

SEQUENCE OF OPERATION

For use on AMS units with RU274 Transducer or AMS070V Controller

Option 1

Manual Balancing

The unit is installed in the outside air opening and furnished with a manual locking hand quadrant and an RU274 pressure transducer. Under flow, the transducer output is checked with a volt meter and compared to the pressure chart (P.A.M.S.). The damper is manually adjusted until the voltage output is equal to the desired CFM flow. The RU274 transducer output signal can be wired to the BAS to prove flow.

CFM can be determined by referencing the chart and utilizing the following formula below. Both Ka and l/m values are constants. See the PAMS chart provided with your unit for Ka and l/m for your specific unit.

$$CFM = (AREA * Ka) * PAMS (l/m)$$

Option 2

BAS Control

The unit is installed in the outside air opening and furnished with an RU274 transducer and a 24V modulating damper actuator. Under flow, the transducer output produces a voltage signal to the Building Automation System (BAS). The BAS calculates the CFM based on the formula and velocity pressure (P.A.M.S.). The BAS sends a control signal to the actuator to modulate to the desired CFM flow.

Option 3

Full Factory Controls

The air measurement station with included control damper is installed in an outside air opening in the building's envelope or in the supply, return or exhaust air ductwork or in an air handler. The air measurement station will be supplied with a corresponding actuator. The actuator will be driven by the AMS070V controller, based on the air measurement station's velocity pressure, to maintain a CFM set point value. The AMS070V controller will drive the damper actuator to maintain a measured CFM value equal to the input set point. Each air measurement station supplied with the AMS070V option will include an Input / Output (I/O) chart showing the input voltage (0-5VDC) corresponding to the range of air flows to be controlled. The I/O chart will also show the expected (4-20mA) analog output, corresponding to the range of air flows being measured and controlled. The AMS070V control panel is powered from 120VAC and can be interfaced with any building automation system. For additional details, for example how to drive the damper closed when the building or space is unoccupied, please reference the attached wiring diagram and the AMS070V catalog sheet at ruskin.com.

VOLTS	PAMS	CFM	FPM
0.1	0.01	1549.6	280.3
0.2	0.02	2253.0	407.6
0.3	0.03	2804.5	507.3
0.4	0.04	3275.9	592.6
0.5	0.05	3695.4	668.5
0.6	0.06	4077.7	737.6
0.7	0.07	4431.7	801.6
0.8	0.08	4763.0	861.6
0.9	0.09	5075.8	918.2
1	0.1	5373.0	971.9
1.1	0.11	5656.7	1023.3
1.2	0.12	5928.9	1072.5
1.3	0.13	6190.8	1119.5
1.4	0.14	6443.5	1165.6
1.5	0.15	6688.1	1209.8
2	0.2	7812.2	1413.1
3	0.3	9724.3	1759.0
4	0.4	11358.7	2054.7
5	0.5	12813.2	2317.8
6	0.6	14138.9	2557.6
7	0.7	15366.2	2779.6
8	0.8	16515.2	2987.4
9	0.9	17599.7	3183.6
10	1	18630.1	3370.0

Sample P.A.M.S. Chart

(P.A.M.S. Charts are job specific)

CUSTOMER: CUSTOMER
 C/N: 200000
 TAG: TAG 1A
 Damper Width: 18.75
 Damper Height: 19.75
 Square Feet: 1.89

AMS050 AIR MONITOR DAMPER WITH AMS070V CONTROLLER

CFM SETPOINT
SETPOINT = 1860 x VDC + 600

INPUT VOLTAGE	CFM SETPOINT
0.0	600
0.5	1530
1.0	2460
1.5	3390
2.0	4320
2.5	5250
3.0	6180
3.5	7110
4.0	8040
4.5	8970
5.0	9900

CUSTOMER SET POINT
2.37 | 5000

MEASURED CFM
CFM = 680.625 x (mA - 4)

MA OUTPUT	ACTUAL CFM
4.0	0
5.6	1089
7.2	2178
8.8	3267
10.4	4356
12.0	5445
13.6	6534
15.2	7623
16.8	8712
18.4	9801
20.0	10890

CUSTOMER SET POINT
11.35 | 5000

NOTE:
 CFM CORRECTED TO 70° F. & 1000 FT ELEVATION.
 FOR OTHER ELEVATIONS ADD 2% PER 1000 FT. INCREASE
 ADD 1% PER 10° F INCREASE IN TEMP.
 RECOMMENDED OPERATING RANGE IS 300 TO 2000 FPM.
 OPERATION OUTSIDE THE OPERATING RANGE IS NOT RECOMMENDED

Sample Control Chart

(Charts are job specific)

AMS-SO-813/Replaces AMS-SO-906

ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.

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AMS070V WIRING SCHEMATIC

