CTO Configuration Guide

E·T·N

Powering Business Worldwide

Eaton® Ferrups®
FE 50Hz Tower Series

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Configuring Your FERRUPS UPS

FERRUPS must be ordered using a Configure To Order (CTO) Number that reflects the cabinet style, VA rating, voltages, runtime, and other options pertaining to the FERRUPS configuration. As you select the options needed, they will become part of the CTO number.
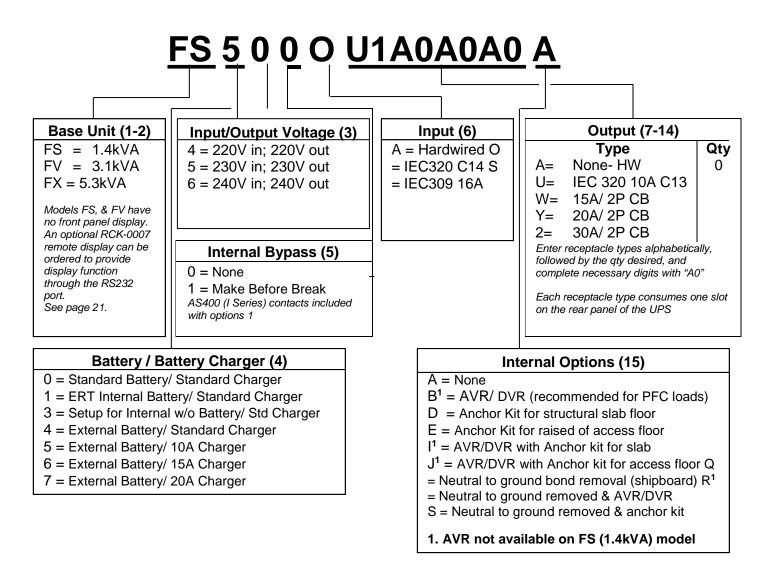
Sample CTO Number: FS500OU1A0A0A0A.

External battery packs, bypass switches and other external options should be ordered as separate items.

The UPS CTO Worksheet

		UPS CTO Order Code			List Price	Discount	Net Price
Base Unit	F_						
Input / Output Voltage							
Battery and Battery Charger							
Internal Maintenance Bypass Switch							
Input Connection							
Output Connection							
Internal Options							
Complete UPS CTO Number	F_						
				UPS Subtotal			

External Battery Pack

Battery Pack Selected:			
Other External Battery Options Selected:			

External Maintenance Bypass Switch

External Maintenance Bypass Switch Selected:			

Other External Options

Note: Eaton offers a complete line of **Power Distribution Units (PDUs)**. Please contact your sales representative or visit our websites, powerquality.eaton.com and www.epdu.com, for details.

Sub Total		
Freight		
Insurance		
Tax/Duty		
Quote Total		

Ferrups 50Hz Tower Series Quick Reference

Note: **Not all options are available on each base unit.** Options restrictions exist. Please consult information in this guide for further detail.

FS 5 0 0 O U1A0A0A0 A

Base Unit (1-2)
FS = 1.4kVA
FV = 3.1kVA
FX = 5.3kVA

Models FS, & FV have no front panel display. An optional RCK-0007 remote display can be ordered to provide display function through the RS232 port.
See page 21.

Input/Output Voltage (3)
4 = 220V in; 220V out
5 = 230V in; 230V out
6 = 240V in; 240V out

Internal Bypass (5)
0 = None
1 = Make Before Break
AS400 (I Series) contacts included with options 1

Input (6)
A = Hardwired O
= IEC320 C14 S
= IEC309 16A

Output (7-14)

Type		Qty
A=	None- HW	0
U=	IEC 320 10A C13	
W=	15A/ 2P CB	
Y=	20A/ 2P CB	
2=	30A/ 2P CB	

Enter receptacle types alphabetically, followed by the qty desired, and complete necessary digits with "A0"

Each receptacle type consumes one slot on the rear panel of the UPS

Battery / Battery Charger (4)
0 = Standard Battery/ Standard Charger
1 = ERT Internal Battery/ Standard Charger
3 = Setup for Internal w/o Battery/ Std Charger
4 = External Battery/ Standard Charger
5 = External Battery/ 10A Charger
6 = External Battery/ 15A Charger
7 = External Battery/ 20A Charger

Internal Options (15)
A = None
B[1] = AVR/ DVR (recommended for PFC loads)
D = Anchor Kit for structural slab floor
E = Anchor Kit for raised of access floor
I[1] = AVR/DVR with Anchor kit for slab
J[1] = AVR/DVR with Anchor kit for access floor Q
= Neutral to ground bond removal (shipboard) R[1]
= Neutral to ground removed & AVR/DVR
S = Neutral to ground removed & anchor kit

1. AVR not available on FS (1.4kVA) model

* Eaton has announced the End of Life of these Ferrups options. Products will be available while supplies last.

QFE1.4kVA CTO Configuration Guide

Ferrups 1.4kVA 50Hz Tower General Specifications

Capacity:	1.4kVA/ 1.0kW	Dimensions:	15.1" x 15.25" x 20.2"
Input Voltage:	220, 230, 240V	(HxWxD)	385mm x 390mm x 515mm
Output Voltage:	220, 230, 240V	Weight (with batteries[1]):	70kg / 154lb
		Weight (without batteries):	45.5kg / 100lb

See Eaton® Ferrups® FE Series 50Hz Product Focus (ILP0368) for additional product specification.
1. Weights are approximate for standard batteries, option 0 for digit 4.

Base Unit		Digits 1-2
Base Model, Frequency, Cabinet Style	**CTO Order Code**	**Base Price**
QFE1.4kVA, 50 Hz Tower	FS	$7,533

Input / Output Voltage			Digit 3
Input Voltage	**Output Voltage**	**CTO Order Code**	**Option Price**
220	220	4	$0
230	230	5	$0
240	240	6	$0

Battery and Battery Charger			Digit 4
Battery Configuration	**Battery Charger**	**CTO Order Code**	**Option Price**
14 minute internal (37m half load)	standard	0	$319
21 minute internal (25m half load)	standard	1	$490
Set up for internal (less batteries)	standard	3	$97
set up for external battery pack[1]	standard	4	$50

[1] Includes External Battery Connector
  Order desired external battery pack as a separate line. See page 1.4k-3.

Internal Maintenance Bypass Switch		Digit 5
Internal Maintenance Bypass Switch	**CTO Order Code**	**Option Price**
No internal maintenance bypass switch option available[1]	0	$0

[1]External maintenance bypass switch available for hardwired systems. Order desired maintenance bypass switch as a separate line item on your order. See page 1.4k-3.

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.
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QFE1.4kVA CTO Configuration Guide

Input Connection			Digit 6
Input Voltage Selected	**Input Connection**	**CTO Order Code**	**Option Price**
Any	Hardwired[1]	A	$45
220, 230, 240	IEC320 – Jumper Cord[3]	O	$0

[1] Hardwired input requires hardwired output

[2] Cannot be used with 15 Amp battery charger

[3] Limits output connections to two panels

Output Connection		Digits 7-14

Designated by 8 digits within the unit CTO number. These eight digits allow selection of the type and quantity for up to four different types of receptacles.

- Three output slots available when a NEMA line cord is selected
- Two output slots available when an international line cord is selected.
- For multiple quantities of one receptacle type, enter the type once with the total quantity (ex: B2 not B1B1).
- Always enter the receptacle types alphabetically (ex: B1C1 not C1B1).
- If hardwire output is desired, select type "A", quantity "0" for all four receptacle types (ex: A0A0A0A0).
- If fewer than four types of receptacle are selected, complete the remaining receptacle digits with A0 (ex: B1C1A0A0).

Output Voltage Required	Output Connection	CTO Order Code		Option Price per Panel
		Type	**Qty**	
Any	Hardwired [1]	A	0	$0
220, 230, 240V	IEC320 10A (Qty 2 per panel)	U	__	$50
Receptacle Output Connection CTO Order Code		_ _	_ _ _ _	A 0
Hardwire Output Connection CTO Order Code		A 0 A 0	A 0 A 0	

[1] Hardwired output requires hardwired input

Internal Options		Digit 15
Option	**CTO Order Code**	**Option Price**
No other option	A	$0
Anchor Kit for structural slab floor	D	$200
Anchor Kit for raised or access floor	E	$200
Neutral to Ground bond removal (For Shipboard Use)	Q	$25

External Options

External battery packs, bypass switches and other external options are not a part of the CTO number and will need to be ordered as separate line items. Some external options require that the UPS be configured for use with the option. More options are listed in the Additional External Options section of this guide.

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.
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QFE1.4kVA CTO Configuration Guide

External Battery Packs

Runtime Full/Half	Battery Charger Required	Order Number	List Price
38m/1h38m	Standard Battery Charger	2me	$2,083
55m/2h26m	Standard Battery Charger	3me	$2,409

External Battery Accessories

Option	Order Number	List Price
External Battery Connector Extension (72") Also recommended for third-party external battery configurations.	BCS-0108	$131

External Maintenance Bypass Switches[1] (Recommended for hardwired units)

UPS Input Voltage	Switch Type	Order Number	List Price
220, 230, 240	MBB (Make Before Break)	BPE01MBB1A	$663
	MBB, with AS/400 (iSeries) Option	BPE01MBBAS1A	$690

[1] Bypass Switch must be mounted on the wall near the UPS.

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.
1.4k - 3

QFE3.1kVA CTO Configuration Guide

Ferrups 3.1kVA 50Hz Tower General Specifications

Capacity:	3.1kVA/ 2.2kW	Dimensions:	21.2" x 15.25" x 22.9"
Input Voltage:	220, 230, 240V	(HxWxD)	540mm x 390mm x 585mm
Output Voltage:	220, 230, 240V	Weight (with batteries[1]):	116kg / 256lb
		Weight (without batteries):	69kg / 152lb

See Eaton® Ferrups® FE Series 50Hz Product Focus (ILP0368) for additional product specification.
1. Weights are approximate for standard batteries, option 0 for digit 4.

Base Unit		Digits 1-2
Base Model, Frequency, Cabinet Style	**CTO Order Code**	**Base Price**
QFE3.1kVA, 50 Hz Tower	FV	$11,459

Input / Output Voltage			Digit 3
Input Voltage	**Output Voltage**	**CTO Order Code**	**Option Price**
220	220	4	$0
230	230	5	$0
240	240	6	$0

Battery and Battery Charger			Digit 4
Battery Configuration	**Battery Charger**	**CTO Order Code**	**Option Price**
14 minute internal (35m half load)	standard	0	$833
37 minute internal (1h38m half load)	standard	1	$1,414
Set up for internal (less batteries)	standard	3	$233
set up for external battery pack[1]	standard	4	$98
set up for external battery pack[1]	15 amp internal upgrade[2]	6	$743

[1] Includes External Battery Connector
   Order desired external battery pack as a separate line. See page 3.1k-5.

[2] Required for external battery packs 12me – 15me

Internal Maintenance Bypass Switch		Digit 5
Internal Maintenance Bypass Switch	**CTO Order Code**	**Option Price**
No internal maintenance bypass switch option available[1]	0	$0

[1]External maintenance bypass switch available for hardwired systems.
   Order desired maintenance bypass switch as a separate line item on your order. See page 3.1k-3.

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Product and pricing subject to change without notice.
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QFE3.1kVA CTO Configuration Guide

Input Connection			Digit 6
Input Voltage Selected	**Input Connection**	**CTO Order Code**	**Option Price**
220, 230, 240V	Hardwired[1]	A	$48
	IEC309 16A[2,4]	S	$60

[1] Hardwired input requires hardwired output

[2] Cannot be used with 15 Amp battery charger

[4] Limits output connections to two panels

Output Connection   Digits 7-14

Designated by 8 digits within the unit CTO number. These eight digits allow selection of the type and quantity for up to four different types of receptacles.

- Three output slots available when a NEMA line cord is selected
- Two output slots available when an international line cord is selected.
- For multiple quantities of one receptacle type, enter the type once with the total quantity (ex: B2 not B1B1).
- Always enter the receptacle types alphabetically (ex: B1C1 not C1B1).
- If hardwire output is desired, select type "A", quantity "0" for all four receptacle types (ex: A0A0A0A0).
- If fewer than four types of receptacle are selected, complete the remaining receptacle digits with A0 (ex: B1C1A0A0).

Output Voltage Required	Output Connection	CTO Order Code		Option Price per Panel
		Type	**Qty**	
220, 230, 240V	Hardwired [1]	A	___	$0
	IEC320 10A (Qty 2 per panel)	U	___	$50
Receptacle Output Connection CTO Order Code		_ _ _ _ _ _ A 0		
Hardwire Output Connection CTO Order Code		A 0 A 0 A 0 A 0		

[1] Hardwired output requires hardwired input

Internal Options		Digit 15
Option	**CTO Order Code**	**Option Price**
DVR (recommended when loads contain PFC power supplies)	B	$0
DVR and Anchor Kit for structural slab floor	I	$215
DVR and Anchor Kit for raised or access floor	J	$215
Neutral to Ground bond removal and DVR (For Shipboard Use)	R	$25

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.

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QFE3.1kVA CTO Configuration Guide

External Options

External battery packs, bypass switches and other external options are not a part of the CTO number and will need to be ordered as separate line items. Some external options require that the UPS be configured for use with the option. More options are listed in the Additional External Options section of this guide.

External Battery Packs

Runtime Full/Half	Battery Charger Required[1]	Order Number	List Price
57m/2h27m	Standard Battery Charger[1] 15 Amp Battery Charger Upgrade Optional	9me	$4,888
1h41m/4h03m	Standard Battery Charger[1] 15 Amp Battery Charger Upgrade Optional	10me	$8,403
2h29m/5h44m	Standard Battery Charger[1] 15 Amp Battery Charger Upgrade Optional	11me	$9,307
2h52m/6h50m	15 Amp Battery Charger Upgrade[1]	12me	$12,380
4h07m/9h27m	15 Amp Battery Charger Upgrade[1]	13me	$15,113
5h52m/13h30m	15 Amp Battery Charger Upgrade[1]	14me	$18,548
9h41m/22h18m	15 Amp Battery Charger Upgrade[1]	15me	$25,081

[1]Order battery charger as part of UPS. See page 3.1k-1.

External Battery Accessories

Option	Order Number	List Price
External Battery Connector Extension (72") Also recommended for third-party external battery configurations.	BCS-0108	$131

External Maintenance Bypass Switches[1] (Recommended for hardwired units)

UPS Input Voltage	Switch Type	Order Number	List Price
220, 230, 240	MBB (Make Before Break)	BPE01MBB1A	$663
	MBB, with AS/400 (iSeries) Option	BPE01MBBAS1A	$690

[1] Bypass Switch must be mounted on the wall near the UPS.

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.
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QFE5.3kVA CTO Configuration Guide

Ferrups 5.3kVA 50Hz Tower General Specifications

Capacity:	5.3kVA/ 3.7W	Dimensions:	29.5" x 15.5" x 25"
Input Voltage:	220, 230, 240V	(HxWxD)	750mm x 395mm x 635mm
Output Voltage:	220, 230, 240V	Weight (with batteries[1]):	229kg / 505lb
		Weight (without batteries):	131kg / 289lb

See Eaton® Ferrups® FE Series 50Hz Product Focus (ILP0368) for additional product specification.
1. Weights are approximate for standard batteries, option 0 for digit 4.

Base Unit		Digits 1-2
Base Model, Frequency, Cabinet Style	**CTO Order Code**	**Base Price**
QFE5.3kVA, 50 Hz Tower	FX	$16,613

Input / Output Voltage			Digit 3
Input Voltage	**Output Voltage**	**CTO Order Code**	**Option Price**
220	220	4	$0
230	230	5	$0
240	240	6	$0

Battery and Battery Charger			Digit 4
Battery Configuration	**Battery Charger**	**CTO Order Code**	**Option Price**
20 minute internal (50 m half load)	standard	0	$1,254
Set up for internal (less batteries)	standard	3	$388
set up for external battery pack	standard	4	$0
set up for external battery pack[1]	10 amp internal upgrade[2]	5	$270
set up for external battery pack[1]	20 amp internal upgrade[3]	7	$624

[1] Order desired external battery pack as a separate line. See page 5.3k-3.

[2] Required for external battery packs 4fe – 5fe

[3] Required for external battery packs 6fe – 7fe

Internal Maintenance Bypass Switch		Digit 5
Internal Maintenance Bypass Switch	**CTO Order Code**	**Option Price**
No internal maintenance bypass switch option[1]	0	$0
Internal maintenance bypass switch option – MBB	1	$825

[1] External maintenance bypass switch also available for hardwired systems.

Order desired maintenance bypass switch as a separate line item on your order. See page 5.3k-4.

All Prices F.O.B. Raleigh, North Carolina U.S.A. in U.S. dollars.
Product and pricing subject to change without notice.
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QFE5.3kVA CTO Configuration Guide

Input Connection			Digit 6
Input Voltage Selected	**Input Connection**	**CTO Order Code**	**Option Price**
220, 230, 240 volt	Hardwired	A	$0

Output Connection — Digits 7-14

Designated by 8 digits within the unit CTO number. These eight digits allow selection of the type and quantity for up to four different types of receptacles.

- Up to four output slots available without internal maintenance bypass switch option.
- Up to four output slots available when internal maintenance bypass switch option is selected.
- For multiple quantities of one receptacle type, enter the type once with the total quantity (ex: B2 not B1B1).
- Always enter the receptacle types alphabetically (ex: B1C1 not C1B1).
- If hardwire output is desired, select type "A", quantity "0" for all receptacle types (ex: A0A0A0A0).
- If fewer than four types of receptacle are selected, complete the remaining receptacle digits with A0 (ex: B1C1A0A0).

Output Voltage Required	Output Connection	CTO Order Code		Option Price per Panel
		Type	**Qty**	
220, 230, or 240 volt	Hardwired [1]	A	0	$0
	15 Amp / 2 pole Circuit Breaker[2]	W	___	$60
	20 Amp / 2 pole Circuit Breaker[2]	Y	___	$60
	30 Amp / 2 pole Circuit Breaker[2]	2	___	$60
Receptacle Output Connection CTO Order Code		_ _ _ _ _ _ _ _		
Hardwire Output Connection CTO Order Code		A0 A0 A0 A0		

[1] Hardwired output requires hardwired input
[2] Internal maintenance bypass switch option required for circuit breaker output connections

Internal Options		Digit 15
Option	**CTO Order Code**	**Option Price**
DVR	B	$0
DVR and Anchor Kit for structural slab floor	I	$323
DVR and Anchor Kit for raised or access floor	J	$323
Neutral to Ground bond removal and DVR (For shipboard use)	R	$25

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Product and pricing subject to change without notice.
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QFE5.3kVA CTO Configuration Guide

External Options

External battery packs, bypass switches and other external options are not a part of the CTO number and will need to be ordered as separate line items. Some external options require that the UPS be configured for use with the option. More options are listed in the Additional External Options section of this guide.

External Battery Packs			
Runtime Full/Half	**Battery Charger Required[1]**	**Order Number**	**List Price**
27m/1h14m	Standard Battery Charger[1] 10 or 20 Amp Battery Charger Upgrade Optional	1fe	$6,038
49m/2h10m	Standard Battery Charger[1] 10 or 20 Amp Battery Charger Upgrade Optional	2fe	$8,456
1h12m/3h08m	Standard Battery Charger[1] 10 or 20 Amp Battery Charger Upgrade Optional	3fe	$9,371
1h27m/3h39m	10 Amp Battery Charger Upgrade[1] 20 Amp Battery Charger Upgrade Optional	4fe	$12,494
2h13m/5h11m	10 Amp Battery Charger Upgrade[1] 20 Amp Battery Charger Upgrade Optional	5fe	$15,269
3h08m/7h22m	20 Amp Battery Charger Upgrade[1]	6fe	$18,379
5h10m/12h10m	20 Amp Battery Charger Upgrade[1]	7fe	$25,382

[1]Order battery charger as part of UPS. See page 5.3k-1.

External Maintenance Bypass Switches[1] (Recommended for hardwired units)			
UPS Input Voltage	**Switch Type**	**Order Number**	**List Price**
220, 230, 240 volt	MBB (Make Before Break)	BPE02MBB1A	$909
	MBB with AS/400 (iSeries) Option	BPE02MBBAS1A	$950

[1] Bypass Switch must be mounted on the wall near the UPS.

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Product and pricing subject to change without notice.

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Additional Ferrups External Options

Voltage Matching Transformers

208V in – 120/240V out	(required for applications using MBB bypass with source voltage of 208V)		
Transformer Description	**For use with Ferrups models:**	**Order Number**	**List Price**
7.5kVA Transformer	FJ, FK (5.3kVA - 7kVA)	TRN-0239	$2,219

Caster Kits

For use with Ferrups models:	**Order Number**	**List Price**
FV (3.1kVA)	CAA-0006	$199

Connectivity

Option	**Order Number**	**List Price**
Hand-held Remote Control Panel with Cable	RCK-0007	$423
IBM AS/400 (iSeries) Interface Kit – UPS w/o maintenance bypass switch	IPK-0001	$131
Serial RS-232 CheckUPS Cable DB25M to DB9F	INT-0035	$67
BestLink SNMP/WEB Adapter	116750225-001	$388

Software

Arriving bundled with every Ferrups UPS is the Eaton Intelligent Power Software Suite. The software suite includes links to LanSafe and NetWatch software.

Eaton's latest release of our free LanSafe® software is fully supportive of the Ferrups product line. Ferrups customers can use LanSafe to deliver comprehensive UPS support including graceful, remote shutdown of UPS systems and network monitoring tools via a serial connection. The most recent release of LanSafe software is available for download on our website powerquality.eaton.com.

NetWatch Clients UPS software enables users to shutdown a server or workstation and acts as a network-monitoring tool through the BestLink SNMP/WEB Adapter that monitors and controls it. During an extended power outage, the SNMP/WEB adapter informs all registered NetWatch Clients that it is time to shut down their respective operating systems, thus preparing them for the removal of AC power.

Ferrups products are also compatible with the Eaton PowerXpert Software, geared toward end users with mostly Eaton power distribution products such as switchgear, UPSs, breakers, PDUs, RPPs, meters, and relays amongst others. PowerXpert has web based views including Trend Viewer, Layout Manager and Quality Manager Modules.

Additionally, the CheckUPS® Software Suite is available for download under legacy software at powerquality.eaton.com. This product remains in Eaton's portfolio and is still used in a number of applications but is not under further development.

For more information on Eaton software products, visit powerquality.eaton.com/Support/Software-Drivers