

# BBK

POWER SYSTEMS

## INDUSTRIAL MODULAR AC&DC UPS

### 26-INIS SERISES



### Multi-Voltage Power System

The Multi-Voltage Power System is a modular backup power solution consisting of modular rectifier and inverter modules, static and maintenance bypass units, a system controller, utility and battery connections, and AC/DC load distribution MCBs.

The system is capable of delivering a total DC power output ranging from 10–20 kW to 20–40 kW and AC power from 7.2 kVA to 21.6 kVA within an output voltage range of 200 VAC to 240 VAC. Its compact architecture can be configured to meet specific application requirements.

### Reliable Power Continuity for Industrial Applications

The Multi-Voltage Power System is designed for critical applications including transmission and distribution substations, process industries, railway signaling systems, shipyards, port facilities, marine applications, electrical substations, and telecommunication infrastructures. Featuring natural convection cooling (fanless operation), N+1 redundancy, and a high-reliability architecture, the system provides continuous and dependable backup power for mission-critical installations.

### Modular and Flexible Architecture

The system supports the following configurations:

- Up to 10 modular 2 kW rectifier modules for model 26-INIS-061 and up to 20 modules for model 26-INIS-062 (1.5 kW per module at 24 VDC).
- Maximum system capacity with 12 and 18 installed modules:
  - 24 VDC; Fanless operation: 10.8 kW / 18 kVA, Forced-air cooling: 14.4 kW / 21.6 kVA
  - 48 / 60 / 110 / 125 / 220 VDC; Fanless operation: 12.6 kW / 18 kVA, Forced-air cooling: 21.6 kW / 21.6 kVA
- One bypass unit.
- The quantity and rated currents of AC and DC load distribution MCBs can be configured according to application requirements during the ordering stage.

### Key Benefits

- Modular and scalable architecture
- Fanless cooling through natural convection
- 5-year warranty for rectifier modules
- MTBF > 1.8 million hours
- N+1 redundancy architecture
- Simultaneous AC and DC load supply capability within the same system
- Wide DC voltage range from 24 VDC to 220 VDC (24 / 48 / 60 / 110 / 125 / 220 VDC)
- AC output support from 200 VAC to 240 VAC
- High system availability for critical infrastructures
- Simplified maintenance and fast module replacement
- Standard IP21 protection degree, expandable up to IP65

**BBK****POWER SYSTEMS****INDUSTRIAL MODULAR  
AC&DC UPS  
26-INIS SERIES****Reliable Power Continuity for Industrial Applications**

The Multi-Voltage Power System has been specifically developed for critical applications such as transmission and distribution substations, process industries, railway signaling systems, shipyards, port facilities, marine applications, power substations, and telecommunication infrastructures. Featuring natural convection cooling (fanless operation), an N+1 redundant architecture, and a high-reliability design, the system provides uninterrupted power continuity for mission-critical installations.

**Key Features**

- Efficiency: Up to 99% for AC loads and up to 97% for DC loads when utility power is available; inverter efficiency up to 90%.
- Cooling: Natural convection cooling or temperature-controlled fan cooling for inverter modules.
- Battery / DC Output Voltages: 24, 48, 60, 110, 125, and 220 VDC.
- AC Output Voltage Range: 200-240 VAC.
- N+1 Redundancy Architecture.
- MCB Protection for AC and DC Load Distribution.
- Battery Connection: External battery connection via MCB protection or terminal blocks for connection to an external battery fuse.
- High efficiency of up to 99% for AC loads and up to 97% for DC loads when utility power is available
- Inverter efficiency of up to 90%
- Natural convection cooling or temperature-controlled fan-assisted design
- DC system voltages ranging from 24 VDC to 220 VDC
- AC output voltages ranging from 200 VAC to 240 VAC
- N+1 redundancy architecture for uninterrupted operation
- MCB protection for both AC and DC distribution circuits
- MCB or terminal connection option for external battery fuse connection
- Temperature sensor interface
- Standard IP21 protection with protection options up to IP65
- EMC performance suitable for industrial and mission-critical infrastructure applications

**EMC (Electromagnetic Compatibility)****Standards**

Modules:

- EN 61000-6-1
- EN 61000-6-2
- EN 61000-6-3
- EN 61000-6-4
- EN 61000-6-5

**Safety Standards**

Modules:

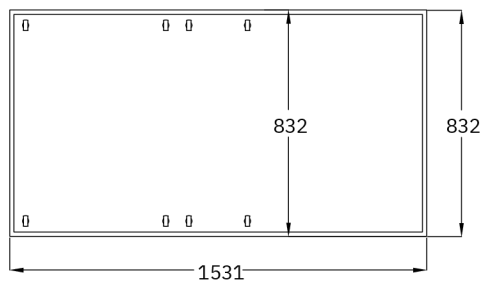
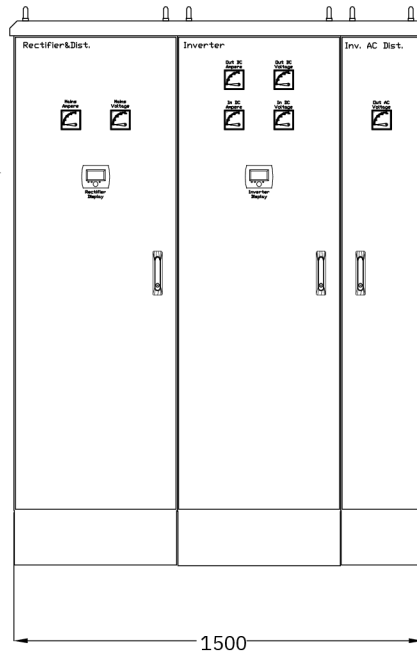
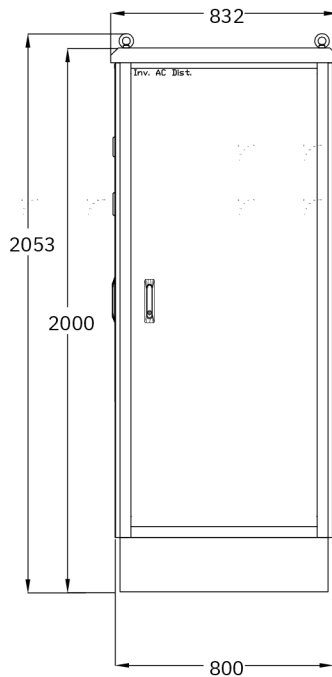
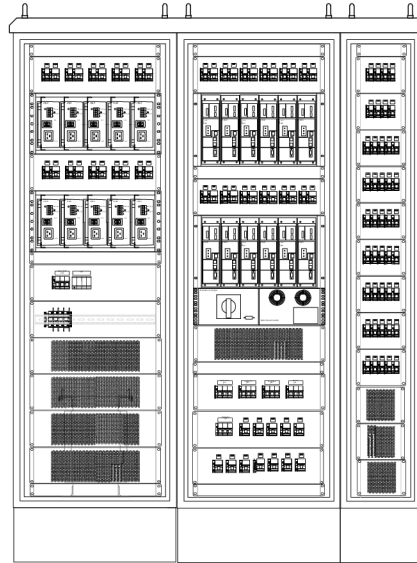
- IEC 62368-1

AC Input and DC Output Specifications Table

Model		26-INIS-061	26-INIS-062
Input	Input Voltage	Nominal 100VAC - 250VAC	
	Input Operating Voltage Range	Maximum operating range: 85–300 VAC Nominal full-power range: 180–275 VAC for 48–220 V models and 140–275 VAC for the 24 V model, Available output power at 120 VAC input: 1200 W, 275–300 VAC is a temporary overvoltage range; continuous operation above 275 VAC is not recommended.	
	Start-Up / Shut-Down Limits	Start-up voltage: 90 VAC, Shut-down voltage: 85 VAC, Overvoltage shut-down threshold: 300 VAC, Restart voltage: 290 VAC	
	Frequency	45–66 Hz power derating operation between 35 Hz and 45 Hz; automatic shut-down below 35 Hz.	
	Power Factor (Typical)	>0.99 (at 85–275 VAC input voltage)	
	THDi (Typical)	< 5% at 100% load < 9% at 50% load (85–275 VAC input voltage)	
	Generator Start-Up Ramp	for operation with generator supplies, the input power is ramped from 10% load to 100% load within 7 seconds. This function can be enabled or disabled by the user (disabled by default).	
DC Output	DC Output Power	2 kW to 20 kW 7.5 kW to 15 kW for 24 VDC systems	20 kW to 40 kW 15 kW to 30 kW for 24 VDC systems
	DC Output Voltage Range	<b>24VDC:</b> 21-33V, <b>48VDC:</b> 42-59V, <b>60VDC:</b> 51-72V, <b>110VDC:</b> 90-150V, <b>125VDC:</b> 100-160V, <b>220VDC:</b> 178-280V	
	DC Current Limiting	Provides constant short-circuit current for 500 seconds, then enters hiccup mode with 500-second cycling intervals.	
	Hold-Up Time	20 ms at 80% load, with output voltage decreasing from float voltage to nominal voltage.	
	Static Voltage Regulation	±0.5% (over load, input voltage, and temperature variations)	
	Dynamic Load Regulation	±5% for 10%–90%–10% load steps, with a recovery time of <2 ms.	
	Efficiency	<b>24VDC:</b> >%95, <b>48VDC:</b> >%96, <b>60VDC:</b> >%96, <b>110VDC:</b> >%96, <b>125VDC:</b> >%96, <b>220VDC:</b> >%95	
	Calculated MTBF for Modules	>1,800,000 hours at 25°C, according to Telcordia SR-332 Method I-D, fixed ground application.	
	Dielectric Withstand Test	Input-to-Ground: 2.83 kVDC / 1 min, Input-to-Output (reinforced insulation): 3.75 kVAC or 5.3 kVDC / 1 min, Output-to-Ground: 2.83 kVDC / 1 min	

Bypass and AC Output Specifications Table

Model		26-INIS-061	26-INIS-062
AC Çıkış	Output Voltage	Nominal 230 VAC pure sine wave output, adjustable by the user within the 200–240 V range, with a floating output configuration.	
	Frequency	Nominal 50 Hz output frequency, user-adjustable within the 40–70 Hz range, with crystal-locked high frequency stability.	
	Overload (5 sec.)	24 VDC models: 200% (fanless), 150% (fan-forced) All other input voltage models: 242% (fanless), 141% (fan-forced)	
	Overload (60 sec.)	An overload capability of 110% is supported for both fanless and fan-forced modules; the maximum allowable duration can be limited to a shorter value by the user. The number of automatic restart attempts and the waiting intervals are user-configurable.	
	Efficiency	24 VDC: >85% (fanless), >83% (fan-forced) 48 VDC, 60 VDC, 110 VDC, 125 VDC, and 220 VDC: >90% (fanless and fan-forced)	
	Load Power Factor Range	Full power output over the entire load power factor range from 100% inductive to 100% capacitive	
	Total Harmonic Distortion (THD) with Resistive Load	< 2 %	
	Crest Factor	Fanless: >3, Fan-forced: >2,7	
Bypass	Operating Voltage Range	80-270VAC	
	Sync Frequency Range	40–70 Hz (user-programmable)	
	Efficiency (at Full Load)	> 99 % @ 230VAC	
	Overload Capacity (Utility Mode)	5000 A for 10 ms, 400 A for 0.3 s, 200 A for 1 min	
	Programmable Parameters	<ul style="list-style-type: none"> <li>• Online / Offline operating configuration</li> <li>• Minimum and maximum acceptable RMS voltage limits for the inverter output</li> <li>• Minimum and maximum acceptable RMS voltage limits for the utility input</li> <li>• Minimum and maximum acceptable utility frequency limits</li> <li>• Maximum allowable utility frequency slew rate</li> <li>• Load threshold for transferring back to inverter operation after an overload condition</li> <li>• Transfer delay to inverter operation in the event of a utility failure or overvoltage condition (minimum 1 ms)</li> <li>• Transfer delay to utility supply in the event of an inverter failure or overvoltage condition (minimum 1 ms)</li> </ul>	
Mechanical Dimensions (W×D×H)		1500x800x2000 (For details, see page 6.)	2100x800x2000 (For details, see page 7.)

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26-INIS-061**

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