FAIRFORD ELECTRONICS

QFE
Soft Starters

INNOVATION IN SOFT STARTER TECHNOLOGY

A Digital Soft Starter for all requirements - Automatic Set Up

THE QFE OPTIMISING SOFT STARTER

Whether a robust, fully featured Soft Starter is all you have in mind, or a sophisticated controller with Communications links is closer to the mark, the powerful and flexible QFE range has the product to suit your needs.

AUTOMATIC SET UP

A simple selection of the application required from our first menu lets the QFE's automatic features do the rest.

The QFE's automatic features cater for ramp profiles for your specific application, no further user adjustment is needed.

CODES ARE CONFUSING

Keypad controllers need to display Messages. Many soft starters do this by codes such as D23, K9, etc.

Unless you are familiar with the codes they can be very confusing especially at times of emergency.

The QFE solves this problem with easily understood messages on the built-in alpha-numeric display. Information at a touch, phase current at a glance – all this and much more.

QFE – THE CRITICS CHOICE FOR CRITICAL APPLICATIONS

Many industries are process dependent. In these industries, the cost of an unscheduled stoppage or shutdown due to controller failure is many times the cost of the failed equipment. The build quality of the QFE gives peace of mind to the plant engineer who can fit and forget – safe in the knowledge that the integrity of his critical application is secure.

RELIABILITY – OUR MOST IMPORTANT FEATURE

Along with quality, connectability, flexibility, competence and technical advancement the QFE range has it all.

Now you can fit and forget with these new fully compliant Soft Starters.

Designed and rigorously tested to the exacting design standards listed opposite, the QFE naturally meets the CE requirements as well.

Advanced Performance. Advanced Features.

QFE Optimising Soft Starters 9-900 Amps, 230-460, 400-575 and 500-690 Volts

FEATURES

- **Automatic application set up.**
  Fan, Pump, Conveyor …
- **Manual adjustment** of Start and Stop times up to 255 seconds, Start and Stop pedestals 10 to 60%, current limitation 1 to 8 x FLC, kick start for high break away torque applications …
- **Six button keypad** including Start/Stop with 2 line 32 character LCD.
- **Menu** designed for easy parameter setup.
- **Continuous display** of motor phase current and control status:– starting, stopping, full volts, optimising, current limitation, overload and fault indication.
- **Modbus & Remote Keypod** option eliminating many control items can be used on a one to one basis or one keypod can control up to 10 Soft Starters.
- **Loads**
  Standard W3C control of motors, Static loads, resistive (heaters) and inductive (transformers).
- **In-Delta** operation – allows for a lower current rating than the motor.
- **Records History of last 5 trips**
  overload, shearpin, under current, current limit time out; Input and motor side phase loss; thyristor short circuit, signal, firing and sensing; external; phase rotation; communication failure; thermal switch, thermistor and excessive starts per hour trips.
- **Patented 'Fairford System'** of Automatic Energy Optimising with adjustable Optimising response rate .
- **Control supply** selectable 115 or 230V.
- **Fully programmable**
  inputs 12VDC - 230V AC, outputs AC1 230V 3A
- **IP20**
- **QFE + option adds**
  Two analogue outputs 0-10V DC two analog inputs 4-20mA and 0-10V DC. Thermistor trip input.
  Two extra relays and Two extra 12VDC – 230VAC inputs.
  All are fully programmable.
- **Plus many more**

DESIGN STANDARDS AND APPROVALS

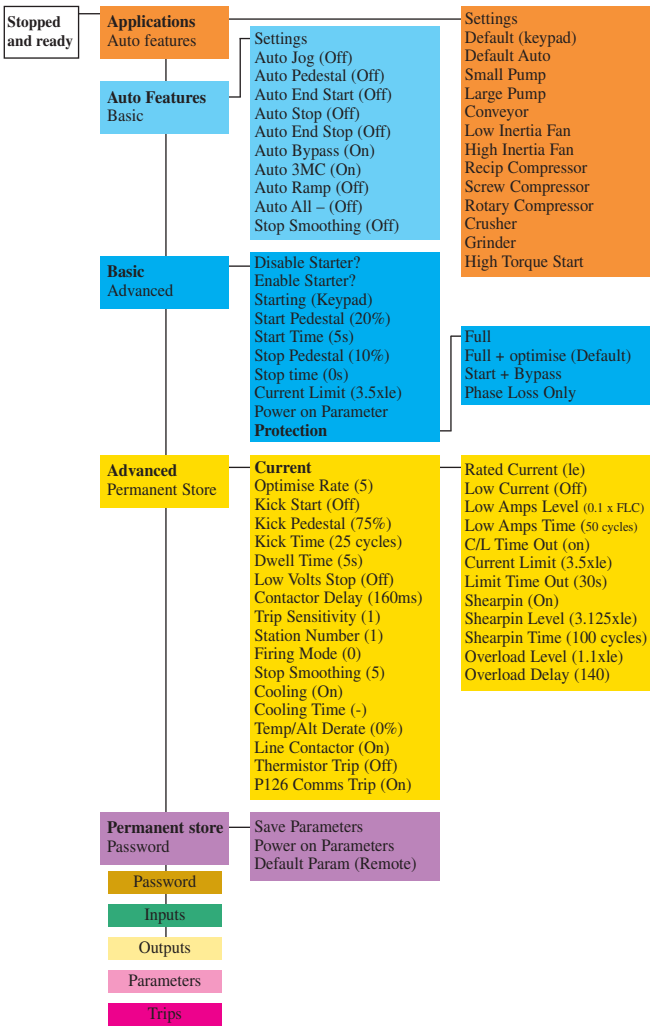
- IEC 60947-4-2:
  Standard for AC Semiconductor Motor Controllers and Starters
- EN 60947-4-2:
  European Standard for AC Semiconductor Motor Controllers and Starters
- Models QFE and QFE-G: UL508
  United States Standard for Industrial Control Equipment

UL Listed
File No. E208760

BENEFITS

- Reduction in high starting currents
- Elimination of inrush currents
- Smooth, stepless acceleration to full speed
- Snatch free starting removing mechanical stress
- Extended contactor life
- Reduced wear on mechanical transmission components
- Automatic energy optimising
- Improved power factor at light loads, reduced kVA demand
- Suitable for all types of induction motor

TYPICAL MENU STRUCTURE

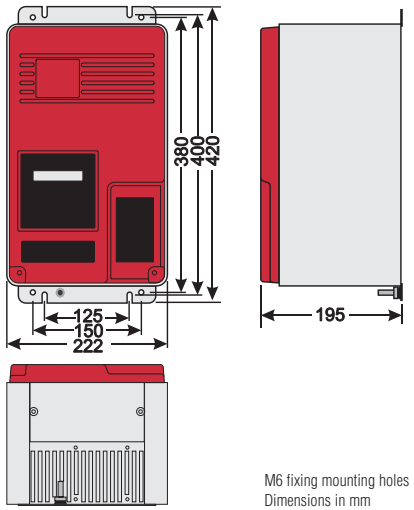


QFE Technical Specifications

Size 1

Model		QFE 9	QFE 16	QFE 23	QFE 30	QFE 44	QFE 59	QFE 72	QFE 85	QFE 105	QFE 146
Max. continuous current		9A	16A	23A	30A	44A	59A	72A	85A	105A	146A
Approximate equivalent motor ratings at voltage:-											
230V kW		2.2	3.7	6.3	7.5	11	16	20	22	30	45
400V kW		**4**	**7.5**	**11**	**15**	**22**	**30**	**37**	**45**	**55**	**75**
460V kW		4	7.5	11	15	22	32	40	45	55	80
Model	**G/E**	**QFE 9**	**QFE 16**	**QFE 23**	**QFE 30**	**QFE 44**	**QFE 59**	**QFE 72**	**QFE 85**	**QFE 105**	**QFE 146**
Max. continuous current		9A	16A	23A	30A	44A	59A	72A	85A	105A	146A
Approximate equivalent motor ratings at voltage:-											
575V kW	**G**	**5.5**	**11**	**15**	**22**	**30**	**37**	**45**	**55**	**75**	**110**
690V kW	**E**	**7.5**	**15**	**22**	**30**	**37**	**55**	**60**	**75**	**90**	**132**
Heat Output at FLC (watts)		30	45	60	80	110	155	180	220	275	440
Weight (kg)		7	7	7	7	7	8	8	8	8	8
Cable Size (mm^2)		4	4	4	6	10	10	16	25	35	70

All units are force cooled except QFE 9, 16 and 23, which are naturally cooled. Clearance of 75mm is required above and below, 15mm side and 25mm front, for cooling air flow.



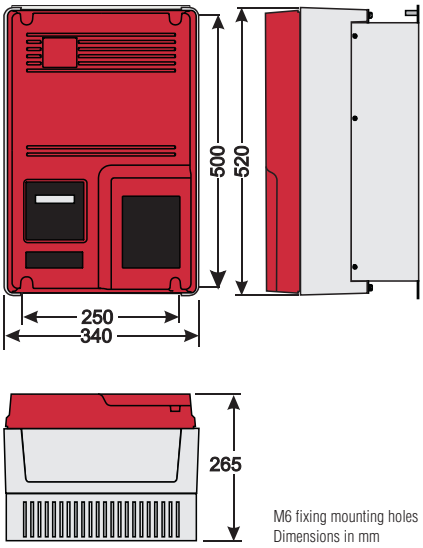
M6 fixing mounting holes
Dimensions in mm

Size 2

Model		QFE 174	QFE 202	QFE 242	QFE 300	QFE 370
Max. continuous current		174A	202A	242A	300A	370A
Approximate equivalent motor ratings at voltage:-						
230V kW		55	63	75	90	110
400V kW		**90**	**110**	**132**	**160**	**200**
460V kW		110	132	150	185	220
Model	**G/E**	**QFE 174**	**QFE 202**	**QFE 242**	**QFE 300**	**QFE 370**
Max. continuous current		174A	202A	242A	300A	370A
Approximate equivalent motor ratings at voltage:-						
575V kW	**G**	**132**	**150**	**185**	**220**	**250**
690V kW	**E**	**160**	**200**	**220**	**300**	**375**
Heat Output at FLC (watts)		520	610	650	850	970
Weight (kg)		15.7	15.7	22	22	22
Cable Size (mm^2)		95	120	120	150	150

All units are force cooled. Clearance of 75mm is required above, 25mm side and 25mm front, for cooling air flow.

Cable entry extensions are optional extras for size 2 units.
They are designed to be drilled for power and control cable glands.
When used the overall height is increased to 740mm

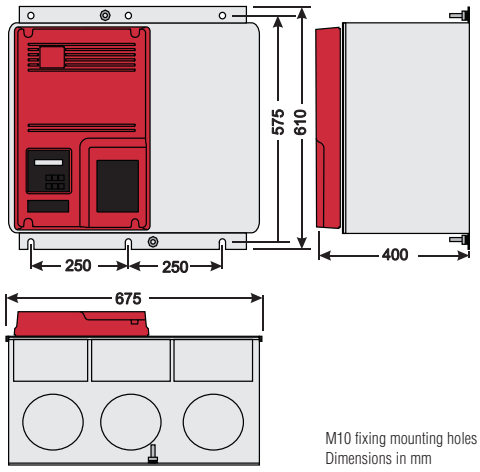


M6 fixing mounting holes
Dimensions in mm

Size 3

Model		QFE 500	QFE 600	QFE 750	QFE 900
Max. continuous current		500A	600A	750A	900A
Approximate equivalent motor ratings at voltage:-					
230V kW		160	185	250	300
400V kW		**250**	**320**	**400**	**500**
460V kW		300	375	450	560
Model	**G/E**	**QFE 500**	**QFE 600**	**QFE 750**	**QFE 900**
Max. continuous current		500A	600A	750A	900A
Approximate equivalent motor ratings at voltage:-					
575V kW	**G**	**375**	**450**	**560**	**670**
690V kW	**E**	**500**	**600**	**750**	**900**
Heat Output at FLC (watts)		1600	2000	2500	3000
Weight (kg)		65	65	72	72
Busbar (conns.)		2 x M10 fixings at 30 mm centres			

All units are force cooled . Clearance of 200mm is required above and below, 90mm side and 25mm front, for cooling air flow.



M10 fixing mounting holes
Dimensions in mm

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SD0048-03/07