

Up to 16 Circuits!

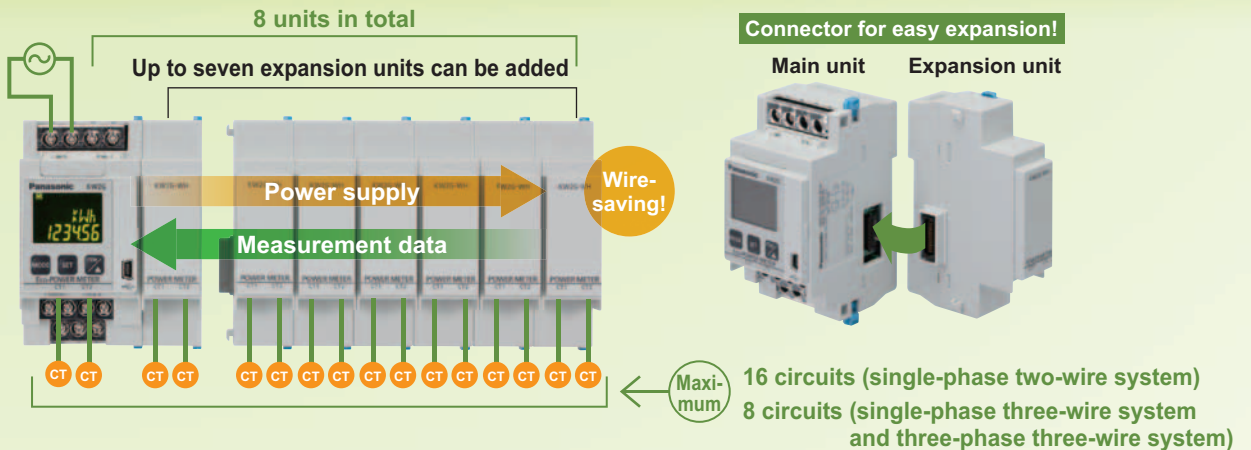
(Single-phase two-wire system)



Features
1

Easy Wire-Saving Expansion

Eliminate excess wiring by using up to seven expansion units to add-on the required number of CT inputs for your application.



■ The data of each unit can also be displayed.

Displaying the data of main unit **M**

Displaying the data of expansion unit **2**



The main unit can display data of expansion units by a simple switching operation.

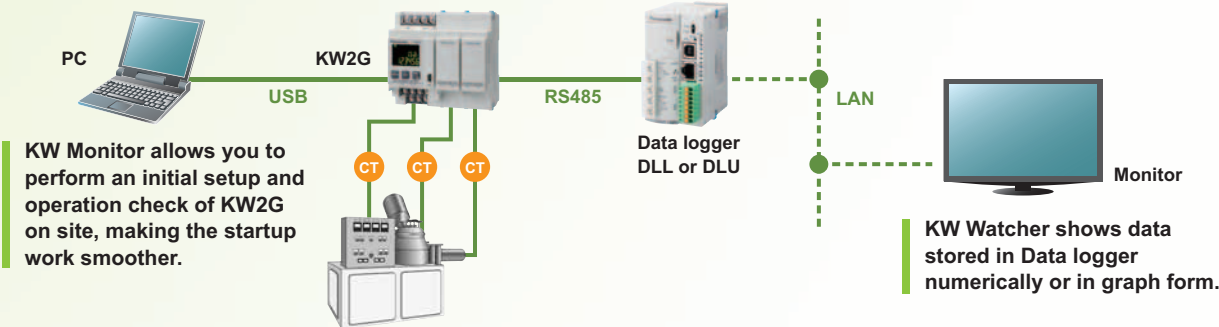
Expandable and Efficient!



No.5 No.6 No.7 No.8

Features 2 Quick initial setting via USB

The unit can be connected to a PC via USB. KW Monitor, an operation setting and check tool, allows you to perform initial setting and operation check of KW2G on site, reducing the time required for startup.



Features 3 Quick installation

The units fit DIN rails.



Features 4 A variety of measurements are possible.

- Capable of simultaneously measuring the electric power and pulse input (e.g. flow amount)
- Measurement of inverter power supplies (primary side) is also available.

**KW2G**

ORDER GUIDE

Product name		Phase and wire system	Operating power supply	Measured current input	Current transformer (sold separately)	Model No.
KW2G Eco-POWER METER	Main unit	Single-phase two-wire system Single-phase three-wire system	100 to 240 V AC 50 / 60 Hz	100 / 240 V AC system	Dedicated CT type 5 A / 50 A (common), 100 A, 250 A, 400 A, 600 A (Note)	AKW2010G
	Expansion unit	Three-phase three-wire system				AKW2110G

Note: For the 600 A current transformer, please see "RECOMMENDED PRODUCTS" (page 9).

MEASUREMENT ITEMS

Item	Unit	Data display range
Integrated electric power (Active) (Note 1)	kWh/MWh	0.00 to 9999.99 kWh to 9999.99 MWh, 0.00 to 9999999.99 kWh (when 9-digit display)
Instantaneous electric power	Active (Note 2)	kW
	Reactive (Note 2)	kvar
	Apparent	kVA
Current	R-current	A
	N/S-current	A
	T-current	A
Voltage	R (RS)-voltage	V
	S (RT)-voltage	V
	T (TS)-voltage	V
Electricity charge (Note 3)		0.00 to 999999
Conversion carbon dioxide value	kg-CO ₂	0.00 to 999999
Power factor (Note 2)	Displayed on the main unit	-1.00 to 1.00 (without identify leading phase and lagging phase)
Frequency	Hz	47.5 to 63.0
Pulse counter (Note 4)		0 to 999999

Notes:

- 1) **KW2G** can measure regeneration electric power. Integrated electrical power is not integrated (not subtracted) when detecting regeneration electric power.
- 2) While detecting regeneration electric power, minus is displayed on instantaneous active electric power and power factor.
- 3) Eco-POWER METER is designed chiefly to manage saving energy. It is neither intended nor can it be legally used for billing.
- 4) Displayed digit of pulse counter differs according to the pre-scale set by pre-scale setting mode.

SPECIFICATIONS

For details, please refer to the Eco-POWER METER user's manual.

Main unit and expansion unit specifications

Item	Specifications
Rated operating voltage	100 to 240 V AC (Add to main unit)
Rated frequency	50 / 60 Hz common
Rated power consumption	Main unit: 6 VA, Expansion unit: 0.5 VA / unit (240 V AC at 25 °C 77 °F)
Allowable operating voltage range	85 to 264 V AC (85 % to 110 % of rated operating voltage)
Allowable momentary power-off time	10 ms
Ambient temperature	-10 to +50 °C +14 to +122 °F (-25 to +70 °C -13 to +158 °F at storage)
Ambient humidity	30 to 85 % RH (at 20 °C 68 °F non-condensing)
Display method	LCD with backlight (green), Upper: 5-digit (7-segment 1-digit + 16-segment 4-digit), Lower: 6-digit (7-segment)
Number of connectable expansion units	Max. 7 units
Power failure memory method	EEPROM (more than 1,000,000 overwrite), Memory items: setting value and integral measuring value
Weight	Main unit: 180 g, Expansion unit: 80 g

Electric power input specifications

Item		Specifications
Accuracy (without error in CT and VT)	Instantaneous electric power, Integrated electric power, Electricity charge and Conversion carbon dioxide value	± (2.0 % F.S. + 1 digit) (at 20 °C 68 °F, rated input, rated frequency, power factor 1) *Accuracy coverage: 10 to 100 % of CT
	Current	± (1.0 % F.S. + 1 digit) (at 20 °C 68 °F, rated input, rated frequency, power factor 1) *Accuracy coverage: 10 to 100 % of CT
	Voltage	± (1.0 % F.S. + 1 digit) (at 20 °C 68 °F, rated input, rated frequency, power factor 1)
	Temperature characteristics	± (1.0 % F.S. + 1 digit) (Range of -10 to 50 °C 14 to 122 °F, rated input, power factor 1)
	Frequency characteristics	± (1.0 % F.S. + 1 digit) (Frequency change ± 5 % based on rated frequency, rated input, power factor 1)

Pulse input specifications (for AKW2010G)

Item	Specifications	
Input mode	Addition (Fixed)	
Max. counting speed	50 kHz / 30 Hz (Select with setting mode)	
Pulse input (Min. input signal width)	0.01 ms (When 50 kHz selected) / 16.7 ms (When 30 Hz selected), ON : OFF ratio = 1 : 1	
Input signal	Contact / No contact (open collector) • Impedance when shorted: Max. 1 kΩ • Residual voltage when shorted: Max. 2 V • Impedance when open: Min. 100 kΩ	
Output mode	HOLD (Over count)	
Prescale	Decimal point	Setting possible up to under 3-digit
	Range	0.001 to 100.000 (Set with setting mode)

Pulse output (Transistor output) specifications (for AKW2010G)

Item	Specifications
Number of output point	1 point
Insulation method	Optical coupler
Output type / Output capacity	Open collector / 100 mA 30 V DC
Pulse width (when pulse output with integrated active electric power selected)	100 ms approx.
ON state voltage drop	1.5 V or less
OFF state leakage current	100 μA or less
Pulse output unit (selectable with setting mode)	0.001 kWh, 0.01 kWh, 0.1 kWh, 1 kWh, 10 kWh, 100 kWh / Power alarm (AL-P) / Current alarm (AL-C) / Stand-by power alarm (AL-S) / Counter (Cnt)

Note: We recommend the setting of minimum unit for pulse output for measurement shown as below. Output pulse: 4 pulses or less per 1sec Count errors may occur if pulse output unit is set so that 4 or more pulses are output per 1 second.
- How to calculate -
Unit for pulse output: PL-P > Max. measurement power (kW) / 3600 sec × 4 pulse/sec

Communication specifications

Item	Specifications	
	RS485 communication	USB communication (Note 5)
Protocol	MEWTOCOL / MODBUS (RTU) (selectable with setting mode)	—
Transmission function	—	Computer link (MEWTOCOL)
Isolation status	Isolated with the internal circuit	Isolated with the internal circuit
Number of connected units	99 units max. (Note 1) (Note 2)	—
Transmission distance	1200 m 3937 ft max. (Note 3)	—
Transmission speed	38400 / 19200 / 9600 / 4800 / 2400 bps (selectable with setting mode)	12 Mbps (Full-speed)
Transmission format	Data length: 8-bit / 7-bit (selectable with setting mode) (Note 4) Parity: Not available / Odd number / Even number (selectable with setting mode) Stop bit: 1-bit / 2-bit (selectable with setting mode)	—
Communication method	Half-duplex	—
Synchronous system	Synchronous communication method	—
Ending resistance	120 Ω approx. (built-in)	—

Notes:

- 1) For RS485 converter on the computer side, we recommend SI-35 and SI-35USB (from LINE EYE Co.,Ltd.).
- 2) When using SI-35, SI-35USB or PLC from our company (which can be connected up to 99 units), up to 99 Eco-POWER METER can be connected. [When using C-NET adapter, up to 32 Eco-POWER METER (max.)] In case using this system with the other devices, up to 31 Eco-POWER METER can be connected.
- 3) Please check with the actual devices when some commercial devices with RS485 interface are connected. The number of connected devices, transmission distance, and transmission speed may be different according to using transmission line.
- 4) With MODBUS (RTU) protocol, it works only with 8-bit. 5) When using the USB port, install the dedicated USB driver.

RECOMMENDED PRODUCTS

For details of recommended products, please contact the manufacturers.

600 A Current transformer (CT)



Panasonic Electric Works
Denro Co., Ltd.
Model No.: **BT37066**

Our CT trunk cable
(1 m 3.28 ft)
Model No.: **AKW4811**

Note: Be sure to use the above CT. For other currents, please select a CT from the table in OPTIONS (page 14).