ALiA ®   ALIAPT

Smart Pressure Transmitter

Model APT8000 Series

Operation Manual

$C\mathnormal{\epsilon}$

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1. Summary
1.1 Introduction

APT8000 series Differential pressure transmitter is a type of intelligent multi-functional digital instrument, it's elaborate designed on the basis of mature and reliable transmitter technology, combined with advanced Single-chip technology and smart digital transmitter technology.

The centerpiece of the Smart Differential pressure transmitter adopt16 bit Single-chip who's powerful and high-speed calculate power guarantee the quality of the transmitter. The whole design focus on reliably, stability, high-precision and intelligent.It also meets the requirements of industrial application.Hence,this software adopt digital signal processing technology,has excellent anti-interference ability, zero point stability, Zero Sensitive Capability (ZSC) and Temperature Sensitive Capability (TSC).

1.2 Characteristic

APT8000 not only has excellent anti-interference ability, zero point stability, Zero Sensitive Capability（ZSC）and Temperature Sensitive Capability（TSC）,but also has many other merits as follow

Adopt S-PORT communication port; communicate with computer directly through special swift module.By the use of special RS485 module could achieve far spread of digital signal or the constructed of RS485 industrial Wireless LAN.

Optional HART modules, has HART communication capabilities.

2 Principle and wiring diagram
2.1 Principle

Use high accuracy and high stability diffused silicon isolation transducer which produced by Nova Sensor in America, through high reliable mu-circuit and precise temperature compensation, can change the fluid's gauge pressure and absolute pressure into standard 4~20mA electric current signal output
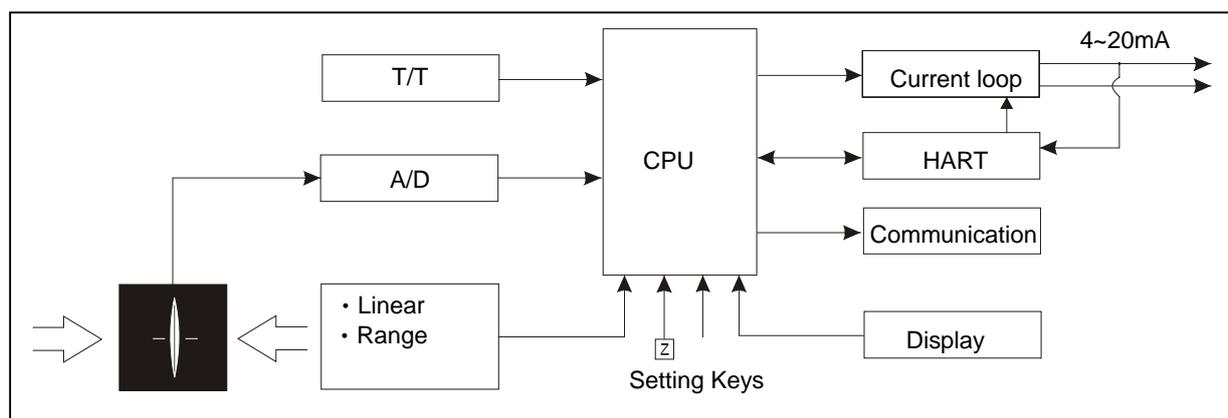
2.2 Dimensional Drawings
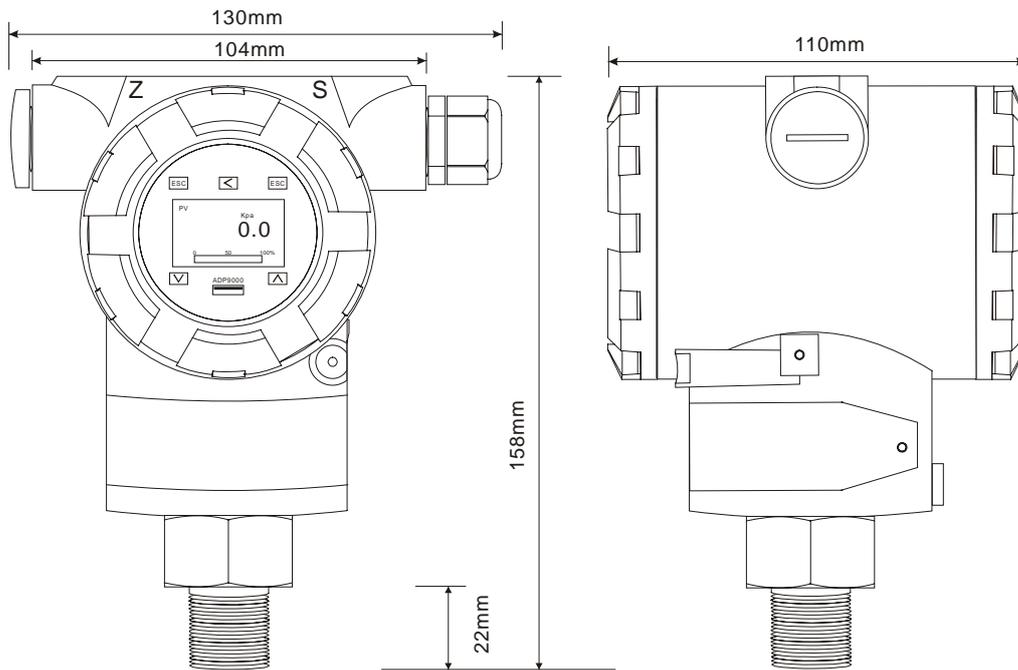
2.3 Wiring

APT8000 is designed with two wire 4~20mA output.
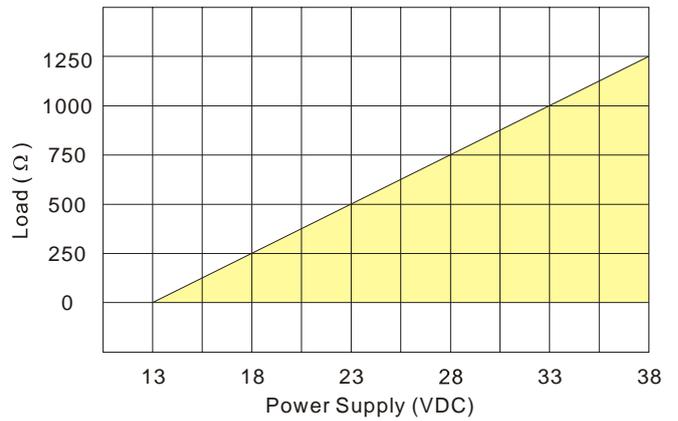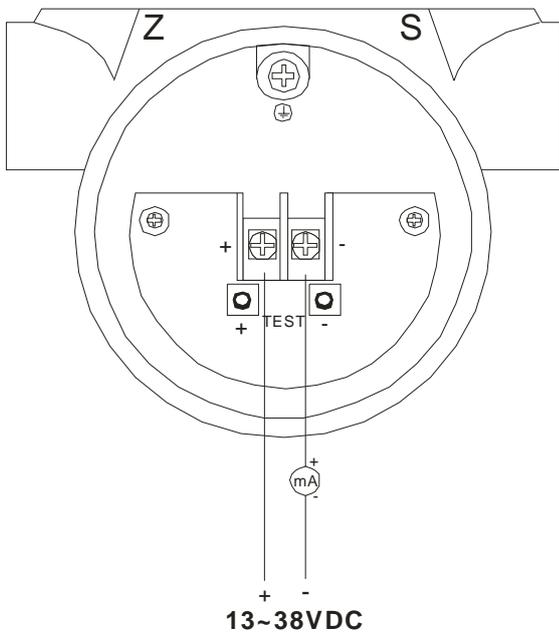
2.4 The function of keypad

Key name	Button Sign	Parameter Setting Status Function
ESCAPE	ESC	Return to the former position
SET	SET	Enter in the Parameter setting, Save the Datas, Get to next step
MOVE	<	Move the cursor and the decimal point to the left.
DOWN	∨	Reduce the values.
UP	∧	Increase the values

1. Press and hold the SET button for about 3 seconds then release to enter the main menu settings. If there is no related operation for 2 minutes in the setup menu, it returns to the normal display automatically.

2. How to do the zero calibration setting

   Press and hold the ∨ button for about 3 seconds, release, then the LCD appears"GOOD", the zero calibration was finished.

3. How to do the Span Shift Setting

   After entering the password 040821 in sub 6, press and hold the ∧ button for about 3 seconds then release it to finish Span Shift Setting

   Under the condition of standard pressure source, add pressure to the standard value then press and hold the ∧ button about 3 seconds, release it to finish Span Shift Setting

4. How to restore password lock state

   Press and hold both the ∧ + ∨ buttons for 3seconds to restore. It will back to the original condition as you never enter the password

2.5 Display
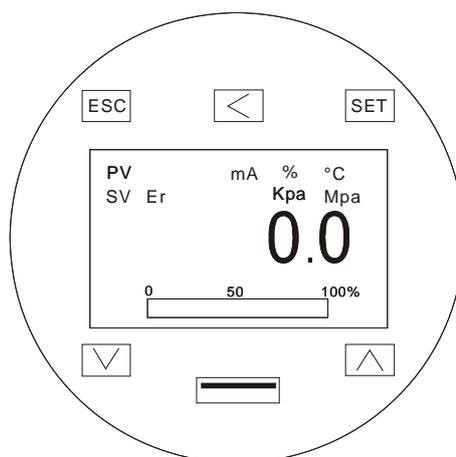
Code	Code Function
SV	Setting status
PV	Measure status
ER	Signal error or over pressure
mA, %,˚C ,Kpa, Mpa	Display unit

3. Parameter setting
3.1 Operate flow chart
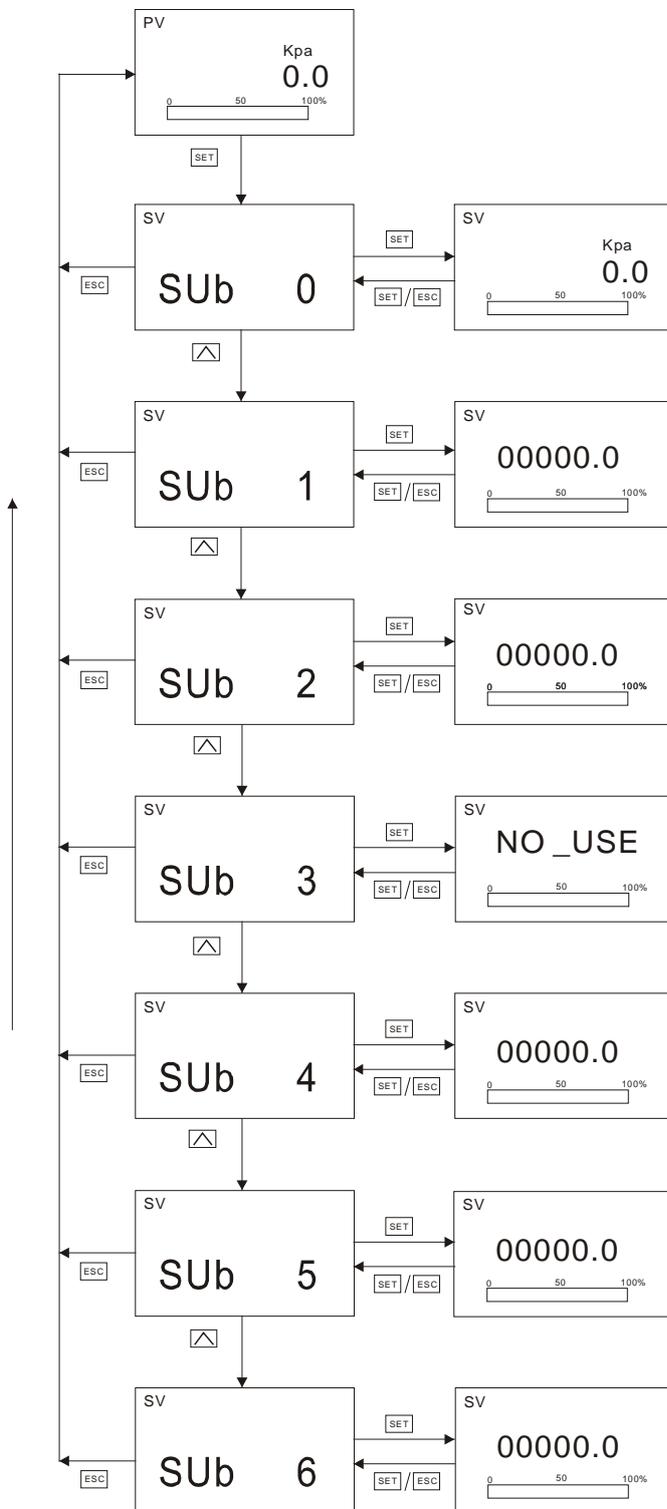
3.2 User operate description
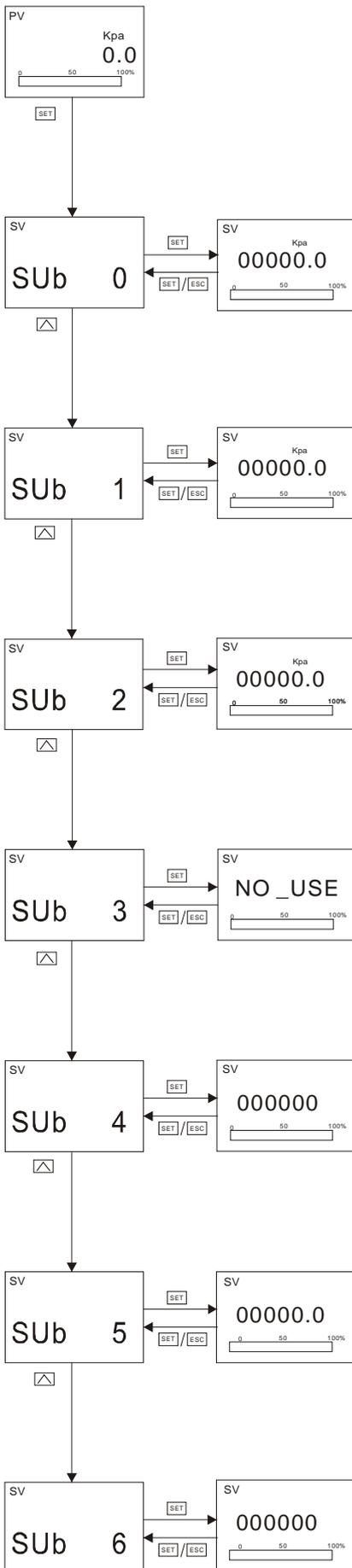
|	
PV Kpa 0.0 0 50 100% SET	**Parameter setting** Press and hold the ⃞SET for 3 seconds,then release it to enter the parameter setting menu
SV SUb 0 △ SET → ← SET /ESC SV Kpa 00000.0 0 50 100%	**Display Unit（Sub 0 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to select units.. 0. Kpa 1. Mpa 2. mA 3. % 4. ℃ Press ⃞SET to confirm, press ⃞ESC to cancel.
SV SUb 1 △ SET → ← SET /ESC SV Kpa 00000.0 0 50 100%	**Zero Setting （Sub 1 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to change the values. Press ⃞SET to confirm, press ⃞ESC to cancel. Notes: Settings should not exceed the maximum range.
SV SUb 2 △ SET → ← SET /ESC SV Kpa 00000.0 0 50 100%	**Span Setting（Sub 2 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to change the values. Press ⃞SET to confirm, press ⃞ESC to cancel.
SV SUb 3 △ SET → ← SET /ESC SV NO _USE 0 50 100%	**NO-USE**
SV SUb 4 △ SET → ← SET /ESC SV 000000 0 50 100%	**Communication Address （Sub 4 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to change the values. Press ⃞SET to confirm, press ⃞ESC to cancel. Rang: 0~250
SV SUb 5 △ SET → ← SET /ESC SV 00000.0 0 50 100%	**Damping （Sub 5 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to change the values. Press ⃞SET to confirm, press ⃞ESC to cancel.. Range: 0~32
SV SUb 6 SET → ← SET /ESC SV 000000 0 50 100%	**Advance setting possword（Sub 6 ）** Press⃞SET to enter, then Press ⃞△ or ⃞∨ to change the values..

### 3.3 Password management of zero calibration setting and Span shift setting

Enter manu SUb 6 and input the password
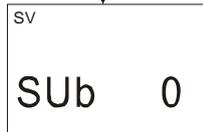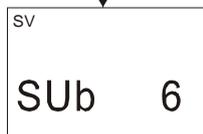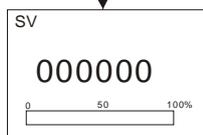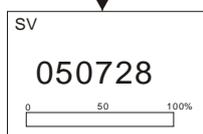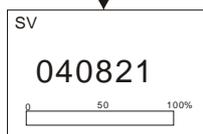
PV Kpa 0.0 0 50 100%	Normal Display Press SET for 3 seconds then release it to enter the parameter-setting menu.
SV SUb 0	parameter-setting menu Press △ or ▽ to change the values. Set the values to "**6** "to enter the parameter-setting menu of password management.
SV SUb 6	password management（SUb 6 ） Press SET to enter the parameter-setting menu of password management
SV 000000 0 50 100%	password management（SUb 6 ） Press △ or ▽ to change the values, press ≤ to move the cursor. Press SET to confirm
SV 040821 0 50 100%	Password management （SUb 6 ） Cancel the Span shift setting, got the permission ofcalibration Password: 040821
SV 050728 0 50 100%	Password management（SUb 6 ） Cancel the zero calibration setting Password: 050728

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3.4 How to set Decimal point and minus

Example: zero = - 5Kpa
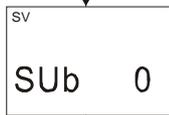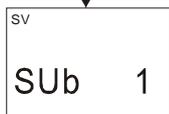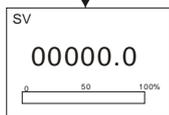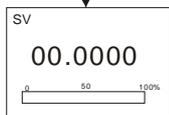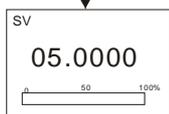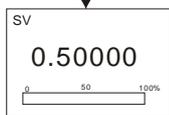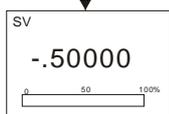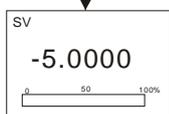
Display	Instruction
PV Kpa 0.0 0 50 100%	**Parameter setting** Press SET button for 3seconds then release to enter parameter-setting menu.
↓ SET	
SV SUb 0	**Engineering Unit Setting（4m）（Sub 0 ）** Press SET to enter,then press △ or ▽ to select units: Kpa 0. Kpa 1. Mpa 2. mA 3. % 4. ℃ Press SET to confirm,
↓ △	
SV SUb 1	**Zero Setting (4m）（Sub 1 ）** Press △ to change the values, press SET to confirm. Then enter into Zero Setting
↓ SET	
SV 00000.0 0 50 100%	**Zero Setting（4m）（Sub 1 ）** Press ＜ for three times to move the position of decimal point. as follow.
↓ ＜	
SV 00.0000 0 50 100%	**Zero Setting (4 mA) (Sub 1)** Press △ or ▽ to change the values, set the values to **05** as follow.
↓ ＜	
SV 05.0000 0 50 100%	**Zero Setting（4m）（Sub 1 ）** Press ＜ to move the position of decimal point, please press ＜ for once to move the decimal to the first place as follow.
↓ ＜	
SV 0.50000 0 50 100%	**Zero Setting (4 mA) (Sub 1)）** Press △ or ▽ to change the values to "**- **", **only the first value could be changed to "-**
↓ △/▽	
SV -.50000 0 50 100%	**Zero Setting（4m）（Sub 1 ）** Press ＜ for five times to move decimal points to the position as follow,
↓ ＜	
SV -5.0000 0 50 100%	**Zero Setting（4m）（Sub 1 ）** press SET to confirm,