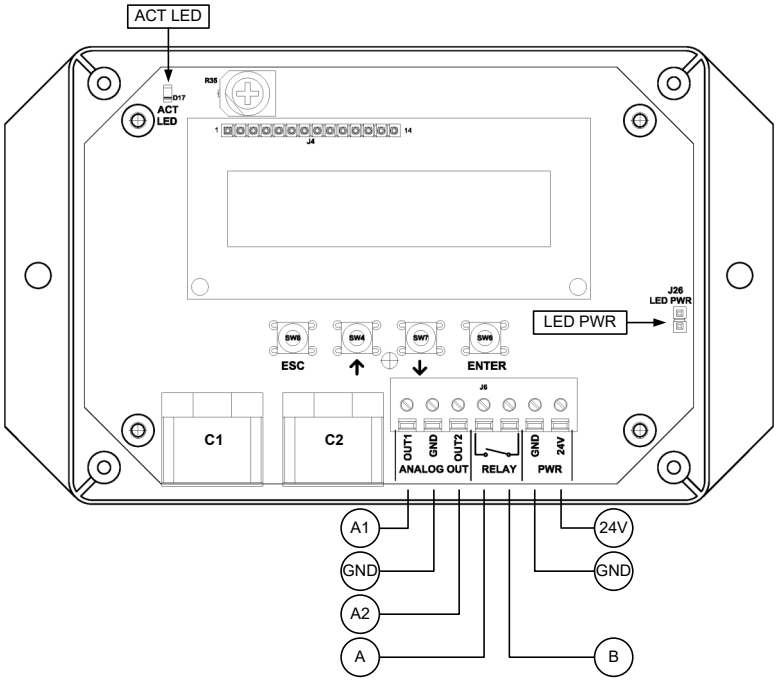
EB-FlowII EF-A2000-B STARTUP GUIDE



EF-A2000-B Parameters - Factory Defaults and Optional Settings/Ranges

Description	Parameter	Default	Optional Settings/Ranges	Units
System of Units	SYS	I-P (US customary)	SI (metric)	
Airflow Calculation Method	AIRFLOW	ACT (actual)	STD (standard mass flow)	
Altitude (for actual flow correction)	ALT	0	0 to 20000 [0 to 6000]	ft [m]
Low Limit Airflow Cutoff	LLIMIT	0 FPM	0 to 500 FPM [0.0 to 2.5 m/s]	
Area	AREA	*{Null}* requires entry	0.00 to 9999.99 [0.000 to 999.999]	sq ft [sq m]
Convert Airflow to Pressure	DPCONVERT	NO	YES	
Uni- or Bi-directional Output	DIRECTION	BI	UNI	
AO1 and AO2 Type	AOUT	2-10V	0-10V, 0-5 V	
AO1 Assignment	AO1 ASGN	AF (Airflow)	None	
AO1 Unit of Measure	AO1 UM	FPM [m/s]	CFM [L/s]	
AO1 Minimum Scale Reading	AO1 MS	-3000 [-15.0]	None	FPM [m/s]
AO1 Full Scale Reading	AO1 FS	3000 [15.0]	100 to 15000 [0.5 to 75.0]	FPM [m/s]
AO2 Assignment	AO2 ASGN	TEMP (Temperature)	ALRM (Alarm) or TRBL (System Trouble)	
AO2 Unit of Measure	AO2 UM	F [C]	None	°F [°C]
AO2 Minimum Scale Reading	AO2 MS	-20 [-30]	-50 to 160 [-50 to 70]	°F [°C]
AO2 Full Scale Reading	AO2 FS	160 [70]	-50 to 160 [-50 to 70]	°F [°C]

Refer to the O&M Manual for more information and/or additional parameter defaults, settings and ranges.

STARTUP INSTRUCTIONS:

1. The bleed sensor measures airflow and direction through a 1/2 inch diameter pipe having 1/2 inch NPT female threads on both ends.
2. Verify that the bleed sensor is mounted with the airflow arrow pointing in the direction of airflow for unidirectional applications and in the positive direction of airflow for bidirectional applications..
3. Verify that the transmitter is installed and wired in accordance with the *EF-A2000-B Wiring Guide* provided with the transmitter and power is provided to the transmitter.
4. Energize power to the transformer. Power-up faults, if detected, are displayed on the LCD. If any power up faults are detected, resolve all conflicts or contact EBTRON customer service at 1-800-232-8766 before proceeding..

⚠ *If extension cables have been added, the extension cable length must be entered into the transmitter. Refer to the Operations and Maintenance Manual for more information.*

5. The transmitter is fully functional as a factory calibrated airflow and temperature measurement device in I-P units (ft, FPM, CFM °F). Bidirectional airflow (FPM) and temperature (°F) are displayed on the LCD.

ⓘ *If SI units are required, refer to the the Operations and Maintenance Manual.*

ⓘ *The factory default airflow output is set to actual airflow (FPM, CFM). If standard (mass) airflow (SFPM, SCFM) is required, refer to the Operations and Maintenance Manual.*

6. The bleed sensor can be configured for bi– or uni-directional measurement. If uni-directional airflow is desired continue to step 7, otherwise skip to step 8.
7. To change from bidirectional to unidirectional measurement, press the ↑↓ arrow buttons simultaneously to enter the MAIN MENU. The SETTINGS menu is displayed. Press the ENT button to select the top of the SETTINGS submenu category. Press the ↓ button until the GENERAL submenu category is visible. Press the ENT button to enter the GENERAL submenu. Press the ↓ button until the DIRECTION parameter is visible. Press the ENT button and set the DIRECTION parameter to UNI using the ↑↓ buttons. Press the ENT button to save the selection. Press the ESC button twice to return no normal operation.
8. If the bleed sensor is used to estimate the total airflow though an opening, continue to step 9, otherwise skip to step 14.
9. Configure the bleed sensor for unidirectional measurement as directed in step 7.
10. Manually enter the free area of the opening where the bleed sensor is mounted in the transmitter. Press the ↑↓ arrow buttons simultaneously to enter the MAIN MENU. The SETTINGS menu is displayed. Press the ENT button to select the top of the SETTINGS submenu category. Press the ↓ button until the GENERAL submenu category is visible. Press the ENT button to enter the GENERAL submenu. Press the ↓ button until the AREA parameter is visible. Press the ENT button and set the AREA parameter using the ↑↓ buttons. Press the ENT button to save the area. Continue to step 11 before returning to normal operation.
11. Change the LCD to display CFM. Press the ESC button to return to the SETTINGS submenu category. Press the ↓ button until the LCD submenu category is visible. Press the ENT button to enter the LCD submenu. Press the ↓ button until the LCD UM parameter is visible. Press the ENT button and set the LCD UM parameter to CFM using the ↑↓ buttons. Press the ENT button to save the selection. Press the ESC button twice to return no normal operation.
12. Use the flow adjust wizard (FAW) to calibrate the bleed sensor to a reliable airflow reference measurement.

13. Press the ↑↓ arrow buttons simultaneously to enter the MAIN MENU. The SETTINGS menu is displayed. Press the ↓ button until the TOOLS menu category is visible. Press the ENT button to select the top of the TOOLS submenu category. Press the ↓ button until the FAW tool is visible. Press the ENT button to execute the tool. Choose a one or two point adjustment. Follow the prompts. Select "YES" when the SAVE prompt is displayed. The transmitter returns to normal operation with the adjustments calculated saved and enabled. Refer to the *Operations and Maintenance Manual* for more information.
14. If the bleed sensor is used to estimate the differential pressure between two adjacent spaces, continue to step 15, otherwise skip to step 17.
15. To change from airflow to pressure measurement, press the ↑↓ arrow buttons simultaneously to enter the MAIN MENU. The SETTINGS menu is displayed. Press the ENT button to select the top of the SETTINGS submenu category. Press the ↓ button until the GENERAL submenu category is visible. Press the ENT button to enter the GENERAL submenu. Press the ↓ button until the DPCONVERT parameter is visible. Press the ENT button and set the DPCONVERT parameter to YES using the ↑↓ buttons. Press the ENT button to save the selection. Press the ESC button twice to return to normal operation.

⚠ *The bleed airflow sensor is not a pressure sensor. Pressure is calculated using a nominal value for the assembly's flow coefficient without additional tubing and the output pressure is approximate. The addition of tubing changes the flow coefficient. To improve the accuracy of the pressure measurement manually calculate gain and offset coefficients using a high-performance pressure measuring device as a reference. Enter the coefficients manually in the transmitter and enable field adjustment. Refer to the Operations and Maintenance Manual for more information.*

17. If analog output signals are used continue to step 18, otherwise skip to step 22.
18. The output signal type and range (2-10 VDC, 0-5 VDC or 0-10 VDC) of AO1 and AO2 is determined by the AOUT parameter. The transmitter is factory set to 2-10V (i.e. AOUT=2-10V).

ⓘ *The VDC output circuit can drive the input circuit of devices designed to measure 4-wire current loops with a resistive load ≥250 ohms.*

⚠ *Do not apply any excitation voltage to the output of the transmitter.*

19. Verify that the transmitter is configured to match the analog input requirements of the host controller. Press the ESC and ↑ buttons simultaneously to display the transmitter setting for the AOUT parameter. If the AOUT parameter is not correct, press the ENT button and use the ↑ and ↓ buttons to set AOUT. Press the ENT button to execute and display the change. Press the ESC button to return to normal operation.
20. The analog output signal for airflow (AO1) is linear. If the bleed sensor is configured for unidirectional measurement, the minimum scale reading (0% output) of the airflow signal is fixed at 0 and the full scale reading (100% output) is factory set to 3,000 FPM if DPCONVERT=NO or 1.5 iWG if DPCONVERT=YES. If the bleed sensor is configured for bidirectional measurement, the minimum scale reading (0% output) of the airflow signal is fixed at the negative full scale reading.

Multiply the default full scale velocity (FPM) by the correct total area (i.e. AREA parameter) of the measurement location to determine the full-scale or span (CFM) for the B.A.S. to avoid additional field configuration when volumetric airflow measurement is desired. EBTRON airflow measurement device accuracy is percent-of-reading. Changing the full scale reading does not affect measurement accuracy.

ⓘ *If custom scaling or unit of measure are required, refer to the Operations and Maintenance Manual.*

21. The analog output signal for temperature (AO2) is linear. The minimum scale reading (0% output) is set to -20 ºF and full scale reading (100% output) is set to 160 ºF.

ⓘ *If custom temperature scaling is required, refer to the Operations and Maintenance Manual.*

ⓘ *AO2 can be configured for a high/low airflow alarm or system status alarm. Refer to the Operations and Maintenance Manual for more information.*

22. If contact closure alarming is required continue to step 23, otherwise skip to step 25.
23. The contact closure relay can be assigned to the high/low airflow (or pressure if DPCONVERT=YES) alarm or system status alarm. Refer to the *Operations and Maintenance Manual* for more information on configuring the high/low airflow alarm..
24. Press the ↑↓ arrow buttons simultaneously to enter the MAIN MENU. The SETTINGS menu is displayed. Press the ENT button to select the top of the SETTINGS submenu category. Press the ↓ button until the RELAY submenu category is visible. Press the ENT button to enter the RELAY submenu. The R1ASGN parameter is visible. Press the ENT button and set the R1 ASGN parameter to ALRM (high/low airflow alarm) or TRBL (System Status Alarm) using the ↑↓ buttons. Press the ENT button to save the selection. The default state for the relay is normally open (N.O.). If N.O. is required, press the ESC button twice to return to normal operation. If N.C. is required, press the ↓ button until the R1 STATUS parameter is visible. Press the ENT button and set the R1 STATUS parameter to NC. Press the ENT button to save the selection. Press the ESC button twice to return to normal operation.
25. Startup is complete! If additional customization is desired, consult the *Operation and Maintenance Manual*.

FOR MORE INFORMATION ….

Operations and Maintenance Manual.

The *Operations and Maintenance Manual* is a comprehensive reference document that contains information on installation, startup, custom configuration, built-in tools, diagnostics, troubleshooting and maintenance.

NEED MORE HELP?

EBTRON Customer Service

For toll-free factory support call 1-800-2EBTRON (1-800-232-8766), Monday through Thursday 8:00 AM to 4:30 PM and Friday 8:00 AM to 2:00 PM eastern time.

Your Local EBTRON Representative

Visit EBTRON.com for the name and contact information of your local representative.