



QFE



**Fairford Electronics
UL soft starter for
AC induction motors
with enhanced
energy optimizing**



The QFE Soft Starter is Fairford's ultimate range of Energy Optimizing Soft Starters.



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It has been specifically designed to start a variety of applications with differing load types, making it an extremely robust unit.

Features and Benefits

Automatic Application Set Up
Choose your application from the menu "Fan, Pump, Conveyor, crusher..." and the automatic features select the correct ramp profiles, saving setup costs.

Patented "Fairford System" of Energy Optimizing
In certain load conditions Fairford System of Energy Optimizing can reduce energy costs by reducing power required by the application, without loss of performance.

6 Button Keypad, 2 Line 32 Character Display
Saves time programming and fault finding because the messages are displayed in English rather than in code format.

Protection
NEMA 1: QFE 9 to QFE 900.
QFE-O 500 to QFE-O 1800.

Fully Programmable
Inputs: 12V DC – 230V AC,
Outputs: AC1 230V 3A.

Continuous Display
Of motor phase current and control status: Starting, Stopping, Full Volts, Optimizing, Current Limitations, Overload and fault indication.

Unit Records History of Last 5 Trips
Allows the user to quickly determine which fault the Soft Starter has identified.

Optional Loads; Static Loads, Resistive (Heaters), Inductive (Transformers)
Allows the unit to be used on a variety of differing applications so one unit is highly versatile and therefore saving money.

Modbus or Remote Keypad Option
Eliminating many control items, can be used on a one to one basis or one keypad can control up to 10 Soft Starters. Other gateway solutions available.

In Delta Capability
Could reduce the size of the unit needed for the application.

QFE – Energy Optimizing Soft Starters, 9 - 1800 Amp

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Case Study

A range of Fairford QFE soft starters have been installed on the drive mechanisms of aeration paddles at a wastewater treatment plant operated by SC-OR (Sewer Commission Oroville Region) in Sacramento California. This installation is part of a \$4.7 million solar power project to reduce the 41% rise in energy costs in this area. These costs could not be passed onto their customers so an innovative Photovoltaic (PV) power system was designed and installed.

18.5kW Fairford QFE energy optimizing soft starters were fitted to paddle type surface aerators. The aerators are the most critical operating unit, running 24 hrs/day, 7 days a week, and since startup, in March 2003, the Fairford soft starters have been trouble-free. The Fairford soft starters are part of the Demand Side Management system at the plant, and have contributed to reducing energy costs by 50%.



Operational Voltage (Ue) 230-460VAC rms, 400-575VAC rms or 500-690VAC rms
3-Phase (-15% +10%)

Rated Frequency 50 - 60Hz +/- 2Hz

Index Rating QFE 9 to QFE 105:
AC53a: 5 - 4: 99-10
AC53a: 3-35: 99-10
QFE 146 to QFE 202:
AC53a: 4 - 6: 99-10
AC53a: 3-35: 99-10
QFE 242 to QFE 900:
AC53a: 4 - 6: 60-3
AC53a: 3-35: 60-3

Start Time 1 to 255 Seconds

Stop Time 0 to 255 Seconds

Control Supply Us X1, X2 115V or 230V AC rms
(-15% +10%)

Control Supply Uc S0, S1 12V/24V DC or
115/230VAC.

Protection NEMA 1; QFE9 – QFE900
IP20 - IP00

Ambient Temperature 32°F to 104°F. Above 104°F
de-rate linearly by 2% of unit
FLC per °F to a maximum of
40% at 140°F

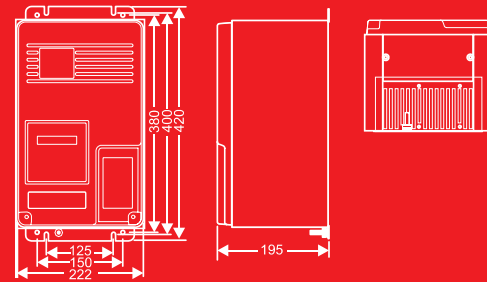
Transport and Storage -13°F to +140°F (continuous),
-13°F to +167°F (not exceeding
24 hours)

Altitude Above 1000m de-rate linearly
by 1% of unit FLC per 100m to
a maximum altitude of 2000m

Humidity max. 85% non-condensing,
not exceeding 50% at 104°F

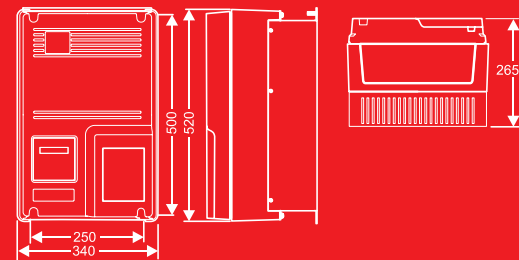
**Design standards
and Approvals** IEC 60947-4-2; EN 60947-4-2
'AC Semiconductor Motor
Controllers and Starters'
UL
CSA
CE

QFE9 to QFE146



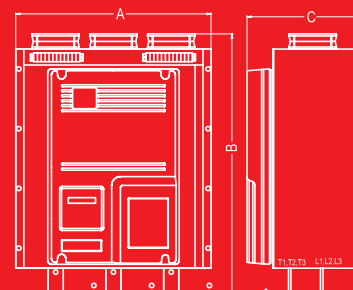
Please note: All dimensions in mm

QFE174 to QFE370



Please note: All dimensions in mm

QFE-O 500 to QFE-O 1800



Please note: All dimensions in mm

QFE-O Range Approximate Dimensions (mm)

	A	B	C
QFE-O 500 to 600	490	648	285
QFE-O 750	508	738	282
QFE-O 900 to 1100	635	746	322
QFE-O 1200	635	782	322
QFE-O 1400 to 1800	775	775	475

MOTOR HORSEPOWER @ 10 STARTS PER HOUR												SOFT START PARAMETERS		
Standard Duty				Medium Duty				Heavy Duty				208 V to 230 V 460V to 575 V MODEL NUMBER	CONTINUOUS CURRENT OUTPUT AMPS	Chassis
400% Motor FLA @ 6 Sec. 300% Motor FLA @ 35 Sec.				400% Motor FLA @ 12 Sec. 300% Motor FLA @ 60 Sec.				400% Motor FLA @ 35 Sec. 300% Motor FLA @ 80 Sec.						
208V	230V	460V	575V	208V	230V	460V	575V	208V	230V	460V	575V			
		5	7.5			5	5					QFE 9k	9	1
3	5	10	10			7.5	7.5			5	5	QFE 16k	16	1
5	7.5	15	20		5	10	10			7.5	7.5	QFE 23k	23	1
7.5	10	20	25	5	7.5	15	20			10	10	QFE 30k	30	1
10	15	30	40	7.5	10	20	30		5	15	20	QFE 44k	44	1
15	20	40	50	10	15	30	40	5	7.5	20	30	QFE 59k	59	1
20	25	50	60	15	15	40	50	7.5	10	30	40	QFE 72k	72	1
25	30	60	75	15	20	50	60	10	15	40	50	QFE 85k	85	1
30	40	75	100	20	30	60	75	15	20	50	60	QFE 105k	105	1
40	50	100	125	30	40	75	125	20	30	60	100	QFE 146k	146	1
50	60	125	150	40	50	100		30	40	75		QFE 174k	174	2
60	75	150	200	50	60	125	150	40	50	100	125	QFE 202k	202	2
75	100	200	250	60	75	150	150	50	60	125	150	QFE 242k	242	2

MOTOR APPLICATION HORSEPOWER @ 3 STARTS PER HOUR MAXIMUM												SOFT START CONTROL		
Standard Duty				Medium Duty				Heavy Duty				208 V to 230 V 460V to 575 V MODEL NUMBER	CONTINUOUS CURRENT OUTPUT AMPS	Chassis
400% Motor FLA @ 6 Sec. 300% Motor FLA @ 35 Sec.				400% Motor FLA @ 12 Sec. 300% Motor FLA @ 60 Sec.				400% Motor FLA @ 35 Sec. 300% Motor FLA @ 80 Sec.						
208V	230V	460V	575V	208V	230V	460V	575V	208V	230V	460V	575V			
100	125	250	250	75	100	200		60	75	150		QFE 300k	300	2
125	150	300	300	100	125	250	250	75	100	200		QFE 370k	370	2
150	200	400	400	125	150	300	300	100	125	250	300	QFE 500k	500	3
200		500	500	150	200	400	400	125	150	300	400	QFE 600k	600	3
		600	600	200		500	500	150	200	400	500	QFE 750k	750	3
		700	700			600	600	200		500	600	QFE 900k	900	3

QFE - Accessories



4MC Gold Card

A retrofit replacement for old 3MC and 4MC Control Cards fitted to many Soft Starters as supplied by: Fairford, BSL, GEC, Moeller(MST), Safronics, Siemens (3RW10), Sprecher + Schuh



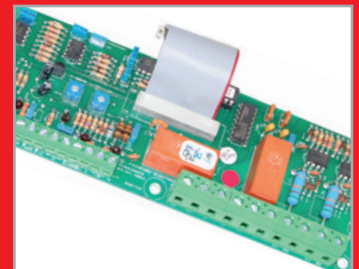
Modbus Communication - RS485

The ability to set up, control and monitor single or multiple QFE Soft starters. The serial card allows control to be switched between an integral Keypad or alternately an external isolated Modbus network.



Remote Keypad

- Can be used on a one to one basis, or one Keypad can control several Soft Starters
- Seven buttons with individual Start and Stop
- Display via a 2 line 32 character LCD
- Eliminates panel mounted Start and Stop push buttons, Ammeters, Run, Top of Ramp and Alarm Lamps



Auxiliary Function Card

- Add on card with additional I/O
- Two 0-10V Analogue outputs
- One 0-21V DC input
- One 4-20mA input
- One Thermistor input
- Two programmable output relays
- Two programmable input relays

For more information on how the QFE from Fairford Electronics can reduce your running costs and lower maintenance bills contact your local distributor.

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www.fairford.com



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