

ATM-R Series
5 DIGIT MICRO PROCESSOR RPM /
LINE-SPEED
/ FREQUENCY ISOLATED
TRANSMITTER

USER'S MANUAL (V1.1)

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Correction record

Version	Record
V1.1	Modify 10. Ordering information

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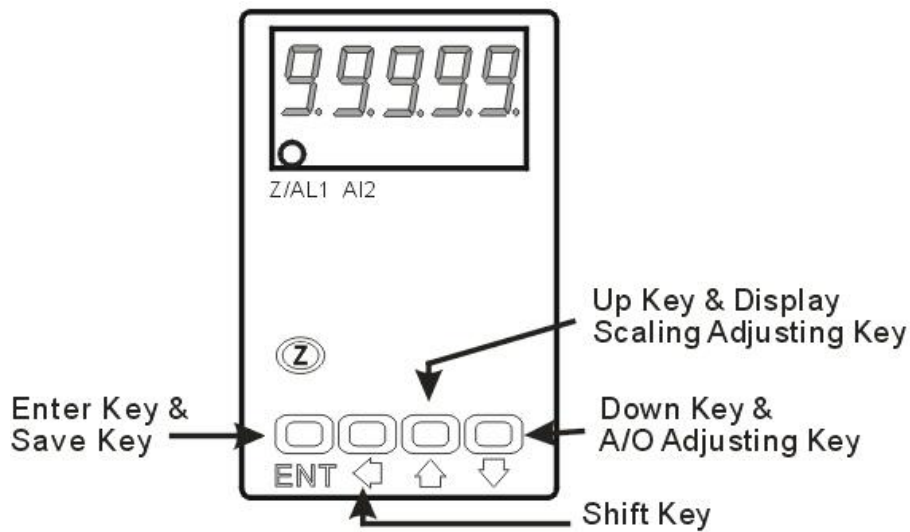
1. Features

- Versatile Input frequency : 0.001Hz~100KHz
- Versatile output selection : 4~20mA , 0~20mA , 0~5V , 0~10V
- Accuracy : Analog output : $\pm 0.1\%$ F.S.
Display : $\pm 0.03\%$ F.S.
- Measuring AC frequency, DC pulse, magnetic; input frequency: 0.001Hz~100KHz
- Line-Speed / RPM / Frequency selectable
- Line unit: M, Ft, Y/min selectable
- RPM pulse input programmable: 1~99999

2. Specifications

- Input Frequency : 0.001Hz~100KHz
- Output Selection : 4~20mA , 0~20mA , 0~5V , 0~10V
- Accuracy : Analog output : $\pm 0.1\%$ F.S.
Display : $\pm 0.03\%$ F.S.
- Display Screen : High brightness red LED; 10.16mm(0.4")
- Display Range : -19999~99999,decimal point selectable
- Zero Adjustment : ± 9999
- Span Adjustment : ± 9999
- Parameters Setting : Push buttons
- Back Up Memory : EEPROM
- Over Range Indication : doFL/ioFL
- Analog Output Resolution : 15 bit
- Output Ripple : $\leq \pm 0.1\%$ F.S.
- Temperature Coefficient : 100ppm/degree C (0 to 60 degree C)
- Output Response Time : < 250 msec (0 to 90%)
- Isolation : Input / Output / Power / Case
- Insulation Resistance : > 100M Ω with 500Vdc
- Surge Test : 2KVac/1min
- Input Impedence :
Voltage : > 2V for 20K Ω /V; $\leq 2V$ for > 200M Ω
Current : $\geq 0.2A$ at 100mV; < 0.2A at 1V
- Output Capability : Voltage Output : < 20mA
Current Output : < 10V
- Operating Temperature : 0 to 60 degree C
- Operating Humidity : 20 to 90% RH (non-condensing)
- Storage Temperature : -10 to 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 parameter.
Shift Key	⇐	1. In the parameter setting , press this key can move the cursor left.
Up Key & Display Scaling Adjusting Key	↑	1. In the measuring status, press this key for 3 sec can enter to display scaling adjustment. 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.

- The following block charts are parameters codes, parameter codes & parameters will alternate flashing if the parameters can be modified.
- To modify the parameters, please press ⇐ ↑ ↓ , and press ENT to save the parameters after the modification.
- Please don't forget the new pass code after modification.
- In any pages, pres ↑ & ↓ , or don't press any keys for 2 minutes that will back to measuring status.
- Scaling Formula:
 - Frequency Display = (Scale x Input Frequency)/PPR
 - RPM Display = (Scale x Input Frequency x 60)/PPR
 - Linear-Speed Display = [Scale x Input RPM x 3.1416(π)]




4. General Mode Operating Procedures

Block Charts	Display	Descriptions	Default
		Scaling Adjustment	
		Present value for measurement.	
	Scale Coefficient Adjustment (SCALE)	Press \leftarrow \uparrow \downarrow to modify scale coefficient 1 (0.0001 ~9.9999). PS: 1. In Frequency & RPM types, this coefficient can be modified for display value. (Please refer to Scaling Formula) 2. In Linear-Speed type, this coefficient means "diameter" of the roll, the unit will be changed by selecting display unit. EX: If the display unit is "Meter", the diameter is also showed "Meter".	10000
		Analog Output: "ZERO" & "SPAN" Adjustment	
		Present value for measurement.	
	A/O Zero Adjustment (AZero)	Press \leftarrow to select adjusting speed rate, press \uparrow \downarrow to modify the A/O zero. PS: To use this function to adjust the real A/O zero.	00000
	A/O Span Adjustment (ASPA n)	Press \leftarrow to select adjusting speed rate, press \uparrow \downarrow 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.	
	Decimal Point Setting (dP)	Pass ↑ ↓ to select decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	0
	Input Type Setting (tYPE)	Pass ↑ ↓ to modify the input type (RPM/Linear-Speed/Frequency).	Customers specify
		The following steps are only available for Linear-Speed type.	
	Linear-Speed Unit Setting (Unit)	Pass ↑ ↓ to modify the unit of linear-speed (Meter/Foot/Yard).	Customers specify
	PPR Setting (PPr)	Pass ← ↑ ↓ to modify ppr (1~99999).	00001
	Sampling Time Base (tbASE)	Pass ← ↑ ↓ to modify sampling time base (0.1~999.9 sec).	0000.1
	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.	00005
	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 output 10V, this value must be set for 90.0.	99999
	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.	no	

6. Error Code of Self-Diagnosis


Display	Descriptions
	Input signal is over input range (0~100KHz).
	Input signal is over display range (99999).
	EEPROM reading/writing suffers the interference (about 1 million times).

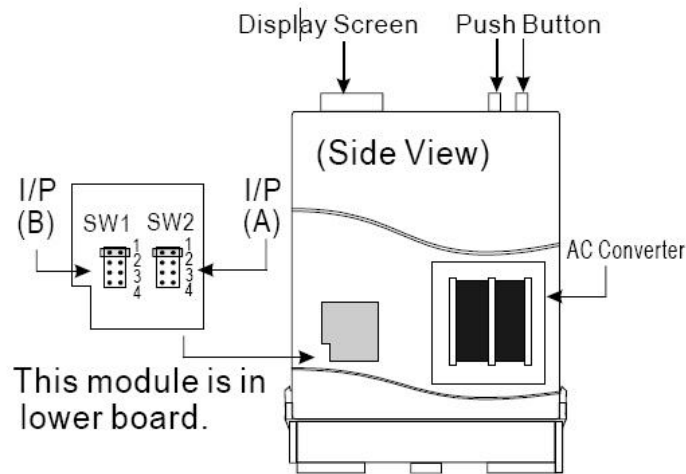
※Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.

7. Frequency Input signal Modification

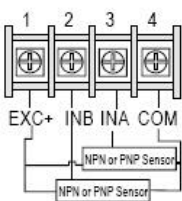
**To Select the pin to modify the input signal for different sensors.

PS: In dual input type, excitation power must be the same.

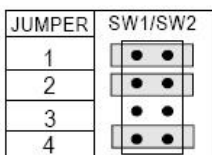
SW1/SW2	JUMPER	DEFINITION
	1	Open: 12V; Close: 5V
	2	Open: 100KHz; Close: 100Hz
	3	Open: NPN; Close: PNP
	4	Open: PNP; Close: NPN



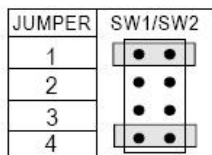
**Connection:



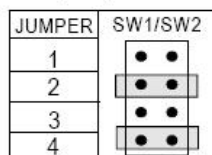
NPN (5V): 0~100 Hz



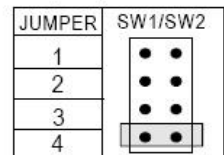
NPN (5V): 0~100 KHz



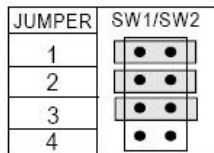
NPN (12V): 0~100 Hz



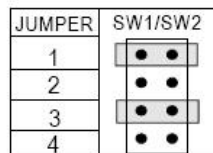
NPN (12V): 0~100 KHz



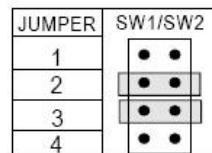
PNP (5V): 0~100 Hz



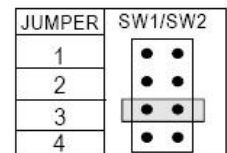
PNP (5V): 0~100 KHz



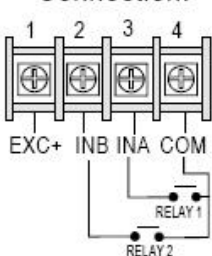
PNP (12V): 0~100 Hz



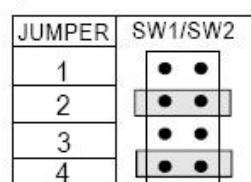
PNP (12V): 0~100 KHz



**Connection:

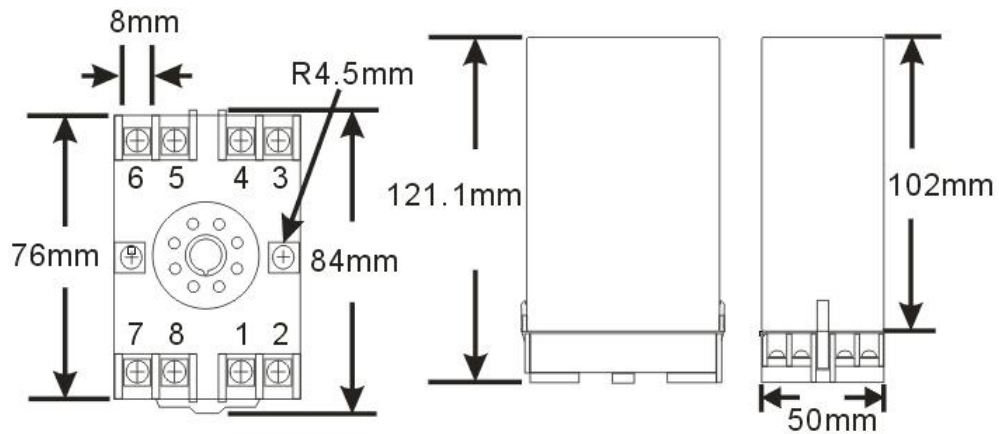


Relay Contact: NPN 0~100 Hz

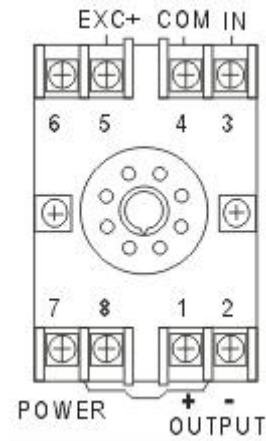


**For relay input type, please select NPN 0~ 100 Hz.

8. Dimensions



9. Wiring Connection



10. Ordering information

ATM-R - Code 1		Code 2		Code 3		Code 4			
Code 1	Input Signal	Code 1	Input Signal	Code 2	Display Unit	Code 3	Aux. Power	Code 4	Analog Output
N5	NPN(5V)	VB	AC 60~600V	H	Hz	A	AC/DC 100~240V	1	4~20mA
N2	NPN(12V)	VC	Pick-up 500mV~1.5V	R	RPM	D	AC/DC 22~60V	2	0~20mA
P5	PNP(5V)	VD	Pick-up 500mV~15V	M	M/min	O	Option	3	0~5V
P2	PNP(12V)	VE	DC 24Vp	Y	Y/min			4	0~10V
CT	Contact	O	Option	F	F/min			O	Option
VA	AC 2~60V								

- 1: NPN(5V),PNP(5V) offers excitation power DC5V; NPN(12V),PNP(12V) offers excitation power DC12V for sensors using.
- 2: Please use PNP/NPN(5V/12V) or DC24Vp for DC pulse input