

MANUAL

TA514-SAFETY with V3 CPU

Modification instructions





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1. Introduction

This document describes modification steps to be performed on TA514-SAFETY training case to use it with AC500 V3 non-safety CPU (e.g., PM5630-2ETH) instead of AC500 V2 non-safety CPU (e.g., PM573-ETH).

AC500-S safety PLC module functions remain unchanged after modifications of TA514-SAFETY training case. It means that the AC500-S safety PLC and related safety functions can be used with TA514-SAFETY training case independently on the used non-safety CPU (AC500 V2 CPU or AC500 V3 CPU).

Refer to <https://new.abb.com/products/1SAP182900R0001/ta514-safety> web page for more details on TA514-SAFETY. In addition, references [1] and [2] provide detailed TA514-SAFETY training case description and related AC500-S safety PLC functionality.

2. Modification instructions


2.1. Prerequisites

You will need the following AC500 products to be able to modify TA514-SAFETY training case for its usage with AC500 V3 non-safety CPU:

- TB5620-2ETH terminal base, <https://new.abb.com/products/1SAP112300R0278/tb5620-2eth>
- PM5630-2ETH CPU module, <https://new.abb.com/products/1SAP131000R0278/pm5630-2eth>

In addition, a slotted screwdriver may be needed to be able to move I/O modules along the DIN rail.

2.2. Modification steps

	Make sure that TA514-SAFETY training case is not energized (refer to A in Figure 1, remove the external power supply connector from TA514-SAFETY) to prevent any electrical shock. In addition, it is recommended to bring the power switch in the OFF state (refer to B in Figure 1).
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The following modification steps shall be performed on TA514-SAFETY training case to work with AC500 V3 non-safety CPU when it is de-energized (see DANGER note above):

1. Remove the power connector (refer to C in Figure 1) from TB521-ETH terminal base of PM573-ETH CPU module and PROFINET cable (refer to D in Figure 1) from CM579-PNIO module.

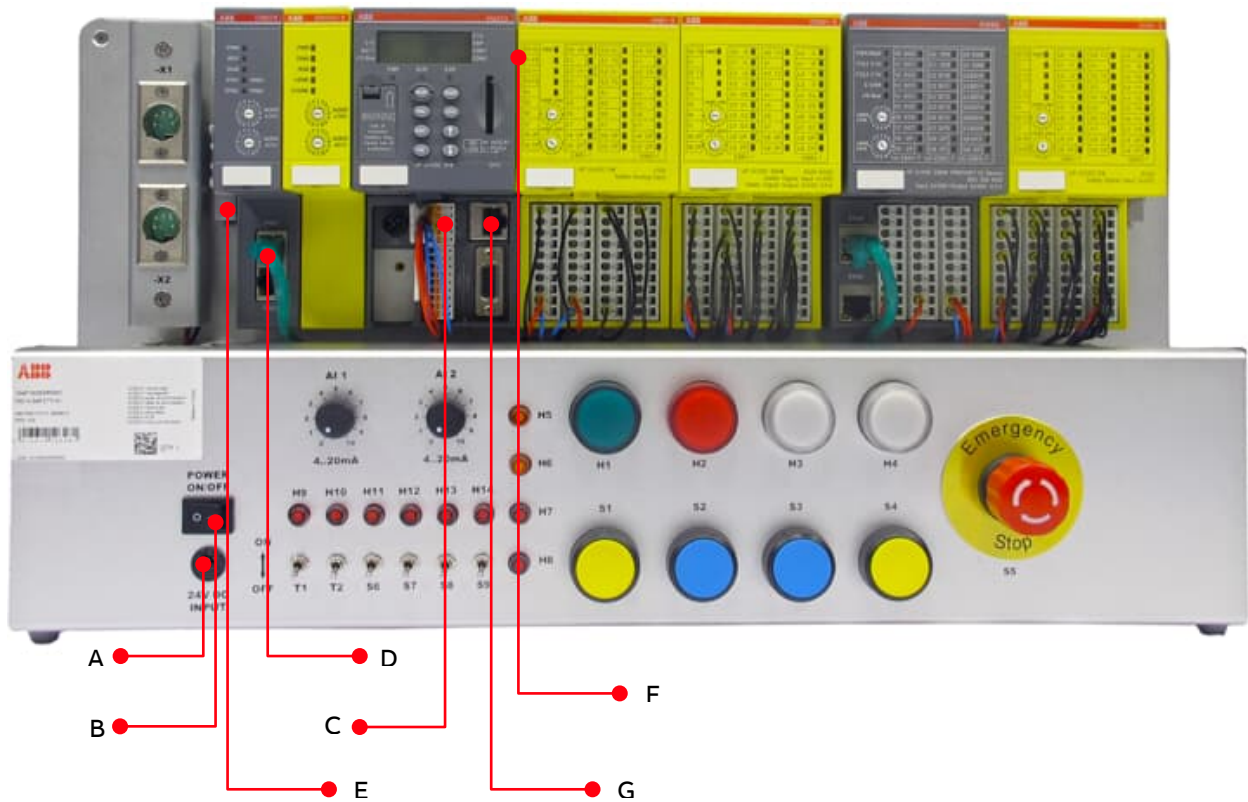
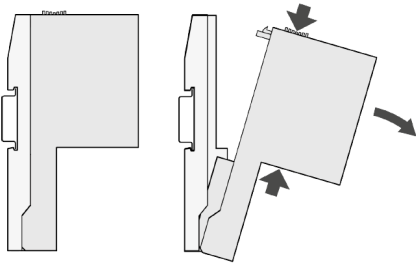
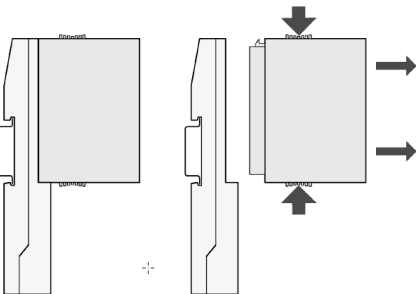


Figure 1: Front view of TA514-SAFETY training case

2. Remove CM579-PNIO and SM560-S modules from TB521-ETH.



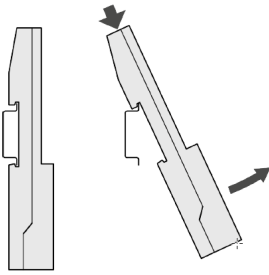
3. Remove PM573-ETH from TB521-ETH.



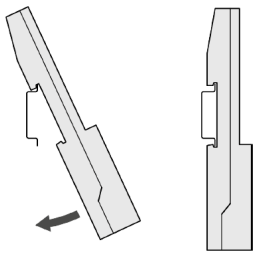
4. Using the slotted screwdriver, unscrew the terminal block end stop (refer to E in Figure 1) and remove it from the DIN rail.

5. Move carefully TB521-ETH along the DIN rail to the left to have no direct mechanical and electrical contact from TB521-ETH with TU582-S of AI581-S. If needed, the slotted screwdriver can be used as a supportive tool (refer to F in Figure 1 for an approximate location on where to apply the force using the slotted screwdriver).

6. Remove TB521-ETH from the DIN rail.

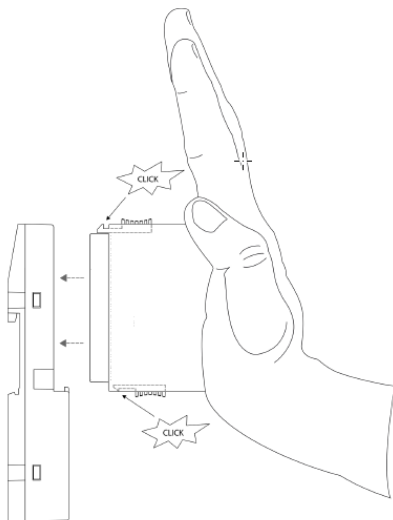


7. Put TB5620-2ETH on the DIN rail position of TB521-ETH and shift it to the right to have the mechanical and electrical contact with TU582-S of AI581-S (refer to F in Figure 1).

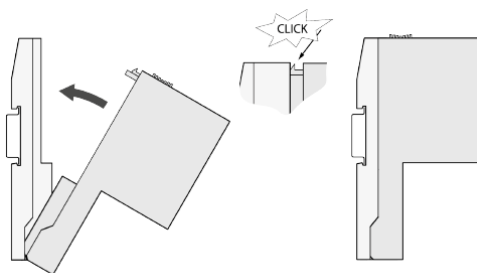


8. Put previously removed terminal block end stop (refer to E in Figure 1) back to the DIN rail and screw it tight to the DIN rail using the slotted screwdriver.

9. Put PM5630-2ETH CPU module on TB5620-2ETH.



10. Put SM560-S safety CPU module in the slot next to PM5630-2ETH on TB5620-2ETH and then CM579-PNIO module in the slot next to SM560-S on TB5620-2ETH.



11. Connect the power connector to TB5620-2ETH below PM5630-2ETH (refer to C in Figure 1) and connect the PROFINET cable back to CM579-PNIO (refer to D in Figure 1).
12. Connect the energized external power supply cable (refer to A in Figure 1) and put the power switch to ON state (refer to B in Figure 1) to switch on the TA514-SAFETY training case with the new PM5630-2ETH V3 CPU on it. **TA514-SAFETY modification is complete now.**

You can now connect your own ETH cable to the ETH connector (refer to G in Figure 1) on TB5620-2ETH of PM5630-2ETH CPU module and access PM5630-2ETH from your engineering PC with Automation Builder suite according to AC500 V3 non-safety CPU instructions [3], e.g., to update PM5630-2ETH firmware, if needed, and download the Automation Builder project of TA514-SAFETY (refer to www.abb.com/plc for the latest TA514-SAFETY Automation Builder project with AC500 V3 non-safety CPU) to it and the safety CPU.

For more details on assembly and disassembly of AC500 modules, refer to [4].

3. References

- [1.] TA514-SAFETY Training Case - Installation Instructions, <https://search.abb.com/library/Download.aspx?DocumentID=3ADR025216M6801&LanguageCode=en&DocumentPartId=&Action=Launch>
- [2.] TA514-SAFETY Training Case - Operation Manual, <https://search.abb.com/library/Download.aspx?DocumentID=3ADR025217M6801&LanguageCode=en&DocumentPartId=&Action=Launch>
- [3.] Getting started with AC500 V3 products, <https://search.abb.com/library/Download.aspx?DocumentID=3ADR010584&LanguageCode=en&DocumentPartId=&Action=Launch>
- [4.] Installation instructions for AC500 modules, <https://search.abb.com/library/Download.aspx?DocumentID=3ADR024117M02xx&LanguageCode=en&DocumentPartId=&Action=Launch>

ABB AG
Eppelheimer Straße 82
69123 Heidelberg, Germany
Phone: +49 62 21 701 1444 Fax :
+49 62 21 701 1382
Mail: plc.support@de.abb.com
www.abb.com/plc

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