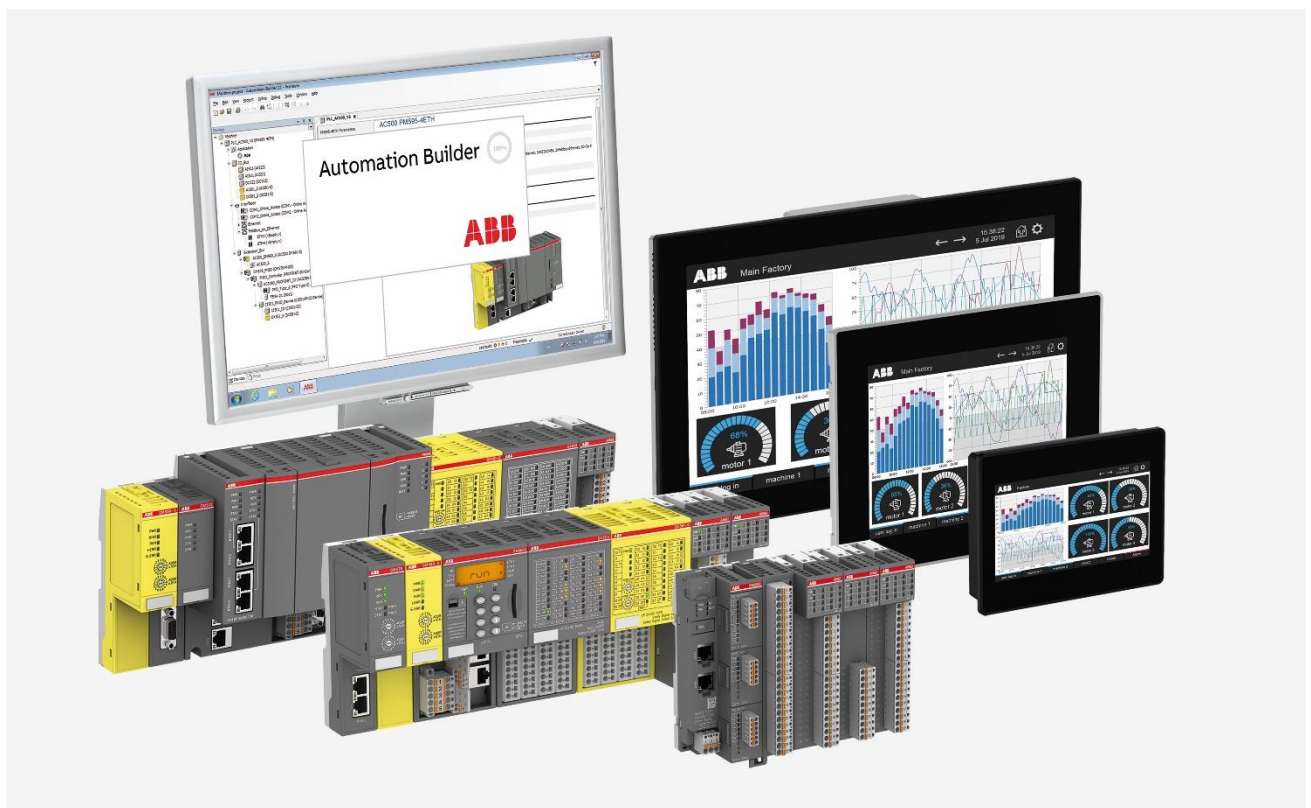


APPLICATION NOTE

AC500 V3-ECO - FAQ

TA514X-RSXXX SERIAL OPTION BOARDS



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1 Introduction

1.1 Scope of the document

Collect and answer frequently asked and important questions regarding the AC500-eCo V3 option boards for serial communication produced from the first week of 2023.

- 1SAP187300R0001 (TA5141-RS232I)
- 1SAP187300R0002 (TA5142-RS485I)
- 1SAP187300R0003 (TA5142-RS485)

For better availability of the components, we had to update the design of the products in the production. These modules have the same features as the products manufactured before 2023 but are using some new components which need at least a CPU Boot Firmware (Boot FW) version 3.5.1.17.

The document describes how to identify the option boards and what has to be done to use them.

1.2 Compatibility

This FAQ document is intended for serial interface option board modules manufactured from the first week of 2023 and upper which must be used from the below engineering system versions and respectively CPU firmware and BootFW.

These modules cannot work with older other versions but are upward compatible to all new and upper versions.

- AC500-eCo V3 PLC
- From Automation Builder 2.5.2 / BootFW 3.5.1.17 and SystemFW 3.5.0.494 or newer

The following table indicates the option boards FW/SW compatibility.

P/N	Type	Manufacturing date Date code	AB 2.4.1 ->		AB 2.5.0		AB 2.5.2->		AB 2.6.x ->	
			BootFW	SystemFW	BootFW	SystemFW	BootFW	SystemFW	BootFW	SystemFW
1SAP187000R0001	TA5101-4DI	From 2xx1 ->	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187000R0002	TA5105-4DOT	From 2xx1 ->	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187000R0003	TA5110-2DI2DOT	From 2xx1 ->	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187100R0001	TA5120-2AI-UI	From 2xx3 ->	-	-	-	-	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187100R0002	TA5123-2AI-RTD	From 2xx3 ->	-	-	-	-	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187100R0003	TA5126-2AO-UI	From 2xx3 ->	-	-	-	-	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187100R0004	TA5122-2AI-TC	From 2xx3 ->	-	-	-	-	-	-	-	-
1SAP187200R0001	TA5130-KNXPB	From 2xx1 ->	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187200R0002	TA5131-RTC	From 2xx1 ->	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187300R0001	TA5141-RS232I	From 2xx1 -> 2xx2	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
		From 2xx3 ->	NO	NO	NO	NO	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187300R0002	TA5142-RS485I	From 2xx1 -> 2xx2	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
		From 2xx3 ->	NO	NO	NO	NO	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
1SAP187300R0003	TA5142-RS485	From 2xx1 -> 2xx2	3.4.0.64	3.4.1.278	3.5.0.37	3.5.0.397	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838
		From 2xx3 ->	NO	NO	NO	NO	3.5.1.17	3.5.0.494	3.6.0.97	3.6.0.838

NO

Please update the AC500-eCo V3 CPU to the latest AB/FW version or at least AB 2.5.2 and corresponding FW

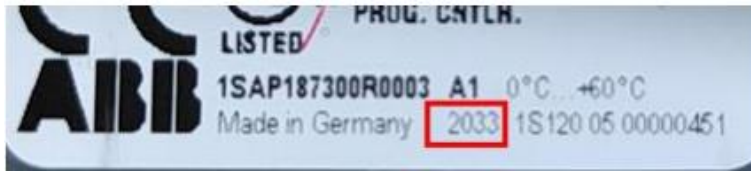
1.3 Overview



2 How to identify the affected products?

The serial interface option boards products are identified on the product itself and on the packaging label with a 4-digit manufacturing Date/Code YWWY.

All the serial option board products from the 1st week of 2023 and upper with a manufacturing Date/Code like 2xx3 or upper are impacted.



This code is composed from 4 digits with following meanings, the **1st** and **4th** digits are representing the manufacturing year. The **2nd** and **3rd** represent the manufacturing week.

e.g., **2033** means manufacturing week **03** from **2023**.

2.1 What is the problem and what's happened?

The new produced option boards are fitted with an EEPROM component for board identification which indicates to the CPU which type of option board is connected during the CPU boot phase.

If mismatch of option board and Firmware the PLC will not start and the Error LED will light up. Online diagnostic will give the error message.

By accessing the PLC with Automation Builder software, the following error is displayed:

Gewichtung	Zeitstempel	Beschreibung	Komponente
1	16.06.2005 01:56:15	Instance #0 prevents RUN. Please check configuration.	IoDrvCom

Instance #x prevents RUN. Please check configuration

The **#x** number indicates which option board slot of the CPU has an error.



Note: This error message indicates that the option board creates a configuration error or its compatibility with the CPU FW must be checked.

2.2 What must be done to overcome the problem?

Using a new produced option board with an AC500-eCo V3 CPU, needs that the CPU is recognizing the option board and that the communication can be achieved.



CAUTION!

Using a new option board with an old CPU with BootFW and SystemFW Version < 3.5.1.17 /3.5.0.494 is not allowed and leads to incompatibility and CPU error.

The BootFW of the CPU must be updated to at least version 3.5.1.17 or higher.

This is included into Automation Builder 2.5.2 and higher. See online help from AB SW to perform a firmware update.

2.3 How to perform a FW/BootFW update of a PLC?

refer to following application note (follow link): [3ADR011177 - AC500 V3 FIRMWARE UPDATE](#)

3 FAQ – Frequently Asked Questions

3.1 May I use a new option board on an old AC500-eCo V3?

Yes, the old and new produced option boards can be used on all AC500-eCo V3 CPU if the CPU is fitted with BootFW/SystemFW \geq 3.5.1.17 /3.5.0.494. Both modules are running without any errors.

If the CPU BootFW/SystemFW is lower, the CPU FW MUST be updated to the right one.

Additionally, if the application has also been created with an ABB Ability™ Automation Builder smaller than AB 2.5.2, then the application MUST also be upgraded too.



CAUTION!

The new produced serial option boards cannot be used with BootFW and SystemFW Version **smaller than** 3.5.1.17 /3.5.0.494. This leads to incompatibility and CPU error.

3.2 May I use mixed new/old option boards on a CPU?

Yes, the old and new produced option boards can be mixed and used on all AC500-eCo V3 CPU if the CPU is fitted with BootFW/SystemFW \geq 3.5.1.17 /3.5.0.494.

Both modules are running without any errors.

3.3 I have a running CPU with an application and want to exchange a defect serial option board, how to proceed?

Check the production date /code of the replacement option boards (see photos):



1. Date/Code is older or equal than 2xx3 (e.g., 2xx2)

- Power OFF the CPU
- Remove the defect serial interface option board, plug the replacement option board
- Power ON the AC500-eCo V3 CPU will start and continue to work.

2. Date/Code is 2xx3 or higher

- Power OFF the CPU
- Remove the defect serial interface option board, plug the replacement option board
- Power ON the AC500-eCo V3 CPU,
 - **if the CPU starts** then the version of the BootFW is good enough, the CPU has recognized the option board, and everything works well.
 - **The CPU doesn't start** and the error LED light on. Connect ABB Ability™ Automation Builder and check the error message. Check the CPU BootFW/System

FW, if the version **is smaller than** 3.5.1.17 /3.5.0.494, you must update your CPU FW and maybe upgrade your application to ABB Ability™ Automation Builder 2.5.2 or higher to run the CPU with newer option board.

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