VIEW 730

BELIEVE YOUR EYES

DIGITAL POWER METER , POWERFUL MEASURING INSTRUMENT

- Max Measuring Accuracy：± (0.1% of reading + 0.05% of range)
- Bandwidth：DC, from 0.5Hz to 100kHz
- Power Measurement Channels：up to 3
- Voltage, current wide-range：
  Direct input (from 15 to 1000V; from 0.5 to 20A)
- Up to 50 harmonic orders

INNO INSTRUMENT | You dream, we DESIGN

Ver V1.00

DESCRIPTION

VIEW730 Digital Power Meter is a powerful instrument for measuring home appli- ances, OA products (office automation), and equipment with large power and process control automation. It is widely used in the areas such as power industry, office or home appliances testing and evaluation, battery drive test and motor efficiency test. This instrument is also equipped with the functions such as recording real time waveform and the waveform data record and analyzing the harmonic. Small in size, compact in structure, convenient in operation, economical in price but accurate in measurement, it is an ideal instrument working on the bench.

PRODUCT OVERVIEW

1. Status display I
2. Measurement display
3. Displayed function settings
4. Range setting
5. Navigation keys
6. Function settings I
7. Wiring settings
8. Function settings II
9. Integration setup keys
10. Status display I
11. Power switch

1. Voltage input terminal
2. D / A connector
3. USB connector
4. GP-IB / RS-232 connector
5. Power switch and power cord connector
6. Ethernet connector
7. EXT current sensor input terminal
8. Current input terminal

FUNCTIONS AND ADVANTAGES

Simultaneously Measuring all Parameters

This digital power meter can measure all DC and AC parameters. It can also measure harmonics and perform integration simultaneously without changing the measurement mode.

Fast Display and Data Update Rate

The fast display and 100ms maximum data update rate of the digital power meter can offer users a shorter test time in their testing procedures.

Peak Hold Function

The maximum values of RMS/MEAN/DC/PEAK, voltage & current, active power, reactive power and apparent power can be held.

Configuration Parameters Saving and Loading

This instrument can save the configuration parameters which can be fast loaded when in similar measurement conditions next time, reducing the time spent by users for parameter access next time.

D/A Output for Measurement Recording

The D/A option can be used to output the Voltage, Current, Power and other measured data and record them in the data loggers or other devices (±5VDC outputs).

Comparator Function

The measured value is compared with the set value. According to the comparison result, output value is +5, 0 or -5v.

Current Sensor Input

The instrument with expanded range of current measurement is equipped with current clamps or current sensors of voltage output model.

Computation Function

Multiple computations are available on this instrument, including performing computations such as crest factor, four arithmetic operations and average active power.

Data Storage

The measured data can be stored , and internal free memory space is available up to 4GB. And the stored data can be accessed to and analyzed via computer or PC connected instead of being displayed and loaded in the screen of this digital digital power meter.

INNO PA Viewer Software

The INNO PA Viewer is an software installed in PC available to remotely control the digital power meter connected via a communication interface (network connector or USB connector), and display the results analyzed by the digital power meter in the form of numeric, waveform, trend, vector, and bar graph.

APPLICATIONS

This digital power meter is easy to use, economy and accurate in measurement, widely used in production, testing, evaluation and research & development.

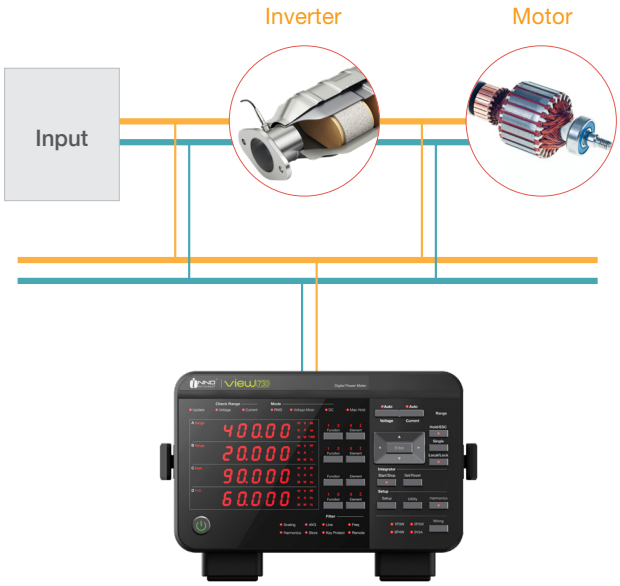
Home appliances and Office equipment

Recently, there are more concerns about energy efficiency, such as reducing the power consumption for the civil electrical appliances (such as air conditioner, washing machine, induction cooker, water heater). The digital power meter can be used to test the power produced by home appliances. One piece of the digital power meter of this series can effectively measure the voltage, current, power, frequency, power factor and THD (Harmonic distortion).

Industrial equipment and Transportation

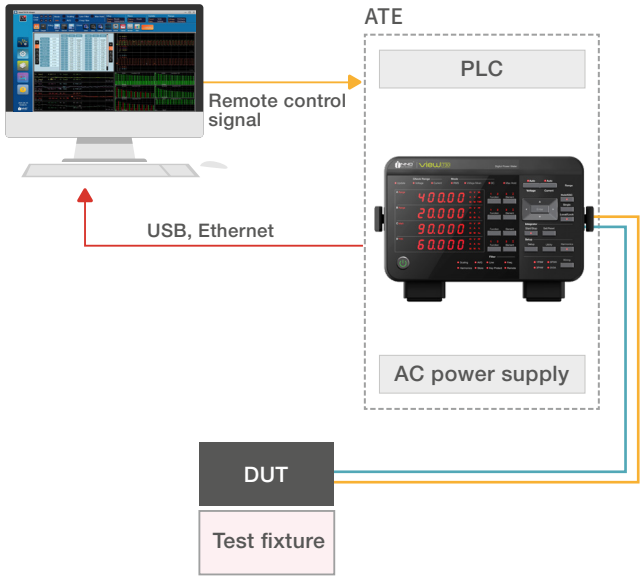
Automotive - Battery or Driven Device Evaluation

This digital power meter can directly measure the high current up to 20A. This provides an economical and accurate method for testing DC driven devices in vehicles without any extra sensors.



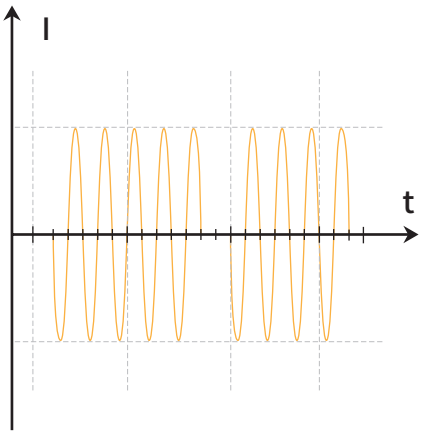
Testing in Production Line

This instrument is so compact in structure to be easily mounted on the shelf for testing during production. Testing platform can be economically set up at a favorable price. The parameters such as voltage, current, frequency, power factor, and harmonics can be measured by this digital power meter, so as to improve testing efficiency.

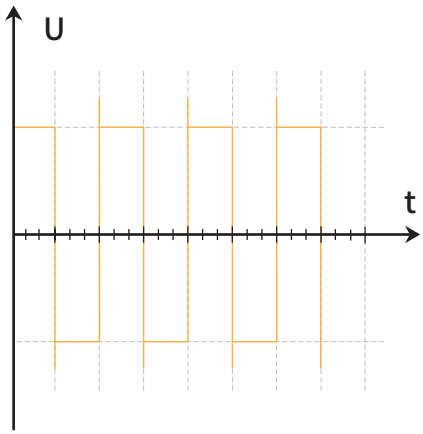


Evaluation Testing of Special Waveform Driven Devices and Distorted Waveforms (including DC Component)

The digital power meter of this series has a broad frequency capability of DC (from 0.5Hz to 100 kHz). It can measure the RMS value of distorted waveforms like square waveforms or special waveform driven devices. The average active power measurement function gives accurate power consumption data for fluctuating power devices such as burst waveform operated devices. Therefore the users can perform accurate distorted waveform measurements without any need to setting special modes.



Inter-harmonics



Square Wave

TECHNICAL SPECIFICATIONS

Input

Item	Specification
Input terminal type	**Voltage(U):** Plug-in terminal (Safety terminal) **Current(A):** binding post **External current sensor input:** Insulated BNC connector
Input format	**Voltage:** Floating input, resistive potential method **Current:** Floating input, Shunt input method
Measurement range	**Voltage** 15V,30V,60V,150V,300V,600V(CF3),1000V(CF2) 7.5V,15V,30V,75V,150V,300V(CF6),500V(CF4)
	Current · **Direct input** 0.5A,1A,2A,5A,10A,20A(CF3) 0.25A,0.5A,1A,2.5A,5A,10A(CF6) · **External current sensor input** **EX1:** 2.5V,5V,10V(CF3) 1.25V,2.5V,5V(CF6) **EX2:** 50mV,100mV,200mV,500mA,1V,2V(CF3) 25mV,50mV,100mV,250mA,500mV,1V(CF6)
Input resistance	**Voltage** Input resistance:Approximately 2MΩ;Input capacitance:Approximately 13pF(paralleled with resistance)
	Current · **Direct input** Input resistance:Approximately 7mΩ;Input capacitance:Approximately 0.1μH(resistance in series) · **External current sensor input** **EX1:** Input resistance:Approximately 100KΩ **EX2:** Input resistance:Approximately 20kΩ
Continuous maximum allowable input	**Voltage** Peak voltage of 2kV or RMS of 1.1kV, whichever is lower
	Current · **Direct input** Peak current of 50A or RMS of 30A, whichever is lower · **External current sensor input** Peak value less than or equal to 5 times the range
A/D converter	Simultaneous voltage and current input conversion **Resolution:** 16bit **Conversion speed (sampling period):** Approximately 10μs
Range selection	manual or auto
Auto range	**Range up(When one of the following conditions is met)** · Urms or Irms exceed 110% of the range · Upk or Ipk of the input signal exceed 330% of the range(660% for CF6) **Range down(When all the following conditions met)** · Urms or Irms is less or equal to 30% of the measurement range · Upk or Ipk of the input signal is less than 300% of the lower range(600% or les For CF6)

Measurement Accuracy

Conditions:Temperature: 23±5°C; Humidity: 30 to 75%RH; Input waveform: Sine wave; Crest factor: 3; Common-mode voltage: 0V; Scaling function: OFF; Number of displayed digits: 5 digits; Frequency filter: ON; After preheating for 30minutes,set to zero before testing; Frequency f with unit kHz; within half a year after calibrated.

Format: ± (% of reading + % of range)

Frequency range	Voltage	Current	Active Power
DC	0.1+0.05	0.1+0.05	0.1+0.05
0.5Hz≤f<45Hz	0.1+0.15	0.1+0.15	0.25+0.2
45Hz≤f≤66Hz	0.1+0.05	0.1+0.05	0.1+0.05
66Hz<f≤1kHz	0.1+0.15	0.1+0.15	0.15+0.15
1kHz<f≤10kHz	0.06*f+0.3	0.06*f+0.3	0.08*f+0.25
10kHz<f≤100kHz	0.04*f+0.5	0.04*f+0.5	0.07*f+0.5

Measurement Conditions

Item	Specification
Crest factor	3 or 6
Measurement period	Interval for determining the measurement function and performing calculations The measurement period is set by the zero crossing of the reference signal (When synchronization source is set to be None, measurement period becomes data update interval)
Synchronizaiton source	Voltage, Current, None
Measurement mode	Select RMS(the true RMS value of voltage and current), MEAN (The rectified mean value calibrated to the RMS value of the voltage and the true RMS value of the current), DC (simple average of voltage and current)
Wiring system	1P2W, 1P3W, 3P3W, 3V3A, 3P4W However, the number of available wiring systems varies depending on the number of installed input elements
Scaling	When inputting output from external current sensors, VT, or CT, set the current sensor conversion ratio, VT ratio, CT ratio, and power coefficient in the range from 0.001 to 9999
Line Filter	Select OFF or ON(cutoff frequency of 500Hz)
Frequency Filter	Select OFF or ON(cutoff frequency of 500Hz)
Averaging	Exponential average: Select an attenuation constant from the values of 8, 16, 32, and 64 Linear average: Select the number of averages from the values of 8, 16, 32, and 64 Harmonic measurement: Only exponential averaging is available
Data update interval	100ms, 250ms, 500ms, 1s, 2s, 5s, Auto
Peak measurement	Measure the peak (max/min) value of voltage, current or power from the instantaneous voltage, instantaneous current or instantaneous power that is sampled
Zero-level compensation	Remove the internal offset

Display

Item	Specification
Display Type	7-segment LED
Displayed Items	Simultaneously display 4 items
Unit Symbols	m, k, M, V, A, W, VA, var, °, Hz, h±, TIME, %
Response Time	At maximum, 2 times the data update rate The time it takes to reach the accuracy of the final value when the displayed value changed from 0 to 100% or 100 to 0% of the rated range
Hold	Hold the displayed value
Single update	Update the displayed value once each time the SINGLE key is pressed during Hold

Frequency Measurement Function

Item	Specification	
Measured source	The frequencies of voltages and currents for all input elements can be measured simultaneously	
Measurement method	Frequency: Reciprocal method	
Frequency measuring range	Data Update Interval	Measurement Range
	0.1s	25Hz≤f≤100kHz
	0.25s	10Hz≤f≤100kHz
	0.5s	5Hz≤f≤100kHz
	1s	2.5Hz≤f≤100kHz
	2s	1.5Hz≤f≤100kHz
	5s	0.5Hz≤f≤100kHz
Frequency accuracy	Requirements: When the input signal level is 30% or more of the measurement range if the crest factor is set to 3.(60% or more if the crest factor is set to 6) Frequency filter is ON when measuring voltage or current of 200Hz or less Accuracy: ±(0.06% of reading)	
Minimum frequency resolution	0.0001Hz	

Integration

Item	Specification
Mode	Select Normal mode or Continuous mode
Timer	Automatically stop integration by setting a timer Selectable range: 00:00:00 ~ 10000:0:0
Count over	If the integration time reaches the maximum integration time If the integration value reaches maximum/minimum display integration value
Accuracy	Fixed range: ±(Power accuracy (or current accuracy)+0.1% of reading) Auto range: The measurement will not be performed during range change After range changed: ±(power or current accuracy+ timer accuracy)
Timer accuracy	±0.02%

Item	Specification			
Measured Item	All installed elements			
Frequency Range	Fundamental frequency of the PLL source is in the range of 8 Hz to 1.5 kHz PLL source: voltage and current of each input element			
Sample rate, window width, and upper limit of harmonic analysis	FFT Data Length 1024, Data Update Interval 100ms, 250ms			
	Fundamental Frequency	Window Width	Upper Limit of Harmonic Analysis	
	20Hz-40Hz	1	50	
	40Hz-440Hz	2	50	
	440Hz-1kHz	10	50	
	1kHz-1.5kHz	16	40	
	FFT Data Length 10240, Data Update Interval 500ms,1s, 2s, 5s			
	Fundamental Frequency	Window Width	Upper Limit of Harmonic Analysis	
	8Hz-40Hz	1	50	
	40Hz-440Hz	2	50	
	440Hz-1kHz	10	50	
	1kHz-1.5kHz	16	40	
Accuracy:±(…% of reading+…% of range)	Add the following accuracy to the accuracy at normal measurement When the line filter is off:			
	Frequency	Voltage	Current	Active Power
	8Hz≤f<45Hz	0.15+0.25	0.15+0.25	0.15+0.5
	45Hz≤f≤440Hz	0.15+0.25	0.15+0.25	0.25+0.5
	440Hz<f≤1kHz	0.2+0.25	0.2+0.25	0.4+0.5
	1kHz<f≤1.5kHz	0.8+0.35	0.8+0.35	1.5+0.6

D/A Connector

Item	Specification
Output Voltage	±5V full scale(approximately ±7.5V maximum) against each rated values
Number of Output Channels	12 outputs
Output Items	Set for each channel U, I, P, S, Q, λ, Ø, Fu, fI, Upk, Ipk, WP, WP±, q, q±, MATH
Accuracy	±(accuracy of each measurement item+0.2% of full scale)(FS=5V)
Minimum load	100kΩ
Update Interval	Same as the data update interval
Temperature coefficient	± 0.05%/°C at full scale
D/A conversion resolution	16bit

Hardware Interface

Item	Specification
D/A Terminal	±5V ; approximately ±7.5V(maximum) ; TTL level

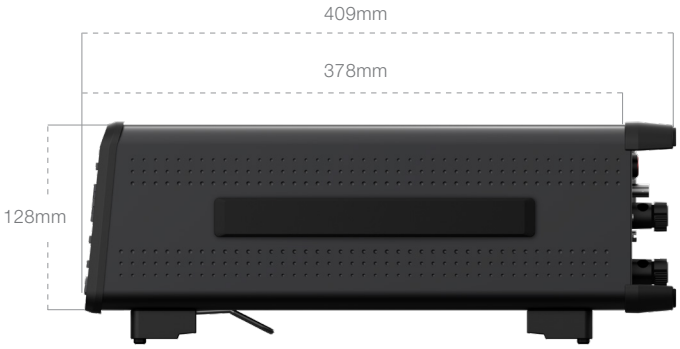
Communication Interface

Item	Specification
Type B USB Interface	Conforms to the USB Rev.2.0; USBTMC-USB488(USB Test and Measurement Class Ver.1.0)
Ethernet Interface	RJ-45 connector; Conforms to IEEE802.3; Ethernet 1000BASE-T, 100BASE-TX, 10BASE-T
RS-232 Interface	9-pin, D-Sub (plug); Conforms to EIA-574, standard of 9-pin EIA-232(RS-232)
GP-IB Interface	Confirms to IEEE Standard 488-1978 (JIS C 1901-1987); Confirms to the IEEE Standard 488.2-1992

General Specification

Items	Specifications
External dimensions	409mm* 232mm*154mm
Rated supply voltage	From 100 to 240 VAC
Permitted supply range voltage	From 90 to 264 VAC
Rated supply frequency	50/60Hz
Permitted supply voltage frequency range	From 48 to 63 Hz
Max. power consumption	50VA
Warm-up time	Approximately 30 minutes
Operation environment	Temperature: 5°C ~ 40°C Humidity: from 20% to 80%RH(no condensation)
Operating altitude	2000m or less
Applicable environment	Indoors
Storage environment	Temperature: -25°C ~ 60°C Humidity: from 20% to 80%RH(no condensation)
Weight	Approximately 6kg
Battery backup	Setup parameters are backed up with a lithium battery.

Measurement Conditions



ACCESSORIES

Current Sensor of VIEW Series

Item \ Model	VIEW110	VIEW120	VIEW130	VIEW140
DC	0-60A	0-200A	0-600A	0-1000A
AC	60Apeak	200Apeak	600Apeak	1000Apeak
Accuracy	±(0.01% of rdg + 10μA)	±(0.008% of rdg +10μA)	±(0.008% of rdg + 10μA)	±(0.008% of rdg + 10μA)
Measuring bandwidth	DC-800kHz	DC-500kHz	DC-300kHz	DC-300kHz
Ratio K_N	1: 600	1: 1000	1: 1500	1: 2000
Resistance Rm	0--25Ω	0--25Ω	0--12Ω	0 -- 3Ω
Aperture	Ø28mm	Ø28mm	Ø30.9mm	Ø30.9mm
Connector	D-Sub 9 pin	D-Sub 9 pin	D-Sub 9 pin	D-Sub 9 pin
Supply	±12V~±15V	±12V~±15V	±15V~±24V	±15V~±24V

Boxes

Name	Single-phase Junction Box	Three-phase Junction Box
Model	PG01A	PG02A
Sample		
Usage	It is used for single phase circuit connection to measure power parameters conveniently via digital power meter	It is used for three- phase circuit connection to measure power parameters conveniently via digital power meter

Connectors and Cables

Name	Model	Sample	Specification
Fork terminal adapter	PAC-1001		Used when attaching banana plug to binding post. Specification: 1000V, CAT II, 20A Color: red, black
BNC Conversion adapter	PAC-1002		Connector: Conversion between safety BNC and banana jack Specification: 600V, CAT III
Safety adapter	PAC-1003		Connector: Safety connector; Solder can be used for tightening the test cables. Specification: 600V, CAT II, 20A Color: red, black
Safety adapter	PAC-1004		Connector: safety connector, spring-hold type Specification: 600V, CAT II, 10A Color: red, black
Safety clamp	PAC-1005		Connector: hook shape connector Specification: 1000V, CAT III, 4A Color: red, black
Large alligator adapter	PAC-1006		Connector: safety connector Specification: 600V, CAT IV, 19A Color: red, black
Small alligator adapter	PAC-1007		Connector: safety connector Specification: 300V, CAT II, 15A Color: red, black
Measurement lead	PAL-1001		Connector: safety connector Specification: 1000V, CAT II, 32A , 600V, CAT III Color: red, black
Safety BNC cable	PAL-1002		Connector: BNC connector Specification: 1000V, CAT II, 600V, CATIII Color: black
External sensor Cable	PAL-1003		Connector: one BNC safety connector Specification: 300V, CAT II, 2A Color: black

Models and Codes

Name	Model	Descriptions
Instrument (with input module)	VIEW730 (with 20A1010)	Digital power meter with input module (20A, 1000V, 01%+0.05%)
Function Module (Option)	/DA12	D/A output
	/EX1	External current sensor 2.5V-10V (or /EX2)
	/EX2	External current sensor 50mV-2V (or /EX1)
	/HA	Harmonic measurement
Communication Interface(Option)	/IG	GP-IB, replace RS-232
Accessory mounted on the support (Option)	PAA1003	Used when the instrument mounted on the support
	PAA2003	Used when the instrument mounted on the support(two instruments)

The Information on this catalog is subject to change without prior notice.

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