EWD-H-XJ3

USER’S GUIDE

(V2.2)

Xi’an Excellent Electromechanical Co., Ltd.

Table of Contents

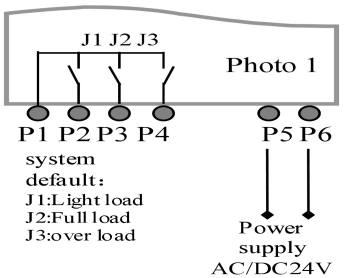
Caution: This system is applicable an elevator with 「**moveable car platform**」.Before use, please read the following content carefully. The Inductive magnet is specially-made rare-earth magnet for this product with strong magnetic force. Special care should be taken during installation. Under no condition should it be away from the high temperature above 100℃ to avoid demagnetizing and the equipment damage and personal hurt from this is beyond our responsibility.

Notice： Our part is just responsible for the products quality in the guarantee period under any condition.

Declaration： Our company reserves the right of changing products for technical improvement and the related technical parameters should be referred to the USER’S GUIDE along with the products.

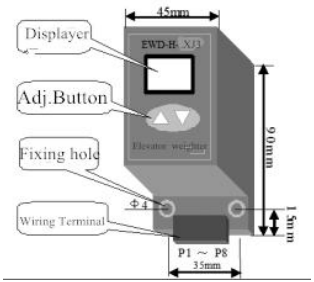
Product Overview

1、 Product Appearance, Interior Structure and Interface Directions:

<table>
<tr><td></td><td colspan="3">EWD-H-XJ3</td></tr>
<tr><td>Appearance</td><td colspan="2"> 
</td><td>Interior Structure</td><td> 
</td></tr>
<tr><td rowspan="5">Interface Directions</td><td>P1</td><td>Com</td><td colspan="2" rowspan="4">Common terminal
J1,J2,J3, is 3 channel Solid State Relay Output</td></tr>
<tr><td>P2</td><td>J1</td></tr>
<tr><td>P3</td><td>J2</td></tr>
<tr><td>P4</td><td>J3</td></tr>
<tr><td>P5
P6</td><td colspan="3">System Power Source：DC/AC24V(±10%) / 150mA
Absolutely not to connect the output terminals of this device except“P5、P6”to exterior power source directly, and the permanent damage from this is beyond our responsibility.</td></tr>
<tr><td colspan="4">1.J1～J3 are interior solid state relays with Max. loading capacity of DC/AC 32V/50mA。
2.To be programmed as “no load～over load”output signal to participate in elevator logic control.</td></tr>
</table>

2、 Exterior Dimensions & Installing Scheme

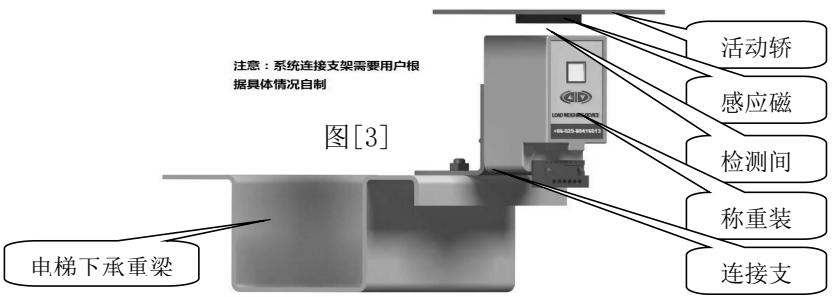
Exterior Dimension



Notice on Installation

1. Install this device as near as possible to the center of elevator car platform or the original place of elevator overload switch. The system should be installed on the bottom bearing beam of elevator car platform with the inductive magnet adhering to the moveable car platform and the marking surface facing to the inductive point of the weighing device.
2. The system supporting frame should be made according to elevator concrete situation with the uneasily deforming material of thickness more than 4mm or with enforcing plate to avoid swaying.
3. Adjust this device so that the car platform magnet aiming to the center point of its upper section. Meanwhile, assure that the section of this device parallel to that of the magnet.

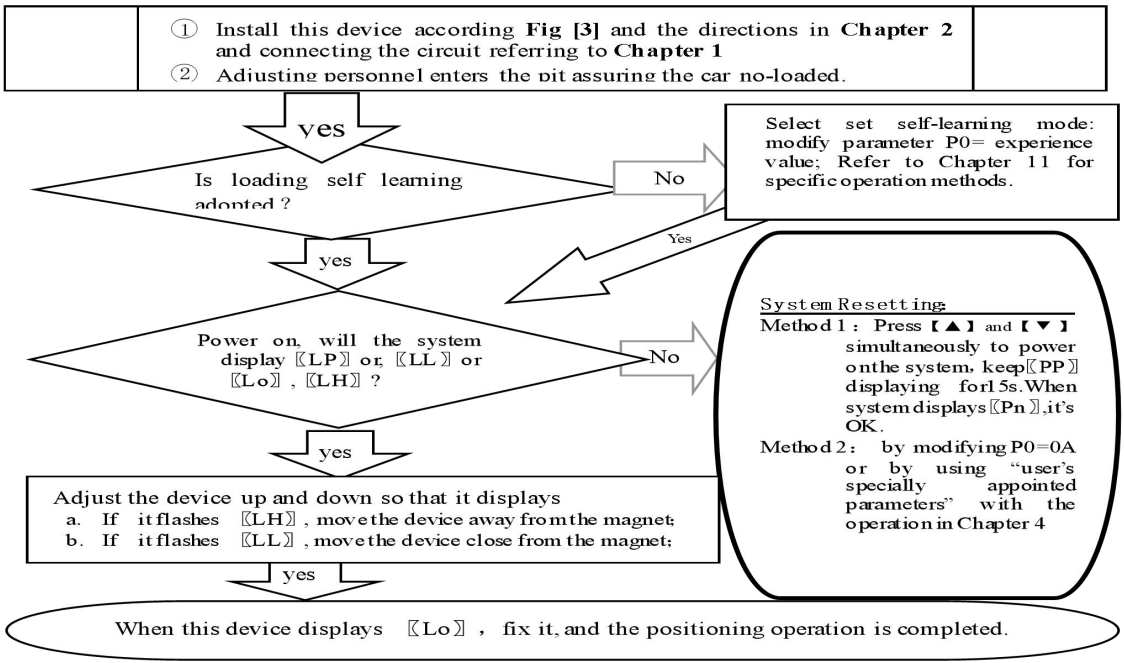
Installing Method



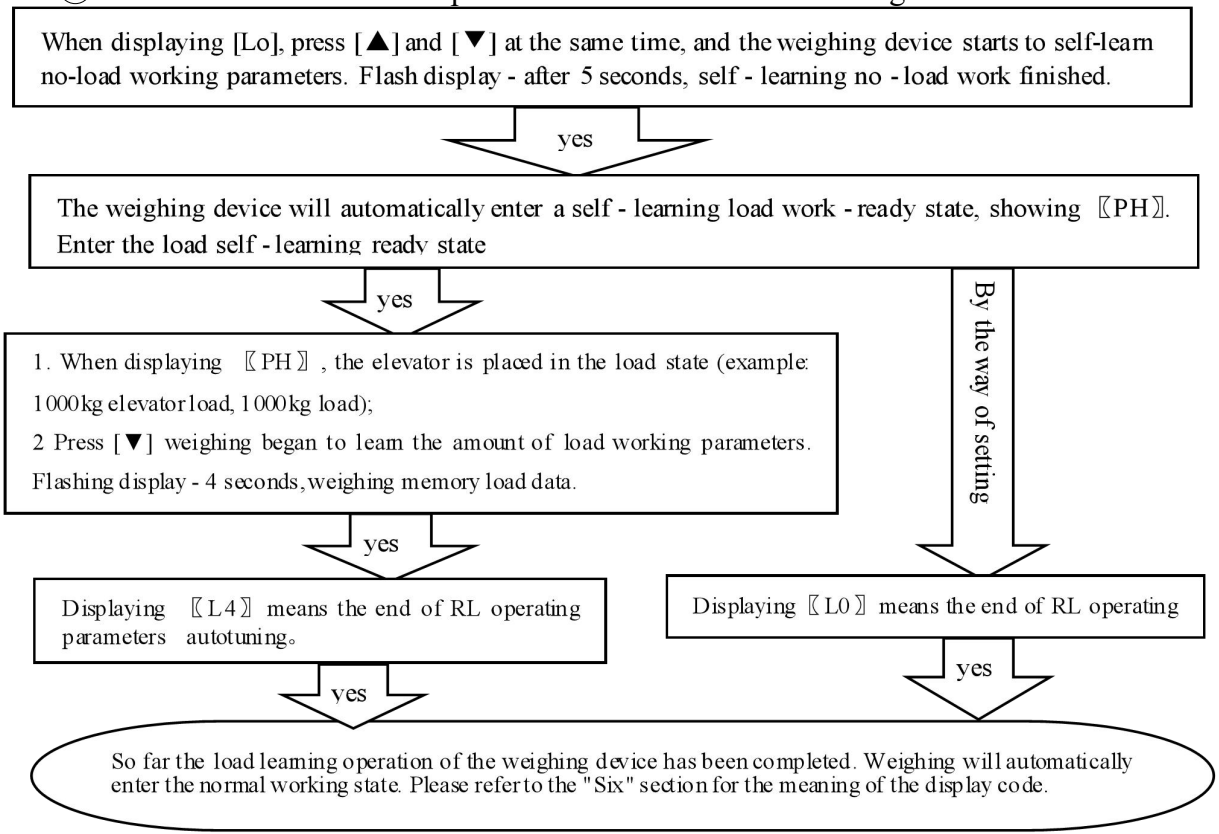
图[3]

3、System Adjustment and Directions

① System Positioning Operation：



② No load and Rated Load Operation Parameters for Autotuning：



③ System Adjustment under other conditions：

For the following reason，it is necessary to modify the operating parameters of this device.

①For elevator car decoration change，the dead weight of the moveable car platform changes；

②The car platform appears mechanical deformation；

③The temperature difference between winter and summer has an unneglecting effect on the elastic coefficient of car platform damping rubber；

④The car platform appears damping rubber appears aging or deforming；

⑤The elevator overruns at the top or at the bottom；

⑥The weighing device becomes slack at the fixing end.

Operation Parameters Adjustment and the Implication

4、 System Operation Parameters Adjustment (Annotation： * represents for a hexadecimal value of "0～9,A～F".)

①Simultaneously press【▲】and【▼】on system control keypad to power on ，this moment〖PP〗will be displayed aglimer, that means entering operation parameters modifying status.

②Release【▲】 and 【▼】buttons，system will display〖P*〗and〖**〗alternately. 〖P*〗is an indication of system operation parameters； 〖**〗is the interior data value of〖P*〗.

③When displaying〖P*〗， press【▼】 ， indication of system operation increases；press 【▲】 ， indication decreases.

④When displaying〖**〗， press【▼】 ， data value increases；press 【▲】 ， data value decreases.

⑤Release buttons，system displays operation indication and configuring data alternately.

⑥To modify other configuring datum, repeat the operation in item 3, item 4, item 5.

⑦At the moment when system displays 〖P*〗，Simultaneously press 【▲】 and 【▼】，system will save modified datum for future use. This moment, system displays〖Pn〗 for 1 second. System operation parameters modification of this time is completed.

Example：Modify parameter P2 to 16；

①Simultaneously press【▲】and【▼】on system control keypad to power on ，this moment〖PP〗will be displayed aglimer, that means entering modifying status.

②Release【▲】 and 【▼】buttons，system will display〖P0〗and〖**〗aglimer

③When displaying〖P0〗, press【▼】 to increasing it to〖P2〗;
④Release button【▼】 , system alternately displays〖P2〗and〖**〗;
⑤When displaying〖**〗, press【▲】 and 【▼】to regulate its value as〖16〗;
⑥Release button, system alternately displays〖P2〗and〖16〗;
⑦At the moment when system displays〖P2〗, Simultaneously press 【▲】 and 【▼】, system will save modified datum for future use. This moment, system displays〖Pn〗for 1 second. System operation parameters modification is completed.

5、Implication of parameter P:

①Directions of Parameter **P0** [System Operation Mode]:

Setting	Explanation	Default Setting	Normal Value
00	Normal Operation	01	00 This value is automatically corrected in the self-learning process of the weighing device
01	Sensor installation positioning, weighing device self-learning no-load and rated-load mode .		
02	Designated weighing device self-learning "no-load" working mode		
03	Designated weighing device self-learning "rated-load" working mode		
04	Select "20% rated-load" self-learning, working mode, convenient users special debugging mode		
25～99 ×0.1mm	For elevator with known “no-load→rated-load”compressing moveable car platform damping rubber pad, it may be set manually. The system may be put into use after system installation positioning. (This adjustment is very convenient for elevator manufacturers. For more detail, refer to Chapter 0.)		

②Directions of Parameter **P1**

Setting	Explanation	Default Setting	User Setting
00	Cascade output mode	00	

③Directions of Parameter **P2** [Light load parameter setting]:

Setting	Explanation	Default Setting	User Setting
00～30	Light load signal output	05	

④Directions of Parameter **P3** [Half load parameter setting]:

Setting	Explanation	Default Setting	User Setting
P2+1～60	Half load signal output	30	

⑤Directions of Parameter **P4**[Full load parameter setting]:

Setting	Explanation	Default Setting	User Setting
P3+1～90	Heavy load signal output	70	

⑥Directions of Parameter **P5** [heavy-load parameter setting]:

Setting	Explanation	Default Setting	User Setting
P4+1～99	Full load signal output	90	

⑦Directions of Parameter **P6** [System overload coefficient]:

Setting	Explanation	Default Setting	User Setting
00～20	Rated load is +(rated load ×P6) %, the overload signal is output.	05	

⑧Directions of Parameter **P7** [Operation Status setting of Solid state relay"**J1**"]:

Setting	Explanation	Default Setting	User Setting
01	Light load action signal output	01(Light-load Dynamic Close)	

⑨Directions of Parameter**P8** [Operation Status setting of Solid state relay "**J2**"]:

Setting	Explanation	Default Setting	User Setting
00～1F	Full load action signal output	04(full- load dynamic close)	

⑩Directions of Parameter **P9** [Operation Status setting of Solid state relay "**J3**"]:

Setting	Explanation	Default Setting	User Setting
00～1F	Over load action signal output	1F(Over load dynamic open)	

⑪ Directions of Parameter **D** [Displacement-expanding Setting]:

Setting	Explanation	Default Setting	User Setting
01	Displacement approach, 10mm effective	01 （Displacement approach mode, 10mm effective）	

Note:① If the setting value is not specified, the weighing device will not work normally.

② During the regular maintenance of the elevator, the self-learning work of the weighing device should be carried out again

Explanation of Displaying Code:

6、System Normal Operation Code: (“W” is the present effective load)

Display Code			Indication	
System displays〖L*〗	L0	No-load car	Output No-load signal	No-load：00≤W≤Rated-load×P2%
	L1	Light-load car	Output Light-load signal	Light-load：No-load <W≤Rated-load×P3%
	L2	Semi-load car	Output Semi-load signal	Semi-load：Light-load <W≤Rated-load×P4%
	L3	Heavy-load car	Output Heavy-load signal	Heavy-load：Semi-load <W≤Rated-load×P5%
	L4	Rated-load car	Output Rated-load signal	Rated-load ： Heavy-load <W≤Rated-load + Rated-load×P6%
	LF	Over-load car	Output Over-load signal	Over-load：W> Rated-load
① Press and hold the [▲] button, if the weighing device displays [4.7], it means that the maximum compression deformation of "no-load to rated-load" at the bottom of the elevator car is "4.7mm", which can be memorized by the user for future use; ② Press and hold the [▼] button weighing device will display the load variable of the current moving car bottom. If shown, [1.2] indicates that it has been compressed by "1.2mm" since "no load".				
For user to save： the code of this elevator				Rated-load compression variable:mm

7、Code for Other Operation and Failures

	Display Code	Indication	Solution
1	YS	System Startup	
2	Pc	System Resetting	
3	PP	Get into the status of operation parameters modification	
4	PL	Self-learning no-load parameter (static display indicates ready state, flashing display indicates complete detection)	

	Display Code	Indication		Solution
5	PH	Self-learning rated-load parameter (static display indicates ready state, flashing display indicates complete detection)		
6	LL	Installation and positioning	Too big Positioning	Move this device closing to the magnet
7	LH		Too small Positioning	Move this device away from the magnet
8	Lo		Accurately Position	
9	LP		Interior Auto Correction	
10	P*	System Configuration Indication		
11	Pn	Saved		
12	EA	Saving Failure		Modify the operation parameters
13	EJ	Without this system setting		Check system setting value
14	ED	Car platform deformation deficient		Affirm elevator in the condition of rated load
15	EC	Car platform deformation overflowing		Damping rubber is too soft，adjust PD
16	EH	Incorrect installation place of the magnet		Check the magnet installation place
17	EL	Incorrect installation place of the magnet		Check the magnet installation place，pay special attention to polarity and distance.

How to do?

8、Brief Analysis of Other Conditions：

①After installation of this weighing device, weighing signal changes in the course of operation？

The elevator load output value is not held after elevator starts, adjust the relative items of the inverter and controller.

②After long-term of operation, system no load zeroing point appears larger deviation？

May be caused by the reason described in section 3,Chapter 3. Set system Autotuning mode to calibrate again

③After the elevator weighing is changed from heavy load to light load, heavy load signal is still displayed？

The movement of the moveable car platform is blocked, it is not reset after pressing. Solute the relevant mechanic problems.

④System output signal doesn't change linearly along with the change of load？

Check the structure of the moveable car platform，pay more attention that there should only be one pair of damping rubber or spring

moving relatively to the moveable car platform.

⑤During the system operation, analog output is abnormal or system resetting or speed-regulator cooperation is abnormal?

It may be caused by system power source series interference. Select another group of power to supply the system, or to provide an exterior power of AC/DC 24V/300mA to supply.

9、How to set an elevator with known "no-load→rated load" compression deformation?

For example：The max "no-load→rated load"compression deformation of this elevator is 5.8mm.

Operation

1.Modify"P0=58"and save it. Refer to chapter 5；

2.After system restarting,〖LP〗is displayed. Wait until〖LL〗,〖Lo〗or〖LH〗 is displayed；

3.When the car is empty， adjust system installation position to make it display〖Lo〗， fasten it；

4.When〖Lo〗is displayed，press【▲】and【▼】simultaneously，system begins to autotune no-load operation parameters；

5.After〖PL〗is display aglimer for 5 second, the whole process of autotuning is finished.

10、How to do Re-Autotune operation for system?

Method 1：Simultaneously press【▲】and【▼】on system control panel to power on. This moment, system aglimmer displays〖PP〗and 〖P-〗.Keep 15 seconds，system will display〖Pn〗.On that occasion，all operation parameters reset to default settings.

Method 2：Modifying parameter P0=0A or user specified operation code will reset system immediately to default status. But for users with specified code. The method is mentioned in Chapter 5.

11、How to modify output status of a system after autotuning is finished?

Modify the corresponding controlling parameters of parameter P respectively. The method is mentioned in Chapter4.and 5.

12、How to adopt 20% rated load for rated load autotune?

Modify P0=04. After〖Lo〗positioning and no-load〖PL〗autotuning，in the period of system displaying〖PH〗，load 20% of the rated load，press【▼】，system displaying 〖L1〗means the end of adjustment. This is an auxiliary method when 100% autotuning can be done.

13、The compression of car damping rubber exceeds the sensor inspection range?

Before autotuning, be assure to select "PD"="02/03"and save it. Then, readjusting the installing position of the sensor is OK (See parameter PD for more details).

14、On adopting operation of “load increasing，displacement aloofing” method?

Before autotuning, be assure to select “PD”= “1*” and save it. Then, readjusting the installing position of the sensor is OK.

System Characteristics

15、Working principle of “EWD-H-XJ3” elevator weighing device

With the development of elevator technology, the influence of elevator weighing device on its performance has reached a point that cannot be ignored. Elevator weighing device of high precision, high reliability, multi-function demand is imminent. With the continuous development of sensor technology and microcomputer, the high precision Hall sensor is used to detect the displacement change of elevator car bottom due to the load. At the same time, the single chip microcomputer is used to carry out scientific calculation and processing, so that the device can realize the function of weighing the elevator car payload.

16、Main property

⑴ Working in a contactless and inductive way. No mechanical movement. Solid-state relay outputs. Being directly installed in the original place of overloading switch. No necessity of changing the mechanism of elevator car.

⑵ The whole system is designed in the waterproof structure with small overall size, easy installation and adjustment and simple structure.

⑶ Wide induction range, high accuracy positioning, intelligent temperature compensation making the range of operating temperature wider.

⑷ The inner core consists of Hall sensor of high accuracy and single-chip microprocessor of high efficiency. All parameters may be set on the field.

⑸ Adopting strong inductive magnet, improving the anti-interference capability of the system to the utmost.

⑹ Each set of products undergo a rigorous aging process to ensure reliable work.

(7)System based on mathematical equations for scientific computing, automatic detection error correction

⑻ On-site adjustment is easy, either by autotuning or by manual displacement setting.

(9) The independent development of the programmable output signal control method can be used for all kinds of traction elevator with moveable car platform.

17、Technical specifications:

1.	Application		Being applicable to all moveable car platform elevators，with an auto inspection range of (2.00mm ≤car platform movement≤10.00mm)；manual setting displacement range 2.5～9.9mm (relate to parameter PD)	
2.	Sensitivity		Elevator rated load/200 (With the rated load of 1T, it is 5.0Kg)	
3.	System Error		≤1.5%(-20～55℃)	In the whole temperature range≤3.0%
4.	Non-Linearity		≤1.0%	
5.	Output Mode：	Solid-state Relay	Programmable universal signal	①3/5 channel programmable output modes are: No load, light load, semi full load, heavy 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 32V/15mA。
6	Working Temperature：		-20～55℃	
7	Relative Humidity：		20%～99%RH	
8	Reaction Time		≤0.25 Seconds	
9	Power Supply：		AC/DC 24(±10%)V / 150mA	
10	Installation Place：		Moveable car platform of elevator	
11	Overall Size：		45×45×90 mm3	

: The intension exceeding the limit parameters listed above may result in the abnormality or permanent damage to the system.

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）。

(2)For any requirement of special functions, make it out by mail.

(3)Any system abnormality in adjustment or operation, please contact our company directly.

Others

1.Accessory　Instruction Manual　1 piece　Fixing Screw set ϕ4*20　2 sets

Inductive magnet [20×20×4mm^3]　1 piece

2.address book：

☎ 029-88416613 85565714/8478　7D，Block A, Olympic Building, 14th Chang An North Road, Xi'an

🖷 029-85565714-886　✉ 710061

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