

APPLICATION NOTE

AC500 PROJECT COMPARISON

COMPARE AC500 PROJECTS AND INTEGRATE THE DIFFERENCES



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1 Introduction

1.1 Scope of the document

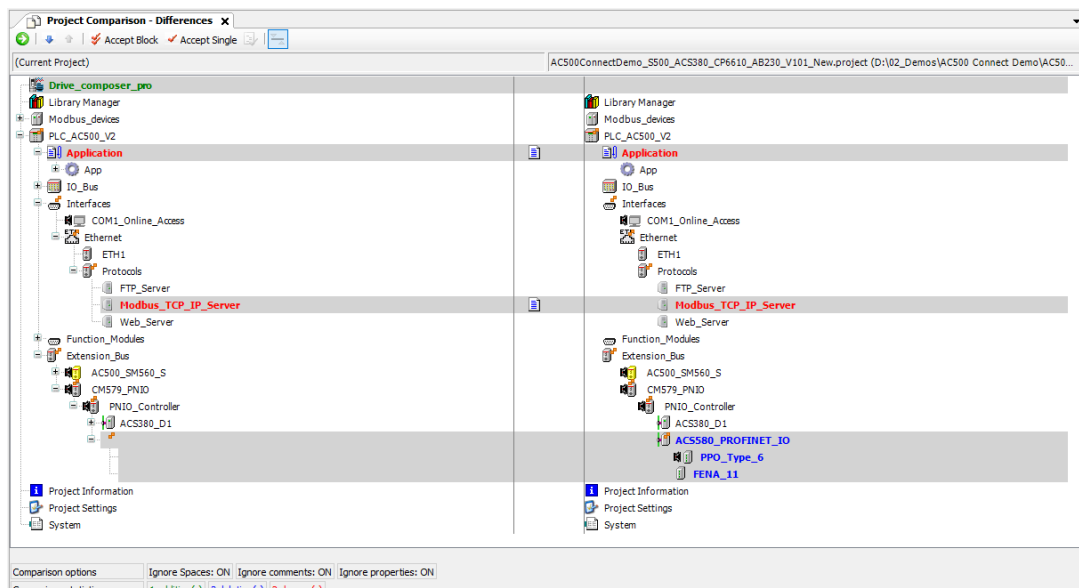
Show how it's possible to compare two Automation Builder Projects and integrate the differences.

1.2 Compatibility

The application example explained in this document have been used with the below engineering system versions. They should also work with other versions, nevertheless some small adaptations may be necessary, for future versions.

- AC500 V2 PLC and AC500 V3 PLC
- Automation Builder 2.3.0 or newer

1.3 Overview



2 Prerequisites

It is possible to compare two Automation Builder projects.

To use this feature a **Premium license** of Automation Builder needs to be activated.

In the comparison as well hardware configuration and software code differences are shown and can be integrated from the comparing into the actual opened project.

To be able to compare the project, which is loaded to an AC500 PLC it is necessary, that the project, which was downloaded to the AC500 was also downloaded as source code to the AC500 PLC. For AC500-V2 PLCs this can be downloaded to an inserted SD-Card. For AC500-V3 PLCs this can be downloaded to the PLC directly.

To compare this downloaded source code, it has to be uploaded from the SD-Card or the AC500-V3 to the PC.

3 Compare two Automation Builder projects and select differences to be integrated

3.1 Documentation in Automation Builder Help

See Help of Automation Builder in chapter:

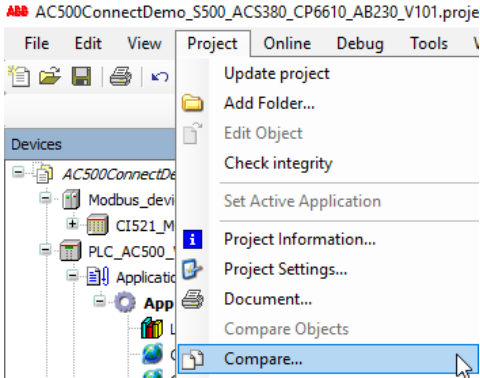
Automation Builder > IEC61131-3 editor > Programming for PM56xx > CODESYS Development System > Reference, User Interface > Menu Commands > Menu 'Project' > Command 'Compare'

Even if this chapter found in the part for PM56xx (AC500-V3) it is applicable in the same way for the PM5xy (AC500-V2).

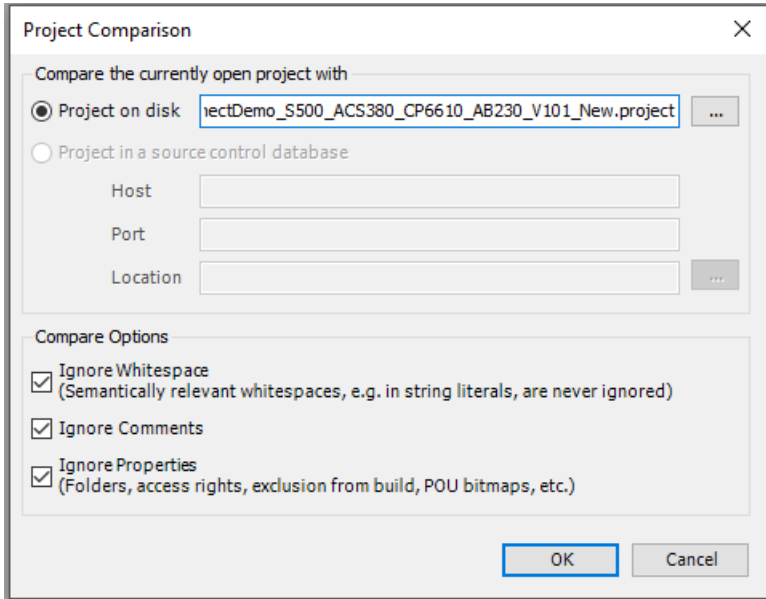
The screenshot displays the Automation Builder help system. On the left, a tree view shows the navigation path: **Automation Builder** > **Programming for PM56xx** > **CODESYS Development System** > **Reference, User Interface** > **Menu Commands** > **Menu 'Project'** > **Command 'Compare'**. The main content area shows the documentation for the 'Compare' command, including its function, call, requirements, and a dialog box titled 'Project Comparison - Differences'. The dialog box shows a side-by-side comparison of two project files: '(Current Project)' and 'proj_a.project (D:\Proj)'. The comparison highlights differences in the 'Counter' and 'prog_1' objects. The 'Counter' object in the current project is highlighted in yellow, while in the reference project it is highlighted in blue. The 'prog_1' object in the current project is highlighted in yellow, while in the reference project it is highlighted in blue. The 'prog_2' and 'prog_3' objects are also visible in the comparison.

3.2 Workflow

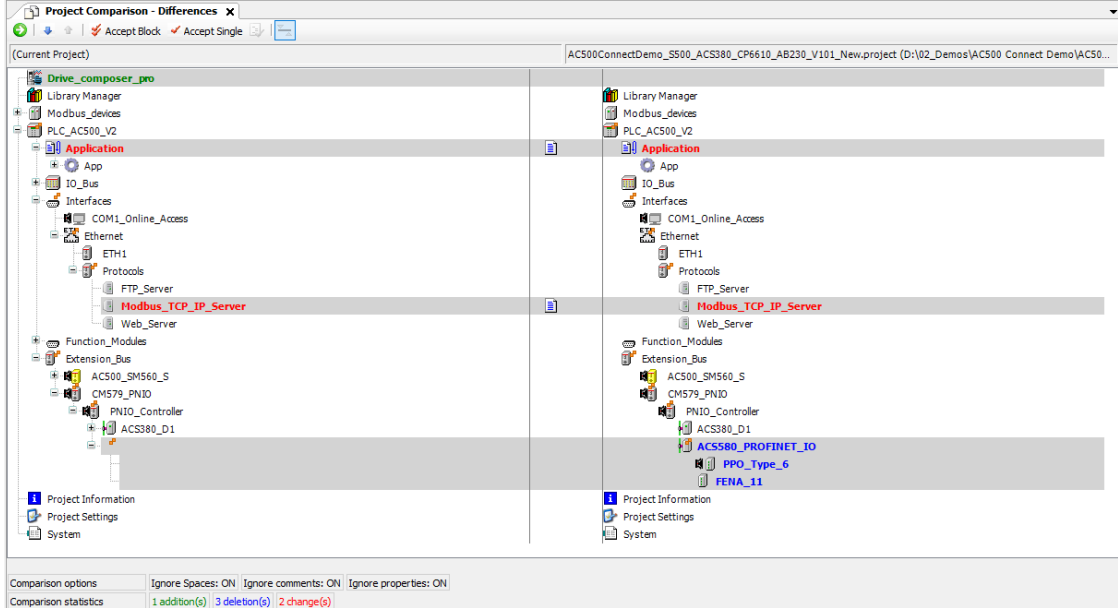
- 1. Open the active project and then select **Project > Compare**



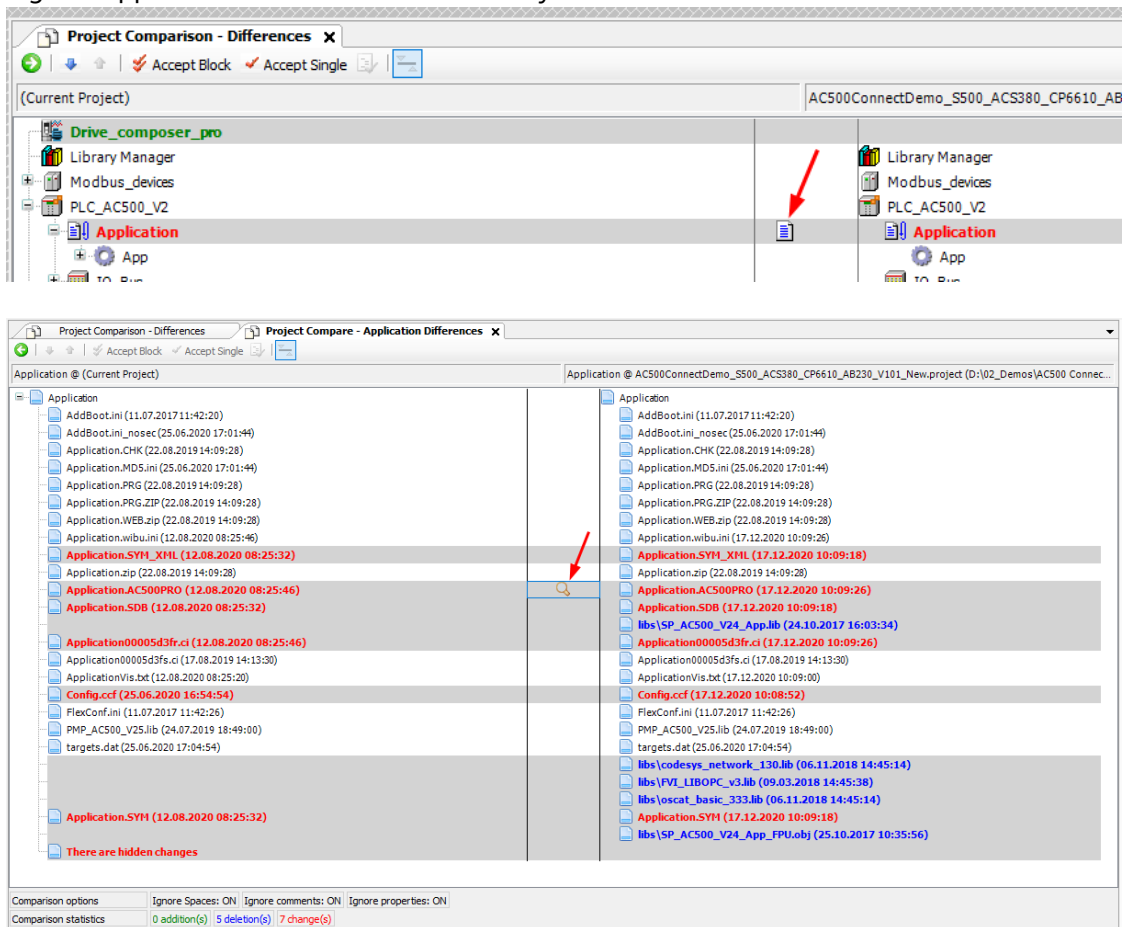
- 2. Select the project to be compared with and the options for the comparison



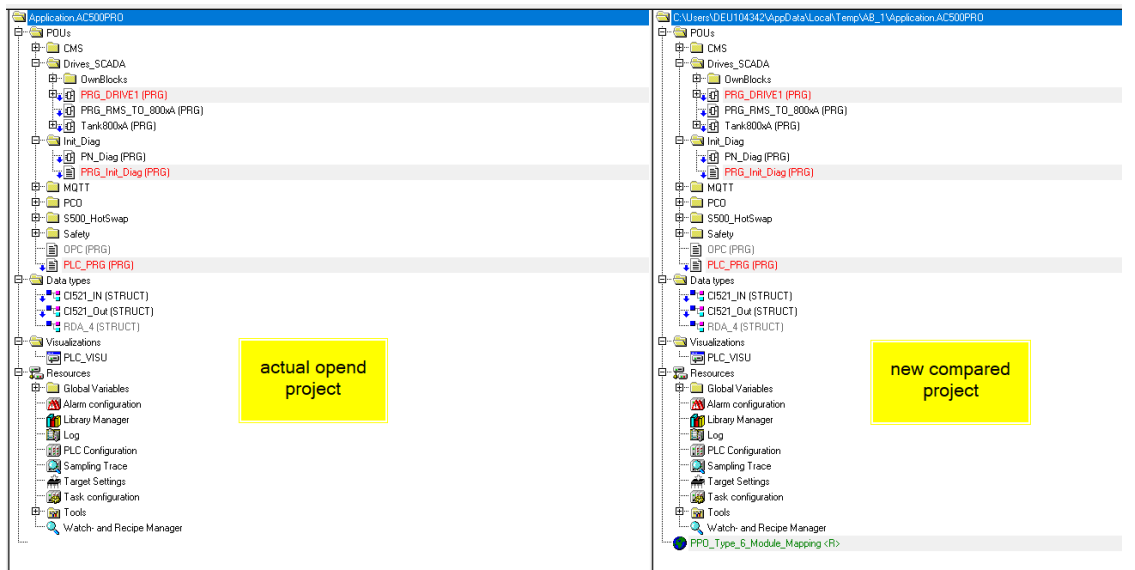
- 3. Click **OK** to open the comparison



- Select the topic which you want to compare more in detail.
E.g. the Application and click on the middle symbol.



- Open the programming part by doubleclick to the magnifier glass to check the programming differences (IEC programming part for V2 PLC)
→ the IEC61131 editor V2 will open and show the differences. (new project on the right)



6. Open the specific programm parts to review the detailed differences.

```

0009 (* reset puls after init is done *)
0010 fbInitPulse(IN:=xDInitDone ,PT:=#2s);
0011 xInitDonePulse := fbInitPulse.Q;
0012
0013
0014
0015 (* running pulse *)
0016 fbRunningDelay(IN:=xPLCRRunning, PT:=#5s);
0017
0018 fbRunningPulse(CLK:=fbRunningDelay.Q);
0019
0020 (* global Reset / Acknowledge *)
0021 r3(CLK:=xOnline_D1);
0022
0009 (* reset puls after init is done *)
0010 fbInitPulse(IN:=xDInitDone ,PT:=#2s);
0011 xInitDonePulse := fbInitPulse.Q;
0012
0013 (* some code deleted and commented: *)
0014
0015 (* running pulse *)
0016 fbRunningDelay(IN:=xPLCRRunning, PT:=#5s);
0017
0018
0019
0020 (* global Reset / Acknowledge *)
0021 r3(CLK:=xOnline_D1);
0022
    
```

7. Close the editors by the X on top right corner

8. Check also the other differences of the project by clicking on the middle symbol e.g. the Ethernet configuration

Project Comparison - Differences

Project Compare - Modbus_TCP_IP_Server Differences

Name	Type	Value	Variable	Address	Description
Server connections	BYTE	5			
Task timeout	WORD	20			
OMB time	WORD	10			
Send timeout	DWORD	0			
Connect timeout	DWORD	18000			
Close timeout	DWORD	0			
Byte order	BYTE	Big endian			
Change %M to %R	BYTE	No			
Disable write to %MB0.xfrom	WORD	0			
Disable write to %MB0.xto	WORD	0			
Disable read to %MB0.xfrom	WORD	0			
Disable read to %MB0.xto	WORD	0			
Disable write to %MB1.xfrom	WORD	0			
Disable write to %MB1.xto	WORD	0			
Disable read to %MB1.xfrom	WORD	0			
Disable read to %MB1.xto	WORD	0			
Assigned interface	BYTE	1			

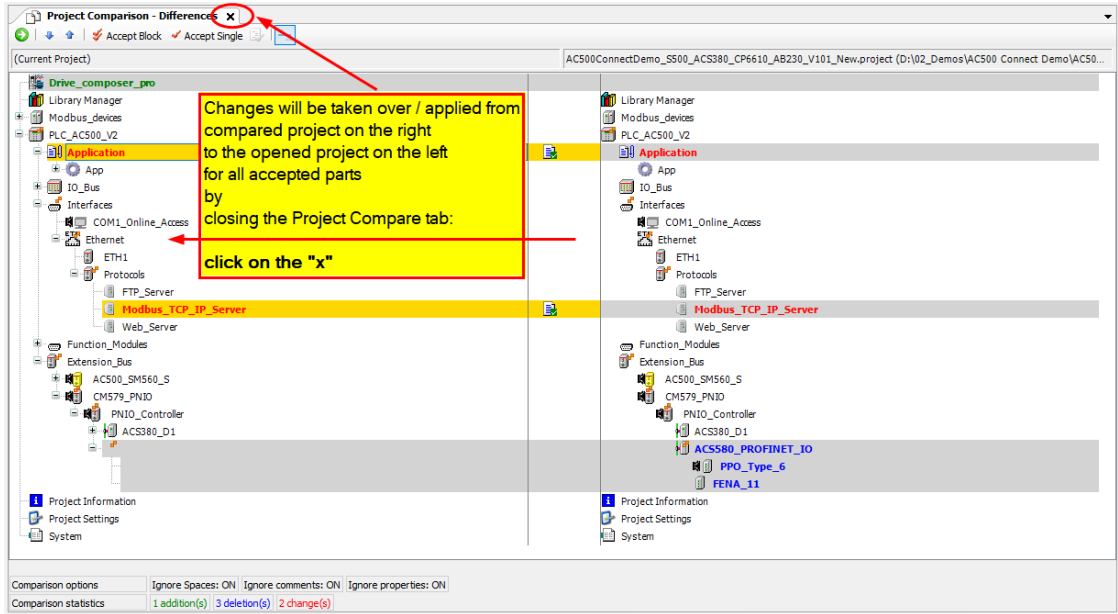
Comparison options: Ignore Spaces: ON | Ignore comments: ON | Ignore properties: ON

Comparison statistics: 0 addition(s) | 0 deletion(s) | 1 change(s)

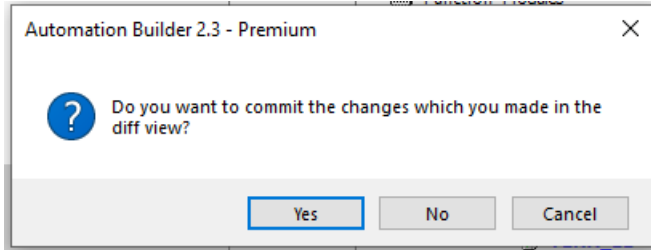
9. **Accept changes**

Select the parts that should be accepted for one block, or only single parts by selecting them in the overview and click on “**Accept Block**” or “**Accept Single**” in the menu

10. Changes will be taken over / applied from compared project on the right to the opened project on the left for all accepted parts by - closing the Project Compare tab: click on the "X"



Confirm the dialogue



The selected parts are then changed in the opened project

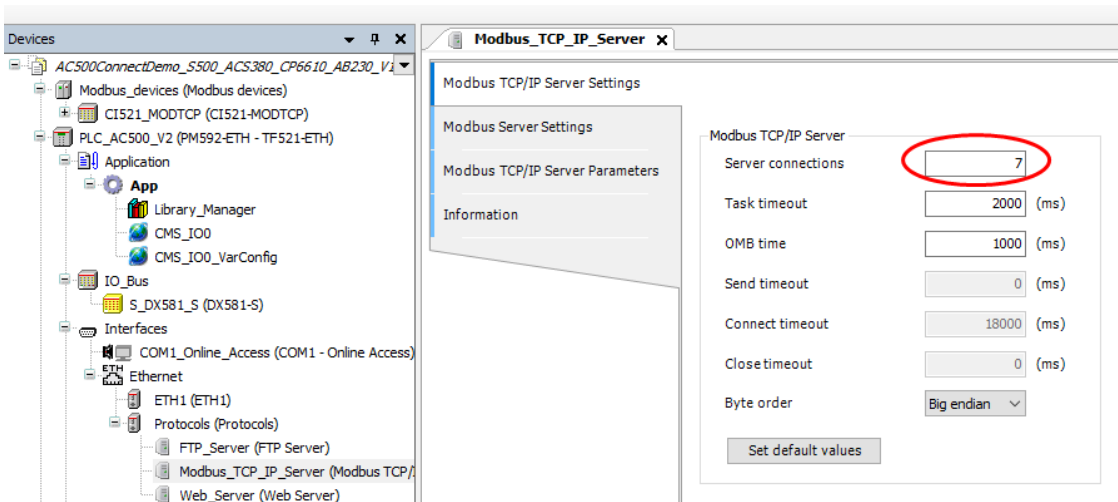




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