Firmware Upgrade Process Using Modbus Connection

Required Hardware

- 1 Computer
- 1 RS485 converter (Suggested: C445XS-USBLEADS; Eaton style# 3-4355-001A)



Note: If usb drivers are needed, they are part of the Power Xpert C445 One Installer package and can be downloaded at link below https://www.eaton.com/us/en-us/catalog/machinery-controls/power-xpert-c445-intelligent-motor-management-relays.resources.html

Required Software

Power Xpert inControl – Firmware Upgrade Tool (V1.4.3.44) See "Power Xpert Firmware Upgrade Setup V1_4_3_44.exe" in package



Firmware

C445 Package 63 Release

Procedure

1. Connect the RS485 converter to the computer usb port & RS485 port on the BCM.

D0 wire (yellow) to the D0 terminal D1 wire (brown) to the D1 terminal

C wire (green) to the C terminal



Note: If RS485 port does not exist on BCM, either CH1 or CH2 communication port will need to be used for reprogramming

- 2. Apply control power to the C445 system.
- 3. From the Start menu open "Settings" and search for the Device Manager

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4. Select "Device Manager", the window below will open, click "OK" to open the Device Manager



5. The window below will open, click on Ports and record the com port number for the RS485



6. Close the Device Manager

7. Open the Power Xpert inControl – Firmware Upgrade Tool and select the rs485 com port

Eaton Power Xpert inControl - Firmware	are Upgrade Tool			_	□ ×	
Options Help						
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Slave Address 1 COM Port	COM8	v	Connec	t		
Product Name Pi	COM2 COM8		allunder	Program	2	
Progra Processor	Memory	Device Rev	File Rev	Program Status		
C445 Base Control Module (BCM) Control User Interface	Application Flash Application Flash		2.01.0003 1.01.0016	Device not present Device not present		
Ethernet Option Card Measurement Module (MM)	Application Flash Application Flash		1.03.0004 1.00.0038	Device not present Device not present		
PROFIBUS Option Card Ground Fault Module	Application Flash Application Flash Application Flash		1.00.0026 1.01.0017 1.00.0001	Device not present Device not present Device not present		
Log					X	
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8. Browse to where the firmware was saved on the computer and select the "C445 Codepack.xml". Window should be similar to one below

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Slave	Address 1 COM Po	COM8	Connect			
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Progra	Processor	Memory	Device Rev File Rev	Program Status		
\odot	445					
	Base Control Module (BCM)	Application Flash	2.01.0003	Device not present		
	Control User Interface	Application Flash	1.01.0016	Device not present		
	Ethernet Option Card	Application Flash	1.03.0004	Device not present		
	Measurement Module (MM)	Application Flash	1.00.0038	Device not present		
	Monitor User Interface	Application Flash	1.00.0026	Device not present		
	PROFIBUS Option Card	Application Flash	1.01.0017	Device not present		
	Ground Fault Module	Application Flash	1.00.0001	Device not present		
Log					-	\$
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9. Select the Connect button and Agree to the License Agreement when it appears. LEDs on all the C445 modules will begin to flash rapidly indicating the C445 has been put into Boot Mode. In addition, a message will be displayed on the user interface that a firmware upgrade is in progress. The important thing to note is that the actual firmware for each module will be displayed in the Device Rev column and the revisions of the firmware for each module in the firmware file will be displayed in the File Rev column. Check marks will only appear to the left of the modules that need to be upgraded

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Configuration File	45 Coc	Browse	
Slave Address 1 COM Port COM8 COM8			
Product Name Redball BCM Product Code 0x8300 Serial Number 2485939476	Program	2	
Progra Processor Memory Device Rev File Rev Progra Stat	tus		
⊙ C445			
☑ Base Control Module (BCM Application Flash 2.00.0009 2.01.0003			
Measurement Module (MN Application Flash 1.00.0037 1.00.0038			
Control User Interface Application Flash 1.01.0016 Device not pres	sent		
PROFIBUS Option Card Application Flash 1.01.0017 Device not pres	sent		
✓ Ethernet Option Card Application Flash 1.02.0022 1.02.0004			
Ground Fault Module Application Flash 1.00.0000			
Monitor User Interface Application Flash 1.00.0020 1.00.0026			
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10. Select the Program button and the download process will begin. Each module will be upgraded one at a time and the result of each module upgrade will be displayed in the Program Status column, as each module completes.

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Slave	Address 1 COM Po	COM8	~	2 Disco	onnect		
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~	Measurement Module (MN	Application Flash	1.00.0037	1.00.0038	Oueued		
	Control User Interface	Application Flash		1.01.0016	Device not present		
	PROFIBUS Option Card	Application Flash		1.01.0017	Device not present		
~	Ethernet Option Card	Application Flash	1.02.0022	1.03.0004	Queued		
\checkmark	Ground Fault Module	Application Flash	1.00.0000	1.00.0001	Queued		
\checkmark	Monitor User Interface	Application Flash	1.00.0020	1.00.0026	Queued		
Log						-	
() w	riting 0x0FE8 bytes with Start	ing Address 0x8011F40					

11. If any module indicates an unsuccessful download, let the process complete for all modules, then repeat the process (Disconnect when the process completes, then Connect again). Only the module with the unsuccessful download will be checked if the process needs to be repeated

12. When all modules have been upgraded successfully, select the Disconnect button and the C445 modules will flash all of their LEDs indicating a soft reset and the process is complete. All C445 modules will be at the new firmware level and will all operate properly together.

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Slave	Address 1 COM Po	COM8	~	2 Disc	connect		
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Progra	Processor	Memory	Device Rev	File Rev	Program Status		
$\odot \mathbf{C}$	445						
	Base Control Module (BCM	Application Flash	2.01.0003	2.01.0003	Programming Success -		
					Verification OK		
	Measurement Module (MN	Application Flash	1.00.0038	1.00.0038	Programming Success - Verification OK		
	Control User Interface	Application Flash		1.01.0016	Device not present		
	PROFIBUS Option Card	Application Flash		1.01.0017	Device not present		
	Ethernet Option Card	Application Flash	1.03.0004	1.03.0004	Programming Success - Verification OK		
	Ground Fault Module	Application Flash	1.00.0001	1.00.0001	Programming Success - Verification OK		
	Monitor User Interface	Application Flash	1.00.0026	1.00.0026	Programming Success - Verification OK		
Log						1	\$
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Firmware Upgrade Process Using a RJ12

Required Hardware

- 1 Computer
- 1 RS485 converter (C445XS-USBRJ12; Eaton style# 3-4354-001A)





Note: If usb drivers are needed, they are part of the Power Xpert C445 One Installer package and can be downloaded at link below

https://www.eaton.com/us/en-us/catalog/machinery-controls/power-xpert-c445-intelligent-motormanagement-relays.resources.html

Required Software

Power Xpert inControl – Firmware Upgrade Tool (V1.4.3.44) See "Power Xpert Firmware Upgrade Setup V1_4_3_44.exe" in package

d Eaton Power Xpert inControl - Firmware Upgrade Tool - InstallShield Wizard



Firmware

C445 Package 63 Release

https://www.eaton.com/content/dam/eaton/products/industrialcontrols,drives,automation&sensors/p ower-xpert-c445-intelligent-motor-management-relays/c445-firmware-release.zip

Procedure

1. Connect the RJ12 converter to the computer usb port & RJ12 one of the two ports on the BCM. Or if the user interface is a C445UM see photos 2 and 3.

Note: If RS485 port does not exist on BCM, either CH1 or CH2 communication port will need to be used for reprogramming

Or If a C445UC-xx is connected see photo 4



Photo 2 NEXT



Photo 3



Photo 4

Note: For systems that have a C445UC-xx User Interface module, repeat steps 2 through 12 for each connected device.

- 2. Apply control power to the C445 system.
- 3. From the Start menu open "Settings" and search for the Device Manager



4. Select "Device Manager", the window below will open, click "OK" to open the Device Manager



5. The window below will open, click on Ports and record the com port number for the RS485



6. Close the Device Manager

7. Open the Power Xpert inControl – Firmware Upgrade Tool and select the rs485 com port

Eaton Power Xpert inControl - Firmw	are Upgrade Tool			-		×
ptions Help						
Configuration						/
Configuration File In Automotion D						-
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110000001110000001	COM8	4	\boldsymbol{k}	Program	×5	
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⊙C445						
Base Control Module (BCM)	Application Flash		2.01.0003	Device not present		
Control User Interface	Application Flash		1.01.0016	Device not present		
Ethernet Option Card	Application Flash		1.03.0004	Device not present		
Measurement Module (MM)	Application Flash		1.00.0038	Device not present		
Monitor User Interface	Application Flash		1.00.0026	Device not present		
PROFIBUS Option Card	Application Flash		1.01.0017	Device not present		
Ground Fault Module	Application Flash		1.00.0001	Device not present		
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8. Browse to where the firmware was saved on the computer and select the "C445_Codepack.xml". Window should be similar to one below

Eato	on Power Xpert inControl - Fir	mware Upgrade Tool		-		×
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	Base Control Module (BCM)	Application Flash	2.01.0003	Device not present		
	Control User Interface	Application Flash	1.01.0016	Device not present		
	Ethernet Option Card	Application Flash	1.03.0004	Device not present		
	Measurement Module (MM)	Application Flash	1.00.0038	Device not present		
	Monitor User Interface	Application Flash	1.00.0026	Device not present		
	PROFIBUS Option Card	Application Flash	1.01.0017	Device not present		
	Ground Fault Module	Application Flash	1.00.0001	Device not present		
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9. Select the Connect button and Agree to the License Agreement when it appears. LEDs on all the C445 modules will begin to flash rapidly indicating the C445 has been put into Boot Mode. In addition, a message will be displayed on the user interface that a firmware upgrade is in progress. The important thing to note is that the actual firmware for each module will be displayed in the Device Rev column and the revisions of the firmware for each module in the firmware file will be displayed in the File Rev column. Check marks will only appear to the left of the modules that need to be upgraded

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Progra	Processor	Memory	Device Rev	File Rev	Program Status		
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-	Measurement Module (MN	Application Flash	1.00.0037	1.00.0038			
	Control User Interface	Application Flash		1.01.0016	Device not present		
	PROFIBUS Option Card	Application Flash		1.01.0017	Device not present		
~	Ethernet Option Card	Application Flash	1.02.0022	1.03.0004			
~	Ground Fault Module	Application Flash	1.00.0000	1.00.0001			
~	Monitor User Interface	Application Flash	1.00.0020	1.00.0026			
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10. Select the Program button and the download process will begin. Each module will be upgraded one at a time and the result of each module upgrade will be displayed in the Program Status column, as each module completes.

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~	Base Control Module (BCM	Application Flash	2.00.0009	2.01.0003	5%		
\checkmark	Measurement Module (MN	Application Flash	1.00.0037	1.00.0038	Queued		
	Control User Interface	Application Flash		1.01.0016	Device not present		
	PROFIBUS Option Card	Application Flash		1.01.0017	Device not present		
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~	Ground Fault Module	Application Flash	1.00.0000	1.00.0001	Queued		
\checkmark	Monitor User Interface	Application Flash	1.00.0020	1.00.0026	Queued		
Log						1	
() w	riting 0x0FE8 bytes with Start	ing Address 0x8011F40					

- 11. If any module indicates an unsuccessful download, let the process complete for all modules, then repeat the process (Disconnect when the process completes, then Connect again). Only the module with the unsuccessful download will be checked if the process needs to be repeated
- 12. When all modules have been upgraded successfully, select the Disconnect button and the C445 modules will flash all of their LEDs indicating a soft reset and the process is complete. All C445 modules will be at the new firmware level and will all operate properly together.

Configuration	File \\MKEWISFP01	\Projects\C445_Results\Pack	ages\Package_	63_Candidate	e\FirmwareCodePack\C445_Cod	Browse
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oduct Name	Redball BCM	Product Code 0x8300	Seri	al Number	2485939476 Program	<i>(</i> 2)
ogra	Processor	Memory	Device Rev	File Rev	Program Status	
Base Co	ntrol Module (BCM ement Module (MN	Application Flash Application Flash	2.01.0003 1.00.0038	2.01.0003 1.00.0038	Programming Success - Verification OK Programming Success - Verification OK	
Control	User Interface	Application Flash		1.01.0016	Device not present	
PROFIB	JS Option Card	Application Flash		1.01.0017	Device not present	
Ground	Fault Module	Application Flash	1.00.0001	1.00.0004	Verification OK Programming Success - Verification OK	
Monitor	User Interface	Application Flash	1.00.0026	1.00.0026	Programming Success - Verification OK	