AMCI NXFE2 Sample Programs - READ ME

The ***AMCI_NXFE2_ Sample_Program*** shows the basic steps needed to get you started controlling the AMCI NXFE2 stepper controller. This program will preset the position, make relative and absolute moves, make JOG CW and CCW moves, program and make assembled moves, or clear errors.

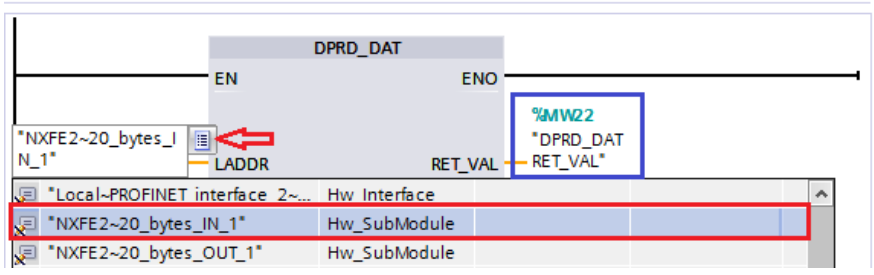
The ***AMCI_NXFE2_Library*** includes common ***Functions***, ***Data Blocks***, and ***Tags***, some of which are used in the sample program. This library can be imported, and modified if needed, for use in any of your projects.

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

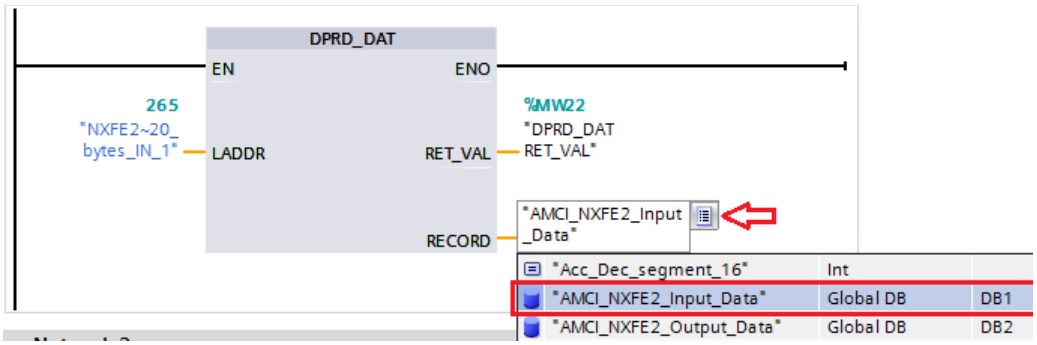
The following information will help you correctly set the needed parameters for the DPRD_DAT and DPWR_DAT instructions.

1. A **DPRD_DAT** instruction is used to read data from the NXFE2 stepper controller. 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 NXFE2 input area.
    b) The **RECORD** parameter defines the target ***Data Block*** (***DB***), which will contain the NXFE2 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.



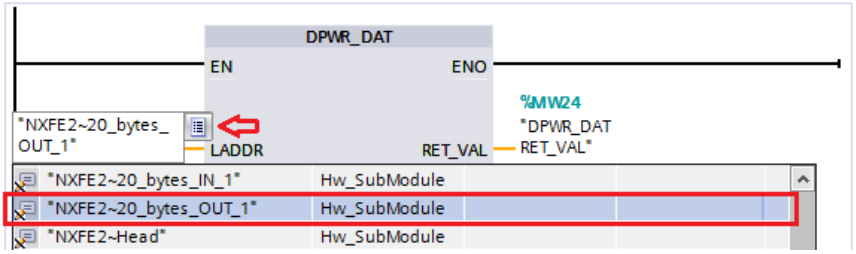
DPRD_DAT LADDR



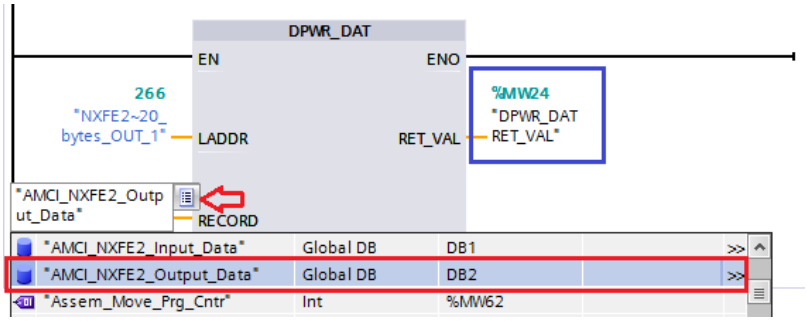
DPRD_DAT RECORD

2. A **DPWR_DAT** instruction is used to write data to the NXFE2 stepper controller. 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 NXFE2 output area.
   b) The **RECORD** parameter defines the target ***Data Block*** (***DB***), which will contain the NXFE2 Output Data to be written to the NXFE2 stepper controller 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.

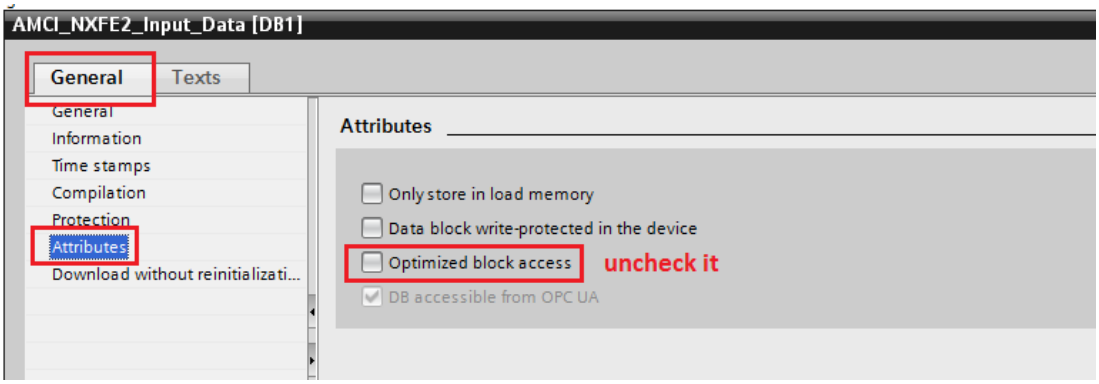


DPWR_DAT LADDR



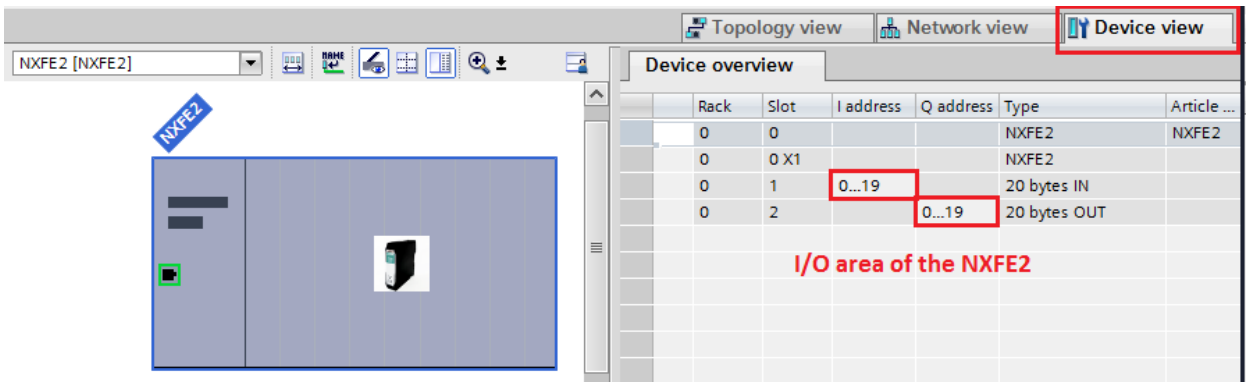
DPWR_DAT RECORD

3. 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 NXFE2 stepper controller. 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

4. Input and Output Module addresses are assigned by the system when the NXFE2 stepper controller is added to the network. If you need to access the NXFE2's I/O area directly, select the NXFE2 stepper controller 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 and Output Module Addresses