

## MITSUBISHI (CITIZEN)

### READ & WRITE DATA

For manufacturing machines from Citizen or Mazak equipped with Mitsubishi controllers this diagnostic tool enables you to test reading and writing operations by using all available commands for these devices. It enables to quickly setup customized [Mitsubishi Citizen device driver](#) INI files for CNCnetPDM. The program can be executed on a PC with MS Windows OS (>= XP SP3) connected to your controller via Ethernet. Please use [MitsubishiCommands](#) for machines from manufacturers other than Citizen or Mazak.

- [Mitsubishi Citizen commands overview](#)

### SETUP

- [Download and extract all contents of citizencommands.zip](#) to a folder on your PC.
- As the program identifies and accesses controllers by using machine numbers the first thing you have to do is to edit the configuration file melcfg.ini.
- Machine numbers are defined in sections, one for each device. The machine number is the numeric part after Machine, e.g. [Machine01] = 1. Note: The second part of this numeric value uses hexadecimal notation from 1 to F, e.g. 01 = 1 and 0F = 15, remember your math lessons.
- If you're testing with one machine it is recommended to leave section [Machine01] as it is. Only in case it doesn't work you can change the value for Controller from M8NX to NCXJ, NCXK, M6B, NX or M7NX.
- It is necessary to adjust section [HOSTS] according to your setup e.g. TCP1=192.168.100.1,683 means that the IP Address of your controller is 192.168.100.1. 683 after the comma is the port to be used to access the controller, do not change that.
- For additional machines you have to copy and paste the whole section [Machine01], then change its name e.g. [Machine02] and Device= to a different device in section [HOSTS] e.g. Device=TCP2. In section [HOSTS] you have to add a new device e.g. TCP2=192.168.100.2,683.
- Save melcfg.ini.

## USAGE

### READ DATA

- After setup of your melcfg.ini file double click CitizenCommands in Windows Explorer
- In field 'Mitsubishi Machine Number' (1) enter the machine number as defined in melcfg.ini
- Initially the program starts with Mitsubishi Command (2) SECT\_RUN\_STATUS which returns the running status of the machine
- Clicking on button 'Execute' (3) shows the result of the operation, here 2, in the right area:

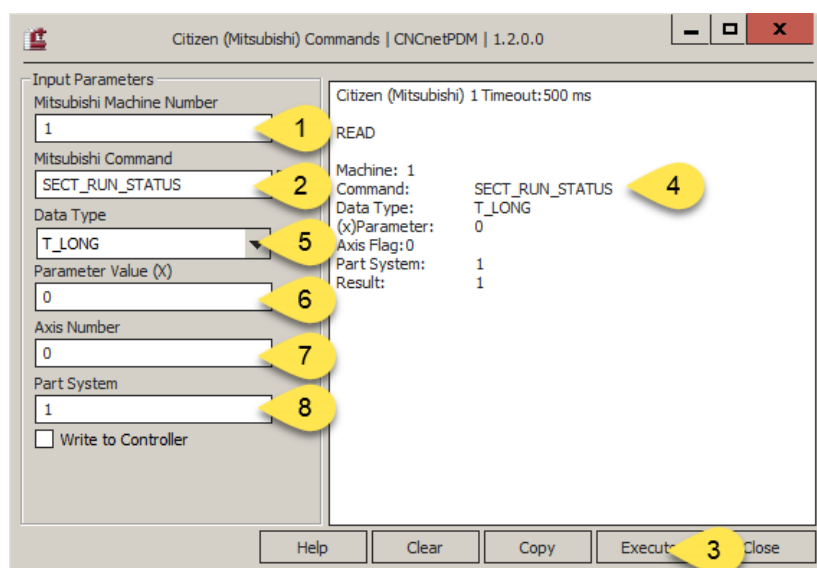


FIG 1: Output of CitizenCommands (Read Running Status)

Data Type (5): Allows you to adjust the data type for the command. Please select a data type according to the expected result e.g. for integers T\_LONG or for floating point numbers like common variables or axis position T\_DOUBLE or T\_FLOATBIN. If you expect text output use T\_STR.

Parameter Value (X) (6): For commands that require a parameter value like a common variable number SECT\_COMMON\_VAL1(x) you can enter it's number here. Input this parameter for commands that end with (x).

Axis number (7): For axis related commands e.g. Axis Name SECT\_AXIS\_NAME a specific axis number has to be entered here.

Part System (8): If your machine has more than one part system you can adjust this value.

## WRITE DATA

CitizenCommands also allows you to change data at the controller by using writable commands e.g. common variables SECT\_COMMON\_VAL1(x). To change the value of common variable 501, proceed as follows:

- In field Mitsubishi Command (9) type in SECT\_COMMON\_VAL1(x). You can also copy the command name and paste it into this field by clicking on the button with 3 dots right of the input field
- As Data Type (10) select T\_DOUBLE
- In field Parameter Value (11) enter 501
- Activate checkbox 'Write to Controller' (12) and enter the new value for variable 501 in the input field below
- Clicking on button 'Execute' (13) changes the variable value and shows the result in the right area
- You can verify the new value for common variable 501 at the controller (14)

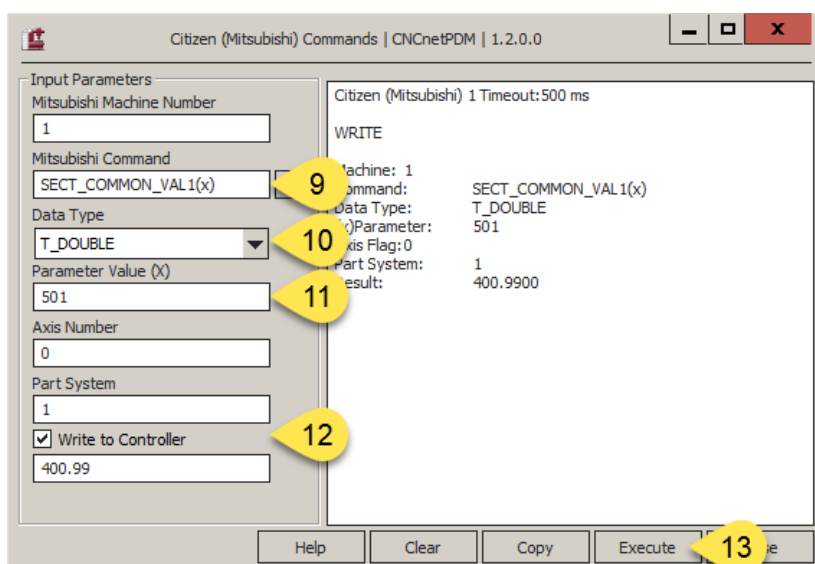
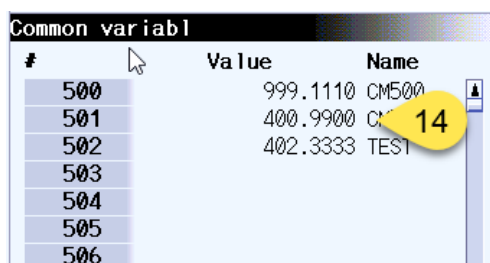


FIG 2: Change common variable 501 with CitizenCommands



#	Value	Name
500	999.1110	CM500
501	400.9900	CM501
502	402.3333	TEST
503		
504		
505		
506		

FIG 3: Verify the new value for common variable 501 at the controller

## LICENSING

If you have installed CNCnetPDM on your PC with a license other than a 'free license' and run this program from the folder where CNCnetPDM is installed you get unlimited functionality. Otherwise you can only read data and execute commands that require no additional input parameter (x). Please see [licensing](#) for details or [contact us](#) if you have any questions.

- Note: If you like to run this program from a different folder on your PC you can simply copy your CNCnetPDM.ini file to this directory.

## CONTROLLERS

The program was tested and works with Citizen machines with the following Mitsubishi controllers, others may work as well:

<b>Controller</b>	<b>Mitsubishi Series</b>
MELDAS FCA70LPC-2A	M70
MELDAS M635L	M635
M635L	M635
MELDAS FCA70LPC-2AV	M70
MELDAS FCA70LPC-2AVU	M70
M735LUC	M700
MELDAS FCA70LPC-2AVU	M70
MELDAS FCA70LPC-2AV	M70
M500	M500
MELDAS FCA730LPC-4VS	M730

FIG 4: Tested Citizen Mitsubishi Controllers