AC500 eCo PLC – First Project

Introduction: 1

This application note shows you step-by-step to create a basic PLC program with ABB eCo PLC using Automation Builder software tool. It also guide you to create hardware configuration, program the PLC and go online with PLC.

Objective: 2

In this application example, we use AC500 eCo PM564 ETH CPU with digital input simulator. This PLC will connect to PC with Ethernet connection.

Equipment list for this application note:

Description	Quantity
PM564 ETH CPU	1
PC with Automation Builder V1.0 or later software installed	1
Power Supply 120vac in/24vdc out, 1.25A	1
CAT5 Ethernet patch cables	1





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3 Creating a new project:

3.1 Double click on ABB Automation Builder software tool 📟 icon on the desktop.

(If Automation Builder icon is not available on your desktop, click **Start**, go to **All Programs**, select **ABB** folder and click on **Automation Builder** software tool.)

- 3.2 The Automation Builder Screen will appear as shown below, if Internet access is available Automation Builder will show the default ABB homepage for PLC products
- 3.3 Create a new project by clicking the New button or selecting the File > New Project
- 3.4 Enter project name as shown in example below: My First eCo PLC project
- 3.5 Select the location to store the project
- 3.6 Select OK to start the project

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	1	Description		Project Object Position

- 3.7 Click the + of PLC to open the popup menu.
- 3.8 Click AC500-eCo then select AC500 PM564-ETH CPU
- 3.9 Click on Add PLC to complete the selection

(es 3) My First eCo RLC project	- + ×	
	New project	
	Object path: C-IACS00 PLC projects/My First eCo PLC project.pr Object name: PLC_AC500	aler.
	Categories	· · · ·
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	Close this dialog after each transaction	e :



4 Specifying the hardware configuration:

To specify the hardware configuration, the I/Os and their symbolic names have to be defined. Configure your I/O by double clicking I/O (Onboard I/Os) and refer to the mapping tab window opened on the right side where you can give variable names to each I/O points.

- 4.1 Double click AC500 (PM564-ETH) on the left to open this hardware menu
- 4.2 Change the value of Check battery from **ON** to **OFF** (if no battery present for this example)

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Devices • a	X PLC_AC500 X				
My First eCo R.C project	MISG4ETH Configuration PNC64ETH Hardw	are Information			
PLC_AC500 (PM564 ETH)	Parameter	Туре	Value	Default Value Unit	Description
G 0810 (501+600+241+140)	- Bring LED / Falsafe function	Enumeration of BYTE	On	On	Error LED off by error dass
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= ZE Ethernet	Reaction on floating point exception	Enumeration of BYTE	E2 failure	E2 failure	Reaction on floating point exception
(I ETH1 (ETH1)	Flexible configuration	Enumeration of BYTE	None	None	Flexible configuration
Protocols (Protocols)	Flexible configuration timeout	WORD(0.65535)	1000	1000 s	Flexible configuration timeout
	Free wheeling pause	BYTE(0255)	10	10 ms	Free wheeling pause
	Start PERSISTENT %R80.x	WORD(0.,1023)	0	0	Set start address for PERSISTENT segment in area %RB0.x
	PEnd PERSESTENT %R80.x	WORD(01023)	0	0	Set end address for PERSISTENT segment in area %RB0.x

- 4.3 To create I/O variable for the CPU, double click on the OBIO selection. The I/O tab will open on your right window with 3 child tabs. The 1st tab is I/O configuration, click on the 2nd tab for I/O Mapping for this application example.
- 4.4 Enter variable names:

MotorStartPB for Digital input DI0 channel MotorStopPB for Digital input DI2 channel MotorRunning for Digital output DO0 channel

		10.14					
My First eCo PLC project ■	GDI+6DO+2AI+1AO Configuration Channels	60I+600+	2AI+1AO I/O Mapping I/O mapping list				
1. Application	Variable	Mapping	Channel	Address	Type	Unit	Descripti
OBIO (601+600+2A1+1AO)	E- Digital + analog inputs						
III IO_BUB	8-10		Digital inputs DI0 - DI5, A10 - A11	%IB4000	BYTE		
- College Arrest (COM) - College Arrest	MotorStartPB		Digital input DI0	%IX4000.0	BOOL		
- CIII COM2 None (COM2 - Name)	MotorStopP0	-6	Digital input DI1	%IX4000.1	BOOL		
= SV: Ethernet	*9		Digital input D12	%IX4000.2	BOOL		
	- *9		Digital input DI3	%IX4000.3	8001		
Protocols (Protocols)	-19		Digital Input D14	%IX4000.4	BOOL		
	- 19		Digital input D15	%JX4000.5	BOOL		
	- *9		Digital input AI0	%JX4000.6	BOOL		
	- 10		Digital input AI1	%IX-4000.7	BOOL		
	- 10		Interrupt D10 - D13	%IB-9001	BYTE		
	- 19		Analog input AI0	%JW2001	INT		
	- *9		Analog input AII	%JW2002	INT		
	😑 🔛 Digital + analog outputs						
	H- 9		Digital outputs D00 / N00 - D05 / N	%Q84000	BYTE		
	* MotorRunning	10	Digital output DO0 / NO0	%QX4000.0	BOOL		
	.0		Digital autput DO1 / NO1	%QX4000.1	8001		
			Digital output DO2 / NO2	%QX4000.2	BOOL		
			Digital output DO3 / NO3	%QX4000.3	BOOL		
	· •		Digital output DO4 / NO4	%QX4000.4	BOOL		
	-**		Digital output DOS / NOS	%QX4000.5	BOOL		
	- **		Analog output AOI / AOU	%GQW2001	INT		
	🕷 🛄 PWM						
	* Ca Fast counter						

L

Note, if you made a mistake during the process, you can always **undo** by going to **Edit** on the left hand top corner and click **Undo**.



5 Setup the Ethernet communication in Windows:

Before you are able to download the compiled program the first time from the PC to the PLC, you have to setup the communication parameter. There are two options you can use to login to the PLC, either with Ethernet or serial with TK503 USB cable. For this exercise, we are using Ethernet connection for online access to this PLC.

Online Access with Ethernet setup for your PC:

To verify the IP address of your PC

Make sure that your PC address is in the same class as the CPU's IP address. The factory setting of the CPU for IP address is 192.168.0.10. Then the IP of the PC should be **192.168.0.x**, x should be different number than **10** so that it will not have an IP conflict with the CPU. Subnet mask should be 255.255.255.0.

To change the IP address in your PC, go to:

- 5.1 Go to Windows Control Panel > Network and Internet > Network and Sharing Center
- 5.2 Click on Change adapter settings
- 5.3 Select Local Area Connection (in this example is **PLC network** connection below) and right click it to open the menu.



- 5.4 Choose **Properties** (the status is active when the Ethernet connection between PC and PLC is active)
- 5.5 Select Internet Protocol Version 4 (TCP/IPv4) and double click to see properties.
- 5.6 Key in your desired IP address and subnet mask then click OK.

PLC network Status	PLC network Properties	s ? X
General	Networking Sharing General	
Connection	Connect using: You can get IP settings assigned automatically if this canability. Otherwise, you need to ask your	your network supports
IPv4 Connectivity: No Internet access	ASIX AX88772 USB2.0 to Fast Ethemet Adapter for the appropriate IP settings.	
IPv6 Connectivity: No network access		
Media State: Enabled	Contigure Obtain an IP address automatically	
Duration: 01:04:22	This connection uses the following items:	
Speed: 100.0 Mbps	Client for Microsoft Network IP address: 192.1	58.3.249
Details	🗹 📮 QoS Packet Scheduler Subnet mask: 255 . 2	55.255.0
	Image: Second	• •
Activity	Internet Protocol Version 4 (TCP/IPv4) Obtain DNS server address automatically Obtain DNS server address automatically	
Sent — 📃 — Received	Link-Layer Topology Discovery Responder OUse the following DNS server addresses:	
	Install Uninstall Properties Preferred DNS server: .	
Bytes: 99,128 538,848	Description Alternate DNS server: .	
Properties Disable Diagnose	Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Advanced
Close		OK Cancel



6 Setup the IP address in Automation Builder software:

- 6.1 Make sure the CPU's RUN switch is at STOP position
- 6.2 Click IP-Configuration to access Scan tool

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- 6.3 Click on Scan button for searching active PLC on the network
- 6.4 Highlight the active IP address in the search window
- 6.5 Change the IP address to new IP address such as 192.168.3.20
- 6.6 Click on Send Configuration button to send new IP address to PLC.

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- 6.7 The warning message window display is shown below for this change.
- 6.8 This screen shows the progress of IP address settings is sending to CPU. Wait about 30 seconds for CPU to register new IP address (the RUN and ERR lights are flashing during this process).
- 6.9 Click OK to accept this new IP address for this CPU.

(Automation	n Builder
	<u>^</u>	Attention ! Setting the IP address will lead to a reset of the PLC in order to take over the new address.
		OK Cancel

6.10 Press "Scan" button again to verify the IP address of CPU. This window shows the Configured IP address sent to CPU successfully. This IP address will be used in IEC 61131-3 CoDeSys to download your PLC project to CPU.



	uth cunn
00-24-59-04-03-A1 PM554-T-ETH Slot 0 000005929 0x00 192.168.3.20 no	

7 Create Configuration data and Go to Application environment:

7.1 From My First eCo PLC project windows, Right click on Application>Create Configuration to complile the hardware configuration for this project.

	Ē	Sourcecode upload Sourcecode Download Paste Rename					
My First eCo PLC project My First eCo PLC project PLC_ACS00 (PM/064-ETH) Application OBIO (6DI+6DO+2AI+1AO) IO_BUS	C C	Add object Update object Add Folder Edit Object		All messag	95	. 0.0	mo(t)
Interfaces COM1_Online_Access (COM1 - Online Access) COM2_None (COM2 - None) Ethernet Ethernet ETH1 (ETH1)		Compare Objects Import Export Manage additional files for PLE	K	Precompile	m ₩ :: ✔ 0K	Project	Object
Protocols (Protocols)		Create configuration data	Create configuration data:			-	

7.2 After the Create configuration data complete, double click on **Application** to goto IEC-61131-3 programming environment as shown on next section.

8 IEC-61131-3 Programming window- Task Configuration:

8.1 Click on Resource tab to access to Global Variables > OBIO_Module_Mapping<R> window. Verify that the mapping variables for this exercise are correct and transfered from Automation Builder OBIO configuration.



8.2 Click on task configuration to goto settings



8.3 Right click on Task configuration then select Append Task to add a task for this CPU.



The task set up parameters: Name: MainProgram Priority (0..31) = 10 Type: Cyclic Properties: T#10ms

- WTask configuration	Taskattrbutes
System events	Nere MarPhogram Dively(0, 31) 10 Type gckc C is point-during C is generating C is generating event
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- Right click on MainProgram > Append program call
- Click on then select PLC_PRG(PRG)

Resources Global Variables Global Variables Global, Variables Global, Variables Global, Variables Global, Variable, Mapping (R) Variable, Configuration (VAI)_CONFIG) Tray, Element_ACS00, VT00, E25 15 14 406 39; pr	Task configuration Jose Configuration System events MainProgram PLC_PRG	Program Cal Program Cal Program Cal (PLC_PRG);	
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Writing the program code in Ladder Diagram Editor: 9

In this CoDeSys Program Organization Units (POUs) window, Structure text (ST) program is default, but it can be changed to Function Block Diagram (FBD), Ladder Diagram (LD), Instruction List (IL), Continuous Function Chart (CFC) and Sequential Function Chart (SFC). In this exercise, we will change it to Ladder Diagram (LD) editor.



9.1 Click Project > Rebuild all to compile the PLC codes. Make sure that there is no error!

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- 9.2 Right click POUs, select Convert Object... to convert it to LD editor
- 9.3 Select LD then click OK to accept the changes.

POUs State	
Add Object	
Rename Object	CoDeSys - Application.AC500PRO*
Edit Object	File Edit Project Insert Extras Online Window Help
Copy Object	
Delete Object	
Convert Object	
Export object	
Object Properties	0003 END_VAR
Project database	
Add Action	0001;
New Folder	
Expand Node	
Collapse Node	0006 Converting PDU: PLC_PRG OK
View Instance	0007 0008 New POU name: PLC_PRG Cancel
Show Call Tree	0009
	0010 0011 © IL CFBD CLD
Save as template	
Exclude from build	

9.4 Double click on PLC_PRG(PRG) to go to Ladder Diagram editor.



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9.5 Click on the instruction set 🕮 🖽 👖 😶 👫

and insert ¹¹ to the network rail below

B BEAUTION TO THE BOOK TO THE	
	CoDeSys - Application.AC500PRO* - (PLC PRG (PRG-LD))
0007	💊 File Edit Project Insert Extras Online Window Help
	Image: Poly and
×6	

- 9.6 Highlight + then hit F2 to open Input assistant menu. Double click on Global Variables then select MotorStartPB under OBIO_Module_Mapping shown below for this Normally-Open contact.
- 9.7 Repeate this step for this 4/1+ and select **MotorStopPB** for its variable tag as shown below.

CoDeSys - Application.AC500PRO* - [PLC_PRG (PRG	-10)	
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िवन्यः • • ■ विद्यागढ मार्ग	Constant Sectors Sectors	Window Help

9.8 Insert another $\stackrel{n}{\dashv}$ then click Shift-F2 to access Declare Variable table. Assign **MotorTimeDone** as variable name as shown below then click OK to accept the changes.

CoDeSys - Application.AC500PRO* - [PLC_PRG (PRG-LD)]							
🎭 File Edit Project Insert Extras Online Wi	ndow Help						
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The complete codes for network #1:

0001			
	MotorStartPB MotorStopPB MotorTimerDone	MotorRunning	L
		()	
	MotorRunning		L

9.9 Click on the rail of network1 then right click to open the pop-up menu (or Ctrl+T). Select Network (after) to insert new network below the current one.

	C:t	Chilly V
CoDeSys - Application.AC500PRO* - [PLC_PRG (PRG-LD)]	Cut	Ctrl+X
💊 File Edit Project Insert Extras Online Window Help	Сору	Ctrl+C
	Paste	Ctrl+V
1 0002 V/R	Delete	Del
POUs D003 D004 Motor timer done: BOOL:	Network (before)	
0005END_WR D005	Network (after)	Ctrl+T
0007	Contact	Ctrl+K
6009	Contact (negated)	Ctrl+G
0010	Parallel Contact	Ctrl+R
	Parallel contact (negated)	Ctrl+D
0001	Function Block	Ctrl+B
Little time the state of the st	Rising edge detection	
Cut Ctrl+X	Falling edge detection	
Copy Ctrl+C	T	
Paste Ctrl+V	Timer (TON)	
Delete Del	Coil	Ctrl+L
Manush (Lafen)	'Set' coil	Ctrl+I
Network (after) Ctrl+T	'Reset' coil	

- 9.10 On this network #2, add MotorRunning contact then right click on the network line to add Timer(TON) from pop-up menu.
- 9.11 Press Shift+F2 to enter **Motor_timer1** as variable name for this timer.

0001 MotorStartPB MotorStop	/B Motor_timer_done	
MotorRunning otc	Limer1 TON ET Declare Variable	
	Class Name VAR V Moto_time1 Symbol list Initial Value Global_Variables V Comment	 OK Cancel CONSTANT RETAIN PERSISTENT

9.12 Add ElapseTime for ET with Type: TIME for this variable.





The network #2 with PLC codes.



- 9.13 Add network #3, insert Motor_timer_done contact then add CTU function block by right click on the network line.
- 9.14 Click on Function Block... to select CTU for this counter Up function block.

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Delete	Del	MotorRunning N TON	CPU_CONE_VARIE CPU_CONE_VARIE CPU_PROSENTRY_READ CTU_PROSENTRY_READ CTU_	Motor_Bmer_done
Network (before) Network (after)	Ctrl+T	0003	Cito Catine Cutines DERMATIVE DREACC	
Contact Contact (negated)	Ctrl+K Ctrl+G	Notor_Itmer_done	DIAG_ACK_ALL DIAG_INFO DIAG_INFO DIAG_INFO	
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Function Block Rising edge detection	Ctrl+B		T" Stuckwed	

9.15 For this CTU, add CounterDone: BOOL and CounterValue: WORD to complete this function block for this motor control logic.

The complete network #2:



9.16 Click **Project > Rebuild** all to complile this PLC logic.



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10 Create CoDeSys Visualization screen:

- 10.1 Click Visualizations tab
- 10.2 Highlight Visualizations tab, right click to access pop-up menu. Select Add Object...
- 10.3 Name this Visualization screen: **Motor_Control_HMI.** Click OK.

			0003
CoDeSys - Application.AC500PRO - [PLC_PRG (PR	RG-LD)]		0004 Motor_tim
File Edit Project Insert Extras Online	Window He		0005 Motor_tim 0006 ElaspeTir 0007 MotorRun
			0009 CounterVa
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- 10.4 On visualization template ONANARE SET SET SET SELECT
- Rectangle
- 10.5 Double click on this object to access to Regular Element Configuration menu
- 10.6 Click on **Text** in Category then type: MOTOR CONTROL VISUALIZATION for this text box
- 10.7 Click on Color to select Blue for inside color of this text box. Click OK to accept the changes.

MOTOR CONTROLOWISUALIZATION	ا المان (#7) د الد الد	Goldyn-Appione-K50070-141 File Uz Paper Inet Data Mede Weden Help	
Category: Trade worksha Line width Colors Colora abroke Hotor abroke Hotor abroke Variables Input Pogrammability	Test Content: HOTOR CONTROL VISI Cancel Horizontal C Lett C Center Vertical C Top C Center Default fort Fort Default fort		Compare Configuration (7) Color Team Configuration (7) Color Configuratio



- 10.8 Select Select rectangle object for Motor Start PB. Double click on this object then select Text and type: MotorStartPB for this button.
- 10.9 Click on Colors > Inside then select ligh blue in color template

MOTOR CONTROL VISUALIZATION			HOTOR CONTROL 1	VISUALIZATION			
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10.10 Change Alarm color by click Colors > Inside then select dark blue on this color template.



- 10.11 Click Variables then press F2 for Input assistant menu, select MotorStartPB.
- 10.12 Click OK to accept all the changes.

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10.13 Add Motor Stop PB by follow those previous steps

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- 10.14 Add the **Motor Running** indicator with **Green** = ON.
 - Select Color > Inside = Grey
 - o Select Alarm color > Inside = Green
 - Variables: Change color = MotorRuning by invoke F2 key.

			1					
			/	Regular Element Confi	guration (#1)		Color	X
NOTOR CONTROL VISIALIZATION				Category: Shape Text	Color		Basic colors:	
Koteriker 19	Pegular Dement Config Category Extension International Category Ca	yuntor, (%)	CK Drod	Text Text variables Line width Colors Colorvariables Motion absolute Motion relative Variables Input Text for tooltip Security Programmability	Inside No color inside No fr Alarm color Inside	Frame Color	Custom colors	
		dobr						Cancel

- 10.15 Add counter to keep track the motor start and stop in this circuit. Here are the steps to create this counter object.
 - Select I then type %s in content field.
 - Highlight Variables then press F2 to insert PLC_PRG.CounterValue variable
 - Add inside color = Yellow

Regular Element Con	figuration (#5)	22				
Category			Motor Stop PE		Regular Element Con	nfiguration (#2)
Text variables Line width Colors Colory ariables Motion absolute	Content 20 ? Horizontal C Lett @ Center @ Right	Cancel	Counter Ng	Counter	Category Shape Text Text variables Line width Colors Colors	Variables Inviable: Input disable
Motion relative Variables Input Text for tooltip Security Programmability	Verifical C Top Center C Bottom Font_ Default font				Motion absolute Motion relative Vascues Input Text for toottip Security Programmability	Denge colo: Textoplay: PLC_PRG.CounterValue Conversion bare: Dense for the second



- 10.16 Add Time elapse object to keep track the motor running time. Here are steps to create this object.
 - Select I then type %s in content field.
 - Highlight Variables then press F2 to insert PLC_PRG.ElapseTime variable
 - Add inside color = light Blue

			Motor running (s)	Regular Element Configuratio	vn (#5)	8
Notor running (s)	Regular Element Configuration (#5) Category: Shape Contract Text Contract Contract Motion absolute Motion	CK Cancel	Motor running (8)	Regular Element Configuration Cargoy Shape Y Tent vanishes In Lice with In Color actuates did Midon actuates did Input Tent Tend vanishes did Input Tend Tend to actuate Did Input Tend Tend to both Did Tend to both Did <th>n (#5)</th> <th>OK Gancel</th>	n (#5)	OK Gancel
				L		

Here is the complete Motor Control Visualization screen:





- 11 Download and Go online with project:
 - 11.1 From Online menu, select Communication Parameters.

🍤 CoDeSys - AC500.pro*		
File Edit Project Insert Extras	Online Window Help	
I I I I I I I I I I I I I I I I I I I	Login Logout	Alt+F8 Ctrl+F8
The second secon	Download Run Stop Reset Reset (cold) Reset (original)	F5 Shift+F8
	Toggle Breakpoint Breakpoint Dialog Step over Step in Single Cycle	F9 F10 F8 Ctrl+F5
	Write Values Force Values Release Force Write/Force-Dialog	Ctrl+F7 F7 Shift+F7 Ctrl+Shift+
	Show Call Stack Display Flow Control	
	Simulation Mode Communication Parameters Sourcecode download	

- 11.2 In the **Communication Parameter** dialog box, **click New...** button to add a new channel. Type the name for this channel. In this example below, **192.168.3.20** is the name for this channel.
- 11.3 In the popup Communication Parameters: New Channel dialog, fill in the "Name" field with 192.168.3.35, select TCP/IP in Device window then click OK.

Communication Parameters	X
Channels Communication Parameters: New Channel Name 192.168.3.20 OK Device Cancel Name Info ABB Arcnet AC ABB SST Arcnet AC driver ABB RS232 AC ABB SST Tcp/lp Level 2 routing Tcp/lp Serial (RS232) SS Serial RS232 driver Serial (Modem) SS Modem driver Tcp/lp (Level 2 Route) SS Tcp/lp Level 2 Router Driver	OK Cancel New Remove Gateway Update



Click **Gateway** then select **Local** for **Connection** from popup **Communication Parameters: Gateway** window as shown below.

Communication Parameters	23
Channels Tcp/lp - 192.168.3.150	OK Cancel
CM574 Motorola byteorder Yes CM574_Slot1	New
□ 192.168.1.7 □ Local_ E Communication Parameters: Gateway S	Remove
	Gateway Update
Password: Port: 1210	

- 11.4 **Double click** in each Value field to replace with
 - Address: **192.168.3.20**
 - Port: 1201
 - Motorola byteorder: Yes

Click **OK** to accept these entries.

- 192.168.3	3.150 🔺	Tcp/lp			- OK
192.168.3	3.10 3.15	Name	Value	Comment	Cance
192.168.3 CM574	3.61	Port Motorola byteorde	1201 r Yes	IF address of nosmanie	New
CM574_9 192.168.1	ilot1				Remove
192.168.3 100.100.1	8.150_ 100.10				Gateway
192.168.3 192.168.3	3.99 3.101				Update
- 192.168.3.10					

11.5 Click Online>login in top menu to download the changes and go online with CPU. Click Yes when message appear below.

🎭 CoDeSys - AC500.AC500PRO - [PLO	_PRG (PRG-LD)]				
🍤 File Edit Project Insert Extras	Online Window Help				
	Login	Alt+F8			
	Logout	Chrit+E8			
POUs	Download				
PLC_PRG (PRG)	Run	F5			
		Shift+F8			
	Reset		CoDeSys		<u>×</u>
	Reset (cold)				
	Reset (original)			No program on the controlle	r! Download the new program?
	Toggle Breakpoint	F9			
	Breakpoint Dialog			Var Na	Const 1
	Step over	F10		Tes No	
	Shen in	E8			



11.6 The download progress as shown below. The CPU status is **ONLINE** and in **STOP** mode. After the program downloaded, select Online>RUN from software to put CPU in RUN mode. The screen below shows PC and PLC is **ONLINE** and **RUN** mode.



11.7 Next, Click Online>Create Boot Project to store the project permanently in CPU's Flash

ONLINE: 192.168.3.20 SIM RUNNING BP FORCE OV READ

memory.

Click on Run to put CPU in RUN mode. 11.8

le Edit Project Insert Extras	Online Window Help			
	Login Logist	Alt+F8 CD1+F8		
Ue	Download.			
PLC_PRG (PRG)	Ron.			
	Toggle Dreakpoint			
	WVER Values	C014#7		
	Porce Values			
	Write/Torce-Dialog	201+21ft+F7	11-	ALL - 170
	Grownel Gast		Login	AIC+F0
	Display Flaw Control		Logout	Ctrl+F8
	Simulation Mode		Descoland	
	Communication Parameters		Run	E5
	OR IN THE NEW VEAL OF DUPINISHING IN A CHEMIC UP.	-Bri de Branania (de 1	Stop	Shifture
	Create boot project		Denat	
	Read He from PLC		Reset	
	they Be information		Reset (cold)	

Testing the project with eCo PM564 in ONLINE mode:

- Loggin to CPU: Click Online > Login > Run •
- Toggle MotorStartPB switch: Motor will run for 5 seconds then stop. The counter will increment by 1
- Toggle this switch 3 more times until the CounterValue = 4 then CounterDone bit = 1 and reseting this • counter back to 0.



S CoDeSys - Application.AC500PRO*			
Vewelexion III HMI HMI HOTOR CONTROL	C C C C C C C C C C C C C C C C C C C	PLC_PRG (PRG-LD) 0001 EI	
Notor Stop FB Motor running (s) T\$15670au	Counter	MotorStar/PE MotorStopPE MotorTimerDone	MotorRunning
		MotorRunning TON ET -ElapseTime=T#1s480ms	MotorTimerDone
		Counter/Done CU CU CV CV Counter/Value=0	CounterDone
		ONLINE: 192 168 3 20 [SIM [RU	INNING (BP (FORCE (OV (REAL

12 Testing the PLC project without connecting to PLC hardware:

- 12.1 Select ONLINE menu then Select Simulation Mode from menu
- 12.2 Click on Online menu again
- 12.3 Select Login and verify this √ symbol is in front of Simulation Mode
- 12.4 Select RUN to test your project in Simulation mode.

CoDeSys - Application.AC500PRO*								
File Edit Project Insert Extras	Online Window Help							
	Login	Alt+F8						
	Logout	Ctrl+F8						
	Download							
	Run	F5						
	Stop	Shift+F8						
	Reset	er						
	Reset (cold)	ni						
	Reset (original)	e						
	Toggle Breakpoint	F9						
	Breakpoint Dialog							
	Step over	F10 tF						
	Step in	F8						
	Single Cycle	Ctrl+F5 ni						
	Write Values	Ctrl+F7						
Implementatio	Force Values	F7						
Implementatio	Release Force	Shift+F7						
Implementatio	Write/Force-Dialog	Ctrl+Shift+F7						
Implementatio	Show Call Stack							
Implementatio	Display Flow Control							
Implementation	/ Constant Made							
Implementatio	Simulation Nidde Communication Parameterr							
Implementatio	Send marked text to RemoteControl Master (e.g. as parameter)							
POU indices:	sense manage text to remote control master (e.g. as parameter)							
Size of used d	Create boot project							
Size of used n Code size: 10	Write file to PLC							
0 Error(s), 0 V	Read file from PLC							
Code size: 10	Show file information							

Visualization Screen in Simulation mode:





