EWD-L-MSJ4-X1

User's Guide

(V2.3)

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-MSJ4-X1”The main features of the weighing device:

1. The normal work of the product, the direct display of the car internal payload, And can output to the external large screen synchronous display of internal payload，self-learning process is simple.
2. Intelligent programming and control process, according to different customer needs, It is possible to adjust the percentage of load corresponding to any one of the 4-channel switching signals output by the controller and the output of turn-off/turn-off, and the output simulation The amount of the way to modify.
3. Intelligent sensor equipment: the use of high-precision load intelligent sensor, direct detection of car load changes;
4. Wide measurement range (payload can be manually set according to demand), high positioning accuracy, intelligent temperature compensation.
5. Electrical performance in line with the "International Electrotechnical Commission (IEC)" standard requirements;
6. The core uses high precision load cell and high performance single chip microcomputer. Can set all the working parameters.
7. Unique programmable output signal control mode, suitable for a variety of activities of the car to mention the elevator weighing signal on the demand.
8. With the working parameters of artificial fine-tuning correction ability, the elevator can be modified after the artificial correction, so as to achieve the purpose of accurate measurement.
9. Unique sensor + controller+ display design structure, wiring is simple.
10. Everything from the user point of view, easy to install, easy to debug, reduce the use of additional costs, performance and high cost.

二. “EWD-L-MSJ4-X1”working principle：

With the continuous progress of elevator technology, elevator weighing device on its performance has been to the point where it can not be ignored. Elevator on the weighing device of high precision, high reliability, multi-functional needs are imminent. In the sensor technology and micro-computer continues to develop today, the use of high accuracy sensor to detect the elevator car due to load changes caused by electrical signals.

High accuracy sensor,the use of serial communication technology for its long-distance high-precision non-destructive transmission; sensor comes with 8 ~ 10m signal transmission cable; at the same time,the microcontroller is used to carry out scientific calculation and processing,finally, the payload in the cage can be displayed synchronously on the digital tube of the controller and the large external screen.it can realized the function of weighing the effective load of the elevator car.

三. Controller and load sensor Appearance ：

1. Elevator load weighting device“EWD-L-MSJ4-X1”Controller

Model	**EWD-L-MSJ4-X1**
Elevator load weighting device“**EWD-L-MSJ4-X1**”Controller	

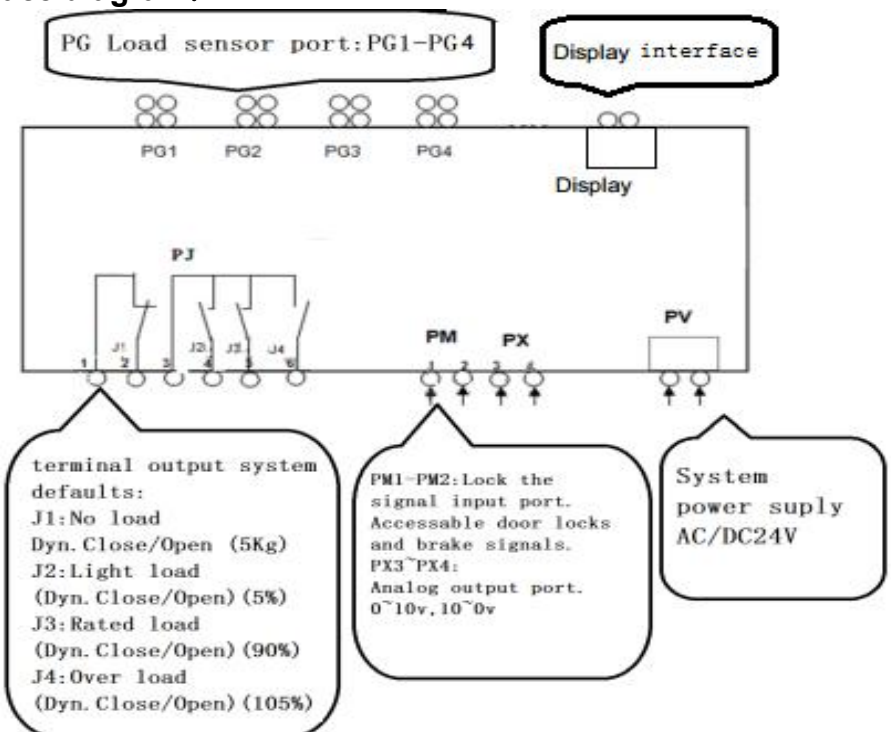
2.LED Large Screen Display

Model	Display	
Physical appearance of the monitor		
Qualification definition	Brown：DC24V+ Blue：COM Black：Signal+ Gray：Gray	Wire Length 6m

3. The appearance and model name of sensor products, Please check the attachment.

四. Controller interface diagram and description:

1. Controller interface diagram:



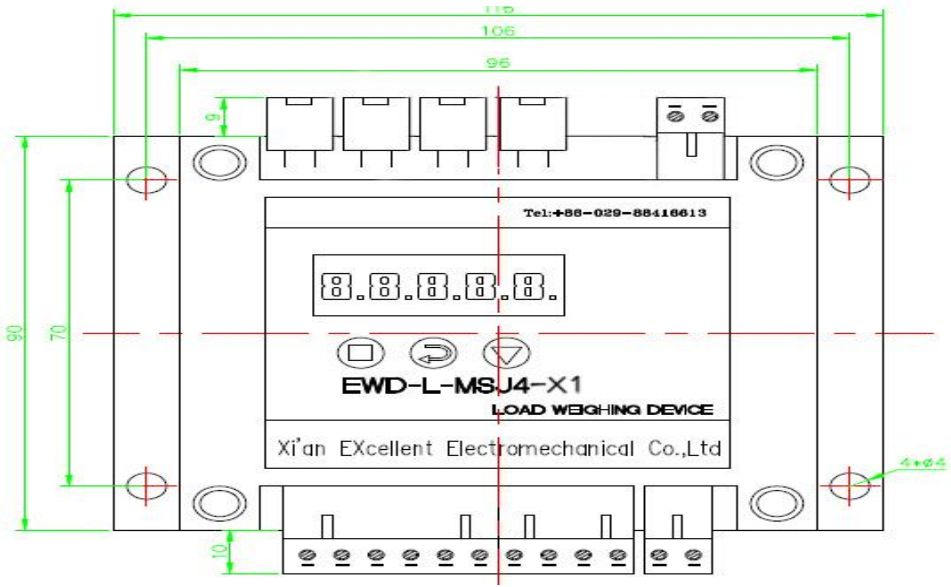
2.Controller port details：

			Function	Explanation	
PJ	Switching	1	J1Relay COM port	With the P2 to produce effective logic	1.Function：Be programmed as“J1～J4”(No load - over load)output signals to participate in elevator logic control. 2.Max loading Capacity：DC/AC 48V/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	Analog	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	PG 1～PG 4	PG is connected with sensor with signal cable		
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:PX and PM port with Polarity requirements and voltage rating requirements)

五、Controller Dimensions：



六、Installation method of sensor and controller：

1.The controller should be installed in the control box on the top of the car, preferably not close to the electric control system transformer, governor and other equipment of the elevator.In any case, the sensor and controller should be installed away from the heat source;

2. The connection between the sensor and the controller should not be in the same wiring slot with 110V, 220V and other power sources;
3. Connect the sensor wiring port to the PG port of the controller, and at the same time, PV can access the power line according to the system requirements. Be sure to pay attention to the voltage level;
4. When the system is powered on after the check is correct, the controller should display the corresponding working mode.

七、Button Function and Instruction Parameter Code Meaning Description：

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)
			BJ3-H	J3 relay moving output, moving together(H)

			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**	**BZ--C**	**BZ-01**	Multiplier parameter setting, multiplied by the amount of 1 times, "01 ~ 99" value corresponding to the amount of 1 to 99 times the amount of adjustable; ★ multiplier parameters to be modified after the completion of self-learning after the completion of confirmation
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**	**l-h-2**	**1000.0**	Fine-tuning the coefficient setting to fine-tune the learning results

八、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-MSJ4-X1 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 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.

①.Check that the sensor wiring is correct;
②.Confirm 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

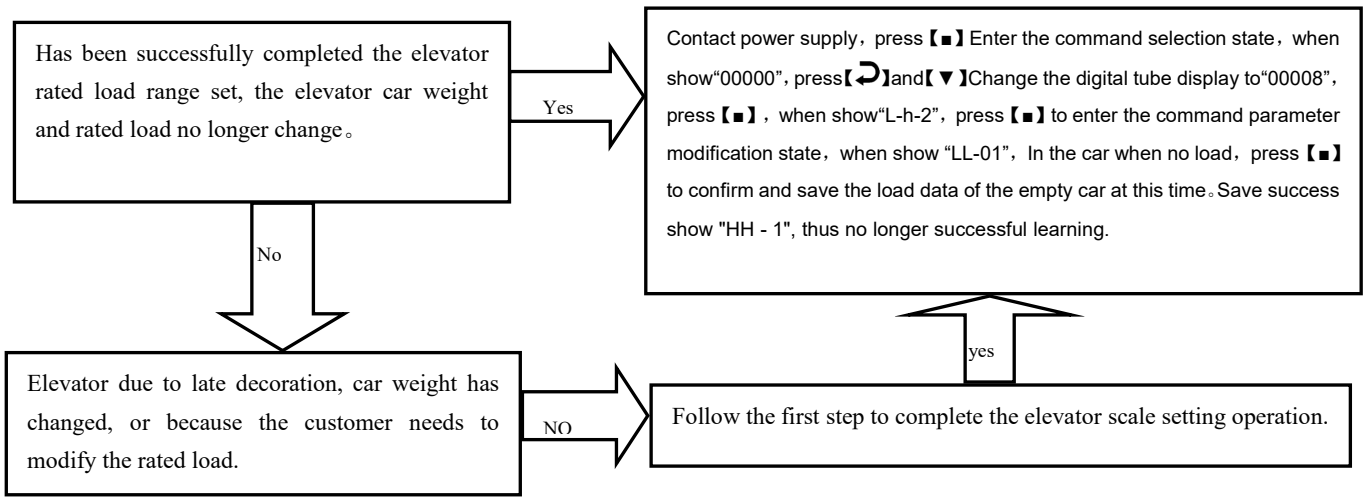
Restore factory default method：
Double-click the quick recovery method： Turn on the power，press same time【⮌】and 【▼】10slater，when show“HELP-”， The internal setting has been restored to the factory settings。
Instruction parameter confirmation method： Turn on the power，press【■】，enter“00000”Command selection 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. **Attention:**① product no-load self-learning before the car must ensure that there is no load and debris, otherwise it will lead to a greater error in the weighing effect.

② product no-load - the two-point self-learning process, must be "LL-01" first study no-load, "HH - 1" retraining, 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

Restore factory default method：

Double-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。

Instruction 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

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

九、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. For example, when the doubling parameter value is "05", the frontal load of the elevator doubles 5 times, and the product output switch quantity and analog quantity will make the corresponding doubling change.) Press the [▼] key to modify the digital tube display to the required increment, press the [■] key to confirm and save the doubling parameter.

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 Suitable for moving car/fixed car bottom elevator

Corresponding to 5 times the value of the analog output changes.

System Features

十、Technical Specifications：

1	Application	①.Suitable for the use of movable car/fixed car bottom elevator. ②.The load is used in (500 Kg ~5500 Kg) traction drive fixed car bottom elevator.(the measuring range of the sensor depends on the traction ratio of the elevator, the weight of the elevator car and the rated load, special instructions are required when ordering)	
2	Floor Compensation	Artificial changes in learning errors and fine-tuning	
3	Sensitivity	Elevator Rated Capacity/1000kg(Example：The rated capacity is 1000 kg, and the sensitivity is 1 kg) [This data may be affected by elevator mechanical performance)	
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 :under movable car platform Controller :control Cabinet in machine room Display: the users in the cage adjust their positions according to their needs	
12	Overall Size	Controller parts：115×90×40 mm3	

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

Promise

⑴If 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

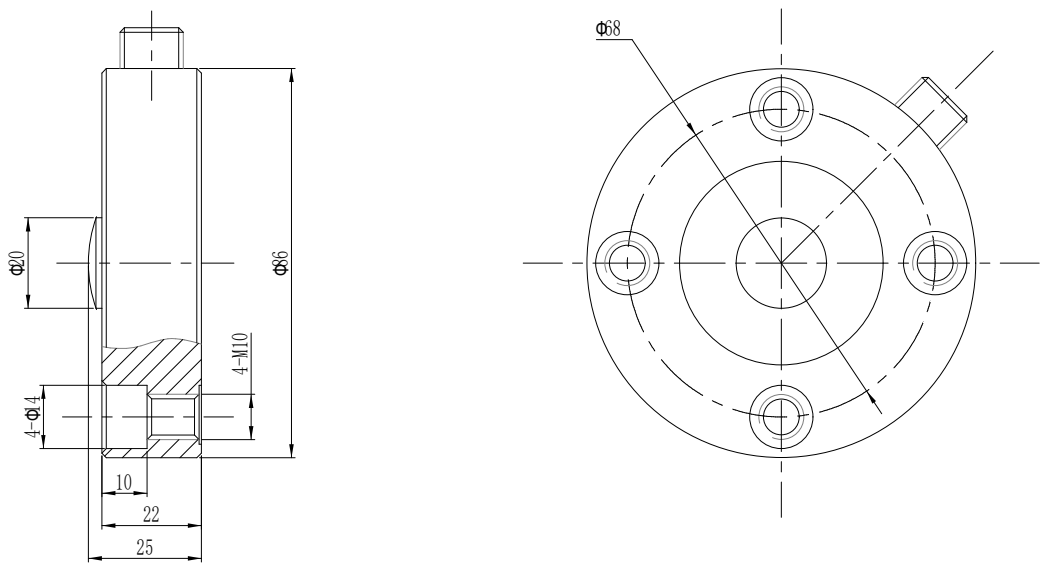
Packing list：	EWD-L-MSJ4-X1 Controller	1set
	Φ4×20mm *Fastening Screw sets*	4sets
	User's Guide	1pcs
	Display	1pcs
	Sensors and accessories	undetermined

Attched document：

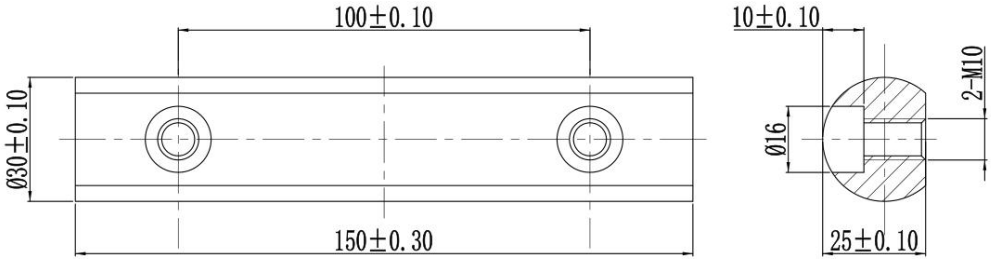
Load sensor dimensions and installation

1. XCL-Y/8625 loading Sensor size and installation method

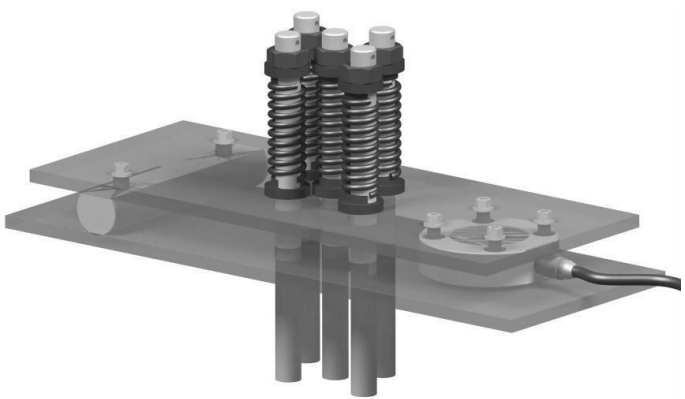
1.1 size (range:12KN、22KN、30KN、40KN、50KN、70KN)



Bar size chart

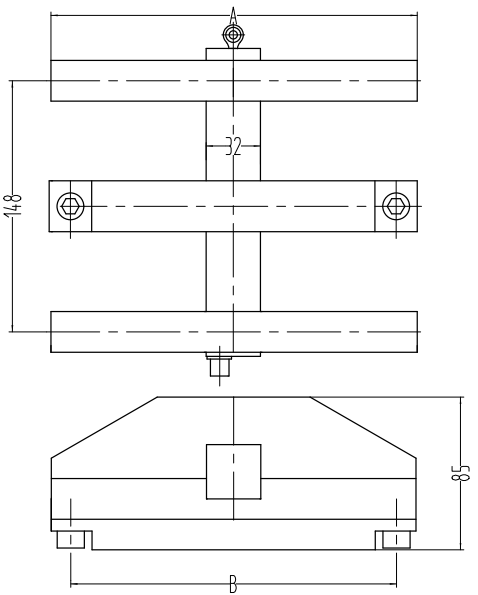


1.2 install method

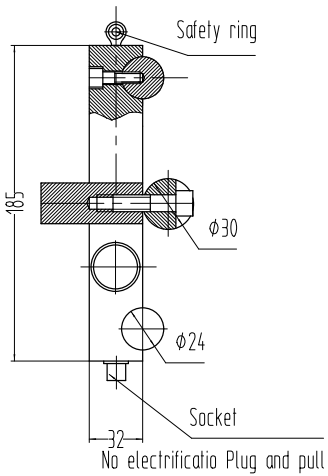


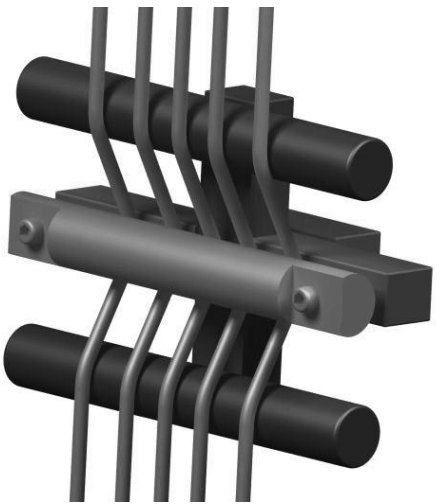
2. XCL-ZL/W Standard character "王" tension sensor size and installation method

2.1 Size of load sensor



2.2 install method

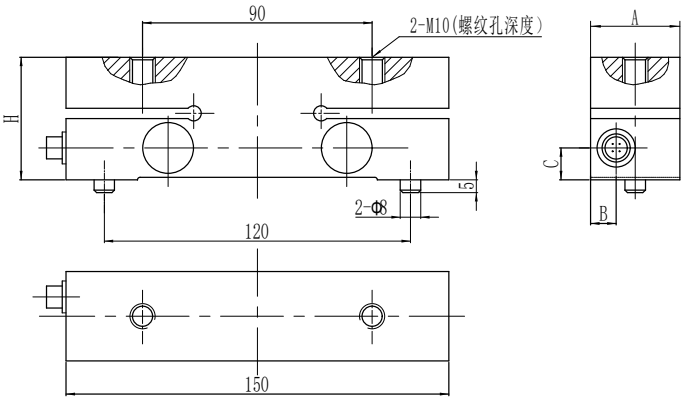




Range	Size	
KN	A	B
20	216	192
50	260	238

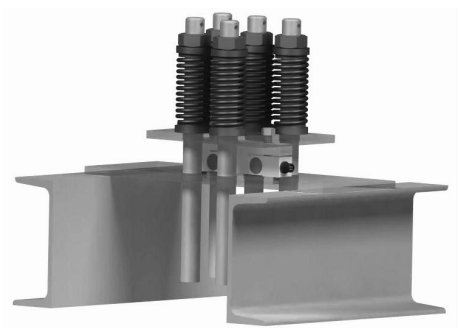
3.XCL-T/A Standard character "一" load sensor size and installation method

3.1 load sensor size



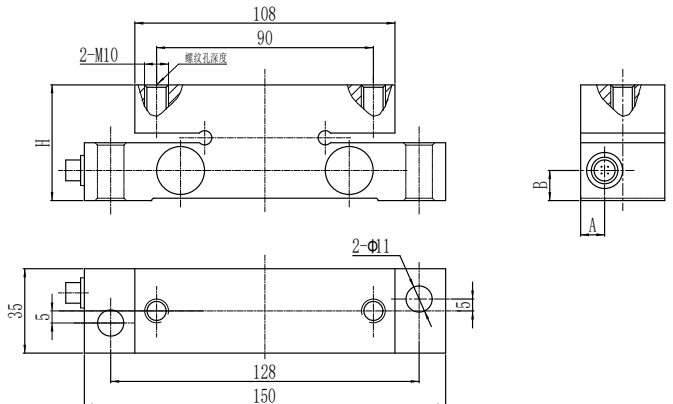
Range	Size				
KN	H	A	B	C	Thread hole depth
10	41	25	8	12.5	Through-hole
15	41	25	8	12.5	Through-hole
20	41	25	8	12.5	Through-hole
30	48	35	10	12.5	Through-hole
50	48	35	10	12.5	Through-hole
70	60	35	8	17	18
100	60	35	8	17	18
150	70	35	8	21	18

3.2 install method



4.XCL-T/B Standard character "—" load sensor size and installation method

4.1 load sensor size

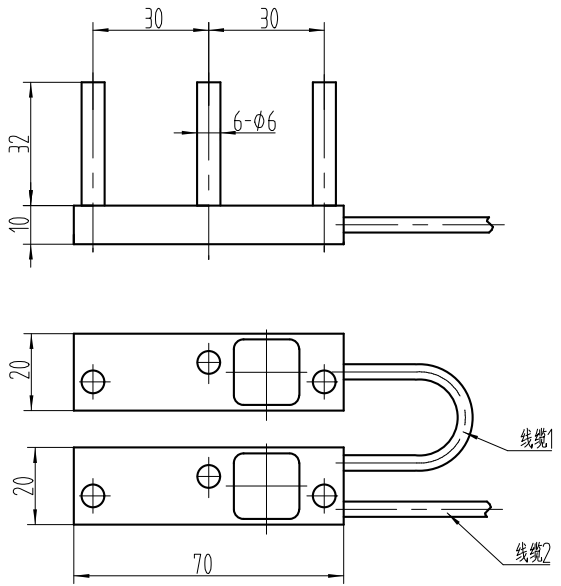


Range	Size			
KN	H	A	B	Thread hole depth
30	48	10	12.5	Through-hole
50	48	10	12.5	Through-hole
70	60	8	17	18
100	60	8	17	18
150	70	8	17	18

4.2 install method

5.XCL-ZL/P2 load sensor dimensions and installation method：

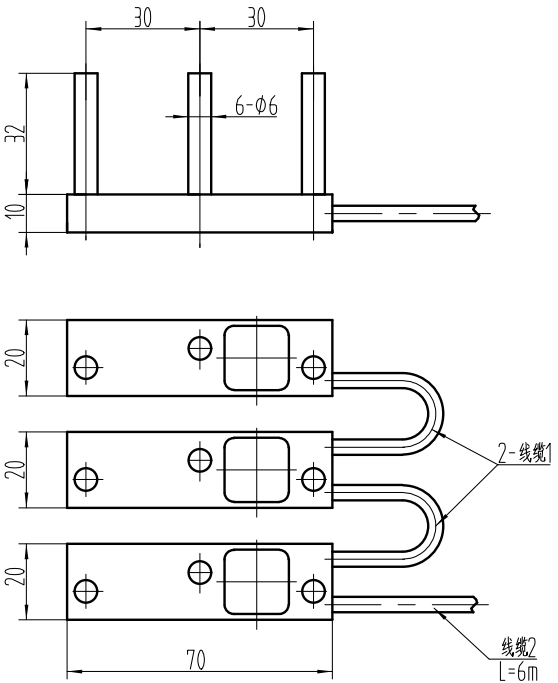
5.1 size（range ： 5KN 、8KN）



5.2 install method

6.XCL-ZL/P3 load sensor dimensions and installation method：

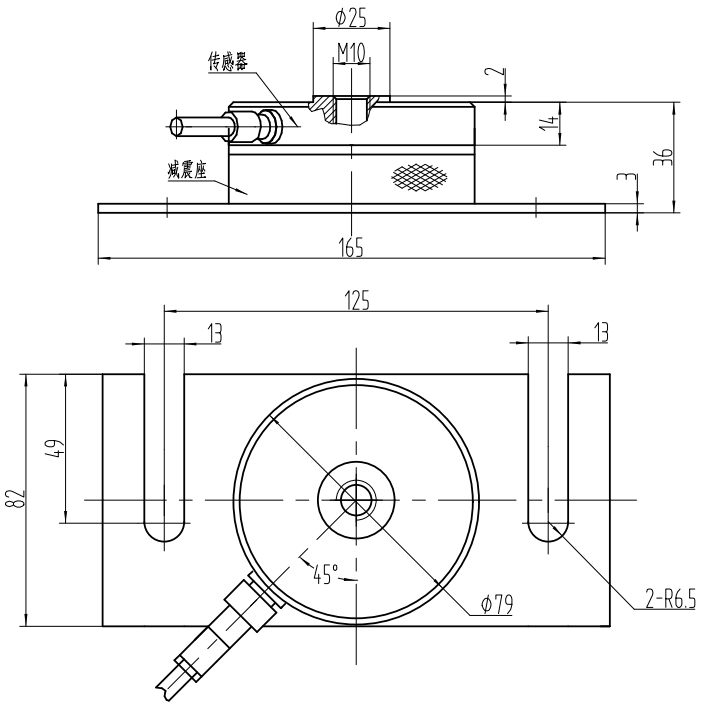
6.1 size（range ： 5KN 、8KN）



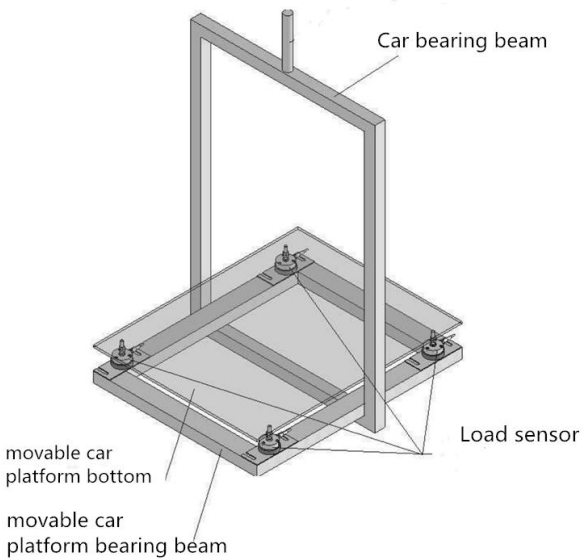
6.2 install method

7.XCL-YH/7910 load sensor dimensions and installation method

7.1 size（range ： 10KN）



7.2 install method



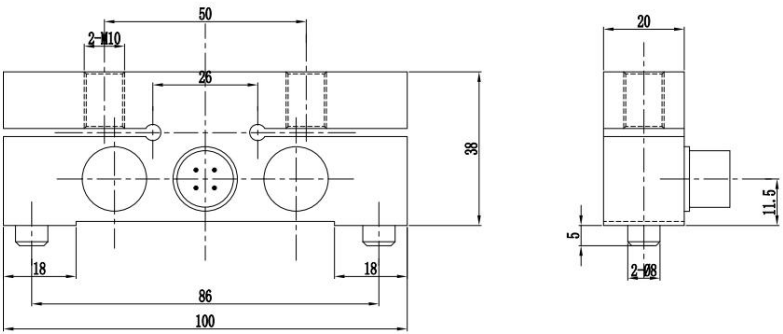
Sensor installation location diagram

Precautions for installing controllers and sensors

1. The controller part should be installed in the control box on the top of the car, and it is best 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;
2.4 Sensors installed at the bottom of the car, and the connection between the controller, it is better not to 110V, 220V and other power supply in the same wiring slot;
3. Connect the sensor wiring port to the PG port of the controller, and connect PV to the power cable according to the requirements of the weighing device. Be sure to pay attention to the voltage level;
4. Power on the weighing device after the check is correct, and the controller should be displayed in the corresponding working mode.

8.XCL-T/A (20) load sensor dimensions and installation method

8.1 size (range : 12KN)



8.2 install method

9.XCL-T/B (20) load sensor dimensions and installation method

9.1 size（range ： 10KN）