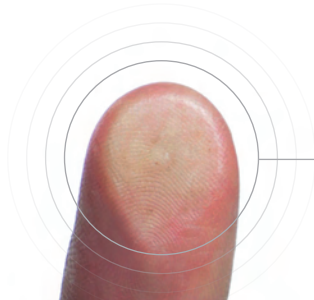


# synergy™

a revolution in soft start motor control



The future of  
soft start motor  
control at your  
fingertips

 **fairford**  
Soft Start Technology

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As the original pioneers of soft start technology Fairford have been at the forefront of motor control innovation since the 1970's.

A major designer and manufacturer of soft start motor control solutions Fairford have manufactured and supplied 1,000,000's of products into the market place and are recognised as the reference point for many control solution providers worldwide. Synergy™ is an innovative form of motor control that bridges the gap between

a drive and a soft starter. With the increasing pressure on industry to lower its energy consumption and increase systems efficiency, synergy™ has been developed to meet these requirements.

In addition, synergy™ utilises Fairford's globally renowned automatic setup feature which allows the user to programme the unit to each

individual application using a simple 8 button process. Not only that but in order to keep pace with modern technology and a fast growing market, buttons are replaced with a touch screen to bring the user interface to even greater management levels.

With built in full motor overload protection as well as full data logging, field

serviceable, upgradeable software, extensive input/output programmability synergy™ meets all of the industrial fixed speed criteria.

More importantly it redefines motor control solutions as we have previously known them.

## iERS – intelligent Energy Recovery System

iERS is an advanced motor control technology for use in fixed speed applications. It is proven to reduce the energy consumed in a variety of industrial and commercial applications and has been implemented in every market from HVAC to Oil and Gas.

In the industrial sector it is becoming increasingly important to offer technology that meets the corporate social responsibilities of companies as well as reducing the overall running costs of equipment and minimising downtime and maintenance.

iERS is a technology that matches the power consumption to the load required. It intelligently monitors and regulates energy consumption on fixed speed motors. It also monitors the voltage, current and power factor during the start to calculate the full load figures. During the running stage, the power factor continues to be monitored.

When the power factor drops, the motor is lightly loaded, and there are losses inherent in the design of a motor causing excess energy to be wasted. These are known as excitation losses. iERS's consistent monitoring automatically recognises these costly losses, and in turn reduces the voltage and current, to not only increase the part load power factor, but reduce the energy consumption in kW. When the power factor increases, the motor is more loaded. iERS then automatically bypasses itself to remove any losses within the equipment.



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Application	Trip Class	
Default	10	
Heavy	20	
Agitator	10	
Compressors	20	
	Centrifugal	20
	Reciprocating	20
	Rotary Screw	10
	Rotary Vane	10
	Scroll	10
Ball mill	20	
Centrifuge / Decanter bowl / Separator - extended start needed for sizing	Motor FLC x 2.3 class 30	30
Bow Thruster	Zero Pitch	10
	Loaded	20
Chillers		10
Conveyor	Unloaded	10
	Loaded	20
Crusher		30
Fan	Low Inertia <85A	10
	High Inertia >85A	30
Feeder - screw		10
Grinder		20
Hammer mill		20

Application	Trip Class	
Lathe machines	10	
Mills - flour Etc	20	
Mixer	Unloaded	10
	Loaded	20
Moulding Machine		10
Pelletizers		20
Plastic and textile machines		10
Press, flywheel		20
Pump - Submersible	Centrifugal	10
	Rotodynamic	10
Pump - Positive Displacement	Reciprocating	20
	Rotary	20
Pump Jack		20
Rolling mill		20
Roots Blower		20
Saw	Band	10
	Circular	20
Screen - vibrating		20
Shredder		30
Transformers, voltage regulators		10
Travelators / Walkways		10
Tumblers		10
Wood chipper		30

## Sizing Guide

Minimum current ratings based on typical rated operation currents of motors for the corresponding rated operational powers. Current rating optimised for kW@400V & hp@440-480V - Ref IEC 60947-4-1:2009 Table G.1

In Line				In Delta				Trip Class 10	Trip Class 20	Trip Class 30
IEC	IEC kW <sup>1)</sup>	UL	HP <sup>2)</sup>	IEC	IEC kW <sup>1)</sup>	UL	HP <sup>2)</sup>	AC-53a	AC-53a	AC-53a
A <sup>3)</sup>	400V	A <sup>4)</sup>	440-480V	A <sup>3)</sup>	400V	A <sup>4)</sup>	440-480V	3-23: 90-5	4-19: 90-5	4-29: 90-5
17	7.5	17	10	29	15	27	20	SGY-101	SGY-103	SGY-105
22	11	21	15	35	18.5	34	25	SGY-103	SGY-105	SGY-107
29	15	27	20	41	22	40	30	SGY-105	SGY-107	SGY-109
35	18.5	34	25	55	30	52	40	SGY-107	SGY-109	SGY-111
41	22	40	30	66	37	65	50	SGY-109	SGY-111	SGY-113
55	30	52	40	80	45	77	60	SGY-111	SGY-113	SGY-115
66	37	65	50	100	55	96	75	SGY-113	SGY-115	SGY-117
80	45	77	60	132	75	124	100	SGY-115	SGY-117	SGY-201
100	55	96	75	160	90	156	125	SGY-117	SGY-201	SGY-203
132	75	124	100	195	110	180	150	SGY-201	SGY-203	SGY-205
160	90	156	125	230	132	242	200	SGY-203	SGY-205	SGY-301
195	110	180	150	280	160	302	250	SGY-205	SGY-301	SGY-303
242	132	242	200	350	200	361	300	SGY-301	SGY-303	SGY-305
302	160	302	250	481	280	477	400	SGY-303	SGY-305	SGY-307
361	200	361	300	610	355	590	500	SGY-305	SGY-307	SGY-309
430	250	414	350	690	400	590	500	SGY-307	SGY-309	SGY-401
500	280	477	400	850	500	840	700	SGY-309	SGY-401	SGY-403

For more information on how **synergy™** from **Fairford** can help you, please visit [www.fairford.com/synergy](http://www.fairford.com/synergy)

For more information on **synergy™** contact your local distributor:

+ 44 (0)1752 894554  
[www.fairford.com](http://www.fairford.com)



# synergy™ specification for sizes 1, 2 and 3

Range from 17-500A or 10-400HP

3-phase SCR

Full motor overload

Standard Trip Class 10: 3 x 23 secs or 3.5 x 17 secs -  
3 or 5 starts per hour (other Trip Classes are available)

208, 230, 400, 480 volts

Allowing for varying frequency 45Hz-65Hz

IP20 / NEMA 1, IP00

Full automatic set up

Control voltages of 24VDC, 110/230VAC

iERS - intelligent Energy Recovery System as standard

In Delta / 6 wire connection

Multiple languages

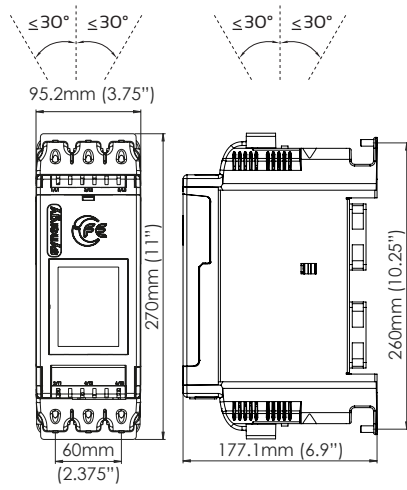
## Inputs / Outputs:

- 4 x programmable output relays
- 3 x programmable digital inputs
- Analogue input / outputs
- USB for data logging and parameter setting/saving
- Thermistor
- Fully field upgradeable
- Comprehensive data logging

Fully field serviceable fans

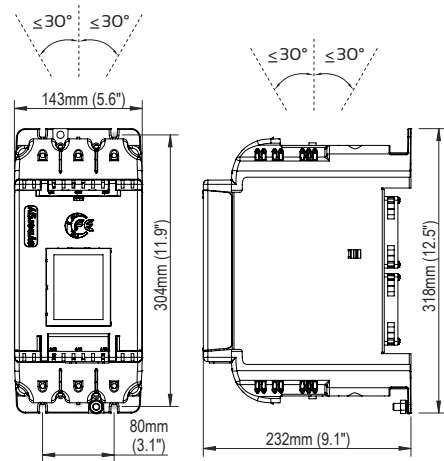
2 year warranty extendable to 5 years

## synergy™ Size 1



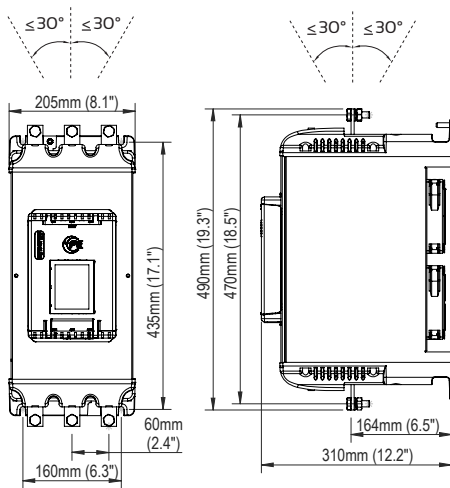
Weight = 3.5kg (7.7lbs)

## synergy™ Size 2

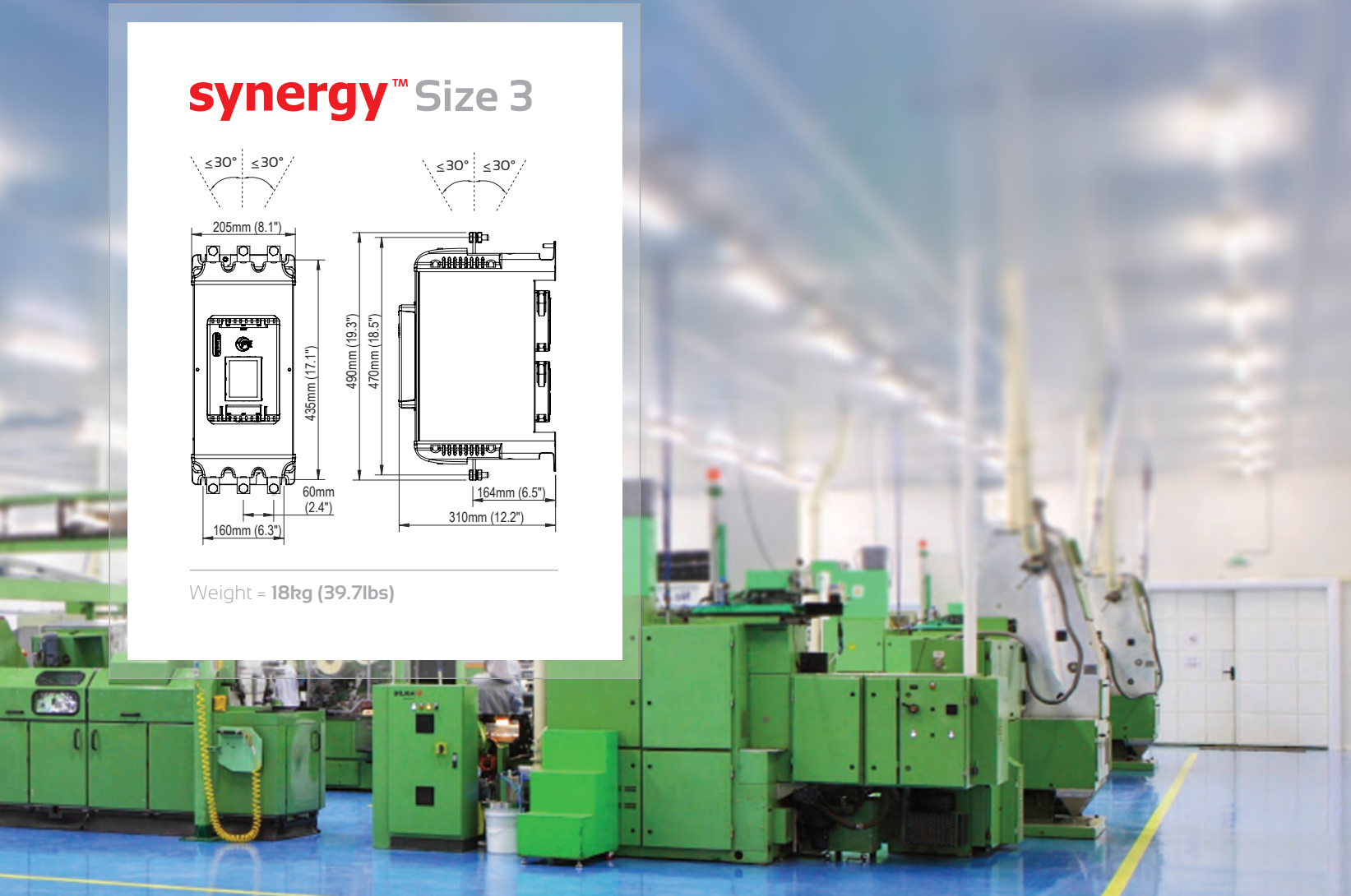


Weight = 6.5kg (14.3lbs)

## synergy™ Size 3



Weight = 18kg (39.7lbs)



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**[www.fairford.com](http://www.fairford.com)**



CONFORMS  
TO STD UL 508  
CSA 222  
No. 14

Ref: SynGEN\_6PAG\_1014 (V1)

