FACT SHEET
ICM870 SOFT-START SERIES

ICM870-9A

ICM870-16A

ICM870-32A

ICM870 SOFT-START SERIES
OVERVIEW

ICM870 Series soft starters are intended for use in Residential, Commercial, RV and Marine applications. Using a soft start in a backup power storage application provides several benefits.

Firstly, it reduces the initial inrush current necessary to start a motor/compressor. Reducing the excessive electrical draw from the power source, in turn allows the generator or backup battery to operate more equipment without loading it down.

Secondly, the addition of the ICM Controls soft start greatly reduces the dimming of household lights and the loud noise that occurs at motor/compressor start-up.

Lastly, it minimizes stress on the connected equipment by gradually ramping up the voltage, reducing the risk of voltage spikes and equipment fatigue. This increases the overall lifespan of the A/C unit and backup power equipment via reduced wear and tear.

WHICH MODEL DO I NEED?

Refer to your service panel or user manual to determine your actual RLA rating

ICM870-9A: For use with a Compressor Load Amp Rating (RLA) of up to Maximum of 9A

ICM870-16A: For use with a Compressor Load Amp Rating (RLA) of 9.1-16A Maximum

ICM870-32A: For use with a Compressor Load Amp Rating (RLA) of 16.1-32A Maximum

Air Conditioning & Heat Pump Loads – Average (for reference only)

Size	BTU	*RLA	ICM870 Model
1 ton	12,000	6	ICM870-9A
2 ton	24,000	12	ICM870-16A
3 ton**	**36,000**	**16**	**ICM870-16A**
4 ton	48,000	22	ICM870-32A
5 ton	60,000	26	ICM870-32A
6 ton	72,000	32	ICM870-32A

*This chart is for quick reference only. It reflects the average Single Phase Air Conditioning and Heat Pump conversions of Tonnage, BTU's, and RLA. Please refer to your service panel or user manual to determine your equipment's actual RLA rating before deciding which model ICM870 you need.

**3 ton units may require either the 16A or 32A soft-start, please refer to the RLA on your compressor name plate to choose the correct model

FREQUENTLY ASKED QUESTIONS

Q: What's the difference between a hard-start and a soft-start?
A: A soft start will adjust the voltage to the run winding of an AC motor and reduce the amount of inrush current required while still supplying the appropriate starting torque necessary to start the motor. A hard start on the other hand, increases the amount of starting torque to assist in starting a motor but does not affect the voltage to the run winding nor does it decrease the amount of inrush current.

Q: Can the ICM870 be installed using wire-nuts?
A: Although, NEC allows a wire-nut to be used on stranded wire, ICM Controls strongly recommends against the use of wire-nuts on the ICM870 installation as they can present a poor connection if not properly secured and can loosen over time.

Q: Does the ICM870 function as an anti-short cycle timer for your compressor?
A: No, while our product has a start delay, it does not function as an anti-short cycle delay for your compressor. If short cycling is a problem, please use an appropriate anti-short cycle delay like the ICM-UFPT-2 or ICM203.

Q: Does the ICM870 reduce wear on your compressor?
A: Yes, both mechanically and electrically. It reduces core heating from inrush and it reduces peak torque during starting that destroys bearings.

Q: Does the ICM870 replace a voltage monitor?
A: No. The ICM870 does monitor voltage, however, it is not intended to be used as a voltage monitoring device. ICM Controls recommends using one of our voltage monitoring products such as the ICM492D, ICM493, or Sentry 3N1 for voltage monitoring.

Q: Can the ICM870 be used on an inverter driven variable speed compressor?
A: No, the ICM870 is only intended for single-phase induction motors with a run capacitor.

Q: Does the ICM870 reduce electric bills?
A: Not on a typical residential meter. It does reduce your peak draw, if your electric bill is based on peak usage.

Q: Can the ICM870 be installed outdoors?
A: No. Although, the ICM870 enclosure is rated for outdoor use, the wires are not UV resistant. For outdoor installation ICM Controls suggests the ICM870 be mounted inside a NEMA 3R metal enclosure or within the AC equipment housing. Avoid mounting the ICM870 upside down.

Q: Can I use the ICM870 on a two-stage unit?
A: Yes, the ICM870 can be used on two-stage units. If there are two compressors in the two-stage unit, it will require the use of an ICM870 for each compressor.

Q: Does the ICM870 replace a surge protector?
A: No, the ICM870 does not have surge protection capability. ICM Controls recommends that you choose an appropriate single-phase surge suppressor to protect your equipment. ICM Controls recommends using one of our single-phase surge protection devices such as the ICM517A-Lite or the ICM517A.

Q: Can I use the ICM870 with a standard (PSC) compressor?
A: Yes, the ICM870 is designed for standard compressors which have a run capacitor. While the ICM870 can be used for any single-phase induction motor with a run capacitor, ICM Controls only supports using the ICM870 with standard capacitor start motors.

Q: Will the ICM870 allow me to operate my AC unit with a generator, where previously it could not be done?
A: Yes. The ICM870 reduces inrush current making it easier to start a compressor while on backup power. However, your backup power should be rated appropriately for the load you wish to start. Additionally, prior to using generator power, please allow the ICM870 to cycle at least four times to learn how to best start your system.

Q: Can I use the ICM870 with a Comfort Alert™ system?
A: Unfortunately, the ICM870 will cause undesirable behavior with certain Comfort Alert™ systems which incorporate a control board driven system operation. Currently, there is no method for bypassing this Comfort Alert™ control board. Visit our website at www.icmcontrols.com to see if your system has a Comfort Alert™ control board which is not compatible.