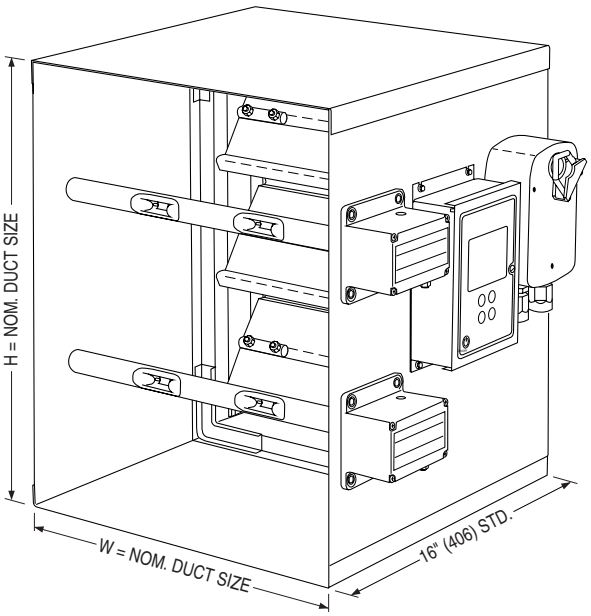
Nailor® Industries Inc.

AIR MEASURING CONTROL DAMPER
THERMAL DISPERSION • VEE BLADE
LOW LEAKAGE • STANDARD PERFORMANCE
MODEL: AMD-TD-10

The AMD-TD-10 is an all-in-one airflow measuring and control damper solution that features time-saving and cost-saving installation. In contrast to other airflow measurement products, the thermal dispersion probes offer higher accuracy, even at more turbulent and lower speed airflows. This unit meets the frequently specified leakage criteria of less than 10 cfm per sq. ft at 4" w.g. (0.5% at 2000 fpm). The damper design features include a sturdy hat channel frame with die-formed corner gussets for reinforcement, a vee groove blade design that maximizes strength and zero maintenance concealed linkage (out of the air stream) for reduced pressure drop and air turbulence.



STANDARD CONSTRUCTION:

Frame: 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel with die-formed corner gussets. Low profile (flat top and bottom) on dampers 10" (254) high and under.

Blades: 6" (152) wide on 5 1/2" (140) centers. 16 ga. (1.6) galvanized steel vee groove design. Parallel or opposed blade action.

Linkage: Concealed side type totally enclosed within the frame and out of the airstream. Plated steel.

Bearings: 1/2" (13) dia. Celcon®.

Axles: 1/2" (13) dia. plated steel double bolted to blades.

Drive Shaft: 6" (152) long x 1/2" (13) dia. rigid drive shaft.

Blade Seals: Dual durometer bulb type extruded PVC.

Jamb Seals: Compression type cambered metal.

Sleeve: Galvanized steel 16" long x 20 ga. (406 x 1.0).

Temperature Range: -20°F to +140°F (-29°C to +60°C).

Monitor Accuracy: 2 – 3% of reading.

Blade Action: ❑ **PB** Parallel (default) ❑ **OB** Opposed

Controls Location: ❑ **CRH** Right Hand (standard as illustrated)
❑ **CRL** Left Hand

OPTIONS:

- ❑ **12G** 12 ga. (2.7) hat channel frame
- ❑ **BO** Oilite® bearings
- ❑ **BS** Type 304 Stainless Steel bearings
- ❑ **BSS** Silicone Blade Seals
- ❑ **ASH** Aluminum Honeycomb Airflow Straightener
- ❑ **SL** Specify Sleeve Length 16" - 28" (406 - 711)
- ❑ **FUS** 1 1/2" (32) flange on upstream side of unit
- ❑ **FDS** 1 1/2" (32) flange on downstream side of unit
- ❑ **FBS** 1 1/2" (32) flange on both sides of unit
- ❑ **SSL** Type 304 Stainless Steel face linkage (includes axles)
- ❑ **24** 24 VAC Modulating, Spring Return Actuator
- ❑ **HLQ** Hand Locking Quadrant
- ❑ Other _____ .

Performance Data - Air Leakage (Damper Closed)
3.5 cfm/ft² @ 1" w.g. (64 cmh/m² @ .25 kPa)
7 cfm/ft² @ 4" w.g. (128 cmh/m² @ 1 kPa)

Sizing

W x H	Minimum Size*	Maximum Size	
	External	Single Section	Multiple Section
	10" x 6" (254 x 152)	48" x 72" (1219 x 1829)	96" x 72" (2438 x 1829)

*Minimum size using two blades is 10" x 10" (254 x 254)

Static Pressure Drop (in. w.g.)

Damper Size	Approach Velocity (fpm)		
	750	1000	1500
12" x 12" (305 x 305)	.025	.050	.13
24" x 24" (610 x 610)	.016	.030	.78
36" x 36" (914 x 914)	.013	.023	.03

Tested per AMCA Standard 500-D, Fig. 5.3.

SCHEDULE TYPE:	Page 1 of 3 Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**6 - 16 - 21**	**FDACC**	**3 - 19 - 21**	**AMD-TD-10**

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DESCRIPTION:
In contrast to having to source all airflow measuring and control items separately, the AMD-TD-10 is offered as an all-in-one, factory assembled and calibrated solution that relieves headaches in parts' sourcing and installation. The AMD-TD-10 consists of a 1000 series control damper, thermal dispersion technology probes, a BACnet MS/TP capable transmitter, an optional 24 VAC modulating actuator, and an ease-of-access terminal block, all fixed to a sleeve. The probes, transmitter, and actuator are factory wired to the provided terminal block, offering easy, single-point wiring.

OPERATION:
The probes and transmitter use thermal dispersion technology to read the airflow and air temperature, which is displayed on the transmitter. The transmitter outputs a 0 - 10 VDC signal proportional to the real-time airflow and/or air temperature being read, where 10 VDC represents the programmed maximum airflow/air temperature. The factory supplied modulating actuator accepts a 0 - 10 VDC signal that corresponds to how open or closed the damper is.

FEATURES:

BACnet MS/TP and Modbus RTU capable Transmitter
BACnet MS/TP and Modbus RTU communication allows for remote monitoring and operation, as well as communication between devices.

Complete Transmitter and Probe Calibration
Individual sensors receive a multi-point, NIST* traceable calibration of air velocity and temperature across the entire operating range.

Ruggedized, Hermetically Sealed Sensors - Precision Thermistors And Heating Circuit Are Fully Encapsulated
Provides a high degree of protection from the environment and allows the sensor assembly to be cleaned without damage.

Dedicated ELECTRA-flo GS Transmitter with Display
Each Air Measuring Control Damper comes complete with a transmitter that is factory matched and configured, optimizing system performance.

Turbulent Airflow Correcting Apertures
At the heart of each thermal probe array are pairs of precision matched thermistors installed in aerodynamic apertures. These sensor aperture assemblies are specifically designed to reduce the effects of angular flow distortions found within ducted air distribution systems. The design, construction and calibration of each thermistor sensor pair ensures the accuracy and long term reliability of the measurement system.

APPLICATIONS:
Nailor's Thermal Dispersion Air Measuring Low Leakage Control Dampers accurately measure airflow in a wide variety of commercial HVAC applications and installations.
Permanently installed airflow measurement and control systems provide the real time, actionable information required for the safe, code compliant and efficient operation of today's high performance buildings.
The Air Measuring Damper unit may be used in any application that requires the airflow to be measured and controlled. Common applications are outside air intake and floor supply and return tracking.

* National Institute of Standards and Technology

SCHEDULE TYPE:	Page 2 of 3 Dimensions are in inches (mm)			
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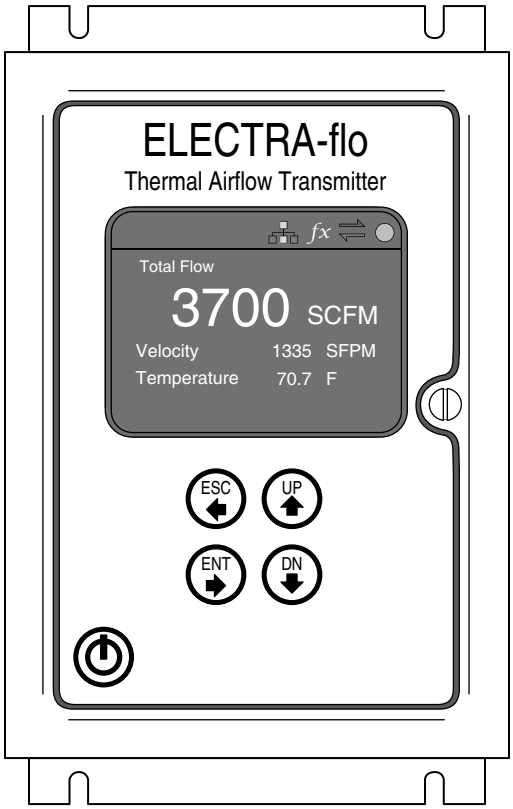

PROBE ARRAY SPECIFICATIONS:

I / O Signals: Two (2) analog outputs, selectable based on configuration.
Network Connections: RS485, BACnet® MS/TP or MODBUS® RTU.
Approvals: UL 60730
BTL Certified to BACnet Standard ISO 16484-5 rev. 1.12.
FCC Meets part 15 Subpart B, Class A device requirements.
Performance: SENSOR ACCURACY Individual sensor accuracy ± 2% of reading from 0 - 5000 fpm.
Sensor Design: Precision matched, hermetically sealed thermistors with laser trimmed resistive heating element.
Dedicated 16 bit A/D procession of each sensor signal.
Sensor node consists of two (2) thermistors mounted in a dedicated flow conditioning aperture.
Temperature Accuracy: ± 0.1°F over operating range of - 20°F to 140°F (± -18°C over operating range of - 29°C to 60°C).

Dimensions are in inches (mm)

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