Schneider Electric Software

Knowledge & Support Center

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New Siemens S7 1200 and 1500 PLC Firmware Support

SUMMARY

After Siemens released a new firmware revision to enable symbolic item support, many customers reported they can no longer get data updates with Wonderware DASSIDirect..

After the firmware release for the S7 1500 and S7 1200 PLC family, many customers found themselves no longer able to get data update from those newly upgraded PLCs. The reason was that the new Siemens PLC firmware added new features that keep PLC DB from sharing the data. In fact not sharing DB is the default setting.

Another new feature in the new PLC Firmware release supports symbolic item naming where you can assign the plc data blocks and elements with more descriptive symbolic names, and allow the client application and interface driver to access the DB with the symbolic names as item names.

This *Tech Note* provides the Wonderware DASSiDirect information needed to get consistent data access from the S7 1200 and 1500 PLC with those new features.

SITUATION

Since the security protection feature was added in the PLC side, the steps in this document need only to be implemented in the within the PLC. You will need to have access to the Step 7 or new TIA programing software. Once the changes are made in the PLC, Wonderware DASSidrect will be able to get data without any additional configuration.

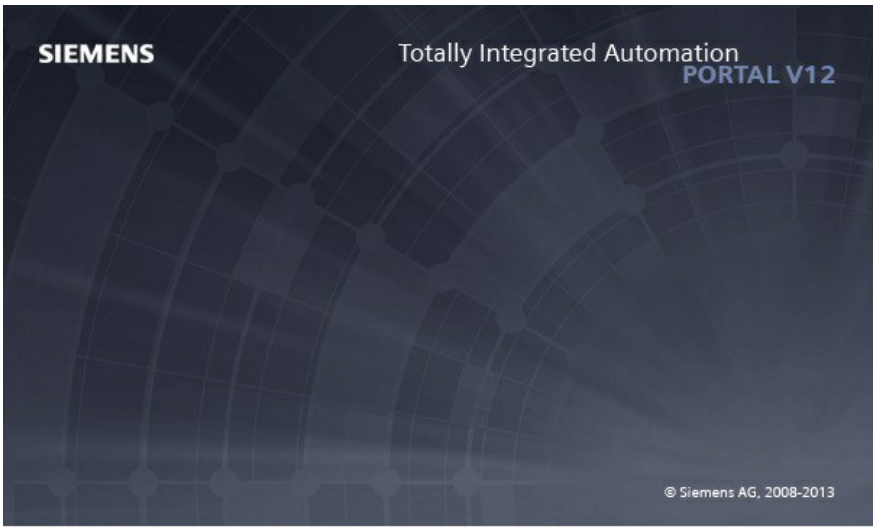

Figure 1: Siemens TIA Programming Software Startup Window

Note: The new symbolic name feature is supported only with Wonderware's new OI Server interface. The feature is not supported by the legacy DAServer DASSiDirect V3.x or prior.

SYMPTOMS

The issues:

- DAServer gets *no* data update from the PLC, regardless the data type, or update interval. You can ping the PLC IP address, and data port 102 is opened properly tested by the portqry utility.
- DAServer gets *partial* data updates from arrays and data blocks. Some data registers (usually the first element in an array) update fine, some others (the rest of elements in an array) are not updated.

ACTION

Symptom 1: The DAServer gets *no* data updates

The solution is to enable the **PUT/GET** programming Access Permit parameter. Complete the following steps to enable the **PUT/GET** setting.

1. Open the Project in the TIA programming software.

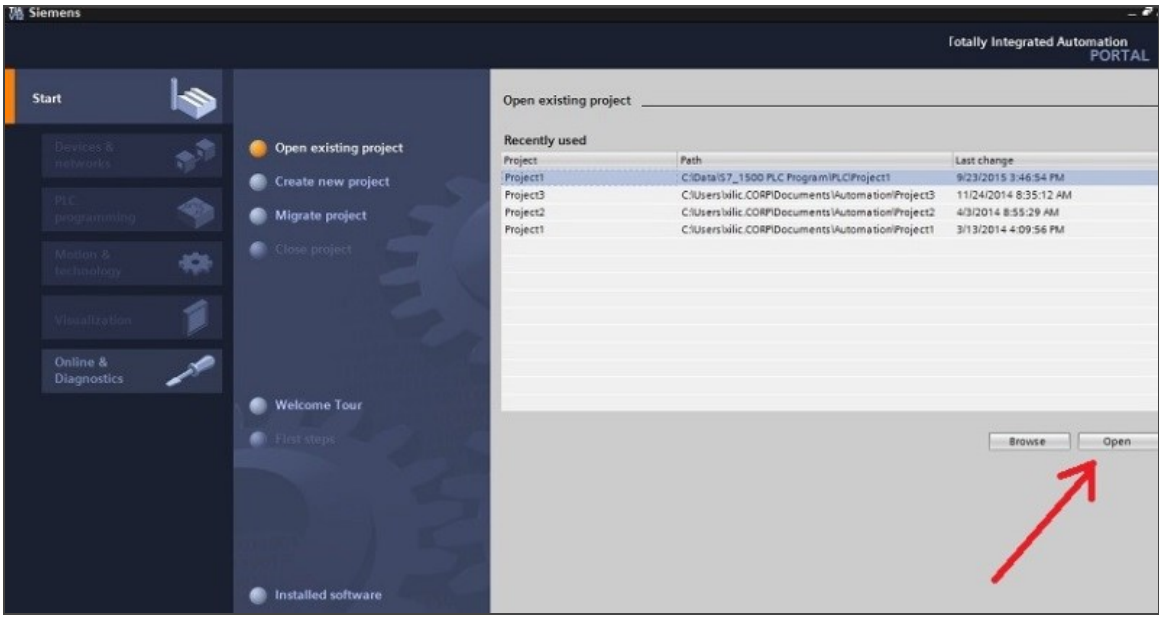

Figure 2: Open the Project in the TIA programming software

2. Select the project, and click **Open**. In this example we're working with **Project1**.
3. Once in the project, from the list on the left side, select the **PLC Programming** item and double-click it.

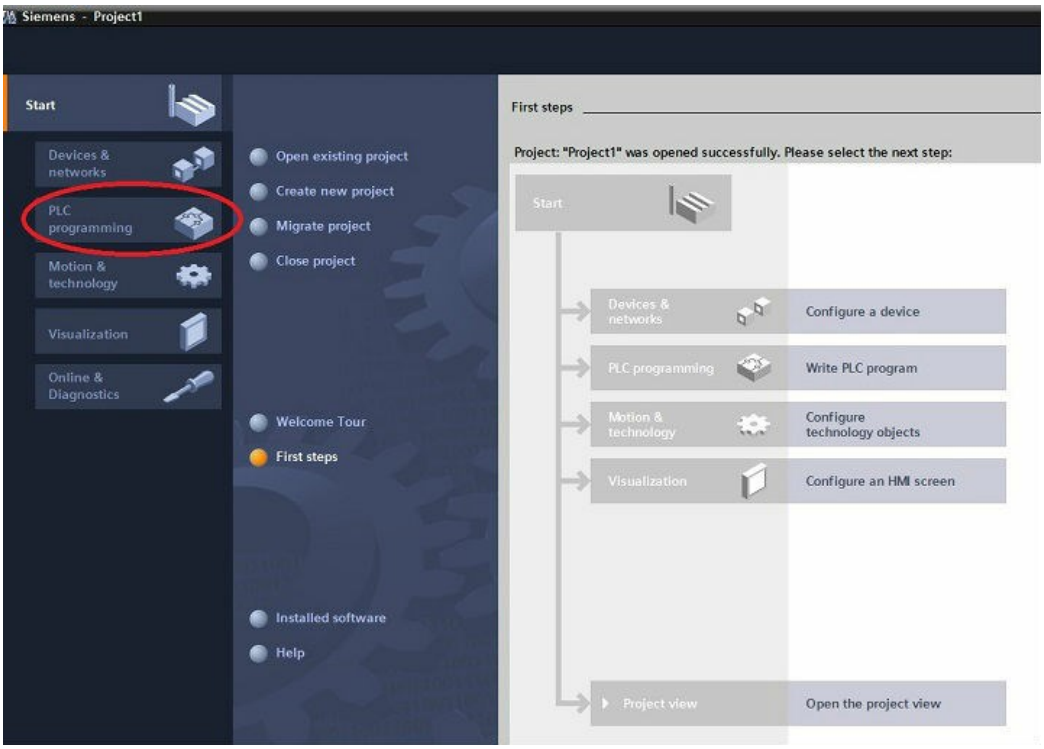

Figure 3: Select PLC Programming

4. Select and click on the **Show Program Structure** option.

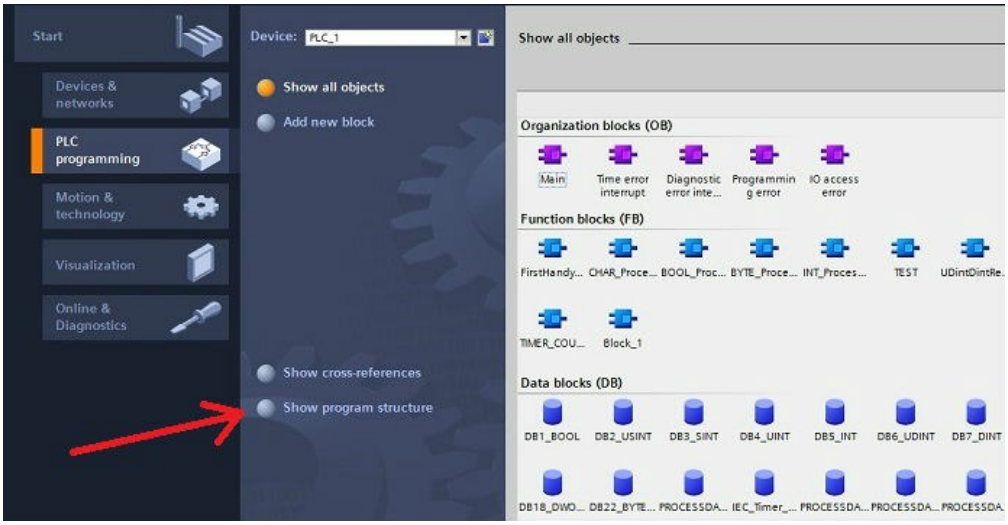

Figure 4: Show Program Structure

5. From the device list in the Program Structure window select the PLC processor (**PLC_1**).

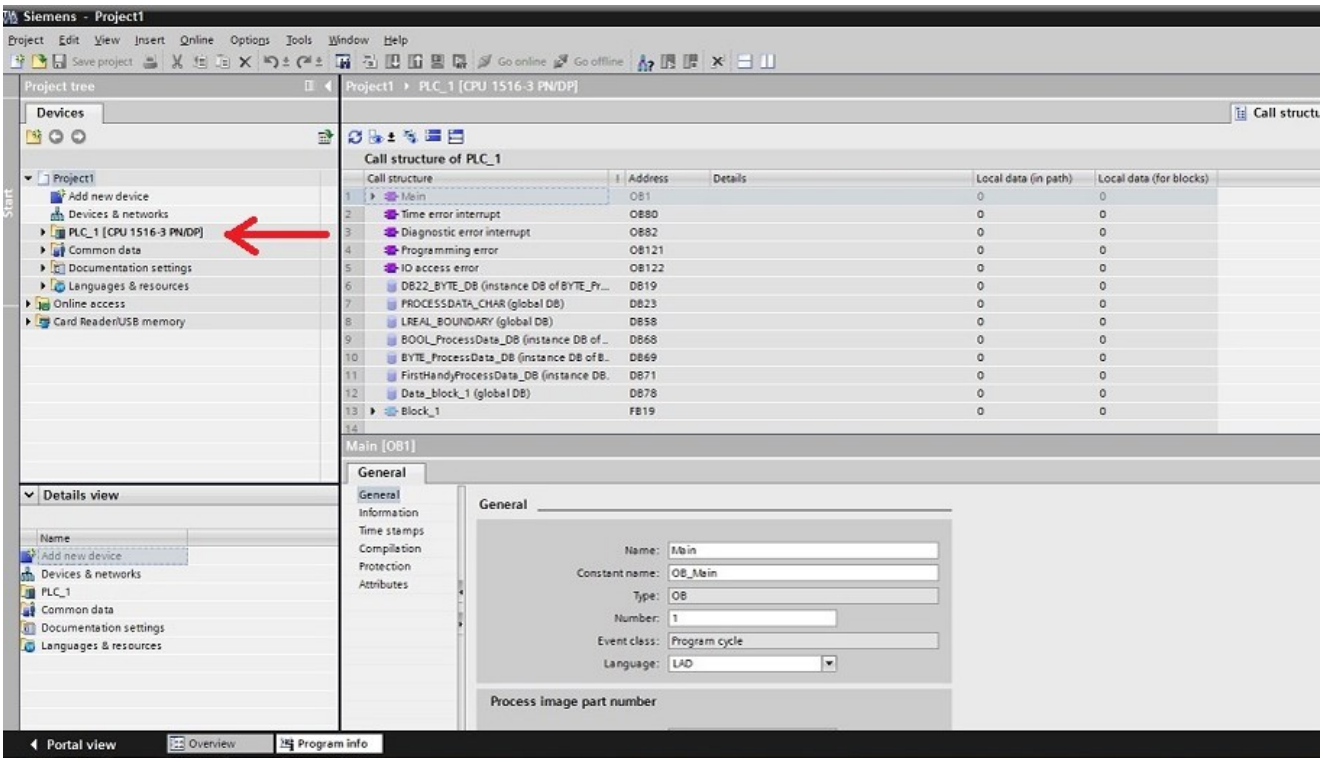

Figure 5: PLC Processor

6. Right-click it and select **Properties**.

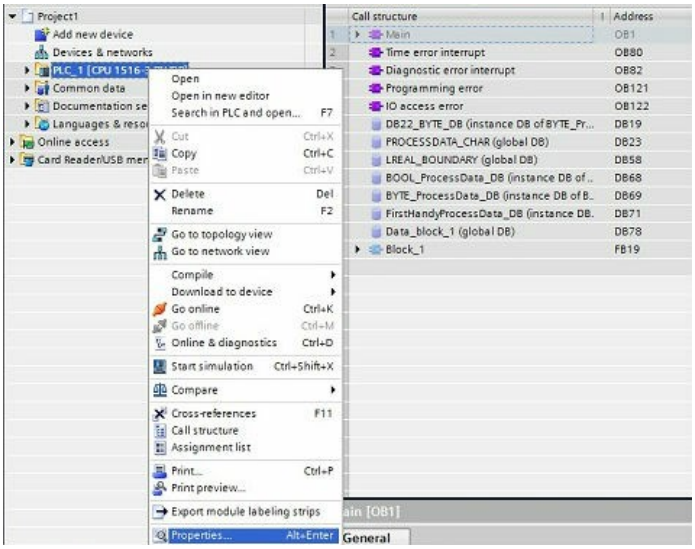

Figure 6: PLC Processor Properties

From the property window showing in Figure 6, you can find the **PUT/GET** parameter, which is disabled by default. This parameter prevents any external access to the PLC data unless it is enabled.

And, from this configuration page, you can determine the external access level, such as **Full Access**, **Read Access**, **HMI Access**, or **No Access** at all.

Figure 7 (below) shows the location of **PUT/GET** parameter and the list of access level configurations.

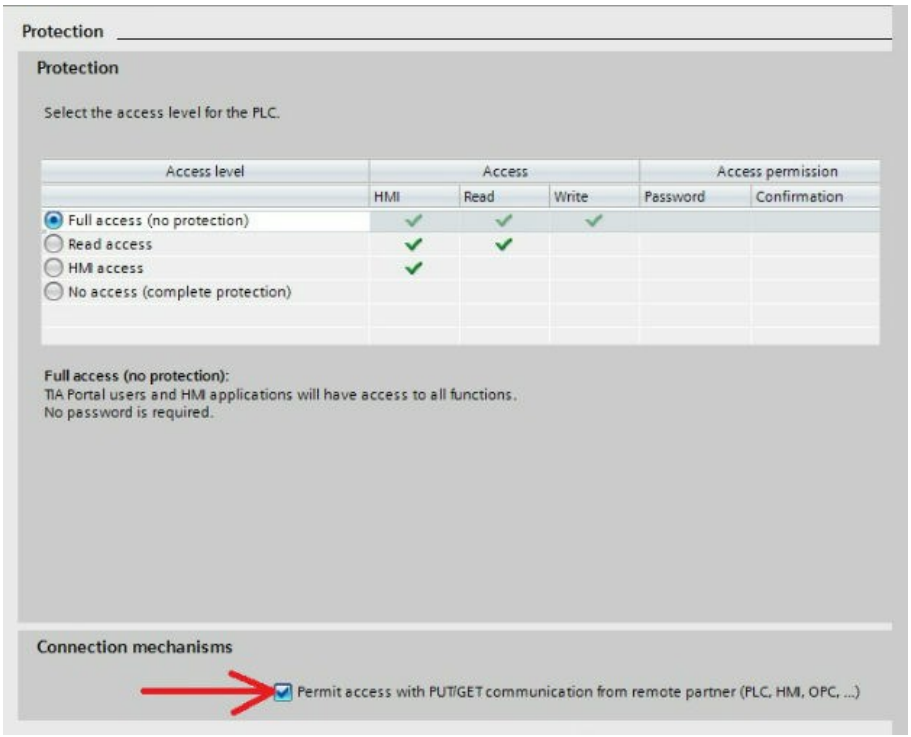

Figure 7: Enable the Permit Access with PUT/GET Communication

Symptom 2: DASSiDirect V3.x gets *partial* updates (accessing the PLC -S7 1200 and 1500 V4.x - data)

You will need to disable the DB block (array) Optimized Block Access.

1. From the TIA programming software, go to the data block you are working with. In this *Tech Note*, we use Block1 (Figure 8 below).

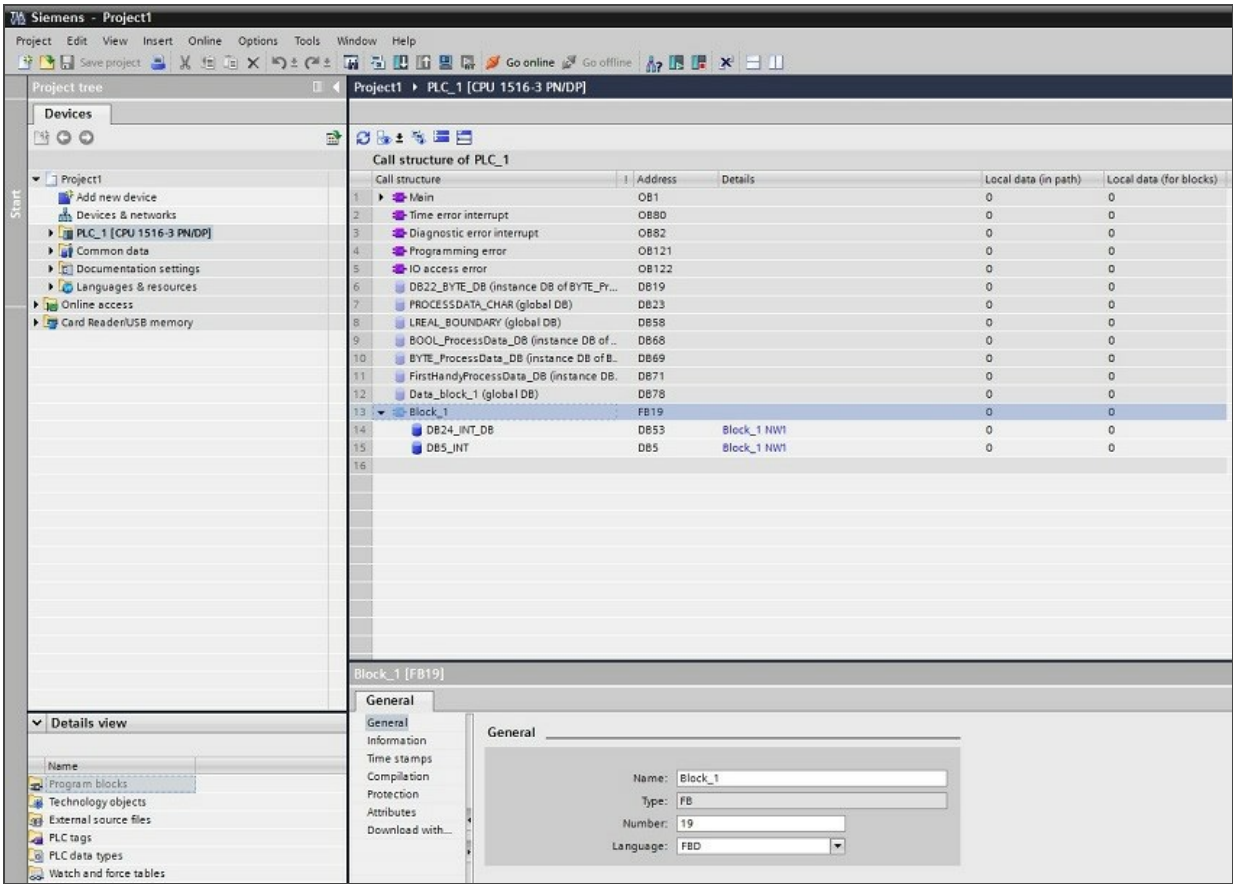

Figure 8: Data Block – Block_1 (FB19)

In this case, Block_1 is the symbolic name, and FB19 is the traditional register name (in this case FB19 - Function Block 19).

2. Double-click Block_1 to open the property window. You will find a list of properties – General, Information, …. Attributes, and Download With…
3. Select Attributes (Figure 9 below).

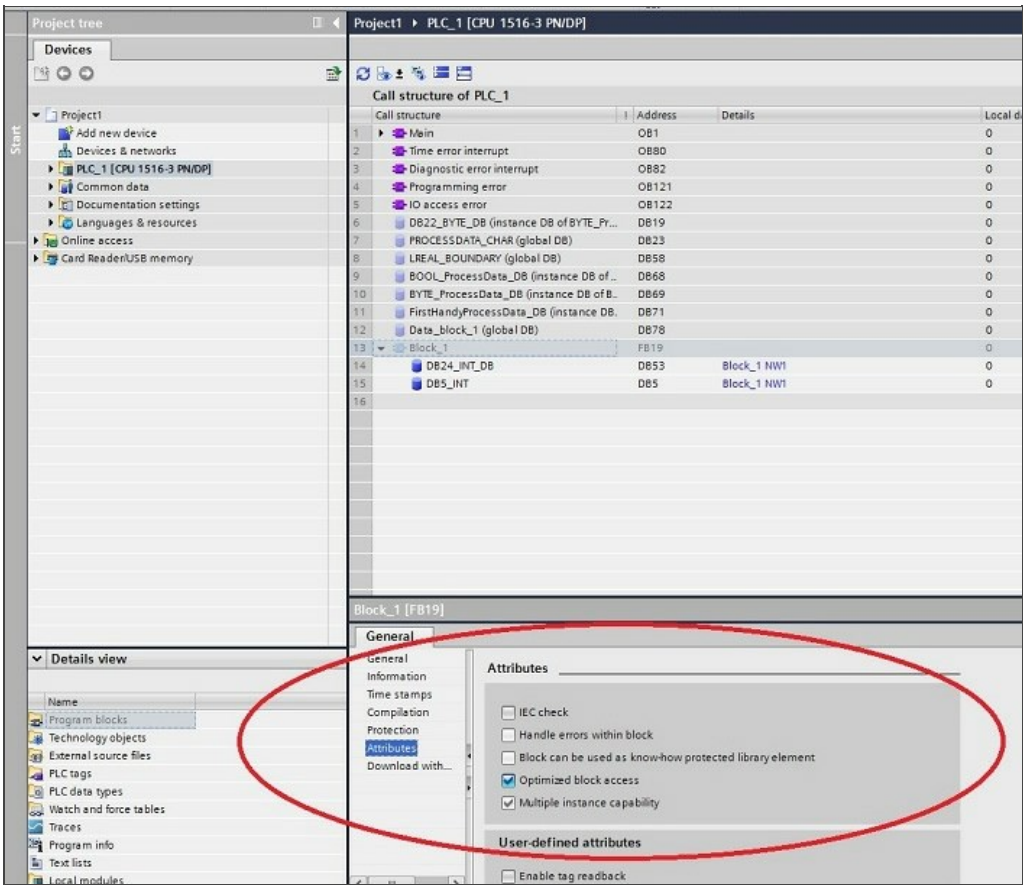

Figure 9 – Data Block Property

If you are running Wonderware's new OI Server SiDirect, you can leave the default setting which checks the option – Optimized Block Access, and

you should be able access the symbolic names in all the elements in an array or a register block.

If you are running Wonderware's legacy DAServcer DASSIDirect V3.x or prior, you must uncheck the attribute Optimized Block Access, to be able properly access all the elements in an array with the traditional register names – FB19, but not the symbolic name Block_1.

AUTHOR NOTES

There is more than one way to navigate to the Program and data block Property, this TN only showing one of the ways. Savvy User of TIA may have much more effective way to get around and finding the properties.