CLAMP ON CURRENT METER

HIOKI

CLAMP ON Hi TESTER

3100·3104 3107·3108 3109·3261 3262

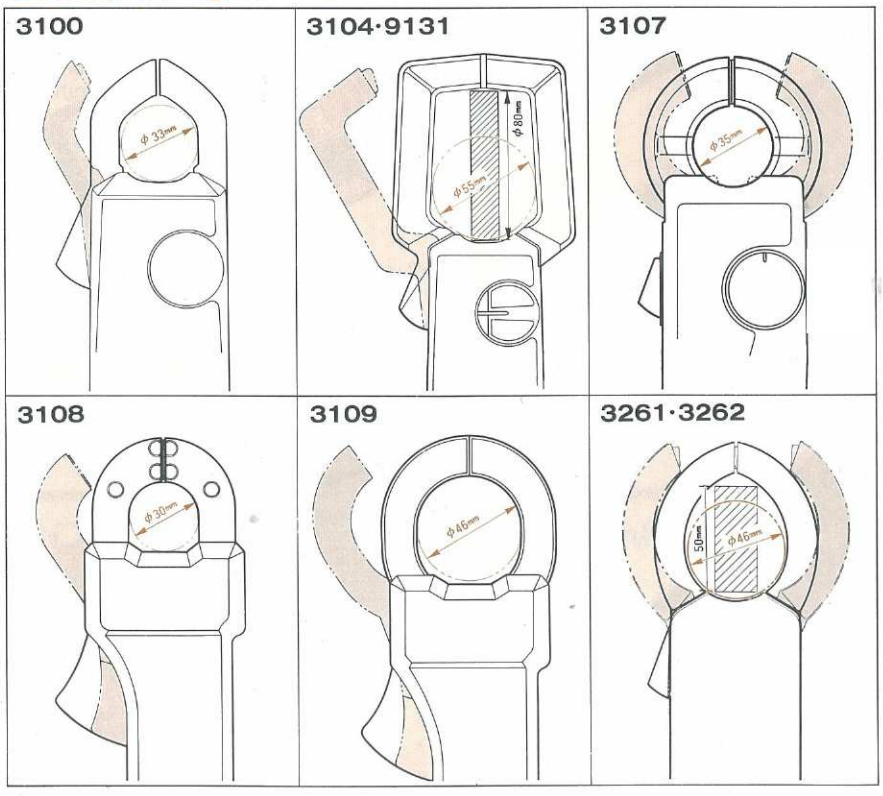
High-Accuracy Clamp On Ammeters for both AC and DC

Full Range of Types to Choice From

A wide range of Hioki Clamp On Hi Testers, with the ability to measure current accurately without cutting conductors is available for both DC and AC measurements.
These instruments were ergonometrically designed for both safety and simple operation and find wide use in applications ranging from electrical construction to fire safety and maintenance. All of this versatility comes in a variety of safe, easy-to-use testers selectable for individual application requirements.

Item \ Model	3100	3104	3107	3107-01	3108	3108-01	3109	3109-01	3261	3262
AC current range	6~300	15~1500	0.2~200		10~250		100~2000		20~1000	
DC current range					10~250		100~2000			
AC voltage range	150~750	150~750	200~600		10~500		10~ 500		200~1000	
DC voltage range	75	75			10~500		10~ 500			
Ω range	0~1k 0~100k	0~1k 0~100k							0~ 1kΩ 0~10kΩ	
Range switching	Manual	Manual	Manual		Manual		Manual		Semi-auto	
Display method	Analog	Analog	Digital (LCD)		Analog		Analog		Digital (LCD)	
Resolution	0.2A	0.5A	0.1mA		0.2A		2A		0.01A	
Batteries	SUM-3×1	SUM-3×1	006P×1		SUM-2×4		SUM-2×4		006P×1	
Continuous operating time			100h		36h		36h		80h	
Hold function	○	○	○						○	
Output function				○	○		○			
Drop-proof	1m	1m								
Ω range protection	Fuse with arc-suppressant	Fuse with arc-suppressant							Fuse with arc-suppressant	
± display function					○		○			
Leakage current measurement			○							
Frequency measurement									○	
Temperature measurement	○	○							○	
RMS display						○		○		○
Frequency response (Hz)	50/60	50/60	40~500		DC~500		DC~500		40~500	

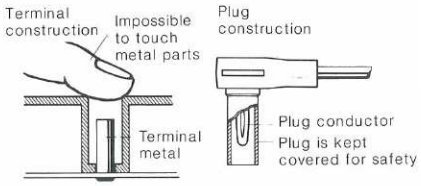
●Clamp Configurations



3100/3104 Clamp On Hi Tester

●Drop-Proof Construction
These meters can be dropped onto concrete from 1m high and, with the exception of damaged appearance, will operate.

●Safety Plugs
Insulated plugs mean that, even if the test leads are pulled out during a measurement, they will not make connect with metallic parts, causing shorts.



●Resistance Input Protected Against up to 250VAC Transients
A glass tubular fuse with arc-suppressant is used for protection. This reliably protects against large short-circuit currents, protecting internal circuitry and parts against such accidents.

●DC Voltmeter Function
This function is useful in battery voltage checks of emergency power supplies used for lighting and fire alarms.

●Temperature Scale
A separately sold temperature probe enables temperature measurements in the range of −50 to +200°C.

●Resistance and Voltage Measurement

●Meter Locking Mechanism

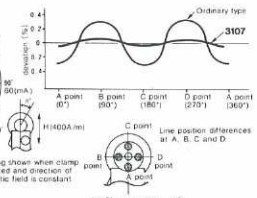
●Clamps onto Bus Bar and Thick Conductors (3104 only)
Accommodates conductors up to 55mm diameter and bus bar up to 80mm wide.

3107
Clamp On Leakage Hi Tester

●High-sensitivity range
The 200mA fullscale range with 0.1mA resolution enables accurate measurement of even minute leakage currents.

●Highly Immune to External Magnetic Fields and the Effects of Changing Conductor Position
A high permeability material is used for both the core and the magnetic shield, enabling accurate measurements even in proximity to transformers, motors and other external magnetic fields. Indication error caused by differences in conductor position has been minimized, so that residual current is minimum and accuracy is good even when used as a zero-phase current transformer.

Influence of external magnetic fields (comparison with previous products

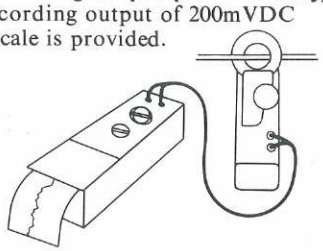


Influence of conductor position

●Accuracy
±1% rdg. ±0.3%f.s.

●Frequency Response
±0.5%, 50 to 500Hz

●Recording Output (3107-01 only)
A recording output of 200mVDC fullscale is provided.



3108/3109
DC Clamp-On Hi Tester

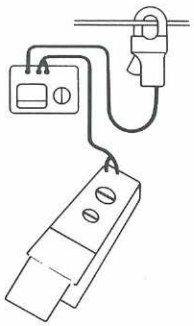
(Photo shows the 3108)

●AC/DC Measurements
A wide range of AC and DC current measurements is possible.

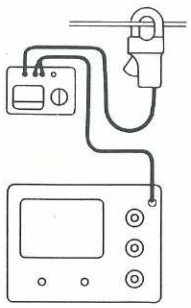
●Zero Centering
DC current can be measured with the zero in the center of the meter scale.

●Convenient Output Terminals
DC waveform observation terminals and AC recording terminals are provided to enable observation and current recording of transient waveforms.

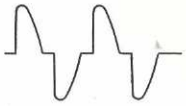
Recording example



Oscilloscope waveform observation example



●True RMS Display (3108-01, 3109-01 only)
Accurate true rms indications are achieved for even distorted AC current and voltage waveforms.



●High Accuracy for both AC and DC
A high-permeability material and Hall device are used in the clamp sensor to insure high accuracy.

3261/3262
Digital Clamp-On Hi Tester

3261

●Microcomputer Controlled
These are the first microcomputer controlled clamp-on ammeters. This innovation enables a wide range of measurement functions, including A, B, ΩHz and °C as well as normal, average and peak mode measurements for current and voltage.
Functional Description
NORMAL: Normal current and voltage measurement mode
AVERAGE: Used to minimize variations in display values occurring in NORMAL mode.
PEAK: Display of the maximum value for current and voltage.

●Protected against up to 250VAC

●Frequency Measurement
Frequency measurement is possible while measuring current.

●Temperature Measurement
The separately sold 9029 Temperature Probe can be used to enable temperature measurements in the range −50 to 150°C.

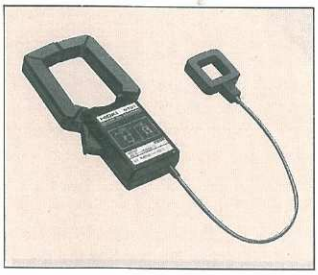
●Data Hold

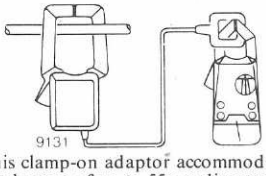
●10A Range

3262

●Optional

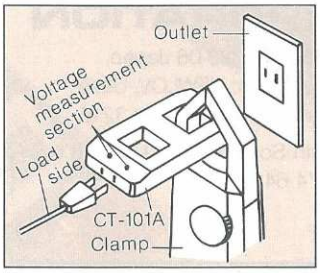
9131 Clamp-On Adaptor





This clamp-on adaptor accommodates conductors of up to 55mm diameter and bus bar up to 80mm wide. Measurements are as simply as clamping the core around the conductor or bus bar and clamping your present clamp-on ammeter around the window of the secondary coil. Ten times the indicated value is the current flowing in the circuit under measurement.

CT-101A Line Splitter



The CT-101A is used to measure the current used and the voltage of a device connected to a two-pin outlet.

Maximum current: 15A (×1 and ×10 magnification provided)

GENERAL SPECIFICATIONS

	3100	3104
AC current	6/15/60/150/300A ±3% of fullscale value	15/60/150/600/1500A ±3% of fullscale value
Measurement time	Continuous	Continuous up to 1000A, 2min at 1500A
AC voltage	150/300/750V ±3% of fullscale value	150/300/750V ±3% of fullscale value
Resistance	1kΩ/100kΩ(30Ω center value) ±3% of scale length	1kΩ/100kΩ(30Ω center value) ±3% of scale length
DC voltage	±3% of 75V fullscale value	±3% of 75V fullscale value
Temperature scale	−50~+200°C	−50~+200°C
Ω battery	SUM-3×1	SUM-3×1
Core opening	33mm dia.	55mm dia. 80mm width
Drop-proof	From 1m onto a concrete surface	
Maximum usable circuit voltage	AC 750V	AC 750V
Withstanding voltage	AC 2500V	AC 2500V
Fuse protection	Ω ranges protected up to 250VAC applied from the power line (0.5A fuse with arc-suppressant)	
Meter	Internal magnet taut band	
Dimensions	190L×63W×34D mm	237L×99W×34D mm
Weight	Approx. 340g	Approx. 570g
Accessories	0.5A fuse with arc-suppressant (built-in), carrying case ,9067 test leads	

	3107	3107-01	3108	3108-01	3109	3109-01	3261	3262
AC current	0.2·2·20·200A		10·25·50·100·250A		100·250·500·1000(2500)A Measurement up to 2000A		NORMAL·AVERAGE 10·100·1000A PEAK 10·1000A Hz: 10~300Hz	
AC voltage	200·600A		10·25·50·250·500V		10·25·50·250·500V		NORMAL·AVERAGE 100·1000V PEAK: 1000V Hz: 10~300Hz	
DC current	———		10·25·50·100·250A (±2.5% f.s.)		100·250·500·1000(2500)A Measurement up to 2000A (±2.5% f.s.)		———	
DC voltage	———		10·25·50·250·500V(±2.5% f.s.)		10·25·50·250·500V(±2.5% f.s.)		———	
Resistance	———		———		———		1·10kΩ	
Temperature	———		———		———		−50°C~150°C	
Output terminals		DC 200 mV f.s.	1V/f.s. (DC current: for waveform observation, AC current for recording)				———	
Accuracy: AC current	±1%rdg. ±0.3%f.s.		±2.5%f.s.(1500~2000A ±5%f.s.)				±1%rdg. ±5dgt.	
Accuracy: AC current Hz	———		———		———		±0.5%rdg. ±1dgt.	
Accuracy: AC voltage	±1%rdg. ±0.3%f.s.		±2.5%f.s.(1500~2000A ±5%f.s.)				±1%rdg. ±3dgt.	
Accuracy: AC voltage Hz	———						±0.5%rdg. ±1dgt.	
Accuracy: DC current	———		±2.5%f.s.(1500~2000A ±5%f.s.)		Resistance		±1%rdg. ±3dgt.	
Accuracy: DC voltage	———		±2.5%f.s.		Temperature		±2dgt.	
Display	3½.LCD(1999)		Analog		Analog		999LCD	
Range switching	Manual		Manual		Manual		Auto(except for 20A)	
Display hold	Slide switch		———		———		Pushbutton switch	
Display over	All segments except maximum digit extinguish		———		———		O.L.indicator	
Sampling rate	Approx.2.5 times/s		———		———		Approx. 2 times/s	
Battery warning	B appears when battery voltage drops below operating level		Battery check		Battery check		BATT mark appears	
Frequency response	±0.5%, 40 to 500Hz		±1% (AC current), 20 to 500Hz.				±2% at 40 to 500 Hz ±3% at 10A	
Temperature coefficient	±1.0% at 0 to 40°C		±1.5% at 0 to 40°C				±1.5% at 0 to 40°C	
Core opening characteristics	Approx. 35mm dia.		approx. 30mm dia.		Approx. 46mm dia.		Approx. 46mm dia. and 50mm wide 20mm bus bar	
Influence of external magnetic fields	Equiv. to 3mA at 400A/m		Equiv. to 0.1A at 400A/m		Equiv. to 0.2A at 400A/m		———	
Influence of conductor position	±0.5%		±1%				———	
Maximum circuit voltage	600VAC max.		500VAC max.				600VAC max.	
Withstanding voltage	2200VAC/1min		———				3000VAC/1min	
Operating temperature/humidity	−10°C to +50°C, 85% RH max.		−10°C to +50°C, 85% RH max.				0 to +40°C, 80% RH max.	
Power supply	006P 9V×1		Four type SUM-2 batteries or 9035 AC Adaptor				006P 9V×1	
Power consumption	Approx. 20mW (approx. 100hr)		Approx. 360mW (approx. 36hr)					
Detection method	Average value response		Average value response	True RMS response	Average value response	True RMS response	Average value response	True RMS response
Dimensions (main unit)	230H×64W×37Dmm		115H×200W×135D mm				230H×63W×40D mm	
Clamp			175H×85W×40D mm		180H×90W×40D mm			
Weight	Approx. 550g		Main unit: approx. 1.25kg Clamp: approx. 600g		Main unit: approx. 1.25kg Clamp: approx. 650g		Approx. 420g	
Accessories	9046 test leads Carrying Case		Clamp sensor 9083 Carrying Case 9060 Test Leads		Clamp Sensor 9083 Carrying Case 9060 Test Leads		9067 Test Leads 9148 Carrying Case	

3261, 3262-00: Supplied with 250VAC fuse with arc-suppressant
-01: Supplied with 9029 temperature probe
-50: Provided with 250VAC fuse with arc-suppressant and 1A/600VAC fuse
-51: −50 plus a 9029 temperature probe

Options

9131 Clamp-On Adaptor

Measurement range: AC 0 to 1500A (50/60Hz)
CT ratio: 10:1
Measurement time: Continuous at 1000A and below, up to 2min at 1500A
Accuracy: ±3% of rdg (at 100 to 1500A)
Frequency response: ±3% at 20 to 1000Hz
Influence of conductor position: ±1% (using the JEMIS-020 method)
Influence of external fields: Equiv. to 0.8A max. (in a 400A/m AC field)
Withstanding voltage: 2200V rms between core and winding & case and widening
Operating temperature: −10° to +50°C
Outer dimensions: 192H×99W×33D mm (main unit)
Weight: Approx. 450g
Accessories: Carrying case

CT-101A Line Splitter

9035 AC Adaptor
9021-01 Thermistor Temperature Probe(for 3100 and 3104)
9029 Temperature Probe (−50 to +150°C)

Standard Packing

	Sets	N.W.kg	G.W.kg	M³
3100	20	12	14	0.10
3104	25	22	25	0.13
3107	25	25	28	0.13
3108 · 3109	5	15	17	0.10
3261 · 3262	25	18	21	0.13

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