5 DIGITAL DUAL INPUT MICRO-PROCESS MATH FUNCTION ISOLATED TRANSMITTER

ATM-M

■ FEATURES

- Accuracy: ±0.1% F.S.
- Mathematic function available: A±B, A x B, A / B, A & B (Hi or Lo), I A I, $\sqrt{A}$
- High brightness 0.4" LED display range: -19999~99999; decimal point selectable
- Display range programmable
- Surge test of AC 2000V / min between input / output / power
- High stability, non-flammable case (PC), high safety

■ ORDER INFORMATION: ATM - M - Code 1 Code 2 Code 3 - Code 4 - Code 5

Code 1	Input Type
D	DC
A	AC AVG
M	AC TRMS

Code 2	I/P A
1	0~50mV
2	0~10V
3	0~300V
4	0~20mA
5	4~20mA
0	Option

Code 3	I/P B
1	0~50mV
2	0~10V
3	0~300V
4	0~20mA
5	4~20mA
0	Option

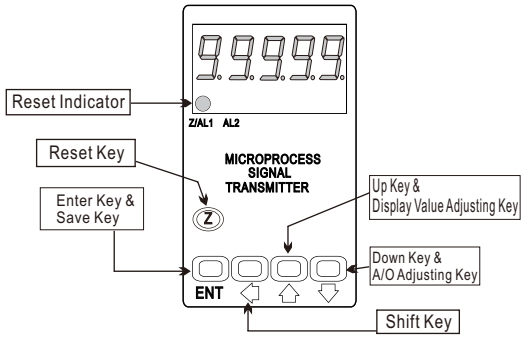
Code 4	Aux. Power
A	AC/DC 100~240V
D	AC/DC 22~60V
0	Option

Code 5	Analog Output
1	4~20mA
2	0~20mA
3	0~5V
4	0~10V
L	LoopPower: 15~30 Vdc 4~20 mA
0	Option

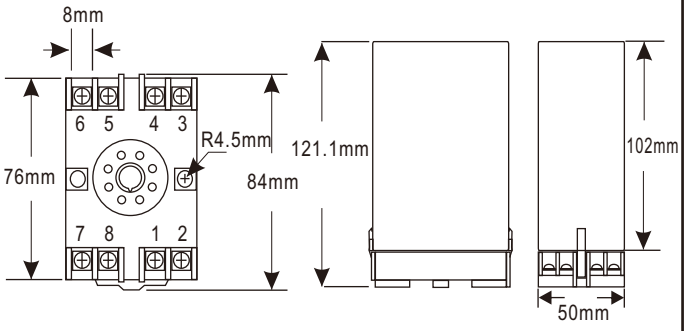
■ SPECIFICATION

- ♦ Accuracy: ±0.1% F.S.
- ♦ Display Screen: High brightness red LED; 10.16mm (0.4")
- ♦ Display Range: -19999~99999
- ♦ Zero Adjustment: ±9999
- ♦ Span Adjustment: ±9999
- ♦ Over Range Indication: doFL / ioFL or -doFL / -ioFL
- ♦ Polarity Indication: Automatic with "-" indication
- ♦ Parameters Setting: Push buttons
- ♦ Back Up Memory: EEPROM
- ♦ Analog Output Resolution: 15 bit
- ♦ Output Response Time: <250 msec (0~90%)
- ♦ Output Capability: Voltage Output: <20mA
  Current Output: <10V
- ♦ Output Ripple: ≦±0.1% F.S.
- ♦ Isolation: Input / Output / Power / Case
- ♦ Temperature Coefficient: 100ppm / ℃ (0~60℃)
- ♦ Operating Temperature: 0~60℃
- ♦ Operating Humidity: 20~90% RH (non-condensing)
- ♦ Storage Temperature: -10~70℃
- ♦ Storage Humidity: 20~90% RH (non-condensing)
- ♦ Power Supply: AC/DC 100~240V; AC/DC 22~60V
- ♦ Surge Test: 2KVac / 1min
- ♦ Insulation Resistance: >100MΩ with 500Vdc
- ♦ Input Impendence: Voltage: >2V for 20KΩ / V; ≦2V for >200MΩ
  Current: ≧0.2A at 100mV; <0.2A at 1V
- ♦ Installation: Socket / Plug in

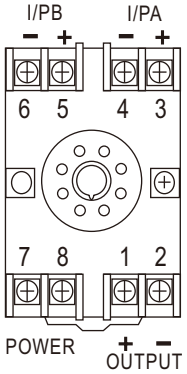
■ FRONT PANEL & KEY FUNCTIONS



■ DIMENSION

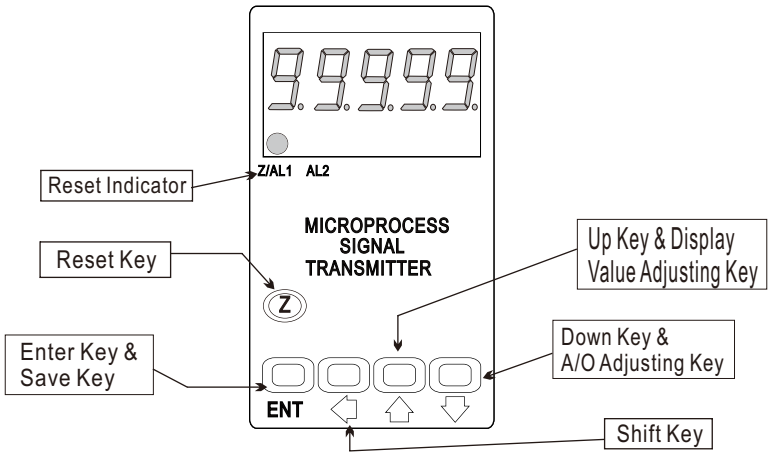


■ WIRING CONNECTION



✻ Please understand key indicators & functions at the first operation.

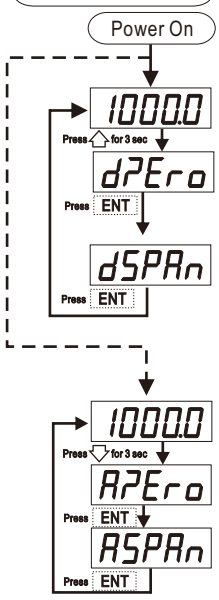
FRONT PANEL & KEY FUNCTIONS



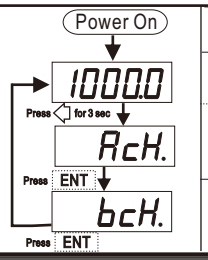
Key Name	Symbol	Descriptions
Reset Key	Z	1. Press this key to enable the reset function & reset indicator (Z) is light; press this key again to disable the reset function & reset indicator (Z) is dark.
Enter Key & Save Key	ENT	1. In the measuring status, press this key can enter to parameter pages. 2. In the parameter setting, press this key can save the value & go to next parameter.
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, press △ & ▽, or don't press any keys for 2 minutes that will back to measuring status.

GENERAL MODE OPERATING PROCEDURES

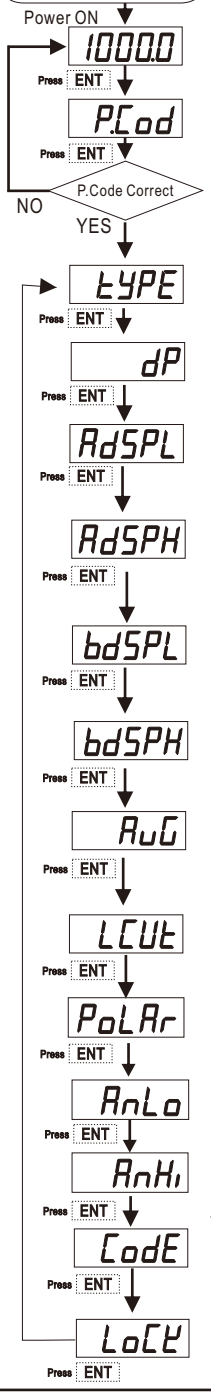


Display	Descriptions	Default
	Display: "ZERO" & "SPAN" Adjustment	
Measuring Status	Present value for measurement.	
Display (dZEro) Adjustment (dZEro)	Press ◁ to select adjusting speed rate, press △ ▽ to modify the zero value. PS: To use this function to adjust the real zero value.	00000
Display Span 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



	Display Value: Preview Input A & Input B	
Measuring Status	Present value for measurement.	
Preview Input A Display Value (A CH.)	Press ⇧⇩ to show the current input A display value.	Input A Display Value
Preview Input B Display Value (B CH.)	Press ⇧⇩ to show the current input B display value.	Input B Display Value

PROGRAMMING MODE OPERATING PROCEDURES



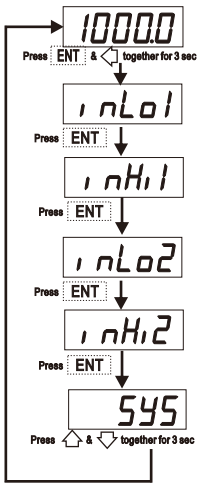
Display	Descriptions	Default
Measuring Status	Present value for measurement.	
Pass Code (P.Cod)	Press ⇦⇧⇩ to enter pass code.	00000
	Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.	
Math Type Setting (tYPE)	Press ⇧⇩ to select the math type of input A & input B; A (Sqr $\sqrt{A}$), |A| (Abs.A), A+B (Add.Ab) , A-B (Sub.Ab) , AXB (MUL.Ab) , A/B (div.Ab) , A&BHi (And.Hi) , A&BLo (And.Lo) .	SqrA
Decimal Point Setting (dP)	Press ⇦⇧⇩ to select decimal point (0, 1, 2, 3, 4) EX: if the value shows "0.00" that means the decimal point is 2 digits.	00000
Input A Display Low Scale (AdSPL)Setting	Press ⇦⇧⇩ to modify display low scale for the input signal zero value. EX: If the input signal is 4~20mA; 4mA is shown display 0.00, this parameter must be set for 000.00.	Customers specify
Input A Display Hi Scale Setting (AdSPH)	Press ⇦⇧⇩ to modify display high scale for the input signal span value. EX: If the input signal is 4~20mA; 20mA is shown display 100.00, this parameter must be set for 100.00.	Customers specify
Input B Display Low Scale Setting (BdSPL)	Press ⇦⇧⇩ to modify display low scale for the input signal zero value. EX: If the input signal is 4~20mA; 4mA is shown display 0.00, this parameter must be set for 000.00.	Customers specify
Input B Display Hi Scale Setting (BdSPH)	Press ⇦⇧⇩ to modify display high scale for the input signal span value. EX: If the input signal is 4~20mA; 20mA is shown display 100.00, this parameter must be set for 100.00.	Customers specify
Display Average Setting (AvG)	Press ⇦⇧⇩ to modify display average (1~99). PS: Please use this function for stable display value when input signal is unstable.	00005
Display Low Cut Setting (LCUt)	Press ⇦⇧⇩ to modify display low cut to 0 (0~99).	00000
A/O Polarity Setting (PoOLAr)	Press ⇦⇧⇩ 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)	Press ⇦⇧⇩ 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)	Press ⇦⇧⇩ 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
Pass Code Setting (CodE)	Press ⇦⇧⇩ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	00000
Key Lock Setting (LoCK)	Press ⇧⇩ 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

Error Code of Self-Diagnosis

Display	Descriptions	Display	Descriptions
ioFL	Input signal is over 120% of input range.	doFL	Math operating result is over display range (19999).
-ioFL	Input signal is under -20% of input range.	-doFL	Math operating result is under display range (-19999).
AoFL	Input signal A is over display range (19999).	boFL	Input signal B is over display range (19999).
-AoFL	Input signal A is under display range (-19999).	-boFL	Input signal B is under display range (-19999).
AdEr	Input signal is over 180% of input range or meter error.	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.

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 1 Calibration (inLo1)	1. Input standard low scale signal to input 1. 2. Press ◁ △ ▽ to calibrate input low scale.	
Input Hi Scale 1 Calibration (inHi1)	1. Input standard hi scale signal to input 1. 2. Press ◁ △ ▽ to calibrate input hi scale.	
Input Low Scale 2 Calibration (inLo2)	1. Input standard low scale signal to input 2. 2. Press ◁ △ ▽ to calibrate input low scale.	
Input Hi Scale 2 Calibration (inHi2)	1. Input standard hi scale signal to input 2. 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.