Thank you for purchasing our products. if you have any questions,
please contact us as follows。

(+86) 769-82122666
www.china-tension.com

Due to the continuous improvement of products,
such as the technical parameters in this manual are modified without prior notice.
If you have any questions or view the contents of this manual and the details of all time,
please put the consultation,
we will be very glad to answer your questions, advice and criticism.
Thank you again for your choice and your trust。

TENSION TECHNOLOGY CO.,LTD

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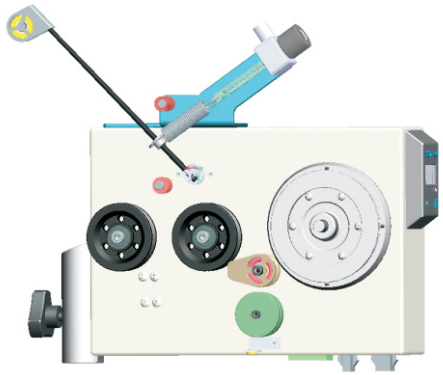
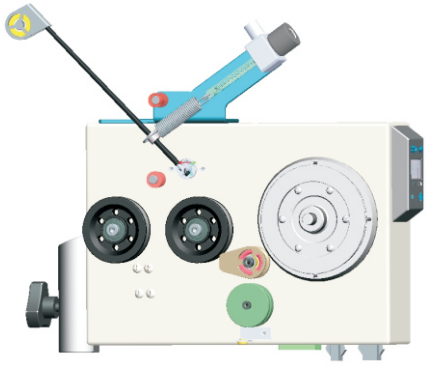
ZL Technology

ETA Series

Electronic Tensioner Product Manual



- ☐ ETA-1500L-L
- ☐ ETA-1500L-LD
- ☐ ETA-1500-L
- ☐ ETA-1500-LD
- ☐ ETA-2000L-L
- ☐ ETA-2000L-LD
- ☐ ETA-2000-L
- ☐ ETA-2000-LD



R type

L type

❶ Product Description

Features of ETA Series Electronic Tensioners:

1. The tension is controlled by excitation current with accuracy +/-2% in Auto mode. It provides stable tension under high speed wiring and closed-loop tension control is possible.
2. Different types of tension setting: The output tension can be altered rapidly (output tension is reference to the setting value) by switching the signal input so that intelligent control is achieved.

ETA-1500L-LD

- Electronic Tensioner
- Refers to the maximum output tension value, The Prefix "A, B..." shows the version of upgrade, while A means the first generation.
- Represents the display locates on left, while it is locates on right without "L".
- Represents the installation base on right, while it is on left for "L". B represents front output and Estructure
- Refers to RS485 communication

Type reference table

model	Tension range (g. f)	Use the line-size range(mm)
ETA-1500L-L/LD	150-1500	Φ0.18 - Φ0.60
ETA-1500-L/LD	150-1500	Φ0.18 - Φ0.60
ETA-2000L-L/LD	150-2000	Φ0.18 - Φ0.69
ETA-2000-L/LD	150-2000	Φ0.18 - Φ0.69

Failure 2:

Wire get stuck with tension arm or wire roller or not running

Solution:

1.Too thin wires may get stuck outside the wire roller. Please examine carefully and wire again;
2.Replace the wire roller if it is caused by the ageing of wire roller after long time usage.

Failure 3:

Tension pulley slips while operating

Solution:

1.Change the wool felt if it is caused by oil or impurities on it.
2.Use the cotton thread with absolute alcohol, and then pull back and forth to clean the tension pulley

Failure 4:

Tension pulsating exists

Solution:

To enter the demagnetization mode. Turn the tension wheel during the demagnetization or it will be invalid.

❿ Packing list

Welcome to buy our products, when you open the package, please check the following:

NO.	ITEMS	QUANTITY		REMARKS
1	Electronic tensioner	1	Taiwan	Standard configuration
2	Tension rod	See the table below		
3	Fixed handle	1	a	Standard configuration
4	Tension spring	See the table below		
5	baize	2	slice	Standard configuration
6	Compression spring	1	article	Standard configuration
7	The power cord	1	article	Standard configuration
8	Product description	1	part	Standard configuration

model	Tension rod	tension spring
ETA-1500L-L/LD	SA4 SA5-4 各1根	S5/S6/S7 各2条
ETA-1500-L/LD	SA4 SA5-4 各1根	S5/S6/S7 各2条
ETA-2000L-L/LD	SA4 SA5-4 各1根	S5/S6/S7 各2条
ETA-2000-L/LD	SA4 SA5-4 各1根	S5/S6/S7 各2条

Statement: when you open the package, please contact the local dealer quickly to ensure your use.

Parameter setting 5
Output mode: Always open
Demagnetization: No

Press " √ " button to change the output mode (means the "broken wire alarm signal" output as "open" or "closed") and to run the demagnetization process. Save after and press "+" to enter parameter setting 6.

Parameter setting 6
Communication address: 1
Switching cycles: 1.0

Press " √ " button to change the communication address and switching cycles. With setting the switching cycles, the tensioner will count the number of turns running in the tension wheel before switching to another tension value being set. (Not necessary to change usually)

Remarks: Please contact our company for RS485 communication port protocol and Modbus-RTU communication address details

❼ Cautions

1.Do not touch or try to stop the tension arms and the wiring wheels or rolls.
2.Do not directly touch the tension sensor wheel with hands to avoid the damage of sensor which will affect the accuracy of tension value measured.
3.Install the tensioner properly to prevent the falling of tensioner.
4.Adjust the pressure applied by the wool-felt clip (avoid too high) and the force by spring to ensure the tension wheel is running properly.
5.Turn the tension wheel to eliminate the magnetism pulse when changing the current from large to small or it will affect the wiring performance.
6.Ensure the enameled wires go through the wire jump preventer and the wire wheels properly but not hanged over the contact roller so that the wheels rotate smoothly.
7.Keep away from oil contamination to the tension pulley, or it will affect the tensioner running well. Use the cotton thread with absolute alcohol to clean it by pulling back and forth of the "O" shape part, if the oil contamination exists.
8.Wool-felt clips, ceramic eyelet, wire roller and the tension arm are consumable parts. Charging s is required for replacement even the tensioner is within the warranty period. Please contact our factory for the cost.
9.Over limit application or improper model using is prohibited. Repair or components disassembly can only be done in factory.

❽ Maintance

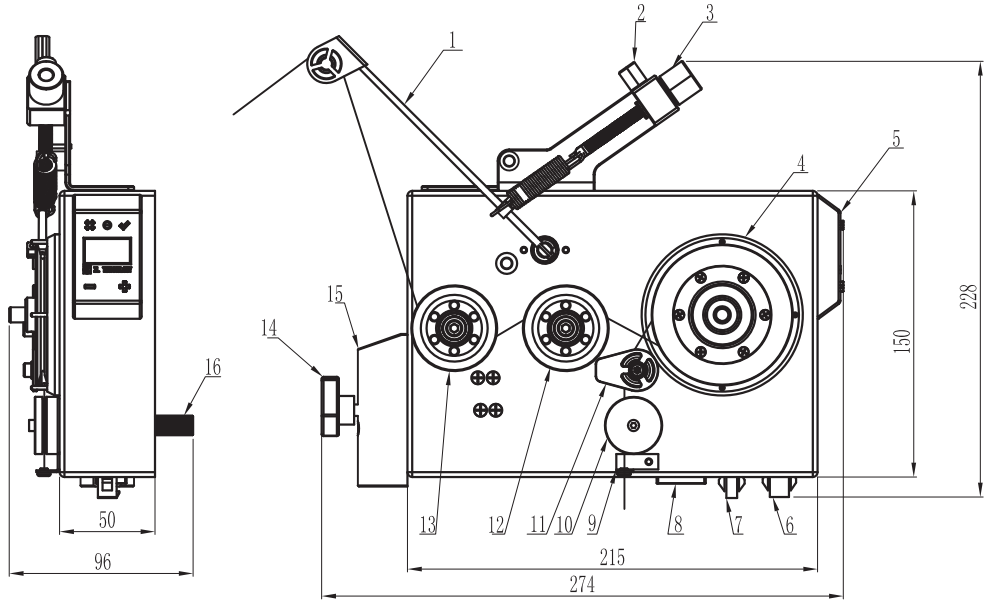
1. Periodically clean the tensioner, wool-felt clip, tension wheel, ceramic eyelet, wire rollers according to the usage situation. Replace the wool-felt if necessary to ensure the tensioner works properly.

❾ Failures

Failures 1:
Enameled wires got stuck in the tension wheel to cause the rotation stop.
Solution:
Unscrew the fixing screw to take out the tension wheel and clean the impurities inside.

❷ External Structure

Fig.1



❶ Tension arm ❷ Back tension lock ❸ Back tension tuninglock ❹ Tension wheel ❺ Dis play
❻ 4P Signal port ❼ 2P Signal port ❽ 485 Communication port ❾ Ceramic eye through parts
❿ Wool-felt parts ⓫ Wire jumping preventer ⓬ Sensing wheel ⓭ Wire crossing wheel
⓮ Fixing handle ⓯ Fixing base ⓰ Wool-felt tuning knob

❸ Cautions

1. Temperature range: -5℃-40℃ Humidity range: 30%-80%.
2. Cleaning requirements of enamelled wire: Keep the enamelled wire without any oil, dust and impurity outside. If the surface of enamelled wire sticked with waxiness, you'd better clean wire rolling frequently and replace wool clampingring regularly. Otherwise, it will cause frequent tension change or wire-through wheel skidding, and shorten operating life of O Ring in tension pulley.

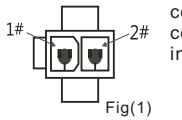
❹ Tensioner installation and commissioning

1.Installation

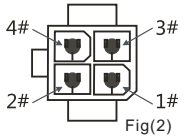
Step 1: Insert the foot mounting into the fixed link and tighten it by fasten the handle.
Step 2: Loosen the fastening nut on the fixing base of tension arm, and insert the tension arm into the rotating shaft and then tighten the fixing screw
Step 3: Choose the appropriate tension arm and tension spring according to the range of wire diameter and tension value. The higher of tension applied, the thicker of tension arm is required.

Step 4: Connect the terminals as figure 2 shows, with details below:
Input power supply: 24VDC+/- 10% (1A) Input signal: 24VDC

Fig.2



Fig(1)



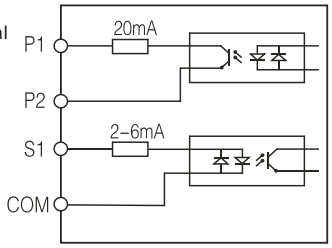
Fig(2)

Remarks:
Tensioner is operated under open-loop control mode if no external signal is connected, while it is under closed-loop control mode when there is external signal input.

Fig.1:
1#-0V (Yellow -ve)
2#24VDC (Red +ve)
Fig.2:

1#(P1) – Alarm signal (Black +ve)
2#(P2) – Alarm signal (White -ve)
3#(S3) – Signal input (Brown +ve)
4#(COM) – Signal input (Blue -ve)

Output Interface
Internal Circuit Diagram



2. Product tuning

Step1: Switch on the tensioner without wiring. If the tension value shown is not "zero", long pressed "X" button for over 5 seconds to set zero.

Step2: Route the wire refers to the fig1 and use the wool clamp knob to adjust the tightness to the wire (clockwise turning to be tight, anticlockwise turning to be loose). Tightness of wool clamp depends on the value of tension. In small tension, tightness should be just enough to hold the wire from falling out from the wool clamp, while it should be tight for large tension.

Step3: Finally, tune the "feedback tension knob" to a back tension that is match with the operating tension according to the requirement. Change the spring to start again the process if the tension reaches the limit and cannot be tuned by the knob anymore.

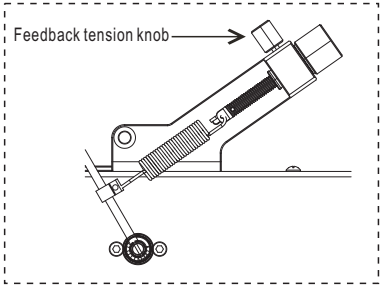


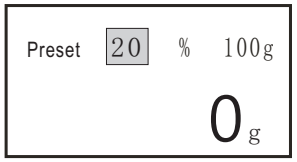
Fig.3

Rotate the feedback tension knob to adjust the back tension.
Clockwise: Back tension increases
Anti-clockwise: Back tension decreases

❺ Button operation menu

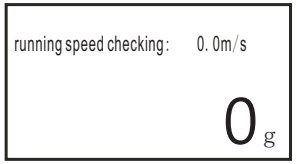
There are four function buttons, with the below definition:
1. √ : To confirm or select;
2. x : To exit;
3. + : Pages rolling or value increases (Continuous / fast adjust by long pressed)
4. - : Pages rolling or value decreases (Continuous / fast adjust by long pressed)

❻ Interface menu:

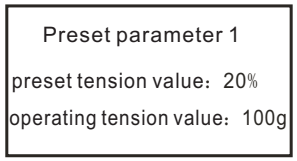


he first step of tension adjust: Press " √ " button once, the cursor move to the number of percentage. Press "+" or "– " to adjust the first step of tension in term of percentage. 0 to 100 with respect to the minimum tension to maximum tension (The first step of tension is default when the tensioner is switching on).

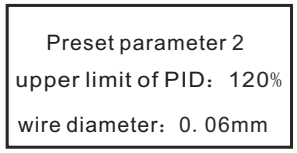
step of tension adjust: Press " √ " again after setting the first step of tension, the cursor will move to the number with "g" unit. Press "+" or "- " to the required tension value, and press " √ " to save and exit. (Signal toggle is required for 2nd step of tension)



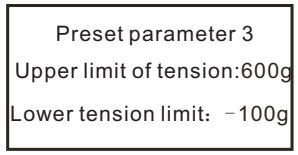
Wire running speed checking: A long pressed of"-" button to enter the speed checking interface. One more long pressed "- " to exit.



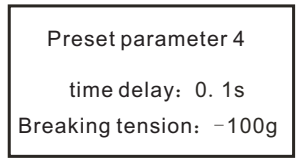
A long pressed " √ " button in operation interface to enter the "preset parameter 1" page. The preset tension value (First step tension) and operating tension value (second step tension) can be set. Press "+" button to enter the "preset parameter 2" page or press "X" button to back to the operation interface if no adjustment is required.



Press " √ " button, to adjust the upper limit of PID (It is not necessary to tune because it can be adjusted automatically) and the wire diameter. Save and press "+" button to enter the "preset parameter 3" page.



Press " √ " button, to set the upper and lower limit of operating tension value (second step tension). When the tension value exceeds this limit set, the indicator light flash will flash and output an alarm signal. Save and press "+" button to enter the "preset parameter 4" page.



Press " √ " button, to set the time delay (the time between the first step tension switches to second step tension. Not necessary to set usually)
And the broken wire tension value (broken wire status is defined if the tension value shown is less than this value). Save and press "+" button to enter the "preset parameter 5" page.