

PW3336

PW3336-01, PW3336-02, PW3336-03

PW3337

PW3337-01, PW3337-02, PW3337-03

POWER METER

Measurement Guide

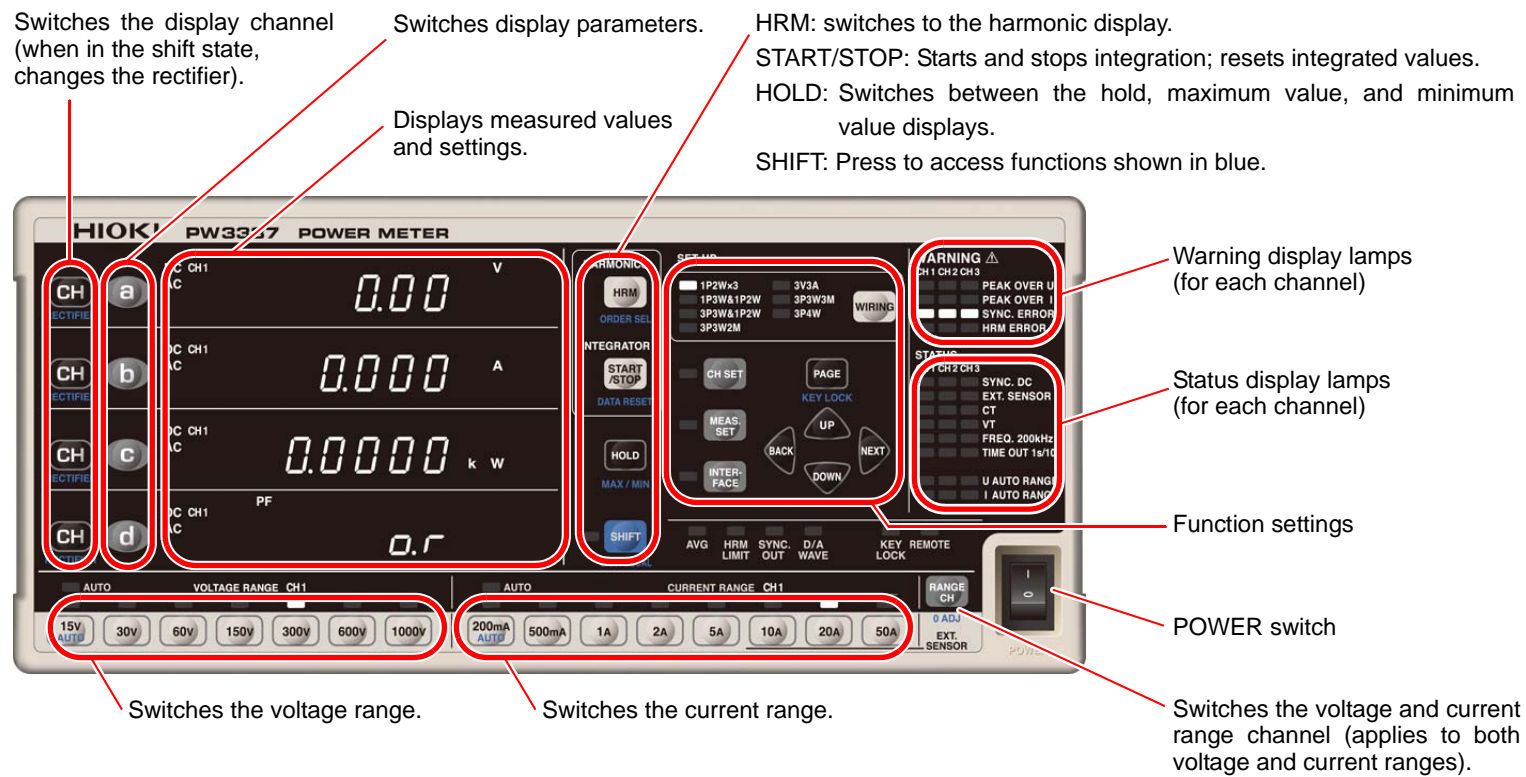
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HIOKI

Thank you for purchasing the HIOKI PW3336, PW3336-01, PW3336-02, PW3336-03, PW3337, PW3337-01, PW3337-02, or PW3337-03 Power Meter. This Measurement Guide introduces basic measurement methods to individuals using the instrument for the first time. Be sure to review the Instruction Manual before using the instrument.



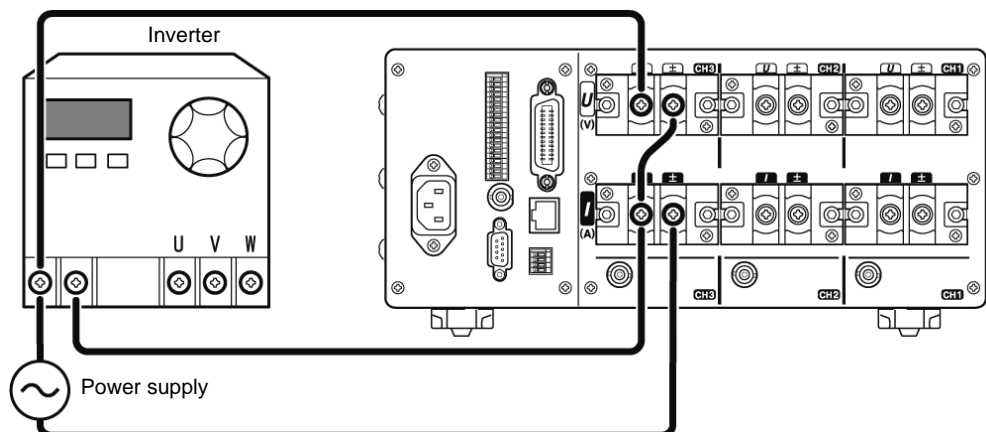
Part names



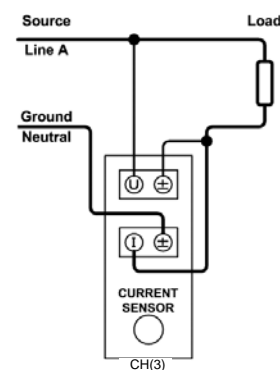
1. Connecting the instrument

Example 1: 1P2W

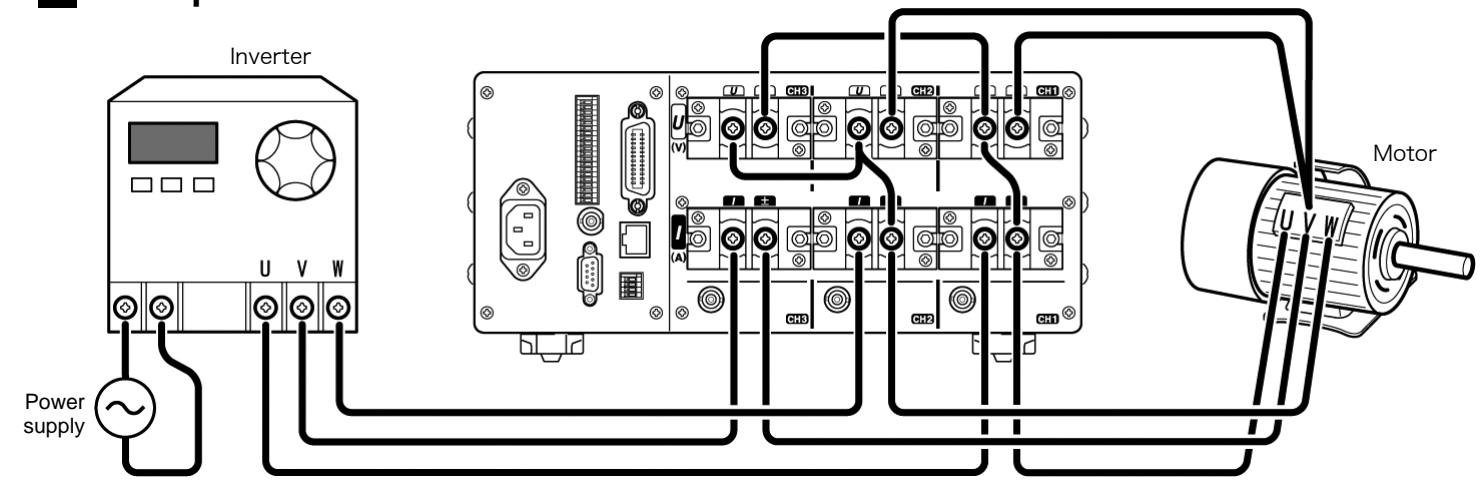
Before connecting the instrument, read "Operating Precautions" in the Instruction Manual carefully.



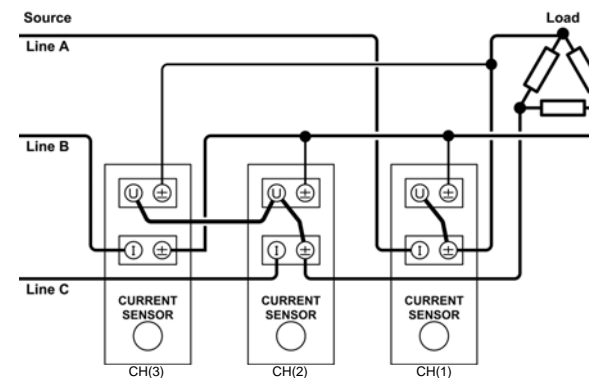
Wiring diagram



Example 2: 3V3A

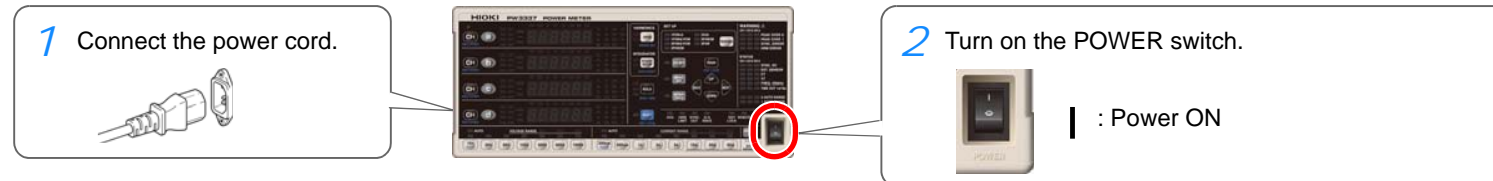


Wiring diagram

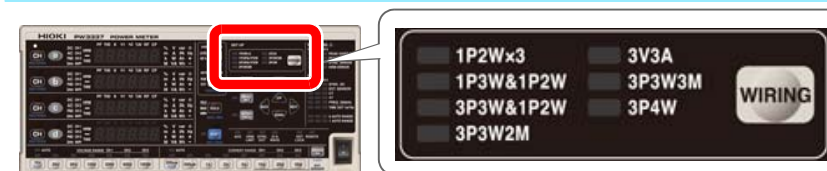


2. Turning on the instrument

Do not activate input to the instrument before it has been turned on.



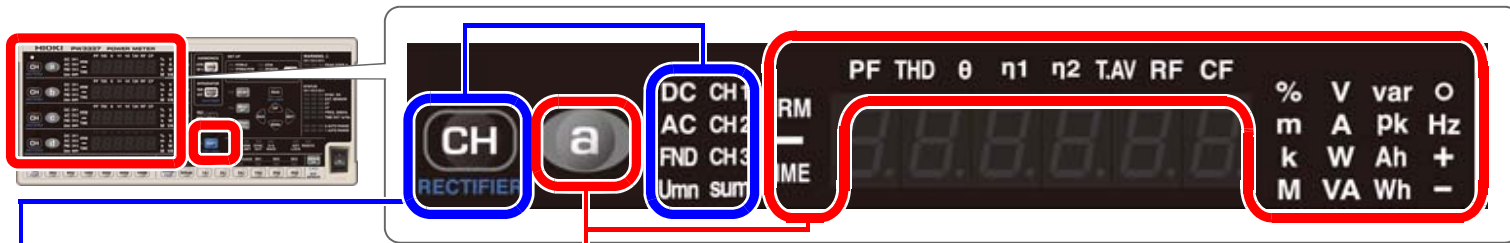
3. Selecting the wiring mode



Display	Description
1P2Wx3 (PW3336: 1P2Wx2)	Allows you to measure three 1-phase/2-wire circuits. (PW3336: Allows you to measure two such circuits.)
1P3W&1P2W (PW3336: 1P3W only)	Measures a 1-phase/3-wire circuit with CH1 and CH2. The PW3337 can simultaneously measure a 1-phase/2-wire circuit with CH3.
3P3W&1P2W (PW3336: 3P3W only)	Measures a 3-phase/3-wire circuit with CH1 and CH2 and measures active power using the two-power-meter method. The PW3337 can simultaneously measure a 1-phase/2-wire circuit with CH3.

Display	Description
3P3W2M	Measures a 3-phase/3-wire circuit with CH1 and CH2 and measures active power using the two-power-meter method. Calculates line voltage and phase current, which are not actually measured, using vector calculations and displays the result as the CH3 voltage and current.
3V3A	Measures a 3-phase/3-wire circuit with connections for all line voltages and phase currents and measures the active power using the two-power-meter method.
3P3W3M	Measures a 3-phase/3-wire circuit. Uses the same connections as the 3V3A wiring mode but converts line voltages into phase voltages by means of vector calculations and displays the results.
3P4W	Measures a 3-phase/4-wire circuit.

4. Selecting the display



Select the parameters to display by pressing the parameter key.

Display	Description	Display	Description	Display	Description
V	Voltage (U)	Ah, +	Positive direction Ah	RF, %, A	Current ripple rate
A	Current (I)	Ah, -	Negative direction Ah	THD, %, V	Total harmonic voltage distortion
W	Active power (P)	Ah	Total Ah	THD, %, A	Total harmonic current distortion
VA	Apparent power (S)	TIME	Integration time	FND, θ, V, °	Inter-channel voltage fundamental wave phase difference
var	Reactive power (Q)	V, pk	Voltage waveform peak value	FND, θ, A, °	Inter-channel current fundamental wave phase difference
PF	Power factor (λ)	A, pk	Current waveform peak value	HRM, V, LEVEL	Harmonic voltage RMS value
°	Phase angle (φ)	η1 or η2	Efficiency (η)	HRM, A, LEVEL	Harmonic current RMS value
V, Hz or A, Hz	Frequency (f)	CF, %, V	Voltage crest factor	HRM, W, LEVEL	Harmonic active power RMS value
Wh, +	Positive direction Wh	CF, %, A	Current crest factor	HRM, %, V, HD%	Harmonic voltage content percentage
Wh, -	Negative direction Wh	T.AV, W	Time average active power	HRM, %, A, HD%	Harmonic current content percentage
Wh	Total Wh	T.AV, A	Time average current	HRM, %, W, HD%	Harmonic active power content percentage
		RF, %, V	Voltage ripple rate		

Select the rectifier by pressing the CH key while holding down the SHIFT key.

Display	Description
AC+DC	AC + DC measurement; display of true RMS values for both voltage and current
AC+DC Umn	AC + DC measurement; display of mean value rectified RMS converted values for voltage and true RMS values for current
DC	DC measurement; display of the DC component only
AC	AC measurement; display of the AC component only
FND	Display of the fundamental wave component from harmonic measurement

Press the CH key to select the channel to display.

Display	Description
CH1	Lights up when displaying CH1 measured values.
CH2	Lights up when displaying CH2 measured values.
CH3	Lights up when displaying CH3 measured values.
sum	Lights up when displaying measured values for the sum of the selected display parameters when using a wiring mode other than 1P2W.

Shift state



Press **SHIFT** to light up the blue lamp before setting functions shown in blue underneath the keys.

5. Selecting the voltage and current ranges

The lamp for the selected range key will light up, and the display value will correspond to the range.

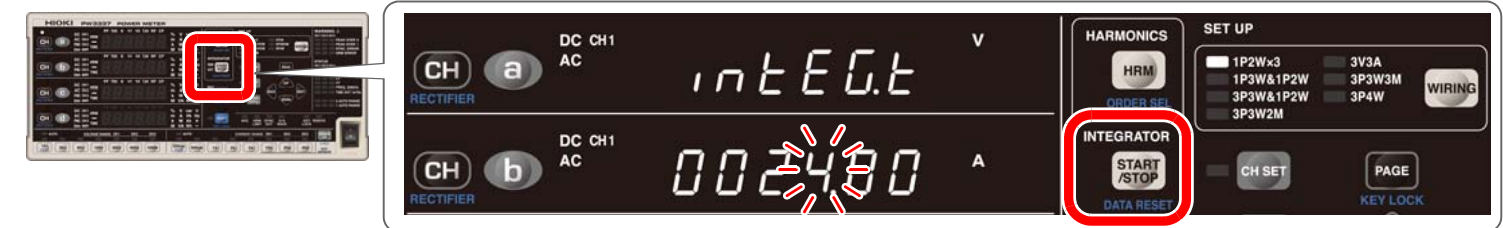
Example: Voltage range: CH1, 300 V; current range: CH1, 20 A

To select auto-range operation, set after pressing **SHIFT**.

Switches the channel for which the range is being set (applies to both voltage and current ranges).

6. Performing integration

Integration is performed to measure the amount of power consumed in the set amount of time. In the example shown, the integration time has been set to 24 hours.



Performing integration

- 1 Press **START/STOP**.
- 2 Integration will start, and the **RUN** lamp will light up.



Stopping integration

- 1 Press **START/STOP** while the **RUN** lamp is lit up.
- 2 Integration will stop, and the **RUN** lamp will flash.



Troubleshooting

■ **Even if the keys are pressed, no settings can be changed (Err.12 is displayed).**

While integration is being performed (the **RUN** lamp is lighting) or stopped (the **RUN** lamp is flashing), range, wiring mode or other settings cannot be changed. To change settings or perform functions, follow the procedure described below. Integrated value will be reset by this operation.

Procedure

If integration is stopped (if the **RUN** lamp is flashing), skip to Step 2.

- 1 Press **START/STOP** to stop integration.
The **RUN** lamp, which had been lit up, will start flashing.
- 2 Press **SHIFT** to place the instrument in the shift state.
The blue lamp will light up.
- 3 Press **START/STOP**.
The **RUN** lamp will turn off, and integrated values will be reset.
You can now change settings.

* Wiring mode, current input method, frequency measurement range (zero-cross filter), timeout, integration time, synchronization source, VT ratio, CT ratio, harmonic analysis order upper limit value, zero-adjustment (can be performed while integration is stopped)

■ **If an error is being displayed**

If the instrument displays an error, see "Troubleshooting" in the instruction manual (for example **Err.16**, etc.).

7. Turning off the instrument



Turn off the POWER switch.



Once measurement is complete, turn off the instrument and disconnect connection cables and other wiring.