

## 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.

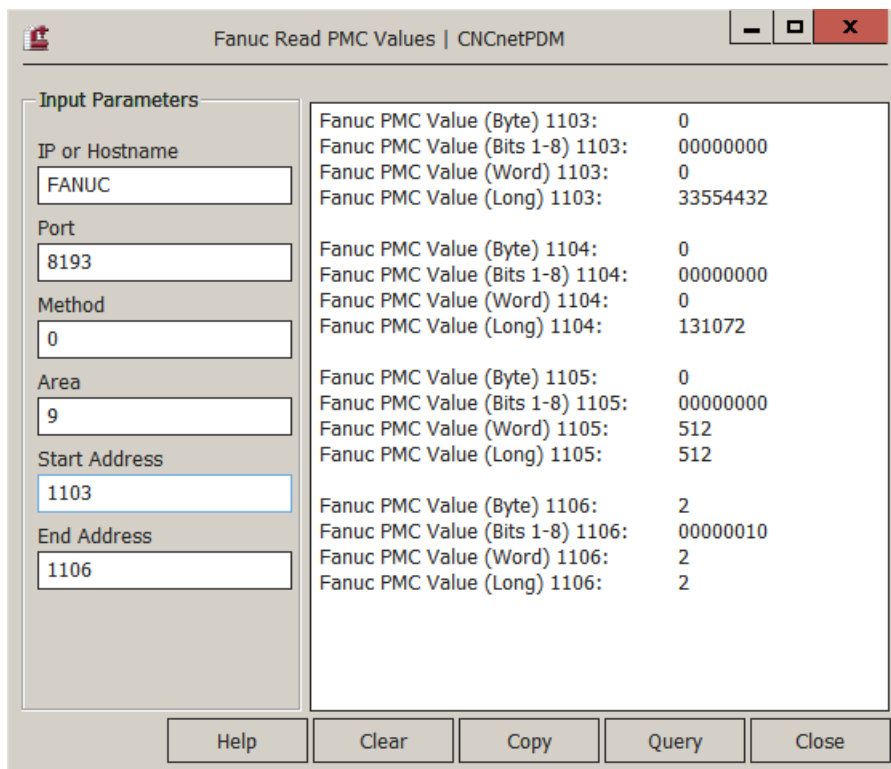
**Important:** If you're using HSSB (High Speed Serial Bus) see notes on HSSB below. In this case run the test directly on the PC with the HSSB interface card!

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:



Address	Byte	Bits 1-8	Word	Long
1103	0	00000000	0	33554432
1104	0	00000000	0	131072
1105	0	00000000	512	512
1106	2	00000010	2	2

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.

PMC MAINTENANCE

RUN \*\*\*

00001 N00010

PMC PARAM (DATA TABLE)

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GROUP NO. 1 D0000 SIGN DEC:BYTE NO PROTECT ( )

NO.	ADDRESS	DATA	NO.	ADDRESS	DATA	NO.	ADDRESS	DATA
1080	D1080	0	1092	D1092	0	1104	D1104	0
1081	D1081	0	1093	D1093	0	1105	D1105	0
1082	D1082	0	1094	D1094	0	1106	D1106	2
1083	D1083	0	1095	D1095	0	1107	D1107	0
1084	D1084	0	1096	D1096	0	1108	D1108	0
1085	D1085	0	1097	D1097	0	1109	D1109	0
1086	D1086	0	1098	D1098	0	1110	D1110	0
1087	D1087	0	1099	D1099	0	1111	D1111	0
1088	D1088	0	1100	D1100	0	1112	D1112	0
1089	D1089	0	1101	D1101	0	1113	D1113	0
1090	D1090	0	1102	D1102	0	1114	D1114	0
1091	D1091	0	1103	D1103	0	1115	D1115	0

D1106 :

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

PMC MAINTENANCE		00001 N00010	
RUN ***			
PMC PARAM (KEEP RELAY)		(PAGE 5/ 8)	
ADDRESS	7 6 5 4 3 2 1 0	HEX	ADDRESS 7 6 5 4 3 2 1 0 HEX
K0900	0 0 0 0 0 0 1 0	02	K0914 0 0 0 0 0 0 0 0 00
K0901	0 1 0 0 0 0 0 0	40	K0915 0 0 0 0 0 0 0 0 00
K0902	0 0 0 0 0 1 0 0	04	K0916 0 0 0 0 0 0 0 0 00
K0903	0 0 0 0 0 0 0 0	00	K0917 0 0 0 0 0 0 0 0 00
K0904	0 0 0 0 0 0 0 0	00	K0918 0 0 0 0 0 0 0 0 00
K0905	0 0 0 0 0 0 0 0	00	K0919 0 0 0 0 0 0 0 0 00
K0906	0 1 0 0 0 0 1 0	42	K0920 0 0 0 0 0 0 0 0 00
K0907	0 0 0 0 0 0 0 1	01	K0921 0 0 0 0 0 0 0 0 00
K0908	0 0 0 0 0 0 0 0	00	K0922 0 0 0 0 0 0 0 0 00
K0909	0 0 0 0 0 0 0 0	00	K0923 0 0 0 0 0 0 0 0 00
K0910	0 0 0 0 0 0 0 0	00	K0924 0 0 0 0 0 0 0 0 00
K0911	0 0 0 0 0 0 0 0	00	K0925 0 0 0 0 0 0 0 0 00
K0912	0 0 0 0 0 0 0 0	00	K0926 0 0 0 0 0 0 0 0 00
K0913	0 0 0 0 0 0 0 0	00	K0927 0 0 0 0 0 0 0 0 00
K0906 :			

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.