VMX-synergy™

High Performance
Energy Saver

Low Voltage
Soft Starters

The future of soft start motor control at your fingertips

17–1080 A*

*For larger motor sizes contact your local distributor.

MOTORTRONICS™
Solid State AC Motor Control

VMX-synergy™

High Performance
Energy Saver

17–1080 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.

Plug n Play

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

Automatic Load Tuning

Full Colour Touch Screen

Intuitive touch screen control on all models.

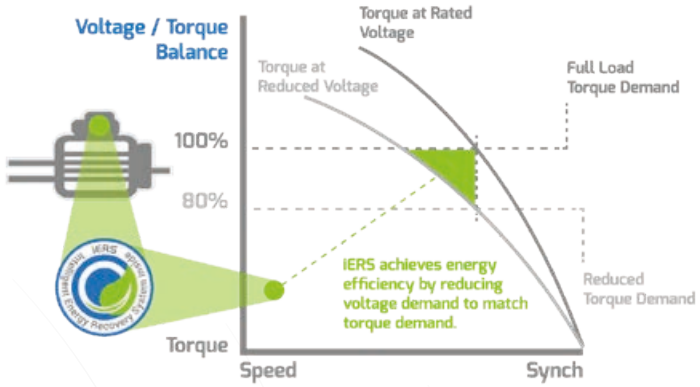
Optional Remote Keypad

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

CONFORMS
TO STD UL 508
CSA 22.2
No. 14

www.microlectra.nl

iERS
Intelligent Energy Recovery System



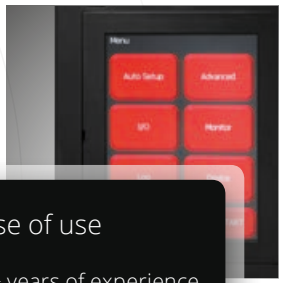
intelligent Energy Recovery System

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.

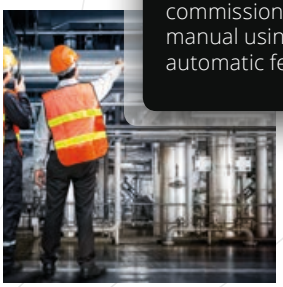
When the power factor drops, the motor is lightly loaded, and there are losses inherent in the design of a motor causing excess energy to be wasted. These are known as excitation losses. iERS's constant monitoring automatically recognises these costly losses, and in turn reduces the voltage and current, 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

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.

i42 Smart Application Pre-program Suite

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

Automatic Reset

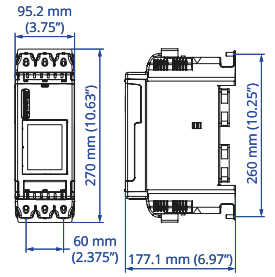
Automatically resets trips in defined situations. Reduces the requirement to send a service technician to reset nuisance trips.

Lifetime Event Logging

Comprehensive logging feature means fault conditions are easily identified.

Dimensions

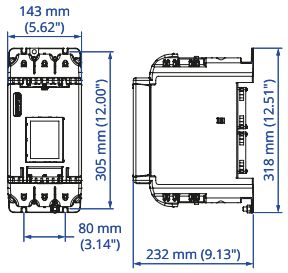
VMX-SGY-101 to VMX-SGY-117



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

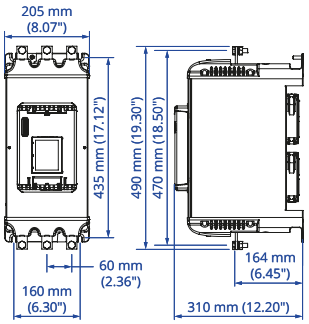
Weight = 3.5 kg (7.71 lbs)

VMX-SGY-201 to VMX-SGY-205



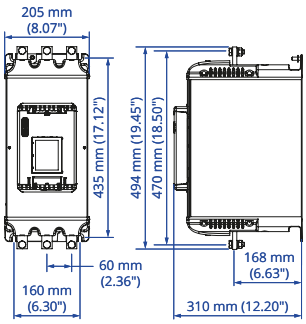
Weight = 6.5 kg (14.33 lbs)

VMX-SGY-301 to VMX-SGY-305



Weight = 16 kg (35.27 lbs)

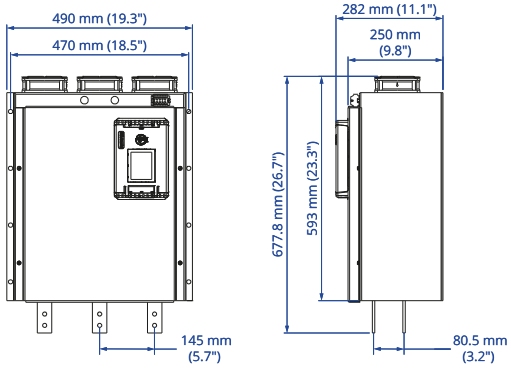
VMX-SGY-307 & VMX-SGY-309



Weight = 21.2 kg (46.73 lbs)

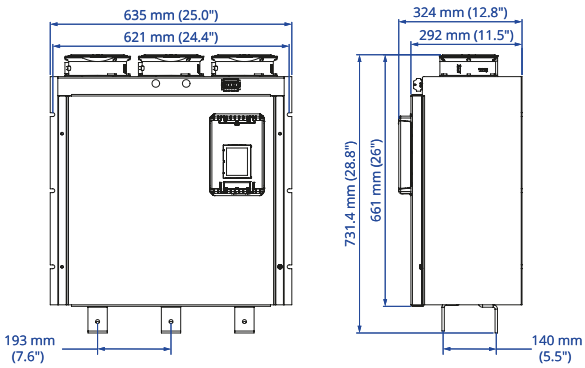
VMX-SGY-401 & VMX-SGY-403

Weight = 65 kg (143.3 lbs)



VMX-SGY-501 to VMX-SGY-505

Weight = 72 kg (158.73 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 Size 4 up to 722 A Size 5 up to 1080 A
Bypass	Internally Bypassed – Size 1 to 3 No Bypass – Size 4 to 5
Motor Protection	Full I^2T 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-505) 90% duty
Frame Sizes	Up to 100 A 95mm wide Up to 195 A 143mm wide Up to 500 A 205mm wide Up to 722 A 490mm wide Up to 1080 A 635mm 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-505)
Ambient Operating Conditions	-20°C to 50°C (VMX-SGY-101 to VMX-SGY-309) -20°C to 40C (VMX-SGY-401 to VMX-SGY-505) 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

	Trip Class 10	Trip Class 20	Trip Class 30
Rated Starting Capability	3 × Motor Current – 23 secs 3.5 × Motor Current – 17 secs	4 × Motor Current – 19 secs	4 × Motor Current – 29 secs
Typical Applications	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	5 starts/hour @ 50°C	5 starts/hour @ 50°C	5 starts/hour @ 50°C
	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			
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-301	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
430	250	414	350	745	425	717	500	↓	↓	VMX-SGY-401
500	280	477	400	866	500	826	600	↓	VMX-SGY-401	VMX-SGY-403
610	355	590	500	1057	600	1022	800	VMX-SGY-401	VMX-SGY-403	VMX-SGY-501
722	400	722	600	1251	710	1251	1000	VMX-SGY-403	VMX-SGY-501	VMX-SGY-503
850	500	840	700	1472	850	1455	1100	VMX-SGY-501	VMX-SGY-503	VMX-SGY-505
960	560	960	800	1663	950	1663	1250	VMX-SGY-503	VMX-SGY-505	—
1080	630	1080	900	1871	1100	1871	1500	VMX-SGY-505	—	—

For larger motor sizes contact your local distributor.

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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-061	Terminal Cover Kit for VMX-SGY-301 to 309
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

VMX-SGY-061

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

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CONFORMS
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No. 14

iERS
Intelligent Energy Recovery System

MOTORTRONICS™
Solid State AC Motor Control

BRO-SGY-002-V01