

AD-1272 Advanced Thermal Dispersion Probe Airflow Measuring System

Technical Bulletin
AD-1272

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AD-1272 Advanced Thermal Dispersion Probe Airflow Measuring System

Technical Bulletin

Document Introduction

This document describes the AD-1272 Advanced Thermal Dispersion Probe Airflow Measuring System's features and functions. It also provides guidelines and instructions for setting up and troubleshooting these devices used in plenum and duct applications.

Navigating the Start-Up Menu

After installing the AD-1272 Airflow Measuring System, power on the unit. Menu options appear on the front panel LCD display of the primary transmitter and are replicated on the Remote Display (see Figure 1). The LCD display has a 16-character per line, 2-line display.

Figure 1: Front Panel LCD Display of Primary and Wired Remote AD-1272 Transmitter (Left) and Wireless Remote Display (Right)



When the device is first powered on, the display boot screen indicates the firmware version.

Figure 2: Firmware Version



After 5 seconds, the display indicates the number of active probes and sensors. This example indicates one active probe and four total sensors.

Figure 3: Active Probes and Sensors Screen



Note: When the Primary Transmitter with Display is located remotely, the AD-1272 counts the Primary Transmitter as an additional probe. This will cause the number of probes to be shown as one greater than the number of ancillary probes.

After another 5 seconds, the display indicates that the unit is warming up.

Figure 4: Unit is Warming Up Screen



Normal Operation

The normal operation screens display the average temperature and average velocity or volume in the units selected.

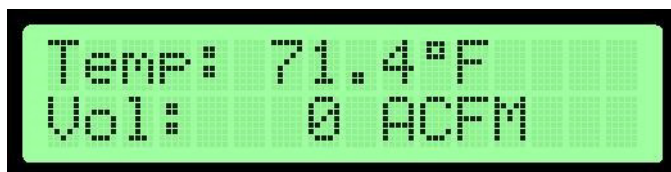
When the display is configured for the International System of Units (SI), the display shows the temperature in Celsius and the average velocity in meters per second or the volume as liters per minute. See Table 3 for the available units.

Figure 5: Average Temperature and Velocity Screen



When the display is configured for Imperial, the display shows the temperature in Fahrenheit and the average velocity in Actual Cubic Feet per Minute. See Table 3 for the available units.

Figure 6: Imperial Temperature and Volume Screen



Note: An asterisk (*) appears on the top left corner of the display if the number of sensors has changed during normal operation mode.

Configuration

The onboard microprocessor in the AD-1272 primary transmitter allows for system configuration, operating parameter selection, analog output configuration, and display filtering.

Note: Each primary and ancillary probe automatically reports temperature and flow based on the number of installed sensors (1 through 8) per probe.

Verify configuration and change editable parameters, within defined ranges, in the configuration mode.

Membrane Pushbuttons

You can use the five membrane pushbuttons (MENU, ESC, UP, DOWN, and ENTER) on the front panel display cover to interface with the AD-1272 primary transmitter.

Note: When in Normal Operation Display Mode the second line can be too long to display everything at once. When this occurs, the display will flash between the value and the unit.

Figure 7: Membrane Pushbuttons



Navigating the Menu Options

The left arrow (→) symbol appears on the left side of the currently selected menu, submenu, or option. Press ENTER to access the selected option.

Figure 8: Menu Option Selection Screen



The up and down arrow (↑) symbol on line two of the display indicates that the selected digit or character can be changed one character or digit at a time. The character or digit blinks when selected.

Figure 9: Adjusting Digits Screen



Press the UP or DOWN buttons to scroll through the available menu and submenu options.

Press ESC to return to the previous menu without making updates to the currently selected option. Press ESC from the Operator or Supervisor Menu to return to normal operation mode.

Press MENU at any time to return to the normal operation mode.

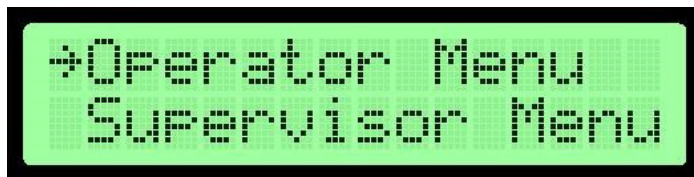
To enter numerical values into a submenu selection option, enter the digits one at a time beginning with the leftmost digit. Press UP or DOWN to scroll through the numbers 0 through 9. When the correct value is displayed, press ENTER. The cursor automatically moves to the next position. If an error is made after pressing ENTER, press ESC to return to the previous digit.

Navigating the Operator Menu

The Operator Menu allows you to view, set, or change system parameters. System configuration setup in the Operator Menu may be required when connected to a building automation system.

1. During normal operation when the LCD screen displays the average temperature and average velocity or volume, press **MENU** and **UP or DOWN** until the arrow is next to Operator Menu.

Figure 10: Selecting Operator Menu Screen



2. Press **ENTER** to enter the Operator Menu submenu options.
 - a. If the Operator PIN is enabled, the LCD screen displays the following message:

Figure 11: Entering Operating PIN Screen



- (1) Enter the 4-digit PIN to access the Operator Menu. PIN entry is made one digit at a time beginning with the leftmost digit. Press **UP or DOWN** to scroll through the numbers 0 through 9.
- (2) When the correct number is displayed, press **ENTER** to select the digit. The cursor automatically moves to the next position. If an error is made after you press ENTER, press ESC to go back and change the digit.

Note: If the PIN is not correctly entered, the display returns to normal operation.

Note: If you misplace your pin, contact JCI technical support.

- b. If the Operator PIN is not enabled, the Operator Menu selections display.

Note: See *Enable, Disable, and Change the Operator PIN* for more information about enabling the PIN.

3. Press **UP or DOWN** to scroll through the available menu selections. See Table 1 for a list of Operator Menu submenus and their descriptions.

Note: Each Operator Menu submenu has submenu selections to access the configurable options.

Table 1: Operator Menu Submenus

| Operator Menu Submenus (Actual Display Name) | Submenu Description |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Enable Operator PIN (Enable Oper PIN) | Allows user to select a PIN to access the Operator Menu and prevents unauthorized access of the Operator Menu. |
| Change Operator PIN (Change Oper PIN) | Allows user to change the Operator Menu PIN. |

Table 1: Operator Menu Submenus

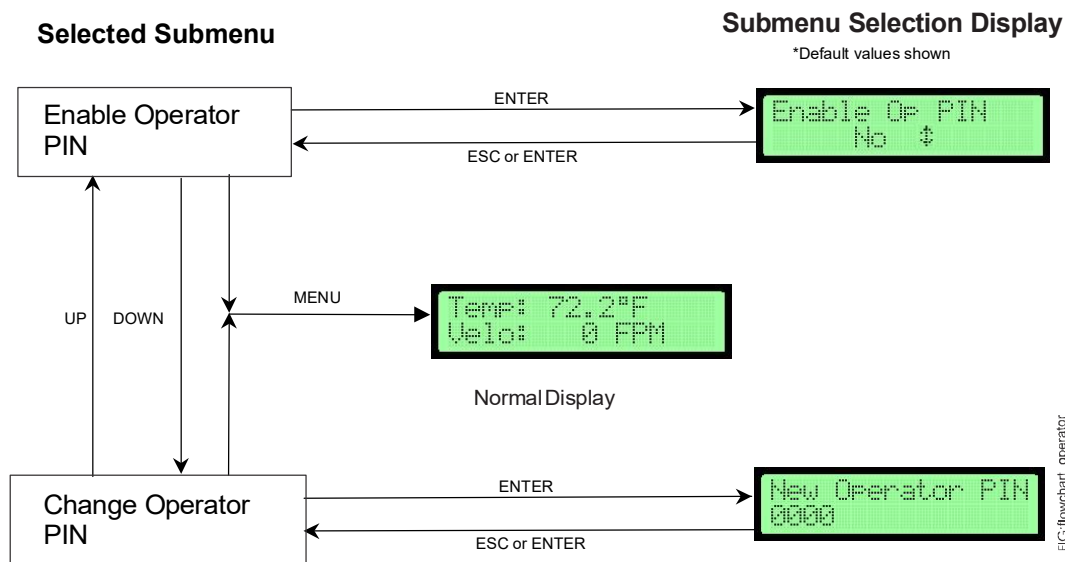
| Operator Menu Submenus (Actual Display Name) | Submenu Description |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flow Configuration (Flow Config) | Configures system variables including duct size and shape, elevation, process type, and process maximum/units. |
| Display Configuration (Display Config) | Selects LCD display parameters. |
| Analog Output 1 Parameters (Output 1 Param) | Selects Analog Output 1 parameters including temperature, flow, or none. |
| Analog Output 2 Parameters (Output 2 Param) | Selects Analog Output 2 parameters including temperature, flow, or none. |
| Temperature Low Pass Filter (Temp LPF) | Selects the amount of filtering applied to the analog output for temperature. |
| Flow Low Pass Filter (Flow LPF) | Selects the amount of filtering applied to the analog output for flow. |
| Analog Output Calibration (Output Cal Menu) | Adjusts the span for the analog outputs. |
| Temperature Balance Menu (Temp Bal Config) | Selects an offset to apply to the reported average temperature including front panel display, BACnet®, and Analog Outputs 1 and 2. |
| K-Factor Configuration (K-Factor Config) | Turns the K-Factor on and off and allows for the calculation or selection of gain and offset values. |
| Menu Inactivity Timeout (Menu Timeout) | Selects a time period after which the backlight on the front panel display turns off when no menu activity is detected and automatically returns to normal operation. |
| BACnet Configuration (Network Cfg) | Configures BACnet settings and turns BACnet on and off. |
| BACnet Flow Alarm Configuration (Flow Alarm Cfg) | Configures high and low setpoints, deadband, and alarm delay settings and turns the BACnet flow high and low alarms on and off. |
| BACnet Temperature Alarm Configuration (Temp Alarm Cfg) | Configures high and low setpoints, deadband, and alarm delay settings and turns the BACnet temperature high and low alarms on and off. |
| Exit Operator Menu (Exit Oper Menu) | Returns the display to normal operation. |

Enable, Disable, and Change the Operator PIN

The Enable Operator PIN and Change Operator PIN menu options enable or disable the Operator Menu PIN and change the current PIN.

Note: The PIN is not set or enabled on a device with factory-default settings.

Figure 12: Operator PIN Flowchart



Note: If the Enable Operator PIN option is selected, the Operator Menu can only be accessed with a PIN.

To enable or disable the PIN:

1. Enter the **Enable Operator PIN** submenu.
2. Press **UP** or **DOWN** to choose Yes to enable the PIN or No to disable the PIN.
3. Press **ENTER** to confirm your selection.

To update the PIN:

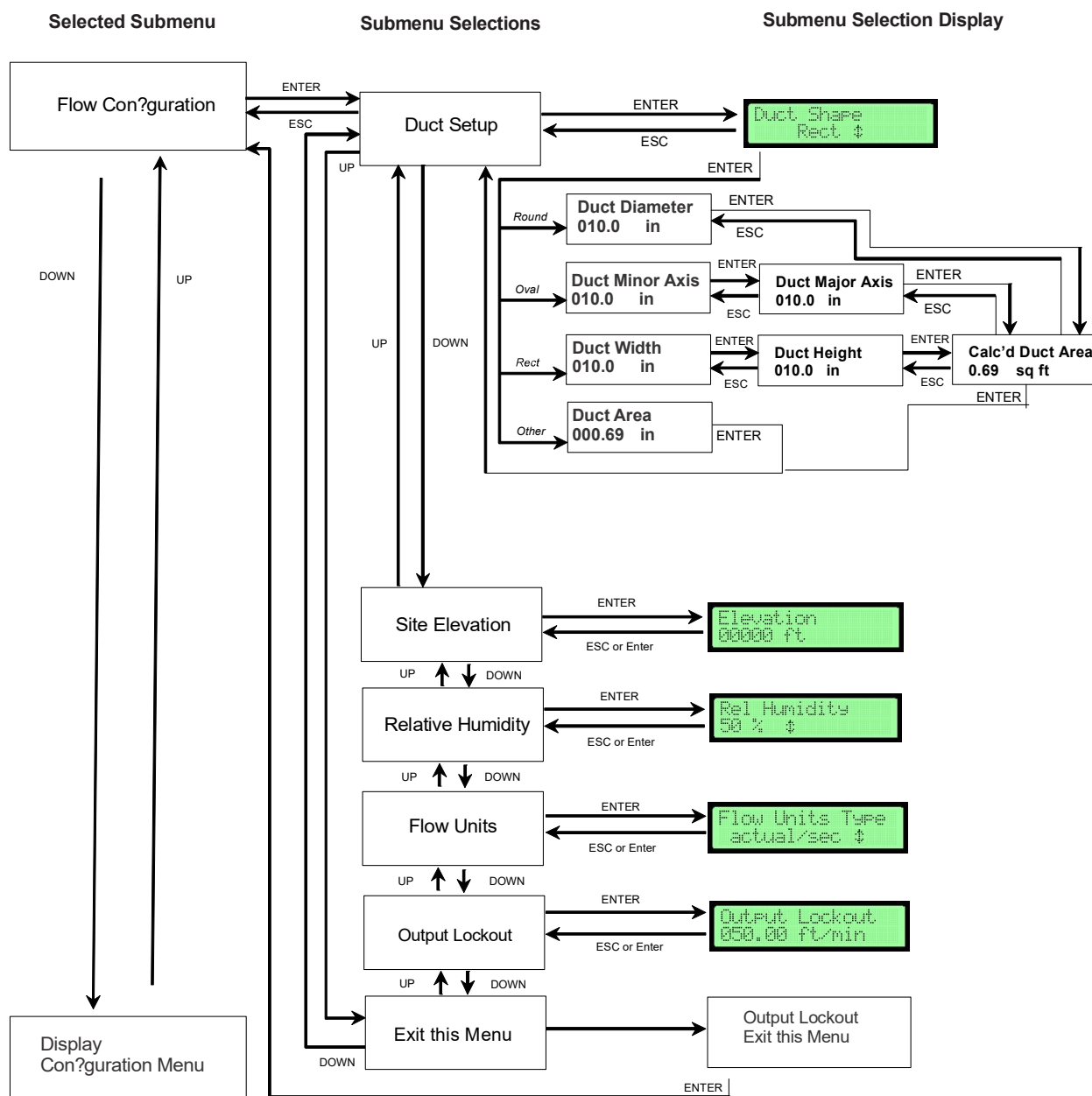
1. Enter the **Change Operator PIN** submenu.
2. Press **UP** or **DOWN** to scroll through the numbers 0 through 9.
3. When the correct number is displayed, press **ENTER** to select the digit. The cursor automatically moves to the next position. If an error is made after pressing ENTER, press ESC to return to the previous digit.
4. Enter the **last digit** and press **ENTER** to store the PIN number. The display returns to the Operator Menu submenu display. Alternatively, press ESC to return to the Operator Menu without updating the PIN.

Note: If the PIN settings are enabled, the PIN number must be entered each time the Operator Menu is entered.

Flow Configuration

The Flow Configuration submenu stores the application-specific data for unique applications. The typical data includes units of measure, duct type and size, flow units, site elevation, system ranges, and output lockout.

Figure 13: Flow Configuration Flowchart



1. Duct Area controls area input when the Other duct shape is selected.

2. Range is set in Feet per Minute (FPM), but should be converted to Cubic Feet Per Minute (CFM) to correspond to the output.

Table 2: Flow Configuration Submenu Selections and Configurable Options

| Flow Configuration Submenu Selections | Configurable Options |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Duct Shape | Select between rectangle, round, oval, or other duct shapes. |
| Duct Width ¹ | Select between 0 to 120 in. or 0 to 304.8 cm. |
| Duct Height ¹ | Select between 0 to 120 in. or 0 to 304.8 cm. |
| Duct Diameter ² | Select between 0 to 120 in. or 0 to 304.8 cm. |
| Duct Area | Scroll between 0 to 100 square feet or 0 to 9.3 square meters. A value not stored or an out of range error displays if the entry exceeds the design range. The units are previously determined. |
| Site Elevation | Select between 0 to 15,000 feet or 0 to 4,572 meters. The units are previously determined. |
| Relative Humidity | Select between 0 and 99% relative humidity 1% at a time. Holding the button increases the speed at which the value changes. |
| Flow Units | Select between the units listed in Table 3. |
| Output Lockout | Enter three digits with two decimal places. Units are in ft/min or m/sec. |

1. For oval ducts, width equals major axis and height equals minor axis. For round ducts, width and height are not used.
2. For rectangular ducts, oval, or other duct types, diameter is not used.

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Flow Configuration submenu.

Figure 14: Flow Configuration Selection Screen

2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 2 for a description of the Flow Configuration submenu selection options and their configurable options.

See Table 3 and Table 4 for the available selections for units appropriate for the flow type.

Table 3: Volumetric Units of Measurement from Flow Unit Selection and Display Units

| Actual Flow Units ¹ | Imperial Units | SI Units | | Standard Flow Units | Imperial Units | SI Units |
|--------------------------------|----------------|----------|--|---------------------|----------------|----------|
| Actual/Sec | ACFS | ALPS | | Standard/Sec | SCFS | SLPS |
| Actual/Min | ACFM | ALPM | | Standard/Min | SCFM | SLPM |
| Actual/Hour | ACFH | ACMH | | Standard/Hour | SCFH | SCMH |

1. Actual Flow Units is the default setting.

Table 4: Volumetric Units of Measurement (Part 1 of 2)

| Volumetric Units of Measurement | Display |
|---------------------------------|---------|
| Actual Cubic Feet Per Second | ACFS |
| Actual Cubic Feet Per Minute | ACFM |
| Actual Cubic Feet Per Hour | ACFH |
| Actual Liters Per Second | ALPS |
| Actual Liters Per Minute | ALPM |

Table 4: Volumetric Units of Measurement (Part 2 of 2)

| Volumetric Units of Measurement | Display |
|---------------------------------------------------|----------------|
| Actual Cubic Meters Per Hour | ACMH |
| Standard Cubic Feet Per Second | SCFS |
| Standard Cubic Feet Per Minute¹ | SCFM |
| Standard Cubic Feet Per Hour | SCFH |
| Standard Liters Per Second | SLPS |
| Standard Liters Per Minute | SLPM |
| Standard Cubic Meters Per Hour | SCMH |

1. The standard conditions for Standard Cubic Feet Per Minute airflow measurements are as follows: 14.696 pounds per square inch (psi) equals 101.325 kPa at sea level. 70 degrees Fahrenheit equals 21.1 degrees Celsius. 50% relative humidity (RH).

Display Configuration

The Display Configuration submenu is used to configure display units, parameters, and line 2 customization. The level of display from 0 to 4 (0 is off, 4 is 80%) is also configurable.

Figure 15: Display Configuration Flowchart

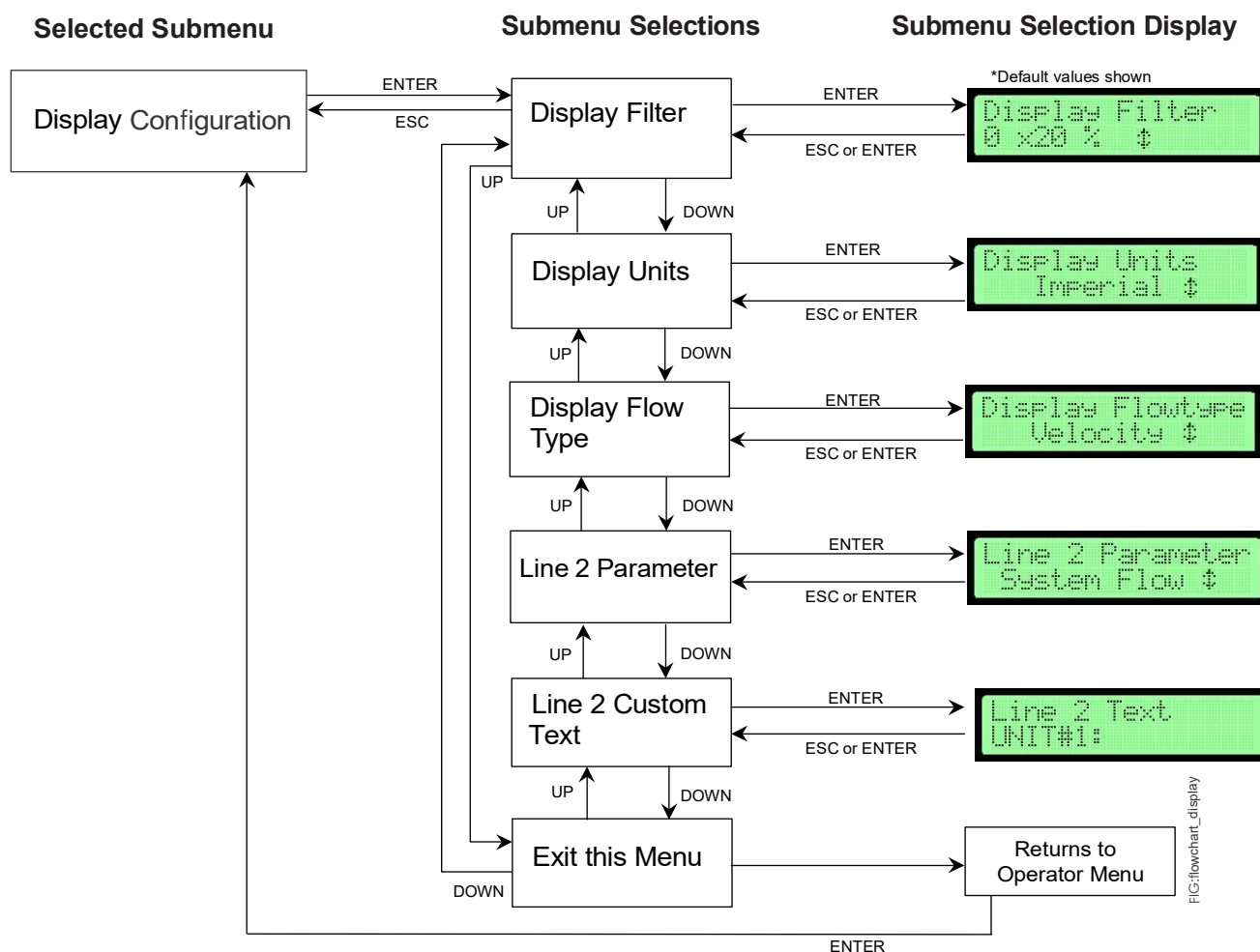


Table 5: Display Configuration Submenu Selections and Configurable Options

| Display Configuration Submenu Selections | Configurable Options |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Display Filter | Select between 0 and 4 where 0 is off. Filtering is equal to the value times 20%. A value of 2 is equal to 40% filtering. |
| Display Units | Select between SI and Imperial. |
| Display Flow Type | Select between velocity and volume. |
| Line 2 Parameters | Select between System Flow and Custom Text for text appearing in line 2 of the display. |
| Line 2 Custom | Select up to seven ASCII characters to display in line 2 of the display. See Selecting Custom Text for more information. |

Updating Display Configuration

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Display Configuration submenu.

Figure 16: Display Configuration Selection Screen



2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 5 for a description of the Display Configuration submenu selection options and their configurable options.

Selecting Custom Text

1. Scroll to the **Line 2 Custom** submenu and press **ENTER**.

2. Press **UP** or **DOWN** to scroll through the available character set. See Figure 17 for a list of available characters.

Figure 17: Custom Text Character Chart

| | | | | | |
|----|---|---|---|---|---|
| 0 | @ | P | ` | p | |
| ! | 1 | A | Q | a | q |
| " | 2 | E | R | b | r |
| # | 3 | C | S | c | s |
| \$ | 4 | D | T | d | t |
| % | 5 | E | U | e | u |
| & | 6 | F | V | f | v |
| ' | 7 | G | W | g | w |
| (| 8 | H | X | h | x |
|) | 9 | I | Y | i | y |
| * | : | J | Z | j | z |
| + | : | K | L | k | < |
| , | < | L | ¥ | l | l |
| - | = | M | I | m | } |
| . | > | N | ^ | n | |
| / | ? | O | _ | o | |

3. Press **ENTER** to choose a character when it is displayed. The character is stored and the cursor advances one position to the right. Press **ESC** to return to the previous character.
4. Fill the line with characters for the remaining positions. After the seventh character is entered, the custom text is stored in memory and the display returns to the Display Configuration submenu.

Analog Output 1 Parameters

The Analog Output 1 Parameters submenu is used to select the process variables that Output 1 represents. Available process variables include flow, temperature, and none. If flow is selected, the output represents the defined flow design range.

Note: Default flow is in FPM. See [*BACnet Network Configuration*](#) for CFM configuration.

Note: The factory-default setting for Analog Output 1 is airflow velocity. However, Output 1 or Output 2 can be configured for either airflow or temperature.

Figure 18: Analog Output 1 Parameters Flowchart

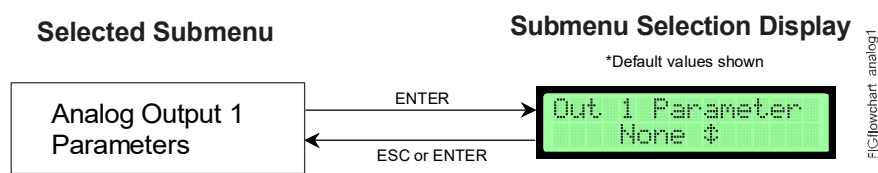


Table 6: Analog Output 1 Submenu Selection and Configurable Option

| Analog Output 1 Submenu Selection | Configurable Option |
|-----------------------------------|---------------------------------------------|
| Output 1 Parameters | Select between none, flow, and temperature. |

Updating Analog Output 1

- 1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Analog Output 1 submenu.

Figure 19: Output 1 Parameter Selection Screen



- 2. Press **ENTER**.
- 3. Make any necessary updates to the submenu selection. See Table 6 for a description of the Analog Output 1 submenu selection option and its configurable option.

Analog Output 2 Parameters

The Analog Output 2 Parameters menu allows you to select the process variables that Output 2 represents. Available process variables include flow, temperature, and none. If flow is selected, the output represents the defined flow design range. If temperature is selected, the default output span for temperature is -25.6 to 120.2°F (-32°C to 49°C).

Note: The factory-default setting for Analog Output 2 is temperature.

Figure 20: Analog Output 2 Parameters Flowchart

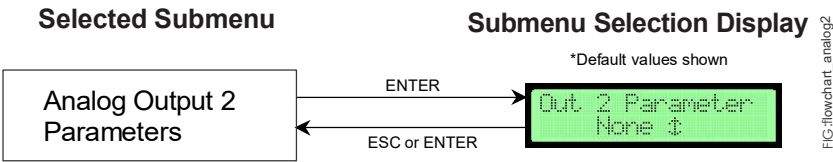


Table 7: Analog Output 2 Submenu and Configurable Options

| Analog Output 2 Submenu | Configurable Option |
|-------------------------|---------------------------------------------|
| Output 2 Parameters | Select between none, flow, and temperature. |

Updating Analog Output 2

- 1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Analog Output 2 submenu.

Figure 21: Output 2 Parameter Selection Screen



- 2. Press **ENTER**.
- 3. Make any necessary updates to the submenu selection. See Table 7 for a description of the Analog Output 2 submenu selection option and its configurable option.

Temperature Output LPF (Low Pass Filter)

The Temperature Output LPF (Low Pass Filter) submenu is used to select the level of process filtering applied to the temperature outputs. The levels are 0 to 9, with 0 indicating the filter is off and 9 indicating maximum filtering. The filtering affects the reported temperature values and analog channels configured for temperature. Display Filter is an additional filter selection applied only to the display.

Note: Each unit of filtering is equal to 10% filtering. For example, 2 is equal to 20%.

Figure 22: Temperature Output LPF Flowchart

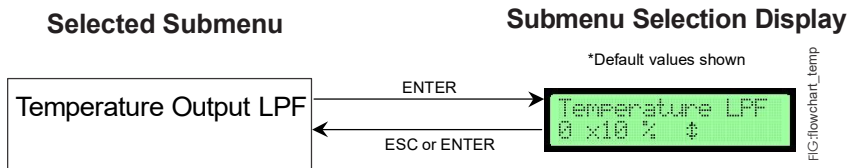


Table 8: Temperature Output LPF Submenu Selection and Configurable Option

| Temperature Output LPF Submenu Selection | Configurable Option |
|------------------------------------------|-------------------------------------------------|
| Temperature Output LPF | Select between 0 to 9 (9 equals 90% filtering). |

Updating Temperature Output LPF

- 1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Temperature Output LPF submenu.

Figure 23: Temperature Output LPF Selection



- 2. Press **ENTER**.
- 3. Make any necessary updates to the submenu selection. See Table 8 for a description of the Temperature Output LPF submenu selection option and its configurable option.

Flow Output LPF

The Flow Output LPF submenu allows the selection of the level of process filtering applied to the flow outputs. The levels are 0 to 9, with 0 indicating the filter is off and 9 indicating maximum filtering. The filtering affects the reported flow values and analog channels configured for flow. Display Filter is an additional filter selection applied only to the display.

Note: Each unit of filtering is equal to 10% filtering. For example, 2 is equal to 20%.

Figure 24: Flow Output LPF Flowchart

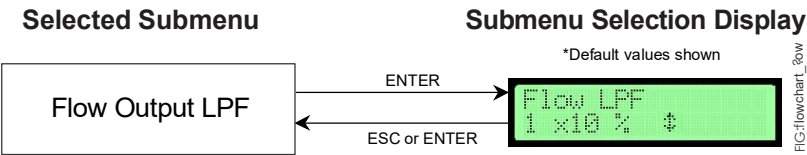


Table 9: Flow Output LFP Submenu Selection and Configurable Option

| Flow Output LPF Submenu Selection | Configurable Option |
|-----------------------------------|-------------------------------------------------|
| Flow LPF Selection | Select between 0 to 9 (9 equals 90% filtering). |

Updating Low Output LPF

- 1. In the Operator Menu, press **UP or DOWN** to scroll to the Flow Output LPF submenu.

Figure 25: Flow Output LPF Selection Screen



- 2. Press **ENTER**.
- 3. Make any necessary updates to the submenu selection option. See Table 9 for a description of the Flow Output LPF submenu selection option and its configurable option.

Analog Output Calibration

Used to adjust the Analog Output Calibration submenu is used to configure the offset and span of Analog Outputs 1 and 2. Span is used to obtain the greatest resolution over the expected or design operating range.

Figure 26: Analog Output Calibration Flowchart

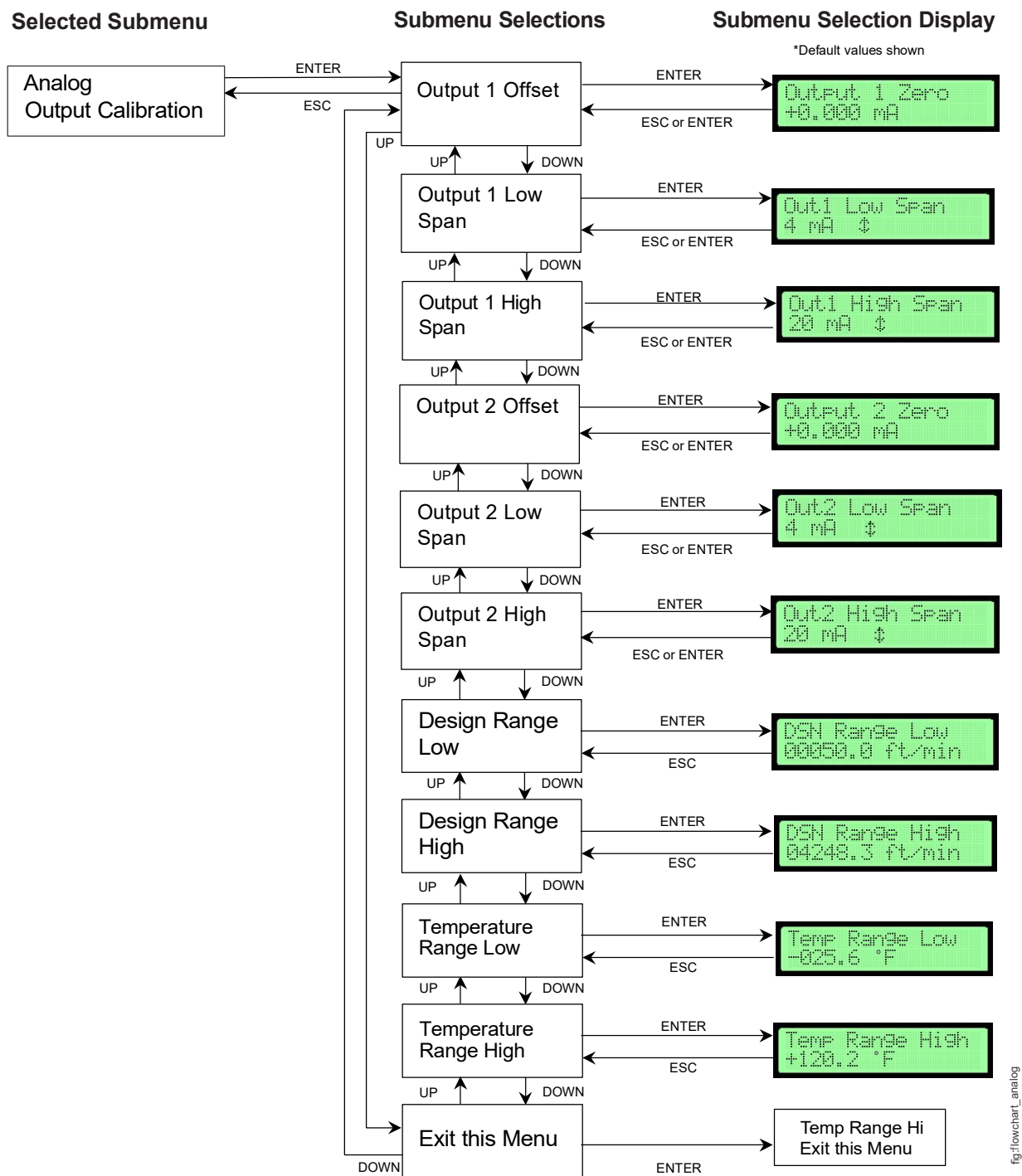


Table 10: Analog Output Calibration Submenu Selections and Configurable Options

| Analog Output Calibration Submenu Selections | Configurable Options |
|----------------------------------------------|-------------------------------------------------------------------------------------------------|
| Output 1 mA Offset | Select between -2 to 2 mA adjustment range. |
| Output 1 mA Low Span | Select between 1 to 4 mA. |
| Output 1 mA High Span | Select between 1 to 20 mA. This value must be higher than the low span value of Output 1. |
| Output 2 mA Offset | Select between -2 to 2 mA adjustment range. |
| Output 2 mA Low Span | Select between 1 to 4 mA. |
| Output 2 mA High Span | Select between 1 to 20 mA. This value must be higher than the low span value of Output 2. |
| Design Range Low | Selects the low range of output flow spanning. |
| Design Range High | Selects the maximum range of output flow spanning. |
| Temperature Range Low | Select between -34.6 to 129.2°F (-37 to 54°C) for low range of output temperature spanning. |
| Temperature Range High | Select between -34.6 to 129.2°F (-37 to 54°C) for maximum range of output temperature spanning. |

Note: By default, the AD-1272 Airflow Measuring System is factory calibrated.

Configuring the Analog Output

To configure the analog output:

1. Set the Analog Output 1 parameter to **None** to keep the output from changing with flow or temperature. See [Analog Output 1 Parameters](#) for instructions.
2. In the Operator Menu, press **UP** or **DOWN** to scroll to the Output Calibration submenu.
3. Press **ENTER**. Scroll to the **Output 1 mA Offset** submenu selection and press **ENTER**.

Figure 27: Output 1 mA Offset Selection Screen



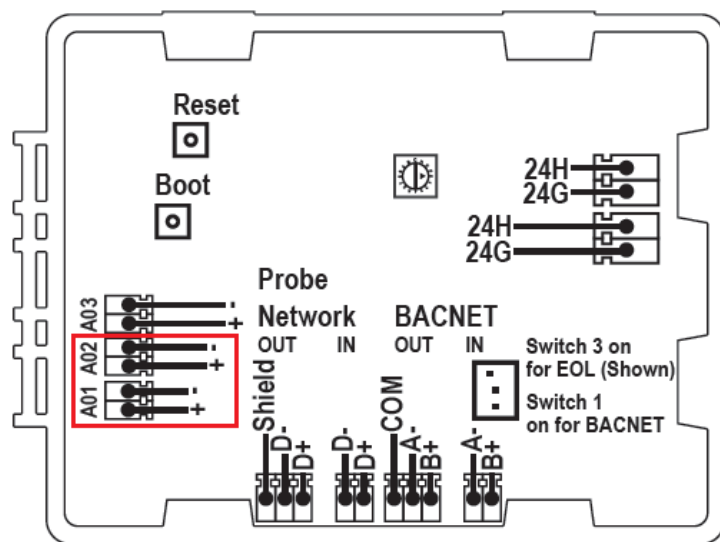
4. The display indicates the current Analog Output 1 offset.

Figure 28: Analog Output 1 Display Screen



5. Connect a digital multi-meter set to scale Analog Output 1 across terminals plus and minus on the AD-1272 Airflow Measuring System. See Figure 29 for terminal locations.

Figure 29: AD-1272 Airflow Measuring System—Terminals 1 and 2



Note: The output value should be between 1 and 20 mA. To align the load resistance with the digital multi-meter, connect the actual process load or a resistor of similar value to the actual process load (250 ohm/ minimum). The digital multi-meter should read a minimum value of 4.00 ± 0.01 mA as determined in Output 1 Span.

6. Press **UP or DOWN** to adjust the output. Once the last digit is entered, the digital multi-meter reflects the adjusted Output 1 offset value.
7. Press **UP or DOWN** in the Output Calibration submenu to scroll to the Output 1 mA Low Span submenu selection.

Figure 30: Output 1 mA Low Selection Screen



8. Press **ENTER**. The display indicates the current Output 1 low span value.

Figure 31: Output 1 Low Span Display Screen



9. Press **UP and DOWN** to scroll between 1 and 4 mA to set the low span value.

Note: The low span value must be set lower than the high span value.

10. Once the low span is set, press **ENTER**. In the Output Calibration submenu, scroll to the **Output 1 mA High Span** submenu selection and press **ENTER**.

Figure 32: Output 1 mA High Span Selection Screen



11. The display indicates the current Analog Output 1 high span value. Press **UP** or **DOWN** to set the high span by scrolling between 1 and 20 mA. The high span value must be higher than the low span value.

Figure 33: Output 1 High Span Display Screen



12. Once the high span is set, press **ENTER** to confirm the setting.
13. Set the parameter for Analog Output 1 to its previous value before the calibration process. See [*Analog Output 1 Parameters*](#) for instructions.
14. Repeat Steps 1 through 13 for Analog Output 2. In Step 5, connect the digital multi-meter across terminals A02 plus and minus.
15. After both outputs are configured, as necessary, configure the Design Range Low, Design Range High, Temperature Range Low, and Temperature Range High submenu selections.
16. In the Operator Menu, press **UP** and **DOWN** to scroll to the **Analog Output Calibration** submenu. Press **ENTER**.

Figure 34: Output Calibration Menu Selection



17. Scroll through the submenu options and make any necessary updates. See Table 10 for a description of the Analog Output Calibration submenu selection options and their configurable options.

Temperature Balance Configuration

The Temperature Balance Configuration submenu applies a temperature offset to the displayed and reported temperature and the temperature used for analog outputs.

Figure 35: Temperature Balance Flowchart

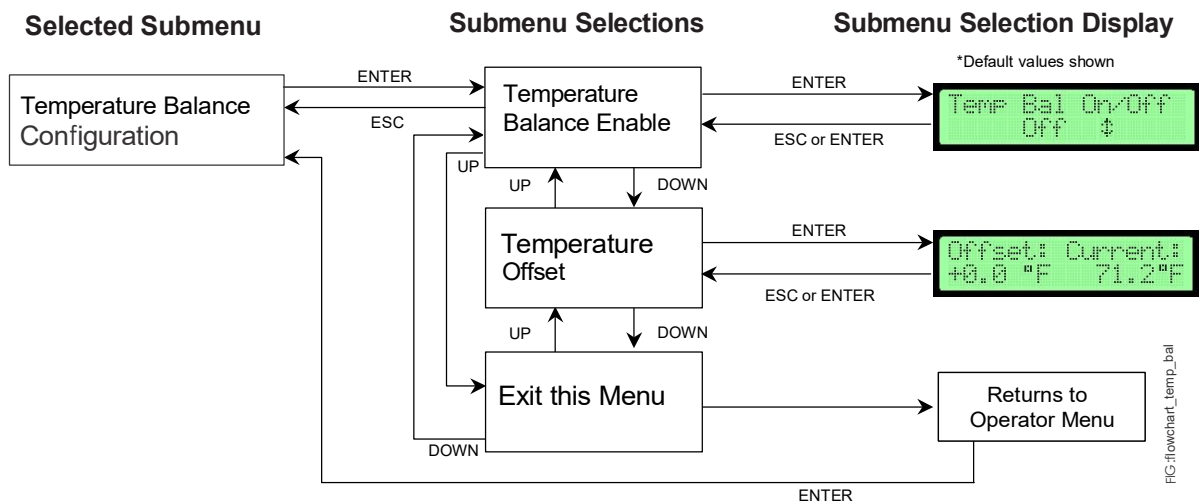


Table 11: Temperature Balance Configuration Submenu Selections and Configurable Options

| Temperature Balance Configuration Submenu Selections | Configurable Options |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature Balance Enable | Select On or Off. |
| Temperature Offset Selection | Enter the currently selected value. The temperature displayed on the left side of line 2 is the offset and the value on the right side of line 2 is a live view of the current temperature with the last confirmed offset value. The offset range is $\pm 5.4^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$). |

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the Temperature Balance Configuration submenu.

Figure 36: Temperature Balance Configuration Selection Screen



2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 11 for a description of the Temperature Balance Configuration submenu selection options and their configurable options.

K-Factor Configuration

The K-Factor Configuration submenu turns K-Factor on and calculates a K-Factor gain and offset from measured and reference data. The K-Factor gain and offset values can also be manually configured.

Figure 37: K-Factor Configuration Flowchart

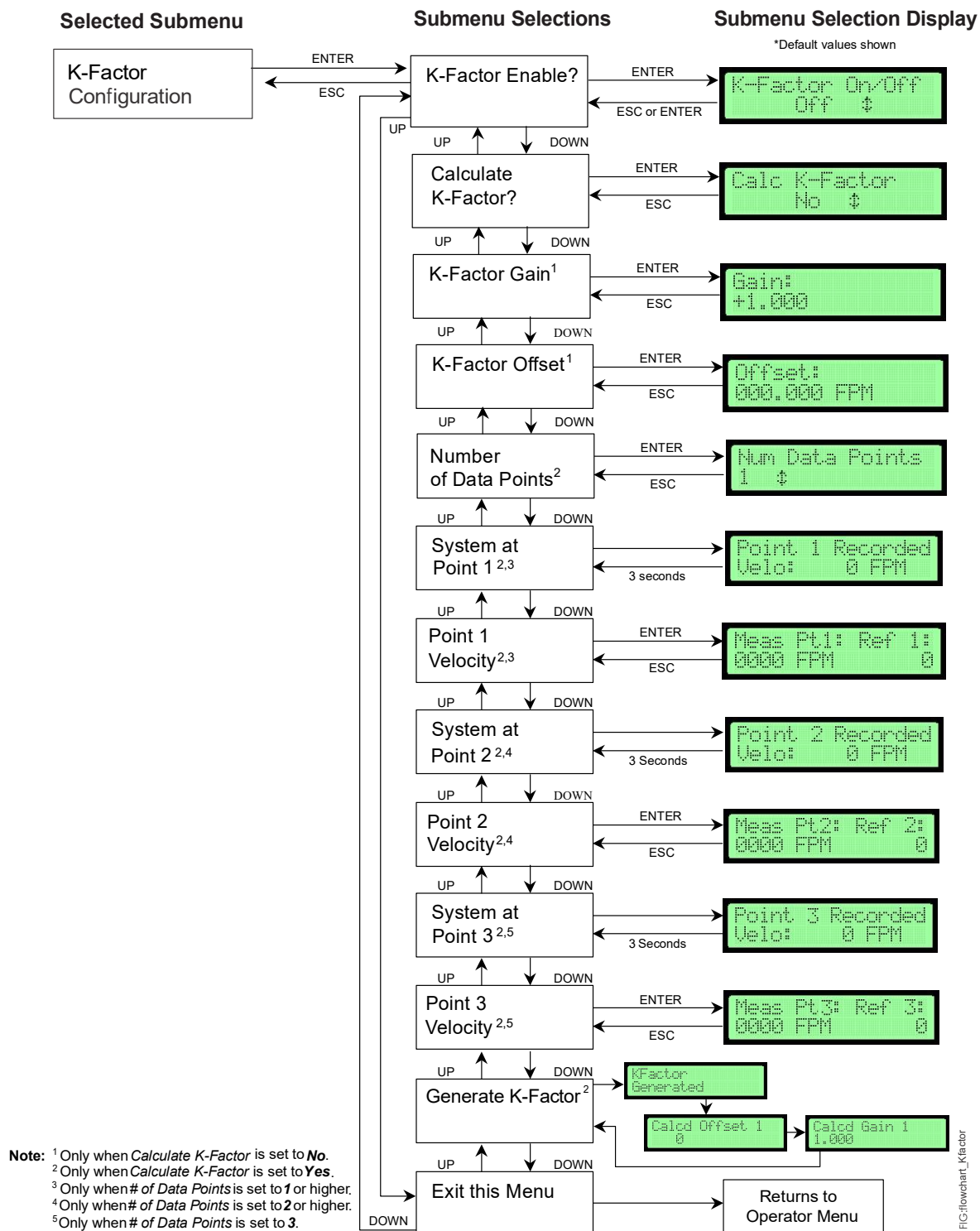


Table 12: K-Factor Configuration Submenu Selections and Configurable Options

| K-Factor Configuration Submenu Selections | Configurable Options |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| K-Factor Enable? | Select On or Off. |
| Calculate K-Factor | Select between Yes or No. |
| Manual Gain¹ | Update the currently selected value. |
| Manual Offset¹ | Update the currently selected value. |
| Number of Data Points² | Select between one to three points for calculating the K-Factor. |
| System at Point 1² | Record the current velocity over the sensors as reference point 1. |
| Point 1 Velocity² | Update the currently selected value. Reference point 1 is displayed on the right side and the measured value is entered on the left. |
| System at Point 2² | Record the current velocity over the sensors as reference point 2. |
| Point 2 Velocity² | Update the currently selected value. Reference point 2 is displayed on the right side and the measured value is entered on the left. |
| System at Point 3² | Record the current velocity over the sensors as reference point 3. |
| Point 3 Velocity² | Update the currently selected value. Reference point 3 is displayed on the right side and the measured value is entered on the left. |
| Generate K-Factor² | Calculate and update the K-Factor values used then display the calculated values. |

1. This submenu selection only appears when Calculate K-Factor is set to No.
2. This submenu selection only appears when Calculate K-Factor is set to Yes.

Configuring the K-Factor

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the **K-Factor Configuration** submenu.

Figure 38: K-Factor Configuration Selection Screen



2. Press **ENTER** to view the K-Factor Configuration submenu. Scroll to the **K-Factor Enable?** submenu selection.

Figure 39: K-Factor Enable Selection Screen



3. Press **ENTER**. The display indicates the current K-Factor setting (Off or On).

Figure 40: K-Factor Settings Screen



4. Press **UP or DOWN** to change the setting and **ENTER** to confirm the setting. The new setting is stored in memory and the display returns to the K-Factor Configuration submenu.
5. Press **UP or DOWN** to scroll to the **Calculate K-Factor** submenu selection and press **ENTER**.

Figure 41: Calculate K-Factor Selection Screen



6. Press **UP or DOWN** to scroll between Yes or No. Press **ENTER** to make a selection. If No is selected, see Automatic Calculation of K-Factor Not Enabled. If Yes is selected, see Automatic Calculation of K-Factor Enabled.

Automatic Calculation of K-Factor Not Enabled

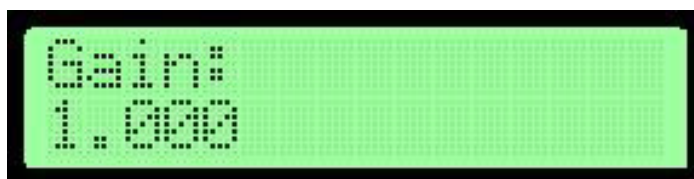
1. When K-Factor is not enabled, the K-Factor Configuration submenu formats itself for manual K-Factor entry mode. Scroll to the **K-Factor Gain** submenu selection and press **ENTER**.

Figure 42: K-Factor Gain Selection Screen



2. Press **ENTER** to adjust the manual K-Factor gain. Press **UP or DOWN** to modify the currently selected value.

Figure 43: K-Factor Gain Screen



3. Press **ENTER** to confirm the value and return to the K-Factor Configuration submenu.

4. Scroll to the **K-Factor Offset** submenu selection.

Figure 44: K-Factor Offset Selection Screen



5. Press **ENTER** to adjust the manual K-Factor offset. Press **UP** or **DOWN** to modify the currently selected value.

Figure 45: K-Factor Gain Screen



6. Press **ENTER** to confirm the value and return to the K-Factor Configuration submenu.

Automatic Calculation of K-Factor Enabled

Automatic K-Factor calculations can be adjusted to use up to three data points in the calculation. One data point calculates and uses one offset. Two data points calculate and use one offset and one gain in one equation. Three data points calculate and use two offsets and two gains in two equations that meet at the middle point.

1. In the K-Factor Configuration submenu, scroll to the **Number of Data Points** submenu selection.

Figure 46: Number of Data Point Selection Screen



2. Press **ENTER**. Press **UP** or **DOWN** to select the number of points to use in the K-Factor calculation.

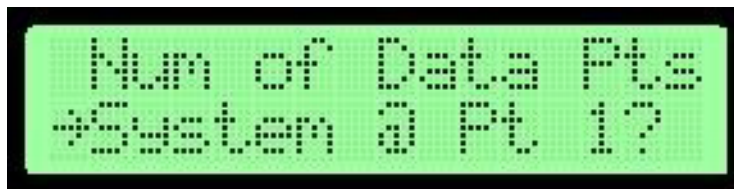
Figure 47: Number Data Points Adjustment Screen



3. Press **ENTER** to confirm the value and return to the K-Factor Configuration submenu.

4. Scroll to the **System at Point 1** submenu selection.

Figure 48: System at Point 1 Selection Screen



5. Press **ENTER**. Run the air handling system unit to the first K-Factor setpoint. Once the appropriate velocity is displayed on the external device, press **ENTER** to store the sensor data and measured velocity in FPM as the reference value for calculating the K-Factor equation. The display indicates the value is stored and displays the value for 3 seconds.

Figure 49: Point 1 Recorded Velocity Screen



Note: Allow the system at least 60 seconds after a velocity state change to balance the displayed readings.

6. The display returns to the K-Factor Configuration submenu. Scroll to the **Point 1 Velocity** submenu selection.

Figure 50: Point 1 Velocity Selection Screen



7. Press **ENTER** to enter the first measured K-Factor setpoint that is acquired from an external device. Press UP or DOWN to modify the currently selected digit.

Figure 51: K-Factor Setpoint Screen



Note: The left side of the display indicates the measured value and the right side shows the corresponding reference value that was recorded for that point.

8. Press **ENTER** on the last digit to confirm the value and return to the K-Factor Configuration submenu.
9. If the number of data points from Step 2 was set for more than one, repeat Steps 4 through 8 for each point. Point 2 must be higher than point 1 and point 3 must be higher than point 2. When all points are recorded, continue to Step 10.
10. Press **UP or DOWN** to scroll to the Generate K-Factor submenu selection.

Note: The line above Generate K-Factor may display a different number depending on the number of data points selected.

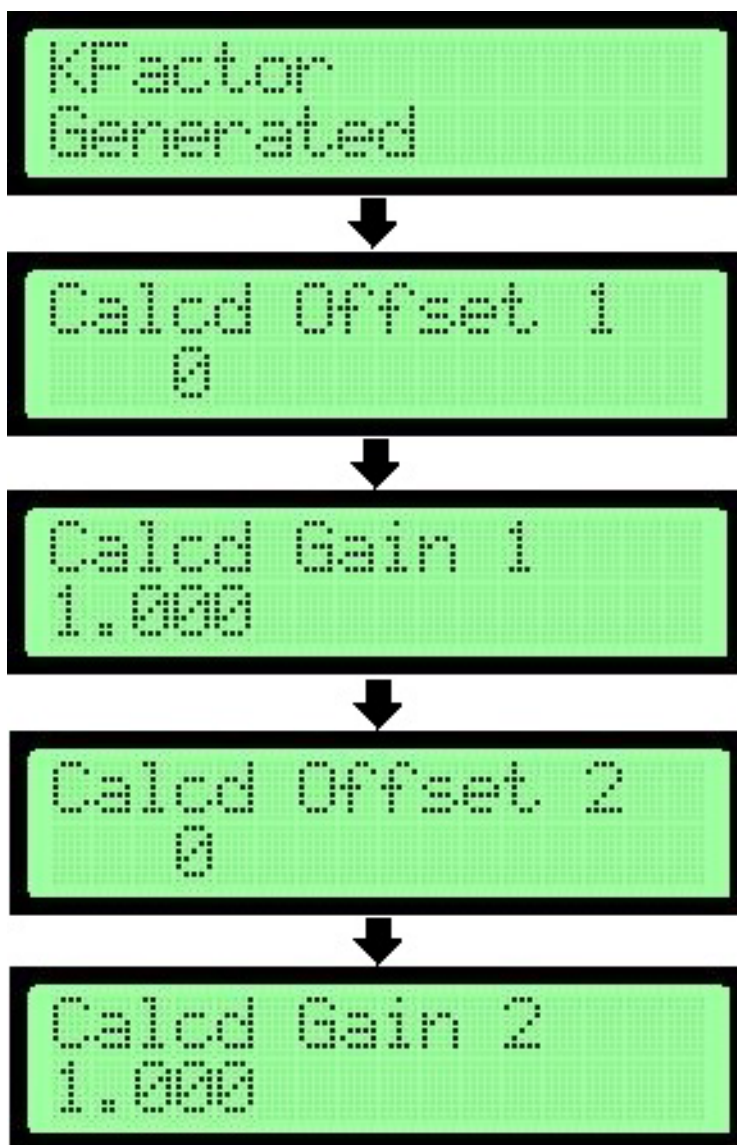
Figure 52: Generate KF Selection Screen



11. Press **ENTER** to generate the K-Factor equation values.

Note: When one data point is selected, the display indicates the K-Factor Generated and Calculated Offset 1 screens. When two data points are selected, the display indicates the K-Factor Generated, Calculated Offset 1, and Calculated Gain 1 screens. When three data points are selected, all five screens display.

Figure 53: K-Factor Equation Value Generator Screens



12. In the Operator Menu, press **UP or DOWN** to scroll to the K-Factor Configuration submenu.

Figure 54: K-Factor Configuration Selection Screen



13. Press **ENTER**.
14. Press **UP or DOWN** to scroll through the submenu options and make any necessary updates. See Table 12 for a description of the K-Factor Configuration submenu selection options and their configurable options.

Menu Timeout

The Menu Timeout submenu is used to select a time in minutes after which the device backlight dims and the device returns to normal operation mode if no activity is detected in the Operator Menu.

Figure 55: Menu Timeout Flowchart

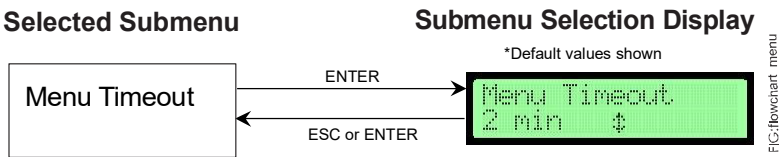


Table 13: Menu Timeout Submenu Selection and Configurable Option

| Menu Timeout Submenu Selection | Configurable Option |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Menu Timeout | Select from 0 to 30 minutes. A value of 0 indicates that the display never times out and the backlight is always on. |

1. In the Operator Menu, press **UP or DOWN** to scroll to the Menu Timeout submenu.

Figure 56: Menu Timeout Selection Screen



2. Press **ENTER**.
3. Make any necessary updates to the submenu selection. See Table 13 for a description of the Menu Timeout submenu selection option and its configurable option.

BACnet Network Configuration

The BACnet Network Configuration submenu turns BACnet on or off and configures parameters based on the BACnet type.

Figure 57: BACnet Configuration Flowchart

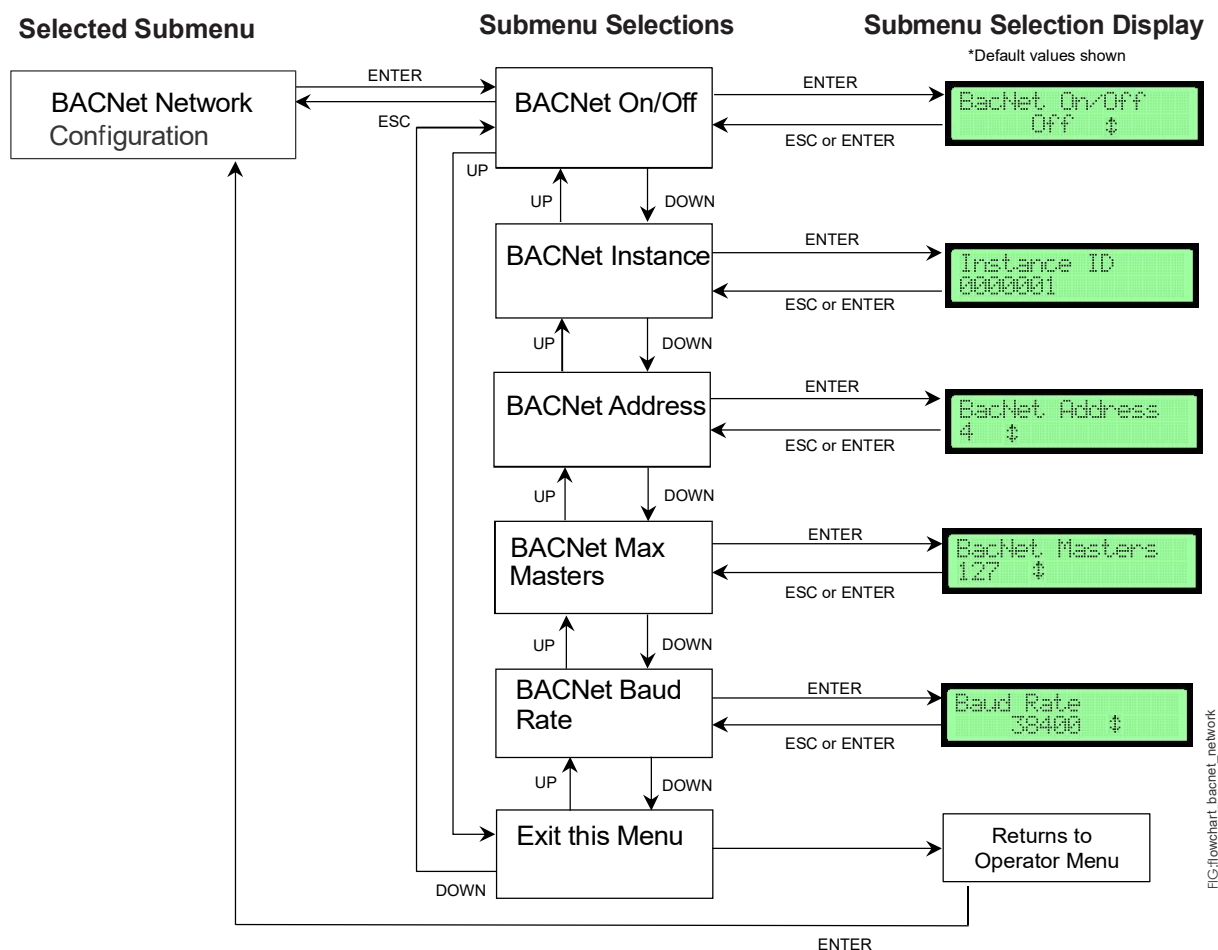


Table 14: BACnet Network Configuration Submenu Selections and Configurable Options

| BACnet Network Configuration Submenu Selections | Configurable Options |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BACnet On/Off | Select On or Off. |
| BACnet Instance | Update the currently selected value. The instance number must be unique from all BACnet devices on the entire system. The range of values is 1 to 4,194,302. |
| BACnet Address | Select a value between 4 and 127. Holding down the button increases the rate the value updates. |
| BACnet Max Mast | Select a value between 1 and 127. Holding down the button increases the rate the value updates. |
| BACnet Baud Rate | Select the 9,600, 19,200, 38,400 (default), or 76,800 baud rate. |

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the BACnet Network Configuration submenu.

Figure 58: BACnet Network Configuration Selection Screen



2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 14 for a description of the BACnet Network Configuration submenu selection options and their configurable options.

Note: If any changes are made to the BACnet Network Configuration parameters after turning on BACnet, you must change the BACnet On/Off setting off and back on again to get the changes to take effect.

BACnet Objects

If BACnet communications is enabled on the AD-1272 and all parameters are correctly set (see Figure 57) the BACnet objects listed below will be available to the Building Automation System (BAS). The units for the BACnet objects will be the same as the units the display is configured for. For example, if the display is setup to show flow on CFM, the units for the BACnet Flow objects will also be in CFM. The Flow and Temperature alarms must be enabled in the AD-1272 (see Figure 59 through Figure 61) for the points to be map able to the BAS.

- Flow
- Temperature
- Low Flow Alarm (if enabled)
- High Flow Alarm (if enabled)
- Low Temperature Flow (if enabled)
- High Temperature Flow (if enabled)

Hardware Objects

If the Analog Outputs on the AD-1272 are wired directly to a field controller on the BAS it is important to note that the high and low values for the Flow Output are configured in Feet per Minute (FPM) and the Temperature high and low values are in Deg F when imperial units are selected and Meters per Second (MPS) with Deg C when SI units are selected. If there is a need to convert the BAS to a different unit, calculate the corresponding values for the units of measure and program the input's high and low values with the calculated values. For example, if you have a 24 x 24 in. (4 square feet) duct and the High Flow Output in the transmitter is set to 5000 FPM (default), the corresponding high CFM value will be 20,000 CFM, see equation below.

$$[(24 \text{ in.} \times 24 \text{ in.}) / 144 \text{ square inches per square foot}] \times 5000 \text{ FPM} = 20,000 \text{ CFM}$$

The scaling for the input receiving the signal should be configured from 0 to 20,000 CFM.

BACnet Flow Alarm Configuration

The BACnet Flow Alarm Configuration submenu is only available when BACnet is on (see [BACnet Network Configuration](#)). Alarm parameters can be configured including high and low alarms, setpoints, and alarm delay.

Figure 59: BACnet Flow Alarm Configuration Flowchart

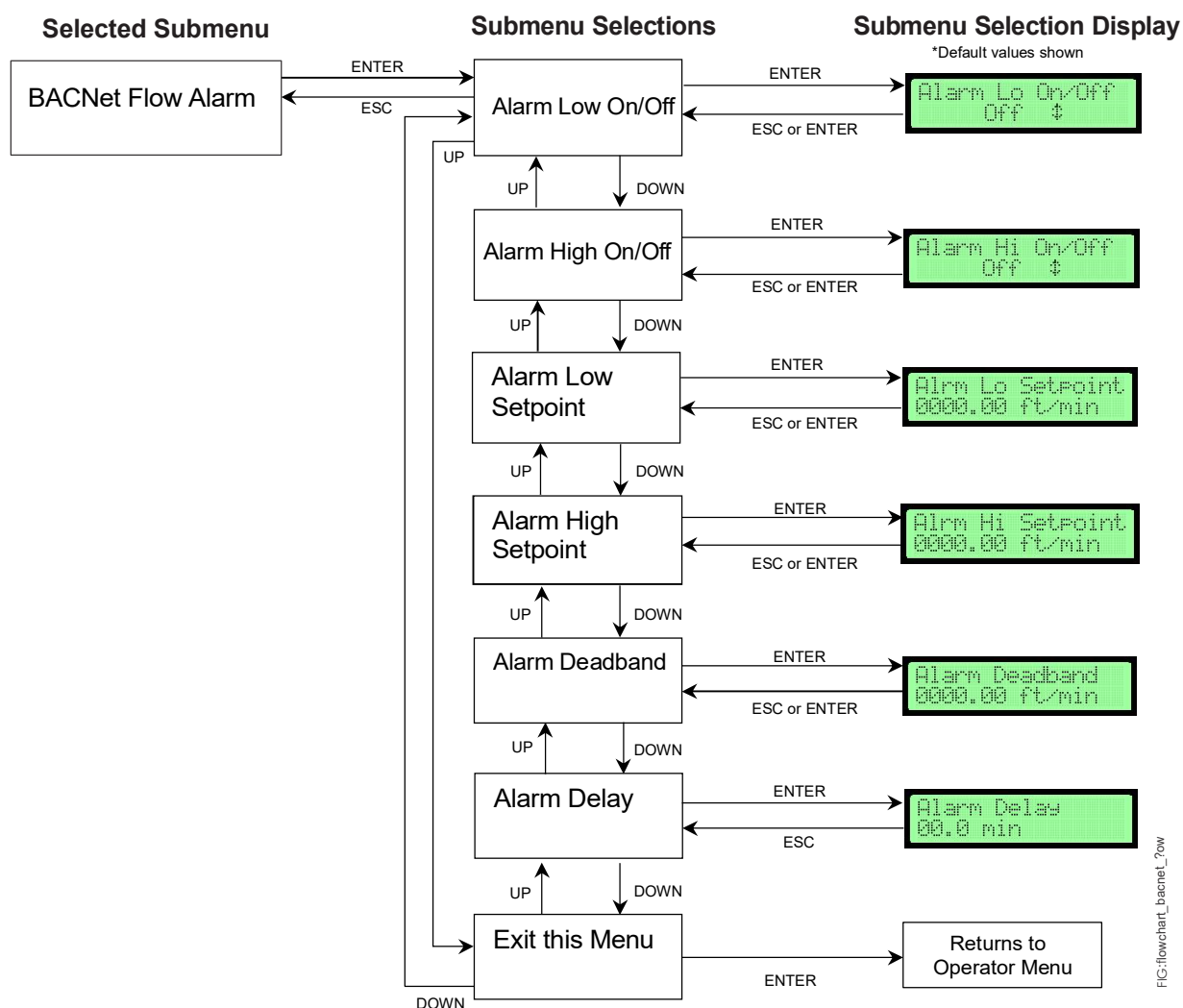


Table 15: BACnet Flow Alarm Configuration Submenu Selection and Configurable Options

| BACnet Flow Alarm Configuration Submenu Selections | Configurable Options |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Low On/Off | Select On or Off. |
| Alarm High On/Off | Select On or Off. |
| Alarm Low Setpoint | Choose a value the flow must go below for an alarm condition to exist. |
| Alarm High Setpoint | Choose a value the flow must surpass for an alarm condition to exist. |
| Alarm Deadband Setpoint | Choose a value of flow the controller must reach above the Alarm Low Setpoint for Alarm Low or below the Alarm High Setpoint for Alarm High before an activated alarm resets. The display units are the same as those chosen in the Display Configuration submenu and flow configuration. |
| Alarm Delay | Select the amount of time between any alarm condition and the BACnet Flow Alarm Low and High activation. This value is adjustable between 0 and 10 minutes. |

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the BACnet Flow Alarm Configuration submenu.

Figure 60: BACnet Flow Alarm Configuration Selection Screen



2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 15 for a description of the BACnet Flow Alarm Configuration submenu selection options and their configurable options.

BACnet Temperature Alarm Configuration

The BACnet Temperature Alarm Configuration submenu is only available when BACnet is on (see *BACnet Network Configuration*). In this submenu, you can configure temperature parameters including high and low alarms, setpoints, and alarm delay.

Figure 61: BACnet Temperature Alarm Configuration Flowchart

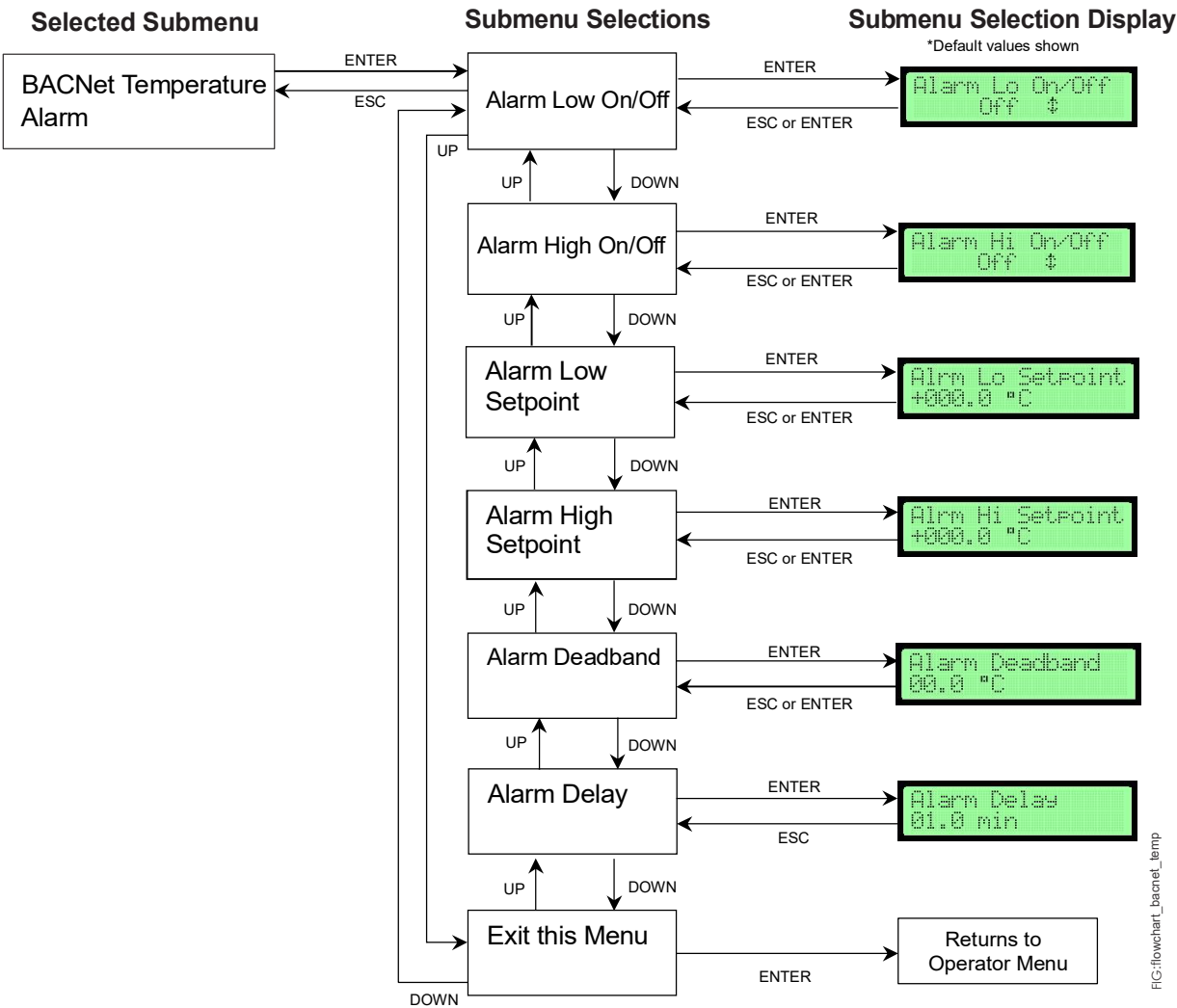


Table 16: BACnet Temperature Alarm Configuration Submenu Selections and Configurable Options (Part 1 of 2)

| BACnet Temperature Alarm Configuration Submenu Selections | Configurable Options |
|-----------------------------------------------------------|-------------------------------------------------------------------------------|
| Alarm Low On/Off | Select On or Off. |
| Alarm High On/Off | Select On or Off. |
| Alarm Low Setpoint | Choose a value the temperature must go below for an alarm condition to exist. |
| Alarm High Setpoint | Choose a value the temperature must surpass for an alarm condition to exist. |

Table 16: BACnet Temperature Alarm Configuration Submenu Selections and Configurable Options (Part 2 of 2)

| BACnet Temperature Alarm Configuration Submenu Selections | Configurable Options |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Deadband Setpoint | Choose a value of temperature the controller must reach above the Alarm Low Setpoint for Alarm Low or below the Alarm High Setpoint for Alarm High before an activated alarm resets. The display units are the same as those chosen in the <i>Display Configuration</i> submenu. |
| Alarm Delay | Select the amount of time between any alarm condition and the BACnet Temperature Alarm Low and High activation. This value is adjustable between 0 and 10 minutes. |

1. In the Operator Menu, press **UP** or **DOWN** to scroll to the BACnet Temperature Alarm Configuration submenu.

Figure 62: BACnet Temperature Alarm Configuration Selection Menu



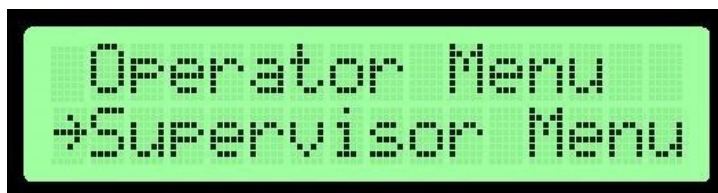
2. Press **ENTER**.
3. Scroll through the submenu options and make any necessary updates. See Table 16 for a description of the BACnet Temperature Alarm Configuration submenu selection options and their configurable options.

Navigating the Supervisor Menu

The Supervisor Menu is used to enable or disable probes and individual sensors, scan all sensors for status updates, and perform diagnostics on alert conditions. It is also used to restore the device to a pre-installation state.

1. When the AD-1272 Airflow Measuring System's LCD screen displays the average temperature and average velocity or volume, press **MENU** and **UP or DOWN** until the arrow is next to the Supervisor Menu.

Figure 63: Supervisor Menu Selection Screen



2. Press **ENTER** to access the Supervisor Menu settings.
 - a. If the Supervisor PIN is enabled, the LCD screen displays the following message.

Figure 64: Supervisor PIN Selection Screen



- (1) Enter the 4-digit PIN to access the Supervisor Menu. PIN entry is made one digit at a time beginning with the leftmost digit. Press **UP or DOWN** to scroll through the numbers 0 through 9.
- (2) When the correct number is displayed, press **ENTER** to select the digit. The cursor automatically moves to the next position. If an error is made after pressing ENTER, press ESC to go back and change the digit.

Note: If the PIN is not correctly entered, the display returns to normal operation.

- b. If the Supervisor PIN is not enabled, the Supervisor Menu selections display.

Note: See [Enable, Disable, and Change the Supervisor PIN](#) for more information about enabling the PIN.

3. Press **UP or DOWN** to scroll through the available menu selections. See Table 17 for a list of Supervisor Menu selections and their descriptions.

Note: Use any Supervisor Menu to access configurable options.

Table 17: Supervisor Menu Submenus (Part 1 of 2)

| Supervisor Menu Submenus (Actual Display Name) | Description |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Supervisor PIN (Enable Supv PIN) | When enabled, prevents unauthorized access to the Supervisor Menu. |
| Change Supervisor PIN (Change Supv PIN) | Set or change the Supervisor Menu PIN. |
| Sensor Management (Sensor Mgmt) | Scans the probe network for active and enabled sensors and enables or disables individual sensors. It also displays the probe status and each sensor's velocity and temperature reading. |
| Reset Sensors (Reset Sensors) | Allows the cycle of power to the sensors. |

Table 17: Supervisor Menu Submenus (Part 2 of 2)

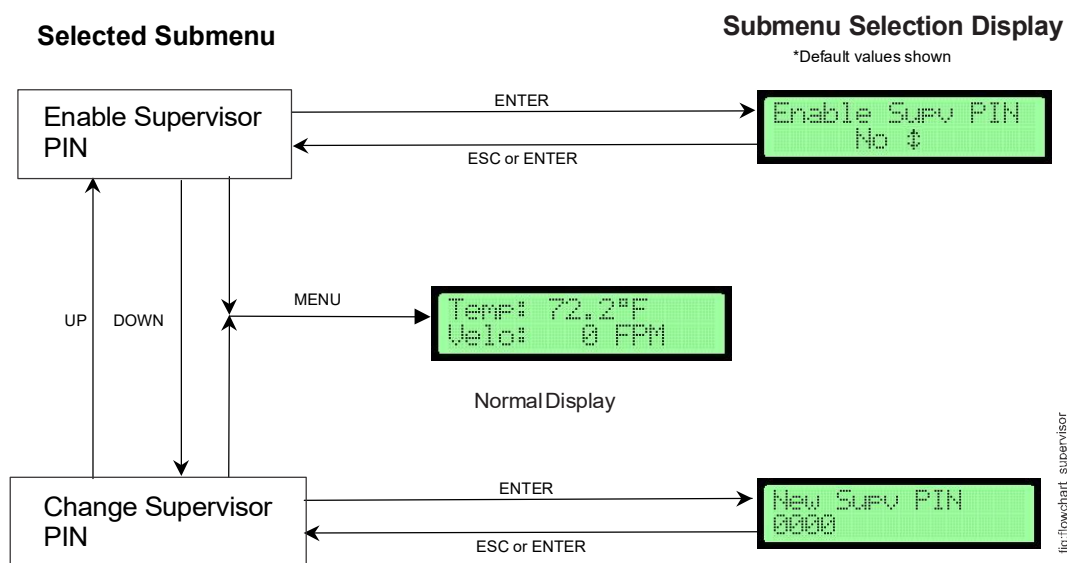
| Supervisor Menu Submenus (Actual Display Name) | Description |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factory Default (Factory Default) | Restores the device to the factory-default settings. Any previous settings made in the Operator and Supervisor Menus are reset including dimensions, the Operator PIN, and custom text. |
| Exit Supervisor Menu (Exit Supv Menu) | Returns the display to normal operation. |

Enable, Disable, and Change the Supervisor PIN

The Enable Supervisor PIN and Change Supervisor PIN menu options are used to enable or disable the Supervisor Menu PIN and change the current PIN.

Note: The PIN is not set or enabled on a device with factory-default settings.

Figure 65: Supervisor PIN Flowchart



Note: If the Enable Supervisor PIN option is selected, the Supervisor Menu can only be accessed with a PIN. To enable or disable the PIN:

1. Enter the Enable Supervisor PIN submenu.
2. Press **UP or DOWN** to choose Yes to enable the PIN or No to disable the PIN.
3. Press **ENTER** to confirm the selection.

To update the PIN:

1. Enter the **Change Supervisor PIN** submenu.
2. Press **UP or DOWN** to scroll to display the numbers 0 through 9.
3. When the correct number is displayed, press **ENTER** to select the digit. The cursor automatically moves to the next position. If an error is made after pressing ENTER, press ESC to return to the previous digit.
4. Enter the last digit and press **ENTER** to store the PIN number. The display returns to the Supervisor Menu submenu display. Alternatively, press ESC to return to the Supervisor Menu without updating the PIN.

Note: If the PIN settings are enabled, the PIN number must be entered each time the Supervisor Menu is entered.

Sensor Management

The Sensor Management submenu is used to scan the sensor network for active sensors and enable or disable individual sensors. This also displays each sensor's velocity and temperature reading.

Probes are numbered with P=Primary, 0=First Achillary, 1=Second Achillary, and so on. Sensor information is displayed on the left-most sensor in the enclosure at the end of the probe.

Note: When the Primary Transmitter with Display is located remotely the AD-1272 count the Primary Transmitter as an additional probe. This will cause the number of probes to be shown as one greater than the number of ancillary probes.

Figure 66: Sensor Management Flowchart

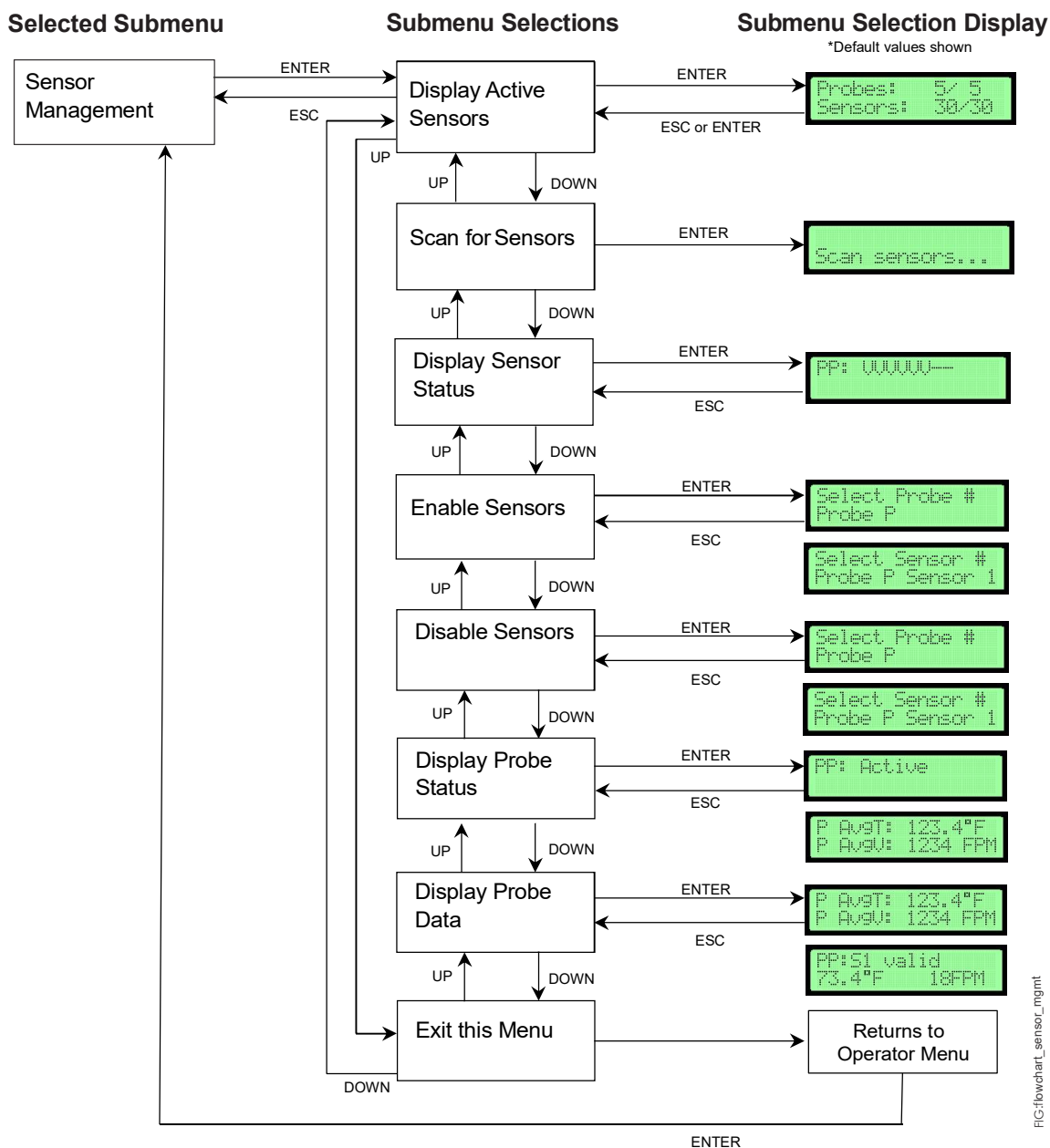


Table 18: Sensor Management Submenu Selections and Configurable Options or Display Screens

| Sensor Management Submenu Selections | Configurable Options or Display Screen |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display Active Sensor | Display screen indicates the number of active and total probes and sensors. |
| Scan for Sensor | Scan for sensors and restart all devices on the network. The primary probe restarts last. After restarting, the primary probe returns to normal operation. |
| Display Sensor Status | Select the probe addresses on the probe network (P, 0 through F) ¹ . V indicates a valid address and D indicates a disabled address. |
| Enable Sensors | Select between probes (P, 0 through F) ¹ then select between sensors. Choose the sensor (1 through 8) to enable. |
| Disable Sensors | Select between probes (P, 0 through F) ¹ then select between sensors. Choose the sensor (1 through 8) to disable. |
| Display Probe Status | Select between probes (P, 0 through F) ¹ to choose the probe on line 2 of the screen. Display indicates the probe's average temperature and velocity (FPM) from the probe data screen. |
| Display Probe Data | Select between probes (P, 0 through F) ¹ . Display shows the individual sensor data. Select between sensors (1 through 8). |

1. The primary probe (P) is displayed first. Ancillary probes use hexadecimal (base 16) numbering. The hexadecimal number corresponds to the setting on the probe's rotary switch.

1. In the Supervisor Menu, press **UP or DOWN** to scroll to the Sensor Management submenu. Press **ENTER**.

Figure 67: Sensor Management Selection Screen



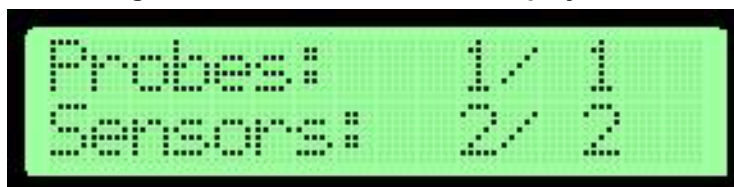
2. Press **UP or DOWN** to scroll to Display Active Sensor.

Figure 68: Display Active Sensor Selection Screen



3. Press **ENTER**. The display indicates the number of active probes and sensors. In this example, one probe is active and enabled and two out of two sensors are valid and enabled.

Figure 69: Probe and Sensor Display Screen



4. Press **ESC** or **ENTER** to return to the Sensor Management submenu.
5. Press **UP** or **DOWN** to scroll to the **Scan for Sensors** submenu selection. Press **ENTER**. When this option is selected, the primary probe sends scan and restart commands to all ancillary probes on the wired probe network. The primary probe then restarts to detect all probes and sensors and updates the inventory.

Figure 70: Scan for Sensor Selection Screen



6. Press **ENTER** to scan for sensors. The primary probe provides scan and restart commands to the network.

Figure 71: Scanning for Sensors Display Screen



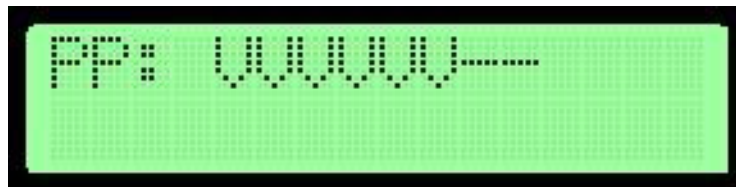
7. Once the scan is complete, the display returns to the normal operation mode. Press **MENU**.
8. Press **UP** or **DOWN** to scroll to the Supervisor Menu. Press **ENTER**.
9. Press **UP** or **DOWN** to scroll to the Display Sensor Status submenu.

Figure 72: Display Sensor Status Selection Screen



10. Press **ENTER**. The display indicates the following message:

Figure 73: Sensor Status Display Screen



11. Press **UP** or **DOWN** to scroll to the probe to display on line 1 of the display.
12. Press **ESC**. The display returns to the Sensor Management submenu.

13. Press **UP** or **DOWN** to scroll to the Enable Sensors submenu selection. Press **ENTER**.

Figure 74: Enable Sensors Selection Screen



14. Scroll to display the correct probe number on line 2 and press **ENTER**.

Figure 75: Probe Selection Display Screen



15. Press **UP** or **DOWN** to display the sensor numbers that are enabled by selecting this option and press **ENTER**.

Figure 76: Probe Selection Display Screen



16. Press **ESC**. The display returns to the Sensor Management submenu.

17. Scroll to the **Disable Sensors** submenu selection and press **ENTER**.

Figure 77: Disable Sensors Selection Screen



18. Follow Steps 14 and 15 to disable the sensors.

19. Press **UP** or **DOWN** to scroll to the **Display Probe Status** submenu selection.

Figure 78: Disable Probe Status Selection Screen



20. Press **ENTER**. The display indicates:

Figure 79: Active Sensors Display Screen



21. Press **UP or DOWN** to scroll to the probe that are displayed on line 1 of the display with this selection. Press **ENTER**. The display shows the probe data.

Figure 80: Probe Data Display Screen



22. Press **ENTER** to view the status and values of individual sensors on the selected probe. Press **UP or DOWN** to scroll through the sensors (1 through 8). Press **ESC** to return to the Probe Data screen.

Figure 81: Individual Sensor Information Screen



23. Press **UP or DOWN** to scroll the menu display to the remaining probes, or press **ESC** to return to the Sensor Management menu.

Note: In the Sensor Management submenu, press UP or DOWN to scroll to the Display Probe Data submenu selection and press ENTER to display the probe data without going through the Probe Status submenu selection.

24. Press **UP or DOWN** to scroll to **Exit this Menu** and press **ENTER** to return to the Supervisor Menu.

Reset Sensor Network

The Reset Sensor Network submenu is used to reset all the sensors on the network and cycle power to the devices for an inventory. It also re-enables any disabled probes or sensors on the network.

Figure 82: Reset Sensor Network Flowchart

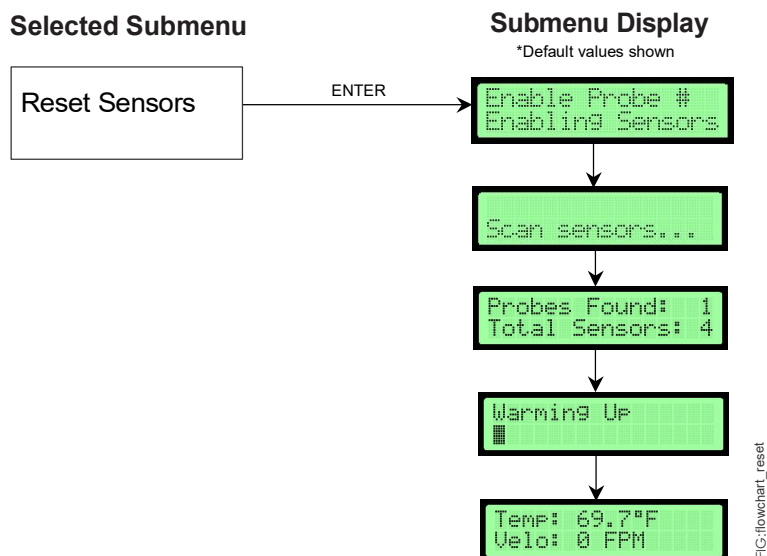


Table 19: Reset Sensor Network Submenu Selections and Display Screens

| Reset Sensor Network Submenu Selection | Display Screens |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reset Sensors | Primary probe commands all probes to re enable all sensors and to restart. Primary probe performs a sensor scan and re-enables sensors to get an inventory from the probe network. Primary probe returns to normal operation. |

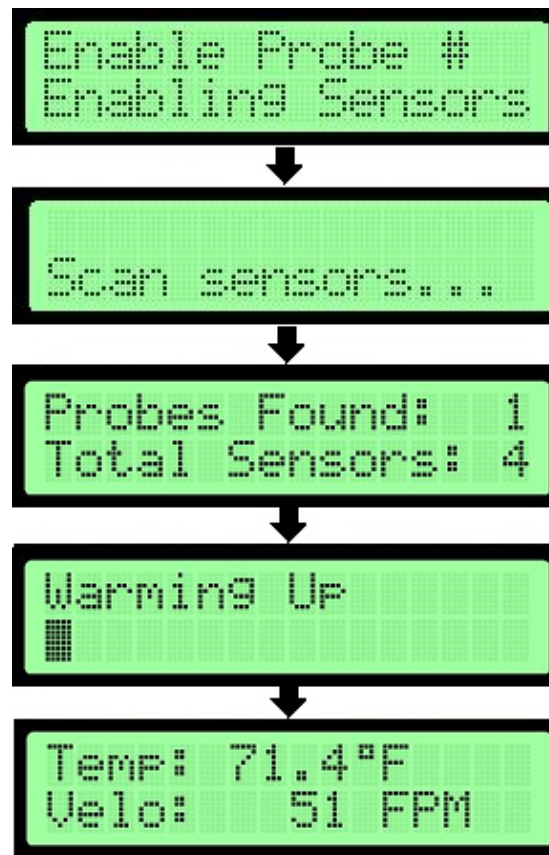
1. In the Supervisor Menu, press **UP** or **DOWN** to scroll to the **Reset Sensors** submenu.

Figure 83: Reset Sensors Selection Screen



2. Press **ENTER**. The display appears as follows:

Figure 84: Enable Probes Display Screens



The primary probe automatically resets all the sensors and devices and then restarts. After warming up, the primary probe returns to the normal operation mode.

Factory Default Reset

The Factory Default Reset submenu is used to reset all settings to the original factory-default settings.

Note: After a Factory Default Reset, any unique configuration settings must be re-entered if they are different from the default settings.

Figure 85: Factory Default Reset Flowchart

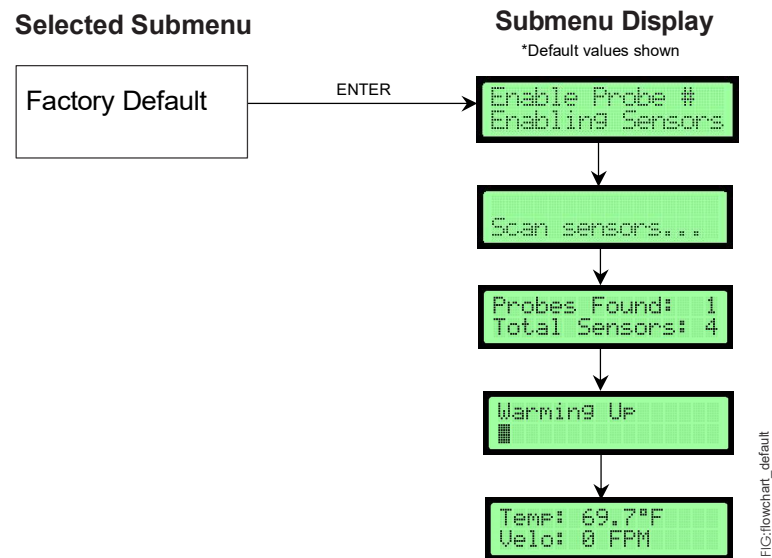
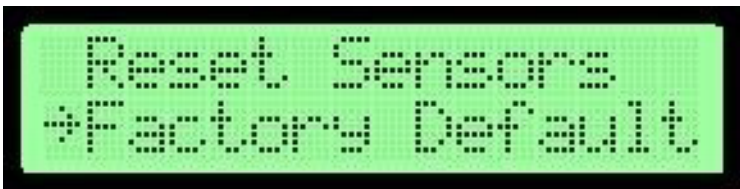


Table 20: Factory Default Reset Submenu Selection and Display Screens

| Factory Default Reset Submenu Selection | Actions and Display Screens |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factory Default | Cycle power from probe to re-enable all sensors and restart the auxiliary devices. Perform a local sensor scan and re-enable local sensors to get an inventory from the probe network. Display returns to normal operation and factory-default settings are restored. |

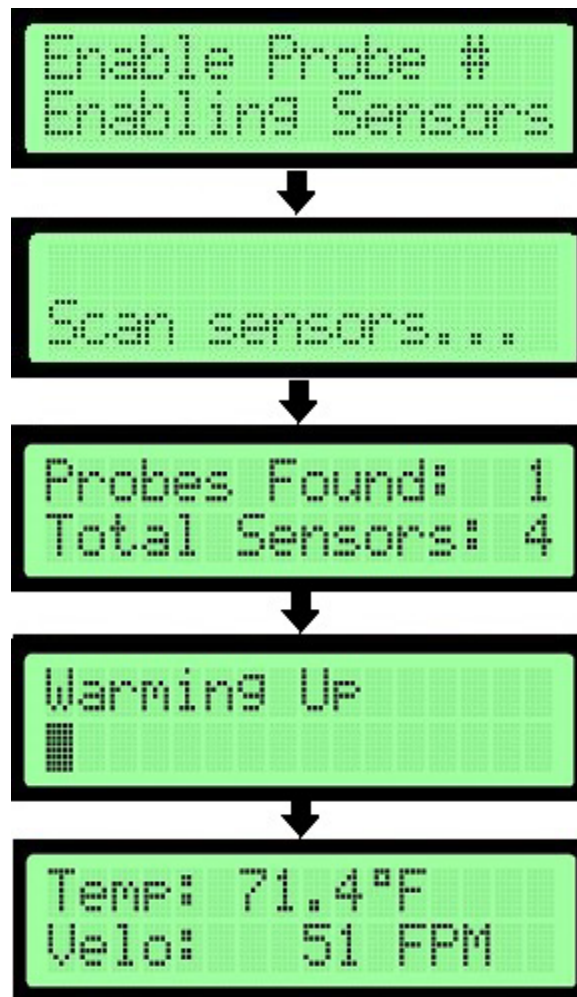
1. In the Supervisor Menu, press **UP** or **DOWN** to scroll to the Factory Default submenu.

Figure 86: Factory Default Selection Screen



2. Press **ENTER**. The display indicates:

Figure 87: Enable Probes Display Screens



The primary probe automatically resets all the sensors and devices and then restarts. After warming up, it returns to the normal operation mode. All settings are restored to their factory-default state.

Troubleshooting

Use Table 21 to troubleshoot problems with the AD-1272 Airflow Measuring System.

Table 21: AD-1272 System Troubleshooting (Part 1 of 2)

| Problem | Possible Cause | Corrective Action |
|-----------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Airflow readings do not match what T&B is reporting | Turbulent or non-uniform airflow across the air measurement station. | Use Automatic K-factor Configuration and use 1 point calibration if only gain is required. If flow is non-linear use two or three-point calibration feature. |
| | | Install additional probes to provide more sensing points. |
| | | Move probes to a better location in accordance with the minimum placement guide. |
| | | Check for leaks in the duct. |

Table 21: AD-1272 System Troubleshooting (Part 2 of 2)

| Problem | Possible Cause | Corrective Action |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No display | No power | Verify 24 VAC power at power terminal. Make sure the ribbon cable is fully seated in the board's socket. |
| | | Visually check to make sure membrane is plugged in to the display board in lid. |
| Incorrect number of PROBES shown when the power is applied. | Probe network is not wired correctly or the plug is plugged into the wrong port. | Verify wiring using the probe network wiring information in the <i>AD-1272 Thermal Dispersion Probe Airflow Measuring Station Installation Instructions (LIT-12012552)</i> . |
| | | Look at the drawings and make sure the left and the right terminals are not swapped. AO, Probe Network and BACnet ports on the primary fit into any of the plugs so make sure connections are correct on the board. |
| | Duplicate addresses on Probe Network. | Verify each ancillary probe has a unique address by checking the rotary dial position. |
| No BACnet communication with the BAS | Network wires terminated to the incorrect point or the wrong connector. | Verify wiring using the BACnet wiring information in the <i>AD-1272 Thermal Dispersion Probe Airflow Measuring Station Installation Instructions (LIT-12012552)</i> . |
| | | Look at the drawings and make sure the left and right terminals are not swapped. |
| | The device is not configured properly. | Verify configuration parameters in the BACnet Network Configuration settings match what is required to communicate with the BAS. |
| Analog Output 1 reading indicates 100% and does not change. Current output of the AD-1272 Airflow Measuring System stuck at 20 mA. | Flow station remains in step test mode while checking your input to CCT. | To exit the step test, power cycle the AD-1272 Airflow Measuring System. Recheck the reading and mA output. Analog output displayed value changes as needed along with the associated current output range of 0 mA to 20 mA. |