



# EBTRON HTA104-T Airflow Sensor Module User Guide

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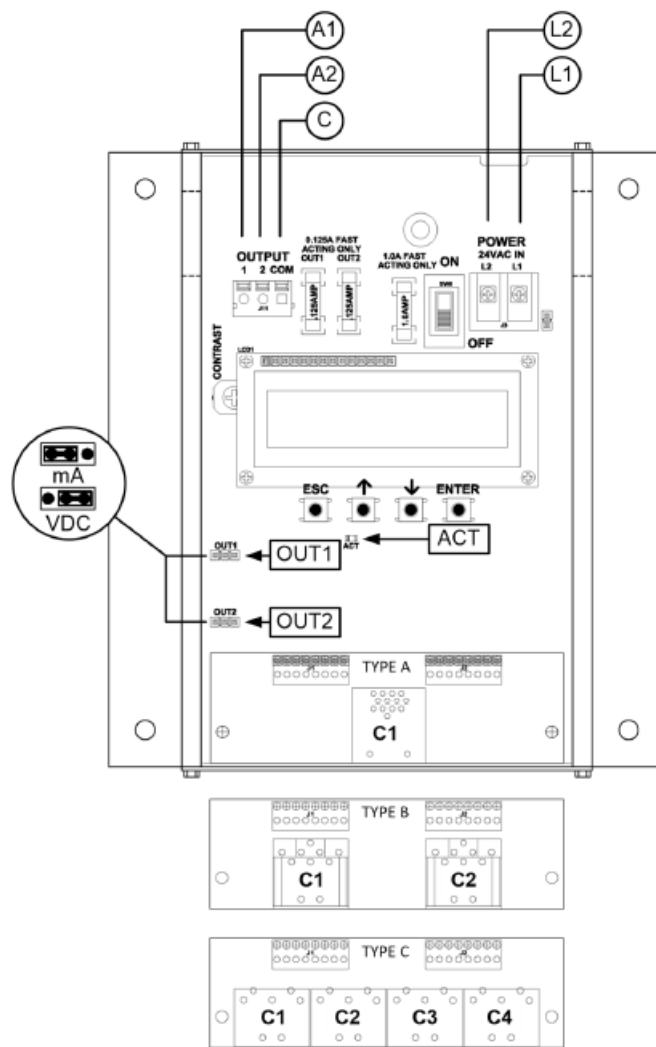
## EBTRON HTA104-T Airflow Sensor Module



## Parameters

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	{Order Area}	0.00 to 9999.99 [0.000 to 999.999]	sq ft [sq m]
AO1 Type	AOUT1	4-20mA	0-10V, 0-5 V	
AO2 Type	AOUT2	4-20mA	0-10V, 0-5 V	
AO1 Assignment	AO1 ASSIGN	AF (Airflow)	None	
AO1 Unit of Measure	AO1 UM	FPM [m/s]	CFM [L/s]	
AO1 Minimum Scale Reading	AO1 MS	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 ASSIGN	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]

## DESCRIPTION



## STARTUP INSTRUCTIONS

1. Verify that the sensor probe is located where they meet EBTRON published installation guides.
2. Verify that the probe is properly installed with the airflow arrow pointing in the direction of airflow.
3. Improperly installed probes will compromise the installed accuracy of the device and degrade system performance.
4. Verify that the transmitter is installed and wired in accordance with the HTA104-T Wiring Guide provided with the transmitter and power is provided to the transmitter.
5. Make sure the ductwork is clean and free of debris prior to fan startup.
  - Move the power switch to the “ON” position. 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 (CFM) and temperature (°F) are displayed on the LCD.
  - If SI units are required, refer to 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. Verify that the area on the hang-tag matches the actual area of the duct or opening where the probes are

located (less any internal insulation). If the area is different, modify the area parameter stored in the transmitter and use the correct area for any external conversion calculations from FPM to CFM. system performance. If the area parameter must be changed, refer to the Operations and Maintenance Manual.

8. If analog output signals are used continue to step 9, otherwise skip to step 14.
9. The output signal type and range (4-20 mA, 0-5 VDC or 0-10 VDC) of AO1 and AO2 is determined by the AOUT parameter and the position of the output jumpers located on the left side of the PCB. Position the jumpers (AOUT1 for AO1 and AOUT2 for AO2) to "mA" if a 4-20 mA signal is required or "VDC" if a 0-5 or 0-10 VDC signal is required. The transmitter is factory set to 4-20mA (i.e. AOUT=4- 20mA and both jumpers are set to "mA").
  - The 4-20mA is "4-wire type" and not loop powered. Do not apply any excitation voltage to the output of the transmitter.
10. 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 output signal type and range is not correct, use the ↑ and ↓ buttons to display the proper output signal type and range and press the ENT button to execute the change.
11. Verify that jumpers AOUT1 and AOUT2 are set to "mA" if the AOUT parameter is set to "4-20mA" or "VDC" if the AOUT parameter is set to "0-5V" or "0-10V".
12. The analog output signal for airflow (AO1) is linear. 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.

**NOTE:** Multiply the default full scale velocity (FPM )by the correct area of the measurement location to determine the full-scale or span (CFM ) for the B.A.S. to avoid field configuration. EBTRON airflow measurement device accuracy is percent-of-reading. Changing the full scale reading does not affect measurement accuracy.

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

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

If minimum placement guidelines cannot be achieved, installed accuracy may be compromised. 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 device if the probes do not meet minimum placement requirements or the discrepancy is greater than the uncertainty of the third-party source.

## 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**



**[EBTRON HTA104-T Airflow Sensor Module](#)** [pdf] User Guide  
HTA104-T Airflow Sensor Module, HTA104-T, Airflow Sensor Module, Sensor Module

**References**

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