



Solutions behind the power

3:1 1:1



94.5%

VFI efficiency*

18A

Maximum charger current*

110/125/150%

Overload (60/10/1 min)

PF=1.0

kVA=kW

THDi ≤3%

Input quality

4× (N+X)

Parallel Redundancy

Flexible Output. Scalable Uptime.

Online double conversion (VFI) with DSP control · PF=1.0 (kVA=kW) · THDi ≤ 3% · Generator compatible · ECO mode

3/1 & 1/1 operation support · Built-in maintenance bypass · Wide input frequency 40-70Hz · RS232/RS485/USB/EPO · Dry contact/SNMP optional

Applications



Government



Telecom



Datacenter



Industrial



Transportation



Healthcare



Energy

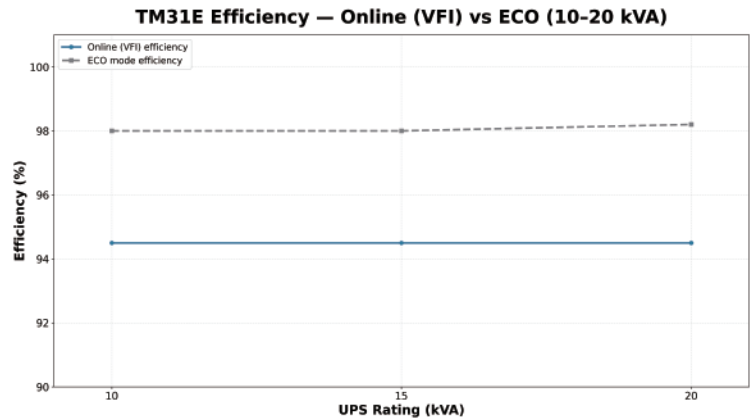
TM31E 10-20kVA is a high-performance **3-phase online double-conversion (VFI) UPS** built to protect critical loads with clean, regulated power. With **DSP control, PF=1.0 (kVA=kW)** and **THDi ≤ 3%**, it delivers strong power quality and supports flexible operation **3/1 and 1/1**, making it ideal for mixed site requirements and future expansion. A **wide 208-478Vac** input range and **40-70Hz** tolerance ensure stable performance even under unstable mains conditions. For scalability and uptime, it provides **parallel redundancy up to 4 units** and **built-in maintenance bypass** for safer, faster servicing. Battery configuration is flexible (16/18/20 pcs, extended strings supported) to match backup needs. Ideal for **server rooms**, small data centers, telecom/network sites, security systems requiring continuous conditioned power.

*Performance may vary by configuration and environment, charger size is based on offered model.

SCAN THE CODE
TO LEARN MORE

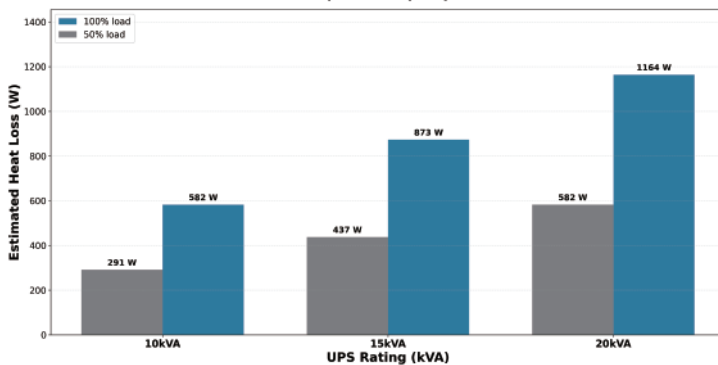


- **Online double conversion (VFI)** with **DSP control** for clean, regulated output.
- **PF=1.0 (kVA=kW)** with **3:1 phase design** (PF 0.9 optional).
- Supports **3/1 and 1/1 operation** for flexible site requirements.
- **Generator compatible** with **intelligent fan speed regulation** for stable operation and lower noise.
- **Cold start + self-testing** at startup for faster commissioning and safer operation.
- Full protection suite: **short-circuit, overload, overheat, battery overcharge/over-discharge, fan fault alarm.**



Performance

TM31E Estimated Heat Dissipation @ 50% & @ 100% Load PF 1.0, Online (VFI) Mode



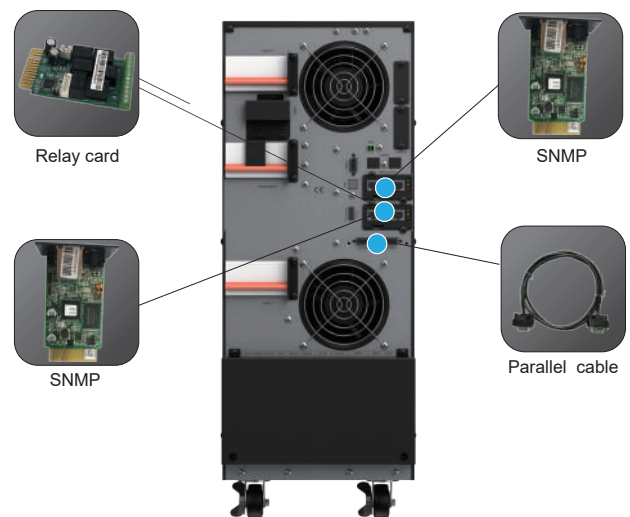
- **High efficiency:** up to **94.5% (AC/VFI)** and up to **98.2% (ECO)**.
- **Wide input window 208-478Vac** with **wide frequency 40-70Hz** (50/60 auto-sensing).
- Excellent input quality: **THDi ≤3%** and **input PF ≥0.99**.
- Strong overload handling: **110/125/150% (60/10/1 min)** to bypass; **≥150% immediate bypass.**
- Output quality: **pure sinewave, crest factor 3:1**, and low THDv (linear/non-linear as specified).

Battery & bypass

- Optimized battery design: **16/18/20 pcs** (extended **32-40 pcs supportable**) for flexible backup time.
- Fast recovery charging: **up to 18A maximum charger current (settable)**; charging current adjustable to battery capacity.
- Battery system voltage supports standard and extended strings (per configuration ranges shown).
- Built-in bypass capability and service friendliness with **maintenance switch design.**

Optional Accessories

- **Dual input source** (optional).
- **Parallel cable/kit** (optional) for **N+X parallel redundancy up to 4 units.**
- Monitoring/communications options: **SNMP card** and **Dry contact card** (optional).
- Sensors: **battery temperature sensor** (optional).
- Display options: **2.4" TFT / 7" LCD** (LCD options).
- **Battery cabinet** (optional).



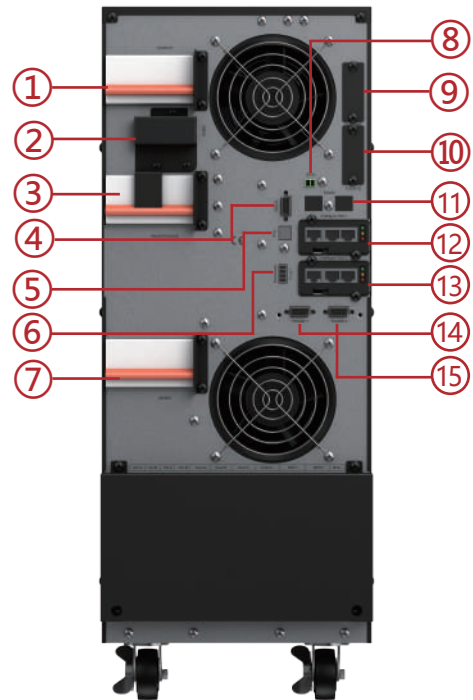
Note: Specifications are model-specific. Optionals (e.g., parallel kit, bigger charger, communications cards, accessories) are not supplied by default and vary by SKU/order.

Final deliverables and configurations are defined only by ATENCO's formal quotation and the customer's confirmed model/options.

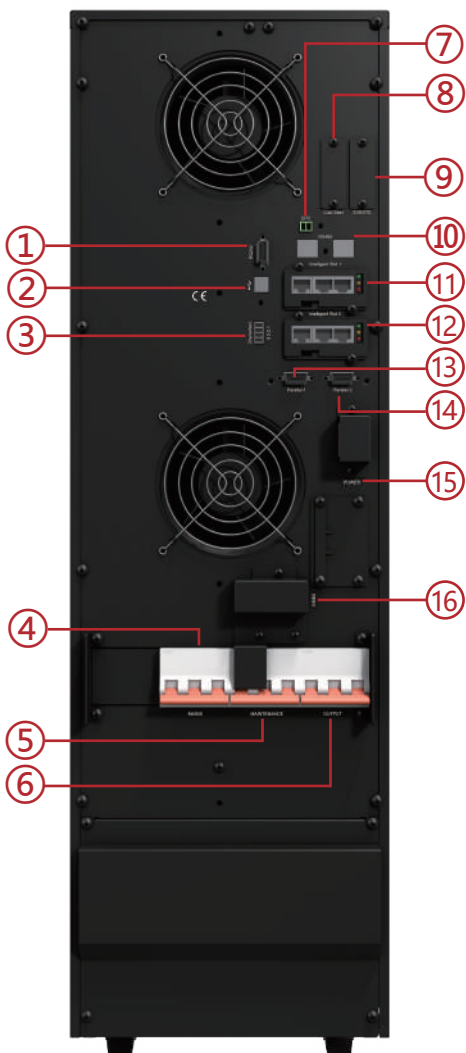
Rear Panel

TM31E-10~20kVA-L

1. Output Switch
2. External Maintenance Bypass Switch
3. Maintenance switch
4. RS232
5. USB port
6. Dry contact port
7. Input & Output terminals
8. EPO "Emergency Power Off"
9. Cold start button
10. EVENTS port
11. RS485 port
12. Intelligent Slot 1 (SNMP card/ Relay card)
13. Intelligent Slot 2 (SNMP card/ Relay card)
14. Parallel port 1
15. Parallel port 2



TM31E-10~20kVA-S



1. RS232
2. USB port
3. Dry contact port
4. I/P Switch
5. Maintenance switch
6. Output Switch
7. REPO port
8. Cold start button
9. EVENTS port
10. RS485 port
11. Intelligent Slot 1 (SNMP card/ Relay card)
12. Intelligent Slot 2 (SNMP card/ Relay card)
13. Parallel port 1
14. Parallel port 2
15. Power
16. External Maintenance Bypass Switch

TM31E Technical Specifications

		TM31E Series					
Model		TM31E-10kVA-L	TM31E-10kVA-S	TM31E-15kVA-L	TM31E-15kVA-S	TM31E-20kVA-L	TM31E-20kVA-S
Capacity		10kVA/10kW		15kVA/15kW		20kVA/20kW	
INPUT							
Nominal voltage		380/400/415Vac (3PH+N+PE); 220/230/240Vac (L+N+PE)					
Operating voltage range		208~478Vac; 120~276Vac					
Operating frequency range		40~70Hz (50/60Hz Auto-Sensing)					
Power factor		≥0.99					
Harmonic distortion (THDi)		≤3% Linear load					
Bypass voltage range		Max. voltage: 220V: +25% (Optional +10%, +15%, +20%) 230V: +20% (Optional +10%, +15%) 240V: +15% (Optional +10%) Min. voltage: -45% (Optional -10%, -20%, -30%)					
Bypass frequency range (Hz)		50/60Hz ±10%					
OUTPUT							
Nominal voltage		220/230/240Vac (L+N+PE)					
Voltage regulation		±1%					
Power factor		1.0					
Output frequency		Line mode: ±1%/±2%/±4%/±5%/±10% of the rated frequency (Optional); Bat. mode: (50/60±0.1%)					
Crest factor		3:1					
Harmonic distortion (THDv)		≤2% Linear load; ≤5% Non linear load					
Transfer time		AC mode to Bat. mode: 0; Inverter to Bypass: 0					
Waveform		Pure Sinewave					
Overload	AC mode	Load≤110%: last 60min turn to bypass; ≤125%: last 10min turn to bypass; ≤150%: last 1min turn to bypass; ≥150% turn to bypass mode immediately					
	Bat.mode	Load≤110%: last 10min; ≤125%: last 1min; ≤150%: last 5s; ≥150%: shut down UPS immediately					
	Bypass mode	Breaker 2×32A		Breaker 2×50A		Breaker 2×63A	
EFFICIENCY							
AC Mode		up to 94.5%					
ECO Mode		up to 98%				up to 98.2%	
BATTERY							
Battery type		VRLA (Lead acid maintenance free battery)					
Battery voltage	Standard unit	Chassis 1: ±120Vdc (20pcs 9Ah) (20pcs 7Ah, 2×20pcs 7/9Ah optional)		±120Vdc (2×20pcs 9Ah) (2×20pcs 7Ah optional)			
		Chassis 2: ±96Vdc (16pcs 9Ah)					
	Long run unit	±96Vdc~±120Vdc (16~20pcs, 16pcs default, Standard unit and 20pcs no power derating; 18pcs output power factor 0.9; 16pcs output power factor 0.8) ±192/204/216/228/240Vdc (32/34/36/38/40pcs supportable)					
Charging current (Max.)		14A	1.35A (2.7A optional)	16A	2.7A	18A	2.7A
Charging current can be set according to battery capacity							
MANAGEMENT							
LED Display		Line mode, Bat mode, ECO mode, Bypass mode, Battery low voltage, Overload & UPS fault					
LCD Display		Input voltage, Input frequency, Output voltage, Output frequency, Load percentage, Battery voltage, Inner temperature & Remaining battery backup time					
ENVIRONMENTAL							
Operating temperature		0°C~40°C					
Storage temperature		-25°C~55°C					
Humidity range		0~95% (Non condensing)					
Altitude		<1000m, derating required between 1000m to 3000m					
Noise level		<55dB				<58dB	
PHYSICAL							
Dimension W×D×H	Standard unit	Chassis 1: 250×900×868mm		250×900×868mm			
		Chassis 2: 250×645×715mm					
	Long run unit	250×580×655mm					
Net weight	Standard unit	Chassis 1: 125kg (20pcs 9Ah)		180kg (2×20pcs 9Ah)		181kg (2×20pcs 9Ah)	
		Chassis 2: 78kg (16pcs 9Ah)					
	Long run unit	33kg		37kg		38kg	
STANDARDS							
Safety		IEC/EN 62040-1, IEC/EN 62477-1					
EMC		IEC/EN 62040-2 (IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61000-2-2)					

Disclaimer: Products are continuously improved and updated. As a result, actual product specifications may differ from promotional or technical materials due to asynchronous revisions. This document is provided for reference only and does not constitute an offer, warranty, or commitment.

TC 10-20kVA battery pack specification

Tower Cabinet	
Model	TC40120N / TC40120N-B
BATTERY SYSTEM	
Battery type	VRLA (Lead acid maintenance free battery)
Typical battery recharging time	6~8 hours (To 90% of full capacity)
Typical battery life	3~5 years, depend on discharging cycle and ambient temperature
System voltage	±120Vdc
Battery quantity	2×20 pcs
Capacity	7Ah/9Ah
PHYSICAL	
Dimension W×D×H	250×619×616mm (With caster)
Net weight	122kg/134kg
ENVIRONMENT	
Operating environment	0°C~40°C
Humidity range	0~95%RH @0~40°C (Non condensing)
Altitude	<1000, derating required between 1000m to 3000m
Noise level	<40dB
STANDARDS	
Safety	IEC/EN 62040-1, IEC/EN 62477-1

Model remark: TC040120N-B: "TC" means Tower cabinet; "40" means battery number inside the cabinet; "120" means the battery system voltage; "N" means battery with neutral connection; "B" means the cabinet with internal battery.

TC080120N / TC080120N-B	
BATTERY SYSTEM	
Battery type	VRLA (Lead acid maintenance free battery)
Typical battery recharging time	6~8 hours (To 90% of full capacity)
Typical battery life	3~5 years, depend on discharging cycle and ambient temperature
System voltage	±120Vdc
Battery quantity	4×20 pcs
Capacity	7Ah/9Ah
PHYSICAL	
Dimension W×D×H	250×900×868mm (With caster)
Net weight	244kg/265kg
ENVIRONMENT	
Operating environment	0°C~40°C
Humidity range	0~95%RH @ 0~40°C (Non-condensing)
Altitude	<1000, derating required between 1000m to 3000m
Noise level	<40dB
STANDARDS	
Safety	IEC/EN 62040-1, IEC/EN 62477-1

Model remark: TC080120N-B: "TC" means Tower cabinet; "80" means battery number inside the cabinet; "120" means the battery system voltage; "N" means battery with neutral connection; "B" means the cabinet with internal battery.



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