SMART SENSOR®
Intell*Instruments™ Pro   Model: AS510

Differential Pressure Meter User Manual

Differential Pressure
Aj510

Introduction

AS510 uses imported air pressure sensor, provide high accuracy, temperature compensated for accurate measurement values.

This unit can be applied on chemical industry, electrical industry, nuclear industry to measure the difference of air pressure.

Safety notice

1. About the user manual.

   a) Before use this differential air pressure meter, please carefully read through this user manual, and operate it as well.

   b) Please pay attention when the warning symbol " ⚠ " is appear on the LCD display.

2. To prevent damage the unit and human body of the user.

   a) To use it within the range of the specified value. Don't use too much force when insert the tube to the unit inlet.

   b) Don't place the unit under acid solvent or other Corrosive solvent environment.

   c) Please follow what instruction manual mentioned method to clean and maintenance the unit.

   d) For safety, please use original part and accessories.

1. Product specifications

1.1 Technical specifications

Measureing range	0~100 hPa / 0~45.15 inH2O
Resolution	0. 01 hPa / 0.01 inH2O
Unit	hPa, mbar, Pa, psi, mmH2O, mmHg,inH2O,inHG,m/s,fpm
Accuracy	±0.03 hPa（0~0. 30 hPa） ±0.05 hPa（0.31~1. 00 hPa） ±（1.5% of readings + 0. 1 hPa） remaining range ±0. 01 inH2O（0~0. 12 inH2O） ±0. 02 inH2O（0.13~0. 40 inH2O） ±（1.5% of readings + 0. 04 inH2O） remaining range
Measuring speed	0.5 sec

1.2 General specifications

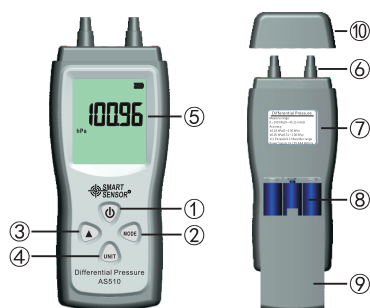| Operating environment	0°C~50°C / 32°F~122°F
Storage environment	−20°C~60°C / −4°F~140°F
Operating voltage	3x 1.5V AAA batteries
Battery life	50 hours (without backlight)
Size	124. 8mm*49. 8mm*25. 6mm
Weight	71.5g

2. Product outline


① Power on/off and escape button
② Mode selection and confirm button
③ Select button
④ Unit selection button
⑤ LCD display
⑥ Measure inlet
⑦ Back model plate
⑧ Battery compartment
⑨ Battery door
⑩ Protection cover

3. LCD display

① Measure value display area
② Battery empty/full symbol
③ Average symbol
④ Minimum symbol
⑤ Maximum symbol
⑥ Value hold symbol
⑦ Pressure units
⑧ Air flow speed
⑨ Air Density unit
⑩ Setup mode symbol

4. DETAIL OPERATION DESCRIPTION

4.1 Check the unit

4.1.1 Turning On and off the unit:
Press " ⏻ " to turn on the unit, then it goes to measurement mode: If you want to turn it off, press " ⏻ " until lcd no display, then it "off".

4.1.2 Back light on/off:
Under measurement mode, press " ⏻ " once will turn on the back light, if no any operation of the keys, the backlight will turn off after 30 second.

4.2 Preparation before measurement take.

4.2.1 Slide off the battery door, place AAA size battery x 3 pieces in correct polarity.

4.2.2 Press " ⏻ " to turn on the unit, then it goes to measurement mode, the lcd display showed the last measured unit (e.g. hPa), the measured differential air pressure value and battery empty/full symbol, as following fig. 1
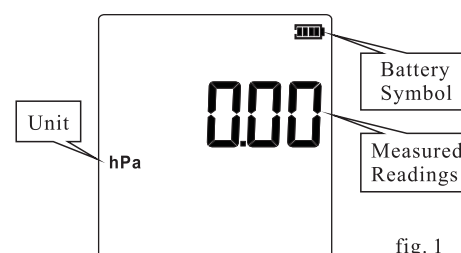

fig. 1

Remarks: If you found the battery indication show " 🔲 " or " 🔲 ", please change the batteries, otherwise will affect the accuracy of the unit.

4.2.3 Selectable units.
  4.2.3.1 Air pressure units:
   hPa, mbar, Pa, mmH2O, inHg, mmHG, psi, m/s, fpm.
  4.2.3.2 Air flow unit:
   m/s, fpm.
  4.2.3.3 Density units:
   kg/m3, lb.fh3.
4.3 Setup before measure
  4.3.1 Setup the air pressure units:
   After turn on the instrument, press "UNIT" button once, instrument will go to "units" selection interface, LCD will display " ▲ ", " ↵ " and blinking (hPa) as figure. 2 showed (the blinking unit is the last measured unit or mass setup unit). Press " ▲ " button to selected your desired air pressure unit, then press [MODE] button to confirm the selection, press " ⏻ " to cancel the selection.
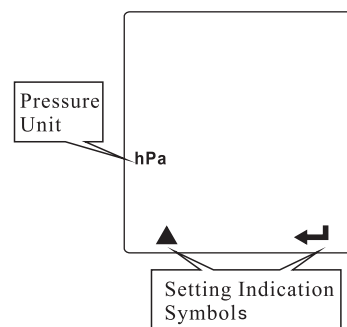

Pressure Unit

hPa

Setting Indication Symbols

fig. 2

4.3.2) Setup the air flow unit:
   After turn on the instrument, press "UNIT" button once, instrument will go to "units" selection step, LCD will display " ▲ ", " ↵ " and blinking (hPa) as fig. 2 showed (the blinking unit is the last measured unit or mass setup unit).
   Press " ▲ " button to selected your desired air flow unit, then press [MODE] button to confirm the selection, press " ⏻ " to cancel the selection as fig. 3 showed.

Air Flow Unit m / s
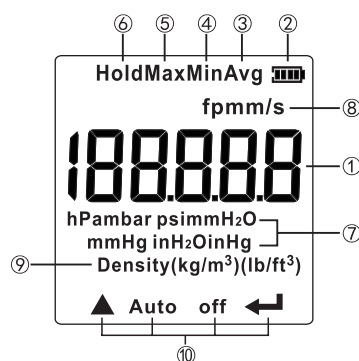
fig. 3

Air Flow Unit fpm
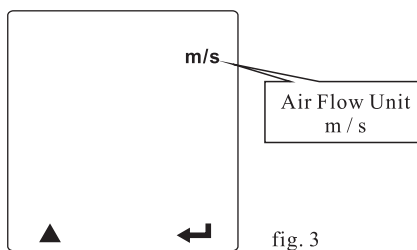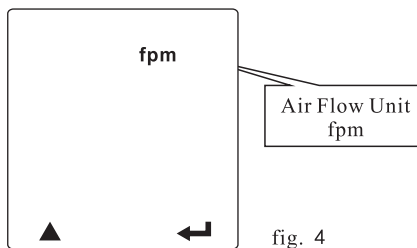
fig. 4

After you selected the air flow unit, if you want to setup the air density, please follow steps below.

4.3.3 Setup the density unit:
  a) After selected air flow unit, press [MODE] button confirmed selection then jump to density setup interface.
  b) Press " ▲ " button to setup the density value, value from 0-9 in sequential, press [UNIT] button to change the digit position.
  c) If you selected air flow unit in m/s, the density unit should be kg/m3 as fig. 5, if you selected fpm air flow unit, the density unit should be lb/ft3 as fig. 6 showed.
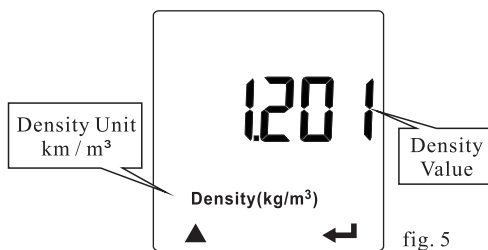

Density Unit km / m³

Density Value

Density(kg/m^3)

fig. 5

Density Unit lb / ft³

Density Value

Density (lb/ft^3)
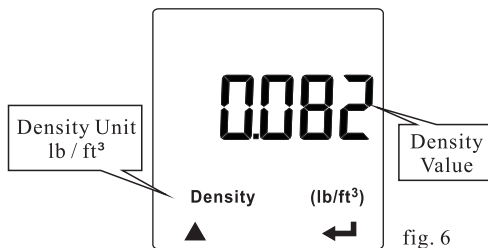
fig. 6

4.4 Ready for measure
  After finished all setup step, connect the provided silicone tube to the inlet of the instrument, then you can start measuring as fig. 7 showed.
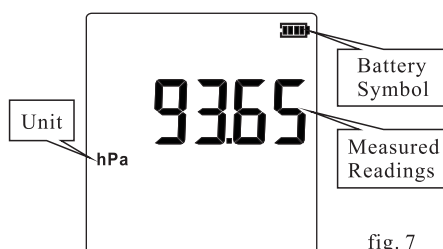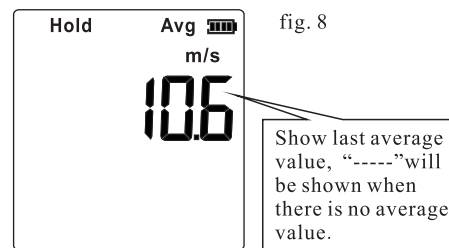

Battery Symbol

Unit

hPa

Measured Readings

fig. 7

4.5 Average value of air flow
  4.5.1 At the air flow measure mode (m/s or fpm), press [MODE] button until LCD display blinking "Hold", "Avg" and the last average value, as fig. 8 showed.

fig. 8

Show last average value, "-----"will be shown when there is no average value.

4.5.2 At that stage, press [MODE] button for 2 seconds, until LCD showed "Avg" symbol and air flow value as fig.9 showed.

fig. 9
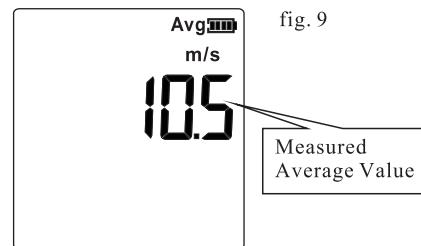
Measured Average Value

4.5.3 Press [MODE] button to end the measure of average, LCD display blinking "Hold", "Avg" and calculated average value. If you still need to measure the average value, repeat step "4.5.3".
4.5.4 Press [MODE] button, return to normal measuring mode.

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4.6 POWER OFF SETUP
  4.6.1 At the power off stage, Press " ⏻ " button until LCD showed setup interface, as fig. 10 showed. In this time LCD display " ▲ ", " ↵ ", [Auto off] and blinking [ON] (or OFF).
  4.6.2 Press " ▲ " to select "ON" or " OFF".
  4.6.3 Press [MODE] button to confirm this setup.
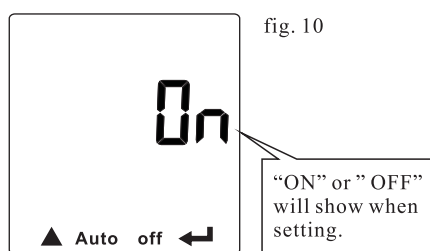

fig. 10

"ON" or " OFF" will show when setting.

4.7 Pre-setable view manual:
  Preset is real time measure reading,
  "Hold", hold the last measure reading.
  "Max", maximum value, the maximum value of last measure or last setup.
  "Min", minimum value, the minimum value of last measure or last setup.
  "Avg", average value, the average value of last measure or last setup.
  Press [MODE] button to select the desired view mode.
4.8 Reset the maximum or minimum value.
  4.8.1 At measure mode, press [MODE] button, change to "MAX" or "MIN" mode.
  4.8.2) Press [MODE] button for 2 secs, until LCD showed "-----", to showed instrument has been re-seted. As fig. 11 and fig. 12 showed.

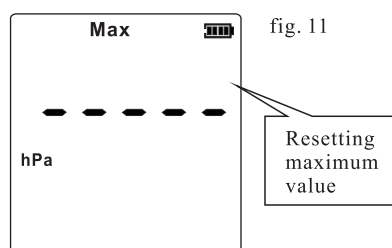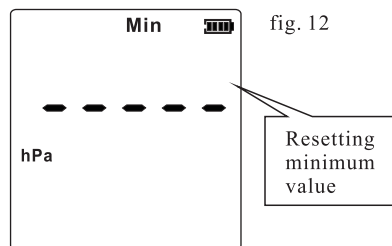
fig. 11

Resetting maximum value

fig. 12

Resetting minimum value

⚠ **Instrument zero point calibration**

The location change of the instrument may cause measure error or inaccurate. After rest to zero, the location of the instrument can't be changed. To compensate the location change or long time zero drift, the instrument must be reset to zero every time before measure. zero calibration only works under 0-10% range. At the normal measuring mode, press " ▲ " button, start the zero reset (instrument must be reset zero within 10hPa air pressure).

📄 **Statement**
  a. We reserve the rights of upgrading and amending the design of the product as well as the manual updating, and the product is subject to change without any further notification.
  b. Dispose of battery should be in accordance with local laws and regulations.

IntelliSafe CE SGS UKAS

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