

INSTALLATION, OPERATION & APPLICATION GUIDE

For more information on our complete range of American-made products – plus wiring diagrams, troubleshooting tips and more, visit us at www.icmcontrols.com

FEATURES

- Near field communication using the **ICM OMNI** App
- Inputs for two temperature sensors or two pressure sensors
- Heat pump bypass for full speed operation in heating mode
- Jumper selectable control voltage enabling
- Universal input voltage 120-600 VAC
- Universal Control voltage 24-240 VAC (jumper enabled)

CAUTION!

Installation of the ICM325A shall be performed by trained technicians only. Adhere to all local and national electric codes.

Disconnect all power to the system before making any connections.

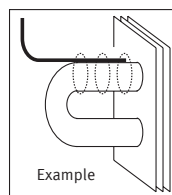
SPECIFICATIONS

- **Line voltage:** 120 - 600 VAC
- **Control voltage:** 24-240 VAC (Jumper enabled)
- **Motor 2 Output:** 10A maximum
- **Frequency:** 50-60 Hz
- **Operating temperature:** -40°F to +167°F (-40°C to +75°C)
- **Temperature sensor:** ICM386
- **Pressure sensor:** ICM387
- **Heat pump reversing valve input:** 24-240 VAC (Heat active default / jumper enabled cool active option)
- **Mounting:**
 - Surface mount using (4) #8 screws
 - The **ICM325A** should be surface mounted to a clean metal or other thermally conductive surface for maximum heat dissipation
- **Motor:**
 - The **ICM325A** is intended to be used with single phase permanent split capacitor motors which are capable of having the input voltage varied.

MOUNTING THE PROBE

1. Install the temperature probe several bends into the condenser. It can be attached to the U-bend or placed between the fins in the upper 1/3 of the condenser (see other side for more information).

**** Note:** The response of the system can be fine tuned by repositioning the probe to a location which satisfies the desired pressure or by adjusting the set point.



2. Connect the two wires from the sensor to the terminal block where it is marked **T1/P1**. If additional probes are necessary for multiple refrigerant circuits, they may be attached to terminals marked **T2/P2**.

**** Note:** The control will respond to the probe that senses the highest temperature or pressure.

CONTROL VOLTAGE SETTING

The optional Control Voltage Enable Jumper activates a universal control voltage input which allows a control voltage to determine when the ICM325A becomes active. The control voltage is defaulted off from the factory and is not required for operation.

HEAT PUMP OPERATION

During heating mode on a heat pump, varying the fan speed is not desirable so the ICM325A has a bypass mode which adjusts the outdoor fan to full speed during heating mode. This is accomplished by reading the voltage of the reversing valve at the HP RV terminals to indicate whether the unit is in heat mode or cool mode. The ICM325A is factory set for air conditioning / heat active reversing valves. A jumper setting (HP O RV) is provided to accommodate cool active reversing valves.



MODE OF OPERATION

The ICM325A is designed to control the head pressure on a heat pump or HVAC unit by controlling the condenser fan speed thus allowing the heat pump or air conditioner to operate even when the temperature outdoors is too low for normal operation.

Temperature vs. Output Voltage %

- **Full Speed:** Temperature sensed above 100°F [Green LED on]
- **Variable Speed:** Temperature sensed between 100°F and 70°F [Orange LED on]
- **Off:** Temperature sensed below 70°F

**** Note:** Stated temperatures are based on default settings.

Pressure vs. Output Voltage %

- **Full Speed:** Pressure sensed above 350 PSI [Green LED on]
- **Variable Speed:** Pressure sensed between 310 PSI and 350 PSI [Orange LED on]
- **Off:** Pressure sensed below 310 PSI

ICM OMNI APP ADJUSTABLE SETTINGS

PROBE TYPE

Probe Type allows the user to select a Direct Pressure Input or a Indirect Temperature Input for monitoring head pressure.

SET POINT

Allows the end user to adjust the set point temperature or pressure the user wishes to maintain.

HARD START SETTING

Adjusts the condenser fan to full speed during startup, allowing lubrication of a sleeve bearing motor during startup.

MINIMUM OUTPUT VOLTAGE SETTING

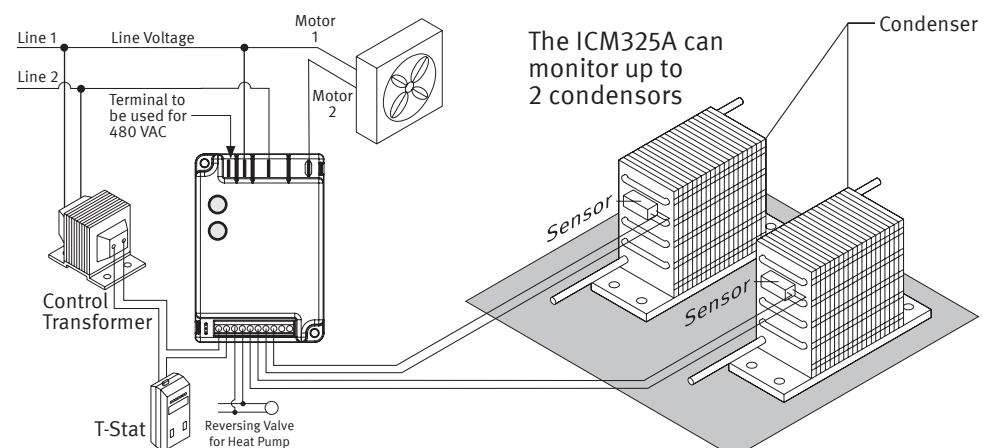
Adjusts the range which the control operates in variable speed. The MAX setting of 48% allows the least amount of variable speed over the range whereas the MIN setting of 17% allows for the most amount of variable speed over the range.

NOTE: ALL adjustments are made using the ICM Controls OMNI App.

SENSOR REPLACEMENTS

- **Temperature Sensor:** ICM386
- **Pressure Sensor:** ICM387

MULTIPLE CONDENSORS UP TO 10 AMPS

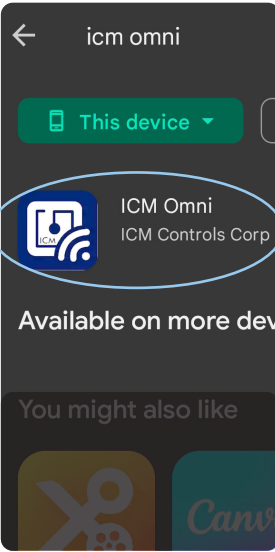


°C	°F	Resistance (KΩ)
0°	32°	32.7
5°	41°	25.4
10°	50°	19.9
15°	59°	15.7
20°	68°	12.5
25°	77°	10.0
30°	86°	8.1
35°	95°	6.5
40°	104°	5.3
45°	113°	4.4
50°	122°	3.6

USING THE NFC TECHNOLOGY

STEP 1 - Download the app

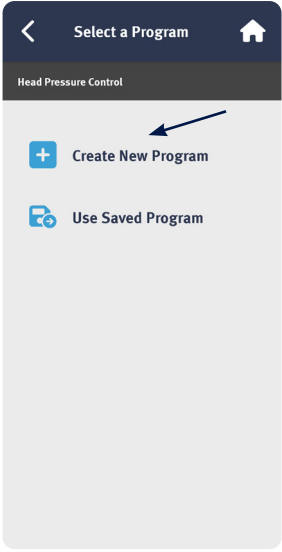
Locate and download the "ICM Omni" app from the Google Play Store or Apple Store.



STEP 2 - Open the app and select Program Device



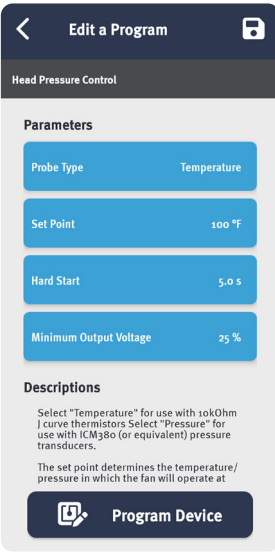
STEP 3 - Select a Device to Program



STEP 4 - Select a Program

Choose the option to create a new program or select a saved program.

NEW UNIVERSAL CONTROLS VIA NFC TECHNOLOGY

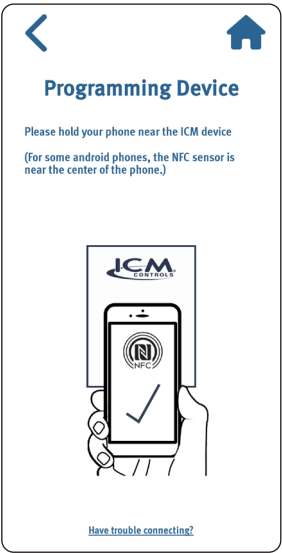


STEPS 5 - 9

Select each Parameter and Program while following the app.

- Select either Temperature or Pressure Sensor from **Probe Type** menu and set the value, then press SET to bring you back to Parameters.
- Select **Set Point** and set to desired pressure or temperature you wish to maintain and press SET.
- Select the **Hard Start** setting and set a Hard Start value from .1 - 5 seconds, then press SET. **NOTE:** Hard Start will run the fan at full speed for the set time period to allow lubrication of sleeve bearings.
- Select **Minimum Output Voltage** and choose the % of variable speed range desired between 17% (most amount) – 48% (least amount).

NOTE: For motors which have difficulty with modulation, set the minimum output voltage to 48%.



STEP 10 - Programming Your Device

Hold your phone near your ICM device. The check mark shows complete.



Reading Your Device

From the Home Screen, tap on Read Device.



Read Device Program

Hold your phone near your ICM device. The check mark shows complete.