



# Quick Start-up Guide for GALaxy Controller KEB Combivis F5 Drive - PM Gearless

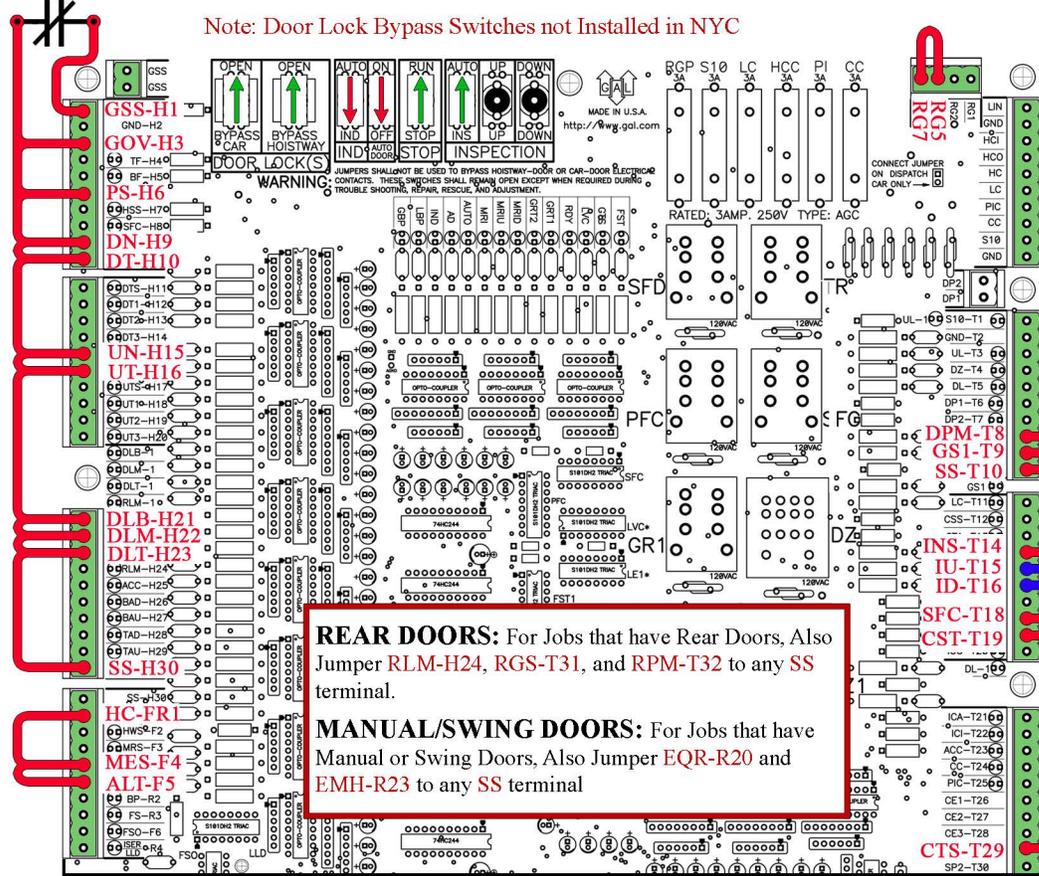
GOVERNOR CONTACT

Note: Door Lock Bypass Switches not Installed in NYC

To Get a Running Platform:

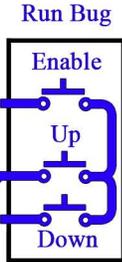
**WARNING:** Jumping inputs high can be dangerous because important safety circuits will not function. Inputs should only be jumped for the purpose of running the car on inspection during initial start-up.

Remove all jumpers before placing a car in service.



**REAR DOORS:** For Jobs that have Rear Doors, Also Jumper RLM-H24, RGS-T31, and RPM-T32 to any SS terminal.

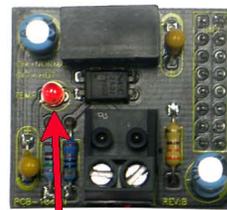
**MANUAL/SWING DOORS:** For Jobs that have Manual or Swing Doors, Also Jumper EQR-R20 and EMH-R23 to any SS terminal



1. Wire Motor and Main Line Power as shown in Diagrams.
2. Install and Wire Governor.
3. Add Jumpers and Set Switches on main I/O board GALX-1064 as shown in Figure 1.
4. Wire the DBR Temperature Sensor to the Temperature Sensor Board (Figure 2) located

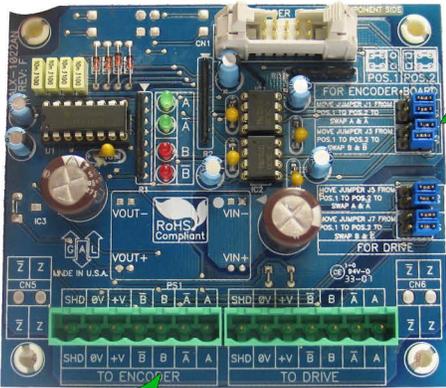
Figure 1

5. Check/Set Parameters in Drive. -see Drive Settings page of this guide
6. Wire Encoder cable from drive to Encoder Isolation Board (Figure 3) and Check Encoder PPR. -Double Check PPR and RPM settings on Drive from step 5. -Set PPR and RPM on Controller (Large LCD) under: Adjustable Variables >> Car Motion >> Encoder PPR Adjustable Variables >> Car Motion >> Encoder RPM
7. Check PIC and PAL inhibit LEDs (Figure 4). -If either the "PIC Inhibit" LED or the "PAL Inhibit" LED is lit on the Safety Processor Board check the "ELEV SERV" Menu (when "ELEV SERV" is on the screen, press the "ENTER" button to view the status) -If LCD displays "open" - check door lock/gate switch jumpers -If LCD displays "INS ERR" - make sure that the "INS" input is high and that the "ACC", "MRI", "ICI", and "AUTO" inputs are off.
8. Check Speed and Direction of Motor Rotation. -If Platform Runs Slow or OverCurrent Fault on Drive, or if Motor Rotation is backwards, change LF.28 Parameter on Drive. "Encoder channel swap / direction" (see Drive Settings page of this guide)



On to Run

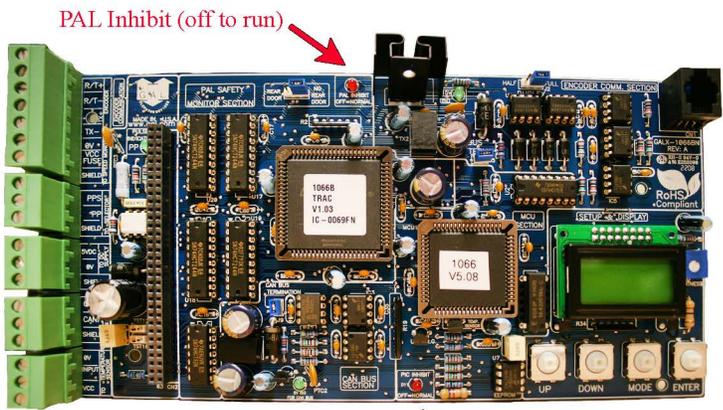
Figure 2



Jumpers for encoder quadrature from Motor to Controller CPU

Figure 3

Wire Encoder cable from Drive here



PAL Inhibit (off to run)

Figure 4

PIC Inhibit (off to run)



# Test Procedures

**Warning:** When performing any of the following tests, the mechanic should follow the required precautions and procedures set forth in the local and national elevator codes.

## Buffer Test

The following test procedure explains how to override the car's position system so that it will run into the terminal landing at contract speed but it is not intended to circumvent any procedure mandated by the elevator code.

1. Inspect and prepare the car according to the "Elevator Industry Inspection Handbook". Make sure that the car is loaded properly for the test and that the appropriate car or counterweight safety is tied.

2. For the car buffer test, jump DT, DT1, DT2, DT3 and DTS terminal limits to SFC (110VAC). For the counterweight buffer test, jump UT, UT1, UT2, UT3, and UTS terminal limits, also to SFC. Refer to the job schematics for specific terminal wiring locations.

3. From the Controller's LCD display, select the "Elevator Setup" menu and then select "Car Buffer Test" or "Counterweight Buffer Test".

4. Turn off the automatic door switch. To execute the test the car must be level at the floor and on automatic operation.

5. The test also cannot be started from a terminal landing. If the car is at a terminal landing, the LCD display will show "To position the car press 'Enter'". Pressing "Enter" will place the car in the middle of the hoistway. If the car is already positioned correctly for the run, the display will give the option to position the car or skip to the next step.

6. Once the car is located in the correct starting position, select "Run Buffer Test". When the "Enter" button is pressed, the car's position will be modified internally to the top of the hoistway for a car buffer test or to the bottom of the hoistway for a counterweight buffer test. The car will then run once at high speed to the appropriate buffer.

7. While the car is in motion, the LCD display will change to "Press Enter Button to Cancel Buffer Test". Pressing the "Enter" button will cause the car to execute an emergency slowdown.

8. After the test is complete, place the car on inspection and inspect the car and buffer.

**9. Remove all jumpers, remove load weights and untie the car or counterweight safeties if previously tied.**

10. Return the car to automatic operation.

## Normal Terminal Slowdown Test

The following test procedure explains how to override the car's position system so that it will run into the terminal landing at the contract speed but it is not intended to circumvent any procedure mandated by the elevator code.

1. Inspect and prepare the car according to the "Elevator Industry Inspection Handbook". Make sure that the car is loaded properly for the test.

2. For the bottom normal terminal slowdown test, jump DTS terminal limit to SFC (110VAC). For the top normal terminal slowdown limit test jump UTS terminal limit also to SFC. Refer to the job schematics for specific terminal wiring locations.

3. From the Controller's LCD display, select the "Elevator Setup" menu and then select "Car Buffer Test" to perform a bottom normal terminal slowdown test or "Counterweight Buffer Test" to perform a top terminal slowdown limit test.

4. Turn off the automatic door switch. To execute the test, the car must be level at the floor and on automatic operation.

5. For this test only adjust parameters UT Vel and DT Vel on the Safety Processor Board to contract speed.

6. The test also cannot be started from a terminal landing. If the car is at a terminal landing, the LCD display will show "To position the car press Enter". Pressing "Enter" will place a car call in the middle of the hoistway. If the car is already positioned properly for the run, the display will give the option to position the car or the skip to the next step.

7. Once the car is located in the correct starting position, select "Run Buffer Test". When the "Enter" button is pressed, the car's position will be modified internally to the top of the hoistway for a car buffer test or to the bottom of the hoistway for a counterweight buffer test. The car will then run once at high speed to the appropriate limit.

8. While the car is in motion, the LCD display will change to "Press Enter Button to Cancel Buffer Test". Pressing the "Enter" button will cause the car to execute an emergency slowdown.

**9 After the test is complete remove all jumpers and adjust the UT Vel and DT Vel parameters on the Safety Processor Board back to their original values.**

10. Return the car to automatic operation.



# Test Procedures

**Warning:** When performing any of the following tests, the mechanic should follow the required precautions and procedures set forth in the local and national elevator codes.

## Emergency Terminal Limit Test

To perform an emergency terminal limit test, the mechanic should follow the required precautions and procedures set forth in the local and national elevator codes. The following test procedure is written to show how to override the car's position system so that it will run into the terminal landing at contract speed but is not intended to circumvent any procedure mandated by the elevator code.

1. Inspect and prepare the car according to the "Elevator Industry Inspection Handbook". Make sure that the car is loaded properly for the test.

2. For the bottom emergency terminal limit test, jump the bottom normal terminal slowdown limit switches DT, DT1, DT2, DT3 depending on how many normal slowdown switches the job has to SFC (110VAC). For the top emergency terminal limit test jump the top normal terminal slowdown limit switches UT, UT1, UT2, UT3 also to SFC. Refer to the job schematics specific terminal wiring locations.

3. From the Controller's LCD display, select the "Elevator Setup" menu and then select "Car Buffer Test" to perform a bottom emergency terminal limit test or "Counterweight Buffer Test" to perform a top emergency terminal limit test.

4. Turn off the automatic door switch. To execute the test, the car must be level at the floor and on automatic operation.

5. The test also cannot be started from a terminal landing. If the car is at a terminal landing, the LCD display will show "To position the car press Enter". Pressing "Enter" will place a car call in the middle of the hoistway. If the car is already positioned properly for the run, the display will give the option to position the car or the skip to the next step.

6. Once the car is located in the correct starting position, select "Run Buffer Test". When the "Enter" button is pressed, the car's position will be modified internally to the top of the hoistway for a car buffer test or to the bottom of the hoistway for a counterweight buffer test. The car will then run once high speed to the appropriate limit.

7. While the car is in motion, the LCD display will change to "Press Enter Button to Cancel Buffer Test". Pressing the "Enter" button will cause the car to execute an emergency slowdown.

**8 After the test is complete remove all jumpers.**

9. Return the car to automatic operation.

## Overspeed Test

To perform an overspeed test, the mechanic should follow the required precautions and procedures set forth in the local and national elevator codes.

1. With the car on automatic, run the car to the top or bottom (away from the desired test run direction).

2. Set LF.20 (car speed) to 135% of the value already there.

3. Set LF.42 (high speed) to 135% of the value already there.

4. In the controller change the following: Adj Var -> Car Motion -> MTR RPM to 125% (or more if necessary) of the value already there.

5. In the controller, go to: Elevator Setup -> Overspeed Test and press "Enter". You can now place a car call in the direction you need to test. The car will overspeed in the desired direction.

6. Return all parameters to the original values.

## Reset Gripper Fault or Emergency Brake Fault

To reset a rope gripper fault, first verify that the cause of the rope gripper fault has been corrected and then follow the directions below:

1. Place the car on machine room inspection.

2. From the LCD Interface, select the Elevator Setup menu and press the enter button.

3. Use the up or down button to select the "Reset Rope Gripper" menu and press enter.

4. Follow the directions on the screen to press and hold the enter button to reset the gripper.

The enter button must be held for approximately 10 seconds. If the car moves unexpectedly within the 10 second delay time, releasing the enter button will cause the gripper to re-engage. When the gripper is fully reset the screen will display "Gripper is Reset".

# Galaxy Controller KEB Combivis F5

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Initialization
US.10=PGLSS (PM Synchronous Gearless)
US.04=Load (Load Configuration)
LF.4=PGLSS (Confirm Configuration)

I/O Configuration (Confirm all values below)
di.0=PnP (Sourcing Input Type)
do.42=0 (No Input Inversion)
do.82=Rdy (Ready)
do.83=DRO (Drive ON)
LF.2=SErSP (Serial Comm. Speed Control)
US.83=1 (Drive PPR Output - Multiplier)

Motor Nameplate (Site specific)
LF.8=on (Electronic Overload Protection)
LF.9=(Calculated Value) (Overload Current)
LF.10=Motor HP (Calculated Value)
LF.11=RPM
LF.12=Rated Current
LF.13=Rated Frequency
LF.14=Line Voltage (Initial Setting)
LF.17=Rated Torque
LF.20=Contract Speed

Machine Data (Site specific)
LF.21=Sheave Diameter (Inches)
LF.22=Gear Ratio
LF.23=Roping Ratio
LF.27=2048 (EnDat Encoder Default PPR)
LF.28=Encoder Channel/Direction (may need adjustment)
LF.29=4 (Encoder Sample Time)
LF.30=2 (Closed Loop w/o Pre-Torque)
LF.76=8 (Encoder Multiplier)

### Mechanical Formulas:

Torque in lb/ft = HP x 5250 /RPM

HP = Torque x RPM /5250

RPM = 120 x Frequency / # of Poles

### Synchronous Speed, Frequency & Number of Poles

RPM = 120 x Freq /# of Poles

Freq =# of Poles x RPM /120

Poles = 120 x Freq /RPM

### Horsepower, Torque & Speed

HP = Torque x RPM /5250

Torque = 5250 x HP /RPM

RPM = 5250 x HP /Torque

## 1. Learn Motor Data

- Set Controller inspection speed to 0
- Prevent brake from picking
- Set LF.3=S Lrn
- Press ENTER, KEB display will show START
- Press and hold UP button on controller – takes 2 to 5 minutes for process to finish
- Release UP button when KEB display says ‘done’
- Write down these values: LF.14, LF.18, LF.19
- Allow brake to pick
- Return inspection speed to proper value

## 2. Learn Encoder

- Set Controller inspection speed to 0
- Prevent brake from picking
- Verify 2.LF.26=Conn (if not, correct the wiring to the encoder)
- Set LF.3=SPI
- Press ENTER, KEB will display START
- Press and hold UP button on controller
- Drive will take 10 encoder position samples
- Release UP button when KEB displays ‘done’
- Write down LF.77 value
- Allow brake to pick
- Return inspection speed to proper value
- Set LF.3=Run
- If LF.93 current is excessive after a trial run, change LF.28 from 0<>1 and repeat from above “Set LF3=SPI”

## 3. Fine Tuning

- LF.28=0 Nothing reversed
  - =1 Encoder A<>B reversed
  - =2 Motor rotation reversed
  - =3 Motor rotation & A<>B reversed

-Set 0.LF.36 to 250% - 300% of LF.17

-Set the following:

### Machine Roped

A.LF.31=3000

d.LF.31=3000

A.LF.32= 350

d.LF.32=250

A.LF.33=3000

d.LF.33=1000

### Machine Unroped

A.LF.31=3000

d.LF.31=3000

A.LF.32= 50

d.LF.32=50

A.LF.33=0

d.LF.33=0