



DIGITAL TEMPERATURE CONTROLLER

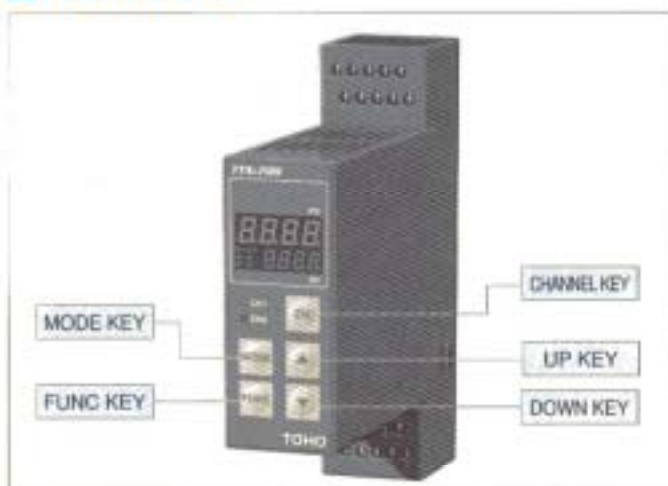
# TTX-700

DIN rail attachable dual channels digital controller  
 Easy setting from front keys and display  
 Communication, max 31 units can be connected at same time

## Features

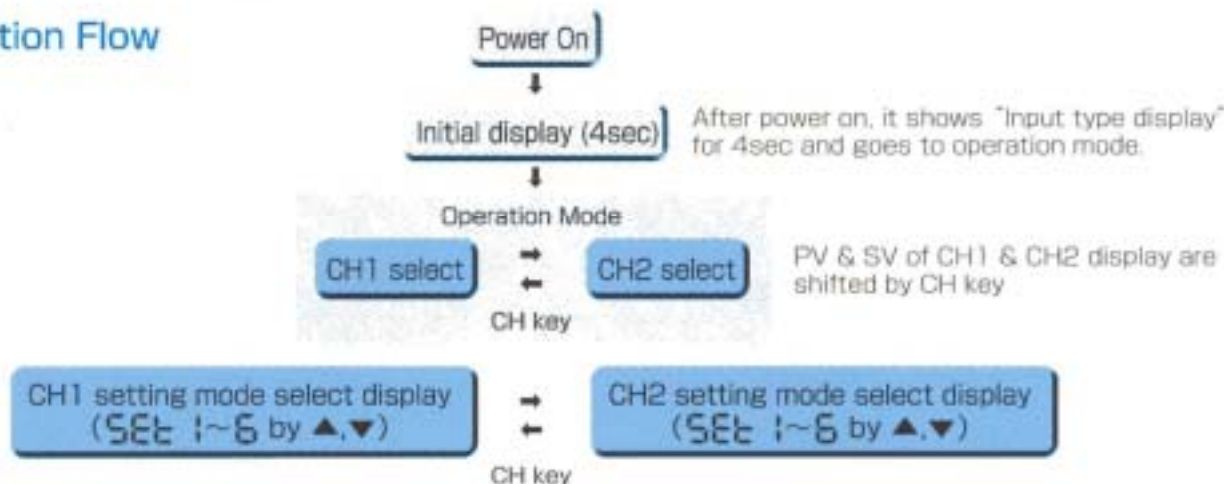
- **Self-Tuning PID**  
 Most appropriate PID constant is automatically reckoned up for control objects. PID constant is calculated when making alteration of setting value, or it is corrected when occurred disturbance/hunting etc.
- **Blind Function**  
 At the request, desirable parameter screen is only displayed and set up.
- **CT function as standard**  
 CT function is available as standard model.
- **Simplified Timer**  
 ON/OFF setting control is available after some certain interval. Function of ON/OFF alarm output is independently usable.
- **Sampling Time**  
 0.25sec of sampling time is adapted.
- **Priority Display**  
 Demanding parameter screens are monitored and set up under operational mode screen. (max. 9 screens)
- **Multiple Inputs**  
 Thermocouple/R.T.D. (Pt100 & JPt100) are selectable by front key.
- **Standard of Conformity**  
 In process of UL, CUL, CE & IP66 approval
- **Compact Size**  
 It is a compact size. The width is only 33mm with dual channels.
- **Manual Control (Balanceless & Bumpless)**  
 Manual output function is applicable for versatile applications of instrumentation systems.
- **Communication Function (RS-485 & MODBUS applicable)**  
 The communication distance is extended up to 500 meters, and maximum 31 units of controllers can be connected at same time. Centralized supervision is available for collection of the whole data and alteration of setting values at remote location.
- **Digital PV Filter**  
 For abrupt alteration of input value, filter effect is operational on software.
- **PID Over-Shoot Protection**  
 It is functional to inhibit PID over-shoot.
- **DI (Digital Input) Function**  
 The following functions are selective.
  1. SV/SV2
  2. RUN/READY
  3. Automatic (RUN)/Manual
  4. Normal/Reverse Action
  5. Normal (SV2)/Reverse Action (SV2)
  6. AT (Auto-Tuning) Start
  7. Timer, Start/Reset
- **Heating/Cooling Control**  
 PID control is available on cooling side. Input of 1ch side is available for heating/cooling control.
- **Others**
  1. CT input (Input Monitor usable)
  2. Shift setting of OFF position during ON/OFF control, for both output 1 & 2.

## Front Panel



MODE	Mode key for shifting display
FUNC	Function key for digit shift, AT (Auto-Tuning), RUN/READY, Timer Start/Reset
▼	Up/Down key for alteration of setting value
▲	Pressing 1~10 sec: 1digit/100ms 10~20 sec: 10digit/100ms over 20 sec: 100digit/100ms
CH	Channel Shift

## Operation Flow



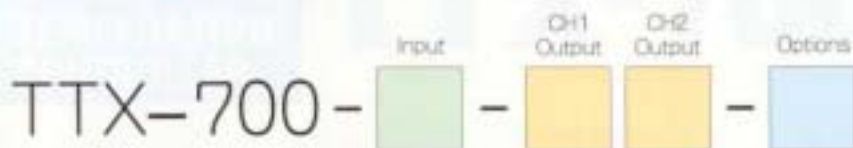
## Standard Specification

Input Type	Thermocouple	K, J, R, T, N, S, B	
	R.T.D.	Pt100, JPt100 (Load resistance: 10Ω or less)	
	Current	4-20mA DC (input resistance 250Ω)	
	Voltage	1-5VDC, 0-5VDC (input resistance 500Ω or more), 0-10mVDC (input resistance 1KΩ or more)	
Control Output	Relay Contact	250VAC, 3A (Load resistance) 1a contact	
	SSR Drive Voltage	0-12VDC (Load resistance: 600Ω or more)	
	Current	4-20mA DC (Load resistance: 600Ω or less)	
	Voltage	1-5VDC (Load resistance: 1KΩ or more)	
Display	PV display	4digits, 7segments Green	
	SV display	4digits, 7segments Red	
	Lamp	1ch/2ch select lamp, 1ch/2ch output lamp (Red) 1ch/2ch event lamp (Red)	
Control Method	PID (Type A, Type B) Auto-Tuning Self-Tuning	Proportional band (P1)	0.1-200.0% of setting inter span
		Proportional band (P2)	at out2 0.10-10.00% times (Timer per P)
		Integral time (I)	1-3600sec (0: OFF)
		Derivative time (D)	1-3600sec (0: OFF)
		Proportional cycle (T1, T2)	1-120sec
		Dead band (DB)	-100.0+100.0 or -100+100(°C)
	ON/OFF	Control sensitivity (C1, C2)	0-999 or 0.0-999.9(°C)
OFF point of out1 &2	Position of setting	-199-999 or -199.9-999.9(°C)	
Memory Element	EEPROM		
Power Source	24VAC/DC		
Weight	200g		
Power Consumption	Less than 4W		
Operation Condition	0 to 50°C, 20 to 90%RH (under non-condensation)		
Storage Condition	-25 to 70°C, 5 to 95%RH (under non-condensation)		

## Additional Functions (Option)

	Specification
Event Output 2 (AL2 or OUT2)	Function: PV contact output (8 modes), Special contact output (3 modes), additional functions (3 modes) Setting Range: -199.9 to 999.9 or -1999 to 9999 (°C) Sensitivity: 0.0 to 999.9 or 0 to 9999 (°C) Rating: 250 VAC 2.4A (Load resistance) 1a contact When selecting output 2, the output generates on cooling side during heating/cooling. Contact polarity is selectable, either normal open or normal close.
DI	Function: SV/SV2 switchable (OFF: SV2), Auto/Manual switchable (OFF: Manual), Run/Ready switchable (OFF: Ready), Normal/Reverse switchable (OFF: Normal), Normal (SV2)/Reverse (SV2) switchable (OFF: Normal SV2), Timer Start/Reset (OFF: Counting) Input Specifications: Minimum input time: 500ms, OFF voltage: 60C max, ON current: 6mA max, Permissible resistance value between contact: ON 333Ω max, OFF=500KΩ min

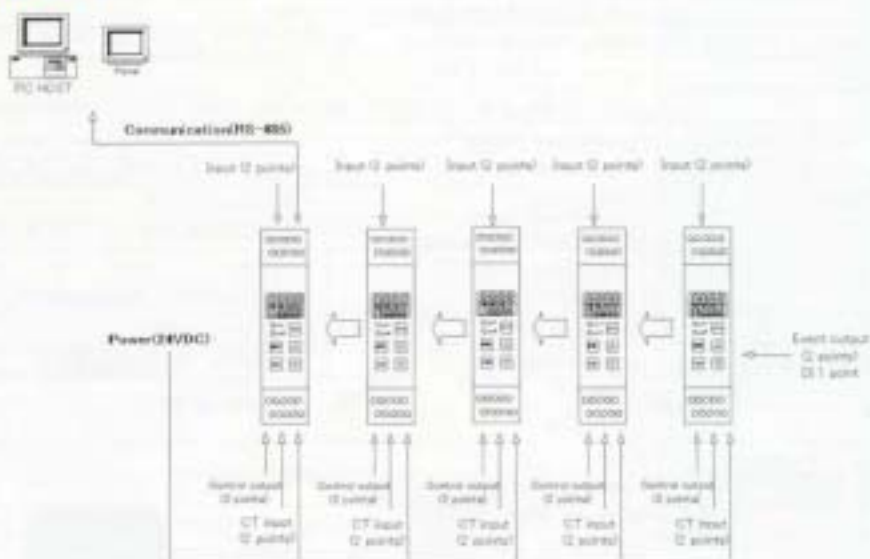
## Ordering Information (Model Configurations)



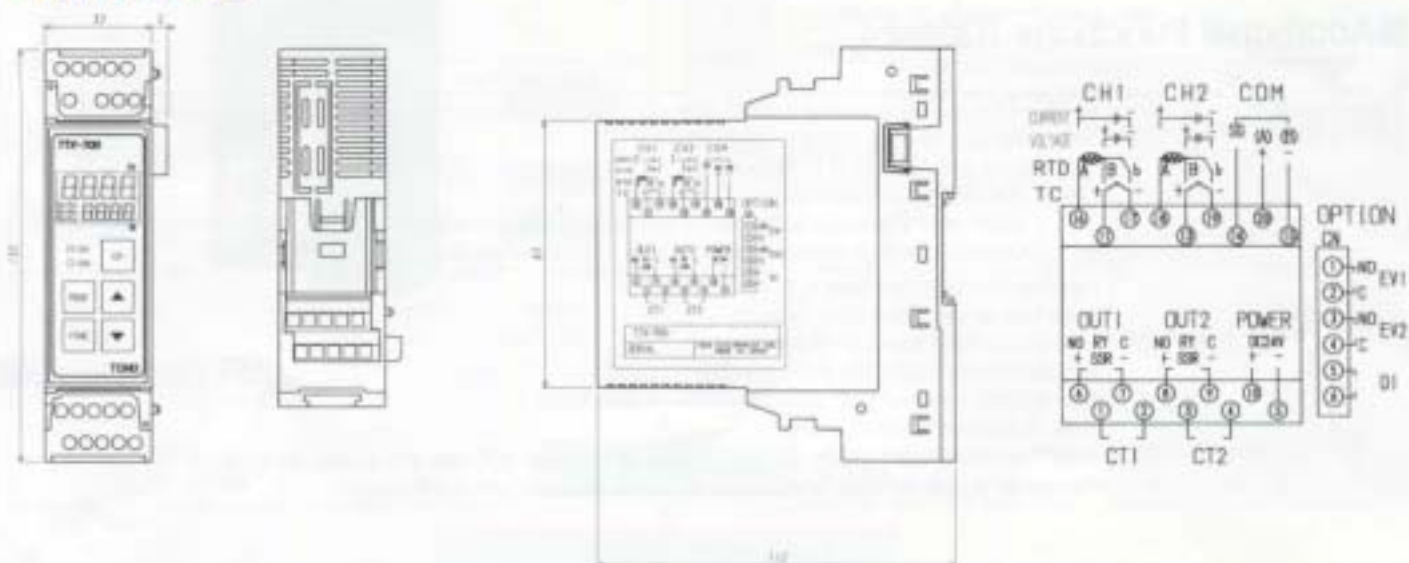
Input	N1	Thermocouple, R.T.D., 0-10mVDC
	2	4-20mADC, 0-5VDC, 1-5VDC
OUT1	R	Relay contact
	P	SSR drive voltage 12VDC
	I	Current 4-20mADC
	V	Voltage 1-5VDC
Options	A	Event Output
	E	DI

Please refer to this table for appropriate specifications when placing order.

## System structure



## Dimensions



*Proudly Supplied by*

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