NHK MEC

# KE-XG

## SETTINGS TOOL MANUAL

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# INTRODUCTION

This manual has been prepared to ensure your correct installation and operation of the KE-XG Settings Tool via PC; this software application interfaces with the KE-XG control unit for operation settings. Please refer to KE-XG Control System Instruction Manual for details of the control system itself. In case of the KE control system transfer of ownership, please make sure to include this instruction manual.

# SYSTEM REQUIREMENTS

| | |
|---|---|
| Memory（HD） | Approx. 20MB |
| Memory（RAM） | Approx. 100MB |
| Operation System | Windows10（32bit、64bit）<br>Windows11（64bit） |

※Recommend Display Size larger than 900 (pix)×720 (pix)

**CAUTION:** Do not move application files from installed folder

# SOFTWARE DOWNLOAD

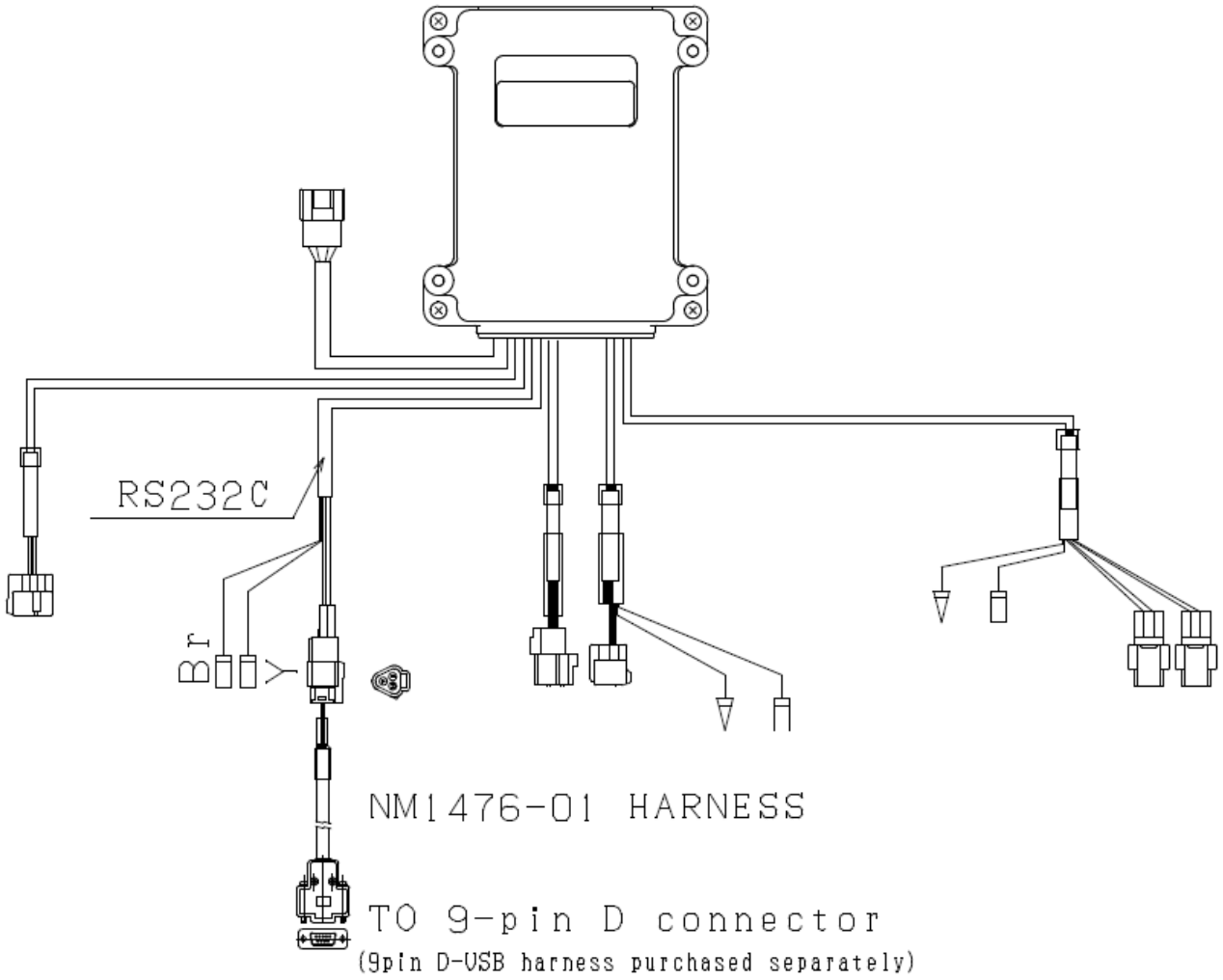
KE-XG Settings Tool software file package software can be downloaded via NHK MEC Corp. website: https://www.nhkmec.com/en/product/download/

# HARDWARE CONNECTION

You will need a separately purchase standard USB to 9-pin D-connector serial adapter harness to connect to your PC in order to communicate with the KE-XG control unit. If necessary for your purchased adapter, download and install the driver onto your PC.

Connect one end of harness NM1476-01 to control unit RS232C connection and the other end to the separately purchased USB –serial adapter; then connect the other end of the harness to your PC USB port.

# HARDWARE CONNECTION (continued)

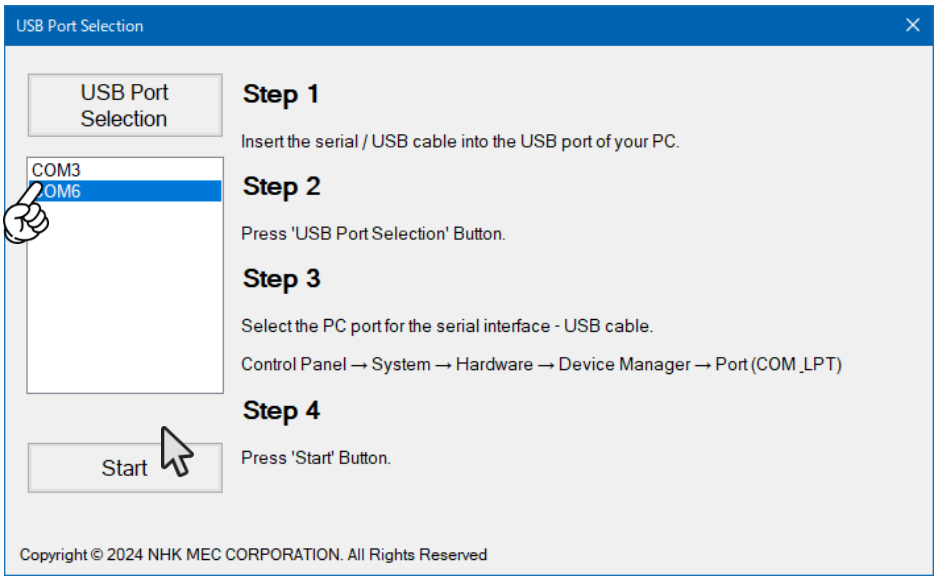



Note: Above drawing shows NM1476-01 harness & D-USB extension harness connection to KE-4XG control unit

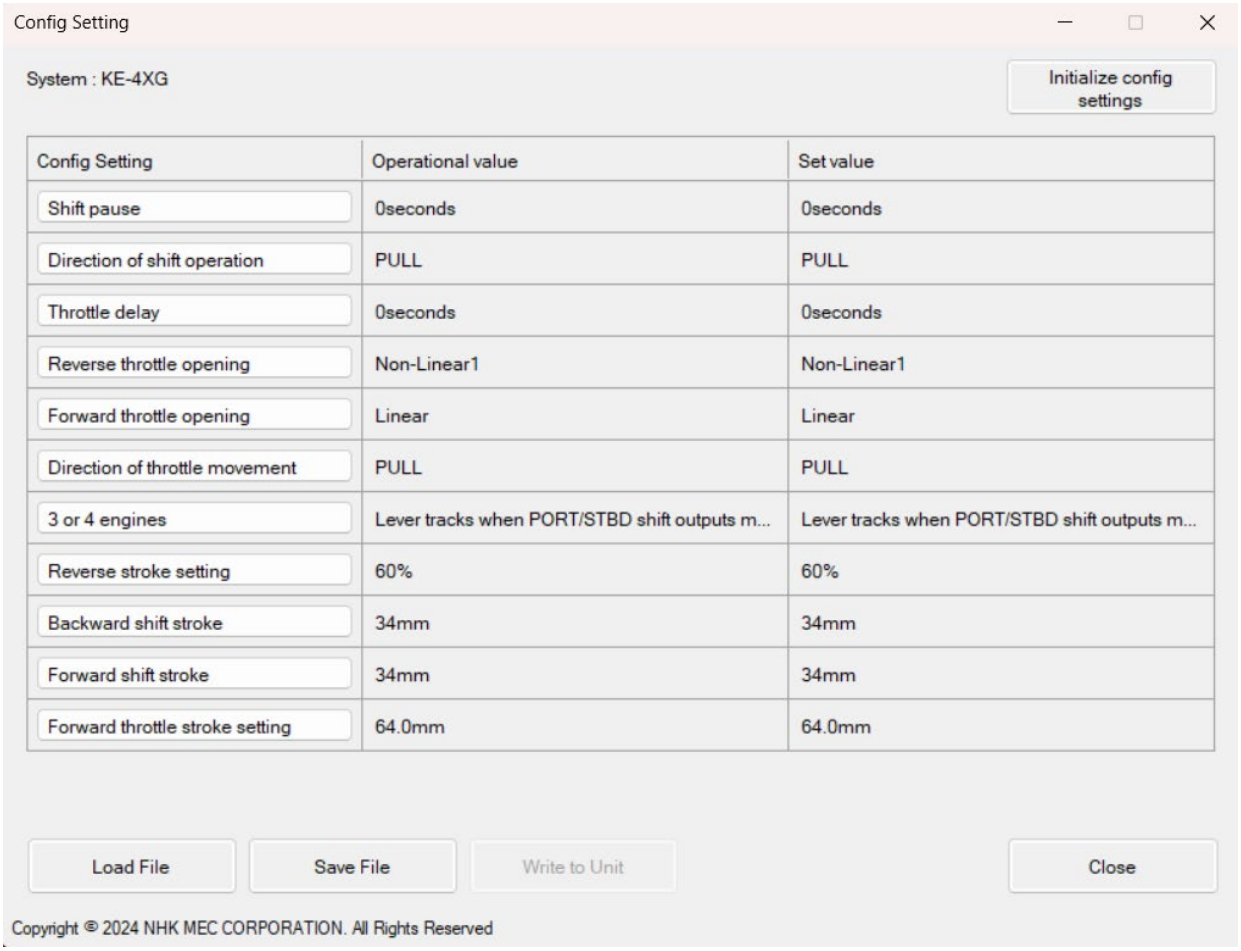
# SOFTWARE ACTIVATION

Next, open KE-XG Settings Tool software on your PC; click on Config Setting:

The software will recognize the harnesses connected between KE-XG control unit & PC, it will list available COM ports, select correct USB port ID to activate as in the example below.



# KE-4XG CONTROL SYSTEM SETTINGS



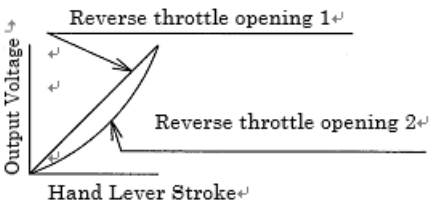

- [Config Setting] list provides all options for KE-4XG settings via drop down menus
- [Operational Value] represents active setting
- [Set value] represents target setting in case where setting change is desired; it will be the loaded valued after power reboot of KE-XG control system
- [Initialize config settings] will reset all set values to factory default values
- [Load File] to select a previously saved file of setting values
- [Save File] to create a new file of setting values
- [Write to Unit] to download setting values into control unit of KE-XG control system

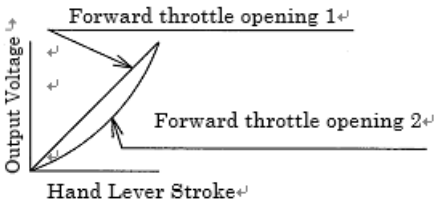
<u>Description of [Config Setting] values for KE-4XG settings:</u>

- Shift pause: delays shock effect if control lever is suddenly operated from throttle to neutral
- Direction of shift operation: push or pull to go forward
- Throttle delay: delays shock effect if control lever is suddenly operated from neutral to throttle
- Direction of throttle operation: push or pull to open throttle
- 3 or 4 engines: activate to have shift outputs of inner engines match outer engines
- Reverse (Backward) stroke: select % of full forward throttle stroke setting
- Reverse (Backward) shift stroke: distance stroke for reverse shift operation
- Forward shift stroke: distance stroke for forward shift operation

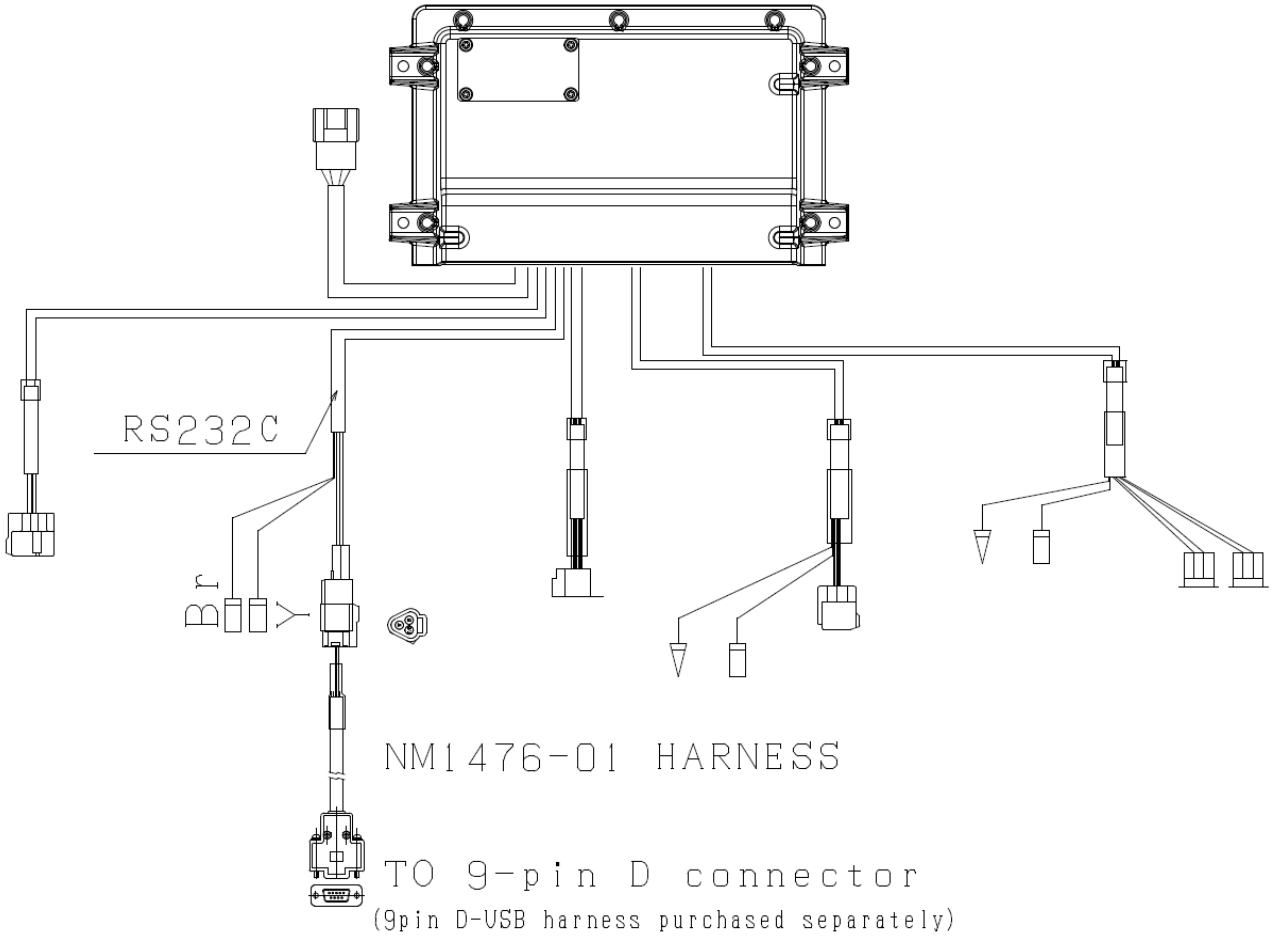
# KE-4XG CONTROL SYSTEM SETTINGS (cont'd)

- Forward throttle stroke: distance stroke for throttle opening
- Throttle openings: select desired throttle opening based on curves below

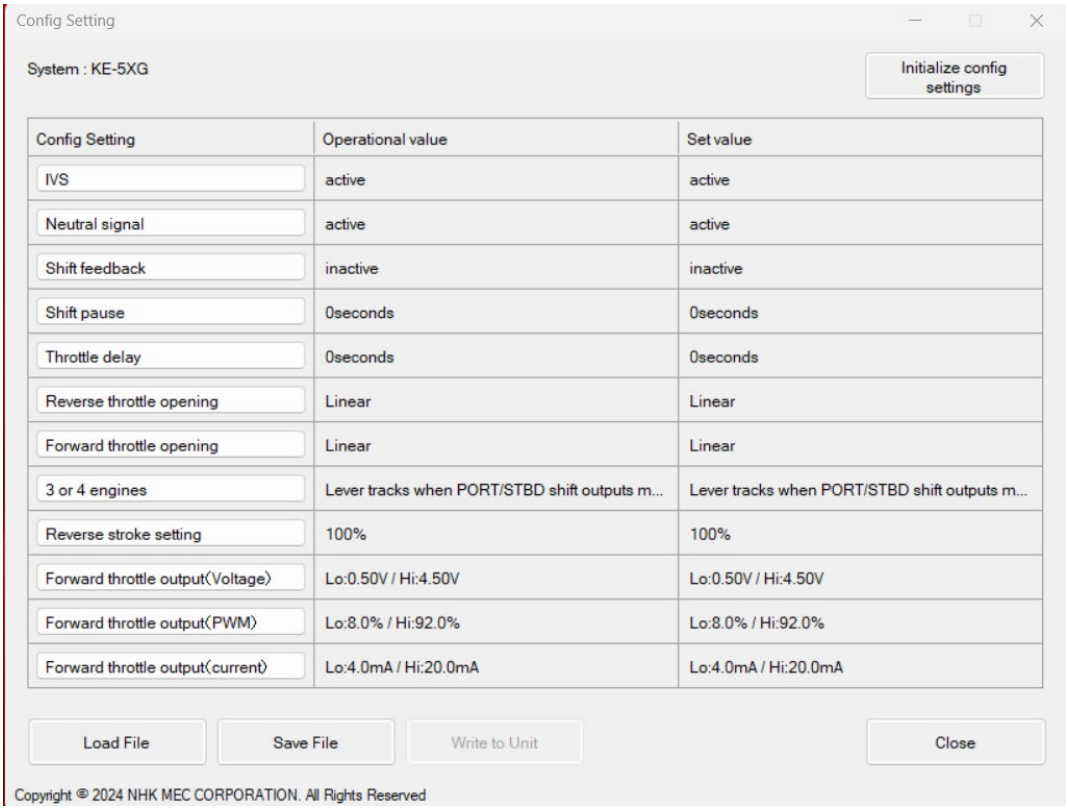



# KE-5XG CONTROL SYSTEM SETTINGS




Note: Above drawing shows NM1476-01 harness & D-USB extension harness connection to KE-5XG control unit

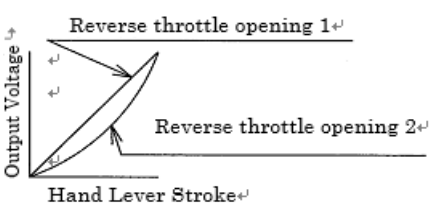


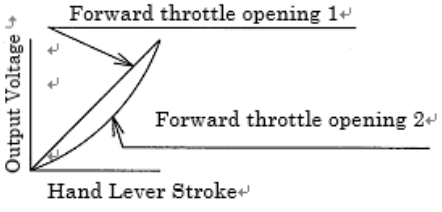

| Config Setting | Operational value | Set value |
|---|---|---|
| IVS | active | active |
| Neutral signal | active | active |
| Shift feedback | inactive | inactive |
| Shift pause | 0seconds | 0seconds |
| Throttle delay | 0seconds | 0seconds |
| Reverse throttle opening | Linear | Linear |
| Forward throttle opening | Linear | Linear |
| 3 or 4 engines | Lever tracks when PORT/STBD shift outputs m... | Lever tracks when PORT/STBD shift outputs m... |
| Reverse stroke setting | 100% | 100% |
| Forward throttle output(Voltage) | Lo:0.50V / Hi:4.50V | Lo:0.50V / Hi:4.50V |
| Forward throttle output(PWM) | Lo:8.0% / Hi:92.0% | Lo:8.0% / Hi:92.0% |
| Forward throttle output(current) | Lo:4.0mA / Hi:20.0mA | Lo:4.0mA / Hi:20.0mA |

- [Config Setting] list provides all options for KE-5XG settings via drop down menus
- [Operational Value] represents active setting
- [Set value] represents target setting in case where setting change is desired; it will be the loaded valued after power reboot of KE-XG control system
- [Initialize config settings] will reset all set values to factory default values
- [Load File] to select a previously saved file of setting values
- [Save File] to create a new file of setting values
- [Write to Unit] to download setting values into control unit of KE-XG control system

Description of [Config Setting] values for KE-5XG settings

- IVS: activate if engine model requires it
- Neutral signal: activate if marine gearbox neutral signal is required
- Shift feedback: activate means control head LED's represent control unit output (not levers)
- Shift pause: delays shock effect if control lever is suddenly operated from throttle to neutral
- Throttle delay: delays shock effect if control lever is suddenly operated from neutral to throttle
- 3 or 4 engines: activate to have shift outputs of inner engines match outer engines
- Reverse stroke: select % of full forward throttle setting
- Throttle openings: select desired throttle opening based on curves below

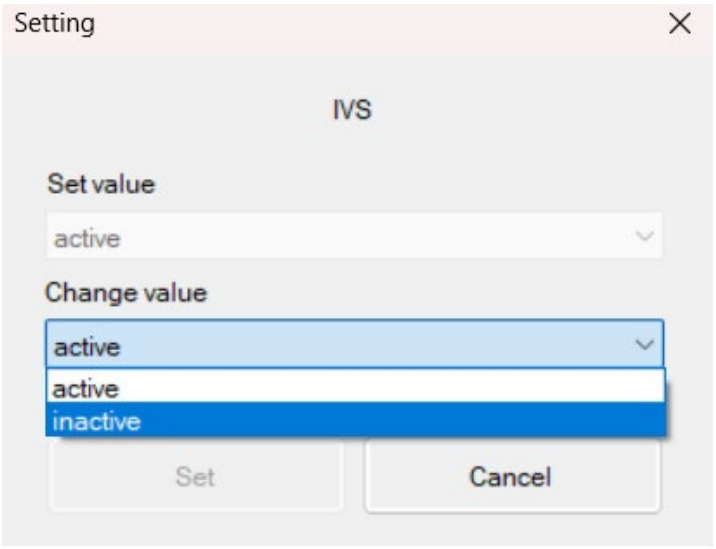


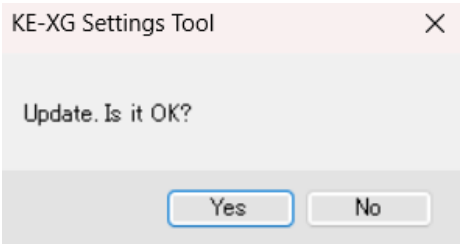
# KE-5XG CONTROL SYSTEM SETTINGS (cont'd)

Example of changing a setting for KE-XG control unit:

- Click on the IVS window under [Config Setting]
- Change value to target value




- System will ask for confirmation of new [Set value]




Typical Throttle settings for engines (based on information at time of print):

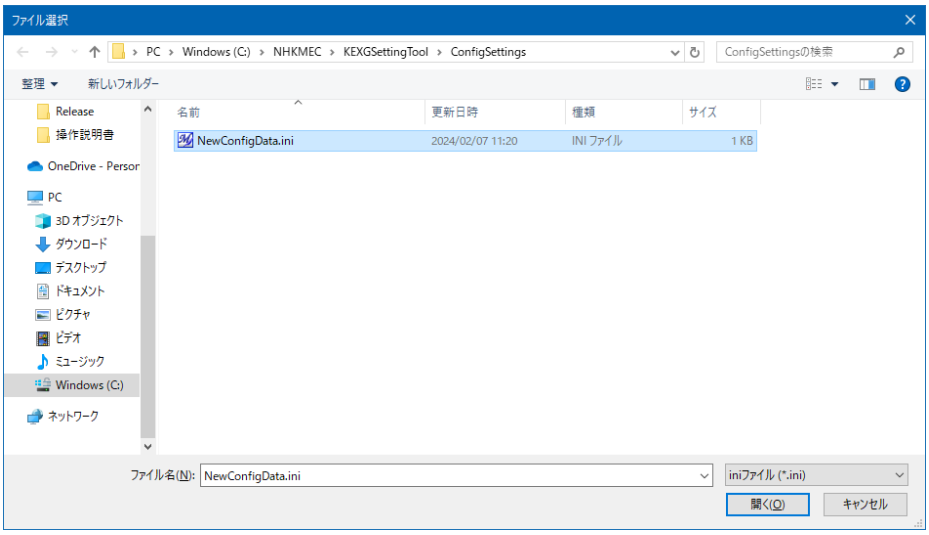
- Volvo, MTU, MAN Cummins (KTA): 4mA～20 mA (±1mA depending on model)
- Detroit Diesel, John Deere, Steyr (single input), Cummins (Quantum):
  0.5V～4.50V (±0.1V depending on model)
- Volkswagen, Iveco FPT: 0.3V～4.40V (±0.1V depending on model)
- Scania D13: 0.45V～2.95V (±0.1V depending on model)
- CAT C7～C32: 7%～93% (±1% depending on model)
- Nanni Diesel (other CAN models): SAE J1939 protocol (contact dealer to review):

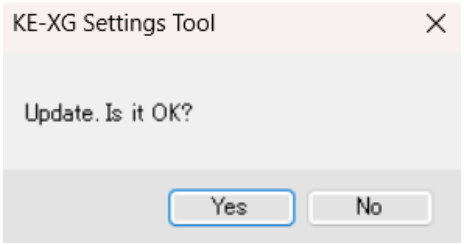
Once you have completed your selection of settings, close the menu, close Settings Tool software and disconnect NM1476-01 harness from the KE-XG control unit. KE-XG control system is now ready for operation.

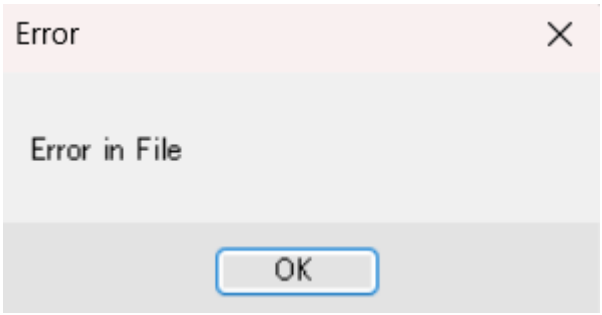
# SETTINGS FILE : PC

Example of PC file loading / saving via KE-XG Settings Tool:

- Select file from Settings Tool folder
- Choose file name suitable for application
- Confirm file update; error message will apply if file name or folder cannot be used



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