ECW-Z1000# { -A / -B / -C

User's Guide

(Version 1.1)

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Caution: This system is applicable an elevator with **fixed car platform**. Before use, be sure to read the following sections carefully.
Note: Under any condition, our part is just responsible for the quality of product in the period of guarantee service.
Declaration: For the reason of technology advancement, our company reserves the right of improving product. As for the relevant technical parameters, Please refer to the technical handbook delivered with the product.

System Overview

1. Product Appearance and Type Nomination:

Install at the rope hitch in machineroom		**ECW-Z1000**		
Application Range		Be applied to elevator of 2:1 drive with the rope hitch in machineroom. There is a 12-meter-long cable with the sensor.		
Controller Appearance		 See figure [2] for detail		
Sensor Appearance				
Product Nomination	**Ordering Type**	ECW-Z1000-A	ECW-Z1000-B	ECW-Z1000-D
	Sensor Type	Select"Disc" type Intelligent Load	Select Character "王" type Intelligent Tension	Select Character "一" type Intelligent Tension
	Detailed Explanation	See [3A.2]	See [3B]	See [3D]

2.Installing Method and Working Principle of "ECW-Z1000"

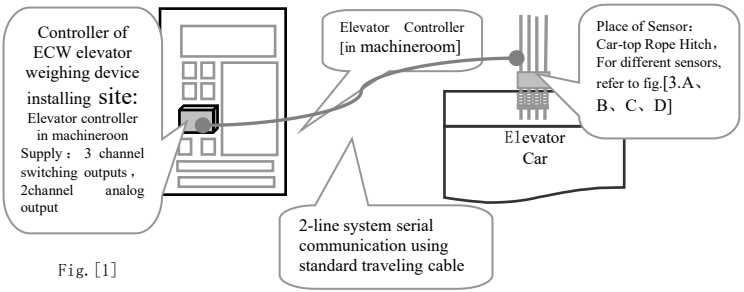


Fig.[1]

system installing position; sensor ECW-Z1000 installed at the rope hitch in machineroom.

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 intelligent "tension" or "load" and "stress" sensors, the electric signal produced by elevator car load changing is tested and inspected. System sensor installed at the traction rope hitch: Type"Z1000": There is a 12-meter-long signal transmitting cable with the sensor. And the single-chip built in the controller may do scientific calculations fulfilling the aim of weighing the effective in elevator car.

3.Illustration of the Appearance of Controller:

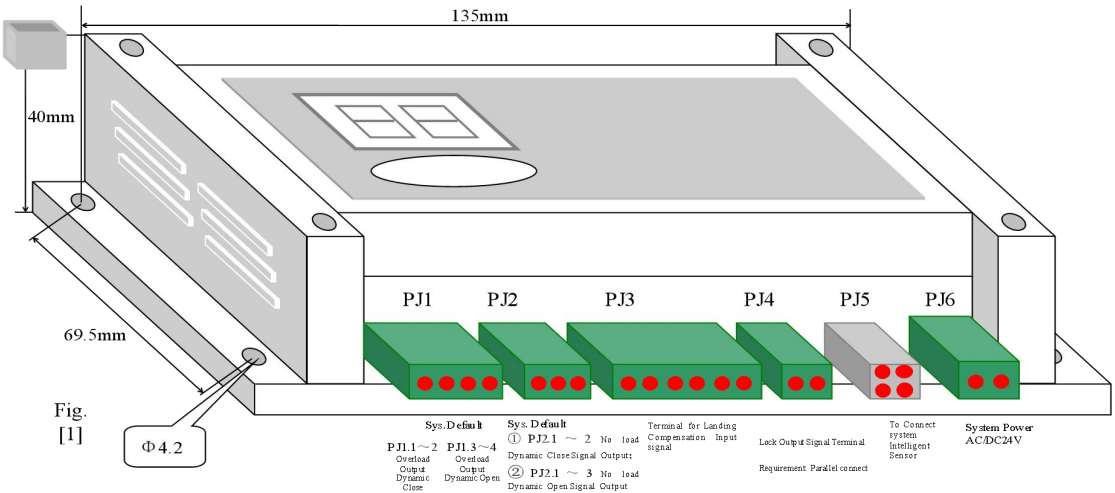


Fig. [1]

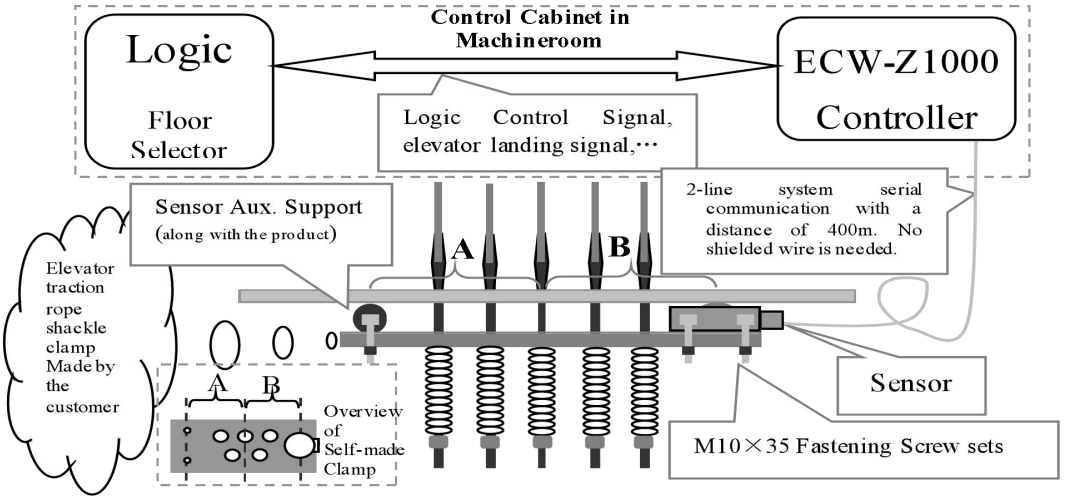
Note：①Hereinafter, Pj1.1 means the 1st place of Pj1 wiring port，successively analogizing. Its arrangement in the control is from left to right. ②The size of the whole set is shown in section 13, charpter 15 in detail.③Terminal wiring is described in section 2, charpter 2.

4. Illustration of the Appearance of Controller and Install Method: (Take Z2000# for example, Z1000# is installed in the same way)

A. Standard "Disc" type Intelligent loading Sensor

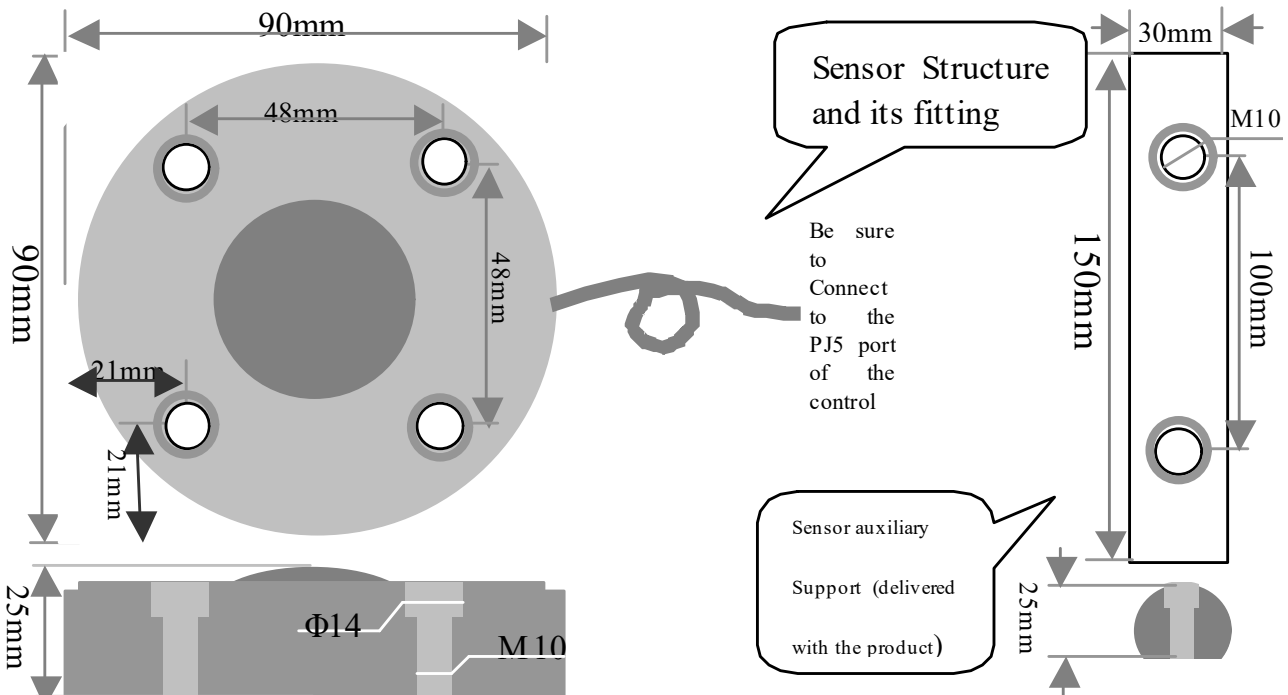
①Assembling Diagram: See Fig. [3A]

Fig. [3A]



Special Explanation on the customer-made rope shackle clamp: ①Based on the concrete condition ; ②The distance between line "A" and "B" in the above figure should be divided equally referring to the center of the traction force;③Assure to fix the sensor and its auxiliary support well with the screw sets along with the system; ④The pull rod through hole should be larger 3~5mm than the original hole for the convenience of the movement of the pull rod.⑤The clamp thickness should not be less than 15mm.

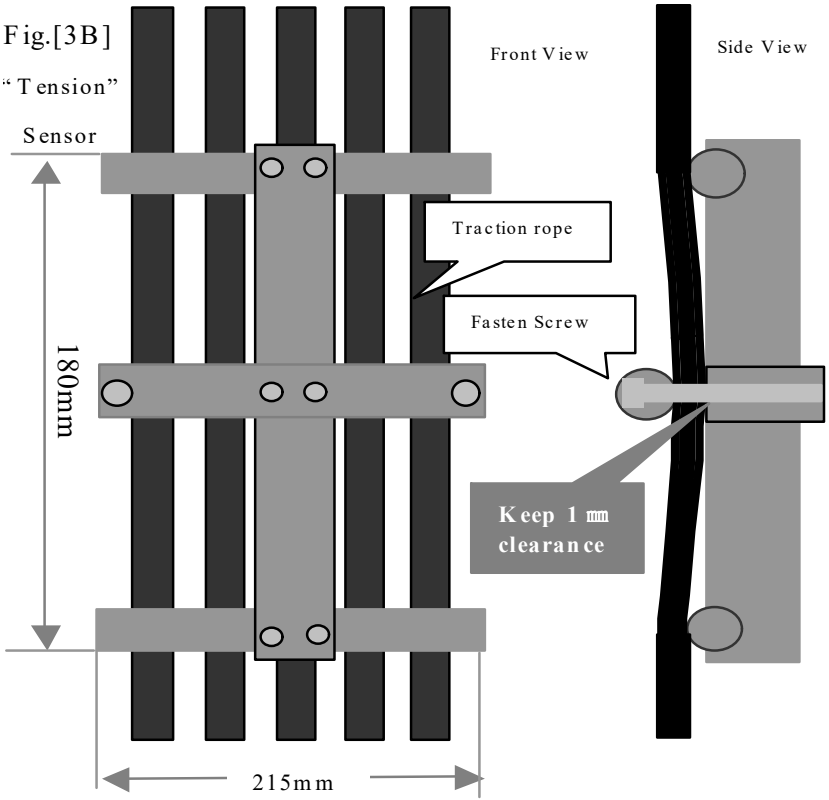
②Appearance and Structure of Z1000# Sensor：See Fig. [3A.2]



B. Standard Character "王" type Intelligent Tension Sensor See Fig [3B]

Fig.[3B]

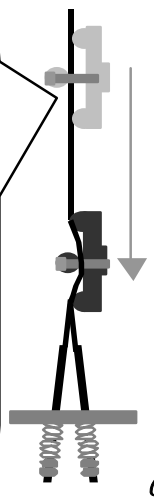
"Tension" Sensor



Explaination

Customer may install according to the concrete condition of elevator, press all traction ropes as tightly as possible to increase the sensitivity of inspection and to reduce the influence of any slacken traction rope on the integral inspection.

Sensor Installing Steps:(Take the underneath rope hitch installation as an example).Primarily fit at a higher place, then pull it down approximately at the place that the elevator overrunning at the top will not damage the sensor. At last, fasten the sensor with the 10# inner hexangular wrench + power-aid rod.



C.

Standard "Convex" type Intelligent Stress Sensor **Just For ECW-Z2000# to Select** See Fig [3C]

"Stress" Sensor Fitting Steps

①Use the **positioning template** supplied by our company to fit the welding positioning accessories referring to the right figure, be assure to fasten all the connecting screw sets.

②Use the welding machine to join the welding accessories to the middle part of the car top bearing beam in accordance with the right figure at the 4 welding spots firmly.

③ After welding，dismantle the **positioning template** and keep it appropriately for future use.

④In the early stage of load weighing device adjustment, stop the car at the bottom floor and install the "stress" sensor well according to the right figure.

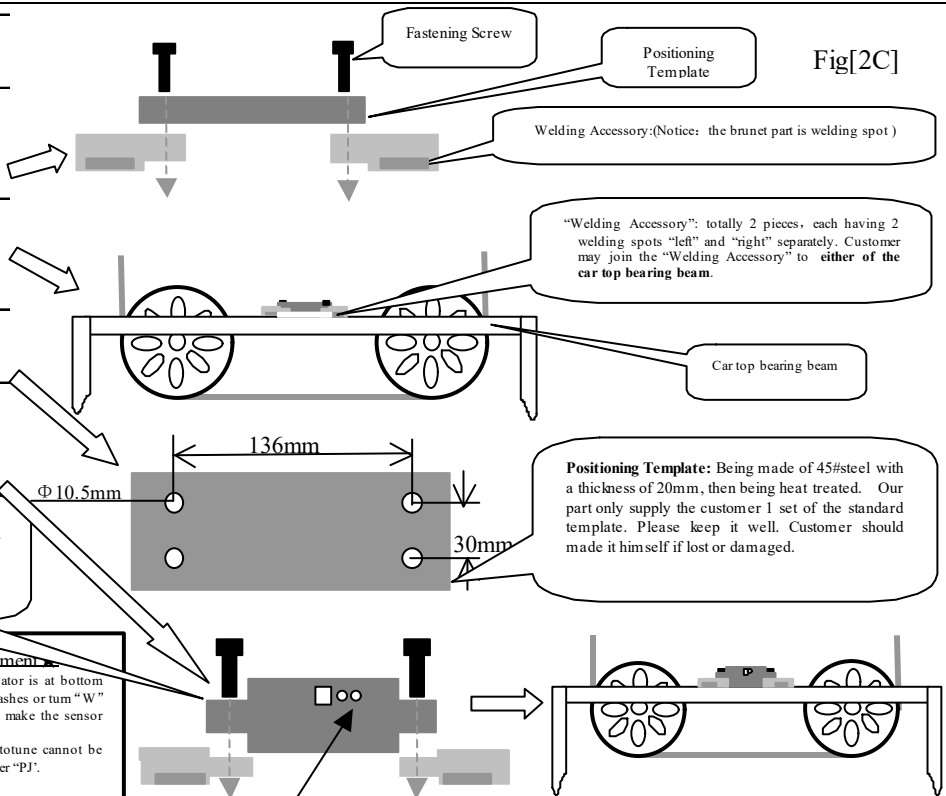


Illustration of Stress Sensor Fitting

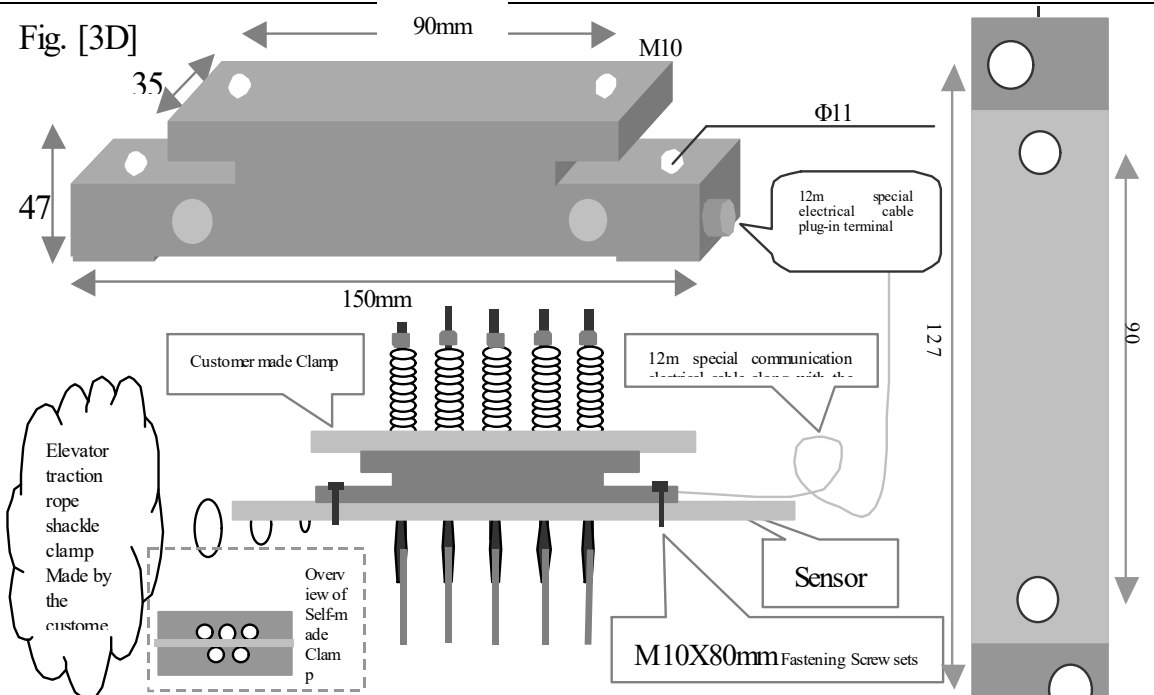
Attentioin：Stress sensor is a component of high precision， take special care in fitting to avoid damaging.

★Attentive Items of Adjustment★

1. When the system is powered on and elevator is at bottom floor, turn "W" clockwise if "Green" light flashes or turn "W" counterclockwise if "Red" light flashes to make the sensor exchangeably flash "Red" and "Green".
2. After No Load Autotune，Rated Load Autotune cannot be done normally, change the value of parameter "PJ'.

D. Standard Character "—" type loading sensor **Just For ECW-Z1000 to Select** See Fig [3D]

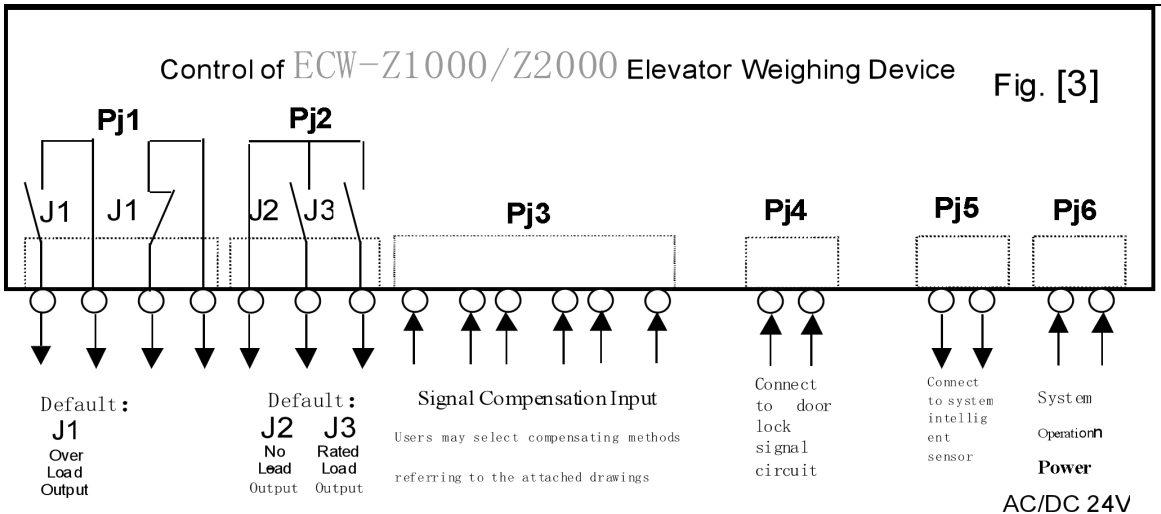
Fig. [3D]



Special Explanation on the customer-made rope shackle clamp:①Based on the concrete condition; ②The pull rod through hole should be larger 3~5mm than the original hole for the convenience of the movement of the pull rod.③The clamp thickness should not be less than 15mm

5. Description of the System Controller Terminals:

Pj1，Pj2，Pj3，Pj4，Pj5，Pj6 are wiring terminals



Detailed Explanation of the Controller Terminals:

	Function			Explanation	
PJ1.1~2	Relay J3	Dynamic Close	Output	System Default: **Overload** Output;	**Max.** Loading Capacity: DC/AC 48V/500mA;
PJ1.3~4		Dynamic Open			
PJ2.1	COM common terminal of Relay J2、J3			System Default of "J1": No load Dynamic Close output;	
PJ2.2	J1 Relay Output Terminal			System Default of "J2": Rated load Dynamic Close output;	

<table>
<tr><td>PJ2.3</td><td colspan="2">J2 Relay Output Terminal</td><td colspan="2">Usage：To be programmed as “No load～Over load”output signal，participating elevator logic control</td></tr>
<tr><td></td><td>Parameter P5=2</td><td>Parameter P5=3</td><td>ParameterP5=4</td><td rowspan="5">1.No wiring means unneeded floor compensation for system. 2.Using this signal, System may do floor-by-floor compensation accurately for elevator to interpolate the floor error caused by the dead weight of cable, wire rope and compensation cable.

3.For this terminal, default input signal is enable for positive skipping，the enabling way of PJ3.1~2、PJ3.3~4 depends on parameter ”PJ”.

4.Enabling property of this terminal depends on parameter P5.For really wiring, see the attached figure.</td></tr>
<tr><td>PJ3.1~2</td><td>Down leveling signal(Up leveling Sensor)</td><td>Signal of Elevator entering leveling zone or door zone</td><td rowspan="2"></td></tr>
<tr><td>PJ3.3~4</td><td>Up leveling signal (Down leveling Sensor)</td><td>Elevator Up traveling Signal</td></tr>
<tr><td>PJ3.5~6</td><td colspan="2">Main Stop Signal with the enabling method decided by high voltage level of parameter P3. P3=“0*”indicates low voltage level enabling.</td><td>For fuzzy compensation method</td></tr>
<tr><td>PJ4</td><td colspan="3">Lock output signal control terminal. Parallel connection in system door lock signal circuit. Note the connecting polarity.</td></tr>
<tr><td>Pj5</td><td colspan="2">Intelligent Sensor Communication Terminal</td><td colspan="2"></td></tr>
<tr><td>Pj6</td><td colspan="2">System Power Supplying Terminal</td><td colspan="2">AC 20～26V / 200mA or DC 24～32V / 200mA</td></tr>
</table>

①Absolutely don't connect the output terminals (except “PJ6”) of this device to the external power source directly and the resulted permanent damage to the device is beyond our responsibility.

②Attention: As for the input signal of “Pj4、Pj3”terminals，a requirement of polarity is needed. Pj3.1、3、5 and Pj4.1 are“+”,and the corresponding circuit voltage should be “DC 12~32V”.

Installation and Adjustment

6. System Construction and Installing Method Schematic Diagram:

①Schematic Diagram of the appearance of the whole set：Controller Section See Fig. [2]

②Sensor Section: “Disc”type See Fig. [3A]；“王”type See Fig. [3B]；“Convex”type see Fig. [3C]；“一”type see Fig. [3D]；

③Schematic Diagram of Character "王" type load sensor installing method See Fig. [3A.1];
④Schematic Diagram of "Disc" type load sensor installing method See Fig. [3B];
⑤Schematic Diagram of "Convex" type load sensor installing method See Fig. [3C];
⑥Schematic Diagram of "一" type load sensor installing method See Fig. [3D];

7.Install Method of Sensor and Controller:

①Adjust traction ropes so that the pull of each rope keeps coincident.

②A. "Disc" type sensor is installed at the place of the elevator- car-side traction rope shackle according to Fig.[3A.1] and Fig.[3A.2] with customer-made shackle clamp plate.

B. **Character** "王" type sensor is installed at the place of the elevator-car-side traction rope shackle according to Fig. [3B] , See explanations in Fig. [3B] for more details.

C. "Convex" type stress sensor is installed in the middle of the elevator-car-top bearing beam according to Fig.[3C], See explanations in Fig. [3C] for more details.

D. Character "一" type sensor is installed at the place of the elevator- car-side traction rope shackle according to Fig. [3D] with customer-made shackle clamp plate.

③ Control Section should be installed in the control cabinet placed in machineroom， being away from equipments such as the transformer, speed regulator of elevator electric control system. Under any condition, sensor and controller should be far away from heat source.

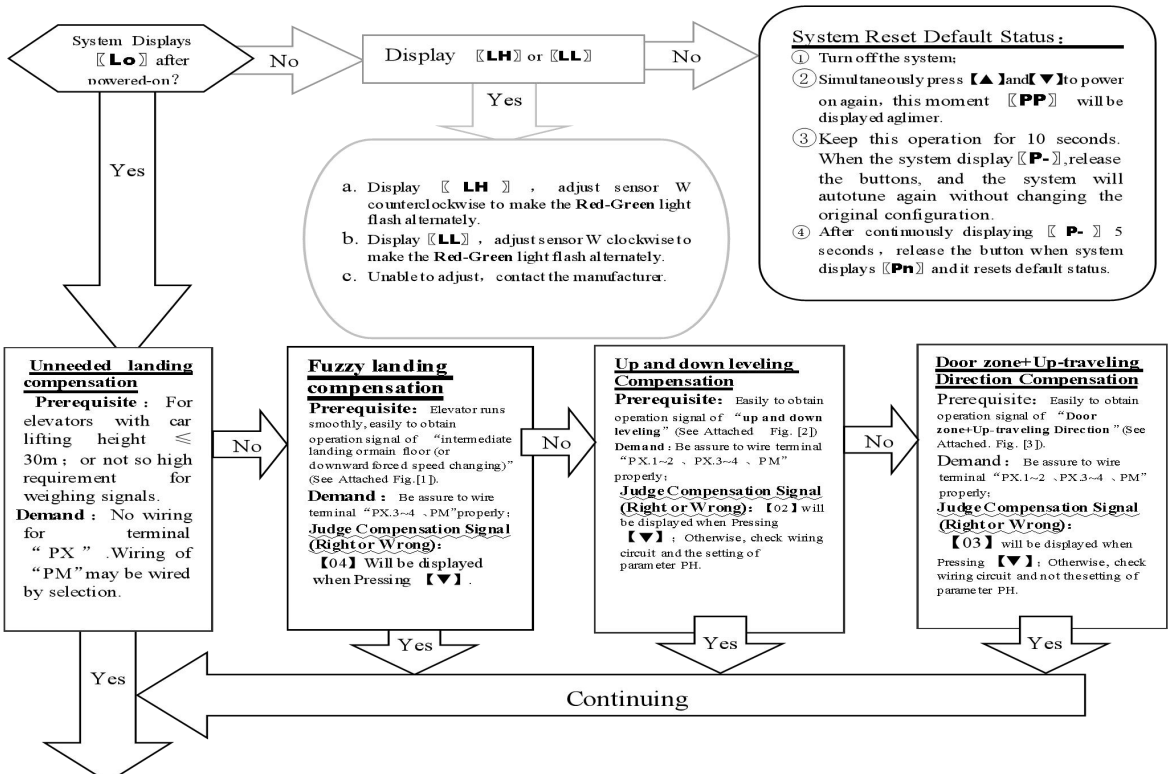
④It would be better not to put the connecting cable between sensor and controller in the same wire duct with dynamic power of 110V or 220V.

⑤Connect the sensor wiring terminal to PJ5 terminal of the control, simultaneously, connect power line to PJ6 according to system requirement. Pay attention to the voltage level.

⑥ When no error is inspected, power on the system and the corresponding operation patterns will be displayed on the control.

8.Adjustment Method and Description of the System (Autotune Operation)

① Initialization: Selection of Compensation Method



② **Lock the dead weight of elevator car:**

Let personnel leave car and car top and stop elevator at the bottom floor leveling position. Then adjusting personnel enters machineroom. When〖Lo〗is displayed on the control, press key【▲】and【▼】simultaneously. When system displays "Pn", test and inspection is completed.

Yes

Use 100% rated load sub-autotuning method?

No

Modifying parameter "P1": P1 = 02: using 20% rated load autotuning method for rated load autotuning.

No

P1 = 03~50: Setting 300~5000Kg autotuning for rated load autotuning. This parameter is just for D "—" type sensor.

Yes

Yes

③. **No load Autotuning Operation Mode:**

Yes

Use "No floor compensation or fuzzy compensation"?

No

Yes

In the period of〖PL〗and〖01〗displaying alternately, press key【▼】.

Yes

① Alternately displaying〖PL〗and〖01〗(PL means effective no-load measuring operation, 01 indicates elevator at bottom floor). After attendant enters elevator car, he must operate to normally run floor by floor. During stopping at each floor, be assure to keep elevator door opening for more than 5 seconds. Hereafter, system automatically save the no-load effective value after the door is closed. This moment, "01" will display aglimer for 1 second. **Note:** In the future operation, the attendant may not be changed ad arbitrium. After autotuning, this system will automatically eliminate the attendant's weight.

② When elevator enters the next upper floor, levels and opens door, the system must alternately display〖PL〗and〖02〗.

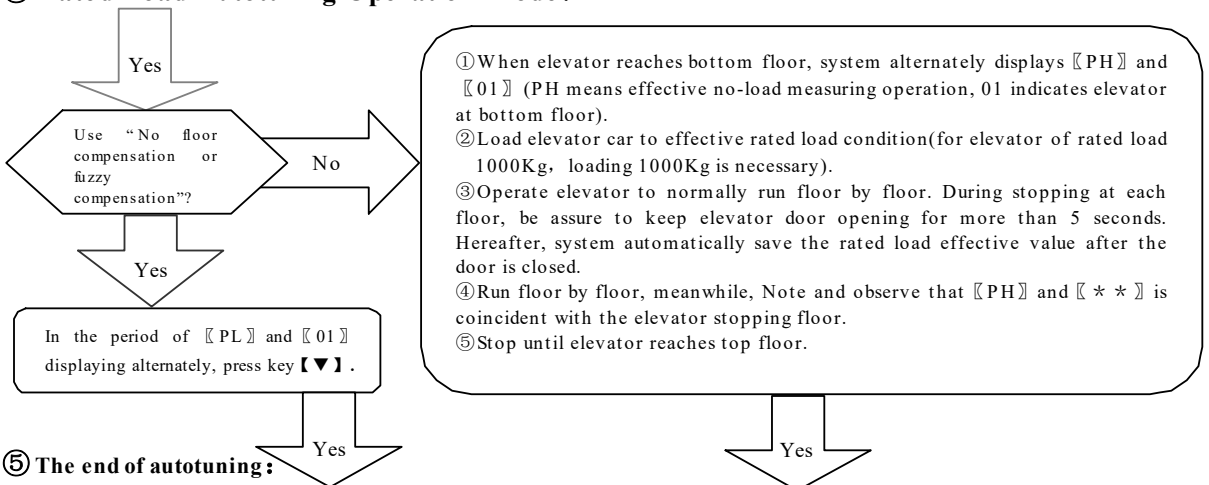
③ Note and observe that〖PL〗and〖＊＊〗is coincident with the elevator stopping floor (Example: 〖＊＊〗means elevator landing is between 01 and 60).

④ After elevator reaches the top floor, the system alternately displays〖PL〗and〖top floor number〗.This moment, let elevator run to bottom floor again.『Now, system will automatically modify the value of "P2"』.

Yes

〖PL〗is displayed aglimer, system no-load autotuning is completed.

④ Rated Load Autotuning Operation Mode:



⑤ The end of autotuning:

① The system resets automatically，this moment, 〖FY〗→〖L4〗will be displayed. **By now，the whole autotuning course is finished.**
② In autotuning condition, if there is any operation failure or system abnormality,(displaying 〖EF〗)，start the autotuning of this item from the very beginning once again.

⑥

System adjustment under other conditions:

For following reasons, the parameters of this system need re-modifying in the way described above.

1) Elevator car decoration changing causes its dead weight change.
2) Larger unbalance appears among traction ropes.
3) Sensor of weighing device becomes flexible.
4) Overrunning at the top or at the bottom appears.

Operation Parameters Adjustment and the Implication

9. 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 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 PJ to 03；(Pj3.1~2、Pj3.3~4 enabling for low voltage level compensation signal)

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 increase it to〖Pj〗；

④Release button【▼】， system alternately displays〖Pj〗and〖**〗.

⑤When displaying〖**〗， press【▼】or【▲】to regulate its value as〖03〗.

⑥Release button，system alternately displays〖Pj〗and〖03〗.

⑦At the moment when system displays 〖PH〗，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.

10. Implication of parameter P：Normally，it is unnecessary to modify parameter after "P0". System may automatically modify it in the course of Autotuning.

⑴Directions of Parameter P0 [System Operation Mode]：

Setting	Explanation	Default Setting	Normal Value
00	Normal Operation (Automatically modify by system after autotune.)	01 (Sensor Positioning)	00 System Auto Modifying
01	Sensor positioning ,System self-learning		
09	Options for dealing with abnormality when Selecting "王" or "Convex" type intelligent sensor.		
0A	Forcibly set system settings as default values		

(2)Directions of Parameter P1 [System Rated Load Setting Mode]:

Setting	Explanation	Default Setting	User Setting
01-05/10	10 - Select "100% load" self-learning mode; 02 - Select "20% load layer by layer" self-learning mode;	10(Rated load Autotuning)	

(3)Directions of Parameter P2 [The Highest Elevator Landing Setting Mode](Automatically modify them in the course of Autotuning by system):

Setting	Explanation	Default Setting	User Setting
01～32	Set the number of elevator stops: select 01 to turn off the layer by layer compensator, and the PJ3 input signal is invalid;	99(Floor)	During self-learning, the system will automatically correct

(4)Directions of Parameter P3 [Setting Elevator Shutdown Main Floor]:

Setting	Explanation		Default Setting	User Setting
	Higher Bits	Lower Bits		
01～19	0— "Pj3.5、Pj3.6" effective for Low Voltage Level; 1— "Pj3.5、Pj3.6" effective for High Voltage Level;	Setting elevator main floor. Example: Selecting 2 means there is a basement floor for this elevator.	01(landing) Connection is valid. Base station is on level 1.	System auto modification in fuzzy compensation autotuning
	Example: Selecting 12 means "Pj3.5、Pj3.6" effective for Low Voltage Level and there is a basement floor for this elevator.			

(5)Directions of Parameter P4 [Time Parameter for Floor-by-floor Compensation]:

Setting	Explanation		Default Setting	User Setting
	Higher Bits	Lower Bits		
00～99	Anti-interference protection time by floor : 0~9×0.5 Second;	Control Factor of fuzzy compensation: 0~3	42 Anti-interference protection time of each floor is 2.0 seconds; Control Factor of fuzzy compensation is 2.	
	0-Unenabling protection time			

(6)Directions of Parameter P5 [Selection of Floor compensation input signal function] (Automatically modify in the period of Autotuning by system):

Setting	Explanation					Default Setting	User Setting
00～03	00 Allow auto deciding compensation method	01 Disable	02 Up/down leveling step counting control	03 Door zone + running direction Control	04 Fuzzy compensation	00 (Auto Measuring)	Auto modified by system in the period of 〖Lo〗

	Notes：1．See Section 3, Chapter 5 and attached drawings for more details； 2．Elevator of serial communication control may use ”03” or ”04’ operation method. Running direction Signal may be parallel connected to the forward rotation command signal of the given inverter.		displaying.

⑺Directions of Parameter P6 Relay "J1, J2, J3" logic state setting] :

Setting	Explanation					Explanation	User Setting
	Higher Bits	Lower Bits					
20～27		state	J3	J2	J1	20 (Relay closing exportation	
		0	Dynamic Close	Dynamic Close	Dynamic Close		
		1	Dynamic Close	Dynamic Close	Dynamic Open		
		2	Dynamic Close	Dynamic Open	Dynamic Close		
		3	Dynamic Close	Dynamic Open	Dynamic Open		
		4	Dynamic Open	Dynamic Close	Dynamic Close		
		5	Dynamic Open	Dynamic Close	Dynamic Open		
		6	Dynamic Open	Dynamic Open	Dynamic Close		
		7	Dynamic Open	Dynamic Open	Dynamic Open		

⑻Directions of Parameter P7 [Setting Relay "J1" operation condition]:

Setting	Explanation	Default Setting	User Setting
00～99 A0~A9 b0~b9 C0~C9 d0~d9 E0~E9 F0~F9	When the load is ≥ capacity load × P7%, output "J1" signal.	05 Set "J1" 05% load action	
	00~99: The action value is 0~99% of the load action; A0~A9: The action value is 100~109% of the load action; b0 to b9: The action value ranges from 110 to 119%. C0~C9: The action value is 120~129% of the load action; d0~d9: The action value is 130~139% of the load action; E0~E9: action value in 140~149% load action; F0~F9: action value in 150-159% load action;		
	P7=80: For 1T payload, 800Kg, J1 system action		
	P7=A5: For 1T payload, 1050Kg, J1 system action		
	P7=C5: For 1T payload, 1250Kg, J1 system action		

⑼Directions of Parameter P8 [Setting Working condition of Relay "J3"]:

Setting	Explanation	Default Setting	User Setting
Same as P7	Same as P7:When the load is ≥ capacity load × P8%, the output "J2" signal	90 Set "J2" 90% load action	

⑽Directions of Parameter P9 [Setting No load Parameter]:

Setting	Explanation	Default Setting	User Setting
Same as P7	Same as P7:When the load is ≥ capacity load × P9%, the output "J3" signal	A5 Set "J3" 105% load action	

⑾Directions of Parameter PA [Light load Parameter Setting]:

Setting	Explanation	Default Setting	User Setting
00 ~ 96 (hours)	After the set time arrives, the system starts to automatically zero-load work. 00 - The system does not start the no-load automatic zeroing function; 12 to 96 - After the system is powered on (12 to 96 hours), the system starts to detect the load retention time during no-load return to zero.	00(Do not start)	

⑿Directions of Parameter PB [Semi load Parameter Setting]:

Setting	Explanation	Default Setting	User Setting
10 ~ 90 minutes	After the automatic zeroing time arrives, the system load does not	30 minutes	

	change within this time, and the system will allow automatic no-load zeroing to begin.		

⑬Directions of Parameter PC [Heavy load Parameter Setting]:

Setting	Explanation	Default Setting	User Setting
03～20 (%)	When the absolute value of 7 and 8 is greater than this set value, At present, the load ratio of the original no-load value system starts to zero work immediately.	05% | no-load deviation | is greater than 5 %, system	

⑭Directions of Parameter Pd [System Overloading Factor]:

Setting		Explanation		Default Setting	User Setting
00~03		PX.1~2	PX.3~4	00 PX.1~2, PX.3~4 Active high	
	00	Active high	Active high		
	01	Active low	Active high		
	02	Active high	Active low		
	03	Active low	Active low		

⑮Directions of Parameter PE [No-Load Auto Zeroing Time Interval]:

Setting	Explanation					Default Setting	User Setting
80～90	D7～D4	D3	D2	D1	D0	81 Standard sensor, 2 level incremental selection	
	8	Sensor gain adjustment Level 0 to 3 gain selection			0- Standard sensor 1- "Convex" stress sensor acquisition anomaly correction		
	Suggestion: Under normal circumstances, users do not need to adjust this parameter, any objection, please contact the manufacturer directly.						
	Description: For the "C-type" sensor, "81" indicates the tensile force; "80" indicates compressive force						

Attentions: ①**When selecting not indicated settings, system will not normally operate.**

②**No load auto zeroing parameters PA, PB and PC should be used cautiously because of the cause variety of elevator no load point drifting. It is recommended for the user to allow or forbid this function according the concrete conditions.**

③Even if **No load auto zeroing operation enabled**，in the course of elevator periodical maintenance，auto tuning operation of this system should be redone without exception.

Explanation of Displaying Code:

11.System Normal Operation Code:

〖L0〗	〖L1〗	〖L2〗	〖L3〗	〖L4〗	〖LF〗
No loaded Car	Light Loaded Car	Semi Loaded Car	Heavy Loaded Car	Rated Loaded Car	Over Loaded Car

1. Displaying "HJ※※※※" when pressing【▲】button indicates present car effective load. For instance, displaying "HJ0520 " indicates the load of 0520kg.
2. Displaying ".※. ※. " when pressing【▼】button or in the course of landing changing indicates present system compensating landing. Adjusting Personnel may judge whether system compensating landing tracing is right or not by its numerical value. Note: This option is just for floor-by floor compensation method.
3. Displaying "0.0." in fuzzy compensation indicates compensation is effective. Displaying "0.1." indicates elevator entering modifying zone.

12.Code for Other Operation and Failures

	Display Code	Indication		Solution
1	FY	System Startup		
2	PC	Sensor Resetting		
3	PP	Get into the status of operation parameters modification		
4	PL	Autotuning No load parameters	(Still Displaying indicates preparation status, flashing displaying indicates the end of inspection)	
5	PH	Autotuning Rated load parameters		
6	LL	Installation and positioning	Too big Positioning	Sensor having no load
7	LH		Too small Positioning	Sensor overload
8	Lo		Accurately Position	
9	LP		Interior Auto Correction	
10	LY		Forcibly skip sensor interior auto correction	
11	P*	System Configuration Indication		
12	Pn	Saved		

	Display Code	Indication	Solution
13	PO	Real-time car set "0" operation	
14	EA	Saving Failure	Re-Modifying operation parameters
15	EJ	Without this system setting	Check System Settings
16	EH	Applied Overflowing Pressure	Sensor Standing Pressure beyond its bearing range
17	EL	Applied Insufficient Pressure	No applied pressure to Sensor
18	EE	No landing of this code	Make certain PC signals abnormality or no load autotuning normal or not
19	EF	Memorizing abnormally	Repeat this operation.
20	ES	Communication Failure	Carefully check wiring between sensor and control.

How to do?

13.Brief Analysis of Other Conditions:

⑴Bad system Operation Stability with the main indication of large output fluctuation in the condition of fixed load and elevator motionless?

Check if PJ6 power supply source fulfils system requirements?

⑵After long-term of operation, system no load zeroing point appears larger deviation?

May be caused by the reason described in section 8, chapter 8. Set system Autotuning mode to calibrate again，or startup parameter"PA≠0" to realize the function of system no load auto zeroing.

⑶System displaying failure code〖EE〗?

Input signal of terminal Pj3 on the control or unreasonably setting.

⑷When selecting floor indication step counting control method，floor-by-floor compensation consistency is bad?

Whether up or down landing signals or leveling signal is normally wiring，Setting of parameter P5 is reasonable?

⑸Traveling Up and down with the same load and stopping at the same floor, but the weighing result is different?

①Lift rope pull is not symmetrical，adjust please.

②Elevator guide shoes are too tightened，running friction is large. It is recommended to adjust or modify relevant mechanical part to make it move flexible，then operate the system to autotune again.

⑹System output signal doesn't change linearly along with load?

Maybe system sensor damaged.

⑺How to descry present effective load of elevator car?

*① In the period of system normal operation, press button【 】.This moment, system displays〖HJ〗→〖**〗→〖**〗 .For example ： displaying 〖HJ〗→〖09〗→〖50〗 indicates a car with rated load of 1000 Kg presently bearing an effective load of 950Kg.*

② If elevator effective load is not 1000 Kg，it may be decided after system autotuning operation is finished by modifying parameter"P1".

③ Because of various impacts from exterior environment，displayed data may fluctuate in a small scope.

⑻When elevator is motionless, weighing signal is normal. But in the course of door opening, it is abnormal?

Elevator door operation system causes relative car weight offset. It may be controlled by adopting door opening/closing relay output signals+ door lock signal jointly participating system Pj4 locking.

⑼How to determine car dead weight(This operation is effective for "Disc"type sensor and "ECW-Z1000#D"type)?

*a. After modified parameter"P0=11"is saved，this moment, system displays〖HP〗→〖**〗→〖**〗 ；For example：displaying〖HP〗→〖15〗→〖10〗 means car dead weight of 1510Kg.*

b. Because of various impacts from outer environment，displayed data may fluctuate in a small scope. Users may adopt algorithm of average value of several time to deal with inspection results. Meanwhile, inspection accuracy may be influenced by self made traction rope clamp and traction ropes tension equality.

c. Press【▲】or【▼】ad arbitrium, system may reset to original setting.

⑽During system operation, analog output is abnormal, repeatedly resetting or abnormal coordination with speed regulator?

May be caused by crossing and interfering system power source. Select another set of power source to supply power to system，or equip AC/DC 24V/300mA exterior power source to supply power.

14.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〗.Keep 15 seconds，system will display〖Pn〗.On that occasion，all operation parameters reset to default settings.

Method 2： Modifying parameter P0=0A will reset system immediately to default status. But for users with specified code, it is necessary to modify parameter P0 as appointed code. Detailed operation is

described in chapter 9.

15.How to adopt 20% rated load for rated load autotune?

After system displaying 〖Lo〗, modify parameter "P1=02".Do no load autotuning operation as described in chapter 6. In the period of displaying〖PH〗, load elevator car with a weight equal to 20% of rated load to do rated load autotuning operation. When operation is finished, 〖L1〗 is displayed.

16.How to do "weight setting" autotune for D type (i.e. character "一" type) sensor? (Just limited to Z1000#-D. Affected by mechanical system, having certain error)

After system displaying 〖Lo〗, modify parameter "P1=elevator effective load" (For 1ton, input10; 3T, input 30). Do no load autotuning operation as described in chapter 5. When operation is finished, 〖J0〗 is displayed.

17.How to get the version code of the product?

After power off, press 【▼】to supply power. System displays〖1.0〗indicating the corresponding **User's Guide** of this product being Version "V1.0".

System Features

18. Main Characteristic:

(1) Equipped with various kinds of sensors:

A. Selecting super thin "Disc" type intelligent load sensor, it is unnecessary to change the pull rod of traction rope shackle, directly inspect elevator car load change;

B. Selecting Character "王" type intelligent tension sensor, installation is much easier.

C. Selecting "Convex" type intelligent stress sensor, much more convenient for complete elevator manufacturers to select.

D. Selecting super thin Character "一" intelligent load sensor, directly setting load, adjusting becomes more advantageous.

(2) Weighing range is wide (effective load of 500Kg～5500 Kg), high-accuracy position, intelligent temperature compensation.

(3) Electric property complies with the requirements of "International Electrotechnical Commission (IEC)" Standard.

(4) Inner core consists of highly accurate load sensor and high performance single-chip micro-computer. All operation parameters can be set on field.

(5) Auto on-site mensuration of various compensation methods, boosting requirement of high accuracy weighing signal of elevator system.

(6) System may do scientific calculation according to mathematical equations with the function of noload auto zeroing, automatically modifying measuring error.

(7) Directly displaying present effective load. Some types may directly measure dead weight of elevator car for the benefit of users.

(8) Field adjustment may select 20% or 100% rate load autotuning method or load setting method(just for "D" type), being easily adjusted and operated.

(9) Independent development of the method of ***Programmable Output Signal Control*** is suitable for all the requirement of traction elevators with various kinds of fixed car platform.

(10) Having the function of operation parameters auto modification, auto accommodation to multi methods of intelligent floor compensation function, being applicable to traction elevators of less than 30 landings.

(11) Distinctive design structure of sensor+ controller, only 2 connecting wires between sensor and controller wiring simply.

(12) The whole shoot starts from users' point of view, easy installation and adjustment, decreasing users' additional cost in use, high ratio of performance to price.

19.Technical Specifications:

1.	Application	Being applicable to all fixed car platform elevators (less than 60 landings) with the load of 500 kg～5000 kg .
2.	Floor Compensation:	Auto accommodating to the following compensation methods: ①Up and Down leveling; ②Up command + door zone; ③Fuzzy and intelligent.
3.	Sensitivity:	Elevator Rated Capacity/200 (Example: The rated capacity is 1000 kg, and the sensitivity is 5 kg) [This data may be affected by elevator mechanical performance.]
4.	System Error:	≤0.5%(5～40℃)
5.	Non-Linearity	≤0.5%
6.	Compensation:	The method of circuit parallel connection is applicable to the signal source system of DC12~32V.Also, the inner fault of this system doesn't affect the original operation mode of elevator.

7.	Output Mode	**Relay**	Programmable universal signal	①3-channel programmable output modes are: No load, light load, semi full load, heavy load, rated load, overload (customer may set the changing range freely). ② Each channel can be programmed as dynamic **Close** or **Open** contact. ③Contact Capacity: DC/AC 48V/100mA
8.	Ambient Temperature：	Temperature：-20～55℃		
9.	Relative Humidity：	20%～90%RH		
10.	Reaction Time	≤0.5Second，The communication distance between the intelligent and the control is 0~400m.		
11.	Power Supply：	AC/DC24(±10%)V / 200mA		
12.	Installation Place：	Sensor Section：At the place of traction rope shackle Controller Section： Control Cabinet in machineroom. See the figure 3 for installing dimension.		
13.	Overall Size：	Sensor Section：See the figure [3]；Controller Section：142×90×40 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.

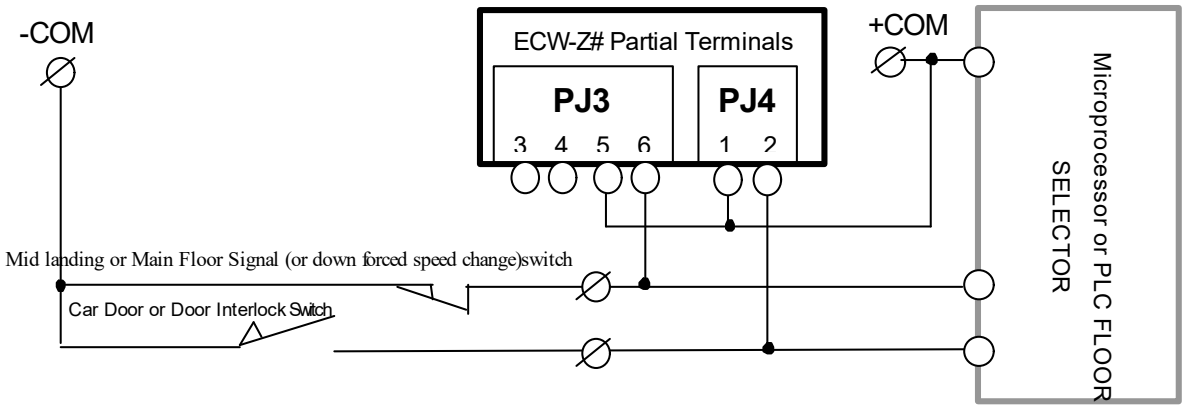
(3)Any system abnormality in adjustment or operation, please contact our company directly.

Others:

1.Packing List:

Type A:	"Disc"type intelligent load sensor	1 set	**Type B:**	"王" type intelligent tension sensor	1 set
Sensor Auxiliary Support		1 set	**Type C:**	intelligent stress sensor	1 set
M10×35mm Fastening Screw sets		6 set			
Type D:	"一"type intelligent load sensor	1 Set	ECW-Z1000 control		1 set
M10×80mm Fastening Screw sets		2 Set	Φ4×40mm Fastening Screw sets		4 set
			User's Guide		1 piece

Att. Fig [1]：Wiring Method of Terminal Pj3 in the mode of parameter "P5=4" (Auto accommodating fuzzy floor compensation)



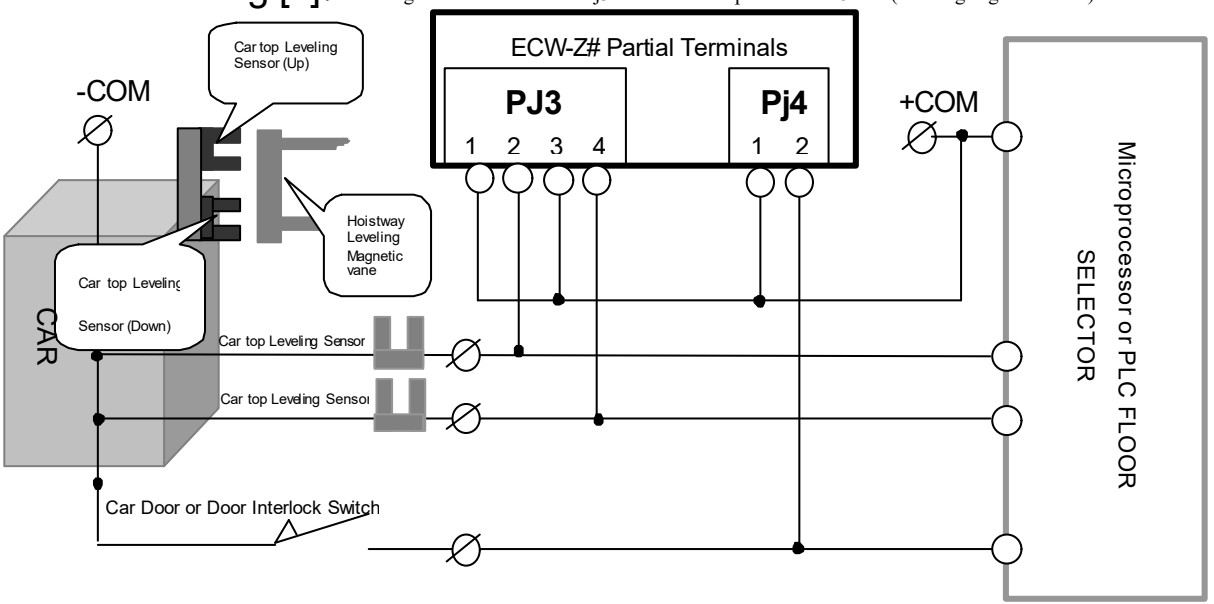
Recommended Application Range of this mode： All elevators with better mechanical installation characteristic.

Notes： 1.Directly parallel connect Pj3.5~6 and Pj4 to corresponding electric circuit. If user selects "mid landing" position signal, more accurate compensation effect may be received.

2.Pj3.5~6 must be connected to corresponding signal circuit. In fuzzy compensation autotuning, system auto modifies higher bits setting of parameter P3 to determine the enabling method of this signal(system default is that in the period elevator stops at main floor, "main floor position signal switch" is in closed condition.).

3.Voltage of terminal COM should be in the range of "DC12~32V".

Att. Fig [2]: Wiring Method of Terminal Pj3 in the mode of parameter "P5=2" (Leveling Signal Control)



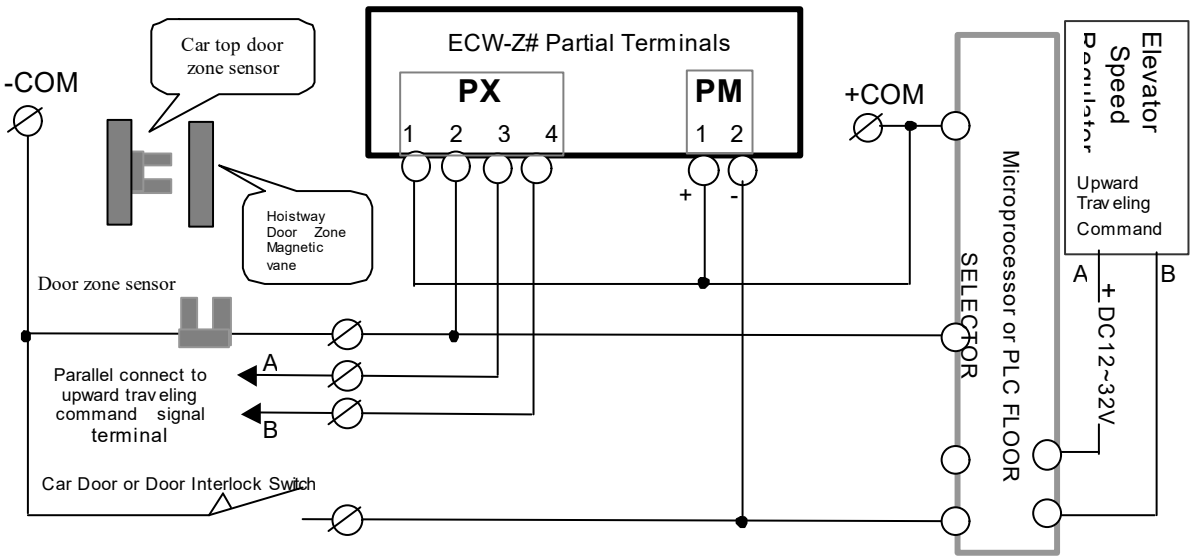
Recommended Application Range of this mode: Elevator having "up leveling" and "down leveling" input signals or allowing to add leveling device in hoistway;

Notes: 1.Directly parallel connect Pj3.1~2、Pj3.3~4、Pj4 to corresponding electric circuit;

2.Pj3.1~2、Pj3.3~4must be connected to corresponding leveling signal circuit. User may select Close Enabling or Open Enabling according to concrete conditions. Please notice manual setting parameter PJ(system default is that in the period elevator leveling, "leveling signal switch" is in Closed condition.).

3.Voltage of terminal COM should be in the range of "DC12~32V".

Att. Fig [3]: Wiring Method of Terminal Pj3 in the mode of parameter "P5=3" (Door Zone+ Running Direction Control)



Recommended Application Range of this mode: Elevator having "Door zone sensor" and "Upward running command" signals.

Notes:

1. Directly parallel connect Pj3.1~2, Pj3.3~4 and Pj4 to corresponding electric circuit.. Meanwhile, pay attention to the" upward running " signal picking-up points "A" and "B".
2. Pj3.1~2 must be connected to door zone signal circuit. (system default is that in the period elevator leveling, "door zone signal switch" is in Closed condition.), Pj3.3~4 must be connected to upward traveling command signal circuit. (system default is that in the period of upward traveling, circuit "Pj3.3~4" exists an operation voltage of "DC12~32V"). User may select Close enabling or Open enabling according to concrete condition. Pay attention to manual setting of parameter PJ.
3. Voltage of terminal COM should be in the range of "DC12~32V"