

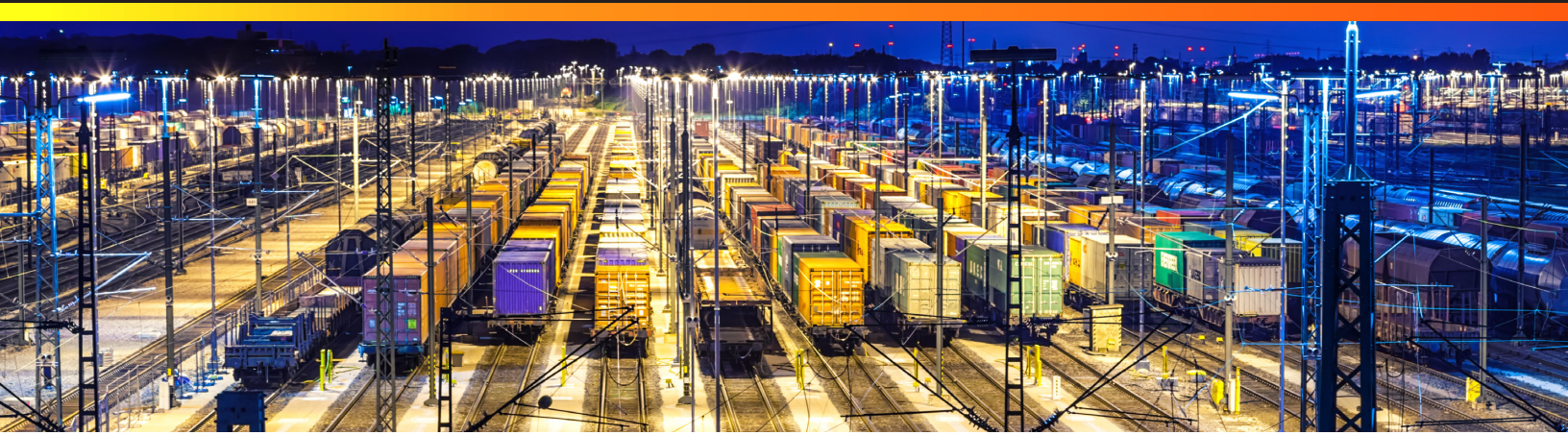


Vertiv™ Liebert®

Industry S Series

Ultimate and Reliable Integrated
Multi-scenario UPS System





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For C&I Multi-scenario Applications

Ultimate and Reliable Integrated UPS System

Industry S 6-30 kVA Single-phase Output System

Industry S 10-30 kVA Three-phase Output System

Product Overview

Adopting a new design concept, the Industry S series multi-scenario UPS system merges Vertiv's professional UPS design into various commercial&industrial (C&I) application scenarios such as manufacturing, transportation, building, logistics, cement, oil and gas applications. While maintaining the ultimate performance indicators, the Industry S series multi-scenario UPS are widely adapted to various harsh physical and electrical environments in multi-scenario applications, providing reliable and uninterrupted power supply for critical loads of C&I businesses.



Design Highlights

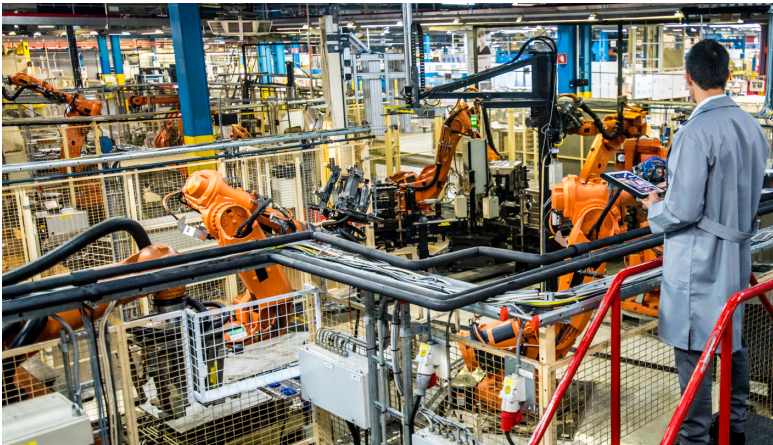
C&I activities cover all aspects of human production and life. UPS in the C&I application scenarios needs to satisfy the requirements for business continuity in different industries and regions. Based on characteristics of C&I applications in non-data center scenarios, the Industry S series multi-scenario UPS overcomes a series of technical difficulties in R&D, and improves the electrical adaptability and environmental adaptability of the product from many design details to ensure that the UPS can be used in C&I applications with high reliability.

- IP42 protection design effectively preventing potential risks caused by the entry of solids with a diameter of 1 mm and accidental water spray
- Original built-in isolation transformer to electrically isolate the critical load ^{*1}
- Worry-free maintenance throughout the entire process, intelligent action-sensing maintenance bypass, automatic misoperation prevention
- Multiple power distribution branches integrated in the cabinet to meet the needs of typical feeders
- Support for original built-in battery module ^{*2}
- Full frontal maintenance design to meet the needs of wall mounting in narrow spaces
- Sturdy vertical cabinet structure (2 mm structural steel)



^{*1} input transformer is optional part.

^{*2} optional part for particular models.



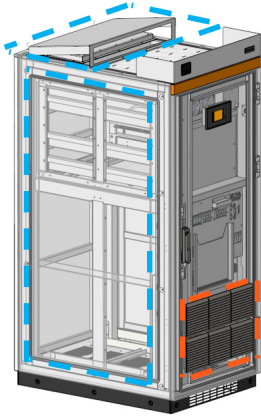
- Exclusive system-level + module-level protective independent air duct design to adapt to various harsh dust and humid environments
- Compartment air ducts of the entire system for large-sized heating components and power modules to optimize heat distribution in the cabinet
- Innovative independent air duct for the power modules to ensure reliable and normal operating of the system even if dust enters the cabinet

- Ultra-wide input voltage range from -55% to +30%, adapted to harsh grid environments
- Excellent performance with an input power factor of 0.99 and input current harmonic of lower than 5%
- Full-color GUI displaying detailed running status and parameters
- Integrated, RS232 interface, RJ45 interface, and dry contact interface in the cabinet, and expandable communication card
- Support for cold start of battery, one-key start in case of power failure, and emergency power supply
- Independent fan switch, achieving safe online fan replacement
- Support for operating ambient temperature of 0°C to 50°C, improving the actual reliability in on-site application
- Operating at a maximum altitude of 3000 m without derating, suitable for application in special regions
- Module-level maintenance to minimize the MTTR



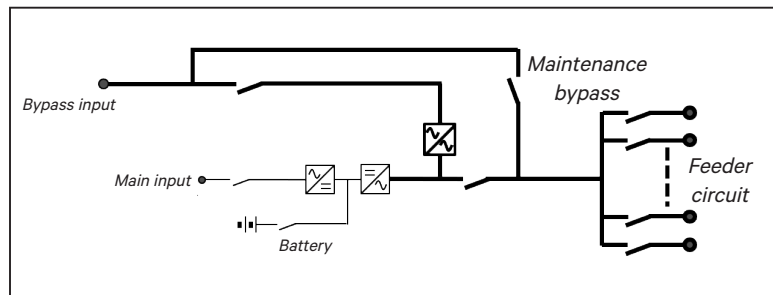
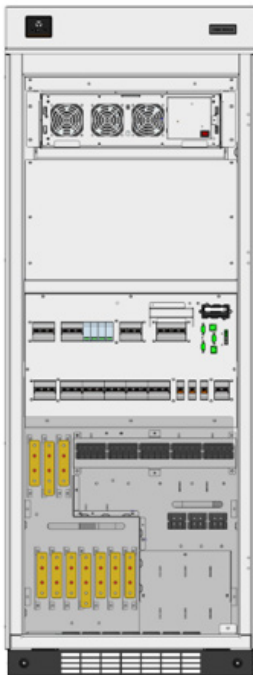
Technical Features

Withstand the harshest environments



- High protection rating: Reaching IP42 grade, the entire equipment of the Industry S series multi-scenario UPS can prevent solids with a diameter of 1.0 mm from entering the cabinet and work properly in case of water spray in a 15° inclined direction.
- Ultra-wide operating temperature range: The normal operating ambient temperature of the host can be as high as 50°C, flexibly adapting to the non-air-conditioning environments and the extreme environments such as dust and humidity in the C&I application scenarios.

Pre-fabricated UPS module design



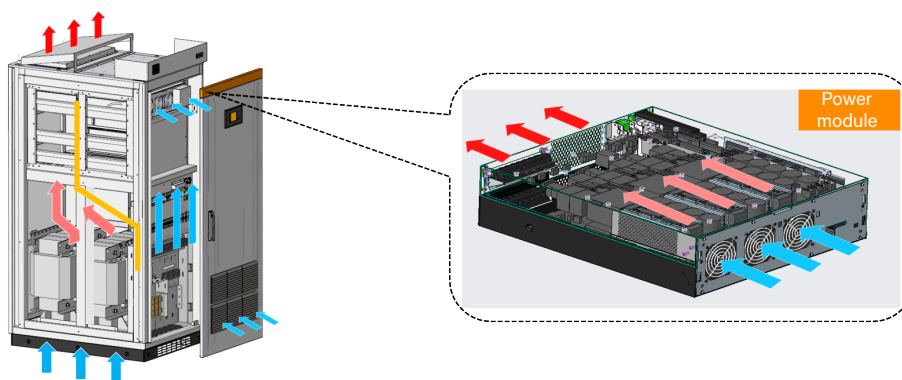
The main UPS cabinet is integrated with the main input and output switches, battery switch, and maintenance bypass switch in the factory, and equipped with multiple sets of user feeders following the main output switch to satisfy basic feeder requirements in most scenarios. As an innovative pre-fabricated UPS module, the Industry S series multi-scenario UPS greatly facilitates on-site installation and O&M and ensures the overall reliability.

*For specific quantity of feeder circuits and specifications, see the electrical single-wire diagram and user manual of the specific model cabinet.

System-level compartment air duct + module-level independent air duct

Industry S series multi-scenario UPS adopts a dual environmental protection design with innovative system-level compartment air duct and power module-level independent air duct. The high-power heating components and power modules in the cabinet use separately isolated air ducts in front and rear compartments to improve the heat dissipation effect.

The power modules in the cabinet adopt the innovative "independent air duct" to isolate sensitive components. In this way, the entire UPS system can still work reliably even if the power modules fail due to dust and conductive powder.

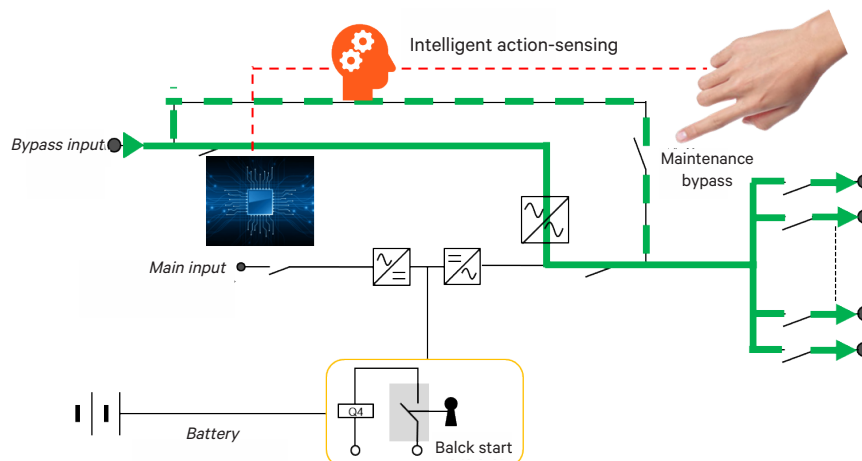


Black start function

You can start the UPS by one key by leveraging the black start function of the battery in case of network-wide power failure. This ensures emergency power supply for critical loads.

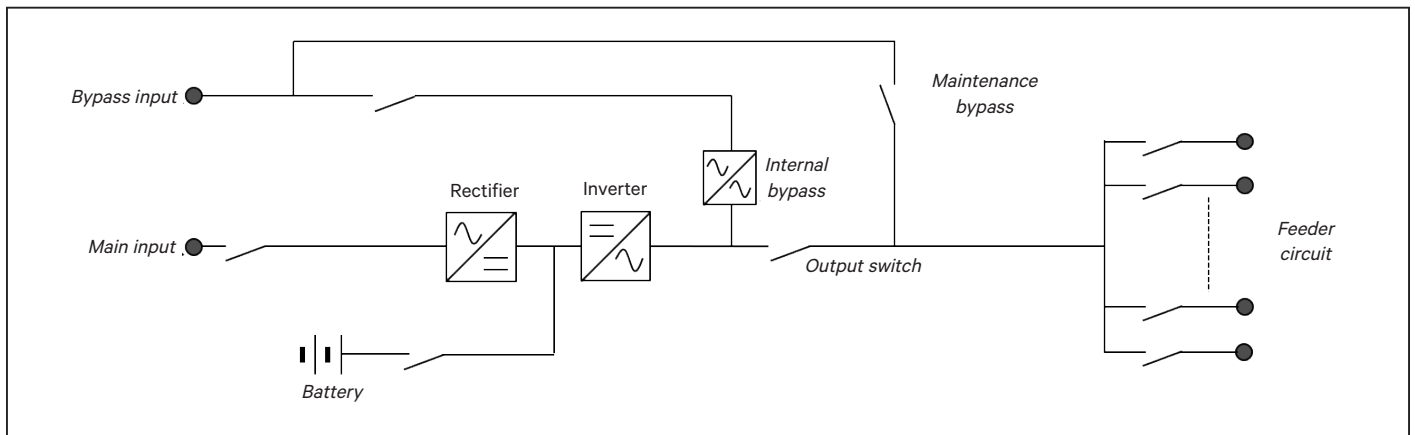
Intelligent maintenance bypass

The maintenance bypass supports intelligent action-sensing. When the maintenance bypass protection device is removed, the UPS host automatically switches to the internal bypass. During maintenance, the UPS is in a logic protection state to avoid misoperation causing the bypass to pass through the inverter.



Technical Features

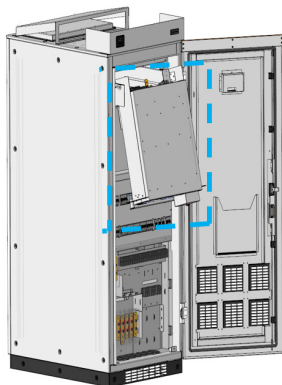
Fully digital control technology, configurable input, output and bypass isolation transformers



The Industry S series multi-scenario UPS can be pre-equipped with input, output, and bypass isolation transformers at the factory. In sensitive power applications, it can completely isolate the electrical system on the input side and the load side.

The built-in transformers are dynamically adjusted by the UPS control algorithms and perfectly match with the rectifier and inverter, making the system keep the optimal operating status. The system detects the transformer temperature in real time to ensure safe and reliable operating.

Full frontal maintenance



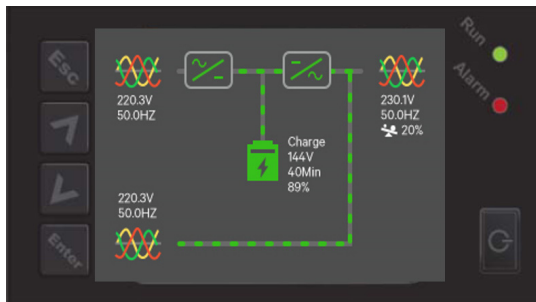
The entire system layout of the Industry S series multi-scenario UPS adopts the fully frontal maintenance mode. The system exhausts hot air from the top of the cabinet and supports the wall-mounted mode. This makes the cabinet arrangement more flexible. Therefore, the UPS is applicable to narrow spaces of C&I business sites.

An independent fan switch is set in the main cabinet, which can safely power off the fan module for fan replacement, making it safer and more reliable to use the system.

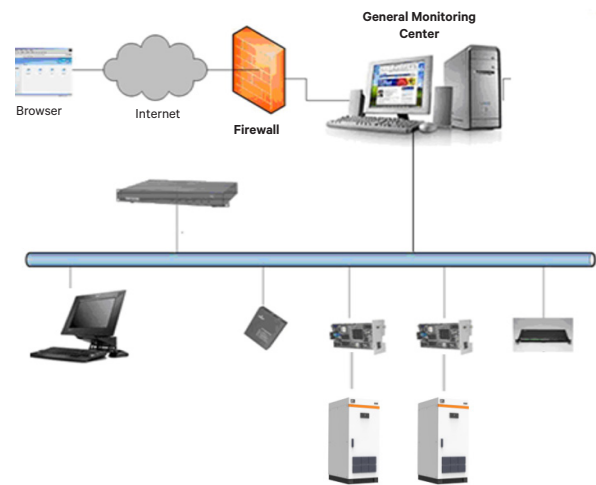
The power module in the cabinet can be taken out as a whole for replacement. The simple and convenient module-level maintenance greatly minimizes the MTTR.

User-friendly HCI screen and communication

Full-color LCD screen displays color graphics and LED indicators, helping you control the UPS operation, query the operating status and parameters, and view event and records.

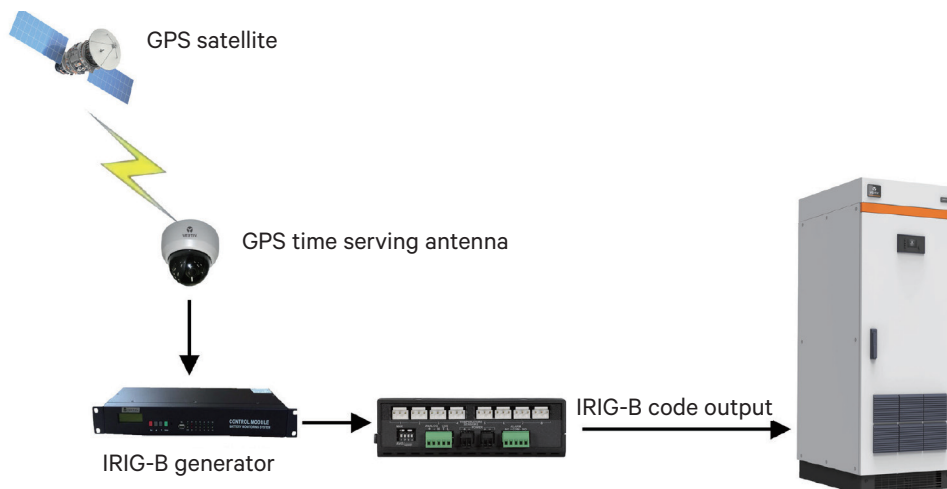


The standard configuration of the UPS includes the RS232 interface, dry contact interface, multi-function communication interface and smart card interface. The UPS can be expanded to include communication cards such as SIC card and Relay card.



IRIG-B time synchronization

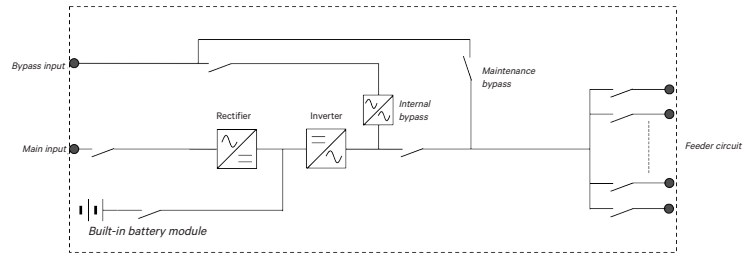
The UPS host supports IRIG-B clock synchronization. It reads the time received from the satellite (or time server) in real time to modify the internal clock of the UPS to keep the UPS host synchronized with the on-site equipment. This function helps the UPS meet the time synchronization requirements of subway, oil and gas transmission, power dispatch and other scenarios.





UPS

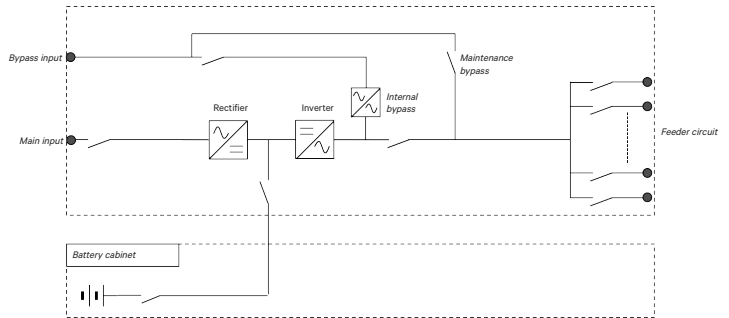
Built-in battery module application



UPS

Battery cabinet

Extended battery cabinet application

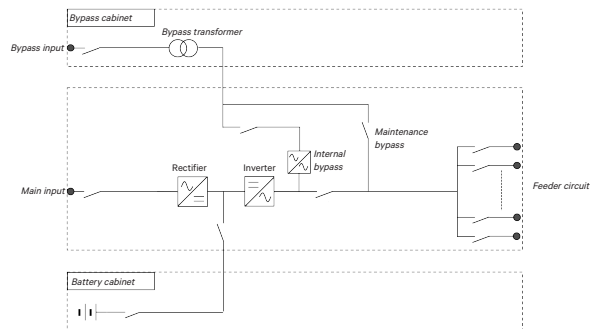


Bypass cabinet

UPS

Battery cabinet

Independent bypass isolation cabinet application



Output Capacity (kVA)

Single-phase input/single-phase output	6	10			
Three-phase input/single-phase output	6	10	15	20	30
Three-phase input/three-phase output		10	15	20	30
Input characteristics					
Rated input voltage (phase voltage)	220/230V				
Phase voltage range	100V~288V ^{*1}				
Rated input frequency	50/60Hz				
Input frequency range	40Hz~70Hz				
Input power factor	0.99				
Input current harmonic content	<5%				
DC characteristics					
Battery switch	Standard built-in battery				
Battery type	Lead acid, nickel cadmium, and lithium batteries ^{*2}				
Built-in battery pack (optional)	20 min	10 min	7 min	5 min	3 min
Rated voltage of battery	For the single-phase output of 6–10 kVA, the options include 144 V, 192 V, 216 V, and 240 V. For other specifications, the options include 288 V, 360 V, 384 V, 432 V, and 480 V.				
Output characteristics					
Rated output voltage (phase voltage)	220/230V				
Output power factor	0.8 ^{*3}				
Voltage stability	<1% in steady state				
	<5% in transient state				
Frequency stability	±0.1 Hz				
Frequency synchronization range	±5 Hz				
Transient response time	20 ms				
Inverter overload capacity	<105% for long-term operating; 105%~125% for 10 minutes; 125%~150% for 1 minute				
Total harmonic content THDv	2% for linear load				
	4% for non-linear load				
Efficiency	93.0%	93.5%	94.0%	94.5%	95.0%
Switching time	0 ms for switching from the main power supply to the battery, and 0 ms for switching from the inverter to the bypass				
System					
Noise	≤55 dB				
Protection rating	IP42				
Color	RAL7035/RAL7021 (Other colors can be customized)				
Communication interface	RS232/Multi-function communication interface(RJ45)/dry contact interface/smart card box interface, (MODBUS & SNMP)				
Cable inlet	Bottom cabling (top cabling optional)				
Physical specifications (mm)	1650/1720 (H) × 600 (W) × 850 (D) ^{*4}				
Operating temperature range	0°C~50°C				
Relative humidity	0~95%				
Altitude	3000 m without derating				
Standard	IEC62040-1/2/3				

^{*1} When the input voltage is 176 V AC to 288 V AC, the system works in full load. When the input voltage is 100 V AC to 176 V AC, the load linearly decreases. When the input voltage is 100 V AC, the system works in half load.

^{*2} nickel cadmium, and lithium batteries need special firmware.

^{*3} The output power factor is 0.8 and the highest PF can be customized as 1.

^{*4} 1650mm is without idler wheel. 1720mm is with idler wheel.



Vertiv.com | Block B2 Nanshan Park No.1001 XueyuanRoad Nanshan Dist. Shenzhen

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