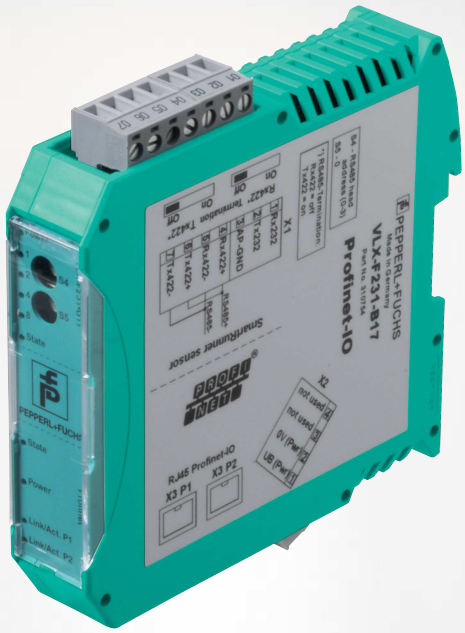
VLX-F231-B17

Function Block—Integration into SIMATIC TIA V15

Manual



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2020-05

1 Introduction

These configuration instructions guide you through the steps required for integrating the function block using the SIMATIC TIA V15 configuration software.

1.1 Scope

These configuration instructions only apply for the following devices with **PROFINET IO** interface and profile in conjunction with a SIEMENS SIMATIC control panel:

- VLX-F231-B17

The device is identified by the affixed nameplate.

In addition to the configuration instructions, the following documents apply. Observe the instructions contained therein:

- VLX-F231-B17 manual
- SIEMENS manual: SIMATIC—Configuring and Programming
- Plant-specific operator's documentation

Note on Figures in the Documentation

The figures in this documentation are provided for basic understanding and may deviate from the actual design.

1.2 Registered Trademarks

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1.3 Symbols used

This document contains information that you must observe to prevent interference.

Warnings

Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

Information messages

Note

This symbol brings important information to your attention.

Action

This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

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2 Function Block

A function block is available to allow you to configure the interface module. This can be downloaded from our website: www.pepperl-fuchs.com. Simply enter the product name or item number in the Product/Keyword field and click the "Search" icon. Select your product from the list of search results. Click on the information you require in the product information list, e.g., Software. A list of all available downloads is displayed.

Importing a function block

1. Select **Options** (1) > **Global libraries** (2) > **Retrieve library...** (3).

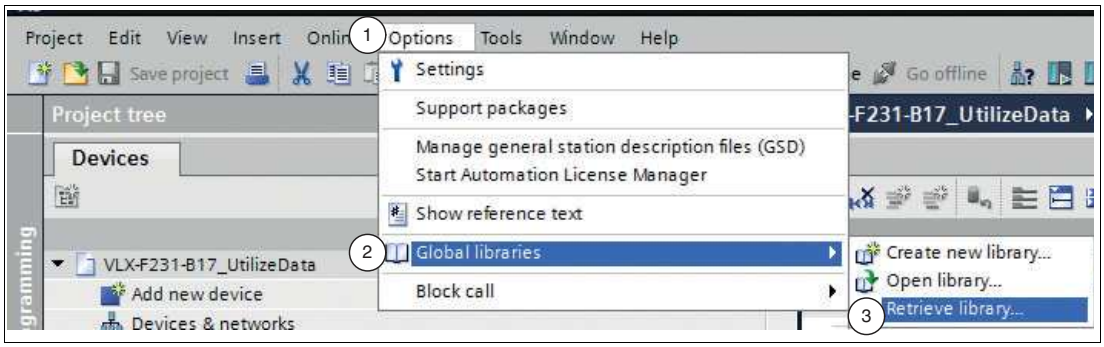

Figure 2.1 Global libraries

↳ The **Retrieve archived global library** dialog box will open.

2. Left-click the destination project and select **Open**.

↳ The selected library will open and be added to the "Global libraries" list.

Description of the function block

The following image shows the call of the function block and the variables to be parameterized.

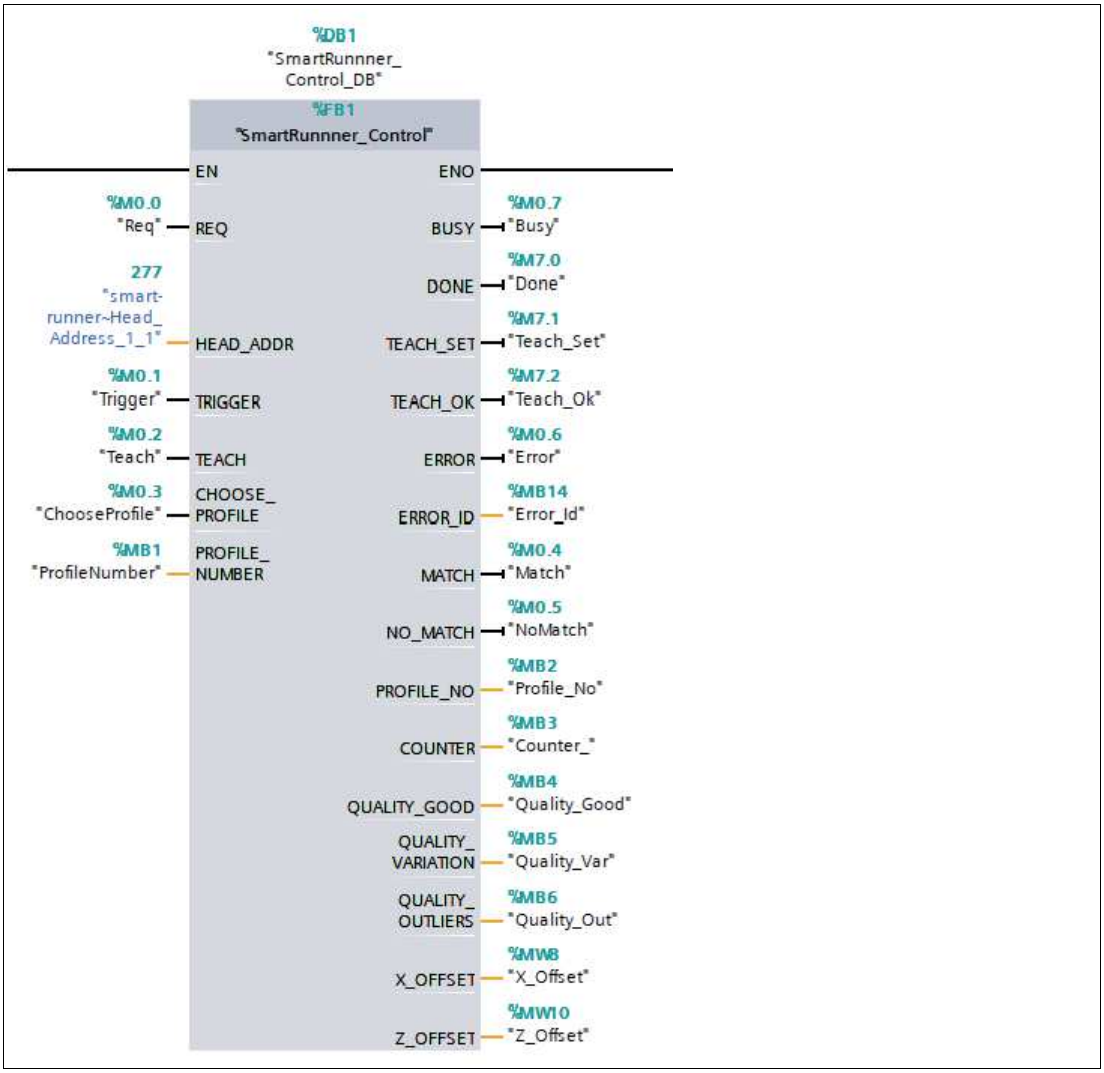

Figure 2.2 Function Block

Input/output variables

Name		Data type	Input/ output	Description
REQ		BOOL	Input	Positive edge: Initiates the data transfer; activates a trigger, teach, or profile change
HEAD_ADDR		HW_IO	Input	Hardware identifier for head-address communication module (0 - 3)
TRIGGER		BOOL	Input	Prepares the trigger • 0 = deactivated • 1 = activated
TEACH		BOOL	Input	Prepares the teach process; teach is only executed once the next trigger is received • 0 = deactivated • 1 = activated
CHOOSE_PROFILE		BOOL	Input	Prepares a profile change • 0 = deactivated • 1 = activated
PROFILE_NUMBER		USINT	Input	Selected profile (1 - 32) which is to be activated
BUSY		BOOL	Output	The function block is busy
DONE		BOOL	Output	The function block is available
TEACH_SET		BOOL	Output	Teach has been set—the teach process will be executed once the next trigger has been received
TEACH_OK		BOOL	Output	The teach process was successful
ERROR		BOOL	Output	An error has occurred
ERROR_ID		BYTE	Output	• 0 = OK • 1 = Communication error • 2 = SmartRunner error • 3 = Multiple assignments of the inputs (TRIGGER, TEACH, CHOOSE_PROFILE) • 16#FE = Teach could not be set
Result Protocol	MATCH	BOOL	Output	Profile matches the taught-in profile
	NO_MATCH	BOOL	Output	Profile does not match the taught-in profile
	PROFILE_NO	USINT	Output	The currently activated profile number (1 - 32)
	COUNTER	BYTE	Output	Counts each trigger up by one
	QUALITY_GOOD	USINT	Output	Quality value 0 = no object; 100 = perfect match
	QUALITY_VARIATION	USINT	Output	Quality value 0 = no object; 100 = perfect match
	QUALITY_OUTLIERS	USINT	Output	Quality value 0 = no object; 100 = perfect match
	X_OFFSET	INT	Output	Profile offset in the X direction
	Z_OFFSET	INT	Output	Profile offset in the Z direction

Note

Further information about the function block can be found in the Configuration Instructions on our website by using the Product/Keyword search function.

2.1 Address Setting

Selecting an address

Transfer the hardware identifiers defined in the hardware configuration for the individual modules into the respective function blocks **Head_Address_x**.

1. In the **Device view** window of the project view, select the **Device overview** tab. Click on a **Head_Address_x** (1) that you want to assign to the function block.

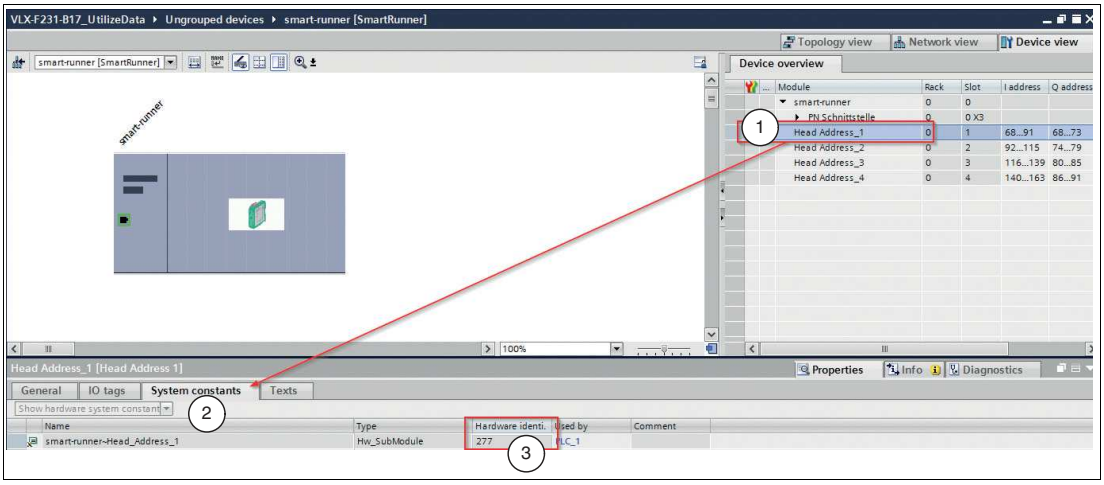

Figure 2.3 Head_Address

2. In the inspection window, click on the **System constants** tab (2).

   ↳ The hardware identifier for the previously selected "Head_Address" is shown in the **Hardware identifier** column (3).

3. Enter the hardware identifier as **HEAD_ADDR** in the function block—in this example, the hardware identifier is "277" (1).

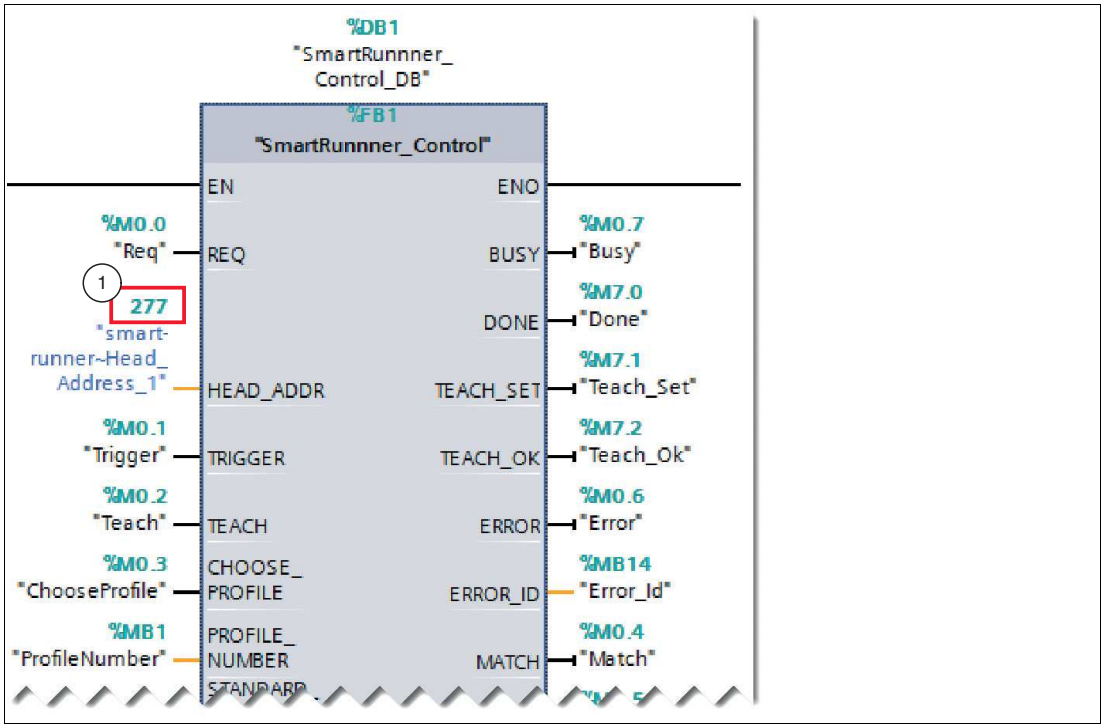

Figure 2.4 Hardware identifier

2.2 Signal Characteristics

Executing TRIGGER

The figure below shows the signal characteristics for executing a trigger signal.

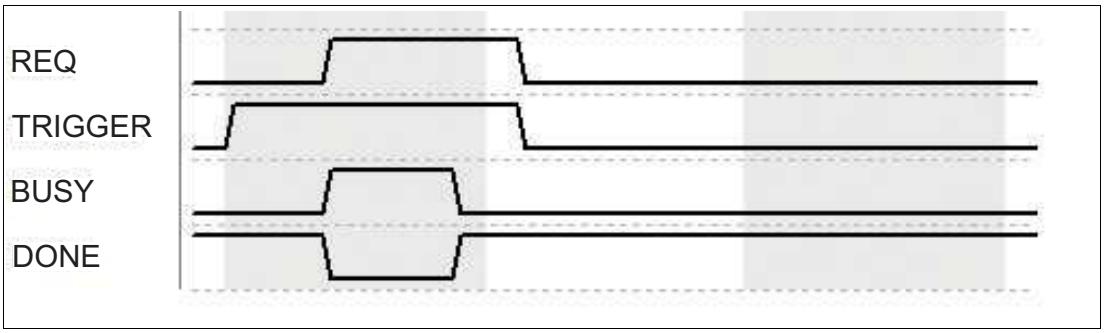

Figure 2.5 Executing TRIGGER

Setting TEACH

The figure below shows how a teach input is set. The teach process is only executed once the next trigger signal has been received (see Running TEACH).

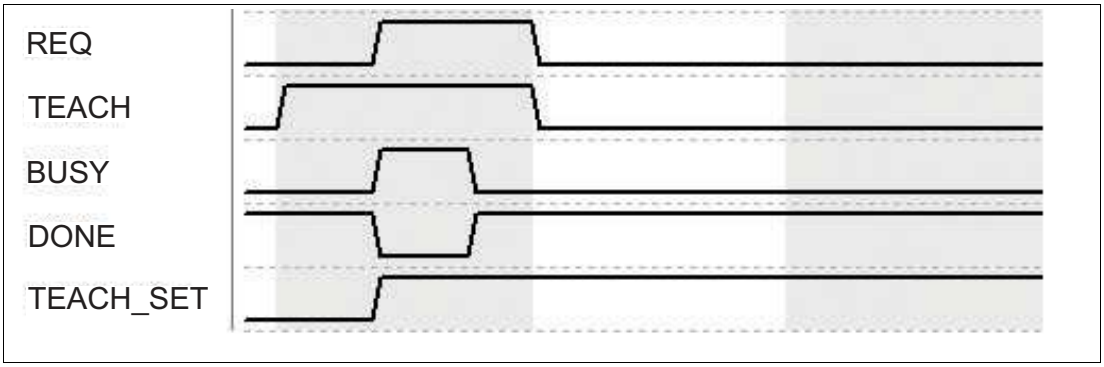

Figure 2.6 Setting TEACH

Executing TEACH

The figure below shows how a teach signal is executed.

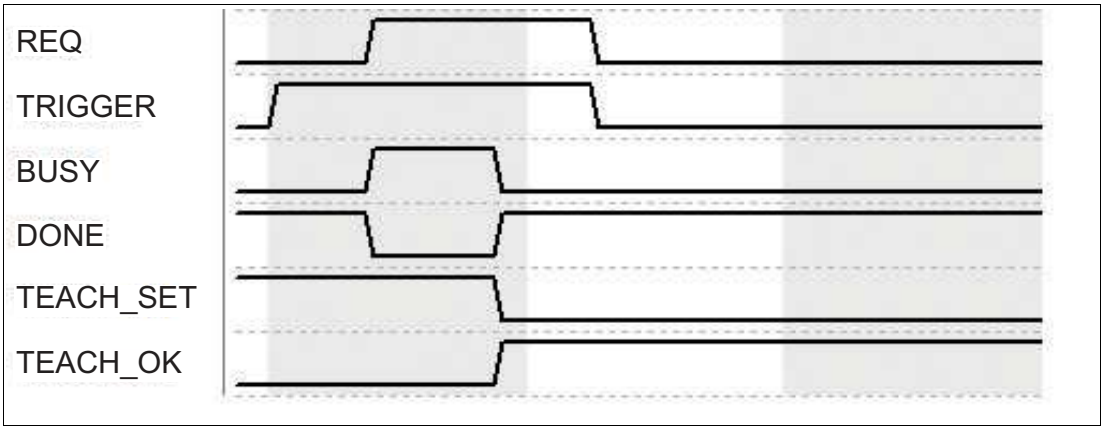

Figure 2.7 Executing TEACH

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Changing profile

The figure below shows how a signal to change profile is set.

Before executing the command to change profile, a profile number "PROFILE_NUMBER" between 1 and 32 must first be selected.

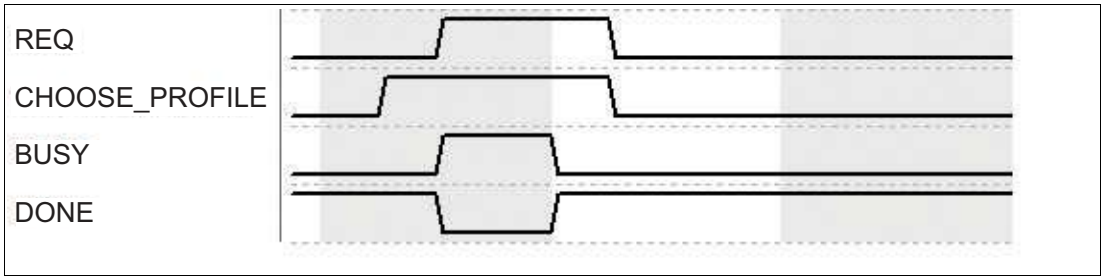

Figure 2.8 Changing profile

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