



Software Upgrade Instructions for Field Conversion of EGCP-2 Controls:

**8406-120 A, B, C, D, E, and F to 8406-120 G
8406-121 A, B, C, D, E, F, and G to 8406-121 H
8406-123 New, A, and B to 8406-123 C**

EGCP-2 Software Upgrade Kit

Download the latest software for controls 8406-120, -121, -123

Introduction

Woodward is releasing application software **149G_app.hex** for upgrading existing EGCP-2 controls in the field. This application note explains how to download the software and describes all the changes made in the software.

The software can be used to upgrade only these existing controls.

- 8406-120 A, B, C, D, E, or F can be upgraded to **8406-120 G**
 - Upgrades software 5418-149 A, B, C, D, E or F to 5418-149 G.
- 8406-121 A, B, C, D, E, F, or G can be upgraded to **8406-121 H**
 - Upgrades software 5418-149 A, B, C, D, E, or F to 5418-149 G.
- 8406-123 New, A, or B can be upgraded to **8406-123 C**
 - Upgrades software 5418-149 D, E, or F to 5418-149 G.

IMPORTANT

Woodward recommends that all existing stock be upgraded. This is only an Application software upgrade, 149G_app.hex, and will not affect any of your configuration or calibration settings. The download takes approximately 14 minutes.

A Communication Cable, Woodward part number 5417-551, can be used to download the new software.

NEW EGCP-2 PART NUMBERS	DESCRIPTION	INSTALLATION & OPERATION MANUAL	APPLICATION MANUAL	COMMUNICATION MANUAL	SECURITY LEVELS MANUAL
8406-120	150–300 Vac PT	26174	26175	26181	26108
8406-121	50–150 Vac PT	26174	26175	26181	26108
8406-123	50–150 Vac PT	26174	26175	26181	26108

Description of Software Changes

1. **Loss of “Start_All” command caused by removing the Auto discrete input of the Master EGCP-2 while the “Engine Control” state is in the Run mode**
 - a. **Present software** - Configuration of the “Auto Sequencing” setting
 - i. Enabled
 1. The “Start_All” command can be left in a “false” state if the Master unit has the Auto discrete input removed after sequencing a slave unit off. The EGCP-2 must be in an “Engine Control” state of Run when Auto is removed.
 2. This would result in the Master unit not issuing a “Start_All” command on the next Loss of Mains event. In a multiple generator standby application this would cause only the Master to start, no Slave units would start.
 - ii. Disabled
 1. The “Start_All” command can only be left in a “false” state if the Master unit has the Auto discrete input removed within a 200-millisecond window of the “Mains Aux Feedback” being received.

- b. **New software** - The “Start_All” command is now reset when the Auto discrete input is opened.
 - i. Reference Service Bulletin 01361
- 2. Unexpected Reboot when generator set is decelerating, Spindown mode**
- a. **Present software** – This can only occur on engines that are decelerating at 1 hertz per second or slower. The EGCP-2 would reboot when going through the 21.35 to 21.50 hertz range. The EGCP-2 will be in the Spindown mode at this time.
 - i. A parameter was found to be “out of range” causing an excessive interrupt rate on the processor. This prevented the toggling of a watchdog timer, which timed out and reset the processor.
 - b. **New software** - The parameter is now limited to prevent excessive interrupts from happening.
 - i. The applications were tested at 50 and 60-hertz settings, from 10 to 120 hertz, at a rate of 0.25 hertz per second.

Description of New Boot Code 2.0 Changes

The Boot code was changed from version 1.1 to version 2.0. The new Boot code was released in June of 2005.

- 8406-120 Rev F, Application software 5418-149 Rev F
- 8406-121 Rev G, Application software 5418-149 Rev F
- 8406-123 Rev B, Application software 5418-149 Rev F

Boot code 2.0 will allow the EGCP-2 to boot up even with a Modbus® * signal present on the 422 port. The previous boot code would lock up while in the boot up phase if a Modbus signal were present.

*—Modbus is a trademark of Modicon, Inc.

The EGCP-2 will go through a boot up phase whenever power is cycled. The Boot code number appears on the left display for 2 to 3 seconds while booting up.

The Boot code 2.0 **CANNOT** be downloaded in the field. If you wish to have a control upgraded there are two options:

1. Contact your Woodward customer service representative for a return authorization number (RAN) and return the unit(s) to Woodward
2. If a return is not feasible, contact your Woodward customer service representative to discuss the availability of replacement/exchange unit(s).

Compatibility with Existing Controls

The new software, 5418-149 G, will operate with all existing EGCP-2 and EGCP-1 controls.

Download Instructions

This section provides instructions for downloading the 149G_app.hex software needed to upgrade the 8406-120, -121 or -123 controls. The software in the control after the download will now be 5418-149 Rev G.

IMPORTANT

Loading the Application software will not affect any Configuration or Calibration set points.

WARNING

An unsafe condition could occur with improper use of these software tools. Only trained personnel should have access to these tools.

Downloading the 149G_app.hex Software

Requirements

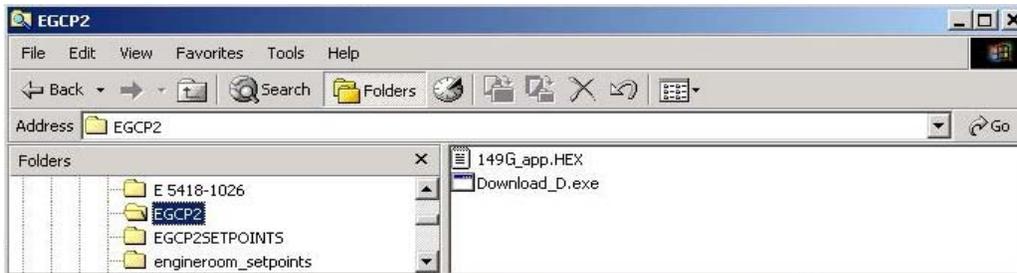
- EGCP Download Cable, Woodward part number 5417-551 (includes RS-232—RS-422 converter) or equivalent.
- Download_d.exe, part number 9926-113 Rev B or greater (download_d is a DOS-based freeware program that can upload and download configuration files through the RS-422 serial port on the EGCP-2. This program is available on the Woodward website at: www.woodward.com/software).

Select **EGCP-2 Tools**, then **Go**. Download the “**EGCP Download Program**”. The “Download_D.exe” file should be saved on your hard drive (C:/). It is suggested to save it in a directory labeled “EGCP2”.

Instructions

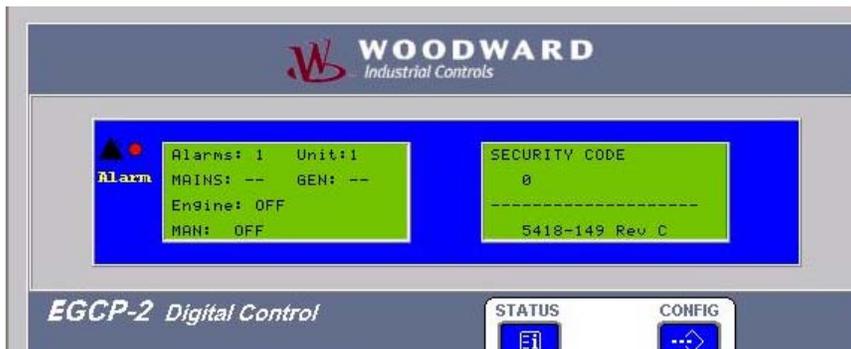
In the following example, showing the 149G_app.hex, the file is saved in a directory called EGCP2 on the C:\ drive. Store the EGCP-2 software files in the same location.

Software – 149G_app.hex

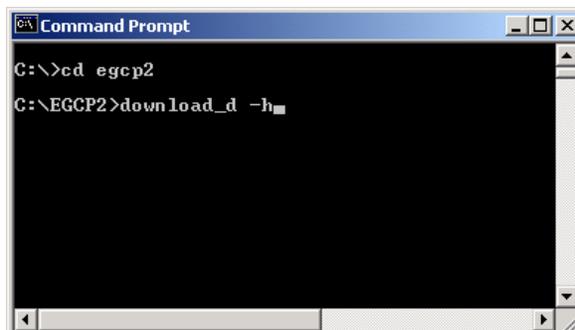


The EGCP-2 control that is being upgraded will have software 5418-149 already loaded. To view the software number that is programmed in the EGCP-2 control, press the “CONFIG” key and then press the “ENTER” key.

The software can be Rev A, B, C, D, E, or F. Here’s an example of a control installed with 5418-149 Rev C software.



Using a DOS command prompt, go to the directory where the download_d.exe file is stored and type “**download_d -h**” (or **-?**) for a complete list of the command-line options.



Establishing a Connection:

Connect the RS-232 / RS-422 cable between the EGCP-2 and the computer.

IMPORTANT

Only one EGCP-2 can be connected to the RS-422 communication network when uploading or downloading set points. If a multidrop network has been set up (linking more than one EGCP-2 on the RS-422 communication port network), it will be necessary to separate the control from the network in order to upload or download.

Downloading 149G_app.hex file from the Computer to the Control:

Using a DOS command prompt, go to the directory where the download_d.exe file is stored and type "download_d 149G_app.hex" at the DOS command prompt (see below). When the message appears as in the example below complete steps 1-6, (examples show 149E_app.hex).

```

C:\> Command Prompt - download_d 149E_app.hex
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

c:\egcp2>download_d 149E_app.hex

GCP Download Program, PN 9926-113D
Copyright (C) 2000, Woodward Governor Company.
All rights reserved. <Dec 28, 2000>

---HEX File---
Waiting on COM1

```

1. Cycle power to the EGCP-2.
2. When the power is restored to the control, the download will begin.
3. On the EGCP-2s left screen, the text "APPLICATION" will be displayed.
4. A scroll bar will appear on the computer screen showing the progress of the download.

```

C:\> Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

c:\egcp2>download_d 149E_app.hex

GCP Download Program, PN 9926-113D
Copyright (C) 2000, Woodward Governor Company.
All rights reserved. <Dec 28, 2000>

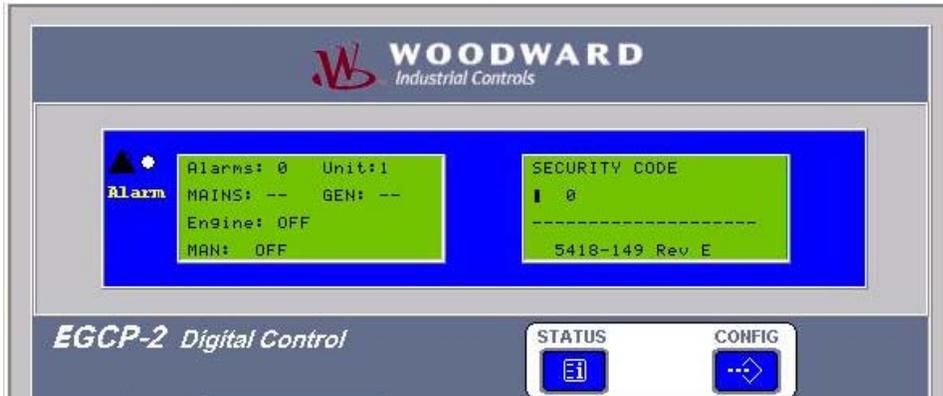
---HEX File---

 1  2  3  4  5  6  7  8  9
-----
Download Statistics
-----
      6291 lines transferred
      020000 lowest address
      0511FC highest address
-----
Elapsed Time: 14 minutes, 55 seconds
-----

c:\egcp2>

```

5. After the download is complete, the control is ready to operate. **The set points and calibration adjustments have not been changed.**
6. The EGCP-2 will display software part number, 5418-149 Rev G.



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Send comments to: icinfo@woodward.com

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