

Industrial Online UPS 10-300KVA
CNI310 & CNI330
Series



CONSNANT

Constant Electric Power
www.consnant.com



CNI310 & CNI330 Series

Industrial Online UPS

10-100KVA (3Ph in & 1Ph out) / 10-300KVA (3Ph in & 3Ph out)



Industrial Processes



Oil Industry



Gas Industry



Petrochemical Industry



Mining Industry



Power Station

Product Snapshot:

Capacity: 10-300KVA

Nominal Voltage: 380/400/415VAC

Nominal Frequency: 50/60Hz

Output Power Factor: 0.8



UPS Main Cabinet



Bypass Cabinet

High-Reliability Industrial Grade Design:

The CNI310 & CNI330 systems are composed of power dedicated UPS, DBW bypass voltage regulator cabinet, and PDU feeder cabinet. CONSNANT is committed to the development needs of China's power plants, substations, and power distribution stations. The products are designed with online double conversion and zero conversion functions. The main applications include power movement, RTU, power carrier, power monitoring, etc. When the mains power is normal, single-phase 220V (or three-phase 380V) is isolated, rectified and filtered into a stable power supply to the load through the inverter. When the input AC power is abnormal or disconnected, the backup power system by the DC panel inverts to supply power through non-return diode. When the DC panel is under voltage or powered off, the static switch switches to bypass to supply power. When the power supply is resumed, the inverter automatically switches to the mains power and supply power in inverter mode. If the inverter is overloaded or malfunctions, it will switch to bypass to supply power and send a warning signal at the same time.

In order to ensure the continuous operation of critical equipment, we offer a full range of uninterruptible AC power systems and related power distribution products for single products, integrated systems, personal network security, IT, medical systems, etc., providing good power protection for the manufacturing industry and ensure stable operation.

Application:

Petroleum, chemical industry, gas and power station...

Key Features:

- Adopt full digital control technology.
- Intelligent detection and monitoring function.
- Digital control and static switch zero switching.
- Input/Output full isolation.
- DC UPS isolated from utility power completely.
- Cubicle design with power standards.
- Multifunctional protections against overvoltage, low voltage, overcurrent, short circuit, and so on.
- Large-screen LCD display with Chinese and English operation interface.
- Ultralong 256 event records, user-friendly analysis and management of the situation of power supply.
- Static bypass has a strong anti-overload capacity.

Control System

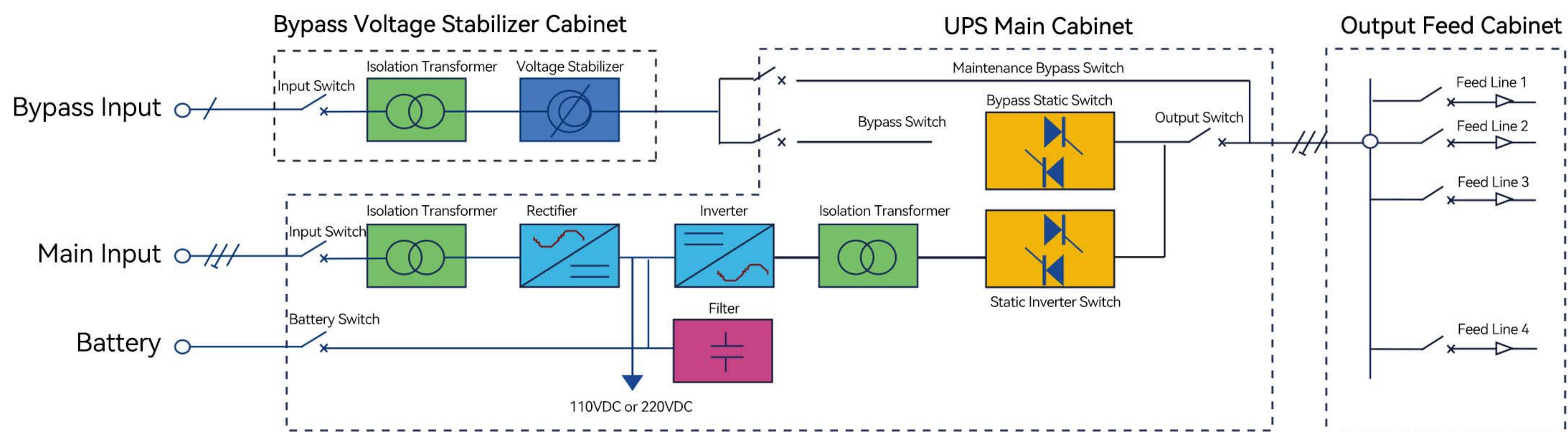
Adopt microprocessor bus control technology and ensure the real-time control of rectifier, inverter, static switch, as well as coordination of each power part, characterized by increased control of aging, higher reliability, and improved efficiency of the entire UPS system.

Rectifier

A fully controlled bridge rectifier composed of 6 pulses or 12 pulses (6 or 12 SGR). Its function is to rectify the input AC 380V to DC 405V or so. Its control features "slope" start, that is, the rectifier output voltage rises from 0V to 405V within 10 seconds without affecting the grid.

Inverter

The SPWM (Sinusoidal Pulse Width Modulation) is a full bridge composed of six IGBT high-power transistors. Its function is to transform the DC voltage into standard sinusoidal AC voltage into AC 220V voltage required by the load through the special (Δ/Y) zero-phase-shift zigzag isolation transformer. In addition, the transformer can eliminate third harmonics reflected from non-linear loads such as computers. The control features the adoption of "slow-down gate voltage" protection technology, which greatly reduces the disturbance shutdown of the inverter (mutual conversion between the inverter and the static switch), improves the overload capacity of the entire UPS system, and the short-circuit resistance and anti-overload capacity are superior to the general UPS, especially the short-circuit resistance is unmatched by the general UPS.



Principle Diagram

Static Switch:

Not sync automatically switch:

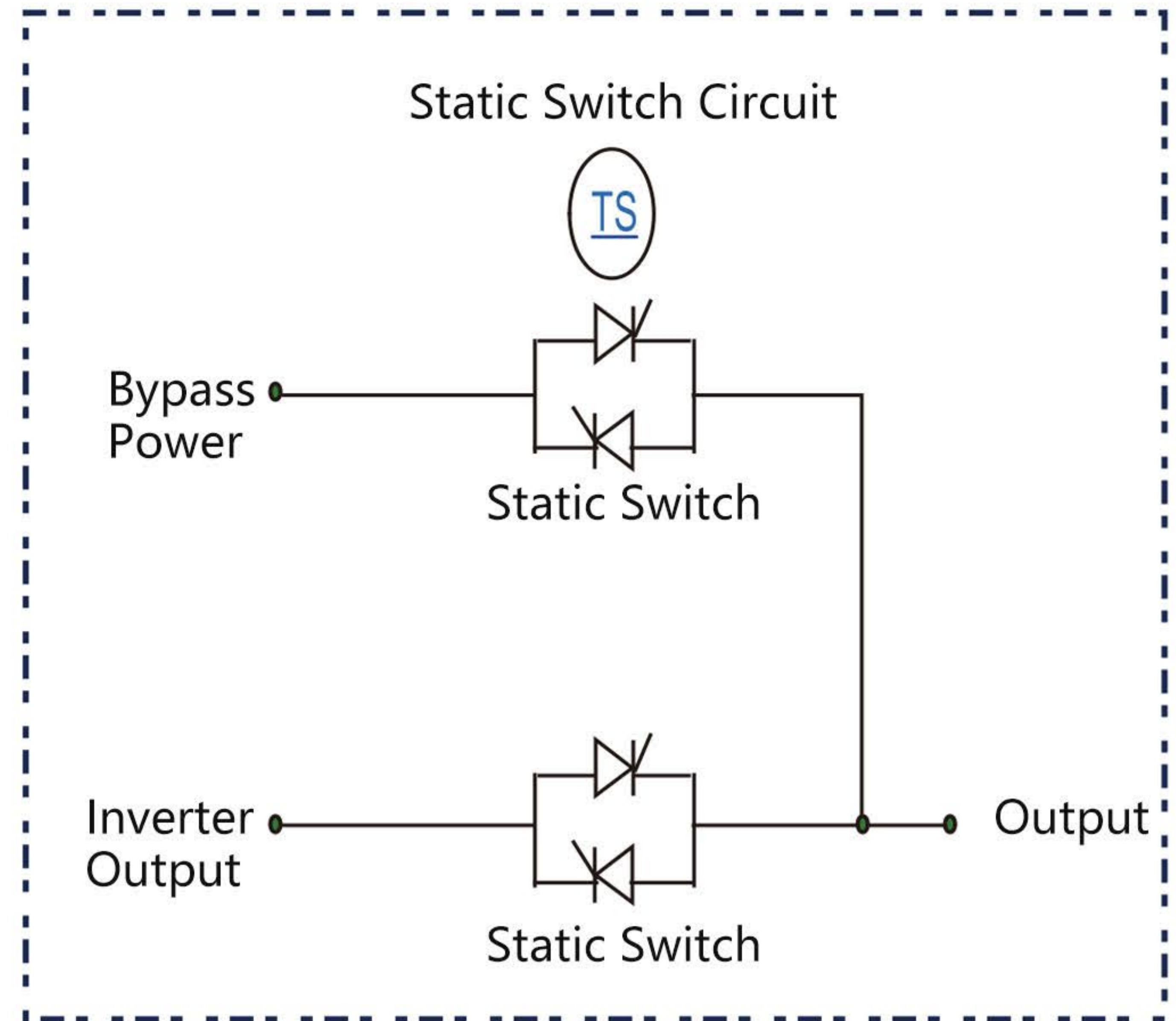
- When the bypass of UPS and inverter are not synchronized, the system can automatically implement not sync switch, which can ensure no power cutoff if the mains surge pulse width is $<5\text{ms}$.
- When the bypass exceeds the limit, UPS detects the bypass every 20ms, as long as the phase angle difference of bypass and inverter comes back to the normal range, not synchronized bypass switching can be realized.

Intelligent Monitoring:

Through RS232/RS485, passive contacts and power transmitter signals, the working status and real-time data of the UPS are transmitted to the DCS system, finally realizing intelligent monitoring.

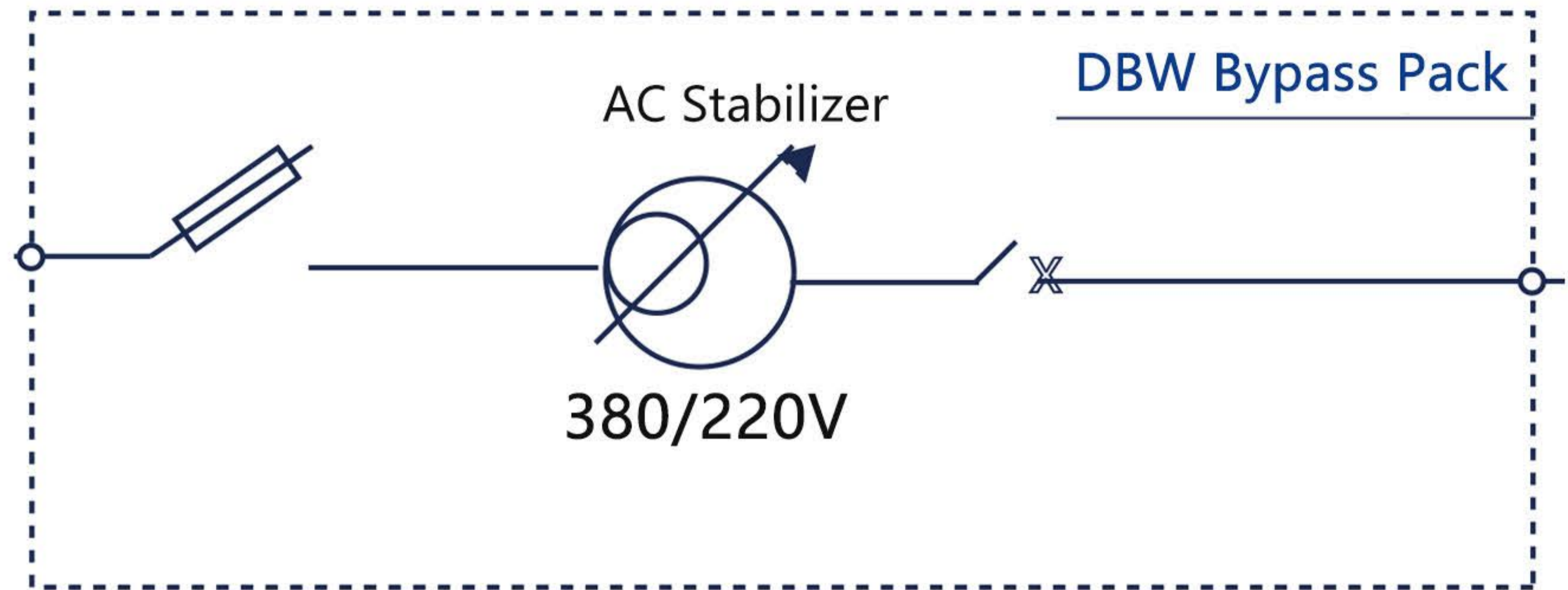
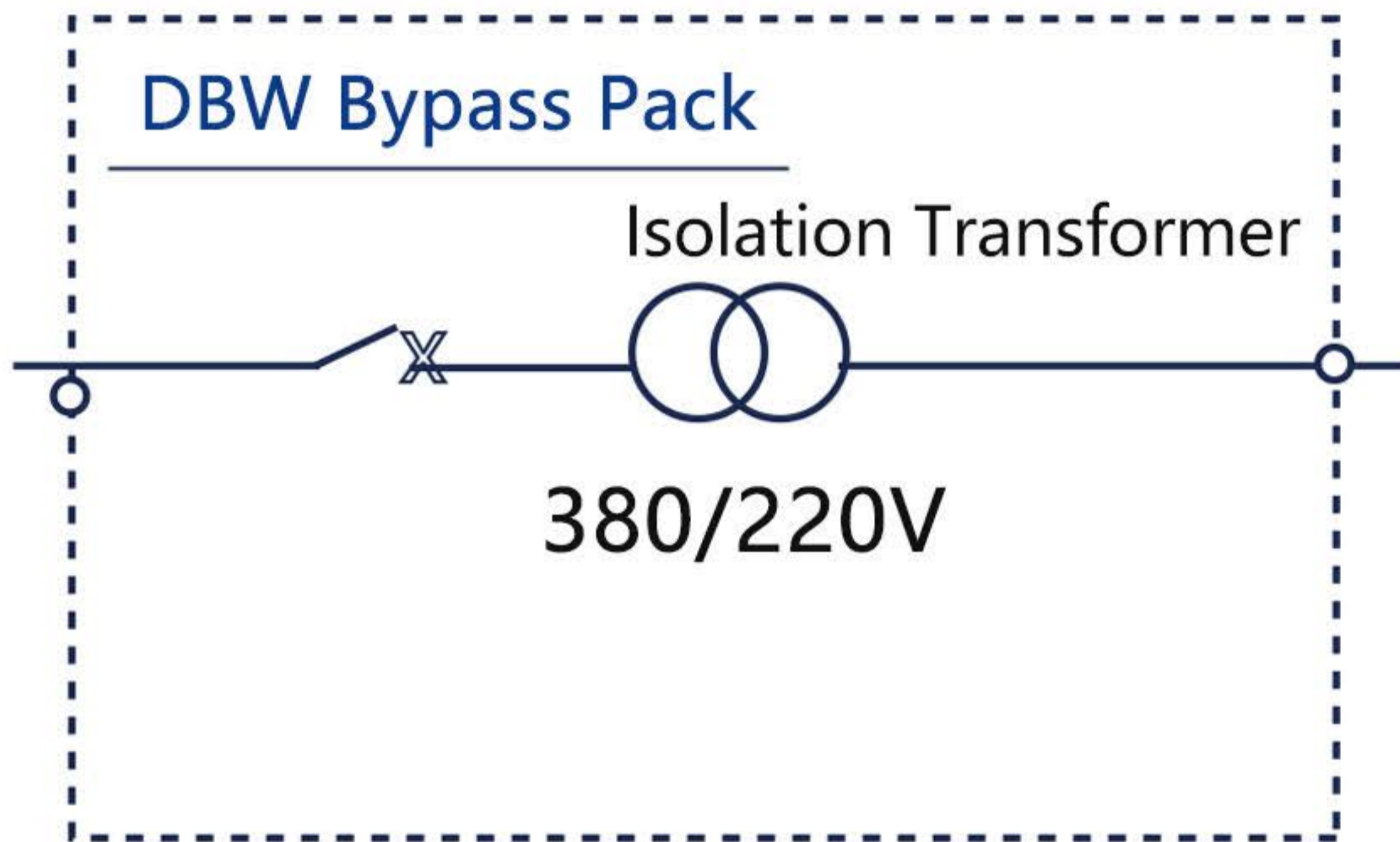
Optional Configuration:

- SNMP Card
- AS400 Card
- Signal Transmitter
- Bypass Isolation and Voltage Regulation
- Increase Feeder Circuit (standard 8 loops)
- 12 Pulse Rectifier



Optional Bypass Cabinet:

Isolation transformer and bypass voltage regulator



Model	Capacity	Nominal Voltage	Battery Voltage	Power Factor	W x D x H (mm)	Weight (KG)
CNI310	10KVA/8KW	380 / 400 / 415 VDC	110 / 220 / 384 VDC	0.8	600x800x1900 (2050)	200
	15KVA/12KW					220
	20KVA/16KW					230
	30KVA/24KW					290
	40KVA/32KW		220 / 384 VDC		340	
	60KVA/48KW				440	
	80KVA/64KW				520	
	100KVA/80KW				770	
CNI330	10KVA/8KW	380 / 400 / 415 VDC	110 / 220 / 384 VDC	0.8	600x800x1900 (2050)	200
	15KVA/12KW					220
	20KVA/16KW					230
	30KVA/24W					290
	40KVA/32W		220 / 384 VDC		340	
	60KVA/48W				440	
	80KVA/64W				520	
	100KVA/80W				770	
	120KVA/96W		384 VDC		855	
	160KVA/128W				1300	
	200KVA/160W				1550	
	300KVA/240W				1640	

CNI310 Series Technical Specifications

CNI310 10-100KVA								
Model	10KVA	15KVA	20KVA	30KVA	40KVA	60KVA	80KVA	100KVA
Capacity	8KW	12KW	16KW	24KW	32KW	48KW	64KW	80KW
Input								
Rated Voltage	380 / 400 / 415 Vac three-phase							
Voltage Range	±20%							
Frequency Range	50/60Hz±5%							
Power Factor	≥0.8							
Current Harmonic Distortion	<5% with harmonic filter							
Soft Start	0-100% in 10s							
Bypass Input								
Rated Voltage	220 / 230 / 240 Vac single-phase							
Allowable Voltage Range	±15% (±10% to ±25% selectable from front panel)							
Rated Frequency	50/60Hz							
Allowable Frequency Range	±2% (±1% to ±5% selectable from front panel)							
Standard Features	Backfeed Protection; Split Bypass Line							
Batteries								
Type	Maintenance-free Lead-acid VRLA / AGM / GEL; Nicd							
Maximum Recharge Current (A)	0.2 x C10							
DC Voltage	220/384 VDC (Optional)							
AC Ripple Voltage	<1%							
Inverter Output								
Number of Phases	1							
Rated Voltage (V)	230Vac single-phase							
Regulation of the Output Voltage	220~244Vac (from control panel)							
Crest Factor (Lpeak/Lrms)	3:1							
Static Stability	±1%							
Dynamic Stability	±5%							
Frequency	50/60Hz configurable							
Overload	110%/125%/150% of the rated current for 5h/10min/1min							
Frequency Stability	±0.05% with mains failure							
System								
Remote Signaling	Volt-free contacts							
Remote Control	EPO and Bypass							
Communication	RS232 + remote contacts							
Operation Temperature	0°C ~ +40°C							
Relative Humidity	<95% (non-condensing)							
Colour	Light grey (RAL 7035)							
Noise	54dBA at 1m	60dBA at 1m		65dBA at 1m				
Protection Degree	IP41 (IP42 & IP55 is optional)							
Efficiency Smart Mode	up to 98%							
Compliance	Safety: EN 62040-1-1 (Directive 2006/95/EC); EMC: 6200-2 (Directive 2004/108/EC)							

Note: Product specifications are subject to change without further notice.



CNI330 Series Technical Specifications

CNI330 10-300KVA												
Model	10KVA	15KVA	20KVA	30KVA	40KVA	60KVA	80KVA	100KVA	120KVA	160KVA	200KVA	300KVA
Capacity	8KW	12KW	16KW	24KW	32KW	48KW	64KW	80KW	96KW	128KW	160KW	240KW
Input												
Rated Voltage	380 / 400 / 415 Vac three-phase											
Voltage Range	±20%											
Frequency Range	50/60Hz±5%											
Power Factor	≥0.8											
Current Harmonic Distortion	<5% with harmonic filter											
Soft Start	0-100% in 10s											
Bypass Input												
Rated Voltage	384 / 400 / 415 Vac three-phase											
Allowable Voltage Range	±15% (±10% to ±25% selectable from front panel)											
Rated Frequency	50/60Hz											
Allowable Frequency Range	±2% (±1% to ±5% selectable from front panel)											
Standard Features	Backfeed Protection; Split Bypass Line											
Batteries												
Type	Maintenance-free Lead-acid VRLA / AGM / GEL; Nicd											
Maximum Recharge Current (A)	0.2 x C10											
DC Voltage	220/384 VDC (Optional)											
AC Ripple Voltage	<1%											
Inverter Output												
Number of Phases	3+N											
Rated Voltage (V)	380 / 400 / 415 Vac											
Regulation of the Output Voltage	348~424Vac (from control panel)											
Crest Factor (Lpeak/Lrms)	3:1											
Static Stability	±1%											
Dynamic Stability	±5%											
Frequency	50/60Hz configurable											
Overload	110%/125%/150% of the rated current for 5h/10min/1min											
Frequency Stability	±0.05% with mains failure; ±2% (selectable from ±1% to ±5%) with mains supply present											
System												
Remote Signaling	Volt-free contacts											
Remote Control	EPO and Bypass											
Communication	RS232 + remote contacts											
Operation Temperature	0°C ~ +40°C											
Relative Humidity	<95% (non-condensing)											
Colour	Light grey (RAL 7035)											
Noise	54dBA at 1m	50-65dBA at 1m										
Protection Degree	IP41 (IP42 & IP55 is optional)											
Efficiency Smart Mode	up to 98%											
Compliance	Safety: EN 62040-1-1 (Directive 2006/95/EC); EMC: 6200-2 (Directive 2004/108/EC)											

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Application

