

1. EM-GW Series Soft Starter

1.1 Motor soft starter profile

Intelligent motor soft starter, the use of intelligent digital control; With the single chip processor as the intelligence center, thyristor module for actuators for full automatic control motor. It applies various squirrel-cage asynchronous motor control of load, the motor can smooth starting under any working conditions, protect the drag system, reduce the starting current impact on power grid, ensure reliable motor starting. Smoothly soft stopping function can effectively solve the inertial system surge problem, eliminate the drag system of inertial impact, that is traditional equipment cannot be achieved. Intelligent digital motor soft start equipment system with the complete protection function, extend the service life of the system, reduce the cost of system cost, improve the reliability of system and compatible with all the functions of starting equipment; It is a new ideal alternative for traditional star triangle starter and self-coupling decompression starter.

1.2 The main function

- Effectively reduce the starting current of the motor; Can reduce the distribution capacity, avoid grid expansion investment.
- Reduce the starting stress of motor and load equipment; Prolong the service life of the motor and related equipments.
- Soft stopping function can effectively solve the parking surge problem of inertial systems; That is a traditional starting equipment cannot be achieved.
- With six unique starting mode; To adapt to the complex motor and load, achieve perfect priming effect.
- With complete and reliable protection function; effectively protect the safety of motor and related production equipment.
- Intelligent motor soft starter, the application of network technology used motor control technology to adapt to the rapid development of electric power automation technology in the higher requirements.

1.3 The main feature of soft starter

Reliable quality

- The computer simulation design.
- SMT production process.
- Good EMC performance.
- The machine before delivery on the high temperature aging, vibration test.

Perfect and reliable system protection function

- Protection of no voltage, less voltage and over voltage.
- Protection of overheating and starting time too long.
- Protection of Input phase lost, output phase lost and 3phase unbalance.
- Protection of starting over current, running overload, and load short circuit protection.

Maintenance function

- Fault self-diagnosis(short circuit, over voltage, less voltage, one phase grounded, motor overload, one phase lost, motor blocked, and intelligent software can inspect drag system working state).
- Combination of modular design, according to the fault display content, quick troubleshooting.

Independent intellectual property products

- Independently software copyright.
- Motor starting and protection proprietary technology.
- Unique way to detect debug equipment and process.

Quick and thoughtful after-sales service

- Reliable performances lay the foundation of qualified service and quality.
- Provide perfect system solution.
- The timely and thoughtful Consulting Services.
- Constantly improve the product performance according to user's opinion.

1.4 Technical specification

Item		Description
Input Power Supply	Input Voltage	Three-phase 380V/480V/660 AC
	Frequency	50/60Hz
Adaptive Motor		Squirrel-cage three-phase asynchronous motor
Starting Times		It is recommended not to exceed 20 times per hour.
Control Mode		(1) Operation panel control. (2) Operation panel + external control. (3) External control. (4) External control + COM control. (5) Operation panel + external + COM control. (6) Operation panel + COM control. (7) COM control. (8) No start or stop operation.
Start Mode		(1) Current-limiting to start. (2) Voltage ramp to start. (3) Torque control + current-limiting to start. (4) Torque control + voltage ramp to start. (5) Current ramp to start. (6) Voltage current-limiting double closed-loop start.
Stop Mode		(1) Soft stop. (2) Free stop.
Protective Function		(1) Open loop protection for external instantaneous stop terminals. (2) Over-heat protection for soft starter. (3) Protection for too long starting time. (4) Input open phase protection. (5) Output open phase protection. (6) Unbalanced three-phase protection. (7) starting over current protection. (8) Running overload protection. (9) Under voltage protection for power voltage. (10) Overvoltage protection for power voltage. (11) Protection for fault parameter setting. (12) Load short circuit protection. (13) Auto restart or incorrect wiring protection. (14) Incorrect wiring protection of external control stop terminals.
Ambient	Place to be used	Indoor location with good ventilation free from corrosive gas and conductive dust.
	Altitude	Below 1000M. It have to rise the rate power when the altitude is more than 1000M.
	Temperature	-20 +45 °C
	Humidity	90%RH without dew condensation.
	Vibration	<0.5G
Structure	Protection Class	IP20
	Cooling Pattern	Fans cooling.

2. Nameplate Explanation and Inspection

Please check up the products before using, if in some problems; please do not hesitate to contact us with any request for additional information. Check-up the type of product whether it is the right one you order.

Nameplate explanation:

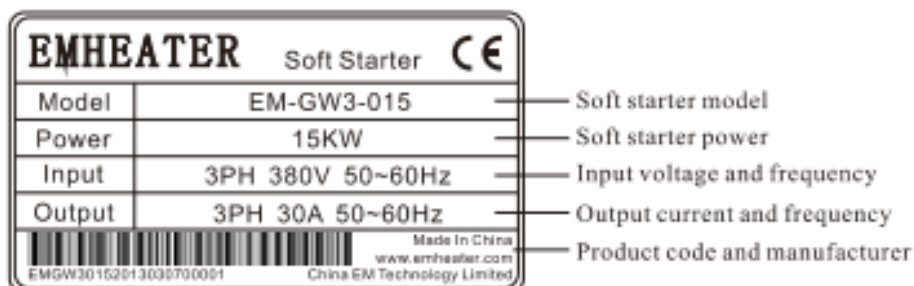


Diagram 2.1

Model explanation:

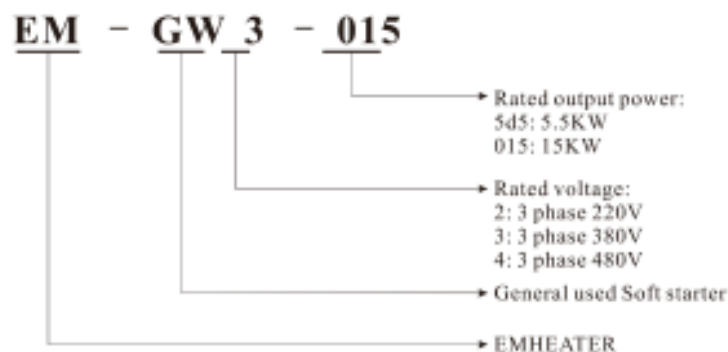


Diagram 2.2

- Check any damage to the product because of the transport, such as the spare parts are apart from the main body or the shell be damage etc.
- Check others, including the user's manual.

3. Usage Condition and Installation

It is strict rule for the users to use or install the soft starter according to the requirement; otherwise, it will be in bad result.

3.1 The usage condition

- **Power Supply:** City grid power, self-provided power, diesel oil dynamotor, 3-phase alternating current 380V/480V/660V \pm 15%, 50Hz or 60Hz. The power capacity of the soft start must meet the motor starting requirement.
- **Matched Motor:** Motor should be three phase squirrel asynchronous motor, and its power capacity must be matched with soft starters.
- **Starting Frequency:** The starting time is according to the loading equipments.
- **Cooling Mode:** Naturally wind cooling.
- **Protective Grade: IP20**
- **Environment Conditions:** when altitude is less than 1000m, the temperature of the environment should be between -20°C ~ 45 °C, relative humidity should be less than 90% RH, no vapor, no flammable, volatile, corrosive gas. No electric dirt, indoor installation, ventilated, vibration is less 0.5G.

3.2 The installation requirement

- The direction and distance of installation: In order to make sure that the soft starter be in good ventilation and heat dissipation, please install the product in vertical direction, and be sure the space around the product is enough. (See the following diagram 3.1)
- If the soft starter is installed in a box, please note that the ventilation is very good, as well as the above notes. (See the following diagram 3.1)

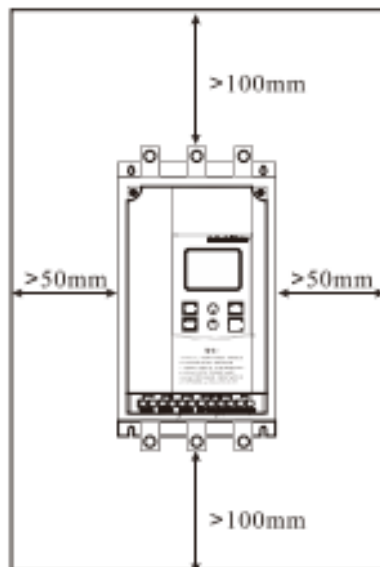


Diagram 3.1



Diagram 3.2

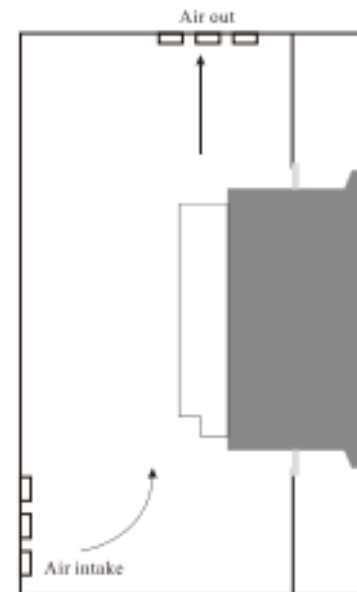
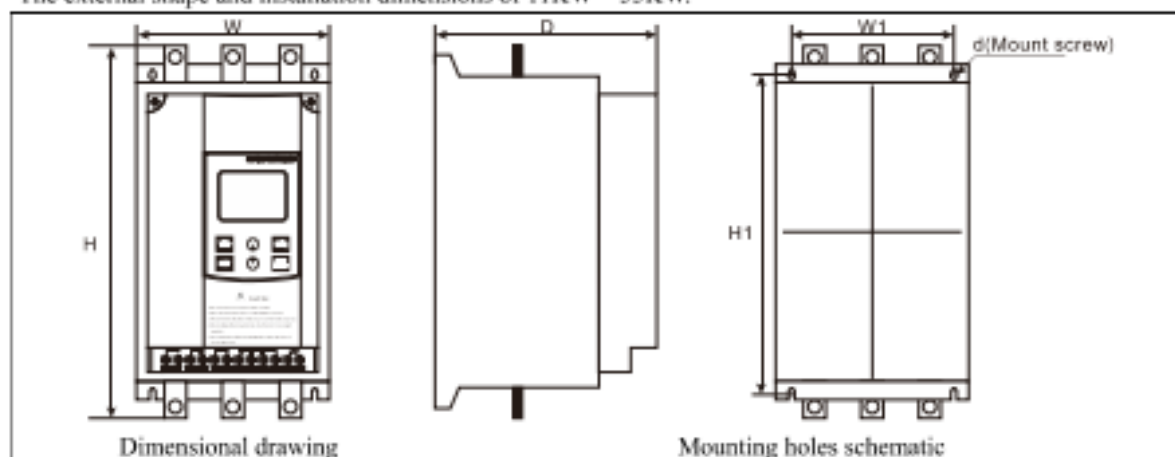


Diagram 3.3

3.3 The installation dimensions

The external shape and installation dimensions of 11KW ~ 55KW.



Model		Power (KW)	Current (A)	External Dimensions (mm)			Installation Dimensions (mm)			N.W (Kg)
380V	480V			H	W	D	H1	W1	d	
EM-GW3-011	EM-GW4-011	11	23	310	150	197	280	85	M8	<6
EM-GW3-015	EM-GW4-015	15	30	310	150	197	280	85	M8	<6
EM-GW3-018	EM-GW4-018	18.5	37	310	150	197	280	85	M8	<6
EM-GW3-022	EM-GW4-022	22	45	310	150	197	280	85	M8	<6
EM-GW3-030	EM-GW4-030	30	60	310	150	197	280	85	M8	<6
EM-GW3-037	EM-GW4-037	37	75	310	150	197	280	85	M8	<6
EM-GW3-045	EM-GW4-045	45	90	310	150	197	280	85	M8	<6
EM-GW3-055	EM-GW4-055	55	110	310	150	197	280	85	M8	<6
EM-GW3-075	EM-GW4-075	75	150	370	210	255	330	150	M8	<12
EM-GW3-090	EM-GW4-090	90	180	370	210	255	330	150	M8	<12
EM-GW3-115	EM-GW4-115	115	230	370	210	255	330	150	M8	<12
EM-GW3-132	EM-GW4-132	132	260	505	408	244	450	322	M10	<23
EM-GW3-160	EM-GW4-160	160	320	505	408	244	450	322	M10	<23
EM-GW3-185	EM-GW4-185	185	370	505	408	244	450	322	M10	<23
EM-GW3-200	EM-GW4-200	200	400	505	408	244	450	322	M10	<23
EM-GW3-250	EM-GW4-250	250	500	606	473	263	523	370	M10	<32
EM-GW3-280	EM-GW4-280	280	560	606	473	263	523	370	M10	<32
EM-GW3-315	EM-GW4-315	315	630	606	473	263	523	370	M10	<32
EM-GW3-355	EM-GW4-355	355	710	606	473	263	523	370	M10	<32
EM-GW3-400	EM-GW4-400	400	800	785	647	330	713	560	M10	<60
EM-GW3-450	EM-GW4-450	450	900	785	647	330	713	560	M10	<60
EM-GW3-500	EM-GW4-500	500	1000	785	647	330	713	560	M10	<60
EM-GW3-600	EM-GW4-600	600	1200	785	647	330	713	560	M10	<60



: The rated power of motor in the above form is the maximum rated value. Generally, the values of matched

motor power capacity should not be more than this value.

3.4 Installation diagram

The EM-GW series soft starter has three types of connection as following:

- **Main circuit connection:** It contains the wiring of 3-phase source input, the output to motor.
- **External terminal connection:** That is the wire comes from twelve external terminals which including control signal and analogue output signal.
- **Communication connection:** One standard RJ-45 network cable socket and one DB9 socket can be used to connect computer or network.