

AMCI SV400x2 Sample Programs - READ ME

The **AMCI_SV400x2_Basic_Moves_Sample_Program** shows the basic steps needed to get you started controlling the SV400x2. This program will preset the position, make relative and absolute moves, make JOG CW and CCW moves, make repetitive CW and CCW moves, or clear errors.

The **AMCI_SV400x2_Axis_Follower_Sample_Program** shows how to use the SV400x2 in linear and circular axis follower mode.

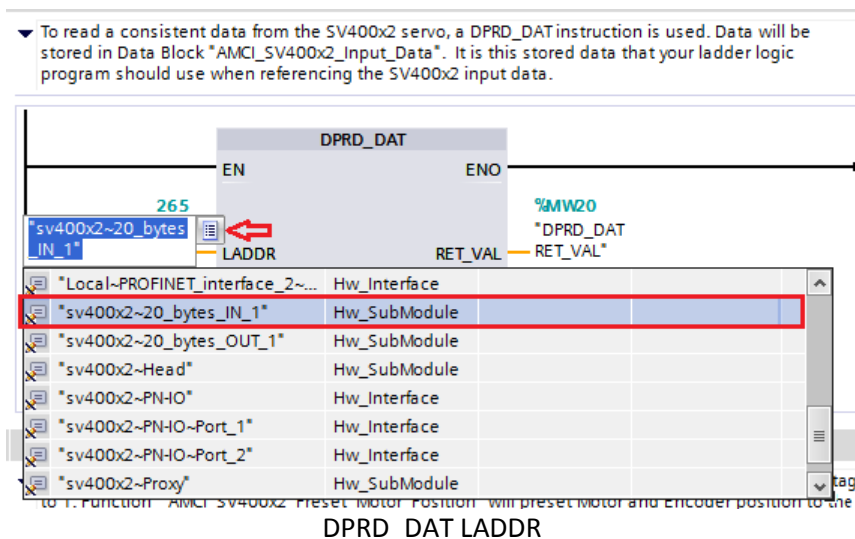
The **AMCI_SV400x2_Library** includes common **Functions**, **Data Blocks**, and **Tags**, some of which are used in the sample programs.

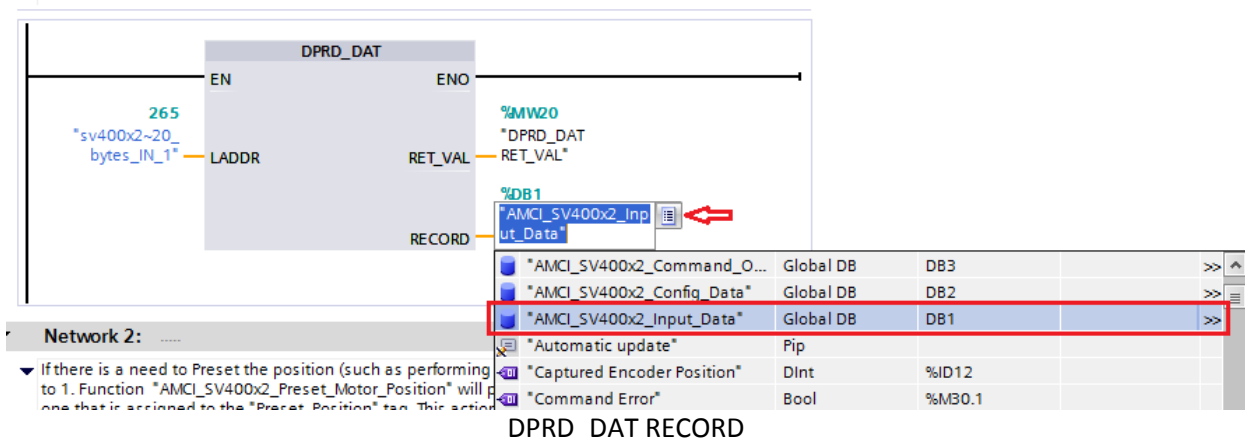
Reading and Writing to the SV400x2

These sample programs also show how to read and write data to the drive using DPRD_DAT and DPWR_DAT instructions to preserve the consistency of the transferred data.

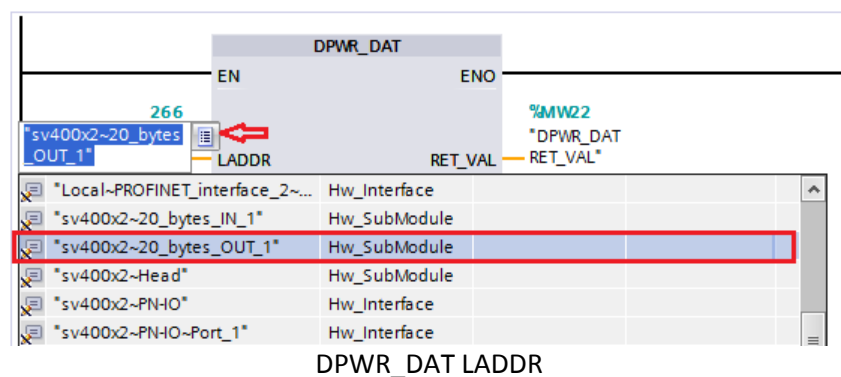
The following information will help you correctly set the needed parameters for the DPRD_DAT and DPWR_DAT instructions.

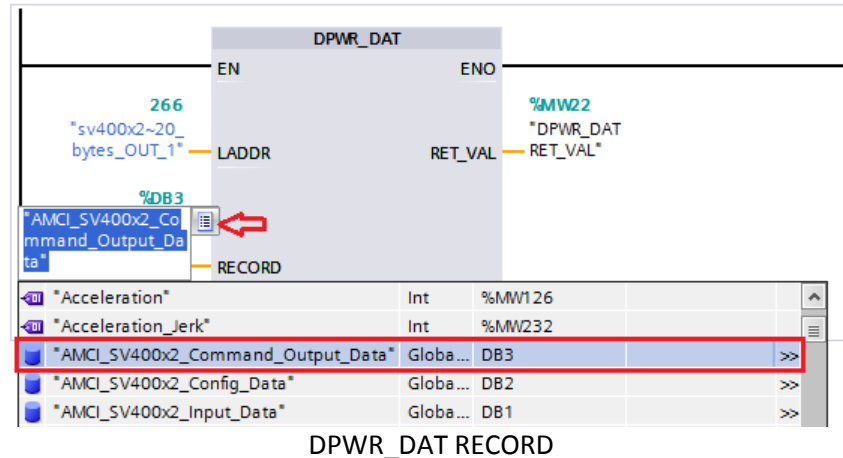
1. A **DPRD_DAT** instruction is used to read data from the SV400x2 drive. It ensures that consistent data is transferred without any interruption. This instruction has 3 parameters that need to be assigned:
 - a) The **LADDR** parameter selects the PROFINET I/O module from which data will be read. As shown in the following figure, to find an available address, click on a **list** icon, and from the drop down list select a hardware submodule assigned to the SV400x2 **input** area.
 - b) The **RECORD** parameter defines the target **Data Block (DB)**, which will contain the SV400x2 Input Data that is read by this instruction. To select the data block, click on the **list** icon and from the drop down list find the appropriate data block.
 - c) The **RET_VAL** parameter will contain an error code if an error occurs while the instruction is being executed.



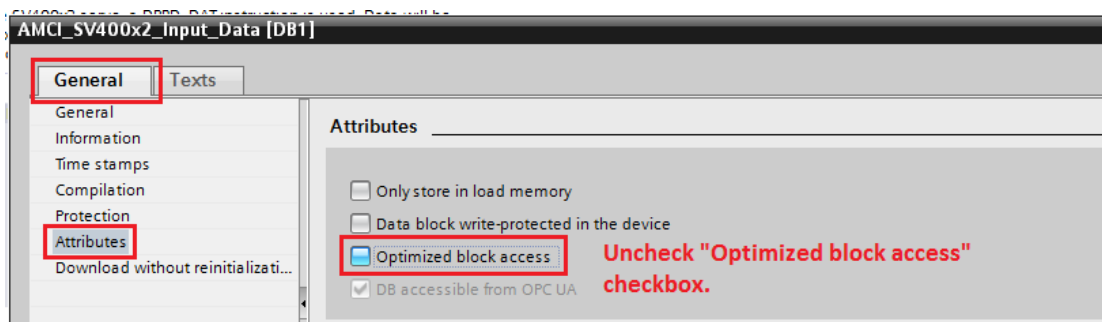


2. A **DPWR_DAT** instruction is used to write data to the SV400x2 drive. It ensures that consistent data is transferred without any interruption. This instruction has 3 parameters that need to be assigned:
 - a) The **LADDR** parameter selects the PROFINET I/O module to which data will be written. As shown in the following figure, to find an available address, click on a **list** icon, and from the drop down list select a hardware submodule assigned to the SV400x2 output area.
 - b) The **RECORD** parameter defines the target **Data Block (DB)**, which will contain the SV400x2 Output Data to be written to the SV400x2 drive by this instruction. To select the data block, click on the **list** icon and from the drop down list find the appropriate data block.
 - c) The **RET_VAL** parameter will contain an error code if an error occurs while the instruction is being executed.





- The **"Optimized block access"** attribute must be unchecked for the DPRD_DAT and DPWR_DAT instructions to work correctly with the **Data Blocks (DB)** used to read data from and write data to the SV400x2 drive. To verify, right click on the selected **Data Block (DB)** and, from the pop-up menu, choose **Properties ...**. As shown in the following image, in the **Properties** window under the **General** tab select **Attributes**, and verify that the **"Optimized block access"** is unchecked.



Data Block - **Attributes** properties

I/O Area of the SV400x2

In some cases, such as Clearing Errors or ending the JOG moves, only the *Command Word 0*, the first output word, needs to be sent to the SV400x2. In these cases, the SV400x2 can be accessed directly through its I/O area.

Input and Output Module addresses are assigned by the system when the SV400x2 drive is added to the network. If you need to access the SV400x2's I/O area directly, select the SV400x2 drive from the **Network view** and then select the **Device view** tab. In this example, the Input area address range is from 0 to 19, and the Output area address range is from 0 to 19. Therefore, Status Word 0, as an input word, would be located in **IW00**, Status Word 1 in **IW02**... and the Command Word 0, as an output word, would be located in **QW00**, Command Word 1 in **QW02**...

Input / Output area of the SV400x2 I/O modules.

Module	Rack	Slot	I address	Q address	Type	Article ...
sv400x2	0	0			SV400x2	sv400x2
PN-IO	0	0 X1			sv400x2	
20 bytes IN_1	0	1	0...19		20 bytes IN	
20 bytes OUT_1	0	2		0...19	20 bytes OUT	

Input and Output Module Addresses

In this sample program, as depicted in the following figure, the Command Word 0 and Command Word 1 of the SV400x2 are tagged as “SV400x2_Command_Word_0” and “SV400x2_Command_Word_1”, which is how they will be used in the function blocks, and their addresses are QW0 and QW2 respectively.

AMCI_SV400x2 Tags							
	Name	Data type	Address	Retain	Acces...	Writa...	Visibl...
28	Current	Int	%IW16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29	Velocity	Int	%IW18	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30	SV400x2_Command_Word_0	Word	%QW0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31	SV400x2_Command_Word_1	Word	%QW2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32	Control	Int	%MW10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>