home

APM110 LOW AIR VELOCITY ALARM

- Ultra low velocity measurement
- Output as linear Velocity or Air volume
- Excellent repeatability
- Excellent Zero Stability
- Climate chamber compensated
- Long term span stability
- Ultra low hysteresis
- Built in air filter
- Factory logged burn in time
- Transducer SMD and PCB is made by CMR
- After Sales Service is provided by CMR
- 24 month warranty
- 12 Years field application experience

APM110 with LCD Display, Sounder, Light and Mute

GENERAL DESCRIPTION

The APM110 is a wall mount velocity transmitter with alarms which provides an output signal of 0..10V and 4..20mA. A built-in LCD display shows the actual velocity in m/s or volume in m3/s or any other engineering units it is configured to.

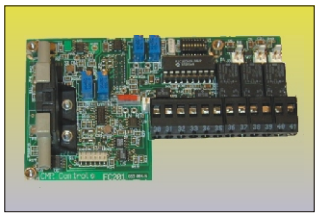
High, low and repeater alarm contacts are configurable to suit the application. Individual alarm timer and re-alarm timer as well as alarm light and sounder are standard.

The standard velocity range is 0..2.00m/s, but other ranges such as 0..1.00m/s up to 0..4.00m/s are available.

Power supplies in DC or AC are available.

THE TRANSDUCER

The transducer circuit is manufactured by CMR and consists of precision engineered components, high quality materials and SMD electronics. The principle of the transducer is the measurement of an air velocity passing through the sensor. The F-Sensor technology is based upon temperature-sensitive films laminated within thick film dielectric material.



CMR Transducer

They are suspended in the form of two bridges over an etched cavity in silicon. The chip is located within a precisely dimensioned air-flow channel to provide a reproducible flow response.

The air is filtered and then enters the channel and passes over a temperature sensor and then over a heating element which keeps a constant temperature of approx 160ºC. The high temperature burns off any particles which try to settle within the sensor.

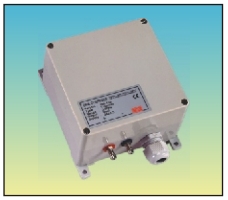
Thereafter, the air passes over a second temperature sensor and by utilising a high precision comparator the signal is scaled into air velocity. Finally, the output is conditioned and scaled to a users signal in the form of m/s or m3/s and represented as 0..10V or 4..20mA.

All F-Sensors are temperature compensated in a computerised climate chamber and go through an ageing burn in cycle.

CMR Climate Chamber

LCD DISPLAY

A 3 1/2 digit LCD Display indicates the actual velocity in m/s or volume in m3/s with a legend in the glass. Litres/s or m3/h can be supplied but without legends. The LCD display is fitted into the front lid of the APM110. It is intended for internal wall mount use.



APM110 with plain Lid

The display can be smoothed by a switch on the rear of the display independently of the output signal of the sensor.

The APM110 can be supplied with a plain lid or a lid with LCD only in an ABS enclosure. The sounder, light and mute button and possibly a second display shall be fitted on a remote alarm plate.

APM110 with LCD only

DISPLAY SCALING

The display is factory scaled during manufacture. The zero and span potentiometer on the rear of the LCD display can be scaled by the user to display any other engineering units.

SIGNAL DAMPENING

The output signal can be smoothed by the slow potentiometer on the F-Sensor PCB which is below the alarm PCB. The dampening acts on the 0..10V, 4..20mA and the LCD simultaneously.

REMOTE DISPLAY AND ALARM PLATE

A remote LCD or LED can be connected to copy the information to the local operator by simply connecting it to the dedicated output terminals or molex connectors. There is a spare Volt free contact.

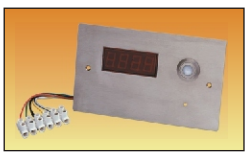
ALARM CONTACTS

The APM110 is supplied with two relays for high/low alarm light and sounder and one relay for repeater or sash alarm The relays can operate in four modes:

Low/high alarm (flashing)
Low/high alarm with repeater (still)
Alarm light, sounder and mute input.
Sash alarm and all other alarms

The relays have adjustable timers and are latching or self resetting.

Remote Alarm Plates are optional and can be custom made by CMR.



Remote Alarm LED Plate

Air Probe and Alarm Plate

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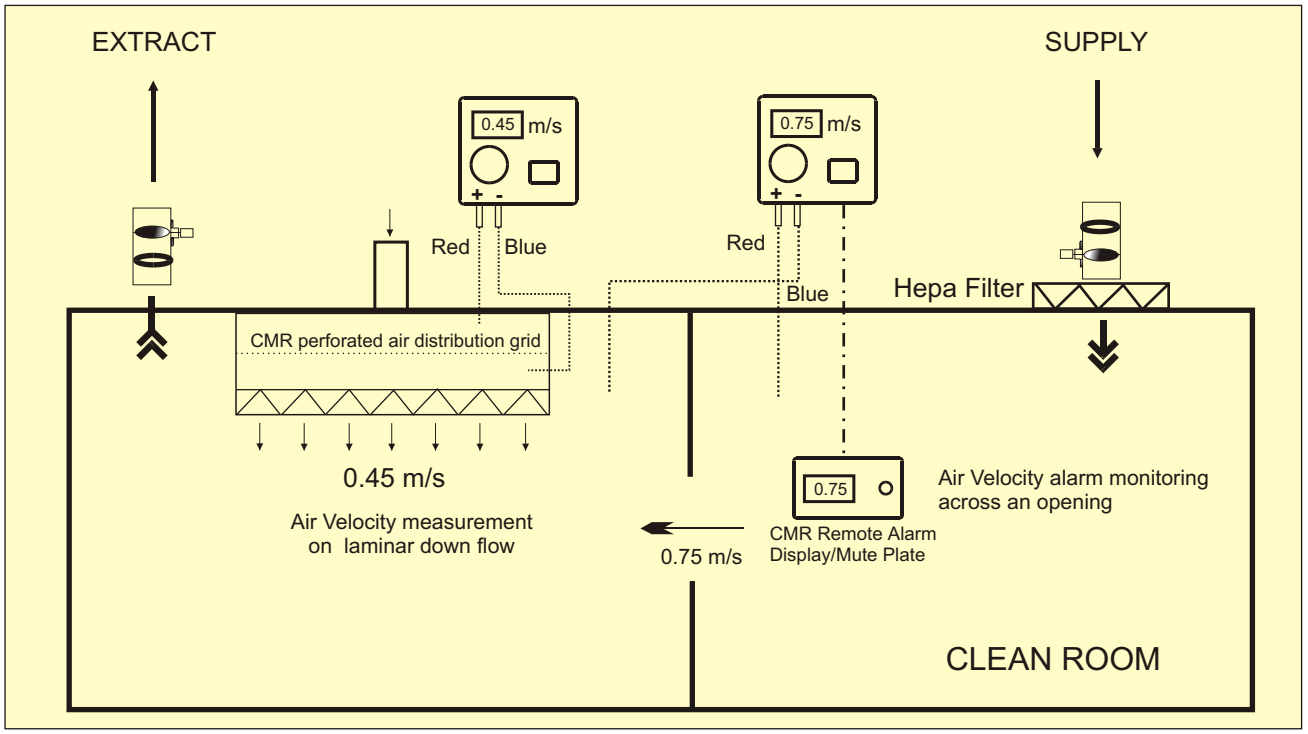
APM110 LOW VELOCITY APPLICATIONS

TYPICAL AIR VELOCITY OR VOLUME ALARM MONITORING SYSTEM WITH APM110



The APM110 is a true Ultra Low Velocity Alarm Transmitter which has been designed to measure and alarm very low air volumes in Ventilation Systems accurately. The built in Square Root Extraction and span scaling makes the APM110 the most versatile instrument. It can display in m/s or m3/s. Other displays such as m3/h, litres/s, litres/min or any imperial measurement units are available on request
Remote LCD or LED display plates can be fitted for the operators to see the actual velocities and provide local alarms and mute facilities.

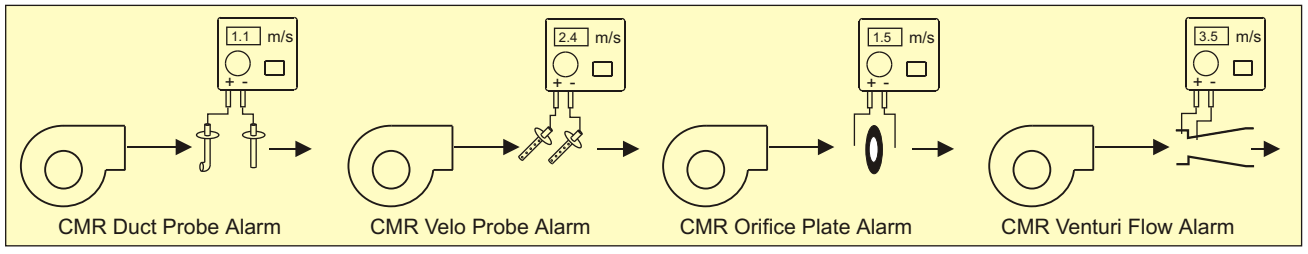
TheAPM110 is ideal for wall or plant room panel mount applications. The CMR PVC tubing can be run up to 10m and the APM110 can be calibrated to suit the tube length.

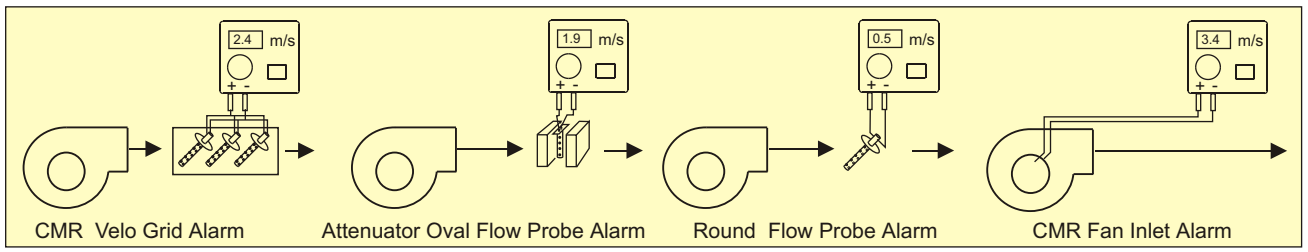
The APM110 is used for monitoring or controlling low Volume Flow such as fume cupboards, laminar flow ceilings, fresh air applications and general draught measurements.

The APM110 is designed to be connected to any CMR Veloprobes, Duct Probes or Velogrids, but it can also be connected to any existing or custom made duct Flow Measurement Device in applications where low velocities up to 4.00 m/s must be measured and alarmed.

The measured values can be transmitted to remote display plates, Scada and BMS Monitoring Systems. An output signal of 0..10V and 4...20mA is standard. A Volt free contact is available for remote monitoring.

TYPICAL ULTRA LOW SUPPLY AIR VELOCITY OR VOLUME ALARM MONITORING APPLICATIONS





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APM110 SPECIAL APPLICATIONS

FUME CUPBOARD ALARM SYSTEM
The drawing on the right shows a typical fume cupboard. The APM110 is used to monitor and alarm the face velocity independently and the output signals of 0..10V or 4..20mA can be connected either to a BMS or Scada system for operator safety and protection alarm monitoring.

The bulkhead at the top outside of the fume cupboard is connected to the positive port of the APM110. The inner bulkheads are connected via a T-Piece to the negative Port. The CMR F-Sensor measures the differential pressure between the laboratory and the inside of the fume cupboard which means a small quantity of air is sucked from the laboratory through the APM110 and exits into the fume cupboard. As clean air enters the APM110 it can never be contaminated. The APM110 transducer translates this by pass air flow into a face velocity and provides a linear output signal to the monitoring computer and to the local LCD Display on the front face of the Fume Cupboard.

In case of an air flow alarm either low or high, the green healthy light switches off. The red Flow alarm light shall start flashing and the sounder commences. When pressing the Flow button the sounder can be muted. After a time out i.e. 2 hours the alarm shall re sound, if the fault condition was not rectified.

In case of the sash being lifted more than 500mm, the amber sash alarm light shall start flashing and the sounder commences. When pressing the sash button, the sounder shall be muted. After a time out i.e. 1 hour, the alarm shall re sound, if the fault condition was not rectified.

To calibrate the APM110, measure the front face velocity at a specified sash opening height with a reference instrument and work out the average across the face area then adjust the span so that the same value shows on the LCD.

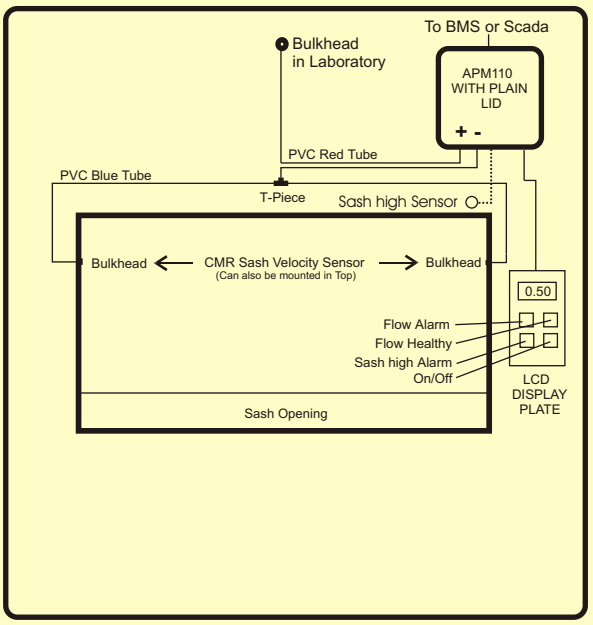
LAMINAR DOWN FLOW ALARM SYSTEM
The drawing on the right shows a typical laminar down flow unit.The APM110 is used to monitor and alarm the filter face velocity independently and the output signals of 0..10V or 4..20mA can be connected either to a BMS or Scada system for product safety and protection alarm monitoring.

The positive port of the APM110 is connected to the top section of the laminar flow unit before the airflow is pressed through a CMR perforated grid. The negative Port is connected to the lower section of the laminar flow chamber after the air has passed through the CMR perforated grid.
A small quantity of air is pressurised through the APM110 and exits into the filter chamber. As clean air enters the APM110 it can never be contaminated. The APM110 transducer translates this air flow into a filter face velocity and provides a linear output signal to the monitoring computer and to the local LCD Display and alarm plate..

In case of an air flow alarm either low or high, the green healthy light switches off. The red Flow alarm light shall start flashing and the sounder commences. When pressing the Flow button the sounder can be muted. After a time out i.e. 2 hours the alarm shall re sound, if the fault condition was not rectified.
In case of Fan failure the amber fan alarm light shall start flashing and the sounder commences. When pressing the Fan button, the sounder shall be muted. After a time out i.e. 1 hour, the alarm shall re sound, if the fault condition was not rectified.

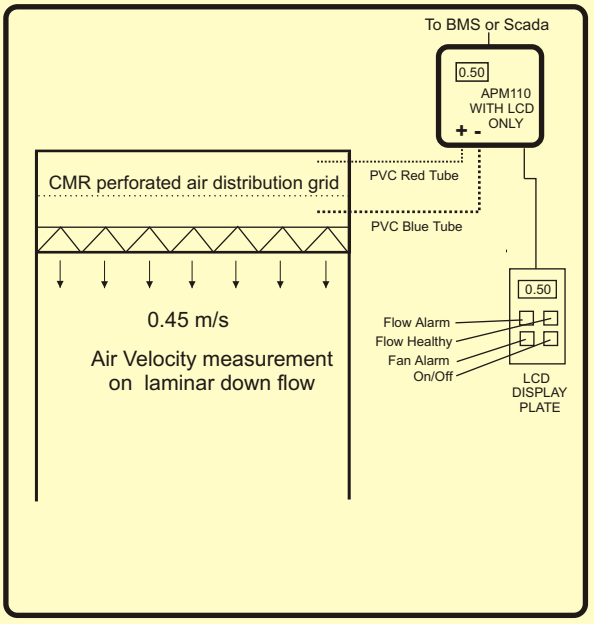
To calibrate the APM110, measure the filter face velocity at a specified distance with a reference instrument and work out the average across the filter face area then adjust the span so that the same value shows on the LCD.

FUME CUPBOARD FACE VELOCITY ALARM



APM110 with Plain Lid and remote LCD Display Alarm Plate

LAMINAR DOWN FLOW VELOCITY ALARM



APM110 with LCD in Lid and remote LCD Display Alarm Plate

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APM110 OPERATOR PANEL

FUNCTION SETTINGS

The APM110 adjustments are easily accessible. An F-Sensor PCB is below the alarm board.

P1 scales the LCD output from 0..10V to any Voltage I.e 0..1V hence a needle instrument could also be connected to the LCD connector.

P2 simulates the sensor signal voltage. Take off terminal 36-37 and switch SW1-1 to on. P2 provides a reference voltage to calibrate the LCD i.e 0...10V. The alarms can also be tested by adjusting P2 above or below threshold value. Watch the green LEDs to illuminate when APM is on alarm.

P3 adjusts the high Alarm threshold using a Voltmeter on the test point 'High' and adjusting P3 0..100% = 0..10V of the sensor range. Set SW1-4 to see Alarm threshold on LCD.

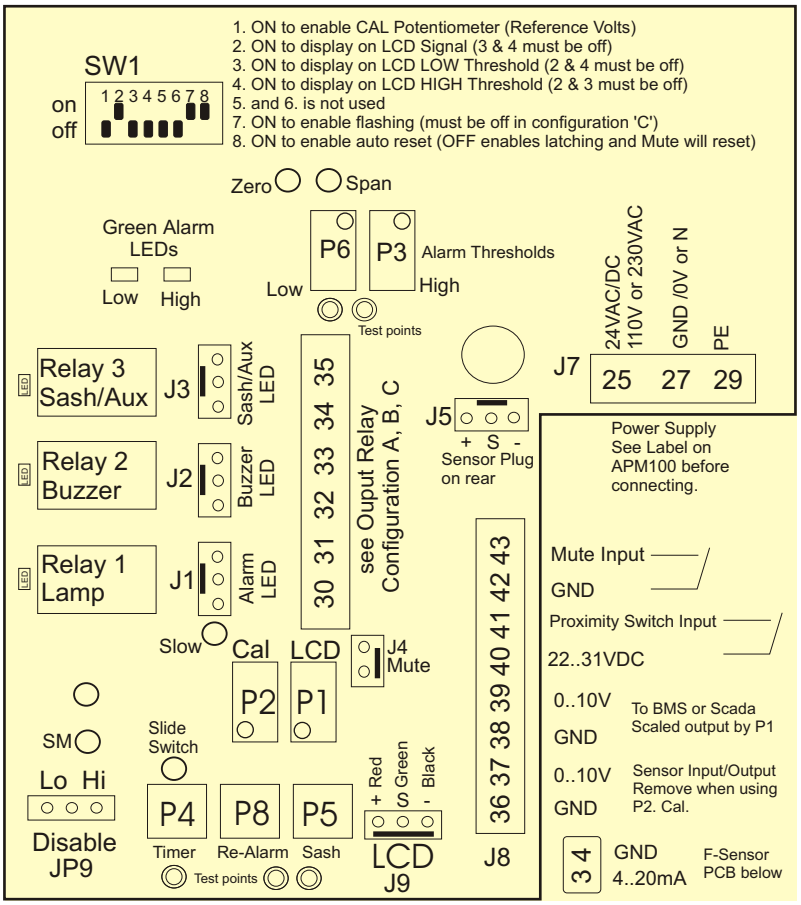
P4 adjusts the delay timer for the velocity alarm. Use Voltmeter and measure on Timer Test point. 0V (anti clock wise) no delay. 5V (fully clockwise) 64s delay or 2.5V = 32s.

P5 adjusts the Sash Re-alarm timer. Use Voltmeter and measure on Sash Test Point. 0V (anti clockwise) no delay. 5V (fully clock wise) shall re-alarm in 1 hour or 2.5V = 30 minutes. The minimum delay is 3 minutes.

P6 adjusts the low Alarm threshold using a Voltmeter on the test point 'Low' and adjusting P6 0..100% = 0..10V of the sensor range. Set SW1-3 to see Alarm threshold on LCD.

P8 adjusts the Re-alarm timer. Use Voltmeter and measure on Re-alarm Timer Test Point.
0V (anti clock wise) no delay. 5V (fully clock wise) shall re-alarm in 5 hours or 2.5V = 2.5 hours.
The minimum delay is 20 minutes.

APM110 CONTROL SWITCHES AND POTENTIOMETERS



JP9 - link middle pin to Lo or Hi to disable Lo or Hi alarm

Terminal Connections

Configuration can be done by solder links on rear of alarm board. Configuration 'B' and 'D' needs also a software change.

Configuration A: Standard Configuration as supplied from Factory. The Sash Relay works on proximity switch or any switch input
All outputs are set for volt free contact suitable for external 24VDC 1A or 24VAC 2 A non inductive.

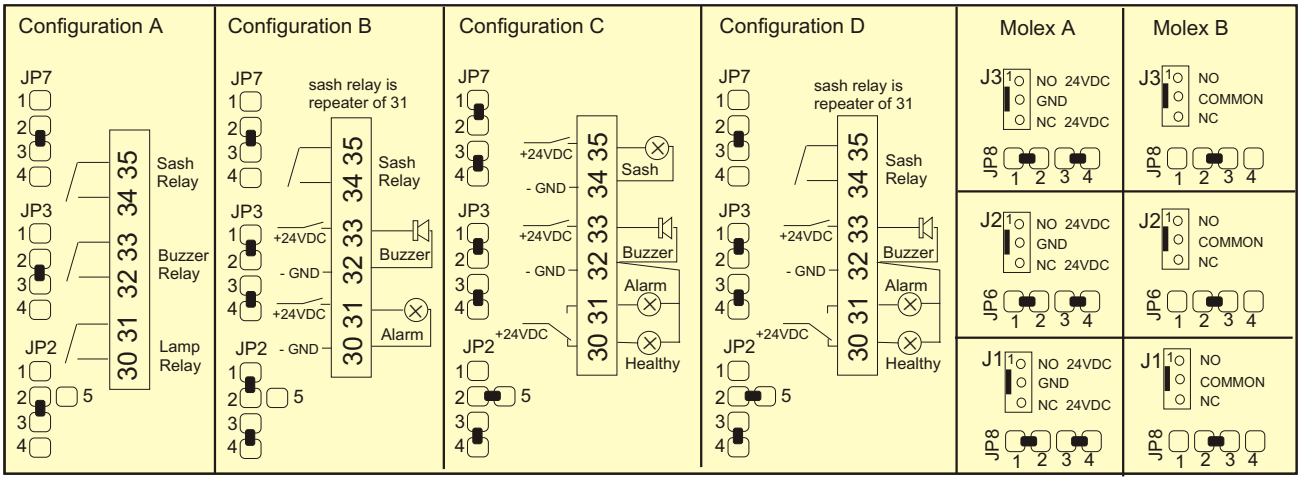
Configuration B: Non standard configuration. The internal power supplies 24VDC(40mA) to the external non flashing Lamp and Buzzer
The PCB Ground is used to operate the Lamp and Buzzer. The Sash relay works in parallel with the Lamp volt free.

Configuration C: All output terminals provide 24VDC and the alarm has a healthy lamp output. The sash works on switch input.

Configuration D: As Configuration C except the sash relay is repeater of Lamp relay and volt free.

Molex A: Standard version provides 24VDC on Molex connector to energise the Lid Lamp, Buzzer and Sash Lamp.

Molex B: Non standard version provides Volt free relay contacts on Molex connector.



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APM110 OPERATING INSTRUCTIONS

APM110 LOW VELOCITY ALARM MONITOR

CALIBRATION INSTRUCTIONS
The APM110's electronic is easily accessible by removing the front Lid. It is important to know that the APM110's calibration is based on 0...10V. The standard APM110 is factory set to have an output signal of 0...10V on terminal 36(-) and 37(+) as well as 38(-) and 39(+).
The mA circuit is on the F-Sensor PCB mounted below the alarm board and the termination and calibration instructions can be found under F-Sensor commissioning Instructions.

ZERO ADJUSTMENT i.e. 0..2.00m/s = 0..10V
The zero hole provides access to the F-Sensor PCB below the alarm board where the zero Potentiometer is located. Put the slide Switch on the F-Sensor PCB to up position (Linear output)
To zero the Sensor turn the slow Potentiometer completely anti clockwise to remove any dampening. Remove all tubes and fit a short circuit tube between the positive and negative nipple to eliminate draught through the sensor and let the sensor settle.

Connect the Voltmeter to 36(-) and 37(+) and adjust the zero to 0.00V or 0 .0m/s.

SPAN ADJUSTMENT i.e. 0..2.00m/s = 0..10V
Check the zero adjustment first as outlined above and put the slide switch into down position (square rooted output).

Measure the air velocity with a reference instrument and work out the average velocity. Adjust the span potentiometer which is located on th F-Sensor PCB below the alarm board until the LCD display shows the same value or until the voltmeter displays the correct value in Volts. The voltmeter should be connected to 36(-) and 37(+)

If the APM110 is scaled to 0..2.00m/s and the measured value is 1.00m/s the output voltage must be adjusted to 5.00V with the span potentiometer which is half the range of the sensor.

Note: the span adjustment must always be done with the slide switch in square root down position.

LINEARITY CHECK
Check the air velocity at various levels. If the APM110 is a 0..2m/s Sensor then test it at the following flows:

25 % = 0.50 m/s or 2.50V - 8.00mA
50 % = 1.00 m/s or 5.00V - 12.00mA .
100% = 2.00 m/s or 10.00V - 20.00mA

The Linearity is the accuracy of the Sensor less any Calibrator deviation:

Example:
Zero of Sensor = 0.00 V Zero of Calibrator = 0.00m/s
Span of Sensor = 5.00 V Span of Calibrator = 1.00m/s
The Sensor is 100% linear compared with the Calibrator.

SQUARE ROOT CHECK
The Square Root circuit is factory adjusted. In order to check its accuracy use a voltmeter on 36(-) and 37(+) and switch the slide switch into up position (linear mode) whilst the APM110 is connected to the air flow system. Measure the voltage and multiply the voltage by 10 then square root the result and the answer shall be the voltage when sliding the switch back to down position (square root mode).

MAGNIFICATION FACTOR SCALING
There is no scaling potentiometer fitted to the F-Sensor PCB and therefore all scaling is done via the span potentiometer.

Repeat the Zero and Span adjustments a few times

DAMPENING OF OUTPUT SIGNAL
Adjust the slow potentiometer on the F-Sensor PCB below the alarm board to clockwise for signal output dampening. This adjustment is useful in monitoring applications where the output signal must be smoothed to eliminate fluctuations in the digital data input channels of Scada Monitoring or BMS Computer Systems. During Calibration of the APM110 set the slow to anti-clockwise as it affects the Display as well.

DAMPENING OF THE DISPLAY
Adjust the Piano Switch SW2-7 on the rear of the LCD to display dampening. This adjustment is useful in turbulent air where the output signal must be fast but the display slow. During Calibration of the APM110 remove the display dampening.

ALARM THRESHOLD
There are Voltmeter test points below P6 and P3 to provide 0...10V. Set SW1-3 to Low or SW1-4 to High Alarm Display and adjust the 'Low' (P6) or the 'High' (P3) to the desired alarm Levels on the LCD Display. 0...2.00m/s = 0...10V. If the low Alarm is to be set to 0.50m/s set P6 to display 2.50V on the Voltmeter and 0.50m/s on the Display. If the high Alarm is to be set to 1.00m/s adjust P3 to display 5.00V on the Voltmeter and 1.00m/s on the display. The Voltage signal is always a linear percentage of the range. A green LED indicates Low or High alarm.

ALARM TIMERS
There are three timers. The Timer is for the Low and High Alarm to start the Lamp and Sounder relay to switch. The re-alarm timer shall bring back the alarm, in case it was muted and nobody attended to the fault.
The Sash alarm starts instantly when the sash input is connected. Once muted, the Sash timer starts and after time out switches the Sash Alarm Relay back on unless the Sash input is disconnected.

ALARM RELAY CONFIGURATION

All volt free relays and sash switch input
The Operator Panel shows a few possibilities to configure the relay outputs. These configurations are done underneath the alarm board with solder connections on the various solder pads and the standard configuration 'A' with volt free contacts are factory made during manufacture. A red LED shows that the relay is energised. Any combination of solder bridges can be made to suit an application.
Configuration B and D needs a different software chip.
There are three double pole relays and one set of contacts go the output terminals and one set go to the Molex connectors J1, J2 and J3. The Molex connectors are configured to have 24VDC to drive the Lamp, Sounder and Sash as standard Molex 'A' but it can also be configured for volt free contacts as shown in Molex 'B'.

With 24VDC output for Lamp and Buzzer and volt free repeater
The Configuration 'B' shall be used which provides 24VDC on the Alarm Terminals to power up a remote Alarm Light, Sounder and the Sash Relay shall be used as a secondary Relay to work in parallel with the Light relay to transmit a volt free contact to a remote location or computer system. Molex is configured to 'A'

All 24VDC output with healthy Lamp and Sash switch input
The Configuration 'C' shall be used which provides 24VDC on the Alarm Terminals to power up a remote Alarm Light, Sounder and Sash Light. The Alarm Light relay has a change over contact to power up a healthy Light. Molex is configured to 'A'

With 24VDC output but with volt free contact repeater
The configuration 'D' is the same as 'C' except sash relay is repeater with volt free contact. Molex is standard 'A'.

For special configurations consult CMR.

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APM110 ORDER DESCRIPTION

APM110 LOW VELOCITY ALARM MONITOR

GENERAL
CMR manufactures a large range of APM110 wall mount velocity alarm Sensors to suit many applications. Because of the variety of velocity ranges, output signals and power supplies it has been necessary to design an easy to use selection table for anybody to make up an APM110 specification to satisfy a requirement. All specifications are available with the associated ordering Code on the APM110 Order Selection Table.

APM110 PART NUMBER
The APM110 Part Number starts with the selection of the enclosure
In the Example we have chosen Code '39A' which is a standard APM110 ABS enclosure with 6 mm barbed nipples to fit CMR PVC Tube.
The Part Number therefore starts with ' 39A '.

NEGATIVE PRESSURE RANGE
The Negative Range is not available with APM110 Sensors as negative velocity pressures are never measured and cannot be square rooted.

The Code '000' always applies to any APM110.
The Part Number extends to '39A 000'.

POSITIVE VELOCITY RANGE
It is important to determine the duct velocity. Normally, this information is supplied by the Designer of the Ventilation System. On the APM110 SelectionTable are a number of standard velocities listed.

We have chosen 0..2.00m/s which has the Code '015'.
The Part Number extends to '39A 000 015'

OUTPUT SIGNAL
The Industry Standard for Output Signals is 0..10V or 4..20mA,
The APM110 has a standard output signal of 0..10V and the 4..20mA signal can be connected to the F-Sensor PCB below the alarm board. No special ordering code is available.

FRONT LID CONFIGURATION
The front Lid can be ordered to be populated with an LCD display, a Sounder and a Mute-Light Switch.
The order Code is All = 'A'.

The front Lid can also be ordered with an LCD display only which is normally done when only a remote alarm is required. The LCD is useful for commissioning the alarm thresholds.
The order Code is LCD = 'B'.

The Front Lid can also be ordered to be Plain with no LCD display or any Mute-Light and Sounder. The order Code is PLAIN = 'C'.

In the example we have chosen the Code ALL = 'A'.
The Part Number extends to '39A 000 015 A'

POWER SUPPLY
The Industry Standards are 24VDC or 24VAC. 110VAC and 230VAC are less used today for safety and EMC protection reasons.
We have chosen 24VAC which has the Code '3'.
The Part Number extends to '39A 000 015 A 3'.

ALARM RELAY SETTINGS
The APM110 has three alarm relays which can be configured to do several functions.

Configuration 'A' and Molex 'A' has the Code 'A'
All output relays are Volt free.

Configuration' B' and Molex 'A' has the Code 'B'
The Lamp and Sounder output relays switch 24VDC to a remote alarm plate but the sash relay is a repeater Volt free relay for remote computer alarm.

Configuration 'C' and Molex 'A' has the Code 'C'
The alarm light and sounder output relays switch 24VDC to a remote alarm. When not in alarm, the light relay is change over and switches 24VDC to a healthy lamp. The sash relay also switches 24VDC to power up a lamp when the sash input is connected.

Configuration 'D' and Molex 'A' has the Code 'D'
The alarm light and sounder output relays switch 24VDC to a remote alarm plate. When not in alarm the light relay is change over and switches 24VDC to a healthy lamp. The sash relay is Volt free and works in parallel with the alarm light relay to provide a remote computer alarm. JP7 is configured as configuration 'B'

In the example we have chosen the Code 'A' .
The Part Number extends to ' 39A 000 015 A 3 A'.

SCALED UNITS
The 3 1/2 digit LCD is factory scaled to suit the application i.e. 0..2.00m/s which means it is scaled in m/s and has the Code '1'.

The display can also be configured to m3/s. By selecting a Piano Switch the engineering units can be changed to m3/s which has the Code '2' .

In the example we have chosen the Code '1' .
The Part Number extends to ' 39A 000 015 A 3 A 1'.

DECIMAL PLACES
The 3 1/2 digit LCD can only display 1999 or 199.9 or 19.99 or 1.999 all depending on the decimal place setting..

It is essential to know how the velocity should be indicated on the LCD. In the example we have chosen two decimal place which has the Code 'C' and the display should indicate 0..2.00m/s.
In the example we have chosen the Code 'C'.
The Part Number extends to ' 39A 000 015 A 3 A 1 C'.

COLUMN 15 AND 16
These two columns are not used and must always have a 'N' and 'N' Code.

FINAL PART NUMBER
The Part Number to order is 39A000015A3A1CNN.

Now try and select your own APM110 using the APM110 Order Selection Table.

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APM110 ORDER SELECTION TABLE

The selection Table has been prepared to make ordering easy. Each Column contains a number of different options which are available and a Part Number can be established by yourself depending on your specific requirements. The Example Part Number 39A 000 015 A 3 A 1 C N N which is printed above the Selection Table can be identified as being an APM110 Low Velocity Sensor having 6mm barbed tube connectors with a Negative Range of 0.00 m/s and a Positive Range of 2.00m/s, with an Output Signal of 0-10V and 4-20mA. The Lid is fully populated. The power Supply is 24VAC. The APM110 is set up as standard configuration 'A' Low and High Alarm Unit. The display is scaled in m/s. The Decimal Place is adjusted to 2 which indicates 0 -2.00 m/s. The last two codes are not used and must always be quoted as N N.

EXAMPLE PART NUMBER SELECTION (The code after the (=) sign is used i.e. 6mm = 39A)

39A	000	015	A	3	A	1	C	N	N
APM110	Negative	Positive	Front	Power	Relay	Scaled	Decimal	Not	Not
Part No.	Range	Range	Lid	Supply	Setup	Units	Places	used	used
6mm = 39A	0m/s = 000	1.00 m/s = 010	ALL = A	24 VDC = 2	Config = A	m/s = 1	N/A = N		
		2.00 m/s = 015	LCD = B	24 VAC = 3	Config = B	m3/s = 2	000 = A		
		3.00 m/s = 020	PLAIN = C	110 VAC = 4	Config = C	m3/h = 3	00.0 = B		
		4.00 m/s = 025		230 VAC = 5	Config = D	l/s = 4	0.00 = C		
						l/min = 5	.000 = D		
						% = 6			

HOW TO ORDER

Make up your own APM110 Velocity Sensor selection below using the empty cells

EXAMPLE
A wall mount velocity alarm is required of the type APM110
The tube connections must be 6mm for CMR PVC Tube
The negative velocity range is always 000
The positive range must be 3.00m/s)
The Lid must only have an LCD no buzzer, no light
The power supply must be 24VDC
The Alarms must have a remote healthy lamp and Volt free relay
The scaled units must be in m/s
The indication must be 3.00m/s with two decimal places

Call CMR for assistance at any time

The part Number for this APM110 is 39A 000 020 B 2 D 1 C N N

CMR CONTROLS
Division of C.M.RICHTER EUROPE LTD
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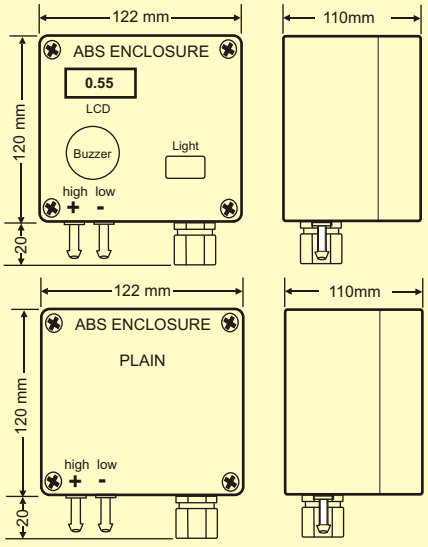
Fax +44 (0) 1268 287099
e-mail: sales@cmr.co.uk

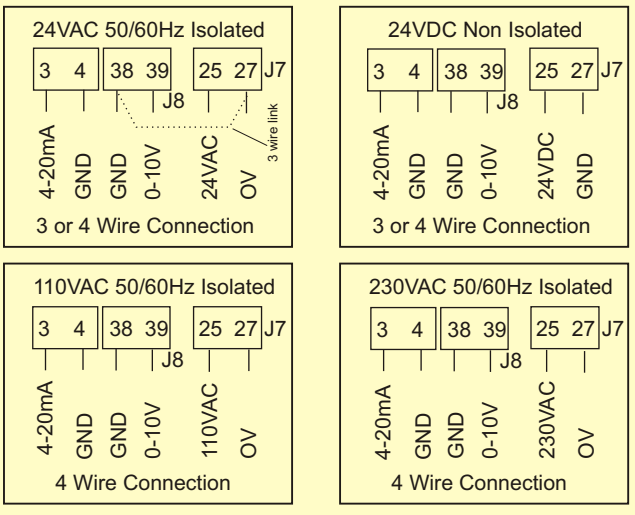
APM110 TECHNICAL SPECIFICATION

Measurement Range	See APM110 Order Selection Table
Optional Range	Any Range from 0..2.00m/s up to 4.00m/s (max. 5.00m/s)
Overload Capacity	To 340 mBar
Media	Non Corrosive Gases such as Air,N2,O2,CO2,N2 O, inert Gases
Output Voltage Drift	-25°C to +25°C = 6% FSO +25°C to +85°C = 7% FSC all depending on air density
AC Power Supplies	24 VAC 50/60Hz 140mA Fuse 300mA Auto Reset
	110VAC 50/60Hz 32mA Fuse 315mA Wickmann
	230VAC 50/60Hz 10mA Fuse 315mA Wickmann
DC Power Supplies	24 VDC (22 to 31VDC) smoothed. Sensor with all Alarm Relays and LED's 180mA (with mA output)
Voltage Output Signal	0-10V (0...100% of Range) i.e 0..2.00m/s RL = 5kOhm min.
Current Output Signal	4...20mA (0...100% of Range) i.e. 0..2.00m/s RI = 500 Ohm max.
Hysteresis/Repeatability	0.5% Typical of Full Scale
Linearity (Accuracy)	2.5% of Full Scale in square root mode
Zero Drift	0.05%K (+10°C to +50°C)
Operating Temperature	0°C to +40°C Storage -40°C to +90°C
Mounting Position	Any plane
Alarm Relays	3 off Single Pole Change Over 2A at 24V AC or 1A at 24V DC
Alarm Timers	3 off Individually adjustable. See operating instructions
Alarm LED's	2 off on PCB for visual indication during commissioning
Weight	0.9 kg
Electrical Connections	Plug with Screw Connections
Air Tube Connections	Positive and Negative Pressure Barbed Nipple 6.5mm O/D x 15mm long
Enclosure	ABS Grey Protection IP44 with populated LID. Plain Lid IP65.
Conformity	EN61326-1 EMC EN61010-1 SAFETY
Calibration Certificate	Must be calibrated against a reference instrument on site to suit application.

DIMENSIONS AND CONNECTIONS



TUBE CONNECTIONS
ABS 2 x 6mm for PVC Tube



CABLE ENTRY GLANDS
1 x PG13 Gland for ABS Enclosure

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