

# Firmware Update Manual: CPU300

## Contents

Introduction .....	1
How to Check for Current Firmware Revision .....	2
Upgrading Firmware for CPU300 Series .....	5
Firmware Upgrade Using the System Menu .....	5
System Register Bits Used for Firmware Upgrade.....	5
User Configurable Splash Screen .....	6

## Introduction

Use these instructions to update or change firmware on the Horner OCS CPU300 Controllers.

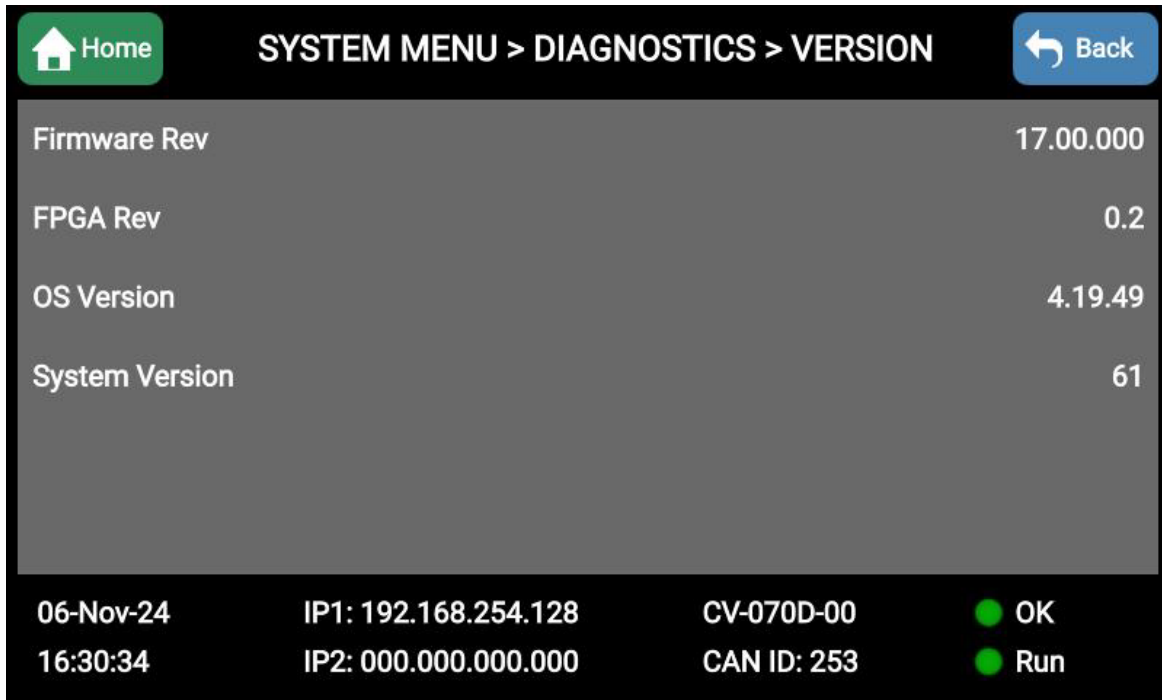
**WARNING:** Firmware updates should only be performed when the equipment being controlled by the OCS is in a safe, non-operational state. Communication or hardware failures during the firmware update process can cause the controller to behave erratically resulting in injury or equipment damage. Confirm that the functions of the equipment work correctly following a firmware update before returning the OCS to operational mode.

## How to Check for Current Firmware Revision

Note: Controllers require a minimum of Cscape 10.3 or later, along with the associated firmware.

### Method 1: Checking the Firmware Version from the HMI Connect display

To check the firmware revision (rev) on a CPU300 controller HMI Connect display, open the **System Menu > Diagnostics > Version**.



SYSTEM MENU > DIAGNOSTICS > VERSION	
Firmware Rev	17.00.000
FPGA Rev	0.2
OS Version	4.19.49
System Version	61

06-Nov-24	IP1: 192.168.254.128	CV-070D-00	● OK
16:30:34	IP2: 000.000.000.000	CAN ID: 253	● Run

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**Method 2: Checking the Firmware Version from the CPU300 Mini Display**

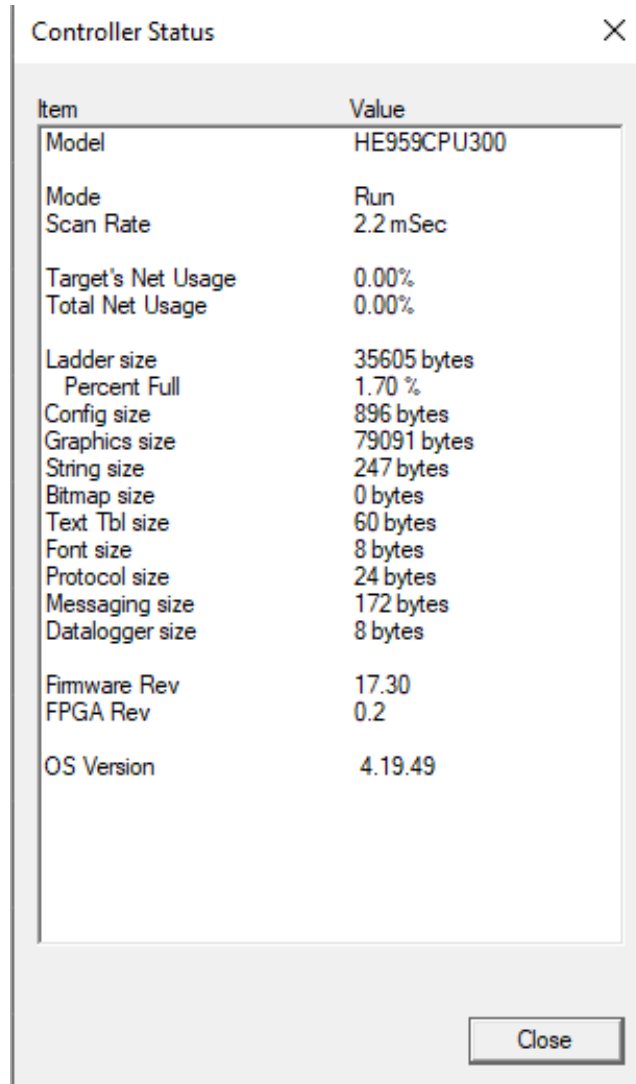
To check the firmware version (rev) on a CPU300 controller mini display, open **System Menu > View Status**



**Method 3: Checking the Firmware Version from Cscope**

To check the firmware version (rev) from Cscope, connect Cscope with the controller through USB Type-C, Serial, or Ethernet communication medium.

In the Cscope ribbon toolbar, navigate to **Debug > Status Open**



**Method 4: Checking the Firmware Version from the System Register**

To check the firmware version (rev) from the System Register:

1. Connect Cscope with the controller through a USB Type-C, Serial, or Ethernet communication medium.
2. From Data Watch, add the System Register %SR38 showing the controller firmware version  
**Note:** %SR38 can be added to graphics to display the firmware version in the user screen.

## Upgrading Firmware for CPU300 Series

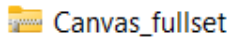
**NOTE:** Use a FAT-formatted single-partition microSD card.

It is essential that there is no bootable partition or associated boot files on the card or drive.

1. Download the zipped folder from the firmware website:  
USA: <https://hornerautomation.com/controller-firmware-cscan/>  
EU: <https://hornerautomation.eu/support/firmware/>

**NOTE:** When the file downloads, it will have the following name (or a variation thereof):  
FWXX.XX\_Canvas\_fullset.zip (The initial filename is preceded by a version number so that the user knows what version is being downloaded.)

2. Extract the folders from the zipped file
3. Copy the following zip file into the root directory of the microSD card.



4. Insert the microSD card into the CPU300 OCS.
5. Use one of the following methods to update the firmware:
  - [System Menu](#)
  - [System Register Bits](#)

## Firmware Upgrade Using the System Menu

**NOTE:** These steps only apply if an HMI Connect display is installed.

1. Insert the microSD card into the CPU300 OCS.
2. Press and hold the **System** button for several seconds to display the **System Recovery** screen.
3. Select **System Upgrade SD**.

**NOTE:** The firmware upgrade begins after a brief announcement.

## System Register Bits Used for Firmware Upgrade

- %SR154.9 - Set by user to upgrade firmware using microSD card.

- %SR154.10 - Set by user to upgrade firmware using USB.
- %SR154.11 - Set by firmware to request confirmation for upgrading firmware, resetting %SR154.9 / %SR154.10. When user resets SR154.11, the upgrade process begins.
- %SR154.12 – Setting this bit high (ON) will not retain programs / variables after firmware update. Setting this bit low (OFF) will retain programs / variables after firmware update.
- %SR154.14 – If the firmware upgrade is not required, then %SR154.14 will be set. For example: In case firmware on OCS and on the microSD / USB is same.
- %SR154.15 – This bit will be set by firmware if there is any error in updating firmware such as a missing firmware file.

## User Configurable Splash Screen

A custom splash screen can be updated on the CPU300 OCS units if an HMI Connect display is installed.

**NOTE:** The user must create the **splash.jpg** with the correct resolution as per the model used.

OCS	Resolution
CPU300 4	480x272
CPU300 7	800x480
CPU30010	1024x600
CPU300 15	1024x768

1. The custom splash screen must be a .jpg image file with the filename **splash.jpg**.
2. Place the custom files on a microSD card, then into the OCS.
3. Press and hold the **System Key** until the **System Recovery Screen** is displayed.
4. Select **Replace System Graphics SD** to replace the splash screen from a microSD card.

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User-created splash screen and function keys can also be updated on the CPU300 OCS units.


Users must replace the .PNG images located in the **keys** folder of the CPU300 firmware files. Only the **keys** folder is required from the CPU300 firmware files.


**Note:** The **keys** folder can be found at **Canvas\_fullset > Options > keys**.


**Important!** Replacements can be made to the following customizable images and must:


- be named exactly the same as the original images,
- saved as a .PNG image inside the keys folder
- saved as a 60x60 resolution

 Arrow

 ArrowBottom

 ArrowLeft

 ArrowRight

 ArrowTop

 F1

 F2


 F3

 F4

 F5

 F6

 F7

 System

1. Place the keys folder into the root directory of a microSD card.
2. Insert the MicroSD card into the OCS.
3. Press and hold the **System Key** until the **System Recovery Screen** is displayed.
4. Select **Replace System Graphics SD** to replace the splash screen from a microSD card.

## Technical Support

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