READ FANUC PMC VALUES

For machine-data acquisition it's often necessary to access, read and use data stored at the PLC (Fanuc: PMC) of a controller. For machines equipped with FOCAS-enabled Fanuc controllers you can use the utility program fanucpmc to do so.

Initially this utility was developed for a project with lots of machines, all equipped with Fanuc controllers but from different manufacturers. The requirement was to get part counter values. Unfortunately machine manufacturers are free to store such values at different locations including the PMC. With fanucpmc it was possible to scan the PMC and find the location of the values. The program is also very useful to find PMC addresses for process, tool and quality data.

Important: If you're using HSSB (High Speed Serial Bus) see notes on HSSB below. In this case run the test directly on the PC with the HSSB interface card!

If you can access the controller via the network it is highly recommend to use the program on a laptop with a network connection at the shop-floor in front of the machine.

SETUP & USAGE

1. Download fanucpmc.zip.
2. Extract all contents of fanucpmc.zip to a folder on your PC.
3. Navigate to the folder with FanucPMCGui.exe
4. Double click FanucPMCGui.exe
5. In section input parameters enter all information to identify controller, PMC area and addresses to be queried.
6. If you access your controller via network enter the IP Address or DNS Hostname.
7. Under Port enter the port number configured for the FANUC Focas option at the controller, default 8193.
8. Only if you access your controller via HSSB change Method to 1 for 'real' HSSB or 2 for NCGUIDE HSSB.
9. Enter the numeric ID Code of the PMC Area that should be queried, for details see pmc_rdpmcrng.
10. Input Start and End number of the PMC addresses that should be read.

After clicking [Query] you should see output similar to the following in the right pane:

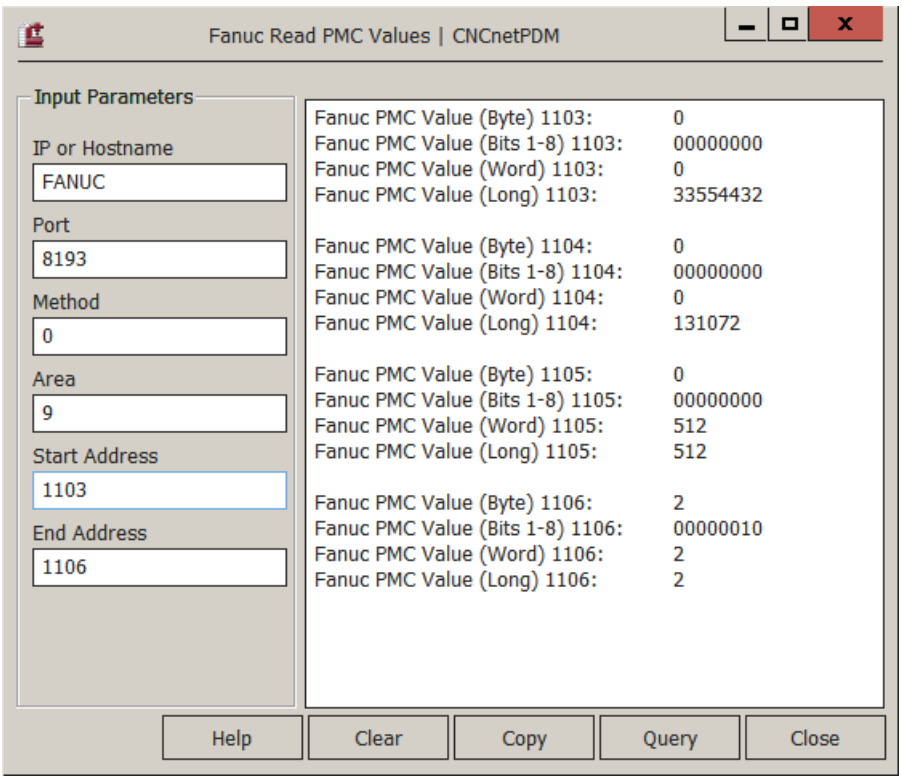

FIG 1: FanucPMCGui: Read PMC data

In this example data of addresses 1103 to 1106 from the data table (9) was queried via network from a controller with DNS Hostname FANUC. If data can be found at the selected addresses the program outputs 4 values: Byte, Bits 1-8, Word and Long.

In the above example the program found data for addresses 1103, 1104, 1105 and 1106. If you get an error please look here (section PMC Data Window) to find out the reason.

Tip: By clicking on [Copy] you can copy the output to the clipboard and simply paste it into a text file.

In practice FanucPMCGui can be used for various requirements:

If you know that the machine stores part counter values at the PMC you can note down the value shown at the operator panel, scan the PMC (max 20 addresses at the same time), copy and paste the output into a text file and search it for the value (for part counter values look at the byte type). You probably will find more than one matching value. Let the machine produce one part. Scan again and search for the value. By doing so it is even possible to find these values without any documentation or assistance of the machine manufacturer!

In case you want to track things like process parameters you can use the same technique: Look at the output at the operator panel and note down the respective value. Scan the PMC and try to find the value. Change the value and scan again. As it is common that the operator panel displays converted values it may be necessary to get the conversion formula from the machine manufacturer.

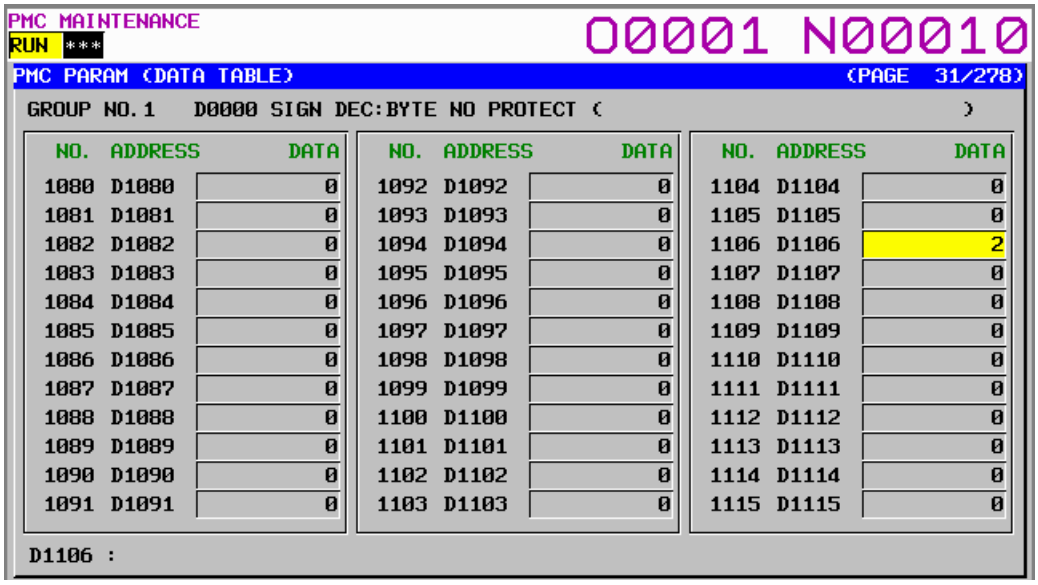

FIG 2: Fanuc 31i Model B Data Table (9) output

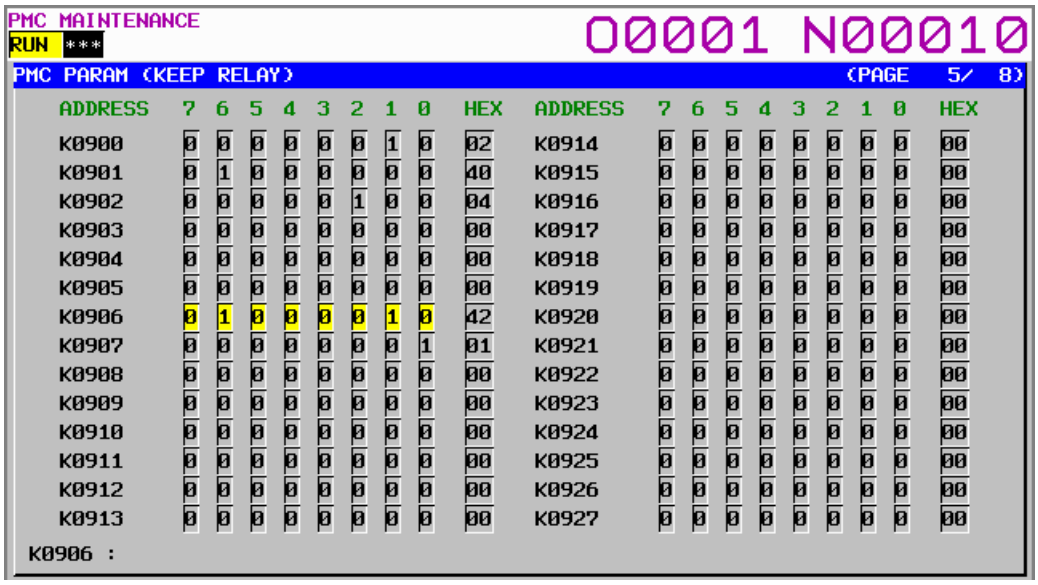

FIG 3: Fanuc 31i Model B Keep Relay (7) output

HSSB

If your machine has a PC that is connected to the controller via HSSB or you use HSSB features of FANUC's NCGUIDE simulation software the setup procedure is slightly different. In both cases do **NOT** use the dll files starting with fwlib (e.g. Fwlib32.dll) included in fanucpmc.zip. For HSSB on a real machine use the fwlib dll's that the machine's PC uses (search for them). For NCGUIDE use the following 5 dll's that are installed by NCGUIDE: fwlib0DN.dll, Fwlib32.dll, fwlibNCG.dll, hssb.dll and mcnhssb.dll.