

## AMP SERIES AIR MEASURING PROBE KITS AMP001, AMP002 & AMP003

Ruskin's AMP series probes are designed to provide accurate flow monitoring at all times. The anodized aluminum step sensor is fastened to a 20 gage galvanized steel mounting plate. Brass fittings are used to connect the high and low pressure chambers of the step sensor to a high performance glass on silicone pressure

transducer through 1/4" (6) O.D. polyethylene tubing. All performance data is based on three duct areas tested to AMCA 610-93 (figures one and two), providing the most comprehensive testing in the industry (refer to page 2).

### STANDARD CONSTRUCTION

#### AMP MOUNTING PLATES

20 ga. G60 galvanized steel.

#### STEP SENSOR EXTRUSION

6063T5 Extruded aluminum, clear anodized finish.

#### SENSOR PORT FITTINGS

1/4 Brass barbed union.

#### PRESSURE TUBING

Plenum Rated Polyethylene.

#### 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.

#### MINIMUM SIZE

6"w x 6"h (152 x 152) Duct.

#### MAXIMUM SIZE

60"w x 42"h (1524 x 1067) Duct.

#### VELOCITY REQUIREMENTS

Product Range - 400 to 5000 FPM.

Operating Range - 250 to 2,000 FPM.

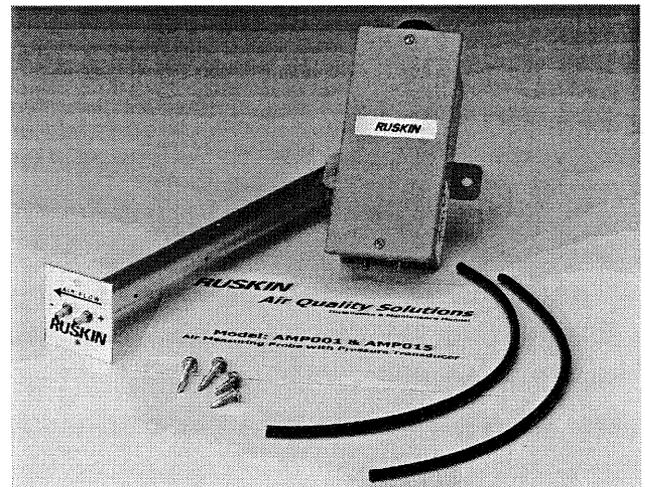
Standard units with RU274-R2-VDC.

Operating Range - 250 to 5,000 FPM.

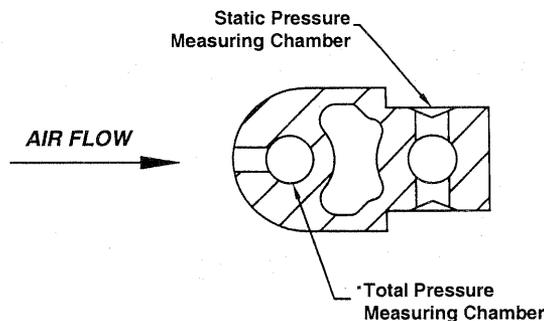
Units with high pressure transducer.

#### OPERATING TEMPERATURE

-22° F to +140° F standard.



AMP001 Single Probe Kit Shown



STEP SENSOR CROSS-SECTION

Ruskin Company certifies that the AMP Series Air Measuring Probes shown herein are licensed to bear the AMCA Certified Rating Seal - Airflow Measurement Station Performance. The ratings shown are based on tests and procedures performed in accordance with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to airflow measurement performance only.



### VARIATIONS

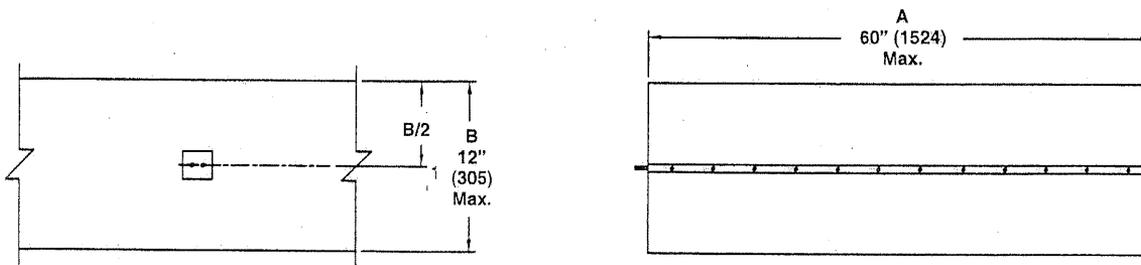
AMS series kits are available with several optional variations to fit your specific application.

- RU-274-R2-MA (4-20mA transducer)
- RU274-R3-VDC High pressure transducer (units over 2,000 FPM)
- Pressure Sensors with LCD Display
- Step sensing probe only

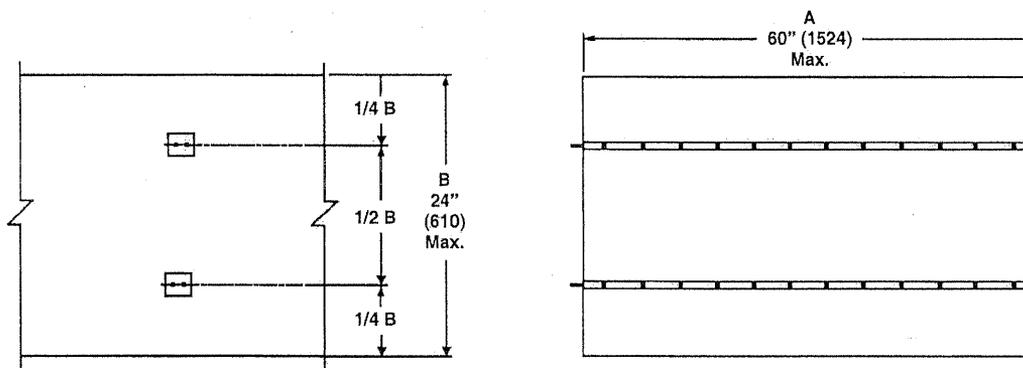
### NOTES:

1. Dimensions shown in parenthesis ( ) indicate millimeters.
2. Refer to installation details for additional details.
3. Probe is furnished 1/4" (6) smaller than given "A" dimension.

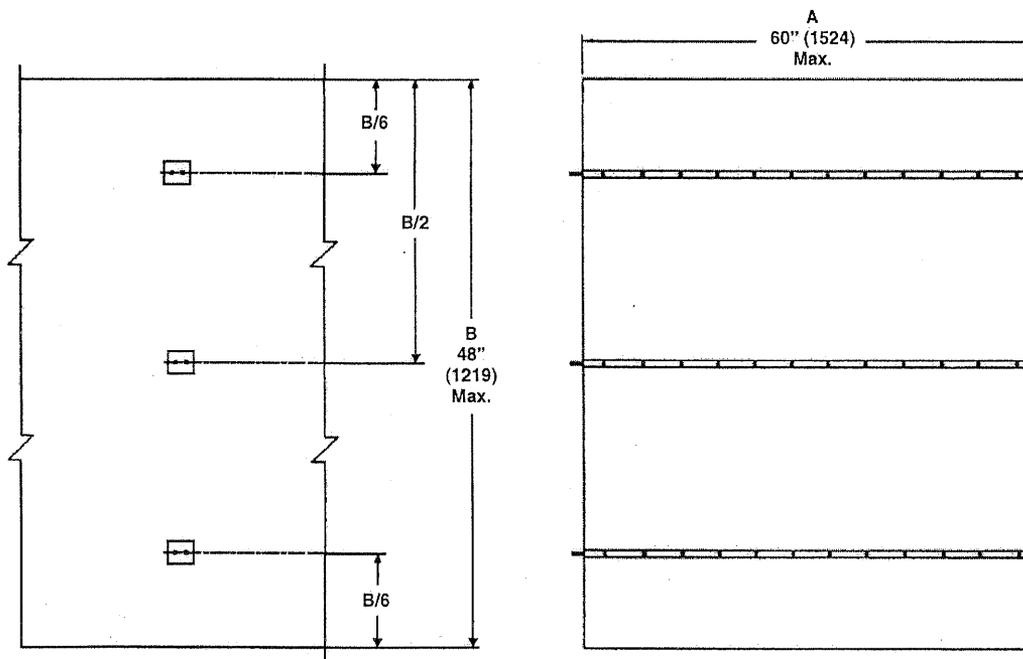
# INSTALLATION DETAILS



AMP001 Single Probe Applications from 6" to 60" A-Width x 6" to 12" B-Height



AMP002 Two Probe Applications from 6" to 60" A-Width x 12" to 24" B-Height



AMP003 Three Probe Applications from 6" to 60" A-Width x 24" to 42" B-Height

# AIR PERFORMANCE ± 5% Measurement Accuracy

Ruskin test data is based on multiple sizes and AMCA test setup configurations. Compare data to other manufacturers that claim lower accuracy and you will find that their data is based on one size in the most favorable test configuration. Some manufacturers do

not even test to AMCA standards. You can trust Ruskin to have the most comprehensive test data in the industry so you can use our products with confidence.

AMCA TEST SETUP FIGURE 1 (Straight Duct)								AMCA TEST SETUP FIGURE 2 (After Elbow)							
TEST SIZE	TEST RUN	DP IN. W.G.	REFERENCE VOLUME CFM	REFERENCE VELOCITY FPM	INDICATED VOLUME CFM	INDICATED VOLUME FPM	% DEVIATION AVERAGE = 0.09	TEST SIZE	TEST RUN	DP IN. W.G.	REFERENCE VOLUME CFM	REFERENCE VELOCITY FPM	INDICATED VOLUME CFM	INDICATED VOLUME FPM	% DEVIATION AVERAGE = 1.94
12"x12" (305 x 305)	3	0.020	427	448	481	504	12.61%	12"x12" (305 x 305)	3	0.020	406	426	481	504	18.43%
	4	0.105	1045	1096	1102	1155	5.43%		4	0.095	1047	1098	1048	1099	0.09%
	5	0.445	2255	2364	2268	2378	0.58%		5	0.445	2255	2364	2268	2378	0.58%
	6	0.990	3553	3725	3383	3547	-4.79%		6	0.990	3553	3725	3383	3547	-4.79%
	7	1.620	4662	4888	4327	4537	-7.18%		7	1.620	4662	4888	4327	4537	-7.18%
24"x24" (610 x 610)	2	0.010	1179	309	1140	299	-3.31%	24"x24" (610 x 610)	2	0.010	1103	289	1140	299	3.35%
	3	0.030	2005	526	1975	518	-1.52%		3	0.035	2003	525	2133	559	6.48%
	4	0.120	4071	1067	3949	1035	-2.99%		4	0.165	4124	1081	4631	1214	12.29%
	5	0.450	7282	1909	7647	2004	5.02%		5	0.500	7253	1901	8061	2113	11.14%
	6	0.790	9970	2613	10133	2656	1.63%		6	0.870	10052	2635	10633	2787	5.78%
	7	1.250	13188	3457	12746	3341	-3.35%		7	1.315	13149	3446	13073	3426	-0.58%
	8	1.760	16220	4251	15124	3964	-6.76%		8	2.070	16454	4313	16402	4299	-0.32%
	36"x36" (914 x 914)	2	0.010	3229	376	2790	325		-13.60%	36"x36" (914 x 914)	2	0.010	3110	362	2790
3		0.050	6136	715	6239	727	1.67%	3	0.045		6109	772	5918	689	-3.12%
4		0.090	8062	939	8370	975	3.82%	4	0.085		8038	936	8134	948	1.20%
5		0.480	17895	2085	19330	2252	8.02%	5	0.445		17709	2063	18612	2168	5.10%
6		1.100	27799	3238	29262	3409	5.26%	6	0.990		27880	3248	27760	3234	-0.43%
7		1.760	36618	4266	37014	4312	1.08%	7	1.620		36568	4260	35511	4137	-2.69%

## Test Criteria

- Model:** AMP001, AMP002 & AMP003
- Method:** Differential Pressure
- Duct Sizes Tested:** 12" x 12", 24" x 24" & 36" x 36"
- Rated Duct Sized:** Rectangular duct with cross-sectional areas between 0.5 and 18 square feet.
- Test Setup:** AMCA Standard 610, Figures 1 and 2

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## CALCULATIONS

$$CFM = (K * Area) DP^{0.5}$$

Where:

*K* = Proprietary constant value based on test data

*Area* = Duct width times duct height over 144

*DP* = Differential Pressure

Single Probe Applications (AMP001): K=3400

Two Probe Applications (AMP002): K=2850

Three Probe Applications (AMP003): K=3100

## ORDERING INFORMATION

Model	Description
AMP001	Single Probe Kit
AMP002	Two Probe Kit
AMP003	Three Probe Kit

Model Suffix	Description
A	RU-274-R2-MA (4-20mA transducer)
B	RU274-R3-VDC High pressure transducer
C	Pressure Sensors with LCD Display
D	Step sensing probe only

### Ordering Instructions:

1. Specify quantity, model, option suffix and "A" duct/probe width\*
2. Refer to Installation Details for probe placement.

### Examples:

- (2) 24" AMP001 (2) 24" kits as pictured on page 1  
 (7) 32" AMP002B (7) 32" two-probe kits with high pressure transducer

### AMP001 Probe Kit Contents

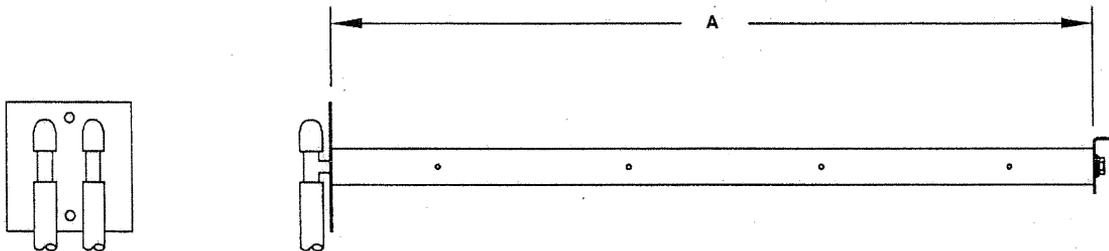
Step Sensor Probe  
 2 Brass "T" Fittings (factory installed)  
 2 Rubber Brass Fitting Caps  
 12" Long High & Low Pressure Tubing  
 RU-274-R2-VDC Pressure Transducer  
 Installation Instructions

### AMP002 Probe Kit Contents

2 Step Sensor Probes  
 4 Brass "T" Fittings (factory installed)  
 2 Rubber Brass Fitting Caps  
 2 12" Long High & Low Pressure Tubing  
 2 15" Long Interconnecting Tubing  
 RU-274-R2-VDC Pressure Transducer  
 Installation Instructions

### AMP003 Probe Kit Contents

3 Step Sensor Probes  
 6 Brass "T" Fittings (factory installed)  
 2 Rubber Brass Fitting Caps  
 2 12" Long High & Low Pressure Tubing  
 4 15" Long Interconnecting Tubing  
 RU-274-R2-VDC Pressure Transducer  
 Installation Instructions



\*Probe is furnished 1/4" (6) shorter than given "A" duct width.

## SPECIFICATION

Furnish and install, at locations shown on plans or as in accordance with schedules, an air measuring probe system piped to a high performance pressure transducer. Kit shall be capable of measuring a range from 250 to 5,000 feet per minute. The Air measuring kit shall consist of 6063T5 extruded aluminum step sensing blade(s) with anodized finish, plenum rated polyethylene pressure tubing, brass barbed pressure fittings, mounting hardware and 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 in a NEMA 4 (IP-65) painted steel enclosure. Transducer shall be factory mounted and piped to high and low brass pressure fittings from the sensor averaging ports. All sensor tubing shall terminate in solid brass barbed fittings. Air Measuring Probe kits shall be, in all respects, equivalent to Ruskin Model AMP001, AMP002 or AMP003.

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