AEC

THE FLEXIBLE ONLINE UPS · RACK / TOWER

IST9

10–40 kVA

One UPS for every site: three-phase or single-phase in and out, rack or tower, any battery from 16 to 40 blocks, lead-acid or lithium, and an external maintenance bypass module in the box.



IST9 · TOWER AND RACK INSTALLATION

1.0
output power factor: kVA = kW

≤ 3%
input THDi on resistive load

3U
one height for all four ratings

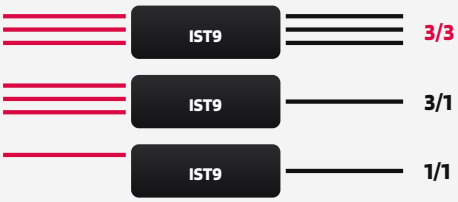
Touch screen
colour display for status and settings

WHY IST9

Key features
IST9 10–40 kVA

Configure the IST9 for the site, not the site for the UPS: phases, mounting, battery and service are all chosen at installation.

01 Input and output
Three-phase or single-phase, set on site



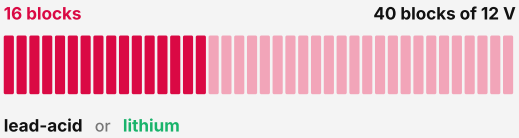
3/3, 3/1, 1/1 set on site (1/1 on 10–20 kVA), with a separate bypass input.

02 Rack or tower
One unit, two installations



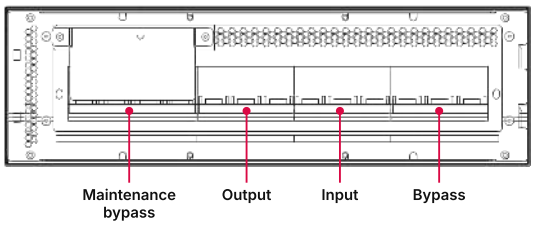
3U in a 19-inch cabinet or upright on its support base. Battery boxes and the bypass module follow the UPS in both layouts.

03 Battery
Any string, any chemistry



16–40 × 12 V, lead-acid or lithium.

04 Service
Maintenance bypass included



The external maintenance bypass module comes with the AEC IST9, in a 19-inch panel above the UPS.

OPERATING COST

Efficiency at 20 kW

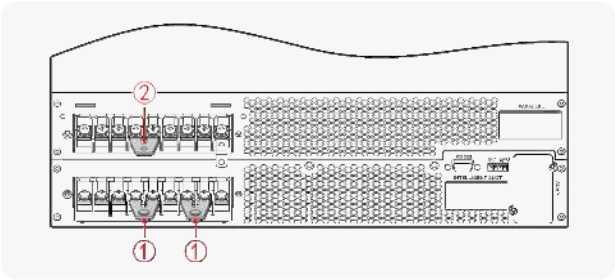
Up to 96% online, 99% in ECO mode.

		ENERGY LOST / YEAR	COST / YEAR
Online double conversion · 96 %	0.83 kW	7,300 kWh	≈ € 1,460
ECO mode · 99 %	0.20 kW	1,770 kWh	≈ € 350

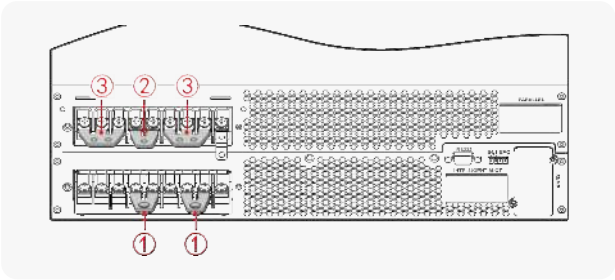
FLEXIBILITY

Input and output configurations
IST9 10–40 kVA

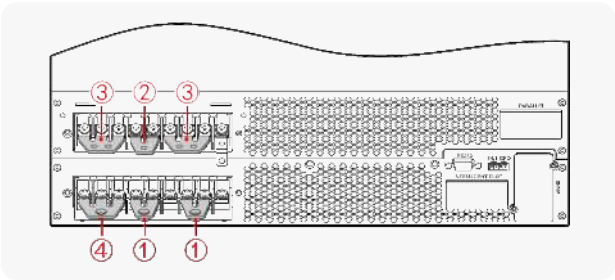
10–20 kVA work in 33, 31 or 11 mode; 30–40 kVA in 33 or 31 mode. The mode is set with connector jumpers on the rear terminals and on the touch screen.



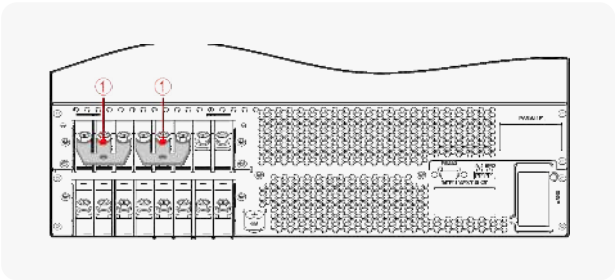
33 mode · 10–20 kVA
three in, three out



31 mode · 10–20 kVA
three in, one out



11 mode · 10–20 kVA
one in, one out



31 mode · 30–40 kVA
three in, one out · ① = 3-pin jumper

Connector jumper positions; circled numbers are the jumper types.

Connector jumpers

10–20 kVA: four jumper types (types 1–2 two-pin, 3–4 three-pin) for 33, 31 or 11 mode. 30–40 kVA: one 3-pin jumper type, used only in 31 mode, short-circuits the three-phase bypass input and the three-phase output terminals.

Set on the screen

Work mode on the System management page. Output 3W + N + PE, settable to 1W + N + PE; input 3W + N + PE (on 10–20 kVA settable to 1W + N + PE).

Output voltage for every grid

220 · 230 · 240 V
Phase voltage, high-voltage mode (380 / 400 / 415 V line), default 220 V

110 · 115 · 120 V
Low-voltage mode (190 / 200 / 208 V line), default 120 V; 20 kVA delivers 10 kVA, 40 kVA delivers 20 kVA

50 / 60 Hz
The UPS monitors the grid frequency and self-adapts

±5 V
output voltage fine adjustment

40–70 Hz
input frequency range

±10%
bypass synchronisation, 50 / 60 Hz

±20%
bypass voltage window

HOW IT WORKS

Operating modes
IST9 10–40 kVA





Normal mode
Rectifier and inverter supply the load; the charger charges the battery.



Battery mode
Mains abnormal: the rectifier switches to the battery input and boosts it onto the DC bus.



Bypass mode
With the bypass in range, the load is fed from the bypass when the UPS is off (if enabled) or on a fault.



ECO mode
Single UPS: the bypass feeds the load while it is normal; the inverter takes over when it is not.



Maintenance bypass
With the distribution module: the load stays supplied while the UPS is serviced.

Auto restart
After a complete outage the UPS shuts down about 1 min after the battery low-voltage point, then restarts by itself in normal mode when the mains returns.

< 1 ms
inverter ↔ bypass, synchronised

< 10 ms
not synchronised

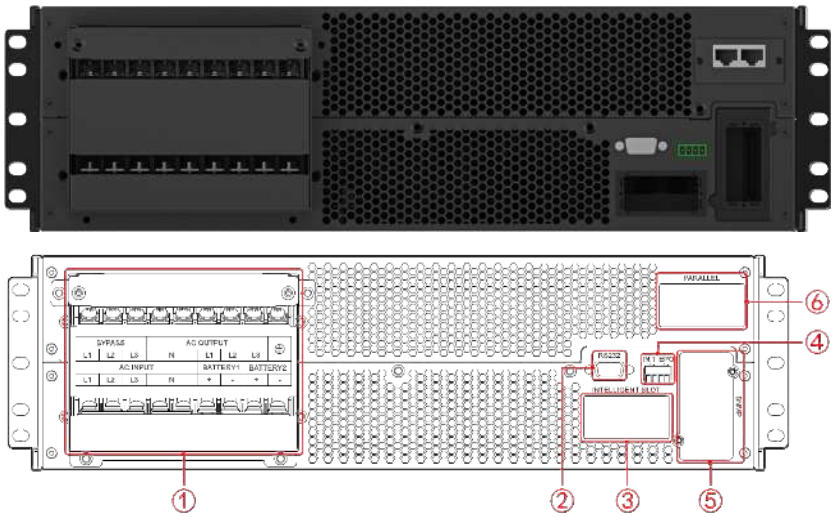
≧ 0.99
input power factor

REAR PANEL

Rear panels and dimensions
IST9 10–40 kVA

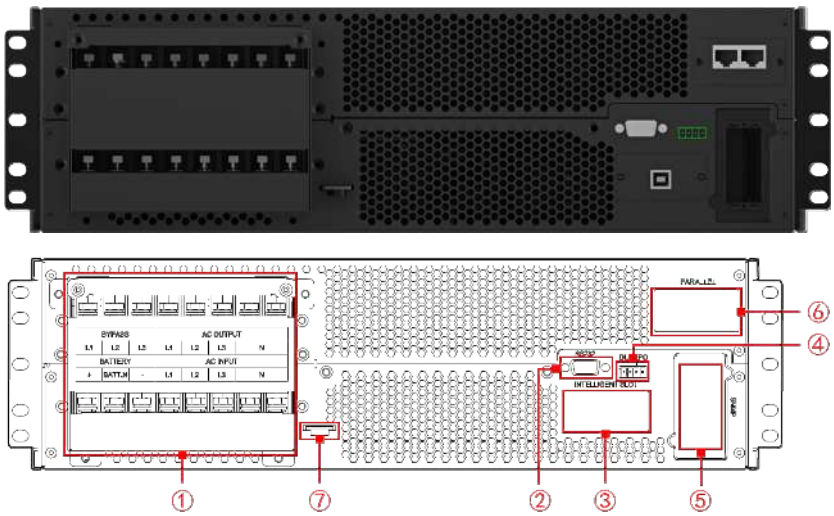
All four ratings share the same front and width; 30–40 kVA has the deeper chassis. Terminals, communication ports and option slots are on the rear.

10–20 kVA · 438 × 535 × 130 mm · 18.4 kg



1. **Wiring terminals**
   bypass, AC output, AC input, battery
2. **RS232**
3. **Intelligent slot**
   SNMP, RS485 + dry contact or lithium protocol card
4. **EPO and input dry contact**
   IN.1, default maintenance bypass detection
5. **SNMP**
   optional
6. **Parallel port**
   optional

30–40 kVA · 438 × 720 × 130 mm · 34.1 / 34.2 kg



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   IN.1, default maintenance bypass detection
5. **SNMP**
   optional
6. **Parallel port**
   optional
7. **PE**

Rear panels, 10–20 kVA and 30–40 kVA. Terminal layout differs slightly between 3/3 and 3/1 mode.

≤ 50 dB
noise at half load, 10–20 kVA

≤ 55 dB
noise at half load, 30–40 kVA

RS232
standard on the rear

TOUCH SCREEN

Touch screen display
IST9 10–40 kVA

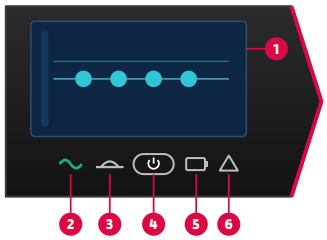
Landscape in the rack, portrait in the tower: the display rotates automatically, or is set by hand. Seven languages, Italian included.



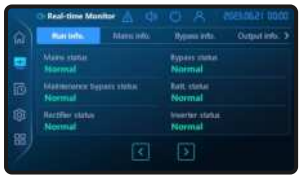
Home page

Live single-line diagram: the active energy path is drawn in yellow, abnormal mains, bypass, battery or output turn red.

Front panel



1. **Touch screen** · Working status and settings.
2. **Mains inverter indicator** · Green in mains mode.
3. **Bypass indicator** · Green when the output is on bypass.
4. **ON / OFF button** · Hold 3 s to switch on or off.
5. **Battery inverter indicator** · Green in battery mode.
6. **Fault indicator** · Red on UPS fault.



Real-time monitor

Run, mains, bypass, output and battery information.



History

Up to 1,000 records, newest first.



Login

User and service access for different settings.



Project management

System, battery, communication, dry contact, calibration, smart management.

What you read

- Mains and bypass: voltage, current, frequency.
- Output: voltage, current, active and apparent power, load, power factor, frequency.
- Battery: group voltages, charge / discharge current, status, remaining capacity and backup time.
- Running status: rectifier, inverter, ECO, fans, temperatures, parallel ID.

Display settings

- Languages: English, Italian, Spanish, French, Portuguese, Russian, Chinese.
- Landscape, portrait or automatic.
- Backlight 10–300 s, brightness 1–100.
- Date and time.

Home
one tap back from any page

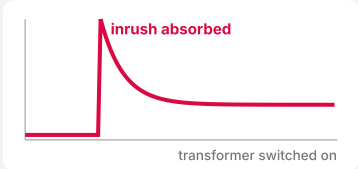
Alarms
current faults with their meaning

Buzzer
controlled from the screen

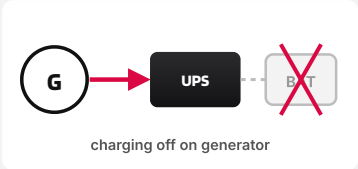
Wiring check
a mode that does not match the wiring is flagged

SMART FUNCTIONS

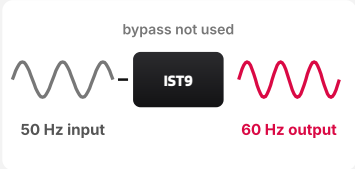
Advanced features and functions
IST9 10–40 kVA



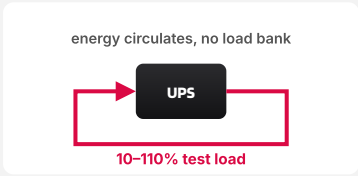
Impact load mode
For loads with high inrush, such as transformers: the UPS limits the excitation current so it cannot damage the inverter. Enabled before the load is started.



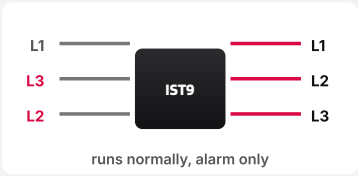
Generator mode
On a generator, battery charging is switched off: the generator only carries the load, and starts more easily.



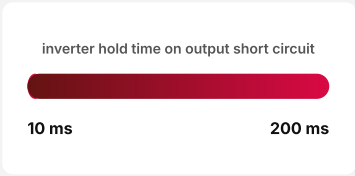
Frequency converter
Output fixed at 50 or 60 Hz whatever the input frequency, for machines built for another grid; the bypass is not used.



Test load
Self-aging at 10–110% of rated load: the system is tested at full power without an external load bank.



Phase sequence calibration
A wrong input phase sequence is tolerated: the output runs normally without derating, and the alarm is still reported.



Short-circuit time
Inverter protection time on output short circuit, settable 10–200 ms, to clear downstream breakers selectively.

Dedust and smart fans

- Fan speed follows the load: longer fan life, less noise.
- **Standard dedust** (load below 50%): fans at full speed for 2.5 s every 2.5 s, for 1 min.
- **Timed dedust**: the same cycle for N minutes (1–60).
- **Regular dedust**: 200 s at full speed every 1–720 h.
- Optional air filter fitted in the right panel.
- Fans reached by removing the right panel.
- Auto-start at power-on: on, off or non-off.
- Bypass on or off when the UPS is off, or forced.

Smart management reminders

Capacitors
electrolytic capacitor use time, 1–84 months

Fans
fan use time, 1–84 months

Battery
replacement reminder, 1–120 months

Dust filter
cleaning reminder, 1–12 months

Three-level
inverter with PFC control

80 V
at light load the battery is not used down to this mains voltage

94%
efficiency in low-voltage mode

TECHNICAL DATA

IST9 10–40 kVA

Model	IST9 10 kVA	IST9 20 kVA	IST9 30 kVA	IST9 40 kVA
Rated power (kVA / kW), high-voltage mode	10 / 10	20 / 20	30 / 30	40 / 40
Rated power (kVA / kW), low-voltage mode	10 / 10	10 / 10	—	20 / 20
Configuration	3/3 · 3/1 · 1/1		3/3 · 3/1	
INPUT				
Connection	3W + N + PE (settable 1W + N + PE)		3W + N + PE	
Voltage range (phase)	high-voltage mode 176–280 V full load, 80–176 V linear derating · low-voltage mode 90–155 V full load, 70–90 V derating			
Frequency · power factor · THDi	40–70 Hz · ≥ 0.99 · ≤ 3% resistive, ≤ 5% non-linear full load			
Bypass	50 / 60 Hz ± 10% · voltage ± 20%			
BATTERY				
Voltage	high-voltage mode ± 96 ... ± 240 V DC (± 48 ... ± 120 cells of 2 V, default ± 96) · low-voltage mode ± 96 ... ± 120 V (± 48 ... ± 60 cells, default ± 60)			
Full-load derating by cells	—		± 48 ... ± 90 cells: 100 × 0.0625 × N / 6 %	
Charging current	1–10 A (default 4 A)		1–20 A (default 15 A)	
OUTPUT				
Voltage	220 / 230 / 240 V L-N, 380 / 400 / 415 V L-L (low-voltage mode 110 / 115 / 120 V); 3W + N + PE, settable 1W + N + PE			
Frequency	tracks the bypass; 50 ± 0.1 or 60 ± 0.1 Hz in battery mode			
Waveform · distortion · power factor	sine wave · ≤ 2% resistive full load · 1.0			
Transfer inverter ↔ bypass	< 1 ms synchronised · < 10 ms not synchronised			
Inverter overload	≤ 105% continuous · 105–110% 60 min · 110–130% 10 min · 130–155% 1 min · > 155% 200 ms · > 200% immediate			
Bypass overload	< 130% continuous · 130–155% 1 min · > 155% 200 ms			
SYSTEM				
Efficiency	up to 96% (high-voltage mode) · 94% (low-voltage mode) · 99% ECO			
Display · cold start	touch screen · battery cold start equipped			
Communication	RS232 · options: SNMP, RS485 + dry contact, protocol card for the approved lithium system, parallel card			
Noise (20–25 °C)	≤ 50 dB half load · ≤ 55 dB 75% and full load		≤ 55 dB half load · ≤ 58 dB 75% · ≤ 60 dB full load	
Environment	−5 ... 40 °C · 0–95% RH non-condensing · ≤ 2000 m			
Dimensions (W × D × H)	438 × 535 × 130 mm (3U)		438 × 720 × 130 mm (3U)	
Weight	18.4 kg	18.4 kg	34.1 kg	34.2 kg

—: not available. Specifications are subject to change without notice.