涌现集团
YONGXIAN GROUP

STVF7 SERIES ELEVATOR

User Manual

HYUN-CM-V3.0-201303-2025-0020

TABLE OF CONTENTS

1. INTRODUCTION ····· 3
1-1. Safety ····· 3

2. PREPARATION ····· 4
2-1. Preparation ····· 4

3. MACHINE ROOM EQUIPMENT WIRING ····· 5
3-1. Machine Room Duct and Conduit ····· 5
3-2. Machine Room Wiring ····· 7
3-3. Grounding ····· 9
3-4. Grounding System Diagram ····· 10
3-5. Machine Room Harness Connection From The Hoistway Cable ····· 11

4. CAR AND RELATED EQUIPMENT WIRING ····· 12
4-1. Car Junction Box Installation ····· 12
4-2. T-cable installation ····· 13
4-3. Car Equipment Wiring ····· 14
4-4. Landing Device Installation ····· 17
4-5. OPB connection ····· 20
4-6. Load Compensating Device ····· 22
4-7. Voice Synthesizer Connection ····· 23
4-8. CPI connection ····· 23

5. HOISTWAY EQUIPMENT WIRING ····· 24
5-1. Hoistway cable harness ····· 24
5-2. Hoistway harness connection ····· 25
5-3. Hall CAN Board Installation ····· 26
5-4. Pit Switch Installation ····· 28
5-5. Limit Switch Installation In Hoistway ····· 29

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1. INTRODUCTION

1-1. Safety

WARNING

Be very careful to keep the following caution required to prevent injury of the workers and to protect the product from being damaged.

CAUTION 1

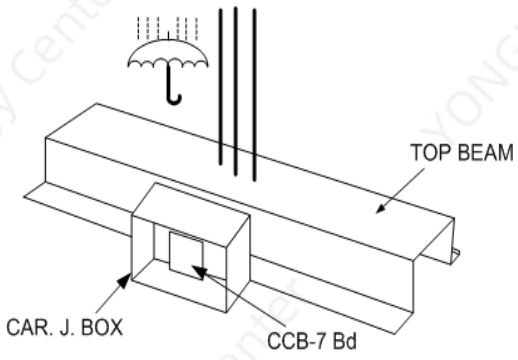
As this system uses serial communication, correct and thorough grounding is vitally required to prevent any mis-operation of the system and damage of the components.

CAUTION 2

As all the connections are done by the harness connectors and there are many connectors in similar appearance, it's very important to confirm right label or marking, connectors color of the connectors before connecting them.
Any wrong connection can cause mis-operation and serious damage to the system.
Unstable connection also should be checked out and corrected to ensure the normal operation.

CAUTION 3

As Car Junction Board is installed in the car junction box, be careful that the board is not damaged by the leaking of water during installation.
Refer to Figure 1.



[Figure 1. Leaking of water prohibited against Car Junction box]

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2. PREPARATION

2-1. Preparation

1) Machine Room

① Clean the machine room floor.
Cover the Traction machine and Control panel, before cleaning.

② Clean the inside of Control panel.

③ Check the state of wiring and connection of the connectors inside the Control panel.

④ Clean the brake and check the oil supply state of traction machine.

⑤ Check the moving part of the governor.

2) Hoistway

① After clearing away the scaffolding, clean the inside of the hoistway.

② Check whether there is any obstacle in running the car and prevent any accident and damage of the product.

③ Check the state of fastening bolts and nuts.

④ Check the state of buffer installation.
Check the oil supply state in case of oil buffer type.

⑤ Clean the rail.

⑥ Clean the pit.

3) Car

① Clean the top and inside of the car.

② Check the state of fastening bolts and screws.

③ Check the state of fixing and fastening of terminal and connectors.

④ Check the installation state of the car junction box and leaking of water at car junction box, especially at car top board.

4) Control panel

① Crane which can lift up more than 500kg is needed to move the control panel.

② Check the control panel is located at proper position for the work in the machine room, after moving it to machine room.

③ Take off the vinyl cover, and check all components are assembled and kept in order without damages.

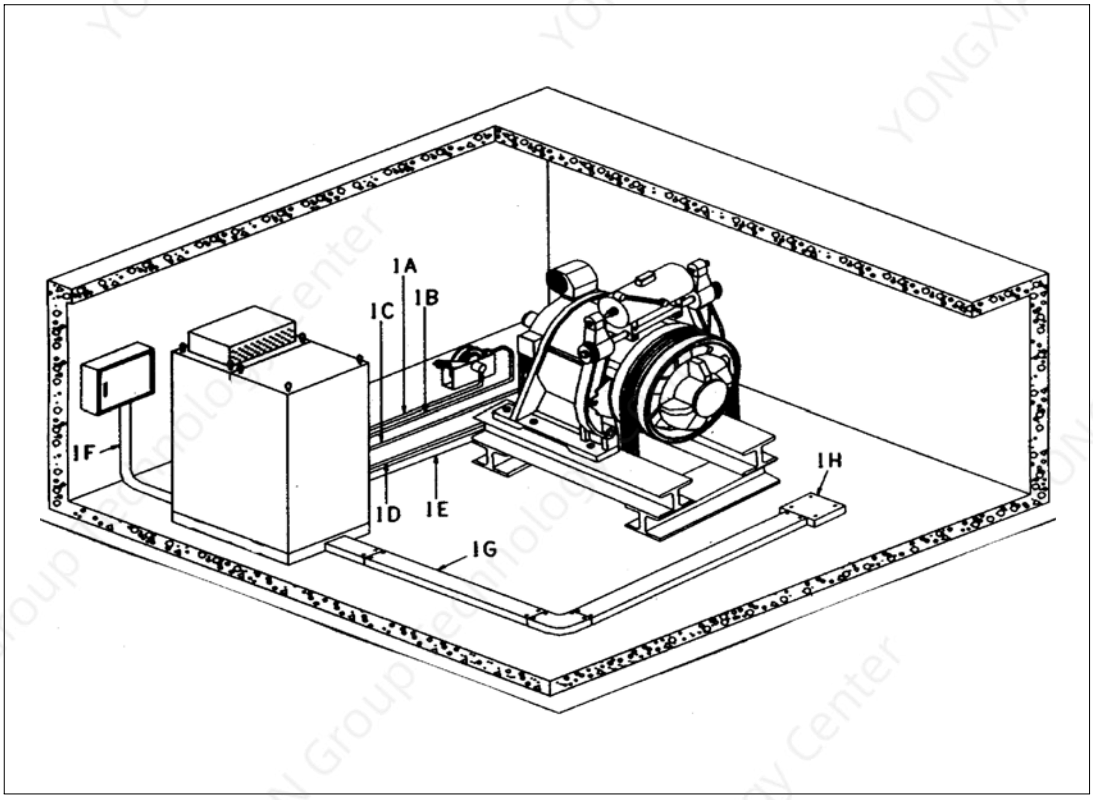
④ Check the state of fastening and connecting of connectors and terminals in the Control.

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3. MACHINE ROOM EQUIPMENT WIRING

3-1. Machine Room Duct and Conduit

1) Install machine room duct and conduit. See Figure 2.
2) Governor encoder(use for 150m/min or over) requires a separate conduit run.
3) Motor encoder and brake switch wiring should be run in a conduit separate from the motor leads.
4) The controller communications wiring must be in separate conduit run between controller and remote locations.
5) Install two(2) separate conduit runs from the controller to the governor.
   One conduit run is for the governor speed switch, the other is for the governor encoder.



[Figure 2. Machine room duct and conduit panel (in case of single car)]

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6) Electro-metallic tubing(EMT) arrangement.

1A ; conduit and flex conduit for governor encoder.

1B ; conduit and flex conduit for governor switch.

1C ; conduit and flex conduit for machine encoder.

1D ; conduit and flex conduit for machine brake & blower motor.

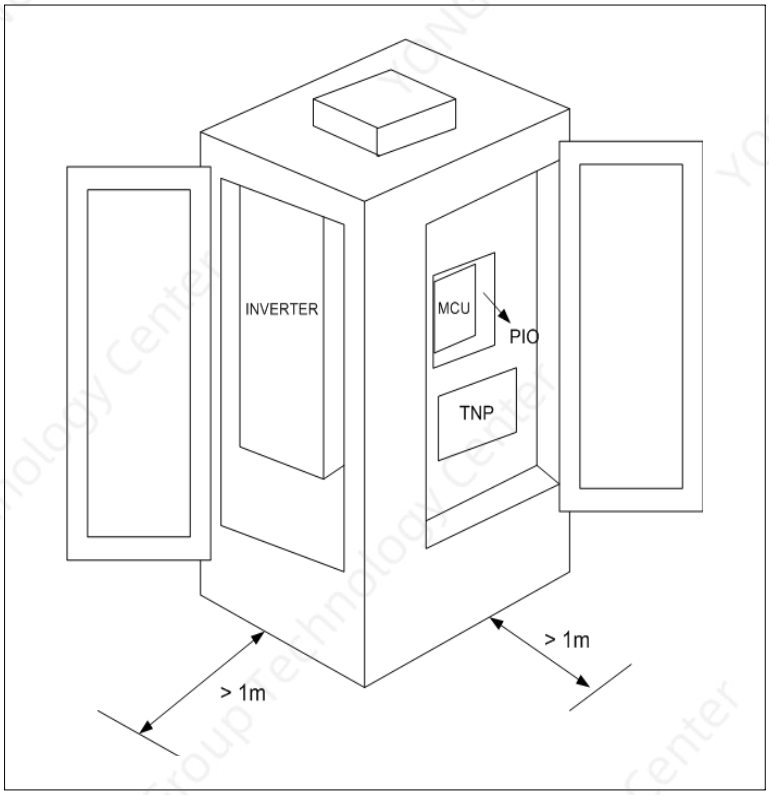
1E ; conduit and flex conduit for machine motor.

1F ; conduit for disconnect switch box.

1G ; machine room duct.

1H ; machine room duct stay box.

7) To work conveniently, control panel is installed at a least 1 meter distance against a wall. Refer to Figure 3.



[Figure 3. Distance between control panel and wall]

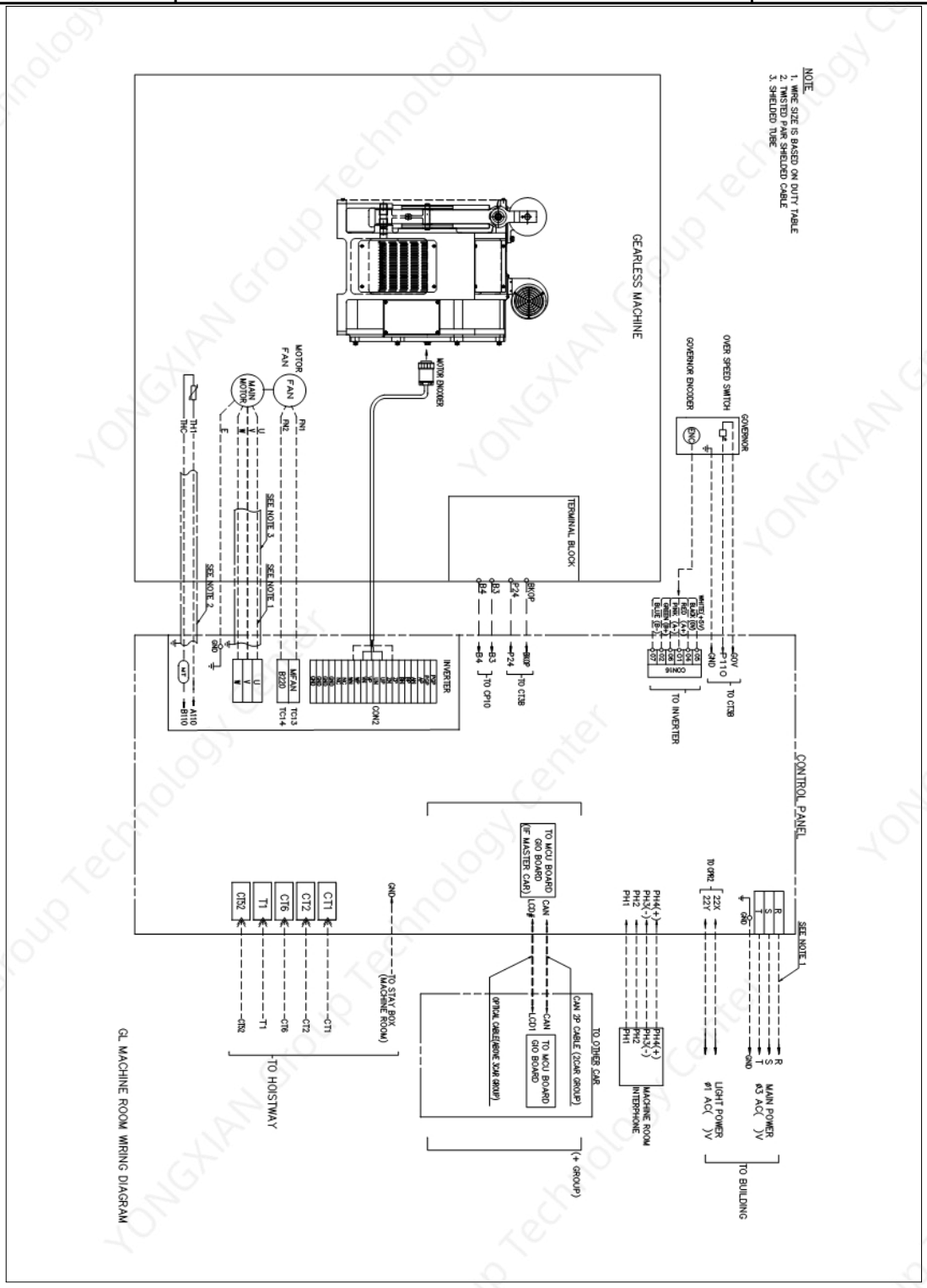
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3-2. Machine Room Wiring

1) Complete the following wiring for machine room equipment.
See wiring diagrams for terminal names and proper wire size.

- See Figure 4 Machine room wiring diagram (example : Gearless System)
- Primary of step up/step down transformer (if required).
- Building ground.
- Car lighting supply (to Building power)
- AC Traction motor
- Motor encoder
- Motor temperature monitoring sensor(Motor Thermal or Motor Thermistor)
- Traction machine blower motor(In case of "GT100" type Machine)
- Brake
- Brake switch
- Governor encoder(use for 150m/min or over)
- Governor switch
- Between motor control panel and car control panel.
- Between car and others car
- Inter communication wiring

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[Figure 4. Machine room wiring diagram (example:Gearless System)]

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3-3. Grounding

- The purpose of the grounding is to protect the workers from the electric shock.
- When working near the electric conducting equipments, be careful of the accident by electric shock as it can be fatal to workers. Also, the grounding is one of the measures to minimize the interference of the noise.
- The system can be protected from the electronic noise by proper grounding and shielding.

1) Items That Shall Be Grounding
   - Motor control panel
   - Car control panel
   - Traction motor
   - Governor
   - Primary of step up/step down transformer (if required).
   - Car operating panel
   - Hall button box
   - Position Indicator box and hall lantern box
   - Car top junction box
   - Switches (Limit switch, Door switch, Fire switch, Parking switch, etc....)
   - Cable duct at machine room and hoistway
   - Other equipments

2) Ground Line Connection
   - Use the Scotch Lock Connector for limit switch, door switch and button box.
   - And wrap the connection part with the isolation tape.

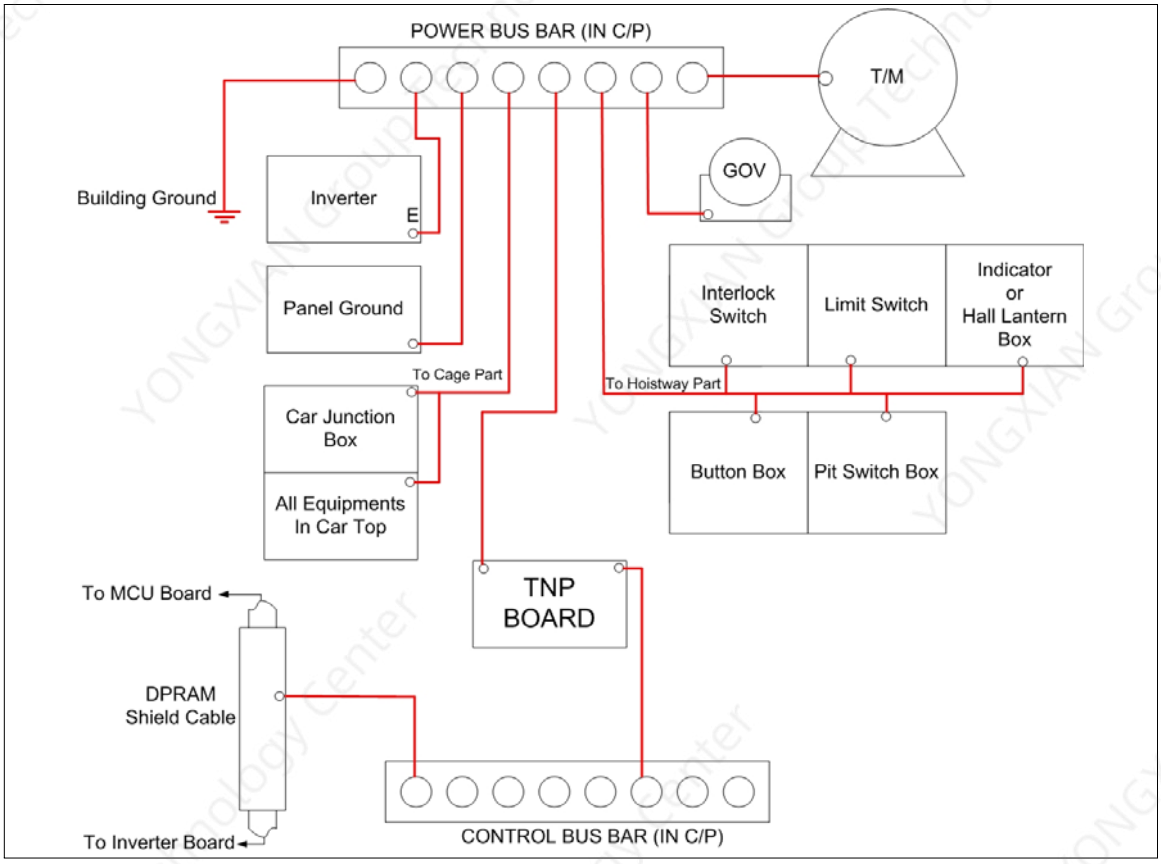
CAUTION

* Use the green wire for the grounding.
* Connect the grounding wire by using the ring type terminal lug.
* Remove the rust or the paint around the connection part so that it's grounded perfectly.

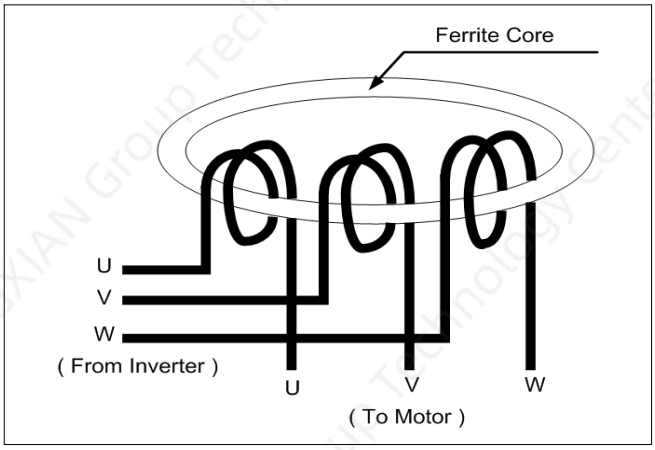
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3-4. Grounding System Diagram

- Power bus bar and control bus bar must be divided as noise. Refer to Figure 5, 6.



[Figure 5. Grounding system diagram]

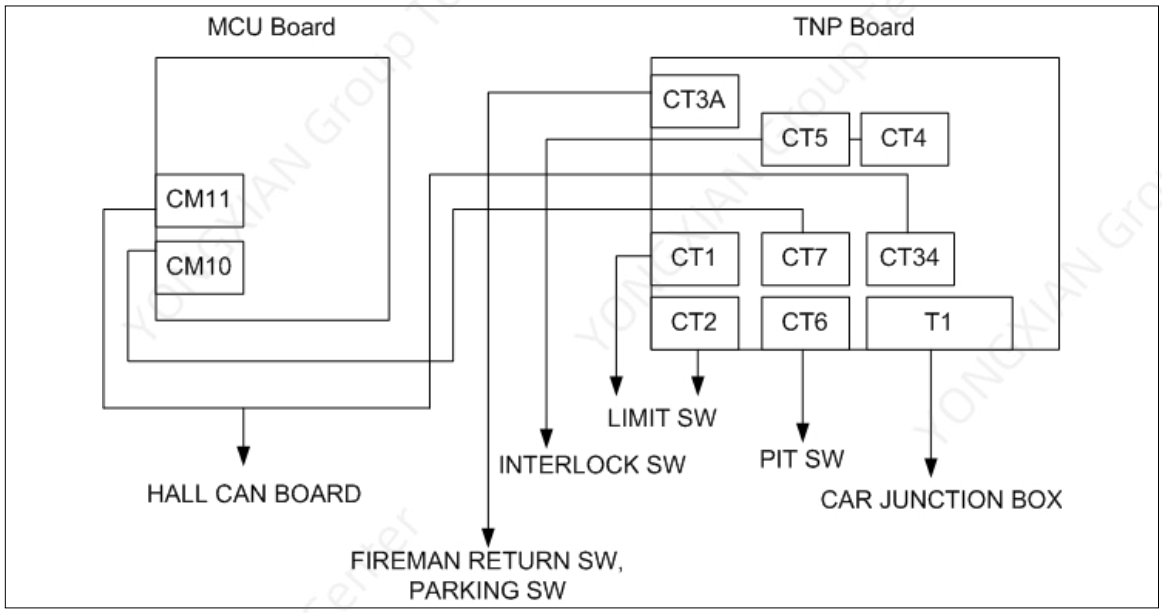


[Figure 6. Ferrite Core]

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3-5. Machine Room Harness Connection From The Hoistway Cable

For the cable connection from hoistway, firmly connect the colored harness connector on the MCU Board and TNP Board in Control Panel after checking the connector color is coincident with the designated color of the Electrical Schematic Diagram.



[Figure 7. Harness connections of MCU board and TNP board]

Control Panel	Connector	Commit
MCU Bd	CM10	CAN Communication Cable (To CT7 of TNP Bd)
	CM11	Hall Communication Cable
TNP Board	CT7	CAN Communication Cable (To CM10 of MCU Bd)
	CT34	Hall Power Cable (DC24V Power)
	CT1	Limit Switch (upper)
	CT2	Limit Switch (lower)
	CT3B	FMR or Parking Switch
	CT4	Top Interlock Switch
	CT5	Bottom Interlock Switch
	CT6	Pit E-stop Switch
	T1	T-Cable (To CCB-7 Bd)
In Control Panel	T1B, T2	
Terminal Block "TC"	TC19, TC20	Pit Light
	"N24"	Interlock Switch Ground

[Table 1. Control Panel Harness Connection]

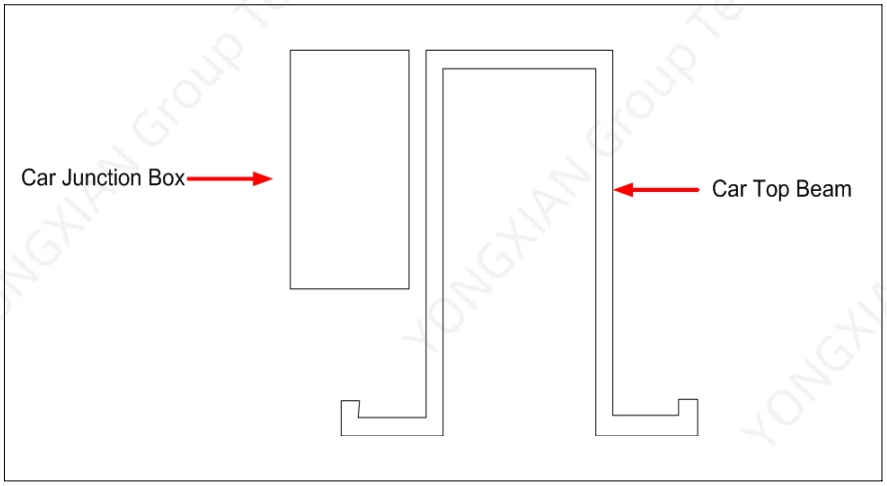
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4. CAR AND RELATED EQUIPMENT WIRING

4-1. Car Junction Box Installation

· Car junction box shall be installed on the side of car top beam as shown below.

· Traveling cables access through hole into the car junction box. See Figure 8.



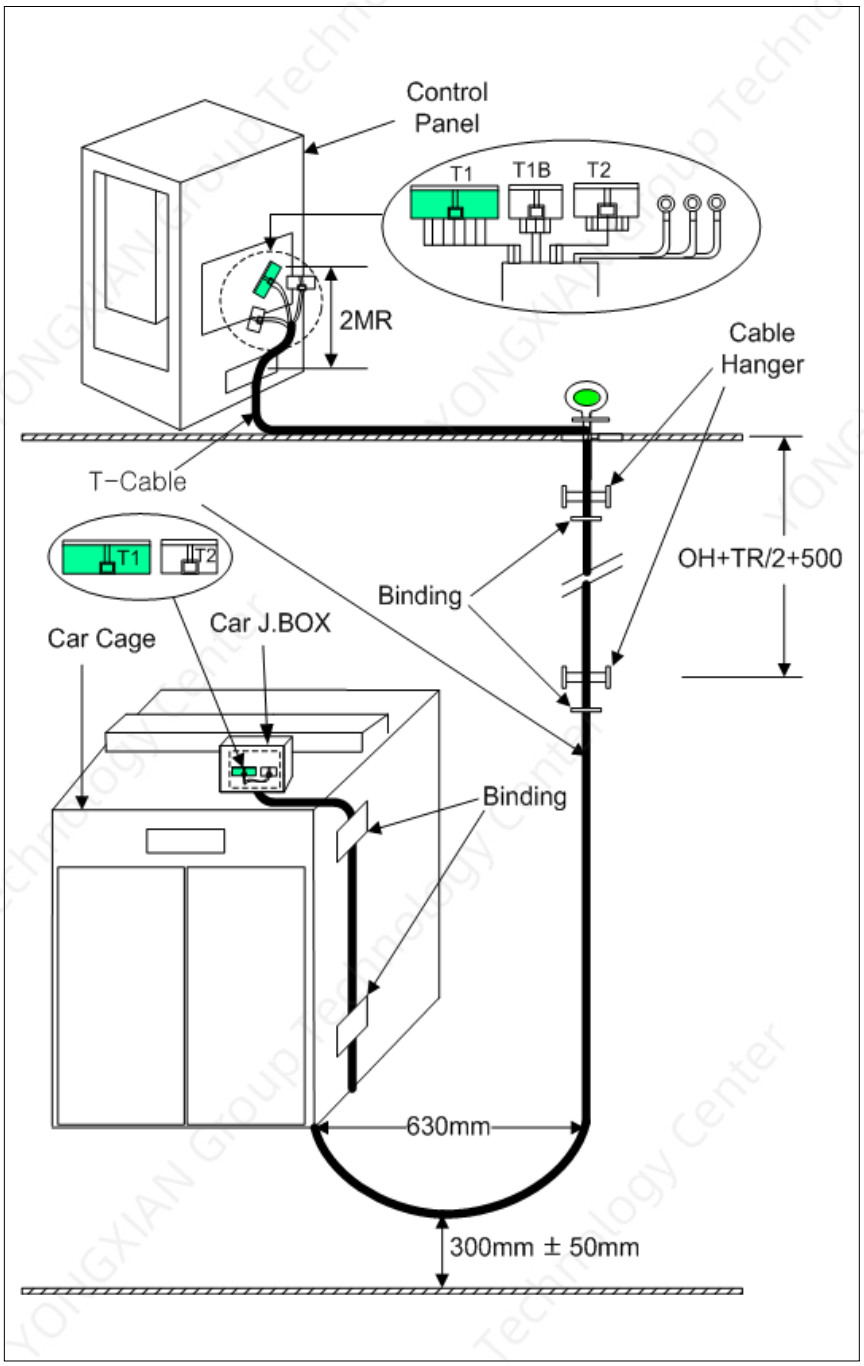
[Figure 8. Car junction box installation]

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4-2. T-cable installation

(1) T-cable hangers are installed in hoistway.

(2) Refer to figure 9.



[Figure 9. T-cable connection]

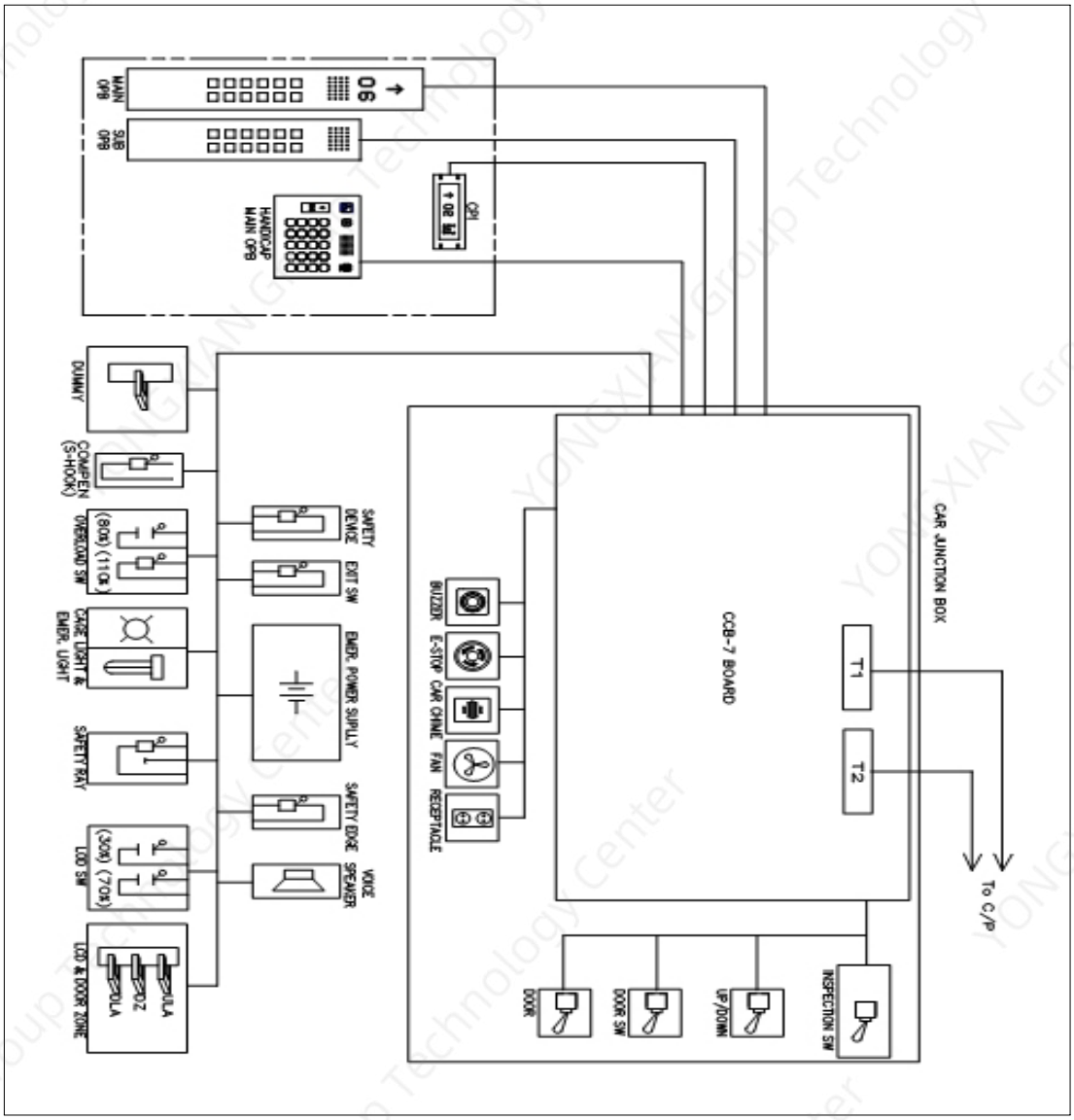
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4-3. Car Equipment Wiring

1) Connect all required devices as per wiring diagram. See Figure 10.
   - Refer to wiring diagrams for each terminal names.
   - Refer to general order sheet for proper wire size.

2) Complete the following wiring for cab equipment.
   - landing device
   - safety switch
   - door operator
   - safety edge switch
   - car light
   - emergency light
   - speaker
   - other option (refer to circuit diagram)
   - gate switch
   - exit switch
   - car fan
   - electric eye (multi beam)
   - emergency power supply
   - ls board & ls sensor

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[Figure 10. Car Equipment Wiring]

3) Harness connection for the cab wiring

- For the easier connection to many other device in the car as listed below, connectors are provided at the end of cables.
- Be sure to confirm the marked labels or connectors color on the connectors and connect each cable correctly to car top board.
- Each cable shall be properly bound to prevent any trouble or poor contacting happening due to cable swaying.

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4) Completely connect the following harness connector for cab equipment.

DEVICE	CONNECTOR	REMARK
Safety switch	CC5	
Exit switch	CC8	
Compensating chain	CC7	Jumper (not used)
Gate switch 1	CC4B	
Gate switch 2	CC4	Jumper (not used)
Door inverter	CC50	
Safety edge 1	CC25B	Jumper (not used)
Safety edge 2	CC25	Jumper (not used)
Safety ray power	CC23, CC23B	
Safety ray 1	CC24B	Jumper (not used)
Safety ray 2	CC24	Jumper (not used)
Multi beam	CC24B	Jumper
	CC24	
	CC16B	Multi beam adapter
Landing device sensor	CC3	
Dummy sensor	CC56	for Non-stop floor
Door load detector	CC55	for door turn function
Cage fan	CC17	
Cage light	CC18	
Emergency light	CC28	
BGM speaker	CC11	
OPB CAN communication	CC54A, CC54B	to OPB-340 board
Voice synthesizer	CC54C	to "CN2" of voice synthesizer
Emergency power supply	CC27	
CPI-CAN	CC58	to "CH1" of CPI-CAN board

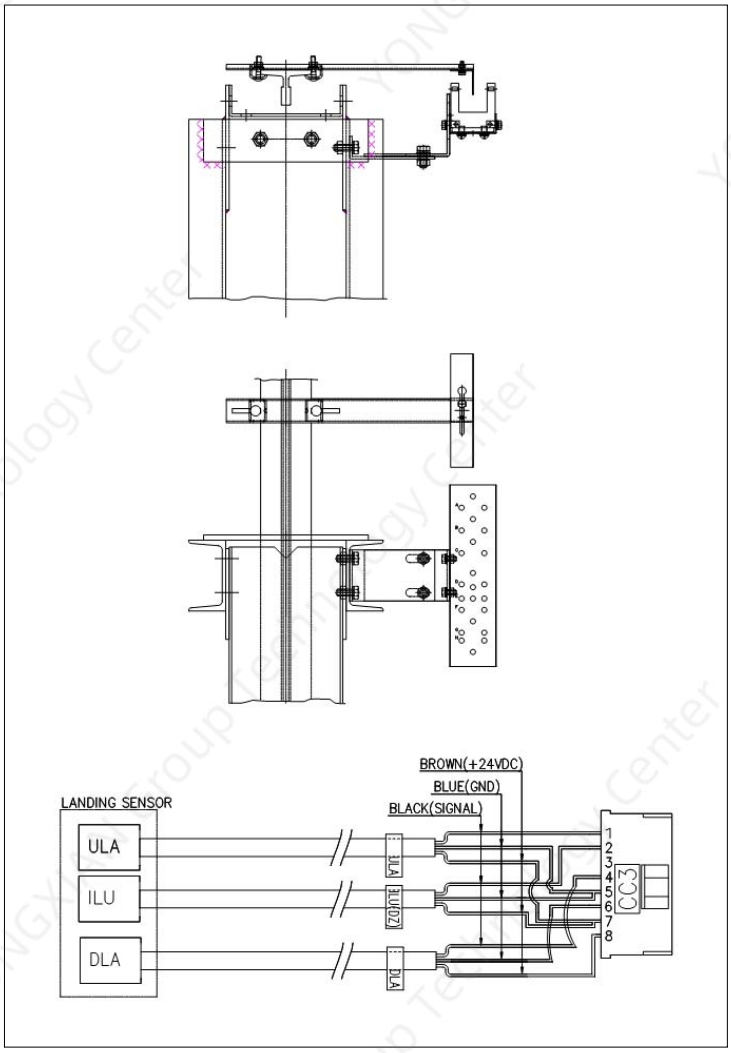
[Table 2. CCB-7 Board Connection]

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4-4. Landing Device Installation

1) Components
- Horseshoe-shaped sensor ; 3 ea/unit
- Landing vane and brackets ; 1 set/floor
- Bracket to install sensor ; 1 set/unit

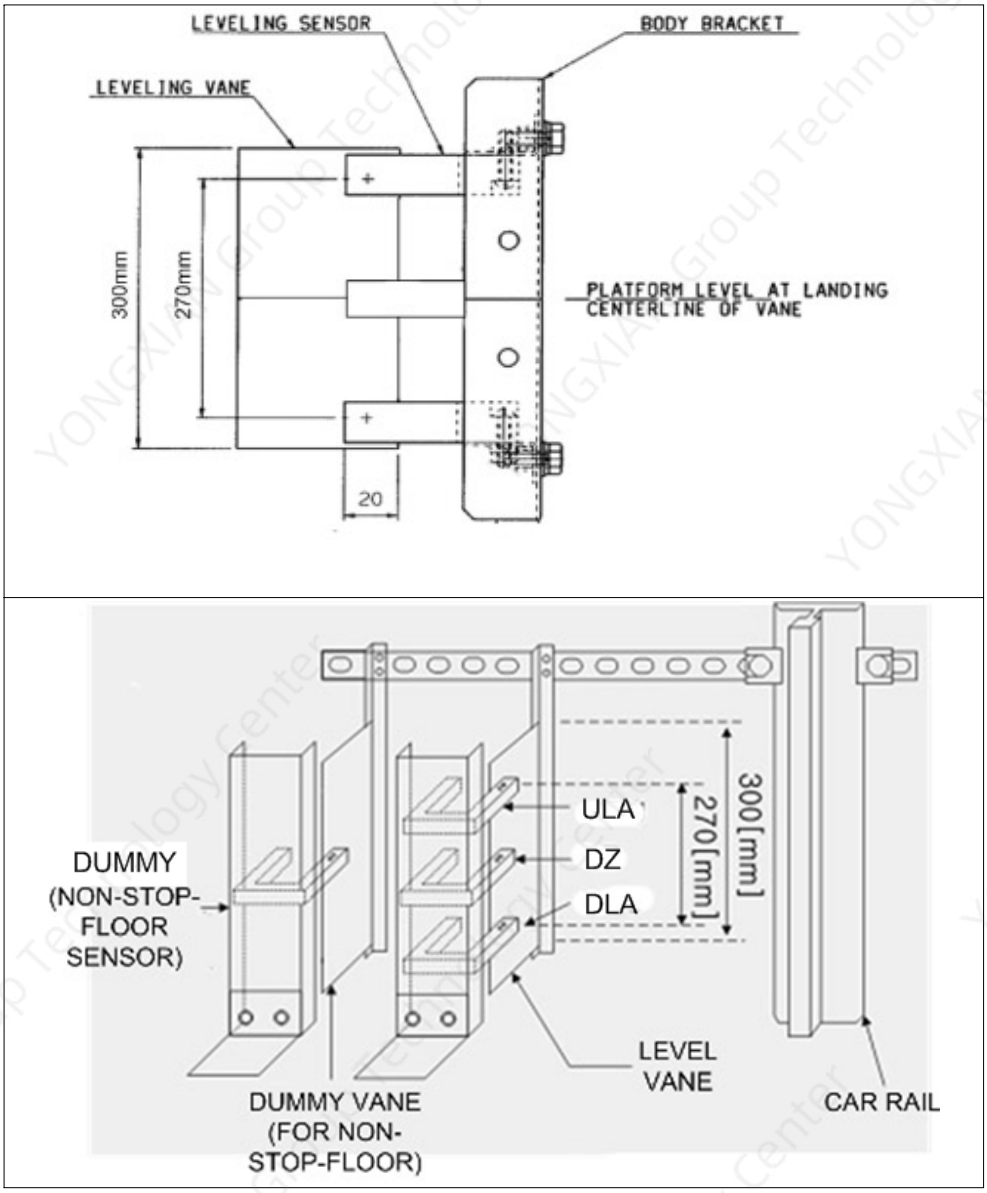
2) Installation and Adjustment of Landing Device
① Put the tools and landing vane on top beam.
② Install the level detection device as shown on the following figure.
See Figure 11. landing device



[Figure 11. Landing Device]

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③ The space between sensors and the distance of vane are as follows. See figure 12.

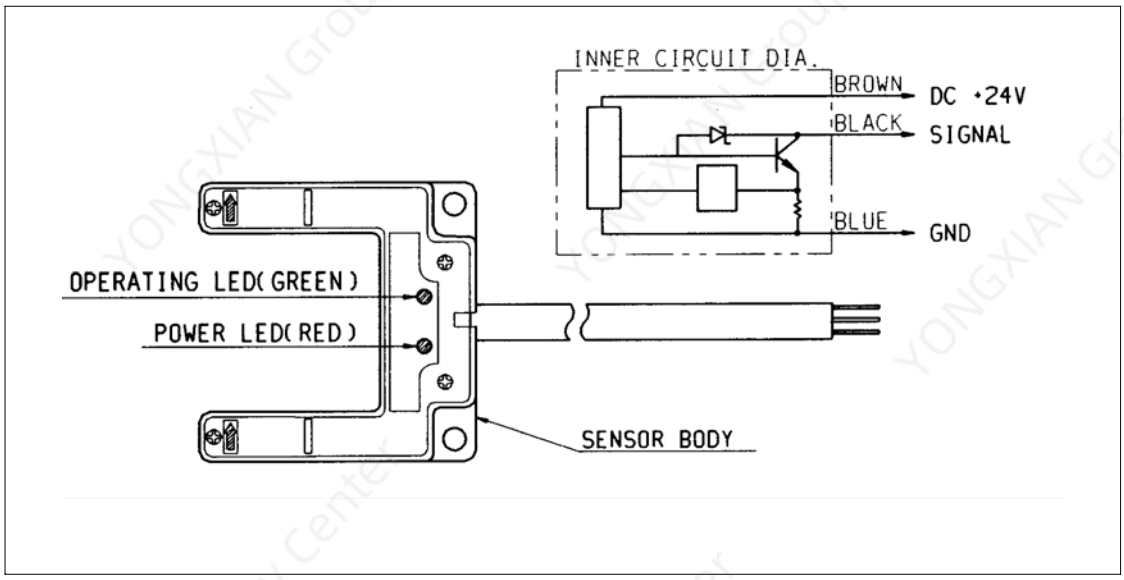


[Figure 12. Setting distance between landing vane and sensor unit]

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④ After installing the level detection device and making the electric connection, check the sensor is operating normally. See Figure 13.
See whether LED is ON by cutting off the sensor beam by hand.

Connection - BROWN ; DC +24V
- BLUE ; GND
- BLACK ; SIGNAL (NPN open collector, Dark on type)



[Figure 13. Connection Diagram of LCD sensor]

⑤ Adjust the floor level exactly by manual operation.
And install landing vane at every floor and adjust that marked half line of landing vane is matched with the half line of LCD bracket.
Then check that all LEDs of sensor are turn ON.

⑥ Check whether there is any interference between the landing vane and the sensor, while moving the car by manual operation and check that the levelling is correct.

CAUTION

When the current is overloaded than the rate current, the overcurrent protection circuit adopted in the sensor will be operated. If overcurrent protection circuit is operated, the output keeps OFF state even it is ON state when beam is cut off by landing vane. To reset it to normal operation, turn the power OFF and ON one time.

Clean up the sensor to prevent the system from any error that can be caused by the foreign matter.

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4-5. OPB Connection

1) Main OPB connection

Cable Name	From		To	
CAN communication (C1)	M.OPB-340	CC54A	CCB-7	CC54A
OPB Signal (B1)	M.OPB-340	CC51,CC52	CCB-7	CC51,CC52
OPB Switch (A1)	OPB Switch	CO1	CCB-7	CO1

[Table 3. Main OPB connection]

2) Disable(Handicap) OPB connection

Cable Name	From		To	
CALL Jumper (F1)	BN	CU47,CU48, CU49	M.OPB-340	CU47,CU48, CU49
Interphone (E1)	Disable interphone	-	CCB-7	CO2

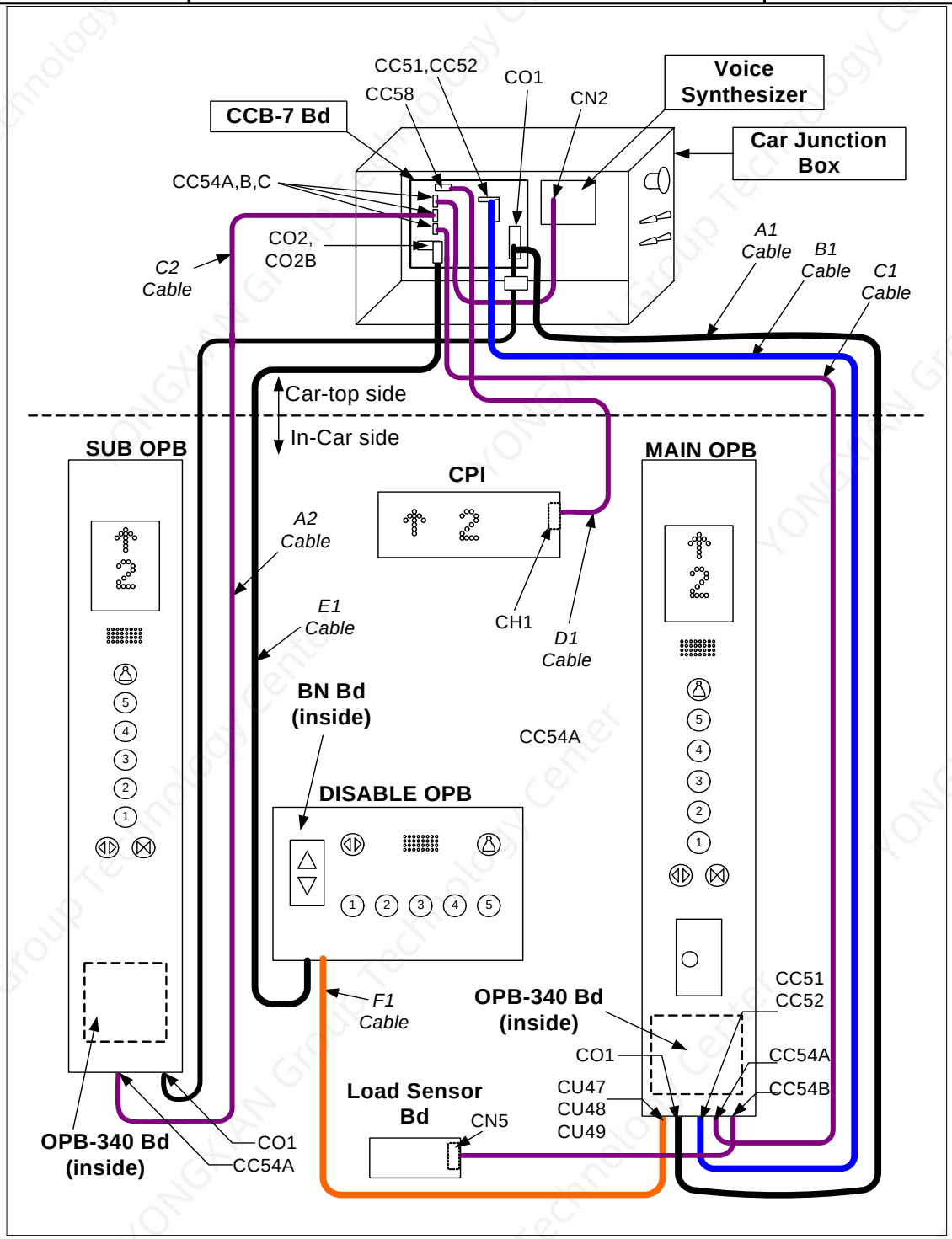
[Table 4. Disable OPB connection]

3) Sub OPB connection

Cable Name	From		To	
CAN communication (C2)	S.OPB-340	CC54A	CCB-7	CC54B
Interphone (A2)	S. interphone	-	CCB-7	CO1S

[Table 5. Sub OPB connection]

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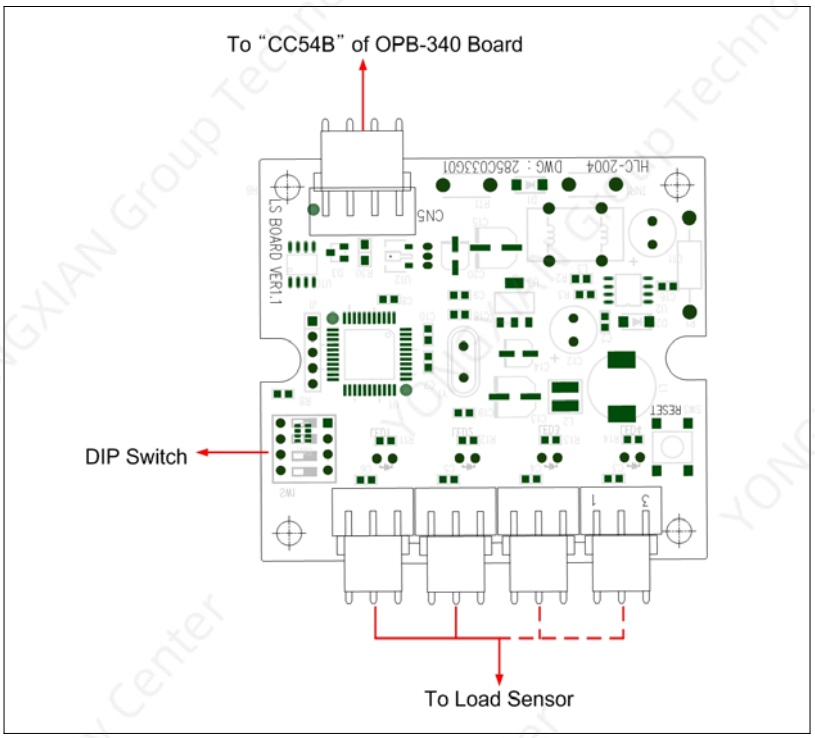


[Figure 14. OPB Connection]

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4-6. Load Compensating Device (For LXVF7 gearless, SSVF7 machine-room-less)

1) Fix the LS board under the cage, and connect the LS sensor and LS board by connector cable.

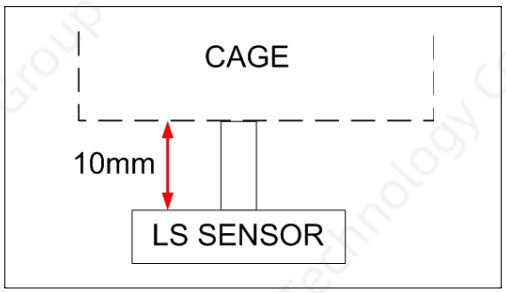


[Figure 15. LS Board]

2) Install the LS sensor under the car, and connect to the "CN1,CN2" of LS board.

3) And set dip switch 1 and 2 on.
(If Ls sensor is one unit only, connect it to the "CN1" connector of LS board and set on dip sw 1 only also)

4) LS sensor must be installed in state of being pressed with 10mm.



[Figure 16. LS Sensor position]

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4-7. Voice Synthesizer Connection

Cable Name	From		To	
CAN communication	CCB-7	CC54C	Voice syn.	CN2
Speaker cable	speaker	-	Voice syn.	CN4
Emergency power cable	Emergency power supply	CN2	Voice syn.	CN1

[Table 6. Voice synthesizer connection]

4-8. CPI (Car Position Indicator) Connection

Cable Name	From		To	
CPI Cable (D1)	CPI	CH1	CCB-7	CC58

[Table 7. Voice synthesizer connection]

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5. HOISTWAY EQUIPMENT WIRING

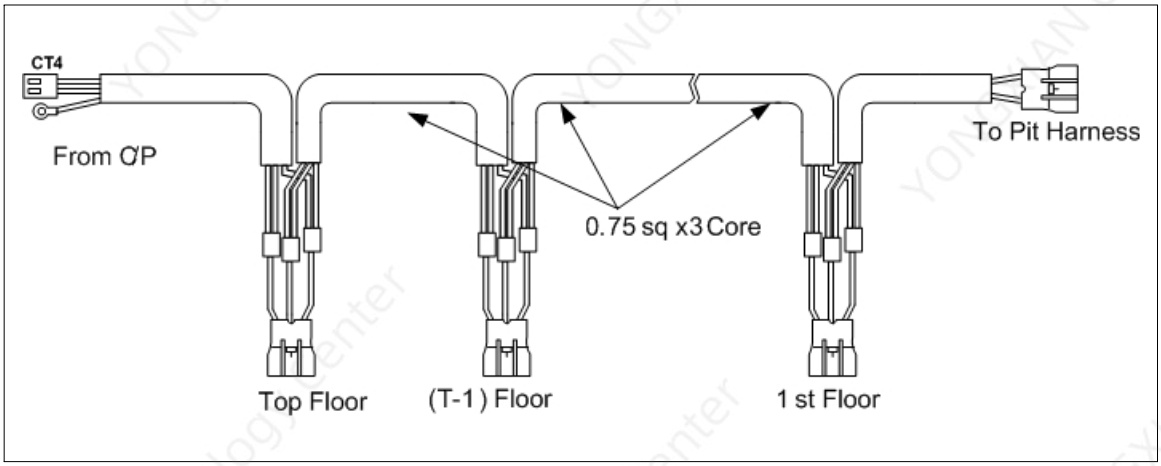
CAUTION

As this system uses the cables with harness connectors at both ends for all field connections, there is the possibility of the PC Boards or other related components being damaged or malfunctioned if the connectors are connected incorrectly or the contacting state is poor. So, it requires special care in doing the connection work.

5-1. Hoistway cable harness

1) Interlock harness

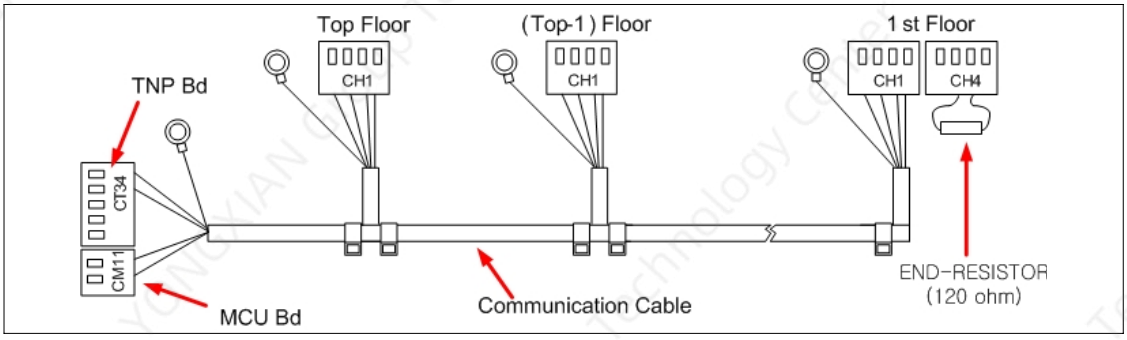
- 0.75 SQ, 3-Core cable
- DC 110V



[Figure 17. Interlock harness]

2) Communication harness

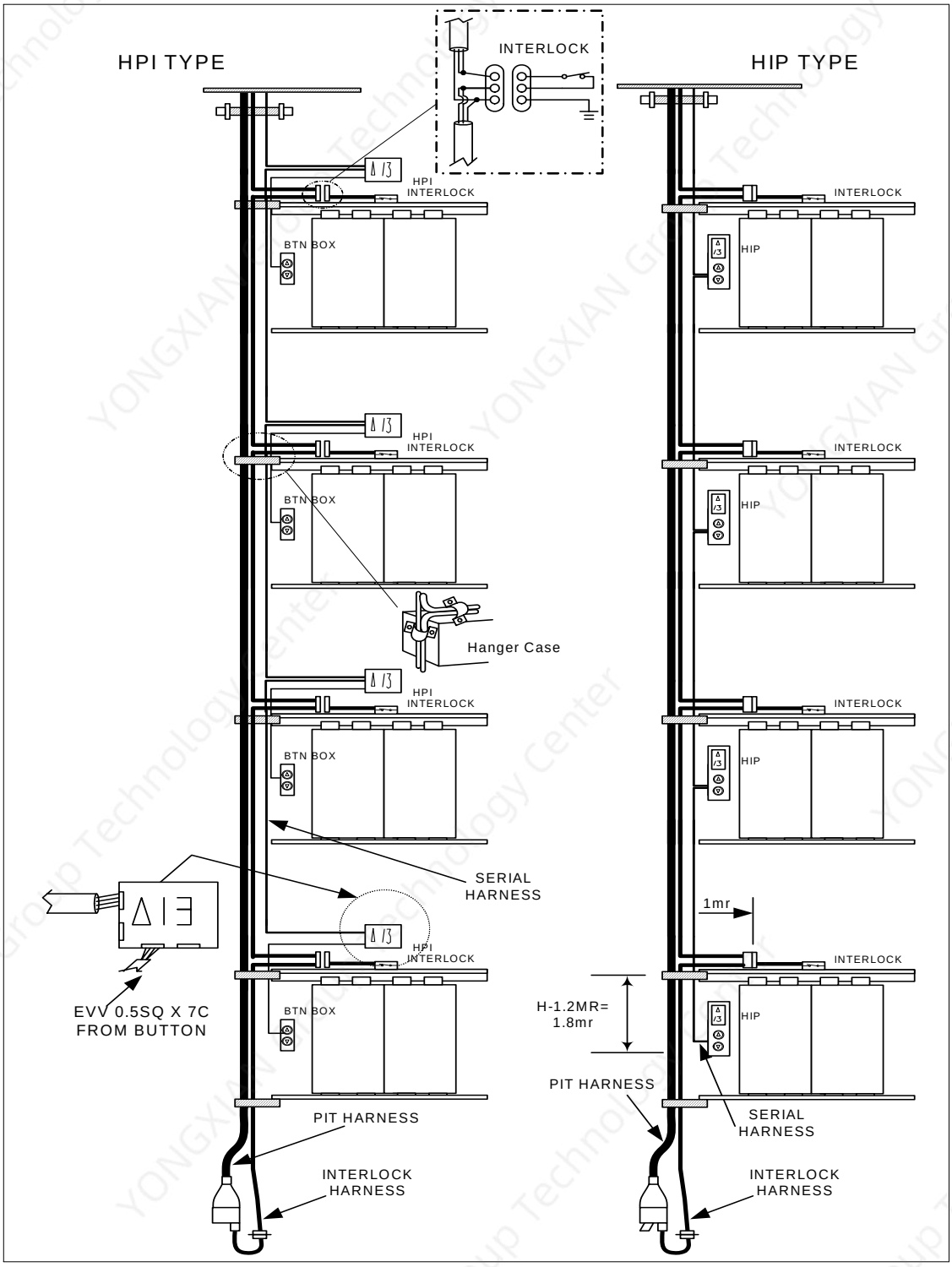
- 0.75 SQ, 5-Core EVV cable
- Communication cable is a role of hall indicator signal, button signal transmission and DC 24V power supplement to hall-can board.



[Figure 18. Communication Cable]

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5-2. Hoistway harness connection

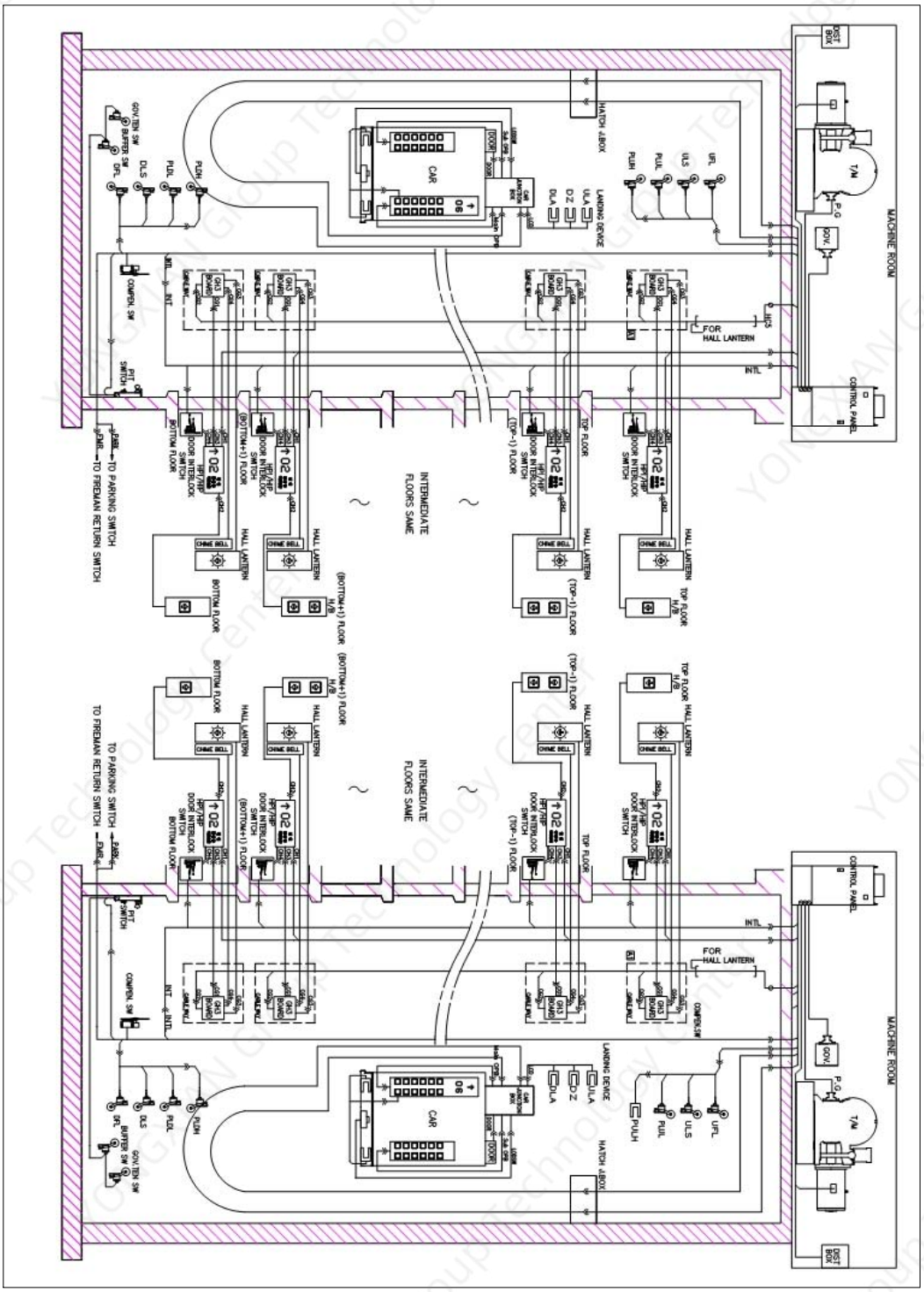


[Figure 19. Hoistway harness connection]

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5-3. Hall CAN Board Installation

1) General Arrangement

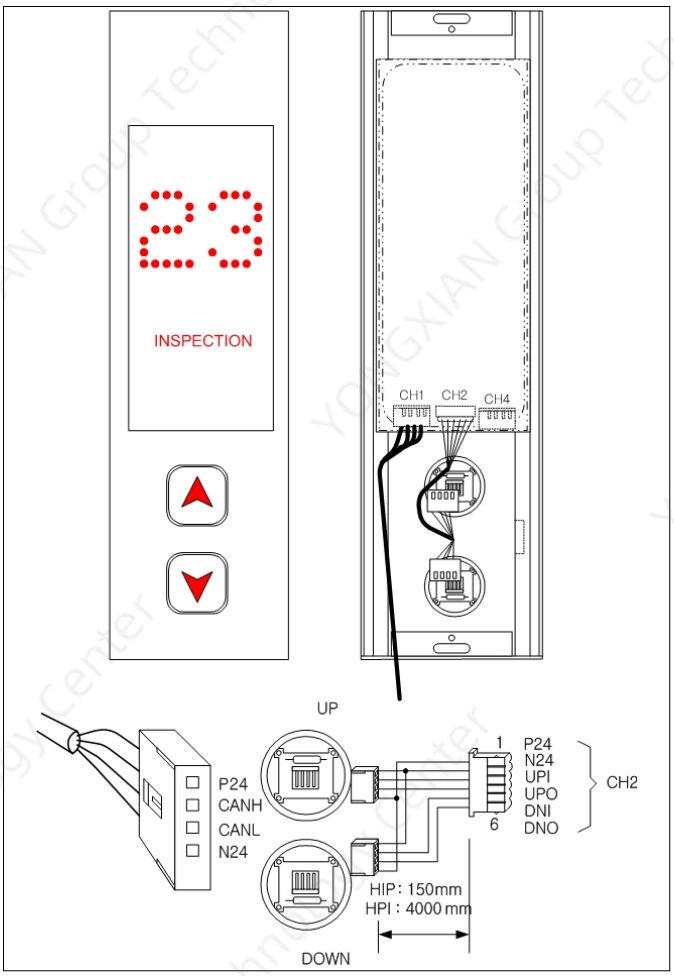


[Figure 20. Hall CAN Board and Hoistway device wiring]

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2) HIP board connection

- Refer to figure 21.
- And refer to "Chapter 2-6. HPI/HIP board connection of STVF7 ADJUSTMENT MANUAL".

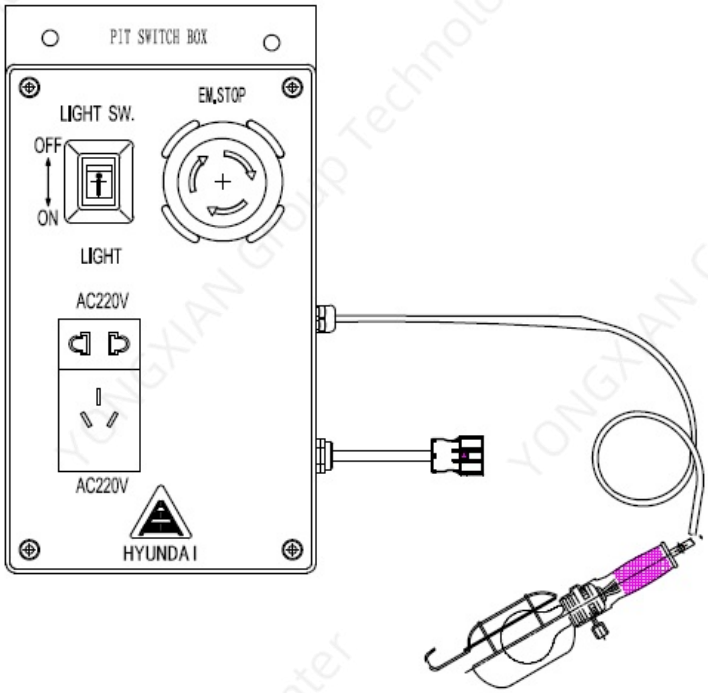


[Figure 21. HIP board connection]

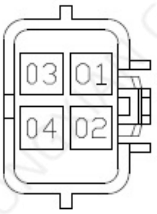
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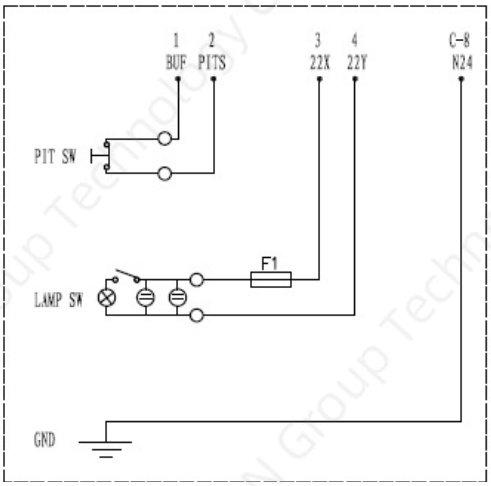
5-4. Pit Switch Installation

1) General Arrangement



PIN	SIGNAL	CABLE
1	BUF	C-1
2	PITS	C-2
3	22X	C-3
4	22Y	C-4



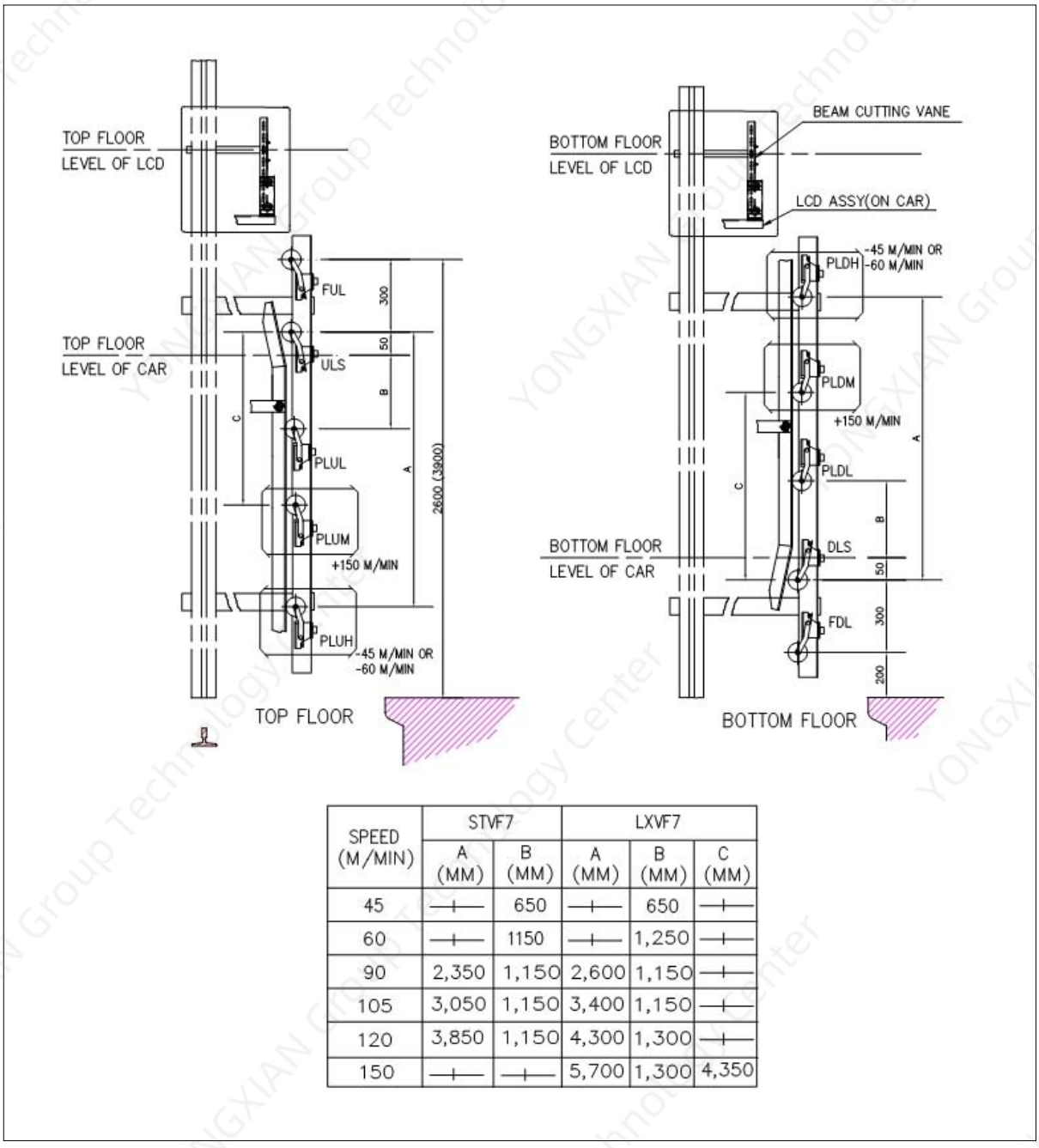


[Figure 22. Pit switch and wiring diagram]

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5-5. Limit Switch Installation In Hoistway

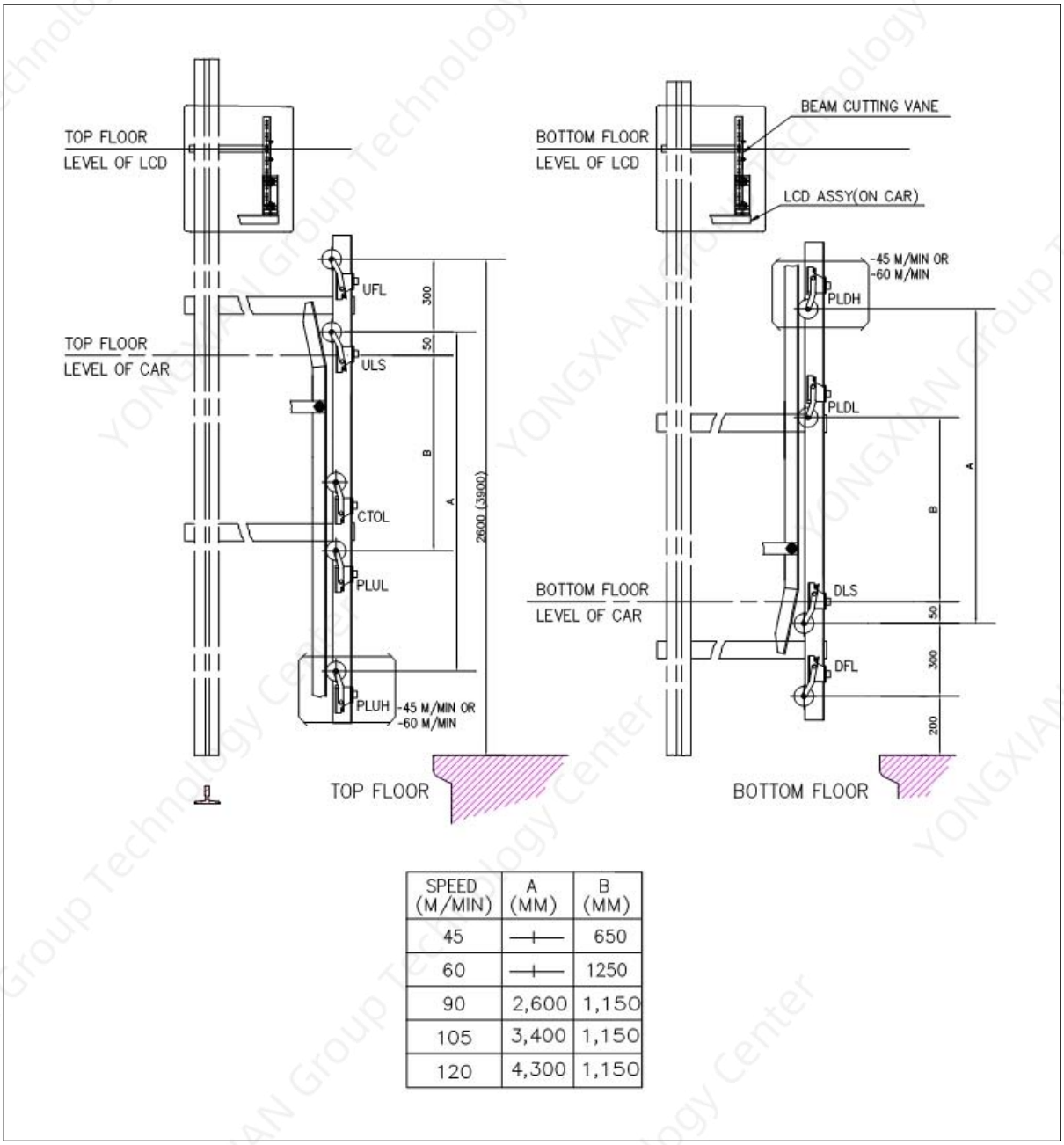
1) Switch location and general arrangement



SPEED (M/MIN)	STVF7		LXVF7		
	A (MM)	B (MM)	A (MM)	B (MM)	C (MM)
45	—+—	650	—+—	650	—+—
60	—+—	1150	—+—	1,250	—+—
90	2,350	1,150	2,600	1,150	—+—
105	3,050	1,150	3,400	1,150	—+—
120	3,850	1,150	4,300	1,300	—+—
150	—+—	—+—	5,700	1,300	4,350

[Figure 23. Limit Switch (STVF7 geared, LXVF7 gearless)]

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SPEED (M/MIN)	A (MM)	B (MM)
45	—+—	650
60	—+—	1250
90	2,600	1,150
105	3,400	1,150
120	4,300	1,150

[Figure 24. Limit Switch (SSVF7 machine-room-less)]

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STVF7 SERIES

ADJUSTMENT MANUAL

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Rev. Commemts :

TABLE OF CONTENTS

1. INTRODUCTION ····· 3
1-1. Main feature ····· 3

2. INSTALLATION ····· 4
2-1. Safety ····· 4

3. BOARDS ADJUSTMENT ····· 5
3-1. MCU Board & PIO Board Adjustment ····· 5
3-2. GIO Board Adjustment ····· 6
3-3. TNP Board Adjustment ····· 8
3-4. CCB-7 Board Adjustment ····· 10
3-5. OPB-340 Board Adjustment ····· 11
3-6. HPI/HIP CAN Board Adjustment ····· 12
3-7. Voice Synthesizer ····· 15
3-8. CPI-CAN Board Adjustment ····· 16
3-9. LS Board Adjustment ····· 17

4. INSPECTION OPERATION ····· 18
4-1. Brake line connection ····· 18
4-2. Power line connection ····· 18
4-3. Motor line connection ····· 18
4-4. Check points after turning on the power ····· 18
4-5. Operate Inspection ····· 19

5. INITIALIZING OPERATION ····· 20
5-1. Purpose ····· 20
5-2. Check subjects ····· 20
5-3. Operating Procedure ····· 21
5-4. Cautious Subjects ····· 21
5-5. Initialization Flow Chart ····· 23

6. LOAD COMPENSATING DEVICE SETUP ····· 24
6-1. Purpose ····· 24
6-2. Procedure ····· 24

Rev. Commemts :

1. INTRODUCTION

1-1. Main feature

(1) STVF7, LXVF7, SSVF7 are designed to apply CAN(Controller Area Network) communication, multi pattern drive and direct landing drive.

(2) User can check data and elevator status with HHT(Hand Held Terminal).

(3) Name

- STVF7 : Geared System
- LXVF7 : Gearless System
- SSVF7 : Machine-Room-Less System

(4) Feature

- CPU : 32 Bit Microprocessor
- Speed : ~150 meter per minute(LXVF7 : Max 150m/m)
- Floor : ~64 floor
- Group Car : ~8 car
- STVF7, LXVF7 and SSVF7 are designed to use same PCB boards.

	STVF7	LXVF7	SSVF7
Main Controller PCB	MCU Board		
In/Out PCB	PIO Board		
Terminal & Power PCB	TNP Board		
Car Top PCB	CCB-7 Board		
In Car Controller PCB	OPB-340 Board		
In Hall Controller PCB	Hall-CAN Board		
Group Controller PCB	- RING GROUP (GROUP Controller + GIO) - DUPLEX GROUP (GIO : CAN type)		
Door inverter	HIDC type		

[Table 1. Similarity between STVF7, LXVF7, SSVF7]

- Difference between STVF7, LXVF7, SSVF7

	STVF7	LXVF7	SSVF7
Inverter	900G	900GT, 910GT, 2000GT	900SS, 2000SS
Limit position	*It is different as speed and inverter.		
Cable connection	*Refer to electrical diagram		

[Table 2. Difference between STVF7, LXVF7, SSVF7]

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2. INSTALLATION

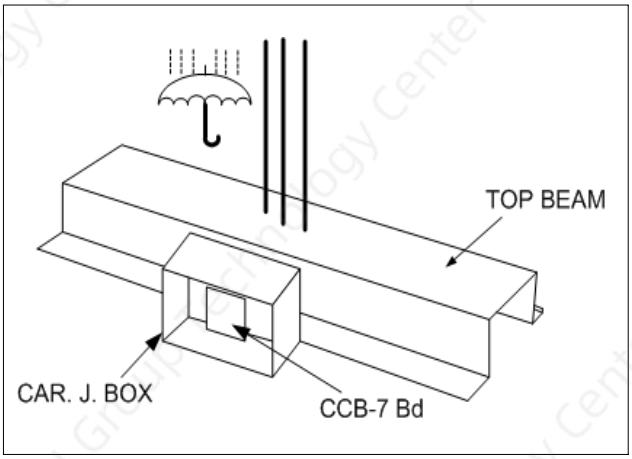
2-1. Safety

(1) Be very careful to keep the following caution required to prevent injury of the workers and to protect the product from being damaged.

(2) As this system uses serial communication, correct and thorough grounding is vitally required to prevent any mis-operation of the system and damage of the components.

(3) As all the connections are done by the harness connectors and there are many connectors in similar appearance, it's very important to confirm right label or marking, connectors color of the connectors before connecting them.
Any wrong connection can cause mis-operation and serious damage to the system.
Unstable connection also should be checked out and corrected to ensure the normal operation.

(4) As Car Junction Board is installed in the car junction box, be careful that the board is not damaged by the leaking of water during installation. Refer to Figure 1.



[Figure 1. Leaking of water prohibited against car junction box]

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3. Boards Adjustment

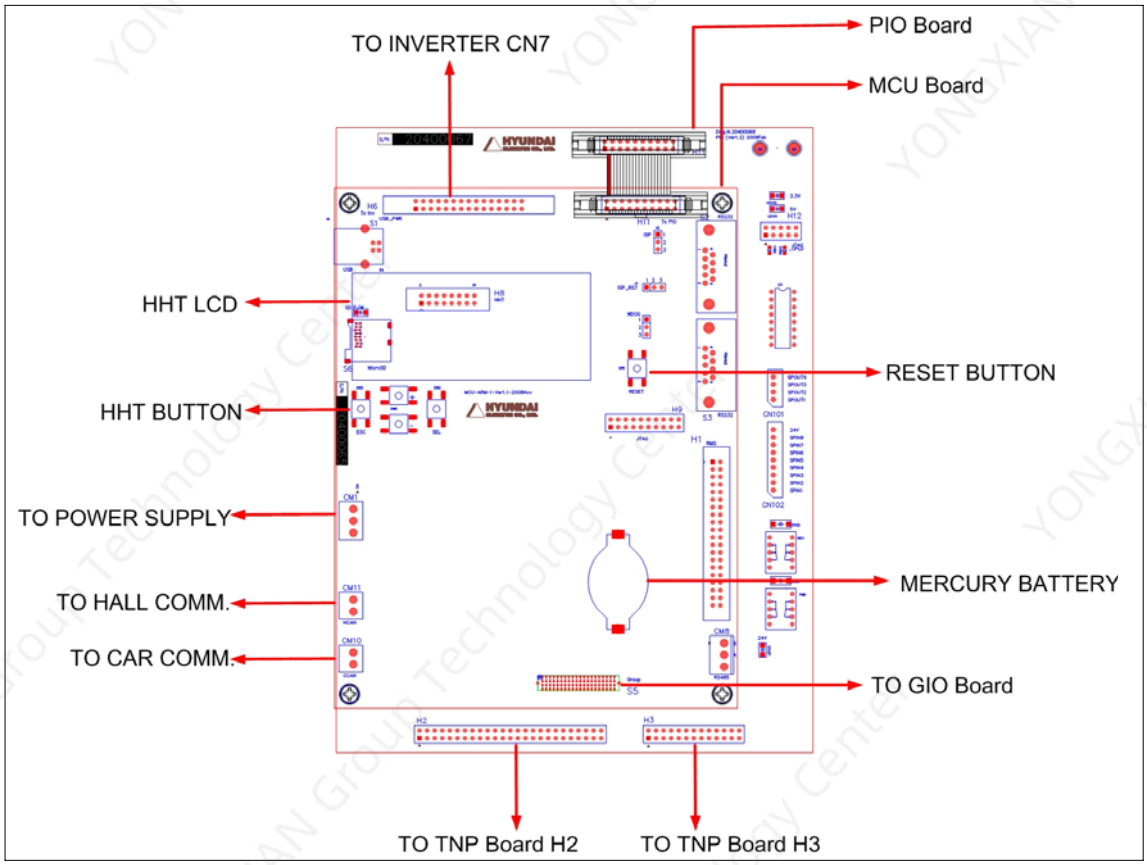
Note

All boards are prescribed at factory.
Don't reset except for troubleshooting or changing the specification.

Warning

Turn off the main power breaker(NFB1,2) before taking out any boards.

3-1. MCU Board & PIO Board Adjustment



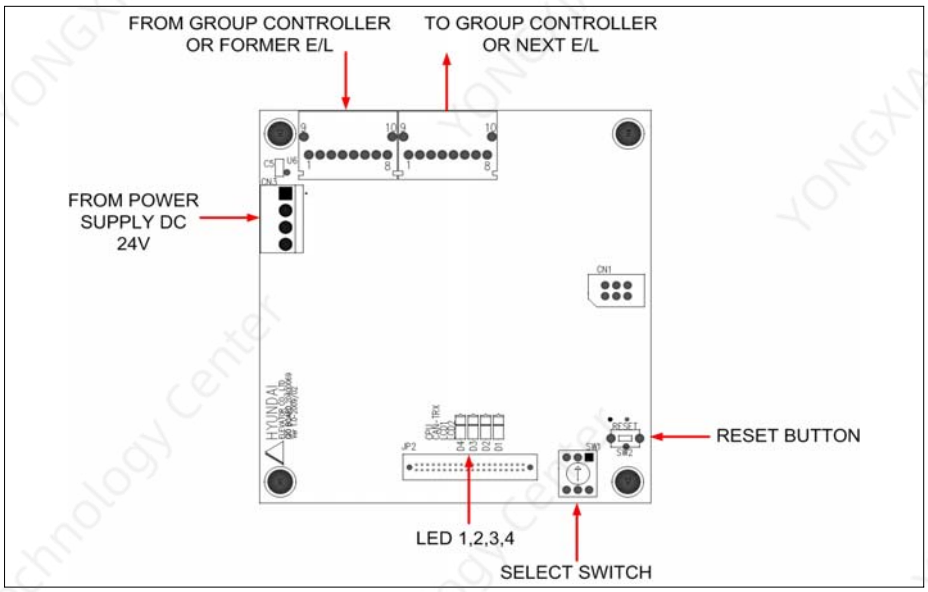
[Figure 2. MCU Board Connection]

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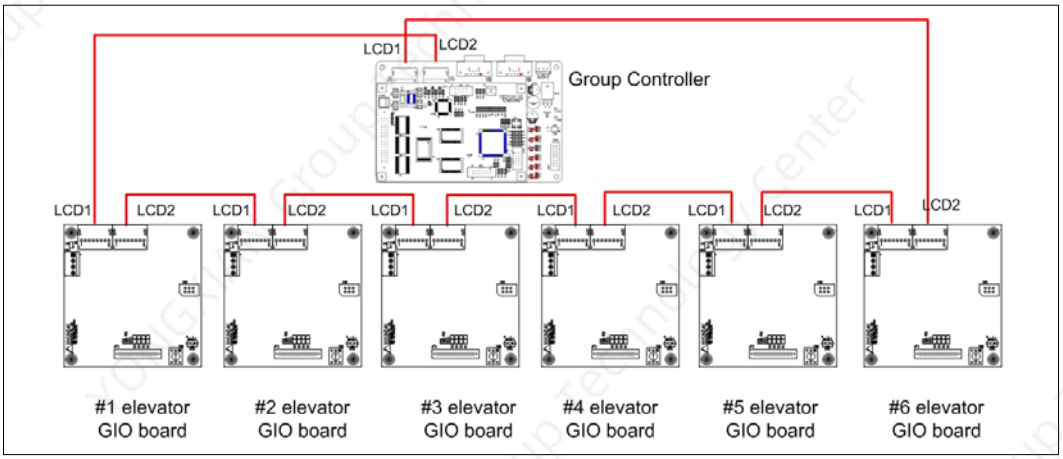
3-2. GIO Board Adjustment

(1) GIO board for ring group

- For ring group, 2 optical modules are inserted on GIO board.
- "D1" LED should be on in normal operation
- If "D1" LED not on, check the connection with the group controller or former elevator.
- And check the DC 24V power of CN3 connector.
- If #1 elevator, "select switch" should be on 1. (If #2, it should be on 2.)
- If changed "select switch", please push the reset button.
- For group operation, please refer to "STVF7 HHT MANUAL".



[Figure 3. GIO Board for Ring Group]

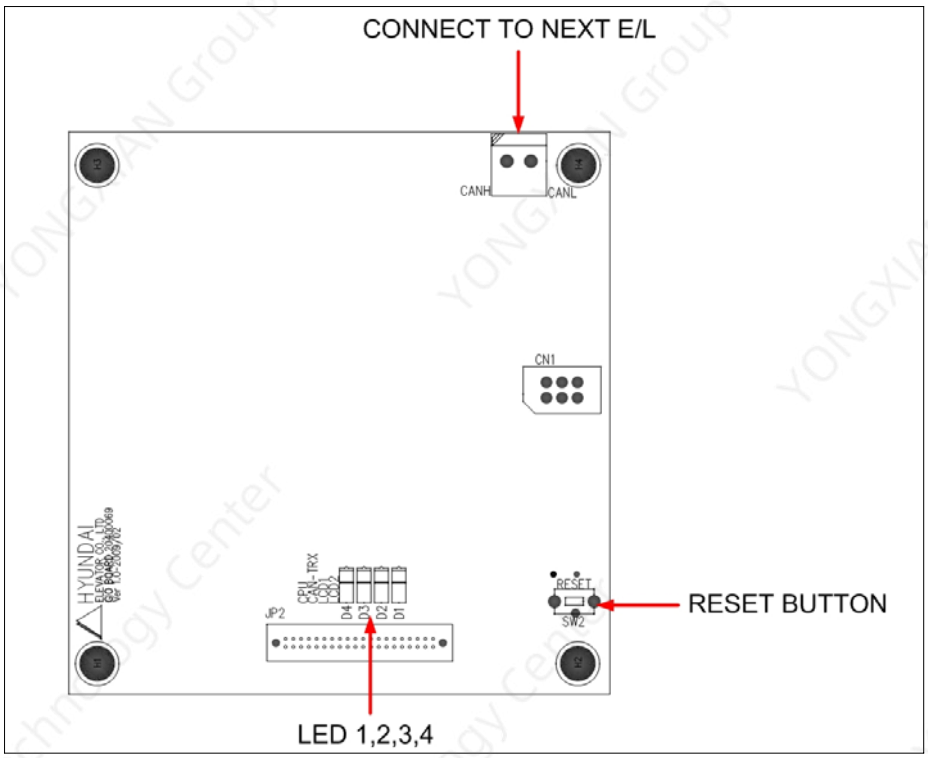


[Figure 4. Connection of Ring Group]

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(2) GIO board for duplex group

- For duplex group, CAN cable is connected on CN2 connector.
- "CAN-TRX" LED should be on in normal operation.
- If "CAN-TRX" LED not on, check the connection with next elevator.
- For group operation, please refer to "STVF7 HHT MANUAL".

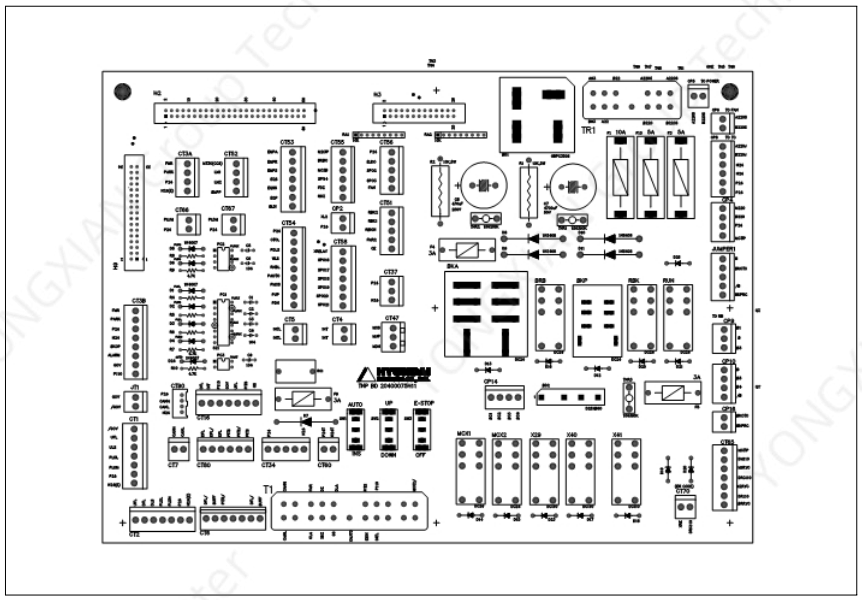


[Figure 5. GIO Board for Duplex Group]

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3-3. TNP Board Adjustment

- TNP (Terminal and Power) board is used for external input, output terminal, and power transformation.



[Figure 6. TNP Board]

- Only "SSVF7" TNP board has a MCX2 relay, so TNP board of "SSVF7" is different from that of "STVF7 and LXVF7".

Name	Use	Remark
BKA	Brake Power line	DC 24V
BRB	BKB Contactor	DC 24V
RBK	sub brake	"ON" in normal
BKP	Variable Voltage of Brake Coil	DC 24V
RUN	BKA, BRB relay	DC24V
X29	safety line	DC 110V
MCX1	MC1 contactor	
MCX2	MC2 contactor	for SSVF7

[Table 3. Specification of relays]

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- all connections are referred to electrical diagram "COL 2A,2B,2C,3A,3B,4A"

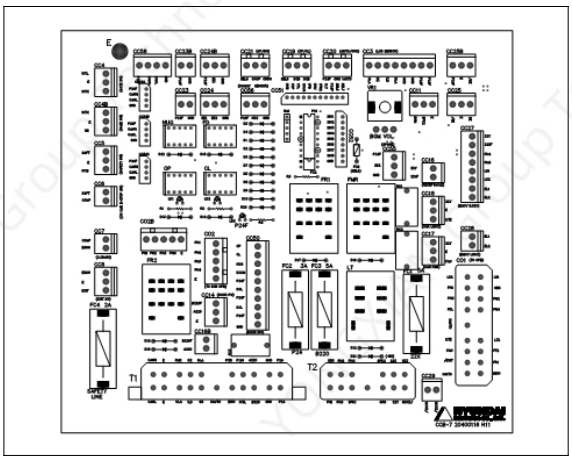
Item	Connection	Pin
H2	to PIO board	50p
H3	to PIO board	26p
H9	to inverter CN12	34p
TR1	to transformer	
CP2	to CPR1 breaker	2p
CP9, 10, 14, 16, JUMPER1	to brake coil line	
CP5	to power supply DC 5V	2p
CP6	to C/P fan	2p
CP8	to T1B harness	6p
CT3B	to governor, BKOP	8p
JT1	to NPR or Jumper(No NPR)	2p
CT1, 2	to final limit switch	
CT80	to FR2R	6p
CT6	to buffer, pit	7p
CT66, 67	to limit switch	
T1	to CCB-7 board	21p
CT47	to installation remote controller	3p
CT51	to sub brake	5p
CT3A	to fire man return switch, parking switch	4p
CT52	to ccs, mt	4p
CT53	to emergency power system, earthquake sensor, emergency landing system	7p
CT56	to emergency landing system, MFAN	5p
CT58	to X-relay	7p
CT65	to MC1, MC2, BKB contactor	7p
CT55	to MC2, BKB contactor	6p
CT70	to X-relay	2p
CT34	to hall can board	5p
CT16	to remote monitor system	7p

[Table 4. TNP board connection]

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3-4. CCB-7 Board Adjustment

- CCB-7 Board is installed in car junction box.



[Figure 7. CCB-7 Board]

DEVICE	CONNECTOR	REMARK
Safety switch	CC5	
Exit switch	CC8	
Compensating chain	CC7	Jumper (not used)
Gate switch 1	CC4B	
Gate switch 2	CC4	Jumper (not used)
Door inverter	CC50	
Safety edge 1	CC25B	Jumper (not used)
Safety edge 2	CC25	Jumper (not used)
Safety ray power	CC23, CC23B	
Safety ray 1	CC24B	Jumper (not used)
Safety ray 2	CC24	Jumper (not used)
Multi beam	CC24B	Jumper
	CC24	
	CC16B	Multi beam adapter
Landing device sensor	CC3	
Dummy sensor	CC56	for Non-stop floor
Door load detector	CC55	for door turn function
Cage fan	CC17	
Cage light	CC18	
Emergency light	CC28	
BGM speaker	CC11	
OPB CAN communication	CC54A, CC54B	to "CC54A" of OPB-340 board
Voice synthesizer	CC54C	to "CN2" of voice synthesizer
Emergency power supply	CC27	
CPI-CAN	CC58	to "CH1" of CPI-CAN board

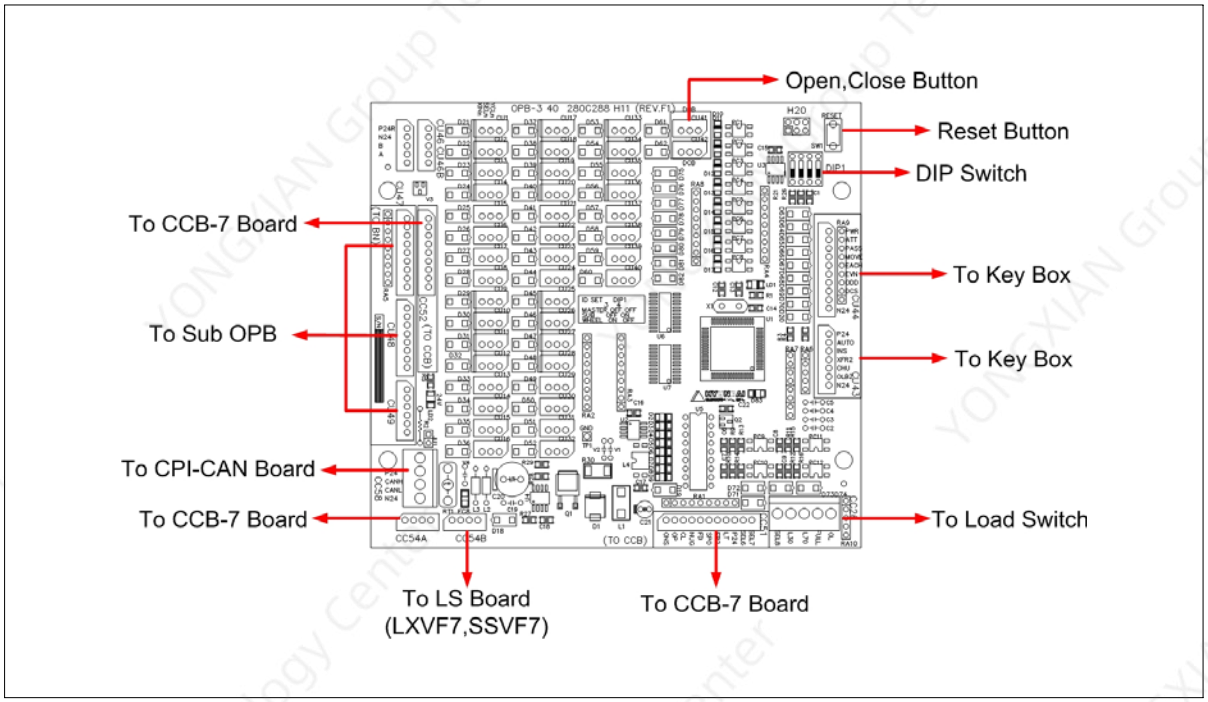
[Table 5. CCB-7 Board Connection]

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3-5. OPB-340 Board Adjustment

(1) Connection

- OPB-340 Board is used for car call, key box connection, LS board connection, and etc.
- please refer to Figure 8.



[Figure 8. OPB-340 Board]

(2) DIP Switch adjustment

- OPB-340 Board has a ID of its own. So please check DIP switch.

OPB Type	DIP Switch			
	1	2	3	4
Main OPB	off	off	off	off
Sub OPB	off	off	off	on
Handicap OPB #1	off	off	on	off
Handicap OPB #2	off	off	on	on

[Table 6. OPB-340 Board DIP Switch]

(3) OPB Button

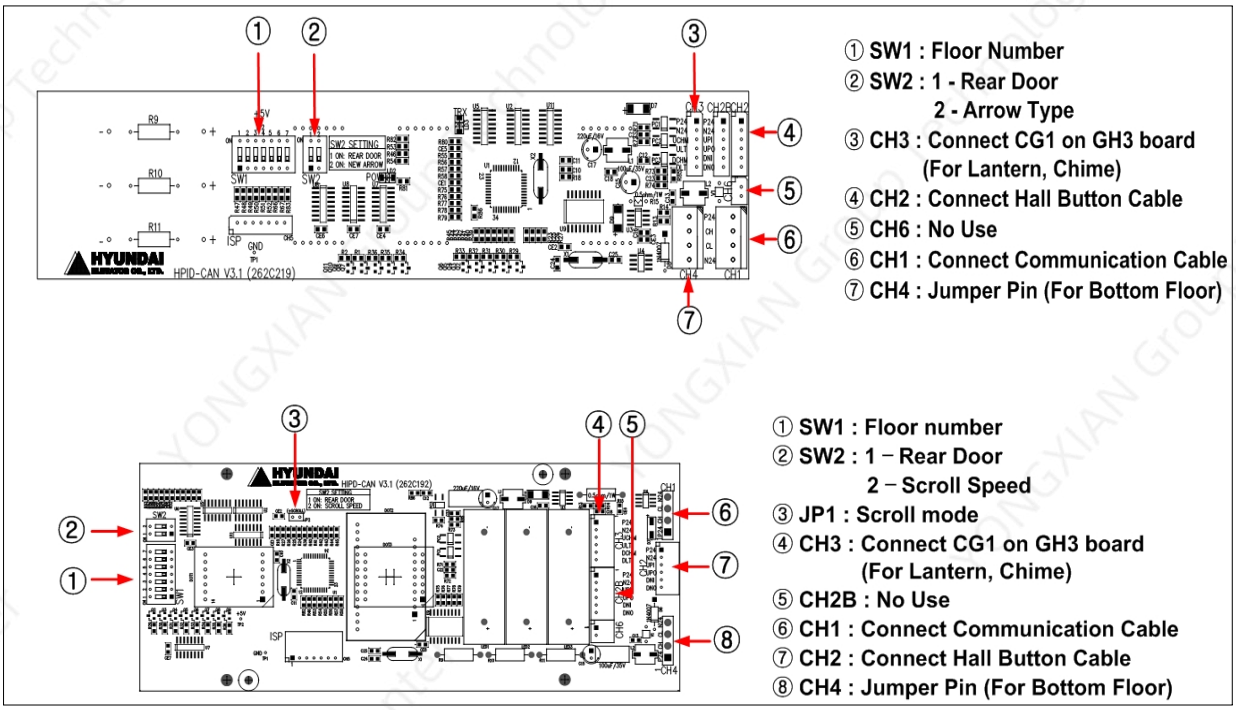
- Resistor of button PCB is 300ohm. (differed from hall button)

(4) Jumper Pin (JU1)

- Jumper Pin (JU1) must be short.

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3-6. HPI/HIP CAN Board Adjustment



[Figure 9. HPI & HIP CAN Board]

(1) The color of HPI/HIP CAN board is Red.

(2) One set of HPI/HIP treats the data of one floors.

(3) Set a floor with SW1 on HPI/HIP CAN board.

SW1	1	2	3	4	5	6	7
Floor	1	2	4	8	16	32	64

EX) If you want to set 12 floor, set on Dip3, Dip4.
(Dip3 + Dip4 = 4 + 8 = 12)

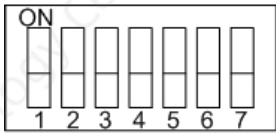
Example)

SW1(0011000)	12F
SW1(1101000)	11F
SW1(0101000)	10F
SW1(1001000)	9F
SW1(0001000)	8F
SW1(1110000)	7F
SW1(0110000)	6F
SW1(1010000)	5F
SW1(0010000)	4F
SW1(1100000)	3F
SW1(0100000)	2F
SW1(1000000)	1F

*** Caution ***

SW1 is turned on by up direction.

1 : ON
0 : OFF



F	1	2	3	4	5	6	7
1F	1	0	0	0	0	0	0
2F	0	1	0	0	0	0	0
10F	0	1	0	1	0	0	0
11F	1	1	0	1	0	0	0

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(4) Connect the connector and JP as shown in the following table. (Refer to Figure 9.)
- In case of HPI/HIP Can board at lowest floor, CH4 connector should be used with end-resistor (120 ohm).

Name	Item	Name	Item
SW1	Set a floor	CH3	Connect CG1 on GH3 Bd for lantern & Chime
CH1	Communication cable from upper HPI/HIP	CH4	1)Communication cable to lower HPI/HIP. 2)At lowest floor, connector should be used with end-resistor.
CH2	Hall button cable	SW2	Use for handicap car
CH2B	Connect hall button cable to next HPI/HIP for group	JP1	Use for indicator scroll on HIP CAN Board.

[Table 7. HPI/HIP Board Connection]

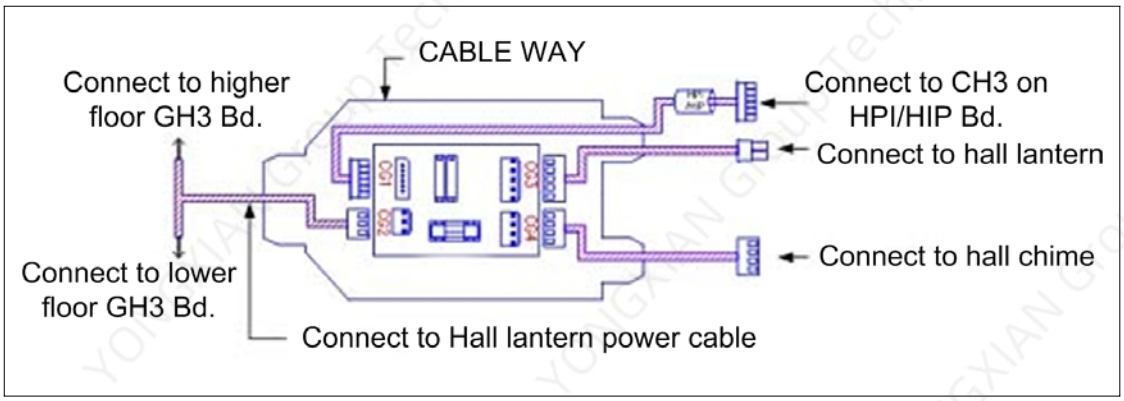
(5) In case that hall button for the handicap car exists ;
- For group, handicap hall button should be installed independently from other car. (CH2B is not used)
- Handicap function for group is only used for ring group system.
- Set MCU HHT : 3.SETUP >> 3.1 Basic >> 31b Field >> B44 Handicap Use → "Enable".
- Set MCU HHT : 3.SETUP >> 3.2 Device >> 32h Hall.1 Type → "Handicap Call"
- Refer to "STVF7 HHT MANUAL" and "STVF7 GROUP CONTROL SYSTEM MANUAL".

(6) Ground Line Connection : the ground line is connected to HPI/HIP board case.

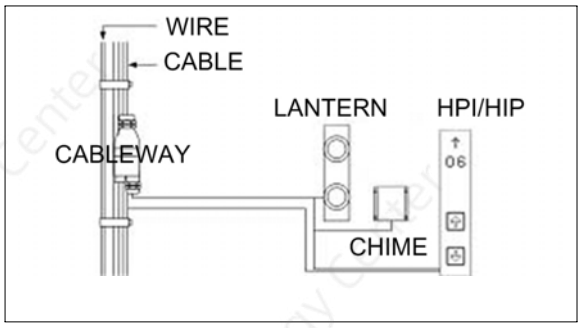
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(7) GH3 Board

- GH3 board should be connected to HPI/HIP CAN board for lantern and chime.
- GH3 board is installed in cableway with lantern power cable.



[Figure 10. GH3 Board in cableway]



[Figure 11. Cableway Installation]

- According to figure 11, "CABLEWAY" which is installed with GH3 board should be fixed vertically for waterproof.

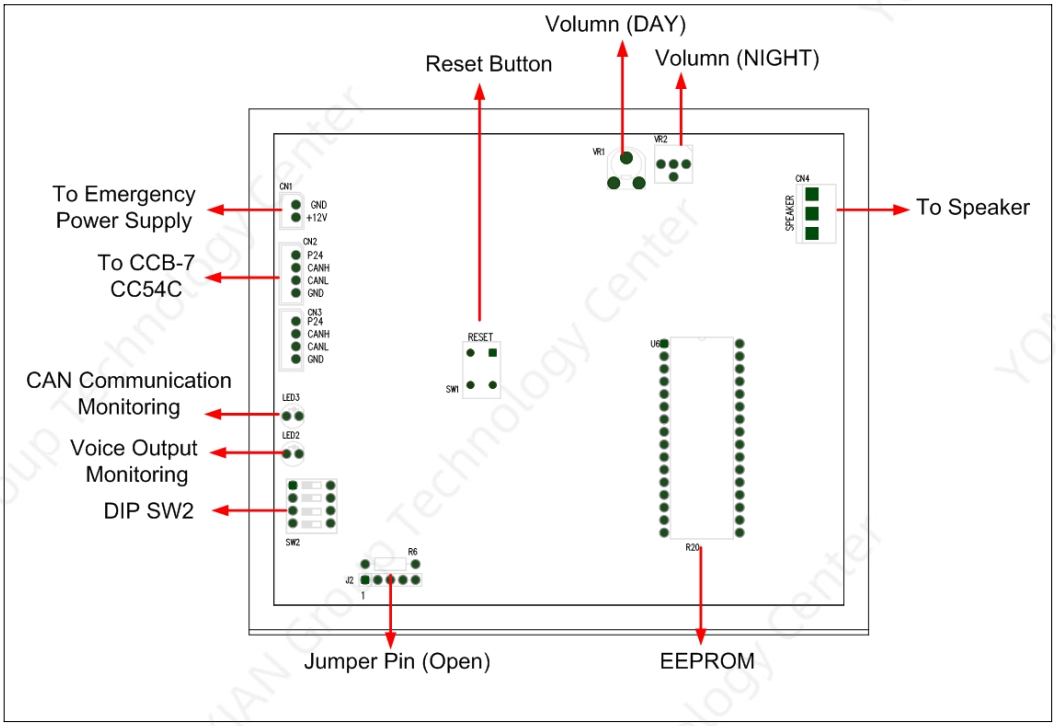
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3-7. Voice Synthesizer

1) Voice synthesizer is a role of button sound and announcing the current floor.
2) If "SW2" all dip switches are on, you can listen all recorded sound.
3) For normal voice operation, please setup "SW2" all dip switches are off.

Cable Name	From		To	
CAN communication	CCB-7	CC54C	Voice syn.	CN2
Speaker cable	speaker	-	Voice syn.	CN4
Emergency power cable	Emergency power supply	CN2	Voice syn.	CN1

[Table 6. Voice synthesizer connection]

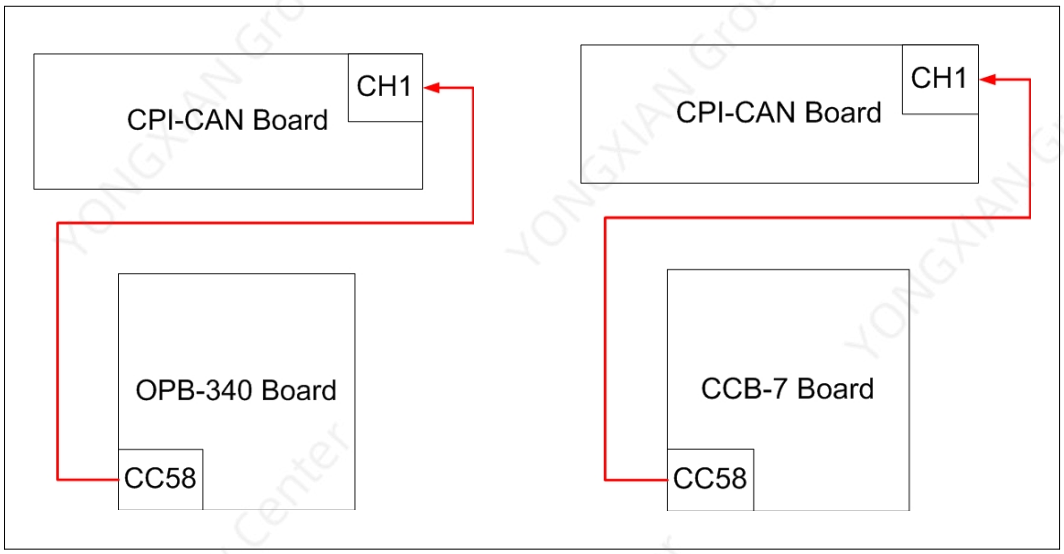


[Figure 12. Voice synthesizer]

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3-8. CPI-CAN Board Adjustment

- CPI(Car Position Indicator)-CAN board is same with HPI-CAN board.
- "CC58" of OPB-340 board or that of CCB-7 board is connected to "CH1" of CPI-CAN board.
- Refer to Figure 13.



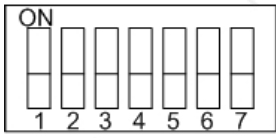
[Figure 13. CPI-CAN Board]

- All DIP switch of SW1 of CPI-CAN Board are "ON".

	SW2	SW1(DIP Switch)						
		1	2	3	4	5	6	7
CPI-CAN	X	1	1	1	1	1	1	1

1: ON
0: OFF

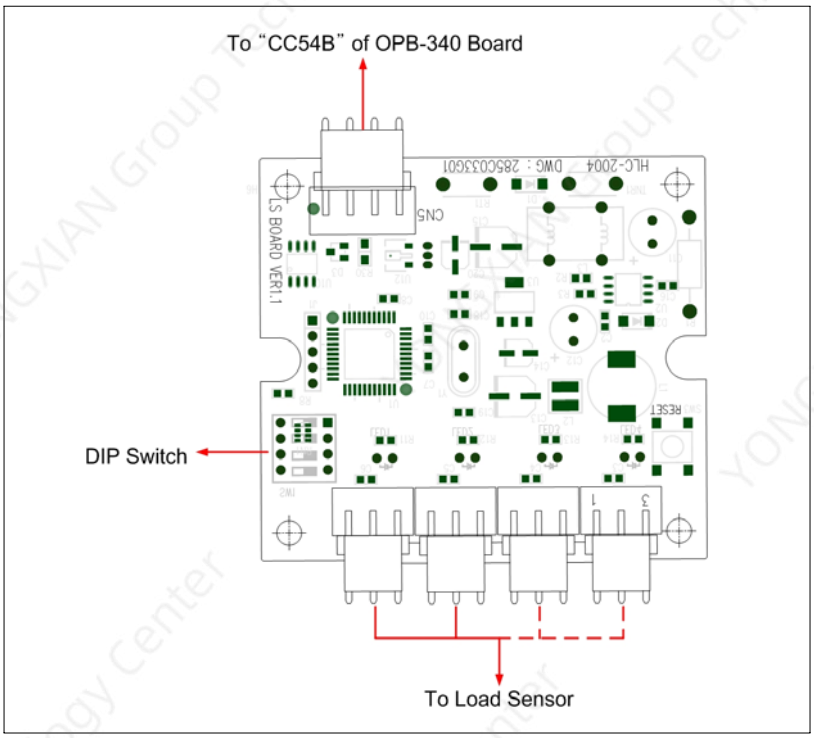
SW1



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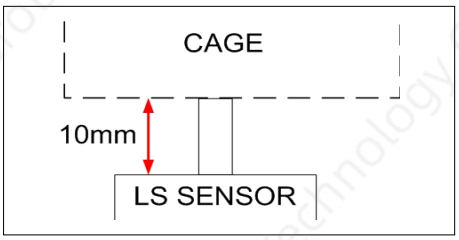
3-9. LS Board Adjustment

- LS board (HLC-2004) is a primary role to decrease start shock.
- Please refer to figure 14.



[Figure 14. LS Board]

- Install the LS sensor under the car, and connect to the "CN1,CN2" of LS board.
- And set dip switch 1 and 2 on.
  (If Ls sensor is one unit only, connect it to the "CN1" connector of LS board and set on dip sw 1 only also)
- LS sensor must be installed in state of being pressed with about 10mm.



[Figure 15. LS Sensor position]

- Refer to the "Chapter 6. Load Compensating Device".

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4. INSPECTION OPERATION

4-1. Brake line connection

- Check the connection between brake and CP terminal "TD".
- B3(TD-11), B4(TD-12), BKOP(TD-7), P24(TD-8)

4-2. Power line connection

- Check the power line connection from the building power distribution box. (R,S,T)

4-3. Motor line connection

- Check the motor line connection from inverter. (U,V,W)

4-4. Check points after turning on the power

(1) Check the setting condition of "Auto/Inspection" switches as follows

- "SW1" of TNP board -> "INS" position
- "SW3" of TNP board -> "E-STOP" position
- Car Top/Internal "AUTO/INS" switch ->"AUTO" position

(1) Check any trouble by turning on each breaker "NFB1" and "NFB2" in regular order.

(2) Check the voltage of each power supply.

Check Point	Voltage
MCU Board (CM1)	DC 5V
Safety Line (P110, N24)	DC 110V
Input / output (P24, N24)	DC 24V
Receptacle (22X, 22Y)	AC 220V

[Table 7. Check Point of Voltages]

(3) Check "MCX1", "X29", "X40", "X41" relays of TNP board.

- These relays must be turned "ON" in normal.

M	c	C	D				2	(	B	1	)	/	3	3
F	1	3						[	0	9	:	2	5	]

: "McCD" must be displayed in total information mode of HHT.

- If not, check the jumper cable and any other connection of TNP board.
- And refer to "STVF7 Troubleshooting manual"

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4-5. Operate inspection

(1) In main controller

a. Check the data "1" in "4.MANAGEMENT >> 4.3 FieldTest >> 43a FieldSetup" of MCU HHT menu.

b. Using UP/DOWN switch(SW2) of TNP board, operate the elevator up/down direction.

c. At that time, brake must be open in normal.

d. B3~B4 voltage : (open) DC120V~200V, (holding) DC70V~120V (please refer to electrical diagram COL2A,2B,2C)

(2) In inverter(LXVF7, SSVF7)

a. Connect the HHT(Hand-Held-Terminal) to inverter.

b. Setup the data "0" in "PROGRAM >> MOTOR >> KNOW ANGLE" HHT menu.

c. Operate the elevator up direction for about 5 seconds.

d. Setup the data "1" in "PROGRAM >> MOTOR >> KNOW ANGLE" HHT menu.

e. Check the angle data in "PROGRAM >> MOTOR >> U ANGLE" HHT menu.

f. Do (b)~(e) one more time, and check U angle data.

g. When the U angle data is correct, you can operate up and down direction normally.

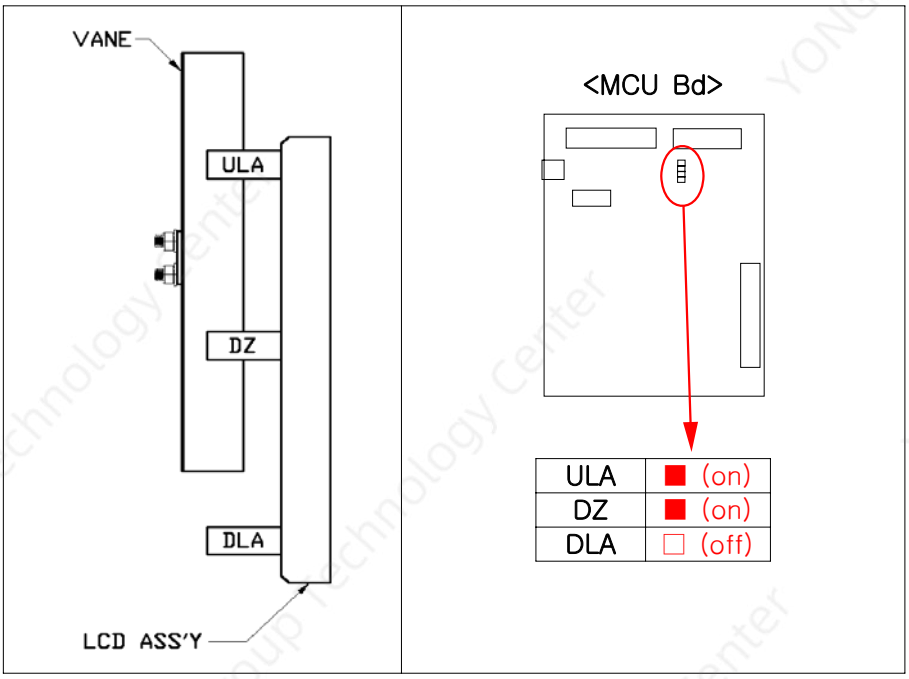
5. INITIALIZING OPERATION (Initial Setting Operation for High-Speed)

5-1. Purpose

1) For the high speed operation, first of all, the main board of the inverter have to detect each floor height (pulse count).
2) After the Initializing Operation, the high speed operation is feasible.

5-2. Check subjects

1) Check that inspection operation is feasible or not.
(If not, check the safety line, door line and any other errors.)
2) Move car where only DLA is off at bottom floor level.



[Figure 16. Position of Landing Device and Vane for Initializing]

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5-3. Operating Procedure

EX) Total Floor : 28Floors, Floor Marking : B2, B1, 1~26

1) Align the car at the bottom floor by inspection operation as shown in figure 16.
2) Turn AUTO/INS switch(SW1) of TNP Board to "INS" position.
3) Turn AUTO/INS switch of car junction box and OPB in car to "AUTO" position
4) Ready to start initialization with HHT.
5) 4. MANAGEMENT >> 4.3 Field Test >> 43a Field Setup
6) Change the data "2" for initialization and auto operation.
   * Refer to "Table 8. Field Setup data"
7) 3. SETUP >> 3.1 Basic >> 31a General >> A19 Init TrvlLen
8) Push "ENTER" key → Select "YES" with "UP" key → Push "ENTER" key

	I	n	i	t		T	r	v	l	.	L	e	n	?
▶												Y	e	s

" Initialization Start" mode
Select "Yes"

9) Car starts operation automatically.

F	i	C	D	↑	≡			1	(	B	2	)	/	2	8
-	-	-							[	0	9	:	2	5	]

Status of initialization

10) Car is stopped automatically at top floor, operation for initialization is completed.

M	c	C	D	•	≡		2	8	(	2	6	)	/	2	8
-	-	-							[	0	9	:	3	2	]

The end of initialization

5-4. Cautious Subjects

1) After the initialization operation is finished, check the inverter data with HHT.
   "Monitor >> Basic >> Init OK " is "1".
2) If any problem occurs while the car is running or stopped, take the proper measure by turning off the safety switch.
3) If the initializing operation failed twice, check the connectors and wiring of the encoder.
4) And if "F22, F42, F62" error occurs, check the inverter floor data and MCU floor data.
   - Inverter : "PROGRAM >> CONTROL >> MAX FLOOR"
   - MCU : "3.SETUP >> 3.1 Basic >> 31b Field >> B01 Total FL Num"

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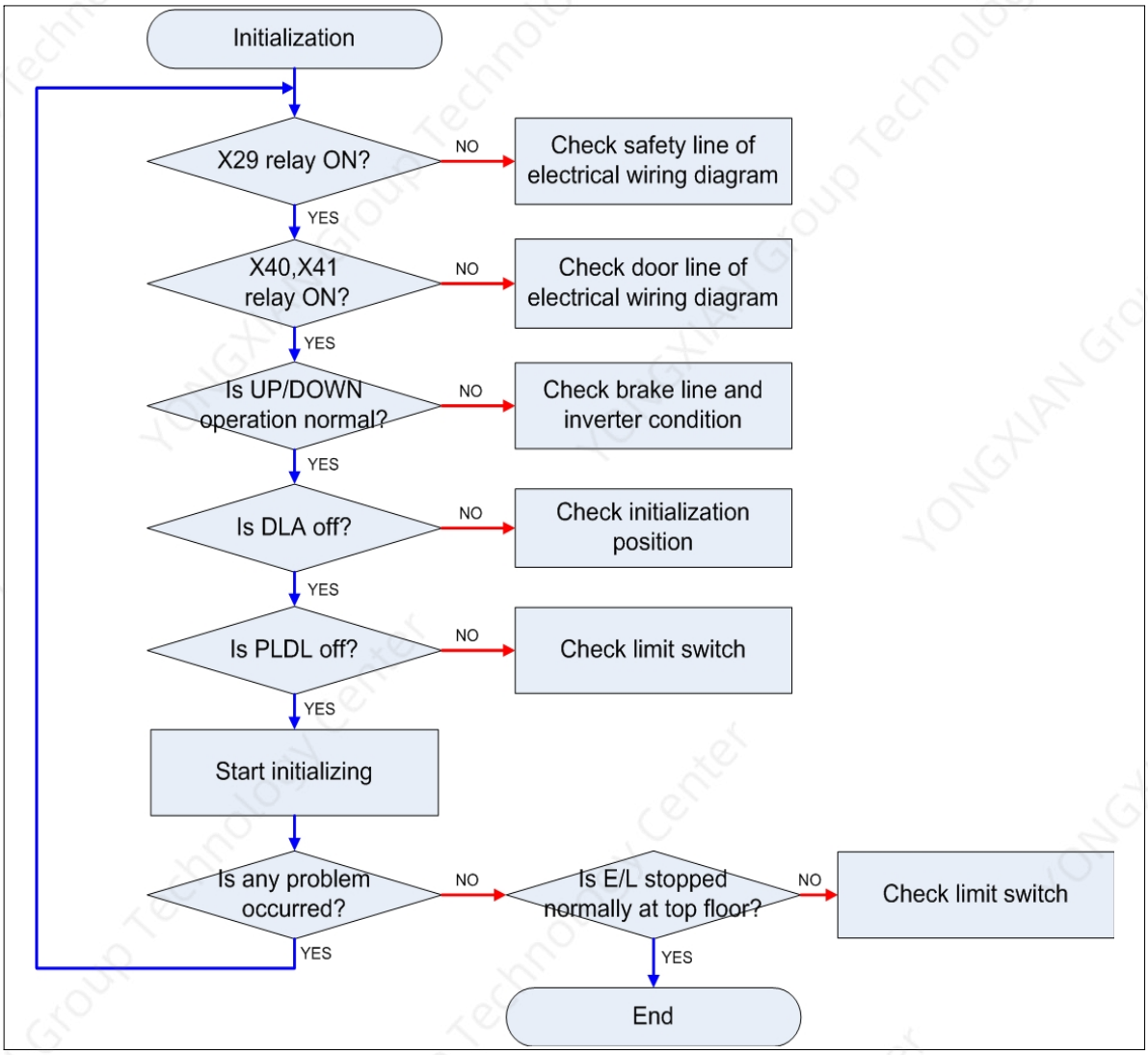
5) Check "4.MANAGEMENT >> 4.3 Field Test >> 43a Field Setup " data.

Field Setup data (43a Field Setup)	Commit	Feasible Operation
0	Before Factory Setup	No
1	After Factory Setup	Inspection
2	After Installation	Inspection, Initialization, Auto Operation

[Table 8. Field Setup data]

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5-5. Initialization Flow Chart



[Table 9. Initialization Flow Chart]

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6. Load Compensating Device Setup

6-1. Purpose

- To decrease start shock, MCU and inverter system must be known the cage weight.

6-2. Procedure

(1) STVF7 (Geared system)

① Fix the 30%, 70% switch under the cage.

② And connect from switch to the "CC26" of OPB-340 board.

③ Refer to electrical wiring diagram COL8B.

(2) LXVF7 (Gearless system), SSVF7 (Machine-room-less)

① Fix the LS board and LS sensor under the cage.

② LS board converts the input voltage into the pulse and supplies it to MCU with CAN communication.

③ Connect connectors CN1,CN2 with LS sensors and turn the DIP SW1,2 on.

④ Open the door completely in landing zone and make the inspection switch be on in the machine room. (not in the car and not on the car)

⑤ Connect HHT to MCU board.

(3) LS board setup method with HHT (LXVF7, SSVF7)

① "3.SETUP >> 3.1 Basic >> 31a General >> A20 Load Sensor >> 20a LS use"
→ set "Enable"

② Reset MCU board. (If "Enable", you don't have to do it).

③ "3.SETUP >> 3.1 Basic >> 31a General >> A20 Load Sensor >> 20c Sensing Data"
→ check "LS data : A/D" within 9000~10000.

④ If not, adjust the LS sensor position under the cage. Refer to figure 15.

⑤ "3.SETUP >> 3.1 Basic >> 31a General >> A20 Load Sensor >> 20b Load Setting"
: If HHT display "Settable", condition is good to load set.
: If "Can't Settable" displayed, check (2)-④.
(door full open, door zone, inspection switch in the machine room)

⑥ When there is no load in the cage, push ENTER key and input "YES" in "Load Set : 0%" HHT mode. Then buzzer rings once.

⑦ Load the weight equivalent to 50% of the rated lad on the cage.

⑧ push ENTER key and input "YES" in "Load Set : 50%" HHT mode. Then buzzer rings twice.

⑨ After completing the LS setting, "20c Sensing Data >> LS data: %" must display 50%.

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No	Check Point (3.SETUP>> 3.1 Basic >> 31a General >>A20 Load Sensor)	Data	Remark
1	20a LS use	Enable	
2	Reset MCU board		needless in "Enable"
3	Load 0% in the cage		
4	20c Sensing Data >> LS data : A/D	9000~10000	
5	20b Load Setting >> Load Set : 0%	Settable	
6	20b Load Setting >> Load Set : 0%	YES → ENTER	
7	Buzzer		once
8	Load 50% in the cage		
9	20b Load Setting >> Load Set : 50%	Settable	
10	20b Load Setting >> Load Set : 50%	YES → ENTER	
11	Buzzer		twice
12	20c Sensing Data >> LS data : %	50%	
13	Load 0% in the cage		
14	20c Sensing Data >> LS data : %	0%	

[Table 10. LS Setup Procedure]

(4) Alignment

- As time goes on, check the "20c Sensing Data >> LS data : %".
- If the data is incorrect, do the alignment with HHT.

① Open the door completely in landing zone and make the inspection switch be on in the machine room. (not in the car and not on the car)

② Load 0% in the cage

③ 20b Load Setting >> Load Align >> "settable"

④ push ENTER → select YES → push ENTER

⑤ After 2~3 seconds, check that the data "20c Sensing Data >> LS data : %" is 0%.

(5) Inverter setup(If necessary to adjust the inverter data)

- Finally, LS data is transferred to the inverter and inverter controls the start shock.

① "PROGRAM >> CONTROL >> 17.TQ_BIAS_SEC >> ANAL_TQ_BIAS "

② "PROGRAM >> CONTROL >> 23.TQ_BIAS_OFFSET >> 38.450 "

③ "PROGRAM >> CONTROL >> 35.DPRAM_TQ_USE >> 1 "

④ "PROGRAM >> CONTROL >> 22.TQ_BIAS_GAIN >> 1.000 "

⑤ Adjust the value "PROGRAM >> CONTROL >> 22.TQ_BIAS_GAIN " between ± 0.3~0.8 to decrease start shock.

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GROUP CONTROL SYSTEM MANUAL (FOR STVF7)

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Rev. Commemts :

TABLE OF CONTENTS

1. GROUP CONTROL SYSTEM OVERVIEW ····· 3
1-1. Features ····· 3
1-2. Composition ····· 3
1-3. Embodiment of prompt prediction and arrival prediction ····· 4

2. GROUP CONTROL SYSTEM SETTING ····· 5
2-1. Ring Group Control System Setting ····· 5
2-2. GIO Board Setting ····· 8
2-3. Handicap Car Setting ····· 9

3. HHT SETTING ····· 10
3-1. Group control HHT mode ····· 10
3-2. The Procedure of setting group data ····· 10
3-3. Edit Enable Mode ····· 10
3-4. Display mode ····· 15

4. TROUBLESHOOTING ····· 16

Appendix : Group System Functions ····· 20

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YONGXIAN Group Technology Center

1. GROUP CONTROL SYSTEM OVERVIEW

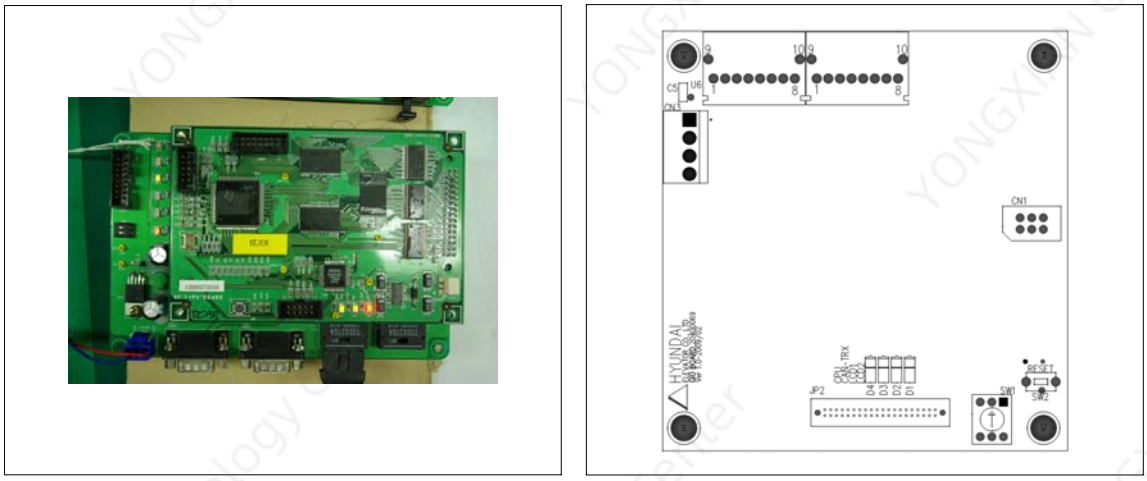
1-1. Features

* Efficient hall call assignment.
* Standing by dispersion .
* please refer to appendix of other functions.

1-2. Composition

(1) Ring Group System

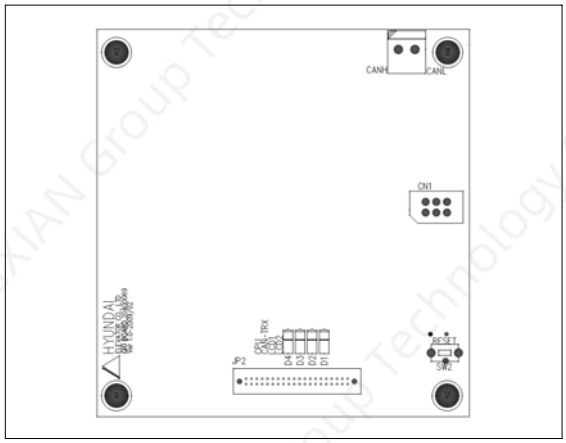
- Ring group board + GIO board (for ring group) + Optical cable



[Figure 1. Ring Group Board and GIO board (for ring group)]

(2) Duplex System

- GIO board (for duplex) + CAN communication cable



[Figure 2. GIO board (for duplex)]

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1-3. Embodiment of prompt prediction and arrival prediction

(1) Arrival prediction

- If you press a hall button, button lamp is on but lantern is not.
- Group assigns a hall call to service car by registration info.
- The lantern of service car is flickered from time of speed decrease to time of door close.
- It must be used for building installed a indicator every floor.

(2) Prompt prediction

- If you press a hall button, both button lamp and lantern are on.
- Passengers don't have to object the other car, because of lantern displayed.
- The lantern of service car is flickered from time of speed decrease to time of door close.
- It must be used for building installed a lantern every floor.

	Merit	Demerit	Method		Details
			Duplex	Ring	
Arrival prediction	- simple predict operation - application of indicator	- impossibility of total predict	standard	standard	standard
Prompt prediction	- total predict operation - bank division function	- impossibility of using indicator	X	HHT set	add a transformer for lantern power impossibility of using indicator

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2. GROUP CONTROL SYSTEM SETTING

2-1. Ring Group Control System Setting

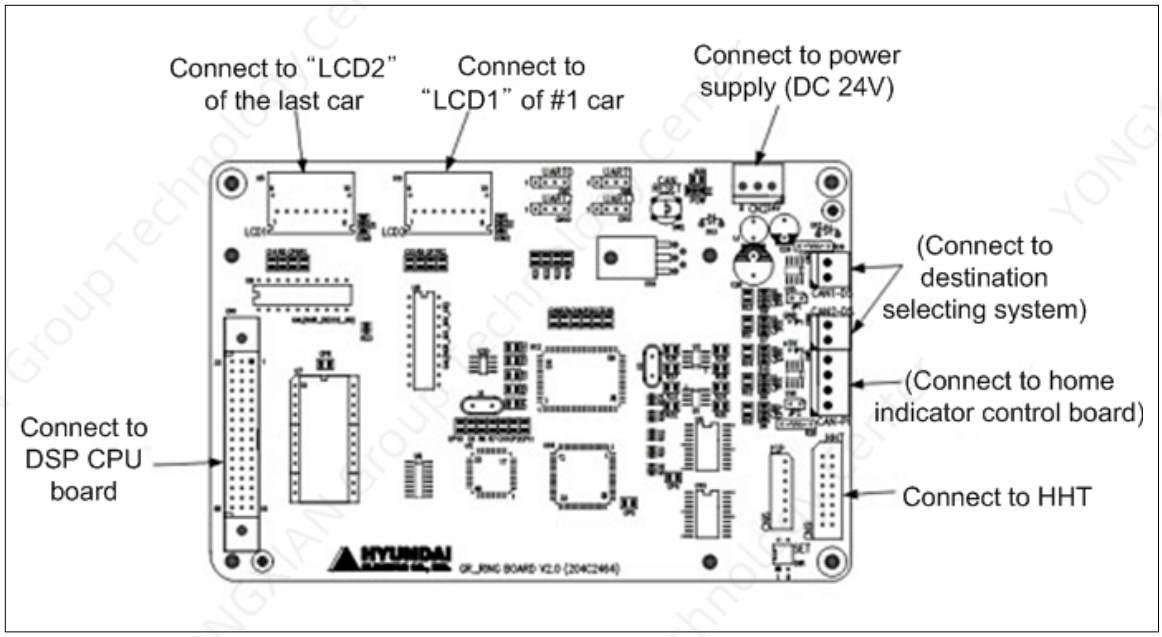
※ attention - Don't change all data except inspection or spec changed.
Data are setted correctly at the factory.
- If you disconnect DSP CPU bd or etc, please turn off the power (DC24V) first.

1) Normal condition of group control board and setting

① Displaying normal operation of DSP CPU
- When CPU "ON", D2 LED turns on.
- When data are normal, D4 LED turns on.
- When program is normal, D3 LED is flickering.

② Data setting method
a) Put HHT to "HHT" connector of Ring Group I/O Board.
b) Please refer to detail setting method which is shown at chapter 3 "Group Control HHT".

③ Setting ring group control board



[Figure 3. Ring Group Control Board]

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④ DIP switch setting method of Ring Group I/O Board.
(outside of board is "OFF")

SET	Master I/O board		Assistance I/O Board	
ON				
OFF	■	■	■	■
	1	2	1	2

■ : DIP switch

2) Fiber Optic Cable connection

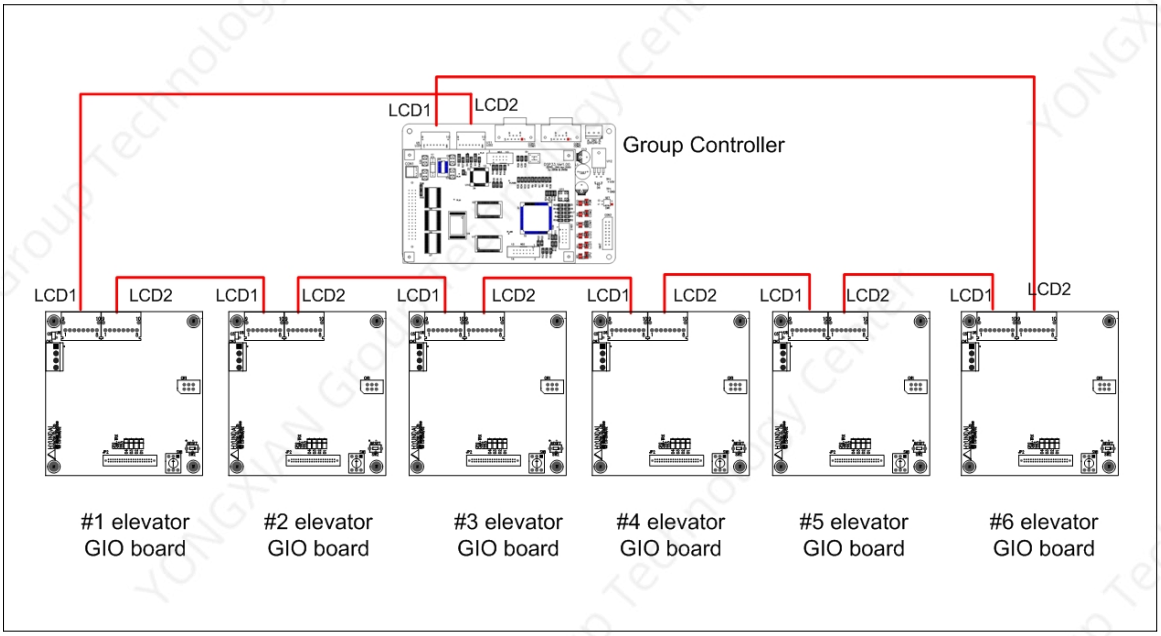
① Connect the Fiber Optic Cable between "LCD2" of Master Group I/O Board and "LCD1" of Slave Group I/O Board.
(If Slave Group is not applied, connect the Fiber Optic Cable between "LCD2" of Master Group I/O Board and "LCD1" on GIO Board of lift #1.)

② Connect the Fiber Optic Cable between "LCD2" of Slave Group I/O Board and "LCD1" on GIO Board of lift #1.
(If Slave Group is not applied, connect as step 1.)

③ Connect the Fiber Optic Cable between "LCD2" of lift #1 and "LCD1" of lift #2.

④ Connect the Fiber Optic Cable between "LCD2" of lift #2 and "LCD1" of lift #3.

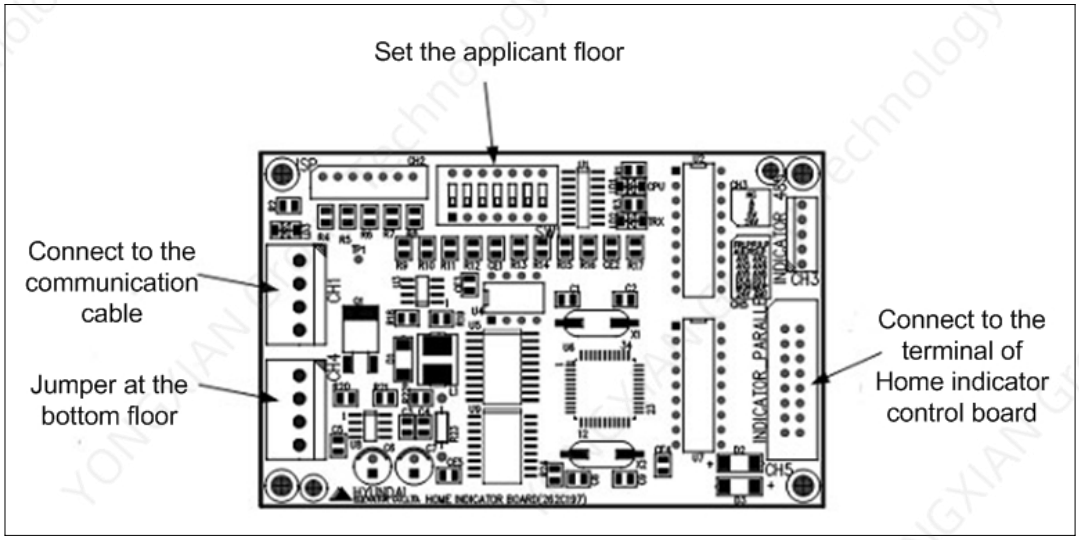
⑤ Connect the Fiber Optic Cable between "LCD2" of last lift and "LCD1" of Master Group I/O Board. (Group Ring Control)



[Figure 4. Fiber optic cable connection]

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3) Home indicator control board connection



[Figure 5. Home Indicator Control Board]

- Home indicator control board transfers the floor information to the home automation device by connecting "CAN-PI" of ring group control board V2.0 .
- Set SW1 value according to the floor.

*** Setting method of SW1**

- When set up, dip switch is on.
- SW1 value of bottom floor is 1000000.

1 : ON 0 : OFF

	1	2	3	4	5	6	7
1 Floor	1	0	0	0	0	0	0
2 Floor	0	1	0	0	0	0	0
10 Floor	0	1	0	1	0	0	0
11 Floor	1	1	0	1	0	0	0

- It must be connected the end resistor to "CH4" connector at the control board of bottom floor.

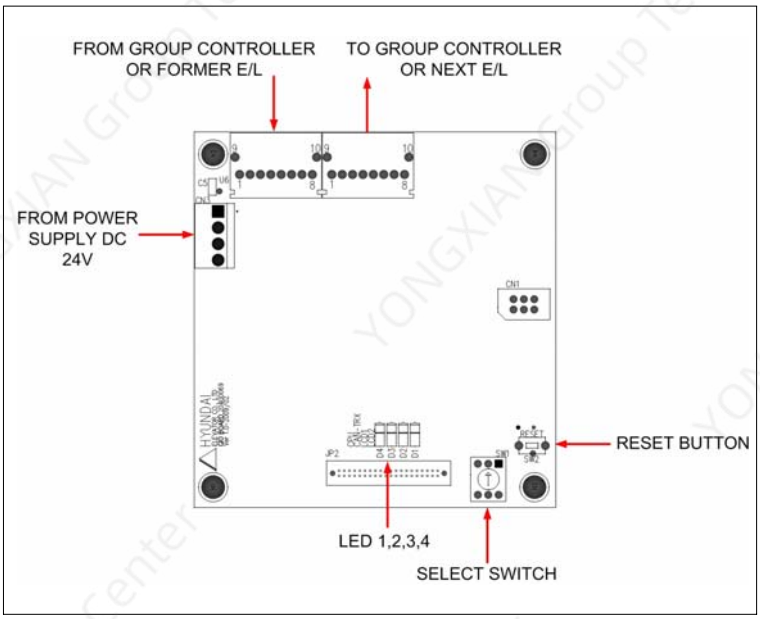
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2-2. GIO Board Setting

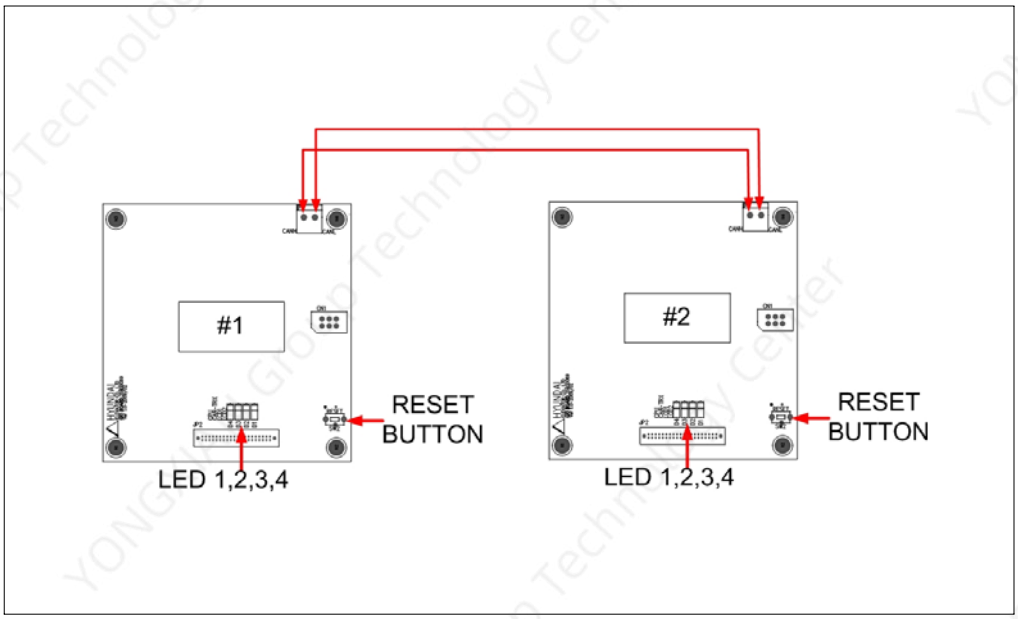
※ Attention

A. For simplex, optical module is not inserted on GIO Board.
For group, 2 optical modules are inserted on GIO Board.

B. In case of removing the GIO Board from Main Board, turn off the power.



[Figure 6. GIO Board (for ring group)]



[Figure 7. GIO Board (for duplex)]

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(1) Rotary switch setting of GIO Board

- Lift #1 should be set "1", ... Lift #n should be set "n".

(2) Check point of GIO Board

ITEM	Check LED	In Normal	details
CPU	"D4" LED	"ON"	
Communication normal	"D2" LED	"ON"	If either D2 or D1 is on, system is normal.
	"D1" LED	"ON"	

2-3. Handicap Car Setting

(1) Handicap car operation overview

① One handicap car can be assigned in case of group control system having more than 2 cars.

② It's different from handicap OPB in car.
(Handicap OPB is controlled by main controller.)

③ Group control assignment per hall call to handicap car

- Both general car and handicap car are assigned service when hall call is registered.
- Only handicap car operates when handicap hall call is registered.
- Handicap hall call is cleared only after handicap car arrives that floor.

④ It can't be available in duplex group.

(2) Setting for handicap hall call

① MCU board setting

Type	Setting Method	Remark
MCU	3. SETUP>>3.1 basic>>31b Field>> B44 Handicap Use	- None - Button Common - Button Divide
	3. SETUP>>3.2 Device>>32h Hall.1 Type	- Normal Call - Handicap Call

② Group control system setting

Type	Setting Method	Remark
Ring Group	1. S03 HANDICAP to "1"	- 0 : No use - 1 : Use
	2. S04 HANDICAP CAR to handicapped car number	- 1~8 : handicap car

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3. HHT SETTING

※ This HHT manual is based in Ring Group Control System.
※ Put HHT to "HHT" connector of Ring Group Control I/O board.
※ After connecting HHT, press "ESC" and "ENTER" key at the same time to display any mode.
※ Please refer to "STVF7 HHT MANUAL" if you want to check MCU board setting.

3-1. Group control HHT mode

1) Edit enable mode (S01-S47, M48-M53)
: In edit enable mode, 'S' or 'M' is displayed left upper side on LCD.
If 'ENTER' Key is pressed, 'S' or 'M' is changed to 'E'.
2) Display mode (D00-D10)
: 'D' is displayed left upper side on LCD.

3-2. The Procedure of setting group data.

- Data can not be changed and inputted without inputting password in M48 Mode (GROUP RESET)

1) Input password in M48 Mode. * Password : 01010102 *
2) DSP CPU reset or DC24V power reset.
3) Change some data in S01~S46 Mode.
4) To save the data, Input "1" in S47 Mode.

3-3. Edit Enable Mode

1) S01~S32 Mode

ITEM	CONTENT	CLASS	VALUE
S01 # GROUP CARS	The number of elevators included Group operation	1~6 CAR	
S02 TOP FLOOR	The number of floor serviced including nonstop floors in group operation. * Set S02, then auto-set S33~S46.		
S03 HANDICAP	The handicapped operation in group	Normal	0
		Handicapped	1
S04 HANDICAP CAR	The elevator in the handicapped operation among (between) the group cars.	1~6 CAR	
S05 BASIC FLOOR	The main(lobby) floor in group operation.		
S06 E/L SPEED	The rated speed of elevators		
S07 IMMEDI. ASGN	Method of forecasting function (lantern)	Immediate	0
		Arrival	1

Rev. Commemts :

ITEM	CONTENT	CLASS	VALUE
S08 HALL CANCEL	Hall Call Two Touch Cancel Function	USE	1
		NO USE	0
S09 #1 MAX PERSN ~ S14 #6 MAX PERSN	the maximum number of persons can be ridden in each car of the group.		
S15 #1 UNDER FLR ~ S20 #6 UNDER FLR	♠the lowest floor of unbalance in the group.		
S21 #1 MID UBFLR ~ S26 #6 MID UBFLR	♠the middle unbalanced floor		
S27 #1 MID 2UBFL ~ S32 #6 MID 2UBFL	♠the 2nd middle unbalanced floor		

♠ S15~S20 mode : Setting of unbalance floor in group operation (UNDER FLOOR).

Ex) If a car #2 car stops from B5 floor to 10 floor and a car #1 car stops from B3 floor to 10 floor, a car #1 serves 2 less floors than a car #2 from the lowest floor.
So set '2' in "S15 #1 UNDER FLR" mode and set '0' in "S16 #2 UNDER FLR".

♠ S21~S26 mode : LCD vane is not installed for one car but installed for other car (1st).

EX) Set '13', if the group cars stop at 15 floors and one car stops at 14 floors except 13th floor (no LCD vane).

♠ S27~S32 mode : LCD Vane is not installed for a car #1 but installed for other car (2nd).

EX) Set '5' in S21 Mode and set '13' in S27 Mode, if the group stops at 15 floors and a car #1 stops at 13 floors except 5th floor and 13th floor.

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2) S33~S46 mode

ITEM	CONTENT	CLASS	VALUE
S33 TOTAL STOP1	The total stop floors of the group. ※Auto-set after setting "S02"	1~32	
S34 TOTAL STOP2	The total stop floors of the group. ※Auto-set after setting "S02"	33~64	
S35 #1 STOP FL1 ~ S40 #6 STOP FL1	The total stop floors of each car. ※Auto-set after setting "S02"	1~32	
S41 #1 STOP FL2 ~ S46 #6 STOP FL2	The total stop floors of each car. ※Auto-set after setting "S02"	33~64	

♠ NOTE

※ Set '1' at the stop floor, '0' at the non-stop floor.
※ In case of 33~64 floor is the same as 1~32 floor.
※ After setting "S02 TOP FLOOR", all data is set automatically in "S33~S46".
※ If there is any non-stop floor (no LCD vane but installed in other car), change the data on "S33~S46" directly.

Ex1) This is the example for S33 to S46 mode

; Let's assume that stop floors for each car are as following table;

Car \ Floor	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	B1	B2	B3	B4	B5
#1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
#2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
#3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●			
#4	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●			
#5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
#6	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●	●	●	●

[#1] : S15 #1 UNDER FLR=0 . S21 #1 MID UBFLR=0 . S27 #1 MID 2UBFL=0 .
[#2] : S16 #2 UNDER FLR=3 . S22 #2 MID UBFLR=0 . S28 #2 MID 2UBFL=0 .
[#3] : S17 #3 UNDER FLR=3 . S23 #3 MID UBFLR=7 . S29 #3 MID 2UBFL=0 .
[#4] : S18 #4 UNDER FLR=3 . S24 #4 MID UBFLR=7 . S30 #4 MID 2UBFL=9 .
[#5] : S19 #5 UNDER FLR=0 . S25 #5 MID UBFLR=7 . S31 #5 MID 2UBFL=0 .
[#6] : S20 #6 UNDER FLR=0 . S26 #6 MID UBFLR=7 . S32 #6 MID 2UBFL=9 .

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	TOP	0000	0000	0111	1111	1111	1111	1111	1111	BOTTOM
S33 TOTAL STOP1		0	0	7	F	F	F	F	F	

	TOP	0000	0000	0111	1111	1111	1111	1111	1111	BOTTOM
S35 #1 STOP FL1		0	0	7	F	F	F	F	F	

	TOP	0000	0000	0111	1111	1111	1111	1111	1000	BOTTOM
S36 #2 STOP FL1		0	0	7	F	F	F	F	8	

	TOP	0000	0000	0111	1111	1111	1111	1011	1000	BOTTOM
S37 #3 STOP FL1		0	0	7	F	F	F	B	8	

	TOP	0000	0000	0111	1111	1111	1110	1011	1000	BOTTOM
S38 #4 STOP FL1		0	0	7	F	F	E	B	8	

	TOP	0000	0000	0111	1111	1111	1111	1011	1111	BOTTOM
S39 #5 STOP FL1		0	0	7	F	F	F	B	F	

	TOP	0000	0000	0111	1111	1111	1110	1011	1111	BOTTOM
S40 #6 STOP FL1		0	0	7	F	F	E	B	F	

※If stop floors are under 32 floor, "S34,41~46" mode is set all "0" automatically.

3) S47 SAVE INITIAL

- Set '1' for saving data, after checking data of 'S01'~'S46'.
- After setting '1', data of S01~S46 is saved in I/O Board of Group MICOM.

Rev. Commemts :

4) M48~M53 mode

ITEM	CONTENT	CLASS	VALUE
M48 GROUP RESET	♠Set password		
M49 YEAR/MONTH/DAY	♠Set YEAR/MONTH/DAY		
M50 HOUR:MINUTE:SECOND	♠Set HOUR:MINUTE:SECOND		
M51 HALL UP CALL	Hall Up Call		
M52 HALL DOWN CALL	Hall Down Call		
M53 GROUP M/MAP	Check all variable data used in group program.		

♠ M48 GROUP RESET : 01010102 → Reset Group Micom → Change data → S47=1

♠ M49 YEAR/MONTH/DAY
Ex) '2004 / 03 / 30' -> '00040330'

♠ M50 HOUR : MINUTE : SECOND
Ex) '16 : 20 : 45' -> '00162045'

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3-4. Display mode

- If you push "ESC" KEY at "S01-S47" or "M48-M53" mode, you can see the "D" mode for data of group operation.
- If you press "ESC" KEY at "D", HHT LCD is changed to "S01-S47" or "M48-M53" mode.

ITEM	CONTENT		CLASS	VALUE
D00 UP LAMP	The information on all up calls transmitted from group cars.		1~32F	
D01 DOWN LAMP	The information on all down calls transmitted from group cars.		1~32F	
D02 UP LANTERN	The up Lanterns which are transmitted from group cars.		1~32F	
D03 DN LANTERN	The down Lanterns which are transmitted from group cars.		1~32F	
D04 UP LAMP2	The information on all up Calls transmitted from group cars.		33~64F	
D05 DN LAMP2	The information on all down Calls transmitted from group cars.		33~64F	
D06 UP LANTERN2	The up Lanterns which are transmitted from group cars.		33~64F	
D07 DN LANTERN2	The down Lanterns which are transmitted from group cars.		33~64F	
D08 GROUP CHECK	♠the number of cars in group operation and status of Group operation	disconnected	Separated	0
		Connected	Attendant or Independent	4
		Connected	In Group operation.	8

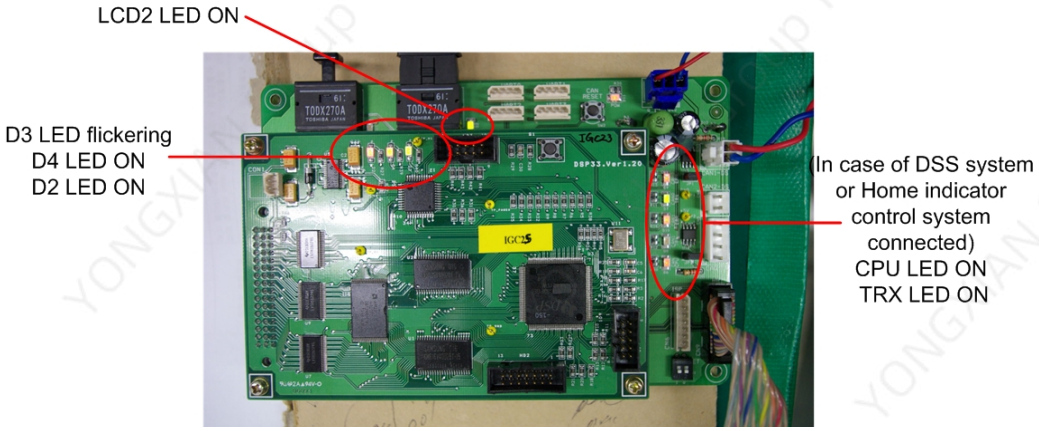
♠ Ex) '4;008084' means the number of group cars is 4
and each car is at the status :
#1 [4] : Group communication is normal and status is Attendant or Independent.
#2 [8] ; Group communication is normal and status is group operation.
#3 [0] ; Group communication is abnormal.
#4 [8] ; Group communication is normal and status is group operation.

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4. Troubleshooting

(1) Is CPU of group control system normal?

- Refer to the following figure of ring group control board.
- Check the MCU board in duplex group.
- If CPU led is abnormal after reset, the board should be replaced.



[Figure 8. ring group control board]

(2) Check by HHT

- HHT > D mode > D08 mode

예)

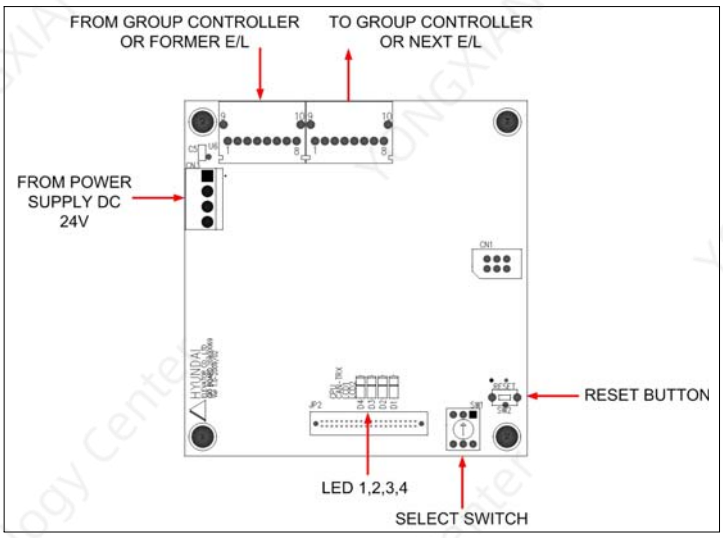
4	:	0	0	8	4	0	8

⇒ #1 car : comm normal, auto operation
⇒ #2 car : comm error
⇒ #3 car : comm normal, independent (ATT,IND)
⇒ #4 car : comm normal, auto operation
⇒ Total cars of group control

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(3) Is communication normal?

- Fiber optic cable (in ring group) : Optic cable of both connectors should be crossed.
  So if blocked oneside, the other optic cable of connectors turns black.
- CAN communication cable (in duplex group) : check the line as one to one.
- GIO board : Check "CPU" LED.
  : If "CPU" LED is abnormal after reset, board should be replaced.



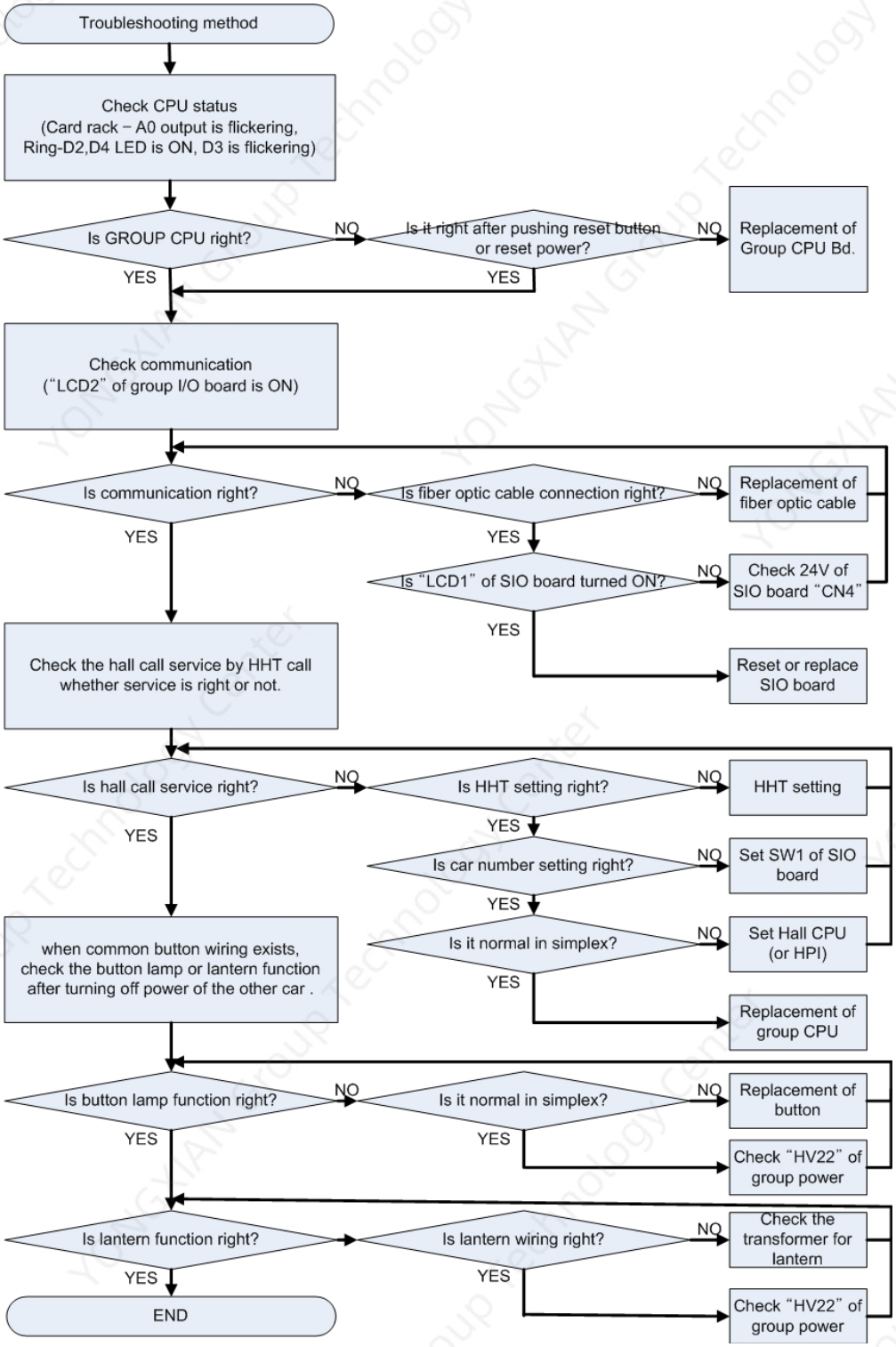
[Figure 9. GIO Board (for ring group)]

(4) Others

Case	Contents	Action
"F18" is displayed at MCU board HHT.	setting error	3. SETUP>>3.1 Basic >> 31b field >> B23 Group Mode
	comm error	Check GIO board status
	GIO board error	Check GIO board connection
"D2" led of GIO board is not on.	Optic module power of GIO board	Check DC24V connector
In case of nonstop floor, car doesn't service other floor	HHT setting is wrong	Refer to HHT setting

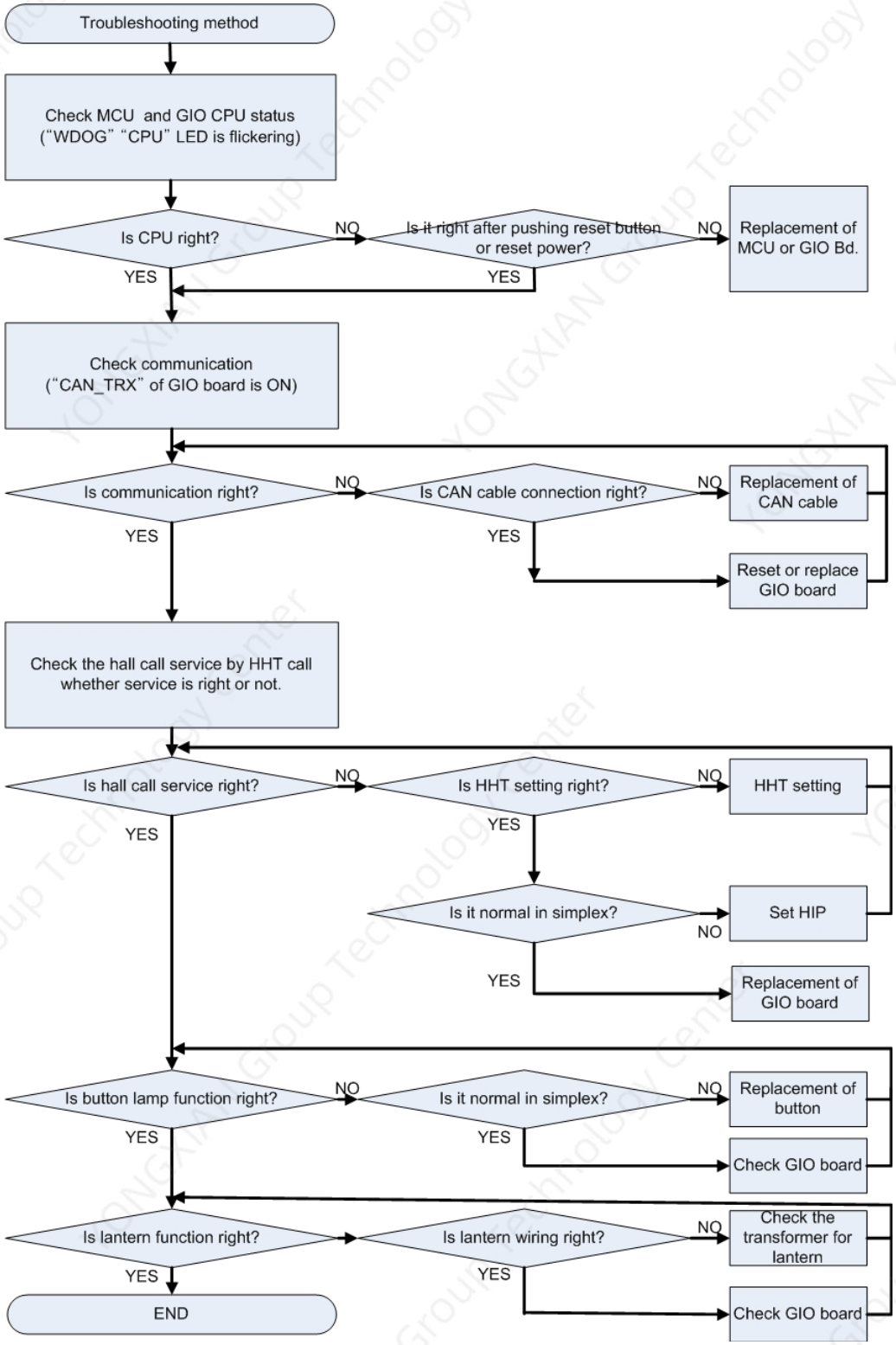
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(5) Troubleshooting Flowchart (in Ring Group)



Rev. Commemts :

(6) Troubleshooting Flowchart (in Duplex Group)



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[Appendix : Group System Functions]

◎ GROUP SYSTEM FUNCTIONS ◎		REMARK
UP PEAK CONTROL	* At the time to attend the office, all lifts are waiting for passengers in a lobby.	○
PEAK TRAFFIC CONTROL	* When many passengers are waiting at a specific floor temporarily, lifts move to that floor preferentially with respect to the other floor service.	○
SEPARATE WAIT CONTROL	* When many hall calls are registered specified floors, lifts will move to those floors and waiting separatedly.	○
AUTOMATIC BYPASS	* When a lift is 80% loaded, it will automatically bypass and other lifts are assigned hall calls.	○
AUTOMATIC CUT SERVICE IN OUT OF ORDER	* In case of a lift problem or disorder, group cut off the lift automatically.	○
ENERGY SAVING	* When building condition is dull, the lifts are restricted to move. So total electric power of building will be saved.	○
GROUP SYSTEM BACK-UP	* In case of master group problem or disorder, additional back-up group device is activated. So group control system keeps up the normal hall call service.	☆
NONSTOP FLOOR SERVICE	* When operator commands nonstop floor service mode, lifts can be serviced at specified floors.	☆
HANDICAPPED LIFT SERVICE	* when a handicapped hall call is generated, Handicapped lift of group is assigned and serviced.	☆
CUT SERVICE	* When the cut signal is inputted, the lift is cut off from the group and switched to independent mode.	☆

○ : STANDARD ☆ : OPTION

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STVF7 SERIES

HHT MANUAL

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HYUNDAI ELEVATOR CO., LTD.

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TABLE OF CONTENTS

1. INTRODUCTION ····· 3

2. HHT MENU ····· 3
2-1. HHT Application ····· 3
2-2. HHT Connection ····· 3
2-3. HHT Mode ····· 3
2-4. The Method of Set up Each Part ····· 4

3. MENU EXPLANATION ····· 5
3-1. Main Menu ····· 5
3-2. Total Information Mode ····· 5
3-3. IN/OUT Mode ····· 6
3-4. ERROR Mode ····· 13
3-5. SETUP Mode ····· 15
3-6. MANAGEMENT Mode ····· 24
3-7. INFO Mode ····· 26

4. MENU INDEX ····· 27
4-1. Menu Index Table ····· 27

5. REVISION ····· 35

Rev. Commemts :

1. INTRODUCTION

-. HHT is simplified character of "Hand Held Terminal".

2. HHT Menu

2-1. HHT Application

1) Set up specification for control part
2) Input and Output memory monitoring
3) Error status monitoring
4) Field adjustment
5) On/off function of MCU board

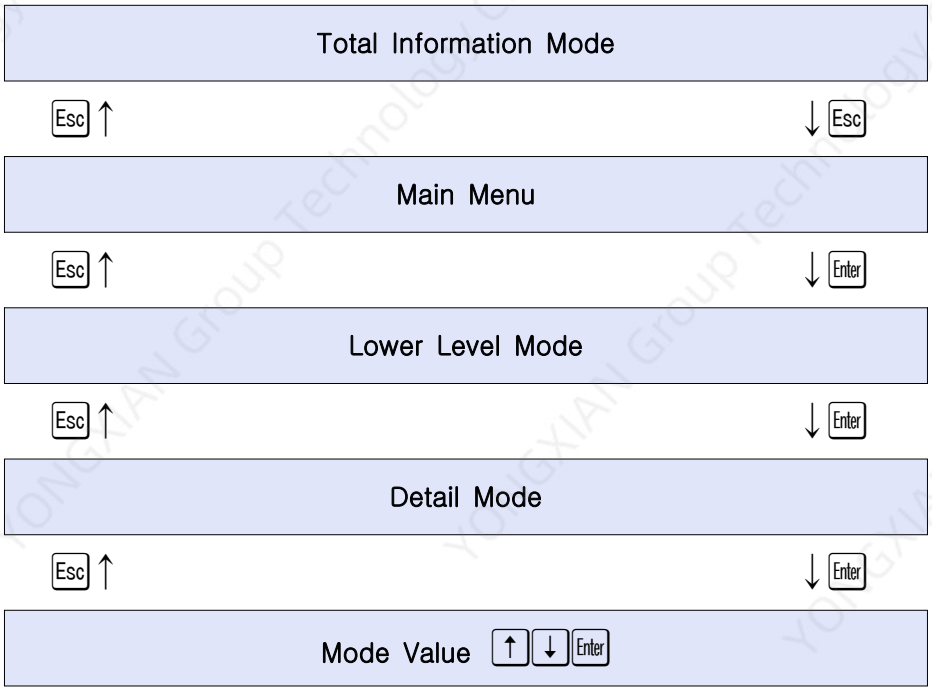
2-2. HHT Connection

1) Connect HHT to H8 connector of MCU board.
2) And push "ESC" and "ENTER" button simultaneously for 1 second.

2-3. HHT Mode

1) HHT is composed by [Esc], [↑], [↓], [Enter].
2) Initial display mode is "Main Menu".
3) If you push [Esc] button at "Main Menu", you can see "Total Information Mode".
4) If tou push [Esc] button at "Total Information Mode", you can see "Main Menu".
5) [↑], [↓] : Increase or decrease of each mode or value.
6) [Enter] : Selection each mode or value,
   : Moving lower level mode
7) [Esc] : Cancel each mode or value,
   : Moving upper level mode.

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<Table 1. HHT menu composition and mode changing method>

2-4. The Method of Set up Each Part

1) You can see lower level mode by pushing Enter button at "Main Menu"
   It is same as moving "Detail Mode".
2) If "▶" is displayed, you can change that detail mode value.
3) You can select the cursor position and mode value with Esc/Enter button.
4) Push Esc button for moving upper level mode or canceling mode value set.

* When elevator is moving, Enter button is not acted at detail mode.

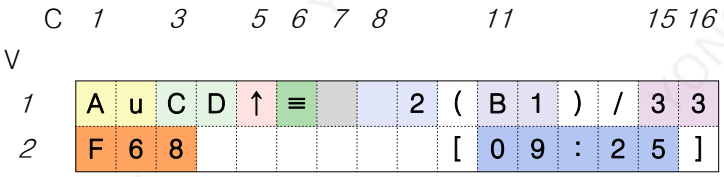
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3. MENU EXPLANATION

3-1. Main Menu

ID	HHT Main Menu	Commit
0.	EL.STATUS	Total Information Mode
1.	IN/OUT	PIO I/O, Car I/O, Call I/O, INVERTER I/O, RMS I/O, Group I/O, CAN STATUS, EXT I/O
2.	ERROR	Error, Error records, Erasing records, Hall Error
3.	SETUP	Spec. change, Device set up, Time set up, Initialization, Load set up
4.	MANAGEMENT	Field test, Factory test, Count E/L running times
5.	INFO	Version information

3-2. Total Information Mode



Position	Commit	Display			
1verse 1,2 column	Elevator Status	No	no mode	F1	1st fireman op.
		Au	auto	F2	2nd fireman op.
		In	In-Car inspection	Mv	independent op.
		On	On-Car inspection	Ep	Emergency op.
		Mc	Machineroom inspection	El	Emergency Landing op.
		Fi	Initialization	Eq	Earthquake op.
		Pk	Parking op.	Rp	Sub brake in
		Fr	Fireman Return	Ar	Arrange op.
1verse 3,4 column	Door Status	OG	Openning	RG	Rear Door Openning
		OP	Open	RO	Rear Door Open
		CG	Closing	RC	Raer Door Close
		CD	Close		
1v 5c	Direction	↑: Up, • : Stop, ↓: Down			
1v 6c	Door zone sensor	ULA, DZ, DLA			
1v 7c	Non-Stop Floor	(Space) : Service Floor, * : non-Service Floor			
1v 8,9c	Absolute Floor				
1v 11~12c	Floor display	Floor display on Indicator			
1v 15,16c	Total Floor				
2v 1,2,3c	Error display	---: No error, Fxx: error code			
2v 11~15c	Current time	Hour : Minute			

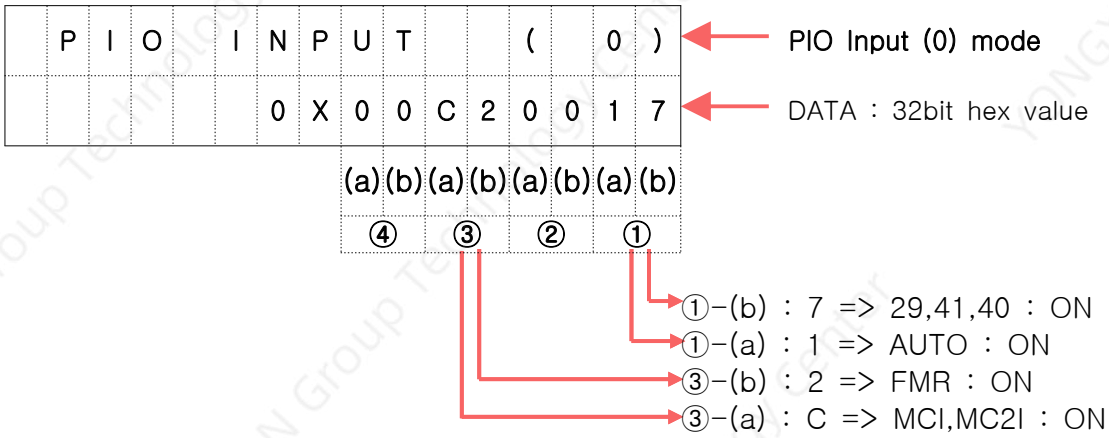
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3-3. IN/OUT Mode

ID	HHT Display	Commit
1.1	PIO Input	PIO input status
1.2	PIO Output	PIO output status
1.3	Car Input	Car input status
1.4	Car Output	Car output status
1.5	Call Input	Call input status
1.6	Call Output	Call output status
1.7	Inv. Input	Inverter input status
1.8	Inv. Output	Inverter output status
1.9	RMS Input	Remote Monitor System input status
1.A	RMS Output	Remote Monitor System output status
1.B	Group Input	Group input status
1.C	Group Output	Group output status
1.D	CAN Status	CAN communication status
1.E	ExtIO Input	Extension input status
1.F	ExtIO Output	Extension output status

<The method of checking IN/OUT status>

ex) : 1.1 PIO input status



* It is same as the other in/out mode.

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3.3.1 IN/OUT / 1.1 PIO Input

ID	HHT Display		Signal Name							
			(a)				(b)			
			8	4	2	1	8	4	2	1
			bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1
	PIO Input [0]	①	MDN	MUP	MCS	AUTO	BKOP	40	41	29
		②	DLS	PLDL	PLDH	PLDM	PLUM	PLUH	PLUL	ULS
		③	MC2I	MCI	ELDI	EQP	EQS	PARK	FMR	RBKI
		④	BKB	FMR2	RDZ	FDZ	EMPO	HOME	ATS	MT
	PIO Input [1]	①	PDN	PUP	PHAND	PAUTO	RNBL	WLS	PDLS	CTOL
		②								
		③								
		④								
	PIO Input [2]	①	30B	BKS	ZSP	RUN	DLD	DLA	DZ	ULA
		②								
	PIO Input [3]	①								
		②								

Display Form : 32bit hex value (0x00000000)

3.3.2 IN/OUT / 1.2 PIO Output

ID	HHT Display	Signal Name							
	PIO Out [0]			REV	FWD	MC2	MC1	RBK	BRKA
		XRLY	MFAN	SPO2	SPO1	ELDO	BRKC	BRKB	ALARM
								IRST	INIT
	PIO Out [0]								

Display Form: 32bit hex value (0x00000000)

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3.3.3 IN/OUT / 1.3 Car Input

ID	HHT Display	Signal Name							
	CarSigIn [0]	FC5	NDZ	FC3	FR2	FR1	ONDN	ONUP	ONS
		OL	FULL	L70	L30	EE	SE	DCL	DOL
		DCS		DCB	DOB			INS	AUTO
			ODD	EVEN	EACH	MOVE	PASS	ATT	PWR
	CarSigIn [1]								
	CarSigIn [2]								
						REE	RSE	RDCL	RDOL
		RDCS		RDCB	RDOB				
	CarSigIn [3]								

Display Form : 32bit hex value (0x00000000)

3.3.4 IN/OUT / 1.4 Car Output

ID	HHT Display	Signal Name							
	CarSigOut [0]	LTR	VFR	UDST	FST	FDR	FR2R	CLR	OPR
		DST	DDN	DUP	VOL	LED3	LED2	LED1	OLBZ
		VEQ	DLOCK	VWEL		VFD		VIP	NUDGR
	CarSigOut [1]								
		BN2	VCL	VOP	LED4	RNUGR	RCLR	ROPR	REAR
							VCNCL	RDOOR	FDOOR
	CarSigOut [2]								
	CarSigOut [3]								

Display Form : 32bit hex value (0x00000000)

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3.3.5 IN/OUT / 1.5 Call Input

ID	HHT Display	Commit
	CarIn.1 1-32	Normal/Front Car call input 1~32 floor
	CarIn.1 33-64	Normal/Front Car call input 33~64 floor
	HUpIn.1 1-32	Normal/Front Hall call up input 1~32 floor
	HUpIn.1 33-64	Normal/Front Hall call up input 33~64 floor
	HDnIn.1 1-32	Normal/Front Hall call down input 1~32 floor
	HDnIn.1 33-64	Normal/Front Hall call down input 33~64 floor
	CarIn.2 1-32	Handicap/Rear Car call input 1~32 floor
	CarIn.2 33-64	Handicap/Rear Car call input 33~64 floor
	HUpIn.2 1-32	Handicap/Rear Hall call up input 1~32 floor
	HUpIn.2 33-64	Handicap/Rear Hall call up input 33~64 floor
	HDnIn.2 1-32	Handicap/Rear Hall call down input 1~32 floor
	HDnIn.2 33-64	Handicap/Rear Hall call down input 33~64 floor

Display Form: 32bit hex value (0x00000000)

3.3.6 3.3.6 IN/OUT / 1.6 Call Output

ID	HHT Display	Commit
	CarOut.1 1-32	Normal/Front Car call output 1~32 floor
	CarOut.1 33-64	Normal/Front Car call output 33~64 floor
	HUpOut.1 1-32	Normal/Front Hall call up output 1~32 floor
	HUpOut.1 33-64	Normal/Front Hall call up output 33~64 floor
	HDnOut.1 1-32	Normal/Front Hall call down output 1~32 floor
	HDnOut.1 33-64	Normal/Front Hall call down output 33~64 floor
	CarOut.2 1-32	Handicap/Rear Car call output 1~32 floor
	CarOut.2 33-64	Handicap/Rear Car call output 33~64 floor
	HUpOut.2 1-32	Handicap/Rear Hall call up output 1~32 floor
	HUpOut.2 33-64	Handicap/Rear Hall call up output 33~64 floor
	HDnOut.2 1-32	Handicap/Rear Hall call down output 1~32 floor
	HDnOut.2 33-64	Handicap/Rear Hall call down output 33~64 floor
	HLantnUP 1-32	Hall Lantern up output 1~32 floor
	HLantnUP 33-64	Hall Lantern up output 33~64 floor
	HLantnDN 1-32	Hall Lantern down output 1~32 floor
	HLantnDN 33-64	Hall Lantern down output 33~64 floor
	HchimeUP 1-32	Hall Chime up output 1~32 floor
	HchimeUP 33-64	Hall Chime up output 33~64 floor
	HchimeDN 1-32	Hall Chime down output 1~32 floor
	HchimeDN 33-64	Hall Chime down output 33~64 floor

Display Form: 32bit hex value (0x00000000)

Rev. Commemts :

3.3.7 IN/OUT / 1.7 Inv. Input

ID	HHT Display	Commit
	Inv.Input [0]	From Inverter to C/P input
	...	
	Inv.Input [47]	

Display Form: 8bit hex value (0x00)

3.3.8 IN/OUT / 1.8 Inv. Output

ID	HHT Display	Commit
	Inv.Output [0]	From C/P to Inverter output
	...	
	Inv.Output [47]	

Display Form: 8bit hex value (0x00)

3.3.9 IN/OUT / 1.9 RMS Input

ID	HHT Display	Commit
	RMS Input [0]	Remote Monitor System input
	...	
	RMS Input [31]	
	RMS_Port_Input	

Display Form: 8bit hex value (0x00)

3.3.10 IN/OUT / 1.A RMS Output

ID	HHT Display	Commit
	RMS Output [0]	Remote Monitor System output
	...	
	RMS Output [47]	
	RMS_Port_Output	

Display Form: 8bit hex value (0x00)

Rev. Commemts :

3.3.11 IN/OUT / 1.B Group Input

ID	HHT Display	Commit
B01	GHUIN 1-32	Group Hall call up input 1~32 floor
B02	GHUIN 33-64	Group Hall call up input 33~64 floor
B03	GHDIN 1-32	Group Hall call down input 1~32 floor
B04	GHDIN 33-64	Group Hall call down input 33~64 floor
B05	GHUBLP 1-32	Group Hall call up button lamp input 1~32 floor
B06	GHUBLP 33-64	Group Hall call up button lamp input 33~64 floor
B07	GHDBLP 1-32	Group Hall call down button lamp input 1~32 floor
B08	GHDBLP 33-64	Group Hall call down button lamp input 33~64 floor
B09	GHLUP 1-32	Group Hall call up Lantern input 1~32 floor
B10	GHLUP 33-64	Group Hall call up Lantern input 33~64 floor
B11	GHLDN 1-32	Group Hall call down Lantern input 1~32 floor
B12	GHLDN 33-64	Group Hall call down Lantern input 33~64 floor
B13	GWHUIN 1-32	Handicap Group Hall call up input 1~32 floor
B14	GWHUIN 33-64	Handicap Group Hall call up input 33~64 floor
B15	GWHDIN 1-32	Handicap Group Hall call down input 1~32 floor
B16	GWHFIN 33-64	Handicap Group Hall call down input 33~64 floor
B17	GWHUBLP 1-32	Handicap Group Hall call up button lamp 1~32 floor
B18	GWHUBLP 33-64	Handicap Group Hall call up button lamp 33~64 floor
B19	GWHDBLP 1-32	Handicap Group Hall call down button lamp 1~32 floor
B20	GWHDBLP 33-64	Handicap Group Hall call down button lamp 33~64 floor
B21	GCFLAG [0]	Group status (00: group, 11: no group)
B22	GCFLAG [1]	Home Landing Floor
B23	GCFLAG [2]	Emergency Power Operation (Auto Home Landing)
B24	GCFLAG [3]	Emergency Power Operation (Continue Running)
B25	DSK.Live Cnt	Duplex Group live counting
B26	DSK.CAN Err	Duplex Group communication error (01: error)
B27	DSK.CAN Cnt	Duplex Group communication status
B28	DSK.FLAG[3]	
B29	DSK.Z68G	
B30	DSK.Version	Duplex Group Version
B31	DSK.FLAG[6]	
B32	DSK.FLAG[7]	
B33	DSK.CANTEC	
B34	DSK.CANREC	
B35	DSK.Master	
B36	DSK.FLAG[11]	
B37	DSK.FLAG[12]	
B38	DSK.FLAG[13]	
B39	DSK.FLAG[14]	
B40	DSK.FLAG[15]	

Display Form: 8bit hex value (0x00)

Rev. Commemts :

3.3.12 IN/OUT / 1.C Group Output

ID	HHT Display	Commit
C01	GHUOUT 1-32	From C/P to Group Hall call up output 1~32 floor
C02	GHUOUT 33-64	From C/P to Group Hall call up output 33~64 floor
C03	GHDOUT 1-32	From C/P to Group Hall call down output 1~32 floor
C04	GHDOUT 33-64	From C/P to Group Hall call down output 33~64 floor
C05	GCCOUT 1-32	From C/P to Group Car call output 1~32 floor
C06	GCCOUT 33-64	From C/P to Group Car call output 33~64 floor
C07	GFSTOP 1-32	From C/P to Group Force stop floor 1~32 floor
C08	GFSTOP 33-64	From C/P to Group Force stop floor 33~64 floor
C09	GWHUOUT 1-32	Handicap hall call up output 1~32 floor
C10	GWHUOUT 33-64	Handicap hall call up output 33~64 floor
C11	GWHDOUT 1-32	Handicap hall call down output 1~32 floor
C12	GWHDOUT 33-64	Handicap hall call down output 33~64 floor
C13	GIFLAG [0]	
C14	GIFLAG [1]	
C15	GIFLAG [2]	
C16	GIFLAG [3]	
C17	GOFLAG [0]	
	...	
C28	GOFLAG [11]	
C29	GOCHECK [0]	
	...	
C33	GOCHECK [4]	
C34	DSK.TFL	
C35	DSK.RFL	
C36	DSK.BFLDIF	
C37	DSK.TFLDIF	
C38	DSK.ELSTATE	
C39	DSK.CNTL [5]	
C40	DSK.CNTL [6]	
C41	DSK.CNTL [7]	
C42	DSK.Slave	
C43	DSK.RFL nRtn	
C44	DSK.SFL nRtn	
C45	DSK.MFL Fix	
C46	DSK.Hall 2-T	
C47	DSK.CNTL [13]	
C48	DSK.CNTL [14]	
C49	DSK.CNTL [15]	

Display Form: 8bit hex value (0x00)

Rev. Commemts :

3.3.13 IN/OUT / 1.D CAN Status

ID	HHT Display	Commit
	CAN.Car Status	Car part CAN status register value : * normal : 0x0000000C * abnormal : 0x80000044
	CAN.Hall Status	Hall part CAN status register value : * normal : 0x0000000C * abnormal : 0x80000044
	HallScan1 1-32	Normal/Front Hall detected ID 1~32 floor (Detected Hall ID bit is displayed "1") * example 8 floor = 0x000000FF * example 15 floor = 0x00007FFF
	HallScan1 33-64	Normal/Front Hall detected ID 33~64 floor
	HallScan2 1-32	Handicap/Rear Hall detected ID 1~32 floor
	HallScan2 33-64	Handicap/Rear Hall detected ID 33~64 floor
	Car Scan	OPB board Detected ID : * 0xHGFEDCBA

H	G	F	E	D	C	B	A
--	ExIO2	ExIO1	LS	OPB4	OPB3	OPB2	OPB1

Display Form: 32bit hex value (0x00000000)

3-4. ERROR Mode

ID	HHT Display	Commit
2.1	Error List	Error occurrence / cancellation list
2.2	Clear Error	Clear error occurrence / cancellation list
2.3	Hall Error	Hall board error

3.4.1 ERROR / 2.1 Error List

- Error List is recorded with error code, occurrence, cancellation, time in regular sequence.
- The number of total recorded lists is 64.

ex 1) 2009. 2. 17 15:55:47.11 F11 occurrence

0	0	2		F	1	1		s	e	t				
0	9	0	2	1	7	-	1	5	5	5	4	7	.	1	1

ex 2) 2009. 2. 17 15:59:58.87 F11 cancellation

Rev. Commemts :

0 0 1	F 1 1	c l r			
0 9 0 2 1 7 - 1 5 5 9 5 8 . 8 7					

3.4.2 ERROR / 2.2 Clear Error

- Clear the total 64 error records

ex) Clear Error /Cln Error List? → push [Enter] button

→select "yes" using [↑] button → push [Enter] button

	C l n	E r r o r	L i s t ?
▶			Y e s

3.4.3 ERROR / 2.3 Hall Error

Undetected or dis-order hall board ID bit is displayed "1".

ID	HHT display	Commit
	HallErr.1 1-32	Normal/Front Hall error 1~32 floor
	HallErr.1 33-64	Normal/Front Hall error 33~64 floor
	HallErr.2 1-32	Handicap/Rear Hall error 1~32 floor
	HallErr.2 33-64	Handicap/Rear Hall error 33~64 floor

Display Form: 32bit hex value (0x00000000)

ex) Hall ID error is detected at 1, 2, 6, 8 floor

H a l l E r r . 1	1 - 3 2	← Hall Err.1 1-32 mode
0 X 0 0 0 0 0 0 A 3		← DATA : 32bit hex value
25~32	17~24 9~16 1~8	

" 0X000000A3 " ---- 8 7 6 5 | 4 3 2 1 floor

DATA "A3 " ---- 1 0 1 0 | 0 0 1 1

* If there is no hall error, DATA is displayed "00".

Rev. Commemts :

3-5. SETUP Mode

ID	HHT Display	Commit
3.1	Basic	Specification change
3.2	Device	Device set up change
3.3	Time & Data	Time, date change

	C	1		3		5	6	7	8			11				15	
V																	
1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	1 Verse : mode position
2	▶						0	X	0	0	0	0	0	0	0	0	2 Verse : Data set up position

** Select mode at 1 column → Push [Enter] button → Cursor is moved to 2 column → Select data using [↑], [↓] button → Push [Enter] button → MCU board reset → End

** At Data set up position, [Esc] is moved to left side and [Enter] is moved to right side.

ex1) Total floor set up (in case of 28 floor)

B	0	1		T	o	t	a	l		F	L		N	u	m	← Total floor set up mode (1~64)
											2	8	f	l		← In case of 28 floor

* "SETUP/ 3.1 Basic/ 31b Field/ B01 Total FL Num" → Select "28" → Push [Enter]

ex2) non-service floor set up

- in case of 2,4,7,15,16,18,25,32 non-service floor, each floor bit is 0.

C	0	1		G	l	b	.	N	o	n	S	t	p	.	L	← Non-service floor mode (1~32)
						0	X	7	E	F	D	3	F	B	5	← DATA : 32bit hex value

* "SETUP/ 3.1 Basic/ 31c Nonstop Set/ C01 Glb.NonStp.L" → Select "0X7EFD3FB5" → Push [Enter]

* If there is no non-service floor, select "**0XFFFFFF**".

ex3) In case of initialization

	I	n	i	t		T	r	v	l	.	L	e	n	?		← Initialization mode
▶													Y	e	s	← select "Yes"

* "SETUP/ 3.1 Basic/3 1a General/ A19 Init TrvlLen/ Init Trvl.Len?" → Select "YES" → Push [Enter] → Car start with initialization operation.

Rev. Commemts :

3.5.1 SETUP / 3.1 Basic

ID	HHT Display	Commit
31a	General	Spec 1 set up
31b	Field	Spec 2 set up
31c	Nonstop Set	Non-service floor set up

3.5.1.1 SETUP / 3.1 Basic / 31a General

ID	HHT display	Commit
A01	Region	Country : Korea/China/Other
A02	T/M Type	Motor : - Geard : geared motor - Gerless notMRL : gearless motor (Not MRL) - MRL-UpperDriven : Upper side MRL - MRL-LowerDriven : Lower side MRL - MRL-InnerDriven : In running way MRL
A03	Speed	Speed - 30, 45, 60, 90, 105, 120, 150
A04	Local Code	Local Code: EN81 code (MC2) - KS_CODE : MC2 no use - EN_CODE : MC2 use - GB_CODE : china MC2 use
A05	SubBrake Typ	Sub Brake Type - None : no use - Rope Brake: Rope Brake, Rope Gripper - Car Brake: Car Brake - Double Brake: Standard Brake
A06	Num. of Door	Normal/Front+Rear Door Type - Standard : 1 Door Type - Front-Rear : 2 Door Type
A07	Door OpenDir	Door open direction - Horizontal Open : right-left side open - Vertical Open : up sliding open
A08	DLD Use	Door load detector type - None : no use - DLD : Use door load detector - HNPS : Use door finger jam prevention (option) - DLD+HNPS : Use DLD + HNPS function (option)
A09	LoadSwch Pos	Load switch position - Car Bottom : Car Bottom - Machine Room : Machine Room
A10	FanLightTime	Fan, Light off time
A11	RFL Rtn Time	Return time to move lobby floor (per minute)

Rev. Commemts :

A12	RFL DoorTime	Door time at lobby floor (per second)
A13	Car DoorTime	Door time for car call (per second)
A14	HallDoorTime	Door time for hall call (per second)
A15	HdcpDoorTime	Door time for handicap option (per 10 second)
A16	Move/Ind/Att	Moving/independence/guide function
A17	DispLampType	Car status display on Indicator : - Full/Ins /Fire: full/inspection/fire - Full/Ins /Move: full/inspection/moving - Full/Ins /O.L. : full/inspection/overload - Full/Ins /Blue : full/inspection/emergency - Full/Ins /Use : full/inspection/using - Full/Auto/Fire : full/auto/fire operation - Full/Auto/Move: full/auto/moving - Full/Auto/Opt : full/auto/option operation - Full/Auto/Blue : full/auto/emergency - Full/Auto/Use : full/auto/using - Full/Auto/Ins : full/auto/inspection - Full/Fire/Move : full/fire op./moving - Ins /Move/Auto: inspection/moving/auto - Ins/Auto/Fire : inspection/auto/fire operation - Ins/Move/Fire : inspection/moving/fire operation - Ins/Fire/Move : inspection/fire op./moving
A18	DispFontType	Floor display pattern on indicator - B7 B6→1 2 3 4 5 - B7 B6→1 2 3 F 5 - B7 B6→G 2 3 4 5 - B7 B6→G 2 3 F 5 - B7 B6→L 2 3 4 5 - B7 B6→L 2 3 F 5 - B7 B6→L 1 2 3 4 - B7 B6→L 1 2 3 F - -7 -6→L 1 2 3 4 - -7 -6→L 1 2 3 F - -7 -6→L G 2 3 4 - -7 -6→L G 2 3 F - B 2 3 4 5 - B 2 3 F 5 - B7 B6→G 1 2 3 4 - B1 1 L 3 4 5 - User Disp Font
A19	Init TrvlLen	Initialization start - “A19 Intl TrvlLen/Init Trvl.Len?” → select "Yes". → push “ENT" → initialization start

Rev. Commemts :

A20	Load Sensor	Load sensor set up : refer to sub menu mode

20a LS Use	Load sensor device selection (Use : Enable)
20b Load Setting	Load set up (0%, 50%, zero point alignment) **Load Set : 0%** (0% set up) **Load Set : 50%** (50% set up) **Load Align :** (zero point alignment at no load) **SetEnd Data** : (no use)
20c Sensing Data	Current load data display **LS Data : %** percentage data (0% ~ 120%) **LS Data : A/D** Analog to digital decimal value data
20d Rd LS Memory	Receive the recorded data of load sensing board **Read LS Memory** - command to read load data. **LS Memory Data** (recorded data) **- LS Memory : 0%** **- LS MEmory : 50%**
20e Wr LS Memory	Transmit the data of 0%, 50% to LS board **Data to Wr : 0%** -Transmit 0% data (decimal value) **Data to Wr : 50%** -Transmit 50% data (decimal value) **Send LS Memory** -Command to transmit 0%,50% data

Rev. Commemts :

3.5.1.2 SETUP / 3.1 Basic / 31b Field

ID	HHT Display	Commit
B01	Total FL Num	Total floor number (the number of door zone vane)
B02	Reference FL	Lobby floor (from bottom floor)
B03	Parking FL	Parking floor (returning floor in parking operation)
B04	Parking Mode	Parking operation use and door status - Disable : no use - Door Close : door closed after parking operation - Door Open : door open after parking operation
B05	Fire Mode	Fire code - Disable : no fire operation - KS : korea code - BS : - CS : china code
B06	FireRtn FL.1	1st fire return floor (from bottom floor)
B07	FireRtn FL.2	2nd fire return floor (option)
B08	Nonstop Use	use non-service floor. (refer to 31c mode)
B09	UserSkip Use	use user skip service floor. (refer to 31c mode)
B10	Relevel Mode	auto leveling op. (door open or close. need X-relay)
B11	Running Open	running open (at landing time) - Disable : no use - Enable : use (need X-relay)
B12	Car Call 2-T	two touch car call cancel
B13	Hall Call 2-T	two touch hall call cancel (no use in group)
B14	Lantern Use	hall lantern
B15	BtTouchSound	car button touch sound
B16	DispFont RFL	the floor indicated "1"
B17	DispRFL Skip	lobby floor indicator skip data ex) If "5,6....." : set up “4”
B18	Font Skip 1	Indicator skip floor 1st. ex) if "1,2,3,5,7,8...." : set "4"
B19	Font Skip 2	Indicator skip floor 2nd. ex) if "1,2,3,5,7,8...." : set "6"
B20	UserDispFont	Indicator: user font (SPEC/3.1 Basic/31a General /A18 DispFontType → select ‘User Disp Font’) User Font [1] ~ User Font [63] ※ User Font [absolute floor] ([0]:no use) ※“Reference data 1. User Font”

Rev. Commemts :

example) indicator display : B1, L, M, 2, 3, F, 5, 6, P (9stop)
*Reference Floor = 2nd floor("L" marked floor)

(1) A18 -> "user disp font" select
(2) B01 -> "9"
(3) B02 -> "2"
(4) B20 -> User font [1] = B1
User font [2] = L
User font [3] = M
User font [4] = 2
User font [5] = 3
User font [6] = F
User font [7] = 5
User font [8] = 6
User font [9] = P

[Table1. User display font]

Font Data	Font Data	Font Data	Font Data	Font Data	Font Data
1	S1	LB	-1	P	2T
2	S2	LG	-2	Q	8A
;	S3	LP	-3	R	18^{A}
10	1A	LL	-4	S	L5
;	2A	LM	-5	T	L6
15	3A	MB	-6	U	L7
16	M1	ML	-7	V	0
17	M2	ME	-8	W	PF
;	M3	PB	-9	X	GE
26	1M	RC	31^{A}	Y	GR
;	2M	SB	31^{B}	Z	SS
30	3M	UB	RG	PH	E5
31	1P	UG	P5	PD	12^{A}
32	2P	G	P6	PS	6A
33	G1	B1	BQ	SP	AP
;	G2	B2	A	PM	RS
39	F1	B3	B	S4	VG
40	F2	B4	C	41	
E1	AA	B5	D	42	
E2	AL	B6	E	;	
E3	AS	B7	F	95	
E4	BM	B8	G	96	
P1	BF	B9	H	6M	
P2	BL	A1	I	7M	
P3	CP	A2	J	RF	
P4	DS	A3	K	4M	
L1	ES	M4	L	5M	
L2	GF	G3	M	PL	
L3	GP	G4	N	MZ	
L4	KM	F	O	1T	

Rev. Commemts :

B21	Supervisor	supervisory
B22	RMS Use	Remote Monitor System
B23	Group Mode	Group controller Type - Disable : no use - Ring : Ring Group controller type - Duplex : 2-car group (can type)
B24	2Car:MFL	2-car : middle floor
B25	2Car:BFL dif	2-car : the number of unbalance floor at bottom
B26	2Car:TFL dif	2-car : the number of unbalance floor at top
B27	2Car:Master	2-car : master / slave
B28	2Car:RFL Rtn	2-car : home landing function
B29	2Car:SFL Rtn	2-car : 2nd home landing function
B30	2Car:Option	2-car : (option)
B31	ANSI CODE	Ansi code (option)
B32	Brk-off Time	brake off time set up (standard : 80ms)
B33	EMP Use	Emergency Power operation
B34	EMP FL	Homelanding floor of Emergency Power operation
B35	ELD Use	Emergency Landing Device (option)
B36	Earthquake	Earthquake operation (option)
B37	VIP Use	VIP operation (option)
B38	VIP FL	VIP floor (option)
B39	Pass Mode	hall call pass operation
B40	1BC Use	1BC type operation
B41	FakeCallCncl	False car call cancel - Disable : no use - Enable : use
B42	RearCallCncl	Contrary direction car call cancel - Disable : no use - Enable : use
B43	ATStall Time	Running time available per 1 time
B44	Handicap Use	Handicap car call / hall call (refer to
B45	Night Run	Calm Running at night - 45a Night Run Set (volumn, speed set up) - 45b Night Start Time - 45c Night End Time

Rev. Commemts :

3.5.1.3 SETUP / 3.1 Basic / 31c Nonstop Set

ID	HHT Display	Commit
C01	Glb.NonStp.L	Total non-service 1~32 floor
C02	Glb.NonStp.H	Total non-service 33~64 floor
C03	FronNonStp.L	(Front/Rear type) Front non-service 1~32 floor
C04	FronNonStp.H	(Front/Rear type) Front non-service 33~64 floor
C05	RearNonStp.L	(Front/Rear type) Rear non-service 1~32 floor
C06	RearNonStp.H	(Front/Rear type) Rear non-service 33~64 floor
C07	RMS NonStp.L	Remote Monitor System non-service 1~32 floor
C08	RMS NonStp.H	Remote Monitor System non-service 33~64 floor
C09	User Skip1.L	User skip 1~32 floor
C10	User Skip1.H	User skip 33~64 floor
C11	User Skip2.L	User skip2 1~32 floor
C12	User Skip2.H	User skip2 33~64 floor
C13	CardkeyMsk.L	Card key service 1~32 floor
C14	CardkeyMsk.H	Card key service 33~64 floor

Rev. Commemts :

3.5.2 SETUP / 3.2 Device

ID	HHT Display	Commit
32a	OPB.2 Use	Sub(Rear) OPB board
32b	OPB.2 Type	Sub(Rear) OPB call type. (common/divided) (with "SETUP / 3.1 Basic / 31a General / A06 Num. of Door" value) - Button Common: common with Main OPB - Button Divided : divided from Main OPB
32c	OPB.3 Use	Handicap OPB #1 board
32d	OPB.4 Use	Handicap OPB #2 board
32e	HdcpOPB Type	Handicap OPB call type (common/divided) (with "SETUP / 3.1 Basic / 31b Field / B44 Handicap Use" value) - Button Common : common with normal OPB - Button Divided : divided from normal OPB
32f	ExtIO.1 Use	Extension I/O board #1
32g	ExtIO.2 Use	Extension I/O board #2
32h	Hall.1 Type	Hall call type (Front Hall call) (with "SETUP / 3.1 Basic / 31b Field / B44 Handicap Use" value) - Normal Call - Handicap Call
32i	Hall.2 Type	Hall call type (Rear Hall Call) (with "SETUP / 3.1 Basic / 31a General / A06 Num. of Door" value) - Handicap Call - Rear Call
32j	CardKey Type	Card key type
32k	CardKey Auto	Auto car call with card key input
32l	CTS Type	Car Touch Screen
32m	DestCallType	Destination Selecting System
32n	RS485 Type	RS485 port
32o	RS485 Speed	RS485 port speed
32p	HomeCall Use	Home automation call
32q	CAN-HHT Use	HHT function with CAN communication

Rev. Commemts :

3.5.3 SETUP / 3.3 Time & Date

ID	HHT Display	Commit
33a	Time Set	hour-minute set up
33b	Date Set	year-month-day set up
33c	RTC Init	Real-Time Clock initialization : 2009-01-01 00:00

3-6. MANAGEMENT Mode

ID	HHT Display	Commit
4.1	EL Run Count	Count the number of elevator running
4.2	Factory Test	Factory test
4.3	Field Test	Field test

3.6.1 MANAGEMENT / 4.1 EL Run Count : Count the number of elevator running

3.6.2 MANAGEMENT / 4.2 Factory Test :

ID	HHT Display	Commit
42a	C/P Test	C/P test signal (using only factory)
42b	Spec Init	Initialize all set up data
42C	UserFontInit	Initialize all user font data

Rev. Commemts :

3.6.3 MANAGEMENT / 4.3 Field Test :

ID	HHT Display	Commit
43a	Field Setup	0 : no use 1 : installation mode (only inspection mode) 2 : auto mode
43b	RopeBrkReset	00 : Rope Brake Error cancellation 01 : Rope Brake Error occurrence *Set up “00”, then F74 error is canceled.
43C	Auto CarCall	Car call without pushing car button * After all inspection, please reset the MCU board.
	Auto CarCall En	Door status set up after car call service No : no use DOOR OPEN : Open → Close (normal function) DOOR CLOSE : Keep up door close status
	Auto CarCall 1	1st car call
	Auto CarCall 2	2nd car call
	Auto CarCall 3	3rd car call
	Auto CarCall 4	4th car call
43d	AutoHallCall	Hall call without pushing hall button * After all inspection, please reset the MCU board.
	AutoHallCall En	Door status set up after hall call service No : no use DOOR OPEN : Open → Close (normal function) DOOR CLOSE : Keep up door close status
	AutoHallCallUp1	1st hall call up
	AutoHallCallUp2	2nd hall call up
	AutoHallCallDn1	1st hall call down
	AutoHallCallDn2	2nd hall call down

Rev. Commemts :

3-7. INFO Mode

ID	HHT Display	Commit
5.1	Version	Program version
5.2	CPID	C/P product information

3.7.1 INFO / 5.1 Version

Program version is displayed with "Ver xx.xx" form.

ID	HHT Display	Commit
51a	MCU.Main	Main program version of MCU board
51b	MCU.CAN	CAN program version of MCU board
51c	PIO.CPLD	CPLD program version of PIO board
51d	GIO	GIO program version of GIO board
51e	OPB.1	Main OPB board version
51f	OPB.2	Sub(Rear) OPB board version
51g	OPB.3	Handicap #1 OPB board version
51h	OPB.4	Handicap #2 OPB board version
51i	LS	Load sensing board version
51j	ExtIO.1	Extension I/O board #1 version
51k	ExtIO.2	Extension I/O board #2 version
51l	(Inverter)	(no use)
51m	(RMS)	(no use)
51n	-	(no use)
51o	-	(no use)
51p	MCU.Lib	MCU library version

3.7.2 INFO / 5.2 CPID

C/P characteristic ID

ID	HHT Display	Commit
52a	Project #	Field project number
52b	MCU Serial #	MCU serial number
52c	Mfg. Time	Program download time
52d	C/P #	Control part number

Rev. Commemts :

4. Menu Index

4-1. Menu Index Table

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
0. EL.STATUS			
1. IN/OUT	1.1 PIO Input	PIO Input [0] PIO Input [1] PIO Input [2] PIO Input [3]	
	1.2 PIO Output	PIO Output [0] PIO Output [1]	
	1.3 Car Input	CarSigIn [0] CarSigIn [1] CarSigIn [2] CarSigIn [3]	
	1.4 Car Output	CarSigOut [0] CarSigOut [1] CarSigOut [2] CarSigOut [3]	
	1.5 Call Input	CarIn.1 1-32 CarIn.1 33-64 HUpIn.1 1-32 HUpIn.1 33-64 HDnIn.1 1-32 HDnIn.1 33-64 CarIn.2 1-32 CarIn.2 33-64 HUpIn.2 1-32 HUpIn.2 33-64 HDnIn.2 1-32 HDnIn.2 33-64	

(continue)

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
1. IN/OUT			
	1.6 Call Output	CarOut.1 1-32 CarOut.1 33-64 HUpOut.1 1-32 HUpOut.1 33-64 HDnOut.1 1-32 HDnOut.1 33-64 CarOut.2 1-32 CarOut.2 33-64 HUpOut.2 1-32 HUpOut.2 33-64 HDnOut.2 1-32 HDnOut.2 33-64	
	1.7 Inv. Input	Inv. Input [0] ... Inv. Input [47]	
	1.8 Inv. Output	Inv. Output [0] ... Inv. Output [47]	
	1.9 RMS Input	RMS Input [0] ... RMS Input [31] RMS_Port_Input	
	1.A RMS Output	RMS Output [0] ... RMS Output [47] RMS_Port_Output	

(continue)

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
1. IN/OUT			
	1.B Group Input		
		B01 GHUIN 1-32	
		B02 GHUIN 33-64	
		B03 GHDIN 1-32	
		B04 GHDIN 33-64	
		B05 GHULP 1-32	
		B06 GHULP 33-64	
		B07 GHDLP 1-32	
		B08 GHDLP 33-64	
		B09 GHLUP 1-32	
		B10 GHLUP 33-64	
		B11 GHLDN 1-32	
		B12 GHLDN 33-64	
		B13 GWHUIN 1-32	
		B14 GWHUIN 33-64	
		B15 GWHDIN 1-32	
		B16 GWHFIN 33-64	
		B17 GWHUBLP 1-32	
		B18GWHUBLP 33-64	
		B19 GWHDBLP 1-32	
		B20GWHDBLP 33-64	
		B21 GCFLAG [0]	
		B22 GCFLAG [1]	
		B23 GCFLAG [2]	
		B24 GCFLAG [3]	
		B25 DSK.Live Cnt	
		B26 DSK.CAN Err	
		B27 DSK.CAN Cnt	
		B28 DSK.FLAG[3]	
		B29 DSK.Z68G	
		B30 DSK.Version	
		B31 DSK.FLAG[6]	
		B32 DSK.FLAG[7]	
		B33 DSK.CANTEC	
		B34 DSK.CANREC	
		B35 DSK.Master	
		B36 DSK.FLAG[11]	
		B37 DSK.FLAG[12]	
		B38 DSK.FLAG[13]	
		B39 DSK.FLAG[14]	
		B40 DSK.FLAG[15]	

(continue)

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
1. IN/OUT			
	1.C Group Output		
		C01 GHUOUT 1-32	
		C02 GHUOUT 33-64	
		C03 GHDOUT 1-32	
		C04 GHDOUT 33-64	
		C05 GCCOUT 1-32	
		C06 GCCOUT 33-64	
		C07 GFSTOP 1-32	
		C08 GFSTOP 33-64	
		C09 GWHUOUT 1-32	
		C10 GWHUOUT 33-64	
		C11 GWHDOUT 1-32	
		C12 GWHDOUT 33-64	
		C13 GIFLAG [0]	
		C14 GIFLAG [1]	
		C15 GIFLAG [2]	
		C16 GIFLAG [3]	
		C17 GOFLAG [0]	
		...	
		C28 GOFLAG [11]	
		C29 GOCHECK [0]	
		...	
		C33 GOCHECK [4]	
		C34 DSK.TFL	
		C35 DSK.RFL	
		C36 DSK.BFLDIF	
		C37 DSK.TFLDIF	
		C38 DSK.ELSTATE	
		C39 DSK.CNTL [5]	
		C40 DSK.CNTL [6]	
		C41 DSK.CNTL [7]	
		C42 DSK.Slave	
		C43 DSK.RFL nRtn	
		C44 DSK.SFL nRtn	
		C45 DSK.MFL Fix	
		C46 DSK.Hall 2-T	
		C47 DSK.CNTL [13]	
		C48 DSK.CNTL [14]	
		C49 DSK.CNTL [15]	

(continue)

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
1. IN/OUT			
	1.D CAN Status	CAN.Car Status CAN.Hall Status HallScan1 1-32 HallScan1 33-64 HallScan2 1-32 HallScan2 33-64 Car Scan	
2. ERROR	2.1 Error List		
	2.2 Clear Error		
	2.3 Hall Error	HallErr.1 1-32 HallErr.1 33-64 HallErr.2 1-32 HallErr.2 33-64	
3. SETUP	3.1 Basic	31a General	A01 Region A02 T/M Type A03 Speed A04 Local Code A05 SubBrake Typ A06 Num. of Door A07 Door OpenDir A08 DLD Use A09 LoadSwch Pos A10 FanLightTime A11 RFL Rtn Time A12 RFL DoorTime A13 Car DoorTime A14 HalldoorTime A15 HdcpDoorTime A16 Move/Ind/Att A17 DispLampType A18 DispFontType A19 Init TrvlLen A20 Load Sensor

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
3. SETUP			
	3.1 Basic	31b Field	B01 Total FL Num B02 Reference FL B03 Parking FL B04 Parking Mode B05 Fire Mode B06 FireRtn FL.1 B07 FireRtn FL.2 B08 Nonstop Use B09 UserSkip Use B10 Relevel Mode B11 Running Open B12 Car Call 2-T B13 Hall Call 2-T B14 Lantern Use B15 BtTouchSound B16 DispFont RFL B17 DispRFL Skip B18 Font Skip 1 B19 Font Skip 2 B20 UserDispFont B21 Supervisor B22 RMS Use B23 Group Mode B24 2Car:MFL B25 2Car:BFL dif B26 2Car:TFL dif B27 2Car:Master B28 2Car:RFL Rtn B29 2Car:SFL Rtn B30 2Car:Option B31 ANSI Code B32 Brk-off Time B33 EMP Use B34 EMP FL B35 ELD Use B36 Earthquake B37 VIP Use B38 VIP FL B39 Pass Mode

(continue)

Rev. Commemts :

YONGXIAN Group Technology Center

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
3. SETUP			
	3.1 Basic	31b Field	B40 1BC Use B41 FakeCallCncl B42 RearCallCncl B43 ATStall Time B44 Handicap Use B45 Night Run
		31c Nonstop Set	C01 Glb.NonStp.L C02 Glb.NonStp.H C03 FronNonStp.L C04 FronNonStp.H C05 RearNonStp.L C06 RearNonStp.H C07 RMS NonStp.L C08 RMS NonStp.H C09 User Skip1.L C10 User Skip1.H C11 User Skip2.L C12 User Skip2.H C13 CardkeyMsk.L C14 CardkeyMsk.H
	3.2 Device	32a OPB.2 Use 32b OPB.2 Type 32c OPB.3 Use 32d OPB.4 Use 32e HdcpOPB Type 32f ExtIO.1 Use 32g ExtIO.2 Use 32h Hall.1 Type 32i Hall.2 Type 32j CardKey Type 32k CardKey Auto 32l CTS Type 32m DestCallType 32n RS485 Type 32o RS485 Speed 32p HomeCall Use 32q CAN-HHT Use	

(continue)

Rev. Commemts :

Main Menu	Sub Menu 1	Sub Menu 2	Sub Menu 3
3. SETUP	3.3 Time & Date	33a Time Set 33b Date Set 33c RTC Init	
4. MANAGEMENT	4.1 EL Run Count		
	4.2 Factory Test	42a C/P Test	
		42b Spec Init	
		42c UserFontInit	
	4.3 Field Test	43a Field Setup	FieldTestSetup
		43b RopeBrkReset	RopeBrake Reset
		43c Auto CarCall	Auto CarCall En Auto CarCall 1~4
		43d AutoHallCall	AutoHallCall En AutoHallCallUp1~2 AutoHallCallDn1~2
5. INFO	5.1 Version	51a MCU.Main 51b MCU.CAN 51c PIO.CPLD 51d GIO 51e OPB.1 51f OPB.2 51g OPB.3 51h OPB.4 51i LS 51j ExtIO.1 51k ExtIO.2 51l (Inverter) 51m (RMS) 51n - 51o - 51p Menu	
	5.2 CPID	52a Project # 52b MCU Serial # 52c Mfg. Time 52d C/P #	

Rev. Commemts :

5. Revision

Rev.	Commit	Date	Remark
0		2009-08-19	

Rev. Commemts :

STVF7 SERIES

TROUBLESHOOTING MANUAL

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HYUNDAI ELEVATOR CO., LTD.

Rev. Commemts :

TABLE OF CONTENTS

1. INTRODUCTION ····· 3

2. TROUBLESHOOING METHOD WITH HHT ····· 4
2-1. Connection and initialization of HHT ····· 4
2-2. Total Information Mode ····· 5
2-3. IN/OUT MODE ····· 6
2-4. ERROR MENU ····· 9

3. ERROR CODES ····· 11

Rev. Commemts :

1. INTRODUCTION

* The manual describes the troubleshooting method of Hyundai "STVF7, LXVF7, SSVF7" elevator system.

* In this manual, elevator troubles are explained in two cases i.e.
* "Condition of operation impossible" means the impossible state of starting and running of elevator by certain causes of troubles.
* "Condition of operation possible" means the possible state of running, but normal service for passenger's is not made by several causes of troubles.

* As troubles are describes by trouble modes and causes of troubles and troubleshooting methods are explained.

* This manual shall be helpful for prompt and accurate troubleshooting of the troubles that could happen at jobsite.

* System power and Boards are explained in "STVF7 INSTALLATION MANUAL AND ADJUSTMENT MANUAL"

* HHT use methods are explained in "STVF7 HHT MANUAL".

Rev. Commemts :

2. TROUBLESHOOING METHOD WITH HHT

2-1. Connection and initialization of HHT

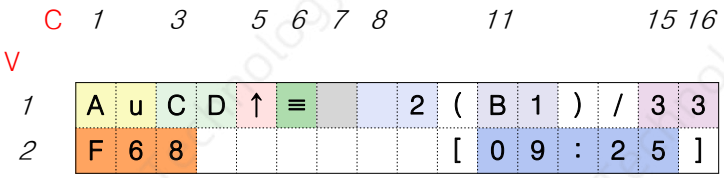
1) Connect HHT to MCU "H8" connector at elevator stopped.
2) Push "ESC" and "ENTER" key for 1 seconds simultaneously.
3) Then, HHT initial menu is displayed normally.
4) Please refer to "STVF7 HHT MANUAL".

ID	HHT Main Menu	Remark
0.	EL.STATUS	Total Information Mode
1.	IN/OUT	PIO I/O, Car I/O, Call I/O, INVERTER I/O, RMS I/O, Group I/O, CAN STATUS, EXT I/O
2.	ERROR	Error, Error records, Erasing records, Hall Error
3.	SETUP	Spec. change, Device set up, Time set up, Initialization, Load set up
4.	MANAGEMENT	Field test, Factory test, Count E/L running times
5.	INFO	Version information

[Table 1. HHT Main Menu]

Rev. Commemts :

2-2. Total Information Mode



Position	Commit	Display			
1verse 1,2 column	Elevator Status	No	no mode	F1	1st fireman op.
		Au	auto	F2	2nd fireman op.
		In	In-Car inspection	Mv	independent op.
		On	On-Car inspection	Ep	Emergency op.
		Mc	Machine room inspection	El	Emergency Landing op.
		Fi	Initialization	Eq	Earthquake op.
		Pk	Parking op.	Rp	Sub brake in
		Fr	Fireman Return	Ar	Arrange op.
1verse 3,4 column	Door Status	OG	Openning	RG	Rear Door Openning
		OP	Open	RO	Rear Door Open
		CG	Closing	RC	Raer Door Close
		CD	Close		
1v 5c	Direction	↑: Up, • : Stop, ↓: Down			
1v 6c	Door zone sensor	ULA, DZ, DLA			
1v 7c	Non-Stop Floor	(Space) : Service Floor, * : non-Service Floor			
1v 8,9c	Absolute Floor				
1v 11~12c	Floor display	Floor display on Indicator			
1v 15,16c	Total Floor				
2v 1,2,3c	Error display	---: No error, Fxx: error code			
2v 11~15c	Current time	Hour : Minute			

[Table 2. Total Information Mode]

Rev. Commemts :

2-3. IN/OUT MODE

(1) Method of checking IN/OUT status

ex) : 1.1 PIO input status

	P	I	O		I	N	P	U	T			(		0	)
						0	X	0	0	C	2	0	0	1	7
								(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
								④		③		②		①	

PIO Input (0) mode

DATA : 32bit hex value

①-(b) : 7 => 29,41,40 : ON
①-(a) : 1 => AUTO : ON
③-(b) : 2 => FMR : ON
③-(a) : C => MCI,MC2I : ON

* It is same as the other in/out mode.

(2) PIO Input (1. IN/OUT >> 1-1. PIO Input)

HHT		SIGNAL NAME							
		(a)				(b)			
		8	4	2	1	8	4	2	1
		bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1
PIO Input [0]	①	MDN	MUP	MCS	AUTO	BKOP	40	41	29
	②	DLS	PLDL	PLDH	PLDM	PLUM	PLUH	PLUL	ULS
	③	MC2I	MCI	ELDI	EQP	EQS	PARK	FMR	RBKI
	④	BKB	FMR2	RDZ	FDZ	EMPO	HOME	ATS	MT
PIO Input [1]	①	PDN	PUP	PHAND	PAUTO	RNBL	WLS	PDLS	CTOL
	②								
	③								
	④								
PIO Input [2]	①	30B	BKS	ZSP	RUN	DLD	DLA	DZ	ULA
	②								

[Table 3. PIO Input]

a. If elevator is in machine room inspection, check that "PIO Input[0]" is whether | - | - | - | - | - | - | 2 | 7 | or not. (MCS, 40, 41, 29)

b. If limit switches are in good condition, check that "PIO Input[0]" is whether | - | - | - | - | E | 7 | - | - | or not. (DLS, PLDL, PLDH, PLUH, PLUL, ULS)

c. If door zone sensors are in good condition, check that "PIO Input[2]" is whether | - | - | - | - | - | - | - | 7 | or not. (DLA, DZ, ULA)

d. If inverter is in good condition at stopped, check that "PIO Input[2]" is whether | - | - | - | - | - | - | A | - | or not. (30B, ZSP)

Rev. Commemts :

(3) PIO Output (1. IN/OUT >> 1-2. PIO Output)

HHT	SIGNAL NAME							
PIO Output [0]			REV	FWD	MC2	MC1	RBK	BRKA
	XRLY	MFAN	SPO2	SPO1	ELDO	BRKC	BRKB	ALARM
							RST	INIT

[Table 4. PIO Output]

a. If elevator is stopped, check that "PIO Output[0]" is whether | - | - | - | - | - | - | - | 6 | or not. (MC1, RBK)

* SSVF7 : | - | - | - | - | - | - | - | E | (MC2, MC1, RBK)

b. If elevator is moving upward, check that "PIO Output[0]" is whether | - | - | - | - | - | - | 1 | 7 | or not. (FWD, MC1, RBK, BRKA)

* SSVF7 : | - | - | - | - | - | - | 1 | F | (FWD, MC2, MC1, RBK, BRKA)

(4) Car Input (1. IN/OUT >> 1-3. Car Input)

HHT	Signal Name							
CarSigIn [0]	FC5	NDZ	FC3	FR2	FR1	ONDN	ONUP	ONS
	OL	FULL	L70	L30	EE	SE	DCL	DOL
	DCS		DCB	DOB			INS	AUTO
		ODD	EVEN	EACH	MOVE	PASS	ATT	PWR
CarSigIn [1]								
CarSigIn [2]								
					REE	RSE	RDCL	RDOL
	RDCS		RDCB	RDOB				
CarSigIn [3]								

[Table 5. Car Input]

a. If inspection switch on the cage is on, check that "Car Input[0]" is whether | - | - | - | - | - | - | - | 1 | or not. (ONS)

b. If door open button is pushed, check that "Car Input[0]" is whether | - | - | 1 | - | - | - | - | - | or not. (DOB)

Rev. Commemts :

(5) Car Output (1. IN/OUT >> 1-4. Car Output)

HHT	Signal Name							
CarSigOut [0]	LTR	VFR	UDST	FST	FDR	FR2R	CLR	OPR
	DST	DDN	DUP	VOL	LED3	LED2	LED1	OLBZ
	VEQ	DLOCK	VWEL		VFD		VIP	NUDGR
CarSigOut [1]								
	BN2	VCL	VOP	LED4	RNUGR	RCLR	ROPR	REAR
						VCNCL	RDOOR	FDOOR
CarSigOut [2]								
CarSigOut [3]								

[Table 6. Car output]

(6) CAN Status (1. IN/OUT >> 1-D. CAN Status)

HHT	Commit
CAN.Car Status	Car part CAN status register value : * normal : 0x0000000C * abnormal : 0x80000044
CAN.Hall Status	Hall part CAN status register value : * normal : 0x0000000C * abnormal : 0x80000044
HallScan1 1-32	Normal/Front Hall detected ID 1~32 floor (Detected Hall ID bit is displayed "1") * example 8 floor = 0x000000FF * example 15 floor = 0x00007FFF
HallScan1 33-64	Normal/Front Hall detected ID 33~64 floor
HallScan2 1-32	Handicap/Rear Hall detected ID 1~32 floor
HallScan2 33-64	Handicap/Rear Hall detected ID 33~64 floor
Car Scan	Detected ID of OPB board : *0xHGFEDCBA

H	G	F	E	D	C	B	A
--	ExIO2	ExIO1	LS	OPB4	OPB3	OPB2	OPB1

[Table 7. CAN Status]

Rev. Commemts :

2-4. ERROR MENU

ID	HHT Display	Commit
2.1	Error List	Error occurrence / cancellation list
2.2	Clear Error	Clear error occurrence / cancellation list
2.3	Hall Error	Hall board error

[Table 8. ERROR MENU]

1) Error List (2.ERROR >> 2.1 Error List)

- Error list is recorded with error code, occurrence time, cancellation time in regular sequence.
- The total number of recorded lists is 64.

ex 1) 2009. 2. 17 15:55:47.11 F11 occurrence

002 F11 set	
090217-155547.11	

ex 2) 2009. 2. 17 15:59:58.87 F11 cancellation

001 F11 clr	
090217-155958.87	

2) Clear Error (2.ERROR >> 2.2 Clear Error)

- Clear the total 64 error records.

ex) Clear Error /Cln Error List? → push [Enter] button

→select "yes" using [↑] button → push [Enter] button

Cln Error List?	
▶ Yes	

Rev. Commemts :

3) Hall Error (2.ERROR >> 2.3 Hall Error)

- Undetected or dis-order hall board ID bit is displayed "1".
- Check the hall board. Refer to "STVF7 ADJUSTMENT MANUAL".

HHT	Commit
HallErr.1 1-32	Normal/Front Hall error 1~32 floor
HallErr.1 33-64	Normal/Front Hall error 33~64 floor
HallErr.2 1-32	Handicap/Rear Hall error 1~32 floor
HallErr.2 33-64	Handicap/Rear Hall error 33~64 floor

ex) Hall ID error is detected at 1, 2, 6, 8 floor

H	a	l	l	E	r	r	.	1			1	-	3	2	
						0	X	0	0	0	0	0	A	3	
								25~32		17~24		9~16		1~8	

← Hall Err.1 1-32 mode

← DATA : 32bit hex value

" 0X000000A3 " ---- 8 7 6 5 4 3 2 1 floor

DATA "A3 " ---- 1 0 1 0 0 0 1 1

* If there is no hall error, DATA is displayed "0x00000000".

Rev. Commemts :

3. ERROR CODES

F11	Safety Line Error
State	- Safety line error(when elevator is stopped). - Impossible to move in inspection, auto operation and etc.,
Reference	- Elec.W.diagram : COL 3A, 3B, 3C, 4A - MCU Bd HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "29"
Check Point	- Check power supply DC110V, DC24V. - Check "X29" relay of TNP board. - Check switches of safety line. - Check HHT 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "29" - Check H2,H3 cable between PIO board and TNP board.

F21	Running Time Error
State	- Available running time error - stop running → impossible to move in any operation
Reference	- HHT : 3.SETUP>>3.1 basic>>31b Field>>B43 ATStall Time - HHT : 3.SETUP>>3.1 basic>>31b Field>>B01 Total FL Num
Check Point	- Check brake operation. - Check the signal "FWD/REV" transmission from MCU to inverter. - Check the signal "BKS, RUN" of inverter. - Check inverter HHT "MONITOR>>Floor data>>1F ~ top floor. - Check total floor data between MCU and inverter.

F31	DPRAM Error
State	- DPRAM cable error between MCU and inverter
Reference	- Elec.W.diagram : COL 1A, 1B, 1C
Check Point	- Check the DPRAM cable from MCU H6 to inverter CN7. - Check the DPRAM cable shield and ground.

Rev. Commemts :

F41	FWD/REV Error
State	- (in inspection) MCU commands to stop, but FWD/REV signal output to inverter. - stop running → "MC1" contactor off (turning inverter off)
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT>>1.2 PIO Output>>PIO Output[0] "FWD","REV" - MCU HHT : 1.IN/OUT>>1.1 PIO Input>>PIO Input[2] "ZSP","RUN"
Check Point	- Check "FWD","REV" signal of HHT and relay of PIO board. - Check inverter HHT "MONITOR>>I/O>>Y1,2,3".

F51	"MC1" Contactor Error
State	- MCU commands "MCX1" on, but "MC1" contactor is not on. - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 4A - MCU HHT : 1.IN/OUT>>1.1 PIO Input>>PIO Input[0] "MCI" - MCU HHT : 1.IN/OUT>>1.2 PIO Output>>PIO Output[0] "MC1"
Check Point	- Check "MCX1" relay of TNP board. - Check PIO board. - Check "MC1" contactor connection.

F61	"MC2" Contactor Fusion Error
State	- MCU commands "MCX2" off, but "MC2" contactor is not off. - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 1C, 3C, 4A - MCU HHT : 1.IN/OUT>>1.1 PIO Input>>PIO Input[0] "MC2I" - MCU HHT : 1.IN/OUT>>1.2 PIO Output>>PIO Output[0] "MC2"
Check Point	- Check "MC2" contacts have welded or not - Check "MC2" contactor connection. - Check "MCX2" relay of TNP board. - Check PIO board.

Rev. Commemts :

F71	Safety Line Error (While Running)
State	- Safety line error (when elevator is running). - Impossible to move in inspection, auto operation and etc.,
Reference	- Elec.W.diagram : COL 3A, 3B, 3C, 4A - MCU HHT : 1.IN/OUT>>1.1 PIO Input>>PIO Input[0] "29"
Check Point	- Check power supply DC110V, DC24V. - Check "X29" Relay of TNP board. - Check switches of safety line. - Check HHT 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "29" - Check H2,H3 cable between PIO board and TNP board.

F12	MT_Thermal / CCS Switch Error
State	- Motor thermal activates in running → F12 → move to near door zone - Compensation chain switch activates in running → F12 occurs → move to near door zone - Possible to move in inspection.
Reference	- Elec.W.diagram : COL 4A (CCS/MT) - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "MT"
Check Point	- Check TH1,THC with tester. - Check MT relay. - Check CCS switch.

F22	Floor data Error
State	- Floor data error in auto operation. - Impossible to move in auto operation. - Floor data error between MCU and inverter
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 3.SETUP>>3.1Basic>>31b Field>>B01 Total FL Num - inverter HHT : PROGRAM>>CONTROL>>MAX FLOOR
Check Point	- Check floor data between MCU and inverter. - Check DPRAM cable, shield and ground.

Rev. Commemts :

F42	Initialization Error
State	- After initialization, inverter don't output high operation signal to MCU.
Reference	- Elec.W.diagram : COL 3A, 3B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “ULS, DLS” - Inverter HHT : MONITOR>>BASIC>>INIT OK : PROGRAM>>CONTROL>>MAX FLOOR
Check Point	- Check the door zone sensor input. - Check the floor data of inverter "MAX FLOOR". - Check the limit switch position.

F52	Pulse Error
State	- Pulse compensation error (±500mm) in auto operation. - F42 → move to near door zone
Reference	- Elec.W.diagram : COL 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “ULA, DLA” - Inverter HHT : MONITOR>>FLOOR DATA>>CURRENT POSITION
Check Point	- Check the door zone sensor input. - Check the floor data of inverter "MAX FLOOR". ? - Check the limit switch position.

F62	Vane Count Error
State	- In initialization, the number of door vane is different from total floor data. - Possible to move in inspection.
Reference	- Elec.W.diagram : COL 3A, 3B, 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “ULS, DLS” - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “DLA,DZ,ULA”
Check Point	- Check the door vane and sensor input. - Check the floor data of inverter "MAX FLOOR". - Check the limit switch position.

Rev. Commemts :

F13	OPB Line disconnection Error
State	- OPB line disconnection error - Possible to move in inspection.
Reference	- MCU HHT : 1.IN/OUT>>1.D CAN Status>>CAN.Car Status
Check Point	- Check the OPB line and OPB board. - HHT "CAN.Car Status" : 0x000000** (normal) : 0x800000** (abnormal)

F23	OPB bus off Error
State	- MCU commands to stop communication as noise. - Possible to move in inspection.
Reference	- MCU HHT : 1.IN/OUT>>1.D CAN Status>>CAN.Car Status
Check Point	- Check line noise and OPB board. - Check ground condition of machine room.

F63	OPB Communication Error
State	- OPB line is correct, but communication data error occurs. - Possible to move in inspection.
Reference	- MCU HHT : 1.IN/OUT>>1.D CAN Status>>CAN.Car Status
Check Point	- Check communication line and OPB board. - Check OPB board dip switch. (all dip switches must be off)

F73	OPB Communication Checksum Error
State	- OPB line is correct, but communication data error occurs. - Possible to move in inspection.
Reference	- MCU HHT : 1.IN/OUT>>1.D CAN Status>>CAN.Car Status
Check Point	- Check communication line and OPB board. - Check line noise and ground condition of machine room.

Rev. Commemts :

F14	Door Error(In running)
State	- Interlock switch or gate switch is not on while elevator running. - F14 → impossible to move in any operation.
Reference	- Elec.W.diagram : COL 3A, 3B, 3C, 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “40, 41”
Check Point	- Check hatch door interlock switch and gate switch. - Check "CT4", "CT5" connectors status of TNP board. - Check "X40", "X41" relays status of TNP board.

F24	Door Jumper Error
State	- Interlock or gate switch jumper when car door is open fully.
Reference	- Elec.W.diagram : COL 3A, 3B, 3C, 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “40, 41” - MCU HHT : 1.IN/OUT >> 1.3 Car Input >> CarSigIn [0] “DOL, DCL”
Check Point	- Check hatch door interlock switch and gate switch. - Check "CT4", "CT5" connectors status of TNP board. - Check "X40", "X41" relays status of TNP board.

F34	DCL Error
State	- No "DCL" signal input after trying to close 3 times.
Reference	- Elec.W.diagram : COL 6A, 6B, 6C - MCU HHT : 1.IN/OUT >> 1.3 Car Input >> CarSigIn [0] “DCL”
Check Point	- Check "DCL" signal and sensor state. - Check door sill and obstacles. - Check "CC13" connector of CCB-7 board.

Rev. Commemts :

F44	Door Open Error
State	- After trying to open 3 times, MCU commands to move E/L for next floor. - And if E/L can't open the door again, MCU commands to move E/L for lobby. - Then F44 error occurs.
Reference	- Elec.W.diagram : COL 6A, 6B, 6C - MCU HHT : 1.IN/OUT >> 1.3 Car Input >> CarSigIn [0] “DOL”
Check Point	- Check "DOL" signal and sensor state. - Check door sill and obstacles. - Check "CC13" connector of CCB-7 board.

F54	Door Close Error (before E/L start to move)
State	- Interlock, gate, DCL signal fault before E/L start to move - F54 → cancel calls → open, close
Reference	- Elec.W.diagram : COL 3A, 3B, 3C, 4A, 6A, 6B, 6C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “40,41” - MCU HHT : 1.IN/OUT >> 1.3 Car Input >> CarSigIn [0] “DCL”
Check Point	- Check "DCL" signal and sensor state. - Check "CT4", "CT5" connectors status of TNP board. - Check "X40", "X41" relays status of TNP board.

F74	Abnormal Running Error (in a state of door open)
State	- E/L moves to a out of door zone without "FWD,REV" signal. - F74 → sub brake activated (RBK off) → stop - Impossible to move in any operation
Reference	- Elec.W.diagram : COL 3A, 3B, 4B, 4C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “RBKI” - MCU HHT : 4.MANAGEMENT >> 4.3 FieldTest >> 43b RopeBrkReset
Check Point	- Check the lining state of brake. - Check the brake spring setting. - Check the gate and hatch interlock switch while E/L is running. - Check "CT51" connector of TNP board. (RBKIN) - Cancel F74 : MCU HHT "43b RopeBrkReset" → 0x00

Rev. Commemts :

F15	Inverter Error (30B)
State	- Abnormal state of inverter (30B off) in spite of MCU output reset signal 5 times at 2 second interval. - F15 → MC1 off → impossible to move in any operation.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “30B”
Check Point	- Connect HHT to inverter and check inverter error. - Check "H9" connector of TNP board. - Check the 3-phase power. (R,S,T)

F25	Dynamic Braking Error
State	- Despite no command, E/L moves upward or downward → MCU commands to brake off continuously → And dynamic braking (output "FWD" for 1 second) → F25
Reference	- Elec.W.diagram : COL 1A, 1B, 1C, 2A, 2B, 2C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “ZSP”
Check Point	- Check the lining state of brake. - Check the brake spring setting. - Check the obstacles in brake. - Check the noise in the motor encoder.

F35	Inverter Setting Error
State	- Despite no command, "RUN" or "BKS" signal of inverter is turned on . - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “ZSP,BKS,30B”
Check Point	- Check the all data of inverter. - Check "CN12" of Inverter and "H9" connector of TNP board.

Rev. Commemts :

F45	Inverter Run Signal Error
State	- At the time to start, there is no "RUN" signal of inverter → F45 occurs - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT>>1.2 PIO Output>>PIO Output [0] “FWD,REV” - MCU HHT : 1.IN/OUT>>1.1 PIO Input>>PIO Input [2] “RUN”
Check Point	- Check "H9" connector of TNP board and "CN12" connector of inverter. - Check "FWD,REV" in MCU HHT - Check "F,R" in inverter HHT "MONITOR >> I/O"

F55	Speed Disagreement Error
State	- Inverter output speed disagreement error while E/L is running.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C
Check Point	- Check the motor encoder and encoder line noise. - Check the data of inverter HHT. - Check the connection of U,V,W between inverter and motor. - Check the balance between cage and counter weight. - Check another errors of MCU and inverter.

F65	Inverter ZSP Error
State	- At the time to start, "ZSP" signal is turned on and E/L can't move for 5 seconds. - F65 occurs → Possible to move in any operation.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “ZSP”
Check Point	- Check the motor encoder and encoder line. - Check "H9" connector of TNP board and "CN12" connector of inverter. - Check inverter HHT "MONITOR >> I/O". - Check inverter HHT "PROGRAM >> INTERFACE >> Zero Speed Level"

Rev. Commemts :

F75	Inverter Error (In running)
State	- Abnormal state of inverter (30B off) while E/L is running.
Reference	- Elec.W.diagram : COL 1A, 1B, 1C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] “30B”
Check Point	- Check the inverter HHT "MONITOR >> ERROR" - Check "H9" connector of TNP board and "CN12" connector of inverter.

F16	Brake Open Error (F26 twice)
State	- MCU commands to open brake, but brake can't be operated. ① "BKOP(Brake confirm switch)" isn't activated. ② "RBKIN(sub brake confirm signal)" isn't activated. - F26 twice → F16 occurs
Reference	- Elec.W.diagram : COL 2A, 2B, 2C, 3A, 3B, 4B, 4C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “BKOP,RBKI”
Check Point	- Check the brake line power and connection. - Check the "BKOP" switch and connection with MCU HHT. - Check the "CT3B" connector of TNP board. - Check the "RBKIN" line and connection in case of appling sub brake. - Check the "CT51" connector of TNP board.

F26	Brake Open Error
State	- Same as F16 - F26 twice → F16 occurs
Reference	- Elec.W.diagram : COL 2A, 2B, 2C, 3A, 3B, 4B, 4C - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “BKOP,RBKI”
Check Point	- Same as F16

Rev. Commemts :

F46	Brake Contactor Fusion Error
State	- In spite of MCU commands to turn brake off, brake contact can't be off. - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “BKB”
Check Point	- Check "BKB" contacts have welded or not - Check brake contactor(BKB) and its connection. - Check "BRB" relay of TNP board.

F56	Car Brake Input Error
State	- No car brake input in inspection or auto operation.
Reference	- Elec.W.diagram : COL 3A, 3B, 4B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “RBKI”
Check Point	- Check the car brake state. - Check the "CT51" connector fo TNP board.

F66	MC2 Contactor Off Error (In running)
State	- No "MC2" contactor input in inspection or auto operation. - Possible to move in any operation.
Reference	- Elec.W.diagram : COL 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “MC2I”
Check Point	- Check the "MCX2" relay of TNP board. - Check the MC2 contactor and its connection. - Check the "CT55" connector of TNP board.

Rev. Commemts :

F17	ULS/DLS Off Error
State	- No "ULS/DLS" signal input at the same time - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 3A, 3B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “ULS, DLS”
Check Point	- Check the limit switch "ULS, DLS" and its connection. - Check "CT1", "CT2" connector of TNP board. - Check the MCU HHT data "PIO Input[0]>>ULS,DLS".

F27	PLU/PLD Off Error
State	- No "PLU/PLD" signal input at the same time - Impossible to move in any operation.
Reference	- Elec.W.diagram : COL 3A, 3B, 10A, 10B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] “PLUL, PLUH, (PLUM), (PLDM), PLDH, PLDL”
Check Point	- Check the limit switch "PLUL, PLUH, (PLUM), (PLDM), PLDH, PLDL" and its connection. - Check "CT1", "CT2" connector of TNP board.

F37	Door Zone Sensor Error
State	① E/L can't be arrived to door zone for 15 seconds after deceleration. ② ULA/DLA on, DZ off ③ ULA/DLA off, DZ on
Reference	- Elec.W.diagram : COL 4A, 7A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] "ULA, DZ, DLA"
Check Point	- Check the door zone sensor input "ULA, DZ, DLA" and its connection. - Check the "T1" harness of TNP board and CCB-7 board. - Check the door zone vane state. - Check the inverter errors and HHT floor data. - Check the "DZ" connection of EPB-100 board. (in case of SSVF7)

Rev. Commemts :

F47	Relevel Landing Error
State	- Out of door zone in door open relevel landing operation
Reference	- Elec.W.diagram : COL 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [2] "ULA, DLA"
Check Point	- Check the door zone sensor input "ULA, DZ, DLA" and its connection. - Check the "T1" harness of TNP board and CCB-7 board. - Check the gap between door zone sensors. (135mm) - Check the door zone vane and its length. (300mm) - Check inverter data "PROGRAM>>CONTROL>>RELEVEL RPM".

F57	ULS/DLS Error (In running)
State	- "ULS" or "DLS" limit switch activated in running.
Reference	- Elec.W.diagram : COL 3A, 3B, 10A, 10B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "ULS, DLS"
Check Point	- Check the limit switch "ULS, DLS", its connection and position. - Check "CT1", "CT2" connector of TNP board. - Check the MCU HHT data "PIO Input[0]>>ULS,DLS".

F67	PLU/PLD Error (Deceleration Fault)
State	- "PLUL" or "PLDL" limit switch activated in auto operation without deceleration.
Reference	- Elec.W.diagram : COL 3A, 3B, 10A, 10B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "PLUL, PLDL"
Check Point	- Check the limit switch "PLUL, PLDL" and its position. - Check "CT1", "CT2" connector of TNP board. - Check the inverter errors and floor data. (MONITOR>>FLOOR DATA) - Do Initializating operation again.

Rev. Commemts :

F77	PLUL/PLDL Error (Floor Confirm Error)
State	- No PLUL switch input at top floor in auto operation. - No PLDL switch input at bottom floor in auto operation.
Reference	- Elec.W.diagram : COL 3A, 3B, 10A, 10B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "PLUL, PLDL"
Check Point	- Check the limit switch "PLUL, PLDL" and its position. - Check "CT1", "CT2" connector of TNP board. - Check the inverter errors and floor data. (MONITOR>>FLOOR DATA)

F18	Group Communication Error
State	① communication error in ring group ② GIO board error in duplex group - both ①,② are possible to move in auto single operation.
Reference	- Elec.W.diagram : COL 18A, 18B - MCU HHT : ① 3.SETUP>>3.1 Basic>>31b Field>>B23 Group Mode ② 1.IN/OUT >> 1.C Group Output >>C24 GOFLAG[7]>>"0x81"
Check Point	- Check MCU HHT data. - Check the state whether in auto operation or not. - Check GIO board connection of MCU board. - Check GIO board LED state. (refer to "STVF7 ADJUSTMENT MANUAL")

F28	RMS Communication Error
State	- RMS(Remote Monitoring System) communication error - Possible to move in any operation.
Reference	- Elec.W.diagram : COL 7B - MCU HHT : 3.SETUP>>3.1 Basic>>31b Field>>B22 RMS use>>"Enable"
Check Point	- Check "H1" connector of MCU board. - Check the power supply of RMS board.

Rev. Commemts :

F38	RNBL Error
State	- "RNBL(Run-By-Limit)" switch is activated while E/L is running. - F38 occurs → buzzer on - Possible to move in any operation
Reference	- Elec.W.diagram : COL 3B - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [1] "RNBL"
Check Point	- Check the "RNBL" switch connection. - Check the main rope tension.

F58	LS Board Communication Error
State	- LS board communication error in case of "LXVF7, SSVF7" - Possible to move in any operation
Reference	- Elec.W.diagram : COL 7A - MCU HHT : 3.SETUP>>3.1 Basic>>31a General>>A20 Load Sensor
Check Point	- Check the LS board connection. - Check the CAN communication line between OPB and LS board. - Check the "JU1" jumper pin of OPB board. (short)

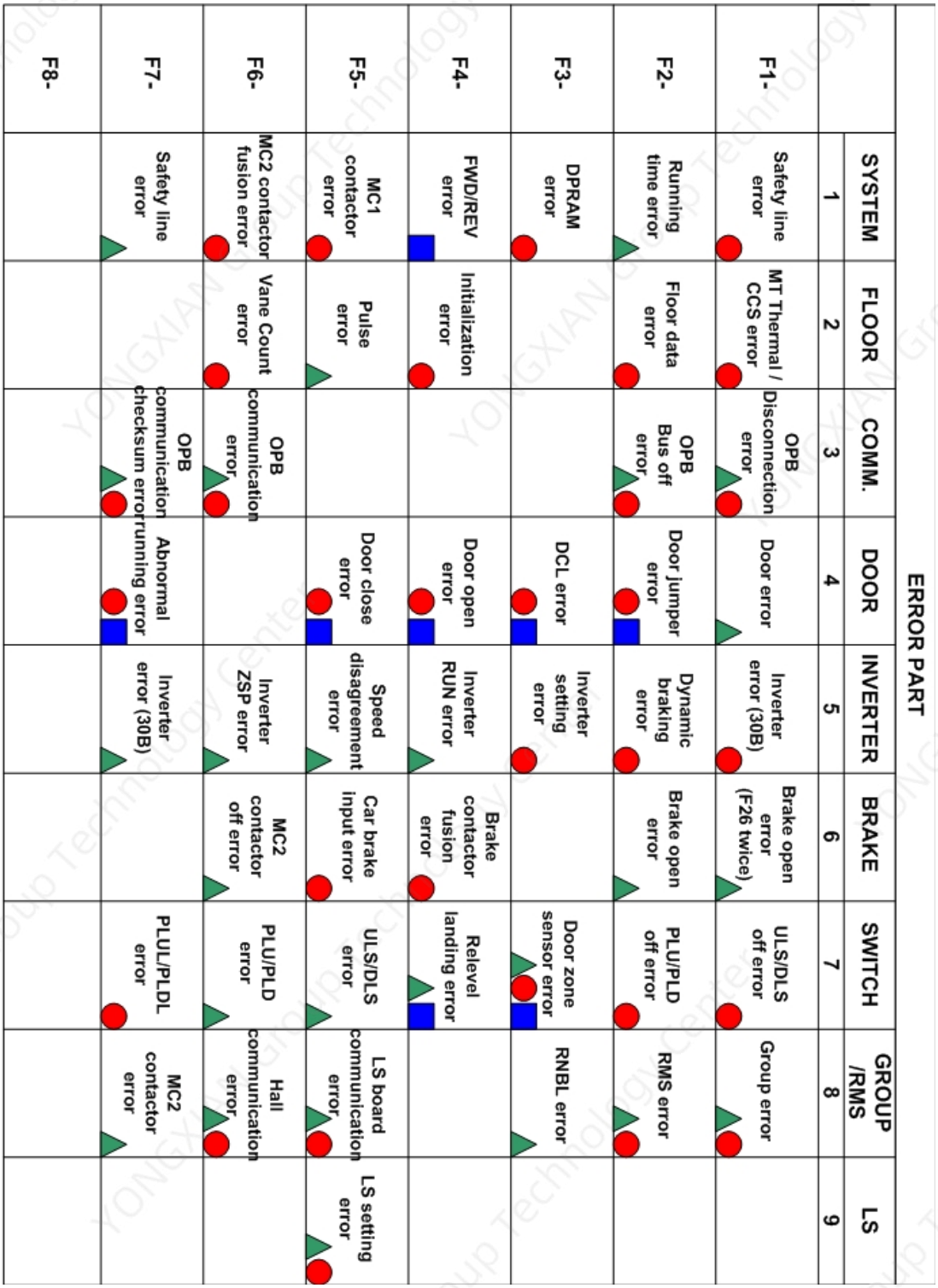
F68	Hall Communication Error
State	- Hall-CAN board communication error - Possible to move in any operation
Reference	- Elec.W.diagram : COL 8A, 11A, 11B - MCU HHT : 2.ERROR>>2.3Hall Error>> HallErr.1, HallErr.2
Check Point	- Check MCU HHT : 2.ERROR>>2.3Hall Error>> HallErr.1, HallErr.2 - Check the communication line. - Check the Hall-CAN board state and dip switch adjustment. (refer to "STVF7 ADJUSTMENT MANUAL)

Rev. Commemts :

F78	MC2 Contactor Error (At starting)
State	- No "MC2" contactor input at starting in case of SSVF7 - Impossible to move in any operation
Reference	- Elec.W.diagram : COL 1C, 3C, 4A - MCU HHT : 1.IN/OUT >> 1.1 PIO Input >> PIO Input [0] "MC2I" - MCU HHT : 1.IN/OUT >> 1.2 PIO Output >> PIO Output [0] "MC2"
Check Point	- Check the "MCX2" relay of TNP board. - Check "MC2" contactor connection. - Check "CT55" connector of TNP board.

F59	LS Setting Error
State	- No LS setting in case of LXVF7 and SSVF7 - Possible to move in any operation
Reference	- Elec.W.diagram : COL 7A - MCU HHT : 3.SETUP>>3.1 Basic>>31a General>>A20 Load Sensor
Check Point	- Do LS board setting according to "STVF7 ADJUSTMENT MANUAL" ① HHT : 20a LS Use → "Enable" ② 20c Sensing Data → 9000~10000 (check LS sensor position) ③ load 0% in cage ④ HHT : 20b Load Setting>>0% "settable" (check in door zone and inspection switch in Machine room) ⑤ HHT : 0% >> "YES" enter → "waiting" ⑥ 0% setting end (buzzer) ⑦ load 50% in cage ⑧ HHT : 50% >> "settable" → "YES" enter → "waiting" ⑨ 50% setting end (buzzer twice)

Rev. Commemts :



Rev. Commemts :

TITLE

iGC3 Group Controller Manual

iGC3 Group Controller Manual

Rev. Commemts :

YONGXIAN Group Technology Center

CONTENTS

I. Description of the iGC3 Board ····· 3

II. Description about SIO(Serial I/O) Board ····· 6

III. Optical cable connection ····· 8

IV. Group Control LCD Display ····· 9

V. Setting for handicapped car ····· 13

VI. Home-Indicator control board setting ····· 14

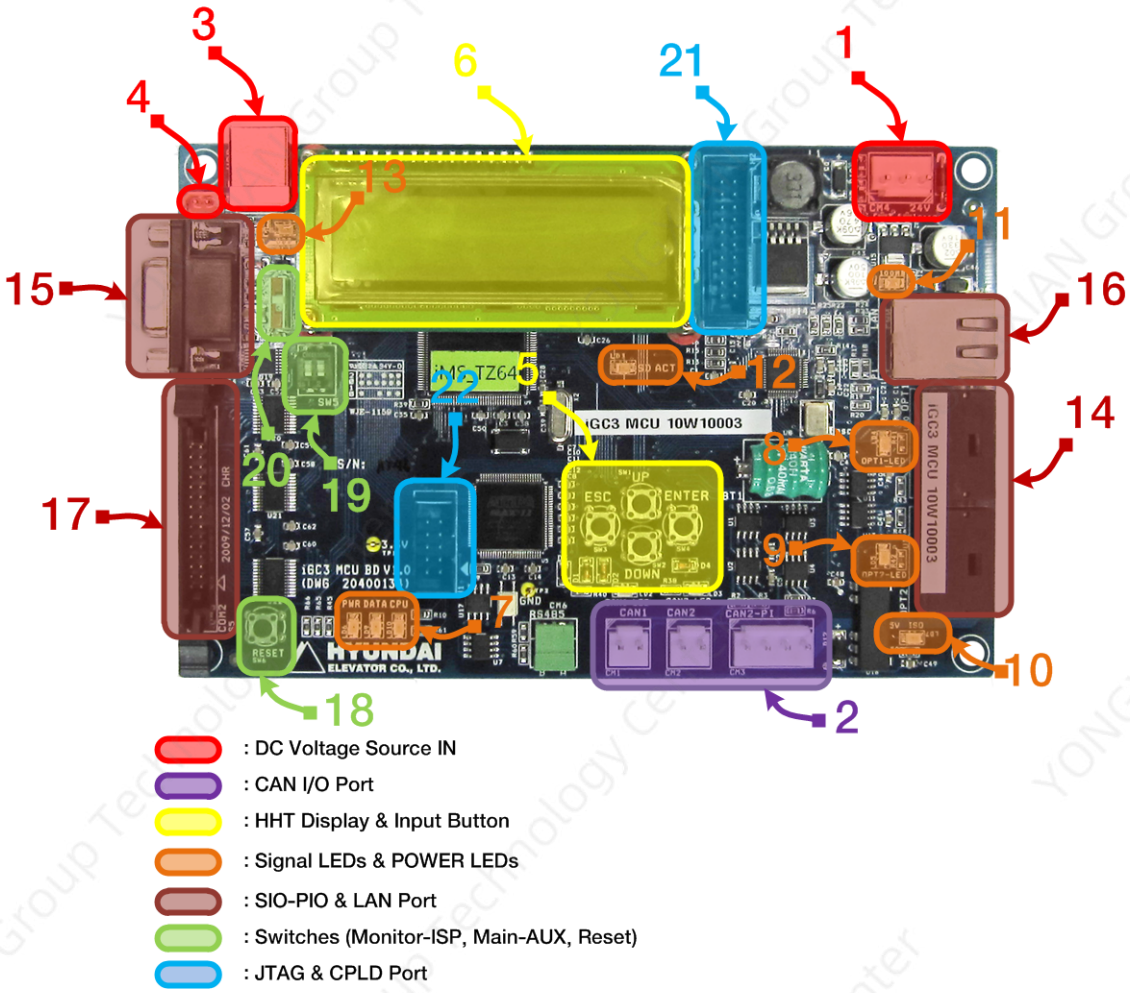
VII. Destination Selection System overview ····· 15

VIII. Destination Selection System LCD Display ····· 18

IX. Revision History ····· 20

Ⅰ. Description of iGC3 Board

- The GROUP CONTROL SYSTEM facilitates 『Efficient hall call assignment』 and 『Standing by dispersion』.



<Fig. 1>

<Tab. 1>

Demensions (unit : mm)	
Width	168
Height	110
Holes sizes	M4

※ Below numbers are the numbers of <Fig.1>.

1. Power input : 24V DC
2. CAN Ports
   - CM1 : HTS/HTK(DSS Terminal) - A BANK.
   - CM2 : HTS/HTK(DSS Terminal) - B BANK.
   - CM3 : Home call device.
3. USB Port
4. 5V Output
5. Data input buttons
6. LCD Module
7. Main LEDs
   - POW : Indicates that the Board is powered on.
   - DATA : Indicates that the data input of SPEC. is finished.
   - CPU : If the LED is flashing, the CPU is alive.

8, 9. Opt. RX / TX LEDs
   - If the LEDs are flashing, the link is OK and data is being received.

10. CAN & RS485 Insulated-power LED
   - Indicates that the CAN & RS485 ports are available.

11. LAN LED
   - Indicates that the 100Mb LAN is available.

12. SD ACT LED
   - Indicates that the SD CARD memory is available.

13. USB ACT LED
   - Indicates that USB port is connected.

14. Opt. signal IN / OUT ports
   - It is connected to the optical cable of SIO Bd, or GIO Bd.

15. RS232 port
   - It is connected to the group-monitor and used to update the program by using the downloading tool.

16. LAN port
   - It is used to monitor the group-service via the ethernet.

17. Extension BUS

18. 『RESET』 button

- It makes the iGC3 Bd. reset.

19. Group control SW for setting

- SW1, SW2 OFF : Main group control.
- Only SW2 ON : AUX group control.

20. Monitor & ISP SW

- MON : Monitors the state of group-service via RS232-port in PC.
- ISP : Updates the program via RS232-port.

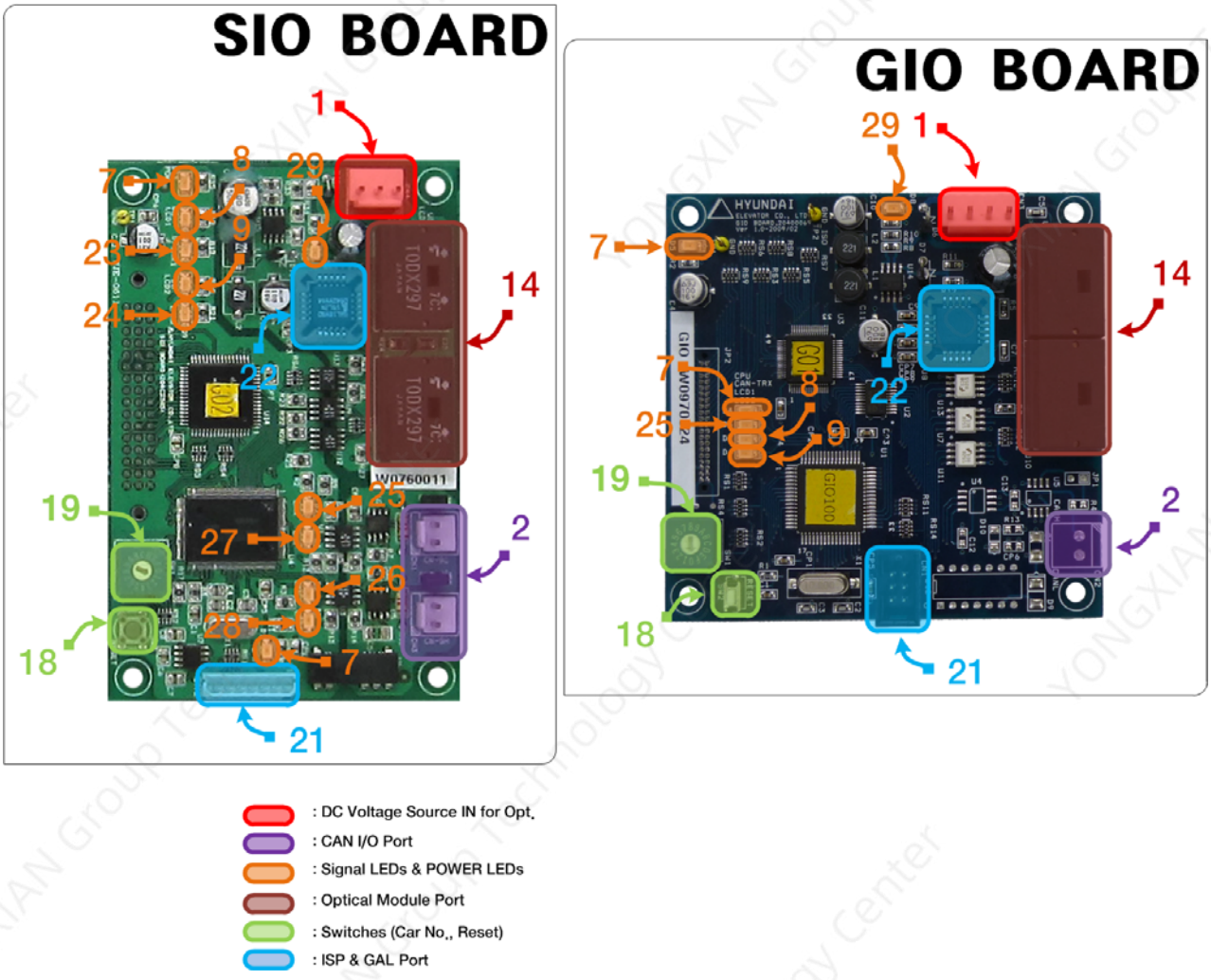
21. JTAG port

22. CPLD port

Ⅱ. Description about the SIO(Serial I/O) Board

=> Both are functionally same, but the shape is different.

❁ Connect same number with iGC3 board. (Refer to <Fig. 1>, 3 page)



<Fig. 2>

<Tab. 2>

BOARD NAME	USE
SIO (Serial I/O)	T&S / FI-4 / STVF5
GIO (GROUP I/O)	STVF7

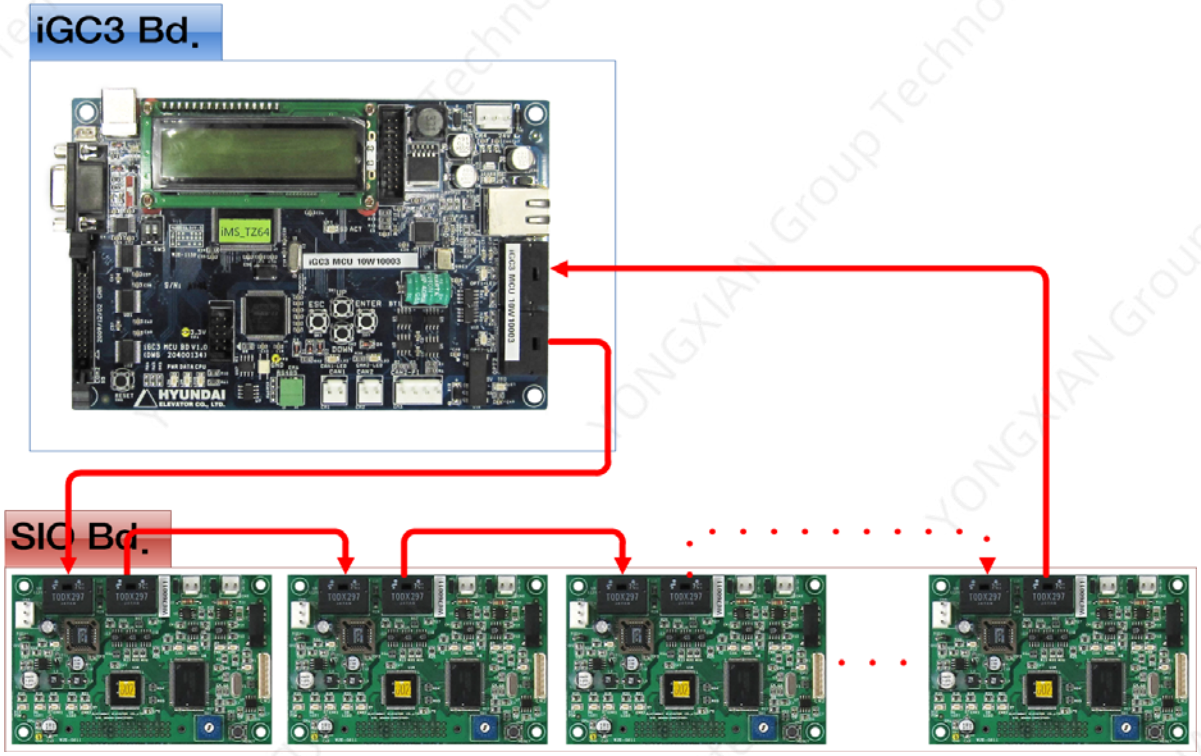
1. Setting for SIO Board

- For single car, optical module is not inserted on SIO Board.
- For group, 2 optical modules are inserted on SIO Board.
- In case of removing the SIO Board from Main Board, turn off the power.
- 『<Fig. 2>, 19』, Rotary-SW  setting of SIO Board.
  - Lift #1 should be set 『1』, … Lift #n should be set 『N』.
  - Attention, 『N』 is limited by 8.

2. Check point of SIO Board (Refer to the number of <Fig. 2>)

ITEM	No. <Fig. 2>	Check LED	In Normal	LED Color	DETAILS
POWER	Upper 7	D13	ON	Red	
CPU	Lower 7	D1	Flickering	Orange	
Group Control communication normal	8 (LCD1)	D6	ON	Green	If either LCD1 or LCD2 is on, system is normal
	9 (LCD2)	D8	ON	Green	
Group Control communication error	23 (ERR1)	D7	OFF	Red	If either ERR1 and ERR2 are on, system is abnormal
	24 (ERR2)	D9	OFF	Red	
CAGE communication normal	25 (CAN)	D2	ON	Green	
CAGE communication error	27 (ERR)	D4	OFF	Red	
HALL communication normal	26 (CAN)	D3	ON	Green	
HALL communication error	28 (ERR)	D5	OFF	Red	

Ⅲ. Optical cable connection



*** Pay attention !

A. Confirm that LCD1 LED (<Fig.2>, 8) of each SIO board is whether green or not.

B. Confirm that OPT2-LED (<Fig.1>, 9) of group controller is whether green or not.

C. If a auxiliary group controller is installed, its position is between master group controller and SIO board.

** The setting of the DIP-switch is below, 『<Fig. 1>, 19』

Main iGC3 Bd.	AUX iGC3 Bd.
	

D. Be careful of DIP-switch on auxiliary group controller.

Ⅳ. Group Control LCD Display

1. SETTING MODE(S01~S51)

The SETTING MODE is displayed as 『S』 at left upper side on LCD Module.
Data can not be changed and inputted without inputting password in 『M00 GROUP RESET』 .

ITEM	CONTENT	CLASS	VALUE
S01 # GROUP CARS	The number of elevators included group operation	1~8 CAR	
S02 TOP FLOOR	The number of floor serviced including nonstop floors in group operation * Set 『S02』, then auto-set 『S33~S50』		
S03 HANDICAP 1st	The handicapped operation for 1st car in group	1~8 CAR	
S04 HANDICAP 2nd	The handicapped operation for 2nd car in group	1~8 CAR	
S05 BASIC FLOOR	The main(lobby) floor in group operation		
S06 E/L SPEED	The rated speed of elevators		
S07 RE. ASGN	Method of forecasting function (lantern)	Immediate	0
		Arrival	1
S08 HALL CANCEL	Two-touch hall call cancel	Use	0
		Not use	1
S09 #1 MAX PERSN ~ S16 #8 MAX PERSN	The maximum number of persons be ridden can ride in each car of the group		
S17 #1 UNDER FLR ~ S24 #8 UNDER FLR	The unbalance floor		
S25 #1 MID UBFLR ~ S32 #8 MID UBFLR	The middle unbalance floor		
S33 TOTAL STOP1	The total stop floors of the group * Auto-set after setting 『S02』	1~32 FL	
S34 TOTAL STOP2	The total stop floors of the group * Auto-set after setting 『S02』	33~64 FL	
S35 #1 STOP FL1 ~ S42 #8 STOP FL1	The total stop floors of each car * Auto-set after setting 『S02』	1~32 FL	
S43 #1 STOP FL2 ~ S50 #8 STOP FL2	The total stop floors of each car * Auto-set after setting 『S02』	33~64 FL	
S51 SAVE SPEC.	Saves the set spec. data		

❁ Below examples only apply to 『T&S』 model.

EX) 『S17 #1 UNDER FLR ~ S24 #8 UNDER FLR』
- The basic floor of criteria car : 1 (FL)

#1 Condition (FLOOR)		UNDER FLR set	#2 Condition (FLOOR)		UNDER FLR set
Criteria car service FL	B5~10	2	Criteria car service FL	B5~10	4
Service FL of car #1	B3~10		Service FL of car #2	B1~10	

EX) 『S25 #1 MID UBFLR ~ S32 #8 MID UBFLR』 :
The car #1 services total 15 FL , the 13 FL is a non-stop floor among these.
-> 『S25 #1 MID UBFLR = 13』

EX) - Total 23 FL (B5~18F) building (: Input value)

Car	Serve FL	Non-stop	UNDER FLR	MID UBFLR	TOTAL STOP	STOP FL
#1	B5~18	0	0	0	007FFFFF	007FFFFF
#2	B2~18	0	3	0		007FFFF8
#3	B2~18	2	3	7		007FFFB8
#4	B2~18	4	3	9		007FFEF8
#5	B5~18	2	0	7		007FFFBF
#6	B5~18	4	0	9		007FFEFF

(『S34』 and 『S43~S50』 are only used in case of above 33 FL, or ALL must be 『0』)
** Set 『1』 at the stop floor, 『0』 at the non-stop floor.
After setting 『S02 TOP FLOOR』 , all data is set automatically in 『S33 ~ S50』 .
If there is any non-stop floor (no LCD vane but installed in other car),
change the data on 『S33 ~ S50』 directly.

⇒ Please refer to the 『Page 19』 for more detail information about this.

- 『S51 SAVE SPEC』
  - Set 『1』 for saving data, after checking data of 『S01~S50』 .
  - After setting 『1』 , data of 『S01~S50』 is saved in the RAM of iGC3 Board.

- 『S07 RE. ASGN』

If you press a hall button			
1	Arrival forecast	Response	The button lamp is on but lantern is not. the lantern of service car is flickered from speed decreased to door closed.
		Use	It must be used for building installed a indicator every floor
		Feature	Simple forecast operation, and application of indicator
0	Immediate forecast	Response	both button lamp and lantern are on. the lantern of service car is flickered from speed decreased to door closed
		Use	It must be used for building installed a lantern every floor
		Feature	Total forecast operation, and bank division function

2. DISPLAY MODE(D00~D10)

- You can switch 『S』, 『M』 and 『D』 mode using 『ESC』 key.
- In this mode, you can check C/P information.

ITEM	CONTENT		CLASS	VALUE
D00 UP LAMP	Up hall lcall button lamp		1~32F	
D01 DN LAMP	Down hall lcall button lamp		1~32F	
D02 UP LANTERN	Up hall lantern		1~32F	
D03 DN LANTERN	Down hall lantern		1~32F	
D04 UP LAMP2	Up hall lcall button lamp		33~64F	
D05 DN LAMP2	Down hall lcall button lamp		33~64F	
D06 UP LANTERN2	Up hall lantern		33~64F	
D07 DN LANTERN2	Down hall lantern		33~64F	
D08 GROUP CHECK	The status of group operation.	Disconnected	Separated	0
		Connected	Attendant or Independent	4
		Connected	In Group operation	8
D09 HALL CHECK1	Hall board check		1~32F	
D10 HALL CHECK2	Hall board check		33~64F	

EX) 『D08 GROUP CHECK』 : Each car is on the status, 『00008084』 (The farthest to the right is #1)

CAR	VALUE	CONTENT
#1	4	Group communication is normal and status is attendant or independent
#2	8	Group communication is normal and status is group operation
#3	0	Group communication is abnormal
#4	8	Group communication is normal and status is group operation

3. MAINTENANCE MODE(M00~M06)

The MAINTENANCE MODE is displayed as 『M』 at left upper side on LCD Module.

ITEM	CONTENT		CLASS	VALUE
M00 GROUP RESET	Set password		???	
M01 YEAR/MONTH/DAY	Set YEAR/MONTH/DAY			
M02 HOUR:MINUTE:SECOND	Set HOUR:MINUTE:SECOND			
M03 UP CALL	Hall-up call			
M04 DOWN CALL	Hall-down call			
M05 GROUP M/MAP	Check all variable data used in group program			
M06 SD CARD LOG	Logs the E/L moving data by using the SD Card	Not use SD Card		0
		Only logs the Traffic Data		1
		Only logs the Traffic Demand		2
		Logs both which are traffic data & traffic demand		3

EX) 『M01 YEAR/MONTH/DAY』 : 『2004Year 3Month 30Day』 ⇒ 『00040330』 .

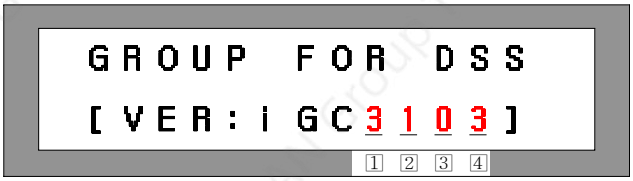
EX) 『M02 HOUR:MIN:SEC』 : 『Afternoon 4Hour(16Hour) 20Min 45Sec』 ⇒ 『00162045』 .

4. The way of data change in 『SETTING MODE』

In 『M00 GROUP RESET』 , it is possible to modify the data by inputting password or being in state that all data are erased.

*** After inputting password, you must reset, if not, data modifing may be impossible.

5. Check the version for program



=> 『i』 : 『HYUNDAI』 , 『GC』 : GROUP CONTROL

		1	2	3	4		
Company	Bd.	H/W Rev.	Series	『10』 th of ver.	『1』 th of ver.	Description	S/W Rev. date
i	GC	3	0	0	3	GROUP	2010.08.30
i	GC	3	1	0	3	DSS	2010.08.30
i	GC	3	2	0	-	Double Deck	-

Ⅴ. Setting for handicapped car

1. Handicapped car operation overview

- One handicapped car can be assigned in case of group control system having more then 2 cars.
- It's different from handicapped OPB in car.
  (Handicapped OPB is controlled by main controller.)
- Group control assignment per hall call to handicapped car
  - Both general car and handicapped car are assigned service when hall call is registered.
  - Only handicapped car operates when handicapped hall call is registered.
  - Handicapped hall call is cleared only after handicapped car arrives that floor.

2. Setting for handicapped hall call

A. 『HIP / HPI』 must be set to handicapped mode.

TYPE	SETTING METHOD	REMARK
HIP	1. 7 of 『SW1』 is ON 2. After setting, reset	The handicapped car can be selected by using the Rotary-SW of SIO Bd., the setting values are 『9~F』
HPI	1. 1 of 『SW2』 is ON 2. After setting, reset	

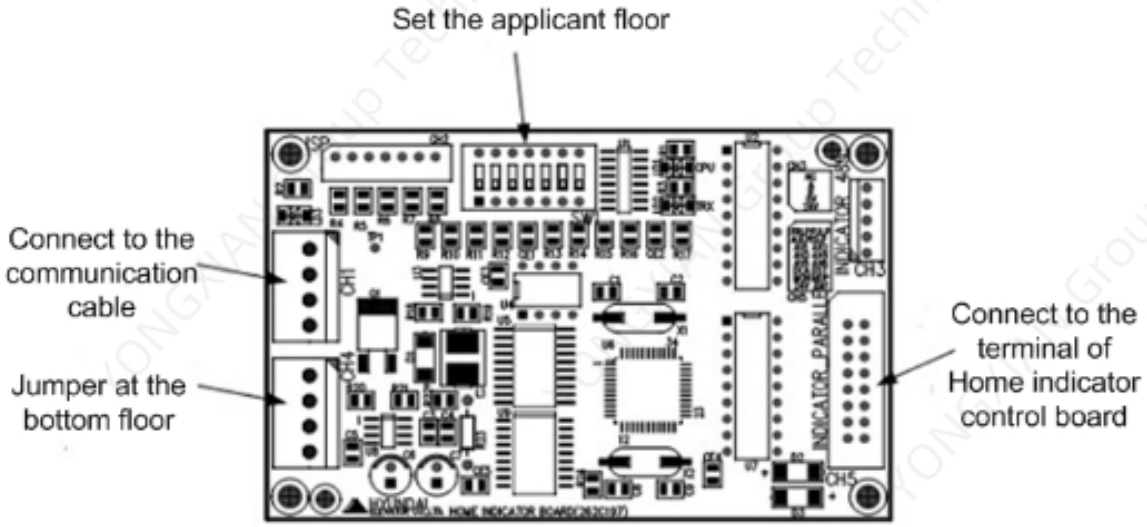
B. Main controller setting

TYPE	SETTING METHOD	REMARK
T&S, FI-4	LCD Display >> 『S03 HANDICAP』 to 『1』	
STVF5	Set A002 to 『0』	

C. Group control system setting

TYPE	SETTING METHOD	REMARK
iGC3	LCD >> Set 『S03 HANDICAP 1st』 to handicapped car number	1~8 CAR
	LCD >> Set 『S04 HANDICAP 2nd』 to handicapped car number	1~8 CAR

Ⅵ. Home-Indicator control board setting



<Fig. 3>

- Home indicator control board transfers the floor information to the home automation device by connectiong 『CAN-PI(CM3) - <Fig. 1>, 2』 of 『iGC3 Bd.』 .

- Set 『SW1』 value according to the floor.

EX) Setting method of 『SW1』
- When set up, dip switch is on.
- 『SW1』 value of bottom floor is 1000000.

FL \ SW1	1	2	3	4	5	6	7
1	1	0	0	0	0	0	0
2	0	1	0	0	0	0	0
10	0	1	0	1	0	0	0
11	1	1	0	1	0	0	0
				1 : ON		0 : OFF	

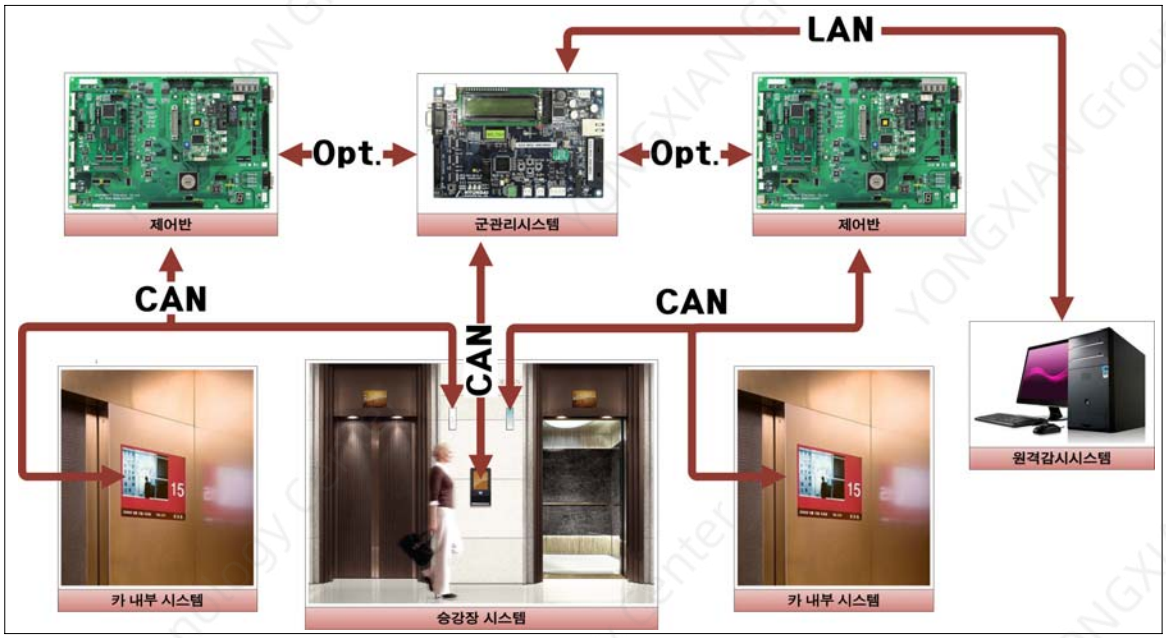
- It must be connected the end resistor to 『CH4』 connector at the control board of bottom floor.

Ⅶ. Destination Selection System overview

1. What is Destination Selecting System (DSS) ?

- 『DSS』 is new elevator control system to supervise elevators more efficiently.

2. Configurtion of DSS

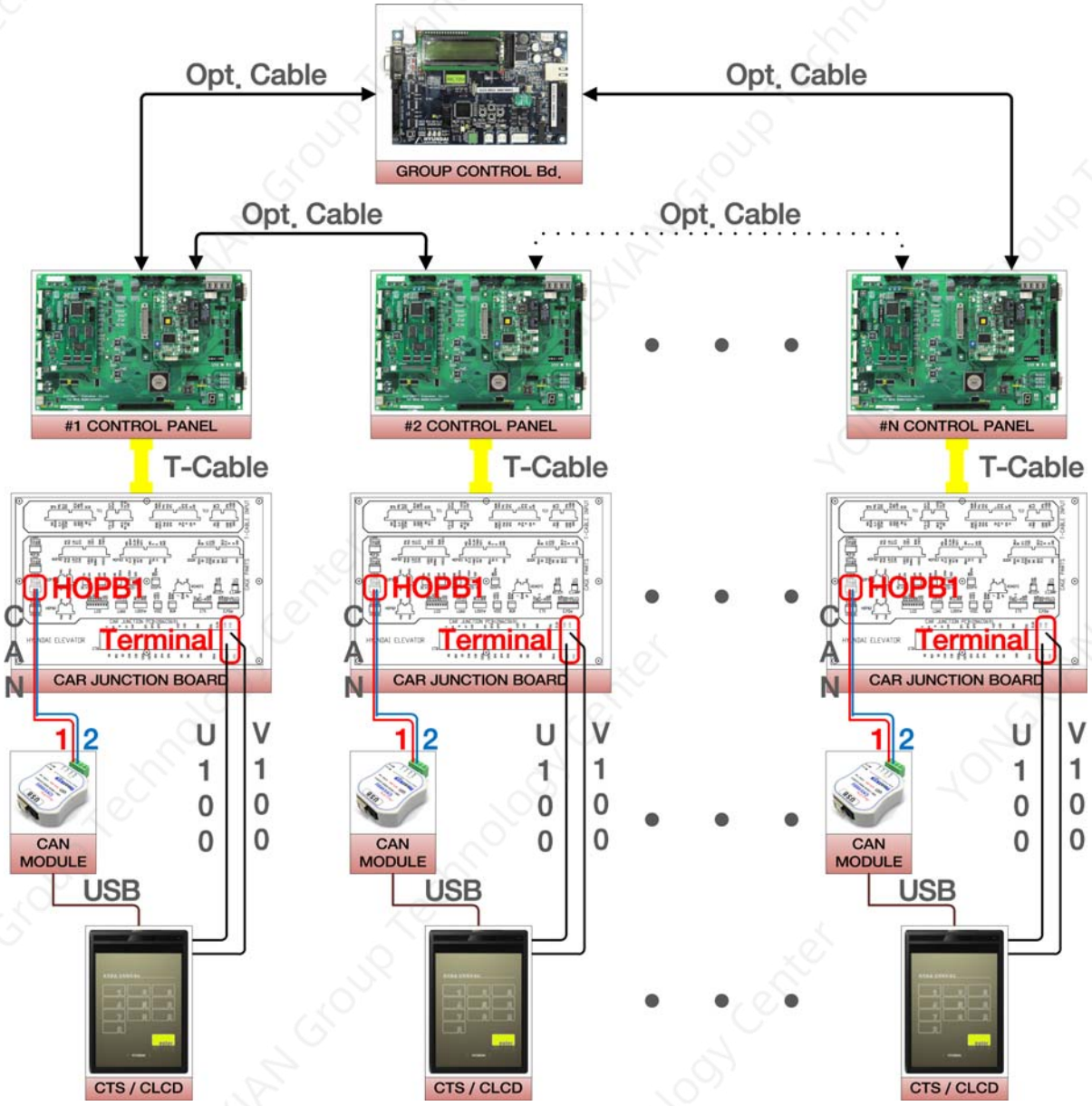


3. Comparative table of 『Normal Group』 and 『DSS』

System	Normal Group	Destination Selection System
Register method	- Register UP / DOWN calls at hall - Register Destination floors at car	- Register Destination floors at hall
Assign method	- Dispatch elevators for hall call - Dispatch elevators according to estimated waiting time	- Dispatch elevators for destination call - Dispatch elevators according to total estimation of all components
Merit	- Inexpensive - Familiar with the use	- Excellent calculation accuracy - System efficiency is high - The traffic is decreased by pre-appointing car - Extension of optional function is easy
Demerit	- Low calculation accuracy - Low efficiency	- Expensive - Inexperienced usage for the beginner

4. Destination Selection System connection-way

1. CTS / CLCD - Car Touch Screen(Call device in car) / Car LCD

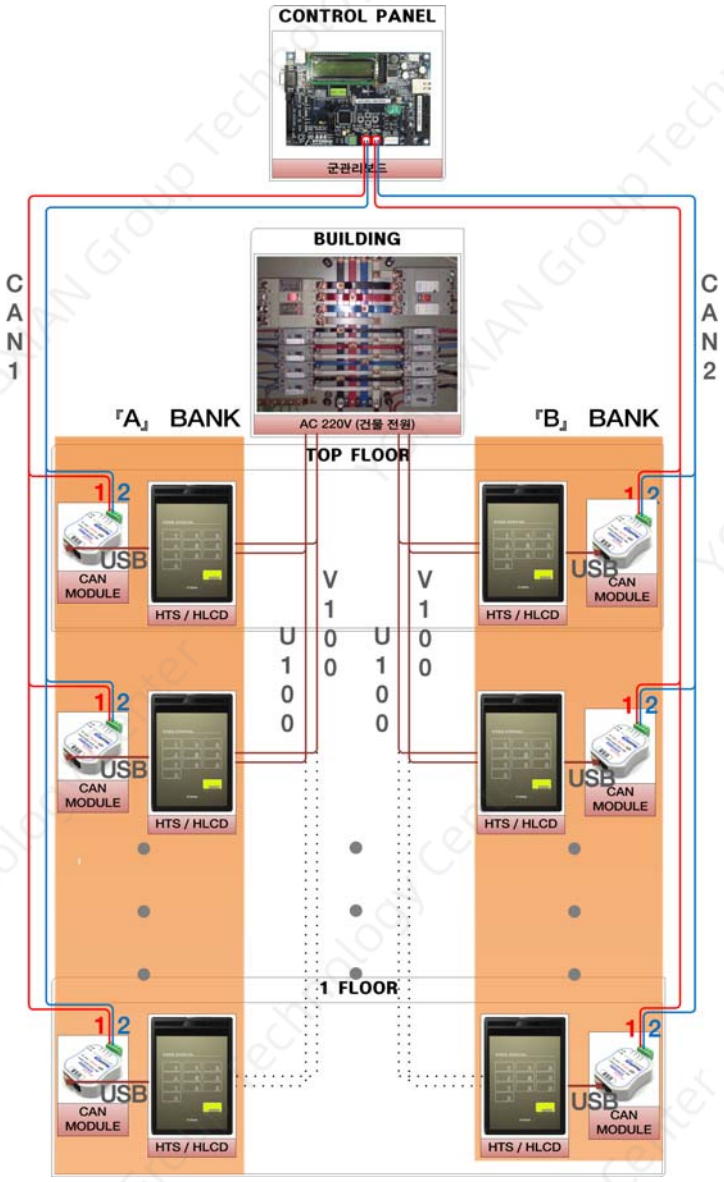


- Set DIP-switch of CAN module in CTS / CLCD as follows



TYPE		ID							
		1	2	3	4	5	6	7	8
CTS	first						ON		ON
	second						ON	ON	ON
CLCD	first						ON	ON	
	second					ON			

2. HTS / HLCD – Hall Touch Screen(Call device at Hall) / Hall LCD



- Set DIP-switch of CAN modul in HTS / HLCD as follows



Floor	ID (In case of Total 40 FLs)							
	1	2	3	4	5	6	7	8
40			ON		ON			
39			ON			ON	ON	ON
38			ON			ON	ON	
⋮								
3							ON	ON
2							ON	
1								ON

Ⅷ. Destination Selection System LCD Display

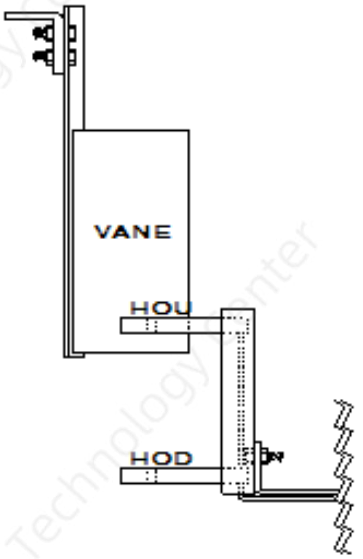
(: Futher-explanation and Example)

The overlapping part is omitted with 『Ⅳ. Group Control LCD Display』 .

1. SETTING MODE(S15~S32)

ITEM	CONTENT	CLASS	VALUE
S15 #1 UNDER FLR ~ S20 #8 UNDER FLR	The lowest floor of unbalance in the group		0
S21 #1 MID UBFLR ~ S26 #8 MID UBFLR	The middle unbalanced floor		0
S27 #1 MID 2UBFL ~ S32 #8 MID 2UBFL	The second middle unbalanced floor	Apply to under iGC3102	0
S47 DSS FL1	The total call information by HTS(Call device at hall)	1~32F	
S48 DSS FL2	The total call information by HTS(Call device at hall)	33~64F	

Set 『1』 at the stop floor, 『0』 at the non-stop floor.
If there is any non-stop floor (no LCD vane but installed in other car),
change the data on 『S33~S46』 directly.



** Reference

FLOOR	VANE	SERVICE
Stop	○	○
Non-service	○	×
Non-stop	×	×

『○: there is』 , 『×: there isn't』

EX) 『S27 #1 MID 2UBFL ~ S32 #6 MID 2UBFL』 : (Apply to under iGC3102)

The #1 car serves total 15FLs. 5FL and 13FL are non-stop floors among these.

⇒ 2nd non-stop floor setting.

-> 『S21 #1 MID UBFLR = 5』, 『S27 #1 MID UBFLR = 13』

(When non-stop floor is two, this menu is used.)

EX) Assume that stop floors for each car are as follows table in 『Destination Selection System』

		FLOOR																						
ab FL		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
real FL		18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	B1	B2	B3	B4	B5
CAR	#1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	#2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	#3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●			
	#4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●			
	#5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●
	#6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●	●	●	●

『● : Stop Floor』, 『○ : Non-stop Floor』, 『ab FL : Absolute floor』, 『real FL(Reference) : Real floor』

=> Set 『S15~S32』 (☐ : Input value)

#Car	Setting mode	ab FL	real FL	Setting mode	ab FL	real FL	Setting mode	ab FL	real FL
#1	S15 #1 UNDER FLR	0	-	S21 #1 MID UBFLR	0	-	S27 #1 MID 2UBFL	0	-
#2	S16 #2 UNDER FLR	3	-	S22 #2 MID UBFLR	0	-	S28 #2 MID 2UBFL	0	-
#3	S17 #3 UNDER FLR	3	-	S23 #3 MID UBFLR	7	2	S29 #3 MID 2UBFL	0	-
#4	S18 #4 UNDER FLR	3	-	S24 #4 MID UBFLR	7	2	S30 #4 MID 2UBFL	9	4
#5	S19 #5 UNDER FLR	0	-	S25 #5 MID UBFLR	7	2	S31 #5 MID 2UBFL	0	-
#6	S20 #6 UNDER FLR	0	-	S26 #6 MID UBFLR	7	2	S32 #6 MID 2UBFL	9	4

=> Set 『S35~S40』 (☐ : Input value) - Refer to 『LCD menu』.

#Car	LCD menu	S33 TOTAL STOP1 : 007FFFFF (B5~18FL → total 23FL)								Input value
1	S35 #1 STOP FL1	0000	0000	0111	1111	1111	1111	1111	1111	: 007FFFFF
2	S36 #2 STOP FL1	0000	0000	0111	1111	1111	1111	1111	1111	: 007FFFF8
3	S37 #3 STOP FL1	0000	0000	0111	1111	1111	1111	1011	1000	: 007FFFB8
4	S38 #4 STOP FL1	0000	0000	0111	1111	1111	1110	1011	1000	: 007FFEB8
5	S39 #5 STOP FL1	0000	0000	0111	1111	1111	1111	1011	1111	: 007FFFBF
6	S40 #6 STOP FL1	0000	0000	0111	1111	1111	1110	1011	1111	: 007FFEBF

『1 : Stop Floor』, 『0 : Non-stop Floor』

※ Above examples only apply to 『T&S』 model.

EX) If 『HTS(Call device at hall)』 are installed from 1FL to 18FL. (Except for basement)

=> Set 『S47, S48』 (☐ : Input value)

LCD menu	S33 TOTAL STOP1 : 007FFFFF (B5~18FL → total 23FL)								Input value
S47 DSS FL1	0000	0000	0111	1111	1111	1111	1110	0000	: 007FFFE0
S48 DSS FL2	0000	0000	0000	0000	0000	0000	0000	0000	: 00000000

If 『HTS』 s are installed under 32FL, All values have to be set as 『0』 at 『S48 DSS FL2』

Ⅸ. Revision History

Rev.	Revision content	Date	Note
0	Prototype	2010-12-09	Writer : HSKIM
1	Page orders are changed, misprints are modified	2011-01-04	Writer : HSKIM

G. U_ANGLE TEST

1. DC LINK CHECK

   The DC Link voltage of the inverter is indicated.

   cf) If the inverter version is up, the DC Link value in the HHT can't be equal to the actual DC Link value. In this case, Adjust the FACTORY/02.SCALE VDC so that this difference comes in the within ±10[V].(Actual DC Link voltage is able to know by measuring the P-N of the SMPS SCN2 using the MULTIMETER).

ITEM	SCALE Vdc	HTT Display	Actual DC Link
Before change	0.350	550[Vdc]	530[V]
After change	0.345	535[Vdc]	530[V]

2. IU,IV,IW CHECK

   ☞ CONFIRM INVERTER 01_MONITOR IN WHICH IU CURRENT"、" IV CURRENT"、" IU CURRENT" DATA, IN THE RANGE OF ±0.2. IF IT OVERSTEPS,IT SHOULD CHANGE THE PARAMETER OF IAS OFFSET"、" IBS OFFSET"、" ICS OFFSET" IN THE FACTORY.

3. CONNECT POWER CABLE FROM INVERTER TO MOTOR.

   ☞ INVERTER "U PHASE"MUST BE CONNECTTED TO MOTOR"U PHASE".

   ☞ WHEN THE ELEVATOR IS NOT U_ANGLE TEST,IT EXCHANGE"W","V"，"U PHASE"NOT CHANGE.

4. INVERTER PARAMETER SETTING

   ☞"FWD DIRECTION"MUST CHOOSE"UP" IN THE 01_CONTROL

   ☞" TQ BIAS SELEC"MUST CHOOSE"NO USE" IN THE 01_CONTROL.

   ☞ FACTORY_MOTOR ENC DIR must be set to 1, please.

5. U_ANGLE TEST

   ☞ ROTOR Position is within the tolerance check ±5.

INSTRUCTION FOR EPB-100 DEVICE（EPB-100）

1. PRODUCT INSTRUCTION

1) EPB DEVICE IS USED FOR EMERGENCY LANDING AND RESCUE. IF THERE IS SOMETHING WRONG WITH THE ELEVATOR, YOU CAN OPEN THE BREAK COIL BY THE EPB DEVICE AND LANDING THE ELEVATOR. IN THE NORMAL CASE,THE BATTERY IS CHARGED BY AC220V,BUT IF IT IS USED TO RESCUE, THE BATTERY WILL SUPPLY VOLTAGE FOR THE BREAK COIL.IF THE BREAK IS OPEN,THE ELEVATOR WILL RUN TOWARD TO THE HEAVY SIDE.

2. SPECIFICATION

1） INPUT VOLTAGE：AC 220V

2） OUTPUT VOLTAGE：DC140~160V / 1.5A

3） RATING TIME：3MIN

4） BATTERY：ES2.9-12(12V/2.9A)　2EA

NOTE：PLEASE CHANGE BATTERY FOR EVERY THREE YEARS。

3. FUCTION INSTRUCTION

1） THE BATTERY IS CHARGED BY AC 220V.

2） IF EST AND SW SIGNAL IS CLOSED,AND THEN B4,B5 WILL OUTPUT VOLTAGE.

3） ONCE YOU PUSH EPB BUTTON，B4,B5 WILL OUTPUT DC VOLTAGE AND ONLY LAST FOR 3 SECONDS.（NOT CONTINOUL OUTPUT VOLTAGE FOR SAFTY）

4. CN1 CONNECTOR INSTRUCTION

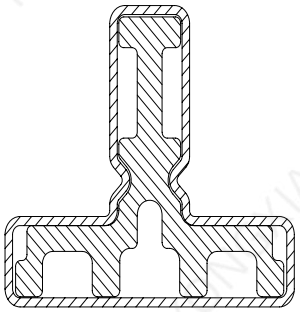
CN1 CONNECTOR：

NO.	NAME	INSTRUCTION	NOTE
1	B4	OUTPUT TERMINAL，OUTPUT DC140~160V TO THE BREAK COIL.	
5	B5		
2	EST	EPB-100 SWITCH SIGNAL，IF EST AND SW SIGNAL IS CLOSED,AND THEN B4,B5 WILL OUTPUT DC VOLTAGE.	
6	SW		
3	12V	DC 12V POWER	
7	N		
4	A220	BATTERY CHARGING VOLTAGE	
8	B220		

The description of TD58 hollow rail assembling

1. About the TD58 hollow rail

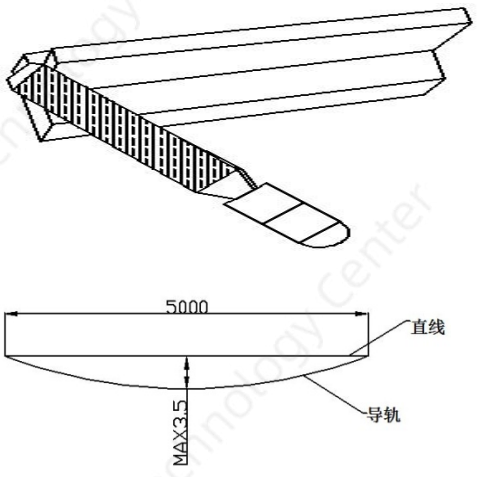
The cwt rail is TD58 hollow rail, it is formed by the cold-rolled hot dip galvanized steel. The thickness of the hot dip galvanized steel can be 1.5mm or 2.0mm, which according to the force that elevator born. Within the molding guide is filled with insulation materials, thus can reduce the noises. As following shows:

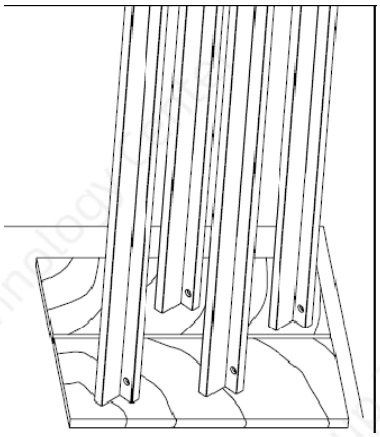
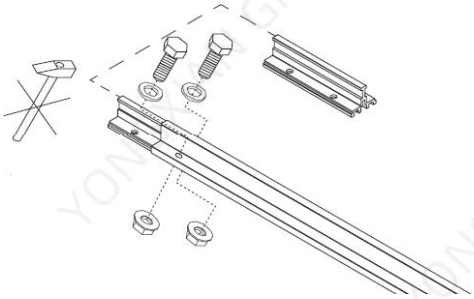
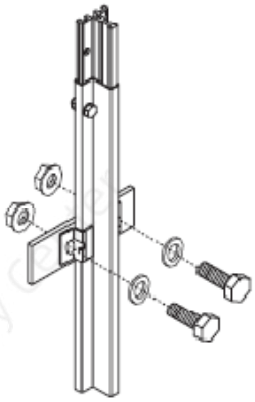
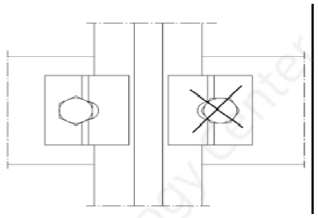


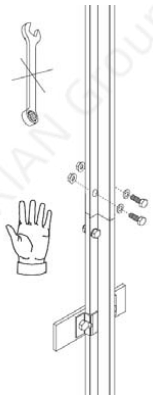
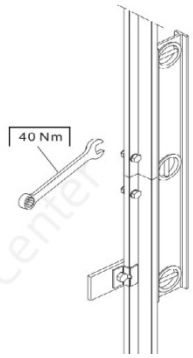
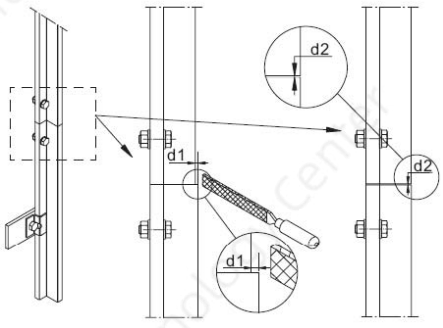
TD58 hollow rail

2. Description of TD58 CWT rail installing

The rail is one of the most important parts of the elevator. So, the rail should have not any defects, and must be installed perfectly to ensure the car moving smoothly and comfortably. Car running more faster, the quality of the rail is asked to be more higher. The recommended installation method of the TD58 rail will be shown below:

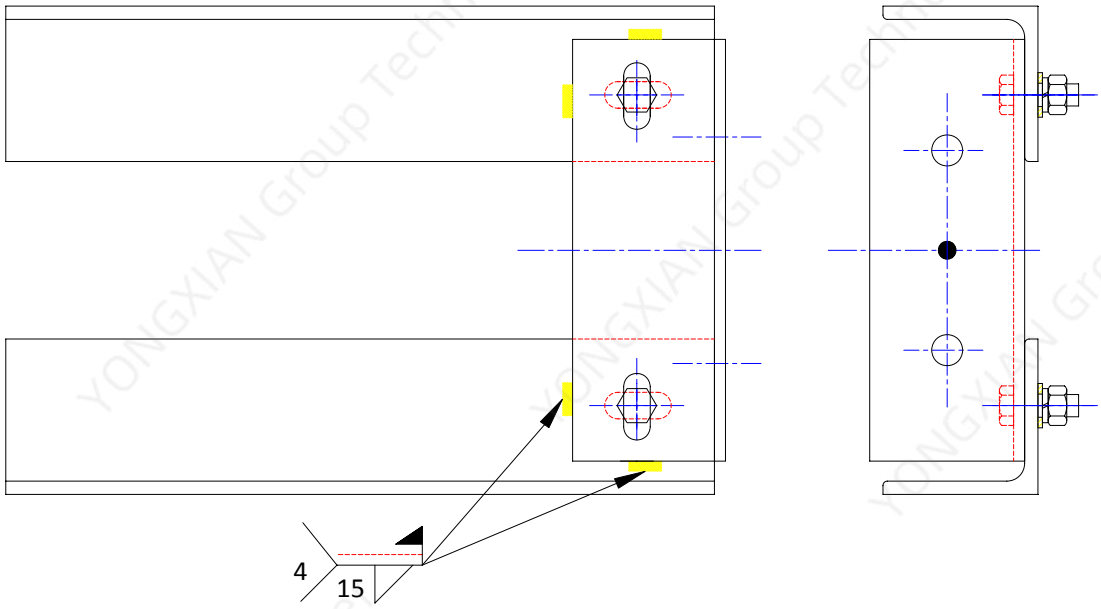
step	operate	expain
1	Visual inspect the rail, whether there are some damages caused by transport or any other reasons. Use a fine file to file level if there are little slight sharp on the edge. If there are some burrs on the end of the rail, use a fine file to remove them. If the linear deviation is more the 3.5mm, replace the rail.	

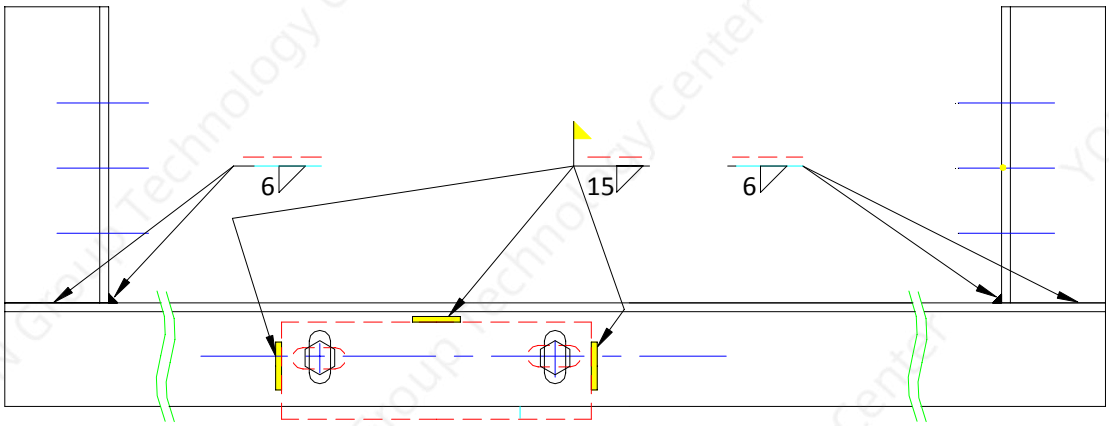
2	Put the rail on the plywood near the vicinity of the well. If the rails may be rusted, coast them with a thin layer of grease for cover.	
3	Fixed the fish plate to the rail end, and tighten the bolts by hands. Bolts: M-10x30 Spring washers: A10 Flange nuts: M10	
4	Calibration and installation of the rail fasteners: Calibrating and installing the bottom rail according to the installation guide or plumb line. Usually one plumb line is ok. But if using two plumb lines to calibrate, the installation will be more accurate and the calibration will be much easier . Bolts: M-12x30 Spring washer: 14 (DIN126) Flange nut: M12 Note: the straight side of the bolt head will reduce the slip resisting effect between pressure guides and rails.	 

5	Lifting the next rail which is ready to be installed, and set it on the fish plate of the previous one slowly, Note: Prohibited all rail upgrade, and then one by one installation	
6	fastening the bolts by hand. Bolts: M-10x30 Spring washers: A10 Flange nuts: M10	
7	After calibrating the rail by straight edge (level), tighten all the bolts by wrench (40Nm).	
8	In the installation process, file smooth cascade/gap(if exist) to make the rails achieve an acceptable level. Repeat the steps shown above for the left rails installing.	 If d1>0.8mm，change the rail. If 0.8mm>d1 >0.5mm, file smoothly. If d2>1.5mm，change the rail.

The description of rail bracket installing

First, connect the brackets by bolts. Then check the dimensions and weld as the following Figure shows.





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