ATM-T Series
5 DIGITAL MICROPROCESS TEMPERATURE (THERMOCOUPLE) ISOLATED TRANSMITTER

USER'S MANUAL (V1.1)

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Correction record

Version	Record
V1.1	Modify 10. Ordering information

Contents

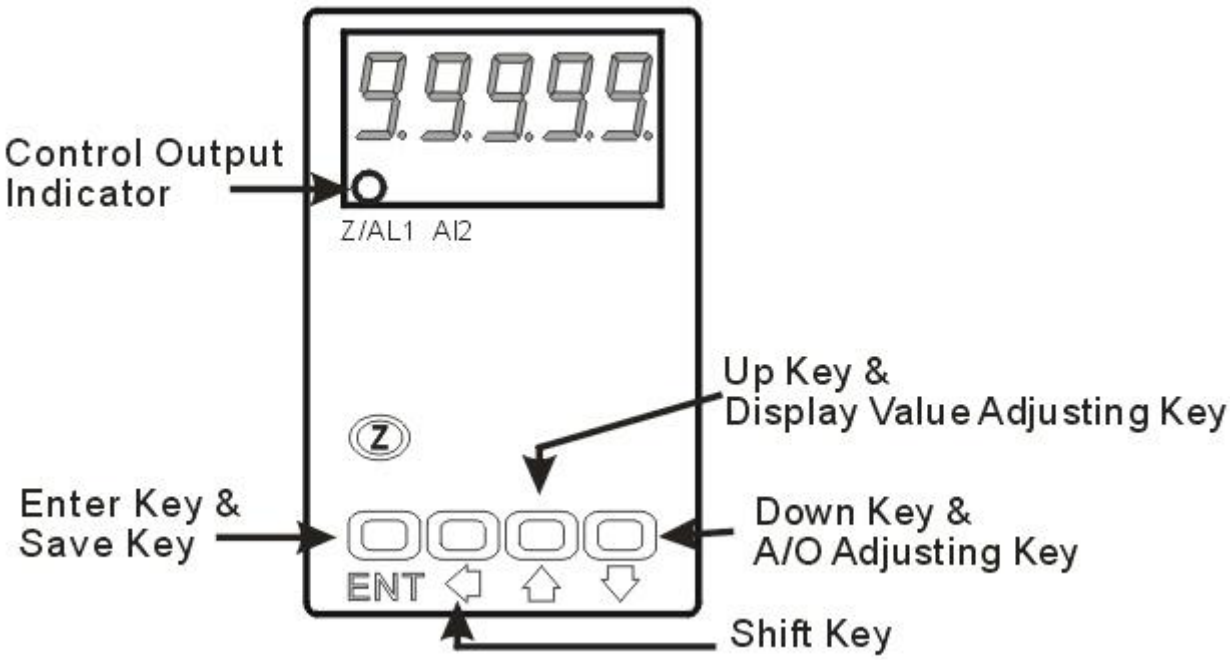
1. Features

- Versatile output selection : 4~20mA , 0~20mA , 0~5V , 0~10V
- Accuracy : ±0.2% F.S., ±0.5 degree C (cold junction compensation)
- Measuring Temperature (TC) sensors for K, J, E, R, S, B, T types
- Measuring sensors disconnection
- 1 decimal point selectable
- Degree C / degree F units selectable
- 1 control output: ON/OFF proportion programmable
- High stability, non-flammable case (PC), high safety

2. Specifications

- Output selection : 4~20mA , 0~20mA , 0~5V , 0~10V
- Accuracy : ±0.2% F.S.,
  ±0.5 degree C (cold junction compensation)
- Display Screen : High brightness red LED; 10.16mm(0.4")
- Parameters Setting : Push buttons
- Back Up Memory : EEPROM
- Over Range Indication : doFL/ioFL or -doFL/-ioFL
- Disconnection Indication : Automatic with "OPEn" indication
- Analog Output Resolution : 15 bit
- Output Ripple : ≦±0.1% F.S.
- Output Response Time : ＜250 msec (0~90%)
- Output Capability : Voltage Output: ＜20mA
  Current Output: ＜10V
- Isolation : Input / Output / Power / Case
- Insulation Resistance : ＞100MΩ with 500Vdc
- Surge Test : 2KVac/1min
- Input Impendence :Voltage: ＞2V for 20KΩ/V; ≦2V for ＞200MΩ
  Current: ≧0.2A at 100mV; ＜0.2A at 1V
- Temperature Coefficient : 100ppm/degree C (0~60 degree C)
- Operating Temperature : 0-60 degree C
- Operating Humidity : 20 to 90% RH (non-condensing)
- Storage Temperature : -10-70 degree C
- Storage Humidity : 20 to 90% RH (non-condensing)
- Power Supply : AC 110, AC 220V
- Installation : Socket / Plug-in

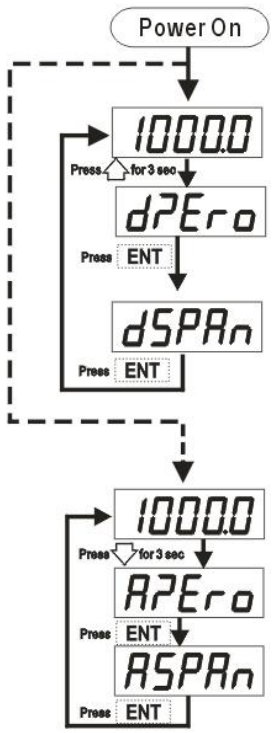
3. Front panel & Key functions



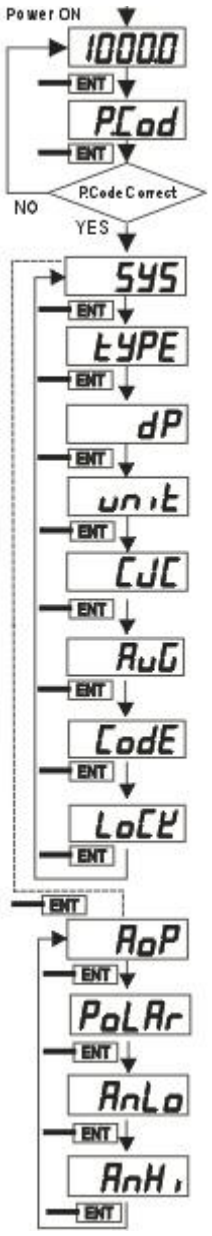
Key Name	Symbol	Descriptions
Enter Key & Save Key	ENT	1. In the measuring status, press this key can enter to parameter pages. 2. In the parameter setting, press this key can save the value & go to next page.
Shift Key	⇦	1. In the parameter setting , press this key can move the cursor left.
Up Key & Display Value Adjusting Key	⇧	1. In the measuring status, press this key for 3 sec can enter to display adjustment of "ZERO" & "SPAN" 2. In the parameter setting, press this key can increase the digits.
Down Key & A/O Adjusting Key	⇩	1. In the measuring status, press this key for 3 sec can enter to analog output adjustment. 2. In the parameter setting , press this key can decrease the digits.

1. The following block charts are parameters codes, parameter codes & parameters will alternate flashing if the parameters can be modified.
2. To modify the parameters, please press ⇦ ⇧ ⇩ , and press ENT to save the parameters after the modification.
3. Please don't forget the new pass code after modification.
4. In any pages, pres ⇧ & ⇩ , or don't press any keys for 2 minutes that will back to measuring status.

4. General Mode Operating Procedures

Block Charts	Display	Descriptions	Default
		**Display : "ZERO" & "SPAN" Adjustment**	
	Measuring Status	Present value for measurement.	
	Display (dZEro) Adjustment (dZEro)	Press ⇦ to select adjusting speed rate, press ⇧ ⇩ to modify the zero value. PS: To use this function to adjust the real zero value.	00000
	Display Span Adjustment (dSPAn)	Press ⇦ to select adjusting speed rate, press ⇧ ⇩ to modify the span value. PS: To use this function to adjust the real span value.	00000
		Analog Output: "ZERO" &"SPAN" Adjustment	
	Measuring Status	Present value for measurement.	
	A/O Zero Adjustment (AZEro)	Press ⇦ to select adjusting speed rate, press ⇧ ⇩ to modify the A/O zero. PS: To use this function to adjust the real A/O zero.	00000
	A/O Span Adjustment (ASPAn)	Press ⇦ to select adjusting speed rate, press ⇧ ⇩ to modify the A/O span. PS: To use this function to adjust the real A/O span.	00000

5. Programming Mode Operating Procedures

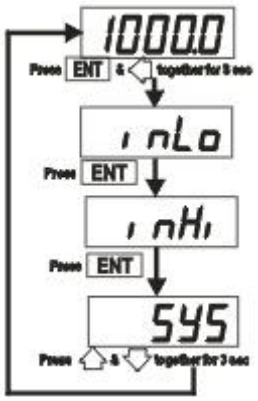
Block Charts	Display	Descriptions	Default
	Measuring Status	Present value for measurement.	
	Pass Code (P.Cod)	Press⇦ ⇧ ⇩ to enter pass code.	00000
		Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.	
	System Setting Page (SYS)	Press⇦ can select A/O setting page.	
	Input Type Setting (tYPE)	Pass ⇧ ⇩ to modify the input type.	
	Decimal Point Setting (dP)	Pass ⇧ ⇩ to select decimal point (0, 1). EX: if the value shows "0.0" that means the decimal point is 1 digit.	00000
	Temperature Unit Setting (Unit)	Pass ⇧ ⇩ to modify the unit of linear-speed (℃/℉).	oC
	Cold Junction Compensation (CJC)	Pass ⇧ ⇩ can switch (on) or (off) cold junction compensation.	no
	Display Average Setting (AvG)	Pass ⇦ ⇧ ⇩ to modify display average (1~99). PS: Please use this function for stable display value when input signal is unstable.	00020
	Pass Code Setting (CodE)	Pass ⇦ ⇧ ⇩ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	00000
	Key Lock Setting (LoCK)	Pass ⇧ ⇩ to lock the keys, using key lock function only can view the parameters, but cannot modify any values. PS: no (unlock) ,YES ("ENT" unlock , others lock).	no
	A/O Setting Page (AoP)	Pass ⇦ can select A/O setting page.	
	A/O Polarity Setting (PoLAr)	Pass ⇦ ⇧ ⇩ To modify output is positive pole or negative pole. PS : Voltage output ,NO: positive pole output (0~+10V) YES: positive & negative pole output (-10~+10V)	no
	A/O Low Scale Setting (AnLo)	Pass ⇦ ⇧ ⇩ to adjust A/O low scale to correspond to the display value. EX : A/O is 0~10V, the display is 10.0 to output 0V, this value must be set for 10.0.	00000
	A/O Hi Scale Setting (AnHi)	Pass ⇦ ⇧ ⇩ to adjust A/O hi scale to correspond to the display value. EX : A/O is 0~10V, the display is 90.0 to output1 0V, this value must be set for 90.0.	99999

6. Error Code of Self-Diagnosis

Display	Descriptions
coFL	Cold junction is over sensor's (PT100) measuring range (0~100℃).
-coFL	Cold junction is under sensor's (PT100) measuring range (0~100℃).
oPEn	Input signal or cold junction is disconection.
doFL	Input signal is over sensor's (T.C) measuring range.
-doFL	Input signal is under senor's (T.C) measuring range.
E-00	EEPROM reading/writing suffers the interference (about 1 million times).

※Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.

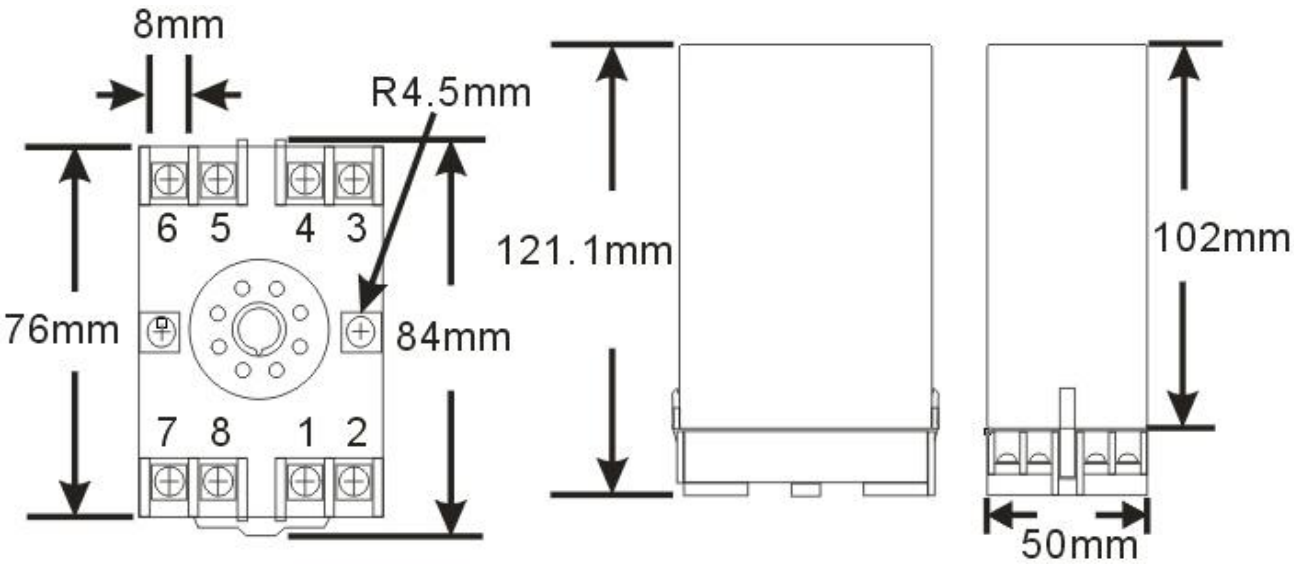
7. Calibration Operating Procedures



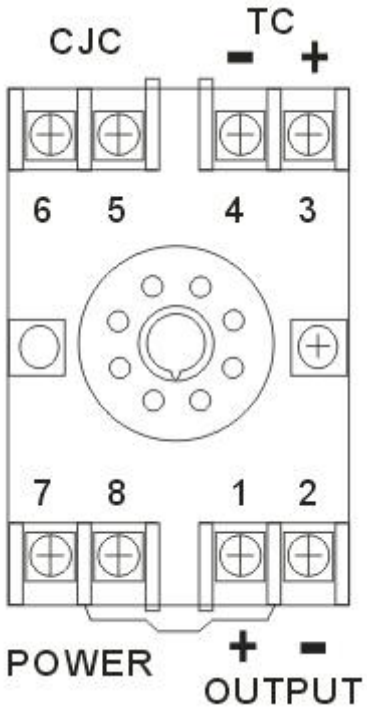
Display	Descriptions	Default
Measuring Status	Present value for measurement Press ENT & ⇦ together for 3 sec will enter to calibration operating procedures.	
Input Low Scale Calibration (inLo)	1. Input standard low scale signal. 2. Press⇦ ⇧ ⇩ to calibrate input low scale.	
Input Hi Scale Calibration (inHi)	1. Input standard hi scale signal. 2. Press⇦ ⇧ ⇩ to calibrate input hi scale	
System Setting Page (SYS)	1. Finish calibration operating procedures will enter to system setting group. 2. Press ⇧ & ⇩ together to back to measuring status.	

Warning: Calibration of this meter requires a standard signal with 0.01% accuracy or better and an external meter with 0.005% accuracy or better.

8. Dimensions



9. Wiring Connection



10. Ordering information

ATM - T - Code 1 - Code 2 - Code 3

Code 1	Input Type
B	200~1800℃
E	-185~990℃
J	-200~760℃
K	-200~1360℃
R	0~1760℃
S	0~1750℃
T	-200~395℃
O	Option

Code 2	Aux. Power
A	AC/DC 100~240V
D	AC/DC 22~60V
O	Option

Code 3	Analog Output
1	4~20mA
2	0~20mA
3	0~5V
4	0~10V
O	Option