



User Guide

ABC-CPU systems

Profibus parameterization under STEP7

07/2016

© Copyright 2015-2016 by ABC IT, Ahrens & Birner Company GmbH

Virchowstraße 19/19a

D-90409 Nuremberg

Fon +49 911-394 800-0

Fax +49 911-394 800-99

<mailto:mail@abcit.eu>

<http://www.abcit.eu/>

ABC IT is a registered trademark of ABC IT GmbH

Simatic is a registered trademark of Siemens AG

STEP is a registered trademark of Siemens AG

PROFIBUS is a registered trademark of PROFIBUS-Nutzerorganisation e. V.

Content

1. Introduction	4
1.1 Function scope.....	4
1.2 Peripheral area with STEP7 Profibus connection	5
1.3 firmware version	6
2. Configuration	7
2.1 STEP7	7
2.1.1 SYSPARAM-DB	7
2.1.2 HW-Config	8

1. Introduction

1.1 Function scope

The Profibus configuration can be done via HW-Config of the Simatic Manager (STEP7).

The configuration of the Profibus master is exactly as on a Simatic CPU 416-2 DP. If with an new Profibus user the I/O addresses of an existing S5-I/O module are entered, the corresponding S5 modules are no longer served.

HW Config - [Profibus-Master (Step 7) (Konfiguration) -- Samples]

Station Bearbeiten Einfügen Zielsystem Ansicht Extras Fenster Hilfe

Suchen:

Profil: Standard

- PROFIBUS-DP
- PROFIBUS-PA
- PROFINET IO
- SIMATIC 300
- SIMATIC 400
- SIMATIC PC Based Control 300/400
- SIMATIC PC Station

PROFIBUS(1): DP-Mastersystem (3)

(6) IM155-6

Steckplatz	Baugruppe	Bestellnummer	E-Adresse	A-Adresse	D...	Kommentar
1	DI8 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	620.0...620.7			
2	DI8 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	621.0...621.7			
3	DI8 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	622.0...622.7			
4	DI8 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	623.0...623.7			
5	DQ8 x 24VDC/0.5A ST V1.1	6ES7 132-6BF00-0BA0		620.0...620.7		
6	DQ8 x 24VDC/0.5A ST V1.1	6ES7 132-6BF00-0BA0		621.0...621.7		
7	Server module	6ES7 193-6PA00-0AA0			16372	
8						
9						

PROFIBUS-DP-Slaves der SIMATIC S7, M7 und C7 (dezentraler Aufbau)

Drücken Sie F1, um Hilfe zu erhalten.

1.2 I/O area with STEP7 Profibus connection

The peripheral area of the ABC X-CPU's of 0...5759 can be parameterized. In this area the Profibus can be used.

The S5 peripheral area is from 0...511 available. This is automatically connected to the system. The P and Q area is constructed as shown in the table. When updating the process image only the first 128 bytes are updated, as is customary in a S5 system. These are also one on one in the S7 area available.

The S5 modules can be replaced bitwise through Profibus components.

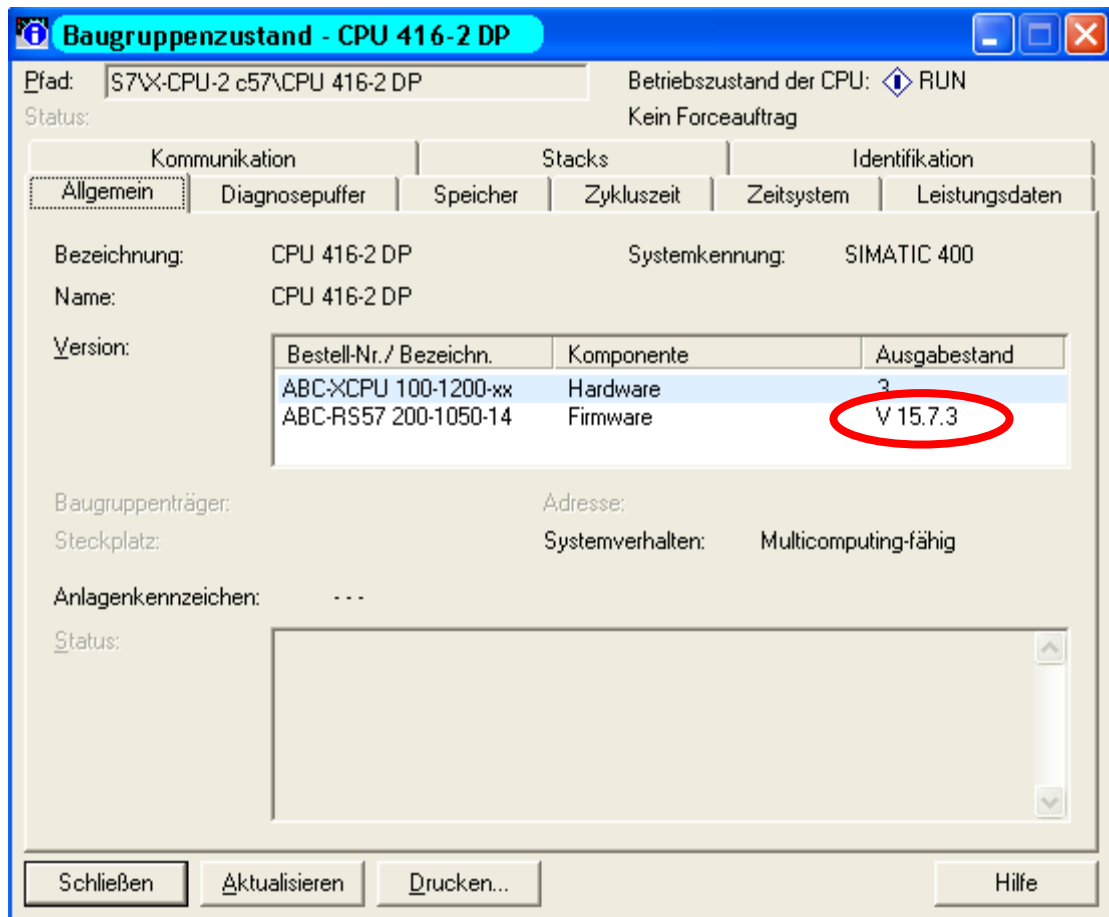
Example EB1, AB254, EW256 are replaced by Profibus components. The bytes of the existing S5 modules are then no longer operated by the X-CPU.

S7 P-Bereich	S7 PAB*		S5 P-Bereich	S5 PAB*	
I/O	Input	Output	I/O	Input	Output
0000	0000	0000	P000	0000	0000
0001	0001	0001	P001	0001	0001
0002	0002	0002	P002	0002	0002
...
0126	0126	0126	P126	0126	0126
0127	0127	0127	P127	0127	0127
...	Größe, siehe CPU Eigenschaft.	Größe, siehe CPU Eigenschaft.	...		
0254			P254		
0255			P255		
0256			Q000		
0257			Q001		
...			...		
0510	Größe, siehe CPU Eigenschaft.	Größe, siehe CPU Eigenschaft.	Q253		
0511			Q254		
0512					
0513					
...					
...					
5758					
5759					

*PAB: Prozessabbild

1.3 Firmware version

The firmware version of the X-CPU must be greater or equal v15 Build 0703.



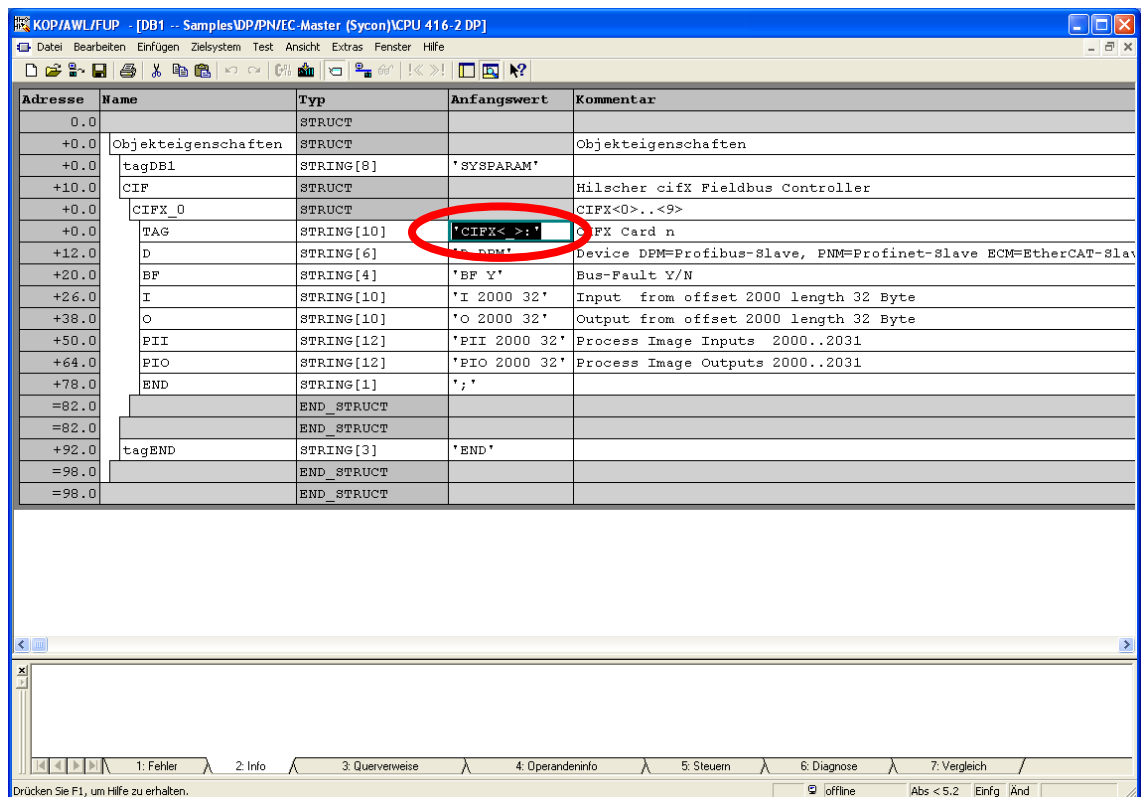
A firmware update is free under www.abcit.eu in the download area on our website available. Please perform a corresponding update!

2. Configuration

2.1 STEP7

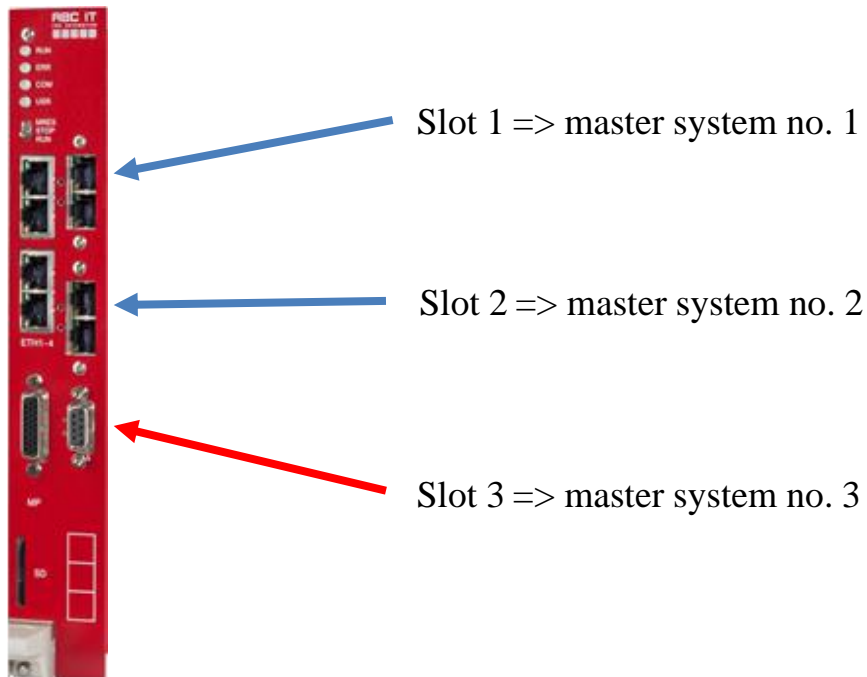
2.1.1 SYSPARAM-DB

In the SYSPARAM-data block (for example DB1), any existing parameter of SYCON.net for the respective cifX-Card must be deactivated.

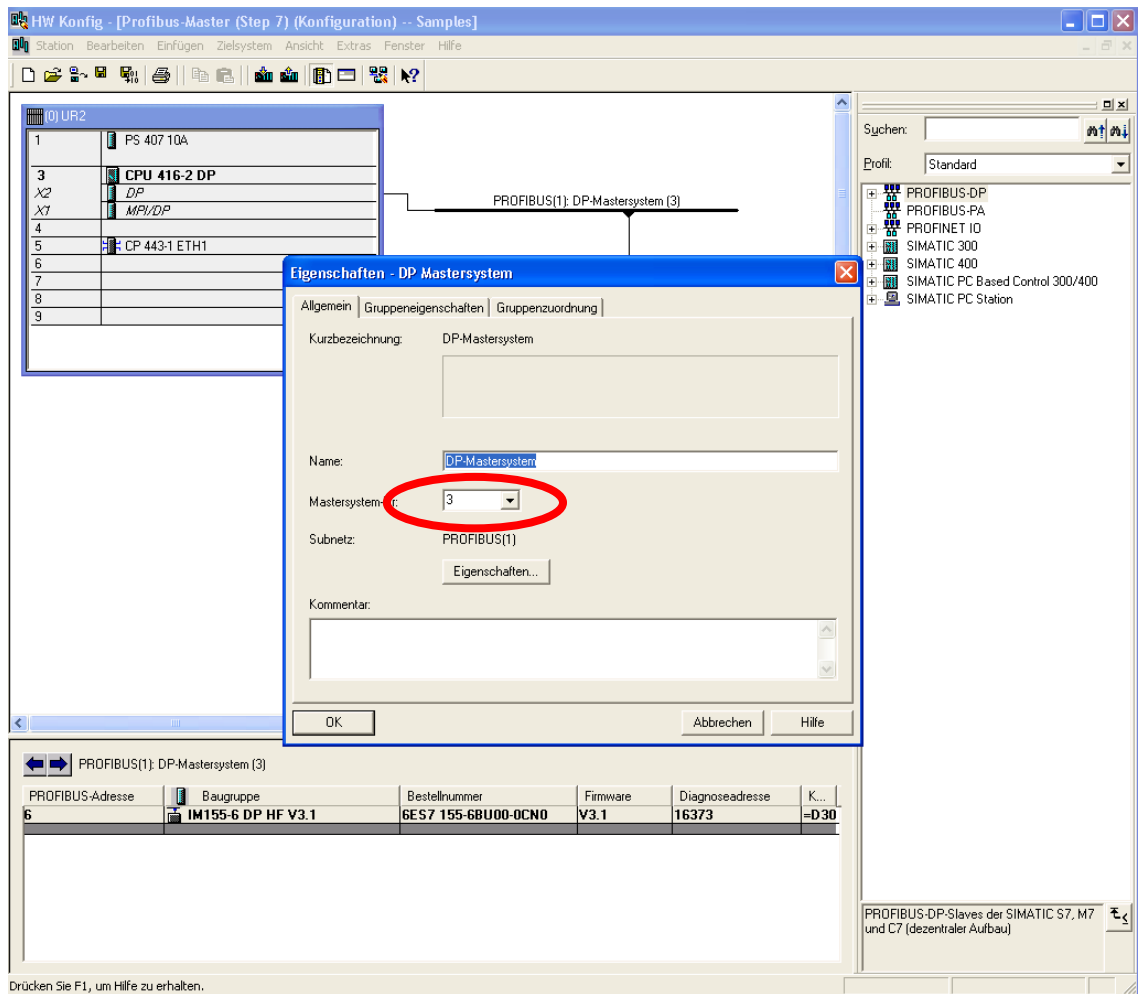


2.1.2 HW-Config

Create a master system with the number corresponding to your hardware:



In this case, the X-CPU-hardware is equipped with three master modules. Slot 3 will be configured, „master system no. 3“ is to be awarded.



Configure the Profibus to the CPU 416-2 DP interface X2 as specified on the STEP7 environment. But you can also use any other DP interface or external Profibus DP controller (for example 6GK7 443 - 5DX05 - 0XE0 / V7.0).

Transfer the hardware configuration into the X-CPU-2.

Drücken Sie F1, um Hilfe zu erhalten.

Steckplatz	Baugruppe	Bestellnummer	E-Adresse	A-Adresse	D...	Kommentar
1	D18 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	620.0...620.7			
2	D18 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	621.0...621.7			
3	D18 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	622.0...622.7			
4	D18 x 24VDC ST V1.1	6ES7 131-6BF00-0BA0	623.0...623.7			
5	DQ8 x 24VDC/0.5A ST V1.1	6ES7 132-6BF00-0BA0		620.0...620.7		
6	DQ8 x 24VDC/0.5A ST V1.1	6ES7 132-6BF00-0BA0		621.0...621.7		
7	Server module	6ES7 193-6PA00-0AA0			16372	
8						
9						

PROFIBUS-DP-Slaves der SIMATIC S7, M7 und C7 (dezentraler Aufbau)

If an I/O address is specified, which is already used in the S5 modules, the Profibus components are given preferential treatment.

The size of the process image can be registered up to maximum 5760 for the inputs and outputs.

Eigenschaften - CPU 416-2 DP - (R0/S3)

Alarme	Uhrzeitalarme	Weckalarme	Diagnose / Uhr	Schutz
Allgemein	Anlauf	Zyklus / Taktmerker	Remanenz	Speicher

Zyklus

☒ OB1-Prozeßabbild zyklisch aktualisieren

Zyklusüberwachungszeit [ms]:

Mindestzykluszeit [ms]:

Zyklusbelastung durch Kommunikation [%]:

☐ Priorisierte BuB-Kommunikation

Größe des Prozeßabbilds der Eingänge:

Größe des Prozeßabbilds der Ausgänge:

OB85-Aufruf bei Peripheriezugriffsfehler:

Taktmerker

☐ Taktmerker

Merkerbyte:

OK Abbrechen Hilfe