# THJ****/*-JW-VVVF
# 交流变频变压电梯随机资料

## AC Frequency Conversion Transformation Elevator Attachment Information

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# THJ***-*/JW-VVVF Elevator controller
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# Programmable controller input port definition

日本三菱 **FX2N-XXMR** 可编程控制器。其输入点按 **8** 进制排列。
**Japanese Mutsibushi FX2N-XXMR programmable controller. Its input port arrange in**

binary-coded octal (BCO);

**X0-X7、X10-X17、X20-X27、X30-X33** 用于电梯各种操作信号的输入
**X0-X7、X10-X17、X20-X27、X30-X33 are using for the input of all the operation signal.**
**X34** 及以后的输入点用作轿内、上呼、下呼按钮的输入点
**X34 and the following input port is used as the input port of the car, up call button, down call button.**

| 输入点<br>**input port** | 定义<br>**definition** | 说明<br>**narrate** | 备注<br>**remarks** |
|---|---|---|---|
| **X0** | 高速计数器 **A High speed counter A** | **AB** 相高速计数<br>**Phase AB high speed counter** | |
| **X1** | 高速计数器 **B**<br>**High speed counter B** | | |
| **X2** | RDY 信号<br>**RDY signal** | 变频器正常时接通<br>**Inverter on when it is normal** | |
| **X3** | 零速信号<br>**Zero speed signal** | 变频器速度为零时接通<br>**Inverter on when it is zero speed** | |
| **X4** | 锁梯<br>**Lock the elevator** | 接通时锁梯<br>**Lock the elevator when X4 is connected** | |
| **X5** | 上强迫减速开关<br>**Up forcibly slow down switch** | 常闭<br>**Normal close** | |
| **X6** | 下强迫减速开关 | 常闭 | |

| | Down forcibly slow down switch | normally open | |
|---|---|---|---|
| **X7** | 消防开关<br>**Fireman switch** | 常开<br>**Normal open** | |
| **X10** | 安全回路<br>**Safety loop** | **50G** 吸合时接通<br>**Connect when 50G picks up** | |
| **X11** | 门锁回路<br>**Door lock loop** | **40G** 吸合时接通<br>**Connect when 40G picks up** | |
| **X12** | 上限位开关<br>**Up limit switch** | 常闭<br>**normally open** | |
| **X13** | 下限位开关<br>**Down limit switch** | 常闭<br>**normally open** | |
| **X14** | 慢上按钮<br>**Slow up button** | 常开<br>**normally open** | |
| **X15** | 慢下按钮<br>**Slow down button** | 常开<br>**normally open** | |
| **X16** | 开门按钮<br>**Close button** | 常开<br>**normally open** | |
| **X17** | 关门按钮<br>**Closing button** | 常开<br>**normally open** | |
| **X20** | 检修/自动<br>**Inspection/Automatic** | 开关断开时为检修<br>**Inspection when the switch off** | |
| **X21** | 司机开关<br>**Attendant switch** | 常开<br>**normally open** | |
| **X22** | 司机直达<br>**Attendant bypass** | 常开<br>**normally open** | |
| **X23** | 上平层感应器<br>**Up leveling sensor** | 上平层时接通 | |
| **X24** | 下平层感应器<br>**Down leveling sensor** | 下平层时接通 | |
| **X25** | 满载开关<br>**Fully loaded switch** | 常开<br>**normally open** | |
| **X26** | 超载开关<br>**Over loaded switch** | 常闭<br>**normally open** | |
| **X27** | 测楼高<br>**Measure the height of the floor** | 接通时自学习井道参数<br>**self-tuning hoist parameter when it is switch on** | |
| **X30** | MC2 反馈<br>**MC2 feedback** | **MC2** 吸合时断开<br>**Not switch on when MC2 pick-up** | |
| **X31** | MG 反馈<br>**MG feedback** | **MG** 吸合时接通<br>**Switch on when MC pick-up** | |
| **X32** | 开门限位 | 常闭 | |

| | | normally open | |
|---|---|---|---|
| **X33** | 关门限位 | 常闭<br>**normally open** | |
| **X34** 以后<br>**X34 and**<br>**the**<br>**following**<br>**input**<br>**ports** | 内选、上呼、下呼按钮<br>**Internal selective, up call**<br>**button, down call button** | | |

# THJ***-*/JW-VVVF 电梯控制柜
# THJ***-*/JW-VVVF Elevator controller
# 可编程控制器输出点定义
# Programmable controller output port definition

日本三菱 **FX2N-XXMR** 可编程控制器。其输出点按 **8** 进制排列。
**Japanese Mutsibushi FX2N-XXMR programmable controller. Its input port arrange in**
binary-coded octal (BCO);

**Y0-Y7** 用于驱动各类接触器及继电器
**Y0-Y7 used in driving all kinds of contactors and relays.**
**Y10-Y17** 用于控制变频调速器
**Y10-Y17 used in controlling the frequency conversion speed controller**
**Y20-Y27** 用于层楼指示器的控制
**Y20-Y27 used to control the floor indicator**
**Y30-Y33** 用于电梯的显示及声音设备的控制
**Y30-Y33 used to control the display and the voice equipment**
**Y34** 以后用作轿内、上呼、下呼按钮的记忆灯的控制
**Y34 and the following output port used to control the memory indicator of the car, up call button, down call button.**

| 输出点<br>**Output**<br>**port** | 定义<br>**Definition** | 说明<br>**Instruction** | 备注<br>**Remarks** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Y0** | 变频器输入接触器控制<br>**Transducer input contactor control** | | 接触器继电器控制<br>**AC220V**<br><br>**Contactor relay control AC220V** |
| **Y1** | 变频器输出接触器控制<br>**Transducer input contactor control** | | |
| **Y2** | 抱闸接触器控制<br>**Brake contactor control** | | |
| **Y3** | 前开门控制<br>**Front opening control** | | |
| **Y4** | 前关门控制<br>**Front closing control** | | |
| **Y5** | 后开门控制<br>**Rear opening control** | | |
| **Y6** | 后关门控制<br>**Rear closing control** | | |
| **Y7** | 延时关灯继电器控制<br>**Delay light off relay control** | | |
| **Y10** | 正转**(**上行**)**控制<br>**conversion (up motion)** | 与变频器 **S1** 号端子相连<br>**switch on with transducer S1 terminal block** | 变频器<br>控制<br>**inverter control**<br>变频器<br>**SC** 号端子为公共端<br>**Transducer SC terminal block is common terminal** |
| **Y11** | 反转**(**下行控制**)**<br>**reversion (down motion)** | 与变频器 **S2** 号端子相连<br>**switch on with transducer S2 terminal block** | |
| **Y12** | 复位控制<br>**reset control** | 与变频器 **S3** 号端子相连<br>**switch on with transducer S3 terminal block** | |
| **Y13** | 第二加减速时间切换控制<br>**Second acceleration/** reduction switching control | 与变频器 **S4** 号端子相连<br>**switch on with transducer S4 terminal block** | |
| **Y14** | 多段速 **2** 控制<br>multi-stage speed 2 control | 与变频器 **S5** 号端子相连<br>**switch on with transducer S5 terminal block** | |
| **Y15** | 多段速 **3** 控制<br>multi-stage speed 3 control | 与变频器 **S6** 号端子相连<br>**switch on with transducer S6 terminal block** | |

| | | | |
|---|---|---|---|
| **Y16** | 点动控制<br>**Inching control** | 与变频器 **S7** 号端子相连<br>**switch on with transducer S7 terminal block** | |
| **Y17** | 外部基极封锁控制<br>exterior base electrode<br>block control | 与变频器 **S8** 号端子相连<br>**switch on with transducer S8 terminal block** | |
| **Y20-Y27** | 层楼指示控制<br>**floor indicate control** | | |
| **Y30** | 上方向灯<br>**up direction lamp** | | **DC24V** |
| **Y31** | 下方向灯<br>**down direction lamp** | | |
| **Y32** | 到站钟控制<br>**Arrival gong control** | | |
| **Y33** | 超载灯控制<br>**Over-load lamp control** | | 用继电器隔离可选择电压<br>**isolate optional voltage by relays** |
| **Y34 以后**<br>**Y34 and the following output ports** | 内选、上呼、下呼记忆灯控制<br>**Internal selective, up call memory indicator, down call memory indicator** | | **DC24V** |

# THJ***-*/JW-VVVF 接线图

# THJ***-*/JW-VVVF Wiring Diagram (6-10 floors)

### TA

| 编号<br>NO. | 功能<br>Function. | | 编号<br>NO. | 功能<br>Function |
|---|---|---|---|---|
| 1、 | **51** | | 31 | **NOP** |
| 2、 | **SSU** | | 32、 | **A** |
| 3、 | **SSD** | | 33、 | **B** |
| 4、 | **SJ** | | 34、 | **C** |
| 5、 | **PASS** | | 35、 | **D** |

### TB

| 编号<br>No. | 功 能<br>Function | | 编号<br>No. | 功 能<br>Function |
|---|---|---|---|---|
| 1、 | **A1** | | 31、 | **3JD** |
| 2、 | **A2** | | 32、 | **4JD** |
| 3、 | **A3** | | 33、 | **5JD** |
| 4、 | **A4** | | 34、 | **6JD** |
| 5、 | **A5** | | 35、 | **7JD** |

| No. | | | No. | | | No. | | | No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6、 | **PLU** | | 36、 | **E** | | 6、 | **A6** | | 36、 | **8JD** |
| 7、 | **PLD** | | 37、 | **F** | | 7、 | **A7** | | 37、 | **9JD** |
| 8、 | **OP** | | 38、 | **G** | | 8、 | **A8** | | 38、 | **10JD** |
| 9、 | **CL** | | 39、 | **ES** | | 9、 | **A9** | | 39、 | **1SD** |
| 10、 | **OPL** | | 40 | **EX** | | 10 | **A10** | | 40、 | **2SD** |
| 11、 | **CLL** | | 41 | **JXD** | | 11 | **AS1** | | 41、 | **3SD** |
| 12、 | **SIO** | | 42 | | | 12 | **AS2** | | 42、 | **4SD** |
| 13 | **USD** | | 43 | **SA3** | | 13 | **AS3** | | 43、 | **5SD** |
| 14 | **DSD** | | 44 | **SA2** | | 14 | AS4 | | 44、 | **6SD** |
| 15 | **UL** | | 45 | **SA1** | | 15 | **AS5** | | 45、 | **7SD** |
| 16 | **DL** | | 46 | **SA0/120** | | 16 | **AS6** | | 46、 | **8SD** |
| 17 | **CZK** | | 47 | **121** | | 17 | **AS7** | | 47、 | **9SD** |
| 18 | **MZK** | | 48 | **122** | | 18 | **AS8** | | 48、 | **2XD** |
| 19 | **FRE** | | 49 | **301/110** | | 19 | **AS9** | | 49、 | **3XD** |
| 20 | | | 50 | **302/111** | | 20 | **AX2** | | 50、 | **4XD** |
| 21 | **JXD** | | 51 | **13** | | 21 | **AX3** | | 51、 | **5XD** |
| 22 | **OPL1** | | 52 | **14** | | 22 | **AX4** | | 52、 | **6XD** |
| 23 | **CLL1** | | 53 | **15** | | 23 | **AX5** | | 53、 | **7XD** |
| 24 | GND | | 54 | **16** | | 24 | **AX6** | | 54、 | **8XD** |
| 25 | GND | | 55 | **17** | | 25 | **AX7** | | 55、 | **9XD** |
| 26 | **VCC** | | 56 | **GUD** | | 26 | **AX8** | | 56、 | **10XD** |
| 27 | **TG1** | | 57 | **B220** | | 27 | **AX9** | | 57、 | **OLHC** |
| 28 | **TG2** | | 58 | **MG1** | | 28 | **AX10** | | 58、 | **OLH** |
| 29 | **TG3** | | 59 | **EARTH** | | 29 | **1JD** | | 59、 | **OLDC** |
| 30 | **TG4** | | 60 | **MG2** | | 30 | **2JD** | | 60、 | **OLD** |

<center>TK</center>

| L1 | L2 | L3 | GR | L | N | | U | V | W |
|---|---|---|---|---|---|---|---|---|---|
| 电源进线<br>power supply<br>incoming line | | | | 照明<br>lighti<br>ng | | | 电动机<br>motor | | |

<center>TL</center>

| 20 | 21 | | 36A | 36B |
|---|---|---|---|---|
| 220V 照明<br>220V<br>lighting | | | 36V 照明<br>36V lighting | |

# THJ***-*/JW-VVVF 接线图　　　(2-5 层)
# THJ***-*/JW-VVVF Wiring diagram　　　(2-5 floors)

TA　　　　　　　　　TA　　　　　　　　　TB

| 编号 NO. | 功能 Function | 编号 No. | 功能 Function | 编号 NO. | 功 能 Function |
|---|---|---|---|---|---|
| 1、 | 51 | 31 | NOP | 1、 | A1 |
| 2、 | SSU | 32、 | A | 2、 | A2 |
| 3、 | SSD | 33、 | B | 3、 | A3 |
| 4、 | SJ | 34、 | C | 4、 | A4 |
| 5、 | PASS | 35、 | D | 5、 | A5 |
| 6、 | PLU | 36、 | E | 6、 | AS1 |
| 7、 | PLD | 37、 | F | 7、 | AS2 |
| 8、 | OP | 38、 | G | 8、 | AS3 |
| 9、 | CL | 39、 | ES | 9、 | AS4 |
| 10、 | OPL | 40 | EX | 10 | AX2 |
| 11、 | CLL | 41 | JXD | 11 | AX3 |
| 12、 | SIO | 42 |  | 12 | AX4 |
| 13 | USD | 43 | SA3 | 13 | AX5 |
| 14 | DSD | 44 | SA2 | 14 | 1JD |
| 15 | UL | 45 | SA1 | 15 | 2JD |
| 16 | DL | 46 | SA0/120 | 16 | 3JD |
| 17 | CZK | 47 | 121 | 17 | 4JD |
| 18 | MZK | 48 | 122 | 18 | 5JD |
| 19 | FRE | 49 | 301/110 | 19 | 1SD |
| 20 |  | 50 | 302/111 | 20 | 2SD |
| 21 |  | 51 | 13 | 21 | 3SD |
| 22 | OPL1 | 52 | 14 | 22 | 4SD |
| 23 | CLL1 | 53 | 15 | 23 | 2XD |
| 24 | GND | 54 | 16 | 24 | 3XD |
| 25 | GND | 55 | 17 | 25 | 4XD |
| 26 | VCC | 56 | GUD | 26 | 5XD |
| 27 | TG1 | 57 | B220 | 27 | OLHC |
| 28 | TG2 | 58 | MG1 | 28 | OLH |
| 29 | TG3 | 59 | EARTH | 29 | OLDC |
| 30 | TG4 | 60 | MG2 | 30 | OLD |

| L1 | L2 | L3 | GR | L | N | U | V | W |
|---|---|---|---|---|---|---|---|---|
| 电源进线<br><br>power supply<br><br>incoming line | | | | 照明<br><br>lighti<br><br>ng | | 电动机<br><br>motor | | |

| 20 | 21 | | 36A | 36B |
|---|---|---|---|---|
| 220V 照明<br>220V<br>lighting | | | 36V 照明<br>36V lighting | |

# THJ***-*/JW-VVVF 控制柜安装调试说明

## 安装及检查

## Installation and instruction

合理安排电梯控制柜在机房的摆放位置

Properly arrange the position of the control cabinet in the machine room.

检查电源是否与原理图相符

Inspect whether the power supply is match with the schematic diagram

正确判断曳引机运行绕组

Exactly estimate the running winding of driving machine

可靠安装光电编码器

Install photoelectric encoder

确保电气设备的安装与图纸相符后，按照电气原理图接线

Switch on the wires according to the electrical diagram after ensuring that the installation of the electrical equipment is match with the schematic diagram.

闭合主回路断路器 MCB，检查相序继电器 JXW 是否正常

Close major loop circuit breaker, inspect the phase relay JXW.

闭合断路器 CB1、CB2，控制变压器得电，检查各组控制电压是否正常    TK    TL

close circuit breaker CB1、CB2，energize the inverter, inspect every group of control voltage.

闭合所有断路器，再次检查各组控制电压是否正常

Close all the circuit breaker, inspect the voltages of all groups once more.

将 PLC 内置开关置于运行位置，检查 PLC 电源指示灯、运行指示灯是否正常

Turn on the PLC built in switch ,then check whether the PLC power supply indication lamp, function indication lamp is normal.

## 检查所有电气信号

## Inspect all the electrical signal

安全回路：安全继电器 **50G** 吸合时安全回路每个开关动作均可使 **50G** 释放

**Safety loop: Every switch actuation can release 50G when safety relay 50G is picking up.**

主回路：**MC1** 吸合，变频器无故障显示

**Major loop:MC1 picks up, transducer doesn't show any malfunction.**

门锁回路：只有安全开关、厅门门锁开关、轿门门锁均闭合时，门联锁继电器 **40G** 吸合

**Door lock loop: Door lock relay 40G picks up only when safety switch, hall door lock switch and car door lock all close**

检修信号：轿顶、轿厢、控制柜检修检修开关任何一个或多个断开均可使电梯进入检修状态

**Inspect signal: Close any one or many of the switch of the car top, car, control cabinet can lead the elevator into the inspection status.**

上下限位信号、上下强迫减速信号、上下平层信号正确，位置基本合适

**Inspect whether the up/down limit signal, up/down forcibly slow down signal, up/down leveling signal is in function and the position is correct.**

## 平层精调
**Leveling fine adjustment**

短接上强迫减速信号，PLC 的 X5 灯亮

Jump out the up forcibly deceleration signal, X5 light of PLC on.

检修运行使电梯停于略高于某层平层位置，PLC 的 X23、X24 灯灭

Inspection travel makes the elevator stops at the position a littler higher than some leveling position, X23 and X24 light on.

使电梯处于非检修状态，PLC 的 X20 灯亮，电梯自动向下自找平层

Make the elevator to be the stage of non-inspection, X20 light of  PLC on, the elevator looks for the leveling automatically.

平层开门后测量当前层的下平层精度

Measure the precision of the down leveling after the leveling open door.

Adjust the position of   the   down leveling switch installation or magnet vane till the car finds the leveling accuracy.

按 8-11 的步骤调整好所有层的上平层精度

Adjust the accuracy of the up leveling according to 8-11 step.

恢复上强迫减速信号，平层精调结束

renew up forcibly slow down signal, leveling fine adjustment is finished.

## 检修运行
1、 允许在没有进行电机学习前动慢车，但前提是将电动机的参数输入变频器的 E2-01~E2-04。

    Motor   tuning low speed travel is allowed subject to inputting motors parameter into E2-01~E2-04 of the transformer

2、可靠接好编码器。如果编码器还没接好，请将变频器的 A1-02 修改为由 2 改为 1。否则电梯运行一段就停梯，同时闪烁显示"0-5"，变频器显示 PGO。

   Well switch on the programmer .Please amend A1-02 of the transformer from 2 to 1 if the programmer is not switch on. Otherwise the elevator will stop after traveling some distance, at the same time scintillation display "0-5",the transformer display PGO.

3、 保证门锁、安全回路接通并确认 X14、X15 灯亮。

Ensure the door lock and the safety loop switch on and X14、X15 light is on.

4、 接通 DSK 锁梯信号则 X5 灯亮，接通上下限位 SXK、XXK 确认 X12、X13 灯亮。

Switch on DSK lock elevator signal, X5 light will be on, switch on up/down limit SXK、XXK, ensure X12,X13 light is on,

5、可靠接通地线，如果没有可靠接地则相序继电器会因为变频器干扰闪烁而误动作。

    Switch on the earth-return system, if it is not well earthed, the phase relay will be in

malfunction by the transformer interferential scintillation.

6、接通轿厢轿顶的检修自动回路开关，并通过控制柜的检修/自动转换开关能使 X7 灯会亮。

Switch on the automatic loop switch of car top and inspection/auto reversible switch will turn on X7 light.

7、按动控制柜上下行按钮 SSU、SSD 控制电梯上下运行，并观察变频器的 U1-01 的频率约等于 U1-02，如果电机转速偏差太大，则是编码器错接或没接好。

Switch on the up/down motion button SSU,SSD control the up/down motion, the frequency of U1-01 of the frequency inverter approximately equals U1-02. If the slip speed of the motor deviation is too big, the problem may be that the programmer is misconnected or switching off.

8、确认抱闸张开是否正常，互换三相输出线任意两根可改变电梯的实际运行方向。

Inspect the opening of brake is normal, interchange any two output wires of phase 3 output wires will change the motion direction of the elevator.

9、查看变频器显示参数 U1-03(变频器输出电流)

Frequency inverter can display the parameter of U1-03(Frequency inverter output currency)

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注意 Notice

安装过程中如需临时短封安全或门锁继电器控制电路，尽量不要将导线压紧在端子上，以保障人员的绝对安全，完成作业后应认真核查！

**If need to switch off the safety or door lock relay control circuit temporarily, please don't press out the lead wire to the terminal to ensure the foolproof of people and carefully examine after work finished.**

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电机自学习

**Motor self-tuning**

作为自学习模式，G7 可在以下 3 种模式中选择：在实施自学习模式前，请务必确认实施前的注意事项。

G7 can choose from these 3 mode of self-tuning(before self-tuning, ensure the notice before implement )

旋转型自学习模式(T1-01=0)

**Totating module self-tuning mode(T1-01=0)**

停止型自学习模式(T1-01=1)

**Stop module self-tuning mode(T1-01=1)**

只对线间电阻的停止型自学习模式(T1-01=2)

为了保障电梯运行舒适感，建议使用旋转型自学习，且多学习几次，取平均值输入。

To ensure the comfort sense while elevator traveling, the totating self-tuning is recommended.

切断控制柜电源

Switch off the power supply of the control cabinet.

使电机空载：（吊起电梯轿箱将曳引绳从曳引机上脱开或将电机和减速箱分开）根据选择学习模式。

No load the motor: (Hoist the lift car release the hoist rope from the hoisting machine or separate the motor and the gear reducer box )

将控制柜端子排上的 USD 线拆开；

Disconnect the USD wire on the control cabinet terminal row

PLC 的 COM 与 X27 短接；控制柜检修开关置于检修位置

COM of PLC jump out with X27; The switch of the control cabinet place in the inspection position.

在控制柜端子排上短接安全回路

Jump out the security loop SA3-SA1 on the terminal row of the control row.

合上控制柜电源：安全、门锁继电器及 MC1、MC2 吸合，X5、X20 灯灭，X27 灯亮（**如果此时电梯开始向下运行则为井道的减速开关不正常，应该慢车开至底层确认 X17 灯灭，再开至顶楼直至 X16 灯灭**）

Disconnect the power supply: Pick up the safety relay, door lock relay and MC1,Mc2 , light X5,X10 off,( The slow down switch of the hoist is abnormal if the lift start traveling down, the car should slowly travel down to the ground floor to ensure light X17 is off, then travel to the top floor till light X16 is off. )

检查变频器的参数设置是否与"THJ***-*/JW-VVVF 电梯控制柜变频器参数设置表"的内容一致

Inspect whether the parameter set is in accordance with the CACF4 lift control cabinet inverter parameter setting form

实施旋转型、停止型自学习模式的注意事项

Notices in operating the rotating self tuning mode and shut down self tuning mode.

1、 在参数 T1-03(电机额定电压)里，输入电源输入电压。

  Input power supply input voltage in parameter T1-03(rated voltage of motor)

2、 在参数 T1-05(电机的基频)里，输入以下的计算值。

  Input the following calculated period in parameter T1-05( baseband frequency of the motor)

(电机铭牌的基频)×(T1-03 的设定值)/(电机铭牌记载的额定电压)

    (The baseband frequency of the motor nameplate)×**(Set point of T1-03)** / (Rated voltage recorded by the motor nameplate)

使变频器进入测试电机参数"Auto-Tuning"状态

Bring the inverter into the state of "Auto-Tuning"

根据变频器提示及电机铭牌依次将电机的额定电压、电流、频率、转速、极数写入变频器

Input the rated voltage, electrical current, frequency, rotation speed, poles input inverter one after one, according to the hint of the inverter and motor nameplate.

当变频器显示"PRESS RUN KEY"时，手动或短接打开电机抱闸

Run motor brake by hand or jump out when the inverter display "PRESS RUN KEY"

按"RUN"键，变频器开始测定电机参数

The inverter start mesure the motor parameter when pressing "RUN" key.

当变频器显示"Successful"且电机零速时，说明测试完毕自学习结束后，

The measurement is over when the inverter display "Successful" and the motor is zero speed,

请在参数 E1-05(电机最高频率)里设定电机铭牌记载的基频。

Please set the baseband recorded by the motor nameplate in the parameter E1-05 (motor maximum frequency)

最高输出频率和基频不同时，并设定最高输出频率(E1-04)。

Set maximum output frequency (E1-04) when the maximum output frequency is different from the baseband.

**注意：Notice:**

操作前应仔细阅读变频使用说明书，有关变频器的操作及测试电机参数过程中出现的保护和提示均在该说明书中有详细叙述

Carefully read the inverter manual before operation, related operation of inverter and the protection and hint appearing in the course of measuring the motor parameter should be detailed described in this manual.

**THJ***-*/JW-VVVF 电梯控制柜安装调试说明**

**THJ***-*/JW-VVVF Debugging narrate.**

井道自学习

**Hoist self-tunning**

使电梯检修运行至不在下端站和上端站范围的其它位置上。

Inspection travel the car to the position not in the other position of the lower end landing and the higher end landing.

切断控制柜电源，短接 PLC 的 COM 与 X27

Disconnect the power supply of the control cabinet, jump out the COM of PLC with X27.

合上控制柜电源

Connect the power supply of the control cabinet

约延时 4 秒，电梯开始向下自动返回至下端站平层位置

Delay about 4 seconds, the lift start return automatically to the lower end landing leveling.

再延时约 4 秒，电梯开始向上运行，（*如果不自动上行，表示停层时两个感应器没有全部插入*）学习井道数据直至停在上端站平层位置。（*停层时两个感应器应全部插入*）

Delay about 4 seconds again, the lift start running up, tuning the hoist figure till the car stop at the higher end landing leveling.

自学习向上运行时，依次将每层楼层高度存放在 PC 机的 32 位数据寄存器中

Input the heights of every floor to the figure register of the PC when the car is in the self tuning up motion.

自学习向上运行时，显示正确的楼层位置。

Display the correct floor position when the car is in the self tuning up motion

到达上端站平层位置后，层楼指示内容应与实际总层/站数相符

Floor indication content should comply with the actual total floor/landing when the car arrives at the up end landing leveling.

再次切断控制柜电源，拆除 PLC 的 COM 与 X27 的短接线

Disconnect the power supply of control cabinet again, remove the COM of PLC and X27.

自学习井道运行结束，

Self tuning hoist motion over.

**注意向上自学习应连续进行，若中途因故中断，则所有记录的数据均无效，需重新开始。**

Pay attention to the continuousness of the self tuning, if it stop for some reasons, all the record will be invalid and should restart.

快车调试

**Fast travel inspection.**

先检修全程上下运行一次，楼层变化正确，则可进行快车调试

Fast travel inspection is available when the floor change display is correct after the car run from up to down floor.

若楼层指示不正常，可尝试调换 PLC 的 X0、X1 接线并重新学习井道数据

If the floor indication is abnormal, try change X0, X1 connection of plc and retuning the hoist figure.

检修运行至中间楼层

Inspection motion to the middle floor.

使电梯处于非检修状态，PLC 的 X20 灯亮，电梯将自找平层后开门

Put the lift in the state of non-inspection, light X20 of PLC is off, the lift will open after automatically looking for the leveling

接下来即可对电梯运行多层、单层的全过程进行调整

Later make adjustments to the whole course of the multi-floor and single floor motion

原则 1：不论运行单层还是多层，减速前均应至少有短暂的稳速段(观察 U1-05)

Principle 1: Both single floor and multi-floor, there should be at least an ephemeral steady segment.

原则 2：利用 C5-01、C5-02、C5-03、C5-04、C5-07 调整运行舒适感

Principle 2: Use C5-01、C5-02、C5-03、C5-04、C5-07 to adjust the motion comfortable sense.

原则 3：C1-01、C1-02 的设定首先应满足多层运行的要求

Principle 3: The setting of C1-01、C1-02 should satisfy the requirement of multi-floor motion first.

原则 4：单层运行的调整只需合理设定 D1-05 即可

Principle 4: The adjustment of single floor motion need to set D1-05 reasonable

原则 5：若多层运行调整完毕，通过设定 D1-05 无法适应单层运行，可考虑调整 D1-03

Principle 5: If the adjustment of multi-floor is finished, the setting of D1-05 can't suit for the single floor motion, can think of adjustment of D1-03.

若井道自学习数据准确，调整完毕时电梯停靠应基本无爬行段

If the self tuning figure is correct, the lift should be no creep segment when it is stop.

最后合理调整上下强迫减速开关的位置，原则上与正常减速点一致

At last，adjust the position of the up/down forcibly slow down switch to the same position of the common deceleration point in the princle.

## 快车调试结束

## Finish the fast travel adjustment

仔细阅读变频器使用说明书，有关变频器的操作及说明均在该说明书中有详细叙述

Carefully read the manual of inverter, there should be detailed description of the operation and instruction in the manual.

## 功能检查

## Function inspection

对电梯进行功能实验，如轻载、满载、超载、直驶、司机运行、消防、锁梯、开关门动作，检查是否符合要求，功能项目参阅相应的原理说明书。Take function test for the elevator, like light load, full load, over load, bypass, travel, fire control, lock elevator, door open/close motion.. Function test in the lift, like light load, over load, bypasst drive, attendant motion

注意客户的特殊功能要求应在订货时声明。

Notice that customer's special requires for the functions should be declared while ordering.

故障代码：

Fault code:

本系统具有故障自诊断功能，常用的故障可以通过楼层数码管直接进行显示，当故障时发生时显示器出现 0 与故障码交替显示，此时该显示即为故障码，请依照表格进行查询。

The system has fault self diagnostics function, common diagnostics can display directly by floor digital pipe, when the diagnostics happens, the display screen shows 0 and fault code in turn, now this code is the fault code, please inquire according to the form. The form is as below:

附表如下：Form attached below:

| 故障码<br>Fault code | 含义<br>Meaning | 内容<br>Content | 处理方法<br>Operation way |
|---|---|---|---|
| 0→1 | 外围安全回路异常<br>Periphery safety loop abnormality | 构成系统的安全回路不导通<br>Non-conduction of safety loop which forms the system. | 查找安全回路<br>Look for the safety loop. |
| 0→2 | 抱闸接触器动作异常<br>Brake contactor motion abnormality | 当控制器输出到抱闸接触器，而反馈回来的信号不符<br>When the controller output to the brake contactor, the feedback signal is not complied. | 查找抱闸接触器的触点<br>Look for the contact of the brake contactor |
| 0→3 | 门锁回路动作异常<br>Door lock loop motion abnormality | 当控制器输出到开门接触器，而反馈回来的信号依然门锁导通。<br>When the controller output to the door | 是否人为短路或者开门系统故障<br>Inspect whether it is |

| | | opening contactor, but the feedback signal it still that the door lock is conducted. | man-made loop or opening system diagnostics. |
|---|---|---|---|
| 0→4 | 运行接触器动作异常<br>Contactor motion abnormality | 当控制器输出到运行接触器，而反馈回来的信号不符<br>When the controller output to the running contactor, but the feedback signal is not complied. | 查找运行接触器的触点<br>Inspect the contact of the running contacor. |
| 0→5 | 电机反馈动作异常<br>Motor feedback motion abnormality. | 输入到控制器的编码器信号错相<br>The coder signal which inputs into the controller is false phase. | 调换编码器的 A、B 相<br>Change phase A, B of the coder. |
| 0→6 | 电梯运行速度太慢<br>The motion speed of the lift is too slow. | 电梯运行速度太慢超过全程设定的时间设定<br>The motion speed of the lift is too slow, which excess the whole course designed time setting. | 查看电梯运行速度<br>Inspect the motion speed of the lift |
| 0→7 | 爬行超时保护<br>Creep overtime protection. | 电梯减速距离太长，超过 10 秒的设定<br>The lift deceleration distance is too long, which excess 10 seconds setting. | 重新井道自学习<br>Hoist reself-tuning |
| 0→8 | 单层高度/感应器损坏保护<br>Single floor height/ Sensor mangle protection | 单层距离太长，超过控制器的单层最高距离<br>single floor distance is too long, which excess the longest distance of the controller which control the single floor. | |

功能检查

**Function inspection**

对电梯进行功能实验，如轻载、满载、超载、直驶、司机运行、消防、锁梯、开关门动作，检查是否符合要求，功能项目参阅相应的原理说明书。

Take function test for the elevator, like light load, full load, over load, bypass, travel, fire control, lock elevator, door open/close motion. Function test in the lift, like light load, over load, bypasst drive, attendant motion

注意客户的特殊功能要求应在订货时声明。

Notice that customer's special requires for the functions should be declared while ordering.

# 七、变频器参数设定表

**Inverter parameter setting form**

### 1、 需要现场调整的参数：

**Parameters that need to be debugged on the spot.**

| 参 数<br>Parameter | 设定值<br>Set point | 含 义<br>Definition | 意 义<br>Meaning | |
|---|---|---|---|---|
| A1-02 | 2 | 有 PG 矢量控制运行方式<br>Operation mode of PG vector control | 无编码器或安装初期可设为 1<br>Can be set as 1 without coder or in the beginning of installation. | |
| C1-01 | 2.20S | 加速时间<br>Acceleration time | 影响加速时间加速舒适度<br>Affect the acceleration time and the acceleration sense of comfort. | |
| C1-02 | 2.20S | 减速时间 | 影响减速时间和减诉距离 | |

| | | Deceleration time | Affect the deceleration time and deceleration distance | |
|---|---|---|---|---|
| C2-01 | 0.60S | 加速开始时 S 曲线时间<br>S curve time when the acceleration time is start | 加大则改善启动舒适感<br>Increasing the time will improve the startup comfort. | |
| C2-02 | 0.60S | 加速结束时 S 曲线时间<br>S curve time when the acceleration time is over | 加大则改善加速满速舒适感<br>Increasing the time will improve the acceleration full speed sense of comfort. | |
| C2-03 | 0.60S | 减速结束时 S 曲线时间<br>S curve time when the deceleration time is over | 延长减速曲线改善减速开始的舒适<br>Increasing the time will improve the deceleration startup sense of comfort. | |
| C2-04 | 0.60S | 减速结束时 S 曲线时间<br>S curve time when the deceleration time is over | 影响停层精度和停层舒适感<br>Affect the precision and sense of comfort of the parking lands. | |
| D1-03 | 48HZ | 多层运行速度<br>multiple floor operation speed | | |
| D1-05 | 46HZ | 单层运行速度<br>single floor operation speed | | |
| D1-07 | 5HZ | 爬行速度<br>creep speed | | |
| D1-17 | 12HZ | 检修运行速度<br>inspection operation speed | | |
| E1-01 | 400V | 输入电压设定<br>input voltage setting | 根据实际电源输入电压<br>input the voltage according to the actual power. | |
| E1-04 | 60HZ | 最高输出频率<br>highest output frequency | 输入电动机铭牌额定频率<br>rated frequency of the input motor nameplate | |
| E1-05 | 3800V | 最高输出电压<br>highest output voltage | 输入电动机铭牌额定电压<br>rated voltage of the motor nameplate | |
| E1-06 | 50HZ | 基准频率<br>reference frequency | 输入电动机铭牌额定频率<br>rated frequency of the input motor nameplate | |
| E2-01 | 26 | 曳引机额定电流<br>hoist rated current | 输入电动机铭牌电流<br>input motor nameplate current | |
| E2-04 | 4 | 曳引机极数<br>numbers of the hoist poles | 输入电动机铭牌极数<br>numbers of the input motor nameplate poles | |
| E2-11 | 11 | 电动机功率<br>motor power | 输入电动机功率<br>input motor power | |

| Parameter No. | Outgoing set point | Definition | Remarks | Site final set point |
|---|---|---|---|---|
| F1-01 | *600* | 编码器脉冲<br>coder pulse | 输入旋转编码器铭牌数据<br>input rotary coder nameplate data | |
| F1-06 | *1* | PG 卡脉冲输出分频比<br>PG card pulse output divide sown ratio | 根据旋转编码器的脉冲进行修改<br>Amend according to the pulse of the rotary coder. | |

（倾斜部分请根据现场实际进行输入 **Please input the inclined part according to the site fact**）

**2、其他的参数设定：Other parameter setting:**

| 参数号<br>Parameter No. | 出厂设定值<br>Outgoing set point | 定义<br>Definition | 备注<br>Remarks | 现场最终设定值<br>Site final set point |
|---|---|---|---|---|
| A1-00 | 0 | 英语<br>English | | |
| A1-01 | 2 | 参数设定级别最高<br>The class of parameter set is the highest | | |
| B1-01 | 0 | 输入键盘频率<br>input keyboard frequency | | |
| B1-03 | 1 | 停止方式：滑行停止<br>Stop mode: slide stop | | |
| B1-06 | 0 | 输入滤波：2 次/2MS<br>Input filtering: 2 times/2MS | | |
| B2-01 | 0.5HZ | 零速基准频率<br>Zero speed reference frequency | | |
| C1-04 | 4.00S | 爬行停止时减速时间<br>creep stop deceleration time | | |
| C1-09 | 2.00S | 非常减速时间<br>abnormal deceleration time | | |
| C1-10 | 0 | 加减速时间设定单位：0.01S<br>set unit of acceleration/deceleration time: 0.01s | | |
| C5-01 | 30 | ASR 高速段比例系数<br>ASR high speed segment proportion modulus | | |
| C5-02 | 0.5 | ASR 高速段积分系数<br>ASR high speed segment integral modulus | | |
| C5-03 | 40 | ASR 低速段比例系数<br>ASR low speed segment proportion modulus | | |
| C5-04 | 0.5 | ASR 低速段积分系数<br>ASR low speed segment integral modulus | | |
| C5-07 | 20HZ | ASR 参数切换频率<br>ASR parameter switching frequency | | |

# G7 变 频 器 参 数 设 定 表
**YASKAWA G7 inverter parameter setting form**

| 参数号<br>parameter NO. | 出厂设定值<br>Outgoing set point | 定　义<br>Definition | 备注<br>Remarks | 现场最终设定值<br>Site final set point |
|---|---|---|---|---|
| E2-02 | 1.64 | | | |
| E2-03 | 9.7 | | | |
| E2-04 | 6 | 电机综合参数<br>Motor integrated parameter | 电机测定后自动写入<br>Auto writing after motor measurement | |
| E2-07 | 0.5 | | | |
| E2-08 | 0.75 | | | |
| E2-09 | 0 | | | |
| F1-02 | 2 | 非常减速停止<br>abnormal deceleration stop | | |
| F1-03 | 2 | 非常减速停止<br>abnormal deceleration stop | | |
| F1-04 | 2 | 非常减速停止<br>abnormal deceleration stop | | |
| H1-02 | 7 | 端子 S4：加减速切换<br>Terminal S4: switch of acceleration/deceleration | | |
| H1-03 | 4 | 端子 S5：多段速 2<br>Terminal S5: multi segment speed 2. | | |
| H1-04 | 5 | 端子 S6：多段速 3<br>Terminal S6: multi segment speed 3 | | |
| H1-05 | 6 | 端子 S7：检修速度<br>Terminal S7: inspection speed. | | |
| H1-06 | 9 | 端子 S8：基极封锁<br>Terminal S8: reference lock | | |
| H1-07 | F | 不使用<br>Not use | | |
| H1-08 | F | 不使用<br>Not use | | |
| H1-09 | F | 不使用<br>Not use | | |
| H2-01 | 37 | 端子 9：运行中 2<br>Terminal 9： in operation 2 | | |
| H2-02 | 6 | 端子 P1：变频器运行准备完了<br>Terminal P1: inverter operation preparation is finished. | | |
| H2-03 | 1 | 端子 P2：零速<br>Terminal P2: Zero speed. | | |

| | | | |
|---|---|---|---|
| H3-02 | 0% | 模拟量输入增益<br>analog input plus | |
| H3-06 | 0% | 模拟量输入增益<br>analog input plus | |
| H3-10 | 0% | 模拟量输入增益<br>analog input plus | |
| L3-04 | 0 | 速度陷落保护<br>speed sink protection | |
| L5-01 | 3 | 故障复位次数<br>fault reset times | |
| L8-05 | 1 | 输入欠相保护有效<br>input open-phase protection efficiency | |
| 01-01 | 5 | 显示电机转速<br>show the rotary speed of motor | |
| 01-02 | 4 | 显示 01-01 内容<br>show the content of 01-01 | |
| L7-01 | 240 | 力矩极限<br>torque limit | |
| L7-02 | 240 | 力矩极限<br>torque limit | |
| L7-03 | 240 | 力矩极限<br>torque limit | |
| L7-04 | 240 | 力矩极限<br>torque limit | |
| O1-01 | 5 | | |
| O1-02 | 4 | | |

★ 其 它 参 数 按 照 变 频 器 标 准 缺 省 值 不 要 改 变 。

Other parameters needn't to be changed according to the inverter standard default value.

THJ\*\*\*-\*/JW-VVVF 电梯控制柜元器件配置

THJ\*\*\*-\*/JW-VVVF elevator control cabinet component collocation.

表 1： 控制柜元器件配置

Form 1: Control cabinet componet collocation

| 代号<br>Symbol | 名称<br>Name | 品牌<br>Brand | 型号<br>Model | 数量<br>Quantity | 备注<br>Remarks |
|---|---|---|---|---|---|
| MC1、MC2 | 输入、输出接触器<br>Input, output contactor | Schnaider | LC1-D 系列 | 2 | |
| 50G、40G | 安全、门联锁、<br>Safety, door interlock | Schnaider | LC1-D0910　AC110V | 3 | |
| KM、GM、<br>MG、DF | 开门、关门、抱闸、<br>Open door, close door,<br>brake | Schnaider | LC1-D0910　AC220V | 3 | |

| | 照明继电器<br>lighting relay | | | | |
|---|---|---|---|---|---|
| MCCB | 总断路器<br>General circuit breaker | CNYH | DZ47-63　D32 | 1 | |
| CB1---CB7 | 断路器<br>Circuit breaker | | DZ47-63　C3 | 4 | |
| ICT | 检修开关<br>Inspection switch | Schnaider | ZB2-BE102 | 1 | |
| SSU、SSD | 上行、下行按钮开关<br>Up, down button switch | TEND | XB2-EA131XB2-EA121 | 2 | |
| SPI | 控制柜急停按钮开关<br>Controller emergency stop button switch | | ZB2-BE102 | 1 | |
| PLC | 可编程柜器<br>Programmable | Mitsubi shi | FX2N 系列 | 1 | |
| PLC.EXT | 可编程柜器扩展模块<br>programmable xtend module | Mitsubi shi | FX0N 系列 | | |
| INV | 变频调速器<br>Inverter governor | YASKAWA | G7 系列 | 1 | |
| INV-A | 变频调速器制动单元<br>Inverter governor brake unit | YASKAWA | CDBR4030 | 1 | |
| PG-B2 | 变频调速器测速卡<br>Inverter governor tachometer card | YASKAWA | PG-B2 | 1 | |
| R1 | 变频调速器放电电阻<br>Inverter governor discharge resistance | NANHUI | RGX20 系列 | 1 | |
| TXK | 通信模块<br>Communication module | MITSUBISHI | FX2N-485 | 1 | |
| JXW | 缺相保护继电器<br>open-phase<br>protection relay | NBDZ | XJ3 | 1 | |
| TR1 | 控制变压器<br>Control inverter | YUEFENG | 380/220V，110V，20V | 1 | |
| TR2 | 安全照明变压器<br>Safety lighting inverter | YUEFENG | 220/36V | 1 | |
| LED | 控制柜层楼指示器<br>Control cabinet floor indicator | CADT | | 1 | |

| YDY | 稳压电源<br>Reference power supply | 24V 110V | YDY | 1 | |
|---|---|---|---|---|---|
| D1 | 抱闸吸收元件<br>Brake absorber | | HD2.2 | 1 | |
| OL | 超载继电器<br>Over-load relay | HONGFA | JQX18EF | 1 | |
| YDY | 电源整流板<br>Power supply wind shield cover | YDY-1 | | 1 | |

表 2：代号说明

Form 2: symbol narrate

| 1JD-nJD | 内指令按钮灯<br>Inner call indicator | GOV-G | 底坑断绳关<br>pit broken step chain device |
|---|---|---|---|
| 1KA | 开门减速开关<br>Open forcibly deceleration switch | GUD | 到站钟<br>arrival gong |
| 2GA | 关门第 1 减速开关<br>Close first deceleration switch | ICTA | 机房检修开关<br>machine room inspection switch |
| 3GA | 关门第 2 速开关<br>Close second deceleration switch | ICTC | 轿顶检修开关<br>car top inspection switch |
| A1-An | 内指令按钮<br>Close second deceleration switch | ICTI | 轿厢检修开关<br>car inspection switch |
| AK1 | 轿顶照明开关<br>car top lighting switch | INV-DOOR | 门机变频器<br>door operator inverter |
| AK2 | 底坑照明开关<br>pit lighting switch | MZK | 满载开关<br>full-load switch |
| AL1 | 轿顶安全照明<br>car top safety lighting | OL | 超载继电器<br>over-load relay |
| AL2 | 底坑安全照明<br>pit safety lighting | OP | 开门按钮<br>open button |
| AS1-Asn | 外呼向上指令按钮<br>hall call up indicator button | OPL、OPL1 | 前、后开门到位开关<br>front, rear open door position switch |
| ASD | 点动向下按钮<br>inching down button | PASS | 司机直达按钮<br>attendant bypass button |
| ASU | 点动向上按钮<br>inching up button | PLD | 下平层感应器<br>down leveling sensor |
| AX2-AXn | 外呼向下指令按钮<br>hall call down indication button | PLU | 上平层感应器<br>up leveling sensor |
| CK1 | 轿顶 220V 插座<br>car top 220V receptacle | RGM | 关门分流电阻<br>close door shunt resistance |
| CK2 | 轿顶 36V 插座<br>car top 36V receptacle | RKM | 开门分流电阻<br>open door shunt resistance |
| CK3 | 底坑 220V 插座 | RMD | 门机调压电阻 |

| | | | |
|---|---|---|---|
| | pit 220V receptacle | | door operator variable voltage resistance |
| CK4 | 底坑 36V 插座<br>pit 36V receptacle | RZ1 | 抱闸调整电阻<br>brake adjusted resistance |
| CL | 关门按钮<br>close door button | S1D-SnD | 外呼向上指令按钮灯<br>Hall call up button indicator |
| CLL、CLL1 | 前、后关门到位开关<br>front, rear close door position switch | SIO | 基站锁梯开关<br>main floor elevator locking switch |
| CZK | 超载开关<br>Over-load switch | SJ | 司机开关<br>attendant switch |
| DK1 | 轿厢照明开关<br>car lighting switch | SPH | 底坑急停开关<br>pit emergency stop switch |
| DL | 下限位开关<br>Down limit switch | UJ、DJ | 电压隔离继电器<br>voltage isolated relay |
| DL1 | 轿厢照明灯<br>Car lighting | UL | 上限位开关<br>up limit switch |
| DM | 轿门电动机<br>Car motor | USD | 上强迫减速<br>up forcibly deceleration |
| DSD | 下强迫减速<br>Down forcibly deceleration | WS | 楼层数据测试开关<br>Floor data test switch |
| DZZ | 抱闸线圈<br>Brake loop | X2D--XnD | 外呼向下指令按钮灯<br>Hall call down button indicator |
| FAN | 轿厢风机<br>Car blower | | |
| FIRE | 消防开关<br>Fireman switch | | |

（完）