



Vertical Class 1A Leakage dampers, Siemens Climatix Controller, single dry bulb changeover for Carrier/Bryant 3 to 6 Ton & select 7.5 to 12.5 Ton units

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

Safety Considerations:

All installation should be performed only by trained/qualified service technicians.

Make sure Lockout/Tagout processes are followed.

All standard PPE should be worn during installation (safety glasses, eye protection and ear protection to name a few).

All HVAC equipment warnings, labels and precautions should be followed.

Economizer to unit cross reference (*=Revision)

CDI Economizer Part Number	Model Number(s)
ECV-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
	RGW/RAW/RHW 036-060

CDI Economizer Part Number	Model Number(s)
ECV-4009- SCSAAD -*	48FC/48FE/50FC/50FE/08-14
	50FCQ/50FEQ08-12
	48GC/48GE/50GC/50GE 07-12
	50GCQ/50GEQ 07-09
	582K/582L/559K 08-14
	547K/547L 08-12
	581K/551K 07-12
	549K 0-09
	RAV/RGV 090-150
	RHV 090-120
	RAW/RGW 072-120
	RHW 072-102

Economizer package contains:

ECONOMIZER P/N	QTY	DESCRIPTION
ECV-4000- SCSAAD -*	1	Low Leak economizer, vertical, ACTS-1000 actuator
	1	OA hood assembly, contains CDI-1010 filter
	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 3/4" TEK screws w/bonded washers (14 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

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For support, please email econsupport@cdicurbs.com

Include your name, company, phone number, brief description of the issue and economizer model number. (Ex. ECV-4000-SCSA-A)

Economizer Installation in the return

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

As stated above, ensure the power to the unit has been shut off and lock out/tagout process has been followed.

- 1) Remove Filter Access Panel (save) and the Indoor Coil Access

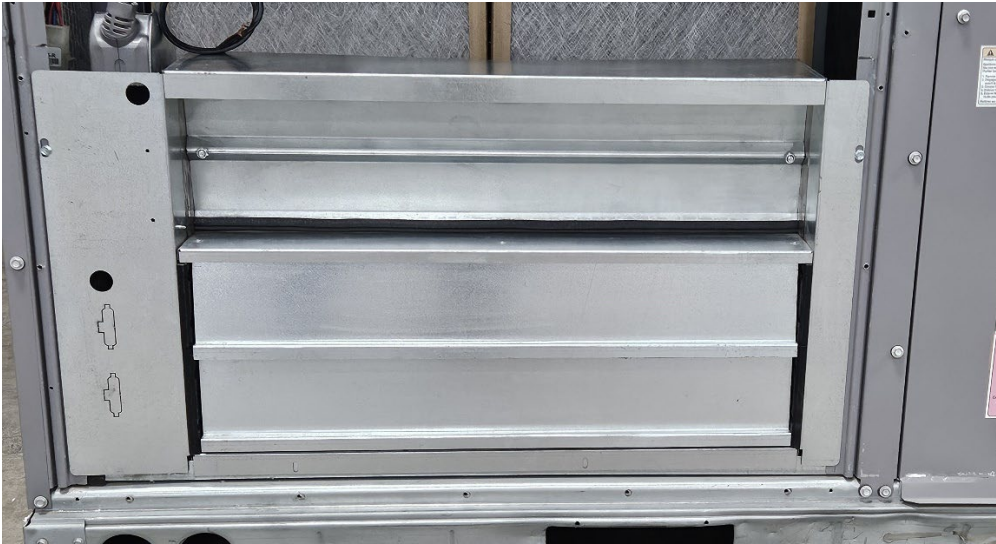


Panel

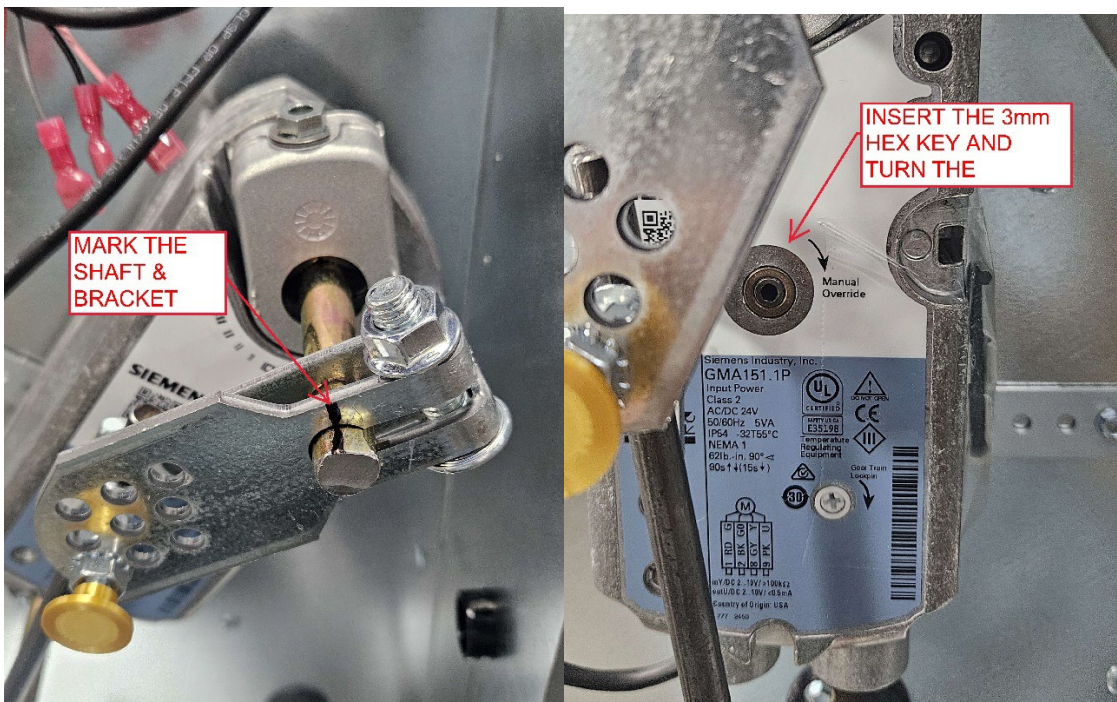
- 2) Once the panels have been removed, insert the Economizer housing into the Return section. Insert the actuator side in first making sure to clear the corner post then rotate the right side into place. Make sure the rear flange slides under the tabs on the floor of the RTU



- 3) Screw the Economizer housing to the RTU frame.



- 4) Check to make sure it is square and the damper blades do not bind. Mark the actuator position (shaft & bracket), loosen the bracket and push the dampers open/closed. Once they are freely moving, align your marks and tighten the actuator back down. You can also insert a 3mm hex key into the “Manual Override” and rotate the actuator to ensure the blades are moving freely.



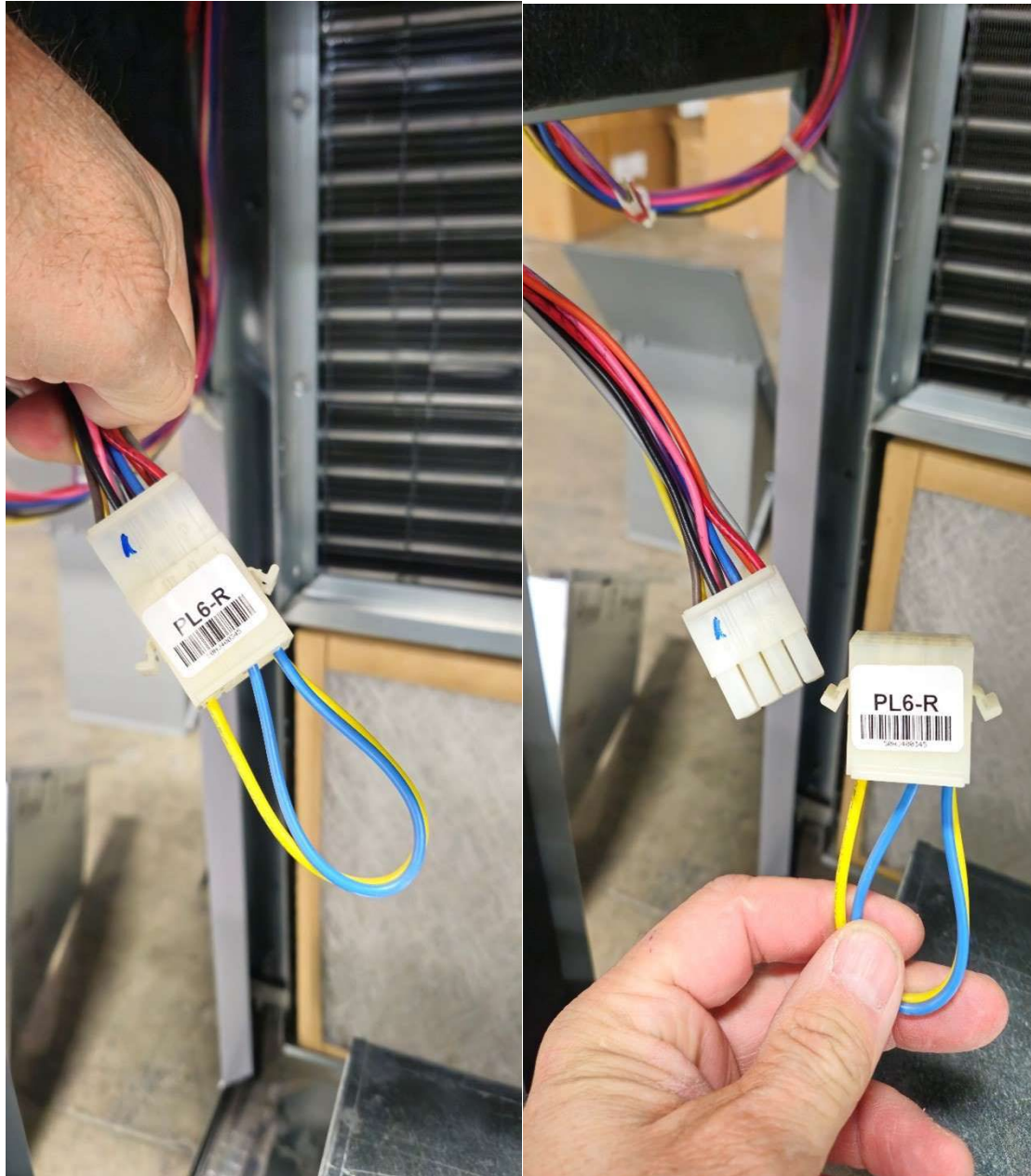
- 5) Install the OAT(outside air temperature) sensor to the front of the Economizer using the provided #8x3/4" self-drilling screws. Route the wires through the top black plug.



- 6) If the economizer will be using an enthalpy sensor (SENS-1001) in place of a temperature sensor, use the same screws and mount it to the front of the economizer in the same place. Refer to the wiring schematics on page 20 & 21 for wiring the sensor as either enthalpy or dry bulb .



- 7) In the Return Plenum, upper left corner, find & remove the 12 pin (square) jumper plug from the unit. Set this aside, do not throw away, if economizer is ever removed, this will be required.



- 8) Install the 12-pin connector from the wiring harness (WIRS-1001) and connect the sensor(s) and actuator to the harness. Refer to the wiring schematics on pages 13-19.

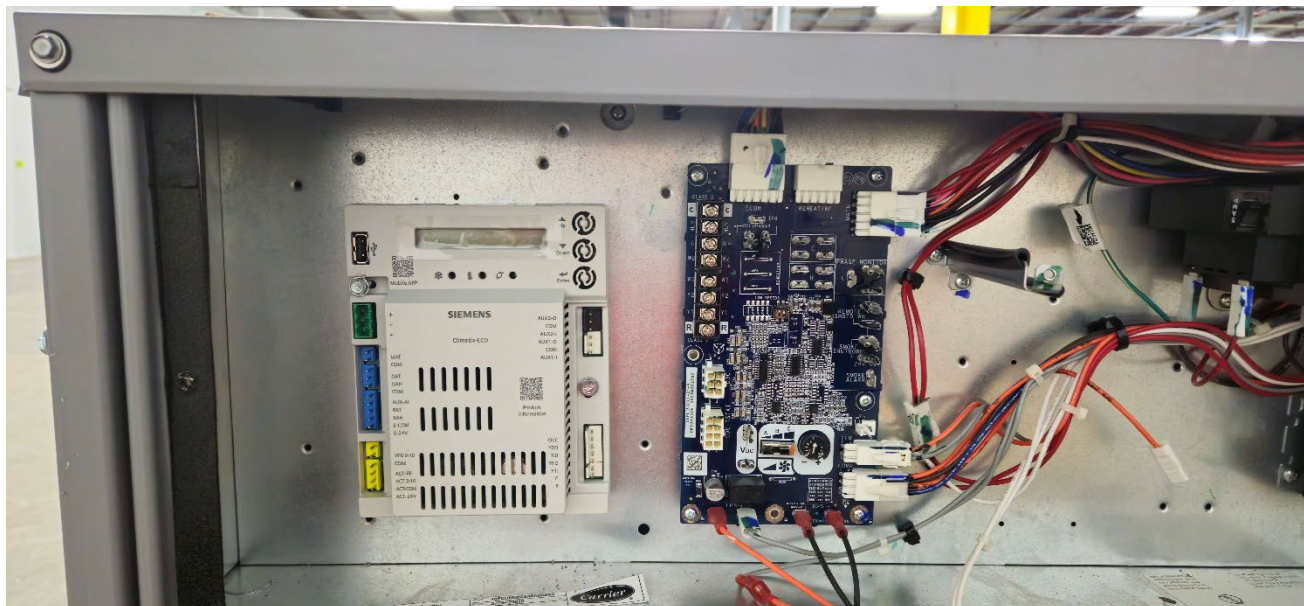
Controller Installation in control panel/blower section

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

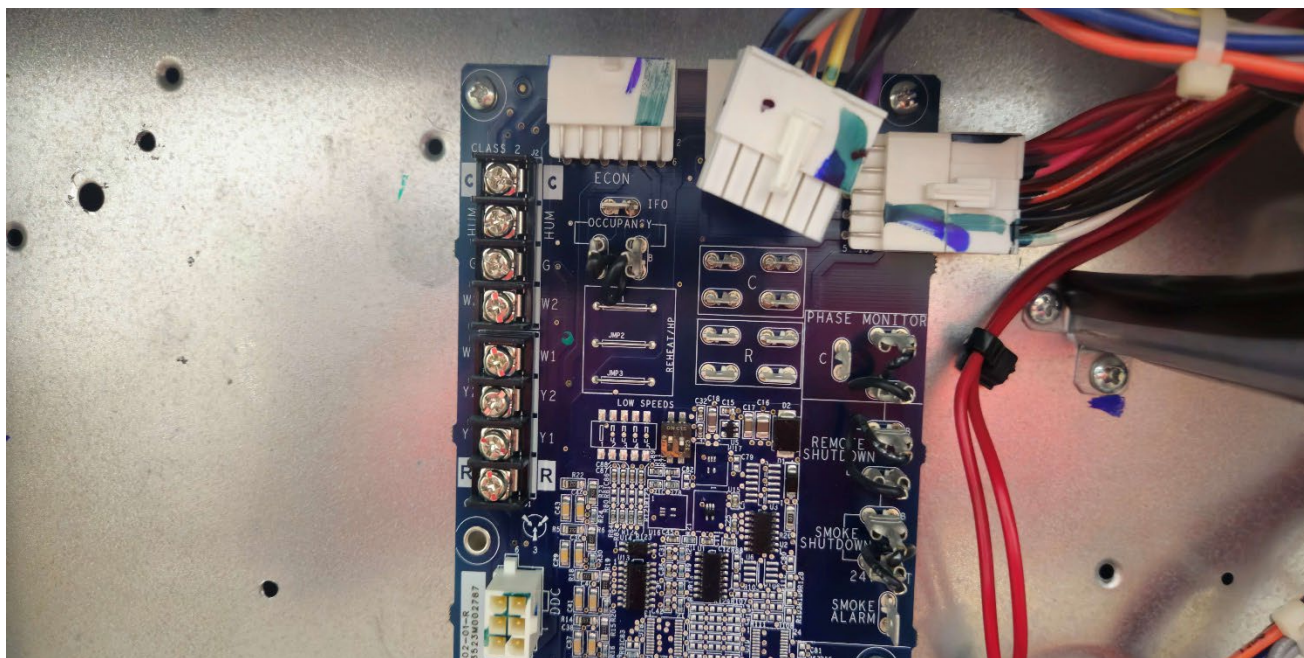


If your unit is using System Vu controls, please skip to step 16

10) In the Economizer packaging, remove the pre-wired Economizer Controller (CNTS-1000). Mount the controller to the left of UCB using the #8x1" screws and pre-punched holes (wiring harness not shown for clarity).



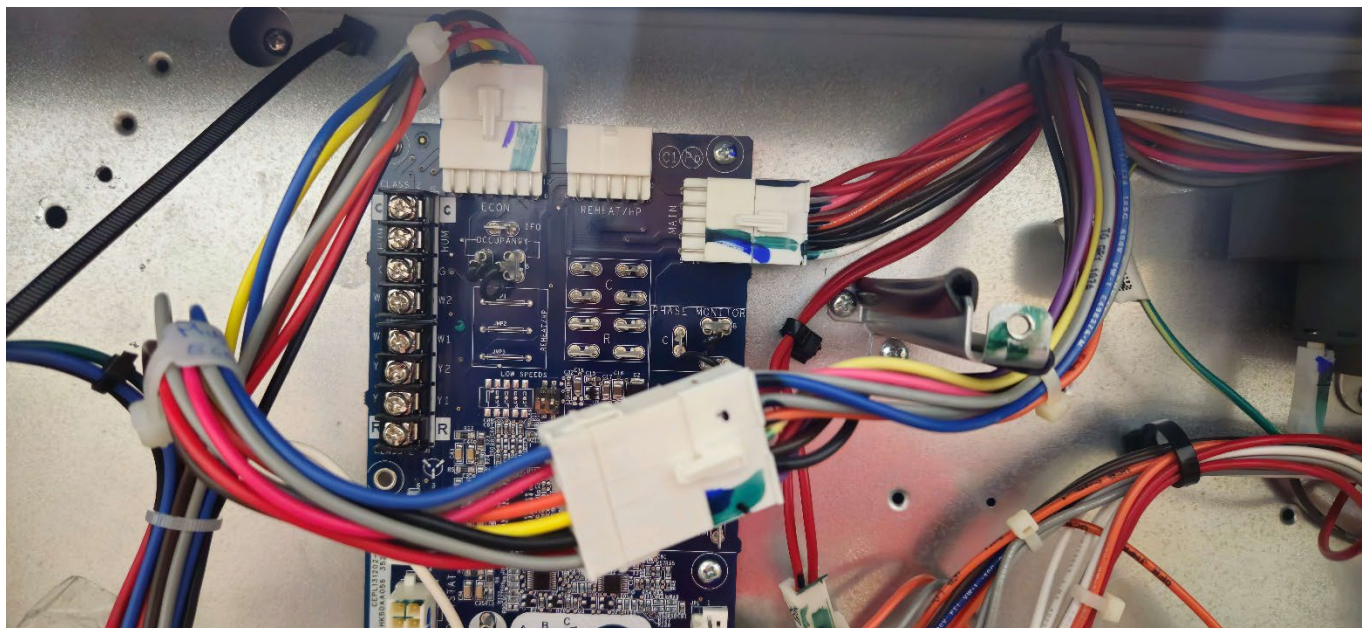
11) Unplug the 12-pin connector (female) that is connected to the UCB



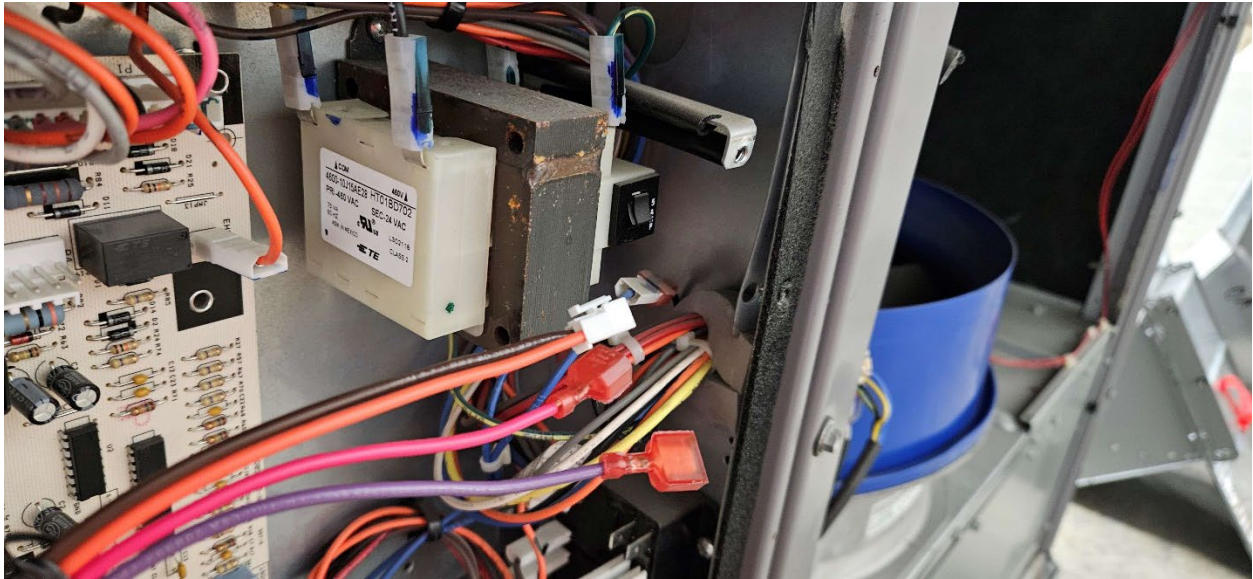
- 12) Install the 12-pin plug (female) from the provided Economizer wiring harness into the UCB board.



- 13) Insert the 12-pin connector you removed from the UCB and connect it to the 12-pin male connector on the supplied wiring harness.



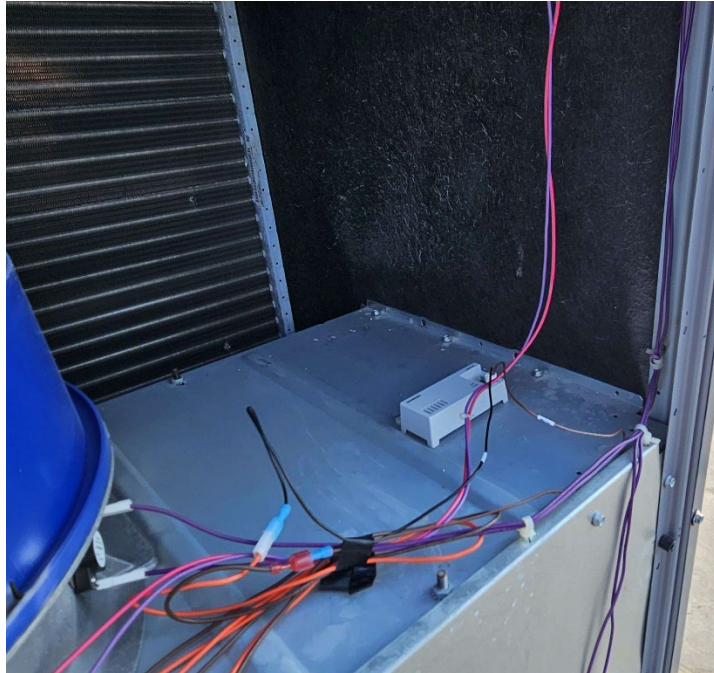
- 14) Route the 4 wires for the OAT (pink/purple)/MAT (brown/orange) that are connected to the controller through the divider panel between the control box and into the indoor blower section. Exact location of hole may differ from what's shown.



- 15) In the indoor blower section, connect the pink & violet wires to the wires bundled in the top right corner, this is the connection to the return plenum harness.



- 16) Next mount the MAT/SAT sensor to the fan deck using the using the provided #8x3/4" self-drilling screws through the pre punched holes (if available) and connect the orange and brown wires to the sensor whip. If using System Vu, please refer to your units' schematics for connections to the MAT/SAT.



- 17) Reinstall the indoor blower access panel removed in step 8.

- 18) For assembly of the OA hood, remove the shipping tape holding the center panel



- 19) Carefully rotated into place making sure not to scratch the hood, add the final 2 provided screws.



- 20) With the sensor(s) and actuator connected, the outside air hood can be installed on the unit using the provided screws and holes from the Indoor Coil Access Panel.

- 21) Once in place, the filter access panel can be reinstalled.

- 22) Install the filters by opening the clips on the inside of the OA hood and insert them into the bottom channel, rotate them into position and snap the clips shut.



- 23) Once all the sensors, actuator and UCB connections have been made, program the POL 224 controller per the Siemens Climatix Economizer Guide. Scan QR code, follow link and under Economizer Instructions and Controller Manuals choose the Siemens file.



- 24) After the controller is setup and all settings have been entered & tested, you can now reinstall the UCB cover and Control Box Panel.

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	OAH	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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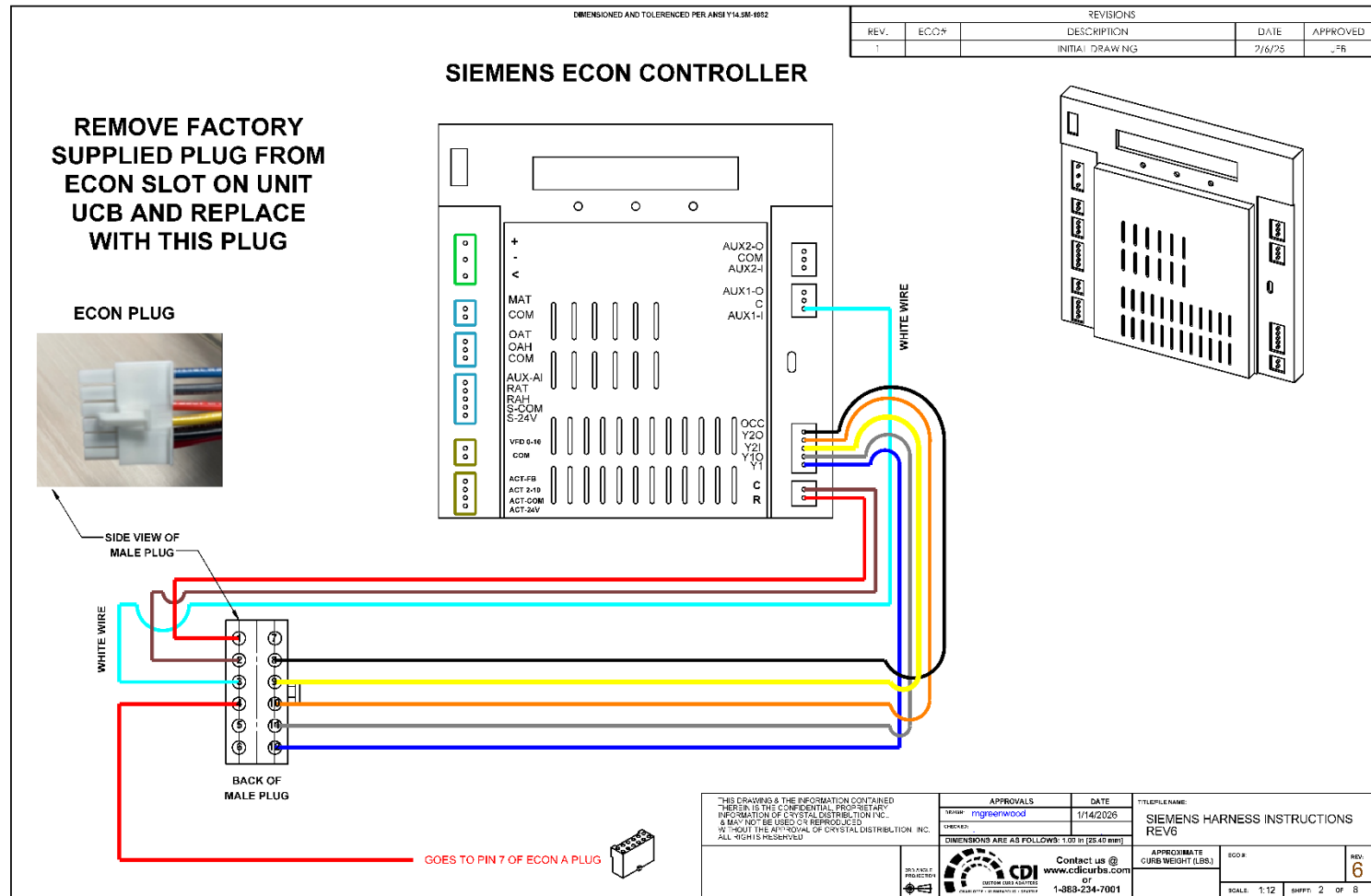
APPROVALS: **ingreenwood** DATE: 1/14/2028
 DESIGNED: **CDI**
 DIMENSIONS ARE AS FOLLOWS: 1.60 in (25.40 mm)

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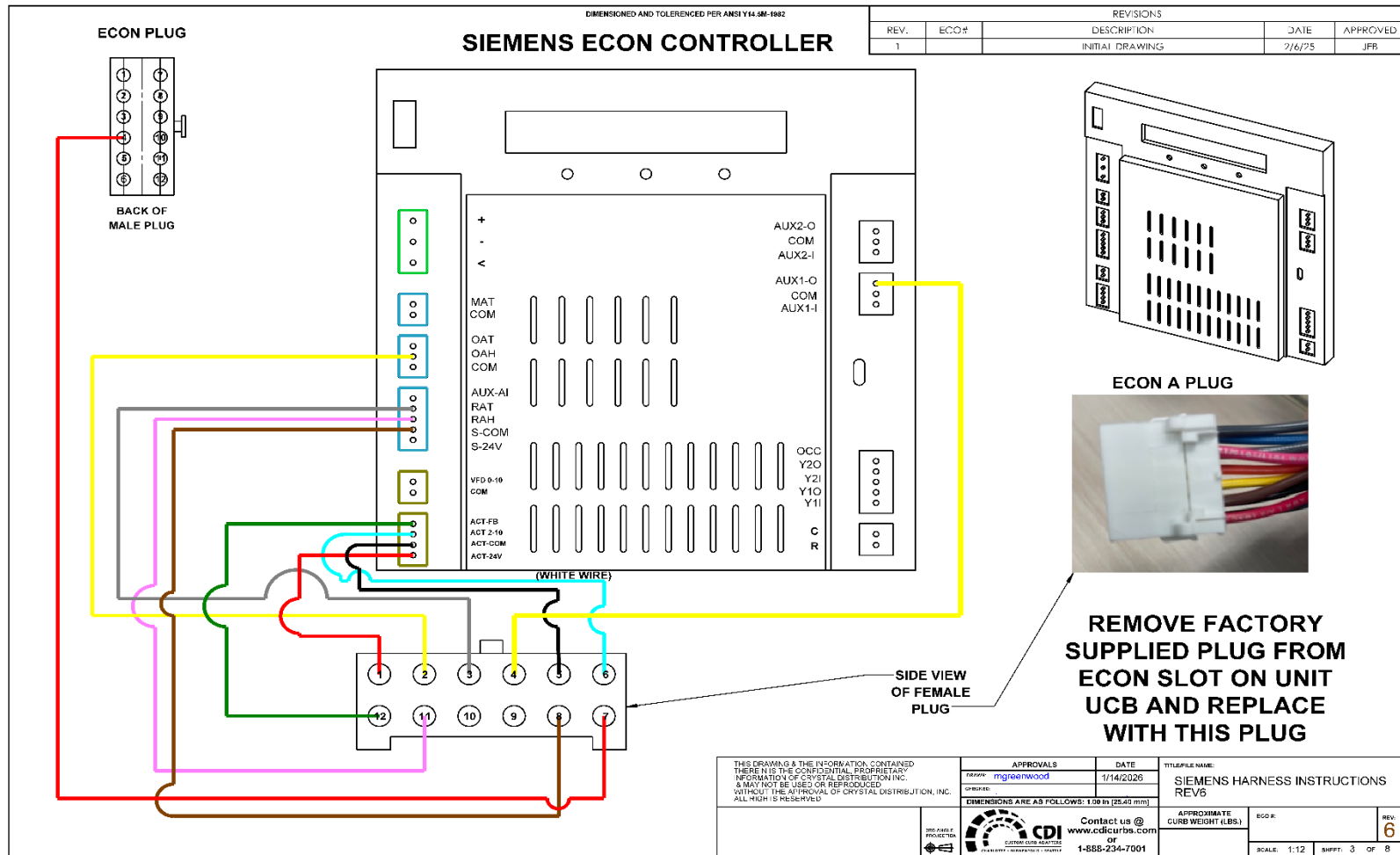
APPROXIMATE CORD WEIGHT: 8.65 LBS
 ECO: **6**
 SCALE: 1:12 SHEET: 1 OF 8

SIEMENS HARNESS INSTRUCTIONS REV6

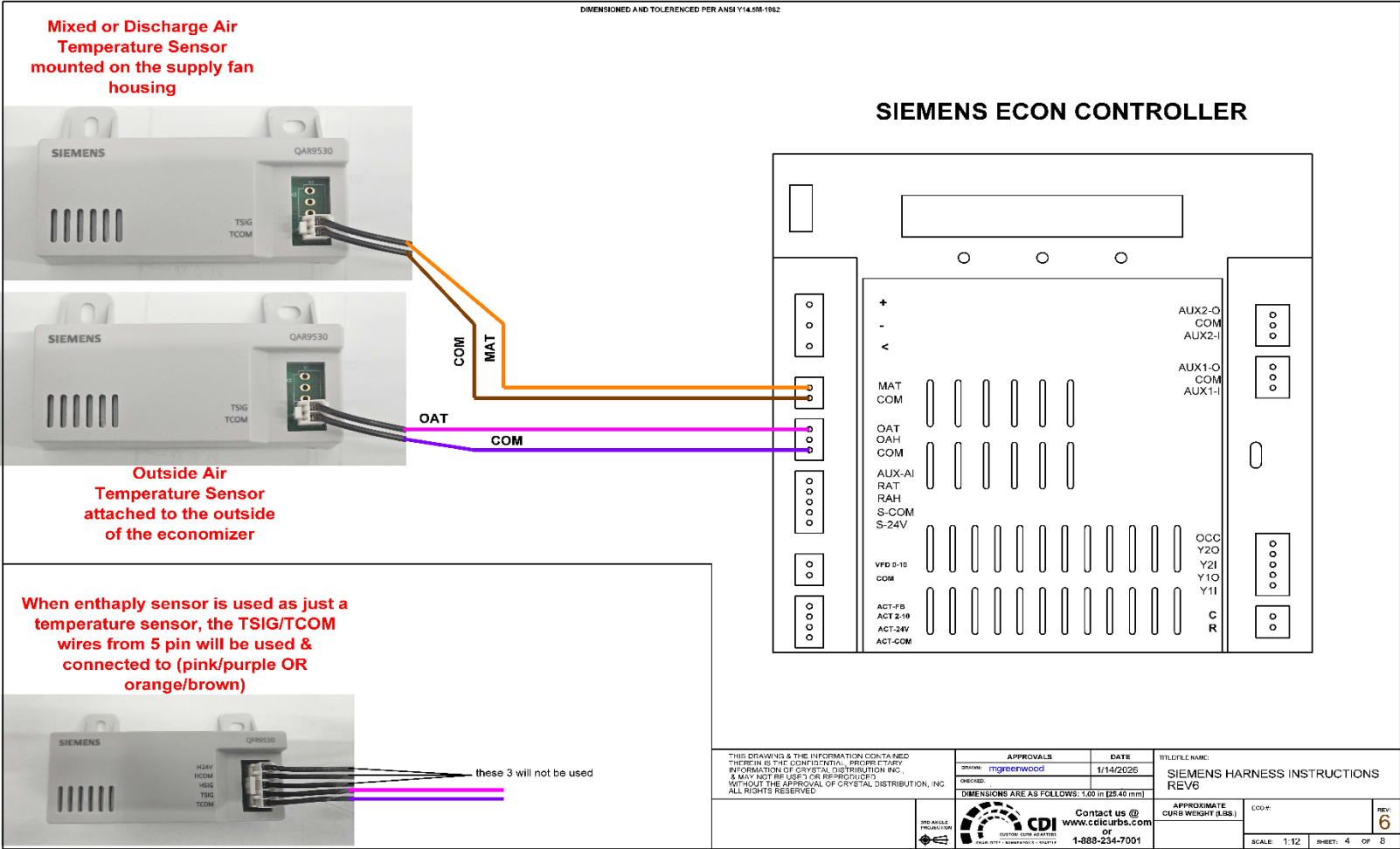
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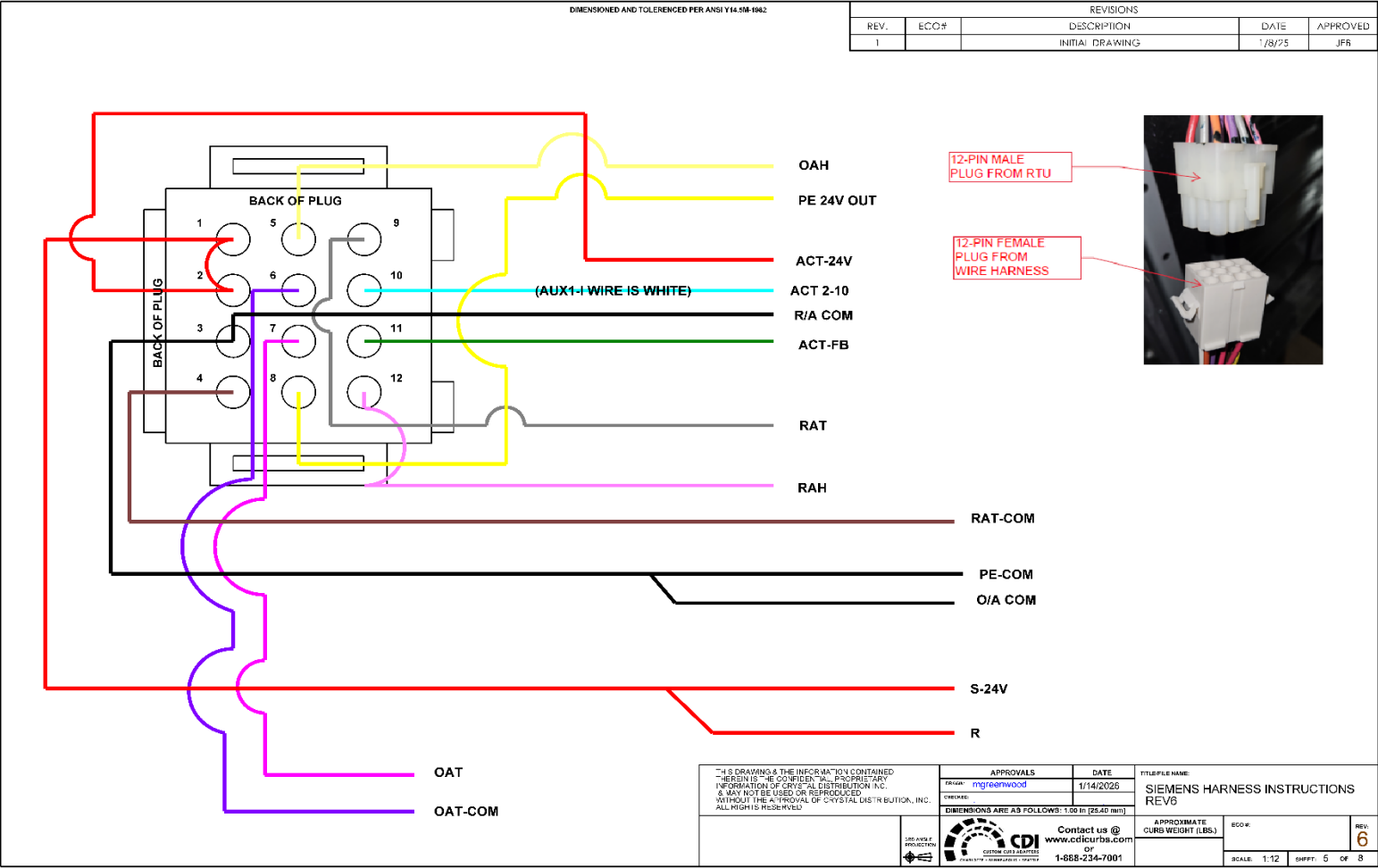
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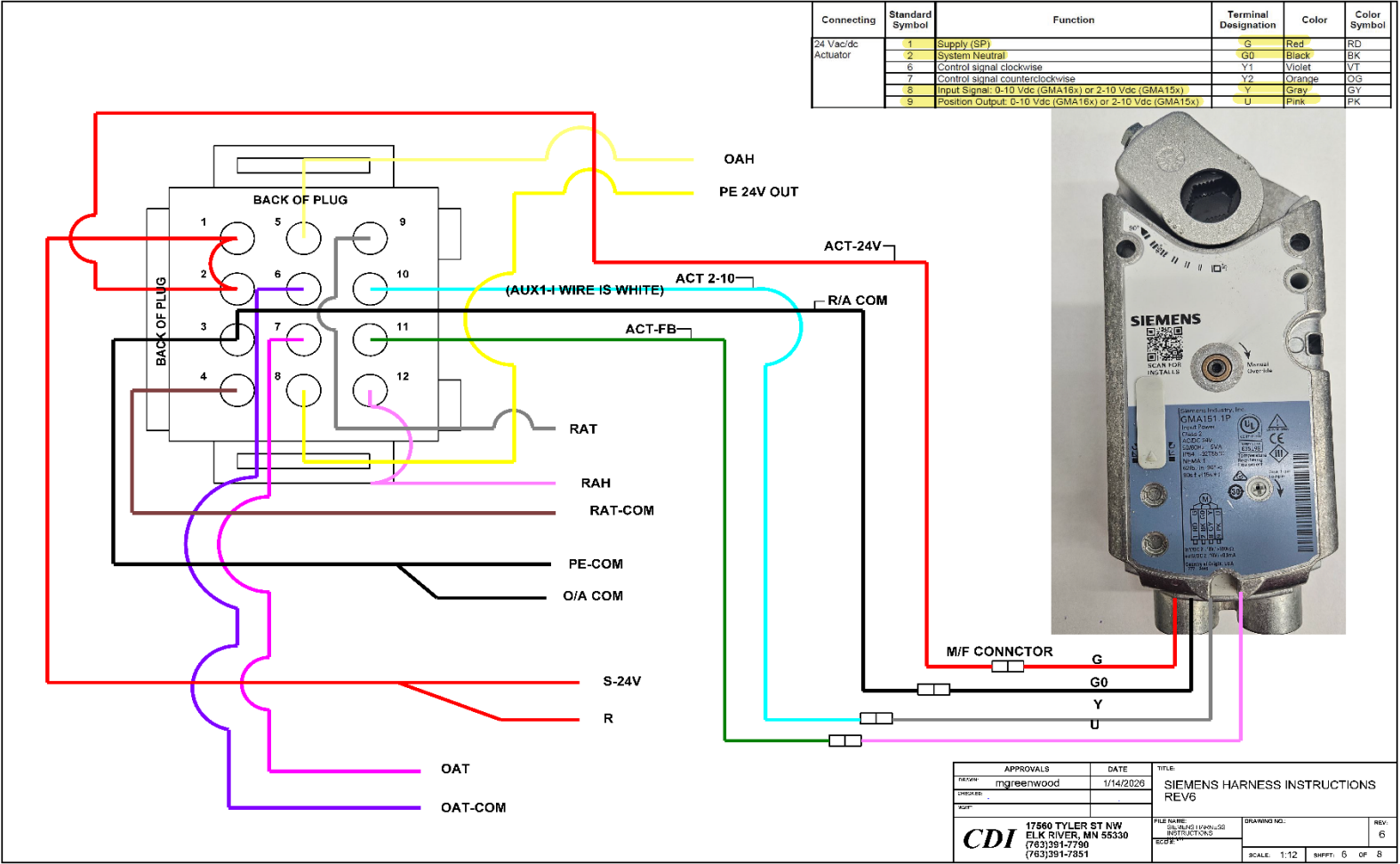
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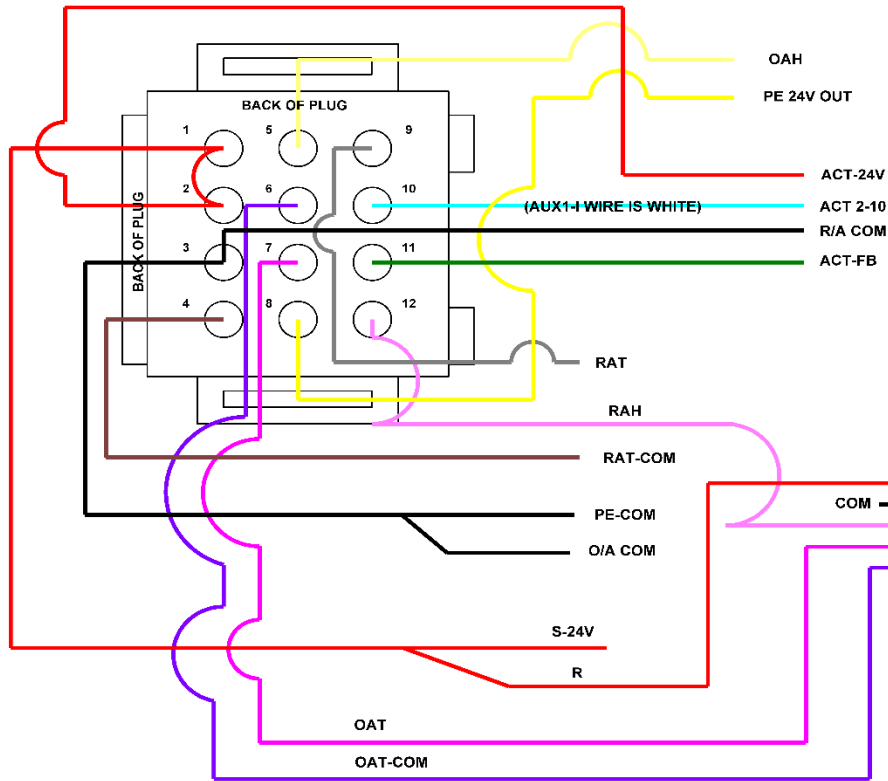


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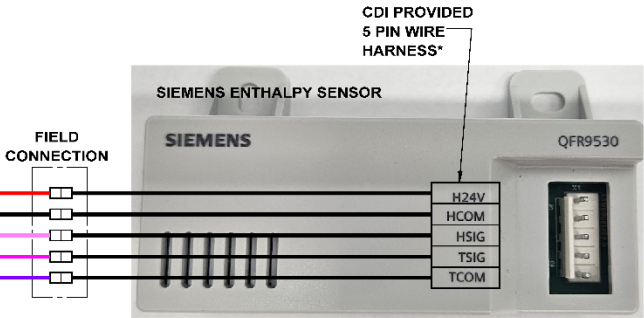


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OAT ENTHALPY SENSOR WIRING



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



APPROVALS		DATE	TITLE
DESIGN	mgreenwood	1/14/2026	SIEMENS HARNESS INSTRUCTIONS REV6
TESTED			
REVIEW			
CDI 17560 TYLER ST NW ELK RIVER, MN 55330 (763)391-7730 (763)391-7651		FILE NAME SIEMENS HARNESS INSTRUCTIONS REV6	DRAWING NO. REV: 6
		SCALE: 1:12	SHEET: 7 OF 8

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RAT 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**

The diagram illustrates the wiring for a RAT Enthalpy Sensor. It shows a 12-pin plug with terminals 1 through 12. The connections are as follows:

- Terminal 1:** OAH
- Terminal 2:** PE 24V OUT
- Terminal 3:** ACT-24V
- Terminal 4:** ACT 2-10 (AUX1-1 WIRE IS WHITE)
- Terminal 5:** R/A COM
- Terminal 6:** ACT-FB
- Terminal 7:** RAT
- Terminal 8:** RAH
- Terminal 9:** RAT-COM
- Terminal 10:** PE-COM
- Terminal 11:** S-24V
- Terminal 12:** R

The Siemens Enthalpy Sensor (QFR9530) has a 5-pin connector with the following labels:

- H24V
- HCOM
- HSIG
- TSIG
- TCOM

The CDI PROVIDED 5 PIN WIRE HARNESS* is connected to the sensor's 5-pin connector. The FIELD CONNECTION block is used to connect the sensor's 5-pin connector to the RAT-COM, PE-COM, S-24V, R, and OAT-COM wires.

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SCALE: 1:12 SHEET: 8 OF 8