



## DURAPULSE GS3 Firmware Upgrade

GS3 drives shipped prior to June 5, 2015 were shipped with firmware version 1.05 or lower. These drives could potentially rotate their motors in an incorrect direction under certain circumstances immediately after recovering from a major drive fault. For more information, please see the GS3 Product Advisory (PA-GS-017) here:

<http://support.automationdirect.com/products/durapulse.html>

The Product Advisory gives instructions on how to determine your drives' firmware revision (P9.39) and the steps to request a Firmware Upgrade Adapter (GS3-FW-ADPTR). The Adapter allows the user to download new firmware via a standard A-to-B USB cable. You only need one Adapter no matter how many drives you are updating (the Adapter does not remain with the drive after the upgrade).

While the firmware upgrade process does not overwrite the drive's parameter values, it is highly recommended to back up your drive's configuration before proceeding. GSOF2 is available for download from the link above. GSOF2 is an easy-to-use drive tool that can upload, download, and save drive configurations. GSOF2 requires an RS485 serial connection on your PC to connect to a GS3 (see [USB-485M](#) USB-to-serial converter, or similar). The GS3's keypad can also be used to store a copy of the drive parameters. See Chapter 3 of the [GS3 User Manual](#) for COPY KEYPAD instructions.

Once you have received the Adapter, follow these steps to upgrade your GS3 drive. Please note that this process is only supported on Windows 7/8/8.1 (32-bit or 64 bit) PCs. **You must be logged into your PC with Administrator rights to install the driver software below.**

### Steps to upgrade GS3 Firmware

- 1) Go to <http://support.automationdirect.com/products/durapulse.html> to download the zip file **GS3-FWUG.zip**. This includes two versions of the GS3 firmware flashing utility (one for each major firmware revision), Silicon Labs' USB COM port driver files (CP201x\_VCP\_Windows directory), and these PDF instructions. There is also a link to a YouTube video demonstrating the firmware upgrade process.
- 2) Save the file onto your PC's hard drive. Unzip/Extract the file to your PC's hard drive (do not try to use the drivers and software directly from the zipped file/directory.)
- 3) Install the USB COM port driver (**must have Administrator rights**): For a 64-bit operating system, run **CP210xVCPInstaller\_x64.exe** that was downloaded in Step 1. For a 32-bit operating system, run **CP210xVCPInstaller\_x86.exe**. Note that the COM port will not show up in Windows Device Manager at this point. If the driver does not successfully install, check to make sure that you have Administrator rights on your PC.

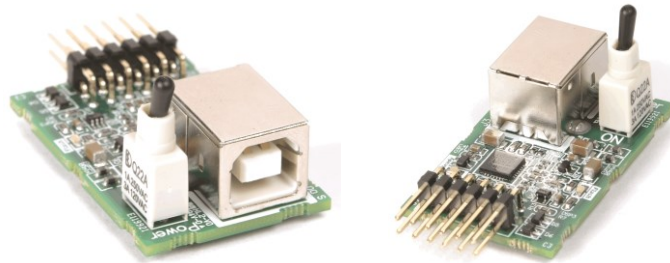
## DURAPULSE GS3 Firmware Upgrade

- 4) Write down the original firmware version of your GS3 drive here.  
The drive firmware version is located in Parameter P9.39. The current firmware version is necessary to determine which **.exe** file to use in Step 14 below. If your drive has v1.06 (v1.060) or later firmware, STOP and proceed no further with this procedure. Your drive has the correct firmware. Most drives sold in the last 10 years will report back v1.05 or v1.04. If your firmware version is v1.03 or lower, please contact the AutomationDirect Returns Department and notify them of your firmware version at [ragroup@automationdirect.com](mailto:ragroup@automationdirect.com) or (800) 633-0405 and proceed no further with this procedure at this time.
- 5) Remove power from the drive.  
(Drive power is not needed to upgrade the firmware.)
- 6) Remove the keypad from the GS3 drive. **Make sure the Power LED under the keypad is OFF before proceeding**; otherwise, dangerous voltages may still exist on the DC bus.
- 7) Remove the front cover from your GS3 drive.
- 8) Connect the GS3-FW-ADPTR to the GS3 drive as shown in the following pictures. There is only one female connector on the drive board, but the adapter module *can* be inserted incorrectly. Make sure to orient the power switch and USB connector in the correct direction as shown in the following pictures.

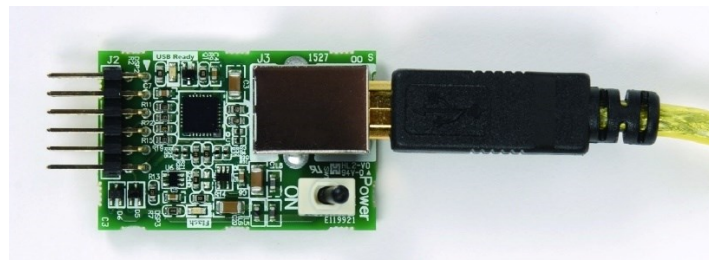
Original FW version

### GS3-FW-ADPTR

With Power Switch in the OFF position



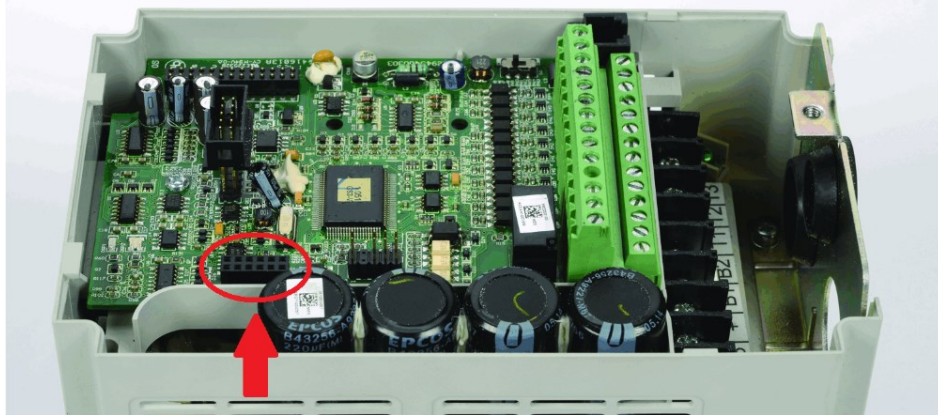
With USB cable **fully** inserted (more than half of the cable's metal connector will seat into the Adapter)



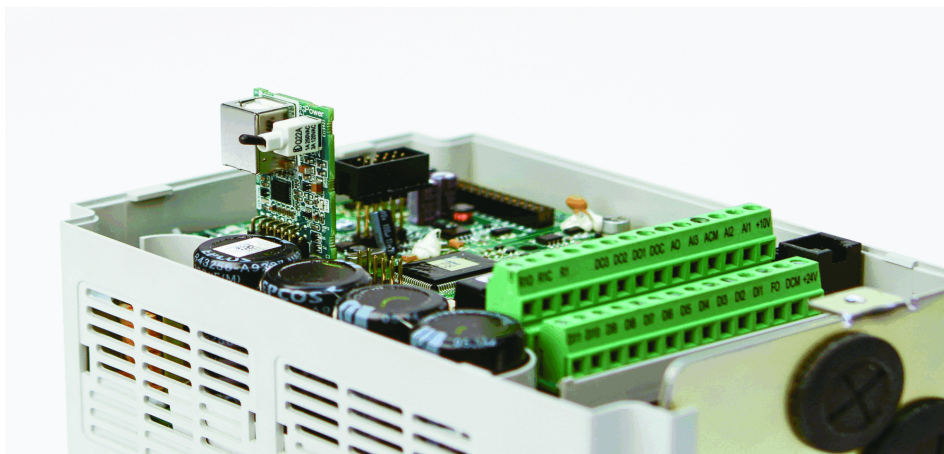
## DURAPULSE GS3 Firmware Upgrade

### For 1 – 3 HP drives

Location of the firmware upgrade connector for 1 – 3 HP drives



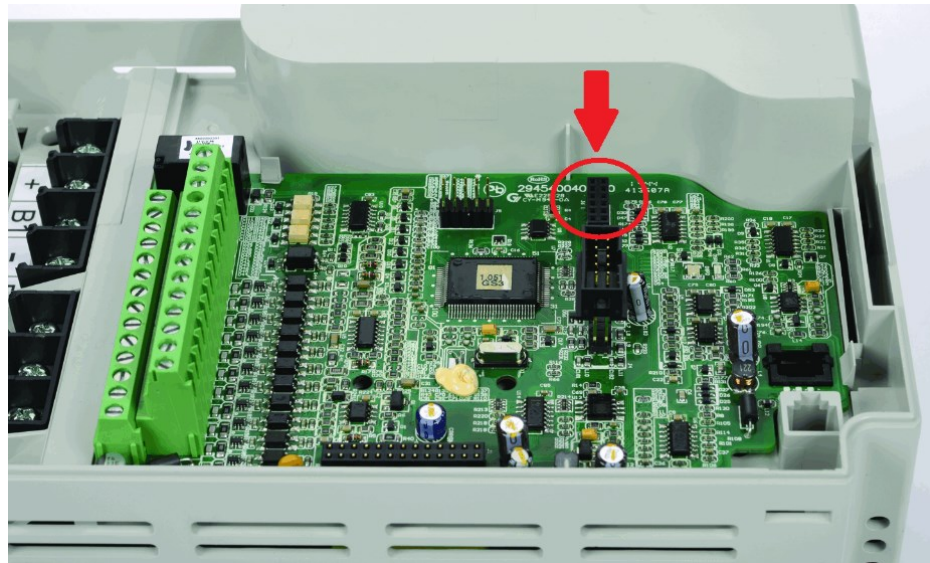
Correct orientation of the GS3-FW-ADPTR



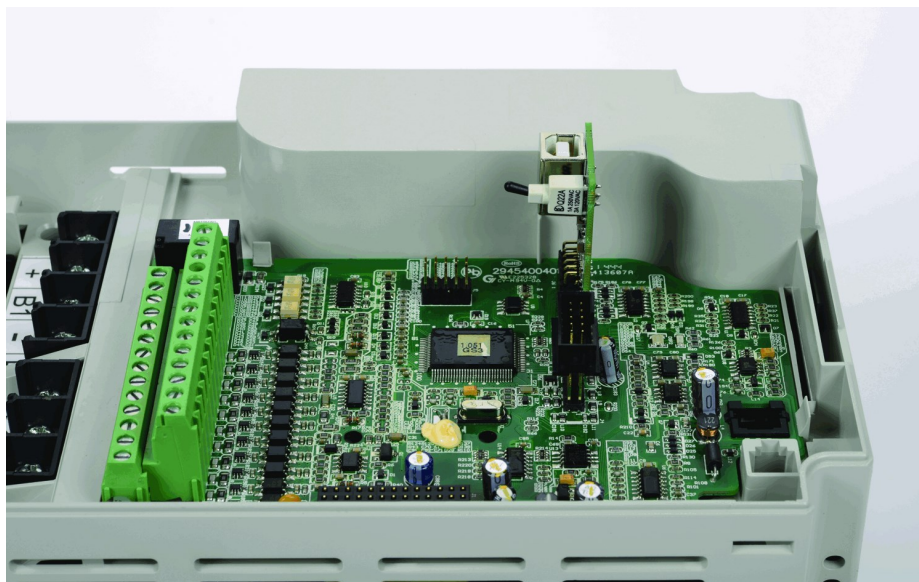
## DURAPULSE GS3 Firmware Upgrade

### For 3 – 5 HP drives

Location of the firmware upgrade connector for 3 – 5 HP drive



Correct orientation of the GS3-FW-ADPTR

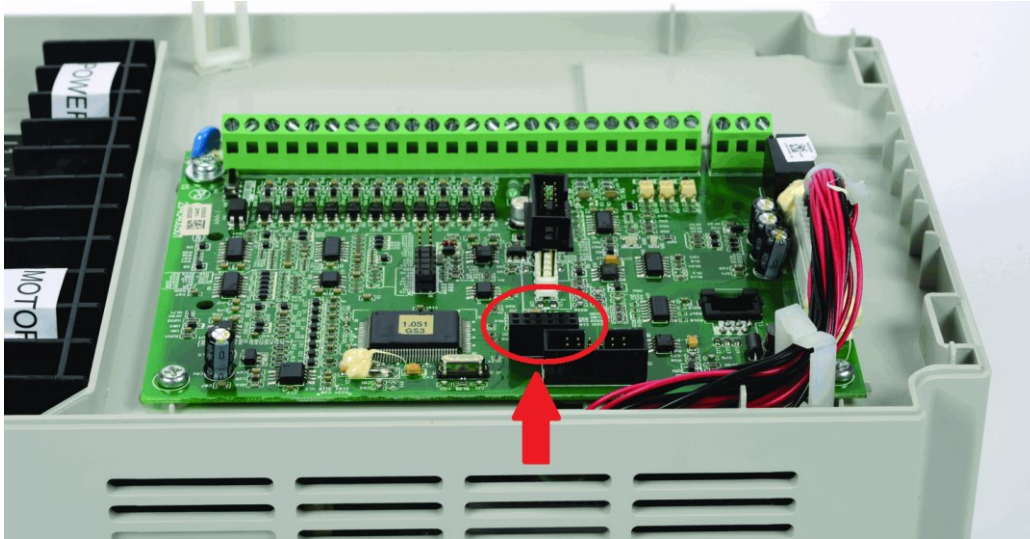




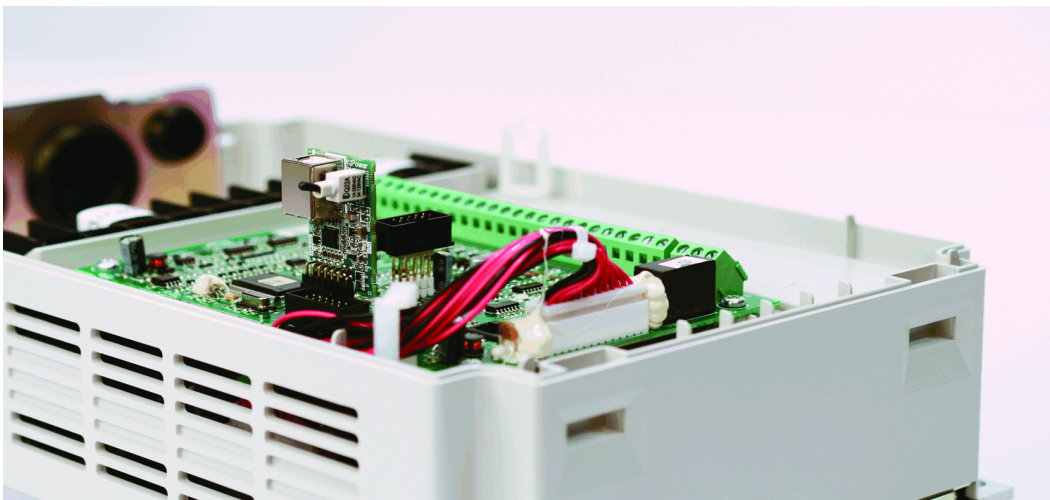
## ***DURAPULSE GS3 Firmware Upgrade***

### **For 7.5 – 100 HP drives**

Location of the firmware upgrade connector for 7.5 – 100 HP drives

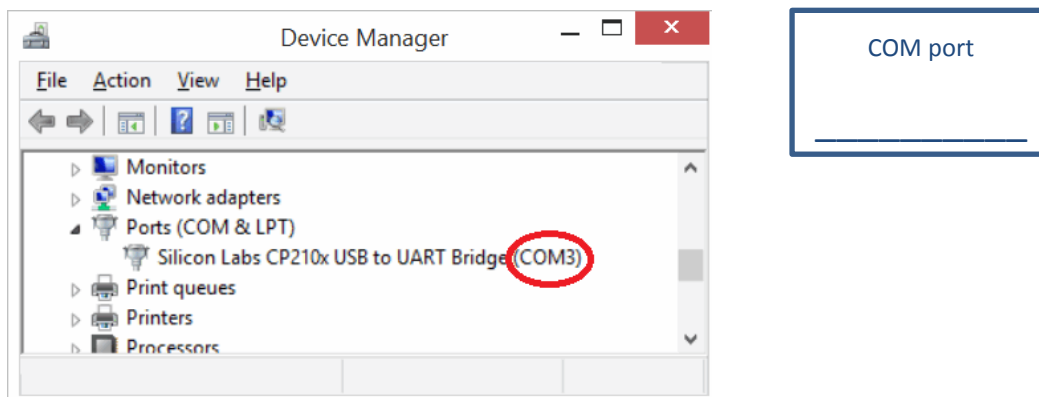


Correct orientation of the GS3-FW-ADPTR



## DURAPULSE GS3 Firmware Upgrade

- 9) Connect the USB cable between the GS3-FW-ADPTR and the PC. Do not use a USB hub, laptop docking station, port replicator, or any other device between the PC's USB port and the Adapter.
- 10) Turn ON the power switch on the GS3-FW-ADPTR. Do not apply main power to the drive. If the Adapter has been installed correctly and the switch is in the correct position (ON), one or more LEDs on the drive's main control board will light. Do not proceed until an LED on the drive's main control board is ON.
- 11) Windows will now automatically initialize the COM port driver. Make sure that Windows completely sets up the driver before continuing (this may take several minutes). Use "Device Manager" (under System Properties) on your PC to verify that the driver installed successfully.
- 12) In Device Manager, write down what COM port the driver was installed as (Windows may change this any time the GS3-FW-ADPTR is disconnected and reconnected). The example below was assigned COM3 by Windows.



If there are warnings associated with the driver, disconnect the USB cable and reinstall the driver. Do not proceed until the driver has been installed correctly (as in the picture above) and there are no warnings.

- 13) Disable all screen savers and power management features that could shut down the PC during data transfer. The download process should take less than 2 minutes.



## **DURAPULSE GS3 Firmware Upgrade**

### **WARNING!**

*DURAPULSE GS3 drive memory allocation differs from firmware version v1.04 to v1.05 and higher.*

*DO NOT UPGRADE a DURAPULSE GS3 drive that contains firmware version v1.04 or v1.045 to v1.06 firmware!*

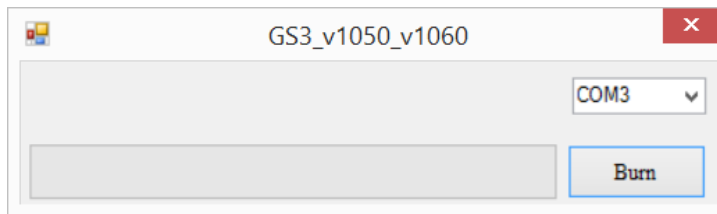
*DO NOT DOWNGRADE a DURApulse GS3 drive that contains firmware version v1.05 or v1.06 to v1.045 firmware!*

*To do so will CORRUPT the drive memory and render the drive UNSAFE for use.*

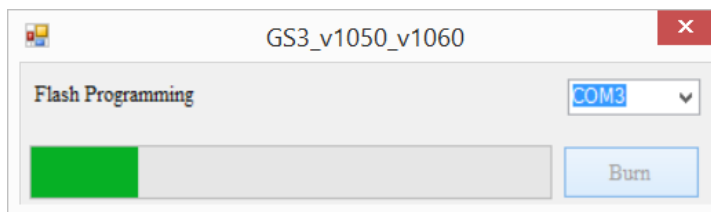
- 14) *If your original firmware version was v1.05 (from Step 4), run **GS3 v1050 v1060.exe** downloaded in Step 1. If your original firmware version was v1.04, run **GS3 v1040 v1045.exe**. If your original firmware version was v1.03 or lower, do not continue this process. Refer to the contact info in Step 4. Do not unplug the cable or the Adapter during the firmware download process.*
- 15) *Select the Adapter's COM Port from Step 12. If the COM port does not show up, close the software and re-open it: the COM port must be recognized by Windows (Adapter connected and ON) before the firmware upgrade software is opened.*

## DURAPULSE GS3 Firmware Upgrade

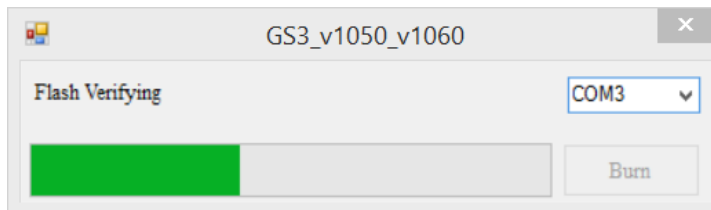
16) Press the Burn button to start upgrading firmware



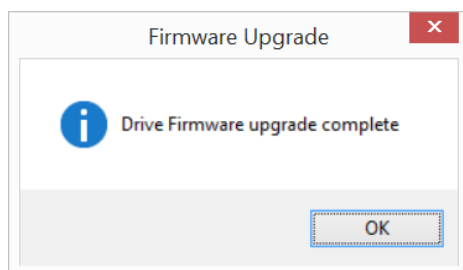
Do not disconnect the USB cable or power down the PC while the drive is being flashed. If the process is disrupted (the progress bar stops or a cable is disconnected), close and restart the software.



The software will also verify that the flash was correct:



If the verification is successful, this splash screen will appear.



Press OK, turn the Adapter power switch to OFF, unplug the cable, remove the GS3-FW-ADPTR from the drive, replace the drive's front cover, and power up the drive. Parameter P9.39 should now show the new firmware version (1.06 or v1.045).

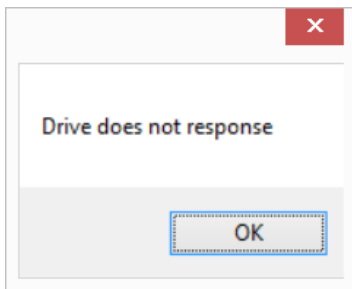
*Note: GSOFTE users will have to upgrade to v4.0.3 or later to recognize firmware version 1.06.*



## DURAPULSE GS3 Firmware Upgrade



**If the upgrade is unsuccessful or you see this message at any point:**



Press the OK button, close that window, and follow these steps:

1. Check the connection between the drive's 12-pin header connector and the GS-FW-ADPTR. Make sure that all 12 Adapter pins are engaged in the header connector and that the Adapter is in the correct orientation, as shown in the previous pictures.
2. Check the USB cable connections between GS-FW-ADPTR and the PC.
3. Check that an LED on the Adapter is ON when the GS-FW-ADPTR's power switch is ON.
4. Check that one or more LEDs on the drive's main control board are ON when the Adapter's switch is ON and connected to the PC via the USB cable.
5. Check that Device Manager shows no errors or warnings for the USB Serial driver.
6. Check that you are using a Win 7/8/8.1 PC and have installed the correct 32-bit or 64-bit driver.
7. Check that you have Administrator Rights on your PC.
8. Follow the procedure to upgrade the firmware again.