

VMX-synergy™

High Performance
Energy Saver

Low Voltage
Soft Starters

The future of
soft start motor
control at your
fingertips



17 - 500 A*

*For larger motor sizes contact your local distributor.

 **MOTORTRONICS™**
Solid State AC Motor Control

VMX-synergy™

High Performance
Energy Saver

17 - 500 A

Redefining Soft Starters

With a unique combination of features, performance and size, Motortronics has redefined the benchmark for soft starter design

The incorporation of Motortronics' unique iERS technology allows VMX-synergy™ to deliver unrivalled soft start performance alongside energy saving capability on partially loaded motors.

With product size and cabinet capacity becoming an increasing focus VMX-synergy™ has been developed to deliver the greatest power to size ratio of any soft starter.

In addition, VMX-synergy™ uses Motortronics' globally renowned i42 smart application pre-program suite. This allows the user to program

the unit to any common application using a simple 4 step process. To keep pace with modern technology, VMX-synergy™ removes the need for buttons and uses intuitive touch screen technology.

With built in full motor overload protection as well as full data logging, field serviceable fans, upgradeable firmware and extensive input/output programmability, VMX-synergy™ meets all key design criteria.



Full Colour Touch Screen

Intuitive touch screen control on all models.



Optional Remote Keypad

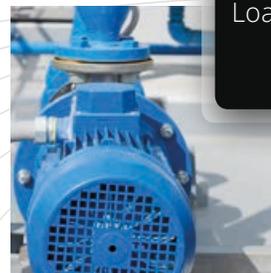
Touch screen remote keypad matching the VMX-synergy™ display.

Plug n Play

The soft starter will 'tune' itself to the load.



Automatic Load Tuning



CONFORMS
TO STD UL 508
CSA 22.2
No. 14



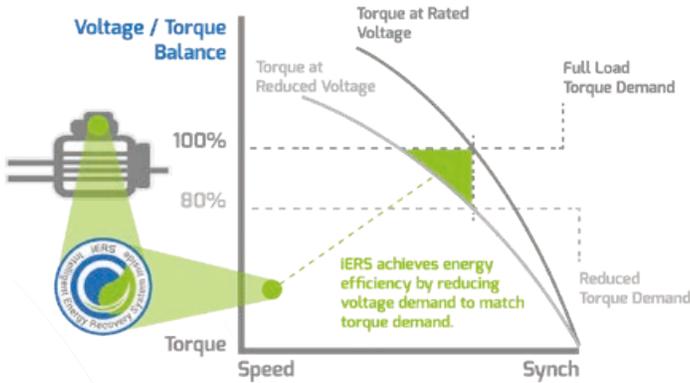
< intelligent Energy Recovery System

iERS is our patented energy saving system with a combined internal bypass to save energy on lightly loaded motors up to 32%.

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 constant 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 activates the bypass to remove any losses within the equipment.

> Learn more: www.motortronics-uk.co.uk



Ease of use

35+ years of experience built in, 60 second commissioning with no manual using i42 and automatic features.

For logging & commissioning: StarterView MLink software

Automatic Reset

Automatically resets trips in defined situations. Reduces the requirement to send a service technician to reset nuisance trips.

Lifetime Event Logging

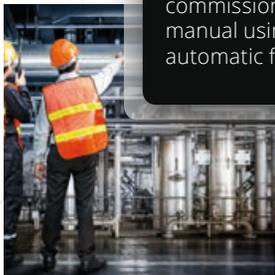
Comprehensive logging feature means fault conditions are easily identified.

i42 Smart Application Pre-program Suite

The automatic functionality has been expanded so that more features can be configured without referring to parameter lists.

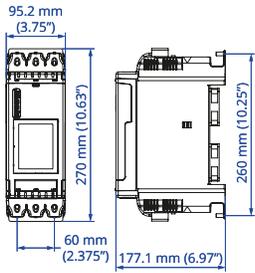
Ease of Use

The display will show all messages in full and multiple different global languages. The use of graphic/ schematic images facilitates complete understanding. Detailed logging aids setup and onboard USB allows configurations to be uploaded/downloaded and emailed.



Dimensions

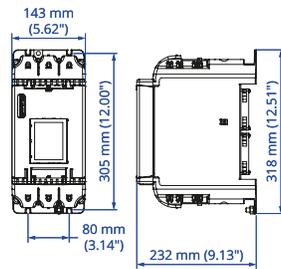
VMX-SGY-101 to VMX-SGY-117



VMX-SGY-101 to VMX-SGY-105 lower fan only

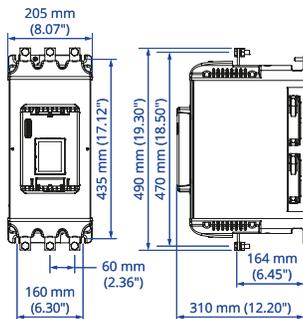
Weight = 3.5 kg (7.71 lbs)

VMX-SGY-201 to VMX-SGY-205



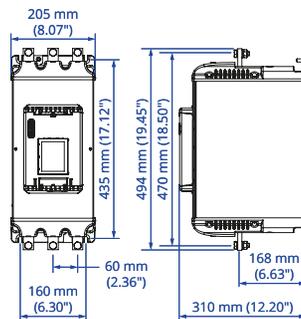
Weight = 6.5 kg (14.33 lbs)

VMX-SGY-301 to VMX-SGY-305



Weight = 16 kg (35.27 lbs)

VMX-SGY-307 & VMX-SGY-309



Weight = 21.2 kg (46.73 lbs)

Specification

Designation	3-phase SCR Energy Saving Motor Controller
Current	Size 1 up to 100 A Size 2 up to 195 A Size 3 up to 500 A
Bypass	Internally Bypassed – Size 1 to 3
Motor Protection	Full IPT Motor Overload with memory Current limit set at 4.5x to meet IEC standards
Supply Voltages	208, 230, 400, 460 volts as standard Allowing for varying supply frequency 45–65 Hz
Standard Duty Rating	Trip Class 10 3x 23 or 3.5x 17 5 starts/hour (VMX-SGY-101 to VMX-SGY-205) 3 starts/hour (VMX-SGY-301 to VMX-SGY-309) 90% duty
Frame Sizes	Up to 100 A 95mm wide Up to 195 A 143mm wide Up to 500 A 205mm wide
Enclosure Type	Up to 195 A IP20/NEMA 1 – with finger guard Above 195 A IP00/NEMA 1 Optional Finger Guards up to 195 A to ensure full IP20 enclosures
Terminal Position	Terminal position/spacing to match common contactors and circuit breakers
Terminal Construction	Up to 195 A Cage Clamp Above 195 A Plain Busbar
Control Voltages	24VDC & 110/230VAC (VMX-SGY-101 to VMX-SGY-305) 110VAC or 230VAC (VMX-SGY-307 to VMX-SGY-309)
Ambient Operating Conditions	-20°C to 50°C (VMX-SGY-101 to VMX-SGY-309) Up to 60°C with de-rating
Motortronics iERS Energy Saving Technology	Yes
In Delta/6 wire connection	Yes
Display Technology	3.5" Colour-TFT Touch Screen
Keypad	Optional full colour touch keypad available for remote/door fitting
Languages	English, Arabic, Chinese (Mandarin simplified), Dutch, French, German, Greek, Italian, Japanese, Korean, Polish, Portuguese, Russian, Serbian, Spanish, Turkish, Vietnamese
Input/Outputs	3 x NO programmable output relays 1 x NC programmable output relays 3 x programmable digital inputs 1 x PTC thermistor input 1 x 0-10V/4-20mA Analogue input 1 x 0-10V/4-20mA Analogue output 1 x USB
Comms	Standard: Modbus RTU Optional: Anybus providing Ethernet IP, Modbus TCP & Profibus DP
Data Logging	Equipped with 4Gb memory, allowing the logging of over 3.5 million events Date of first start (warranty date) Total number of soft starts Number of soft stops Number of error events Display event logs Export data in CSV format
EU/IEC Legislation	IEC 60947-4-2: 2012 Low Voltage Directive Battery Directive Energy Using Products/Energy Related Product Directives
Environmental	Products comply to REACH, SVHC, RoHS and WEEE
Standards	CE, ETL, CETL
Warranty	2yrs
Field Serviceability	Firmware upgrade from USB port

Model Selection

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



Rated Starting Capability

Typical Applications

Trip Class 10	Trip Class 20	Trip Class 30
3 × Motor Current – 23 secs 3.5 × Motor Current – 17 secs	4 × Motor Current – 19 secs	4 × Motor Current – 29 secs
Agitator Compressor Rotary Vane Unloaded Scroll Conveyor Unloaded Bow Thruster Zero Pitch Fan Low Inertia or < 85 A Feeder Screw Lathe Machines Mixer Unloaded Moulding Machine Plastic and Textile Machines Pump Submersible - Centrifugal Submersible - Rotodynamic Saw Band Transformers Voltage Regulators	Compressor Centrifugal Reciprocating Rotary Screw Ball Mill Bow Thruster Loaded Conveyor Loaded Grinder Hammer Mill Mills Flour etc. Mixer Loaded Pelletizers Press, Flywheel Positive Displacement Pump Reciprocating Rotary Pump Jack Rolling Mill Roots Blower Saw Circular Screen Vibrating Tumblers	Crusher* Shredder Wood Chipper Fan* High Inertia or > 85 A
		* start time > 30 secs

Motor Rating

In Line				In Delta				Select Model	Select Model	Select Model	
IEC	IEC	UL	UL	IEC	IEC	UL	UL				
	kW ¹		HP ²		kW ¹		HP ²				
A ³	400 V	A ⁴	440-480 V	A ³	400 V	A ⁴	440-480 V	5 starts/hour @ 50°C	5 starts/hour @ 50°C	5 starts/hour @ 50°C	
17	7.5	17	10	29	15	29	20	VMX-SGY-101	VMX-SGY-103	VMX-SGY-105	
22	11	21	15	38	18.5	36	25	VMX-SGY-103	VMX-SGY-105	VMX-SGY-107	
29	15	27	20	50	22	47	30	VMX-SGY-105	VMX-SGY-107	VMX-SGY-109	
35	18.5	34	25	61	30	59	40	VMX-SGY-107	VMX-SGY-109	VMX-SGY-111	
41	22	40	30	71	37	69	50	VMX-SGY-109	VMX-SGY-111	VMX-SGY-113	
55	30	52	40	95	45	90	60	VMX-SGY-111	VMX-SGY-113	VMX-SGY-115	
66	37	65	50	114	55	113	75	VMX-SGY-113	VMX-SGY-115	VMX-SGY-117	
80	45	77	60	139	75	133	100	VMX-SGY-115	VMX-SGY-117	VMX-SGY-201	
100	55	96	75	173	90	166	125	VMX-SGY-117	VMX-SGY-201	VMX-SGY-203	
132	75	124	100	229	110	215	150	VMX-SGY-201	VMX-SGY-203	VMX-SGY-205	
160	90	156	125	277	150	270	200	VMX-SGY-203	VMX-SGY-205	↓	
195	110	180	150	338	185	312	250	VMX-SGY-205	↓	↓	
3 starts/hour @ 50°C				3 starts/hour @ 50°C				3 starts/hour @ 50°C	3 starts/hour @ 50°C	3 starts/hour @ 50°C	
160	90	156	125	277	150	270	200	↓	↓	VMX-SGY-301	
195	110	180	150	338	185	312	250	↓	↓	VMX-SGY-303	
242	132	242	200	419	220	419	350	VMX-SGY-301	VMX-SGY-303	VMX-SGY-305	
302	160	302	250	523	300	523	450	VMX-SGY-303	VMX-SGY-305	VMX-SGY-307	
361	200	361	300	625	355	625	500	VMX-SGY-305	VMX-SGY-307	VMX-SGY-309	
430	250	414	350	745	425	717	500	VMX-SGY-307	VMX-SGY-309	↓	
500	280	477	400	866	500	826	600	VMX-SGY-309	↓	↓	
3 starts/hour @ 40°C				3 starts/hour @ 40°C				3 starts/hour @ 40°C	3 starts/hour @ 40°C	3 starts/hour @ 40°C	3 starts/hour @ 40°C
430	250	414	350	745	425	717	500	↓	↓		
500	280	477	400	866	500	826	600	↓			
610	355	590	500	1057	600	1022	800				
722	400	722	600	1251	710	1251	1000				
850	500	840	700	1472	850	1455	1100	Ask about VMX-synergy Plus	Ask about VMX-synergy Plus	Ask about VMX-synergy Plus	
960	560	960	800	1663	950	1663	1250				
1080	630	1080	900	1871	1100	1871	1500				

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+ 44 (0)1752 894554

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Product Options

- VMX-SGY-026** Modbus Splitter RJ12 to RJ45
- VMX-SGY-035** Modbus Terminating Resistor RJ45
- VMX-SGY-012** Remote Keypad Kit Modbus Master
- VMX-SGY-011** Powered Modbus Splitter
- VMX-SGY-014** Modbus Adaptor RJ12 to RJ45
- VMX-SGY-015** Communications Cable RJ45 3m
- VMX-SGY-6604** Anybus M40 Ethernet/IP 2-port plug-in communications module
- VMX-SGY-6223** Anybus M30 Modbus TCP 2-port plug-in communications module
- VMX-SGY-6270** Anybus M30 Profibus DP plug-in communications module



VMX-SGY-026



VMX-SGY-035



VMX-SGY-012



VMX-SGY-011



VMX-SGY-005
VMX-SGY-009

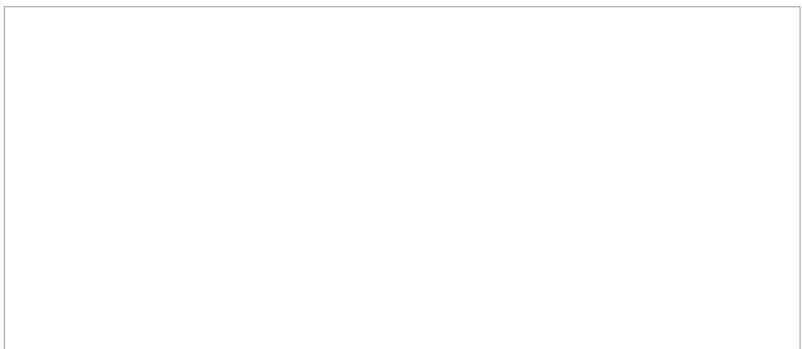
Product Spares

- VMX-SGY-005** Finger Guard Kit IP20 for VMX-SGY-101 to 117
- VMX-SGY-009** Finger Guard Kit IP20 for VMX-SGY-201 to 205

For more information
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