iAIRE

Economizer Controls Package I/O/M manual

Table of Contents

Economizer Controls Package Installation Overview

The *iAIRE* controls package includes ion generators for 400 CFM/Ton nominal Roof Top Units (RTU) and standard loading, VOC sensor, CO_2 sensor, 2 temperature probes and an ion mounting plate. If your current system has drastically different CFM/Ton, contact the factory for more information on adjustments to the controls package that are needed. **Review the table below to verify that the roof top matches the controls package ordered.**

	Part #	EC - 0 - 06S00 0E	EC - 0 - 12S000	EC - 0 - 24S00 0
	Economizer Controller mod. # iAIRE-1000	1	1	1
	Ionization air cleaner mod. # ION-0A*0	2	4	8
	Mounting Plate mod. # UNV0016	2	4	8
	CO2 Sensor mod. # SEN-CO2-B-01-01-0	1	1	1
	VOC Sensor mod. # SEN-VOC-A-01-01-0	1	1	1
	Temperature Probe mod. # TP-B-0-J-**-**-A	2	2	2
	Required Power	15.7W	25.3W	44.5W
	Total Weight	1.37lb/.62kg5	.97lb/2.71kg1	1.17lb/5.07kg

ADD-ON	Humidity Sensor mod. # SEN-HUM-A-02-02-0	If you would like to add enthalpy sensing to your system, you will need to include a humidity sensor.
	Actuators mod. # MTR-00*	Allows for feedback to be given. Can replace current actuators without a feedback system.
	Transformer mod. # TRN-0002	If additional rooftop power is required, you will need to add our 24v Transformer. It accommodates 460 / 270 / 230 / 120 V inputs.
	BACnet Translator mod. # CNT-0002	For reliable protocol translation you will need to add our BACNet Translator to your system.
	BP Sensor mod. # SEN-DP-C-01-03-0	Allows for low-pressure measurement for building energy management and comfort control.

Tools/Parts (provided by contractor)

- Wire cutters / strippers
- Screwdriver (small flathead and philips)
- Needle nose pliers
- Drill with 5/16 nut driver bit, step bit and 1/2" drill bit for temperature probe holes
- Wire (thermostat wire) for VOC, CO2, ion generator, optional humidity, optional transformer, optional BACnet translator, optional actuator, mod power exhaust, RT VFD, 2 speed RTU

Hardware Included with controls package
(not shown on pg. 3). Reference pg. 3 for major components.

- Wire connectors (6)
- Screws (40 self tapping)
- Wire ties (5)

Economizer Controls Installation
Supply Air Temperature Sensor

⚠ **IMPORTANT** *Before beginning installation, test all Roof Top Unit (RTU) functionality to ensure it is working properly. Once complete, shut off all power to the RTU and follow lock-out tag-out procedures, then continue with the installation below.*

Start by removing the blower access panel to gain access for the installation of the supply air temperature sensor (SAT) and ion generator(s).

The SAT should be mounted in the blower (either by inserting into an existing hole, or by using a drill bit to create an opening). See **figures [1.1] and [1.2]** below. *(For SAT instructions, refer to TP-B-0-J-**-**-A install documents in reference documentation (page 11))*

The temperature sensor should clear the blower wheel. Make sure to tie wires away from any moving parts or areas that may cause wires to be sucked into the blower.
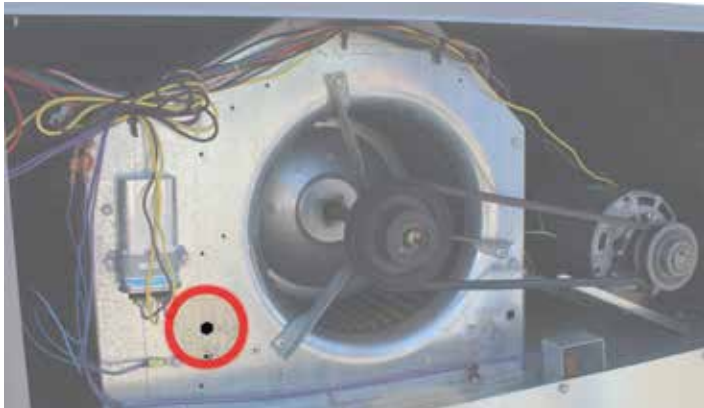
figure [1.1]

figure [1.2]
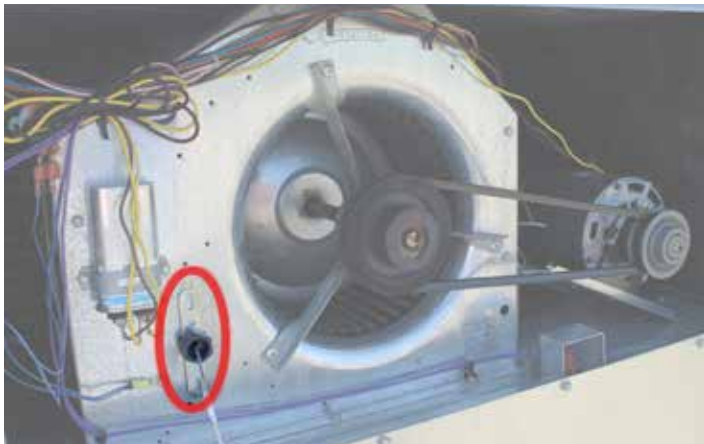
*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spot labeled SAT)*

Ion Generator(s)

Next, mount your ion generator(s) so that the ionization cloud *(refer to ion generator data sheet for more information)* is in front of the inlet to the supply fan (some ion generator(s) should be installed by the inlet of the supply fan on the opposite side of the drive shaft and belt). See **figure [1.3]** below. This may require the removal of the top panel on the RTU. If multiple blowers exist, evenly distribute the number of ion generators between them.

figure [1.3]
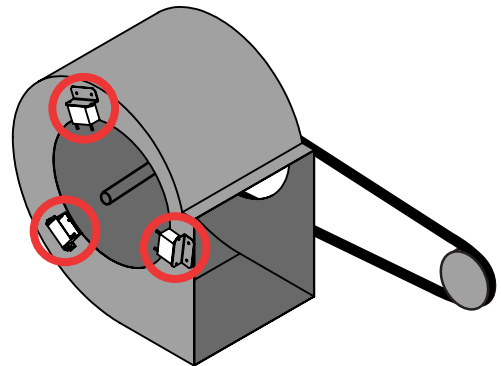
If using multiple ion generators, tie the wires of each generator together after mounting (if using the mounting plate, mount the generators to the plate and tie the wires of each generator together before mounting each plate). Be sure to keep all wires away from the generator tips, moving objects and areas that may cause wires to be sucked into the blower. *(For ion instructions, refer to ION-0A*0 install documents in reference documentation (page 11))*

*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spot labeled 24V)*

After mounting the SAT and the ion generator(s), run the wiring over to the controller so the wires can land on the controller terminal strip. This may require the removal of the top panel on the RTU. See **figure [1.4]** below.

figure [1.4]

VOC and CO2 Sensors

Wire and mount your VOC and CO2 sensors in the building occupied space at the same level as the thermostat.

Alternately, (but not recommended) you can mount the sensors in the return duct. After running the supply air temperature sensor and ionization generator(s) wires, remove the RTU hood and pull the economizer damper out of the RTU to gain access to the return air. See **figure [1.5]** below.
*(For VOC and CO2 instructions, refer to SEN-CO2-B-01-01-0 and SEN-VOC-A-01-01-0 install documents in reference documentation (page 11))*
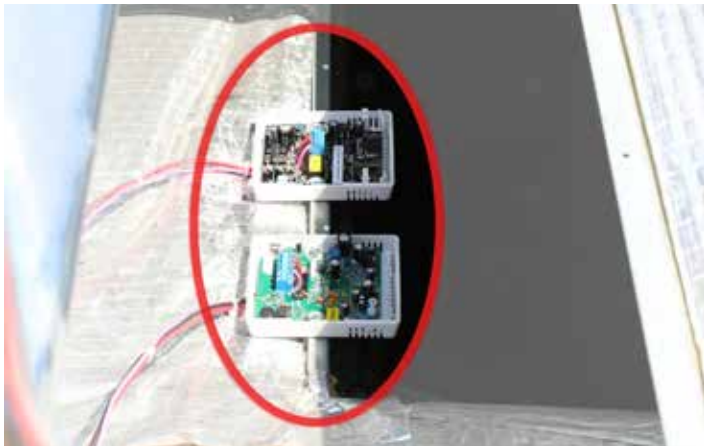
figure [1.5]

*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spots labeled VOC and CO2)*

Outside Air Temperature Sensor

Next, install the Outside Air Temperature sensor (OAT) in the top of the economizer damper. The temperature probe should be mounted in the center of the outside air opening. Use a drill bit to make a 3/4" hole for the probe to be inserted (it should be installed so that the probe is closest to the hood edge of the economizer and does not interfere with the damper blade). See **figure [1.6]** at the top of the next column.
*(For OAT instructions, refer to TP-B-0-J-**-**-A install documents in reference documentation (page 11))*

figure [1.6]

*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spot labeled OAT)*

Optional Parts Installation

After installation of the OAT sensor, if you have purchased the optional humidity sensor, actuator or BACnet translator, follow the installation instructions below. If you do not have any of these additional parts, please skip to the **iAIRE** controller section of the installation *(page 7)*.

Optional Humidity Sensor

The humidity sensor should be mounted in the hood of the RTU. Make sure the probe is in the outside air flow. See **figure [1.7]** below.
(For humidity instructions, refer to SEN-HUM-A-02-02-0 install documents in reference documentation (page 11))

figure [1.7]

*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spot labeled ENT/HUM)*

Optional Actuator

The replacement actuator should be mounted in the same location as the original actuator. See **figure [1.8]** below. If moving the mounting location, please reference the actuator installation documents for mounting instructions.
(For actuator instructions, refer to MTR-000* install documents in reference documentation (page11))
figure [1.8]

*(When wiring to the **iAIRE** economizer controller, the wires will land on the terminal in the spot labeled ECON SIG, if you have feedback, that will land in the spot labeled ECON POS)*

Optional BACnet Translator

The BACnet Translator should be mounted to the back of the controller plate. (shown in **figure [1.9]**)
*(When wiring to the **iAIRE** economizer controller, the wires will plug in the controller in the spot labeled RS485)*

Economizer Controls Installation
Controller

Once all parts have been installed, you will remove the old economizer controller (refer to page 10 for information on where wires should land on the new controller from the old economizer controller). Next, you will mount the new **iAIRE** economizer controller to the top of the economizer damper. The controller should be mounted far enough to the back of the economizer damper that the screws clear the damper blades and the controller wires do not interfere with the RTU cover panel. See **figure [1.9]** at the top of the next column. If the RTU has a VFD, follow instructions in the **iAIRE** economizer controller section on how to hook up a RTU with a VFD.

figure [1.9]

After the new **iAIRE** economizer controller is mounted, begin landing the wires from the sensors, ion generator(s) and temperature probes. Reference the **iAIRE** economizer controller wiring schematic on page 8 and the terminal detail on page 9 for further information on where wires should land.

ACT has provided some wire connectors with the package to assist in landing multiple wires under one screw terminal.

When the wiring is complete, restore power to the RTU and run the controller in IAQ mode, making sure that all set-points for this mode are correct. Once confirmed, make sure all panels and doors on the RTU are in place and re-secured.

Additional installation questions? Contact us:

Advanced Control Technologies
Phone: 800.886.2281
Email: support@act-solutions.com

iAIRE Controller Wiring Diagram version 1.5 11/27/2013

THERMOSTAT

G
W₁
W₂
Y₁
Y₂

TO ACTUATOR

Terminal Strip 1

R/2
C
G
W₁
W₂
Y₁
Y₂
2
C
ECON SIG

RED
BLU
GRN
WHT
BRN
YEL
BLU
RED
BLU
GRY

Terminal Strip 2

SAT
SAT SIG
OAT
OAT SIG
BP SIG
ENT SIG
RTU SIG
ECON POS
OC SIG
CO2 SIG

RED
GRN
YLO
BLU
GRY
ORG
BRN
PN
PUR
WHT

SUPPLY AIR TEMPERATURE SENSOR LOCATED IN RTU AFTER SUPPLY FAN

OUTSIDE AIR TEMP SENSOR LOCATED IN HOOD

FEEDBACK FROM ACTUATOR

MAIN CONTROLLER

SAT OAT BP ENT RTU ECON POS OC CO2
GRN RED BLU YLO GRY ORG BRN PN PUR WHT

OD PE ECON SIG
ORG BLU GRY RED

COMP 1 COMP 2 PE 1 ALARM
RED RED RED RED
YEL BLU PUR PN

Y₂ Y₁ W₁ G
BLU YEL WHT BRN
RED

TO BACnet TRANSLATOR
RED BLU BRN GRN

OCCUPIED

24 VAC
RED BLU
RED BLU

Terminal Strip 3

RED BLU GRN WHT BRN YEL BLU PUR PN ORG

R C G W₁ W₂ Y₁ Y₂ PE1 ALARM OD PE

TO RTU

RED BLU BRN GRN

iAIRE Controller Terminal Detail

Terminal Strip 3	Terminal Strip 1	Terminal Strip 2
RED — R #1	RED — R (24V) #11	RED — SAT + #21
BLK — C #2	BLK — C (Common) #12	GRN — SAT SIG #22
GRN — G #3	GRN — G (Fan contact) #13	YLO — OAT + #23
WHT — W$_1$ #4	WHT — W$_1$ #14	BLU — OAT SIG #24
BRN — W$_2$ #5	BRN — W$_2$ #15	GRY — BP SIG #25
YLO — Y$_1$ #6	YLO — Y$_1$ #16	ORG — ENT/HUM SIG #26
BLU — Y$_2$ #7	BLU — Y$_2$ #17	BRN — RTU VFD #27
PUR — PE1 #8	RED — 24V #18	PNK — ECON POS #28
PNK — ALARM #9	BLK — Common #19	PUR — VOC SIG #29
ORG — MOD PE #10	GRY — ECON SIG #20	WHT — CO2 SIG #30

Actuator
Power should land on #1
Common should land on #2
Signal should land on #20
Feedback signal should land on #28 *(optional)*

SAT Sensor
Power should land on #21
Common should land on #22

OAT Sensor
Power should land on #23
Common should land on #24

Ion Generator(s)
Power should land on #18
Common should land on #19

VOC Sensor
Power should land on #11
Common should land on #12
Signal should land on #29

CO2 Sensor
Power should land on #18
Common should land on #19
Signal should land on #30

Humidity Sensor *(optional)*
Power should land on #11
Common should land on #12
Signal should land on #26

Building Pressure Sensor *(optional)*
Power should land on #18
Common should land on #19
Signal should land on #25

RTU VFD *(optional)*
Signal should land on #27

MOD PE *(optional)*
Signal should land on #10

BACnet Translator *(optional)*
Plug provided for direct insertion into the economizer controller at the spot labeled RS485.
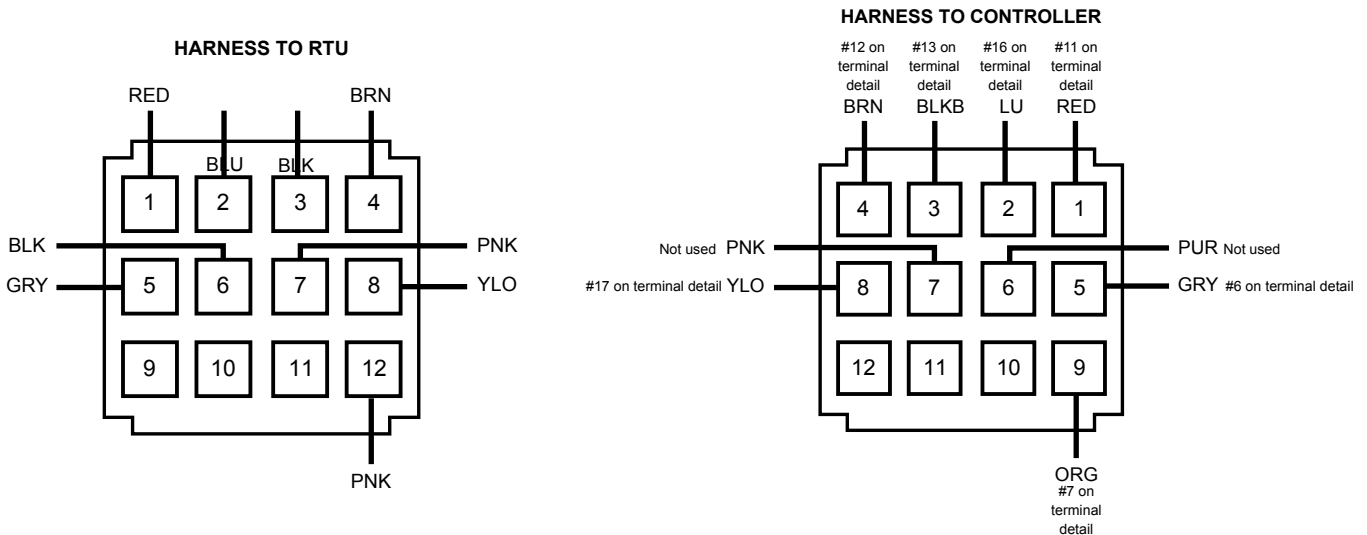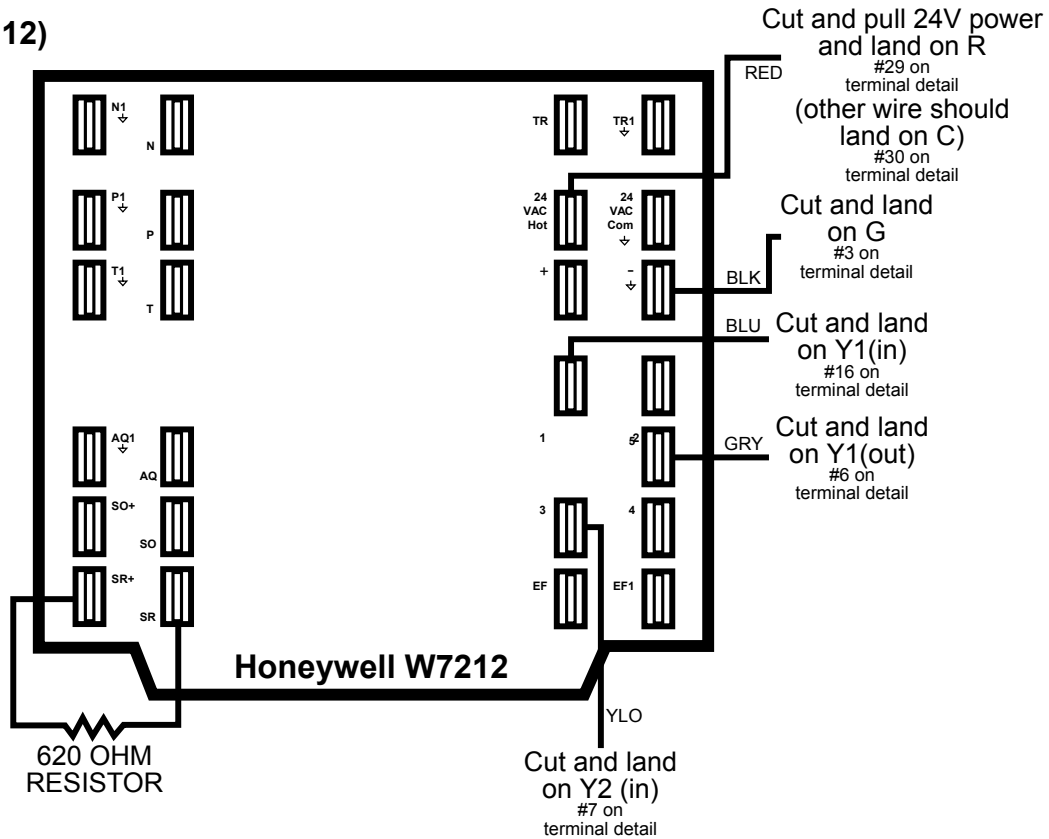
ALARM Signal *(optional)*
Signal should land on #9

Existing Controller Wiring Diagrams

When replacing the economizer controller, use the diagrams below to verify where wires should be cut and landed to the new *iAIRE* economizer controller terminal strips.
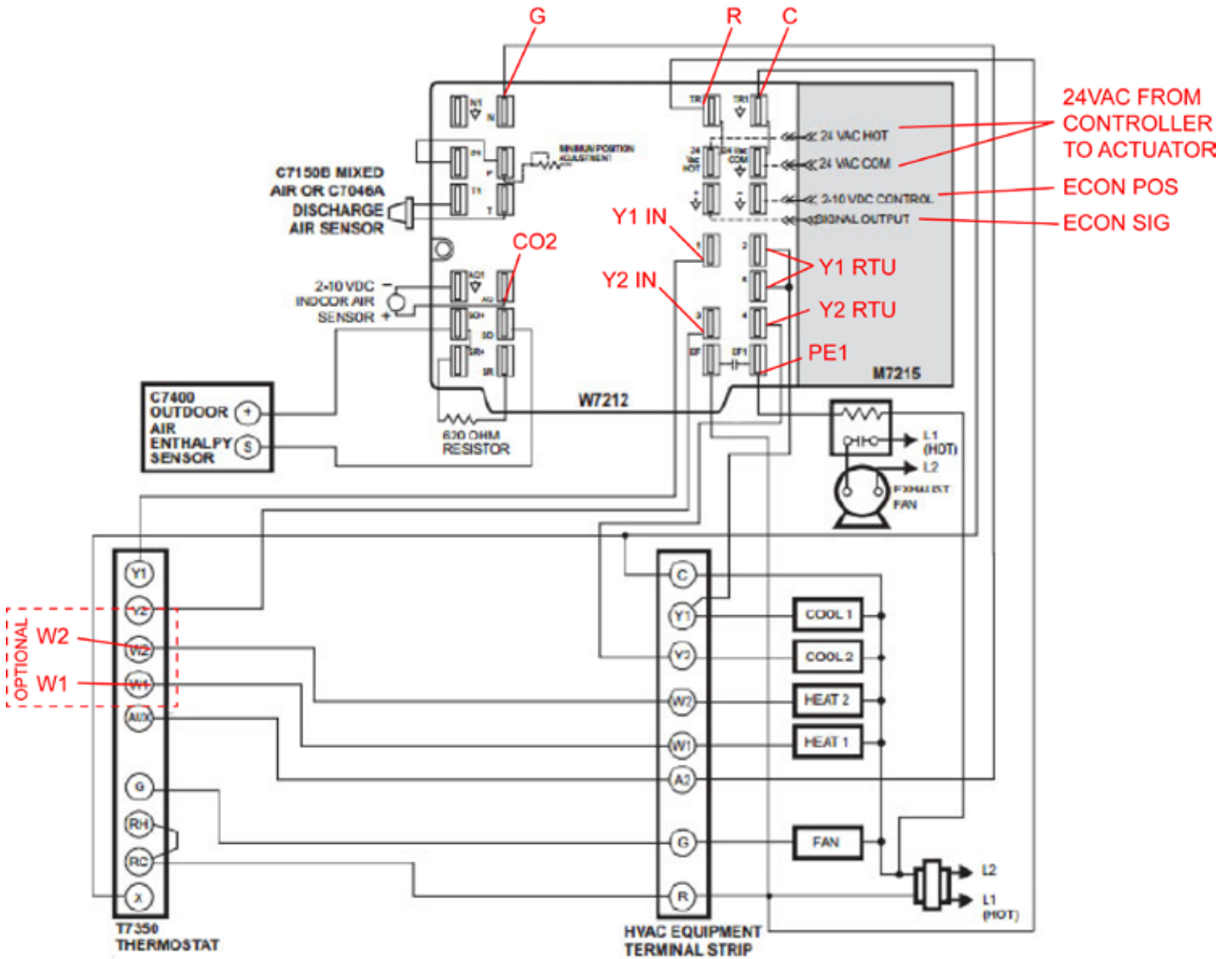
(Honeywell W7212)

Cut and pull 24V power and land on R
#29 on terminal detail
(other wire should land on C)
#30 on terminal detail

RED

Cut and land on G
#3 on terminal detail
BLK

Cut and land on Y1(in)
#16 on terminal detail
BLU

Cut and land on Y1(out)
#6 on terminal detail
GRY

Honeywell W7212

620 OHM RESISTOR

YLO
Cut and land on Y2 (in)
#7 on terminal detail

HARNESS TO RTU

RED   BRN
BLU   BLK
BLK — 1   2   3   4
GRY — 5   6   7 — PNK
      8 — YLO
      9 10 11 12
PNK

HARNESS TO CONTROLLER

#12 on terminal detail   #13 on terminal detail   #16 on terminal detail   #11 on terminal detail
BRN   BLKB   LU   RED
4   3   2   1
Not used PNK — 8   7   6   5 — PUR Not used
#17 on terminal detail YLO   GRY #6 on terminal detail
12 11 10 9
ORG
#7 on terminal detail

Leave the two halves of the harness plugged together. Tie wires off of harness to the controller plug end to the *iAIRE* terminal strips.
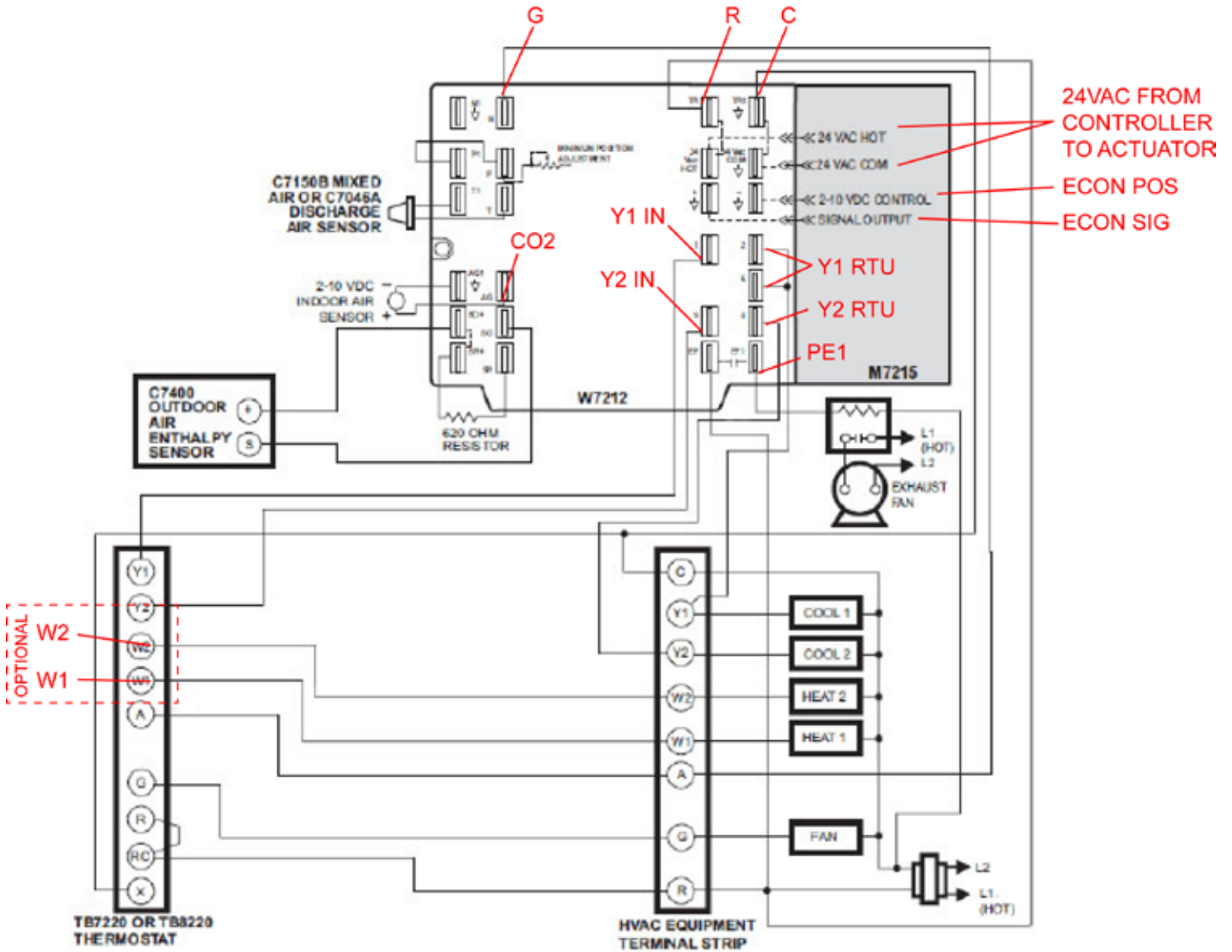
All other wires are not needed. Either discard extra wires or make sure they will not interfere with the new *iAIRE* controls system.
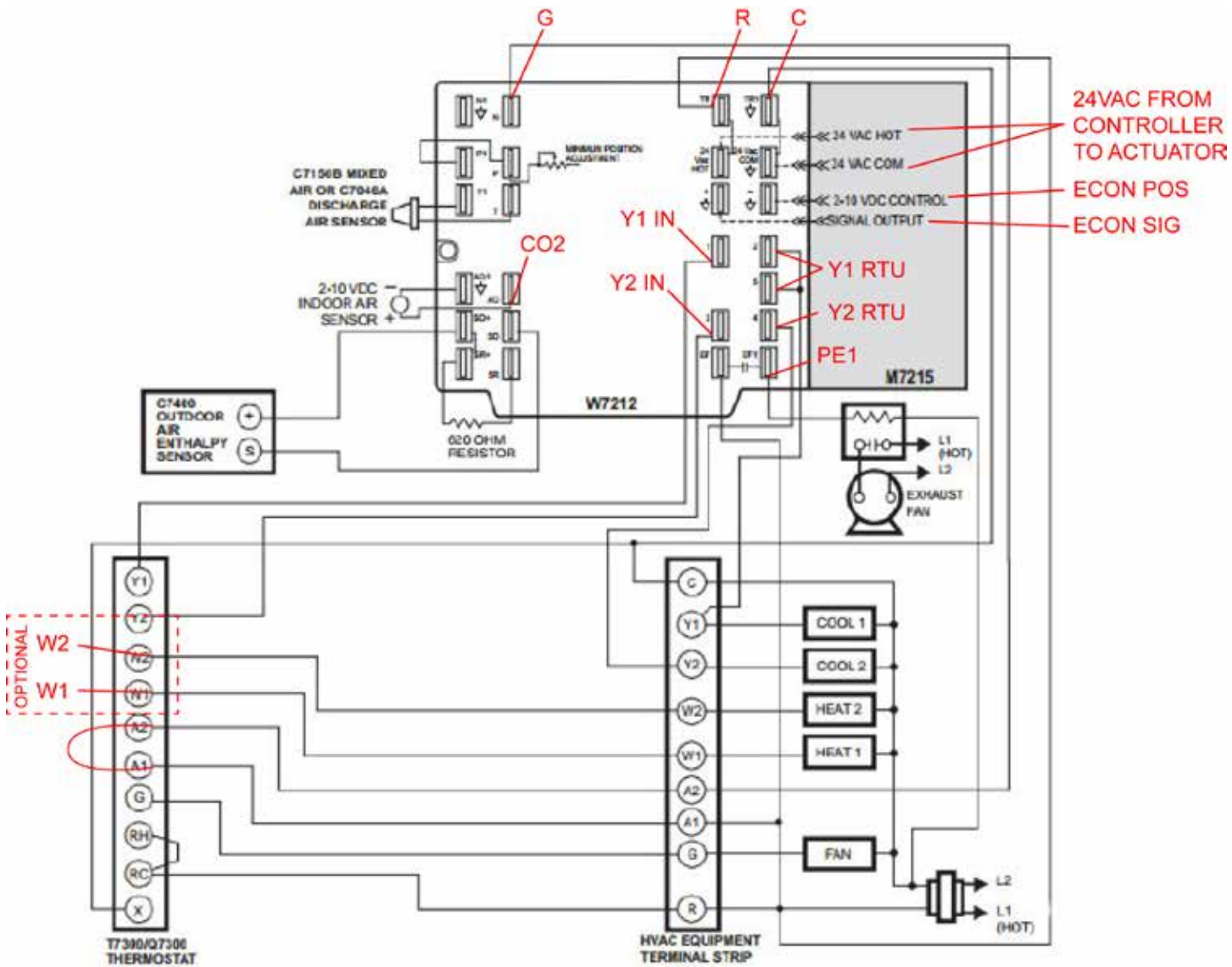
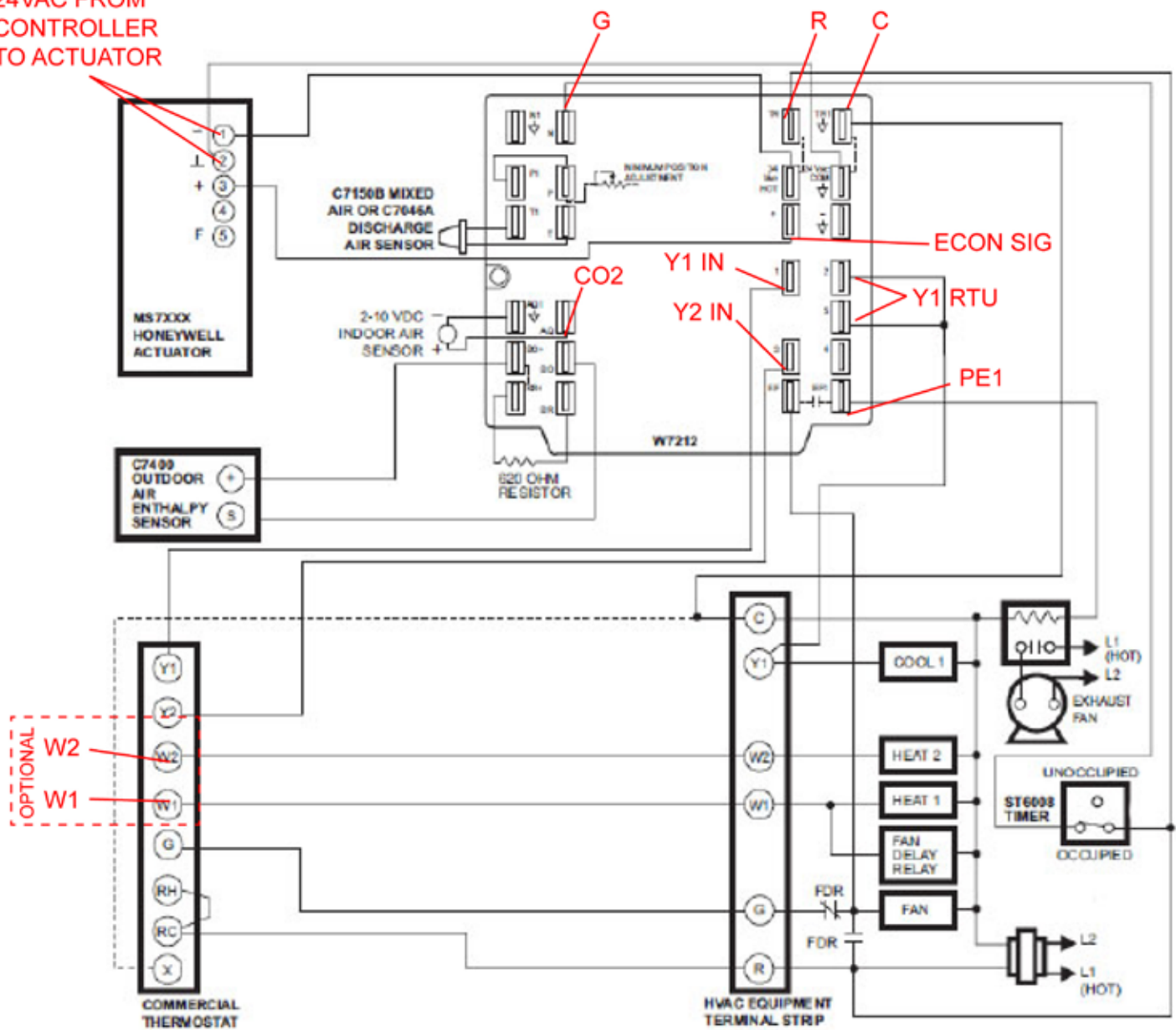**7212 with M7215 damper motor and T7300 thermostat**

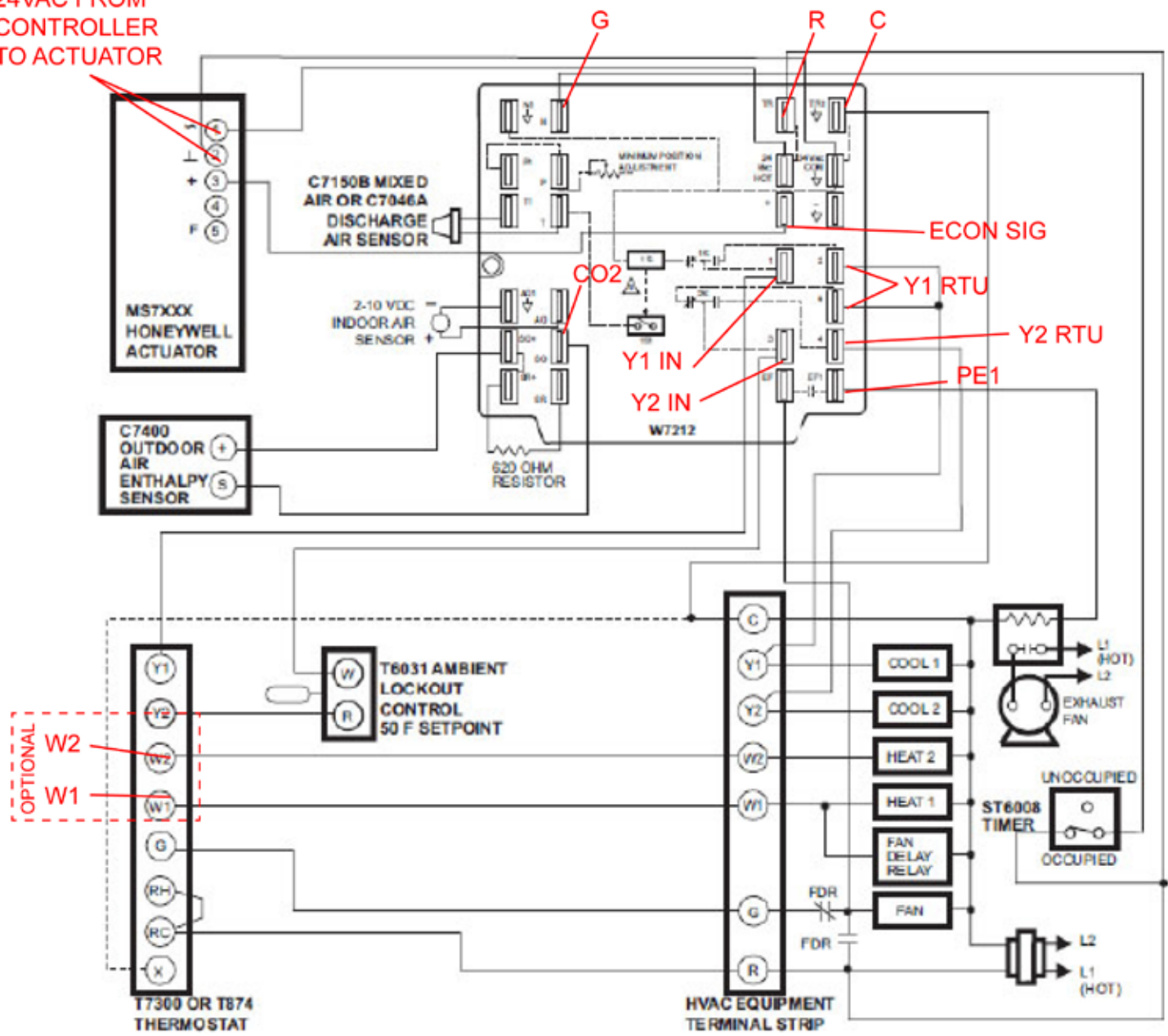**7212 with M7215 damper motor and T7350 thermostat**

24VAC FROM CONTROLLER TO ACTUATOR
**ECON POS**
ECON SIG

24 VAC HOT
24 VAC COM
2-10 VDC CONTROL
SIGNAL OUTPUT

C7150B MIXED AIR OR C7046A DISCHARGE AIR SENSOR

Y1 IN
Y2 IN

Y1 RTU
Y2 RTU
PE1

M7215

CO2

2-10 VDC INDOOR AIR SENSOR

C7400 OUTDOOR AIR ENTHALPY SENSOR

620 OHM RESISTOR

W7212

EXHAUST FAN

L1 (HOT)
L2

COOL 1
COOL 2
HEAT 2
HEAT 1

FAN

L2
L1 (HOT)

OPTIONAL
W2
W1

TB7220 OR TB8220 THERMOSTAT

HVAC EQUIPMENT TERMINAL STRIP

7212 with M7215 damper motor and TB7220 or TB8220 thermostat

7212 with single-stage cooling system with single enthalpy changeover and Honeywell actuator and time clock for occupancy.

24VAC FROM CONTROLLER TO ACTUATOR

MS7XXX HONEYWELL ACTUATOR

C7150B MIXED AIR OR C7046A DISCHARGE AIR SENSOR

2-10 VDC INDOOR AIR SENSOR

C7400 OUTDOOR AIR ENTHALPY SENSOR

620 OHM RESISTOR

W7212

G   R   C

ECON SIG

CO2

Y1 RTU

Y1 IN

Y2 RTU

Y2 IN

PE1

T6031 AMBIENT LOCKOUT CONTROL 50 F SETPOINT

OPTIONAL W2 W1

T7300 OR T874 THERMOSTAT

HVAC EQUIPMENT TERMINAL STRIP

COOL 1

COOL 2

HEAT 2

HEAT 1

FAN DELAY RELAY

FAN

ST6008 TIMER

UNOCCUPIED

OCCUPIED

FDR

EXHAUST FAN

L1 (HOT)
L2

L2
L1 (HOT)

7212 with two-stage cooling system with Honeywell Series 72 Actuator and time clock for occupancy.
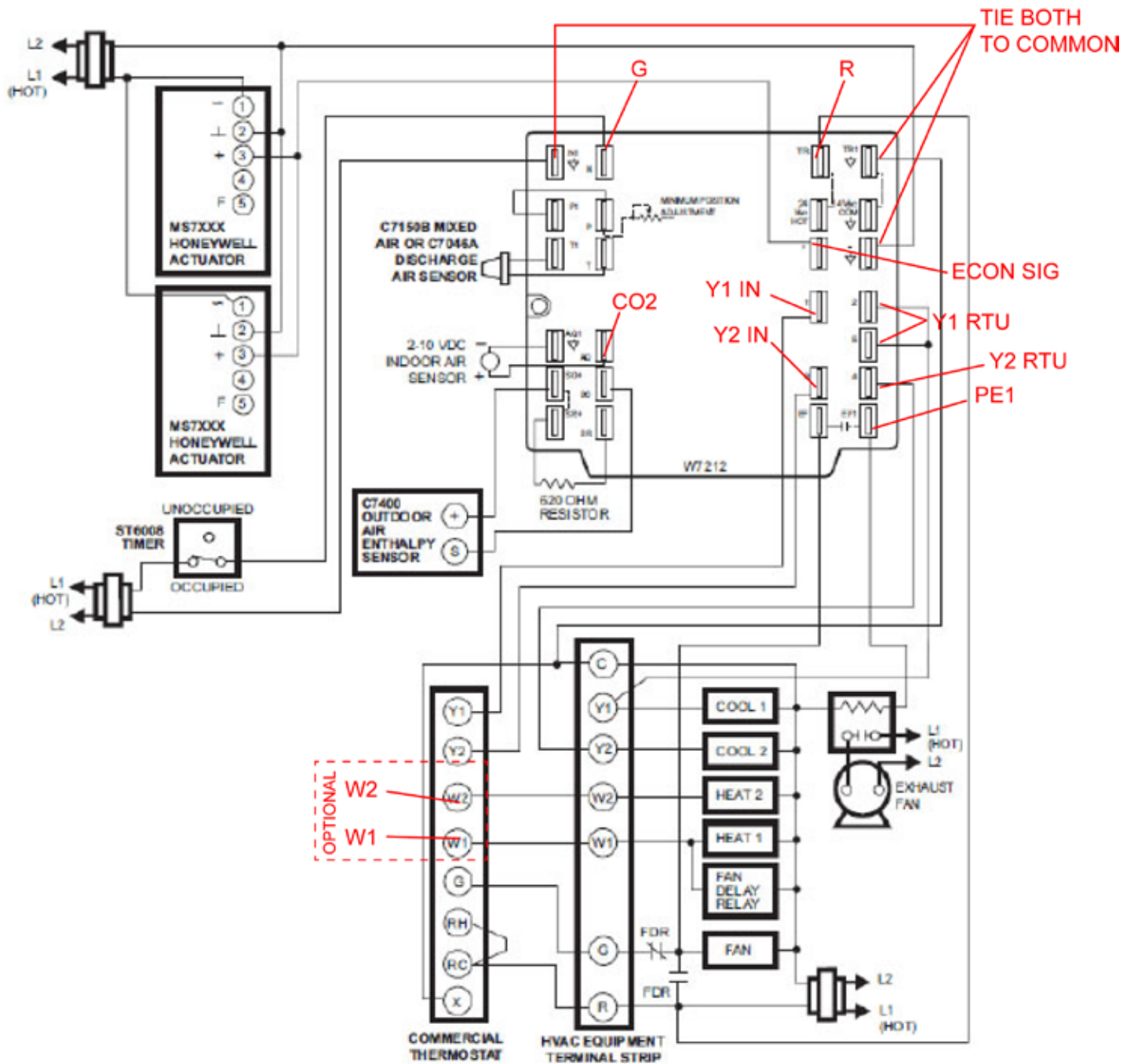
7212 controlling parallel-wired Honeywell Series 72 Actuators and time clock for occupancy.
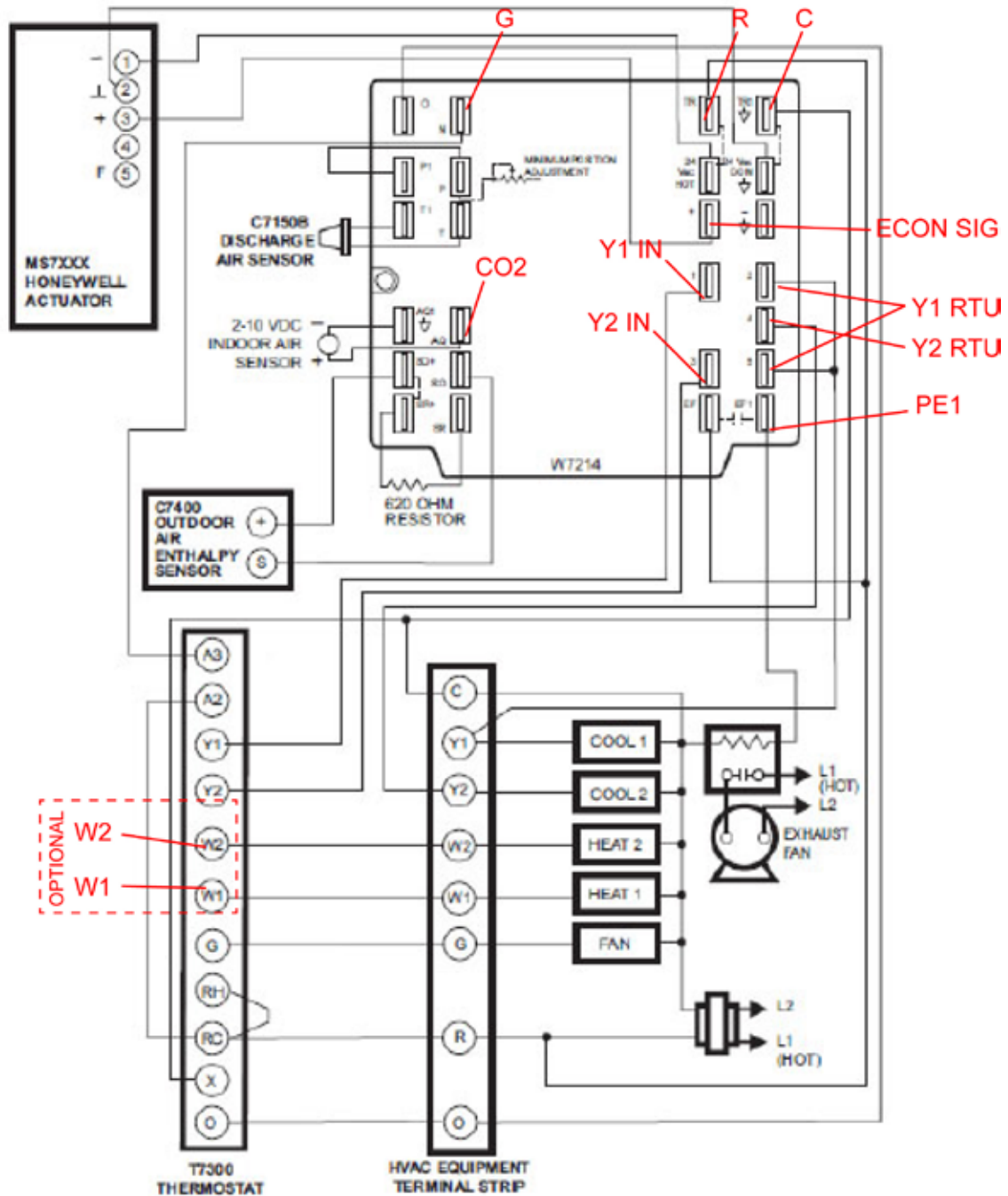
7213, 7214 controlling heat pump system.

The following are reference product installation sheets

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* temperature probe is both non-polarity and non-position sensitive. All thermistor type room units are supplied with a two-pole terminal block. It is recommended to use 18-20 AWG twisted pair wire or shielded cable for sensor installation.

MOUNTING

The temperature probe should be mounted using (2) two screws through the existing screw holes.
(Unit can mount in any position or angle)

WIRING

The wires for the teperature probe should land at the desired location (either the SAT or OAT location on your controller).
⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

Black

Red
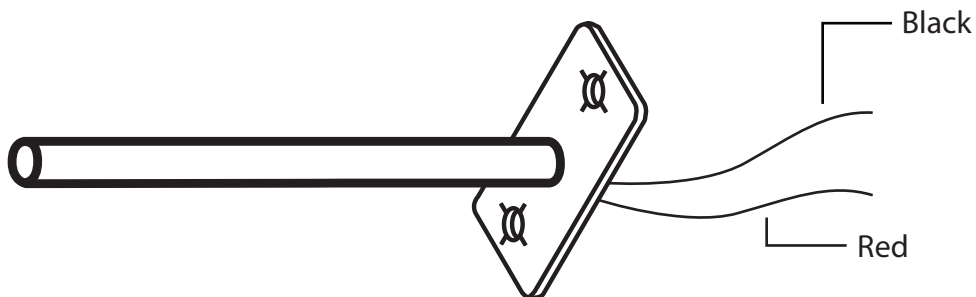
ION-0A*00 INSTALL

Ion Generator for AHU's, Heating and AC Units

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* ion generator is a versatile product and can be mounted in any type HVAC system. It is designed for airflows of up to 1,800 CFM and standard VOC loading.
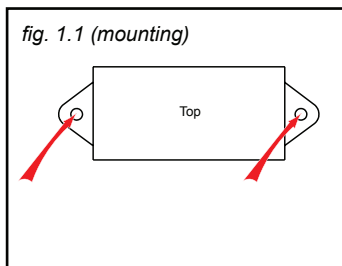
MOUNTING

Find a suitable location in the air stream. The optimal location is at the inlet to the supply fan.

The ion air purifier has two mounting flanges with a hole to accommodate self tapping sheet metal screws [figure 1.1]. With the metal screws, mount the ion air pruifier perpendicular to and in the middle of the air stream such that air will flow simultaneously in between the carbon fiber needles on the ends of the unit [figure 1.2]. Make sure the exposed end of the screw does not protrude from the unit where someone can be cut on the screw tip.

(air purifier can mount in any position or angle)

In some cases, to properly mount the ion air purifier perpendicular to the airstream, the optional mounting bracket is required [figure 1.3].

The mounting bracket has (4) holes (2) that accommodate mounting of the ion air purifier and (2) for mounting to a surface so the air purifier is perpendicular to the airstream.
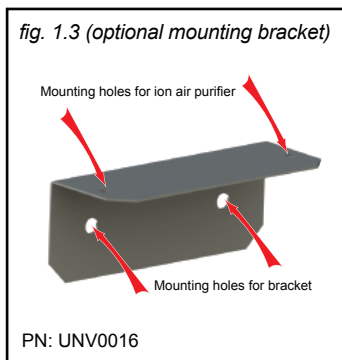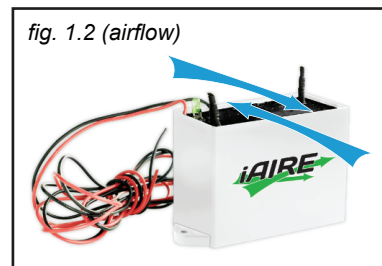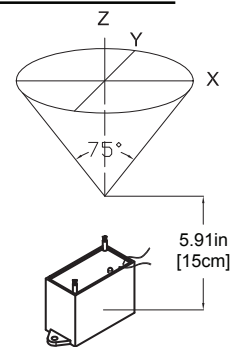
fig. 1.1 (mounting)

Top

fig. 1.2 (airflow)

fig. 1.3 (optional mounting bracket)

Mounting holes for ion air purifier

Mounting holes for bracket

PN: UNV0016

ION DISTRIBUTION

Z
Y
X
75°

5.91in
[15cm]

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*
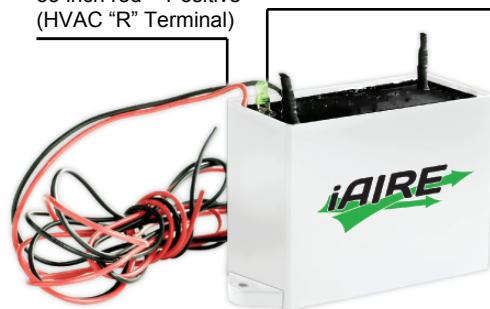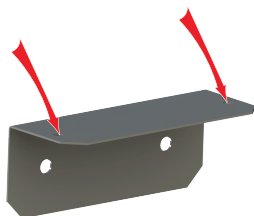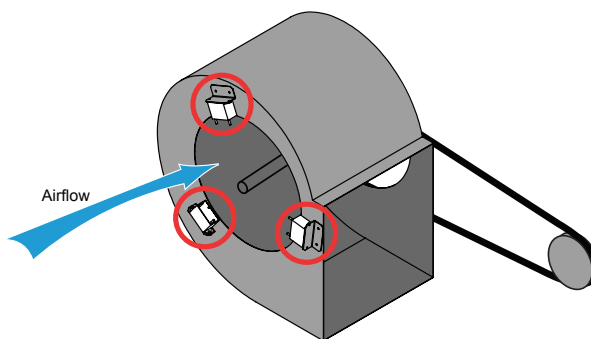
I O N - 0A * 00

VOLTAGE:
A - 24VAC / VDC, 1φ
D - 115VAC, 1φ

35 inch black = Neutral or Ground (HVAC "C" Terminal) or chassis in case of furnace

35 inch red = Positive (HVAC "R" Terminal)

- Check the label on the product and wire it only to the voltage range shown. The 24V product accepts VAC/VDC power.
- Unit should be powered 24/7 or it may be interlocked to fan operation (or other similar controls).
- Green LED will illuminate when powered and operating.

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* mounting bracket allows for optimal installation of multiple ion air cleaners. They can be used for mounting any number of air cleaners.

MOUNTING

Ion air cleaners should be mounted to the bracket using self tapping metal screws on the small holes [figure 1.1].

The number of ion air cleaners that are mounted should be spaced evenly around the blower.

Wires for all ion air cleaners should be tied together before mounting the brackets inside the RTU for easier wiring. If using the optional 24V transformer, tie all ion air cleaner wiring to the transformer and run transformer wires to the power distribution block.

The brackets should then be mounted, using self tapping metal screws on the large holes, in a suitable location in the air stream [figure 1.2]. The optimal location is at the inlet to the supply fan.

fig. 1.1 (ion device mounting)

fig. 1.2 (plate mounting)

Airflow

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

I O N - 0A * 00

VOLTAGE:
A - 24VAC / VDC, 1φ
D - 115VAC, 1φ

35 inch red = Positive (HVAC "R" Terminal)

35 inch black = Neutral or Ground (HVAC "C" Terminal) or chassis in case of furnace

- Check the label on the product and wire it only to the voltage range shown. The 24V product accepts VAC/VDC power.
- Run black and red wires to 24V transformer in RTU to power ion air cleaners.
- Unit should be powered 24/7 or it may be interlocked to fan operation (or other similar controls).
- Green LED will illuminate when powered and operating.

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* CO2 sensor is a versatile product and can be mounted to any standard wall. It is designed for real-time CO2 detection in basic HVAC and Ventilation systems.
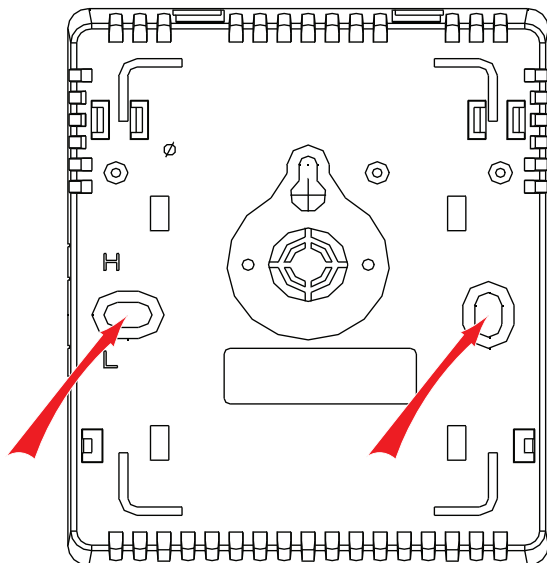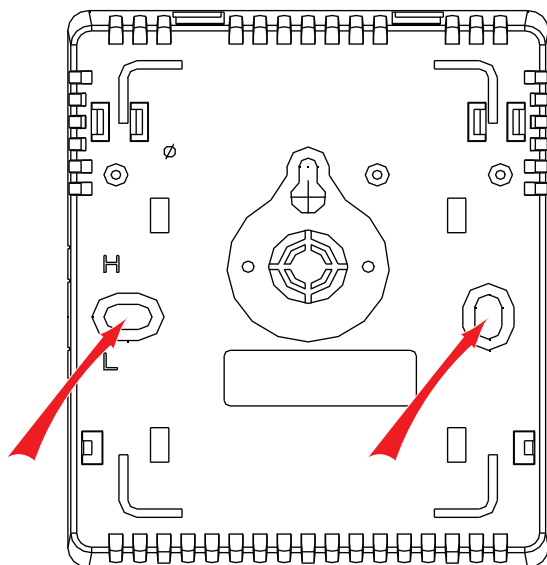
MOUNTING

Find a suitable location on the wall to mount the sensor. The sensor should be mounted at a similar height to the thermostat.
⚠ *(It is recommended when mounting on a wall to secure the unit using drywall anchors or to wall studs directly.)*

Using screws, mount the sensor to the wall ensuring it is secure.
(Unit should be mounted vertically so that product labels are facing up)

*(hole for wall mounting located on back of device)*

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

• Only 0~10VDC output
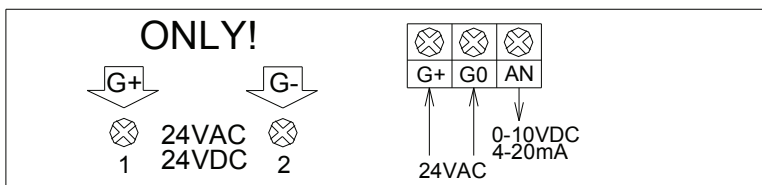
READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* VOC sensor is a versatile product and can be mounted to any standard wall. It is designed for VOC detection and **should not be used as a safety detector** (for example, a gas alert detector).

MOUNTING

Find a suitable location on the wall to mount the sensor. The sensor should be mounted at a similar height to the thermostat.
⚠ *(It is recommended when mounting on a wall to secure the unit using drywall anchors or to wall studs directly.)*

Using screws, mount the sensor to the wall ensuring it is secure.
(Unit should be mounted vertically so that product labels are facing up)

(hole for wall mounting located on back of device)

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

- 0~10VDC linear output (default)
- 4~20mA selectable by jumpers

If you want to change the output voltage, please follow these steps: Cut off power and simultaneously depress the two clips on either side of the transmitter to remove the faceplate from the wall plate. There are four jumpers on the top left of the circuit, S1,S2,J1,J2. Choose different output type through disconnection or connection per the table below:
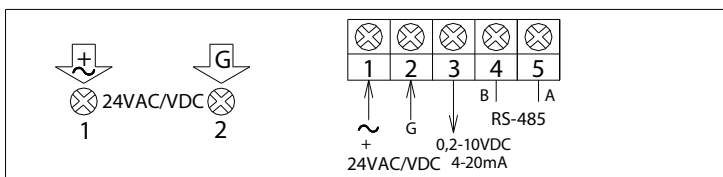
S2	S1	J1	J2	Analog output
Upper 2 pins connected	Upper 2 pins connected	connected	ineffective	4-20mA
Lower 2 pins connected	Lower 2 pins connected	disconnected	ineffective	0-10VDC(default)

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* actuators have standardized footprints, wiring configurations and checkout procedures allowing for fast installation resulting in lower installed cost.

MOUNTING

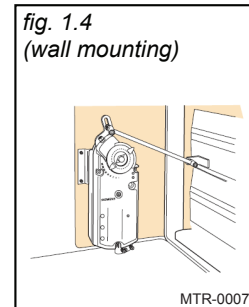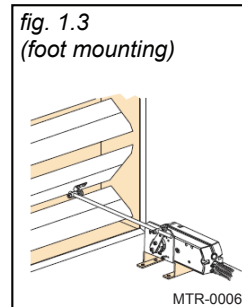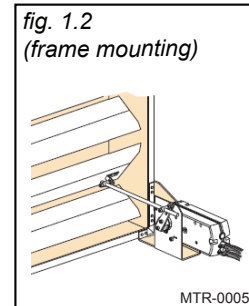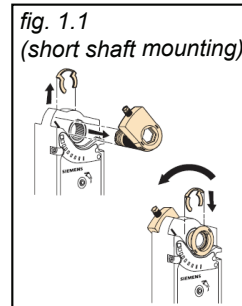There are several mounting options for the MTR -000* actuators.

For easy mounting on short shafts without special accessories, the self-centering shaft adapter can be mounted on the backside of the actuator. Each actuator includes an adapter so that the position indicator is still easily viewed [figure 1.1].

The frame mounting kit (MTR-0005) is used when the actuator cannot be directly mounted on the damper shaft due to space limitations [figure 1.2].

Easily replace existing Honeywell, Johnson and Barber-Colman modulationg motors using the foot mounting kit (MTR-0006). The foot mounting kit can also be used for placing the actuator in the air stream and linking to the damper blades [figure1.3].

Other kits provide additional mounting options such as wall mounting (MTR-0007) [figure 1.4].

(For all kits, parts are included, except for the damper rod.)

fig. 1.1
(short shaft mounting)

fig. 1.2
(frame mounting)

MTR-0005

fig. 1.3
(foot mounting)

fig. 1.4
(wall mounting)

MTR-0006

MTR-0007

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

Multiple acutators can be powered off of one transformer (up to ten on one transformer) [figure 2.1].

Actuators can be wired in parallel with one signal driving up to ten actuators. Feedback should not be wired together and can be read off of one of the actuators [figure 2.2].

Actuators can be wired in parallel with one signal driving a bank of up to ten actuators. Multiple transformers can power multiple actuators. Feedback should not be wired together and can be read off of one of the actuators [figure 2.3].

Master and slave actuators can be tandem mounted for 0 to 10 V applications. This effectively doubles the torque produced by one actuator. This unique feature allows the actuators to operate in a wider range of applications [figure 2.4].

With the settings shown in [figure 2.5], two 0 to 10 V actuators can be sequenced such that the first one will operate at 0 to 2 V and the second at 2 to 10 V. This feature allows for specialized applications, such as staging or minimum required airflow.

M

1 RED (24V)
2 BLK (Ground)
3 GRY (Econ SIG)
4 PNK (Econ POS)

(continued)

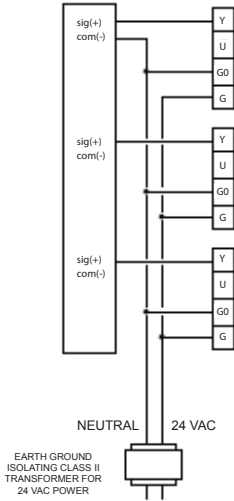**WIRING CONFIGURATIONS**
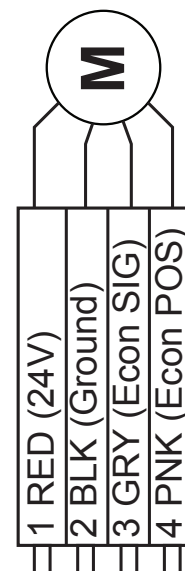
fig. 2.1
(one transformer)

fig. 2.2
(parallel w/ one signal)
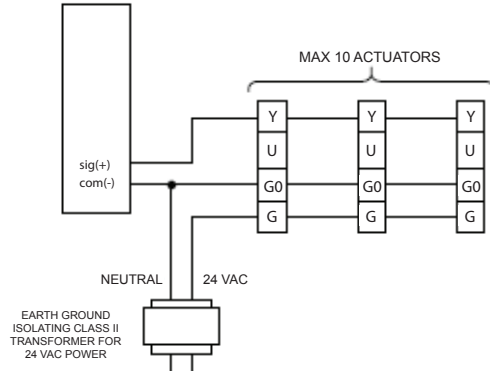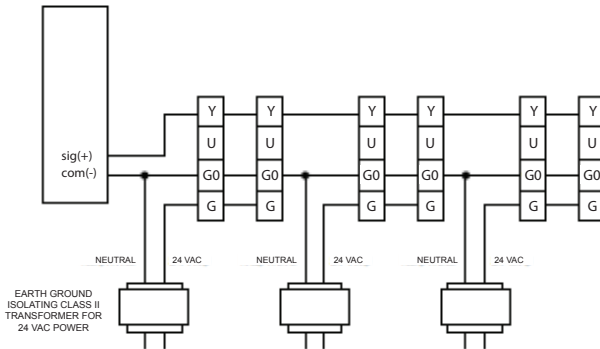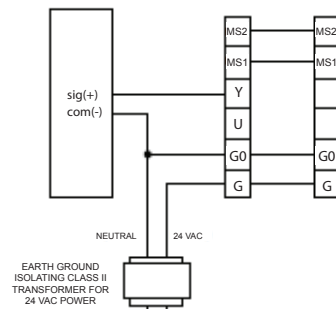
fig. 2.3
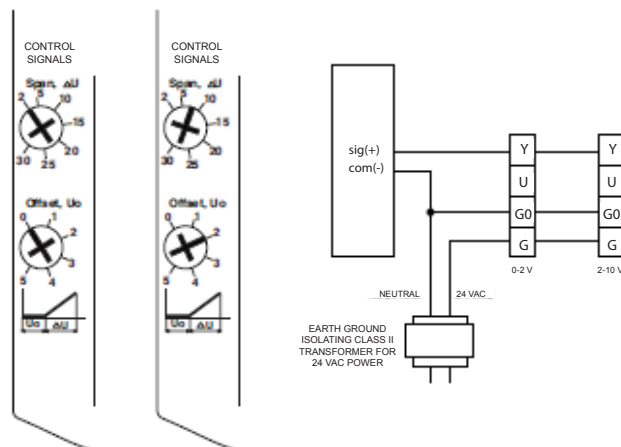(parallel w/ multiple transformers)

fig. 2.4
(master and slave)

fig. 2.5
(sequencing)

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION

INSTALLATION

The *iAIRE* Humidity sensor is a versatile product and can be mounted to any standard wall. The unit is designed to transmit relative humidity and temperature measurements.
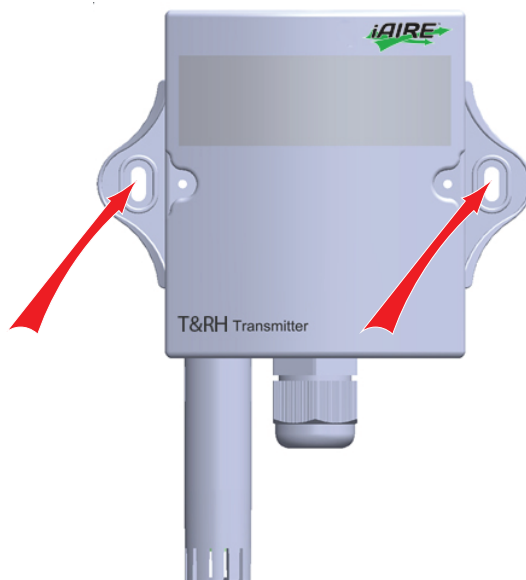
MOUNTING

Find a suitable location on the wall to mount the sensor.
⚠ *(It is recommended when mounting on a wall to secure the unit using drywall anchors or to wall studs directly.)*

Using screws, mount the sensor to the wall ensuring it is secure.
(Unit should be mounted vertically so that product labels are facing up)

(holes for wall mounting)

WIRING

⚠ *(Be sure to follow all local and electrical codes. Turn off power to the unit before mounting or making any connections.)*

• 2x0~10VDC (default) or 2x4~20mA(selectable by jumpers)
• 2x0~5VDC (selected when order is placed)

To change the output, follow steps below:
- Power off and remove the face cover, you can see a set of short-circuit block jumpers S1-S4 in the middle of the PCB board. When you block the top two pins of the S1-S4, the analog output is voltage output. Blocking the lower two pins sets analog output.
- There is a set of short circuit block jumpers J1-J3 in the top of the PCB board. Connecting or disconnecting the J1 will switch between 0-10V and 4-20mA outputs.