

Tension Controller

HS-802

(Built-in Load Cell Amplifier)

(With communication)

USER MANUAL

1.Introduction

Thank you for using the developed HS-802 tension controller (hereinafter referred to as 802). Before using the 802, in order to give full play to the functions 802, and to ensure the safety of users, read this manual to facilitate future wiring to facilitate the design, parameter setting and understanding of the causes abnormal and treatment, proper care this manual.

When you use any doubt in this manual can not provide your solution, please contact the Company, we will be happy to serve you and ask you to continue to use the criticism of the company's products and advice.

2. Note:

- a. Can not be implemented in the transmission wiring, or removable connector 802 controller.
- b. 802 controllers are the controller terminal feedback signal and output signal contacts, do as he.
- c. Output of the controller 802 is connected to AC power source must not, and different voltage to enter.
- d. Do not remove the controller enclosure and the controller part of the pressure to do the test.
- e. Power supply AC 220V \pm 10% for the 802 input terminals 1,2 contacts.

3.HS-802 introduced the principle

The controller is based on the production line with conditions set take-up or discharge, and the materials needed for the production of tension, HS-802 and the LOAD CELL will be set according to the value returned by comparing the sensor calculated, the correction output instruction, braking force to change the size or the take-up torque, automatically set to achieve the practical needs of tension and tension of the same high precision tension control system.

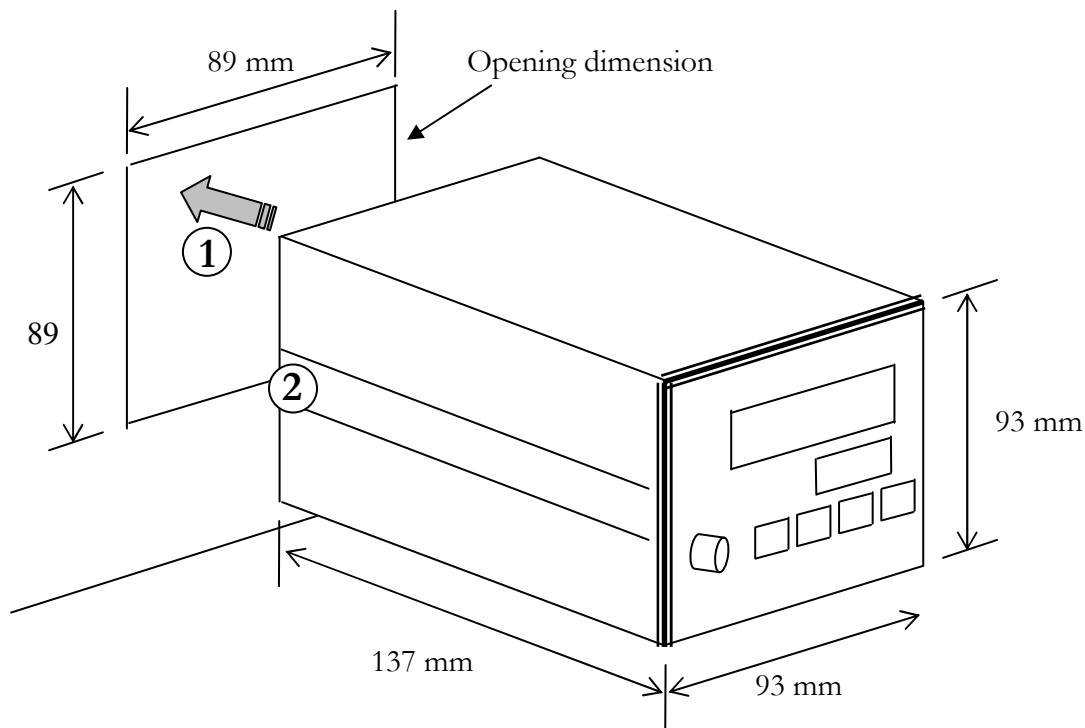
4.Introduction Features

1. High accuracy and reliability with reasonable price.
2. Intelligent design with easy operation.
3. Changeover units of tensile value: kg / N / LB.
4. Inbuilt signal amplifier of Tension detector.
5. Digital design.
6. Dual displays for the required and the actual value of tension.
7. Multi separate power sources built inside, with signals input isolated by photo coupling in order to get the best anti-interfering effect.
8. Unique anti-interference design, available for positive or negative signal output.
9. Function of memory as power failure.
10. With RS-485 communication interface with PLC and PC communication.

■ Specifications

Power supply voltage		AC 220 V \pm 10%
Hardware Specification	2 set LOAD CELL 輸入	0 ~ 300mV/V input, Zeo & Span
	2 set AI (選配)	DC 0~10V input , 12 bit resoultion , input 200K
	1 set AO (1 組選配)	DC 0~10V output maximum 10mA 12 bit resoultion
	4 set DI	Dry contact or crystal method (Low Active)
	2 set RELAY DO	Relay A contact 5A 250VAC/30VDC
	RS-485 MODBUS Communication	RS-485 communication interface with MODBUS RTU protocol communication can be started, modified, specify the output, read and other operations °
Condition	Use of Location	Indoor, non-corrosive gas, liquid and dust
	Operating ambient temperature	0°C TO 60°C
	Storage temperature	0°C TO 60°C
	Ambient humidity	90% RH

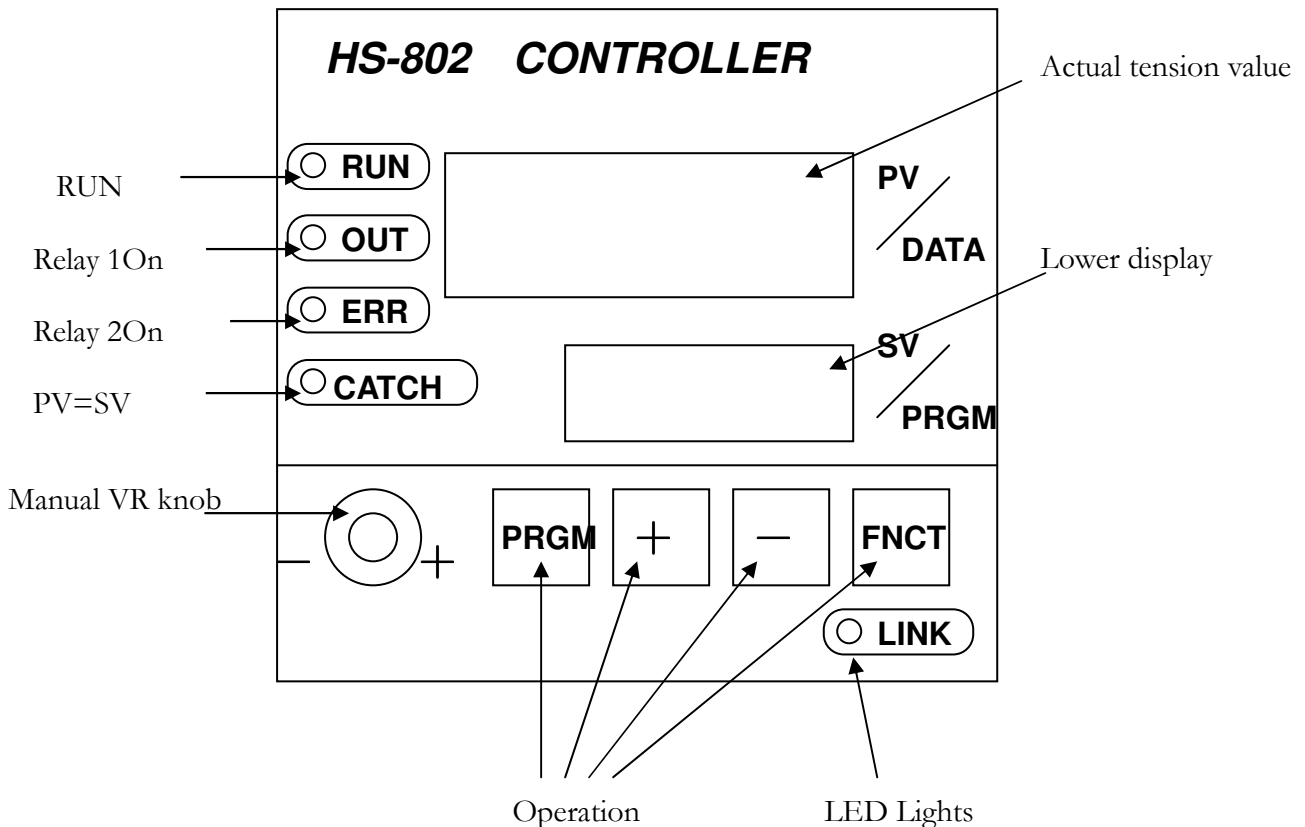
■ Dimensions & Installation



Panel display and operating

2

■ Panel display shows



■ Display shows :

Upper display : Shows the value of the tension feedback ◦

Lower display : This display in normal display mode change by No.20 parameter

■ LED light Description: :

(1) RUN Light : When the controller "STOP" , RUN light OFF ◦

When the controller "RUN" , RUN light keep ON ◦

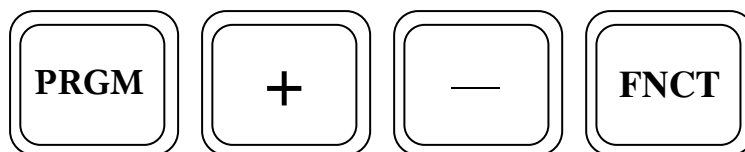
(2) OUT Light : When the RELAY 1 "ON" light is ON ◦

(3) CATCH Light : When the feedback value can not bring into the scope, the representative of the light will light up into the stable state ◦

(4) ERR Light : When the RELAY 2 "ON" light is ON ◦

(5) LINK Light : When the RS-485 and external connection, as each completed a communication, LINK light will flash it ◦

■ Parameter setting instructions (key operating instructions) :



(1) <PRGM> button: enter the parameters used to select the display mode, or return to normal display mode. Click to enter the parameter display mode, and then click to go back to normal display.

When entering the parameters, the lower display will show Pr · XX, XX is a parameter number, the upper display will show the contents of the parameter.

(2) <FNCT> button: This button has three effects, when pressed <PRGM> key, then <FNCT>, then the next row shows Pr · XX representatives will begin to flash · parameter change mode.

When the parameter change is completed, press <FNCT> values can be stored in the controller after the changes, the absence of a direct press <PRGM> press <FNCT> left, the parameter change will be invalid.

When the general display, <FNCT> key can be used to clear the error state.

(3) <+> button: When entering the parameter display mode, the available plus <+> to the number of parameters plus one.

When entering the parameter change mode <lower display flashing>, use the <+> key to the argument by one.

(4) <-> button: When the parameter display mode, the parameter number can be used by a minus sign.

When the parameter change mode <lower display flashing>, available <-> to the parameter value minus one.

Terminal connection

■ Connection Diagram

Terminal	Code	Function	Explanation
1	AC1	AC 220V	Power in (± 10%)
2	AC2	AC 220V	Power in (± 10%)
3	FG	FG	Ground
4	VS+	LOADCELL +10V	LOAD CELL power supply +
5	VS-	LOADCELL 0V	LOAD CELL power supply -
6	SL+	LEFT LOADCELL Signal+	LEFT LAOD CELL signal output +
7	SL-	LEFT LOADCELL Signal-	LEFT LAOD CELL signal output -
8	SR+	RIGHT LOADCELL Signal+	RIGHT LAOD CELL signal output +
9	SR-	RIGHT LOADCELL Signal-	RIGHT LAOD CELL signal output -
10	RY1C	Relay1 COM	Maximum output 5A AC250 / DC35V COM
11	RY1A	Relay1 A	Maximum output 5A AC250 / DC35V A
12	RY2C	Relay2 COM	Minimum output 5A AC250 / DC35V COM
13	RY2A	Relay2 A	Minimum output 5A AC250 / DC35V A
14	AI1	Analog input 0 ~ 10V	External feedback analog input
15	AI2	Analog input 0 ~ 10V	Main speed analog input(Manual torque enable)
16	ACOM	ACOM	analog COMMON point
17	+12V	DC 12V	+12V power supply
18	AOUT1	Analog output 1	Analog output 0 ~ 10V
19			
20	INP1	External input contact 1	RUN(START)
21	INP2	External input contact 2	RESET(Speed mode)/MANUAL(Torque mode)
22	INP3	External input contact 3	Integral STOP
23	INP4	External input contact 4	spare
24	ICOM	External input contact COM	External input contact COMMON
25	485+	RS - 485 +	RS – 485
26	485 -	RS - 485 -	RS – 485

NOTE : External input contact is NPN

■ Parameter Description

Pr • 01 Password

Description : Parameter password, when the same settings and 1234, only set the parameters of Pr-02 ~ Pr47 content

Setting range : 0 ~ 9999

Factory setting : : 1234

Pr • 02 Main speed basic ratio

Description : Main speed basic ratio value °

Setting range : 0.001 ~ 9.999

Factory setting : 1.000

Pr • 03 The proportion of main speed (Manual torque) upper limit

Description : Calculus maximum percentage of compensation °

Setting range : 0 ~ 9999

Factory setting : 2000

Pr • 04 The proportion of main speed (Manual torque) lower limit

Description : Lower proportion of compensation calculations °

Setting range : 0 ~ 9999

Factory setting : 0500

Pr • 05 Main speed acceleration time

Description : Main motor acceleration time and speed control mode and the host must set this parameter as the acceleration time to achieve the best control response.

Setting range : 000.0 ~100.0 (S)

Factory setting : 001.0 S

Pr • 06 Main speed deceleration time

Description : Main motor deceleration time and speed control mode and the host must set this parameter as the acceleration time to achieve the best control response.

Setting range : 000.0 ~100.0 (S)

Factory setting : 001.0 S

Pr • 07Dead zone

Description : When the feedback error between the set value is less than the parameter, the correction operation will stop, greater than the parameter the correction operation will use PK1 ,IK1 , to avoid the instability caused by a small mistake ◦

Setting range : 0 ~ 25.5

Factory setting : 0.3

Pr • 08Dead zone II

Description : When the feedback error between the set value is greater than the parameter , the correction operation will use PK2 ,IK2 ◦

Setting range : 0 ~ 25.5

Factory setting : 1.5

Pr • 09Dead zone III

Description : When the feedback error between the set value is greater than the parameter , the correction operation will use PK3 ,IK3 ◦ ◦

Setting range : 0 ~ 25.5

Factory setting : 3.0

Pr • 10Error compensation rate of the first paragraph of tension (PK1) setting

Description : P used to compensate for offset errors, direct compensation for the output voltage, when set larger, the greater the compensation voltage. This is the first amendment to set the value of the ratio, when the feedback error is less than parameter Pr.07, the use of this setting ◦

Setting range : 0 ~ 99.99(%)

Factory setting : 0.30 (%)

Pr • 11Error compensation rate of the second paragraph of tension (PK2) setting

Description : P compensation setting the second paragraph, when the error is greater than Pr.08, the use of this setting.

Setting range : 0 ~ 99.99 (%)

Factory setting : 0.60(%)

Pr • 12Error compensation rate of the second paragraph of tension (PK3) setting

Description : P compensation setting the second paragraph, when the error is greater than Pr.09, the use of this setting.

Setting range : 0 ~ 99.99 (%)

Factory setting : 0.60(%)

Pr • 13 Section 1(IK1) value

Description : When the error continue to produce, you can rate this value to set the points, set larger, slower compensation, set smaller, compensating faster. If set too small, will lead to output shocks.

Setting range : 0 ~ 99.99

Factory setting : 10.00(Sec)

Pr • 14 Section 2 (IK2) value

Description : Integral calculation, can be divided into 2 treatment, the value of this parameter is the second paragraph, the general use, will be first rate value is set higher (Compensation slower), and the second set is small (compensated faster), then determined by the Pr.08 segment point can be modified to achieve faster results than stable.

Setting range : 0 ~ 99.99

Factory setting : 5.00 (Sec)

Pr • 15 Section 3 (IK3) value

Description : Integral calculation, can be divided into 2 treatment, the value of this parameter is the second paragraph, the general use, will be first rate value is set higher (Compensation slower), and the second set is small (compensated faster), then determined by the Pr.09 segment point can be modified to achieve faster results than stable.

Setting range : 0 ~ 99.99

Factory setting : 2.00 (Sec)

Pr • 16 Starting points of the minimum voltage of the main speed

Description : When the main speed setting voltage is smaller than this value, the integral action will stop, if set to 0, the starting points will continue after the action.

Setting range : 0 ~ 10.00(V)

Factory setting : 0.05 (V)

Pr • 17 Max. error for I replace

Description : Integral calculation is calculated by the error to substitute, when the error is large, is likely to continue into the points accumulated on behalf of an excess of the value to one, use this parameter to limit the generation of error into the ceiling, to prevent the occurrence of this

Setting range : 0 ~ 99.99

Factory setting : 50

Pr • 18Don't change this

Description :

Setting range :

Factory setting :

Pr • 19Don't change this

Description :

Setting range :

Factory setting :

Pr • 20Don't change this

Description :

Setting range :

Factory setting :

Pr • 21Proportional voltage limits (P)

Description : Limited voltage range of proportional calculus.

Setting range : 0 ~ 10.00(V)

Factory setting : 2.00(V)

Pr • 22Control mode

Description : Select controller mode

0:Wind control 1:Unwind control/For speed control

Pr • 23Feedback source

Description : Feedback Source Selection

Setting range : 0 ~ 2

Factory setting : 0

Value	Description
0	LOAD CELL
1	AI2

Pr • 24Source of basic ratio

Description : Used to specify the source of the basic scale. Parameter settings as follows table:

Setting range : 0 ~ 2

Factory setting : 0

Value	Description
0	Use PR02
1	Panel VR
92	AI1 input

Pr • 25 Tension “ZERO” setting

Description : When the tension value of zero feedback and the actual reading is not the same row can enter this parameter by 2 "FCNT" button to complete the zero movement point.

Setting range : -9999 ~ 9999

Factory setting : 0

Pr • 26 Tension read K (correction rate SPAN)

Description : When the tension feedback value and the actual weight of reading is not the same parameters can be adjusted rate which, when used, should be fine zero Adjusting the magnification.

Setting range : 000.0~ 999.9

Factory setting : 100.0

Pr • 27 Tension decimal point

Description : Decimal point position is used to set the tension °

Setting range : 0 ~ 3

Factory setting : 1

Pr • 28 Display average Time

Description : Please use this function for stable display value when input signal is unstable

Setting range : 0001 ~0200 (s)

Factory setting : 3.0

Pr • 29 Tension filter time

Description : Use this parameter to set the filter time to read the tension, the tension to get more stable readings and more stable control..

Setting range : 0.1 ~ 10.0

Factory setting : 0.5

Pr • 30 The lower display mode(Green LED)

Description : Set the next row of the display monitor :

Setting range : 1 ~ 4

Factory setting : 3

Value	Description
1	Main speed value
2	Ratio value
3	Set value
4	Output voltage

Pr • 31 MODBUS controller Address

Description : Set controller communication address °

Setting range : 1 ~ 255

Factory setting : 1

Pr • 32 MODBUS Baudrate

Description : Baudrate select :

1 = 2400

2 = 4800

3 = 9600

4 = 19200

5 = 38400

Setting range : 1 ~ 5

Factory setting : 4

Pr • 33 VOUT1 Zero correction (control output)

Description : This parameter is AOUT1 output zero correction

Setting range : 0.000 ~ 9.999

Factory setting : 50

Pr • 34 Choose the output voltage polarity

Description : 1 = 0~ +10V

2 = +10 ~ -10V

3 = 0 ~ -10V

Setting range : 0 ~ 1

Factory setting : 0

Pr • 35 Set the upper limit of tension

Description : Limit the maximum tension setting operation

Setting range : 0 ~ 999..9

Factory setting : 90.0

Pr • 36 Set the limit of tension

Description : Limit the minimum tension setting operation

Setting range : -100.0 ~ 999..9

Factory setting : 0.1

Pr • 37 Alarm upper limit feedback

Description : When the feedback value is greater than the set value, the internal feedback exceeds the limit will be set flag output can be used stays with RELAY1

Setting range : 0 ~ 999.9

Factory setting : 90.0

Pr • 38 Alarm lower limit feedback

Description : When the feedback value is less than the set value, the internal feedback is set lower than flag output can be used stays with RELAY2

Setting range : -100.0 ~ 999.9

Factory setting : 0.1

Pr • 39 Basic output voltage

Description : Minimum output voltage setting °

Setting range : 00.00 ~10.00 (V)

Factory setting : 00.00

Pr • 40 Don't change this

Description :

Setting range :

Factory setting :

Pr • 41 Don't change this

Description :

Setting range :

Factory setting :

Pr • 42 Speed / torque mode select

Description: 0=speed mode control 1=torque mode control

Range: 0-1

Factory setting:0

Pr • 43 Startup augmentation (%)

Description: When INP1 operation is started, tension output will compensate startup augmentation first with compensation time set by Pr.09.

Range: 0-255 (%)

Factory setting: 20 (%)

Pr • 44 Startup time

Description: When INP1 operation is started, tension starts augmentation compensation time value. Computation begins from the instant INP1 is ON.

Range: 0-25.5 (seconds)

Factory setting: 0.0 (seconds)

Pr • 45 STOP augmentation (%)

Description: When INP1 operation is OFF, tension output will compensate for the termination.

Range: 0-255 (%)

Factory setting: 20 (%)

Pr • 46 STOP augmentation (V) e

Description: When INP1 is OFF, tension terminates augmentation compensation V.

Range: 0-10.00 (V)

Factory setting: 0.0 (V)

Pr • 47 Terminating movement time

Description: When INP1 is OFF, tension terminates augmentation compensation time. The time begins from the moment INP1 is OFF.

Range: 0-25.5 (seconds)

Factory setting: 0.0 (seconds)