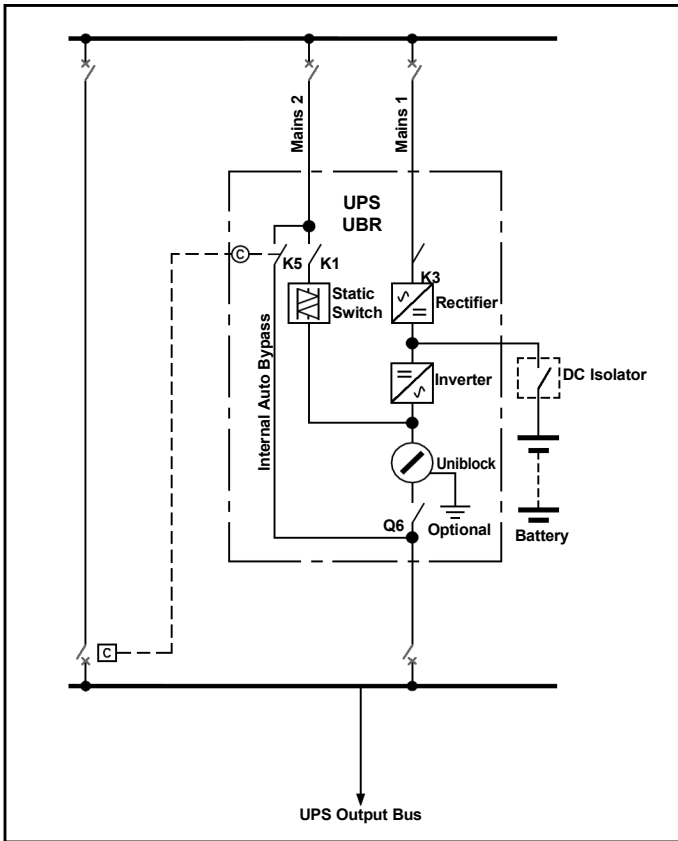


78 - UPS Application Design Guidance



UNIBLOCK UBR Hybrid Rotary UPS - Single Line Drawing

UNIBLOCK UBR Hybrid Rotary UPS - Operation

Normal operation is through the static switch (thyristor) path (Mains 2). The thyristor switch is controlled so that active power flows only in the direction of the motor of the UNIBLOCK machine. The generator of the UNIBLOCK machine supplies the load with the same dynamic characteristics as an AC supply system.

In the event of a fault in the thyristor switch the UNIBLOCK machine is supplied exclusively by the rectifier and inverter circuit (Mains 1). Similarly during a failure of the rectifier/inverter circuit the UNIBLOCK machine is supplied by the thyristor switch.

In the event of a mains failure the UNIBLOCK machine is fed via the battery and inverter with the input contactors opened.

The generator of the UNIBLOCK machine can supply peak currents without being limited by the current ratings of additional semiconductors. The impedance of the generator – which is similar to that of the AC line – delivers a short-circuit current of up to 18 times the rated current without switching back to Mains (even when operating in battery mode).

The motor voltage provides natural commutation for the inverter and the UNIBLOCK machine generates a sinusoidal voltage so no power capacitors are necessary for commutation or filtration. The brushless excitation of the motor/generator is provided by an exciter mounted on the shaft and the generator voltage is electronically regulated.

The internal redundancy combined with no capacitors and control redundancy make the UBR Hybrid Rotary UPS the most reliable UPS available. In addition since the UPS does not normally operate through the double conversion path it achieves efficiencies in excess of 95%.

Technical Data - UNIBLOCK UBR

Input

Voltage: 380 - 415V 50Hz
 Voltage Tolerance: +10% / -20%
 Power Factor at Rated Voltage: > 0.95
 Current Harmonic Distortion: < 2% (Meets G5/4)
 (Normal operation)

General

Operational Altitude: Up to 1000m Above Sea Level
 Ambient Temperature: 0 - 35°C Daily Average
 Relative Humidity: 0 - 95% Non Condensing
 Degree of Protection: IP20

Reliability

> 860,000 Hours

Output

Voltage: 380 - 415V 50Hz
 Voltage Tolerance: ± 1% - Steady State
 Frequency Tolerance: ± 1%
 Overload capacity: 110% for 1 hour
 125% for 10 minutes
 150% for 2 Minutes
 (Without switching to bypass)
 Power Factor: 0.8 Lag to Lead
 Efficiency: Up to 95%
 Load Crest Factor: Unlimited
 Short Circuit Capacity: Up to 18 x Rated Current

(Without switching to bypass)

Pillar UNIBLOCK UBR Hybrid Rotary UPS Guide to Dimensions & Weights

	150 kVA L x W x H	220 kVA L x W x H	330 kVA L x W x H	420 kVA L x W x H	500 kVA L x W x H	625 kVA L x W x H	800 kVA L x W x H	1100 kVA L x W x H
UNIBLOCK UBR	1905 x 865 x 1900	2438 x 865 x 1900	2438 x 865 x 1900	2740 x 985 x 1900	2740 x 985 x 1900	2740 x 985 x 1900	3662 x 1320 x 2353	3662 x 1320 x 2353
Weight kg	2510	3725	3725	5285	6235	6235	12440	13150
UNIBLOCK UBRW (Incl water cooling option)	2580 x 865 x 2200	3138 x 865 x 2200	3138 x 865 x 2200	3540 x 985 x 2300	3540 x 985 x 2300	3540 x 985 x 2300	6063 x 1339 x 2353	6063 x 1339 x 2353
Weight kg	2930	4125	4125	5705	6655	6655	13505	14205
Example 5 mins VRLA Battery on Stand	1965 x 700 x 1590	2010 x 700 x 1605	2335 x 655 x 2380	2335 x 655 x 2380	4545 x 655 x 1590	3890 x 700 x 2395	2 x (2335 x 655 x 2380)	2 x (3680 x 700 x 2000)
Weight kg	2360	2500	3375	3375	4500	7500	6750	12495
Example 10 mins VRLA Battery on Stand	2005 x 700 x 1605	2335 x 655 x 2380	3680 x 700 x 1605	3595 x 700 x 2380	3680 x 700 x 2395	2 x (3680 x 700 x 1605)	2 x (3680 x 700 x 2000)	2 x (3680 x 700 x 2780)
Weight kg	2500	3375	5000	7070	7500	10000	12495	16495