

TC Series

4-Digit Display PID controller

DESCRIPTION

- Measurement T/C, Pt100Ω, Process signals mA, Vdc
- Accuracy: Full scale ±0.5%
- 4-digit display ; Display range: -1999~9999
- Standard with automatic / manual output
- Optional heating / cooling control output
- Optional analog signal transfer function
- Dimensions can choose DIN 1/4, 1/8, 1/16
- High stability and low cost



TECHNICAL SPECIFICATION

Input signal	Measurement range	Input impedance	
Thermocouple	K	0~1370°C/0~2192°F	≥1M ohm
	J	0.0~1200°C / 0~2192°F	≥1M ohm
	E	0~1000°C/0~1832°F	≥1M ohm
	T	0~600°C / 0~999°F	≥1M ohm
	R	0~1760°C/0~3216°F	≥1M ohm
	S	0~1760°C/0~3216°F	≥1M ohm
	B	0~1820°C/0~3308°F	≥1M ohm
	N	0~1200°C/0~2192°F	≥1M ohm
Temperature resistance	Cu50	-199.9~600°C/-199.9~999°F	≥1M ohm
	Pt100Ω	-199.9~600°C/-199.9~999°F	≥1M ohm
Linear signal (Options)	Current	0~20 mA	100 ohm
		4~20 mA	100 ohm
	Voltage	0~10 V	≥20K ohm
		0~5 V	≥10K ohm
		±10 mV	≥1M ohm
		0~10 mV	≥1M ohm
		0~20 mV	≥1M ohm
		0~50 mV	≥1M ohm

Measurement accuracy: ± 0.5% F.S. ± 1digit
 Display range: -1999~9999; 14 bit Resolution
 Sampling time: 150ms
 Display LED: Dual display: PV & SV · 4-digit high brightness LED 7-segment displays, 8-segment LED status display : Output, alarm...
 Decimal point:: 0000/000.0/00.00/0.000
 Unit: °C and ° F temperature can be switched
 Display compensation: PV value correction function
 Overflow display: display "uuu1"

Operating

Operation keys: Function setting / Auto - Manual output / shift keys / down keys / up key
 Function of hidden: Hide the user does not need to use the function (Level2, 3 locked)

Control mode

ON/OFF Control: When P is set to 0 (P = 0), ON-OFF control mode
 Output hysteresis (hys): 0 ~ 1000 counts

PID Control: Automatic calculation (Rt)

Proportional band (P&P1): Full scale 0.1~300.0%
 Integral time (I&I1): 0~3000 Sec.
 Differential time (D&D1): 0~200 Sec
 (Note: P1, I1, & D1, for the cooling side of the dual-output control)
 Output cycle time: 0~250 Sec.(Relay & SSR used)
 Heating / cooling: Dual-output control
 Plan for forward / reverse motion control

Control output:

Relay: Contact:SPDT x 3A/220Vac(2 outputs for SPST)
 Voltage pulse: SSR driver: ON:24V,OFF:0V, Maximum drive current: 20mA
 Linear current: 4(0)~20 mA, Maximum load impedance 1000Ω
 Linear voltage: 0-5V/0~10 V, Maximum drive current: 20mA

Alarm

Relay contact: Standard: Alarm 1: SPDT 3A/220V(there 2,3 groups, SPST) optional: Alarm 2、3: SPST 3A/220V
 Alarm function: Alert standby, Alarm hysteresis, Alarm time
 Alarm mode: 10 mode can be set (Refer to alarm mode table)

deviation of (floor / ceiling), the upper and lower limits of the deviation of alarm or range alarm, absolute value the same deviation range, upper and lower limits standby alert (first movement) & The thermostatic timing Alert

Analog output (optional)

Accuracy: ± 0.5% of F.S.
 Output capability: Maximum load impedance : 1000 ohms
 Isolation: Between the input / output isolation
 Calibration: Panel key calibration

Power

Power supply: AC 85~265V, 50/60 Hz,

Option : DC 15~50V

Power consumption: Max. 5.0VA

Back up memory: EEPROM

Environmental

Operating temp.: -10~60 °C
 Operating humidity: 20~85%RH(Non-condensing)
 Storage temp.: -10~70 °C
 Enclosure: IP 42

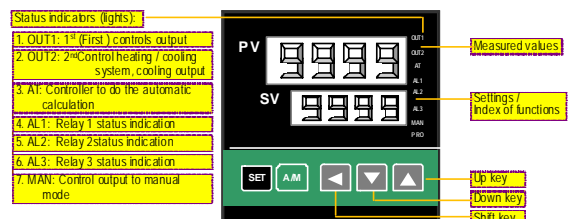
Electrical Safety

Dielectric strength: main circuit :1500Vac for 1 min
 Between control loop :1000Vac for 1 min
 Input / Output / Power / Case
 Temperature coefficient: ≤100 PPM/°C (0~50°C)
 ≤50 PPM/°C (at 23 ± 3°C)
 Insulation resistance: ≥10M ohm
 LVD: EN61010-1
 EN 55022; EN50204
 EMC: EN61000-3-2; EN61000-4-2

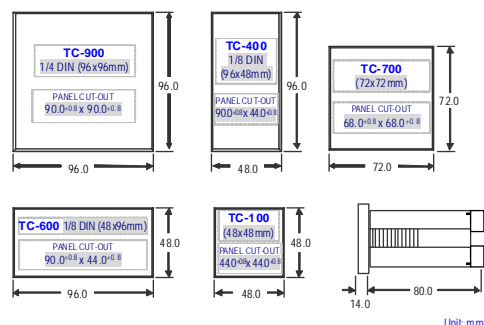
Mechanical

Case material: ABS fire-resistance
 Mounting: Panel flush mounting
 Terminal block: Screw terminal
 Weight: 150~400g(Different models, different weight)

FRONT PANEL

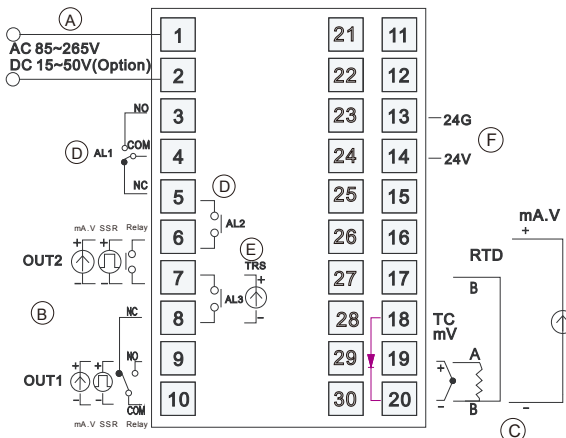


DIMENSIONS

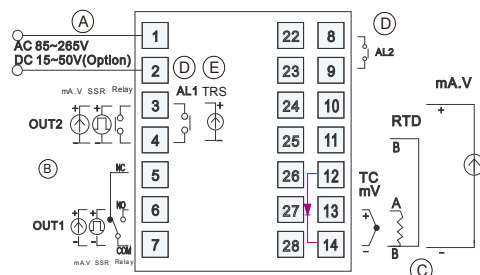


CONNECTION DIAGRAM

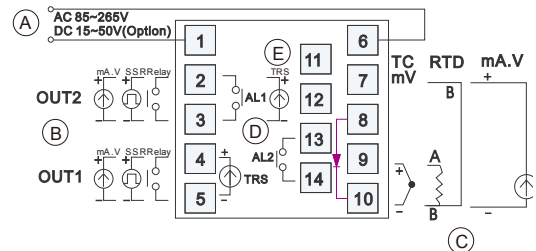
TC-900(96x96)



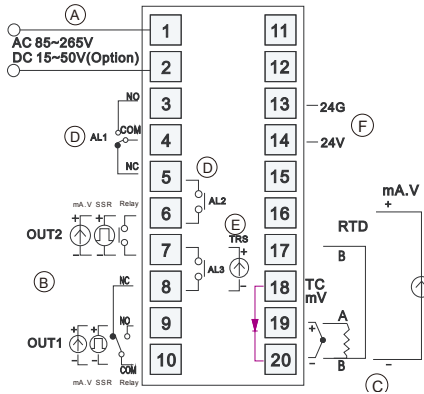
TC-700(72x72)



TC-100(48x48)



TC-400(48x96) / TC-600(96x48)



CONNECTION DIAGRAM INSTRUCTIONS:

Sign	Explain	Considerations
A	Operating supply	Standard AC power. For DC power supply must be specified when ordering.
B	Control output	Dual output, the output of the contacts are normally open (NO) contacts.
C	Input signal	No voltage or current signal to fixed input range must be specified when ordering.
D	Alarm output	AL2 output, the output contacts are normally open (NO) contact.
E	Re-trans. output	Re-trans. output OUT2 due contact sharing, it's not co-exist only alternative.
F	Excit. power output	TC-100 & TC-700 Unable to attach to excitation power output.

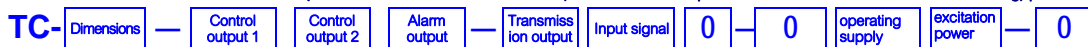
The same contacts marked two or more functional output symbol, the common terminal, so the function can only select one choose. The wiring diagram on the instrument prevail.

ALARM MODE TABLE

Sign	Explain	Sign	Explain	Sign	Explain
Ad=0	PV Deviation high alert SV+AL, SV AL>0, HY=0	Ad=4	PV Deviation regional alarm SV+AL, SP AL>0, HY=0	Ad=9	Thermostatic timing Alert SV AL is thermostat time Unit: time
Ad=1	PV Deviation low alarm SV, SV+AL AL<0, HY=0	Ad=5	PV Deviation outside the region alarm SV+AL, SV AL>0, HY=0	Ad=10	Standby deviation outside the area of alarm, first time not alarm SV+AL, SV AL>0, HY=0
Ad=2	PV Absolute value high-point alarm AL AL is absolute value, HY=0	Ad=6	PV Standby deviation low alarm, first time not alarm SV, SV+AL AL<0, HY=0	Settings in the LEVEL 2 The alarm mode parameters	
Ad=3	PV Absolute value low-point alarm AL AL is absolute value, HY=0	Ad=7	PV Standby absolute value low alarm, first time not alarm AL AL is absolute value, HY=0		

ORDERING INFORMATION

(Note: limited number of terminals, some of the output will not be able to exist when ordering, please note!)



CODE	Dimensions	CODE	Control output 1	CODE	Control output 2	CODE	Alarm output	CODE	Transmission	CODE	Input signal	CODE	operating supply	CODE	excitation power
100	48x48mm	0	None	0	None	0	None	0	None	0	Thermocouple	0	AC 85~265V	0	None
400	48x96mm(H)	1	Relay	1	Relay	1	1 Group	1	PV value transfer	1	RTD	1	DC 15~50V	1	DC 24V
600	96x48mm(V)	2	SSR	2	SSR	2	2 Group	2	SV value transfer	2	4~20mA				
700	72x72mm	3	4 ~ 20 mA	3	4 ~ 20	3	3 Group	3		3	Other				
900	96x96mm	A	Other	A	Other					4					