Model M3LPA / M3LPA2 Frequency Transmitter

PC CONFIGURATOR SOFTWARE

Model: M3LPACFG

USERS MANUAL

MG CO., LTD. www.mgco.jp
5-2-55 Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN

CONTENTS

1. GETTING STARTED

1.1. PC REQUIREMENTS

The following PC performance is required for adequate operation of the M3LPACFG.

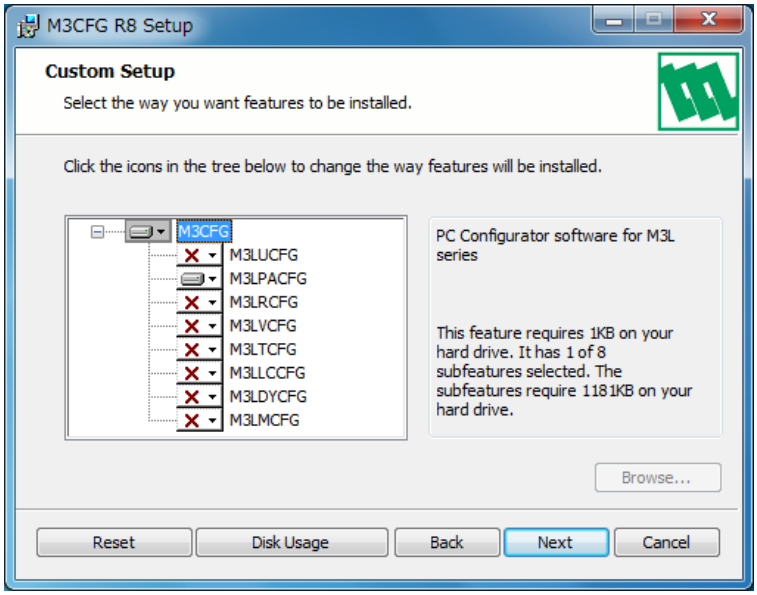
PC	IBM PC compatible
OS	Windows 7 (32-bit, 64-bit) Windows 10 (32-bit, 64-bit) The software may not operate adequately in certain conditions.
CPU/Memory	Must meet the relevant Windows' requirements.
Hard disk	10MB minimum free space
PC configurator cable	Model COP-US (USB) or MCN-CON (RS-232-C)

1.2. INSTALLING & DELETING THE PROGRAM

INSTALL

The program is provided as compressed archive. Decompress the archive and execute 'setup.msi' to start up the M3LPACFG installer program. Follow instructions on the Windows.

In the M3LPACFG installer program, all the software of the M3CFG series will be installed. If you would like to install only M3LPACFG, change to "X" for other software in the window appeared during the installation as shown below.



DELETE

Open Control Panel > Add/Remove Programs. Select the "M3CFG Rx" from the program list and click Delete button.

1.3. STARTING UP THE M3LPACFG

Connect the model M3LPA Frequency Transmitter to the PC via the PC configurator cable.

Press Start on the task bar and choose M3CFG > M3LPACFG from the Program menu.

1.4. OPTION /A & OPTION /B

The M3LPA with Option /B is not designed for PC configuration but only for monitoring on the PC, while the Option /A version is fully programmable.

OPTION /B

When you connect the Option /B version to the PC and start up the M3LPACFG program, you can confirm the current setting but these buttons and fields used for configuring the module are greyed out and thus unavailable.

The M3LPACFG features available for the Option /B version are: monitoring, One Step Calibration, DAC trimming, loop test output and diagnostics.

OPTION /A

The Option /A version is fully programmable including the following: sensor type, frequency range and pulse amplitude, linearization table PV transfer function, threshold, moving average filter, prescaling, excitation and waveform polarity, and cutout frequency.

This version of the M3LPA can be programmed and calibrated even when the configuration mode switch (DIP switch SW2-8) is set to DIP SW mode, however, once the power supply to the M3LPA is turned off and on, it restarts based on DIP switch configurations. It must be started up with the SW2-8 turned on so that it reads its EEPROM contents regardless of other DIP switch configurations.

1.5. M3LPACFG'S AVAILABLE MODEL TYPE

M3LPACFG enables various configuration for model M3LPA and M3LPA2. When using M3LPA2, refer to the same users manual by replacing M3LPA with M3LPA2, only the settings in [Freq. Range] ("3.1. INPUT CONFIGURATION"), [Moving Ave.] ("3.2. DETAILED INFORMATION") and [Sampling Time] ("3.2. DETAILED INFORMATION") for M3LPA2 are different from the ones for M3LPA. Refer to the related sections for the detailed information.

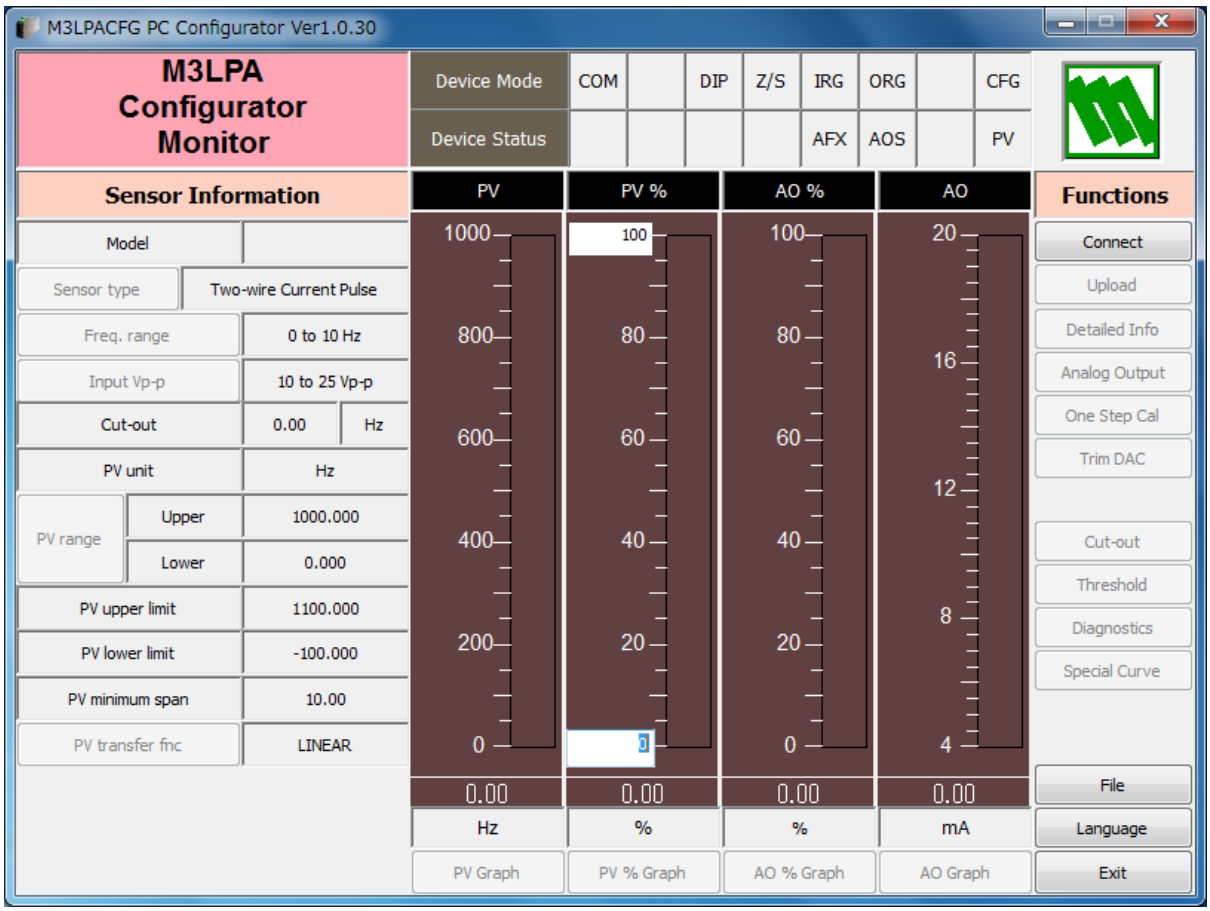
2. MONITOR

2.1. STARTING UP

Figure 1 shows the initial window of the M3LPACFG PC Configurator window.

In order to enable the tools shown on the screen, the model M3LPA Frequency Transmitter must be connected to the PC via the PC configurator cable.

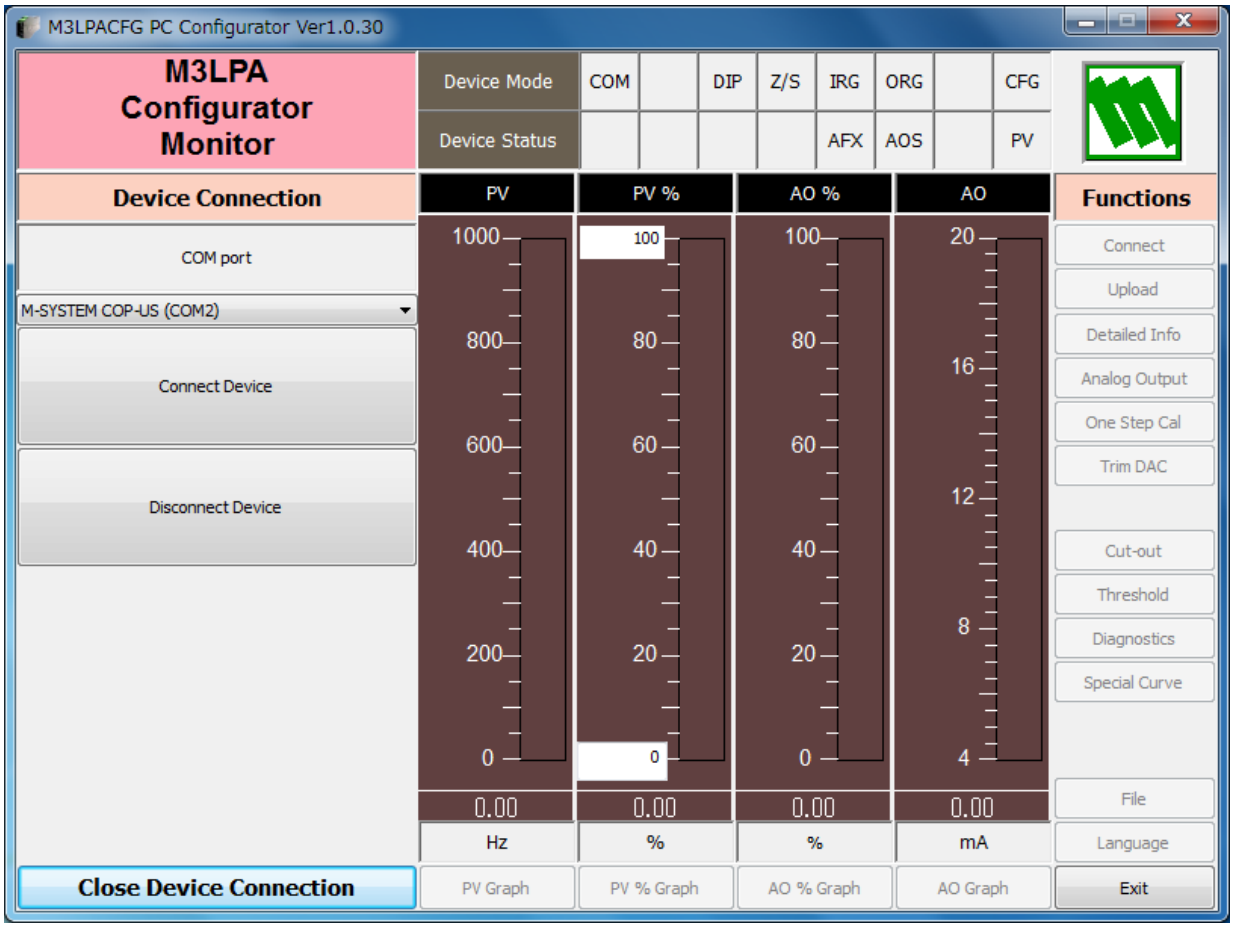
Figure 1. Initial Window



2.2. CONNECTING THE DEVICE

On the initial window, click [Connect] and the Device Connection menu appears on the screen.

Figure 2. Device Connection



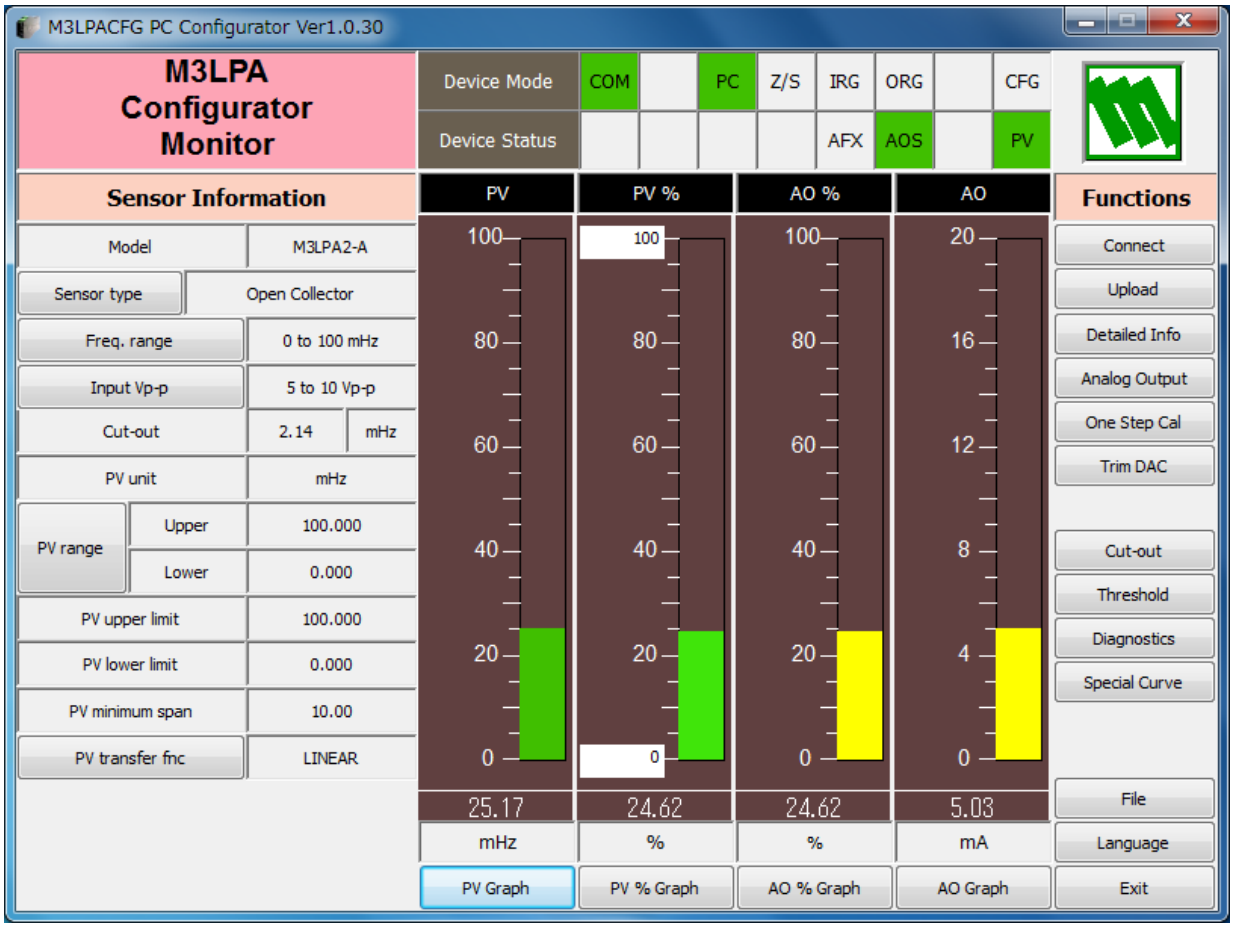
COM port	Choose an adequately configured COM port to be connected.
Connect Device	Connects the device. Once the connection is established, the program uploads the device's configuration information and automatically opens Sensor Information window. The window is the base for various operations to configure the M3LPA.
Disconnect Device	Disconnects the currently connected device.
Close Device Connection	Close the Device Connection window.

2.3. MONITORING TRENDS

Once the device is connected, the Sensor Information menu and the trend monitors appears on the screen. The user can configure various parameters of the M3LPA.

Use [Upload] button to re-load device information e.g. when you replace the module with a new one or when you make changes to M3LPA's configuration without using this tool.

Figure 3. Sensor Information



2.3.1. DEVICE MODE

Device Mode summarizes the device's current operation status and communications status with the PC by lamps.

or

[COM] lamp	Blinks with the normal communications condition.
[DIP]/[PC] lamp	Shows the device's configuration mode: DIP switch or PC. For the M3LPA version /B, only DIP switch mode is available.
[Z/S] lamp	Red light turns on when the device is in the DAC trimming mode.
[IRG] lamp	Red light turns on when the device is in the input one-step calibration mode.
[ORG] lamp	Red light turns on when the device is in the output one-step calibration mode.
[CFG] lamp	Red light turns on when data changes have been done on the configuration software since it was stored the last time. It turns off once the data has been stored into the nonvolatile memory.

2.3.2. DEVICE STATUS

Device Status summarizes the current device status by lamps.

[AFX] lamp	Red light turns on when the analog output entered in Fixed AO mode. The light turns on during output loop testing and fine zero/span adjustments. It turns off when the output tracks input signals.
[AOS] lamp	Green light turns on when the analog output is diagnosed to be normal. Red light turns on when the output is saturated upscale or downscale. Red light turns on during output loop testing and fine zero/span adjustments. It turns off when the output tracks input signals.
[PV] lamp	Green light turns on when the sensor input is in the specified range. Red light turns on when it is out of the range.

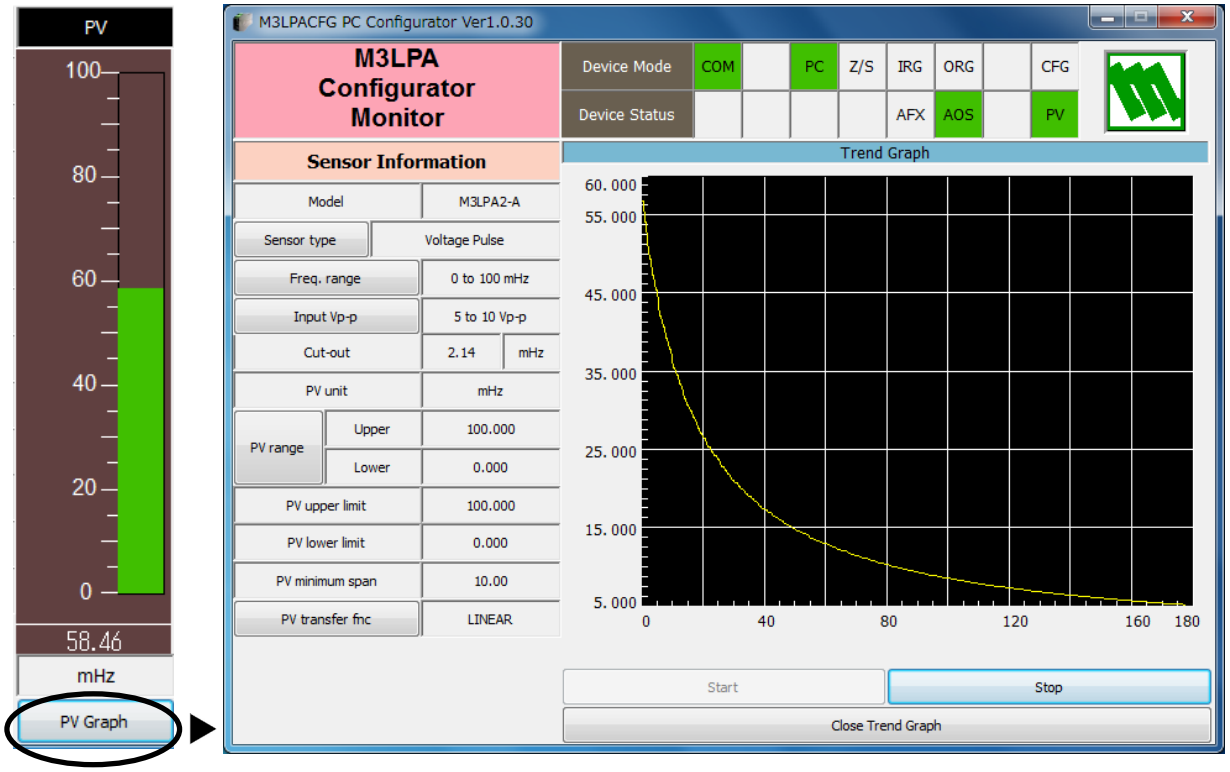
2.3.3. BARGRAPH & TREND GRAPH

Four bargraphs indicating PV (mHz, Hz or kHz), PV in % of the selected range, analog output in % which is calculated from PV in % by transfer function and analog output in engineering unit are available.

The graph scales for the PV in % can be modified unlike the PV, analog output in % and analog output in engineering unit of which the scales are automatically determined and fixed according to the selected range.

At the bottom of each bargraph is [Graph] button which opens a trend graph for the item. Use [Start] and [Stop] buttons to start/stop recording data, and click [Close Trend Graph] to close the graph window.

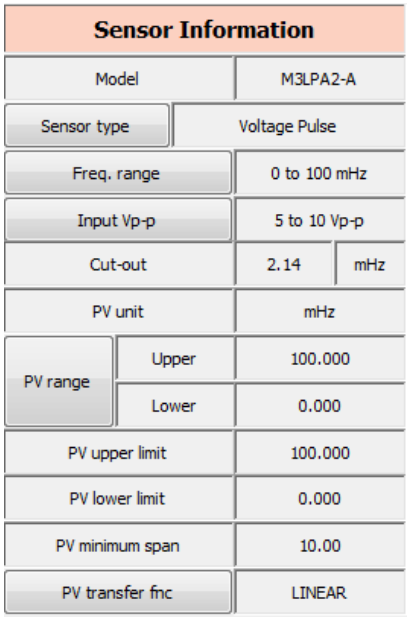
PV Bargraph **Figure 4. Trend Graph**



3. CONFIGURATION

3.1. INPUT CONFIGURATION

In Figure 3, the Sensor Information menu on the left shows basic configuration information of the connected device. When you need to change configurations, click the left button for the required parameter to modify its setting.



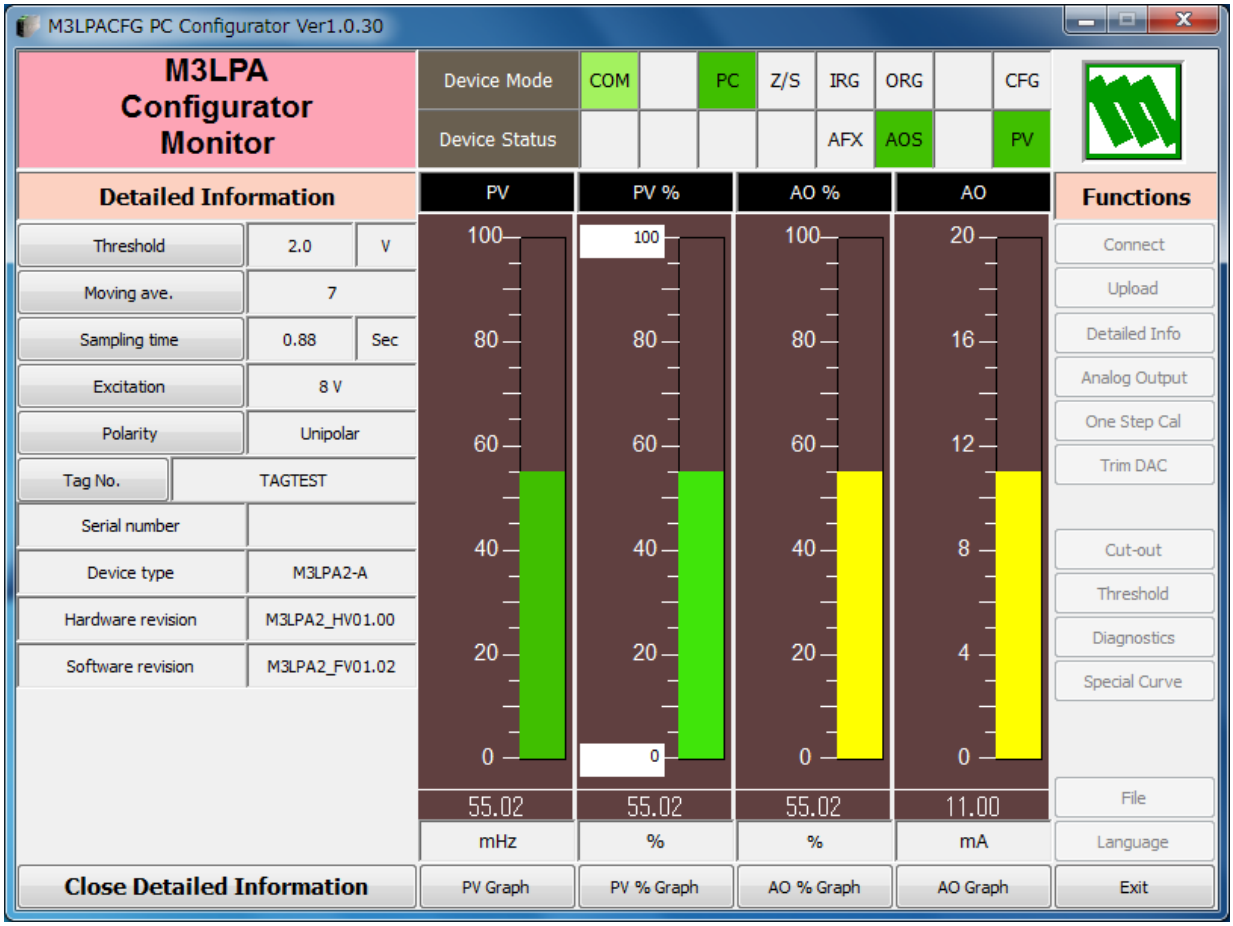
Model	Shows the model number of the device.
Sensor type	The input sensor type can be selected from among the following 5 types. Open Collector Mechanical Contact Voltage Pulse Two-wire Current Pulse RS-422 Line Driver Click [Sensor type] button to choose the input sensor type. Choose with SW2-1, 2-2 in DIP SW mode.
Freq. range	The table below shows the respective frequency ranges of M3LPA and M3LPA2. M3LPA: 0 – 10 Hz; 0 – 100 Hz; 0 – 1 kHz; 0 – 10 kHz; 0 – 100 kHz M3LPA2: 0 – 10 Hz; 0 – 100 Hz; 0 – 1 kHz; 0 – 10 kHz; 0 – 200 kHz; 0 – 10 mHz; 0 – 100 mHz; 0 – 1 Hz Click [Freq. range] button to choose the frequency range. Choose with SW2-3, 2-4, 2-5 in DIP SW mode.
Input Vp-p	The input amplitude can be selected from among the following 7 types. 50 to 100 Vp-p 25 to 50 Vp-p 10 to 25 Vp-p 5 to 10 Vp-p 1 to 5 Vp-p 0.5 to 1 Vp-p 0.1 to 0.5 Vp-p Click [Input Vp-p] button to choose the input amplitude type. Choose with SW2-6, 2-7, 2-8 in DIP SW mode.

Cut-out	Specifies the lowest frequency input value below which the value is processed as 0%. Click [Cut-out] button in the Functions menu to set the cutout frequency.
PV unit	Engineering unit for the PV value is displayed. mHz, Hz or kHz is displayed according to the range selected in [Freq. range].
PV range (Upper / Lower)	Specifies input range for 0% and 100%. Click the left button to open a dialog box for changing the setting. The input range can be also changed on One Step Calibration mode.
PV upper limit	Shows the usable range information for the selected type of sensor.
PV lower limit	
PV minimum span	
PV transfer fnc	The type of the Transfer function can be selected from the following 2 types. LINEAR SPECIAL_CURVE Click [PV transfer fnc] button to specify either LINEAR or SPECIAL_CURVE. With the “LINEAR” function, the output value in % is equal to the input value in %. With the “SPECIAL_CURVE” function, the user-specific transfer function is used for input-to-output transfer. The user-specific transfer function can be used by defining a linearization table in the “SPECIAL CURVE” setting. For details, refer to “6.1. LINEARIZATION TABLE”. Once the linearization table is defined, change the setting to “SPECIAL_CURVE.” The linearization table cannot be changed while this function is enabled. Temporarily change the function to “Linear” to change the linearization table and then return the setting to “Special Curve.”

3.2. DETAILED INFORMATION

In Figure 3, click [Detailed Info] in Functions menu to the right opens the [Detailed Information] menu as shown in Figure 5.

Figure 5. Detailed Information



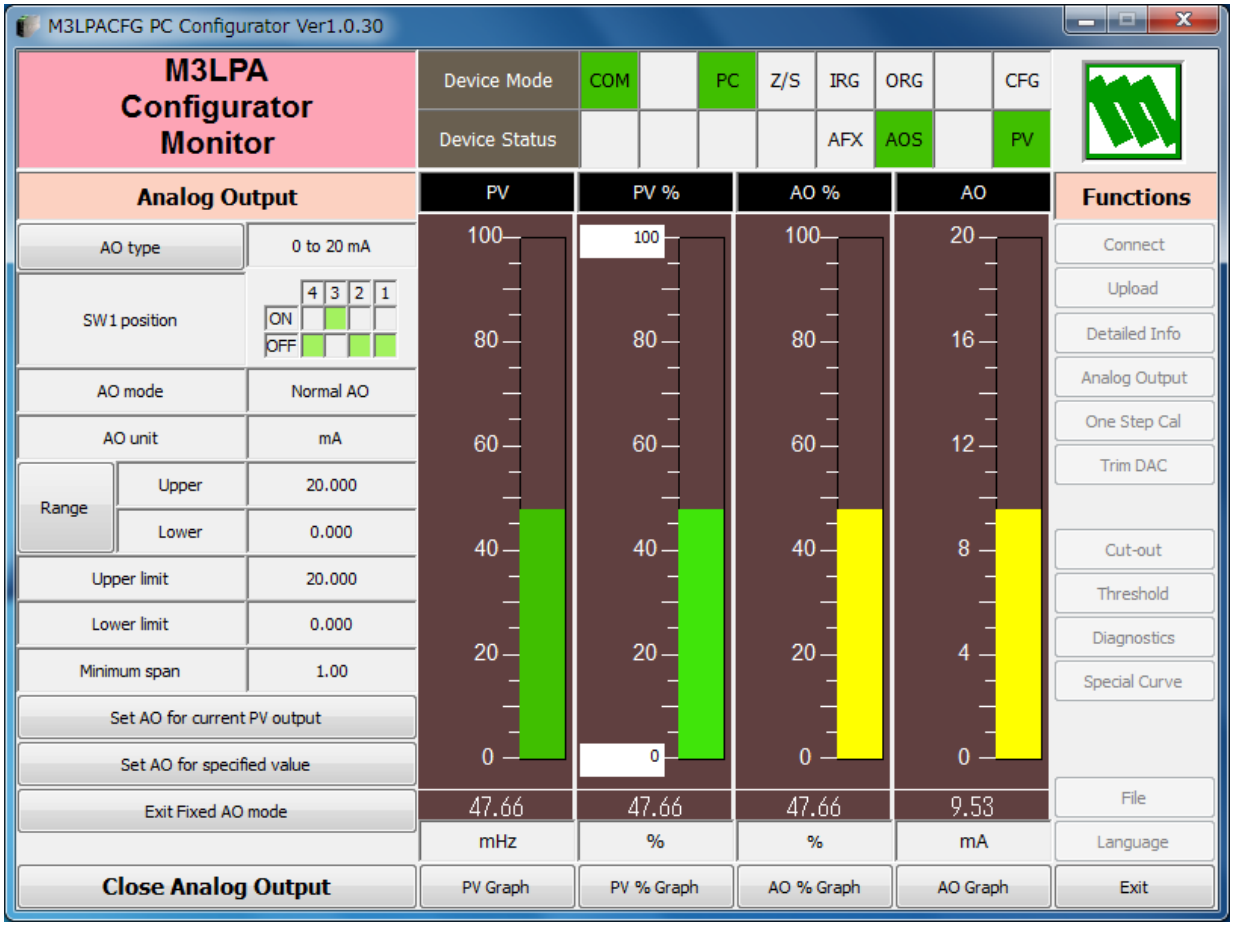
Threshold	Specifies the threshold for the detecting level of the input pulse in 0.1 V increments. If the [Polarity] is set to "Bipolar", the threshold is fixed to 0 V and unchangeable.
Moving ave.	Specifies the number of samples to be averaged Click [Moving ave.] button to change setting. The setting range is integers from 1 to 8. This setting is not available for M3LPA2.
Sampling time	Specifies the input pulse sampling period in seconds. Click [Sampling time] to change the sampling period. The setting range is from 0.05 sec. to 100 sec. for M3LPA, and 0.00 sec. to 100 sec. for M3LPA2. The default value is 0.05 sec.
Excitation	Specifies the type of power supply from among the following 3 types. 4 V 8 V 12 V Click [Excitation] button to choose the power supply type. Choose with SW3-4, 3-5 in DIP SW mode.
Polarity	Specifies the polarity of the input signal from the following 2 types. Bipolar Unipolar Click [Polarity] button to specify the polarity. When 'Bipolar' is selected, the [Threshold] is automatically set to 0 V. With 'Unipolar,' the [Threshold] is set to 2 V. Choose with SW3-6 in DIP SW mode.

Tag No.	You can enter a tag name using up to 16 alphanumerical characters.
Serial number	Automatically displayed.
Device type	
Hardware revision	
Software revision	
Close Detailed Information	Close the window.

3.3. ANALOG OUTPUT

In Figure 3, click [Analog Output] in Functions menu to the right opens the [Analog Output] menu as shown in Figure 6.

Figure 6. Analog Output



The Analog Output menu on the left shows the output type and ranges. When you need to change configurations, click the left button for the required item to modify the setting.

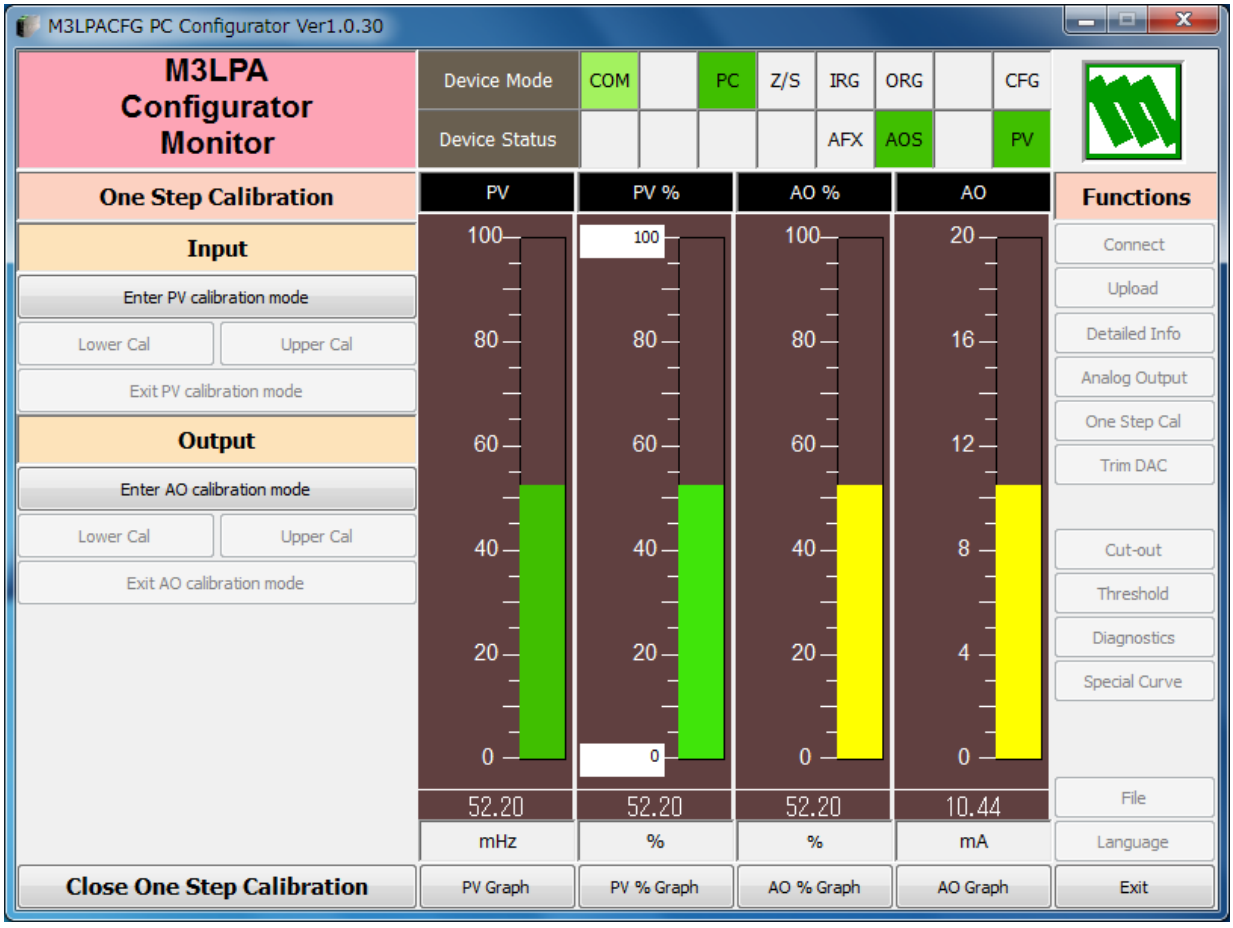
AO type	Specifies the Analog Output type from among three choices. 0 to 20 mA -1000 to +1000 mV -10 to +10 V Click [AO type] button to specify output type.
SW1 position	Shows DIP SW configuration (hardware setting) required for the selected output type. Confirm actual setting.
AO mode	Shows the output mode. 'Normal AO' is usually displayed.
AO unit	Shows engineering unit for the output signal.
Range (Upper / Lower)	Specifies the output range for 0% and 100%.
Upper limit	Show the usable range information for the selected output type.
Lower limit	
Minimum span	
Set AO for current PV output	The output signal is held at the current value.
Set AO for specified value	You can set a specific value to fix the output in order to perform an output loop simulation test.
Exit Fixed AO mode	Cancels the fixed output mode to return the device into normal output mode.
Close Analog Output	Close the window.

4. ONE STEP CALIBRATION

In Figure 3, click [One Step Cal] on the right control panel opens the One Step Calibration menu as shown in Figure 7.

The 'One Step Calibration' technique realizes automatic input and output ranging with a signal simulator connected to the module's input terminals.

Figure 7. One Step Calibration



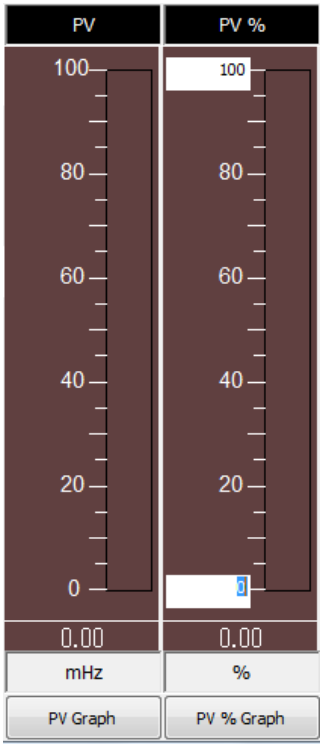
4.1. INPUT CALIBRATION MODE

(1) Connect the M3LPA to a simulator as described in the M3LPA instruction manual.

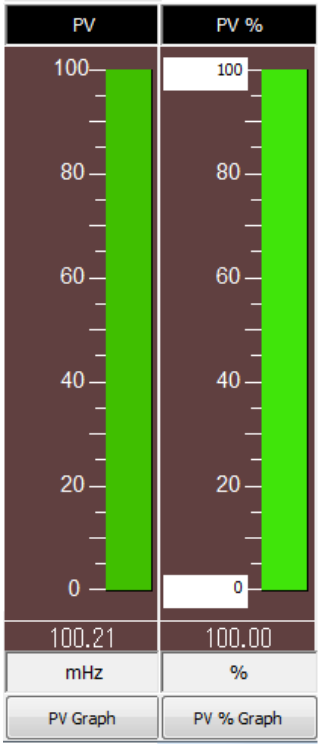
(2) Click [Enter PV calibration mode] in order to turn the module into the input calibration mode. The red [IRG] lamp in [Device Mode] panel at the top turns ON while the module is in this mode.

(3) Apply desired 0% and 100% signal levels and click [Lower Cal] and [Upper Cal] buttons respectively so that the input range is automatically set.

Input: 10 mA (Lower Cal)



Input: 15 mA (Upper Cal)



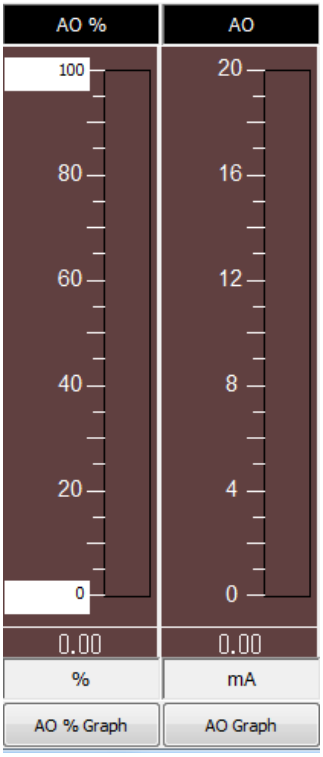
(4) Click [Exit PV calibration mode] when the calibration is complete.

4.2. OUTPUT CALIBRATION MODE

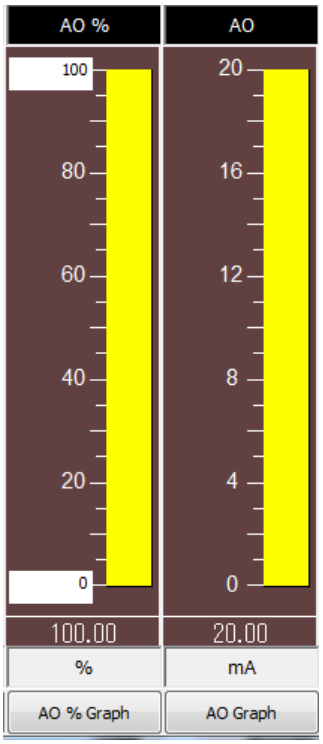
(1) Click [Enter AO calibration mode] in order to turn the module into the output calibration mode. The red [ORG] lamp in [Device Mode] panel at the top turns ON while the module is in this mode.

(2) Increase or decrease the simulated input until the output multimeter shows desired 0% and 100% signal levels and click [Lower Cal] and [Upper Cal] buttons respectively so that the output range is automatically set.

Apply the input so that output become 0%



Apply the input so that output become 100%



(3) Click [Exit AO calibration mode] when the calibration is complete.

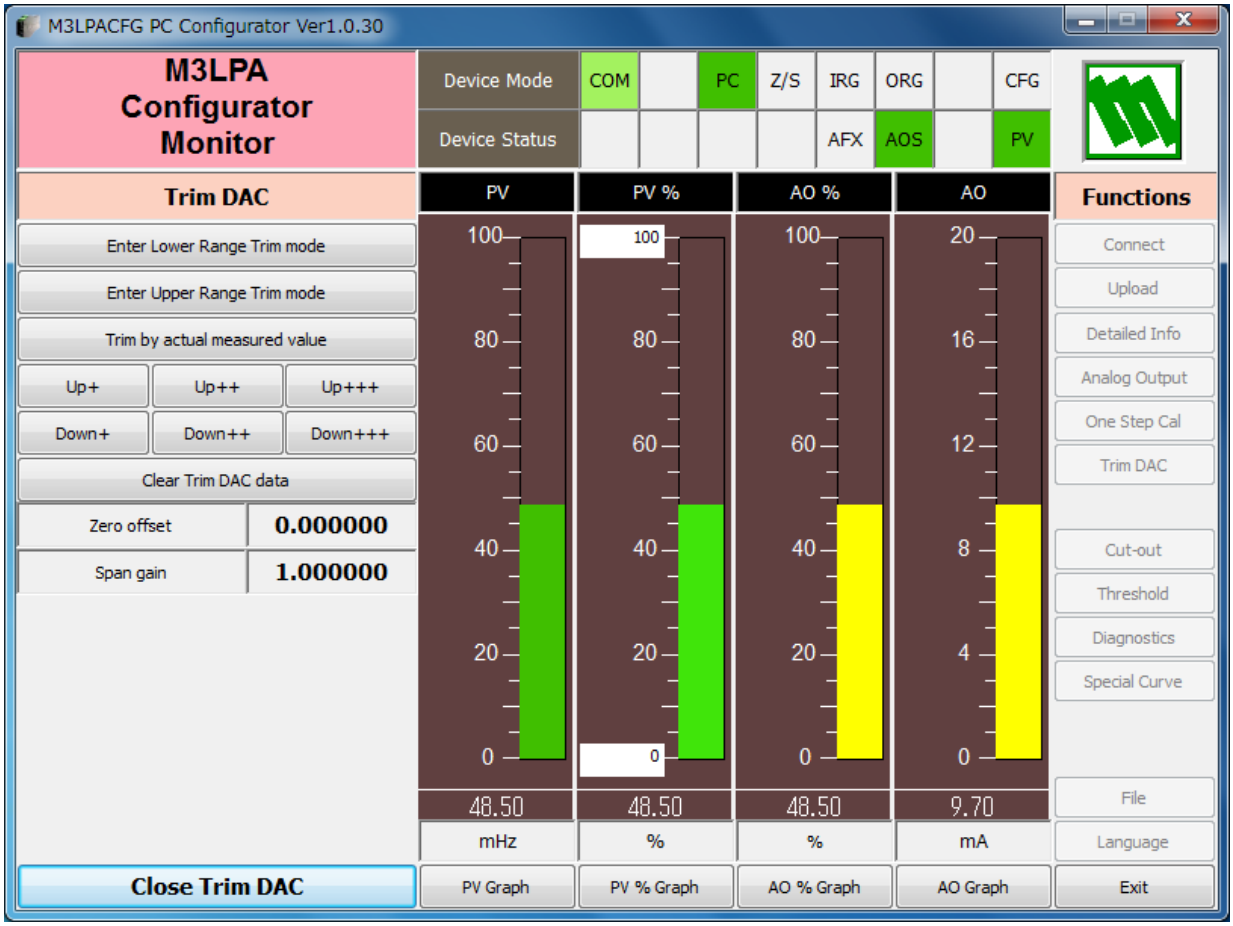
Click [Close One Step Calibration] to close the window.

5. INPUT / OUTPUT CALIBRATION

5.1. DAC TRIMMING

Click [Trim DAC] button to open the Trim DAC window as shown in Figure 8.

Figure 8. Trim DAC (e.g. Upper Range Trim Mode)



5.1.1. LOWER RANGE DAC TRIMMING

(1) Click [Enter Lower Range Trim mode]. The device outputs a fixed lower range signal level.

(2) Measure the actual output signal at the receiving instrument to which the device output should be matched.

(3) Click [Trim by actual measured value] to set the measured value.

(4) Repeat setting [Trim by actual measured value] until the measured output shows the desired level. Alternately, use [Up] or [Down] buttons. [+], [++] and [+++] have different increments. Deviation from the default value is shown in [Zero offset]. Lower range value is adjustable within ±15%.

5.1.2. UPPER RANGE DAC TRIMMING

(1) Click [Enter Upper Range Trim Mode]. The device outputs a fixed upper range signal level.

(2) Measure the actual output signal at the receiving instrument to which the device output should be matched.

(3) Click [Trim by actual measured value] to set the measured value.

(4) Repeat setting [Trim by actual measured value] until the measured output shows the desired level. Alternately, use [Up] or [Down] buttons. [+], [++] and [+++] have different increments. Deviation from the default value is shown in [Span gain]. Upper range value is adjustable within ±15%.

5.1.3. RESETTING TO THE DEFAULT

Click [Clear Trim DAC data] to return the device to the factory default trimming values. The factory setting values are 0.0 and 1.0 for “Zero offset” and “Span gain,” respectively.

Click [Close Trim DAC] to close the window.

5.2. CUT-OUT

Click [Cut-out] button to open the Cut-out window as shown in Figure 9.

The cut-out value can be set within 0% to 100% in 0.01% increments. The function itself can be disabled. Output characteristics for 'setting to 0%' and 'disabling the cut-out' are different when the lower range frequency is with an offset. For example, with 5 – 10 kHz input range, the output remains to 0% for the input below 5 kHz with the '0%' setting, while the output tracks proportionally to the input down to -15% of the full-scale range for the same input below 5 kHz with the 'disable' setting.

Figure 9. Cut-out

Cut-out	Shows the current cut-out setting in % and in mHz, Hz or kHz. With the cutout function disabled, [Disable] is shown instead of [Setting by Value].
Set by Value	Specifies the cut-out %. Entered value is rounded to two decimal places. If you press this button while the cut-out is disabled, the function is automatically enabled.
Disable Cut-out	Disables the cut-out function. Alternately, use [Up] or [Down] buttons. '+1.0' and '-1.0' increases/decreases the value in 1.0% increments, '+0.1' and '-0.1' in 0.1% increments, and '+0.01' and '-0.01' in 0.01% increments respectively.
Close Cut-out	Close the window.

5.3. THRESHOLD

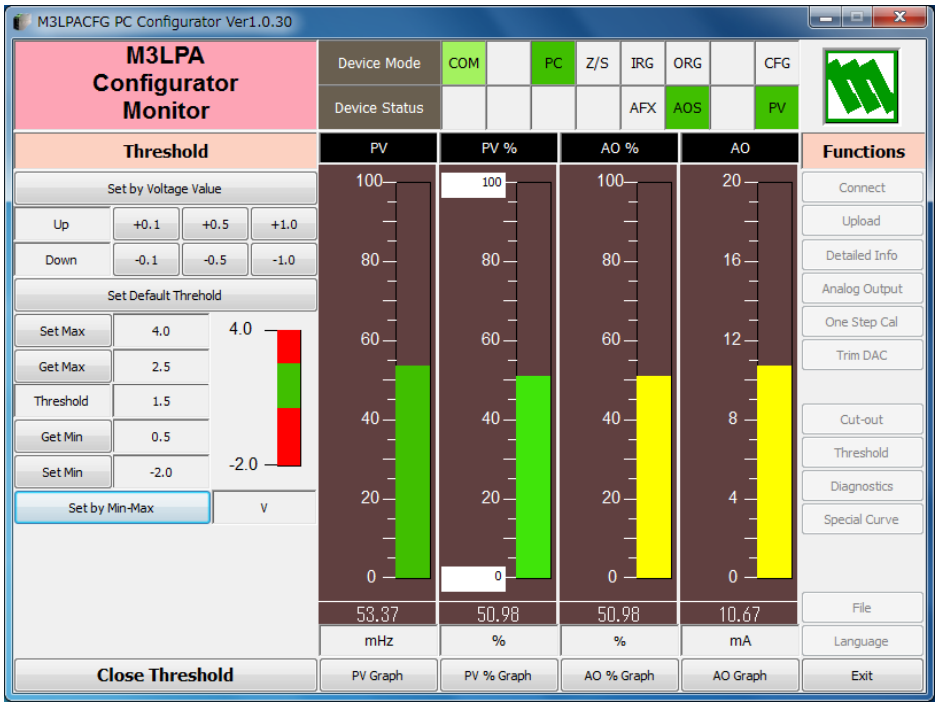
Click [Threshold] button to open the Threshold window as shown in Figure 10.

This window is available for setting when the Polarity is set to 'Unipolar.' When it is set to 'Bipolar' the threshold is fixed to 0V, thus no setting is available.

Selectable threshold range depends upon the specified input amplitude (Input Vp-p). The input frequency may not be recognized correctly if the setting is inappropriate.

Furthermore, the most appropriate setting in the middle of the maximum and minimum threshold values can be easily found and set by using the actual input signal.

Figure 10. Threshold



The current threshold value in V, which represents the detecting level, is displayed. The allowable maximum and minimum threshold values are shown on the bargraph.

Click [Set by Voltage Value] button to specify the threshold in voltage in 0.1 V increments by pressing [Up] or [Down] buttons. Specifically, '+0.1' / '-0.1' button increases/decreases the value in 0.1 V increments, '+0.5' / '-0.5' button in 0.5 V increments, and '+1.0' / '-1.0' in 1.0 V increments, respectively.

To reset to the system default values, click [Set Default Threshold] button.

In order to find the most suitable threshold, proceed as follows:

(1) Apply the most appropriate input signal to detect a threshold.

(2) Set the maximum allowable threshold value in [Set Max] (e.g. 4.0 V in Figure 10).

(3) Repeatedly press [Down] button to the level where the PV value is measured correctly. Press [Get Max] button to store the maximum suitable value (e.g. 2.5 V in Figure 10). Red zone on the bargraph shows the undetectable range above the maximum suitable value.

(4) Set the minimum allowable threshold value in [Set Min] (e.g. -2.0 V in Figure 10).

(5) Repeatedly press [Up] button to the level where the PV value is measured correctly. Press [Get Min] button to store the minimum suitable value (e.g. 0.5 V in Figure 10). Red zone on the bargraph shows the undetectable range below the minimum suitable value.

(6) Now the green zone on the bargraph shows the suitable range for a threshold (e.g. 0.5 V to 2.5 V in Figure 10). Press [Set by Min-Max] button to set the middle value (1.5 V in Figure 10) between the maximum (2.5 V) and the minimum (0.5 V) suitable values as threshold.

Click [Close Threshold] to close the window.

6. OFFLINE CONFIGURATION AND READ / WRITE FILES

6.1. LINEARIZATION TABLE

The M3LPA supports the user-specific linearization table function (Special_Curve). In order to use the Special_ Curve, the data in text format must be defined and registered. Specify “SPECIAL_CURVE” of [PV transfer fnc] in the Sensor Information window, and then the user-specific transfer function can be used. The procedure to use user-specific transfer function is as follows.

1. Create a user-specific linearization table as follows.
2. Click [PV transfer fnc] button on the Sensor Information menu and select “LINEAR.” (A new transfer function cannot be written when “SPECIAL CURVE” is selected.)
3. Click [Special Curve] button to open the Special Curve window.
4. Click [Read table from file] button to read a created linearization table. Basic information is shown in the Special Curve Table Contents.
5. Click [Display Special Curve graph] button to show characteristics data in a graph.
6. Click [Write table to device] button to download currently displayed characteristics data to the M3LPA.
7. Confirm that status under Special Curve Table Contents shows ‘Configured. This means a SPECIAL_CURVE is registered in the device. If the status under Special Curve Table Contents does not show ‘Configured, [TPV transfer fnc] can not be set to SPECIAL_CURVE.
8. Click [PV transfer fnc] button on the Sensor Information menu and select “SPECIAL_CURVE” to enable the new transfer function.

6.1.1. LINEARIZATION TABLE SETTING

For the user-specific linearization table, the data in text format must be defined and registered. The file format is as following.

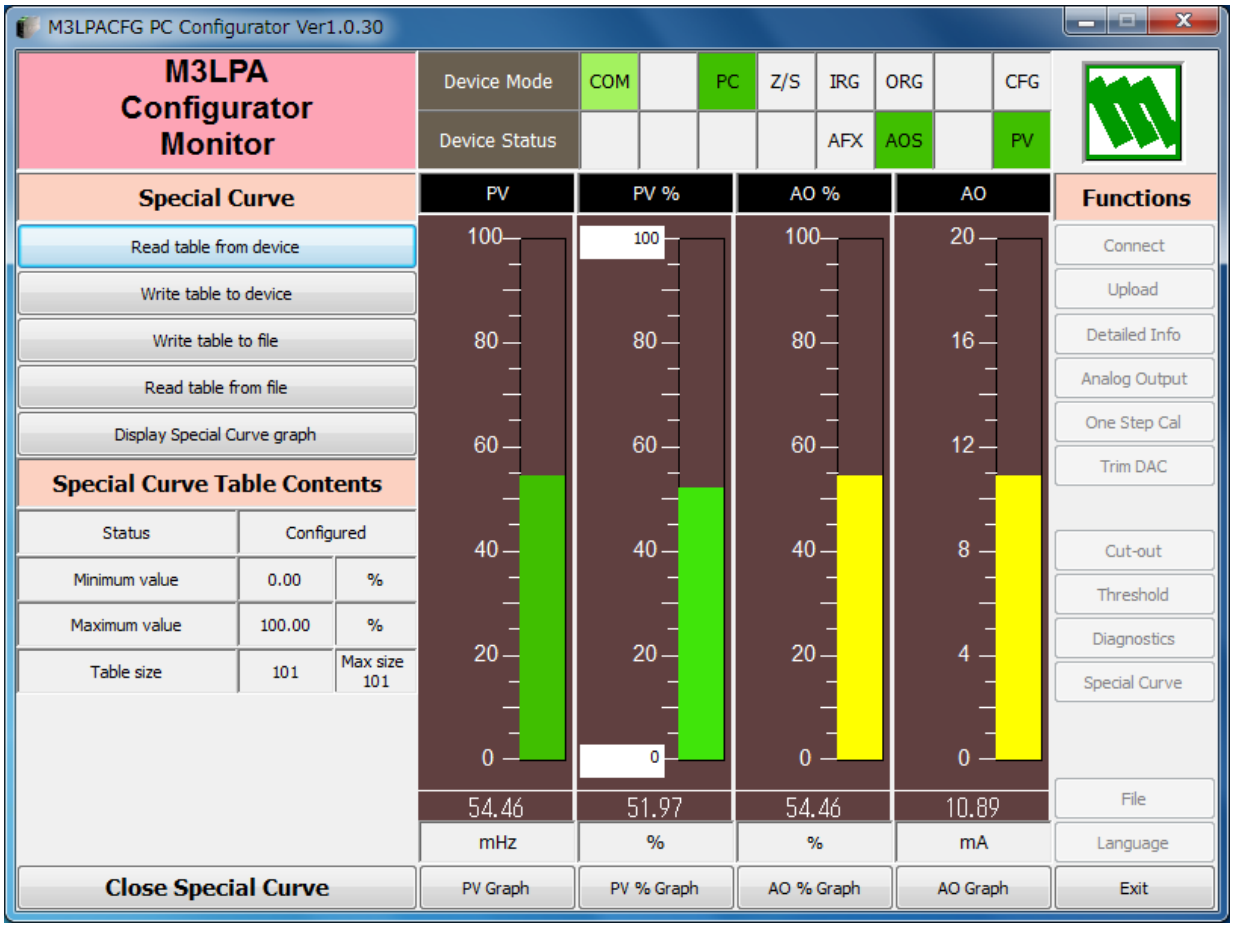
Describe the characteristics data within { }. Sets of X and Y values must be entered in %. Up to 101 points can be specified.

```
/*********************************************************
/*   Linearization Table( Special Curve ) Definition
/*   Yi = f(Xi) ( 0 <= i < Size )
/*         -15<= X, Y <= 115 %
/*         Xi < Xi+1
/*         2<= Size <= 101
/*********************************************************
{
0.000000,  0.000000                  <-- The minimum X and Y values
:
100.000000,     100.000000           <-- The maximum X and Y values
}
```

6.1.2. SPECIAL CURVE

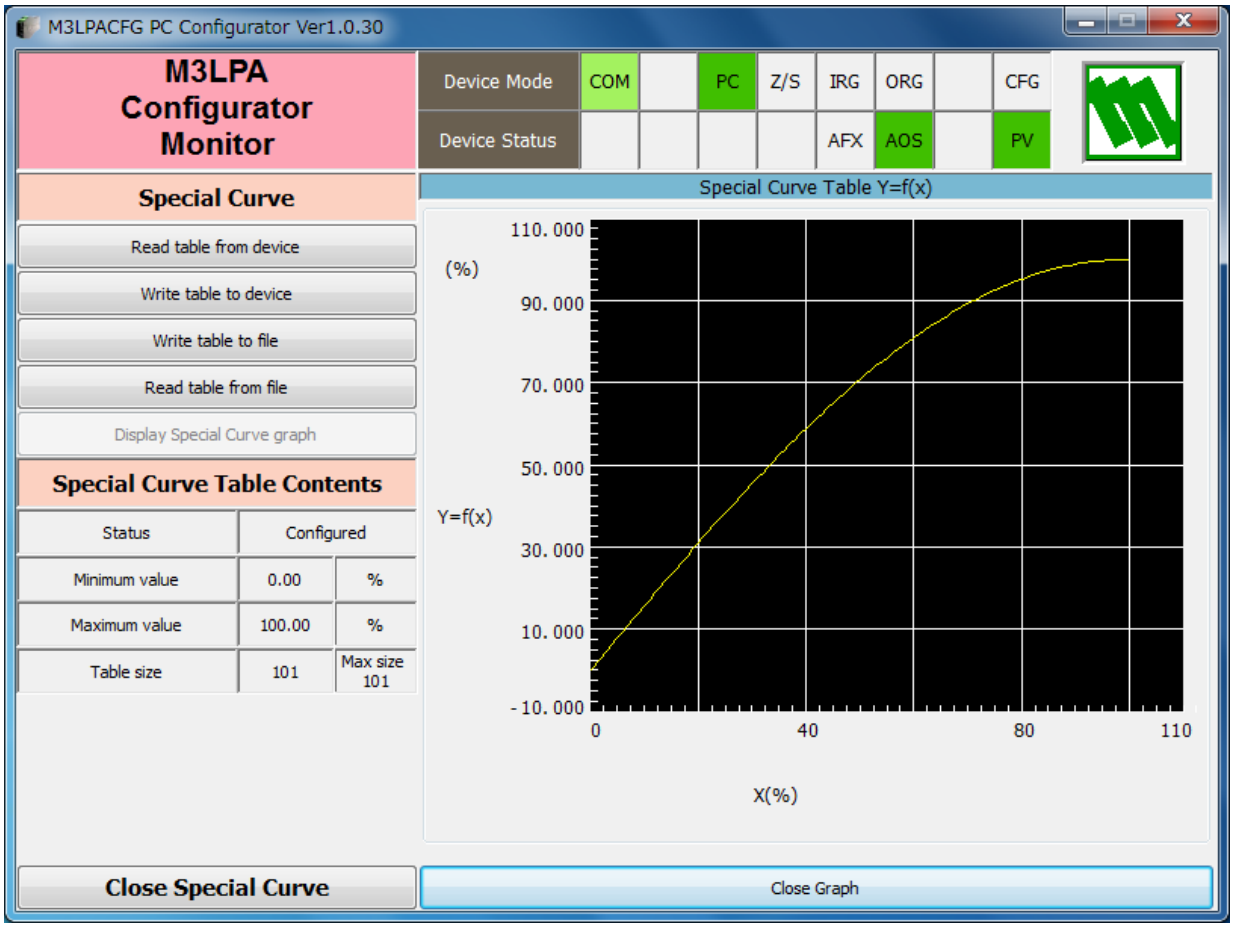
Click [Special Curve] button to open the Special Curve as shown in Figure 11.

Figure 11. Special Curve



Read table from device	The program uploads characteristics table registered in the M3LPA. If there is no file registered, Status under Special Curve Table Contents shows 'Non configured.'	
Write table to device	The program downloads currently displayed characteristics to the M3LPA. When downloading is successfully complete, Status under Special Curve Table Contents shows 'Configured.'	
Write table to file	The program saves currently displayed characteristics data to a file.	
Read table from file	The program uploads a file stored in the PC. When uploaded, the file contents summery is indicated under Special Curve Table Contents.	
Display Special Curve graph	Characteristics data can be shown in a graph. (figure 12)	
Special Curve Table Contents	Show the summary of Special Curve Table	
	Status	Show the status of Special Curve Table.
	Minimum value	Minimum input (x) in %
	Maximum value	Maximum input (x) in %
	Table size	Defined number of point
Close Special Curve	Close the window.	

Figure 12. Special Curve graph



6.2. FILE MANAGEMENT

The M3LPA's configurations can be saved in a file and then read out to be downloaded to multiple modules.

Click [File] button to open the File Management window as shown in Figure 13.

While this window is active, the device connection is severed, therefore the device can be connected and disconnected freely except during Upload or Download operations.

The window is divided in two sections: 'File Configuration' and 'Device Configuration.' 'File Configuration' shows data transfer (Read or Write) between the PC Configurator and the PC, while 'Device Configuration' shows data transfer (Upload or Download) between the configurator and the device.

The M3LPACFG's File Management window consist of two pages. Click [Page] button to switch between pages. The second page appears as follows (Figure 14).

Click [Exit] to complete the file management operations. The device will remain disconnected and must be 'Connected' to start monitoring.

NOTE

(1) Validity of the selected range values is not verified in this window. Please make sure to set them according to the described specifications.

(2) Special Curve Table data is not handled in this window.

(3) With the Option /B version, Download is unavailable. However, Upload is possible to save a configuration file, or to compare with other configurations.

(4) A comment can be entered in 'Description' in File Configuration section, which is saved in a configuration file. It cannot be written in the device. When a setting is uploaded from device, the relevant field in Device Configuration shows the device's serial number.

(5) 'Cut out' is set as percentage of the range. The cutout frequency is calculated from the frequency range. If there is no range setting, no cutout frequency display is available. In order to disable the cut out function, set to -15%.

(6) No 'Threshold' setting is available when the 'Polarity' is set to 'Bipolor.'

Figure 13. File Management, 1st Page

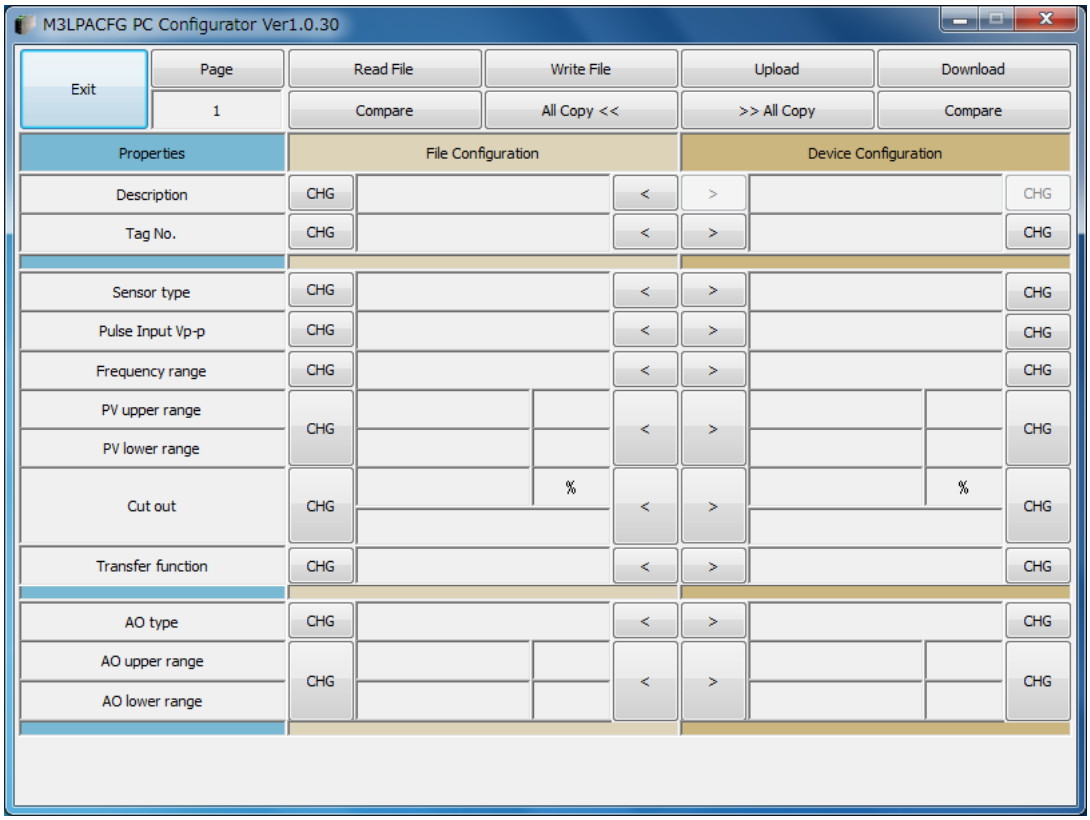
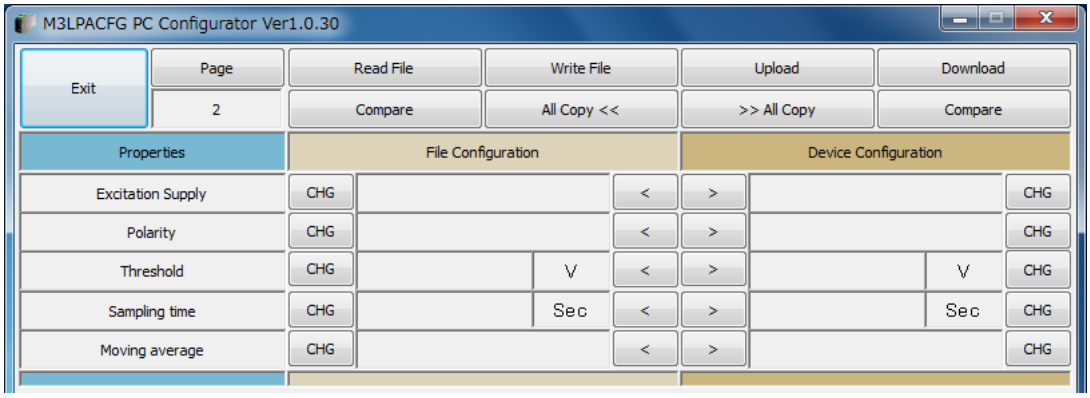


Figure 14. File Management, 2nd Page



6.2.1. MODIFYING PARAMETERS

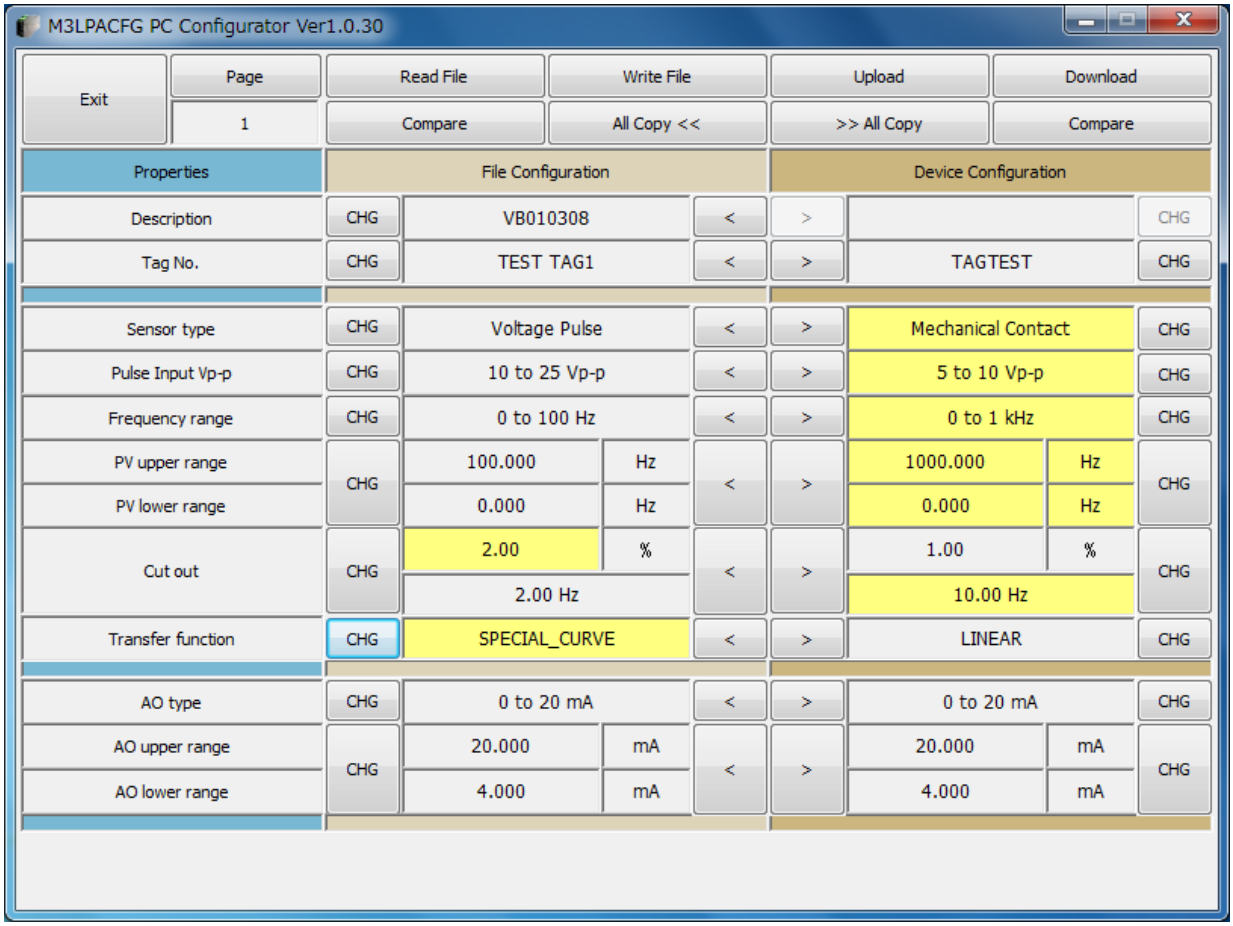
Click [CHG] button at the left of each field to modify the parameter. Fields in which the parameter has been changed will be highlighted in light yellow background color. [CHG] buttons placed across multiple fields indicate that these parameters can be modified in single sequence.

When one parameter has been changed, related fields may be also affected. For example, when 'Sensor type' is modified, 'PV range' may be automatically changed.

Parameters can be copied between 'File Configuration' and 'Device Configuration' using [<] and [>] buttons. Copied fields will be highlighted in light yellow background color.

Using [All Copy <<] or [All Copy >>] buttons enables transferring all parameters between the sections. Copied fields will be highlighted in light yellow background color.

Figure 15. Parameters Modified



6.2.2. TRANSFERRING DATA TO/FROM DEVICE

Click [Upload] button to connect to the device, to read out its configuration data and to show it in 'Device Configuration' section on the screen (Figure 16). All background colors are back to the initial state.

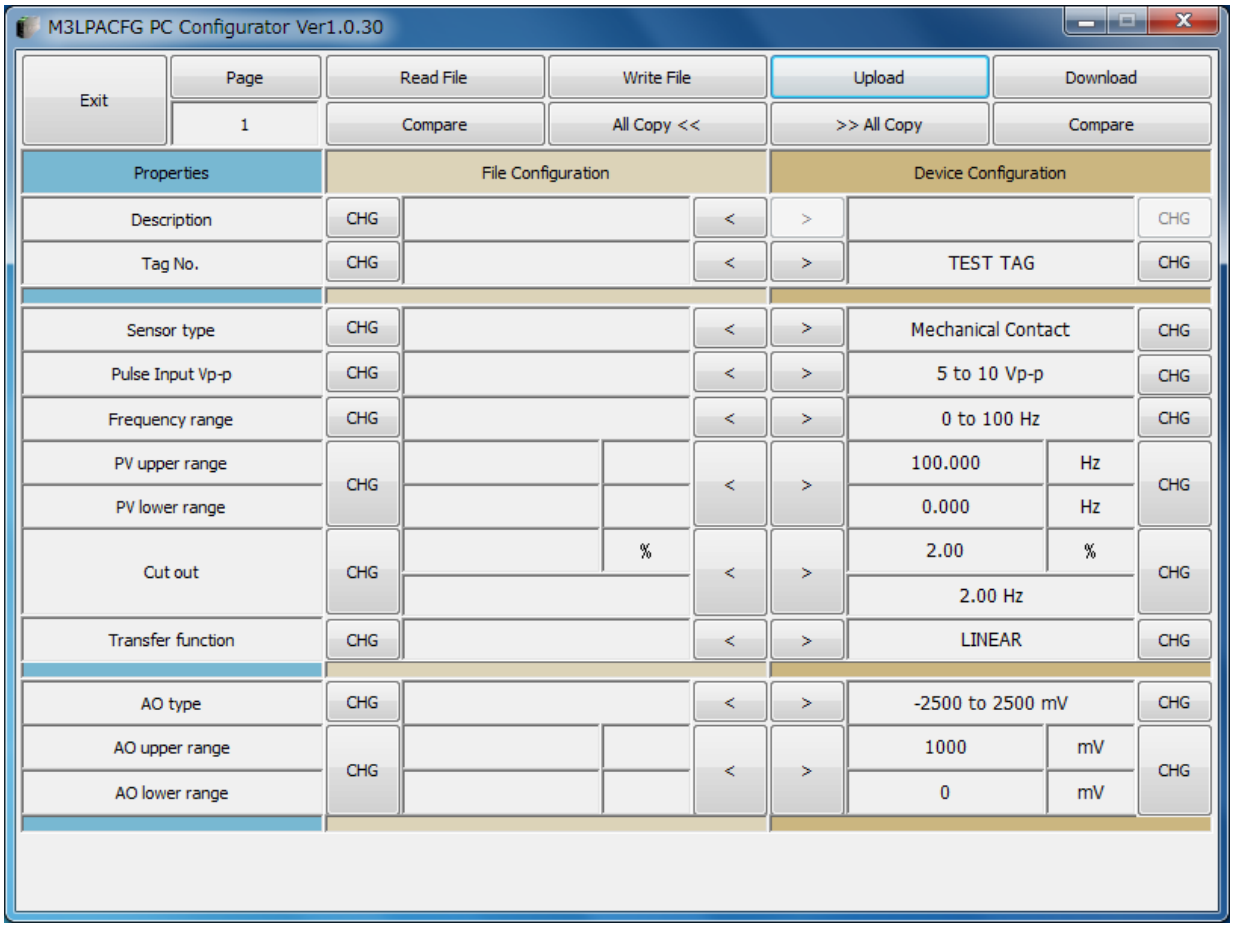
'Description' indicates the serial number of the product, which cannot be modified or copied from 'File Configuration' section.

Click [Download] button to connect and write the configuration data in 'Device Configuration' fields to the device.

If an error occurs and downloading is stopped during the process, erred data field is highlighted in med pale red background color.

When the downloading is successfully complete, the configuration data is automatically uploaded and the background color returns to the initial state.

Figure 16. Data Uploaded, first page



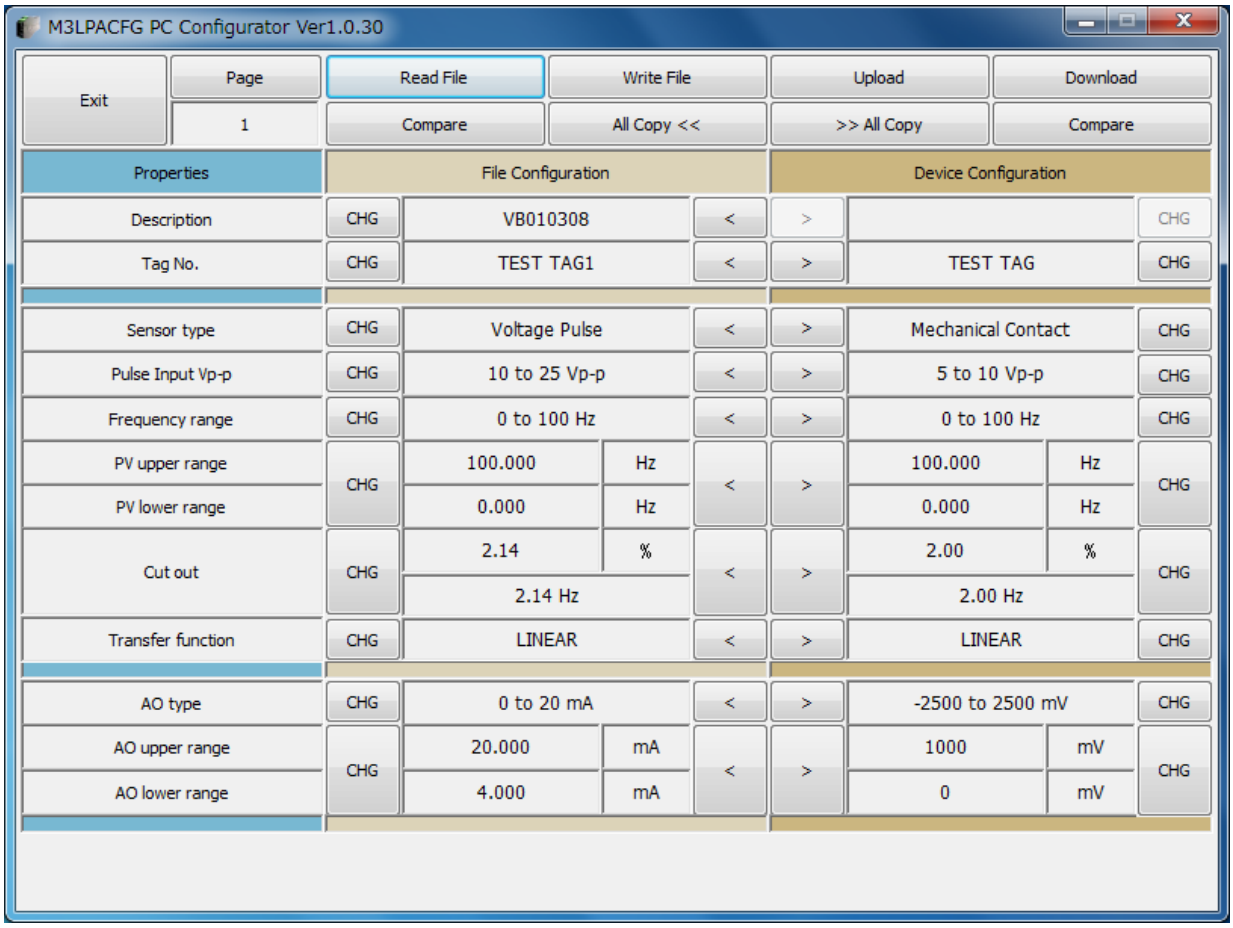
6.2.3. READING/WRITING FILES

Click [Read File] button to read the configuration data from a specified file and to show it in 'File Configuration' section on the screen (Figure 17). All background colors are back to the initial state.

Click [Write File] button to write the configuration data in 'File Configuration' section to a specified file.

A comment (max. 64 alphanumeric characters) can be entered in 'Description' in File Configuration section, which is saved in a configuration file. It cannot be written in the device. When a setting is uploaded from device, the relevant field in Device Configuration shows the device's serial number.

Figure 17. File Read Out



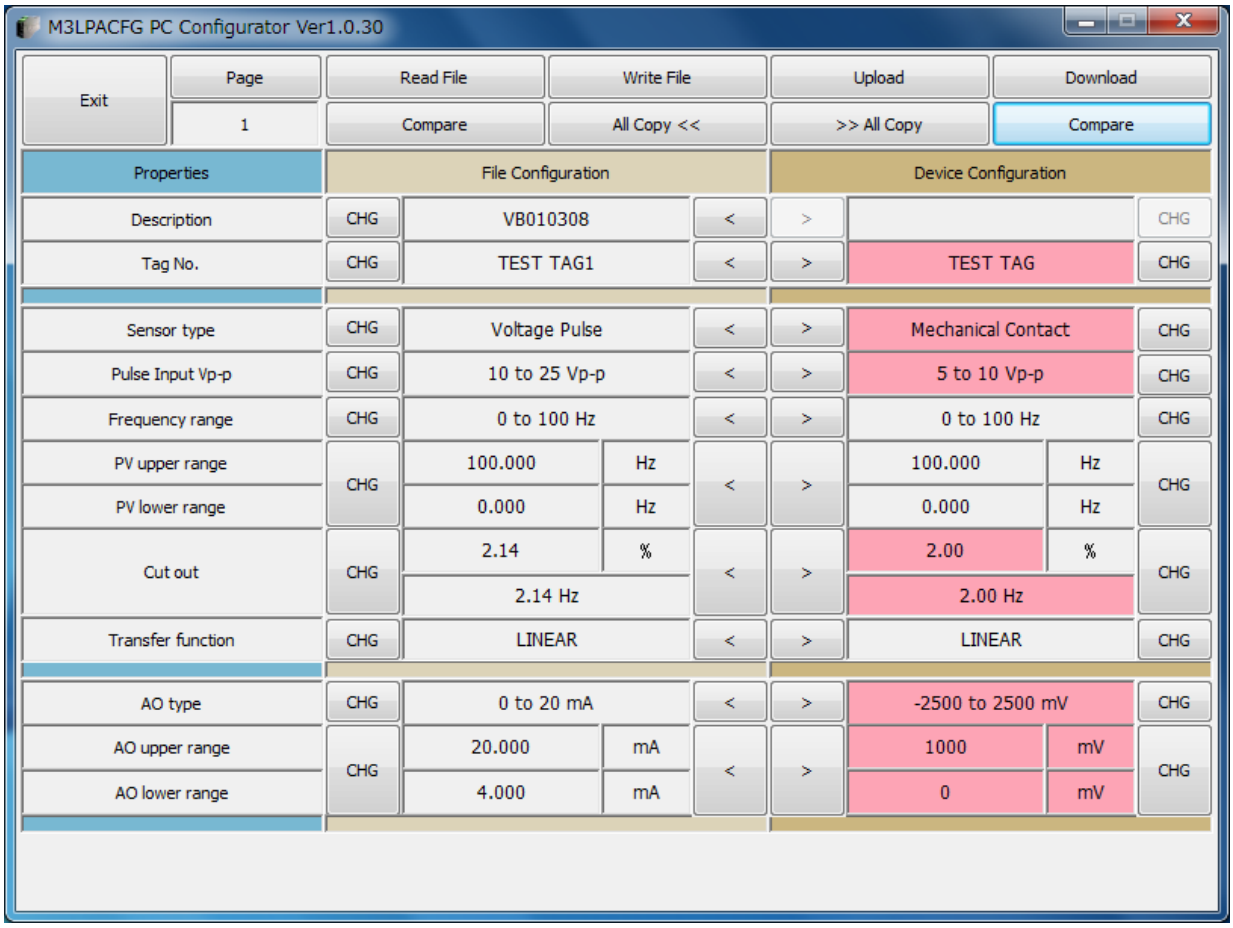
6.2.4. COMPARING FILE TO DEVICE

You can compare the configuration data in 'File Configuration' fields and 'Device Configuration' fields.

Click [Compare] button in 'Device Configuration' fields to compare its data to those in 'File Configuration' fields. Deviations will be highlighted in med pale red background color.

Click [Compare] button in 'File Configuration' fields to compare its data to those in 'Device Configuration' fields. Deviations will be highlighted in med pale red background color.

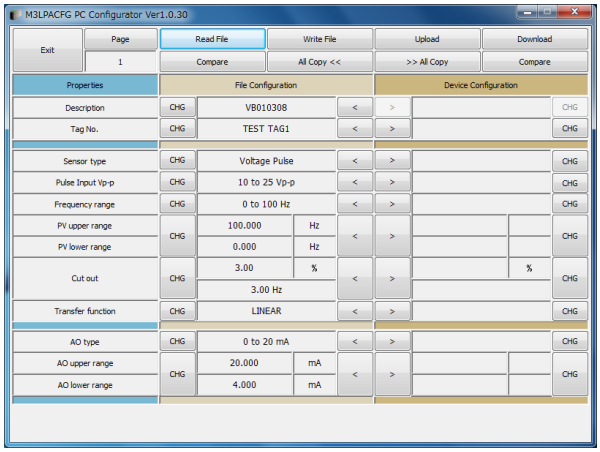
Figure 18. Parameters Compared



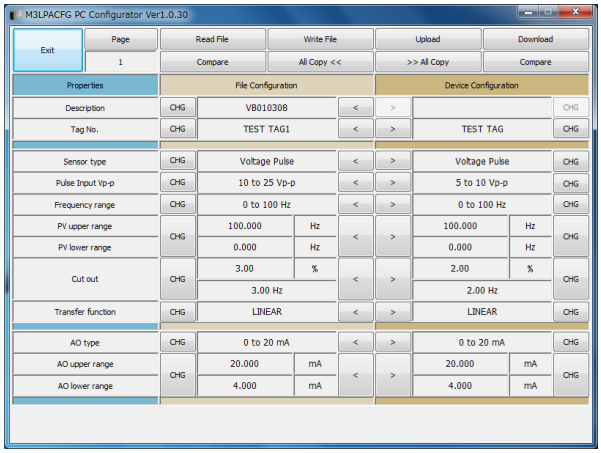
6.2.5. OPERATION EXAMPLE BY FILE MANAGEMENT

Operation procedure to change the configuration of the device with file management.

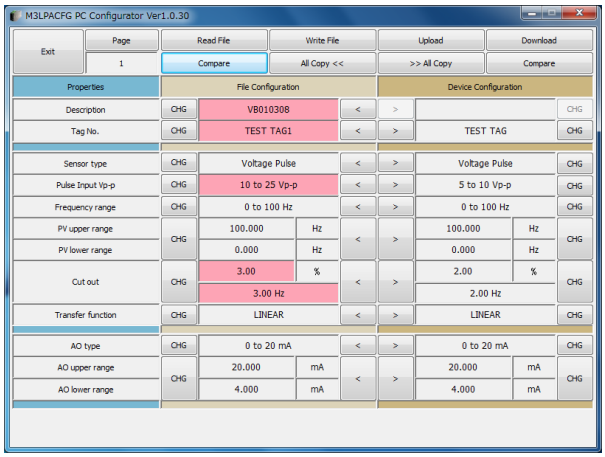
(1) Click [Read File] button to read the configuration data from a specified file



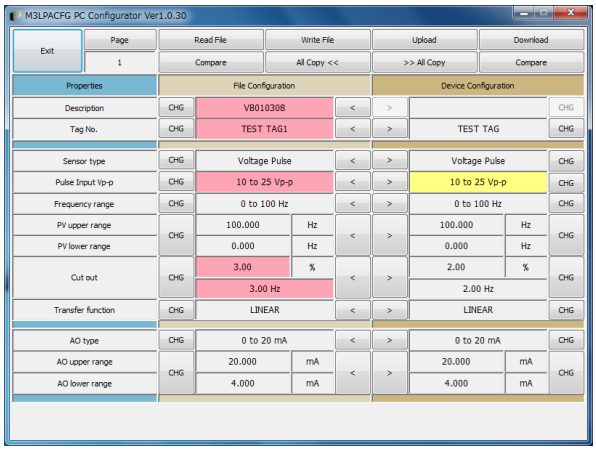
(2) Click [Upload] button to connect to the device, to read out its configuration data.



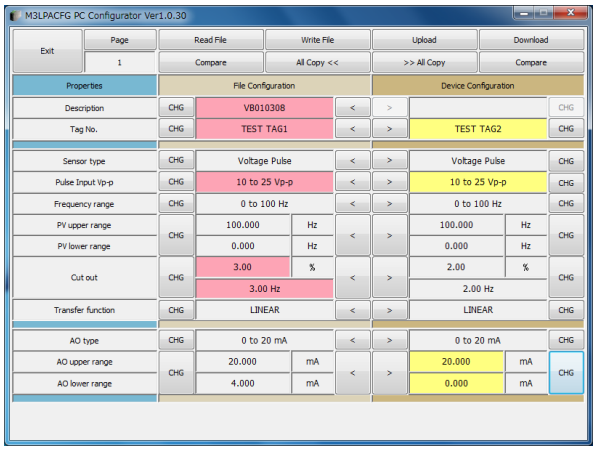
(3) Click [Compare] button in 'File Configuration' fields to compare the data in the file and the data in the device. Deviations will be highlighted in med pale red background color.



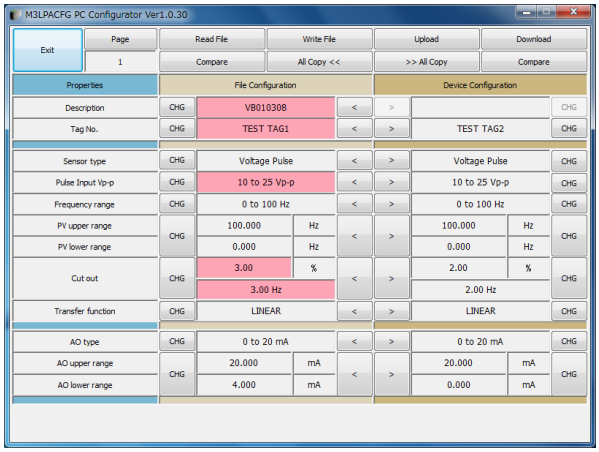
(4) Parameter can be copied from ‘File Configuration’ to ‘Device Configuration’ using [>] button. Copied fields will be highlighted in light yellow background color.



(5) Click [CHG] button at the left of each field to modify the parameter. Fields in which the parameter has been changed will be highlighted in light yellow background color.



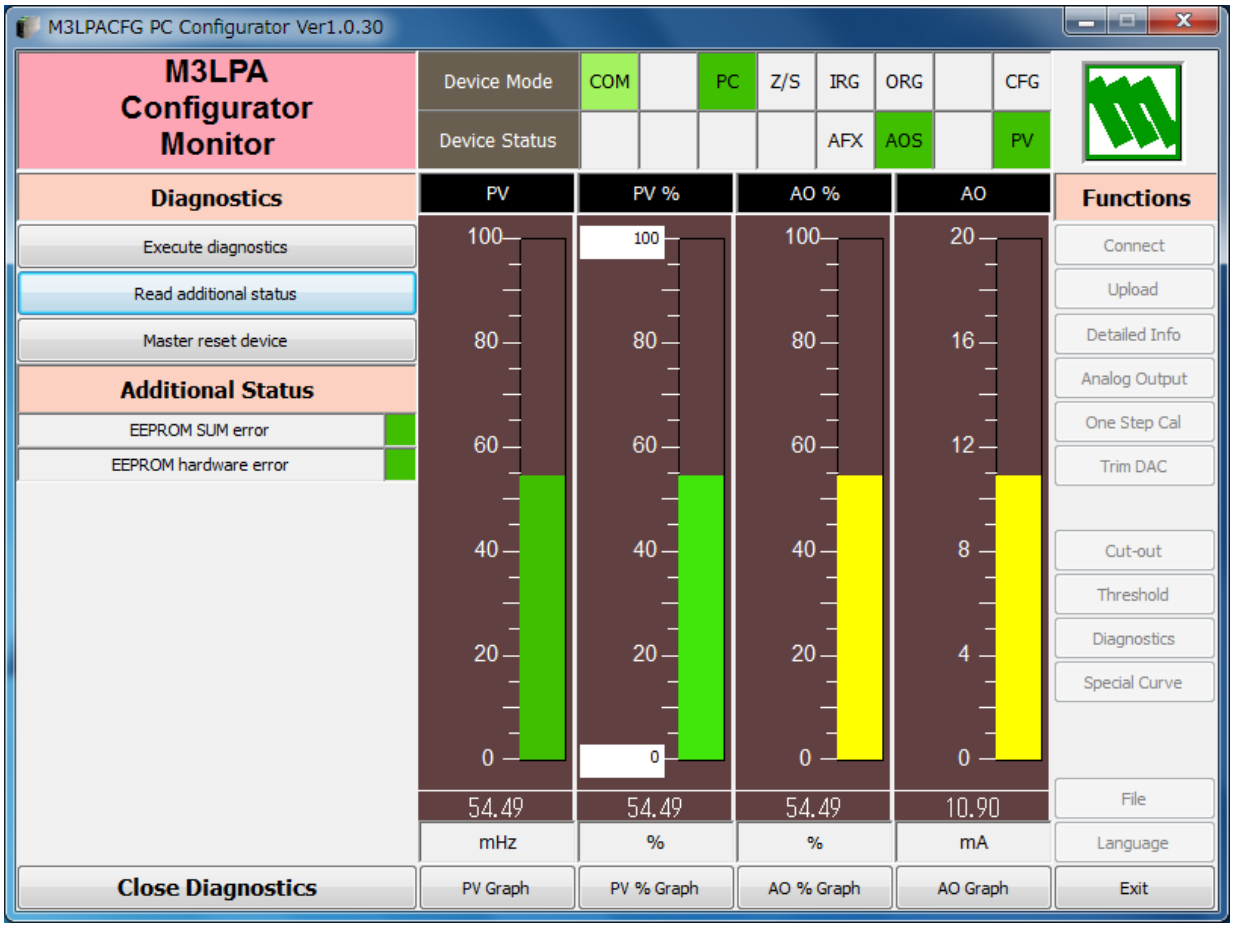
(6) Click [Download] button to write the configuration data in ‘Device Configuration’ fields to the connected device. When the downloading is successfully complete, the configuration data is automatically uploaded and the background color returns to the initial state.



7. DIAGNOSTICS

Click [Diagnostics] button to open the Diagnostics window as shown in Figure 19.

Figure 19. Diagnostics

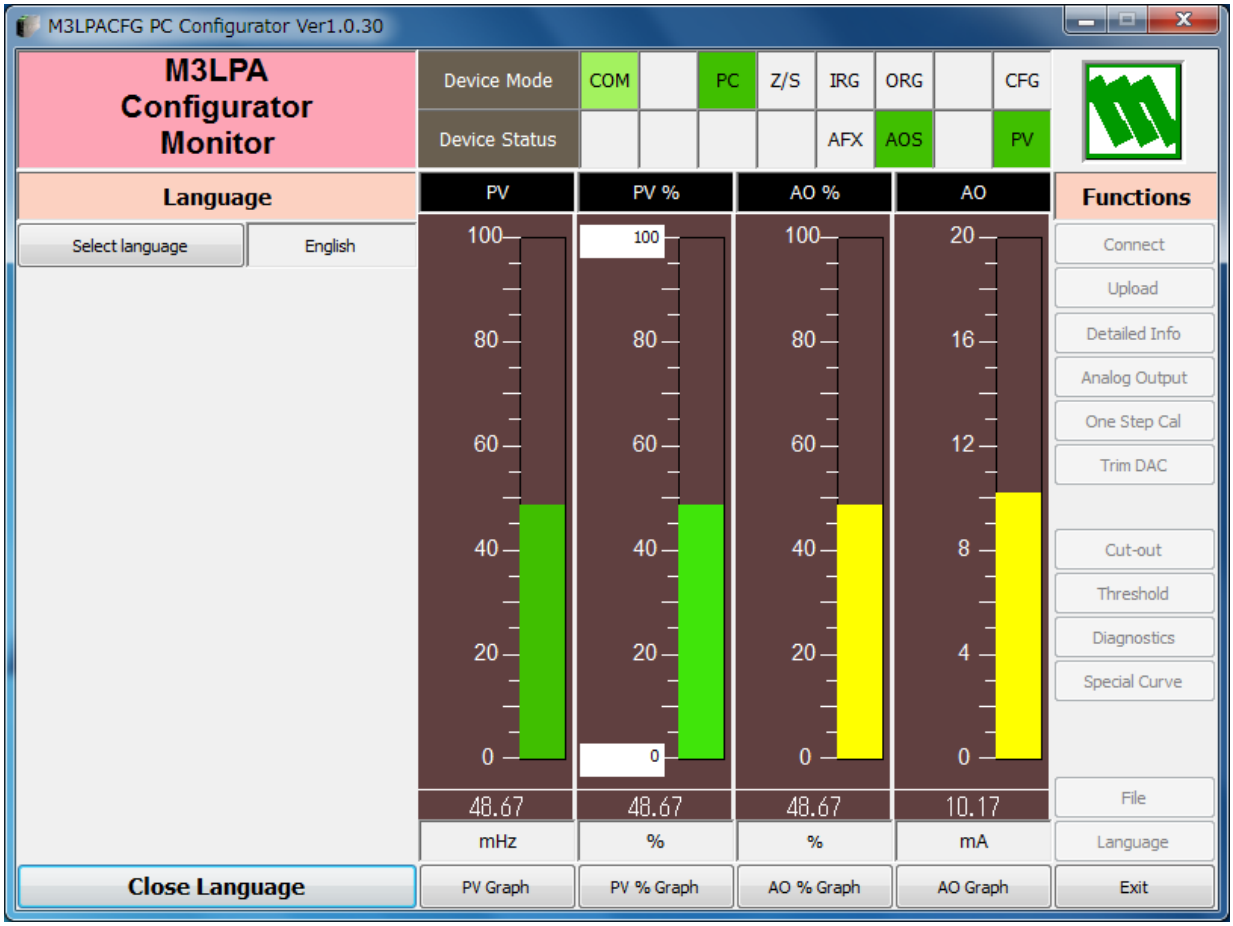


Execute diagnostics		Activates a diagnostics program and results are displayed in Additional Status.
Read additional status		Reads current contents of Additional Status from the device.
Master reset device		Reset and restart the device without actually turning OFF/ON the power supply.
Additional Status	EEPROM SUM error	Status is displayed: green in normal status, while red in error.
	EEPROM SUM hardware error	
Close Diagnostics		Close the window.

8. LANGUAGE

Click [Language] button to open the Language window as shown in Figure 20. The user can select the display language of the M3LPACFG.

Figure 20. Language



Click [Select language] to select the available language. The selected language is shown on the screen immediately.

English is available in each language version of Windows, while Windows in your PC must support other language in order to display it.

Click [Close Language] to close the window.