EWD-H-XJ3

USER'S GUIDE

(V1.5)

Xi'an Excellent Electromechanical Co., Ltd.

Table of Contents

Product Overview	1、Product Appearance, inner structure and interface directions	……	**Page 2**
	2、Exterior dimensions and installing diagram	……	**Page 5**
Installation & Adjustment	3、System Adjustment and directions	……	**Page 6**
Implication and Adjustment Method of the Operation Parameters	4、System Parameters Adjustment	……	**Page 9**
	5、Explanation of the Meaning of Parameter **P**	……	**Page 10**
Indicating Code Explanation	6、Explanation of System Normal Operation Code	……	**Page 15**
	7、Explanation of other displaying	……	**Page 16**
How To Do?	8、Brief introductions of conditions	……	**Page 17**
	9、How to do setting adjustment of an elevator with the known "no load→rated load" compressing deformation?	……	**Page 17**
	10、How to repeat the **Autotune** operation for the system?	……	**Page 18**
	11、How to modify the system output conditions after **Autotune**?	……	**Page 18**
	12、How to Obtain the Product Version Code?	……	**Page 18**
	13、Further Explanation of EWD-H-SJ3 multi-function terminals "P5、P6"	……	**Page 18**
	14、How to do Rated Load **Autotune** by adopting 20% rated load?	……	**Page 19**
	15、Compression of car damping rubber exceeds sensor detecting range	……	**Page 19**
	16、On the adoption of the method "load increasing, displacement aloof "	……	**Page 19**
System Characteristics	17、 Working principle of "EWD-H-J3/J5/SJ3" elevator weighing device	……	**Page 19**
	18、Main Properties	……	**Page 19**
	19、Technical Items	……	**Page 20**
Promise		……	**Page 21**
Others		……	**Page 21**

Caution: This system is applicable an elevator with 「**moveable car platform**」. Before use, please read the following content

carefully.

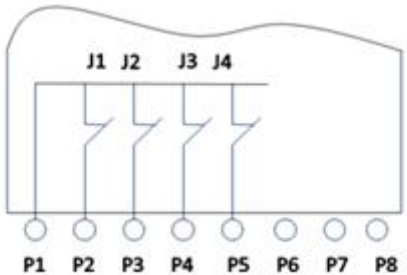
The Inductive magnet is specially-made rare-earth magnet for this product with strong magnetic force. Special care should be taken during installation. Under no condition should it be away from the high temperature above 100℃ to avoid demagnetizing and the equipment damage and personal hurt from this 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:

	EWD-H-XJ3		
Appearance		Interior Structure	

P1	Com	Common terminal "Com": 2-channel solid-state relay output
P2	J1	
P3	J2	
P4	J3	
P5	*System Power Source:* DC/AC24V(±10%) / 150mA	
P6	Absolutely not to connect the output terminals of this device except "P7、P8" to exterior power source directly, and the permanent damage from this is beyond our responsibility.	

1. J1～J4 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.

2、 Exterior Dimensions & Installing Scheme

Exterior Dimension

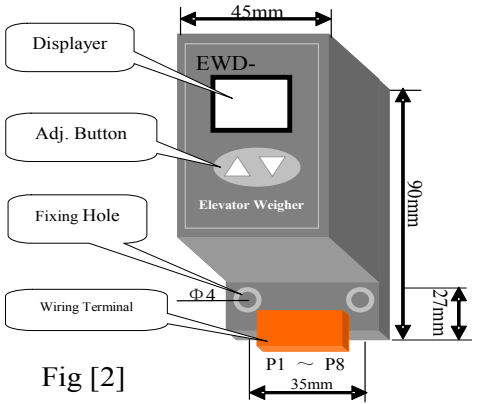
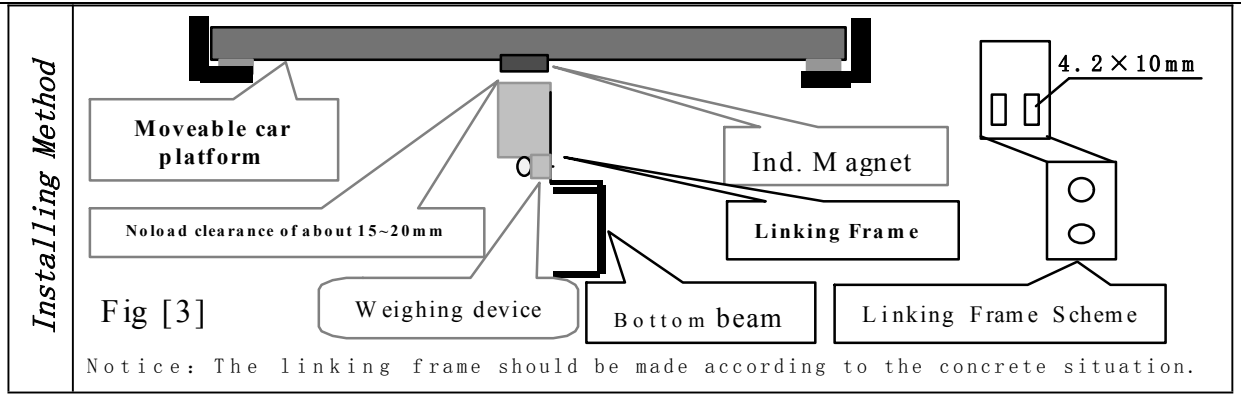


Fig [2]

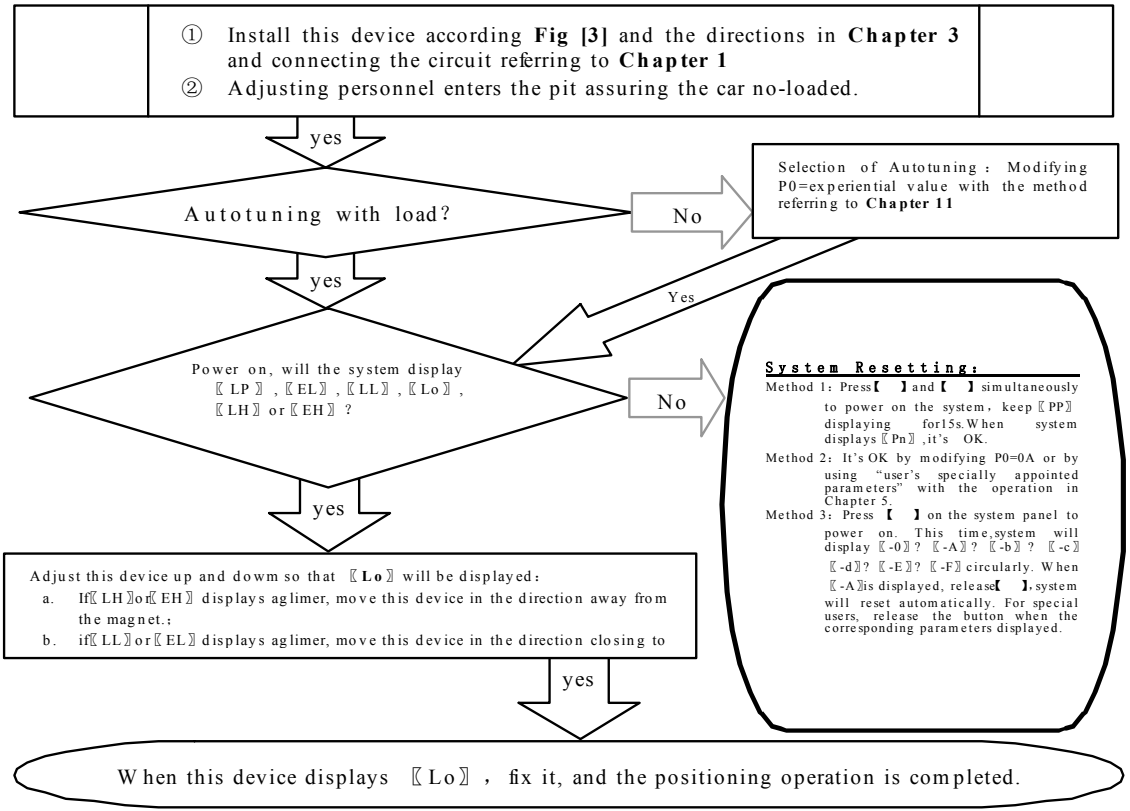
Notice on Installation

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.*

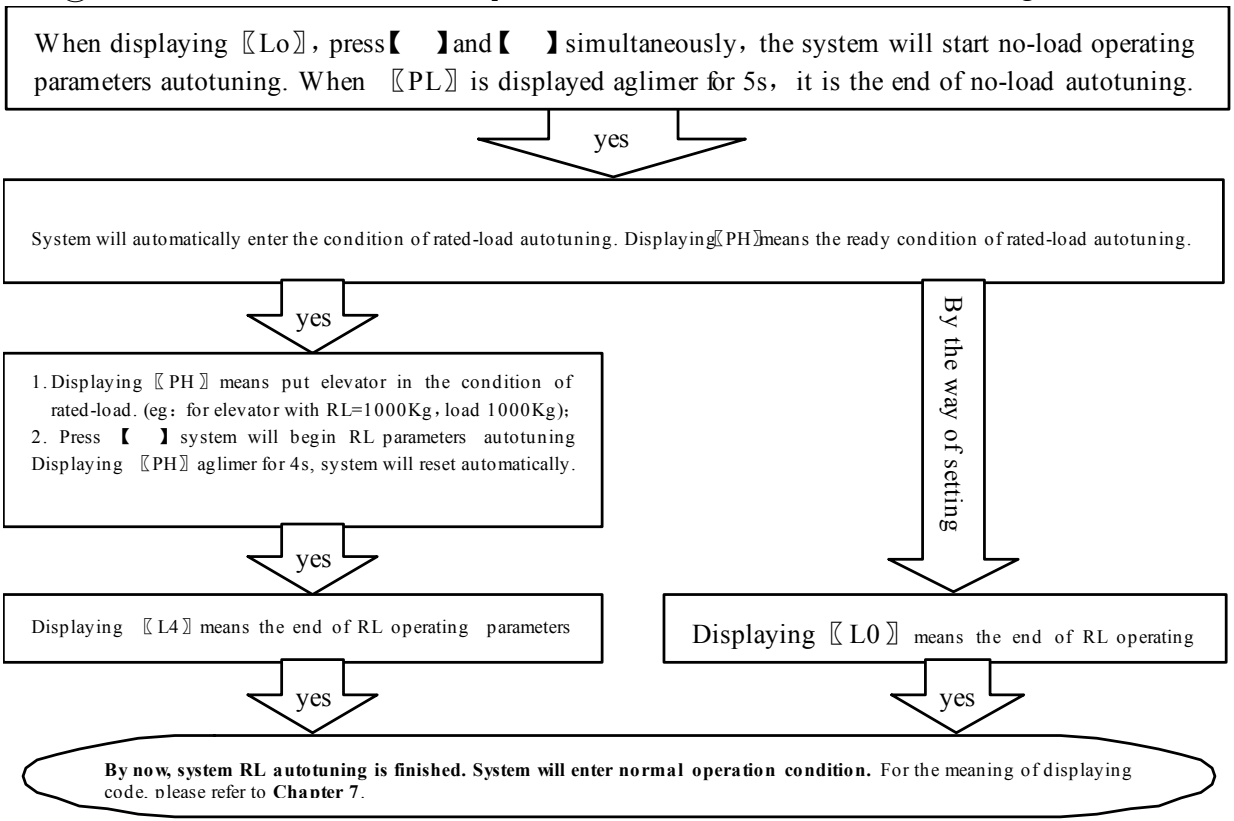


3、System Adjustment and Directions

① System Positioning Operation:


① Install this device according **Fig [3]** and the directions in **Chapter 3** and connecting the circuit referring to **Chapter 1**
② Adjusting personnel enters the pit assuring the car no-loaded.
yes
Autotuning with load?
No
Selection of Autotuning: Modifying P0=experiential value with the method referring to **Chapter 11**
yes
Yes
Power on, will the system display 〖LP〗, 〖EL〗, 〖LL〗, 〖Lo〗, 〖LH〗or〖EH〗?
No
yes
System Resetting:
Method 1: Press【 】and【 】simultaneously to power on the system, keep〖PP〗displaying for15s.When system displays〖Pn〗,it's OK.
Method 2: It's OK by modifying P0=0A or by using "user's specially appointed parameters" with the operation in Chapter 5.
Method 3: Press【 】on the system panel to power on. This time,system will display〖-0〗?〖-A〗?〖-b〗?〖-c〗〖-d〗?〖-E〗?〖-F〗circularly. When〖-A〗is displayed, release【 】,system will reset automatically. For special users, release the button when the corresponding parameters displayed.
Adjust this device up and dowm so that 〖**Lo**〗will be displayed:
a. If〖LH〗or〖EH〗displays aglimer, move this device in the direction away from the magnet.;
b. if〖LL〗or〖EL〗displays aglimer, move this device in the direction closing to
yes
When this device displays 〖Lo〗, fix it, and the positioning operation is completed.

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 【π】and【θ】on system control keypad to power on , this moment 〖PP〗 will be displayed aglimer, that means entering operation parameters modifying status.

②Release【π】and【θ】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【θ】, indication of system operation increases; press【π】, indication decreases.

④When displaying〖**〗, press【θ】, data value increases; press【π】, 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 【π】and【θ】, 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 【π】and【θ】on system control keypad to power on , this moment 〖PP〗 will be displayed aglimer, that means entering modifying status.

②Release【π】and【θ】buttons, system will display〖P0〗and〖**〗aglimer

③When displaying〖P0〗, press【θ】to increasing it to〖P2〗;

④Release button【θ】, system alternately displays〖P2〗and〖**〗;

⑤When displaying〖**〗, press【π】or【θ】to regulate its value as〖16〗;

⑥Release button, system alternately displays〖P2〗and〖16〗;

⑦⑦At the moment when system displays〖P2〗, Simultaneously press 【π】and【θ】, 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:

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

Setting	Explanation	Default Setting	Normal Value
00	Normal Operation	01	00 This value will be modified in the course of autotuning.
01	Sensor installing positioning, system no-load and rated-load autotuning operation.		
02	Specifying system no-load autotuning operation.		
03	Specifying system Rated-load autotuning operation.		
04	Select "20% rated load" autotuning operation, being convenient for users special adjustment.		
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 10.)		

2.Directions of Parameter **P1**

Setting	Explanation		Default Setting	User Setting
00、01 10、11	0-Stepped output 1-0dotted ourput		**00** Stepped output, short circuit for holding	User do not modify

3.Directions of Parameter **P2** [No-load parameter setting]

Setting	Explanation	Default Setting	User Setting
00～30	When car load≤ rated-load×P2%, output no-load signal.	05	

4.Directions of Parameter **P3**[light-load parameter setting]

Setting	Explanation	Default Setting	User Setting
P2+1～60	When car load≤ rated-load×P3%, output light-load signal.	30	

5.Directions of Parameter **P4** [light-load parameter setting]

Setting	Explanation	Default Setting	User Setting
P3+1～90	When car load≤ rated-load×P4%, output semi-load signal.	70	

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

Setting	Explanation	Default Setting	User Setting
P4+1～99	When car load≤ rated-load×P5%, output heavy-load signal.	90	

7. Directions of Parameter **P6**[Semi-load parameter setting]:

Setting	Explanation	Default Setting	User Setting
00～20	Overload triggering value> rated-load +(rated-load×P6)%	05	

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

Setting	Explanation		Default Setting	User Setting
00～1F	Higher Bit: When the status is active: 0—Contact Dyn Close 1—Contact Dyn Open	Lower Bit: 0- Select no-load operation 1- Select light-load operation 2- Select semi-load operation 3- Select heavy-load operation 4- Select rated-load operation F- Select over-load operation	00 (No-load Dynamic Close)	
eg: "P7=02" represents J1 is the dynamic close output of semi-load signal				

9. Directions of ParameterP8 [Operation Status setting of Solid state relay "J2"]:

Setting	Explanation	Default Setting	User Setting
00～1F	The same as the above	02(semi-load dynamic close)	

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

Setting	Explanation	Default Setting	User Setting
00～1F	The same as the above	04(Over load dynamic close)	

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

Setting	Explanation		Default Setting	User Setting
	Higher Bit	Lower Bit	01	

01～03 11～13	0-load increasing, displacement closing. 1- load increasing, displacement apart.	1. Select sensor 0～9.9mm valid; 2. Select sensor 0～19.9mm valid; 3. Select sensor 0～29.9mm valid;	displacement closing , 10mm valid	

Notice: ①Select unindicated setting will lead to system abnormal operation.

②For the variety of the fleeting of elevator no-load point, special care should be taken in the use of PA, PB and PC for No-load auto-zeroing. It is suggested to forbid or to allow this function according to the user's concrete situation.

③Even if auto-zeroing function is in use, autotuning operation should be done again in the course of periodical maintenance.

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
〖**〗(only for EWD-H-SJ3)	0.0～9.9～10 displaying analog voltage %			
〖U*〗 (only for EWD-H-SJ3)	8421 output		*-any value of 0～1F, 0≤*≤parameter "[P1]+1" Displaying 〖♉*〗means the tested value is larger than "0F"	

① Press【π】, system displaying〖4.7〗means the max compression "no load→rated load" of this moveable car platform is "4.7mm".User may save this value for future use.

② Press【θ】, system will display the present moveable car platform load. Displaying〖1.2〗means the compression of "1.2mm" from no load condition.

For user to save: the code of this elevator	Rated-load Compression: mm

7、Code for Other Operation and Failures

	Display Code	Indication		Solution
1	FY	System Startup		
2	Pc	System Resetting		
3	PP	Get into the status of operation parameters modification		
4	PL	Autotuning No load parameters (Static Displaying represents preparative status, twinkling displaying for the end of testing)		
5	PH	Autotuning Rated load parameters (Static Displaying represents preparative status, twinkling displaying for the end of testing)		
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

	Display Code	Indication	Solution
			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【π】and【0】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【π】and【θ】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 Section 6, Chapter 5.

12、How to get the version code of the product?

Press 【θ】to supply power. System displaying 〖L1〗〖20〗〖..〗〖1.2〗means that this product is of V1.2 relatively to **USER' S GUIDE**.

13、More on "P5、P6" multi-function terminals of EWD-H-XJ3:

Lower bit setting of Parameter〖P2〗	Output status of terminal "P5～P6"		
	P5 --- "＋"； P6 --- "－"		
X **0**	Analog	0～10V	For short distance connection, analog torque compensation speed regulation system is required.
X **1**		10～0V	
X **2**	Digital	0～10V	For user' s selection of "**ECW-AL1**" remote transmitting system， analog of 0～1000 meters remote digitally transmitting
X **3**		0～10V	

14、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【θ】, system displaying 〖L1〗means the end of adjustment. This is an auxiliary method when 100% autotuning can be done.

15、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).

16、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

17、Working principle of "EWD-H-XJ3" elevator weighing device

With the constantly development of elevator technology, the impact of elevator weighing device on elevator performance can not be neglected. The requirement of elevator for weighing devices with high accuracy, high reliability and multi-functions becomes extremely urgent. Presently, the progress of sensor technology and microcomputer is ceaseless. With the adoption of highly accurate Hall sensor, the change of displacement along with car platform load can be checked. Meanwhile, with the adoption of single chip microprocessor, scientific calculation can be done, making this device weigh the elevator car load effectively. With the cooperation of ECW—AL1 remote signal transferring device, analog or digital signal can be transferred far away, largely enlarging the user's application range and decreasing the additional cost in the course of use.

18、Main property

(1) 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.

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

(3) Wide induction range, high accuracy positioning, intelligent temperature compensation making the range of

operating temperature wider.

(4) 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.

(5) Having the controllable function of "automatically return-to-zero at no load"

(6) Having the analog voltage output ports, greatly improving elevator performance in coordination with elevator speed regulator.

(7) Having the function of remote digital communication, fulfilling remote data transmitting together with "ECW-AL1".

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

(9) Each set has passed strictly aging treatment to assure reliable operation.

(10) The system is based mathematical equations and scientific calculation, correcting inspection error automatically.

(11) On-site adjustment is easy, either by autotuning or by manual displacement setting.

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

19、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%(5～40℃)	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。
		Elevator load changes from "no load~ rated load", analog quantity: 0～10V linearly changing		
		Remote digital communication, with the cooperation of "ECW-AL1" to relies datum remote transfer.		
6.	Storage Temp.	-25～75℃		
7.	Ambient Temperature:	-20～55℃		
8.	Relative Humidity:	20%～99%RH		
9.	Reaction Time	≤0.25 Second		
10.	Power Supply:	AC/DC 24(±10%)V / 150mA		
11.	Installation Place:	Moveable car platform of elevator		
12.	Overall Size:	45×45×90 mm^3		

: 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 copy Fixing Screw set 2 sets
Inductive magnet [20×20× 4mm³] 1 piece

3.address book:

☎ After-sales service: (029)88416613
📠 7D,Block A, Olympic Building, 8th Chang An North Road, Xi'an
📻 Technical guidance: 18092639750
✉ 710068