

# 4 DIGITAL PID CONTROLLER

**TB Series**

## FEATURE

- Measuring T/C, Pt100 Ω, Process signal mA, Vdc
- Accuracy: ±0.25% of full scale
- 4 Digital display: -1999~9999
- Automatic / manual output in standard
- Heating / Cooling control output available in option
- Analog re-transmission function option
- Outside dimensions is 1/4, 1/8, 1/16 DIN
- High stability & low cost
- CE Approval



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## SPECIFICATIONS

Measuring Range	Resolution	Input Impedance
Thermo-couple	K 0.0~400.0°C / 0~1200°C	≥1M ohm
	J 0.0~400.0°C / 0~1200°C	≥1M ohm
	E 0~1000°C	≥1M ohm
	T -199.9~400.0°C / 0.0~350.0°C	≥1M ohm
	R 0~1796°C	≥1M ohm
	S 0~1796°C	≥1M ohm
	B 0~1820°C	≥1M ohm
	N 0~1300°C	≥1M ohm
	W 0~2320°C	≥1M ohm
	PLII 0~1390°C	≥1M ohm
U -199.9~400.0°C / 0.0~400.0°C	≥1M ohm	
L 0~800°C	≥1M ohm	
Pt100 Ω	-199.9~600.0°C / 0~600°C	≥1M ohm
Current	0~20 mA	2.4 ohm
	4~20 mA	2.4 ohm
Voltage	0~50 mV	≥1M ohm
	0~10 V	≥20K ohm
	1~5 V	≥10K ohm

- Measuring accuracy: ± 0.25% F.S. ± 1 digit
- Scaling: -1999~9999; 14 bit resolution
- Sampling time: About 2 cycles/sec.
- Display functions**
- LED: Dual display for PV & SV  
8 square LED for status of output, alarm...  
10 segments bar display for output percentage
- Decimal point: Settable any digit by front key (linear input)
- Unit: °C and °F changeable
- Compensation: For PV and SV
- Over-range indication: "UUU1" display
- Operating**
- Operation key: Five key for Function setting / Auto-Manual output  
Up key / Down key / Shift key
- Skip function: Skip the functions showing what the customer don't use.
- Control mode**
- ON/OFF control: when P sets to be 0(P=0),  
Hysteresis (Hy): 0~1000 counts
- PID control: Auto tuning  
Proportional Band (P): 0.0~200.0% of span  
Cooling side Proportional Band (P1):  
0.0~200.0% of span  
Reset time (Integral): 0~900 sec.  
Rate time (Deviation): 0~1000 sec.  
Cycle time: 0~150 sec.  
H/C dual control output  
Direct/Reverse programmable
- Control output: Relay SPDT x 1, 5A/240Vac  
SSR, 24V, 20mA  
4~20 mA, Load: 600Ω  
0~10 V, Load: 1MΩ

### Alarm

- Relay contact: Standard: Alarm 1: SPDT 5A/240V  
Option: Alarm 2: SPDT 3A/240V
- Alarm functions: Wait, Hysteresis, Alarm time, Alarm delay, Alarm hold,
- Alarm mode: 13 action modes programmable  
Deviation High, Low or High & Low alarm,  
Absolute value High, Low or High & Low alarm,  
Absolute value high & low range  
A/D error, Heater break

### Analogue output (option)

- Accuracy: ± 0.25% of RO
- Output capability: Max. load resistance : 600 ohms
- Isolation: Isolation between input and output
- Calibration: By front key

### Power

- Excitation Supply: DC 24V, 30mA
- Power Supply: AC 85~265V, 50/60 Hz  
Option: DC 24V  
4.5VA
- Power consumption: By EEPROM
- Back up memory: By EEPROM

### Enviromental

- Operating temperature: 0~55 °C
- Operating relative humidity: 20~90%RH(Non-condense)
- Temperature coefficient: ≤100 PPM/°C (0~50°C)  
≤50 PPM/°C (23 ± 3°C)
- Storage temperature: -10~70 °C
- Enclosure: IP 42

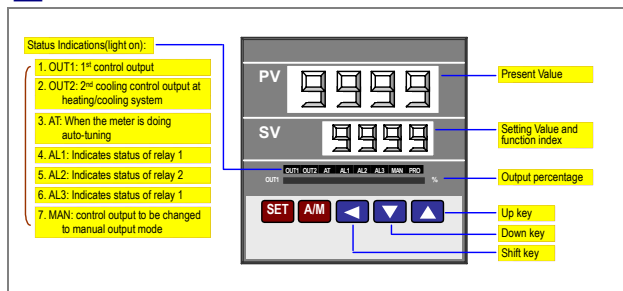
### Electrical safety

- Dielectric Strength: AC 2.0KV for 1 min  
Between Input / Output / Power / Case  
≥20M ohm
- Insulation: EN61010-1
- LVD: EN55022; EN50204
- EMC: EN61000-3-2; EN61000-4-2

### Mechanical

- Case material: Black ABS fire-protection
- Mounting: Panel flush mounting
- Connection: Screw terminal
- Weight: About 325g

## FRONT PANEL

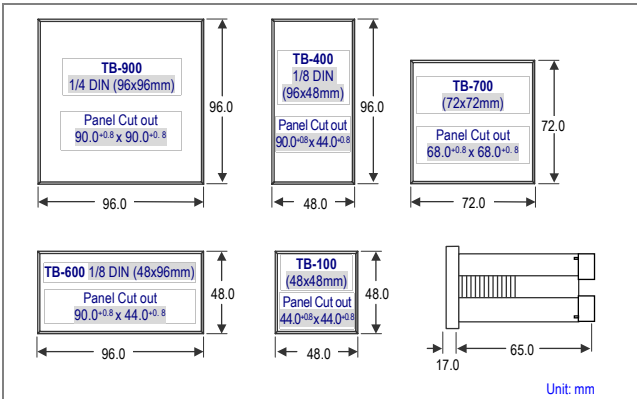


**C-05a**

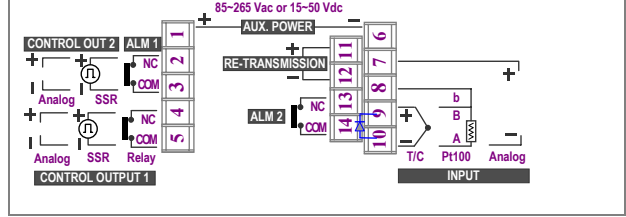
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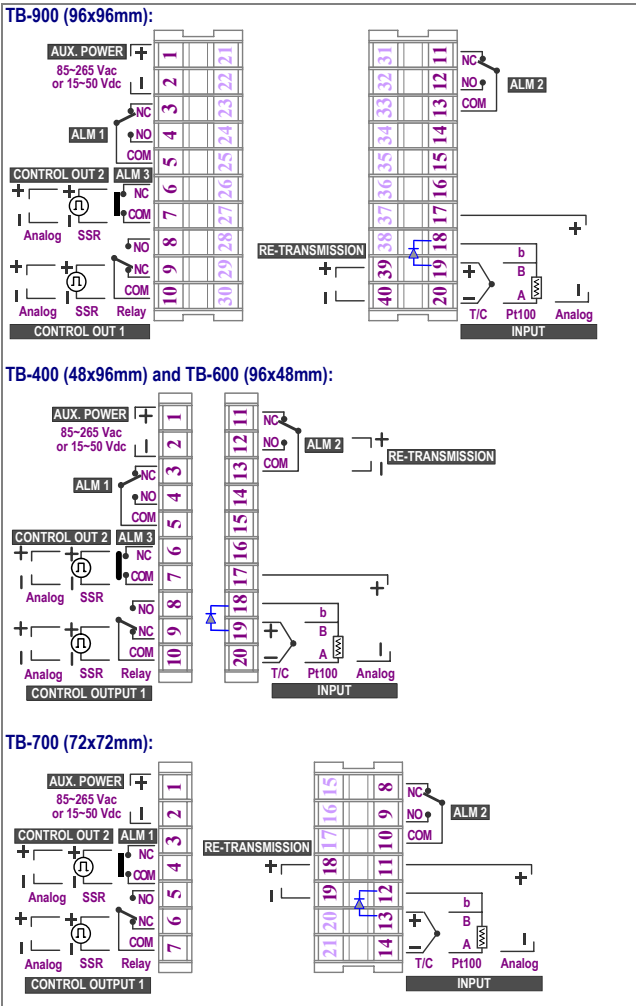
## DIMENSIONS



TB-100 (48x48mm):



## CONNECTION DIAGRAM



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## ORDER INFORMATION



CODE	DIMENSION	CODE	CONTOL O/P 1	CODE	CONTOL O/P 2	CODE	ALARM O/P	CODE	ANALOG O/P	CODE	AUX. POWER
900	96x96mm	0	None	0	None	0	None	0	None	A	AC 86-264V
700	72x72mm	1	Relay	1	Relay	1	1 Relay	1	4 ~ 20 mA	D	DC 10-50V
600	96x48mm(V)	2	Volt (for SSR)	2	Volt (for SSR)	2	2 Relay	2	0 ~ 20 mA		
400	48x96mm(H)	3	4 ~ 20 mA	3	4 ~ 20 mA	3	3 Relay				
100	48x48mm										

**C-06a**