

Doc#: AN.AFD.19

Title: Replacing a 7 Series Drive with a 1000 Series Drive for PROFIBUS Communication

Application Note

Replacing a 7 Series Drive with a 1000 Series Drive for PROFIBUS Communication

Applicable Products: CM067, CM061, SI-P3 PROFIBUS Communication Option Kits



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INTRODUCTION

This application note discusses how to replace a 7 series drive with a CM061 or CM067 PROFIBUS option with a 1000 series drive and the SI-P3 option.

INTENDED AUDIENCE

This document assumes that the reader is familiar with Yaskawa AC drives, PROFIBUS technical terminology and operation, and with Siemens S7 programming.

REFERENCES

Other Yaskawa application notes that pertain to interfacing Yaskawa drives to Rockwell PLCs.

- IG.AFD.12 PROFIBUS Installation Guide for E7, F7, G7 and P7 series drives
- TM.AFD.12 PROFIBUS Technical Manual for E7, F7, G7 and P7 series drives
- IG.V7.12
 PROFIBUS Installation Guide for V7 series drives
- TM.V7.12 PROFIBUS Technical Manual for V7 series drives
- SIEPC73060023 SI-P3 Installation Guide
- TOBPC73060023 SI-P3 technical Manual

OVERVIEW

Due to a difference in product codes, the 1000 series drives with the SI-P3 option is not plug-in replaceable for any 7 series drive with either the CM067 or the CM061 options. The PLC network configuration needs to be updated with the new module. However, most replacements can be made without any other changes to the PLC program.

REPLACE A CM061 OR CM067 WITH A SI-P3

Replacing an existing CM061 or CM067 in a configured network consists of a series of steps that need to be followed in the order shown.

- 1. Open the network configuration in your configuration software. Siemens Step 7 software will be used in the demonstration.
- 2. Select the PROFIBUS device to be replaced.
- 3. Record the configuration type (Basic, Extended 1 or Extended 2) and memory blocks allocated.
- 4. Load the GSD file for the SI-P3 (YASK0ACF.GSD). The file can be downloaded from the link below. <u>https://www.yaskawa.com/links?type=documents&docnum=YASK0ACF&name</u>=
- 5. Delete the device
- 6. Select the SI-P3 from the catalog. Make sure that the node address is the same as the node address of the replaced device.
- 7. Select the configuration for the SI-P3. Make sure that the configuration matches exactly the configuration of the replaced device.
- 8. Examine the memory blocks allocated for the SI-P3. They should match exactly the memory block that had been allocated for the replaced device. If there is a discrepancy in memory allocation, allocate the memory manually.
- 9. Compile, save and download the new network configuration to the PLC.

Note: The standard I/O of each configuration will remain the same. For the Extended 1 and Extended 2 configurations, however, the address contained in the dynamic data section may need to be changed to match the 1000 series drive parameter mapping.



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- 1. Open the network configuration in your configuration software. Siemens Step 7 software will be used in the demonstration.
- 2. Select the PROFIBUS device to be replaced.
- 3. Record the configuration type (Basic, Extended 1 or Extended 2) and memory blocks allocated.

躍 HW Config - [SIMATIC 300 Station (Configuration) BK Compat Test]											
	Eind: nt ni										
2 CPU315-2 DP PROFIBUS(1): DP master system (1)	Profile: Standard										
	Additional Field Devices										
	E- Drives										
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	- Basic data										
Record the node address	Extended Data 1										
	🖶 🗃 SI-P3 PROFIBUS-DP INTERFACE CARD										
Select drive to replace Record configuration	Switching Devices 1/0										
Load the SI-P3 GSD file	🗄 🦲 Gateway										
Ludu ille 31-13 030 ille	⊕										
	Configured Stations										
	DP V0 slaves DP/AS-i										
(4) PROFIBUS-OP INTERFACE CA	🕀 🧰 DP/PA Link										
Slot D PID Order Number / Designation I Address Q Address Comment	ENCODER ET 200B										
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2 1040 ** Extended Unita 1 2000.313	⊕										
Record memory blocks											
Record memory blocks	⊕ 🛄 ET 200L										
	ET 200M ET 200Pro										
	🕀 🧰 ET 200R										
	⊕ ET 200S ⊕ ET 200U										
	Function Modules										
	⊕ 🔁 IDENT ⊕ 🔁 IPC										
	🗄 🕀 🧰 NC										
	Components Sensor system										
/ ' Press F1 to get Help.											

Figure 1: Record device properties

- 4. Load the GSD file for the SI-P3 (YASK0ACF.GSD). The file can be downloaded from the link below. https://www.yaskawa.com/links?type=documents&docnum=YASK0ACF&name=.
- 5. Delete the device



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- 6. Select the SI-P3 from the catalog. Make sure that the node address is the same as the node address of the replaced device.
- 7. Select the configuration for the SI-P3. Make sure that the configuration matches exactly the configuration of the replaced device.
- 8. Examine the memory blocks allocated for the SI-P3. They should match exactly the memory block that had been allocated for the replaced device. If there is a discrepancy in memory allocation, allocate the memory manually.

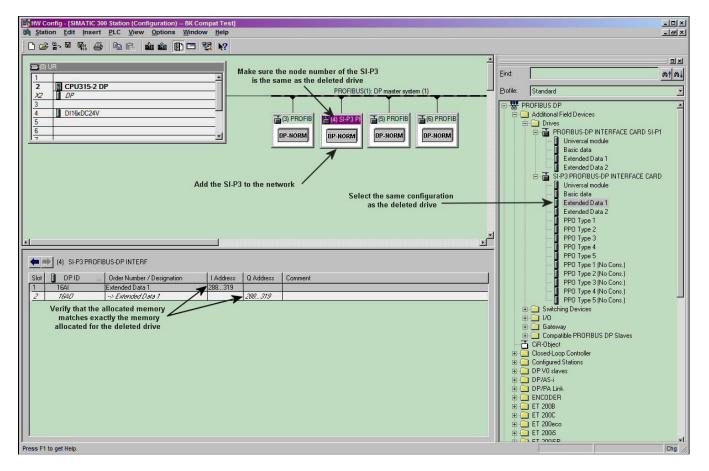


Figure 2: Add the SI-P3 to the network



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SAVE AND COMPILE THE CONFIGURATION

9. Compile, save and download the new network configuration to the PLC.

Ex HW Config - [SIMATIC 300 Station (Configuration) BK Compat Test]										
Station Edit Insert PLC View Options Window Help										
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É.	<u>O</u> pen	Ctrl+0							1	
	Open ONLINE							Ē		·
	Close								<u>F</u> ind:	nt ni
	Save					PROCIDU	S(1): DP master system	(1)	Profile:	Standard 👻
	Save and Compile	Ctrl+S				PROFIBU:	5(1): DP master system			
	Properties				(3) PROFIB	📥 (4) SI-P3 PF	(5) PROFIB	(6) PROFIB		PROFIBUS DP
	Import		- 1		(S)THOTIS	(4) 311 311	(S)T NOTE			
	Export			1	DP-NORM	DP-NORM	DP-NORM	DP-NORM		PROFIBUS-DP INTERFACE CARD SI-P1 Universal module
	Consistency Check	Ctrl+Alt+K								Basic data
	Check CiR Compatibility	Ctrl+Alt+F								- Extended Data 1
	Print	Ctrl+P								Extended Data 2 SI-P3 PROFIBUS-DP INTERFACE CARD
	Print Preview									Universal module
	Page Setup									Basic data
-										Extended Data 1
	1 BK Compat Test\SIMATIC 300 Station									Extended Data 2
	2 S7_Pro2\SIMATIC 300 Station									PPO Type 1
	3 S7_Pro1\SIMATIC 300 Station 4 S7_Pro3\SIMATIC 300 Station							-		— PPO Type 2 — PPO Type 3
₫.	4 57_Prosisima ne 500 station							F		PPO Type 4
	E <u>x</u> it	Alt+F4								PPO Type 5
										PPO Type 1 (No Cons.)
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1	16Al Extended Data 1		288319							PPO Type 4 (No Cons.)
4	? 1640> Extended Data 1	,		288319						PPO Type 5 (No Cons.)
										E is Switching Devices
										i 🔁 1/0
										🗄 🦲 Gateway
										⊕- 🔁 Compatible PROFIBUS DP Slaves — — GiR-Object
										Closed-Loop Controller
										Configured Stations
										DP V0 slaves
										🛅 DP/AS-i
										- 🔁 DP/PA Link
										- ENCODER
										- ET 2008 - ET 200C
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1										🔁 стралер 🚽
Save	s and creates all system data in the current sta	ation.								Chg //

Figure 3: Save and compile the network



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DOWNLOAD CONFIGURATION TO PLC

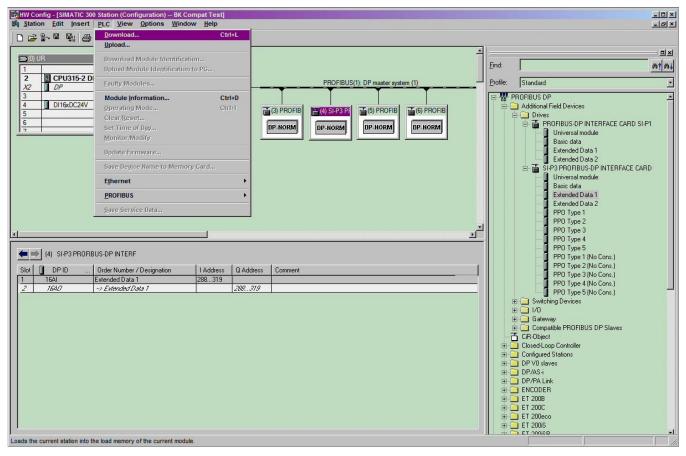


Figure 4: Download the network configuration to the PLC