

DTC-612

Dancer Tension Controller



CHIH HORNG SCIENTIFIC CO., LTD.
TEL : 886-2-28221466 FAX : 886-2-28238003

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Introduction

We have been developing and manufacturing a serial of products for Tension Control System since 1992. Over 20 years growing our business, they are more than twenty series available in the market.

DTC-612 is our new generation Tension Controller and high efficiency with our rich experience of automatic control industry, resulted from hearing customers requirement and suggestion. DTC-612 has some remarkable features below and outstanding than other similar series:

- 一 . Executing inertia compensation automatically at processing the situations of Stop, accelerated and decelerated system.
- 二 . Alarm output function, to warn you before hitting the target value.
- 三 . Driving Brake or clutch directly.
- 四 . Easy operation, entering outer diameter directly.
- 五 . Dual working methods selection.
 - 1. Start-up manual Tension/material-thick input, then switching to auto-run procedure, DTC-612 will get into the model of self-modification of voltage to control the system.
 - 2. At auto-run model, when you change the roller, then reset, DTC-612 will modify the control voltage automatically by accounting the number of turns of the roller.

2. Working Principle & features

Working Principle

DTC-612 Tension Controller is developing and following the principle of direct proportion between roller diameter and output voltage control.

First of all, you can set up the material thickness in DTC-612 and the proximity around the roller detects the number of turns of the roller, then DTC-612 figure the diameter variation out. The diameter variation corresponds to the positive relationship with output variation of control voltage.

DTC-612 are also composed of some advanced functions, for example, Inertia compensation at processing the situations of Stop, accelerated and decelerated system, advanced alarm and output volume limit and so on, its best design with high quality and economy humidity controller.

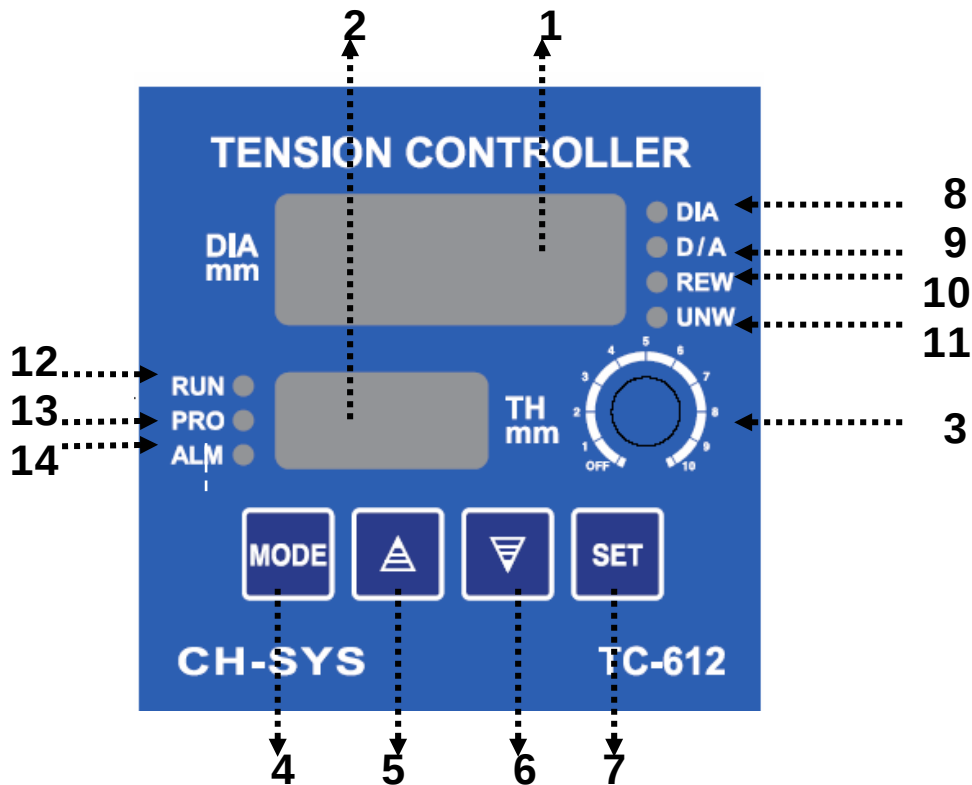
Feature

- 一. High quality, economy, easy operation.
- 二. Executing inertia compensation automatically at processing the situations of Stop, accelerated and decelerated system.
- 三. Alarm output function, to warn you before hitting the target value.
- 四. Entering outer diameter via panel setting directly or reset by system designed automatically.
- 五. Equipped the function of setting maximum and minimum power limit to avoid damaged the material.
- 六. Dual operating models selected by the user.
 1. Set up roller diameter by manual input, then switching to auto-run procedure.
 2. When finishing automatic operation, you can push Reset key to run it again.
- 七. Minimum thickness of producing material is 0.001mm.

3. Electrical Characteristics

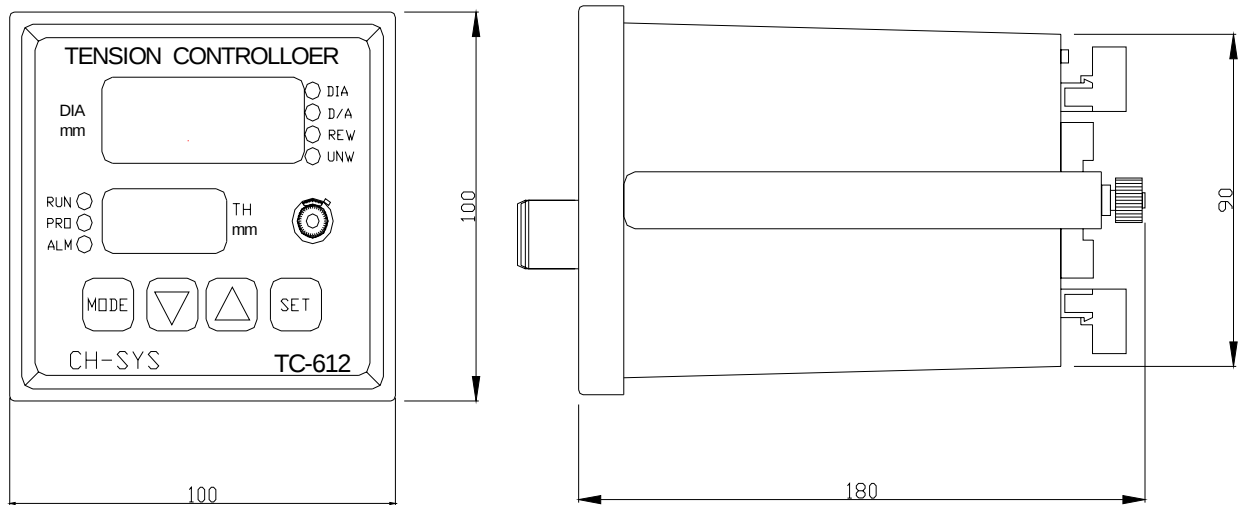
1.	Power source	AC220V $\pm 10\%$ 50/60Hz	
2.	Consumption	Under 100W	
3.	DC-24V Power input	DC 24V 3.5A	
4.	Power control output	DC 0-24V 3A (please add fuse)	
5.	Power for Proximity	DC 12V $\pm 5\%$ 50mA	
6.	Shaft Proximity signal input	NPN input (Optical-isolator)	Frequency speed 50Hz/Sec
7.	Control contact input	NPN input (Optical-isolator)	
8.	Main speed input	Input :12 Bit A/D	DC:0-10V
9.	D/A output	Tension control output D/A 12 Bit (Option)	DC:0-10V
10.	Relay output	A Contact 250V AC, 1A	
11.	Operating Temperature Range	-10 ~+60	
12.	Weight	1KG	
13.	Humidify Range	10-85% RH	

4. Panel functions



1. Outer diameter or Tension value display
2. Tension percentage
3. Manual Tension setting
4. Enter Parameter model
- 5.6 Numerical adjustment for material thickness or parameter content
7. Enter Parameter value setting
8. Outer diameter executing indicator
9. Analogy output indicator
10. Unwinding model indicator
11. Winding model indicator
12. Start-up indicator
13. Proximity input indicator
14. Alarm indicator (before arriving target value)

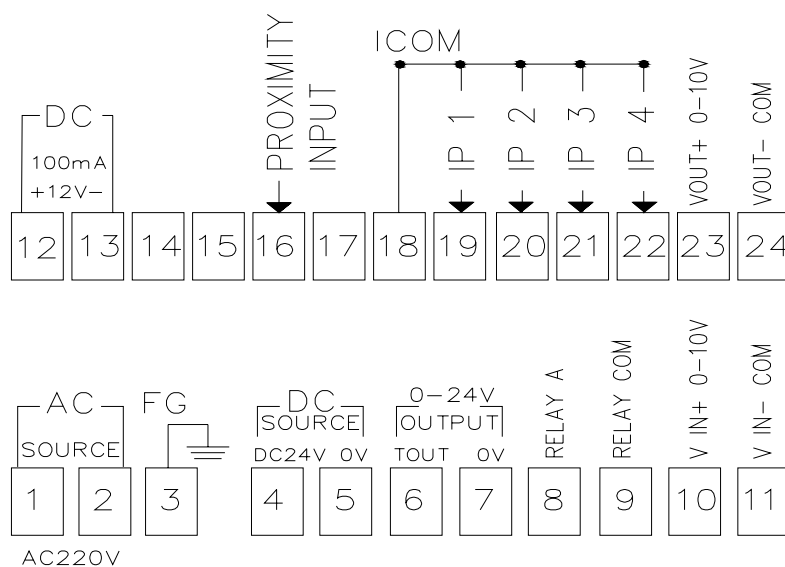
5. Dimension & installation



Opening dimension: 92 x 92 mm

6. Terminal connection

CONNECTION DIAGRAM



JP1 :

Terminal	Code	sign	Function
1	AC1	R	The power source AC220V $\pm$ 10% 50/60HZ
2	AC2	S	
3	FG		Ground contact

JP2 :

Terminal	code	sign	Function
4	DC+24V	+	Extra Power for power brake DC24V 4A
5	0V	-	
6	TOUT	+0-24V	Output to power brake/clutch
7	0V	-	
8	R1A	A	RELAY(alarm output contact)
9	R1C	COM	
10	VIN+	+0-10V	Imitative main speed input
11	VIN-	-0V	

JP3 :

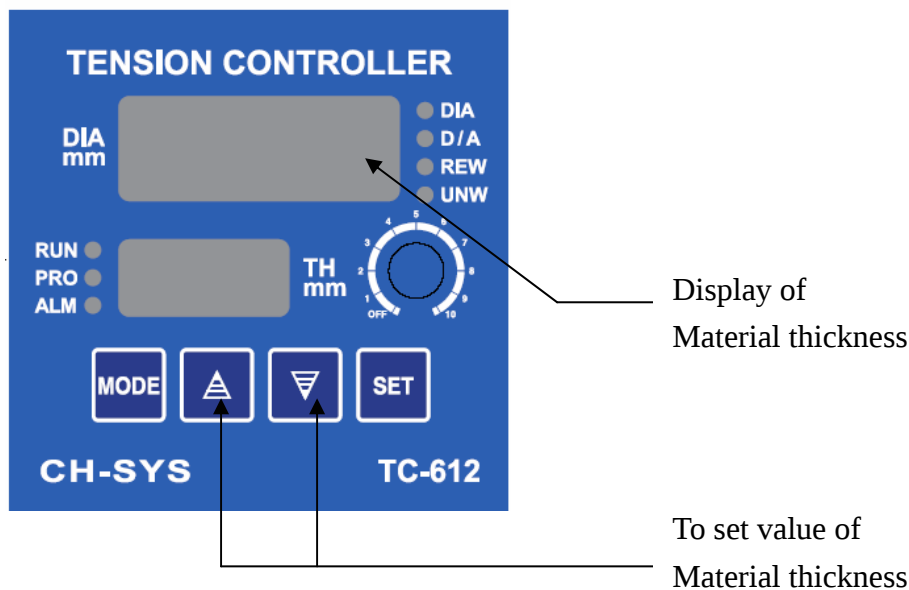
Terminal	code	Function
12	DC+12V	The power source of Proximity DC12V $\pm$ 3%
13	0V	
14	E1A	
15	E1B	
16	E2A	Proximity input contact
17	E2B	Reserved
18	ICOM	Control input common contact
19	IP1	System Start-up contact
20	IP2	Manual/auto-run selection contact (ON>manual OFF:auto)
21	IP3	Urgent stop contact
22	IP4	Reset contact for winding diameter
23	VOUT+	Analogy signal output(OPTION) DC0-10V
24	VOUT-	

7. How to operate working modes (Manual, Auto-run)

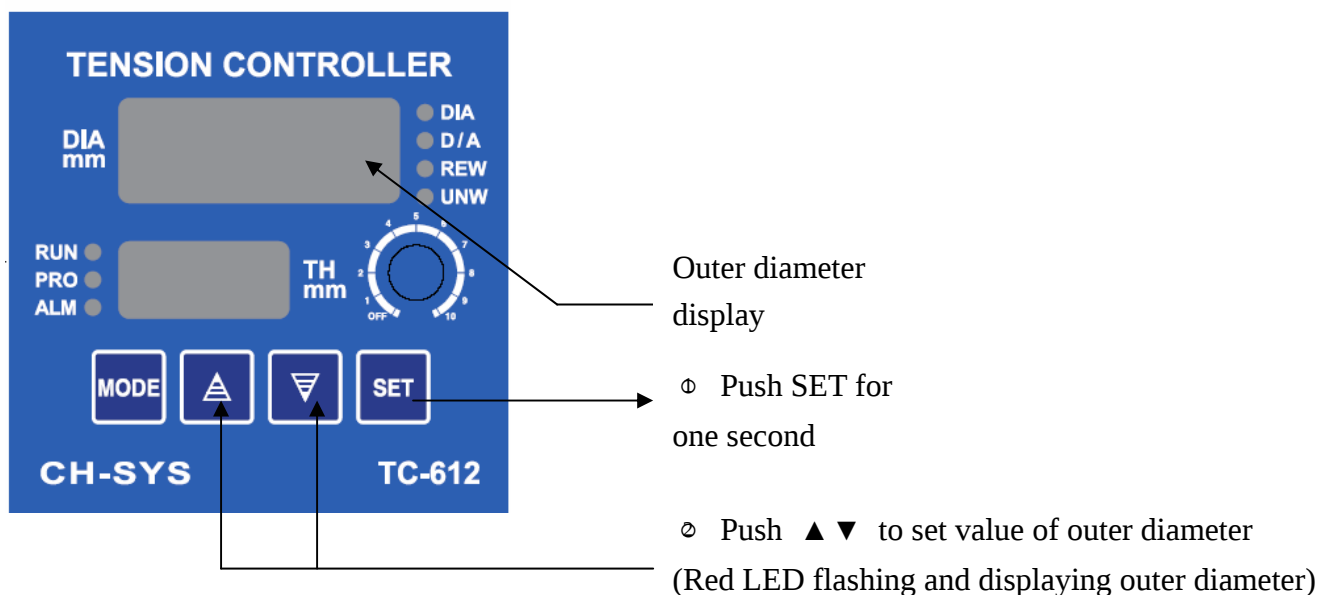
First of all, please finish all parameter setting,

A. Manual switching to Auto-run mode

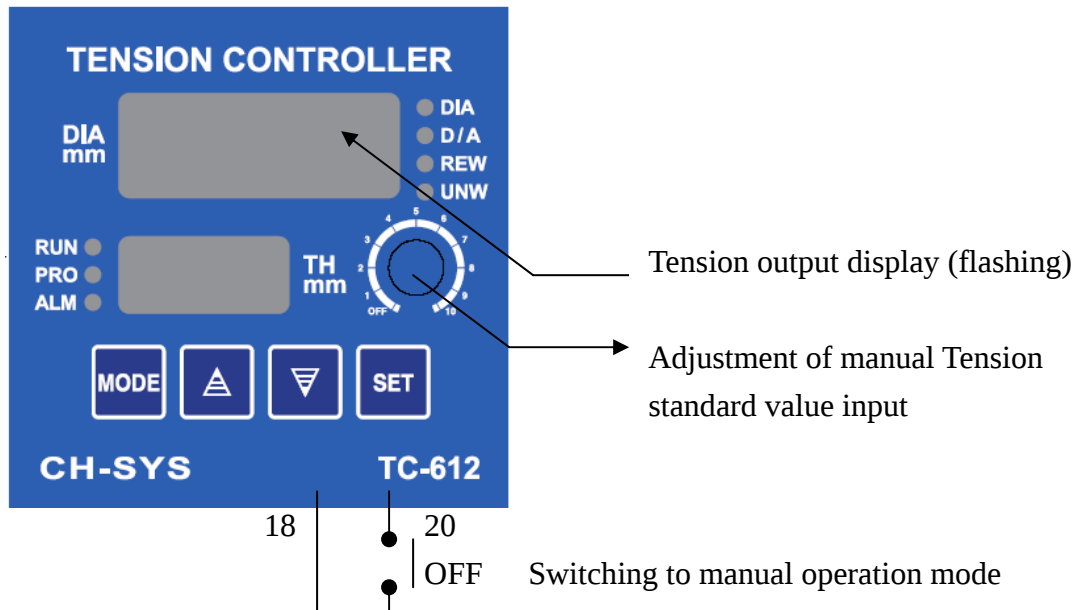
一、Input material thickness



二、Input outer diameter

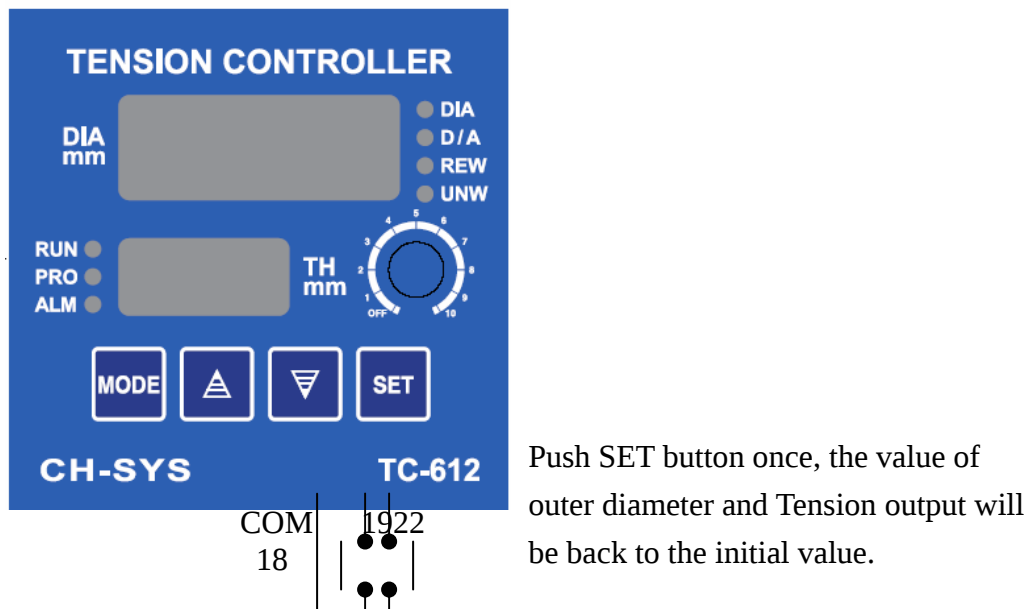


三、 Manual Tension standard value input



B. Auto-run mode

四、 Auto-run model processing



8. Table of Parameters

No	Parameter content	Unit	Range	Default setting
1	Password	Digital	0001 - 9999	1234
2	Initial outer diameter (x 1mm)	mm	0001 - 9999	0100
3	Initial voltage (x 0.01V)	DCV	00.00 - 10.00	02.00
4	Winding/Unwinding 0 : Winding 1 : unwinding	%	0000 - 0001	0000
5	Outer diameter 1mm corresponding to voltage variation (x 0.001V)	DCV	0.000 - 1.000	0.005
6	Outer diameter variation limit (Max: winding; Mimi: unwinding)	mm	0001 - 9999	1000
7	RELAY input outer diameter of advanced volume (x1mm)	mm	0000 - 9999	0010
8	Voltage output limit (Max: winding; Mimi: unwinding)	V	00.00 - 10.00	10.00
9	Acceleration/deceleration corresponding to delay time K value	Sec.	000.0 - 100.0	001.0
10	Tension compensation percentage for acceleration (x 0.1%)	0.1%	000.0 - 100.0	000.0
11	Tension compensation percentage for deceleration (x 0.1%)	0.1%	000.0 - 100.0	000.0
12	Voltage variation percentage at a state of emergency stop (x 1%)	1%	0000 - 0100	0000
13	Voltage variation percentage at a state of stopping worktable(x 1%)	1%	0000 - 0100	0000
14	Upper display content 1 : outer diameter value 2 : output percentage 3 : Main speed		0001 - 0003	0001
15	PULSE amount for each turn	P/R	0001 - 1000	0001
16	Output voltage (K value)	K	0.001 - 9.999	1.000
17	ENCODER frequency : 1 : Slow 50CPS 2 : High 2K CPS	Hz	0001 - 0002	0001

18	PWM Linear compensation (K Value)	K	0.700 – 1.500	1.000
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9. Parameters setting procedure

To enter the parameter setting model : Push MODE button once and PRG lamp flashing; To exit the procedure: push MODE button again.

Example: The procedure of change content of Parameter 16

Step	Key operated	Green LED Display	Red LED display
Enter setting model	Mode	Pr01	Password : 1234
Take turns to Pr16	▲	Pr02....Pr16	
Enter Pr16	Set	Pr16 flashing	The value of Parameter16
Chang the value of Pr16 (Setting new value)	▲ or ▼	Pr16	The value setting
Exit Pr16	Set	Pr16	New value of Pr16
Exit setting model	Mode	outer diameter value/ output percentage/ Main speed display	

* Entering Password is the necessary/first procedure before modifying any parameters.

10. Notices

- a. Never assemble or remove terminals when the power turns on.
- b. To avoid DTC-612 damage, don't connect AC power source to Terminal 4 ~ 24 which are contacts for input and output signals.
- c. D/A output terminal 23(+) and 24(-) couldn't be connected to AC power or entering voltage.
- d. Don't open the case or test the components of controller.
- e. Don't forget to record your exclusive parameter setting value for your specialized application.

