

Do not fill in the parameters when calling the FC block interface



AI Overview

You can call an FC block without explicitly filling its parameters, as the FC uses stack memory to handle input values internally during execution. How FC Blocks Handle Parameters When an FC block is called, all input parameters are pushed onto the stack and assigned to internal memory locations within the FC. The FC then performs its logic using these internal copies of the parameters. After execution, only the return value (if any) is passed back to the calling program, and all temporary memory used for the parameters is discarded. This means that filling parameters is not strictly required if the FC logic does not depend on external values or if default values are acceptable. Call-by-Value vs Call-by-Reference Call-by-value: The FC copies the actual parameter values into its internal memory. This is typical for simple data types like INT, DINT, or REAL. Call-by-reference: The FC references the memory address of the parameter, which is more common for complex data types like STRUCT, ARRAY, or STRING. This avoids unnecessary memory copying. For FC blocks, simple data types are usually passed by value, so leaving parameters empty will not affect the stack allocation, but the logic may produce default or zeroed results if no values are provided. Differences from FB Blocks Unlike FB blocks, which require an instance data block (DB) to store persistent parameter values and internal states, FC blocks do not maintain internal memory between calls. Each call to an FC is independent, and parameters are allocated on the stack for that call only. This is why FCs are often used for stateless operations or calculations where persistent memory is not needed. Practical Implications You can safely call an FC without filling parameters if the logic allows default or zero values. If the FC requires specific input values for correct operation, you must provide them; otherwise, the output may be incorrect. U...

Article Content

Function (FC) and Function Block (FB) Similarities/Differences in ...

Tip: In FC programming, if you do not want to use the results of the FC subroutines outside of it, it is always a good idea to use TEMP variables, instead of Memory Bits (M) or Data Blocks (DB).

Function inputs in Siemens TIA Portal | PLCtalk

Num_1 and Num_2 are called dummy arguments. They more or less do not exist until the FC block is evaluated (called) by the PLC processing the OB1 logic rungs.

Difference Between FC and FB in Tia Portal

Learn the difference between FC and FB in TIA Portal, including how they handle memory and their role in Siemens PLC programming.

Why are the local data and the block parameters for the functions ...

Consequently, users do not have the complete system memory at their disposal. The storage of variables in the temporary local data corresponds to storage in a global data block and the

What should you watch out for in STEP 7 (TIA Portal) when ...

Description The following description applies to S7-1200 (FW V4.0 and higher) and S7-1500 firmware. During program execution, the block parameters in STEP 7 (TIA Portal) are processed differently by

Difference between Functions (FC) and Function Blocks (FB) in

This article highlights the difference between functions and function blocks in Siemens PLC programming. Functions A function (FC) is a code block without memory. A function gives you

SIMATIC STEP7 SCL: Call FC block with or without returning

This video is a small demo on how to call FC block that returns result, or does not return it.00:00 Brief of theory01:50 Create FC with return06:25 Create OB...

How does a FC function work in Siemens PLC?

FC Function is used to create a particular logic in the PLC program and then call it as many times as required.

How to Insert Block Calls in SCL Language?

Explore the best practices for inserting block calls in SCL language and improve your programming in the TIA Portal.

Function blocks (FB)

A call of a function block is referred to as an instance. An instance data block is required for each instance of a function block; it contains instance-specific values for the formal parameters declared in

Siemens Tia Portal – Different Instances of Calling a Function Block

A parameter instance will save the data instance of the FB called into the In Out area of the FC block interface. Allowing you to enter a new data instance for each FC call.

How to... create and call Function block (FB) and Function (FC) in ...

The FB and FC will be called inside OB1. Drag the FC from the project tree to a network. The function is now called inside OB1. To call a function block an instance datablock needs to be made.

FC Function in Siemens PLC

FC function is used in the PLC programming where a function or task use over and over. We all know that designing PLC programs is sophisticated and tedious work especially when you

Understanding Function Block Instances (Single, Multi and Parameter

The function block instance-specific data might be stored in its instance data block or the calling block's instance data block. In this tutorial, we will be looking at the different types of function block instances

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How to use FC block and FB block in Siemens step7. what is FC

#siemensplc #step7 #simaticmanagerstep7tutorial In this video i am show how to use Function call and Function Block. leave a comment for any query. ☐☐How to create new project !!!!!

Passing parameters to blocks

When the user program passes a parameter to a function as "call-by-reference", the user program references the address of the actual parameter for the IN/OUT interface type and does not copy the

Siemens S7 CALL FC Instruction Explained | STL Syntax, Parameters ...

In this video, we explain the CALL FC instruction in Statement List (STL) for S7-300 and S7-400 controllers. This is an essential concept for modular programming in industrial automation.

Tia Portal – Different Instances of Calling a Function Block

In this article, we will talk about PLC data block instances of different function block types in Siemens Tia Portal and when to use them.

FB vs FC in Siemens PLC Programming

FCs do not have instance memory and all actual parameters must be filled. It also lists similarities like using TEMP variables, ENO execution feedback, and EN enable parameters. The document

Function block (FB)

If you do not assign a new start value for a parameter in the FB interface, the default value from instance DB is copied to start value. The following figure shows an OB that calls one FB three

What should you watch out for in STEP 7 (TIA Portal) when

When the block is called, the value of the actual parameter is copied to the temporary data of the calling block. Writing a parameter in the called block does not lead to modification of the

Setting Parameters for FC Calls | Siemens S7 manual

Download appendix for Siemens . Learn more about Setting Parameters for FC Calls, Calling Communication Blocks for an S7-300.

FC vs FB in Siemens S7: When to Use Functions or Function Blocks ...

In Siemens SIMATIC S7 programming, choosing between Functions (FC) and Function Blocks (FB) is a fundamental design decision. The core difference: FBs possess internal memory via

Siemens S7 TIA Portal

That said, using external parameters that are both inputs and outputs ("InOut" parameters in some languages) could make something work with an FC, where those external persistent

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://adikor.eu>

Email: info@adikor.eu

Phone: +33 6 48 37 92 15

Address: 12 Rue de la Paix, 75002 Paris, France

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