Overview

After a Flō unit is installed on a customer site, the outdoor air damper and supply fan must be configured to ensure the unit's airflow and make-up air requirements are achieved. The Flō i-Controller is equipped with an "Air Balancing Mode" that automatically places the dampers in the positions required to complete a simple balancing process. This document describes the two i-Controller "Air Balancing Mode" procedures and controller navigation.

Navigating to the Air Balancing Mode Screen

1. On the Main Menu of the Visograph, while holding button **7**, press button **1** to access the Field Tech Menu.

2. In the Field Tech Menu, press **2. Test Modes**, then **1. Air Balancing Mode** to access the Air Balance Mode screen.
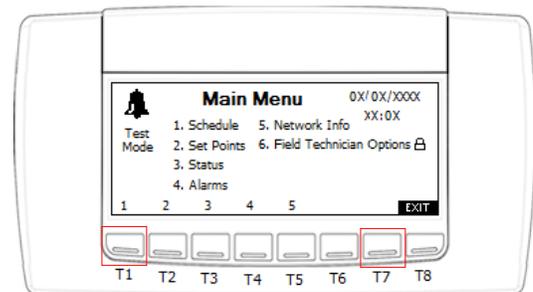

Figure 1. i-Controller Main Menu

Supply Fan Balance Mode

When Supply Fan Balance Mode is enabled, the dampers will move to positions to allow for VFD configuration of the specified total air flow. The Outdoor Air Damper (OAD) is set to 0%, the Return Air Damper (RAD) is set to 100%, and the Bypass Air Damper (BAD) is set to Min% (Default 30%). These damper positions can be overridden from this screen, if necessary.

1. Enable Supply Fan Balance Mode by using the [icon] to highlight the OFF value, press [ENTER] (*the value will begin to flash*). Press the [icon] to turn the mode ON.

2. Using the [icon], [icon] and [ENTER] button, adjust the OAD, RAD, and BAD Override Values as necessary.

3. Adjusting the Supply Fan on the VFD

   a. Measure Current Supply CFM. If good go to step 3. If you need to adjust CFM continue with steps b-h.
   b. Pull SF-R1 (Supply fan Relay).
   c. Wait until the fan ramps down.
   d. Use the DOWN ARROW key to navigate to drive parameters. The drive will show either PAR (J1000 or V1000) or Programming (A1000 or Z1000). Press the ENTER key once. The first parameter shown is A1-01, and the "A" will be flashing. Use the UP-ARROW key to change the "A" to "H." Press the RIGHT ARROW/RESET key to select the number next to "H."
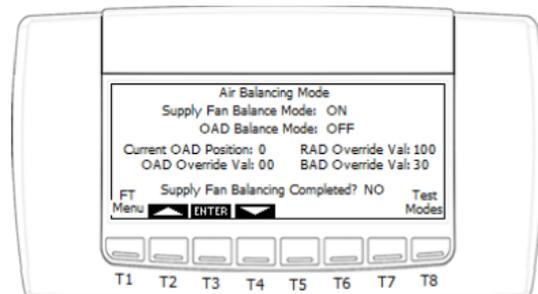

Figure 2. i-Controller Air Balance Mode - Supply Fan

Change the now flashing "1" to "3." Press the RIGHT ARROW/RESET key once again, and the "0" will be flashing. Leave the "0" as is. Press the RIGHT ARROW/RESET key for the final time, and the "1" will be flashing. Using the UP ARROW key, change the "1" to "3". H3-03 should be displayed on the screen. Press the ENTER key.

e. H3-03 Upper Limit Frequency (100%=60Hz See chart in Figure 3 for Reference)

f. Press ENTER key to save the changes. Use the ESC key to return to the display that shows the operating drive frequency

g. Reinstall SF-R1. If the CFM is correct now go to step h. If speed still not right do step b-g again.

h. Once the VFD has been set, scroll to the "Supply Fan Balancing Completed?" question and change the value to YES. The Supply Fan Balance Mode will be turned OFF, and the OAD Balance Mode will turn ON.

YASKAWA VFD UPPER LIMIT FREQUENCY REFERENCE

Hertz Setting	Speed %	Hertz Setting	Speed %	Hertz Setting	Speed %
60	100.0	46	76.7	32	53.3
59	98.3	45	75.0	31	51.7
58	96.7	44	73.3	30	50.0
57	95.0	43	71.7	29	48.3
56	93.3	42	70.0	28	46.7
55	91.7	41	68.3	27	45.0
54	90.0	40	66.7	26	43.3
53	88.3	39	65.0	25	41.7
52	86.7	38	63.3	24	40.0
51	85.0	37	61.7	23	38.3
50	83.3	36	60.0	22	36.7
49	81.7	35	58.3	21	35.0
48	80.0	34	56.7	20	33.3
47	78.3	33	55.0		

Figure 3. VFD Upper Limit Frequency Reference

Outdoor Air Damper (OAD) Balance Mode

When OAD Balance Mode is enabled, the RAD is set to the maximum cooling position, and the BAD is set to its minimum position. The OAD position can then be adjusted to set the specified outdoor air flow.

1. Turn OAD Balance Mode ON (*if not already activated*).

2. Using the ▭, ▭ keys and ENTER button, adjust the OAD Input Val until the desired outdoor air flow is achieved.

3. Once the OAD position is set, scroll to the "OAD Balancing Completed?" question and change the value to YES. The OAD Input Val will be saved as the maximum operating OAD position, and the unit will revert to normal operation.
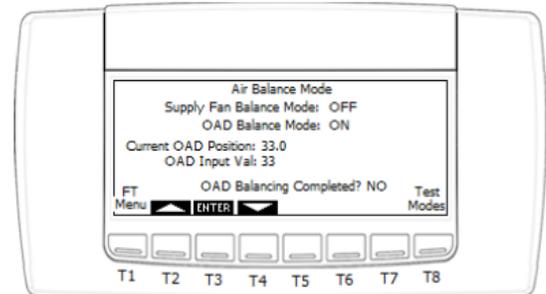
Figure 4. i-Controller Air Balance Mode - OAD

Note: If equipped with CO2 sensor is below the Min CO2 level (Default 800ppm) the Incremental CO2 OAD Position% (Default 20%) will be subtracted from the OAD Input value. If CO2 is above the Max CO2 level (Default 1000ppm) the OAD will be at the OAD Input Value that was set. The Incremental CO2 OAD Position% will be added incrementally to the current OAD position on a linear scale as the CO2 level increases from Min CO2 Level (Default 800ppm) to Max CO2 Level (Default 1000ppm).