



## Troubleshooting Guide of the Prostart 100% Electric Gate

-

This document is designed to assist you in identifying main errors with the starting gate. It serves to:

- Help in understanding error messages
- Help in finding the cause of errors
- Describe the procedure for trouble shooting

### Summary:

Pages 2 - 3            Errors concerning the servo-driver internal code

Page 4                Errors concerning the sound

Pages 5 - 7           Errors concerning the quality of the gate drop

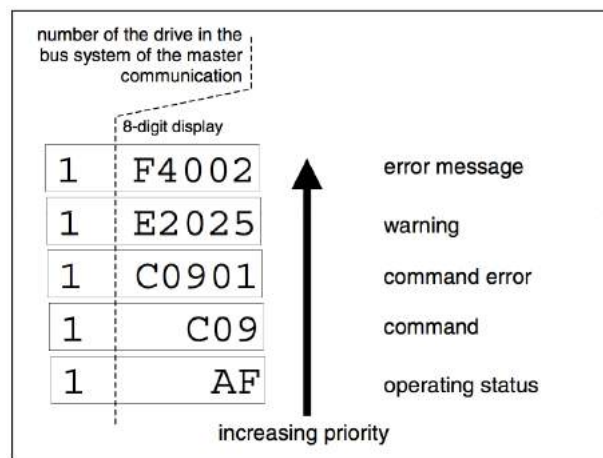
## ERRORS CONCERNING THE SERVO DRIVER

If your gate doesn't move but the system is well powered, the difficulty must certainly come from the servo driver.

This component is located at the bottom left of your control box and measures about 70mm width (3 inches) and 320mm height (1 foot)

### Priorities of the servodriver's display:

The following priorities apply for displaying the current diagnostic message:



When the gate is fully operational and in down position, the display shows « Ab » (Drive ready)

When the gate is in up position, it shows « C13 » (Positive stop drive procedure command)

If you do not have one of these two messages, you will find below the main warning and error messages:

### E2049 - Positioning velocity $\geq$ limit value

Cause: This warning says the value of velocity is too high. (Max 100 000)

Remedy: Having this warning during the gate drop does not affect the performance of the starting gate. Anyway, we still recommend to inform us so the Prostart team can change this value to definitely remove this warning error.

### **F2074 - Actual position value 1 outside absolute encoder window**

Cause: This fatal error appears while turned on the starting system, axis was moved since its last position. In the case you switch off the starting gate whereas it was still in up position or you got an electricity shut-down whereas the gate was in up position, this F2074 error message will be generated.

Remedy: Clear error in pressing on the ESC button available on the Driver, switch off the system and switch on back.

### **F2174 - Loss of motor encoder reference**

Cause: Switching on without reference (in the case of initial commissioning or caused, for example, by changing parameters that characterize mechanical system or influence position evaluation)

Remedy: Clear error in pressing on the ESC button available on the Driver, switch off the system and switch on back.

### **F2814 - Undervoltage in mains**

Cause: Mains voltage below minimum value

Remedy: Check the potential between the three phases and verify each value is between 375 and 475 Volts. And each phases got +/- 5% the same value.

### **F2815 - Overvoltage in mains**

Cause: Mains voltage is greater than maximum specified value (480V)

Remedy: Check the potential between the three phases and verify each value is under 475 Volts.

### **F2818 - Phase failure**

Cause: Incorrect wiring or Mains circuit breaker defective

Remedy: Check and correct wiring or Replace mains circuit breaker

## ERRORS CONCERNING THE SOUND

If your gate works properly but the sound reacts abnormally, you will find below the main problems

### Possible error 1 – No sound

Cause: Absolutely no sound during the complete sequence.

Remedy #1: After switching off the system, look for the green voicecard located on the top right side of the PLC. On this electronic card, an SD memory card is located into a slot. Simply remove and put back this memory card in its slot and switch back ON the system again.

Remedy #2: If the SD card memory operation doesn't succeed, you will have to be equipped with earphones. On the electronic card, a 3.5mm jack socket is located at the bottom of the card (close to the volume adjustment).

If the earphones don't deliver any sound, replace the green voicecard.

If the earphones deliver all the right sounds, replace the speaker located under the gate.

Remedy #3: If the earphones deliver all the right sounds and you already proceed to the replacement of the speaker, it means the amplification of the green voicecard is out of service. Replace this voicecard to remedy definitely the problem.

### Possible error 2 – Weak sound

Cause: Speaker damaged.

Remedy: Replace the speaker located under the gate.

### Possible error 3 – Strange sounds

Cause: Green voicecard damaged.

Remedy: Replace the voicecard.

# ERRORS CONCERNING THE QUALITY OF THE GATE DROP

If your gate works but in having an abnormal drop, you will find below the procedure to identify better the source of the problem

**Causes:**

- Gate bounced at the end of the drop
- Gate hit stronger than usual the bottom position
- Gate doesn't hold the riders enough during its up position

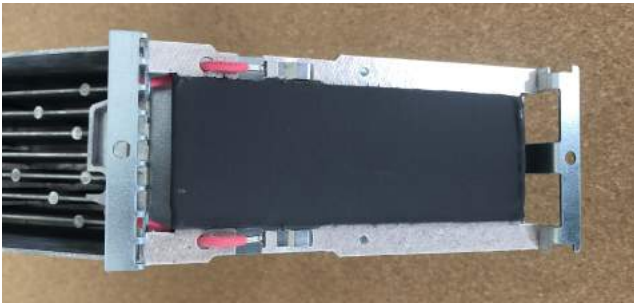
## Remedy solution #1: Control of the ram fixations

Check the fixation of the ram. After months and years, it's possible the back or front fixations got some loose. After removing the two center-grates and doing few gate drops, you will be able to see if the fixations are stiff or not. If everything is good about the fixations, it means the problem comes from another source.

## Remedy solution #2: Control of the Driver inside the E-BOX

The driver is a robust but sensitive device which can fail on the long term getting too much intensity during its activity. In order to check the good performance of the driver, please find below the procedure:

- 1 - Switch off the circuit breaker controlling the E-BOX to remove any power inside
- 2 - Disconnect all the connectors around the Driver "Rexroth IndraDrive Cs"
- 3 - Loosen a little bit the 2 Hex-Screws at the bottom and top of the Driver and then simply slide it up to be able to take it out.
- 4 - Look at the back of the driver and loosen the 2 Torx-Screws fixing the resistor
- 5 - Flip the resistor and check its state. Below is the picture of a clean or perfect resistor:



If your resistor looks to be burnt, please take a picture and end us by e-mail toward this address:

[quentin.grun@prostart.fr](mailto:quentin.grun@prostart.fr)

The best solution in that case meeting a potential damaged resistor is the replacement of the whole driver.

Otherwise, if the resistor looks in good shape, please move onto the solution #3.

### Remedy solution #3: Control of the inside of the electric ram

Please follow the procedure below:

1 - Remove the ram from the gate. You will have to disconnect the connectors and the back + front clevis. Ram weight is 35 kilos (70 pounds) so be careful to be assisted on this removal operation.

2 - Realization of a first test: Move manually the rod. If you can do the total run of the rod by hand without too much effort, it means the motor is moving correctly.

If you can't move it at all or can't move it completely, it means the system inside needs a better control >>

2A - Follow the document "How to Grease the Prostart Electric Ram" in order to add grease around the rod to improve the moving performance of the system.

2B - Loosen completely the 10 Hex-Screws on the back the ram (fixing the back-aluminium base)

2C - Check the tightness of the belt drive. The normal tightness is to get 1cm of motion each side of the belt drive when you press with your fingers. If the belt drive is too tightened:

2C1 - Loosen a little bit the 4 Hex-Screws fixing the motor (Just to get some loose)

2C2 - Loosen the only small Hex-Screw on top of the ram until getting a good tightness of the belt drive

2C3 - Tight back the 4 Hex-Screws fixing the motor

2C4 - Put back the back-aluminium base and repeat the first test

After connecting back the ram on the gate and repeat several gate drops, aim is to check if the problem is removed or still running.

If the problem is still running, we will ask you to connect to the Prostart Customer portal and watch the video called "Prostart Electric Ram - Complete maintenance procedure"

Pictures to help :



Step 2B



Step 2C1



Step 2C2

Resume around the cause of a bad gate drop quality :

- 1 - Ram fixation
- 2 - If not solved, checking of the internal resistor of the Drive
- 3 - If not solved, checking of the internal gearing of the Ram
- 4 - If not solved, a Prostart technician is highly recommend to come on site and make the analysis + reparation(s).