

## CDRAMS ROUND AIR MEASURING STATION WITH INTEGRAL DAMPER

The CDRAMS combines an air measuring station with an ultra low-leak, true round, control damper that was developed to meet the industry requirements for an air measuring station for use in spiral duct applications. The specially designed blade-to-frame, full circumference seal is mechanically fastened between a dual skin blade. The flow sensing cross samples the air pressure across the

full diameter of the duct. The complete assembly is factory assembled and tested to provide effective setpoint monitoring and adjustment. The unit comes standard with a pressure transducer. The output signal is proportional to cfm. The output signal can be read with a volt meter to position the damper at the desired set point. Automated control options are available.

### STANDARD CONSTRUCTION

#### FRAME

20 gage (1) galvanized steel.

#### FLOW SENSING CROSS

One-piece ABS Plastic (units 6" dia. Through 16" dia.). Two-piece anodized aluminum extrusion (units 18" dia. Through 24" dia.)

#### SENSOR PORT FITTINGS

Brass.

#### PRESSURE TRANSDUCER

RU-274-R2-VDC; 0-5 or 0-10 VDC output (field selectable). Output signal is proportional to CFM.

#### POWER REQUIREMENTS

12-40 VDC or 12-35 VAC.

#### DAMPER BLADE

Dual-skin galvanized steel; 14 gage (2) equivalent thickness.

#### BLADE SEAL

Full circumference seal, mechanically fastened between dual blade skins.

#### AXLE

1/2" (13) plated steel, extended 6" (152) from frame O.D.

#### BEARINGS

Stainless steel sleeve.

#### DAMPER SIZES (see Detail 1)

##### D Diameter

6", 7", 8", 9", 10", 12", 14", 16", 18", 20", 22", 24" (152, 178, 203, 229, 254, 304, 356, 406, 457, 508, 559, 610).

##### L Length

6" dia. - 10" dia. (152 - 254) L = 17" (432)  
Above 10" dia. - 20" dia. (254 - 508) L = 27" (686)  
Above 20" dia. - 24" dia. (508 - 610) L = 31" (787)

#### VELOCITY REQUIREMENTS

Product Range - 400 to 4000 FPM

Operating Range - 400 to 2,000 FPM

-Standard units with RU274-R2-VDC

Operating Range - 400 to 4,000 FPM

-Units with AMS070V controller or special (high pressure) transducer.

#### FINISH

Mill galvanized frame and damper blade.

#### OPERATING TEMPERATURE

Minimum -40°F (-40°C). Maximum 200°F (93°C).

#### NOTES:

1. Dimensions shown in parenthesis ( ) indicate millimeters.
2. Units furnished approximately 1/8" (3) smaller than given opening diameter.



Shown with ABS flow sensing cross and optional AMS070V-AF control package.

#### Application Hint:

Perfect for manually balancing a branch take-off or use with the AMS070V-AF in lieu of a VAV box.

#### VARIATIONS

The CDRAMS is available with several options to fit your specific application.

- Stainless steel frame, blade and axle
- 24VAC Actuator (AF24MFT30001)
- AMS070V Controller package  
Package includes factory calibration of control module, 24 VAC actuator, transformer and NEMA1 enclosure in a turnkey assembly (reference AMS070V data sheet)
- Heavy duty hand quadrant
- Transducer with LCD display
- Non-stock 120 VAC or 24 VAC electric actuators
- Actuator mounting bracket for field mounted, customer-furnished actuator.

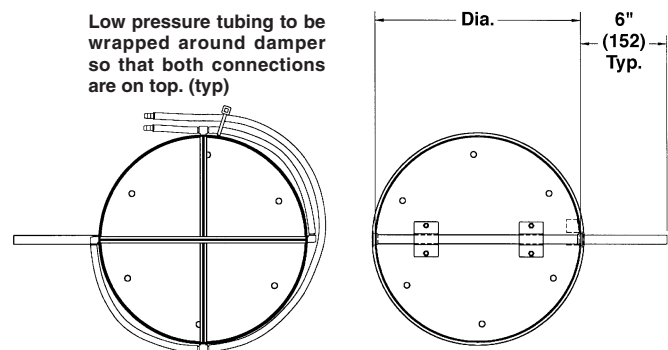
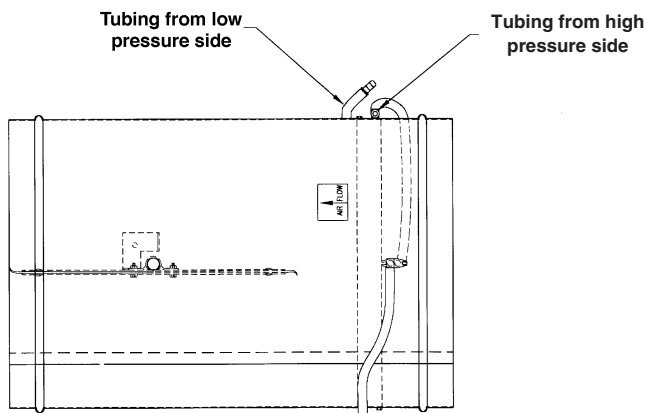
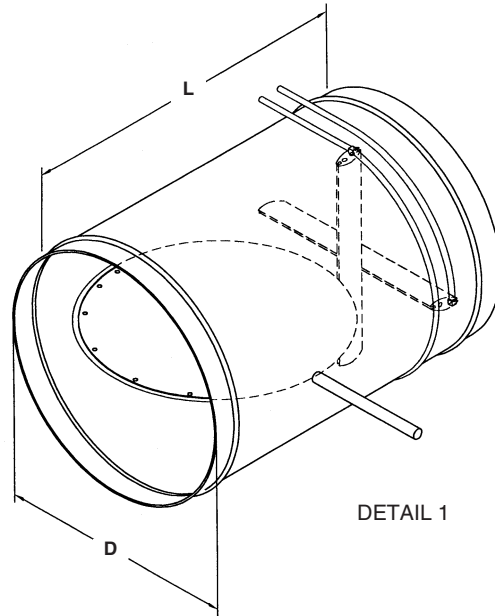
## SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, a true round air measuring station with integral control damper and factory piped pressure transducer. The complete air measuring package shall be factory assembled into a turnkey product capable of sending a 0-10 VDC output signal that is proportional to cfm. Unit shall have a measuring range from 400 to 4,000 feet per minute. The air measuring station shall consist of a glass-on-silicone GL-Si capacitance sensor pressure transducer capable of measuring up to six field selectable pressure ranges up to 1" water column. The transducer shall be accurate to  $\pm 1\%$  of full scale and be contained within a NEMA 4 (IP-65) painted steel enclosure. Transducer shall be factory mounted and piped through high and low brass pressure fittings to the sensor averaging ports.

All sensor tubing shall terminate in solid brass barbed fittings. The integral damper shall consist of a dual-skin blade, equivalent to 14 gage steel and shall have a full circumference seal, mechanically locked, between the dual blade skins. The low profile blade seal shall be an integral part of the damper blade. Seals that are attached to the inside of the damper frame with Adhesive or that clip-on, are not acceptable. Axle bearings shall be non-corrosive stainless steel sleeve type and shall be pressed into the damper frame. The damper axle shall be plated steel and shall run the full length of the blade and extend beyond the outside of the frame, a distance no less than size inches, to accommodate the control device most desirable for the application. Air Measuring Stations shall be, in all respects, equivalent to Ruskin Model CDRAMS.

## ORDERING INFORMATION

1. Specify "D" diameter (length is determined by diameter).
2. The standard transducer is field selectable 0-5 or 0-10 VDC output.  
Specify an alternate transducer as required.
  - 4-20 mA output
  - Transducer with LCD display (displays output signal)
  - High pressure transducer (units over 1" w.g.)
3. Specify the means of damper control.
  - Manual operation requires a heavy duty hand quadrant.
  - BAS-controlled damper may have either a customer furnished actuator or Ruskin furnished AF24MFT30001 24 volt actuator. Special actuators available upon request (consult factory).
  - Flow control applications require the AMS070V-AF option. Specify the design setpoint cfm, along with a low and high limit cfm when ordering this option. The low limit cfm is generally set to the ASHRAE62.1 design for the space. The high limit is generally based on future occupancy or purge requirements. Design is a value that is between the low and high limits. Often, the design is the same as the low limit, since you should never operate below the ASHRAE minimum requirement in the space.
  - Actuator by others - Ruskin provides an actuator mounting bracket.



Construction details shown with anodized aluminum flow measuring cross.

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