



EBTRON EF-N2000-U EB-FlowII Airflow/Temperature Measurement Devices User Guide

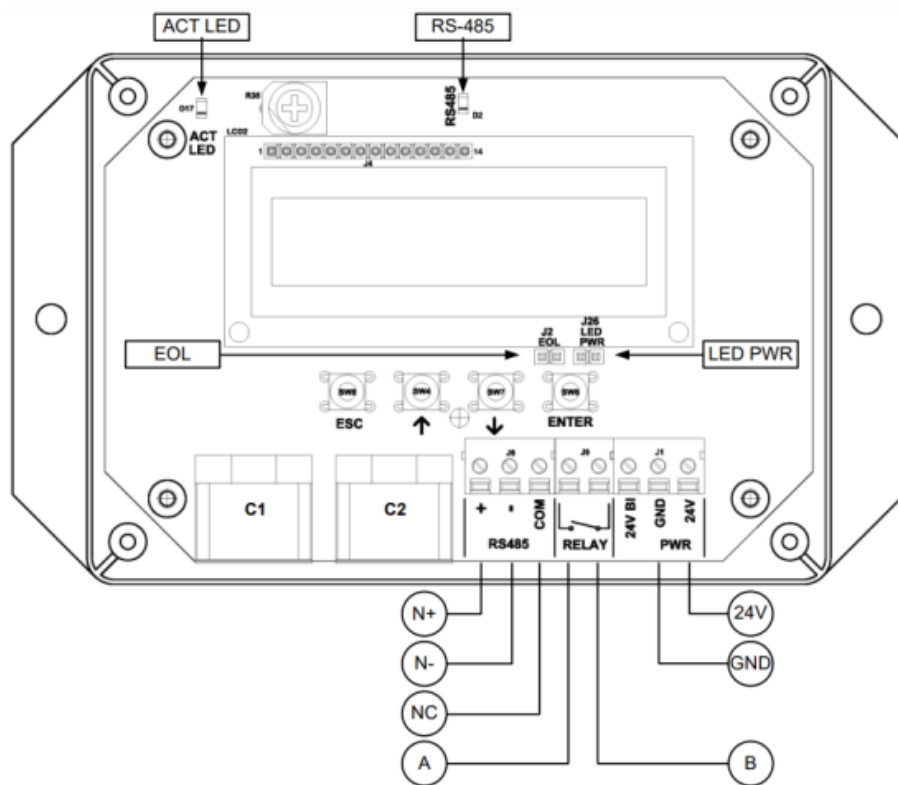
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Product Overview





Parameters


EF-N2000-U 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]
RS-485 Network	BACnet MS/TP or Modbus RTU (requires configuration)			


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

STARTUP INSTRUCTIONS

1. Verify that the sensor probes are located where they meet EBTRON published installation guides.
2. Verify that the probes are properly spaced with the airflow arrows pointing in the direction of airflow.
 Improperly installed probes will compromise the installed accuracy of the device and degrade system performance.
3. Verify that the transmitter is installed and wired in accordance with the EF-N2000-U Wiring Guide provided with the transmitter and power is provided to the transmitter.
4. Make sure the ductwork is clean and free of debris prior to fan startup.
5. 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.
6. The transmitter is fully functional as a factory calibrated airflow and temperature measurement device in I-P units (ft, FPM, CFM °F). Airflow (FPM) and temperature (°F) are displayed on the LCD.

 Airflow is displayed in FPM in lieu of CFM because the exact area where the sensor probes are located is not known until installation is complete.


 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.


7. If two probes are provided and each probe is used in a separate measurement location (ex. intake and exhaust paths of an ERV) continue to step 8, otherwise skip to step 9.

8. 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 ENT button to enter the GLOBAL submenu. Press the ↓ button until the LOCATIONS parameter is visible. Press the ENT button and set the LOCATIONS parameter to 2 using the ↑↓ buttons. Press the ENT button to save the selection. Press the ESC button twice to return to normal operation. Location 1 is the probe connected to receptacle C1.

9. It is recommended that the area of the opening where the probes are mounted is entered manually or calculated using the area wizard tool (AREA WIZ). The area parameter, AREA, can also be entered manually directly through the SETTINGS menu.

 Use the free area, excluding the probe blockage, where the probes are located.

 Refer to the Operations and Maintenance Manual if manual entry of the AREA parameter is desired.

 Failure to use the correct area will result in volumetric airflow (CFM) measurement error and degrade system performance.

10. To use the AREA WIZ tool, 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 AREA WIZ tool is visible. Press the ENT button to execute the tool. Select “YES” when the SAVE prompt is displayed. The display will be changed from FPM to CFM and the AREA parameter will be updated.

11. If the RS-485 network connection is required continue to step 12, otherwise skip to step 14.

12. 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 RS-485 submenu category is visible. Press the ENT button to enter the RS-485 submenu. The NET OUT parameter is visible. Press the ENT button and set the NET OUT parameter to BACNET (BACnet MS/TP) or MODBUS (Modbus RTU). Press the ENT button to save the selection. Use the ↓ arrow button and continue through the RS-485 submenu to configure the remaining network parameters. Enable network communications by setting the RS485 COM parameter to “ON” and press the ENT button. Press the ESC button twice to return to normal operation.

13. Refer to the A4 Operations and Maintenance Manual for detailed information on the BACnet Objects and Modbus Registers supported by this device.

14. If contact closure alarming is required continue to step 15, otherwise skip to step 17.

15. The contact closure relay can be assigned to the high/low airflow alarm or system status alarm. Refer to the Operations and Maintenance Manual for more information on configuring the high/low airflow alarm..

16. 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.

17. Startup is complete! If additional customization is desired, consult the Operation and Maintenance Manual.

VERIFICATION

Many installations require third-party airflow verification. If the airflow measuring device is within the measurement uncertainty of the verification technique, EBTRON strongly recommends that no field adjustment correction is made. EBTRON airflow measurement devices are factory calibrated to NIST traceable standards. Field adjustment is not recommended when installed in accordance to published guidelines.

If field adjustment is required, refer to the Operation and Maintenance Manual.

 Transmitters can be field adjusted to match a third-party measurement. Adjusted field measurements typically result in comparative readings within $\pm 3\%$ of the third-party measurement. Be advised that the third-party measurement may have uncertainties greater than or equal to $\pm 10\%$ and should only be used to adjust the airflow measurement if the discrepancy is greater than the uncertainty of the third-party source.



The -U probe type is often used in outdoor air intakes of smaller rooftop units or mounted directly downstream of the blades of an intake louver on larger systems. In this type of application, adjustment to a reliable third-party measurement may improve the “out of the box” installed accuracy of the device.

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?

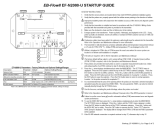
EBTRON Customer Service

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.

Documents / Resources



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EF-N2000-U, EB-FlowII Airflow Measurement Devices, EB-FlowII Temperature Measurement Devices

References

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