

SERIES RPM-1 ROOM PRESSURE MONITOR



DESCRIPTION

The Modus room pressure monitor takes advantage of our time-proven sensor technology to monitor, alarm and/or control critical room to room differential pressures. The same instrument monitors either positive or negative room pressures.

Monitoring of hospital rooms such as operating rooms and isolation rooms for housing contagious patients is a typical application. Other applications requiring differential pressure monitoring are: fume hoods, clean rooms, computer rooms, asbestos abatement projects etc. This monitor is extremely sensitive and performs reliably at very low room pressures.

It is easily mounted on a wall and the installer has the choice of rear or bottom knockouts for electrical and pressure connections. All electrical and mechanical components are housed in a tough polycarbonate NEMA type 13 (IEC529, IP65) enclosure with a clear, gasketed polycarbonate cover for easy viewing of display and room status.

Pressure is displayed on the front panel with a resolution of 0.001" of water (or 0.1 Pascals). The unit measures positive or negative pressure. A minus sign indicates a negative room pressure. A small light, next to the digital display, indicates the selected units of measurement (inches of water or Pascals). A bright red and a bright green LED alert those approaching the status of the room. The pressure at which the lights change state can be adjusted from the front panel.

The room pressure monitor comes standard with a SPDT relay (for supplemental controls such as audible alarm or remote status indication), and 3 analog output signals, 0 to 5 Vdc, 0 to 10 Vdc and 4 to 20 mA. These analog outputs are proportional to the room pressure.

A selector switch allows field setup for either 120 Vac or 240 Vac 50/60Hz service. 24 Vac operation is optional.

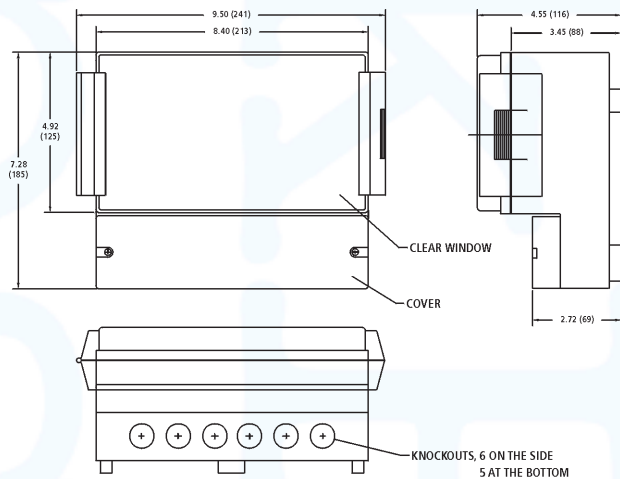
SPECIFICATIONS

General

Resolution to .001 inches of water
Dependable solid state design
Rugged NEMA 13 Enclosure
Cost effective & easy to install

Performance

Accuracy of reading: $\pm 1\%$ F.S.
Accuracy of alarm output: $\pm 1\%$ of setpoint (lights and relay)
Standard range: ± 0.1 inches of water (or ± 25 Pascals)
Resolution: 0.001" of water (or 0.1 Pascals)
Panel indicator lights: One red & one green LED
Display: LCD 3 digits 0.5" digit height
Alarm output: SPDT relay contacts rated at 5A at 30 Vdc or 120 Vac 4A at 240 Vac resistive
Deadband: Preset at 5% of range, field adjustable from 1 to 20%
Analog outputs: 0 - 5Vdc, 2.5V at zero pressure 2 mA max, 0 - 10Vdc, 5V at zero pressure 2 mA max
4 - 20mA sourcing, 12mA at zero pressure, max loop resistance is 580 Ohms
Power requirements 95-135/190-270 Vac 50/60 Hz or 19.5 to 30Vac 50/60 Hz
Max power consumption: 5 Watts



Electrical connections

3/4" terminal strip with # 6 screws

Operating medium: Air or non-corrosive non-explosive gas

Maximum momentary pressure limit: ± 6.0 inches of water (± 1.5 kPa)

Environmental

Operating temperature: 0°C to 50°C (32°F to 120°F)

Storage temperature: -30°C to 70°C (-20°F to 160°F)

Effect of temperature on reading: $\pm 0.05\%/^{\circ}\text{C}$

Operating humidity range: 10% to 90% R.H.

Physical

Color: Light grey

Construction: Glass filled polycarbonate flammability rating of UL94 V-1

Cover: Clear polycarbonate flammability rating of UL94 V2

Knockouts: 6 in lower front & 5 in back of enclosure

Hinges: Strong & removable allow hinging from either side open 180°

Mounting: 3-point mounting

Physical dimensions: See outline drawing

Weight: 2.56 lb (1160g)

Calibration: (Traceable to N.I.S.T.)

See page 20 for Annunciator Accessory

ORDERING INFORMATION

Order Number (See Table below)

RPM-1 - P - R

EXAMPLE: RPM-1 - A - 01E

P = Power	R = Range (See Table below)
A - 120/240 Vac 50/60Hz	
B - 24Vac, 50/60Hz	

NOTES

Range

Pressure Code	Pressure Range	Resolution w.c./ Pa
01E	0.1 to +0.1" w.c. (-25 to +25 Pa)	0.001" (0.1 Pa)
04E	0.5 to +0.5" w.c. (-125 to +125 Pa)	0.001" (1 Pa)
05E	1.0 to +1.0" w.c. (-250 to +250 Pa)	0.01" (1 Pa)

MODEL AN-1A Annunciator

DESCRIPTION

This single-point annunciator provides a visual and audible warning of an alarm condition occurring at a remote location. It operates, either with the Room Pressure Monitor Model RPM-1 which supplies the necessary power to the annunciator, or with any dry contact and an external power supply.

Alarm Sequence

Under normal conditions, the green LED is "STEADY ON." When an alarm condition occurs, the green LED turns off, the red LED "FLASHES ON" and the audible alarm "PULSES ON." Momentarily pressing the acknowledge button silences the audible alarm but the red LED stays "FLASHING ON," as a reminder, until the alarm fault is corrected. When the conditions are normal again, the annunciator resets itself. The green LED returns to "STEADY ON," the red LED and audible alarm are "OFF."

SPECIFICATIONS

Behind the front panel are two potentiometers. One potentiometer provides a variable time delay from the moment the alarm is received by the annunciator, until it responds to the time delay. This delay may be adjusted between 5 and 45 seconds. The annunciator will not change to the alarm mode if the alarm condition disappears before the end of the time delay. This eliminates nuisance alarms caused by short transients.

The other potentiometer sets the volume of the audible alarm, from zero to maximum. The volume is also a function of the power supply voltage. The external power supply to the annunciator can be between 5 and 32 Vdc, with a maximum supply current of 13 mA. The maximum volume levels that can be expected from a distance of 1 meter at various supply voltages are outlined below:

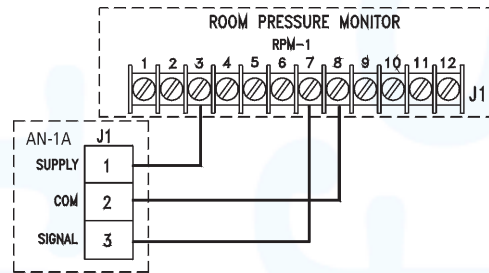
External Supply	Max. Volume
5 Vdc	80 db
8 Vdc	92 db
12 Vdc	98 db
18 Vdc	103 db
24 Vdc	108 db

The input signal may be either a dry contact or a voltage. The input voltage may be as high as the supply voltage. The alarm mode occurs when the input signal exceeds 2.5 Volts. When the signal is a dry contact, the contact must be closed under normal conditions. The current through the contacts is 1 mA.

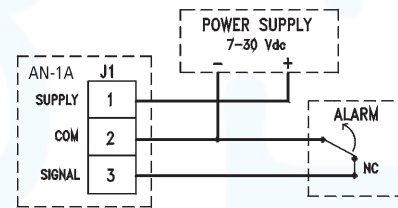
The annunciator is designed for flush installation in a wall. The front panel is the same size as the standard electrical wall plate (2-3/4" x 4-1/2"). It is supplied with a standard plastic (PVC) switch box, 2-13/16" deep. This box includes four integral clamps, swing arms and ears. Other boxes with a minimum depth of 1-1/4" may be substituted by the user.



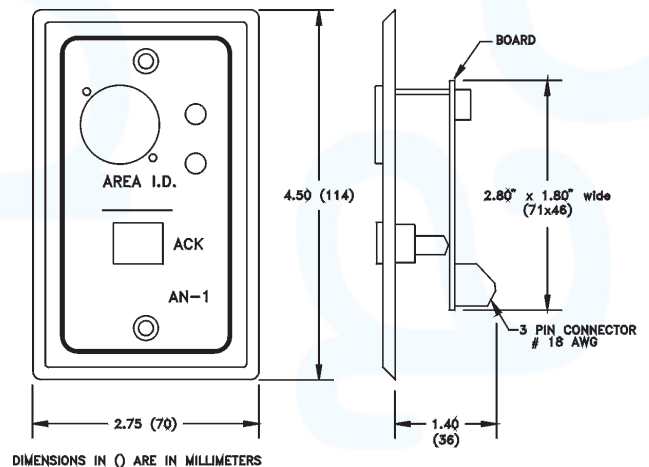
WIRING DIAGRAMS



a. Wiring to the Room Pressure Monitor Model RPM-1



b. Wiring to dry relay contact with external power supply



ORDERING INFORMATION

Order Number
AN-1A

MODEL AST-1 Static Pressure Probe

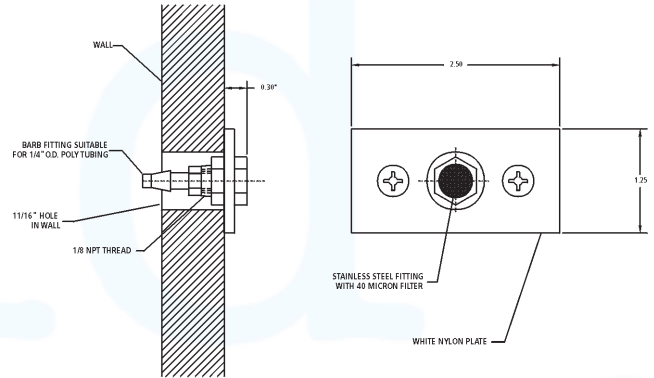


ORDERING INFORMATION

MODEL AST-1

SPECIFICATIONS

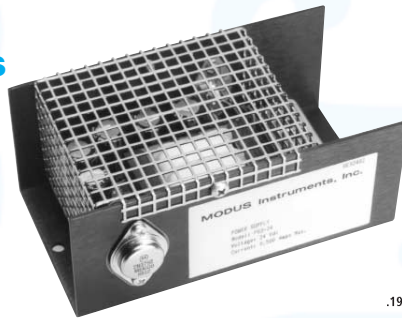
This pressure probe conveniently terminates the end of a 1/4" O.D. plastic tubing at the point where static pressure is being measured.



TYPICAL INSTALLATION OF STATIC PRESSURE PROBE

Power Supplies

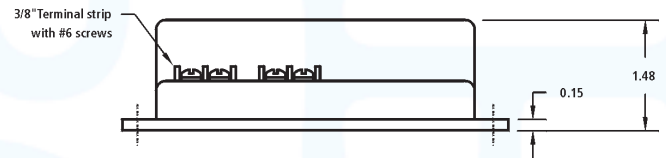
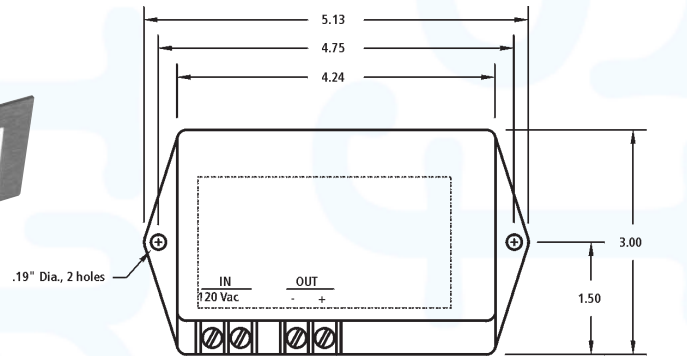
120 Vac IN/Vdc OUT



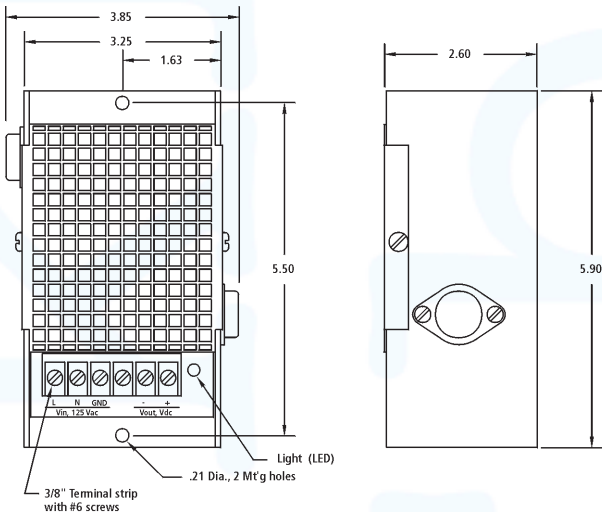
DESCRIPTION

Modus offers three models of small AC to DC power supplies. The low output ripple and good voltage stability under varying load and line power conditions make these power supplies well suited for powering control instruments and transmitters, such as 4-20 mA current loops.

These power supplies are conservatively rated for long life and do not require derating within the temperature, current output and line voltage operating ranges.



POWER SUPPLY, Model PS1-



POWER SUPPLY, Model PS2- OR PS3-

SPECIFICATIONS

Performance

All power supplies are current-limited and internally protected to prevent damage from accidental short circuits. A status light (LED) indicates the presence of an output voltage on the PS2- and PS3-models. Isolation between input and output is 1500 Vrms minimum and the output is floating to allow grounding where it is most convenient. The Input voltage range is 105 to 135 Vac 50/60 Hz.

Environmental

Operating temperature: 0°C to 52°C (32°F to 125°F)

Electrical Connections

Wiring is by means of 3/8" terminal strip with #6 screws

Physical

Weights: PS1-0.52 Lb (236 g), PS2-1.38 Lb (625 g), PS3-1.56 Lb (707g)

ORDERING INFORMATION

Order Number (Order by Model Number, see Table below)

Model No	Output Current	Output Voltage	Typ. Load Regulation*
PS1-12	150mA	12 Vdc ± 0.5 V	10mV
PS1-24	70mA	24 Vdc ± 1.2 V	22mV
PS2-12	625mA	12 Vdc ± 0.5 V	18mV
PS2-24	365mA	24 Vdc ± 1.0 V	25mV
PS3-24	625mA	24 Vdc ± 1.0 V	25mV