



Horizontal Class 1A Leakage Damper— Installation Instructions

Siemens Climatix Controller, single dry-bulb or enthalpy changeover.

For Carrier/Bryant 3 to 6 ton and select 7.5 to 12.5 ton units.

(Class 1A per AMCA 511: <3 cfm/ft² at 1 in. wg.)

Safety Considerations

Installation must be performed only by trained, qualified service technicians.

Follow all lockout/tagout procedures before beginning work.

Wear all standard PPE during installation, including safety glasses and ear protection.

Follow all warnings, labels, and precautions on the HVAC equipment.

Economizer to unit cross reference (*=Revision)

CDI Economizer Part Number	Model Number(s)
ECH-4000-SCSAAD-*	48FC/48FE/50FC/50FCQ/50FE/50FEQ 04-07
	48GC/48GE/50GC/50GCQ/50GE/50GEQ 04-06
	582K/582L/559K/547K/547L 04-07
	581K/551K/549K 04-06
	RGV/RAV/RHV 036-072
	RGG/RAG/RGW/RAW/RHW 036-060

Economizer package contains:

ECONOMIZER P/N	QTY	DESCRIPTION
ECH-4000- SCSAAD -*	1	Low Leak economizer, horizontal, ACTS-1000 actuator
	1	OA hood assembly, contains CDI-1082 filter
	1	Barometric relief hood
	1	CNTS-1000 Climatix controller,
	1	WIRS-1001 Return/Actuator wiring harness
	1	WIRS-1000 wiring harness, Econo
	1	SENS-1000 temperature sensor
	1	SENS-1001 enthalpy sensor
	1	WIRS-1002 Siemens 2 pin harness, QAR9530 temp sensor
	1	WIRS-1003 Siemens 5 pin harness, QFR9530 humidity & temp sensor
	1 bag	#10-16 x ¾" TEK screws w/bonded washers (60 pcs)
	1 bag	#8 x 1/2" TEK screws (4 pcs) for temp sensors
	1 bag	#8 x 1" TEK screws (2 pcs) for Climatix controller
	1	ECON-2054, Econ Front Plate
	1	ECON-2055, Econ Service Panel
	1	ECON-2056, Econ Front Plate Extender

For support, please email econsupport@cdicurbs.com

Include your name, company, phone number, brief description of the issue and economizer model number (e.g. ECV-4000-SCSA-A). The model number is on the sticker on the base flange below the actuator.

NOTE: THIS IS NOT COMPATIBLE WITH THE CTB STLYE CONTROL BOARD.

YOU MUST ORDER CDI # WIRS-1009 FOR THE LEGACY HARNESS

Economizer Installation — Return Side

Before starting: confirm power to the unit is off and lockout/tagout has been applied.

- 1) Remove the filter access panel, indoor coil access panel, and side return cover. None of these panels are reused in a horizontal installation.



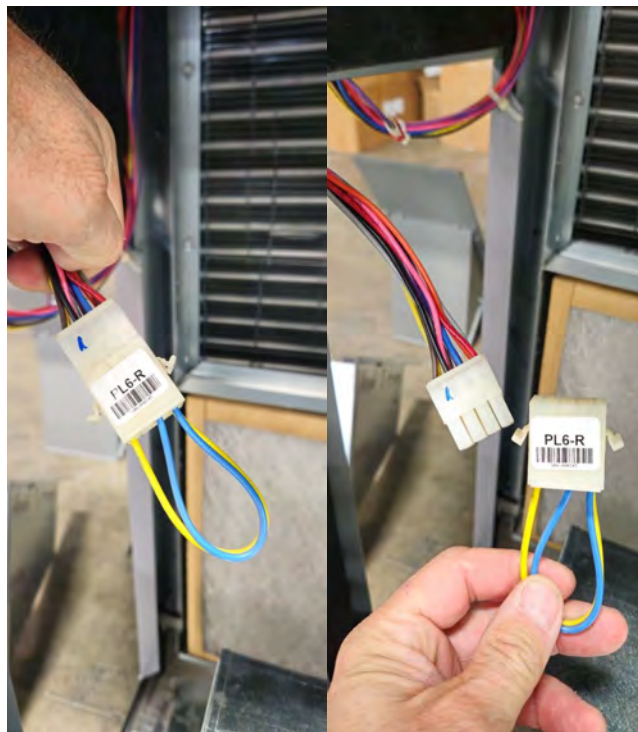
- 2) Insert the economizer through the side return opening, keeping the bottom flange on the outside of the opening.



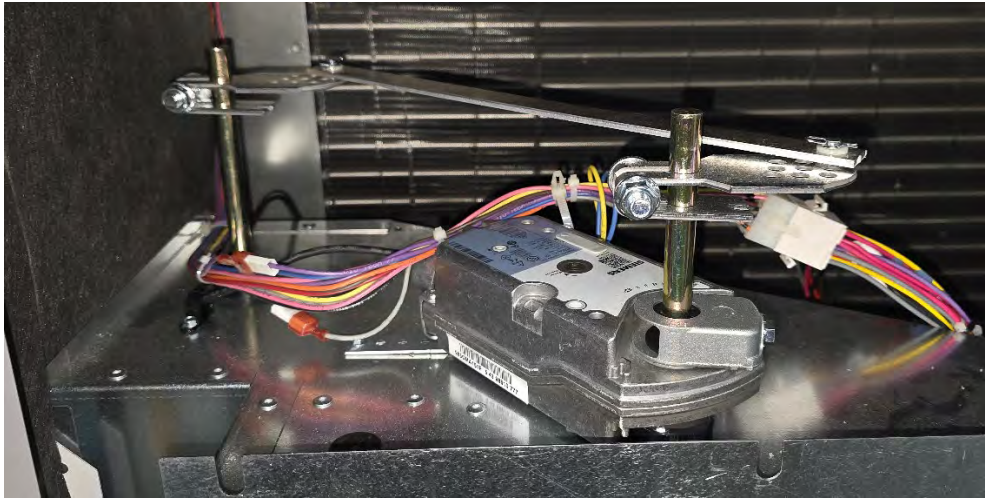
- 3) Do NOT attach the large painted panel to the economizer until the temperature/enthalpy sensor(s), the PL6-R harness, and the smoke detector (if equipped) are wired.



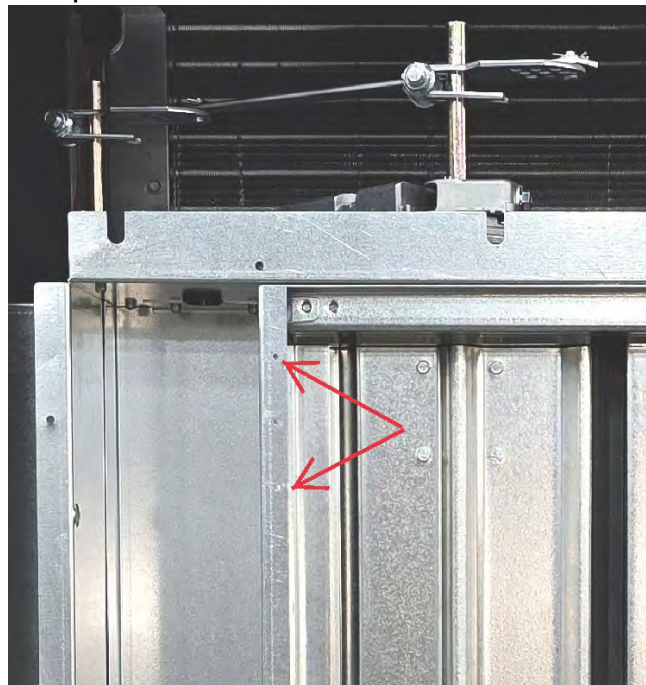
- 4) In the upper left corner of the return plenum, find and remove the 12-pin (square) jumper plug. Save it — it will be needed if the economizer is ever removed.



- 5) Plug the 12-pin connector from the economizer wiring harness (WIRS-1001) into the receptacle you just unplugged. See the wiring schematics on pages 18–28.



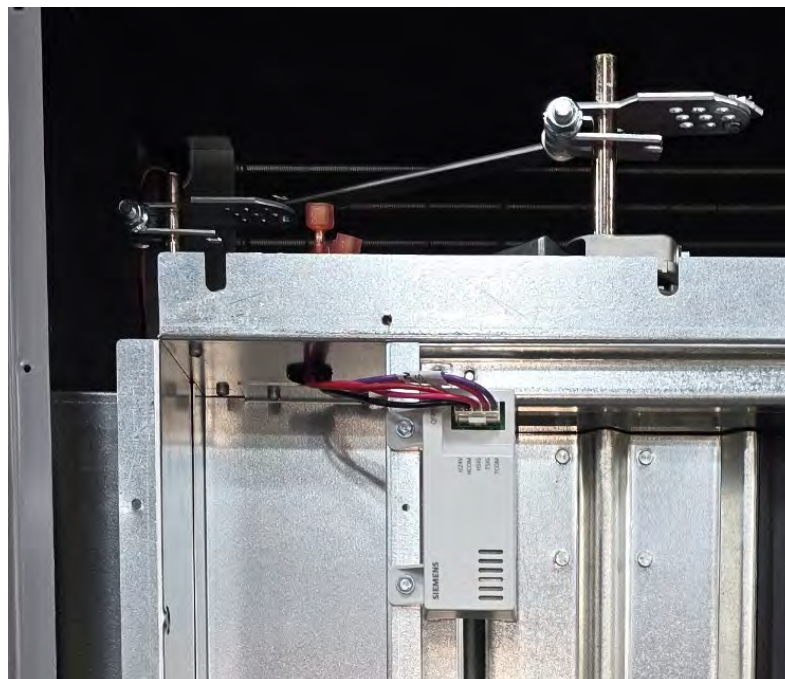
- 6) The actuator is pre-wired to the PL6-R harness on the economizer; it is connected as soon as you plug in the 12-pin connector above.
- 7) Install either the OAT (outside-air temperature) or OAH (outside-air humidity) sensor — depending on your application — on the front of the economizer. Use the provided #8 × 3/4" self-drilling screws and the pre-drilled holes in the upper left corner of the OA damper frame.



- 8) Route the sensor wires through the top black grommet and connect them to the PL6-R harness per the wiring schematics.



OAT sensor, 2 wire harness



OAH sensor, 5 wire harness

- 9) If the economizer was purchased with the smoke detector option, see the schematic on page 25 for connecting the provided wire harness to the UCB. Route the wires from the return plenum, through the indoor blower section, and back to the control panel.
- 10) With return-plenum wiring complete, attach the large econ front plate to the economizer using the 8 provided screws. Seat the plate into the grooves on the RTU — lift the economizer slightly to line up the mounting holes. Leave the screws hand-tight for now.



- 11) Attach the econ face plate to the RTU. Start with the 5 bottom screws, then the 3 vertical screws on each side (11 total). After these are in, return to step 10 and fully tighten the 8 screws you left loose.



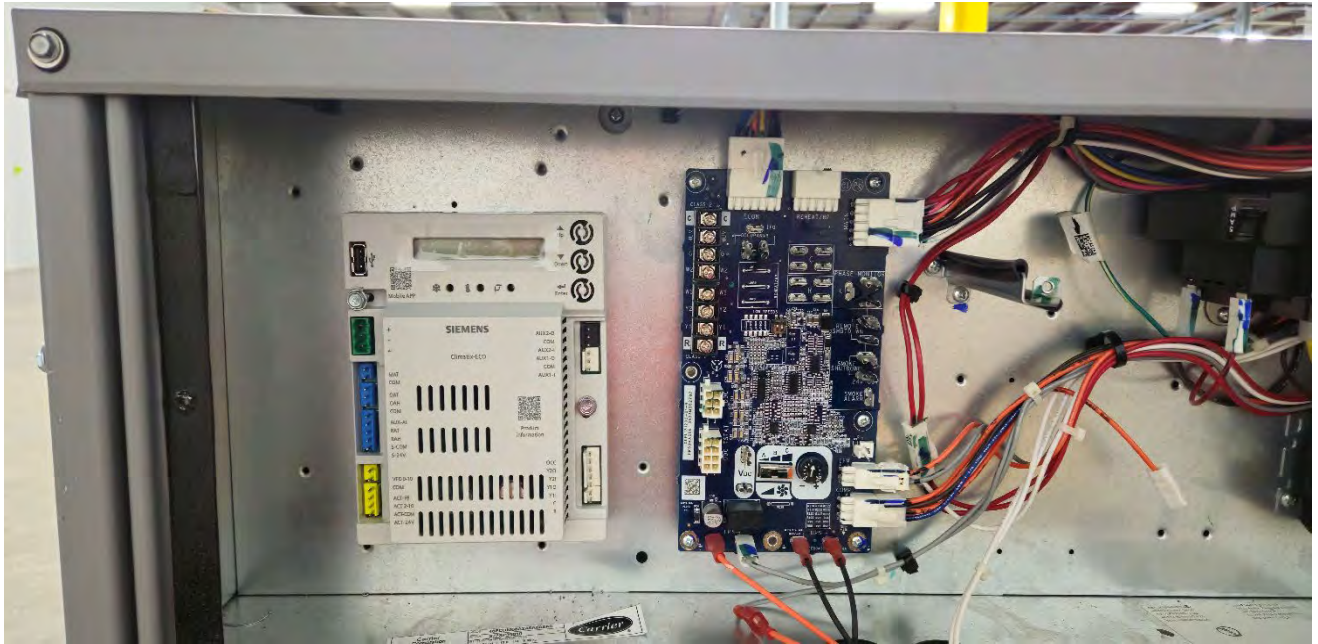
Controller Installation in control panel/blower section

- 12) Remove the Indoor blower access panel, Control Box Panel and the internal UCB Panel

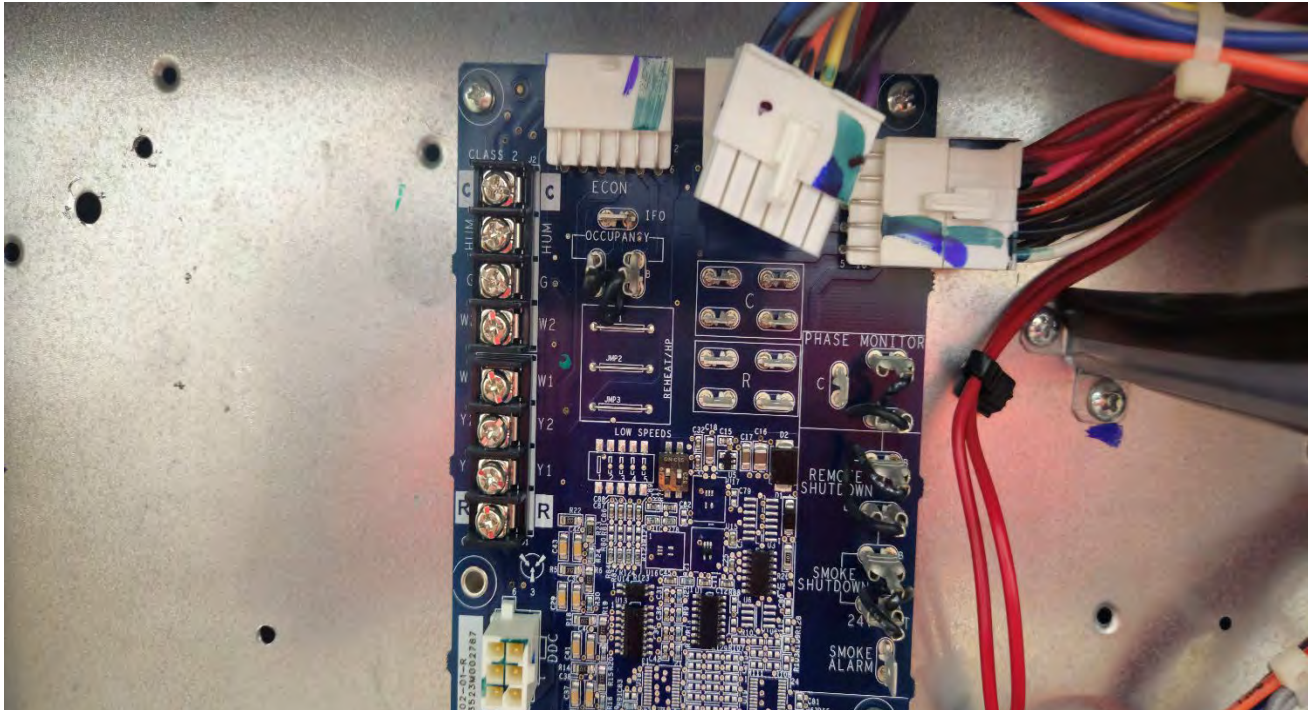


If your unit is using System Vu controls, please skip to step 19

- 13) Remove the pre-wired economizer controller (CNTS-1000) from the packaging. Mount it to the left of the UCB using the #8 × 1" screws and the pre-punched holes. (The wiring harness is omitted from the photo for clarity.)



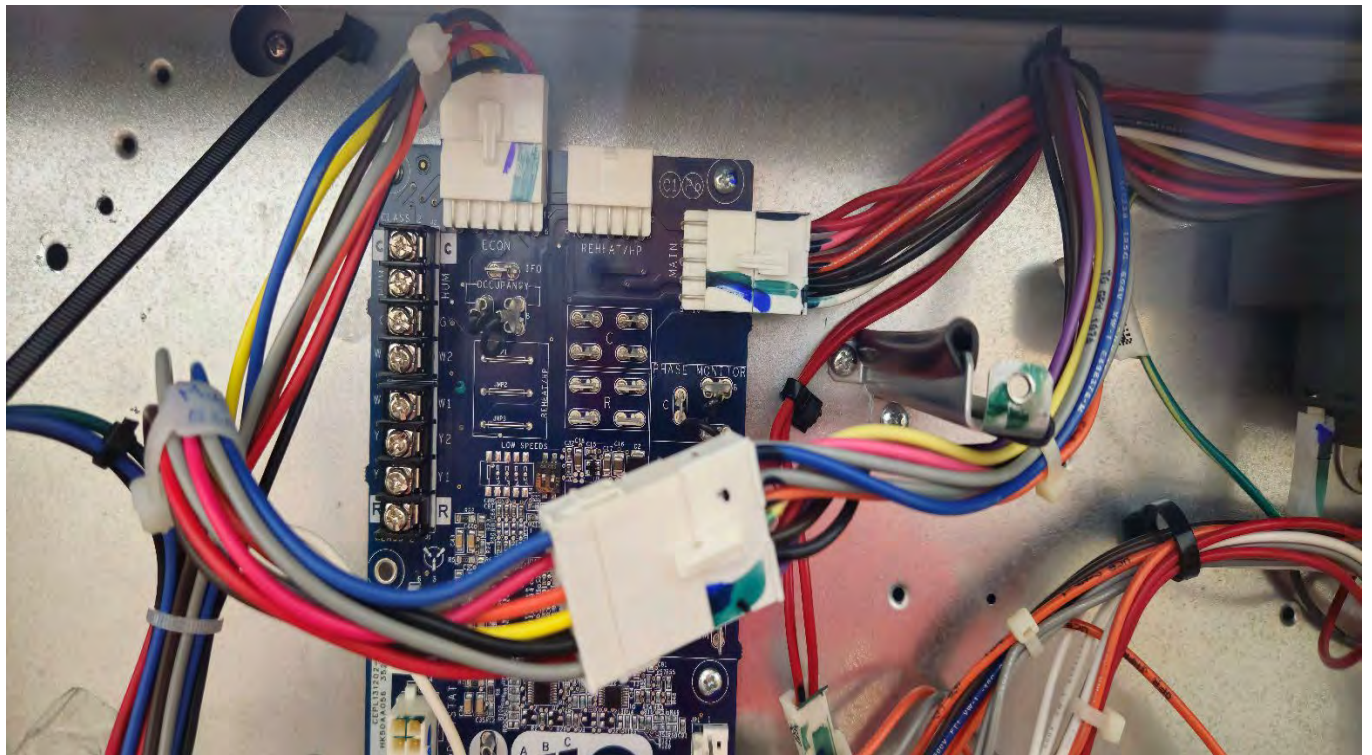
- 14) Unplug the 12-pin connector (female) that is connected to the UCB



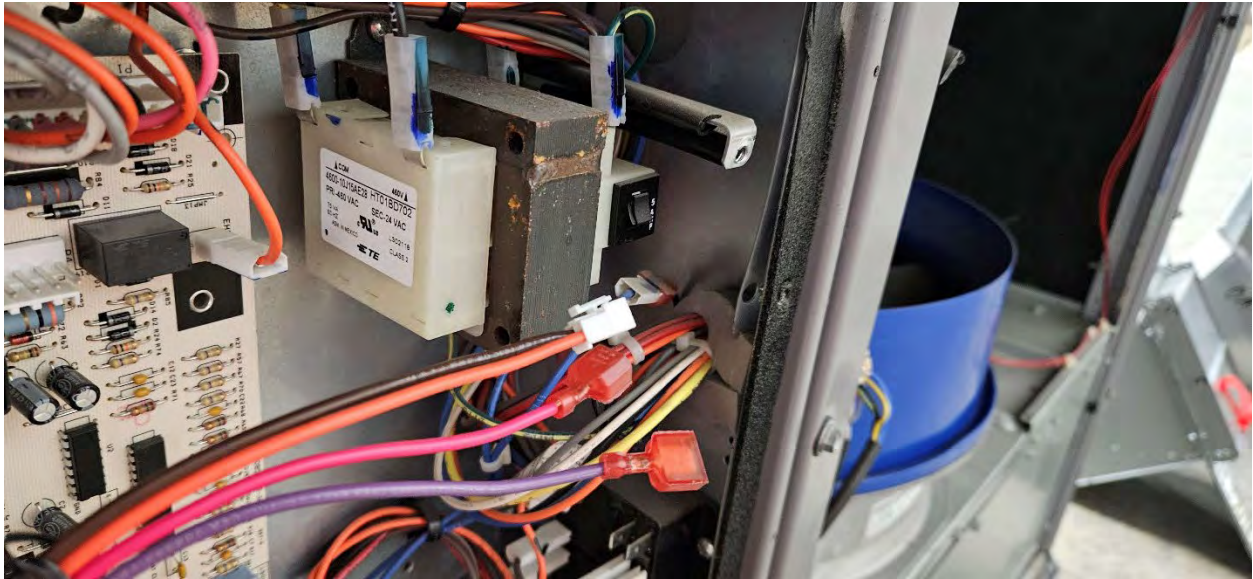
- 15) Plug the 12-pin (female) connector from the economizer wiring harness into the UCB board.



- 16) Reconnect the 12-pin connector you removed from the UCB by plugging it into the 12-pin male connector on the supplied harness.



- 17) Route the 4 controller wires — OAT (pink/violet) and MAT (brown/orange) — through the divider panel between the control box and the indoor blower section. The exact hole location may vary from what is shown.



- 18) In the indoor blower section, connect the pink and violet wires to the bundle in the top right corner. This is the connection to the return-plenum harness.



- 19) Mount the MAT/SAT sensor to the fan deck using the provided #8 × 3/4" self-drilling screws and the pre-punched holes (if available). Connect the orange and brown wires to the sensor whip. For System Vu units, refer to the unit's schematics for MAT/SAT connections.



1)

- 20) Reinstall the indoor blower access panel removed in step 12

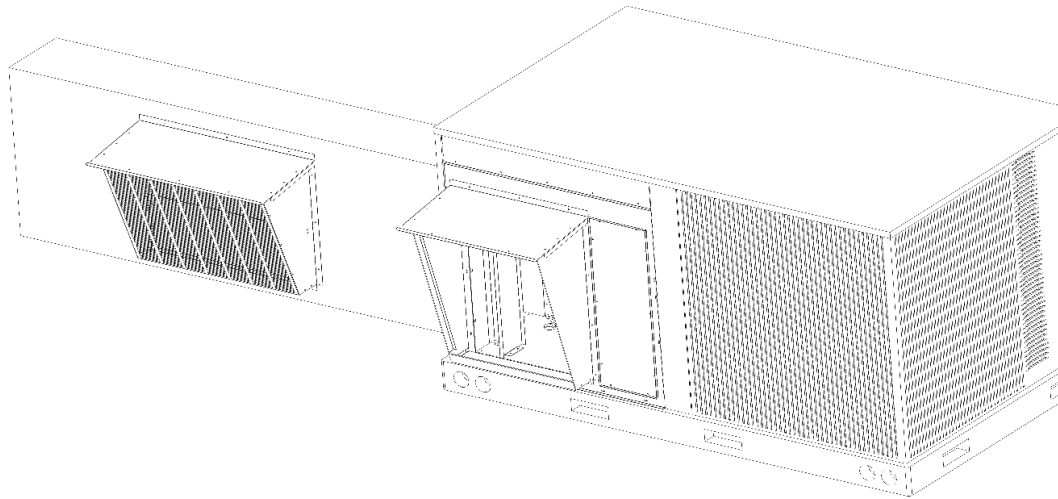
- 21) With the sensor(s), actuator, and econ face panel in place, install the outside-air hood on the unit using the 11 provided screws



- 22) Install the OA hood filter: open the clips inside the OA hood, slide the filter into the bottom channel, rotate it into position, and snap the clips shut.



- 23) After installing the horizontal duct off the side return opening, choose a location for the barometric relief damper. Measure and cut a matching hole, then attach the damper using the 12 provided screws.



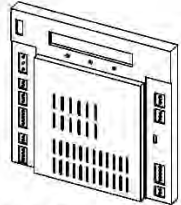
- 24) Once all sensor, actuator, and UCB connections are made, program the POL 224 controller using the Siemens Climatix Economizer Guide. Scan the QR code, follow the link, and under "Economizer Instructions and Controller Manuals" select the Siemens file.



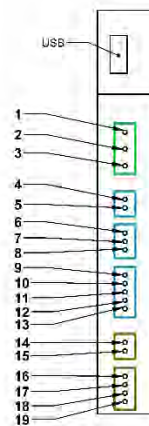
- 25) After the controller is set up and all settings have been entered and tested, reinstall the UCB cover and the control box panel.

WIRING SCHEMATICS

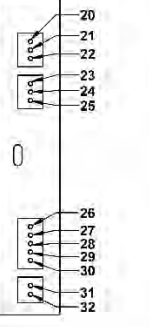
ECON PLUG TABLE			
PIN	TYPE	LABEL	DESCRIPTION
1	RS485 Modbus A	+	Line A
2	RS485 Modbus B	-	Line B
3	GND_ISO	<	Earth ground
4	Type II NTC 10K or 0-10 Vdc	MAT	Mixed or Discharge Air Temperature Sensor
5	COM	COM	Mixed or Discharge Air Temperature Sensor Common
6	Type II NTC 10K or 0-10 Vdc	OAT	Outside Air Temperature Sensor
7	0-10 Vdc or 4-20 mA	DAH	Outside Air Relative Humidity Sensor
8	COM	COM	Outside Air Temperature Sensor or Outside Air Relative Humidity Sensor Common
9	0-10 Vdc, 2-10 Vdc or 0-5 Vdc	AUX-AI	Air Quality Sensor or Pressure Sensor
10	Type II NTC 10K or 0-10 Vdc	RAT	Return Air Temperature Sensor
11	0-10 Vdc or 4-20 mA	RAH	Return Air Relative Humidity Sensor
12	COM	S-COM	24 Vac Common
13	24 Vac	S-24V	24 Vac Power out to sensors
14	0-10 Vdc	VFD 0-10	Variable-Speed Supply Fan Output
15	COM	COM	24 Vac Common
16	ACT-FB	2-10Vdc	Damper Actuator Feedback
17	ACT2-10	2-10 Vdc	Damper Actuator Output
18	ACT-COM	COM	Damper Actuator Output Common
19	ACT-24V	24 Vac	24 Vac Power out to Damper Actuator
20	AUX2-O	24 Vac OUT	Configurable: • Cooling Stage 3 Output • Exhaust Fan (1 or 2) • VFD On/Off (Variable Speed Supply Fan Enable or Disable) • ERV • System Alarm output (Title 24)
21	COM	COM	24 Vac Common
22	AUX2-I	24 Vac IN	Configurable: • Cooling Stage 3 Input • Shut Down • Heat Conventional (W1) • Heat Pump Changeover (reversing valve O/B, HP(B)/HP(O)) • Preoccupancy
23	AUX1-O	24 Vac OUT	Configurable: • Cooling Stage 3 Output • Exhaust Fan (1 or 2) • VFD On/Off (Variable Speed Supply Fan Enable or Disable) • ERV • System Alarm output (Title 24)
24	COM	COM	24 Vac Common
25	AUX1-I	24 Vac IN	Configurable: • Cooling Stage 3 Input • Shut Down • Heat Conventional (W1) • Heat Pump Changeover (reversing valve O/B, HP(B)/HP(O)) • Preoccupancy
26	OCC	24 Vac IN	Occupancy input • T-STAT • ALWAYS
27	Y2O	24 Vac OUT	Cooling Stage 2 Output to stage 2 mechanical cooling
28	Y2I	24 Vac IN	Cooling Stage 2 Input from commercial thermostat
29	Y1O	24 Vac OUT	Cooling Stage 1 Output to stage 1 mechanical cooling
30	Y1I	24 Vac IN	Cooling Stage 1 Input from commercial thermostat
31	C	COM	24 Vac Common
32	R	24 Vac	24 Vac Power



SIEMENS ECON CONTROLLER



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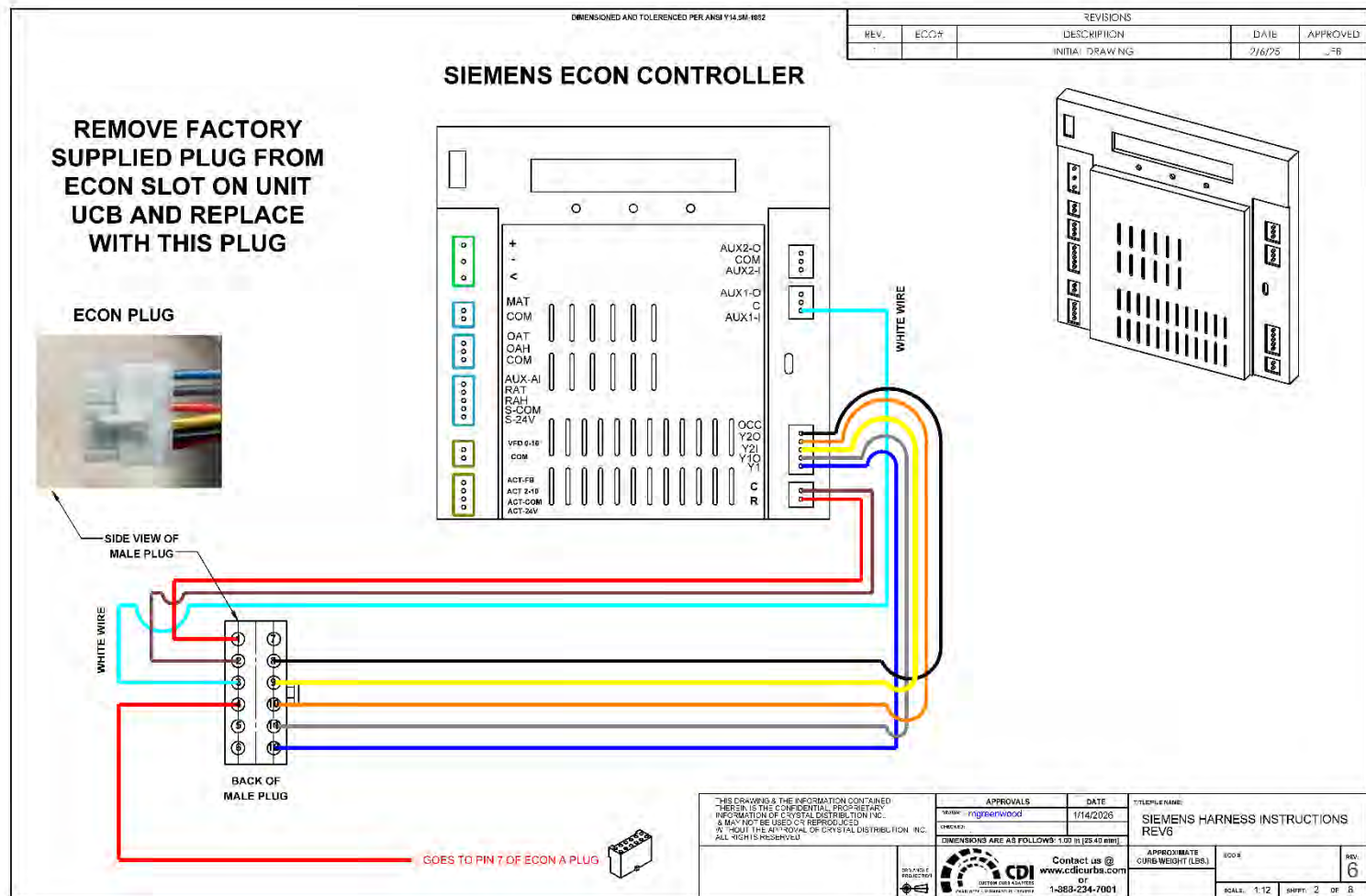


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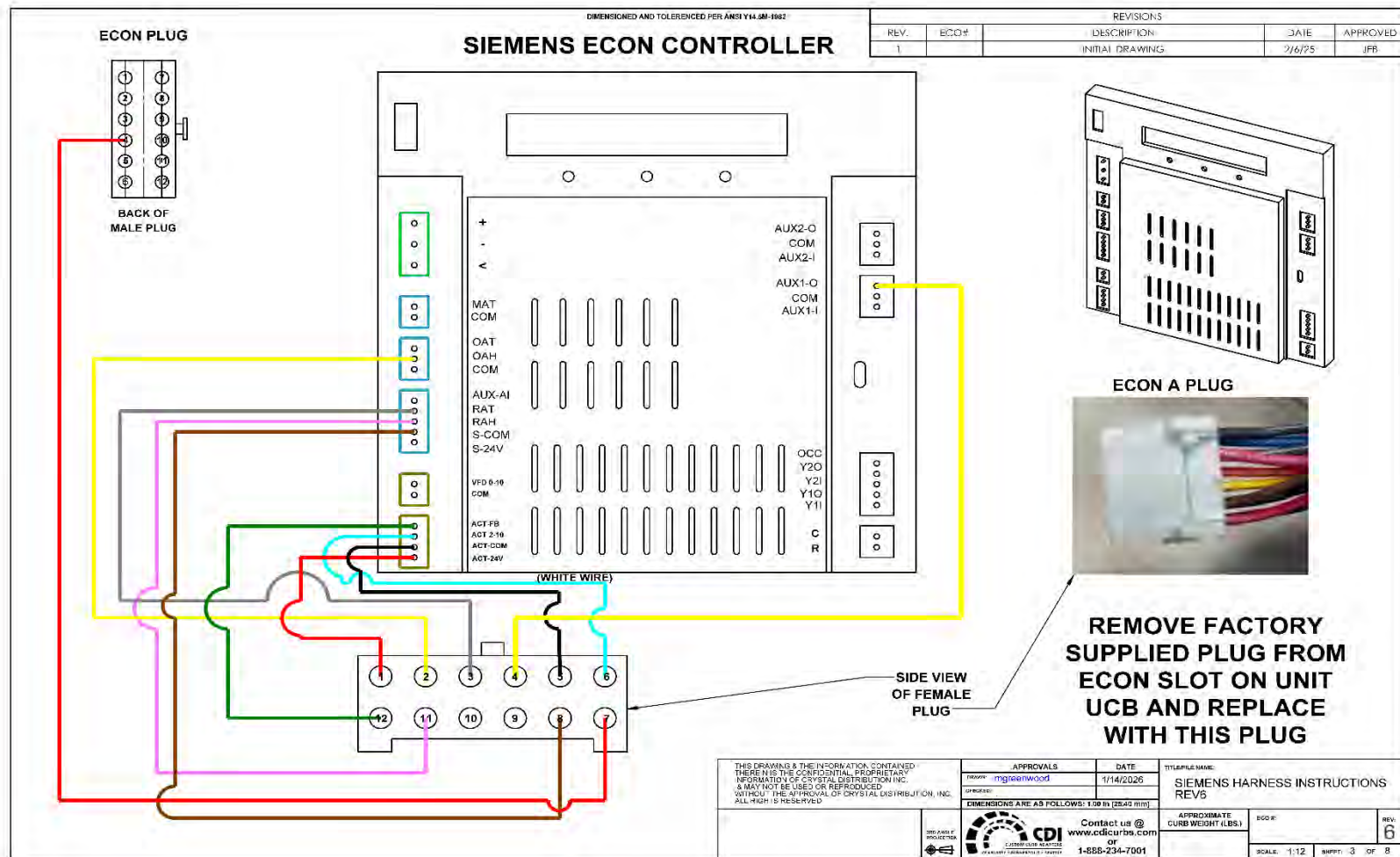
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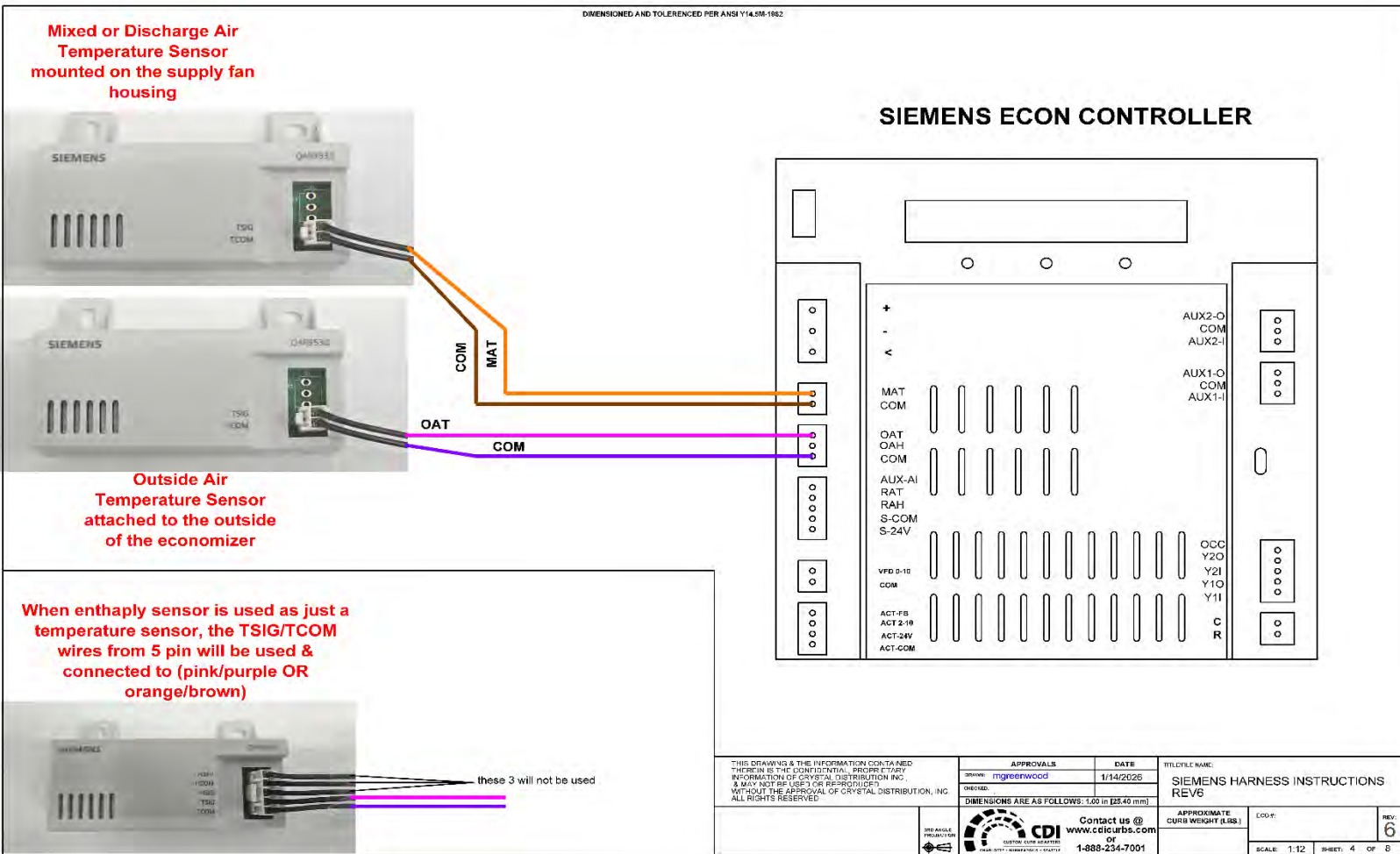
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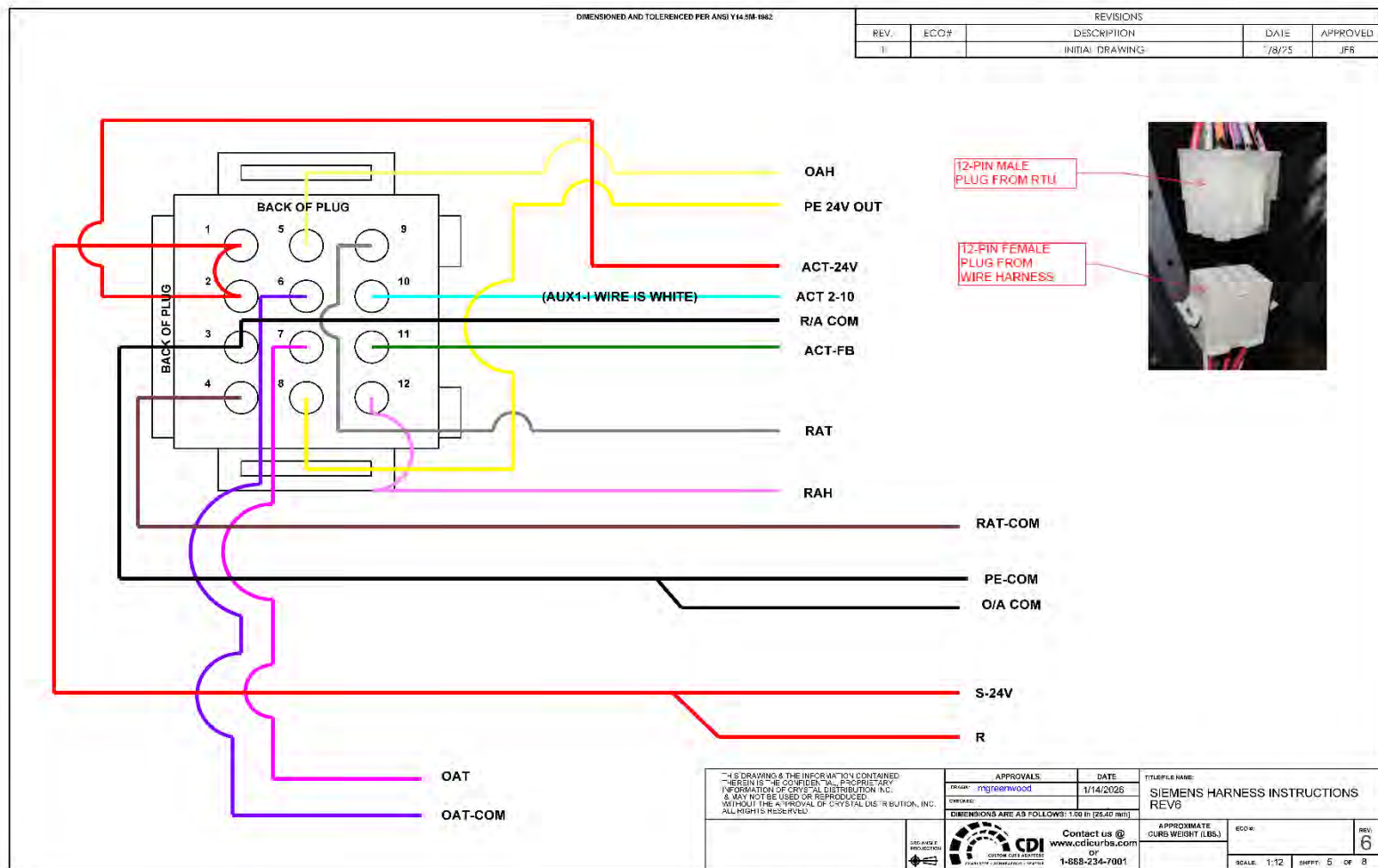


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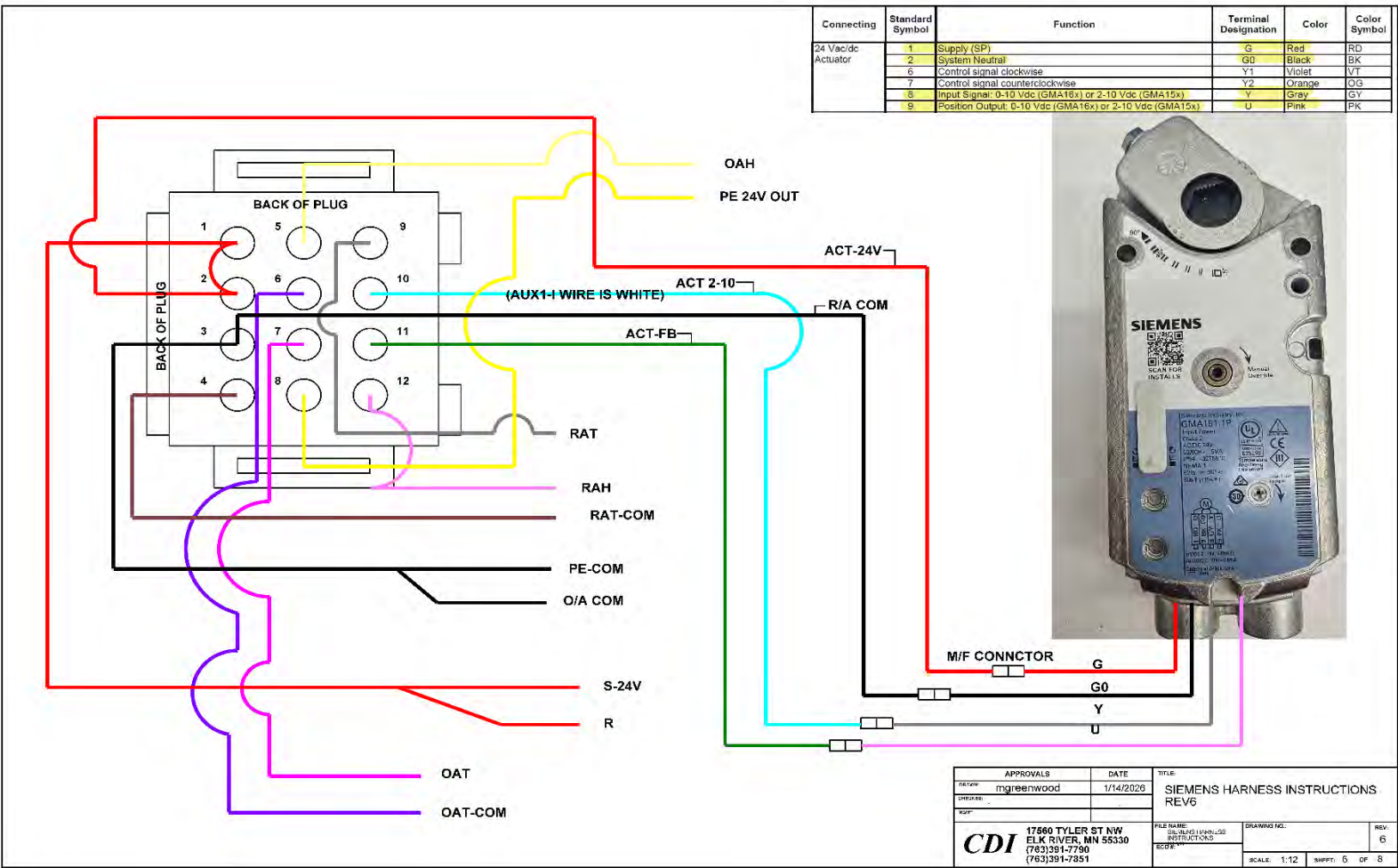




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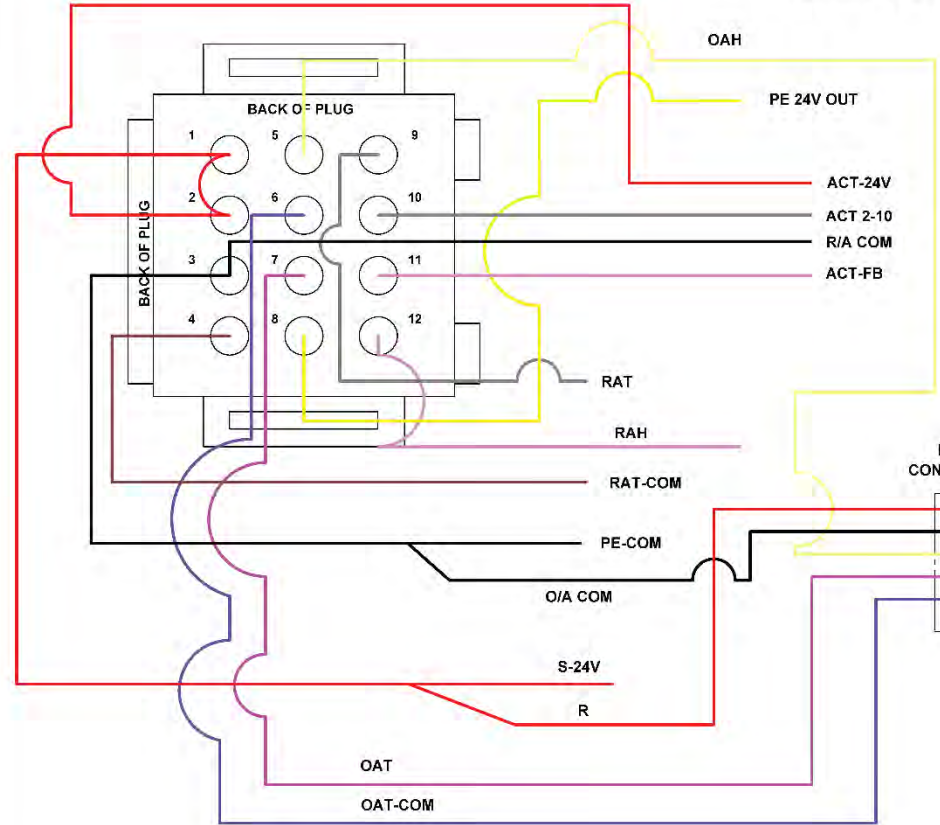


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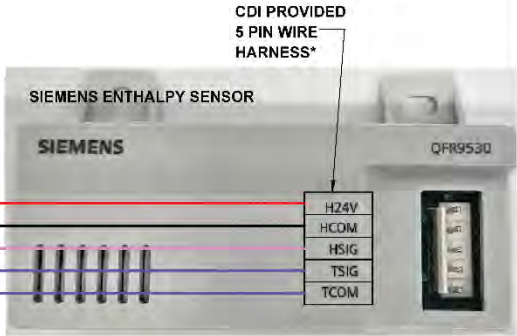


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OAT ENTHALPY SENSOR WIRING



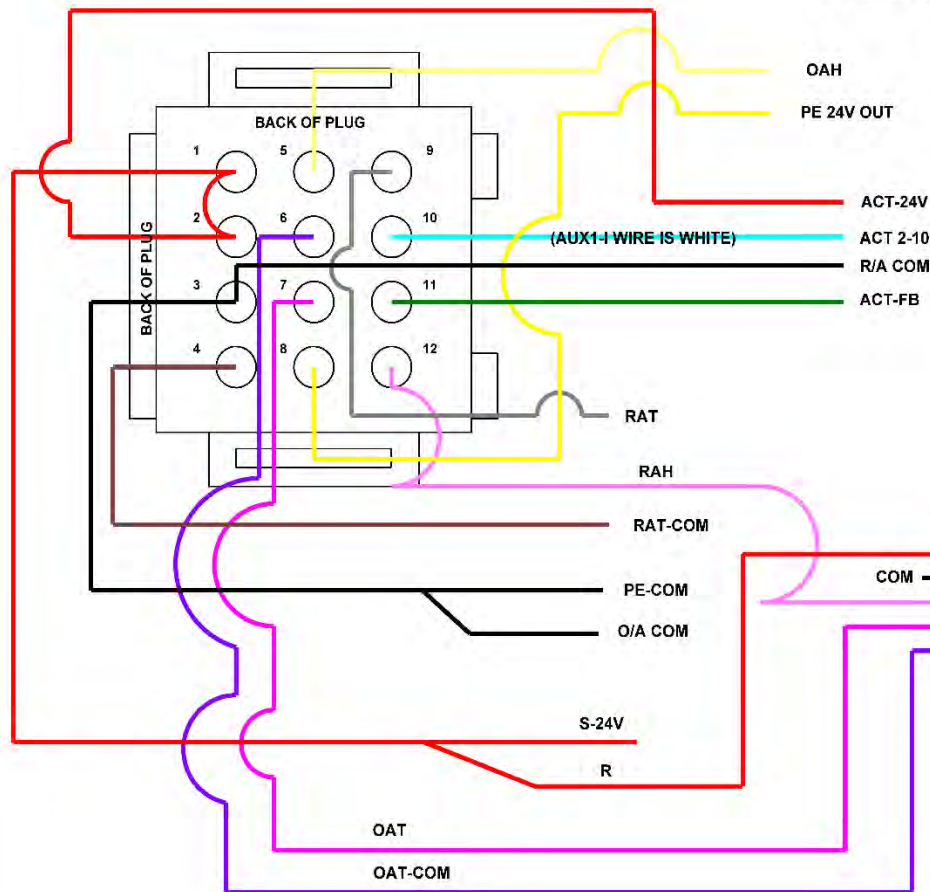
***NOTE, WHEN USING ENTHALPY
SENSOR AS A TEMP SENSOR,
ONLY TSIG & TCOM WIRES WILL
BE CONNECTED IN THE 5 PIN
HARNESS, CAP THE HSIG,
HCOM & H24V WIRES**



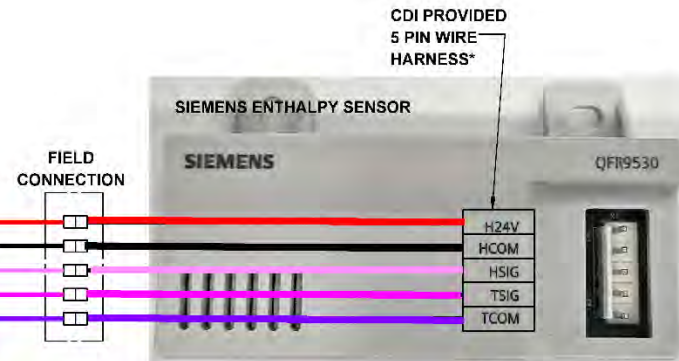
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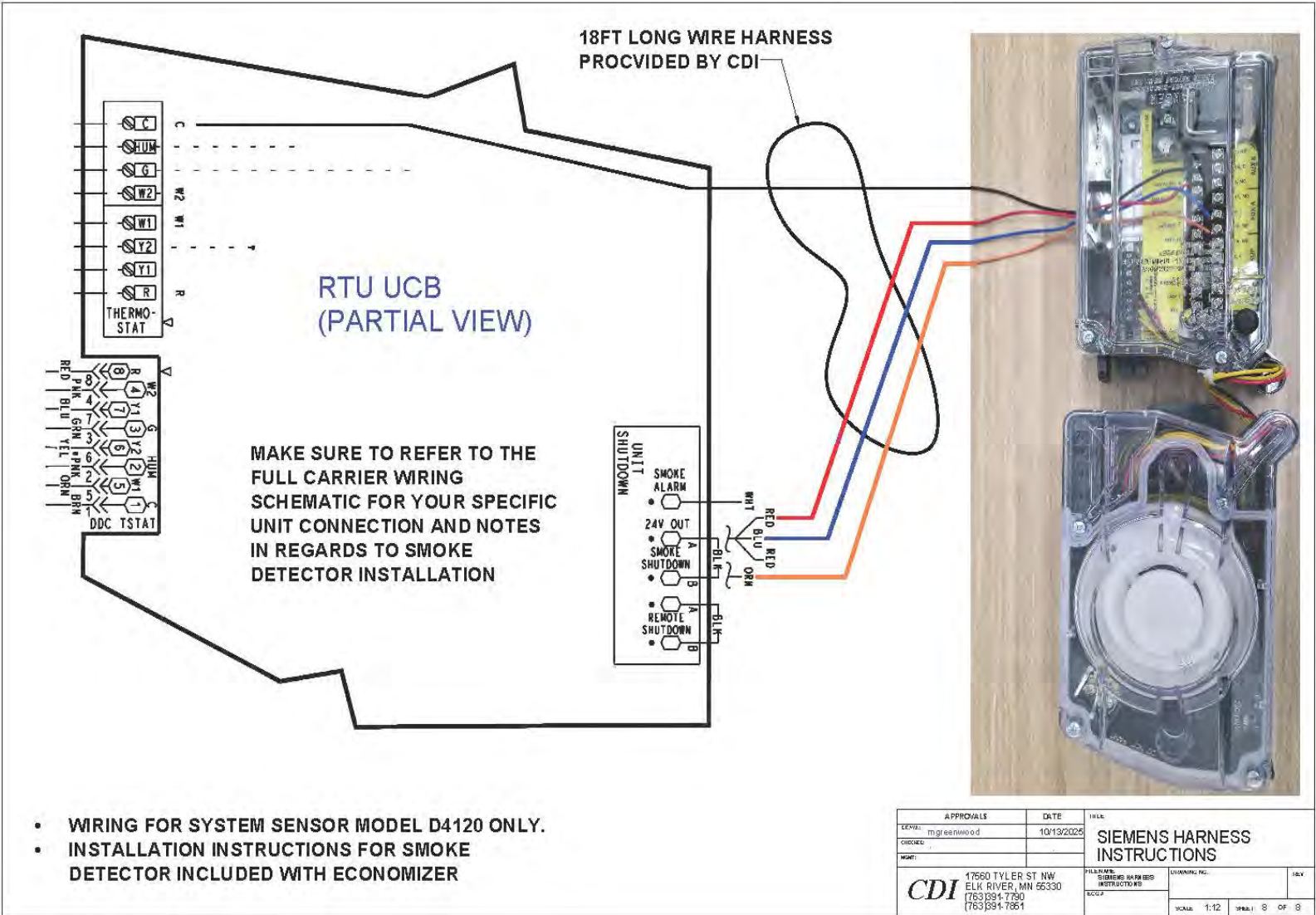
OAT ENTHALPY SENSOR WIRING



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