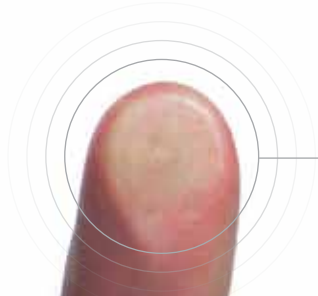


# synergy™

a revolution in soft start motor control



The future of  
soft start motor  
control at your  
fingertips



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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.



# 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

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

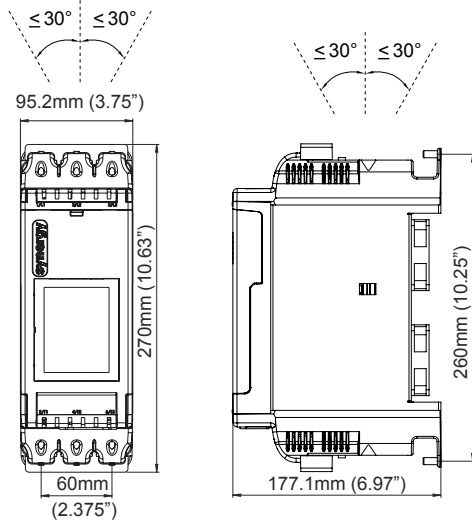
Fully field upgradeable

Fully field serviceable fans

2 year warranty

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

### Dimensions

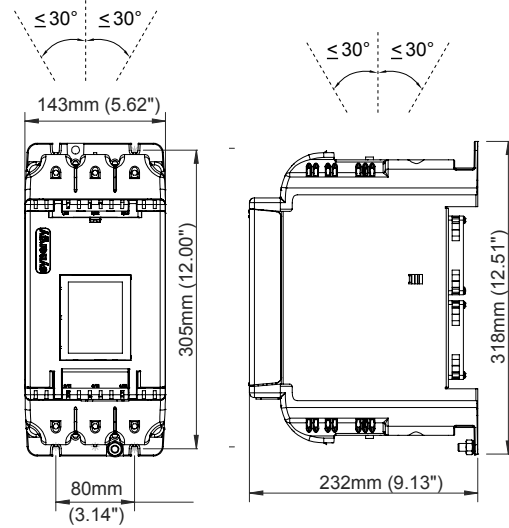


SGY-101 to SGY-105 lower fan only

Weight = 3.50 kg (7.71 lbs)

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

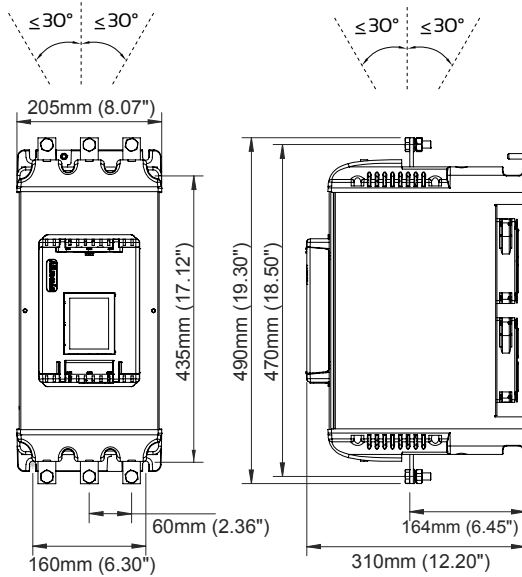
### Dimensions



Weight = 6.50 kg (14.33 lbs)

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

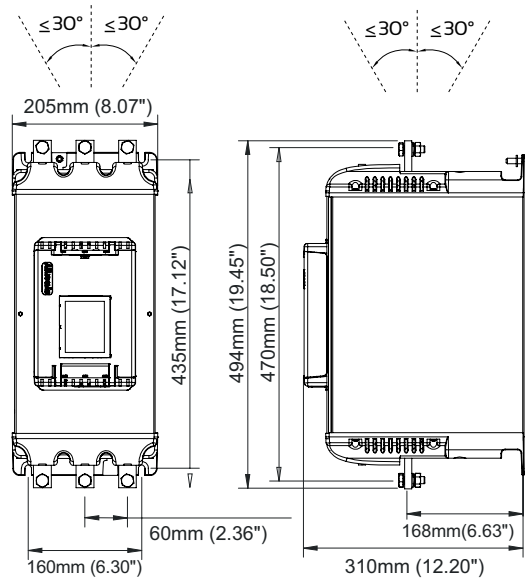
### Dimensions



Weight = 16.00 kg (35.27 lbs)

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

### Dimensions



Weight = 21.20 kg (46.73 lbs)

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| 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       |

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)



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CONFORMS  
TO STD UL 508  
CSA 22.2  
No. 14

