ICM870 SERIES APPLICATION,INSTALLATION CHECK LIST & TROUBLESHOOTING BULLETIN

GENERAL SIZING

◊ Check the RLA of the compressor and make sure the soft start you choose is correct for the application. Note: Do not jump to a larger size soft start if the RLA is close to max.

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

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

MOUNTING

◊ Check for proper mounting of the ICM870 inside the equipment cabinet or in an outdoor rated enclosure with a sealed wire race way. Also be sure the ICM870 is not mounted upside down

SURGE PROTECTION RECOMMENDATION

◊ ICM Controls recommends protecting your equipment and the ICM870 with a surge protection device such as the ICM517A or ICM518 to ensure damaging surges do not get to your equipment or the ICM870

START DELAY

◊ If the Fault light is flashing rapidly , WAIT ; It can take up to 4 minutes for the start delay to end. Do not begin troubleshooting or removing the soft start until the delay has elapsed. Please note the compressor must see 4 minutes of uninterrupted run time between cycles or this delay will continue to occur.

WIRING

◊ Check all wiring is correct per ICM870 wiring diagram and connections are clean and tight and be sure no wire nuts are being used with the ICM870.

◊ Check all crimp connections are tight (tug on wires to be sure).

◊ Make sure the Brown wire of the ICM870 is directly spliced to the run winding of the compressor and NOT reconnected back to contactor

INSTALLATION CHECK

◊ Check the RUN Capacitor for proper MFD reading and integrity

◊ Check there are no additional hard starts, start capacitors, or starting relays installed. If there are, these must be removed or disabled before using the ICM870 soft start

◊ Check and remove or bypass any diagnostic controllers like the core sense, & comfort alert boards that can interfere with the operation of the ICM870

Note: Errors in start up are indicated by flashing the red fault light on the soft start in a repeating pattern of blinks followed by a brief pause [For example, 2 blinks followed by a pause which repeats is a Code 2 fault (2 flashes)].

FAULT	LED STATUS	CORRECTIVE ACTION
High/Low Voltage	1 Flash	Check the incoming voltage is not out of range with the soft start specifications for the model being used (refer to install guide).
Compressor not Sensed or Open Fuse	2 Flashes	• Check RLA of the compressor does not exceed the rating for the soft start being used (See install guide for RLA table) • Check all wiring is clean and tight with no loose crimps or connections • Make sure no additional hard start or start relay connected • Check the BROWN wire of the ICM870 is directly spliced to the Run winding wire of the compressor (no wire nuts) • Check the ICM870 BROWN wire splice is NOT attached back to the contactor • Check the RED wire of the ICM870 is connected to the contactor for better load carrying capacity. • Check the value Run capacitor of the AC unit to be sure it is good • Check the resistance between the ICM870 RED & BLUE wires. It should be about 460KΩ-500KΩ. It should not read open.
High Current	3 Flashes	• Check all wiring is clean and tight with no loose crimps or connections • Make sure no additional hard start or start relay connected • Check and clean any rust or oxidation on terminals • Check or replace the RUN capacitor • Check or replace contactor relay
Compressor Start Error	4 Flashes	This is not a hard error and the unit will run. This error is simply a time out error which means the time to start the compressor exceeded the normal start time in the ICM870 software. • Check for weak run capacitor • Check for any compressor issues including weak start winding and check the refrigerant charge
Invalid Operating Frequency	5 Flashes	If running on a generator or other power source, be sure the frequency is a steady 50/60Hz before energizing the soft start • Check your line power frequency is stable at 50/60Hz.
Start Delay	RAPID	A rapidly flashing fault light indicates you are in start delay. This is a normal condition when the compressor has not been given 4 minutes of uninterrupted runtime. The start delay can last up to 4 minutes depending on how much uninterrupted accumulated runtime the compressor had in the previous cycle.