

IO-Link

SIKO IO-Link Device used with TIA-Portal

Implementation Guide



Table of Content

1	Components used	3
1.1	Objective of this manual.....	3
1.2	Trademarks	3
1.3	Liability	3
1.4	Abbreviations and terms.....	3
2	Hardware Setup	4
2.1	Components.....	4
3	Software Requirements	5
4	TIA Portal implementation	6

1 Components used

S7-1200	Siemens PLC
ET200SP	Siemens IO-Module
CM 4xIO-Link	Siemens IO-Link Master
AG03/1 48 IP54 KR/12 A IOL2	SIKO Positioning Actuator

1.1 Objective of this manual

The main objective of this document is to show the implementation of SIKO IO-Link devices into the Siemens TIA portal. It displays the implementation of an AG03/1 into a Siemens PLC.

The manual is only a reference and not a directive of how to implement IO-Link devices. It also doesn't provide a programming guide for the Siemens programming environment. It's intended exclusively for technicians trained in control and automation technology, who have experience in installing, commissioning, programming and diagnosing systems and the relevant fieldbuses.

1.2 Trademarks

All trademarks or brand names including those protected for third parties shall unconditionally be subject to the provisions of the applicable laws governing trademarks and the proprietary rights of the registered owners. All trademarks, brand names or firm names are or may be trademarks or registered trademarks of their respective proprietors and are used only for description and unique identification. All rights not explicitly granted here are reserved. Failure to explicitly identify trademarks used in this manual does not indicate that a name is free from rights of third parties. S7-1200®, S7-1500® and TIA Portal® are registered trademarks of Siemens AG. PROFIBUS® and PROFINET® are registered trademarks of PROFIBUS and PROFINET International (PI).

1.3 Liability

SIKO GmbH assumes no warranty whatsoever regarding topicality, correctness, completeness or quality of the information or software products provided. All liability claims against SIKO GmbH referring to material or immaterial damages caused by using or not using the information or software provided or by using erroneous or incomplete information or software are always excluded.

1.4 Abbreviations and terms

TIA	Totally Integrated Automation, programming environment of Siemens
PLC	Programmable Logic Controller
S7-PCT	Port configuration tool
UDT	User defined data type



2 Hardware Setup

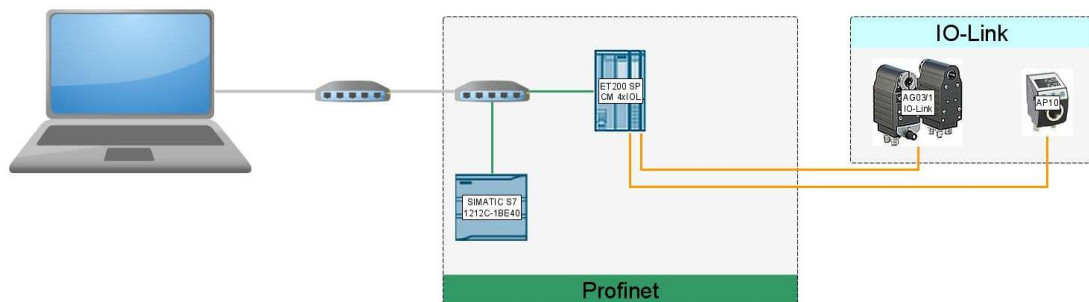


Fig. 1: Used hardware

2.1 Components

The S7-1200 PLC is wired to the Siemens power supply unit. The ET200SP is mounted together with the power supply and PLC onto a DIN rail and connected to the power supply unit. The communication between the PLC and the ET200SP is realized with Profinet. Therefore an Ethernet cable (RJ45 connectors) is plugged into port X1P2 at the PLC and port P1R at the ET200SP. The PLC (port X1P1) is connected via Ethernet cable to the PC. At last the IO-Link master is plugged into the ET200SP at slot 1 and terminated with the server module in slot 2. All connections have to be checked before supplying power to the system.

Connect the "AG03/1 48 IP54 KR/12 A IOL2" to the master according to the "Installation Instruction" found on:

http://www.siko-global.com/p/AG03_1

Connect the "AP10 IOL 20 II IP53 K" to the master according to the "Installation Instruction" found on:

<http://www.siko-global.com/p/ap10>

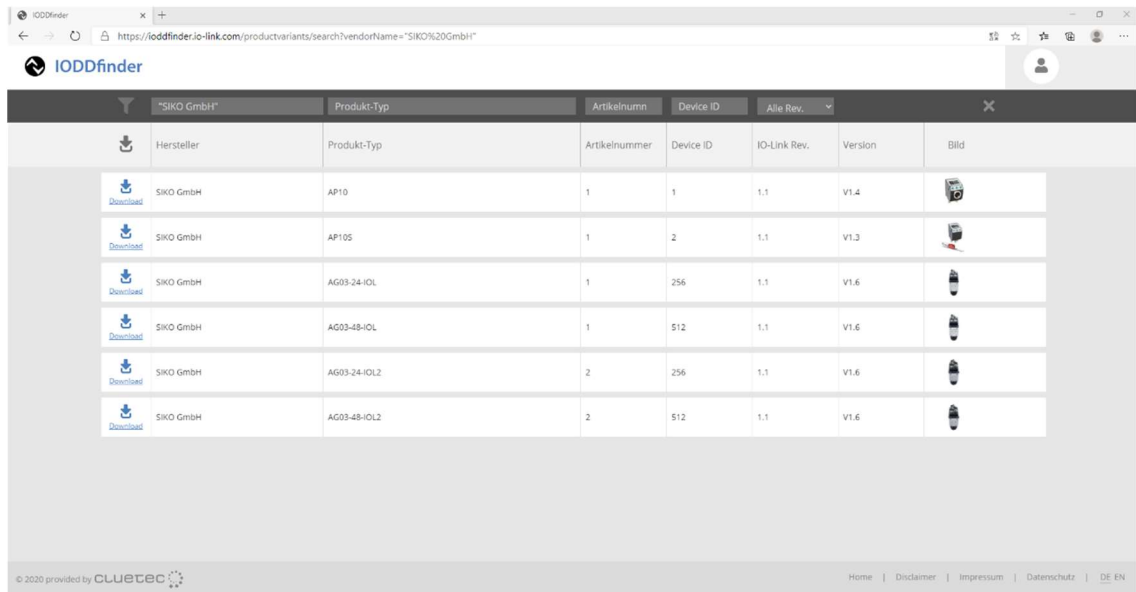
3 Software Requirements

- TIA Portal V14 SP1 Upd9
- SIKO-AG03-48-20200731-IODD1.1
- SIKO_AG03_IOL_1500_TIA_V14_SP1_Upd9_1.00.zal14 library



Fig. 2: Download software packages from website











Hersteller	Produkt-Typ	Artikelnummer	Device ID	IO-Link Rev.	Version	Bild
SIKO GmbH	AP10	1	1	1.1	V1.4	
SIKO GmbH	AP10S	1	2	1.1	V1.3	
SIKO GmbH	AG03-24-IOL	1	256	1.1	V1.6	
SIKO GmbH	AG03-48-IOL	1	512	1.1	V1.6	
SIKO GmbH	AG03-24-IOL2	2	256	1.1	V1.6	
SIKO GmbH	AG03-48-IOL2	2	512	1.1	V1.6	

Fig. 3: Download IODD from IODD-finder

4

TIA Portal implementation

The following configuration and program examples are realized with Organization blocks (OB), Function blocks (FB), Functions (FC) and Data blocks (DB). The used languages are FBD (Function block diagram) for the OB and SCL (Structured Control Language) for all FBs.

We show in the following pages the implementation of a SIKO IO-Link device as example with the AG03/1. Other SIKO IO-Link devices implementation accordingly similar with use of their matching IODD and function block library.



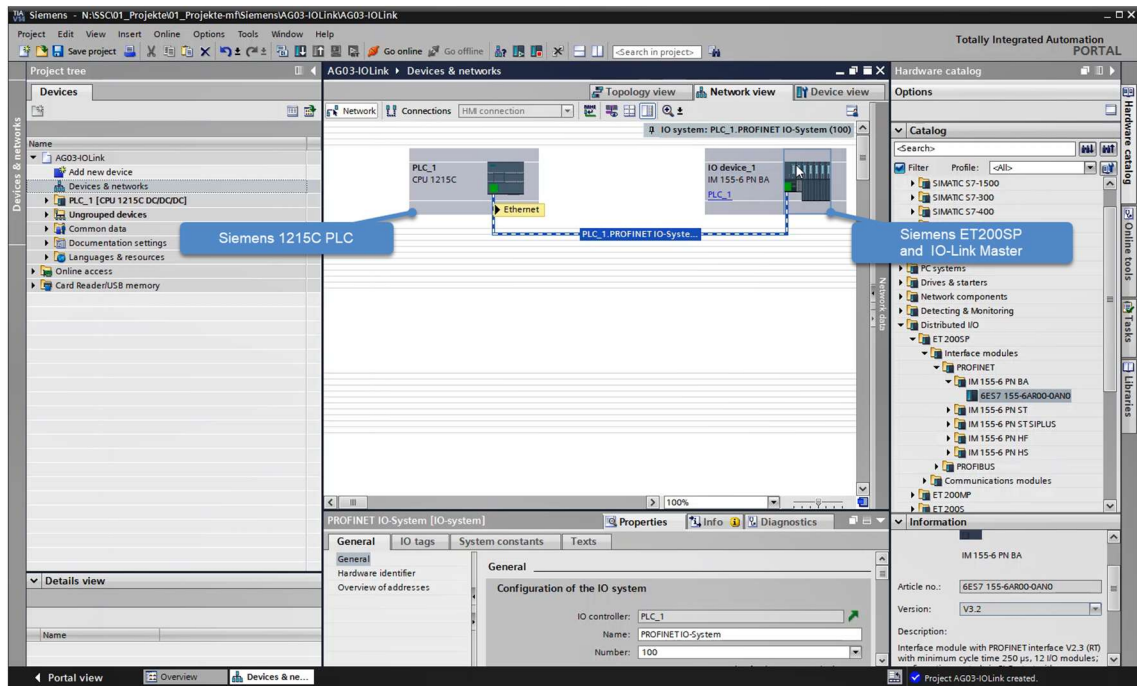


Fig. 4: Used hardware in this project

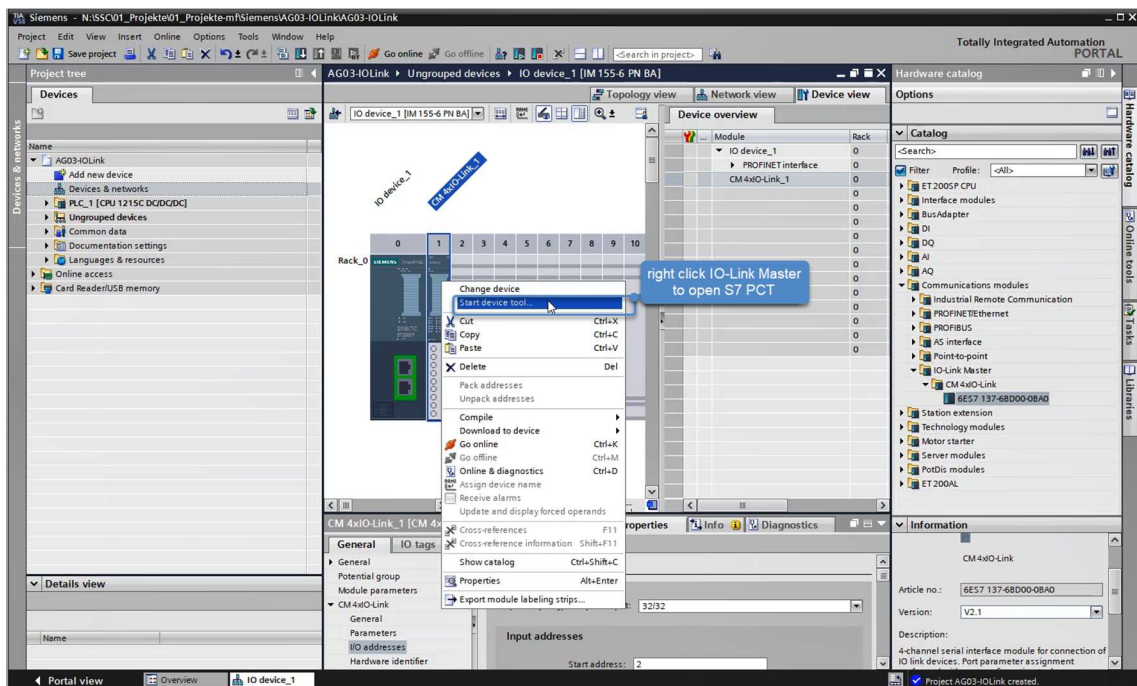


Fig. 5: Start S7-PCT

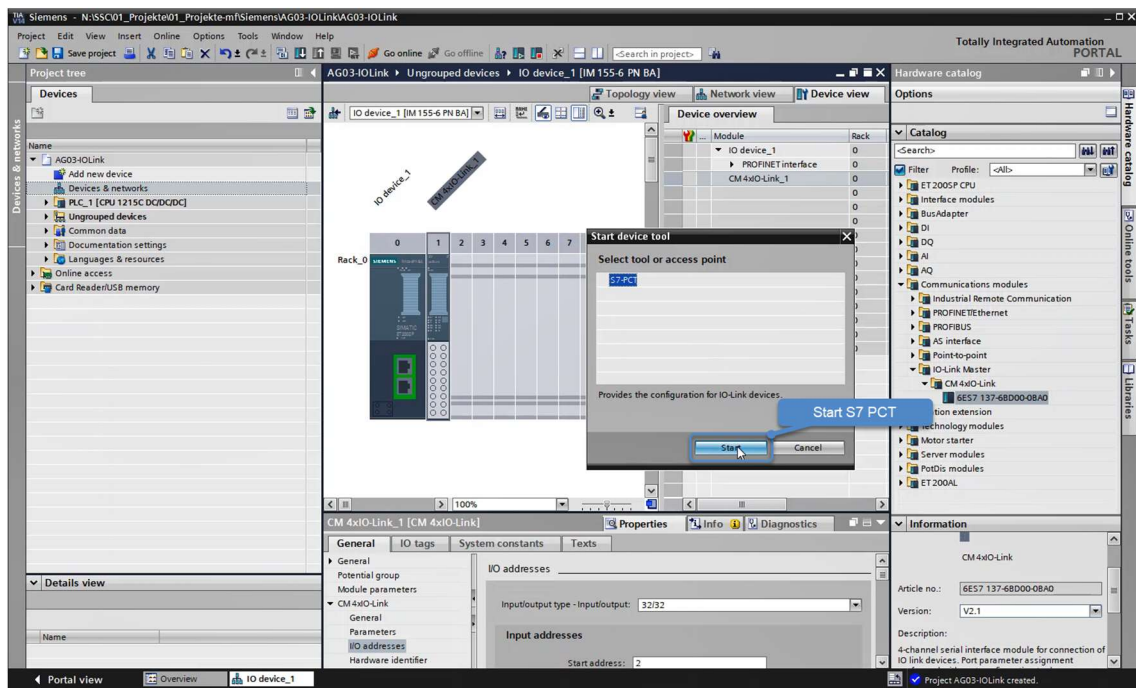


Fig. 6: Open S7-PCT with start

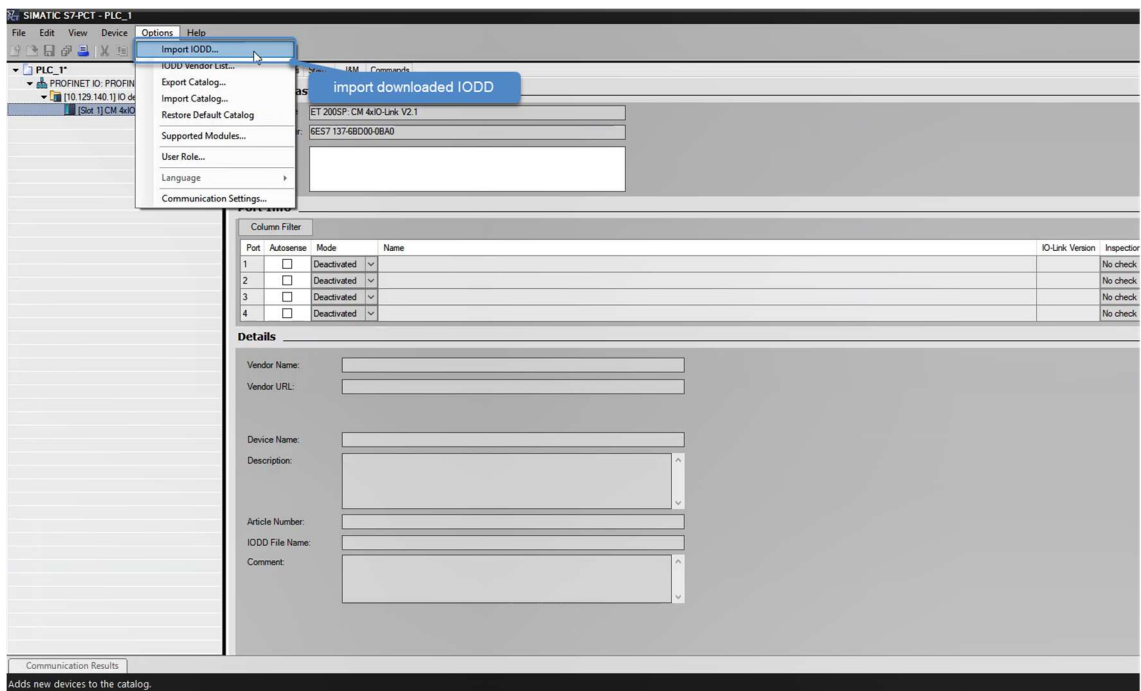


Fig. 7: Import IODD

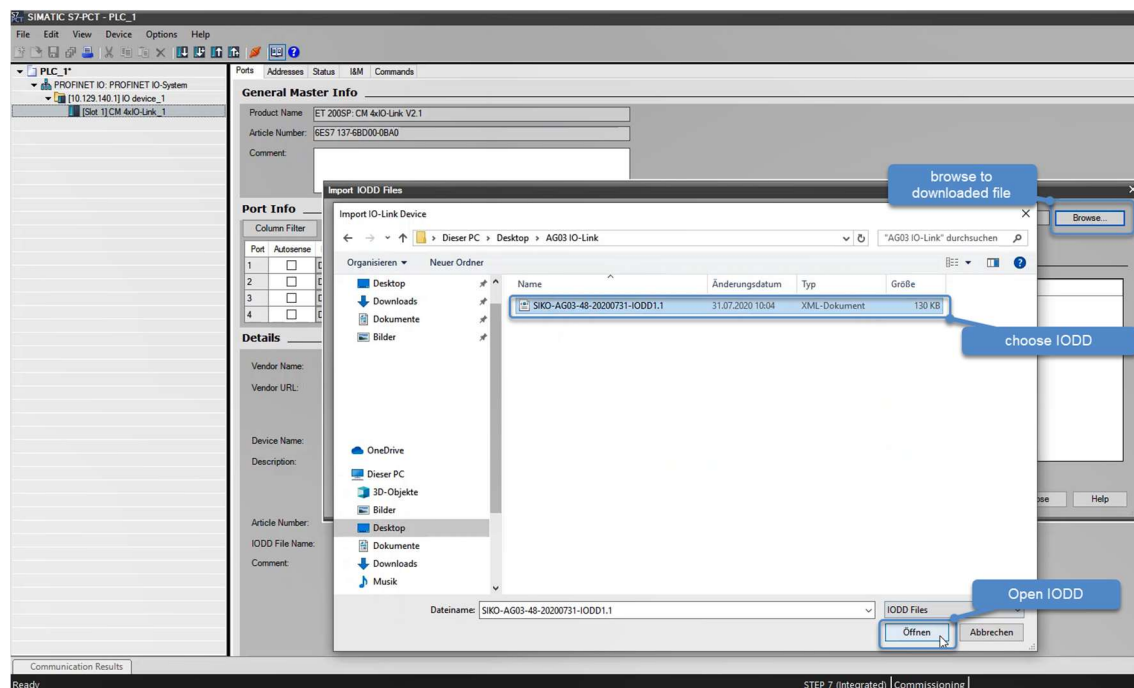


Fig. 8: Choose IODD-zip-file

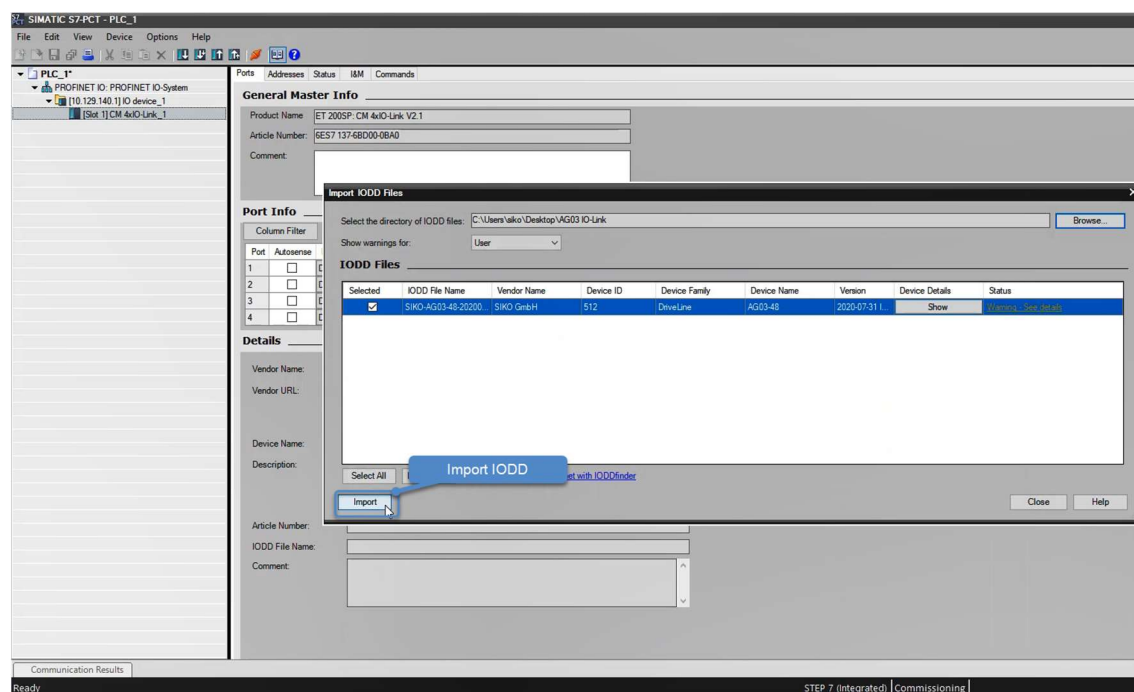


Fig. 9: Select IODD-file

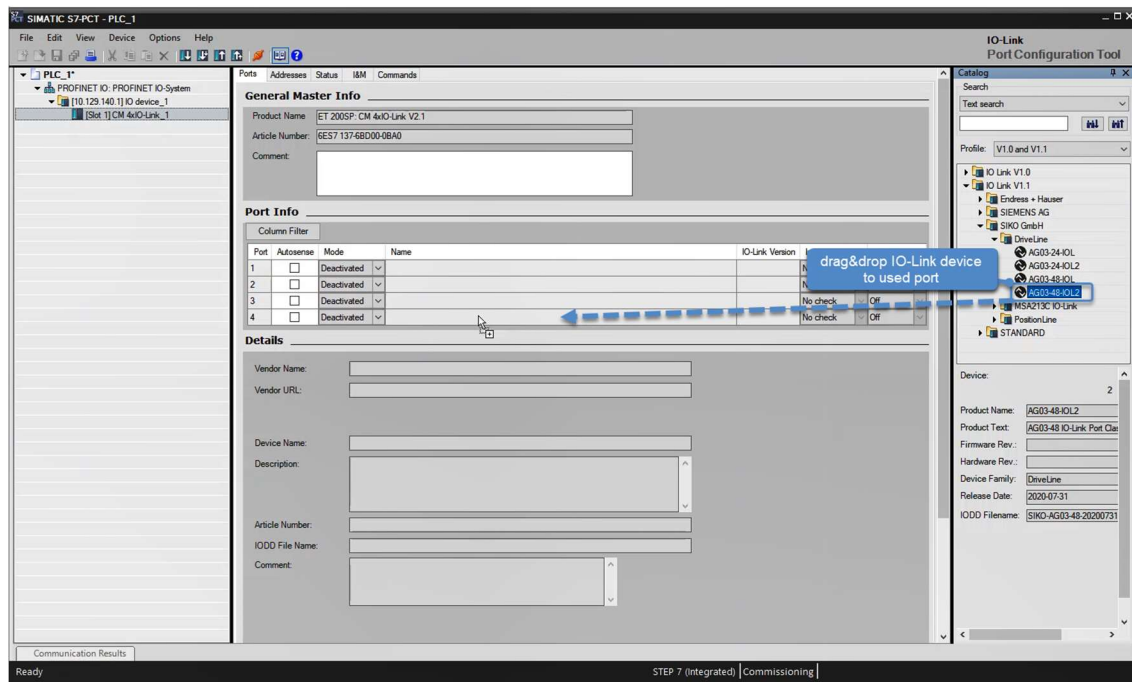


Fig. 10: Drag&drop IO-Link device to port

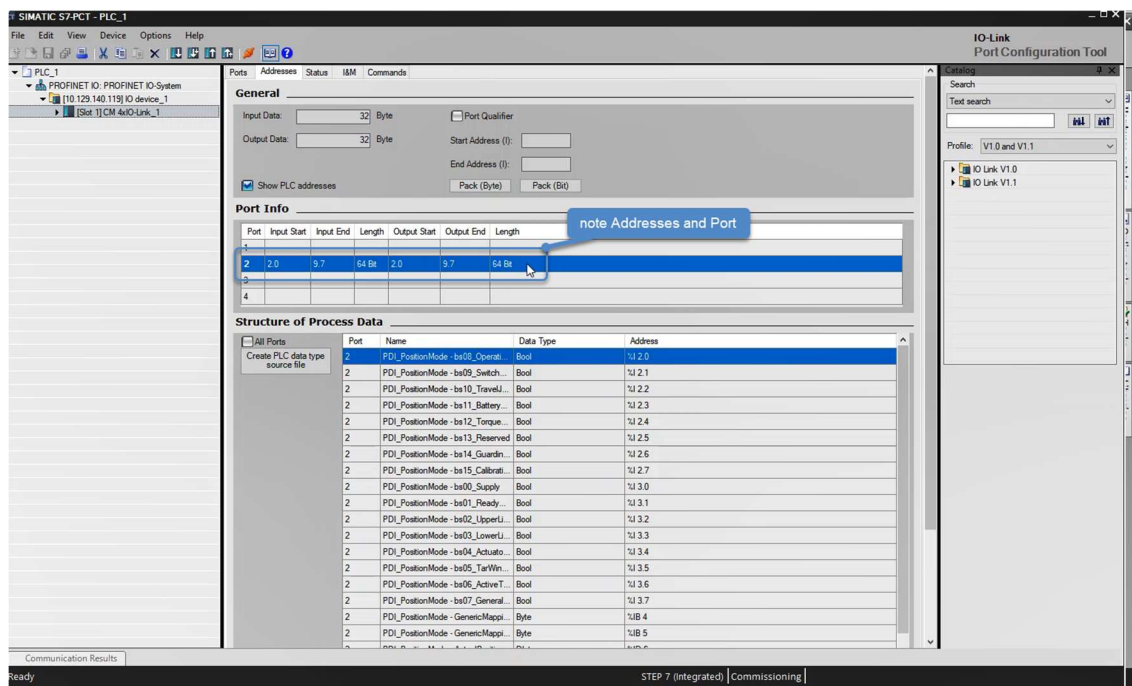


Fig. 11: Note IO-addresses and create UDT-file

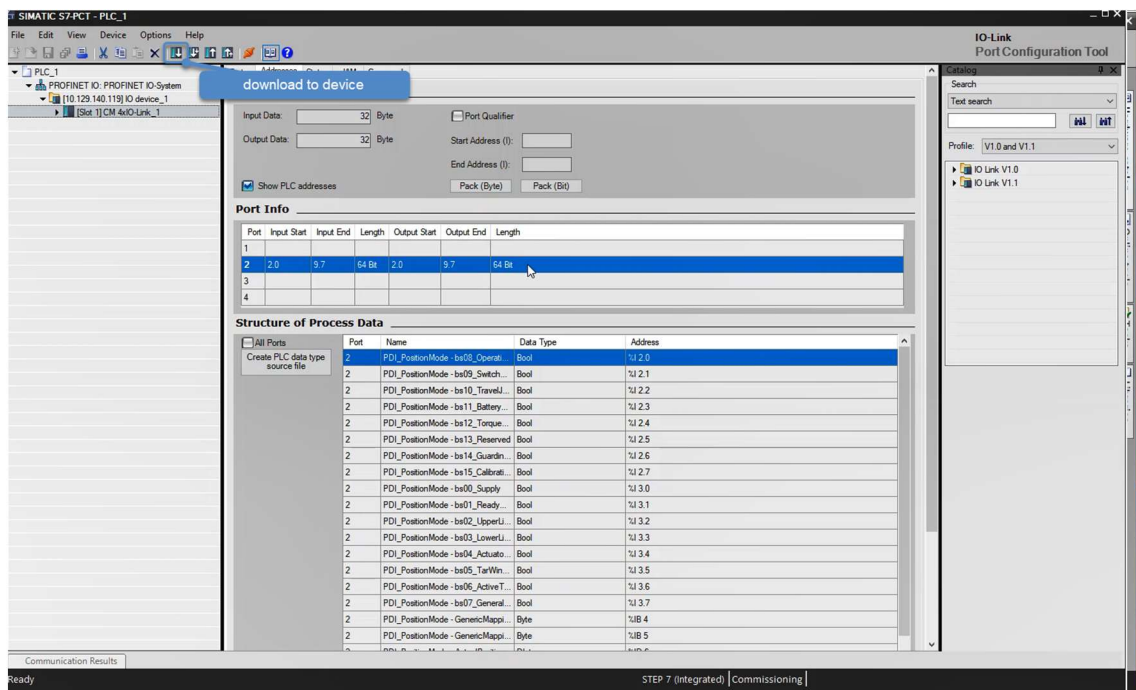


Fig. 12: Download configuration to IO-Link device

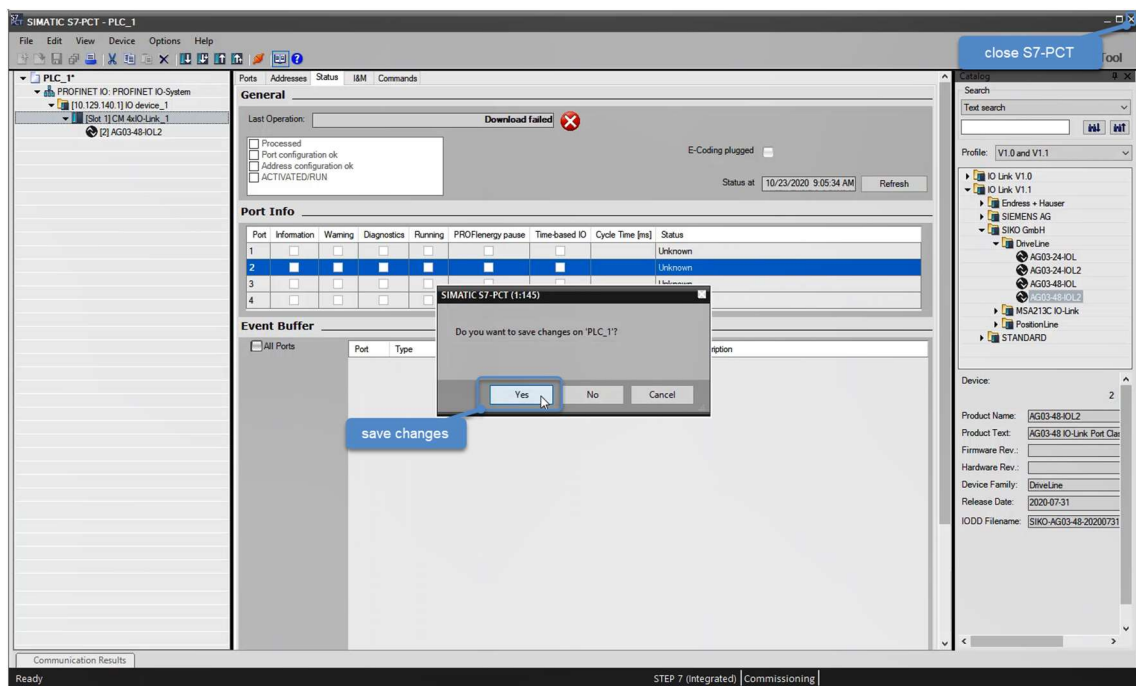


Fig. 13: Save configuration of S7-PCT

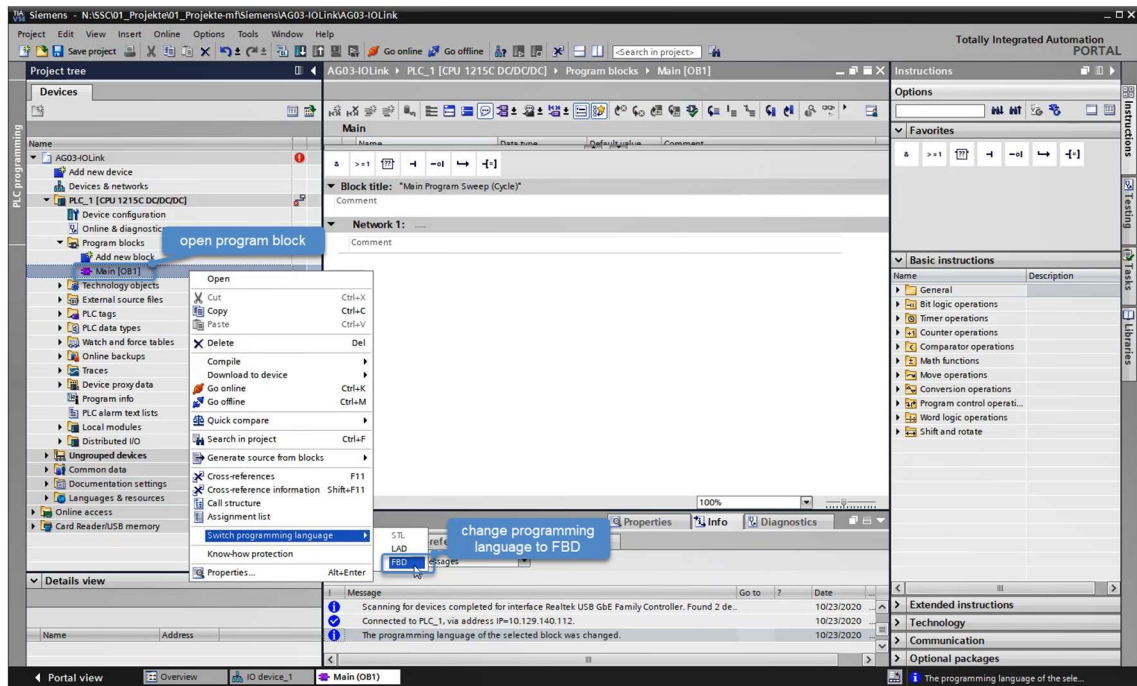


Fig. 14: Open program block

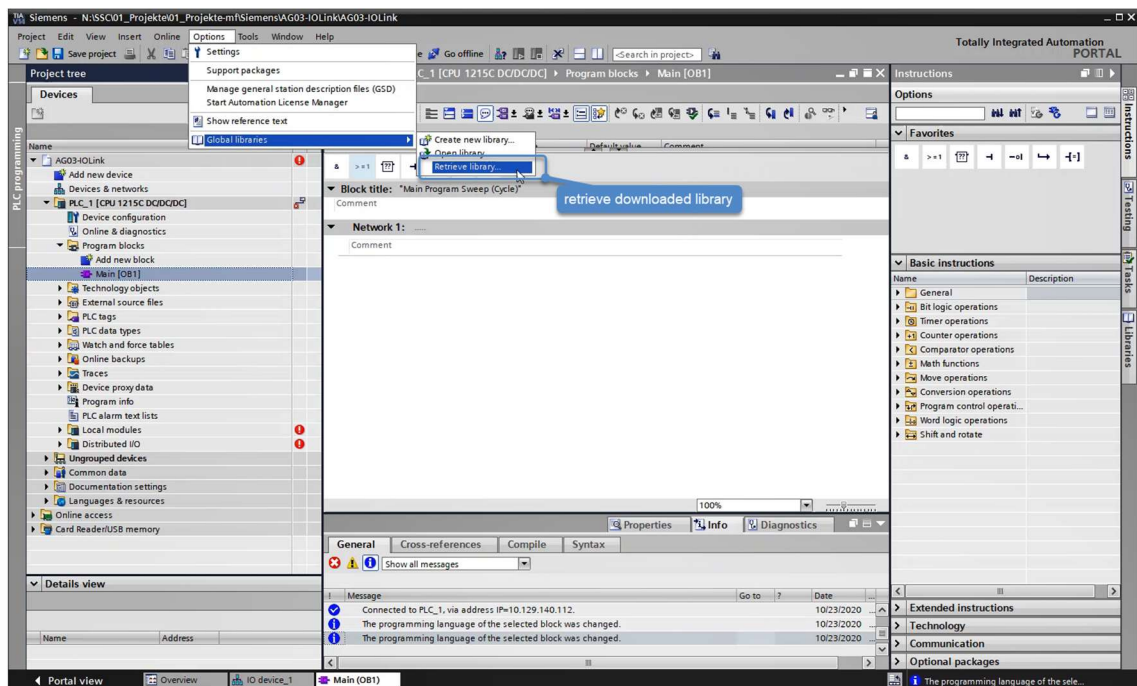


Fig. 15: Retrieve library

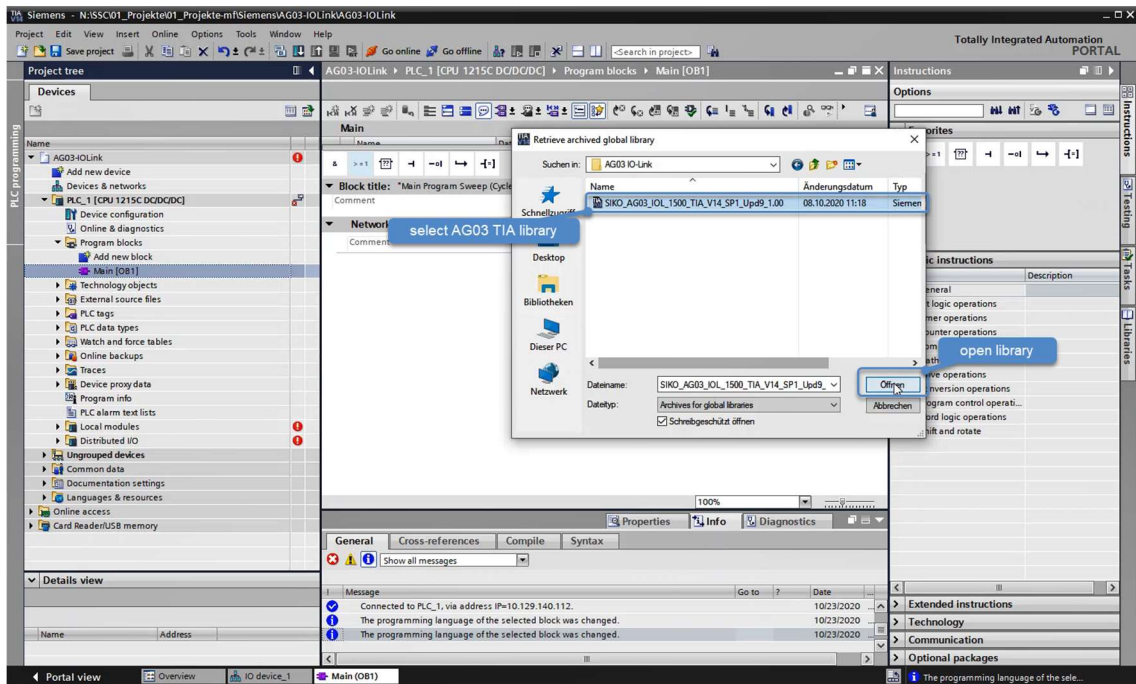


Fig. 16: Choose library

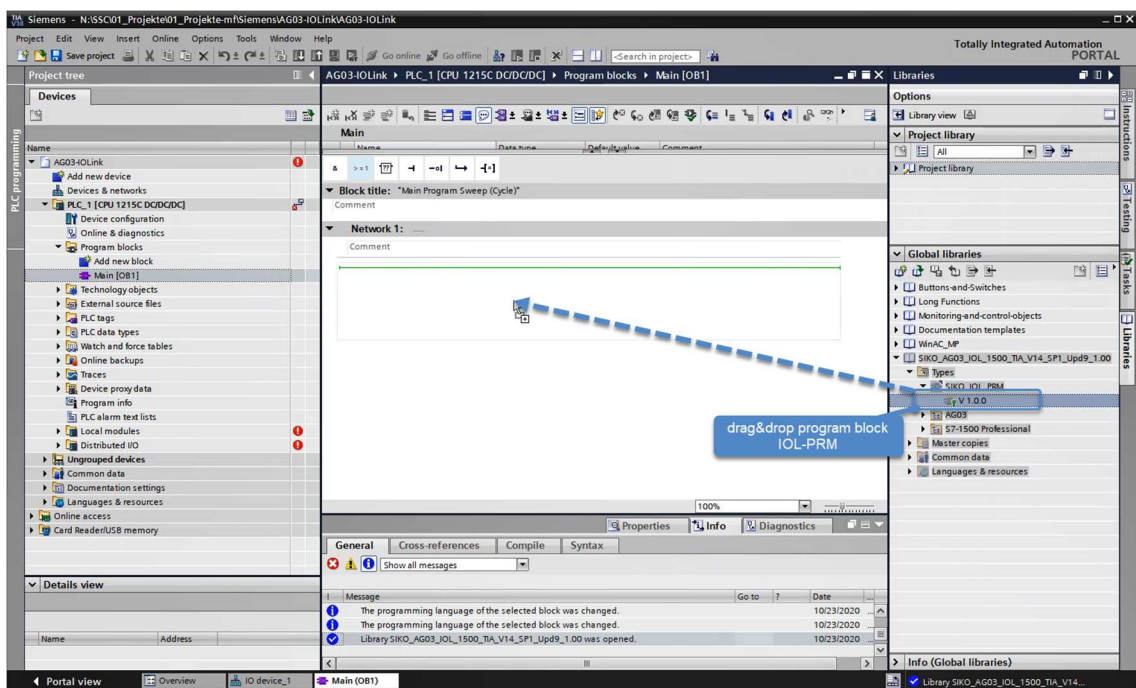


Fig. 17: Drag&drop function block

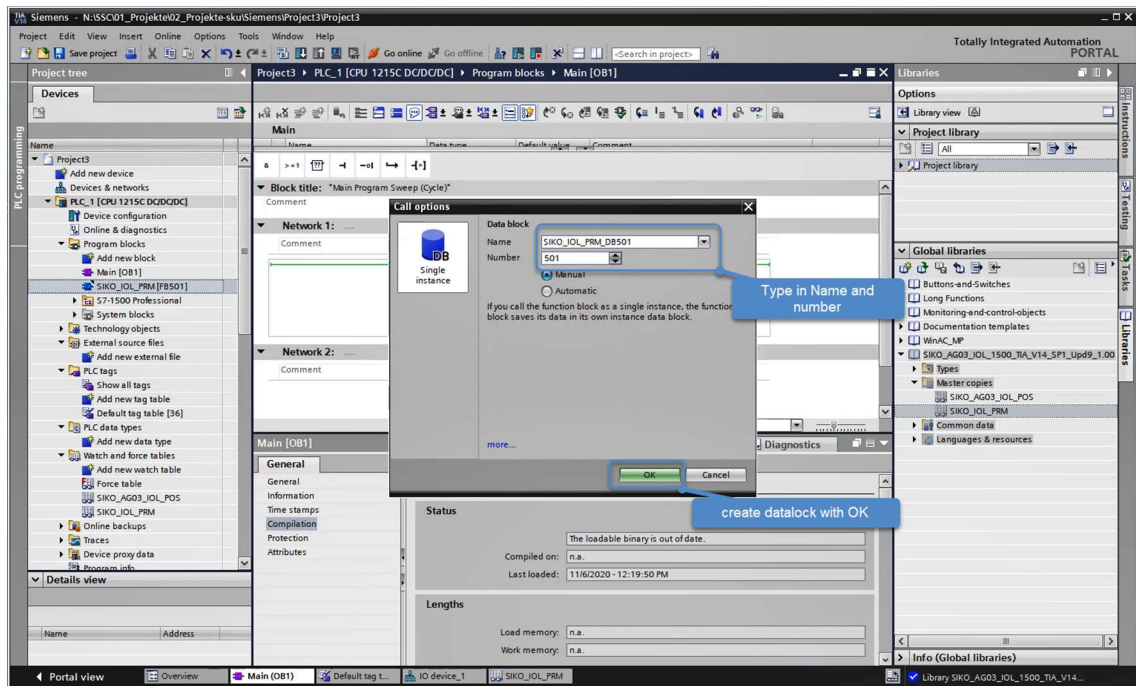


Fig. 18: Create data block

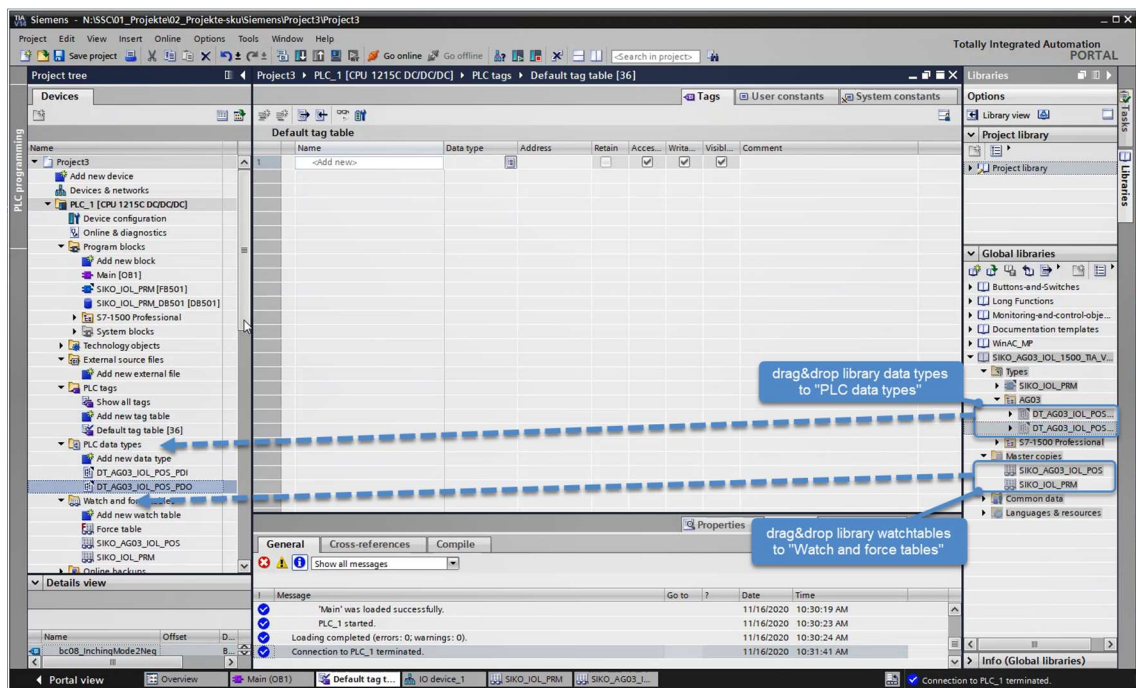


Fig. 19: Drag&drop data types and watchtables

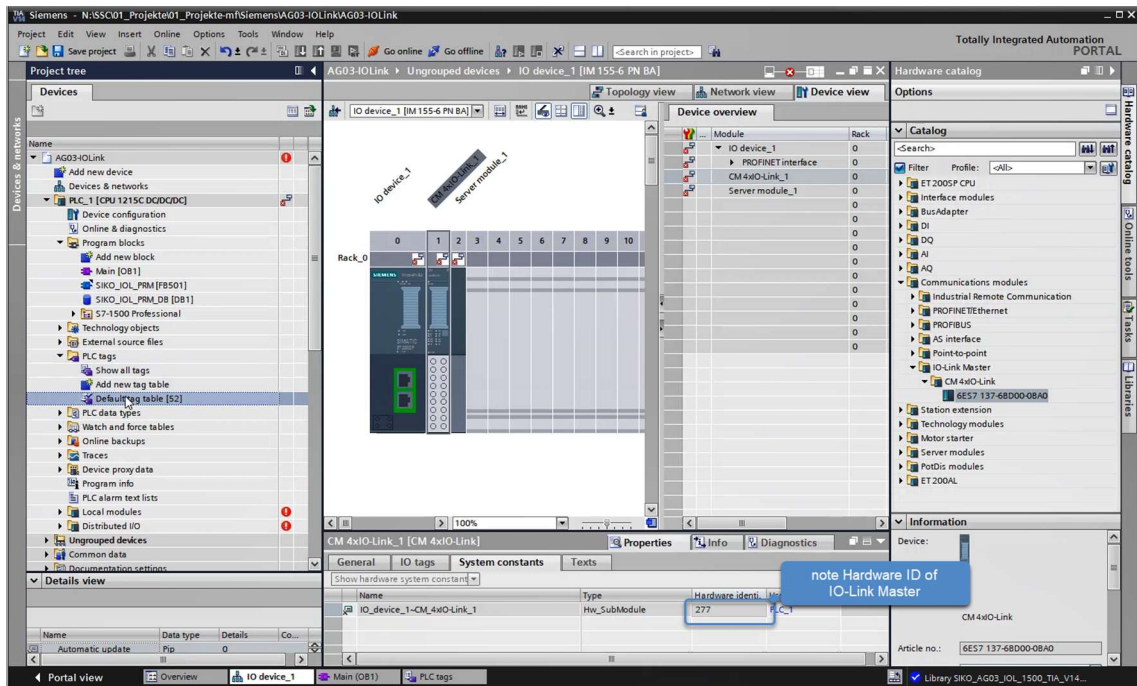


Fig. 20: Note Hardware-ID

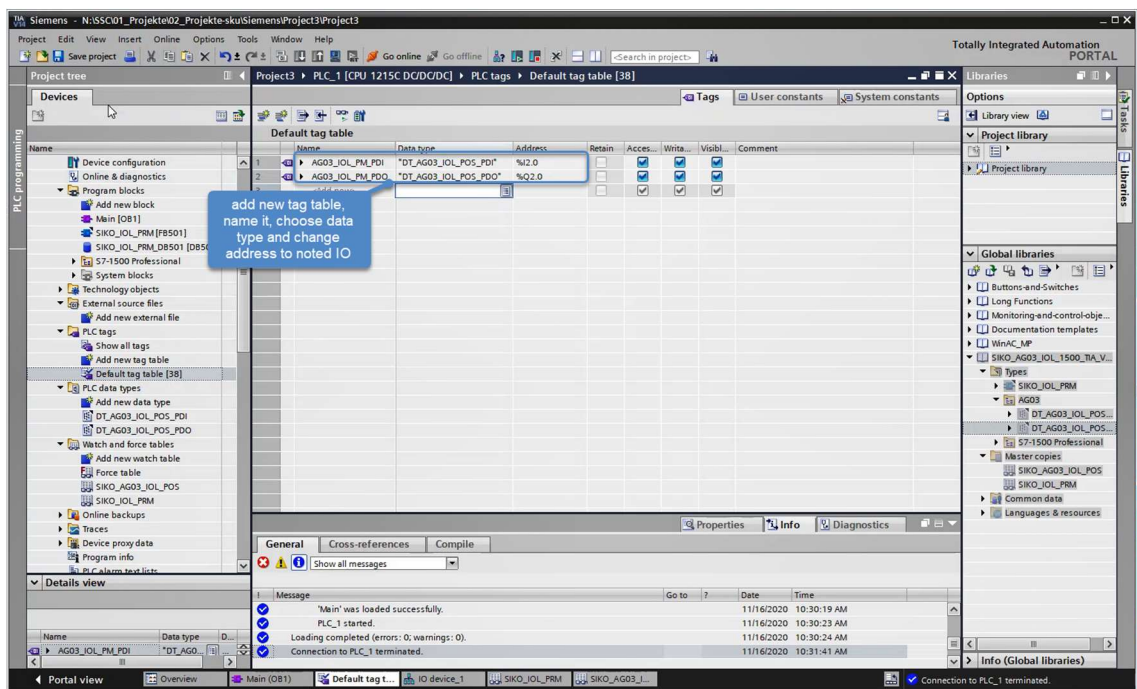


Fig. 21: Add global tags



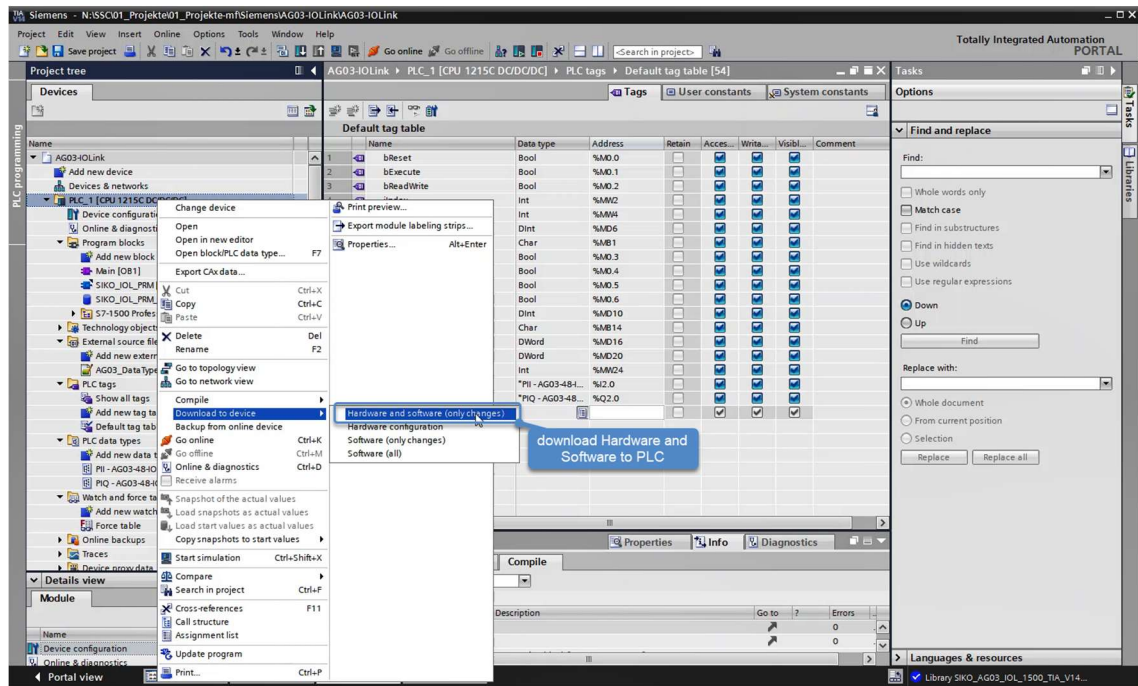


Fig. 22: Download hardware and software

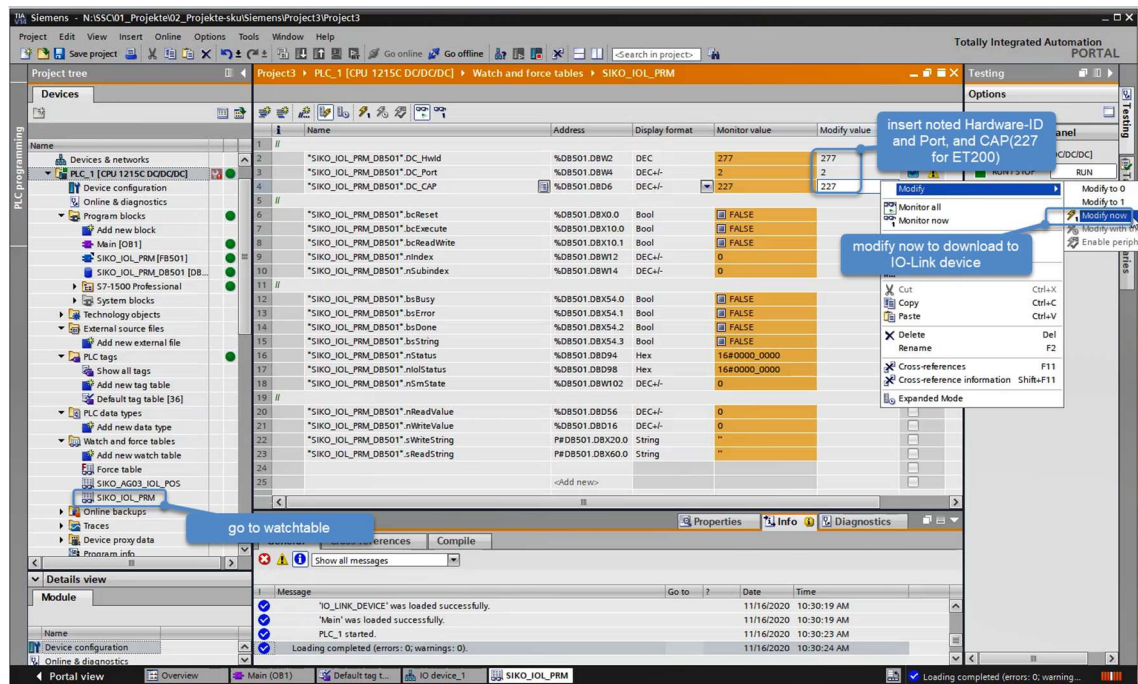


Fig. 23: Configure watch table





SIKO GmbH

Weihermattenweg 2
79256 Buchenbach

Telefon

+ 49 7661 394-0

Telefax

+ 49 7661 394-388

E-Mail

info@siko-global.com

Internet

www.siko-global.com

Service

support@siko-global.com

