Error Codes

Error #: Cause: *Indication Recovery Action*

ERR0: Firmware revision mismatch.
Get updated software for the VAV Box controller or replace the Balancing Sensor with an updated version.

ERR1: Commissioning Session locked – unable to enter Balancing Mode because another tool/session is currently active.
Check to see if a commissioning session has already been started via the FX-PCT tool, or on another Balancing Sensor.

ERR2: Communication error on SA Bus
Check the cables and connections between Balancing Sensor and the VAV Box controller.

ERR3: Control Sequence is currently disabled.
Re-enable the Control Sequence from FX-PCT.

ERR4: Another operation (Auto Calibration or Gain Calculation) is currently being performed in the Balancer Primitive.
Wait for the other operation to complete, and retry the desired operation. It may take a couple minutes to complete.

ERR5: No flow override has been selected
You must select a Flow Setpoint Override. Then allow the flow to settle (watch the value displayed on the Balancing Sensor), and then retry calculating the gain.

ERR6: Flow reading is unreliable.
The DP sensor is giving an unreliable value. Check connections/integrity of the pneumatic tubing, and check the pickup tubes for a possible obstruction.

ERR7: Value out of range
Slightly increase or decrease the value.

ERR8: Auto Calibration Timed Out
Check all stroke time settings.

ERRx: Unknown Application Error
Reboot the VAV Box controller. If the problem persists, get updated software for the VAV Box controller, or replace the Balancing Sensor with an updated version.

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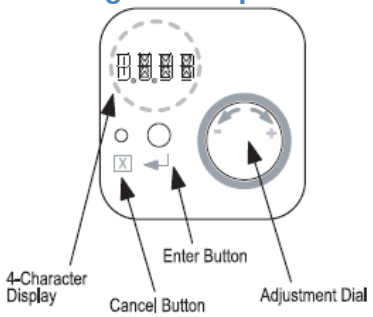
Balancing Mode Operation



To start balancing:

Assure proper connection. Press the Enter and the Cancel buttons simultaneously for 5 seconds until the word BUSY *appears. The VAV Box controller's FC Bus address appears.*

General Operation

The display shows the operating parameters and/or the values for parameters.

- The large Enter button allows you to enter a selection.
- The small Cancel button causes the present selection to be canceled**.**

The adjustment dial changes a selection or varies an input parameter.

Operation (continued)

Upon entering the balancing mode of operation, the address of the VAV Box controller's Field Bus connection appears.

The Balancing Sensor presents the correct balancing functions and reacts to the use of the Enter and Cancel buttons depending on the configuration of the connected VAV Box controller. Upon pressing either button the next logical balancing menu item automatically appears. You may not need to use the Dial to select the next command or state.

The Balancing Sensor automatically cancels the balancing mode if no user input is provided for a default period of 60 minutes. Manual exiting of the balancing mode can be done either by selecting Exit command(s) or by pressing and holding the large and the small buttons simultaneously for 5 seconds.

The backlighting stays on continuously while in the balancing mode.

For longer operations like Auto Calibration, the word BUSY appears. Do not press any buttons during this time.

We recommend that you exit the balance mode before removing power. This returns the VAV Box controller to normal operation. Otherwise a delay may result if you choose to resume the balancing mode.

VAV Balancing Sensor User Guide

Part No. 24-10159-13, Rev. A

For Models

FX-ATV7003-0 Handheld portable
NS-ATV7001-0 Surface mount with phone jack
NS-ATV7002-0 Surface mount with terminal block
NS-BTV7001-0 Wallbox mount with phone jack
NS-BTV7002-0 Wallbox mount with terminal block

INSTALLATION

For permanent mounting, see the Network Sensor Installation instructions P/N 24-10094-9 for the surface mount models and P/N 24-10094-25 for the wall box mount models.

For handheld, portable unit, plug one end of coiled cable into the modular jack on the balancing unit. Plug the other end of the coiled cable into the wall mounted Network Sensor associated with the controller to be balanced.

SINGLE DUCT – supply/exhaust

Address appears

Dial to Balance Mode [BAL] and press enter.

Supply Duct [SPLY], press enter.

dP Offset [dPO]	00.00 – 99.99
Auto Calibrate dP [ACAL]	No [NO]
	Yes [YES]
Flow Setpoint Override [FLSP]	None [NONE]
	Cooling Max [CMAX]
	Cooling Min [CMIN]
	Heating [Htg]
	Closed [OFF]
Actual Flow [FLOW]	0001 – 9999
Box Gain – K Factor [K]	0.001 – 9.999

Dial Exit and press enter.
[EXIT]

Exhaust Duct [EXH], press enter.

dP Offset [dPO]	00.00 – 99.99
Auto Calibrate dP [ACAL]	No [NO]
	Yes [YES]
Flow Setpoint Override [FLSP]	None [NONE]
	[NONE]
	Cooling Max [CMAX]
	Cooling Min [CMIN]
	Heating [Htg]
	Closed [OFF]
Actual Flow [FLOW]	0001 – 9999
Pickup Gain – K Factor [K]	0.001 – 9.999

Dial Exit and press enter.
[EXIT]

Dial Exit and press enter.
[EXIT]

Dial in selection or value and press Enter
OR
Accept selection or value presented by pressing Enter.
Use the Cancel button to back up to the last display.

SINGLE DUCT – supply/exhaust

Dial to Parameter Mode [PARM] and press Enter.

Flow Setpoints [FLSP], press Enter.

Cooling Max Flow [CMAX]	0001 – 9999
Cooling Min Flow [CMIN]	0000 – 9999
Heating Flow [Htg]	0000 – 9999
Differential Flow [dIFF]	-999 to 999

Dial Exit and press Enter.
[EXIT]

Supply Duct [SPLY], press Enter.

Box Area [AREA]	0.001 – 9.999
Pickup Gain – K Factor [K]	0.001 – 9.999
dP Offset [dPO]	00.00 – 99.99

Dial Exit and press Enter.
[EXIT]

Exhaust Duct [EXH], press Enter.

Box Area [AREA]	0.001 – 9.999
Pickup Gain – K Factor [K]	0.001 – 9.999
dP Offset [dPO]	00.00 – 99.99

Dial Exit and press Enter. [EXIT]

Dial Exit and press Enter. [EXIT]

Dial Exit (balance mode) and press Enter. [EXIT]

DUAL DUCT – supply/exhaust

Address appears

Dial to Balance Mode [BAL] and press Enter.

Cold Duct [Cd], press Enter.

dP Offset [dPO]	00.00 – 99.99
Auto Calibrate dP [ACAL]	No [NO]
	Yes [YES]
Flow Setpoint Override [FLSP]	None [NONE]
	Max [CMAX]
	Min [CMIN]
	Closed [OFF]
Actual Flow [FLOW]	0001 – 9999
Box Gain – K Factor [K]	0.001 – 9.999

Dial Exit and press Enter.
[EXIT]

Hot Duct [Hd], press Enter.

dP Offset [dPO]	00.00 – 99.99
Auto Calibrate dP [ACAL]	No [NO]
	Yes [YES]
Flow Setpoint Override [FLSP]	None [NONE]
	Max [HMAX]
	Min [HMIN]
	Closed [OFF]
Actual Flow [FLOW]	0001 – 9999
Box Gain – K Factor [K]	0.001 – 9.999

Dial Exit and press Enter.
[EXIT]

Exhaust Duct [EXH], press Enter.

dP Offset [dPO]	00.00 – 99.99
Auto Calibrate dP [ACAL]	No [NO]
	Yes [YES]
Flow Setpoint Override [FLSP]	None [NONE]
	Cooling Max [CMAX]
	Cooling Min [CMIN]
	Heating Max [HMAX]
	Heating Min [HMIN]
	Closed [OFF]

DUAL DUCT – supply/exhaust

(Continued)

Actual Flow [FLOW]	0001 – 9999
Pickup Gain – K Factor [K]	0.001 – 9.999

Dial Exit and press Enter.
[EXIT]

Dial Exit and press Enter. [EXIT]

Dial to Parameter Mode [PARM] and press Enter.

Flow Setpoints [FLSP], press Enter.

Cooling Max Flow [CMAX]	0001 – 9999
Cooling Min Flow [CMIN]	0000 – 9999
Heating Max Flow [HMAX]	0001 – 9999
Heating Min Flow [HMIN]	0000 – 9999
Differential Flow [dIFF]	-999 to 999

Dial Exit and press Enter.
[EXIT]

Cold Duct [Cd], press Enter.

Box Area [AREA]	0.001 – 9.999
Pickup Gain – K Factor [K]	0.001 – 9.999
dP Offset [dPO]	00.00 – 99.99

Dial Exit and press Enter.
[EXIT]

Hot Duct [Hd], press Enter.

Box Area [AREA]	0.001 – 9.999
Pickup Gain – K Factor [K]	0.001 – 9.999
dP Offset [dPO]	00.00 – 99.99

Dial Exit and press Enter.
[EXIT]

Exhaust Duct [EXH], press Enter.

Box Area [AREA]	0.001 – 9.999
Pickup Gain – K Factor [K]	0.001 – 9.999
dP Offset [dPO]	00.00 – 99.99

Dial Exit and press Enter.
[EXIT]

Dial Exit and press Enter.
[EXIT]

Dial Exit (balance mode) and press Enter.
[EXIT]