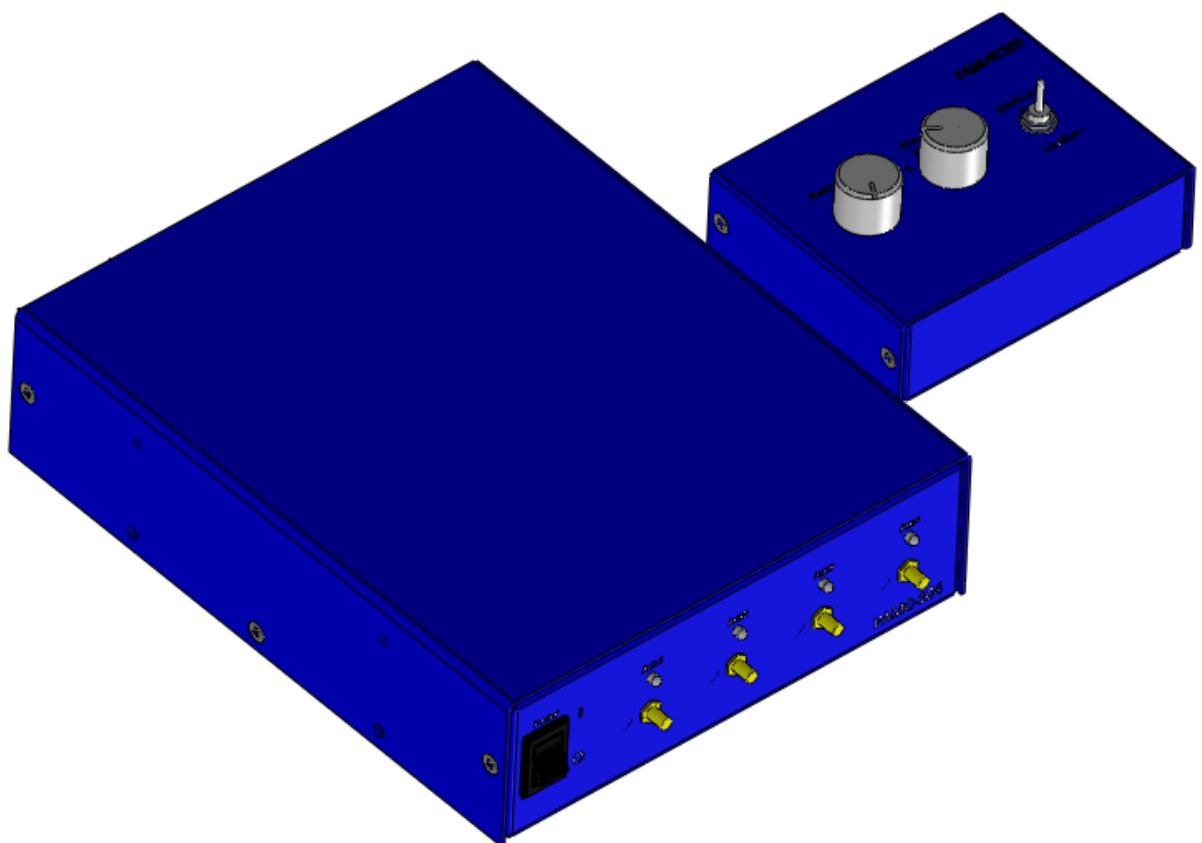


PIEZO ASSIST MOTOR CONTROLLER PAMC-104 OPERATION INSTRUCTION MANUAL



Revision History

Version number	Date	Revised content	Approved by
1	20230105	English First Edition Ver0.1	Chee Sze Keat

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1 Overview

This driver is specifically designed for driving Piezo Assist Motor (PAM). By using RS232C protocol or tool like TeraTerm, the PAM can be driven. A ready-made software is included with the driver to send command to PAMC-104 through RS232C.

2 Contents

The product contains the following items.

① PAMC-104 Driver	1
② PAM-RC100 Driver (Not included, sold separately)	1
③ USB Conversion Cable	1
④ D-SUB Conversion Cable	1
⑤ SMB Cable	4
⑥ Instruction Manual	1
⑦ CD (Software Installer)	1

3 Dimensions

The dimension of the driver is as follows.

PAMC-104

External Dimensions : 142 (W) × 180 (D) × 41 (H) mm

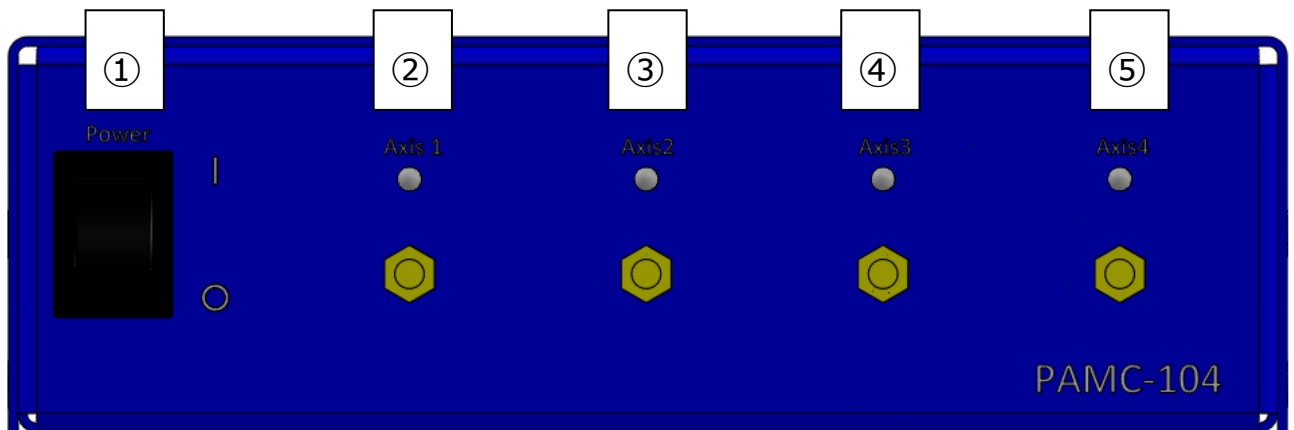
PAM-RC100

External Dimensions : 103 (W) × 78 (D) × 30 (H) mm

4 Operation Manual

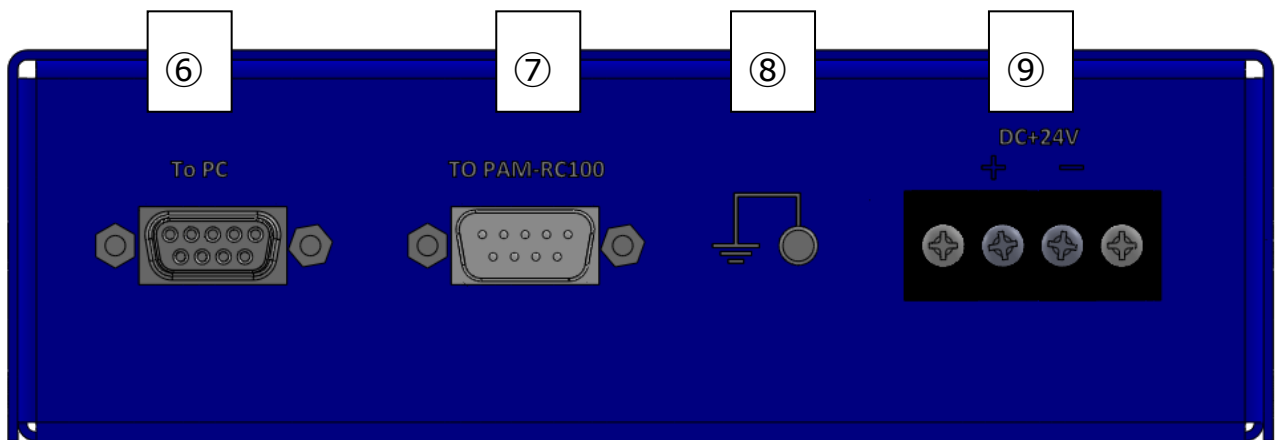
4.1 PAMC-104 Parts

<Front Panel>



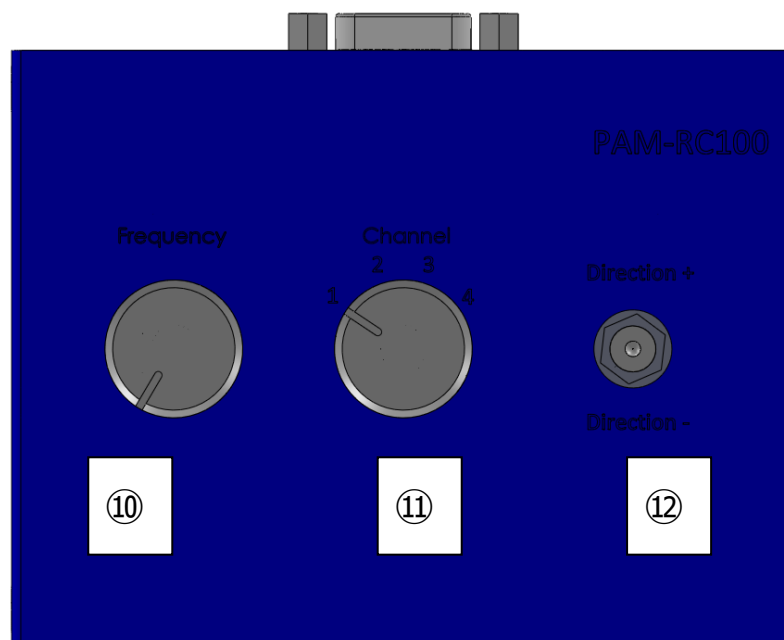
- ① [Power] : Switch to turn on/off the driver.
- ② [Axis1] : SMB output terminal for Ch1. (Connect to PAM)
- ③ [Axis2] : SMB output terminal for Ch2. (Connect to PAM)
- ④ [Axis3] : SMB output terminal for Ch3. (Connect to PAM)
- ⑤ [Axis4] : SMB output terminal for Ch4. (Connect to PAM)

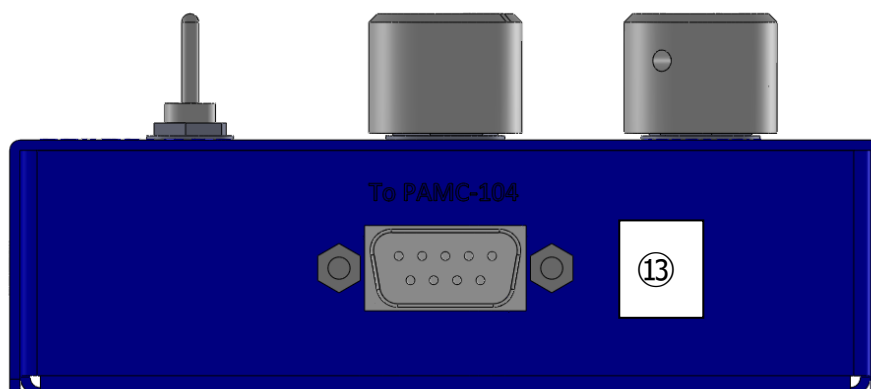
<Rear Panel>



- ⑥ [RS232 D-sub male] : Connection port for controlling from PC.
- ⑦ [RS232 D-sub female] : Connection port for controlling manually. (Connect to PAM-RC100)
- ⑧ [CASE GND] : Ground terminal of the case.
- ⑨ [DC+24V] : DC power terminal.

4.2 PAM-RC100 Parts





- | | | |
|---|----------------------|---|
| ⑩ | [Frequency] | : Frequency Control (0 ~ 1500 Hz) |
| ⑪ | [Channel] | : Channel selection (Ch1 ~ Ch4) |
| ⑫ | [Direction±] | : Rotation direction control. |
| ⑬ | [RS232 D-sub female] | : Connection port for controlling manually. (Connect to PAMC-104) |

4.3 Controlling from PC

1) Connection

- A) Confirm that the power switch located in front of the driver is switched off.
- B) Connect power supply to the power terminal at the back of the driver.
- C) Connect the PC to the D-sub terminal of the driver. Use USB conversion cable.
- D) Use SMB cable to connect PAM to each channel.

※Use only the attached cables for connection between PAMC-104 and PAM.

Precaution when using cables

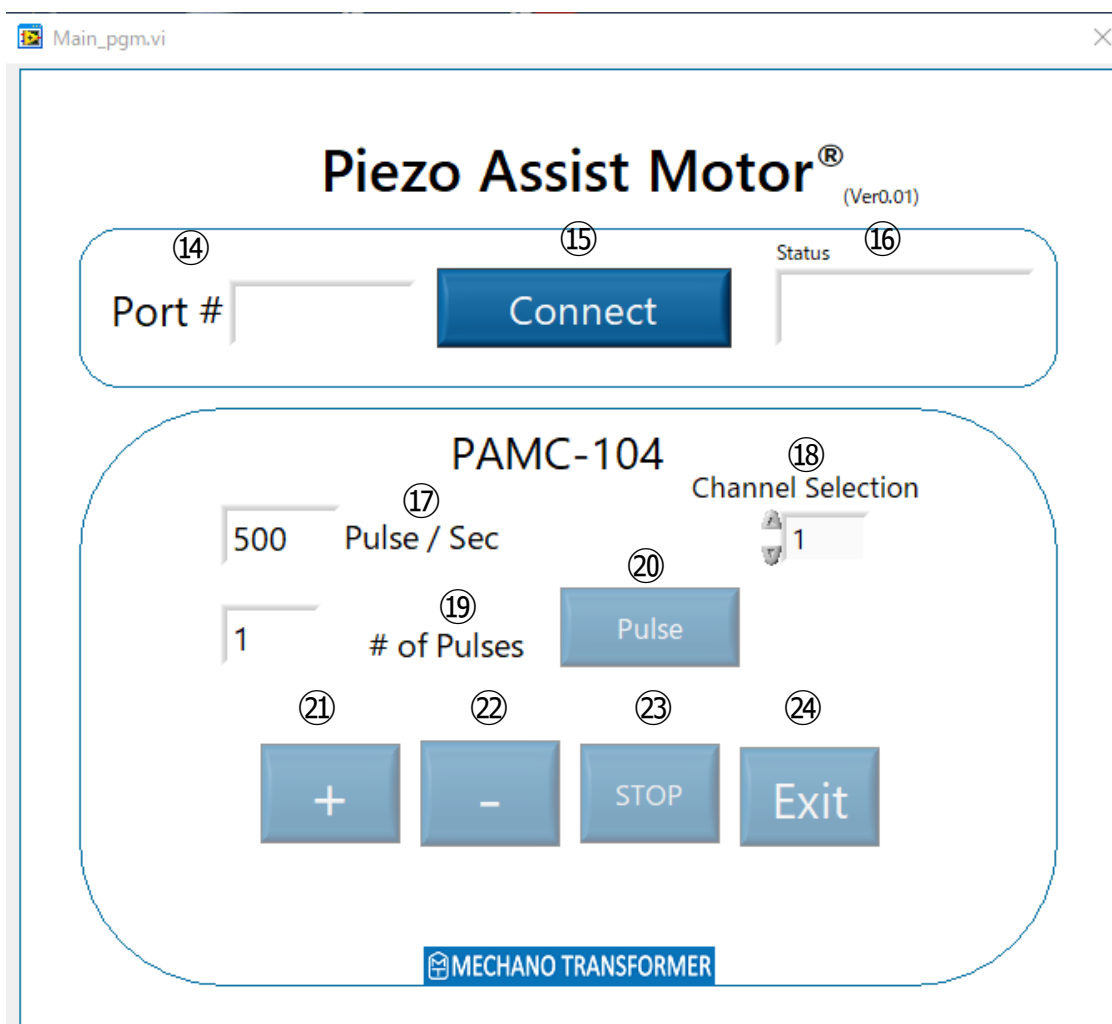
- Please use only the attached cable to connect the driver and PAM.
- In case the SMB cable is unable to connect to the PAM connector or PAMC-104 connector, check if there are any foreign materials inside the connector. Take caution as the cable or then connector **may be damaged if forcibly inserted**.

2) Operation

- A) Check the connection per instructions in 1).
- B) Switch on the POWER switch.
- C) Open the software for PAMC-104. Select the desired channel and output.

3) Opening the software

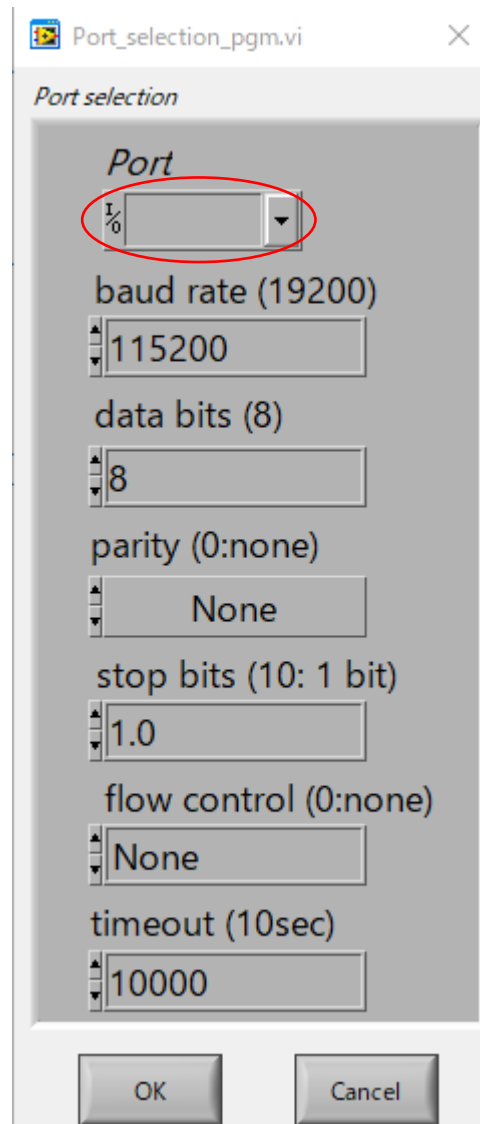
<Software Window >



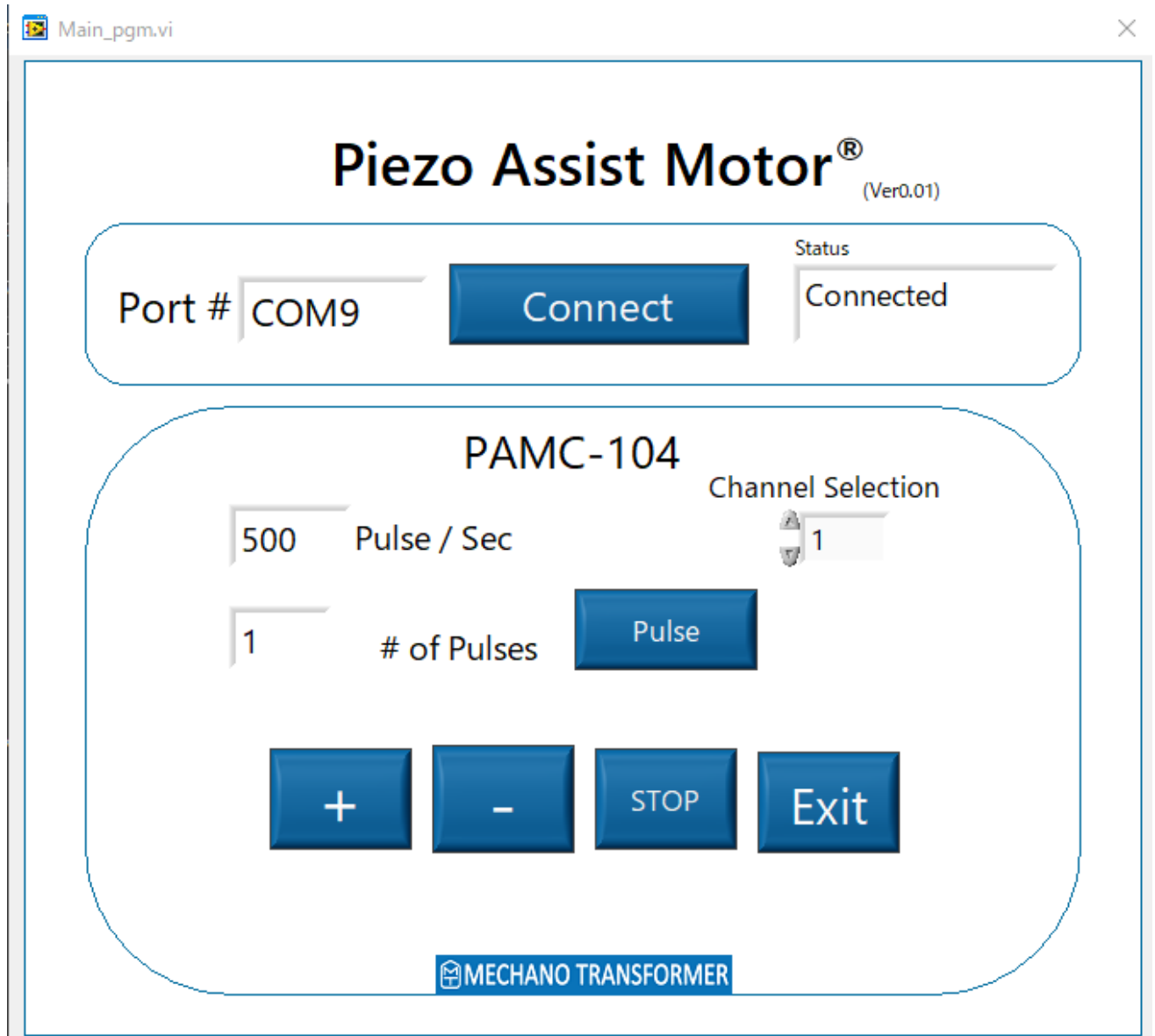
- ⑭ [Port#] : Display the connection port.
- ⑮ [Connect] : Open port selection window.
- ⑯ [Status] : Display the connection status of driver to the PC.
- ⑰ [Pulse/Sec] : Specifies number of output pulse per second.
- ⑱ [Channel Selection]: Select channel.
- ⑲ [# of Pulses] : Set number of times to drive.
- ⑳ [Pulse/Continuous] : Change the output mode.
- ㉑ [+] : + Rotation direction.
- ㉒ [-] : - Rotation direction.
- ㉓ [Stop] : Stop operation.
- ㉔ [Exit] : Close the software.

<Port Selection Window>

※Please confirm the port connected to the USB cable in device manager before selecting.
The communication setting is as shown below.



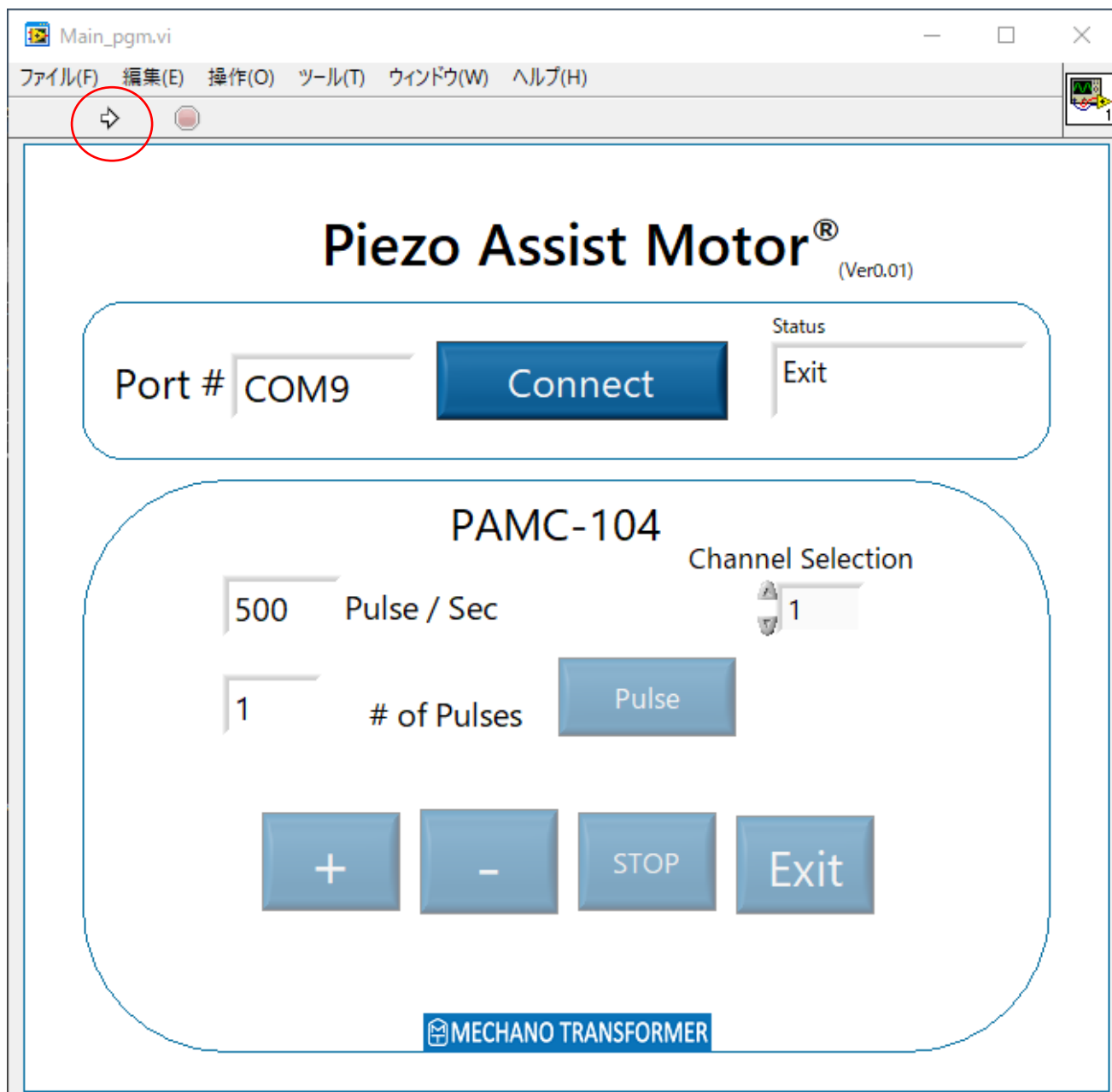
<Window after successful connection between PC and driver>



<Window after exiting the software>

※To reconnect to the driver:

Click the button  to reconnect.



4.4 Controlling Using Serial Communication With TeraTerm

1) Settings for communication between PAMC-104 and PC.

- Interface : Tera Term
- Baud rate : 115200bps
- Data bit : 8bit
- Parity : None
- Stop bit : 1bit
- Flow control : None
- New-line : CR+LF
- Local Echo : Check

2) Command to operate driver (All letters are in capital)

① Connection Check command

- Command to confirm connection between PAM-104 and PC.

Command line:

CON

Example:

CON

OK

② Drive Command:

- Command to drive output with frequency, number of pulses and axis.

Command line:

NR/RR-OOOO-△△△△-☆

(No hyphen is needed when typing command)

Example:

(To control Axis 1 : Drive PAM in clockwise direction with 1500HZ, 10 pulses)

NR15000010A

OK

③ Stop Command

- Stop the driving operation.

Command line :

S

Example :

S

FIN

Parameter :

NR/RR : PAM drive direction

(NR: Clockwise direction, RR: Anti-clockwise direction)

○○○○ :Frequency (1 ~ 1500 Hz)

△△△△ :Drive count (0000 ~ 9999 Pulses) (0000: Continuous drive)

☆ :Output channel (A~D) (Axis1: A, Axis2: B, Axis3: C, Axis4: D)

Message list:

<i>Display Message</i>	
OK	Command received properly
FIN	Driving operation ended
ERROR	Wrong command
BUSY	Currently driving

4.5 Controlling using PAM-RC100

Connect PAM-RC100 to PAMC-104 using the included cables (Female D-SUB – Female D-SUB)

- Push the jog switch (Direction±) towards + to drive PAM into + direction.
- Push the jog switch (Direction±) towards - to drive PAM into - direction.

5 Cautions During Handling

1. Please read and understand the Operation Instruction Manual before usage.
2. Only experienced technician should handle the driver.
3. Do not disassemble or modify the driver.
4. Do not use the driver near any flammable materials or locations with high moisture or humidity.
5. Turn off the driver power supply if abnormal smell, noises, overheating, heat dissipation are detected.
6. Do not turn on the driver after dropping or applying shock to driver.
7. Do not touch the PAM during operation.
8. Do not operate with wet hands.

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