



- High Accuracy
- Broad Bandwidth
- Low Zero-drift

Shenzhen Aerospace Precision Electronics Co., Ltd.

HIU Series High Precision AC/DC Meter User Manual V1.3



Founded in 2017, Shenzhen Aerospace Precision Electronics Co., Ltd. is a technology-leading enterprise dedicated to the development, production, sales and customization of high-precision current transducers and measuring instruments. We will strive to build a well-known brand of precision current transducers and precision instruments in the DC field, and become a leading international leader in precision electronics in the field of DC systems.

Based on multi-faceted technology integration and innovation, Shenzhen Aerospace Precision Electronics Co., Ltd. has developed the industry's first high-precision digital current transducer and an analog current transducer featuring high precision, low costs, low zero drift and low temperature drift. This series of products reduces industry costs, improves industry efficiency, enhances user experience, and creates value for customers. The company's products have won many achievements in the national innovation and entrepreneurial competition, and won wide attention and support from all walks of life.

As a company with strong sense of responsibility and mission, we adhere to multi-point zero-flux technology-led approach, with client-oriented service and customized products, and improve the operating quality by successfully capital financing. We are making our efforts to build an innovative sharing enterprise.



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2 Summary

2.1 Product summary

HIU series high-precision AC/DC meter is a new generation of high-precision AC/DC meter produced by our company. The product adopts a new software and hardware design, which can simultaneously measure single-phase AC and DC voltage, current, frequency, phase, active power, etc. It can be widely used in AC and DC measurement of institute of metrology, power, measurement, military, manufacturing, academic research and other fields.

2.2 Product characteristics

- It can measure single-phase AC and DC voltage, current, frequency, phase and active power.
- Ripple test can be performed to detect AC ripple below 1 kHz.
- Equipped with RS232, RS485 communication interface which can communicate directly with PC.
- Voltage, current and multi-range can be automatic switched, and it can measure the limit of 120%.
- Equipped with 4.3-inch or 5.6-inch LCD.
- Equipped with online upgrade of product program.

2.3 Product composition

Front



1	Display area (touch panel)	Display measurement data, set parameters, etc.
2	Cable piercing hole	Please refer to the chapter "Measurement Process" for details.
3	Busbar fixing hole	For fixed busbars
4	Handle	For instrument handling



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Back



1	Housing fixed position	The whole machine is fixed by six trap screws.
2	Busbar fixing hole	For fixed busbars
3	Cable piercing hole	Please refer to the chapter "Measurement Process" for details.
4	Vents	For body cooling

Left



1	Power input	Please refer to "Check before measurement"
2	Main power switch	For ON/OFF of the main power
3	Voltage measuring terminal (positive)	Connect the test cable HIGH terminal: connect the red cable
4	Voltage measuring terminal (negative)	Connect the test cable LOW terminal: connect the black cable

Right



1	Current direction indication of the measured cable	Route the cable through the test hole as indicated by the arrow for current testing
2	Manufacturing nameplate	Do not strip off for management purposes.



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3 Product selection guide and technical parameters

3.1 Product selection

HIU series product selection				
	HIU600B	HIU600C	HIU1000B	HIU1000C
AC voltage measurement	1V~707V			
AC current measurement	200mA~424A		500mA~707A	
DC voltage measurement	1V~1000V			
DC current measurement	200mA~600A		500mA~1000A	
AC accuracy	0.05%			
DC accuracy	0.02%	0.05%	0.02%	0.05%

3.2 Technical parameters

HIU series technical parameter					
		HIU600B	HIU600C	HIU1000B	HIU1000C
AC voltage measurement	Measuring limit	35V、71V、141V、354V、707V			
	Measuring range	(0~110%)RG			



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	Accuracy	±0.05%RD (20V≤U≤707V)			
	Resolution	0.01%RG			
AC current measurement	Measuring limit	200mA、8A、17A、42A、85A、170A、424A		500mA、14A、28A、71A、141A、354A、707A	
	Measuring range	(0~110%)RG			
	Accuracy	±0.05%RD(5A≤I≤424A) ±0.05%RD(200mA≤I≤5A)(Accessories needed)		±0.05%RD(10A≤I≤707A) ±0.05%RD(500mA≤I≤10A) (Accessories needed)	
	Resolution	0.01%RG			
DC voltage measurement	Measuring limit	10V、20V、50V、100V、200V、500V、1000V			
	Measuring range	(0~110%)RG			
	Accuracy	±0.02%RD(20V≤U≤1000V)	±0.05%RD(20V≤U≤1000V)	±0.02%RD(20V≤U≤1000V)	±0.05%RD(20V≤U≤1000V)
	Resolution	0.005%RG			
DC current measurement	Measuring limit	200mA、12A、24A、60A、120A、240A、600A		500mA、40A、100A、200A、400A、1000A	
	Measuring range	(0~110%)RG			
	Accuracy	±0.02%RD(10A≤I≤600A) ±0.02%RD(200mA≤I≤10A) (Accessories needed)	±0.05%RD(10A≤I≤600A) ±0.05%RD(200mA≤I≤10A) (Accessories needed)	±0.02%RD(20A≤I≤1000A) ±0.02%RD(500mA≤I≤20A) (Accessories needed)	±0.05%RD(20A≤I≤1000A) ±0.05%RD(500mA≤I≤20A) (Accessories needed)
	Resolution	0.005%RG			
Power measurement	AC power measuring accuracy	±0.02%RD(20V≤U≤707V, 5A≤I≤424A)	±0.05%RD(20V≤U≤707V, 5A≤I≤424A)	±0.02%RD(20V≤U≤707V, 10A≤I≤707A)	±0.05%RD(20V≤U≤707V, 10A≤I≤707A)



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	DC power measuring accuracy	$\pm 0.02\%RD(20V \leq U \leq 1000V, 10A \leq I \leq 600A)$	$\pm 0.05\%RD(20V \leq U \leq 1000V, 10A \leq I \leq 600A)$	$\pm 0.02\%RD(20V \leq U \leq 1000V, 20A \leq I \leq 1000A)$	$\pm 0.05\%RD(20V \leq U \leq 1000V, 20A \leq I \leq 1000A)$
Phase measurement	Measuring range	0.00°~359.99°			
	Accuracy	$\pm 0.02^\circ(20V \leq U \leq 707V, 5A \leq I \leq 424A)$		$\pm 0.02^\circ(20V \leq U \leq 707V, 10A \leq I \leq 707A)$	
	Resolution	0.001°			
Frequency measurement	Measuring range	40Hz~70Hz			
	Accuracy	$\pm 0.01Hz$			
	Resolution	0.001Hz			
Ripple measurement	Accuracy	$\pm 0.05\%RG$			
	Bandwidth	$\leq 1kHz$			
Other parameters	Working power voltage range	AC85V~265V, 50/60Hz			
	Power consumption	<30VA			
	Preheat time	≤ 30 minutes			
	Working temperature	10°C~35°C			

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	Relative humidity	≤85%, Non-corrosive gas
	Dimensions	Around 300mm×185mm×100mm(Length× Width× Depth)(No protrusions)
	Weight	1.5kg

Remarks:

1. Measuring range automatically switched
2. RD-Reading value, RG-Range value

