AEC

ONLINE UPS · DOUBLE CONVERSION · RACK / TOWER

FERRUS RT

1–3 kVA

Single-phase online UPS for 120 V loads in a 2U chassis: in a 19-inch rack or standing as a tower, with internal batteries and 19-inch battery packs for longer runtimes.



FERRUS RT · RACK BELOW, TOWER ON ITS STANDS

kVA = kW
1,000 W in every kVA

93 %
maximum efficiency

50–150 V
input range, 60 Hz

3 years
warranty on the UPS

Product Overview
FERRUS RT 1–3 kVA

Single-phase online double-conversion UPS for 120 V loads, 1 to 3 kVA, in one 19-inch, 2U chassis: in a rack or upright on two stands.

Main Features

Online
double conversion: the inverter feeds the load, 0 ms transfer

kVA = kW
output power factor 1: every VA a usable watt

50–150 V
input window: brownouts stay on the mains

Online + ECO
online or ECO mode, set from the panel

1–4
battery packs of the UPS's DC voltage per UPS

80.8 min
longest backup at full load

1–8 A
charger set to the packs, 9–200 Ah

2U
19-inch rack or tower on two stands

Key Data

Ratings	1, 1.5, 2, 3 kVA
Output power	1,000 W–3,000 W (PF 1)
Input	50–150 V AC, 60 Hz ±5 Hz
Output	100 / 110 / 115 / 120 V AC, sine wave
Efficiency	up to 93 %
Battery	12 V 9 Ah VRLA inside: 2, 4, 6 blocks

Backup, full load	4.2–6 min inside; up to 80.8 min with packs
Size, W × D × H	17.3 × 17.3–22.8 × 3.4 in (2U)
Weight	41.8–61.7 lb
Communication	RS232, slot for SNMP-M or dry contacts, EPO, USB optional
Standards · warranty	UL 1778 standard · 3 years UPS, 2 years VRLA batteries

Models

1 kVA
- 1,000 VA / 1,000 W
- 17.3 × 17.3 × 3.4 in
- 41.8 lb
- Battery 2 × 12 V 9 Ah
- 8 × 5-15R
- Backup 4.2 min full load

1.5 kVA
- 1,500 VA / 1,500 W
- 17.3 × 17.3 × 3.4 in
- 48.5 lb
- Battery 4 × 12 V 9 Ah
- 8 × 5-20R
- Backup 6 min full load

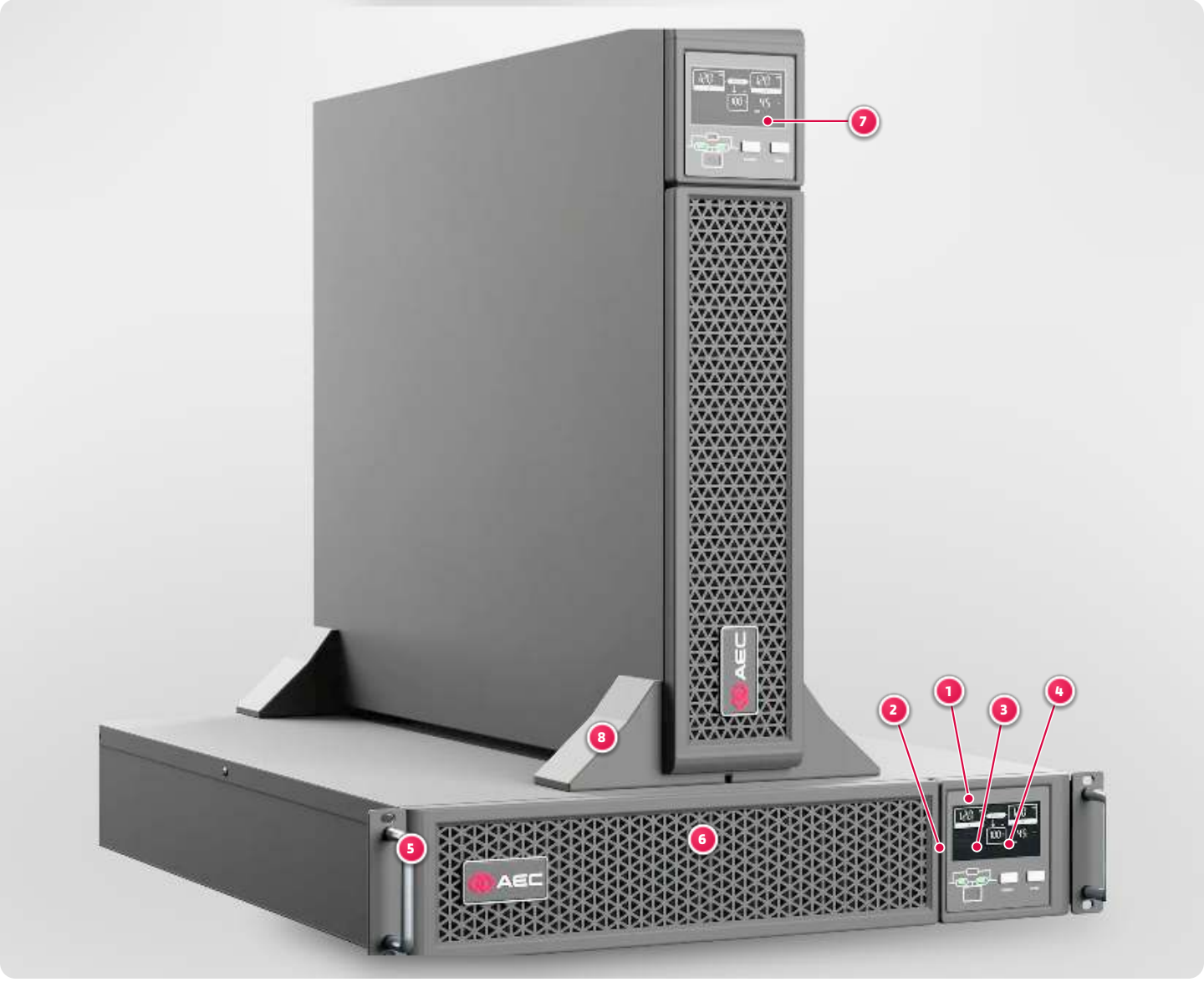
2 kVA
- 2,000 VA / 2,000 W
- 17.3 × 17.8 × 3.4 in
- 51.8 lb
- Battery 4 × 12 V 9 Ah
- 8 × 5-20R
- Backup 4.2 min full load

3 kVA
- 3,000 VA / 3,000 W
- 17.3 × 22.8 × 3.4 in
- 61.7 lb
- Battery 6 × 12 V 9 Ah
- 6 × 5-20R + 1 × L5-30R
- Backup 4.2 min full load

FERRUS RT · FRONT VIEW

Front View
FERRUS RT 1–3 kVA

One 2U front for every rating: the LCD, the status LEDs and two keys. In the rack on its ears, or upright on two stands.



1 LCD
readings and power flow, black screen

2 Status LEDs
REC, INV, BYP, BAT on the power-flow mimic

3 ON/OFF key
start, stop, transfer to bypass

4 FUNC key
pages, mute, settings

5 Rack ears and handles
19-inch rack, 2- or 4-post

6 Front grille
air in at the front

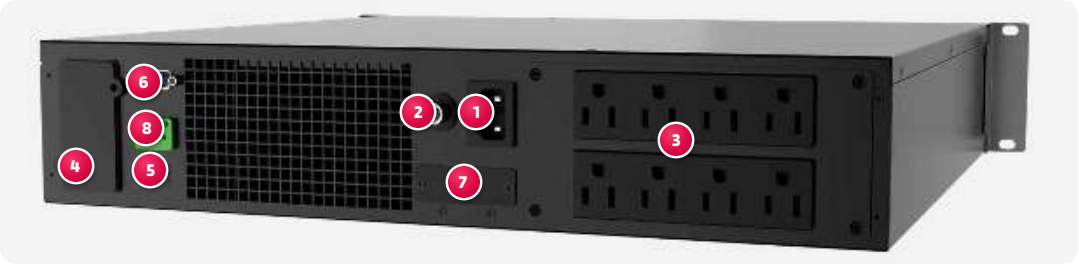
7 LCD, turned
as a tower the reading turns with the unit

8 Two stands
the same 2U chassis upright

Rear View
FERRUS RT 1–3 kVA

The back of every rating, 1, 1.5, 2 and 3 kVA, its parts numbered, and what each rating carries.

FERRUS RT 1 kVA



- **Output** 1,000 VA / 1,000 W
- **Size** 17.3 × 17.3 × 3.4 in, 2U
- **Weight** 41.8 lb
- **Input** IEC C14 inlet
- **Outlets, NEMA** 8 × 5-15R
- **Battery** 2 × 12 V 9 Ah, 24 V DC · packs BAT0424RT
- **Backup, full load** 4.2 min

FERRUS RT 1.5 and 2 kVA



- **Output** 1,500 VA / 1,500 W · 2,000 VA / 2,000 W
- **Size** 17.3 × 17.3 × 3.4 in · 17.3 × 17.8 × 3.4 in, 2U
- **Weight** 48.5 lb · 51.8 lb
- **Input** NEMA 5-20P cord
- **Outlets, NEMA** 8 × 5-20R
- **Battery** 4 × 12 V 9 Ah, 48 V DC · packs BAT0848RT
- **Backup, full load** 6 min · 4.2 min

FERRUS RT 3 kVA



- **Output** 3,000 VA / 3,000 W
- **Size** 17.3 × 22.8 × 3.4 in, 2U
- **Weight** 61.7 lb
- **Input** attached cord, straight-blade plug
- **Outlets, NEMA** 6 × 5-20R + 1 × L5-30R
- **Battery** 6 × 12 V 9 Ah, 72 V DC · packs BAT1272RT
- **Backup, full load** 4.2 min

1 Input
Input socket or power cord.

2 Input surge protection
Resettable protector of the input.

3 Output sockets
NEMA outlets in two groups.

4 Intelligent slot
Dry-contact card or SNMP card.

5 USB
Optional.

6 RS232
DB9 port for monitoring software.

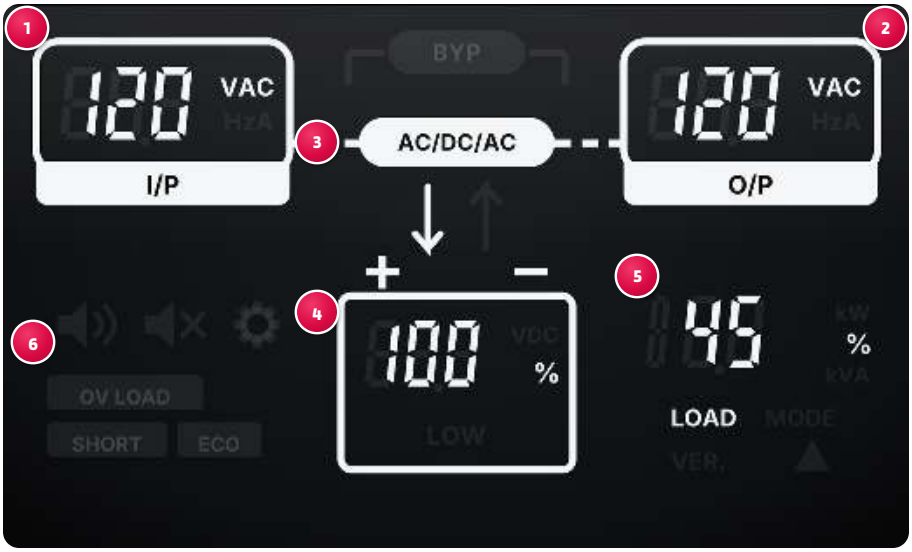
7 External battery terminal
For the battery packs (long backup).

8 EPO
Normally closed: opening it turns the UPS off.

9 NEMA L5-30R
30 A twist-lock output, 3 kVA.

Display and Controls
FERRUS RT 1–3 kVA

The black LCD of FERRUS RT, its status LEDs and its two keys; the reading turns with the unit, rack or tower.



Shown in normal online operation: 120 V in and out, battery 100 %, load 45 %.

1 Input
voltage (VAC), frequency (Hz) or current (A), page by page

2 Output
the same readings for the output

3 Power flow
AC/DC/AC lit in online operation; BYP on bypass

4 Battery
voltage, current, capacity %, LOW; the arrow shows charge or discharge

5 Load · version · code
load in kW, kVA or %; firmware; model; a warning code with the triangle

6 Alarm and settings
buzzer, mute, OV LOAD, SHORT, ECO and the setting gear

Status LEDs

LED	Steady	Flashing	Off
REC	green: rectifier normal	green: rectifier starting	rectifier not working
INV	green: inverter normal	green: starting or tracking the bypass (ECO)	inverter not working
BYP	yellow: on bypass	yellow: bypass alarm	normal mode, bypass good
BAT	yellow: battery discharging	yellow: no battery or battery alarm	battery connected

Keys

Key	Function
ON/OFF	starts the inverter; held 2.5 s: load to bypass, or on battery the UPS shuts down; held 5 s without mains: cold start
FUNC	next page; held 1.5 s: mute (page 1) or clear a fault (page 4)
FUNC + ON/OFF	held 2.5 s together: the settings, applied after a restart

Online + ECO
online or ECO mode

100–120 V
output voltage

9–200 Ah
battery capacity

1–8 A
charger, long backup

Battery and Runtime
FERRUS RT 1–3 kVA

Every FERRUS RT has its batteries inside; one to four battery packs of the same voltage add runtime. Times at full load, new batteries.

Backup time at full load

FERRUS RT 1 · 2 · 3 kVA

Internal batteries	4.2 min
+ 1 battery pack	10 min
+ 2 battery packs	23.7 min
+ 3 battery packs	39.4 min
+ 4 battery packs	56.4 min

FERRUS RT 1.5 kVA

Internal batteries	6 min
+ 1 battery pack	14.3 min
+ 2 battery packs	34 min
+ 3 battery packs	56.4 min
+ 4 battery packs	80.8 min

Runtime at 100 % load; at lighter loads it is longer.



BAT...RT battery packs share the UPS's 19-inch chassis: 2U, 3U or 4U by rating.

The battery packs

Code	Blocks · DC	W × D × H, in	Height	Weight
BAT0424RT	4 × 12 V 9 Ah · 24 V DC	17.3 × 17.3 × 3.4	2U	35.4 lb
BAT0848RT	8 × 12 V 9 Ah · 48 V DC	17.3 × 17.3 × 5.2	3U	64.8 lb
BAT1272RT	12 × 12 V 9 Ah · 72 V DC	17.3 × 22.8 × 7	4U	94.2 lb

Packs of the UPS's DC voltage: BAT0424RT for 1 kVA, BAT0848RT for 1.5 and 2 kVA, BAT1272RT for 3 kVA; one to four per UPS.

Battery care

- Charge at least 12 hours before first use.
- Internal blocks and packs: replace as a full set, same type and capacity.
- Temperature, life and storage as FERRUS: p. 25.

Adding battery packs: three steps

01

Same DC voltage as the UPS
BAT0424RT (24 V DC) for the 1 kVA, BAT0848RT (48 V DC) for the 1.5 and 2 kVA, BAT1272RT (72 V DC) for the 3 kVA; one to four per UPS.

02

Under the UPS or beside it
The packs share the 17.3 in width of the 2U chassis: in the rack under the UPS, or standing beside it.

03

Wired and set
Each pack on the external battery terminal of the UPS; the capacity, 9 to 200 Ah, and the charger, 1 to 8 A, set from the panel.

24 · 48 · 72 V
battery DC voltage

12 V 9 Ah
VRLA blocks, sealed

1–8 A
charger, long-backup set-ups

≧ 12 h
first charge

Technical Specifications
FERRUS RT 1–3 kVA

Model	1 kVA	1.5 kVA	2 kVA	3 kVA
Power (VA / W)	1,000 / 1,000	1,500 / 1,500	2,000 / 2,000	3,000 / 3,000
INPUT				
Voltage · frequency	50–150 V AC · 60 Hz ±5 Hz, single-phase			
Power factor	> 0.99 at full load			
Current, max.	10 A	20 A		30 A
Connection	IEC C14 inlet	NEMA 5-20P cord		attached cord, straight-blade plug
OUTPUT				
Voltage	100 / 110 / 115 / 120 V AC, set from the panel			
Frequency · waveform	60 Hz (50 / 60 Hz settable) · sine wave			
Current	8.3 A	—	16.6 A	25 A
Outlets	8 × 5-15R	8 × 5-20R		6 × 5-20R + 1 × L5-30R
Efficiency, up to	93 %			
Modes	online (S) · ECO (E) · bypass · cold start from battery			
BATTERY				
Internal	2 × 12 V 9 Ah	4 × 12 V 9 Ah		6 × 12 V 9 Ah
DC voltage	24 V DC	48 V DC		72 V DC
Charger	1 A standard · 1–8 A with battery packs			
Backup at 50 % · 100 %	10 min · 4.2 min	14 min · 6 min	10 min · 4.2 min	
Recharge	at least 12 h for a full charge			
GENERAL				
Communication	RS232 · intelligent slot (dry contacts or SNMP-M) · EPO · USB optional			
Display	LCD, 4 LEDs, 2 buttons			
Environment	32–104 °F (0–40 °C) · RH < 95 % · 3,300 ft (1,000 m) at full power			
W × D × H in	17.3 × 17.3 × 3.4		17.3 × 17.8 × 3.4	17.3 × 22.8 × 3.4
W × D × H mm	439 × 439 × 86		439 × 452 × 86	439 × 579 × 86
Weight	41.8 lb (19 kg)	48.5 lb (22 kg)	51.8 lb (23.5 kg)	61.7 lb (28 kg)
Standards	UL 1778 standard			
Warranty	3 years on the UPS · 2 years on VRLA batteries			

— The output current of the 1.5 kVA is not published. Runtimes with new batteries. Specifications are subject to change without notice.

REAR PANELS



OUTLETS 8 × NEMA 5-15R

1. **Input** · Input socket or power cord
4. **Intelligent slot** · Dry-contact card or SNMP card
7. **External battery terminal** · For the battery packs (long backup)



OUTLETS 8 × NEMA 5-20R

2. **Input surge protection** · Resettable protector of the input
5. **USB** · Optional
8. **EPO** · Normally closed: opening it turns the UPS off



OUTLETS 6 × NEMA 5-20R + 1 × L5-30R

3. **Output sockets** · NEMA outlets in two groups
6. **RS232** · DB9 port for monitoring software
9. **NEMA L5-30R** · 30 A twist-lock output, 3 kVA

Ordering Information
FERRUS RT 1–3 kVA

FER 3000RT -6X9 +BAT1272RT x2

series	VA, rack / tower	6 × 12 V 9 Ah	battery pack	1 to 4

EXAMPLES

FER1000RT-2X9
FERRUS RT 1 kVA, internal batteries

FER3000RT-6X9+BAT1272RTx2
FERRUS RT 3 kVA with two battery packs

Code	Description
FER1000RT-2X9	FERRUS RT 1 kVA online UPS, 2U rack / tower, internal batteries
FER1000RT-2X9+BAT0424RT	FERRUS RT 1 kVA with 1 × BAT0424RT battery pack
FER1000RT-2X9+BAT0424RTx2	FERRUS RT 1 kVA with 2 × BAT0424RT battery packs
FER1000RT-2X9+BAT0424RTx3	FERRUS RT 1 kVA with 3 × BAT0424RT battery packs
FER1000RT-2X9+BAT0424RTx4	FERRUS RT 1 kVA with 4 × BAT0424RT battery packs
FER1500RT-4X9	FERRUS RT 1.5 kVA online UPS, 2U rack / tower, internal batteries
FER1500RT-4X9+BAT0848RT	FERRUS RT 1.5 kVA with 1 × BAT0848RT battery pack
FER1500RT-4X9+BAT0848RTx2	FERRUS RT 1.5 kVA with 2 × BAT0848RT battery packs
FER1500RT-4X9+BAT0848RTx3	FERRUS RT 1.5 kVA with 3 × BAT0848RT battery packs
FER1500RT-4X9+BAT0848RTx4	FERRUS RT 1.5 kVA with 4 × BAT0848RT battery packs
FER2000RT-4X9	FERRUS RT 2 kVA online UPS, 2U rack / tower, internal batteries
FER2000RT-4X9+BAT0848RT	FERRUS RT 2 kVA with 1 × BAT0848RT battery pack
FER2000RT-4X9+BAT0848RTx2	FERRUS RT 2 kVA with 2 × BAT0848RT battery packs
FER2000RT-4X9+BAT0848RTx3	FERRUS RT 2 kVA with 3 × BAT0848RT battery packs
FER2000RT-4X9+BAT0848RTx4	FERRUS RT 2 kVA with 4 × BAT0848RT battery packs
FER3000RT-6X9	FERRUS RT 3 kVA online UPS, 2U rack / tower, internal batteries
FER3000RT-6X9+BAT1272RT	FERRUS RT 3 kVA with 1 × BAT1272RT battery pack
FER3000RT-6X9+BAT1272RTx2	FERRUS RT 3 kVA with 2 × BAT1272RT battery packs
FER3000RT-6X9+BAT1272RTx3	FERRUS RT 3 kVA with 3 × BAT1272RT battery packs
FER3000RT-6X9+BAT1272RTx4	FERRUS RT 3 kVA with 4 × BAT1272RT battery packs
BAT0424RT	Battery pack, 19-inch rack, 24 V DC, 4 × 12 V 9 Ah, for FERRUS RT 1 kVA
BAT0848RT	Battery pack, 19-inch rack, 48 V DC, 8 × 12 V 9 Ah, for FERRUS RT 1.5 and 2 kVA
BAT1272RT	Battery pack, 19-inch rack, 72 V DC, 12 × 12 V 9 Ah, for FERRUS RT 3 kVA
SNMP-M	SNMP-M network card: web pages, SNMP v1/v2c/v3, Modbus TCP/IP and MQTT; for FERRUS, FERRUS RT, FERRUS SP, FERRUS SP RT, RADIANT, RADIANT-IB, CIRRO-IB and CIRRO
DRYCNT	Dry-contact relay card: mains failure, battery low, UPS fault, bypass; all AEC UPS series