

# GPM-8213 – Digital Power Meter

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Version

Date. 2017

# Outlook



GPIB  
(Opt.)

# Features

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- ※ 4" TFT LCD
- ※ Two data display modes
  - Standard display: displaying two major measurement items + six minor measurement items
  - Enlarge display : displaying test data of four different measurement items
- ※ Met the requirement of IEC 62301 power measurement
  - Voltage/current test frequency bandwidth : DC~6kHz
  - Watt resolution : 1mW
  - Current resolution : 1uA
  - Current/voltage measurements reach CF=3 for distorted wave and CF=6 for half range
  - W-h (power vs time) / A-h (current vs time) integration function
  - Total harmonic distortion measurement
- ※ Front panel test terminal
- ※ Standard interfaces: RS-232C, USB device, LAN
- ※ Optional interface: GPIB
- ※ Optional test fixture: GPM-001

# Features brief

※ Two data display mode



Standard mode  
(2 major & 6 minor)



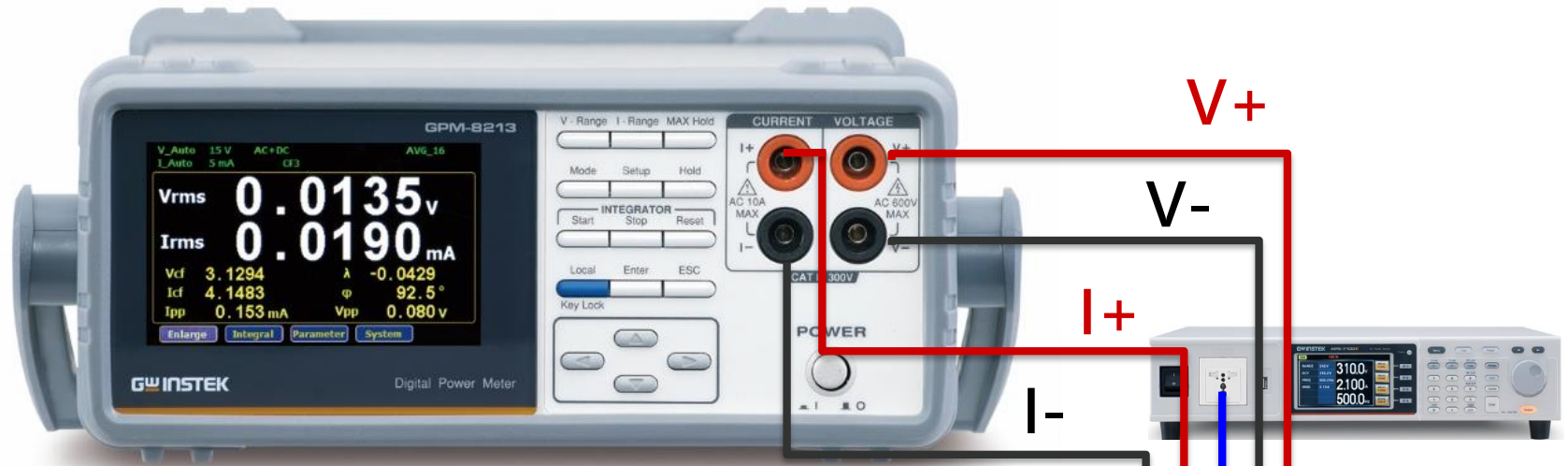
Enlarge mode  
(4 major)

# Features brief

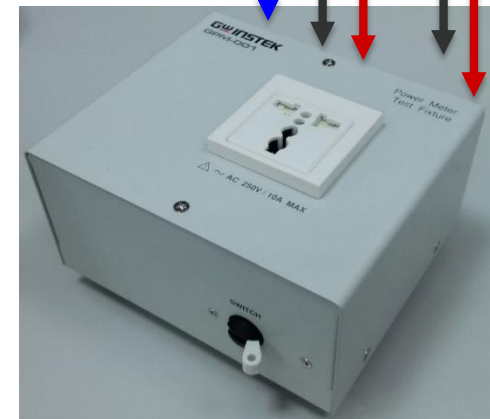
## ※ Measurement Items

Item		Content
Measurement Item	Voltage	Vdc, Vrms, V+pk, V-pk
	Current	Idc, Irms, I+pk, I-pk
	Power	P, P+pk, P-pk, VA, var
	Crest Factor	CfV, CfI
	Power Factor	PF
	Frequency	VHz, IHz
	Angle	Deg
	Total Harmonic Distortion	THDV, THDI
	Integrated	Time, WP, WP+, WP-, q, q+, q-

# Features brief (test fixture)



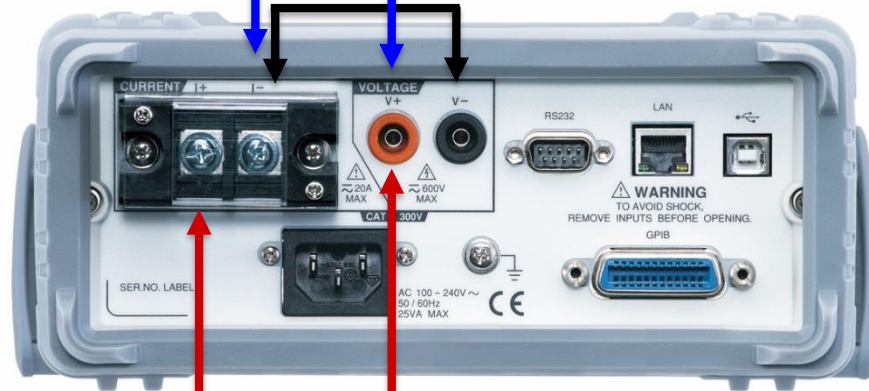
Source IN



GPM-001  
(Opt.)



# Features brief (direct connection)



# Features brief (PC software)

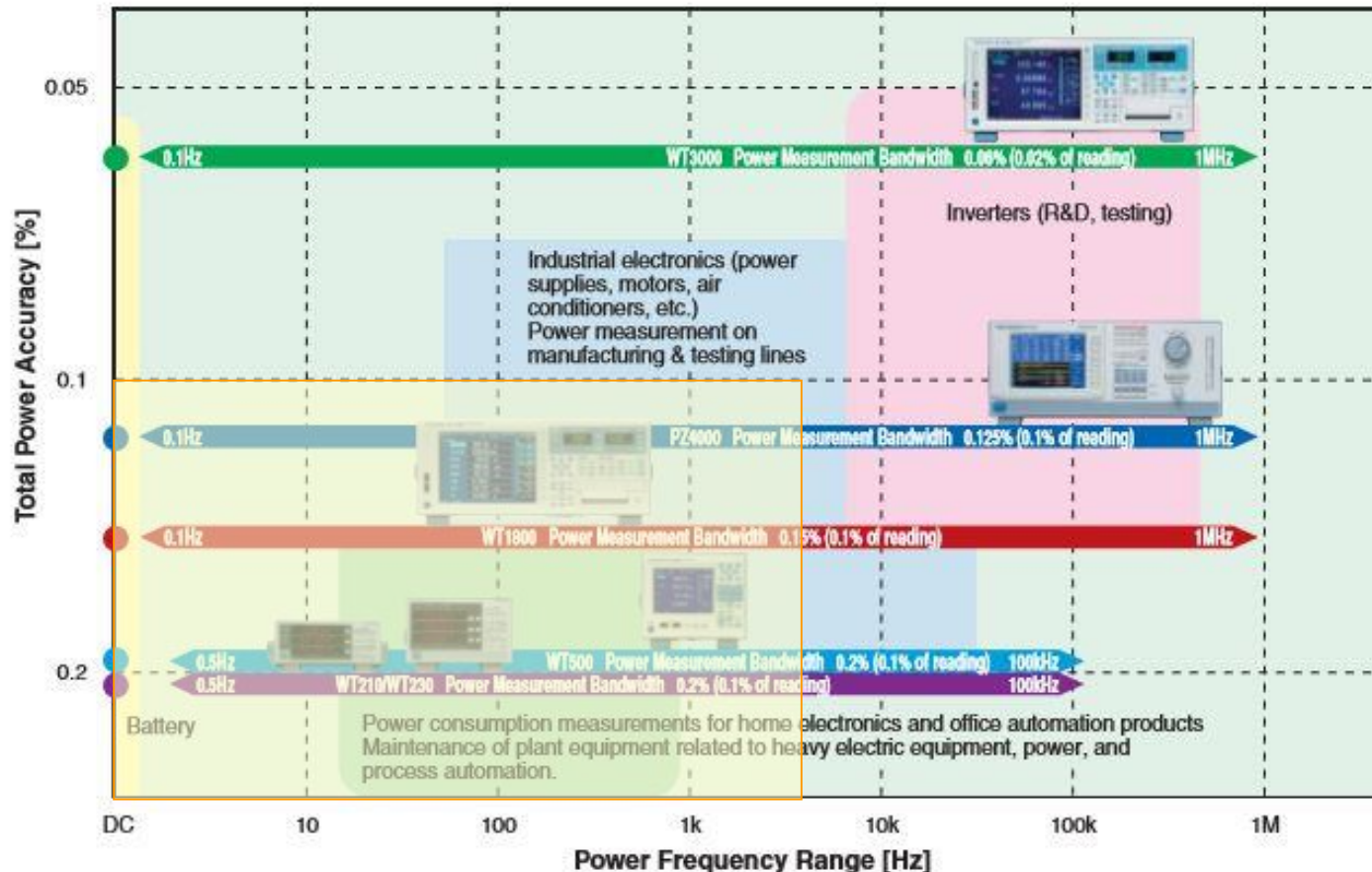
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- Data logging
- IEC 62301 report format



# Application

- ※ Main : Home/Office/IT electronics (power consumption/Stand by)
- ※ Second : Industrial electronics (power measurement)



# Comparison with current model

Company	GW Instek	GW Instek
Model	GPM-8213	GPM-8212
Display	4" TFT LCD	7-Segment * 3
Wiring/ Mode	1P2W / <b>AC, DC</b>	1P2W / AC
Parameters	<b>V/V<sub>RMS</sub>/V<sub>PP</sub>/V<sub>PK+</sub>/V<sub>PK-</sub>/ I/I<sub>RMS</sub>/I<sub>PP</sub>/I<sub>PK+</sub>/I<sub>PK-</sub>/ P/P<sub>PK+</sub>/P<sub>PK-</sub>/S/Q/λ/φ/ V<sub>CF</sub>/I<sub>CF</sub>/fV/fl/TIME/ Wh/Wh±(+)/Wh±(-)/ Ah/Ah±(+)/Ah±(-)/ THD V%/THD A% (iEC,CSA)</b>	V/A/W/PF/ Hz/Max/Min
Sample Rate	96kHz	12 kHz
Input Resistance	A : 5mΩ/500mΩ V : 2.4MΩ	A : 10mΩ V : ≥1MΩ
Input Terminal	4-wire, isolated	3-wire, non-isolated
Max input V,A	700Vrms, 25Arms	700Vrms, 20Arms
Volt Range	15.000~600.0V (6 ranges) , <b>CF≤3</b>	5.000~640.0V (8 ranges) , CF≤1.5
Volt Accuracy (Best)	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range
Amp Range	<b>5.0000mA</b> ~ 20.000A (12 ranges), <b>CF≤3</b>	160.0mA ~ 20.48A (8 ranges), CF≤1.5
Amp Accuracy	± 0.1% of reading ± 0.1% of range	±0.1% of reading ±0.1% of range
Power Range	75.000mW ~ 12.000kW (72 ranges)	800.0 mW ~ 13.10kW (64 ranges)
Power Accuracy	<b>±0.1% of reading</b> <b>±0.1% of range</b>	±0.2% of reading ±0.2% of range
Freq Range	<b>DC,45Hz~6kHz</b>	40.0Hz~400.0Hz
Interface	<b>RS232+ USB+ LAN</b> (Option: GPIB)	(Option: RS485/232)
PT/CT scaling	YES	YES
CE Approval	<b>YES</b>	NO

# Comparison ~ Main Competitors

Company	GW Instek	GW Instek	Hioki	Kikusui	iDRC
Model	GPM-8213	GPM-8212	3334/3334-1	KPM1000	CP-268-PS
Display	4" TFT LCD	7-Segment * 3	7-Segment * 4	7-Segment * 4	
Wiring/ Mode	1 phase/ AC, DC	1 phase/ AC	1 phase/ AC, DC	1 phase/ AC	1 phase/ AC, DC
Parameters	V/V <sub>RMS</sub> /V <sub>PP</sub> /V <sub>PK+</sub> /V <sub>PK-</sub> / I/I <sub>RMS</sub> /I <sub>PP</sub> /I <sub>PK+</sub> /I <sub>PK-</sub> / P/P <sub>PK+</sub> /P <sub>PK-</sub> /S/Q/Nφ/ V <sub>CF</sub> /I <sub>CF</sub> /fV/fI/TIME/ Wh/Wh±(+)/Wh±(-)/ Ah/Ah±(+)/Ah±(-)/ THD V%/THD A% (IEC, CSA)	V/A/W/PF/ Hz/Max/Min	V/A/W/VA/PF/ Vpk/Apk/Hz/ Ah/Wh/AVG	V/A/W/VA/var/PF/ Vpk/Apk/Hz/CF/ Ah/Wh/pWh/nWh/ DEG (p:positive,n:negative)	V/A/W/VA/VAr/PF/ Hz/CF
Sample Rate	96kHz	12 kHz	74.4kHz	100kHz	NA
Input Resistance	A : 5mΩ/500mΩ V : 2.4MΩ	A : 10mΩ V : ≥1MΩ	A : 7.5mΩ V : 2.4MΩ	A : ≤2mΩ (CT) V : 6MΩ	A : ≤2mΩ V : ≥2MΩ/10pF
Input Terminal	4-wire, isolated	3-wire, non-isolated	4-wire, isolated	4-wire, isolated	3-wire, non-isolated
Max input V,A	600Vrms, 20Arms	640Vrms, 20Arms	300Vrms, 30Arms	360Vrms, 24Arms	600Vrms, 20Arms
Volt Range	15.000~600.0V (6 ranges), CF≤3	5.000~640.0V (8 ranges), CF≤1.5	15.000~300.0V (4 ranges), CF≤3	150.00/300.00V (2 ranges), CF≤3	1.500~600.00V (9 ranges), CF≤1.7
Volt Accuracy (Best)	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1~1% of reading ±0.1~1% of range
Amp Range	5.0000mA ~ 20.000A (12 ranges), CF≤3	160.0mA ~ 20.48A (8 ranges), CF≤1.5	100.00mA ~ 30.00 A (6 ranges), CF≤3	5.0000mA ~ 20.000A (12 ranges), CF≤6	1.0000mA ~ 20.000A (14 ranges), CF≤4
Amp Accuracy	± 0.1% of reading ± 0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1~1% of reading ±0.1~1% of range
Power Range	75.000mW ~ 12.000kW (72 ranges)	800.0 mW ~ 13.10kW (64 ranges)	1.5000W ~ 9.000kW (24 ranges)	750.00mW ~ 6.000kW (24 ranges)	1.500mW ~ 12.000kW (126 ranges)
Power Accuracy	±0.1% of reading ±0.1% of range	±0.2% of reading ±0.2% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1~1% of reading ±0.1~1% of range
Freq Range	DC, 45Hz~6kHz	40.0Hz~400.0Hz	DC, 45Hz~5kHz	V/A: 45Hz~5kHz, W: 45Hz~3kHz	10.000Hz ~ 2kHz
Interface	RS232+ USB+ LAN (Option: GPIB)	(Option: RS485/232)	RS232+GPIB(3334-01)	RS232 (Option: GPIB, USB)	RS485 (Option: GPIB)
PT/CT scaling	YES	YES	YES	YES	YES

# Comparison ~ Other Competitors

Company	GW Instek	Yokogawa	致遠	Voltech	Tektronix
Model	GPM-8213	WT-310E/310EH	PA310	PM-1000+	PA1000
Wiring/ Mode	1 phase/ AC, DC	1 phase/ AC,DC	1 phase/ AC, DC	1 phase/ AC, DC	1 phase/ AC, DC
Parameters	V/V <sub>RMS</sub> /V <sub>PP</sub> /V <sub>PK+</sub> /V <sub>PK-</sub> / I/I <sub>RMS</sub> /I <sub>PP</sub> /I <sub>PK+</sub> /I <sub>PK-</sub> / P/P <sub>PK+</sub> /P <sub>PK-</sub> /S/Q/λ/φ/ V <sub>CF</sub> /I <sub>CF</sub> /fV/fl/TIME/ Wh/Wh±(+)/Wh±(-)/ Ah/Ah±(+)/Ah±(-)/ THD V%/THD A% (iEC,CSA)	V/A/W/VA/var/PF/V <sub>PK+</sub> / V <sub>PK-</sub> / /A <sub>PK+</sub> /A <sub>PK</sub> /W <sub>PK+</sub> /W <sub>PK-</sub> / VHz/AHz/MATH/TIME/ Wh/Wh±(+)/Wh±(-)/ Ah/Ah±(+)/Ah±(-)/DEG/ THD V%/THD A% (iEC,CSA)	V/A/W/VA/VAr/PF/ Vpk/Apk/Hz/CF/ Ah/Wh/ DEG	Vrms/Vrnm/Vdc/Arms/ ADC/W/VA/VAr/PF/ Vpk+/Vpk-/Apk+/Apk-/ Hz/CF/Ah/Wh/AVG/ DF/THD/Z/R/X	Vrms/Vrnm/Vdc/Arms/ ADC/W/VA/VAr/PF/ Vpk+/Vpk-/Apk+/Apk-/ Hz/CF/Ah/Wh/AVG/ DF/THD/Z/R/X
Sample Rate	96kHz	100kHz	500kHz	NA	NA
Input Resistance	A : 5mΩ/500mΩ V : 2.4MΩ	A : ≤6mΩ/500mΩ V : ≥2MΩ	A : ≤5m/505mΩ V : 2MΩ/13pF	A : 12.5mΩ/35pF V : 1MΩ/35pF	A : 12.5mΩ/0.6Ω V : 1MΩ/22pF
Input Terminal	4-wire, isolated	4-wire, isolated	4-wire, isolated	4-wire, isolated	4-wire, isolated
Max input V,A	600Vrms, 20Arms	600Vrms, 20Arms	1000Vrms, 20Arms	600Vrms, 20Arms	600Vrms,20Arms
Volt Range	15.000~600.0 V (6 ranges), CF≤3	15.000~600.00V (6 ranges) ,CF≤3	15.000~1000.0V (7 ranges), CF≤6	10.00~900.0 Vprak (4 ranges), CF≤20	10.000~1000.0 VPEAK (7 ranges), CF≤10
Volt Accuracy (Best)	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.05% of reading ±0.05% of range	±0.05% of reading ±0.05% of range
Amp Range	5.0000mA ~ 20.000A (12 ranges), CF≤3	5.0000mA ~ 20.000A (12 ranges), CF≤3	5.0000mA ~ 20.000A (12 ranges), CF≤6	0.1~100APEAK (6 ranges), CF≤20	0.002 ~ 2.00APEAK 0.1 ~ 100.00APEAK (20 ranges), CF≤10
Amp Accuracy	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range
Power Range	75.000mW ~ 12.000kW (72 ranges)	75.000mW ~ 12.000kW (72 ranges)	750.0mW ~ 6.000kW (84 ranges)	1.000W ~ 90.00kW (24 ranges)	1.5000W ~ 90.000kW (140 ranges)
Power Accuracy	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.1% of reading ±0.1% of range	±0.2% of reading ±0.1% of range	±0.05% of reading ±0.05% of range
Freq Range	DC,45Hz~6kHz	DC,0.5Hz~100kHz	DC, 0.5Hz~300kHz	DC,10.00Hz~1MHz	DC,10Hz~1MHz
Interface	RS232/ LAN/ USB (Option: GPIB)	RS232+ GPIB+ LAN	RS232/ GPIB/ LAN/ USB	RS232/ GPIB/ USB	GPIB/ LAN/ USB
PT/CT scaling	YES	YES	YES	YES	YES