EWD-L-MSTJ4

User's Guide

(V2.2)

Table of Contents

Note: the system is applicable to "moving car" elevators. Please read the following sections carefully before using.
Notice: in any case, we are only responsible for the quality of the products within the warranty period.
Statement: due to technological progress, the company reserves the right to change the product;For the technical parameters, please refer to the random product manual.

System overview

一. “EWD-L-MSTJ4”The main features of the weighing device:

1. When the product is working normally, the internal payload of the cage can be directly displayed. The self-study process is simple to operate.
2. Intelligent programming and control process, according to different customer needs, can adjust the percentage of load corresponding to any of the 4-way switch signals output by the controller and the output of turn-off/turn-off, and modify the output mode of analog quantities.
3. Intelligent sensor: choose high-precision XCL-YL-C tension sensor to directly detect the change of load of the car;
4. Wide measurement range (the payload can be set manually according to the demand), high positioning accuracy and intelligent temperature compensation.
5. The electrical performance conforms to the standard requirements of "international electrotechnical commission (IEC)";
6. The core is composed of a high-precision load sensor and a high-performance monolithic microcomputer.All working parameters can be set on site.
7. Output full-load and overload signals directly according to the change of cage payload;.
8. With the ability of manual fine-tuning correction of working parameters, the error of elevator after decoration can be manually corrected to achieve the purpose of accurate measurement.
9. Unique sensor + controller design structure, simple wiring.
10. From the perspective of the user, it is easy to install and debug, reduce the additional cost in the user's use, and the performance price is higher.

二. “EWD-L-MSTJ4”working principle：

With the development of elevator technology, the influence of elevator weighing device on its performance cannot be ignored.The elevator is in urgent need of high precision, high reliability and multifunction of weighing device.With the continuous development of sensor technology and microcomputer, a high-precision c-type 25Kg sensor is used to detect the electrical signals generated by the elevator cage due to the change of load.High precision

sensor: serial communication technology is used to transmit the sensor in a high precision and long distance.The sensor is equipped with 8m signal transmission cable;At the same time, the single chip microcomputer in the controller is used to carry out scientific calculation and processing, and the final accurate direct display of the cage payload in the controller digital hang, realizing the working function of weighing the elevator cage payload.Controller and load sensor Appearance ：

三. Controller, sensor, display (optional) appearance：

1.Elevator load weighting device“EWD-L-MSTJ4”Controller

Model	**EWD-L-MSTJ4**
Elevator load weighting device“**EWD-L-MSTJ4**”Controller	

2.High precision C sensor

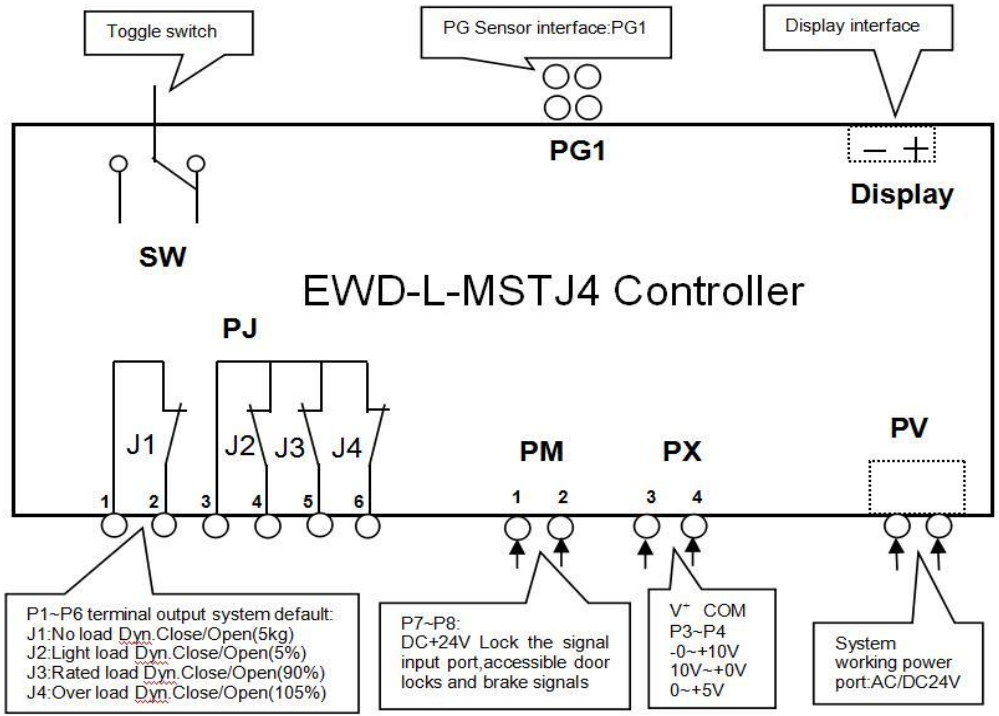
Model	Display
XCL-YL-C appearance of sensor	
	The cable length of the directly connected sensor is 8 meters by default.

3.LED large-screen display (optional)

<table>
<tr><td>Model</td><td colspan="3">Display</td></tr>
<tr><td>Display</td><td colspan="3">  </td></tr>
<tr><td rowspan="4">Qualification definition</td><td>Brown</td><td>DC24V+</td><td rowspan="4">Wire Length 6m</td></tr>
<tr><td>Blue</td><td>com</td></tr>
<tr><td>Black</td><td>Signal +</td></tr>
<tr><td>Gray</td><td>Signal -</td></tr>
</table>

四. Controller interface diagram and description：

1. Controller interface diagram：

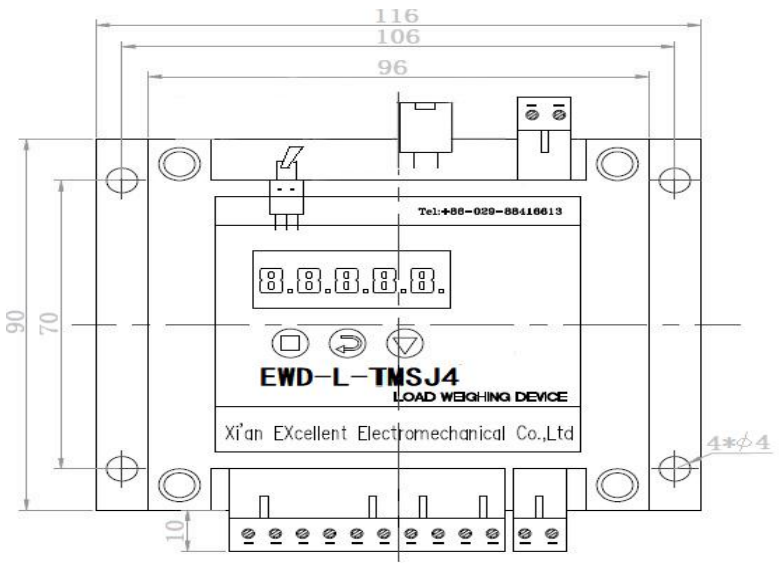


2.Controller port details：

			Function	Explanation	
PJ	Switching	1	J1Relay COM port	With the P2 to produce effective logic	Function：Be programmed as“J1～J4”(No load - over load)output signals to participate in elevator logic control. 2.Max loading Capacity：DC/AC 24V/500mA
		2	J1Relay Output	system default“J1”：5Kg No load Dynamic open output	
		3	J2、J3、J4 Relay com port	With P4.P5.P6，to produce effective logic	
		4	J2 Relay Output	system default“J2”：Light load Dyn. Close output	
		5	J3 Relay Output	system default“J3”：Related load Dyn close output；	
		6	J4 Relay Output	system default“J4”：Overload Dyn,open output；	
PM	Lock	1	Lock signal COM port	Note the voltage difference and the connection polarity when connecting	
		2	DC+24V lock signal，Can access the door lock signal and brake signal		
PX	Anal**og**	3	0～10V;10～0V;Analog voltage output	Used for pre-torque compensation of the drive system	
		4	COM Connect the governor to the analog common		
PV	Power supply		System power supply port：AC/DC 24V／200mA		
PG	Sensor connection port	PG1	EWD-L-MSTJ4 controller，contact XCL-YL-C sensor		
SW	toggle switch		Toggle switch for system debugging		
Display	External monitor connection port		Port access black and gray signal line，Power supply：DC+24V/500mA		

- It is absolutely impossible to connect the output port other than the "PV" device directly to the external power supply, which may cause permanent damage.
  (Note:❽PX❾and❽PM❾ port with Polarity requirements and voltage rating requirements)

五、Controller Dimensions：



Installation and debugging

六、Button Function and Instruction Parameter Code Meaning Description：

Note: (1) Press the button, meaning to release the button after one press.

(2) Hold down the button, meaning according to the requirements of a long time to hold down the button.

1.Button Meaning and Function Description：

No.	Button icon	Function	Explanation
1	【■】	Set and confirm Button（SET）	Set a parameter and confirm the internal data function
2	【⮌】	Switch / cursor shift Button(SHIFT)	Used to switch the digital display digit
3	【▼】	Data increase Button（ADD）	Change the internal value of the parameter

2.Button to use method description：

⑴Set and confirm button【■】Instructions：

When power is displayed, press it【■】, Enter the parameter setting status，by【⮌】 and 【▼】button Enter the setting parameter，Can be set accordingly.Finish setting ， press【■】button check，Save the parameters.

⑵Switch / cursor shift buttons【⮌】Instructions：

In the parameter setting state，press once【⮌】, The cursor moves one by one ，to the last one，Press the toggle / cursor shift button【⮌】And cycle back to the first place.

⑶Data increase button【▼】Instructions：

In the parameter setting state，press once【▼】, Add one to the cursor bit data, add the maximum value of the set data and then cycle back to the minimum value of the data.

3.With the decimal point of the parameters of the process of adjusting the use of key examples:

After powering on the product, press【■】button to enter the instruction setting state. When "00000" is displayed, press【↩】button to move the flashing cursor to the last digital tube. Press【▼】key to adjust the digital display to "00001", press【■】button to enter the command parameter setting state, digital display "dd - c", press 【■】 buttons to enter this Parameter modification mode, display "00001" means that the decimal point is 1 bit. Press【↩】 and 【▼】 to change the digital tube display to "00002", press【■】 key to confirm this parameter is modified, the digital tube decimal point will move one by one. (Note: other instruction item parameters can be modified and confirmed in accordance with this method.)

4.Instruction Parameter Code Meaning Description：

No	Instruction parameter code	Function code	Code default data	Function and explanation
1	**00001**	**dd--c**	**00001**	Display the decimal point position setting, the factory default for the 1-bit display "00001", adjustable 4 decimal point adjustment
2	**00002**	**Lc--01**	**1000.0**	The amount of load range set, according to the different capacity of the elevator directly to the manual set to the load range can be。
3	**00003**	**Bj--1**	**0005.0**	J1 for the no-load signal output corresponding to the car load, the default setting elevator car load 5.0kg.
		Bj--2	**0005.0**	J2 for the light load signal output corresponding percentage, the default setting for the amount of 5% output action,
		BJ--3	**0090.0**	J3 for the full load signal output corresponding percentage, the default setting for the amount of 90%,
		BJ--4	**0105.0**	J4 for the overload signal output corresponding percentage, the default setting for the amount of 105%,

4	**00004**	**BJ-HL**	**BJ1-L**	J1 relay dynamic output, dynamic (L)
			BJ2-H	J2 relay moving output, moving together(H)adjustable
			BJ3-H	J3 relay moving output, moving (H) adjustable
			BJ4-L	J4 relay dynamic output, dynamic (L)
5	**00005**	**Da--c**	**Da-00**	Analog output mode corresponds to P9 ~ P10 terminal port output 0 ~ 10V
			Da-01	Analog output mode corresponds to P9 ~ P10 terminal port output 10 ~ 0V
6	**00006**	**HELP-**	**---01**	Restore factory settings
7	**00007**	**B2--c**	**B2-01**	The multiplication parameter is set, the multiplication value is 1 times the amount of load, and the value of "01~99" corresponds to the 1-99 times of the amount of load can be adjusted; The modification of the doubling parameter shall take effect after the load is confirmed after the completion of learning
8	**00008**	**L-H-2**	**LL--1**	The controller learns the no load parameter;
			HH--1	The controller self - learns the load parameter
9	**00009**	**I-h-2**	**1000.0**	Fine-tuning the coefficient setting to fine-tune the learning results

七、System debugging methods and instructions (self-learning)：

（Here to lift the amount of 1000Kg as an example to describe the load range setting and "no load and the amount of two self-learning" process）

Before the system debugging：

①.Products must be in strict accordance with the "EWD-L-MSTJ4 user manual" for self-learning, otherwise it will cause the product can not be used and product measurement accuracy is not accurate.

②.Before commissioning, it is necessary to specify the weight of the car. The weight of the truck can not exceed the total range of the sensor. Otherwise, the sensor will be damaged and the product will not be used.

1. Elevator rate-load range setting：

Note：①1. Product digital tube display the default decimal point to 1, the unit is Kg, For example :the case shows "1000.0", that is,1000kg.

①Check that the sensor wiring is correct;
②Confirm the signal grade and polarity of the product terminals, and after the plug is firmly connected, the product is powered on and the digital tube is displayed normally。

NO

Ensure that the power supply circuit and the sensor are connected properly after power supply.

yes

Yes

Restore factory default method：
①Double-click the quick recovery method：Turn on the power，press same time【⮌】and 【▼】10slater，when show“HELP-”，The internal setting has been restored to the factory settings。
②Instruction parameter confirmation method：Turn on the power，press【■】，enter“00000”Command selection interface，press【⮌】and 【▼】Change the digital tube display to“00006”，press【■】enter“help-”，press again【■】，to restore the factory settings.

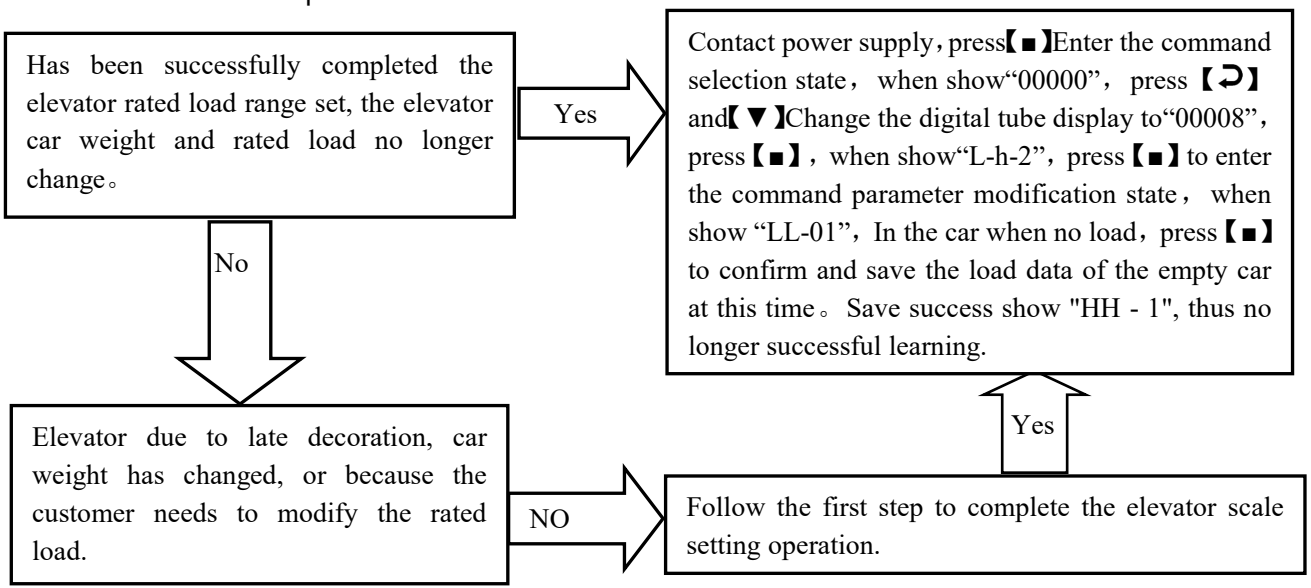
yes

System digital tube normal display，press【■】Set the key to enter the command selection state，When show “00000”，press【⮌】and 【▼】button Change the digital tube display to“00002”After the load range setting command，press【■】，when show“Lc--01”，press again【■】Enter the load scale to modify the state，press【⮌】and 【▼】Change the digital tube display to“1000.0”，press【■】Confirm and save the range of 1000Kg of data。（Example: elevator capacity of 1000kg, that is, the amount of load range set to 100% of the amount of "1000.0" can)

2.Elevator no-load self-learning process：

Attention:①Before the no-load self-learning of the product, there must be no load and debris in the car, otherwise it will lead to a large error in the weighing effect.

② Product no-load - load two points self-learning process, must be "LL-01" to learn no-load, "HH--1" and then load, otherwise it will lead to the product can not be used.



3.Lift the amount of self-learning process：

After successful completion of the no-load self-learning process, add 100% of the load weight to the elevator car when the product "HH-1" is displayed. (For example, this elevator is set to 1000Kg, The weight of the weight of 1000Kg), press the 【■】 key to confirm and save the load data of the car. When the digital display "1000.0", this time shows the car is the actual load value, the flag from the self-learning completion.

No

Due to self-learning misuse (elevator load and weight changes), resulting in digital tube display weight and car load does not match or the error is too large, you need to restore the factory settings, re-self-learning.

yes

yes

Digital display of the current load data, this mark the product from the successful study, into the normal working condition.

Restore factory default method：

①Double-click the quick recovery method：Turn on the power，press same time【↩】and 【▼】10slater，when show“HELP-”， The internal setting has been restored to the factory settings。

②Instruction parameter confirmation method：Turn on the power，press【■】，enter“00000”Command selection interface，press【↩】and 【▼】Change the digital tube display to“00006”， press【■】enter“help-”， press again【■】， to restore the factory settings.

八、Multiplication parameter setting process description (auxiliary function)：

Note: Repeated parameter debugging must be in the product after the completion of Chapter 8 product self-learning process before they take effect. Multiplier parameter adjustment range of "01 ~ 99", that is, the product multiplier for the amount of 1 to 99 times the amount for customers to choose. The product default multiplier parameter value is 1 times the amount of time to restore the factory settings after the product multiplier parameters are restored to the product default multiplier parameter value of the rated load of 1 times.

1.Multiply parameter setting process：

When the system is displayed normally,Press 【■】 to enter the instruction selection state, and when "00000" is displayed； press 【⮌】and【▼】button to change the digital tube display to "00007". "Press 【■】 key to display "bz - c", press the 【■】 key again to enter the command parameter to modify the state, the product digital hanging display "bz-01" (after the two digital display "01" That is doubled.

2.For Example：

Has completed the amount of 1000kg self-learning process of the product, into the normal working condition. At this time digital tube Display "1000.0" for the current car payload value of 1000kg.

According to the above parameter setting process will be multiplied parameter value is set to "bz-05", and successfully saved 5 times Parameter value. At this point the product light load action load value from the original 1000kg * 5% = 50kg also doubled, this When the product in the 1000kg * 5 * 5% = 250kg output light load switch signal. And so on, the load signal and
The load value of the overload signal is also increased by 5 times. The output of the product will also be based on the load of the elevator,Corresponding to 5 times the value of the analog output changes.

System Features

十、Technical Specifications：

1	Application	Suitable for all traction, hydraulic, strong drive elevator use (load range depends on sensor range)
2	Manual revision fine-tuning mode	The learning error can be modified and fine-tuned manually.

3	Sensitivity	Elevator rated load /1000 (2.1kg for 1T load) [This indicator will be affected by the mechanical properties of the elevator]	
4	System Error	≤0.25％(5～40℃)	
5	Non-Linearity	≤0.25％	
6	Output Mode	Programmable 4-way switch signal	①4-channel programmable output modes are: No load, light load,rated load, overload (customer may set the changing range freely) ②Each channel can be programmed as dynamic Close or Open contact ③Contact Capacity：DC/AC 48V/100mA
		Linear analogue	Full compensation range 0～10V;10～0V
7	Ambient Temperature	-20～55℃	
8	Relative Humidity	20%～90％RH	
9	Reaction Time	≤0.25 seconds	
10	Power supply	AC/DC24(±10%)V / 200mA	
11	Installation Place	Load sensor :Above the bearing beam Controller :control Cabinet in machine room	
12	Overall Size	Controller parts：116×90×40 mm3	
13	Display	Display Size：370×120×35mm3	
		Installation spacing：195mm	

：Use of strength exceeding the limit parameters listed above may result in abnormal system operation or permanent damage.

Promise

(1)If this system appears any quality problem of product itself in 1 year after delivery, it will be replaced freely （damage of the product seal will not be dealt with）。

⑵For any requirement of special functions, make it out by mail.

⑶Any system abnormality in adjustment or operation, please contact our company directly.

Other

1. Packing list：EWD-L-MSJ4 Controller 1set

Φ4×40mm *Fastening Screw sets* 4sets

Load sensor according to customer's requirement

User's Guide 1piece

Display 1plece

2.Address Xi'an Excellent Electromechnical Co.,Ltd

ADD:7D，Block A, Olympic Building, 14th Chang An North Road, Xi'an, Shaanxi,China

TEL:**(029)88416613 85565714/8478**

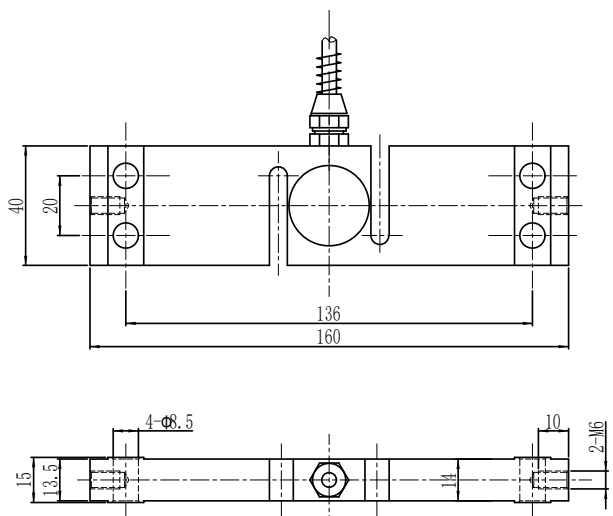
FAX：(029)85565714-886 Postal Code:710061

Technical Support：0086-18092639750 0086-18092639752

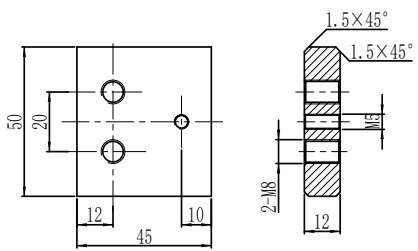
Attached page:

XCL-YL/C sensor size and installation position diagram and installation precautions

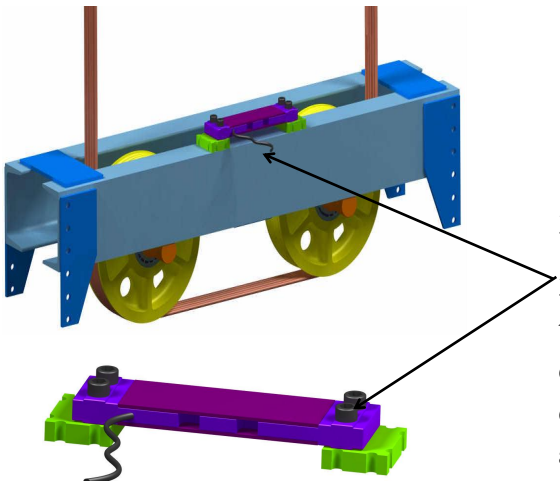
1. Sensor size diagram:



Force transfer plate size：



2.Installation Method：



The green part is welding accessories, tatally 2, each "left , right, back" 2 welding points; The user can weld the Fukien with the load-bearing beam.

3. Precautions for installing the controller and sensor：

3.1 The controller part should be installed in the control box on the top of the car, and it is better not to be close to the elevator electronic weighing device transformer, governor and other equipment. In all cases, sensors and controllers shall be installed away from heat sources;

3.2 "C" type sensor The sensor is installed above the bearing beam, and the connection between the controller is better than 110V, 220V and other power supply in the same wiring slot;

3.3 Connect the sensor wiring port to the PG port of the controller, and connect PV to the power line according to the requirements of the weighing device. Be sure to pay attention to the voltage level;

3.4 Power on the weighing device after the check is correct, and the controller shall be displayed in the corresponding working mode.