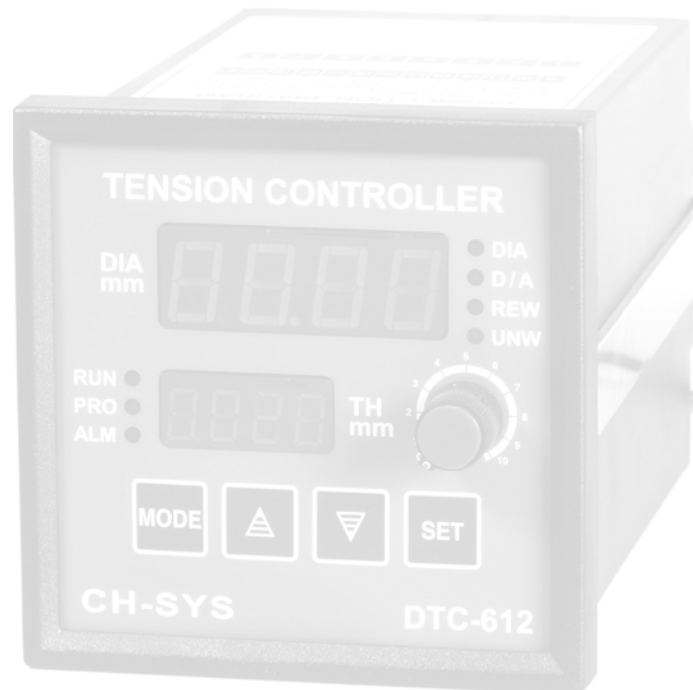


DTC-614

Dancer Tension Controller



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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-614 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-614 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-614 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-614 will modify the control voltage automatically by accounting the number of turns of the roller.

2. Working Principle & features

Working Principle

DTC-614 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-614 and the proximity around the roller detects the number of turns of the roller, then DTC-614 figure the diameter variation out. The diameter variation corresponds to the positive relationship with output variation of control voltage.

DTC-614 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 humidify controller.

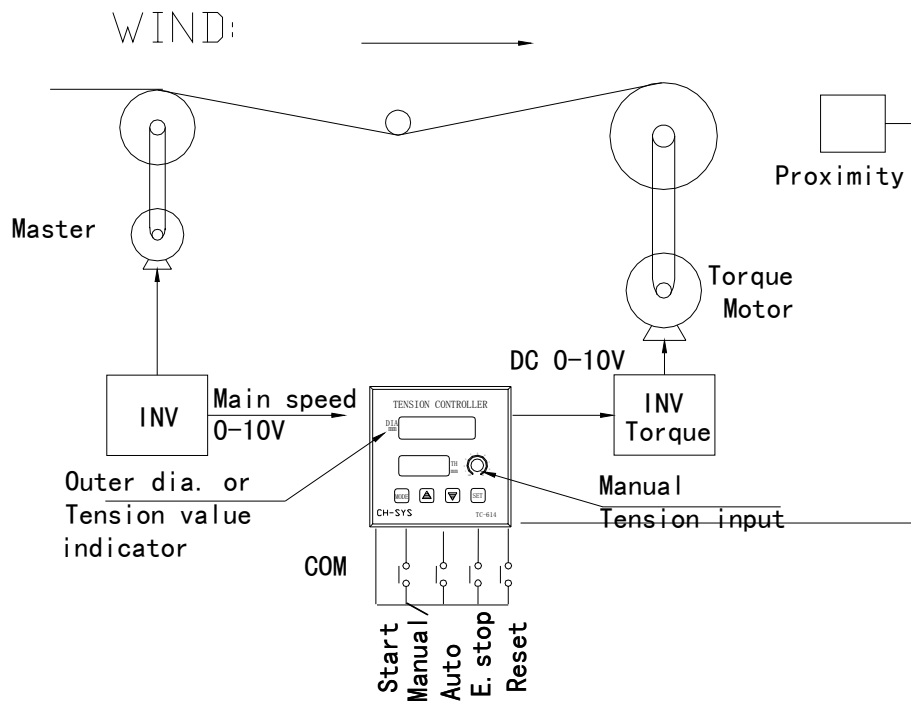
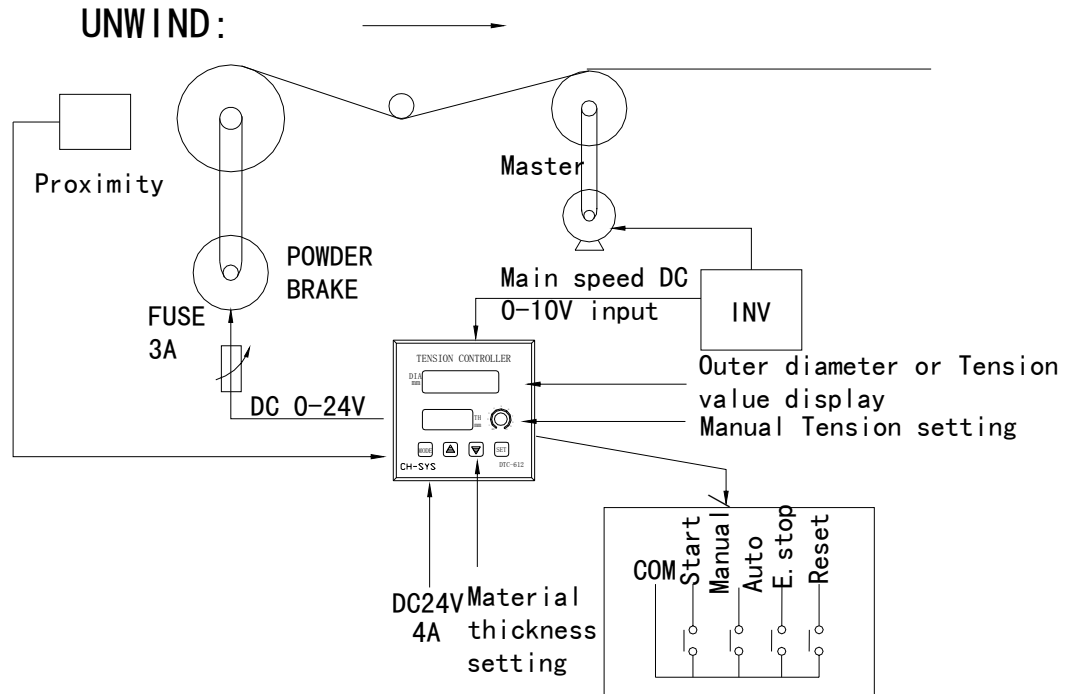
Feature

- 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.

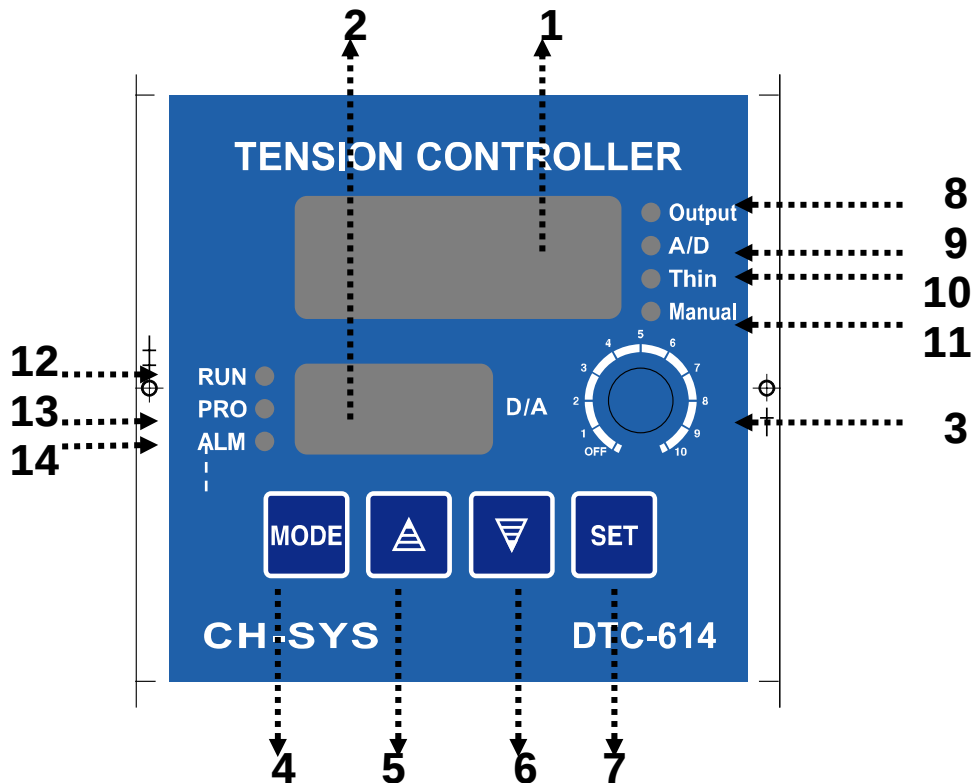
3. Electrical Characteristics

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 (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 (Optical-isolator x 4)	
8.	Main speed input	Input :10 Bit	DC:0-10V
9.	D/A output	D/A 12 Bit (Option)	DC:0-10V
10.	Relay output	A Contact 250V AC, $\leq 1A$	
11.	Operating Temperature Range	-10°C ~+60°C	
12.	Weight	1KG	
13.	Humidify Range	10-85% RH	

4. Flowchart of DTC-614

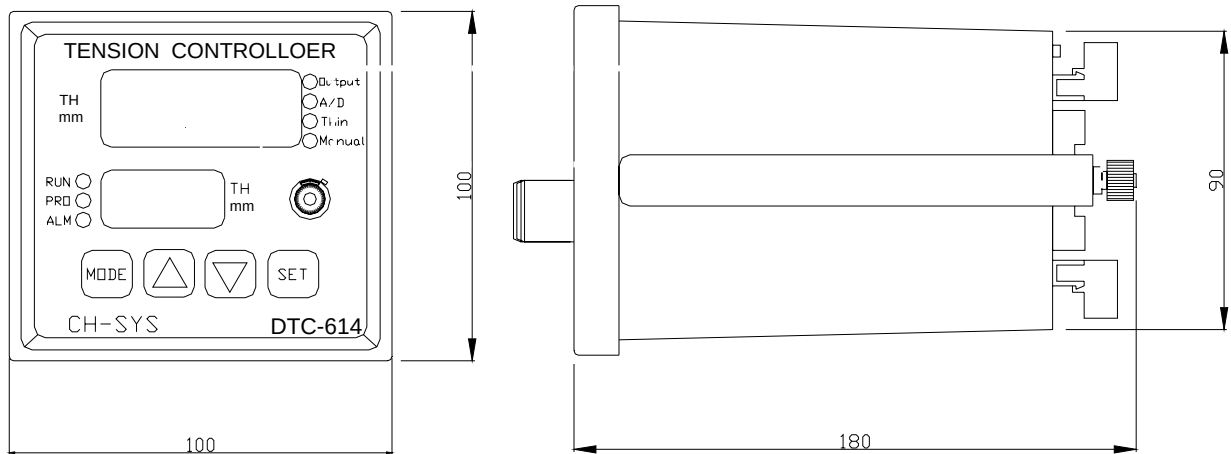


5. Panel functions



1. Material thickness value or Tension value display
2. Outer diameter value display
3. Manual Tension value setting
4. Enter Parameter model
- 5.6 Numerical adjustment for outer diameter/material thickness or parameter content
7. Parameter value setting key
(push 3 seconds to enter/set Material-thickness value)
8. Analogy output indicator
9. Analogy input indicator
10. Material thickness indicator
11. Manual model indicator
12. Start-up indicator
13. Proximity input indicator
14. Alarm indicator (before arriving target value)

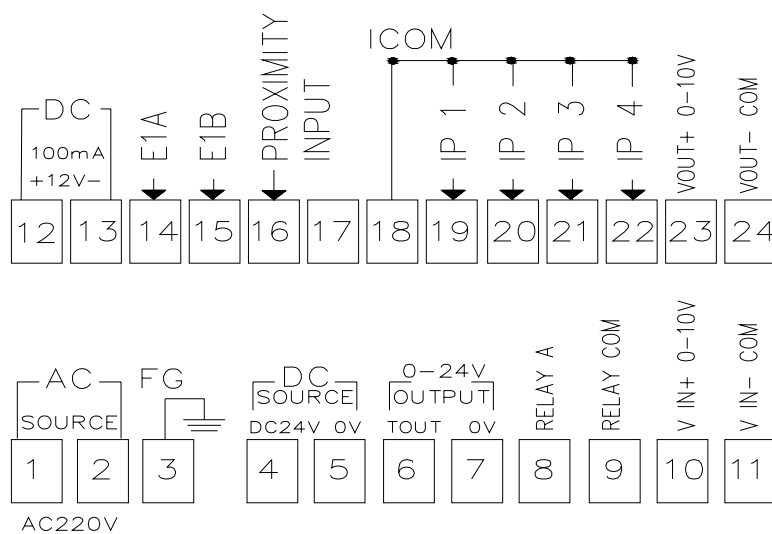
6. Dimension & installation



Opening dimension: 92 x 92 mm

7. 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 :

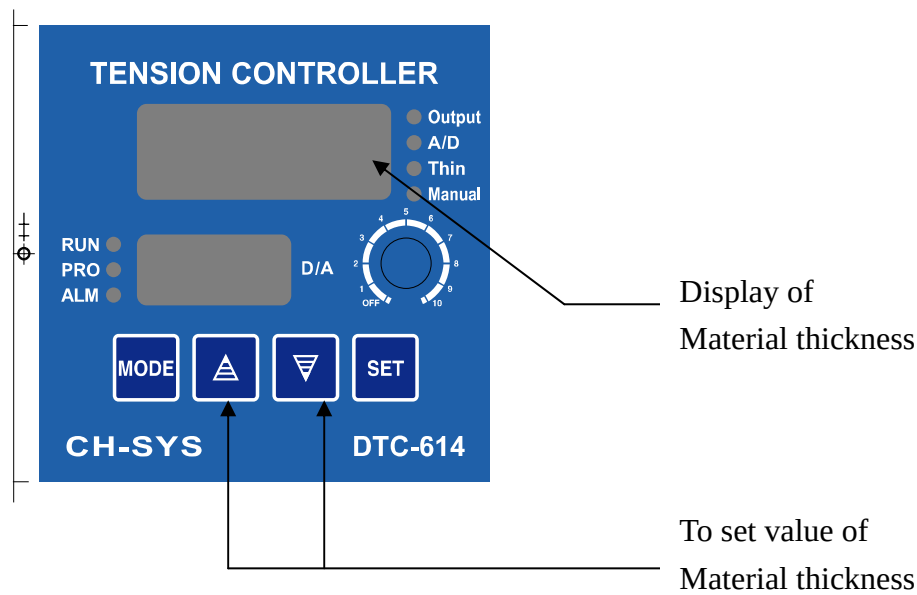
Terminal	code	Function
12	DC+12V	The power source of Proximity DC12V $\pm$ 3%
13	0V	
14	E1A	Encoder input
15	E1B	
16	E2A	Proximity input contact
17	E2B	Reserved
18	ICOM	Control input common contact
19	IP1	System Start-up contact
20	IP2	Manual/auto-run selection contact (ON>manual OFF:auto)
21	IP3	Urgent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

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

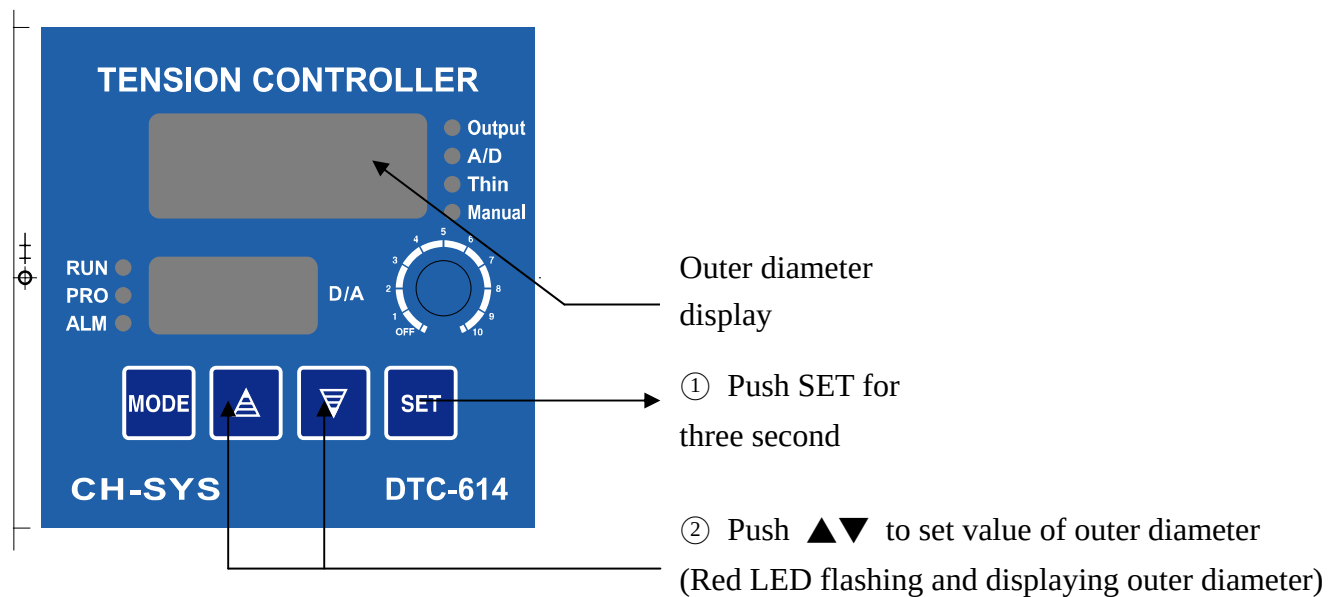
First of all, please finish all parameter setting,

A. Manual switching to Auto-run mode

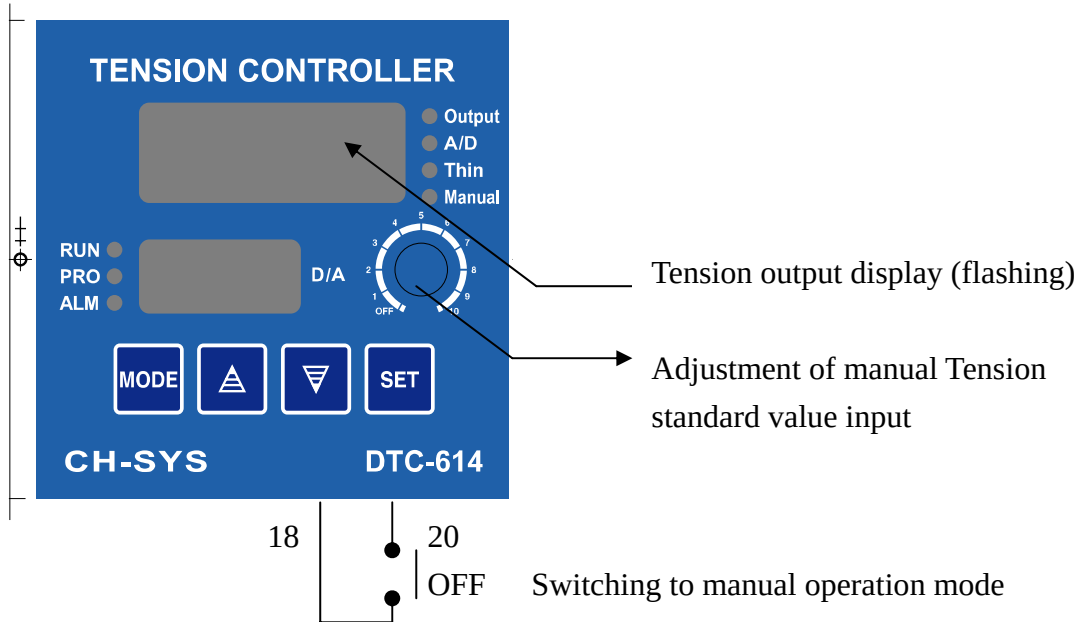
一、Input material thickness



二、Input outer diameter

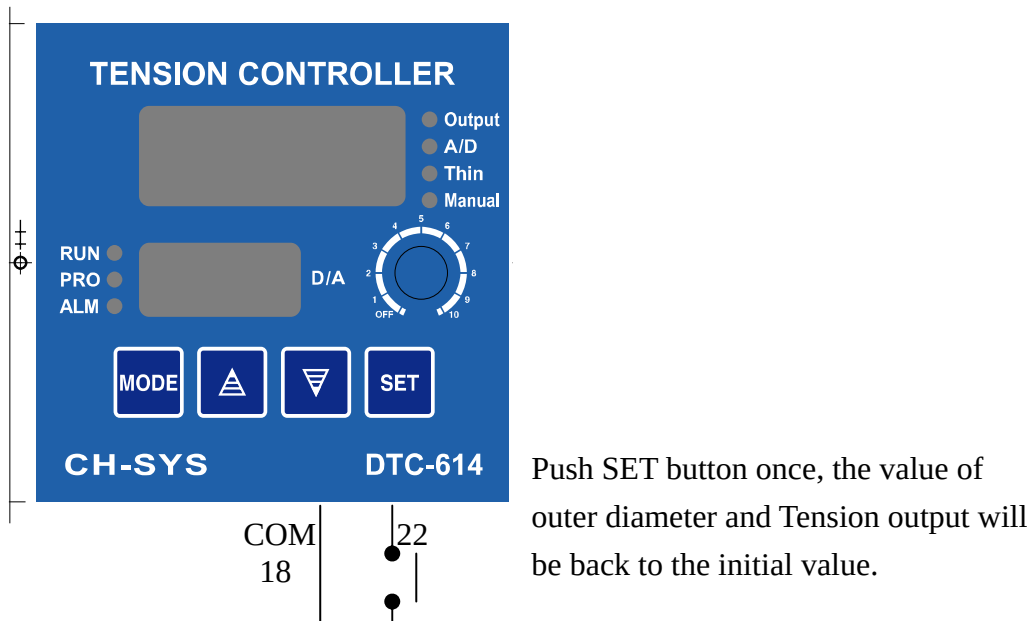


三、Manual Tension standard value input



B. Auto-run mode

四、Auto-run model processing



9. Table of Parameters

No	Parameter content	Unit	Range	Default setting
1	Minimum voltage output	V	0-10.00V	
2	Maximum voltage output	V	0-10.00V	
3	Initial outer diameter (x 1mm)	mm	0001 - 9999	
4	Password	Digital	0001 - 9999	
5	Winding/Unwinding 0 : Winding 1 : unwinding	0/1	0000 - 0001	
6	Minimum outer diameter	mm	0001-9999	
7	Maximum outer diameter	mm	0001-9999	
8	Outer diameter of advanced volume of RELAY output (x1mm)	mm	00.00 - 10.00	
9	Acceleration/deceleration corresponding to delay time K value	Sec.	000.0 - 100.0	
10	Tension compensation percentage for acceleration (x 0.1%)	0.1%	000.0 - 100.0	
11	Tension compensation percentage for deceleration (x 0.1%)	0.1%	000.0 - 100.0	
12	Voltage variation percentage at a state of emergency stop (x 1%)	1%	0000 - 0100	
13	Voltage variation percentage at a state of stopping worktable(x 1%)	1%	0000 - 0100	
14	Upper display content 1 : outer diameter value 2 : output percentage 3 : Main speed	1.2.3	0001 - 0003	
15	PULSE amount for each turn	P/R	0001 - 1000	
16	Output voltage (K value)	K	0.001 - 9.999	
17	ENCODER frequency : 1 : Slow 50CPS 2 : High 2K CPS	Hz	0001 - 0002	
18	PWM Linear compensation (K Value)	K	0.700 - 1.500	
19	Basic voltage at E. stop	V	0.00-2.00V	

10. 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.

11. Notices

- a. Never assemble or remove terminals when the power turns on.
- b. To avoid DTC-614 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.

12. Output/diameter connected Diagram

- Pr.01 Min. output voltage Pr.05 Wind/Unwind 0=Wind 1=Unwind
 Pr.02 Max. output voltage Pr.06 Min. outer diameter
 Pr.03 initial outer diameter Pr.07 Max. outer diameter
 Pr.08 Advanced outer diameter of RELAY output (x1mm)

