PW3336/PW3337 LabVIEW driver

HIOKI E.E. Corporation

Thank you for downloading the PW3336/PW3337 LabVIEW driver.
This LabVIEW driver is used to control and collect data from our Power Meter PW3336, -01, -02, -03,
PW3337, -01, -02, and -03 by using the LabVIEW manufactured by National Instruments Corporation.
Refer to the "**Driver list**" below for the driver types and a detailed description of each driver.

◆ Specifications
1. Operation has been checked in the LabVIEW versions 7.1 to 2013.
2. Each driver can control and obtain data from the PW3336/PW3337.

◆ Operation environment
  The personal computer must be running Microsoft Windows XP, 7, or 8, and the LabVIEW.
  It must also be installed with any of the RS-232C, LAN, and GP-IB interfaces.
   Note.
    1. NI-VISA and NI-488.2 are necessary.
    2. The GP-IB interface manufactured by National Instruments Corporation.
    3. It also depends on the operation specifications of the LabView.
         In any versions other than version 7.1, the program may be automatically recompiled.
  Even for a personal computer running an operation system other than those specified above, we
  assume that drivers can still function properly as long as the computer supports the LabVIEW.
  However, if any error occurs, please contact us.

◆ Content of the files
  readme.pdf   This file
  HIOKI3337.llb   LabVIEW driver for PW3336/PW3337
  Communication Command Instruction Manual(English).pdf.
                             Communication command manual
  DEMO vi Manual.pdf   Instruction manual for DEMO Measure*.vi

◆ Important reminder
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  This driver is free software. It can be used for any purpose under the user's own responsibility.
  We do not assume any responsibility for any results arising from using this software.

◆ Version Upgrade History
   2013/12/1 V1.00 Release

Driver list

Driver name	Icon	Description
HIOKI PW3337 Initialize.vi		Opens the communication interface Initial setting of RS-232C/LAN/GP-IB
HIOKI PW3337 Close.vi		Closes the communication interface
HIOKI PW3337 CLS.vi		Clears the event register
HIOKI PW3337 ESE SRE.vi		Sets/queries the event status enable register
HIOKI PW3337 ESR STB.vi		Obtains the event register
HIOKI PW3337 IDN.vi		Executes the *IDN? command (device ID acquisition)
HIOKI PW3337 OPC.vi		Executes the *OPC command (process termination)
HIOKI PW3337 OPT.vi		Executes the *OPT command (optional information acquisition)
HIOKI PW3337 RST.vi		Executes the *RST command (system reset)
HIOKI PW3337 TRG.vi		Executes the *TRG command (measurement trigger)
HIOKI PW3337 WAI.vi		Executes the *WAI command (waiting for processing)
HIOKI PW3337 Conf AOUT.vi		Sets/queries the D/A output items and waveform output switching
HIOKI PW3337 Conf Wiring.vi		Sets/queries the wiring mode
HIOKI PW3337 Conf Averaging.vi		Sets/queries the average number of times
HIOKI PW3337 Conf Harmonic.vi		Sets/queries the harmonic analysis upper limit order
HIOKI PW3337 Conf IntegTime.vi		Sets/queries the integration time
HIOKI PW3337 Conf Voltage.vi		Sets/queries the voltage range, voltage auto range, and VT ratio
HIOKI PW3337 Conf Current.vi		Sets/queries the current input type, current range (direct, sensor), current auto range, and CT ratio

Driver name	Icon	Description
HIOKI PW3337 Conf Source.vi		Sets/queries the synchronous source, frequency range, and timeout
HIOKI PW3337 Demag.vi		Executes zero adjustment and checks the condition
HIOKI PW3337 Hold.vi		Switches/queries the HOLD/MAX/MIN value and resets the maximum/minimum value
HIOKI PW3337 Integrate_Start.vi		Starts the integration
HIOKI PW3337 Integrate_Stop.vi		Stops the integration
HIOKI PW3337 Integrate_Reset.vi		Resets the integration value
HIOKI PW3337 Integrate_State.vi		Obtains the integration status
HIOKI PW3337 SyncControl.vi		Sets/queries the synchronous condition for multiple systems
HIOKI PW3337 Display.vi		Sets/queries the normal measurement display items Use "Display Mode Select.vi" for switching the display.
HIOKI PW3337 DisplayHRM.vi		Sets/queries the harmonic display items common to all Orders Use "Display Mode Select.vi" for switching the display.
HIOKI PW3337 DisplayHRM Select.vi		Sets/queries the harmonic display items for order selection Use "Display Mode Select.vi" for switching the display.
HIOKI PW3337 Display Mode Select.vi		Switches/queries the display
HIOKI PW3337 MeasureUIP.vi		Obtains the voltage, current, active power, and power factor data for normal measurement
HIOKI PW3337 MeasureUIP_MAX.vi		Obtains the maximum values of the voltage, current, active power, and power factor data for normal measurement
HIOKI PW3337 MeasureUIP_MIN.vi		Obtains the minimum values of the voltage, current, active power, and power factor data for normal measurement
HIOKI PW3337 MeasurePower.vi		Obtains the active power, apparent power, reactive power, and power factor data for normal measurement
HIOKI PW3337 MeasurePower_MAX.vi		Obtains the maximum values of the active power, apparent power, reactive power, and power factor data for normal measurement
HIOKI PW3337 MeasurePower_MIN.vi		Obtains the minimum values of the active power, apparent power, reactive power, and power factor data for normal measurement

Driver name	Icon	Description
HIOKI PW3337 MeasureDEG.vi	3337 DEG	Obtains the phase angle data for normal measurement Can be selected from instantaneous, maximum and minimum values
HIOKI PW3337 MeasureFREQ.vi	3337 FREQ	Obtains the frequency data Can be selected from instantaneous, maximum and minimum values
HIOKI PW3337 MeasureEffi.vi	3337 EFFI	Obtains the efficiency data (instantaneous/maximum/minimum value)
HIOKI PW3337 MeasureChDeg.vi	3337 ChDEG	Obtains the inter-channel phase difference data (instantaneous/maximum/minimum value)
HIOKI PW3337 MeasureIntegWP.vi	3337 WP	Obtains the active power integration value data
HIOKI PW3337 MeasureIntegIH.vi	3337 IH	Obtains the current integration value data
HIOKI PW3337 MeasureTav.vi	3337 TAV	Obtains the time average data
HIOKI PW3337 MeasureEtc.vi	3337 ETC	Obtains the voltage peak, current peak, voltage crest factor, current crest factor, voltage ripple rate, current ripple rate, total harmonic voltage distortion rate, and total harmonic current distortion rate
HIOKI PW3337 MeasureEtcMAX.vi	3337 ETCMAX	Obtains the maximum values of the voltage peak, current peak, voltage crest factor, current crest factor, voltage ripple rate, current ripple rate, total harmonic voltage distortion rate, and total harmonic current distortion rate
HIOKI PW3337 MeasureEtcMIN.vi	3337 ETCMIN	Obtains the minimum values of the voltage peak, current peak, voltage crest factor, current crest factor, voltage ripple rate, current ripple rate, total harmonic voltage distortion rate, and total harmonic current distortion rate
HIOKI PW3337 MeasureWrite.vi	3337 WRITE	Obtains the desired items for normal measurement
HIOKI PW3337 MeasureHRM.vi	SUB MEASHRM	Obtains the specified harmonic data
HIOKI PW3337 MeasureHRM Level.vi	3337 LEV	Obtains the voltage, current, and active power harmonic level data
HIOKI PW3337 MeasureHRM LevelMAX.vi	3337 LEVMAX	Obtains the maximum values of the voltage, current, and active power harmonic level data
HIOKI PW3337 MeasureHRM LevelMIN.vi	3337 LEVMIN	Obtains the minimum values of the voltage, current, and active power harmonic level data
HIOKI PW3337 MeasureHRM Con.vi	3337 CON	Obtains the voltage, current, and active power harmonic content percentage data
HIOKI PW3337 MeasureHRM ConMAX.vi	3337 CONMAX	Obtains the maximum values of the voltage, current, and active power harmonic content percentage data

Driver name	Icon	Description
HIOKI PW3337 MeasureHRM ConMIN.vi		Obtains the minimum values of the voltage, current, and active power harmonic content percentage data
HIOKI PW3337 MeasureHRM Phase.vi		Obtains the voltage, current, and active power harmonic phase data
HIOKI PW3337 MeasureHRM PhaseMAX.vi		Obtains the maximum values of the voltage, current, and active power harmonic phase data
HIOKI PW3337 MeasureHRM PhaseMIN.vi		Obtains the minimum values of the voltage, current, and active power harmonic phase data
HIOKI PW3337 Read_Write.vi		Sends the communication commands and receives data
HIOKI PW3337 RS232C.vi		Sets/queries the RS-232C communication speed Can be set via the GP-IB or LAN communication
HIOKI PW3337 LAN.vi		Sets/queries the IP address, subnet mask, and default gateway for the LAN Can be set via the RS-232C or GP-IB communication
HIOKI PW3337 GPIB.vi		Sets/queries the GP-IB address Can be set via the RS-232C or LAN communication
HIOKI PW3337 Transmit.vi		Sets/queries the data separator and message terminator for the response data
HIOKI PW3337 Demo Measure.vi		Obtains the normal measurement data and displays a graphExamples of using the following programs HIOKI PW3337 Initialize.vi HIOKI PW3337 Close.vi HIOKI PW3337 Conf Voltage.vi HIOKI PW3337 Conf Cuuent.vi HIOKI PW3337 Conf Wiring.vi HIOKI PW3337 MeasureWrite.vi HIOKI PW3337 Integrate_Start.vi HIOKI PW3337 Integrate_Stop.vi
HIOKI PW3337 Demo Measure_H.vi		Obtains the harmonic data and displays a bar graphExamples of using the following programs HIOKI PW3337 Initialize.vi HIOKI PW3337 Close.vi HIOKI PW3337 Conf Voltage.vi HIOKI PW3337 Conf Cuuent.vi HIOKI PW3337 Conf Wiring.vi HIOKI PW3337 Read_Write.vi HIOKI PW3337 MeasureHRM.vi

Refer to the HELP window for a detailed description of each driver.
In the HELP window, in addition to the terminal name and description (notated in English), the used communication commands are also displayed.
The brackets [ ] written next to a communication command indicate a page number in the manual.
Refer to the manual for the features, restrictions, and setting range of each command.

詳細ヘルプ

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                              Ch
        Connection settings in  ═══╗ ┌3337┐ ╔═══  Connection settings out
           Voltage range set  ──┐ │      │ ┌──  Voltage range out
         Voltage autorange set  ┈┈│ │ ▤▤  │ │┈┈  Voltage autorange out
                 VT ratio set  ──┐││ │ VOLT │ ┌┌──  VT ratio out
            error in (no error)  ═══╬╬╬      ╬╬╬═══  error out
          Response Header (F)  ┈┈┈┈┈│││      │││
                 Query? (F)  ┈┈┈┈┈┈┈││      ││
              Error Out (F)  ┈┈┈┈┈┈┈┈│      │
```

HIOKI PW3337 Conf Voltage.vi

Set and read voltage setting. Please see below for commands used in this VI.
Please refer to the communication command in the Instruction Manual. "?" mark is the Query message. [ ]: page

[Voltage range set]
[Voltage range out]
Set and Query the Voltage Range Setting.
  :VOLTage1:RANGe(?)
  :VOLTage2:RANGe(?)
  :VOLTage3:RANGe(?)   [45]

[Voltage autorange set]
[Voltage autorange out]
Set and Query the Voltage Auto Range setting.
  :VOLTage1:AUTO(?)
  :VOLTage2:AUTO(?)
  :VOLTage3:AUTO(?)   [45]

[VT ratio set]
[VT ratio out]
Set and Query the VT Ratio Setting.
  :SCALe1:VT(?)
  :SCALe2:VT(?)
  :SCALe2:VT(?)   [51]

[Response Header (F)]
Set Response Message Headers ON/OFF Status.
  :HEADer(?)   [106]

Terminal name

Description

Communication command

Page number in the manual
Allows you to check the
features, restrictions, and
setting range of the command.

Among the input/output parameters, **"Connection settings in/out"** and **"error in/out"** are common parameters for all vi programs. If there are any additional parameters, the description will be included in the section of the relevant vi program.
The following are the descriptions of the **"Connection settings in/out"** and **"error in/out"** parameters, as well as the **"Query? (F)","Error Out (F)","Item (string)" and "String out"** parameters, which are the major common setting parameters.

■ **Connection settings in/out**
This parameter is used to send/receive the connection information to/from the current communication line (LAN/RS-232C/GP-IB). The line type output from the PW3337 Initialize.vi program is connected via the input/output line of each vi program.

■ **error in/out**
This parameter is used to send/receive the error information. The following error codes contain the unique error information.
1223: When *IDN is sent from the PW3337 Initialize.vi, this error information is output if an error occurs or the manufacturer/model name of the obtained device ID is anything other than "HIOKI, PW3336" or "HIOKI, PW3337".
1300: When the error check function using "*ESR?" is activated in each driver, this error information is output if data other then 0 is returned as a response to "*ESR?". The response to "*ESR?" is displayed in the error source column as the "ESR Code".

■ **Query? (F)**
This is a Boolean query provided for the vi program that can be used to send both the setting commands and query commands. When F is set, this is used to send a setting command; when T is set, this is used to send a query command.

■ **Error Out (F)**
This parameter determines whether or not to check errors using "*ESR?". When F is set, errors are not checked; when T is set, errors are checked.

■ **Item (string)**
This is response message of the MEASure command.

■ **Sring out**
This is response message of the command except the MEASure command.