



## ***MPC-20 Software Configuration Tool Guide***

In order to consistently bring you the highest quality, full-featured products, we reserve the right to change our specifications and designs at any time. The latest version of this manual can be found at [www.fwmurphy.com](http://www.fwmurphy.com).

**Warranty** - A limited warranty on materials and workmanship is given with this Murphy product. A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>.



**BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT:**

- Read and follow all installation instructions.
- Please contact Enovation Controls immediately if you have any questions.
- A visual inspection of this product for damage during shipping is recommended before installation.
- It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

Contact Enovation Controls Technical Service if you have any questions or concerns at: +1 918-317-4100.

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## About the Murphy PowerCore™ MPC-20 Controller

Murphy's PowerCore™ MPC-20 is an all-purpose industrial controller that stands up to the harshest environments. This powerful controller is targeted for engine-driven pumps and irrigation, with the versatility to work in most engine-driven applications.

The MPC-20 is configurable by the user to meet the most versatile applications. The ease of initial setup of the I/O does not leave the user feeling paralyzed when an input is needed for a specific function. This allows for quicker uptime and less headache while on the manufacturing floor or in the field.

## About the PowerVision Configuration Studio™

The PowerVision Configuration Studio is a PC-based software program suite for configuring the PowerView™ Model PV350, PV380, PV450, PV780 display units and the PowerCore™ MPC-20. The program is a member of the MurphyNet™ Software Suite of display configuration tools. The software interface enables users to modify the display to their own specific needs.

The PowerVision Configuration Studio generates configuration updates for the display units. These updates can be transferred to the display unit by either a direct cable connection between the PC and the display unit or by copying a configuration from the PC to a USB flash drive and then connecting the USB flash drive to the display unit's USB port.

### Intended Use

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The following document is intended as a reference manual only.

## Using PowerVision with the MPC-20 Controller

The simplified version of PowerVision that will be utilized to create the configuration for the MPC-20 Controller will be available via download from our website (Forum), <http://forum.fwmurphy.com/viewforum.php?f=49>

The following screen will appear:

The screenshot displays the forum interface for 'PowerVision for Controllers (MPC-20)'. At the top, there is a navigation bar with the Murphy logo and a 'BACK TO THE MURPHY WEBSITE' link. Below this, the forum title and breadcrumb trail are shown: 'Board index < PowerVision for Controllers < PowerVision for Controllers (MPC-20)'. A search bar and a 'NEWTOPIC' button are present. The main content area features an announcement table with columns for 'ANNOUNCEMENTS', 'REPLIES', 'VIEWS', and 'LAST POST'. A single announcement is listed: 'PowerVision Studio for MPC-20' by 'jpratt', posted on 'Wed Mar 26, 2014 6:57 am', with 0 replies and 20 views. Below the table, there are sorting options: 'Display topics from previous: All Topics', 'Sort by: Post time', and 'Descending'. A 'Go' button is also visible. At the bottom of the forum post area, there is a 'FORUM PERMISSIONS' section listing various restrictions such as 'You cannot post new topics in this forum'. The footer of the forum page includes a 'Board index' link and a copyright notice: 'The team • Delete all board cookies • All times are UTC - 5 hours [ DST ]'.

Click PowerVision Studio for MPC-20, and the following screen will appear:

**MURPHY**  
by ENOVATION CONTROLS

BACK TO THE MURPHY WEBSITE »

Board index < PowerVision for Controllers < PowerVision for Controllers (MPC-20)

FAQ Register Login

**PowerVision Studio for MPC-20** 1 post • Page 1 of 1

POSTREPLY Search this topic... Search

**PowerVision Studio for MPC-20**  
by **jpratt** » Wed Mar 26, 2014 6:57 am

FWMurphy is proud to announce the release of PowerVision Studio for MPC-20. The MPC-20 Edition has a number of features beneficial to any MPC-20 user.

- Provides a streamlined user interface removing the need to know PowerVision Programming and Page Flow concepts.
- Ability to set a new factory reset defaults customized to the application needs when loading a new configuration.
- Ability to set a new Splash Screen to show at startup.
- Ability to change parameters in the 6-Up screens.
- Allows for altering text strings in English and Spanish.
- Allows faster setup time when loading a new configuration on the factory floor vs. manually setting values through the MPC20 Front Panel.
- First free-of-charge downloadable product configuration tool based off of PowerVision Studio offered by EnovationControls.

PowerVision.Installer.MPC20.2.7.10382.msi.zip

You must [register](#) and be logged in to download this file

[Manual Coming Later Today]

You must be logged in and have sufficient access to download files.

Last edited by **murphyadmin** on Thu Mar 27, 2014 1:05 pm, edited 1 time in total.

Jake Pratt  
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**jpratt**  
Murphy Development  
Posts: 192  
Joined: Mon Jun 21, 2010 12:18 pm

POSTREPLY 1 post • Page 1 of 1

In order to download the PowerVision Studio for MPC-20 file, you must be registered and logged in. Registration causes the Administrator to receive an email, and you will in turn receive an email back from the Administrator after your registration is activated for the MPC-20. After logging in and registering, the link to the file becomes active, as shown below:

[PowerVision.Installer.MPC20.2.7.10382.msi.zip](#)  
(62.78 MiB) Downloaded 2 times

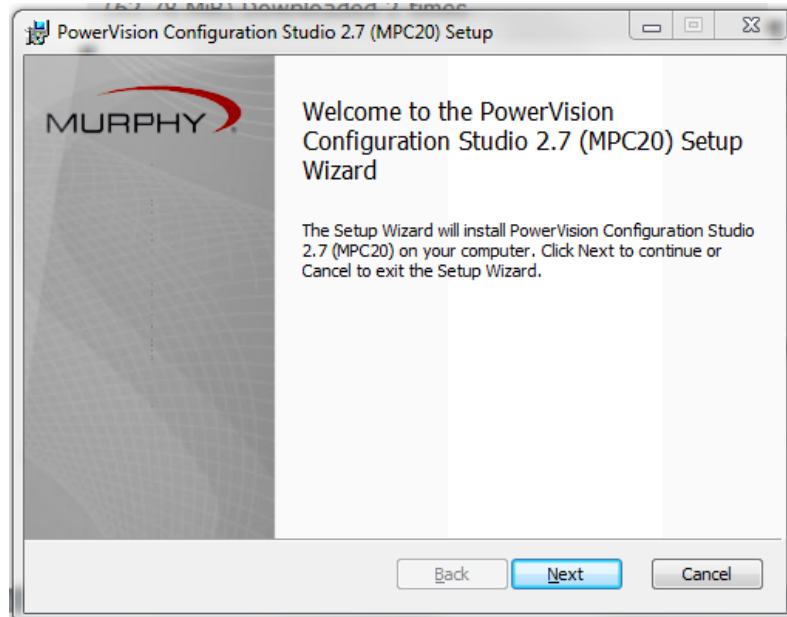
**This version number may differ from the actual current version number on the website.**

Click on the link to begin the download. When prompted, click Save to save the file then Open after the download is complete. The Windows Installer screen will appear:

Name	Type	Compressed size
PowerVision.Installer.MPC20.2.7.10...	Windows Installer Package	64,290 KB

Double click the PowerVision.Installer.(version number).... file to begin installing the package.

When prompted, click Run, and the following screen will appear:



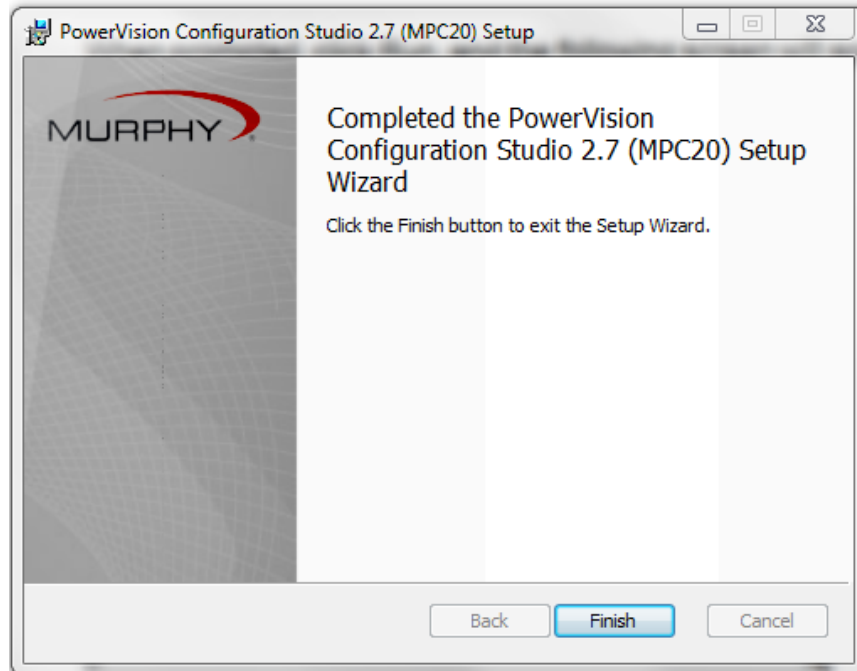
Click Next, and then accept the Terms of Agreement.

Accept or change the Destination Folder, then click Next.

Click Install to begin the installation.

When the install is complete, the following screen will appear:






Click Finish.

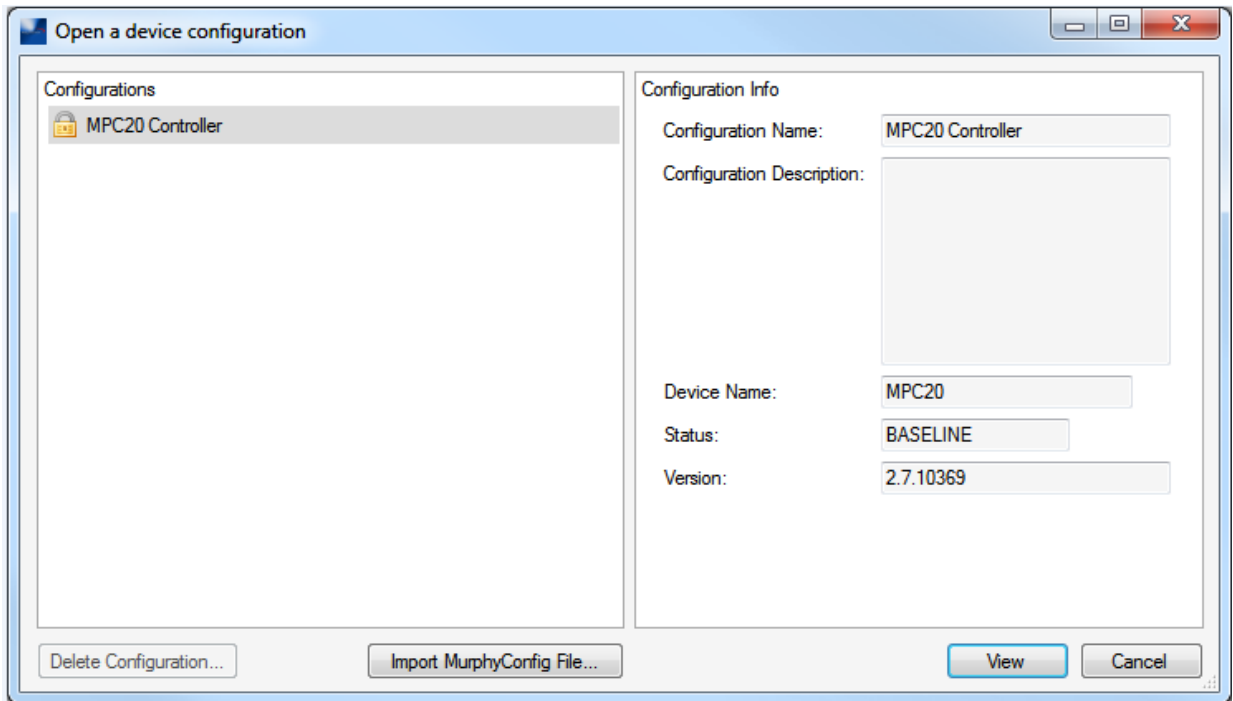
Open the updated PowerVision file, and continue with the next section.

## Developing the MPC-20 Configuration

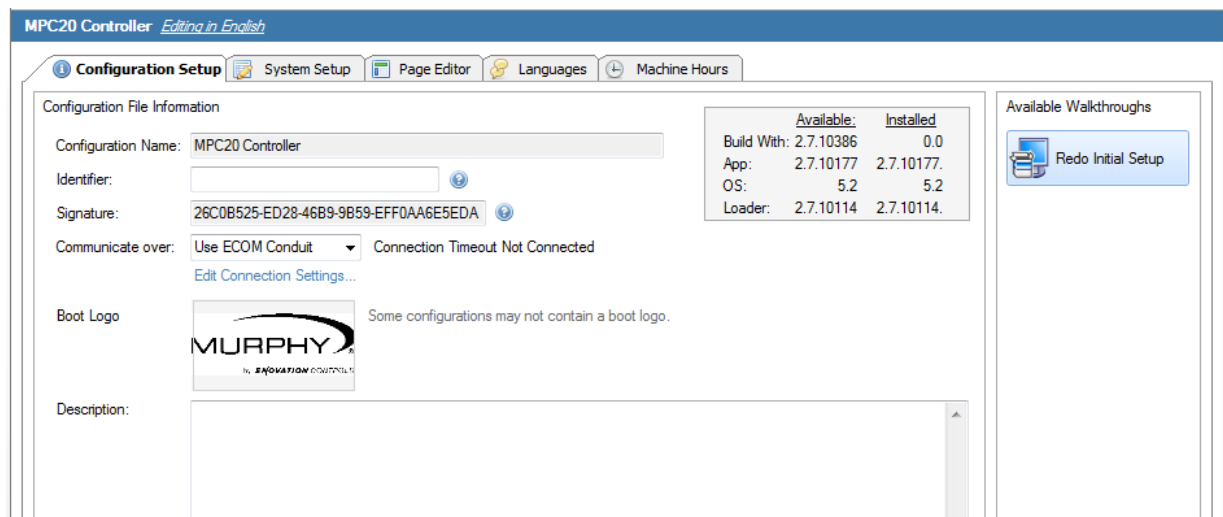
After PowerVision has been successfully downloaded and opened on your PC, follow these steps to create the MPC-20 configuration:



1. From the PowerVision toolbar, click .
2. The Open a Device Configuration screen will appear as shown below. Highlight MPC-20 Controller and click View.



3. The MPC-20 Controller configuration screen will appear as follows:



There are two options for configuring the software, and the next two sections describe each:

- Walkthrough: a series of questions (similar to a Wizard) that walks through each component, or
- Follow the instructions established in this manual to walk through each tab/component.

## Walkthrough Method

Notice the Available Walkthroughs column on the right side of the screen. Clicking the Redo Initial Setup button will display the following screen:

The screenshot shows the 'Initial Setup' window. On the left, a sidebar titled 'System Setup' has a tab for 'System Setup'. The main area is divided into sections: 'Units Setup' with dropdowns for Pressure Units (PSI), Temperature Units (Fahrenheit), Level Units (Feet), and Flow Units (gal/min (US)); 'Language Setup' with a dropdown for Language (English); and 'System Setup' with fields for Standby / Stopped Time (00:30:00), Beeper (Enable), and Auto/Manual after power cycle (Manual). A scrollable text box at the bottom provides definitions for the unit types. At the bottom right are buttons for Cancel, Back, Next, and Finish.

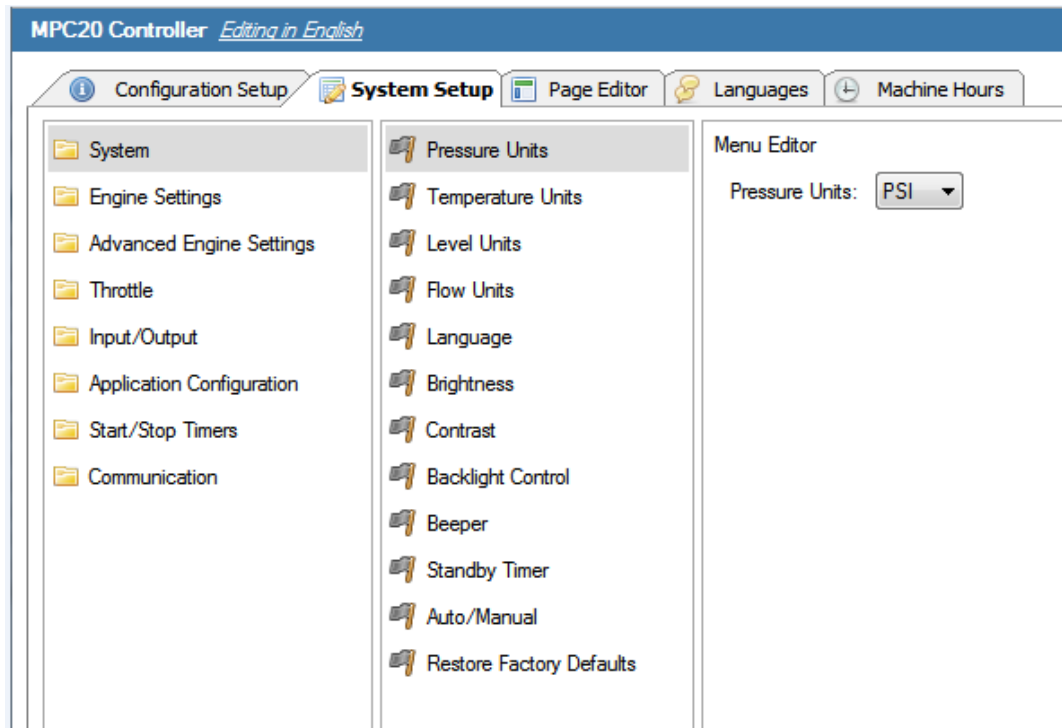
This procedure is similar to a Wizard and will display each field needed in the configuration. When the Units, Language and System Setup fields are chosen, click Next.

The screenshot shows the 'Application Selection' window. On the left, a sidebar titled 'Application Selection' has two tabs: 'System Setup' and 'Application Selection'. The main area is titled 'Application' and contains a dropdown menu for 'Application Type' set to 'Pump All Purpose'. At the bottom right are buttons for Cancel, Back, Next, and Finish.

The Application Selection choices will appear next. When done, click Next, and work through entering most of the configuration needed to setup the controller for the application. Click Finish when all fields have been assigned.

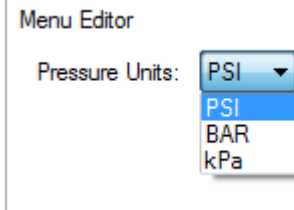
## Non-Walkthrough Method

4. Click the System Setup tab, and the following screen will appear:

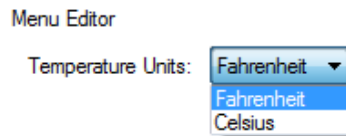


## System Setup

5. Highlight System in the far left column, and the following choices will appear in the second column:
  - a. Pressure Units
  - b. Temperature Units
  - c. Level Units
  - d. Flow Units
  - e. Brightness
  - f. Contrast
  - g. Backlight Control
  - h. Beeper
  - i. Standby Timer
  - j. Auto/Manual
  - k. Restore Factory Defaults
  
6. Highlight Pressure Units in the second column, and the following will appear in the third column:



7. Select PSI, BAR or kPa.
8. Highlight Temperature Units in the second column, and the following will appear in the third column:



9. Select Fahrenheit or Celsius.
10. Continue by highlighting each selection in the second column and choosing its corresponding choices in the third/fourth column. The available choices for the entire configuration are documented below:
  - a. System
    - i. Pressure Units
      1. PSI
      2. BAR
      3. kPa
    - ii. Temperature Units
      1. Fahrenheit
      2. Celsius
    - iii. Level Units
      1. Feet
      2. Meters
    - iv. Flow Units
      1. Gal/min (US)
      2. Gal/min (UK)
      3. LPM
    - v. Brightness
      1. 0-100
    - vi. Contrast
      1. 140-180
    - vii. Backlight Control
      1. Enable
      2. Disable
    - viii. Beeper

- 1. Enable
    - 2. Disable
  - ix. Standby Timer
    - 1. Enter the HH:MM:SS
  - x. Auto / Manual
    - 1. Auto
    - 2. Manual
  - xi. Restore Factory Defaults
    - 1. Restore Factory Defaults
- b. Engine Settings
  - i. Engine Type
    - 1. J1939
    - 2. Mechanical
  - ii. Engine Manufacturer
    - 1. Caterpillar
    - 2. Cummins
    - 3. John Deere
    - 4. Deutz
    - 5. Kubota
    - 6. Yanmar
    - 7. JCB
    - 8. Volvo
    - 9. FPT
    - 10. Isuzu
    - 11. GM
    - 12. Other
  - iii. Engine Emission
    - 1. Tier 3 or Less
    - 2. Tier 4 / EU Stage IIIA, IIIB
    - 3. Interim Tier 4
  - iv. DEF Gauge
    - 1. No
    - 2. Yes
  - v. Tier 4 Regeneration (appears when Tier 4/EU Stage IIIA, IIIB or Interim Tier 4 Engine Emission is chosen)
    - 1. Auto/Inhibit Regen
      - a. Auto Regen
      - b. Inhibit Regen
    - 2. Request Regen
  - vi. Speed Source
    - 1. J1939
    - 2. Alternator
    - 3. Magnetic Pickup
  - vii. Percent Soot Gauge
    - 1. No
    - 2. Yes

- viii. Speed Calibration (appears if Alternator or Magnetic Pickup Speed Source is chosen)
  - 1. Enter 1-255
- ix. Minimum Engine Speed
  - 1. Enter 0-6000 RPM
- x. Maximum Engine Speed
  - 1. Enter 0-6000 RPM
- xi. Warm Up Speed
  - 1. Enter 0-6000 RPM
- xii. Warm Up Delay
  - 1. Enter the HH:MM:SS
- xiii. Cooldown Speed
  - 1. Enter 0-6000 RPM
- xiv. Cooldown Delay
  - 1. Enter the HH:MM:SS
- xv. Warnings and Shutdowns
  - 1. Low Fuel Level Shutdown
  - 2. Low Fuel Level Warning
  - 3. High Battery Warning
  - 4. Low Battery Warning
  - 5. Weak Battery Warning
  - 6. Underspeed Shutdown
  - 7. Overspeed Shutdown
- c. Advanced Engine Settings
  - i. J1939 Address Claim
    - 1. Enter J1939 address
  - ii. ECU Source Address
    - 1. Enter ECU source address
  - iii. ECU Hour Select
    - 1. ECU Hours
    - 2. Internal
  - iv. Crank Attempts
  - v. Crank Disconnect Speed
  - vi. Clutch Engage Speed
  - vii. Clutch Disengage Speed
  - viii. Run to Destruct
    - 1. Enable
    - 2. Disable
  - ix. Timers
    - 1. Auto Start Delay
    - 2. Auto Stop Delay
    - 3. Minimum Run Time
    - 4. ECU Stabilize Timer
    - 5. Crank Time
    - 6. Crank Rest
    - 7. Prestart Delay 1

8. Prestart Delay 2
9. Prestart Delay 2 Mode
  - a. Crank Through
  - b. PreCrank
10. Energize to Stop Time
11. Spindown Timer
12. Post Crank Lockout Setup
  - a. Post Crank Lockout Time
  - b. Post Crank Lockout 1 - 5
    - i. Lockout Parameter
      1. Disabled
      2. Low Fuel Level
      3. Fuel Leak
      4. Low Fuel Level Digital
      5. Fuel Filter Restriction
      6. Low Lube Oil Level
      7. Low Coolant Level
      8. Water In Fuel
      9. No Flow
      10. Engine Over Speed
      11. Engine Over Speed Digital
      12. Air Filter Restriction
      13. Battery Charger Fail
      14. Oil Filter Restriction
      15. User 1
      16. User 2
      17. User 3
      18. User 4
      19. User 5
      20. User 6
      21. High Oil Pressure
      22. High Oil Temperature
      23. Air Damper Closed
      24. Low Oil Pressure
      25. Underspeed
      26. High Engine Temp
      27. High Discharge Pressure
      28. Low Discharge Pressure
      29. High Suction Pressure
      30. Low Suction Pressure



- 31. High Level Alarm
- 32. Low Level Alarm
- 33. High Flow Alarm
- 34. Low Flow Alarm
- 35. High Pump Housing Temperature
- 36. High Pump Oil Temperature
- ii. Expires at Load
  - 1. Enabled
  - 2. Disabled
- 13. Post Warmup Lockout Setup
  - a. Post Warmup Lockout Time
  - b. Post Warmup Lockout 1 - 5
    - i. Lockout Parameter
      - 1. Disabled
      - 2. Low Fuel Level
      - 3. Fuel Leak
      - 4. Low Fuel Level Digital
      - 5. Fuel Filter Restriction
      - 6. Low Lube Oil Level
      - 7. Low Coolant Level
      - 8. Water In Fuel
      - 9. No Flow
      - 10. Engine Over Speed
      - 11. Engine Over Speed Digital
      - 12. Air Filter Restriction
      - 13. Battery Charger Fail
      - 14. Oil Filter Restriction
      - 15. User 1
      - 16. User 2
      - 17. User 3
      - 18. User 4
      - 19. User 5
      - 20. User 6
      - 21. High Oil Pressure
      - 22. High Oil Temperature
      - 23. Air Damper Closed
      - 24. Low Oil Pressure
      - 25. Underspeed
      - 26. High Engine Temp
      - 27. High Discharge Pressure

- 28. Low Discharge Pressure
  - 29. High Suction Pressure
  - 30. Low Suction Pressure
  - 31. High Level Alarm
  - 32. Low Level Alarm
  - 33. High Flow Alarm
  - 34. Low Flow Alarm
  - 35. High Pump Housing Temperature
  - 36. High Pump Oil Temperature
  - ii. Expires at Load
    - 1. Enabled
    - 2. Disabled
14. Bubble Lockout Setup
- a. Bubble Lockout Time
  - b. Bubble Lockout 1 - 5
    - i. Disabled
    - ii. Low Fuel Level
    - iii. Fuel Leak
    - iv. Low Fuel Level Digital
    - v. Fuel Filter Restriction
    - vi. Low Lube Oil Level
    - vii. Low Coolant Level
    - viii. Water In Fuel
    - ix. No Flow
    - x. Engine Over Speed
    - xi. Engine Over Speed Digital
    - xii. Air Filter Restriction
    - xiii. Battery Charger Fail
    - xiv. Oil Filter Restriction
    - xv. User 1
    - xvi. User 2
    - xvii. User 3
    - xviii. User 4
    - xix. User 5
    - xx. User 6
    - xxi. High Oil Pressure
    - xxii. High Oil Temperature
    - xxiii. Air Damper Closed
    - xxiv. Low Oil Pressure
    - xxv. Underspeed

- xxvi. High Engine Temp
  - xxvii. High Discharge Pressure
  - xxviii. Low Discharge Pressure
  - xxix. High Suction Pressure
  - xxx. Low Suction Pressure
  - xxxi. High Level Alarm
  - xxxii. Low Level Alarm
  - xxxiii. High Flow Alarm
  - xxxiv. Low Flow Alarm
  - xxxv. High Pump Housing Temperature
  - xxxvi. High Pump Oil Temperature
- x. Warnings and Shutdowns
    - 1. Low Fuel Level Warning
    - 2. Low Fuel Level Shutdown
    - 3. High Battery Warning
    - 4. Low Battery Warning
    - 5. Weak Battery Warning
    - 6. LOP High Speed
    - 7. LOP Warning, High Speed
    - 8. LOP Shutdown, High Speed
    - 9. Low Oil Pressure Warn
    - 10. Low Oil Pressure Shut Down
    - 11. High Oil Temperature Warning
    - 12. High Oil Temperature Shutdown
    - 13. High Oil Pressure Warning
    - 14. High Oil Pressure Shutdown
    - 15. High Engine Temperature Warning
    - 16. High Engine Temperature Shutdown
    - 17. Low Engine Temperature Warning
    - 18. Underspeed Shutdown
    - 19. Overspeed Shutdown
- d. Throttle
    - i. Throttle Type
      - 1. J1939 TSC1
      - 2. Pulse Inc/Dec
      - 3. Analog, 0-5VDC
    - ii. Auto Throttle Type
      - 1. Non PID Auto Throttle
      - 2. PID Auto Throttle
    - iii. Target RPM Step Size
    - iv. Throttle Deadband RPM
    - v. Throttle Inc/Dec Pulse
    - vi. Throttle Inc/Dec Pulse Delay
    - vii. Throttle Inc Rate
    - viii. Throttle Dec Rate

e. Input / Output

i. Digital Inputs

Digital Input 1 - 6

a. Function

- i. Disabled
- ii. Single Contact Start/Stop
- iii. Auto Start Momentary / Maintained
- iv. Auto Stop Momentary / Maintained
- v. Remote Alarm Acknowledge
- vi. Low Fuel Level
- vii. Fuel Leak
- viii. Fuel Filter Restriction
- ix. Low Lube Oil Level
- x. Low Coolant Level
- xi. Emergency Stop
- xii. Idle Engine
- xiii. Water in Fuel
- xiv. No Flow
- xv. Engine Over Speed
- xvi. Crank Termination
- xvii. Air Damper Closed
- xviii. Air Filter Restriction
- xix. Battery Charger Fail
- xx. Oil Filter Restriction
- xxi. Run to Destruct Override
- xxii. User 1
- xxiii. User 2
- xxiv. User 3
- xxv. User 4
- xxvi. User 5
- xxvii. User 6
- xxviii. Speed 1
- xxix. Speed 2
- xxx. Speed 3
- xxxi. Speed 4
- xxxii. Speed 5

b. Active

- i. B-
- ii. B+
- iii. Open

c. Action

- i. Not Used
- ii. Warning
- iii. Shutdown
- iv. Shutdown, Controlled
- v. Relay Control

## ii. Analog Inputs

### 1. Analog Input 1 - 8

#### a. Function

NOTE: If a value other than Disabled is selected, there will be a Sensor Setup menu at the end, where the user can configure their sensors (e.g. if they pick 4-20mA Oil Pressure, there will be a 4-20mA Oil Pressure item under Sensor Setup, where they can configure the 4-20mA Oil Pressure input).

- i. Disabled
- ii. 4-20mA Oil Pressure
- iii. 0-5V Oil Pressure
- iv. 4-20mA Coolant Temperature
- v. 0-5V Coolant Temperature
- vi. 4-20mA Fuel Level
- vii. 0-5V Fuel Level
- viii. 4-20mA Oil Temperature
- ix. 0-5V Oil Temperature
- x. 4-20mA Suction Pressure
- xi. 0-5V Suction Pressure
- xii. 4-20mA Discharge Pressure
- xiii. 0-5V Discharge Pressure
- xiv. 4-20mA System Level
- xv. 4-20mA Flow Rate
- xvi. 4-20mA Pump Oil Temperature
- xvii. 0-5V Pump Oil Temperature
- xviii. 4-20mA Pump Housing Temperature
- xix. 0-5V Pump Housing Temperature
- xx. 4-20mA Ambient Temperature
- xxi. 0-5V Ambient Temperature
- xxii. 0-5V Throttle Input
- xxiii. Datcon Oil Pressure
- xxiv. Murphy Oil Pressure
- xxv. VDO 5Bar Oil Pressure
- xxvi. VDO 7Bar Oil Pressure
- xxvii. Murphy Coolant Temperature
- xxviii. Datcon Coolant Temperature
- xxix. VDO Coolant Temperature
- xxx. Murphy Fuel Level
- xxxi. VDO Fuel Level
- xxxii. Datcon Fuel Level
- xxxiii. Murphy Oil Temperature
- xxxiv. Datcon Oil Temperature
- xxxv. VDO Oil Temperature
- xxxvi. Murphy Discharge Pressure
- xxxvii. Murphy Suction Pressure
- xxxviii. Datcon Pump Housing Temperature
- xxxix. Murphy Pump Housing Temperature
- xl. VDO Pump Housing Temperature

- xli. Murphy Pump Oil Temperature
    - xlii. Datcon Pump Oil Temperature
    - xliii. VDO Pump Oil Temperature
    - xliv. Analog.Digital1
  - iii. Relay and Digital Outputs
    - 1. Relay 1 – 6 (10A)
      - a. Not Used
      - b. Prestart 1 Delay
      - c. Prestart 2 Delay
      - d. Crank
      - e. Fuel
      - f. ECU Enable
      - g. Excite Eng. Alternator
      - h. At Load (Clutch)
      - i. Shutdown
      - j. Common Alarm
      - k. Remote Alarm
      - l. Air Damper N/De-Energized
      - m. Not in Auto
      - n. Air Damper N/Engergized
      - o. Energize to Stop
      - p. Engine Running
      - q. Throttle Increase
      - r. Throttle Decrease
      - s. Digital Input 1
      - t. Digital Input 2
      - u. Digital Input 3
      - v. Digital Input 4
      - w. Digital Input 5
      - x. Digital Input 6
      - y. Analog 1 Digital
      - z. Analog 2 Digital
      - aa. Analog 3 Digital
      - bb. Analog 4 Digital
      - cc. Analog 5 Digital
      - dd. Analog 6 Digital
      - ee. Analog 7 Digital
      - ff. Analog 8 Digital
    - 2. DO 1 (5V, 200mA) [Same as Relay 1]
    - 3. DO 2 (5V, 200mA) [Same as Relay 1]
    - 4. DO 3 (B+, 2A) [Same as Relay 1]
    - 5. DO 4 (B+, 2A) [Same as Relay 1]
    - 6. DO 5 (B-, 1A) [Same as Relay 1]
    - 7. DO 6 (B-, 1A) [Same as Relay 1]
  - f. Application Configuration
    - i. Application

1. Pump All Purpose
2. Center Pivot / Linear Irrigation
3. Air Compressor
4. Hose Reel Irrigation
5. Frost Protection
- ii. Auto Start / Stop Function
  1. Single Contact
  2. Local Start Key
  3. Two Contact Maintained
  4. Two Contact Momentary
  5. Pressure Transducer
  6. Level Transducer
  7. Flow Transducer
- iii. Auto Throttle Method
  1. Maximum RPM
  2. Pressure Transducer
    - a. Maintain Pressure
    - b. Deadband Pressure
    - c. Pressure Maintain
      - i. Suction
      - ii. Discharge
    - d. Steady/Proportional
      - i. Steady
      - ii. Proportional
    - e. Line Fill 1 Speed
    - f. Line Fill 1 Delay
      - i. Enter HH:MM:SS
    - g. Line Fill 1 Pressure
    - h. Start Pressure
    - i. Stop Pressure
      - i. Pressure P
      - ii. Pressure I
      - iii. Pressure D
  3. Level Transducer
    - a. Maintain Level
    - b. Deadband Level
    - c. Steady/Proportional
      - i. Steady
      - ii. Proportional
    - d. Level Type
      - i. Empty
      - ii. Fill
    - e. Start Level

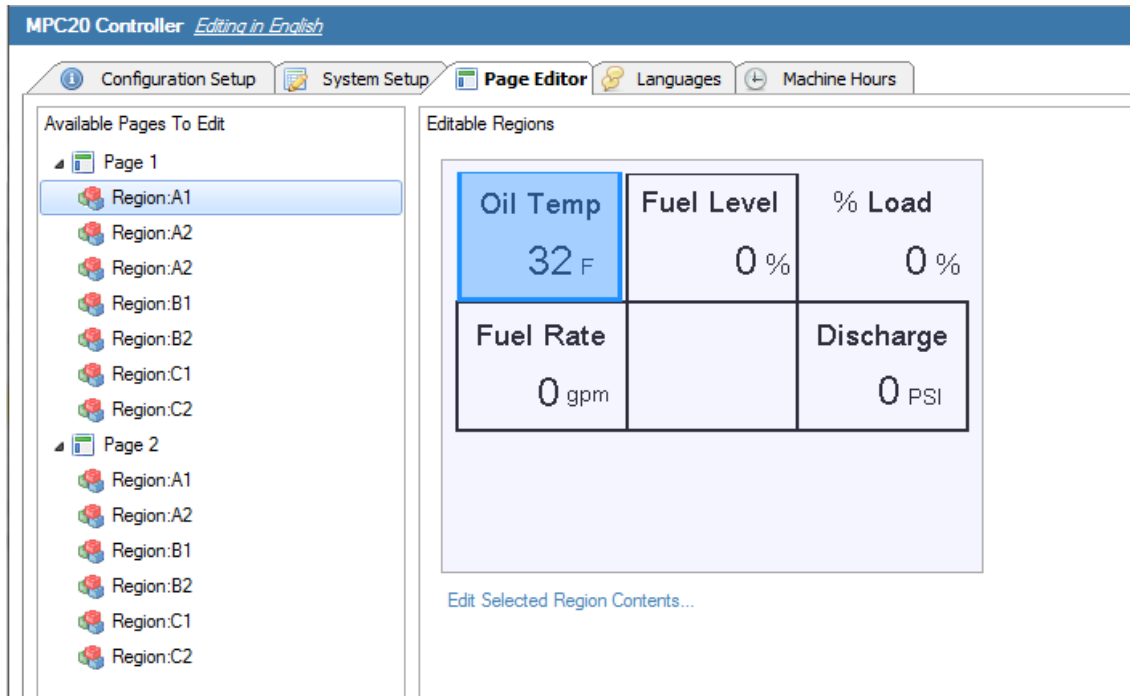
- f. Stop Level
      - i. Level P
      - ii. Level I
      - iii. Level D
  - 4. Flow Transducer
    - a. Start Flow Rate
    - b. Stop Flow Rate
    - c. Maintain Flow
    - d. Steady/Proportional
      - i. Steady
      - ii. Proportional
    - e. Deadband Flow
    - f. Flow Maintain Type
      - i. Flow P
      - ii. Flow I
      - iii. Flow D
  - 5. Temperature Transducer
    - a. Start Temperature
    - b. Stop Temperature
  - 6. Throttle Input
- iv. Warnings and Shutdowns
  - 1. High Level Warning
  - 2. High Level Shutdown
  - 3. Low Level Warning
  - 4. Low Level Shutdown
  - 5. High Flow Warning
  - 6. High Flow Shutdown
  - 7. Low Flow Warning
  - 8. Low Flow Shutdown
  - 9. High Discharge Pressure Warning
  - 10. High Discharge Pressure Shutdown
  - 11. Low Discharge Pressure Warning
  - 12. Low Discharge Pressure Shutdown
  - 13. High Suction Pressure Warning
  - 14. High Suction Pressure Shutdown
  - 15. Low Suction Pressure Warning
  - 16. Low Suction Pressure Shutdown
  - 17. High Pump Housing Temp Warning
  - 18. High Pump Housing Temp Shutdown
  - 19. High Pump Oil Temp Warning
  - 20. High Pump Oil Temp Shutdown



- g. Start / Stop Timers
  - i. Countdown Timer
    - 1. Enter HH:MM:SS
  - ii. Start / Stop Timer 1 - 8
    - 1. Start Day 1
      - a. Sunday
      - b. Monday
      - c. Tuesday
      - d. Wednesday
      - e. Thursday
      - f. Friday
      - g. Saturday
      - h. Daily
      - i. Off
    - 2. Start Time 1
      - a. Enter HH:MM:SS
    - 3. Stop Day 1 (same as Start Day 1)
    - 4. Stop Time 1 (same as Start Time 1)
- h. Communication
  - i. Communication Type
    - 1. Modbus
    - 2. PVA Gauge
    - 3. Local Display
  - ii. Slave Address
    - 1. Enter the value in the text box.
  - iii. Serial Setup
    - 1. Baud Rate
      - a. 9600
      - b. 19200
      - c. 38400
      - d. 57600
      - e. 115200
    - 2. Stop Bits
      - a. Enter Stop Bits number
    - 3. Parity
      - a. None
      - b. Odd
      - c. Even
  - iv. PV CAN Backlight Enable
    - 1. On
    - 2. Off
  - v. CAN Termination
    - 1. Disable
    - 2. Enable

## Page Editor

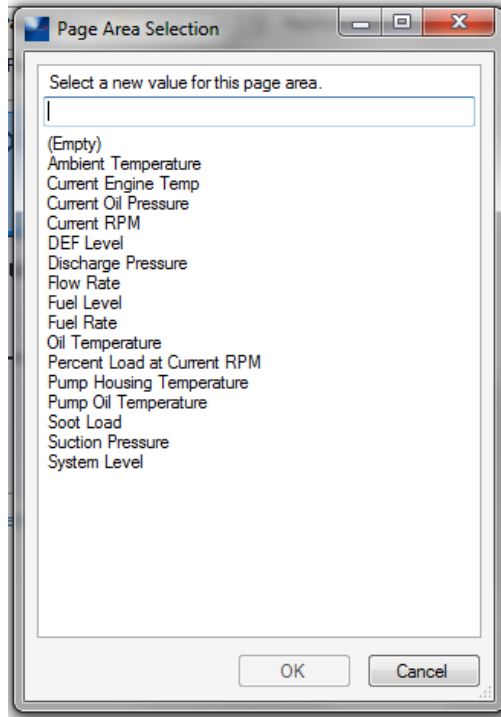
11. Click on the Page Editor tab, and the following will appear:



The Page Editor tab allows editing on pages that are editable. In this instance, the only pages that are editable within PowerVision are the two six-up screens of the controller.

To change one or more of the regions, click the region to change on the left side, and the corresponding region will be highlighted on the right side.

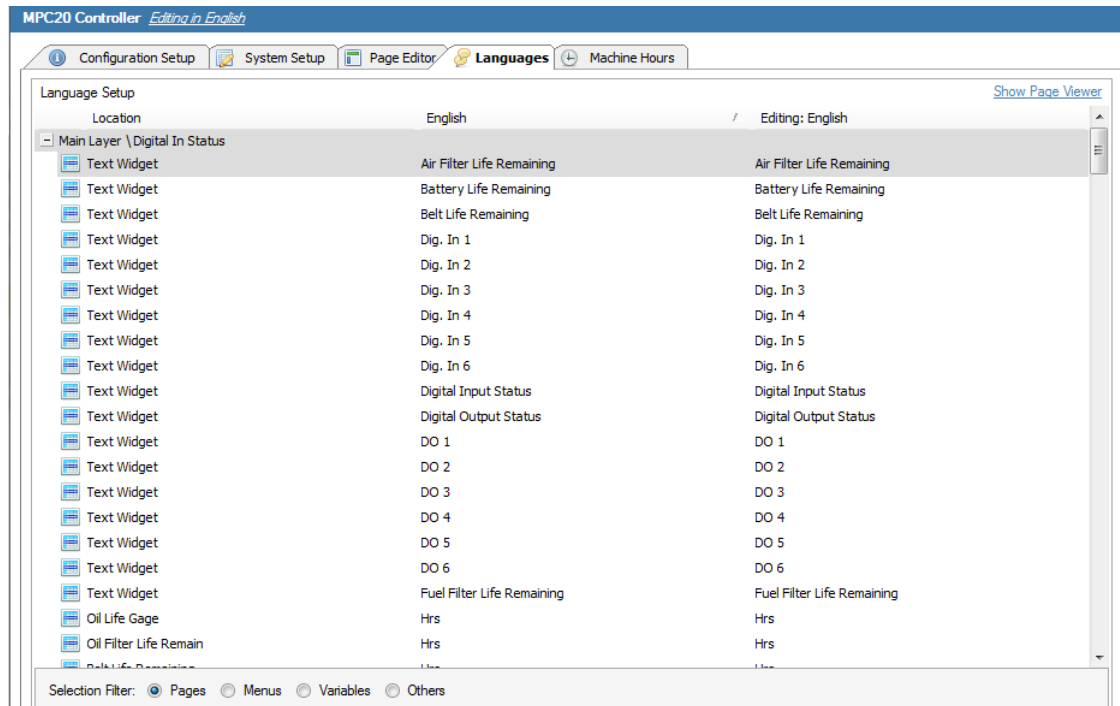
Double-click that region, or click Edit Selected Region Contents..., and the following will appear:



Select a new value for the highlighted region, and click OK.

## Languages

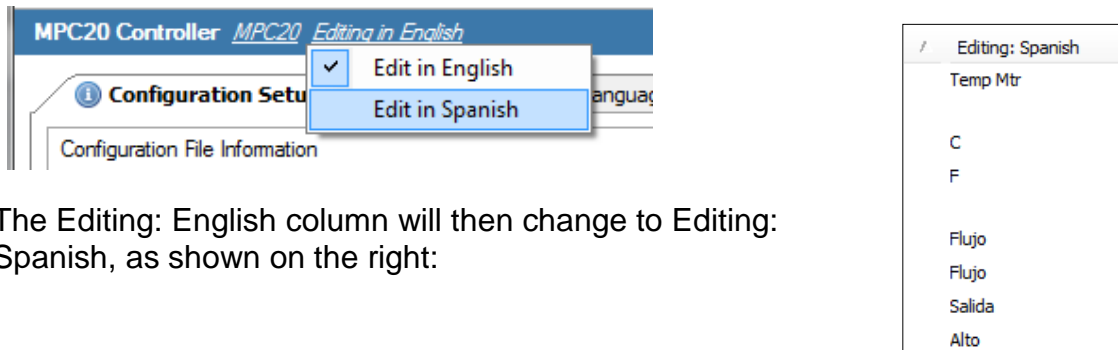
12. Click on the Languages tab, and the following will appear:



The Languages tab allows the editing of various components and labels within the MPC-20 menu. As an example, if the word **Start** needed to be changed to **Begin**, that process could ensue here.

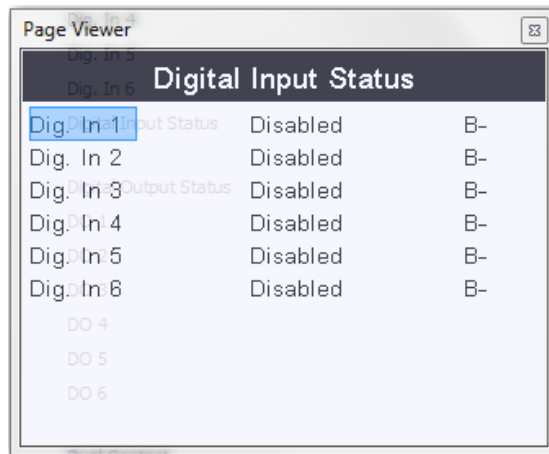
Components may be filtered by Pages, Menus, Variables and Others.

If it is desired that the editing be done in Spanish, click the Editing in English link at the top of the tabs (shown below), and choose Edit in Spanish.

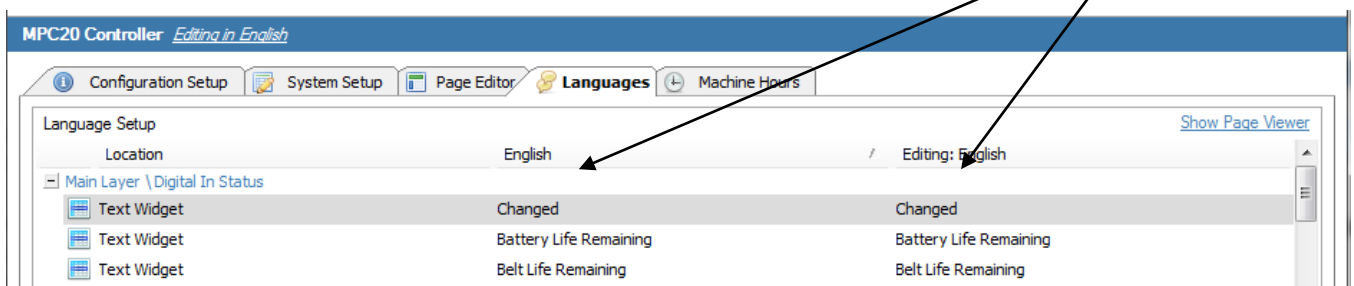


The Editing: English column will then change to Editing: Spanish, as shown on the right:

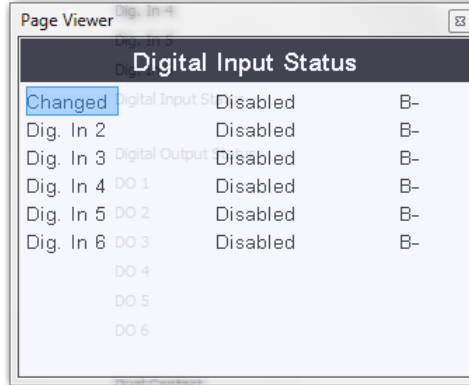
The [Show Page Viewer](#) link will display a window that shows the actual screen on the MPC-20 where any editing changes will occur:



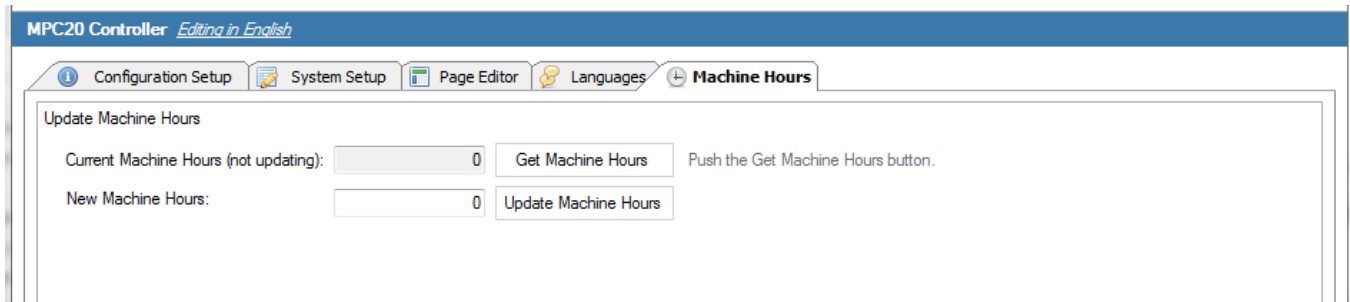
For example, the Dig. In 1 field shown in the above screen shot has been changed below to the word **Changed**.



At the same time, the Page Viewer window will appear as follows:



## Machine Hours




The Machine Hours tab provides a method of updating the machine hours. For example, if the controller was replaced, the machine hours in the new controller would need to match the actual machine hours.

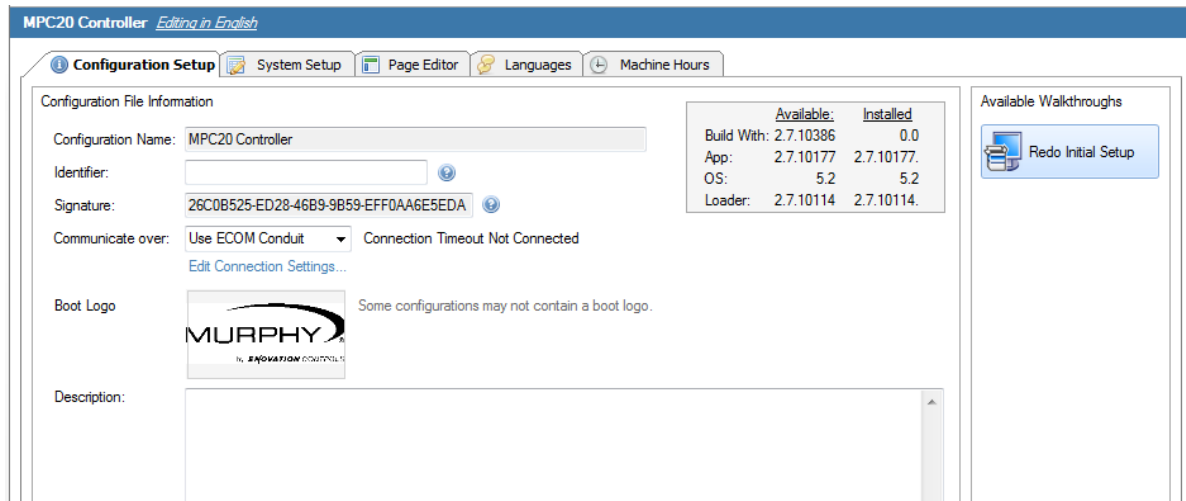
Retrieve the actual machine hours by clicking the Get Machine Hours button. Enter the new machine hours in the New Machine Hours space, then click Update Machine Hours.

**NOTE:** In order to view the Machine Hours, the controller must be connected to the PC via the ECOM dongle. Without this connection, the Get Machine Hours will not work.

## Finalizing the Configuration



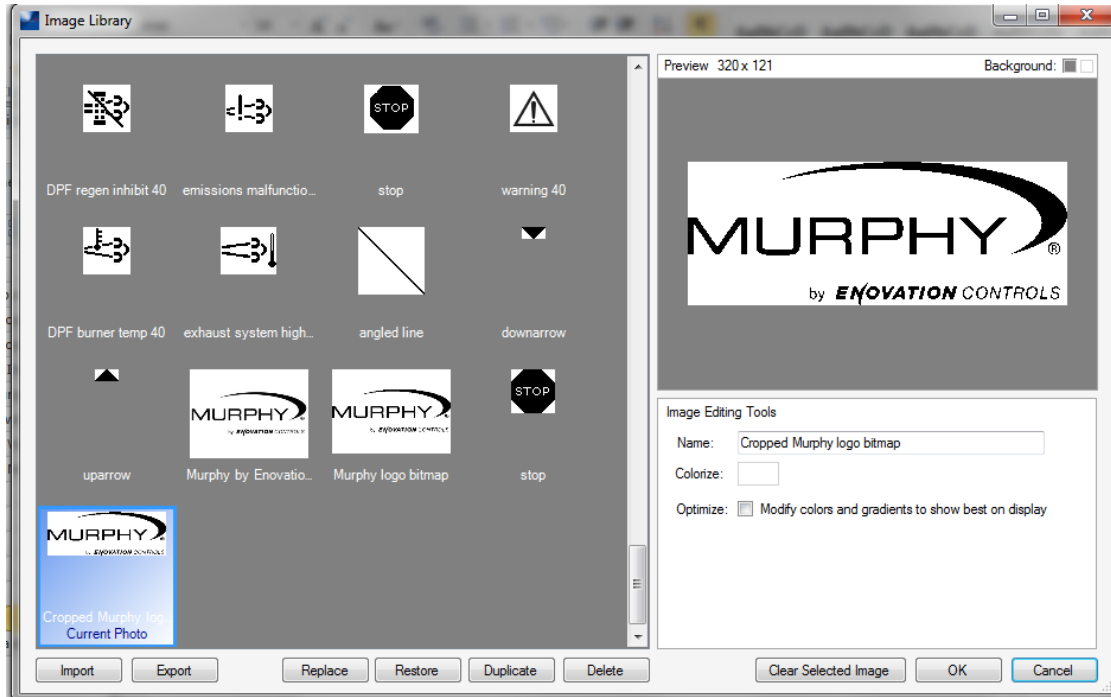
Once the configuration is established, click the  button and assign a name to the configuration. The Configuration Setup Tab will then appear as follows:



## Changing the Boot Image

To change the boot image that appears on the MPC-20 screen to an alternate image, follow these steps:

1. Click the boot logo (shown above as Murphy), and the following Image Library screen will appear:



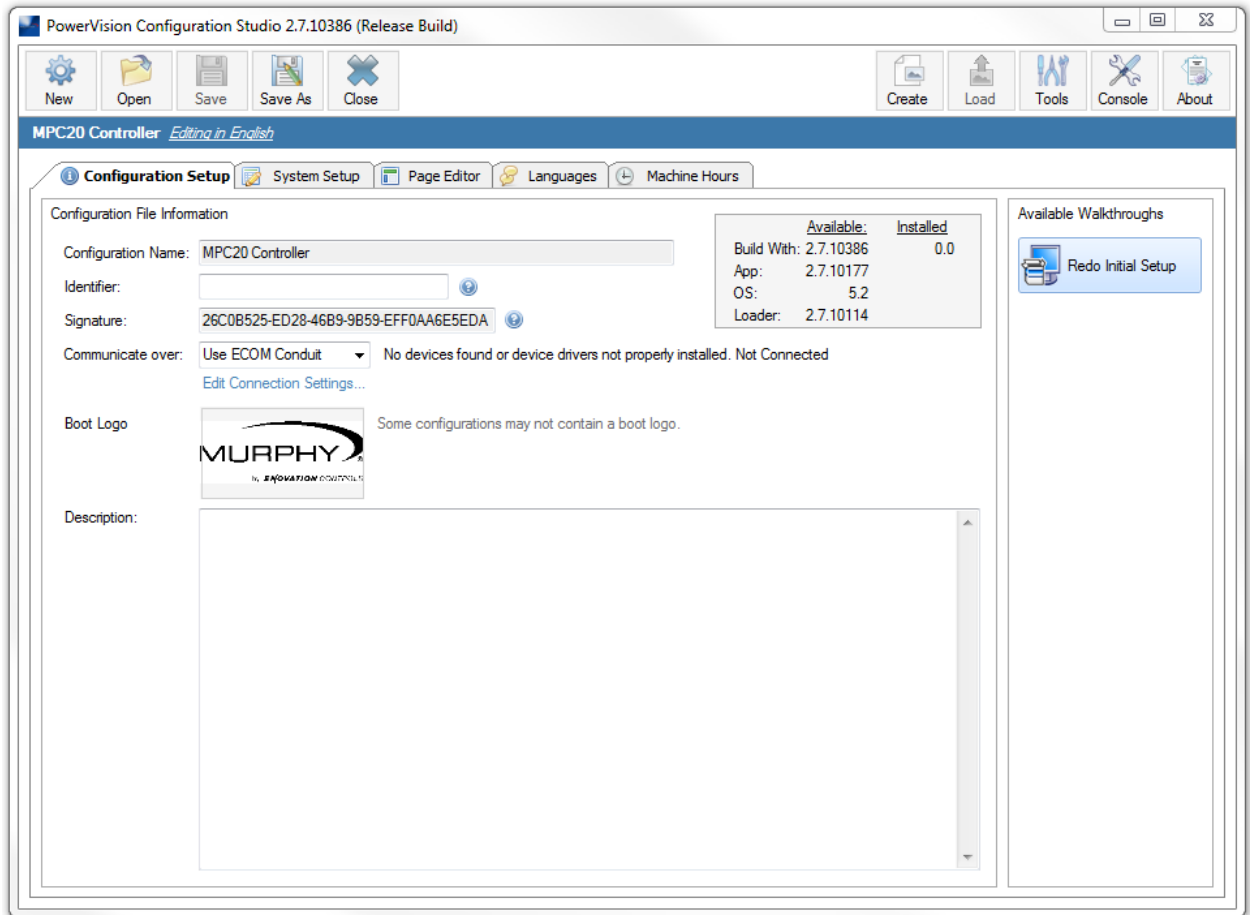
2. Choose an alternate image and click OK. If none of the displayed images will suffice, click Import and choose an image file from the computer accessing PowerVision. Then click Open. The image will be loaded into the library to select, then click OK.

NOTE: PowerVision will convert the imported image to the correct format before loading it onto the MPC-20.

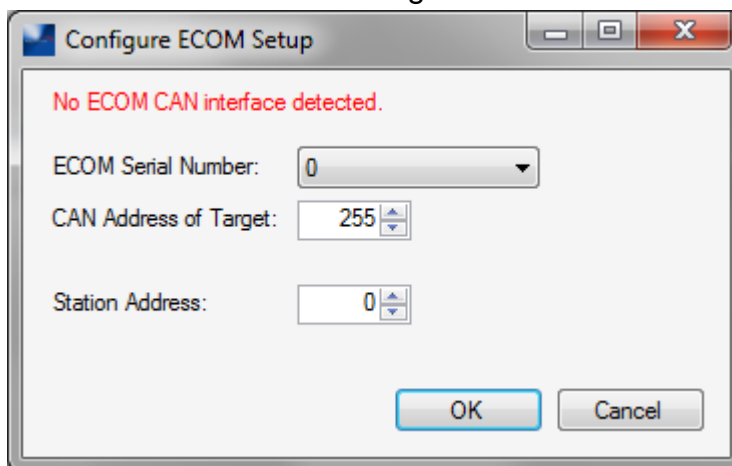
## ECOM Device Setup for Direct Connection to J1939 CAN bus



1. Install the ECOM device driver for a 32-bit or 64-bit Windows installation.
2. Connect the ECOM dongle.
3. Connect the display to the harness, and power it up.
4. Open the configuration file (i.e., PV350, PV380, PV450, PV780, MPC-20).
5. From the Connections tab, select Communicate over: Use ECOM Conduit.



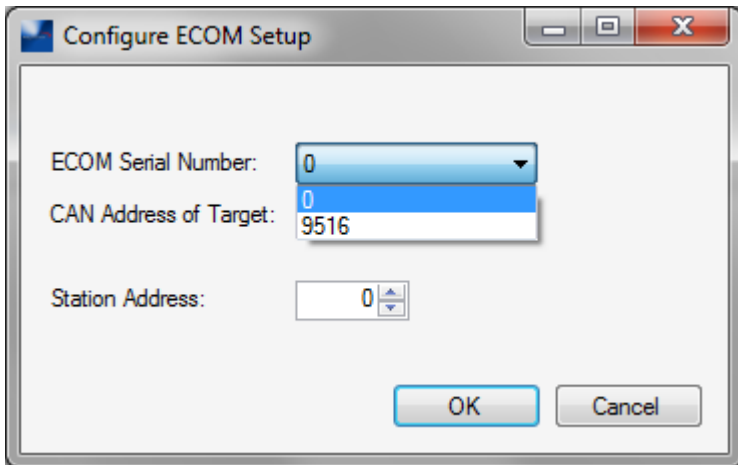
6. Click on Edit Connection Settings



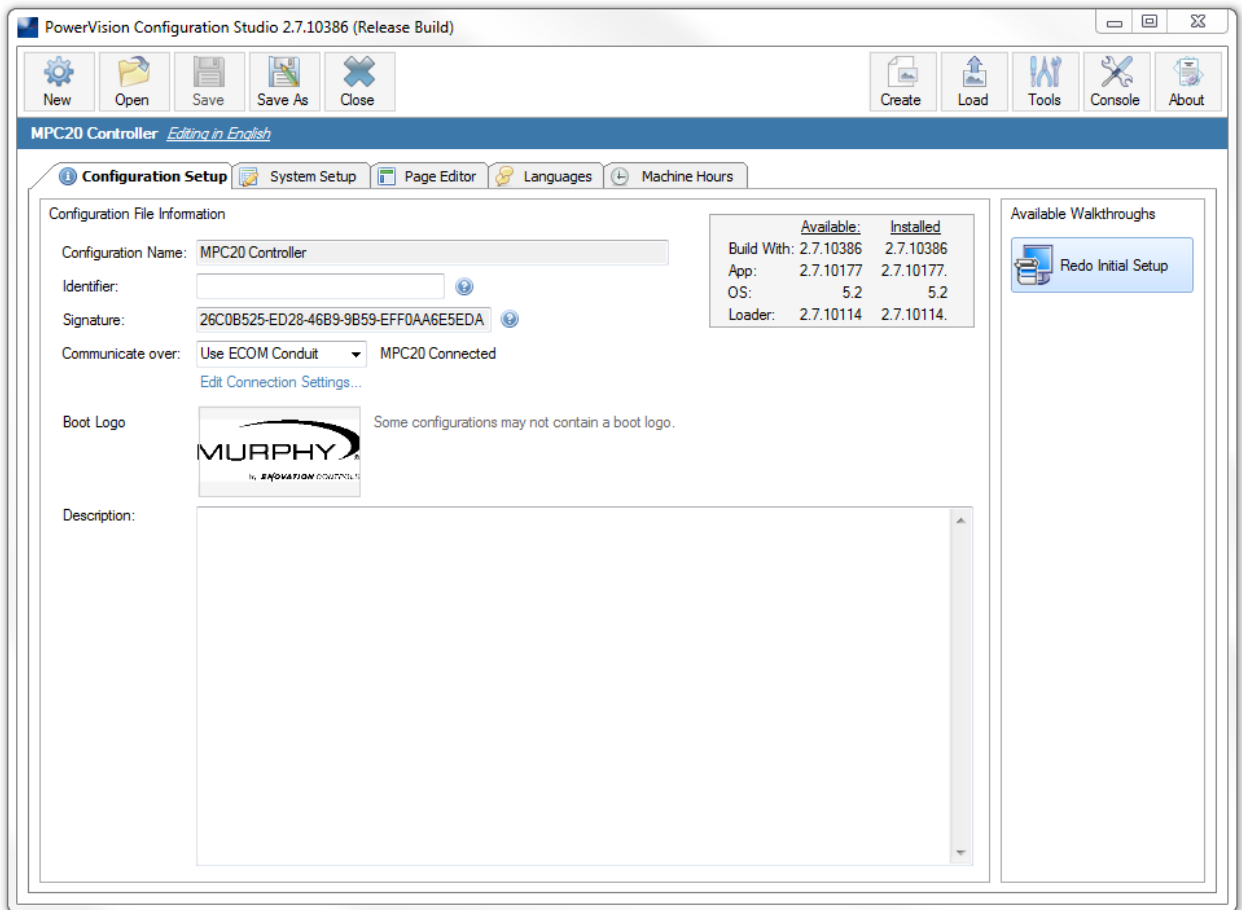
**NOTE:** If only 0 shows in the ECOM Serial Number field, the ECOM is not connected properly, and an error message will appear as shown above.

If the ECOM is connected properly, a serial number will appear as shown below:

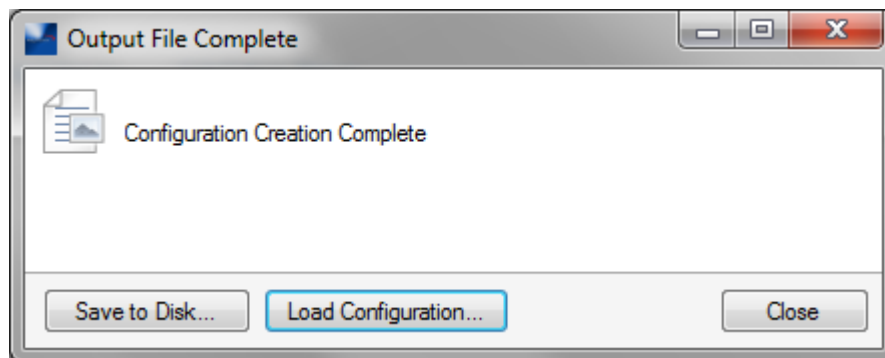
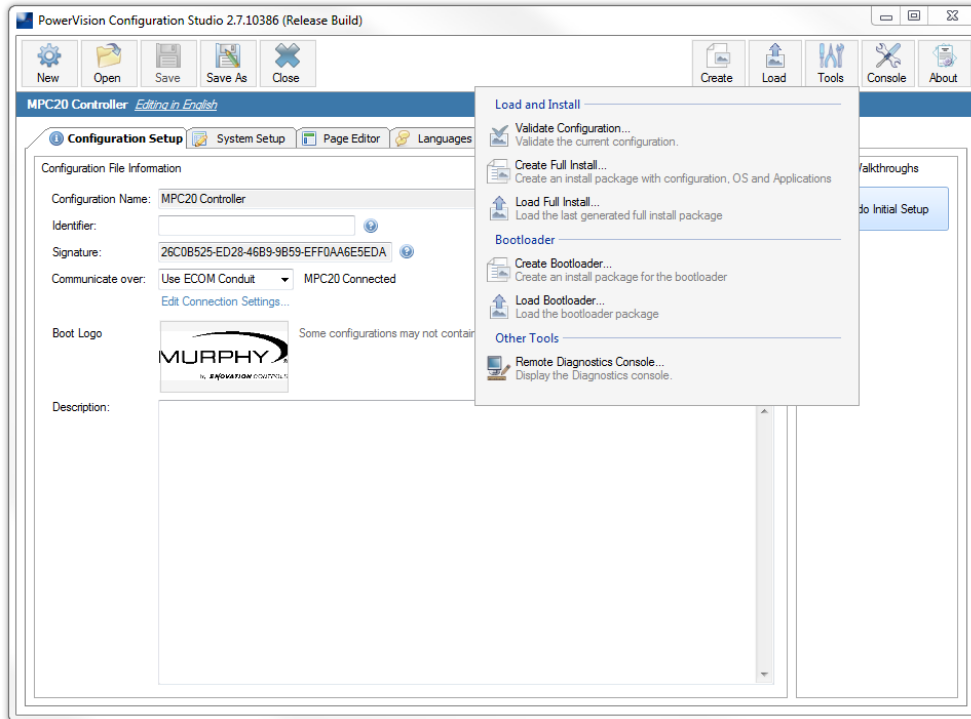




7. Select the ECOM Serial Number and select OK. When the ECOM Serial Number is selected, this line will change from Not Connected to MPC-20 Connected and will display the type of hardware connected.



8. Select Tools/Generate Full Install



9. Click Load Configuration. After configuration loads completely, the display will automatically reboot with the new configuration running.

## Loading the Configuration

The ML2000 panel has a 6-pin Amp connector on the inside of the panel to plug in a USB programming harness for loading via a flash drive.

The MPC-20 controller can be configured the same way if used with the whip harness, or an ECOM dongle may be purchased to load via CAN on the J1939 CANBus. Please speak with an Enovation Controls representative for the ECOM dongle pricing and details.

The MPC-20 acts as a USB host so the configuration can be loaded from a flash drive. However, the loading screen appears blank in the bootloader mode so a file name cannot be selected nor does it tell the user when the programming is complete.

**The configuration tool does not support flash drives using the FAT32 system. Only FAT systems are supported.**

Follow these steps:

1. Create Full Install and Save to Disk (desired location to save this file) the configurationFull.gciBin file using PowerVision.
2. Rename the file:  
(NOTE: this naming convention, while not optimal, is necessary because the MPC-20 will only recognize the file name exactly as full.bin)

Rename configurationFull.gciBin to full.bin

3. Copy the full.bin file to the flash drive.
4. Insert the flash drive into the USB port on the programming harness.
5. Apply power to the MPC-20.
6. The MPC-20 will read and program the full.bin
7. Pay close attention to the LED on the flash drive. Because the screen in the boot cannot be seen, wait until the LED on the flash drive stops flashing to know that programming is complete. This takes approximately 15 seconds. The amber LED on the MPC-20 will also start to flash after the load is complete.
8. Remove the flash drive, and the MCP-20 may reset and run the updated code/config. If it doesn't reset, cycle power with the USB flash drive removed to run the updated code/config.

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