



SUN ELECTRONIC SYSTEMS

**EC1X AUXILIARY OUTPUT GUIDE
062013**

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EC1X Auxiliary Output Application Guide 07/22/2013

The EC1X chamber has up to 5 open collector ON/OFF outputs that may be used to turn on external SSR's to power on/off user equipment.

Not all output are available. The chamber uses some of these outputs if there are any optional valves (line-purge, redundant, 2,3-tank, N2 gas purge) installed on chamber. Verify which options have been installed on your chamber (call Sun for assistance if necessary) and use the table below to choose witch outputs are available to use. Note: Outputs 0,1 and 7 are never available as they are used by the chamber's controller for HEAT,COOL, FAN respectively.

Output Number	Output Not Available if This Option Installed
2	Ambient blower (EC13HA, EC15HA, EC16HA)
3	Redundant Valve
4	N2 Gas Purge
5	2,3 tank LN2/LCO2
6	3 tank LCO2 or LN2 Line Purge

These outputs are accessed via the I/O board on the chamber. The I/O board is located on the firewall and may be accessed by separating the right side (control section) from the rest of the chamber by removing the sheet metal screws along the top and bottom (right side) of chamber. Once the screws have been removed, the control section can be slid away from the rest of the chamber exposing the I/O board.

Outputs #2 and #4 are the most easily accessible outputs on the I/O board. The pads are located on the I/O board and are labeled +(2), -(2) and +(4), -(4) respectively as can be seen from the photo below.

The '+' portion of the output pair is connected to a 270 ohm pull-up resistor on the motherboard and the '-' to an open-collector output on the motherboard. To use an output, simply solder a wire from the '+' pad and connect the other end to the '+' terminal of an external SSR. Then solder a wire to the '-' pad of the pair and connect the other end to the '-' terminal of the external SSR.

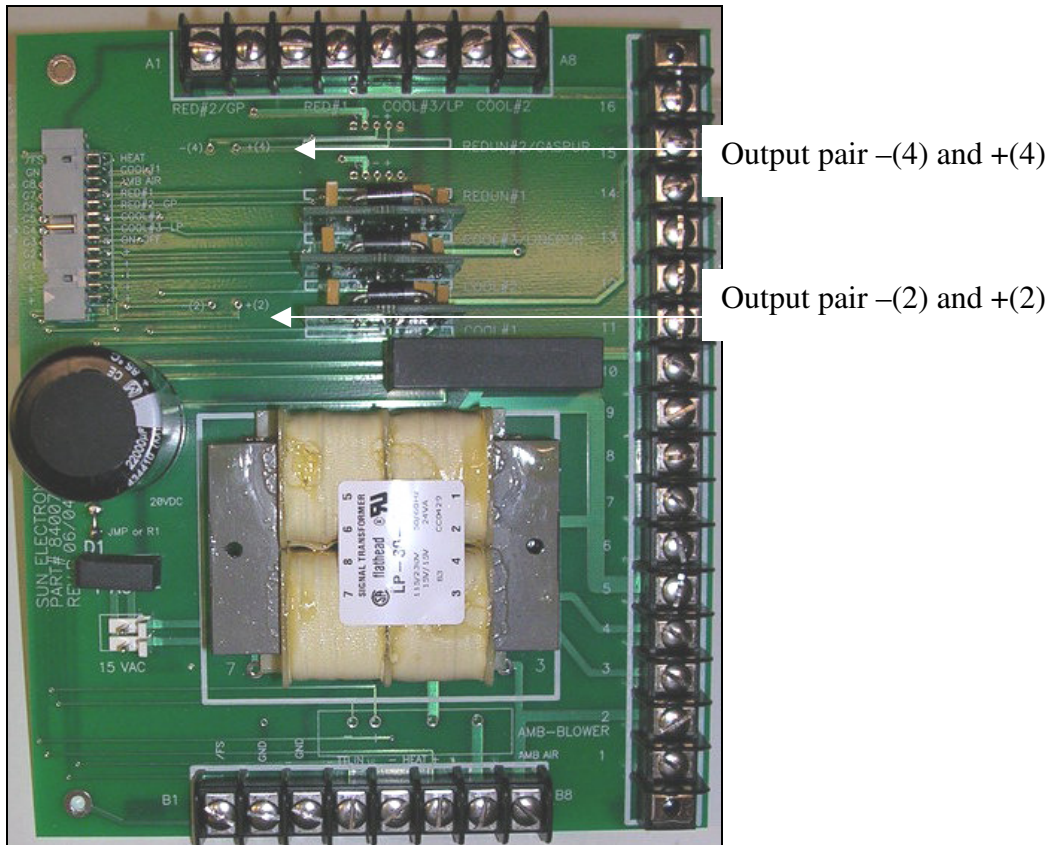
The outputs may then be turned on by issuing the OUT0: n, m;
where n is the output number and m is 1 (ON) or 0 (OFF).

So, for example, if using output 2 you would issue:

OUT0: 2,1 (to turn on the external relay connected to this output)

OUT0: 2,0 (to turn off the external relay connected to this output)

These commands may be issued from the front panel, inserted as a line in a local program (in EDIT mode) or sent remotely through either the RS232 or IEEE-488 (GPIB) interface.



An example using the OUT command in a Local Program stored in location 0:

EDIT 0

OUT0: 2,1 (turn on external relay connected to output 2)

RAIT = 10 (ramp at 10C/min)

WAIT = 30

SET = 100C (soak for 30 min at 100C)

WAIT = 30

SET = -50C (soak for 30 min at -50C)

WAIT = 5

SET = 25 (return to ambient)

OUT0: 2,0 (turn off external relay)

END

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