

# synergy™

a revolution in soft start motor control

Low Voltage  
Soft Starters



The future of  
soft start motor  
control at your  
fingertips

 **fairford**  
Soft Start Technology

# synergy™

a revolution in soft start motor control



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.



# synergy™

a revolution in soft start motor control

Application	Trip Class	
Default	10	
Heavy	20	
Agitator	10	
Compressors	Centrifugal	20
	Reciprocating	20
	Rotary Screw	20
	Rotary Vane	10
	Scroll	10
Ball mill	20	
Centrifuge / Decanterbowl / Separator - extended start needed for sizing	Motor FLC x 2.3 class 30	30
Bow Thruster	Zero Pitch	10
	Loaded	20
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	
Tumblers	20	
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	UL HP <sup>2)</sup>	IEC	IEC kW <sup>1)</sup>	UL	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	29	20	SGY-101	SGY-103	SGY-105
22	11	21	15	38	18.5	36	25	SGY-103	SGY-105	SGY-107
29	15	27	20	50	22	47	30	SGY-105	SGY-107	SGY-109
35	18.5	34	25	61	30	59	40	SGY-107	SGY-109	SGY-111
41	22	40	30	71	37	69	50	SGY-109	SGY-111	SGY-113
55	30	52	40	95	45	90	60	SGY-111	SGY-113	SGY-115
66	37	65	50	114	55	113	75	SGY-113	SGY-115	SGY-117
80	45	77	60	139	75	133	100	SGY-115	SGY-117	SGY-201
100	55	96	75	173	90	166	125	SGY-117	SGY-201	SGY-203
132	75	124	100	229	110	215	150	SGY-201	SGY-203	SGY-205
160	90	156	125	277	150	270	200	SGY-203	SGY-205	SGY-301
195	110	180	150	338	185	312	250	SGY-205	SGY-301	SGY-303
242	132	242	200	419	220	419	350	SGY-301	SGY-303	SGY-305
302	160	302	250	523	300	523	450	SGY-303	SGY-305	SGY-307
361	200	361	300	625	355	625	500	SGY-305	SGY-307	SGY-309
430	250	414	350	745	425	717	500	SGY-307	SGY-309	SGY-401
500	280	477	400	866	500	826	600	SGY-309	SGY-401	SGY-403
610	355	590	500	1057	600	1022	800	SGY-401	SGY-403	SGY-501
722	400	722	600	1251	710	1251	1000	SGY-403	SGY-501	SGY-503
850	500	840	700	1472	850	1455	1100	SGY-501	SGY-503	SGY-505
960	560	960	800	1663	950	1663	1250	SGY-503	SGY-505	-
1080	630	1080	900	1871	1100	1871	1500	SGY-505	-	-

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, 3, 4 and 5

Range from 17-1080A or 10-900HP

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

Internally Bypassed - Size 1 to 3 Yes,  
Size 4 to 5 No

IP20 / NEMA 1, IPOO

User-friendly, full colour touch screen

Full automatic set up

Control voltages of 24VDC, 110/230VAC

iERS - intelligent Energy Recovery System as standard

In Delta / 6 wire connection

Multiple languages

Modbus RTU as standard

**Inputs / Outputs:**

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

Comprehensive data logging

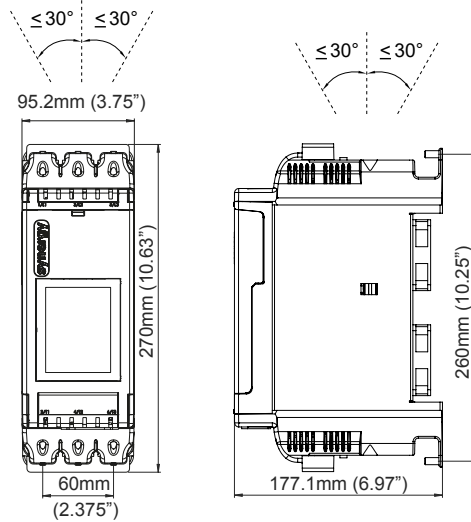
Fully field upgradeable

Fully field serviceable fans

2 year warranty

## synergy™ Size 1, SGY - 101 to SGY-117

### Dimensions

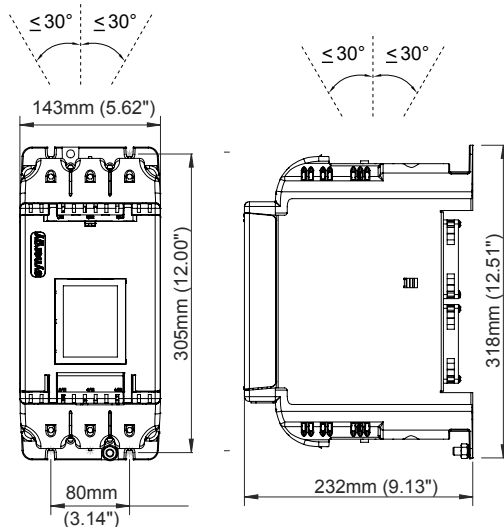


SGY-101 to SGY-105 lower fan only

**Weight = 3.50 kg (7.71 lbs)**

## synergy™ Size 2, SGY - 201 to SGY-205

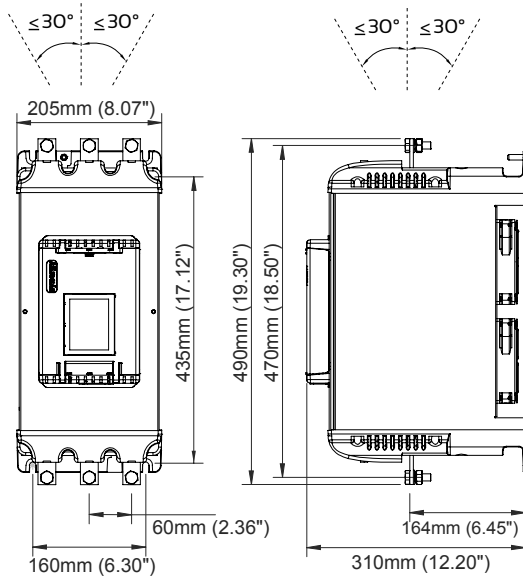
### Dimensions



**Weight = 6.50 kg (14.33 lbs)**

**synergy™** Size 3, SGY - 301 to SGY - 305

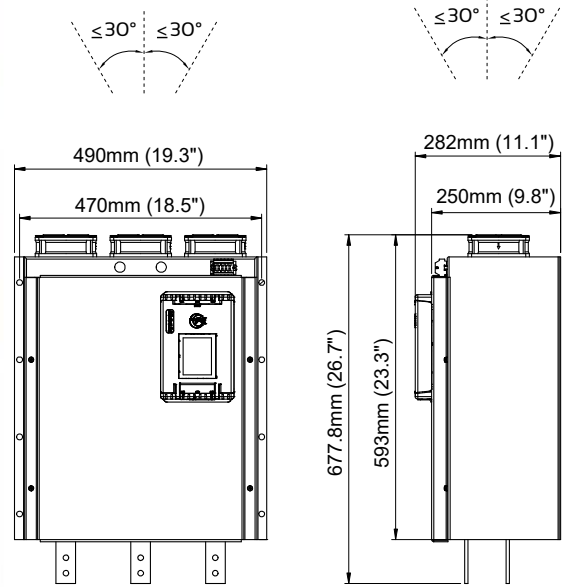
**Dimensions**



**Weight = 16.00 kg (35.27 lbs)**

**synergy™** Size 4, SGY - 401 to SGY - 403

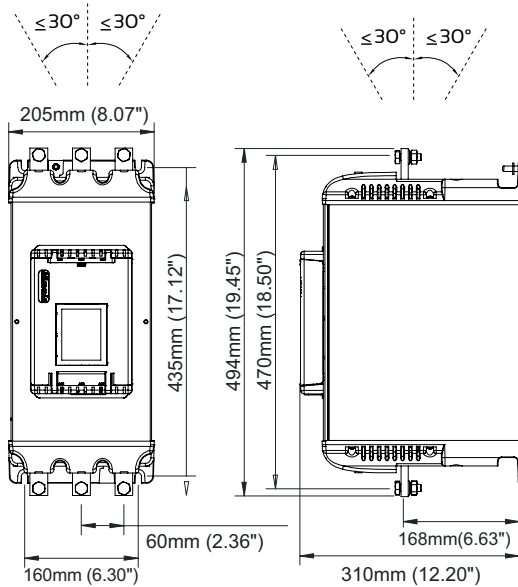
**Dimensions**



**Weight = 65.00 kg (143.30 lbs)**

**synergy™** Size 3, SGY - 307 & SGY - 309

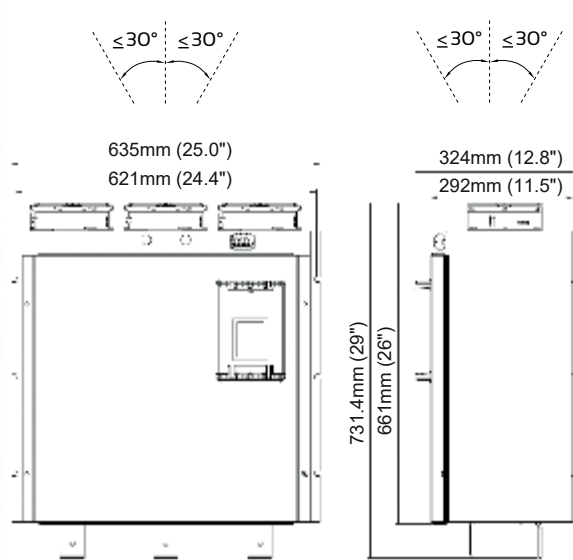
**Dimensions**



**Weight = 21.20 kg (46.73 lbs)**

**synergy™** Size 5, SGY - 501 to SGY - 505

**Dimensions**



**Weight = 72.00 kg (158.73 lbs)**

# synergy™

a revolution in soft start motor control

For more information on  
synergy™ contact your  
local distributor:

+44 (0) 1752 894554

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



CONFORMS  
TO STD UL 508  
CSA 22.2  
No. 14

