

The Advanced Pressure Monitor II (APM2) is a flexible, touch-screen local display unit that measures pressure, temperature, and humidity for pressurized spaces for the purpose of ensuring integrity of ventilation and airflow. The APM2 is more than a pressure monitor. Flexible use of analog inputs allows temperature and humidity sensors to be configured for these additional values to be displayed for the user. A digital output can also be used for local occupancy control of an airflow control valve or other two-state device.

The APM2 provides a bright, easy-to-read display that combines a free-form message banner on the left one-third of the screen, together with dynamic room operating parameters on the right two-thirds of the screen. The touch-screen display makes the APM2 easy to operate by just pressing areas of the screen to perform functions. Nuisance alarms are virtually eliminated because of the high accuracy and reliability of the APM2, and through the use of seven types of alarm functions. If desired, the APM2 can be configured so it never needs to be touched by staff on the floor.

### **FREE-FORM MESSAGE BANNER**

Having only the value of a pressure reading on a display is not always meaningful to untrained staff. To address this, the left one-third of the screen is dedicated to a free-form message banner that is intended to provide notice to personnel outside the room what is happening inside the room. The conditions are red for "stop", yellow for "caution", and green or blue for "go". Text above and below the color icon can be customized by the user, and made full screen if desired. Each of the four colors can be assigned functions: room occupied, room unoccupied, APM2 is active, APM2 is in standby, or no action.

The right two-thirds of the screen shows the room label, intended pressure (positive, negative, neutral), operation (normal, alarm, door, valve), the pressure value (WC or Pa) and a slide-bar that indicates where the current pressure reading is relative to alarm setpoints.

### **ACCURACY**

Using pressure transducer technology, the APM2 is capable of sensing at a 0.5% ( $\pm 0.25\%$ ) full scale accuracy and with a display resolution up to 0.0001" WC. It can meet the stringent requirements of pressure sensing for laboratory animal facilities, critical healthcare spaces, biocontainment cleanrooms and any application where very low room pressure sensing is required.




### **FEATURES**

- 4.3" Color touch-screen TFT display
- Monitor two spaces with one APM2 (option)
- One-touch room mode change
- Message banner informs staff of room condition
- Two levels of password protection
- Visual/audible local or remote alarming
- Valve flow alarming
- Door status indicator
- Positive, negative, or neutral setpoints
- French language support
- Mode switches alarm setpoints for positive, negative or neutral rooms
- Resistant to spray washdown (IP-54)
- Resistant to decontamination chemicals
- Mounts in standard off-the-shelf electrical box
- Clone configuration feature

**NOTE:** If the equipment is used in a manner not specified, the protection provided by the equipment may be impaired.

## SPECIFICATIONS

Choice of Full Scale Ranges			Environmental Data	
<b>Bi-Directional</b>	$\pm 0.05''$ WC ( $\pm 12.45$ Pa) $\pm 0.10''$ WC ( $\pm 24.90$ Pa) $\pm 0.25''$ WC ( $\pm 62.27$ Pa) $\pm 0.50''$ WC ( $\pm 124.54$ Pa) $\pm 1.00''$ WC ( $\pm 249.08$ Pa)		<b>Temperature</b> Operating <sup>3</sup> °F (°C)      32 to +120 (0 to +50) Storage °F (°C)            -20 to +160 (-30 to +70)	
<b>Performance Data</b>			<b>Operating Humidity</b>	<b>5 to 95 % RH (non-condensing)</b>
	<b>Standard Accuracy</b>	<b>High Accuracy</b>	<b>Pressure Media</b>	<b>Air, or non-conductive non-explosive gasses</b>
Accuracy RSS <sup>1, 2</sup> (at constant temp)	$\pm 0.5\%$ FS	$\pm 0.25\%$ FS	<b>Altitude</b>	<b>6562 ft. (2000 m) max.</b>
Non-linearity (BFSL-based)	$\pm 0.49\%$ FS	$\pm 0.24\%$ FS	<b>Physical Description</b>	
Hysteresis	$\pm 0.05\%$ FS	$\pm 0.05\%$ FS	Display	<b>4.3" touch-screen TFT LCD, 480 x 272 pixels, dimmable, password protected</b>
Non-repeatability	$\pm 0.05\%$ FS	$\pm 0.05\%$ FS	Faceplate and housing	<b>Fire-retardant plastic (UL94V-0)</b>
Zero setting tolerance	$\pm 0.5\%$ FS	$\pm 0.5\%$ FS	Electrical connections	<b>Removable terminal blocks</b>
Span setting tolerance	$\pm 0.5\%$ FS	$\pm 0.5\%$ FS	Pressure fittings	<b>Barbed fittings for ¼" flexible tubing</b>
Stability per year	$\pm 1.0\%$ FS		Weight	<b>1 lb. 3 oz. (590 grams)</b>
Overpressure	<b>15.00" WC (0.5 PSI)</b>		<b>Relay Type</b>	<b>SPDT</b>
<b>Thermal Effects<sup>1</sup></b>			<b>Relay Contact Rating</b>	<b>0.6A @125 Vac / 2A @ 30 Vdc</b>
Zero	$\pm 0.03\%$ FS/°F ( $\pm 0.05\%$ FS/°C)		<b>Mains Supply Voltage</b>	
Span	$\pm 0.03\%$ FS/°F ( $\pm 0.05\%$ FS/°C)		Not to exceed 18-32 Vac, 50-60 Hz, isolated, resettable fuse, 9.6 VA maximum. Mains supply voltage fluctuations up to $\pm 10\%$	
<b>Mounting</b>			<b>Interoperability</b>	
Rough-in electrical box	<b>RACO 697, Appleton M3-350</b>		No communication	
Position	<b>Housing to be 90° in reference to level surface, <math>\pm 5^\circ</math></b>			
<b>Wire</b>				
Power	<b>2 or 3-conductor (depending on application) stranded unshielded twisted pair, 16-22 AWG</b>			
I/O	<b>Stranded shielded twisted pair, Belden 950x, 16-28 AWG</b>			
<b>Communications</b> - 3-conductor, twisted, shielded 22 AWG cable (See "Phoenix Controls Recommended Cables" on page 16.)				
<b>Inputs</b>				
AI-1, AI-2	Analog Inputs. Multi-purpose, choose a function: - Function 1: Primary or secondary room input - Function 2: Tri-state input to switch pressure alarm thresholds 0 Vdc = Space is intended to be positive pressure. Alarm threshold values are placed in the negative range. 5 Vdc = Space is intended to be neutral pressure. Alarms are placed in the span zero neutral range. 10 Vdc = Space is intended to be negative pressure. Alarms threshold values are placed in the positive range. - Function 3: Temperature or humidity sensor (voltage output either 0-5 V or 0-10 V).			

DI-1	Digital Input, door status indicator or valve pressure switch indicator (choose one). Door status: visual on LCD, yellow on door open Dry contact Closed = Door closed or no valve alarm; Open = Door open or valve alarm Configurable, door open can disable alarming
<b>Outputs</b>	
AO-1	Analog Output. Filtered output signal of primary room pressure differential. Field selectable: 0-5 Vdc; 0-10 Vdc; or 4-20 mA. Speed of response = 100 ms Max., 3 time constants
DO-1	Digital Output. SPDT alarm relay to remote annunciator or the relay can be used for occupancy contact with message banner (choose one) Alarm deadband 0—10% of setpoint adjustable Contact rating 2.0A @ 30 Vdc/Vac, 0.6A @ 125 Vac Calibrated into a 50K $\Omega$ load, operable into a 5K $\Omega$ load or greater
<b>Alarming</b>	
Ranges	Positive, negative or spanning zero pressure (across neutral)
Audible	Dual piezo with 4 volume levels, (from 0—75dB)
Visual	LCD display Red = Alarm, Yellow = Warning, or Green = Normal, Backlight = 4 levels
Remote	Annunciation via Digital Output SPDT relay
Latch	Alarm must be acknowledged at the touch-screen and pressure must return within range
Silence	Selectable 0-9999 (9999 = forever) seconds
Delay	Selectable 0-9999 (9999 = forever) seconds
Valve	Flow alarm notification
BACnet	Alarm and event notification services
<b>Display Parameters</b>	
Temperature — °F or °C Pressure — "WC or Pa Humidity — %RH	
<b>USB Port</b>	
A micro-USB type AB port is provided for firmware updates or for copying configurations from one monitor to others that require similar parameters (i.e., cloning). Phoenix Controls REQUIRES the Sandisk Cruzer 2GB (minimum) flash drive, along with the aid of a Micro USB Host Mode OTG cable from T & S Electronics (Model: OTG-SBK6) or from SonoXY (Model: USB_MIC-OTG). No PC is required.	
<b>Washdown and Chemical Resistance</b>	
IP-54 rated against dust and liquid penetration. Exposed surfaces are chemically resistant to vaporized hydrogen peroxide (VHP), formaldehyde, chlorine dioxide (clidox), perchloric acid, sodium hypochlorite 3-6% (bleach), quaternary ammonium 7% in 1:128 tap water (ammonia).	
<b>Regulatory Compliance</b>	
 <ul style="list-style-type: none"> <li>• RoHS</li> <li>• EU Contact Address: Honeywell GmbH Boeblinger Str. 17 71101 Schoenaich Germany</li> </ul>	
<sup>1</sup> Units calibrated at nominal 70°F. Maximum thermal error computed from this datum. <sup>2</sup> RSS is root sum of squares of non-linearity (BFSL), non-repeatability, and hysteresis. <sup>3</sup> Operating temperature limits of electronics only, not pressure transducer.	

## ORDERING GUIDE

### MONITORS

### APM2 00 - ENG - ANU - STL

#### PRODUCT FAMILY

APM2 = Advanced Pressure Monitor II, comes standard with white faceplate and two pressure pickup ports.

#### OPERATIONAL PRESSURE RANGE

00 = ±0.05" WC (12.45 Pa) (±0.5% accuracy)  
 01 = ±0.10" WC (24.90 Pa) (±0.5% accuracy)  
 03 = ±0.25" WC (62.27 Pa) (±0.5% accuracy)  
 05 = ±0.50" WC (124.54 Pa) (±0.5% accuracy)  
 10 = ±1.00" WC (249.08 Pa) (±0.5% accuracy)  
 30 = ±0.05" WC (12.45 Pa) (±0.25% accuracy)  
 31 = ±0.10" WC (24.90 Pa) (±0.25% accuracy)  
 33 = ±0.25" WC (62.27 Pa) (±0.25% accuracy)  
 35 = ±0.50" WC (124.54 Pa) (±0.25% accuracy)  
 40 = ±1.00" WC (249.08 Pa) (±0.25% accuracy)

#### FACEPLATE LANGUAGE

ENG = English

#### NETWORK TYPE

ANU = Analog (firmware can be upgraded)

#### OPTIONS

NPP = No pressure ports, APM2XX is provided without the two standard pressure pickup ports  
 RET = Retrofit kit; includes modified APM2xx with 90 degree ports and faceplate that covers hole from APM1xx and excludes the two pressure pick-up ports that come standard with non-retrofit units. (see Note)  
 STL = Simulated brushed steel faceplate (No extra charge)

**NOTE:** Cannot be ordered with ±0.25 accuracy pressure range APM2xx, nor with options "NPP" or "STL"

Calibration certificates are provided with all products except ±1.00% accuracy

### Accessories

### APM2 AC - F01

#### PRODUCT FAMILY

APM2 = Advanced Pressure Monitor II

#### PRODUCT OPTION

AC = Accessory

#### TYPE

ANC = Remote annunciator sounds an audible alarm; remote unit is located away from the wall-mounted unit housed in a single-gang stainless steel wall plate; includes a remote alarm speaker and remote acknowledge button to temporarily silence the alarm.

PPP = Pressure Pickup Port, an additional single-gang stainless steel plate used to sense room pressure - two PPPs are included standard with the APM2.

#### For all of the following transducers:

Remote pressure transducers can be used with the APM2 to measure differential pressure in a secondary space. The 264 and 267 transducers sense differential pressure and convert this pressure difference to a proportional electrical output signal - either 0-5 Vdc or 0-10 Vdc, respectively. Using 0-10 Vdc (267 model) provides a higher resolution output signal than 0-5 Vdc (264 model). Standard accuracy is usually adequate for most critical room applications. Use high accuracy if building specifications require it.

F00 = 264 transducer, 0-5V output, ±0.05" WC (12.45 Pa) (±1.00% accuracy)  
 F01 = 264 transducer, 0-5V output, ±0.10" WC (24.90 Pa) (±1.00% accuracy)  
 F03 = 264 transducer, 0-5V output, ±0.25" WC (62.27 Pa) (±1.00% accuracy)  
 F05 = 264 transducer, 0-5V output, ±0.50" WC (124.54 Pa) (±1.00% accuracy)  
 F10 = 264 transducer, 0-5V output, ±1.00" WC (249.08 Pa) (±1.00% accuracy)  
 F20 = 264 transducer, 0-5V output, ±0.05" WC (12.45 Pa) (±0.40% accuracy)  
 F21 = 264 transducer, 0-5V output, ±0.10" WC (24.90 Pa) (±0.40% accuracy)  
 F23 = 264 transducer, 0-5V output, ±0.25" WC (62.27 Pa) (±0.40% accuracy)  
 F25 = 264 transducer, 0-5V output, ±0.50" WC (124.54 Pa) (±0.40% accuracy)  
 F30 = 264 transducer, 0-5V output, ±1.00" WC (249.08 Pa) (±0.40% accuracy)  
 F40 = 264 transducer, 0-5V output, ±0.05" WC (12.45 Pa) (±.25% accuracy)  
 F41 = 264 transducer, 0-5V output, ±0.10" WC (24.90 Pa) (±.25% accuracy)  
 F43 = 264 transducer, 0-5V output, ±0.25" WC (62.27 Pa) (±.25% accuracy)  
 F45 = 264 transducer, 0-5V output, ±0.50" WC (124.54 Pa) (±.25% accuracy)  
 F50 = 264 transducer, 0-5V output, ±1.00" WC (249.08 Pa) (±.25% accuracy)  
 T00 = 267 transducer, 0-10V output, ±0.05" WC (12.45 Pa) (±1.00% accuracy)  
 T01 = 267 transducer, 0-10V output, ±0.10" WC (24.90 Pa) (±1.00% accuracy)  
 T03 = 267 transducer, 0-10V output, ±0.25" WC (62.27 Pa) (±1.00% accuracy)  
 T05 = 267 transducer, 0-10V output, ±0.50" WC (124.54 Pa) (±1.00% accuracy)  
 T10 = 267 transducer, 0-10V output, ±1.00" WC (249.08 Pa) (±1.00% accuracy)  
 T20 = 267 transducer, 0-10V output, ±0.05" WC (12.45 Pa) (±0.40% accuracy)  
 T21 = 267 transducer, 0-10V output, ±0.10" WC (24.90 Pa) (±0.40% accuracy)  
 T23 = 267 transducer, 0-10V output, ±0.25" WC (62.27 Pa) (±0.40% accuracy)  
 T25 = 267 transducer, 0-10V output, ±0.50" WC (124.54 Pa) (±0.40% accuracy)  
 T30 = 267 transducer, 0-10V output, ±1.00" WC (249.08 Pa) (±0.40% accuracy)  
 T40 = 267 transducer, 0-10V output, ±0.05" WC (12.45 Pa) (±.25% accuracy)  
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 T43 = 267 transducer, 0-10V output, ±0.25" WC (62.27 Pa) (±.25% accuracy)  
 T45 = 267 transducer, 0-10V output, ±0.50" WC (124.54 Pa) (±.25% accuracy)  
 T50 = 267 transducer, 0-10V output, ±1.00" WC (249.08 Pa) (±.25% accuracy)