

HIOKI

IN-CIRCUIT TESTER FA1220-22

NEW

NEW

NEW ARRIVAL

MAKE IN INDIA

High-speed & High-performance
Measurement engine Technology
From Japan

For Indian Market Hioki's IN-CIRCUIT TESTER
Manufacturing in India

Key Features

- Extensive component testing capability
- Component testing with less test pins
- 512 scanner pins standard; expandable to 1,024 pins
- Ultra-low resistance measurement capability

JAPANESE TECHNOLOGY

Pricing, delivery and service,
suitable for the Indian market

3^{year}
Warranty

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For More Details Contact
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Features

Standard model

Extensive component testing capability

The FA1220-22 ships standard with extensive testing capability, including a polarity check to detect electrolytic capacitors that have been mounted backwards and milliohm-range resistance testing using 4-terminal measurement.

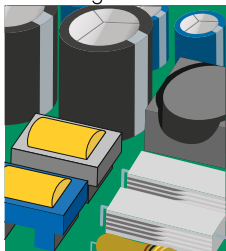


cro	*	0	1	131.0	Ω	13
cro	*	0	2	1.715	MΩ	1.
cro	*	0	3	994.9	Ω	99
cro	*	0	4	278.0	Ω	27
cro	*	0	5	646.8	Ω	64
cro	*	0	8	131.0	Ω	13
cro	*	0	9	1.075	kΩ	1.
rmDiode	*	0	10	437.5	Ω	43
cro	*	0	11	112.0	Ω	11
cro	*	0	4	278.0	Ω	27
cro	*	0	5	646.8	Ω	64
cro	*	0	8	131.0	Ω	13
cro	*	0	9	1.075	kΩ	1.
rmDiode	*	0	10	437.5	Ω	43
cro	*	0	11	112.0	Ω	11

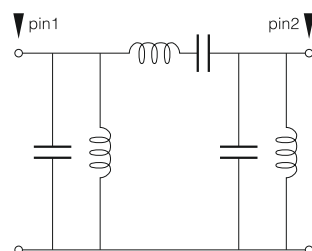
Standard model

Component testing less measurement pins

When it's difficult to set probe contact with a component's pads, the FA1220-22 can generate judgments based on the composite impedance of multiple components. Macro testing allows the system to acquire measured values from a known-good reference board for use as reference values.



Use with boards that lack sufficient space for probing.

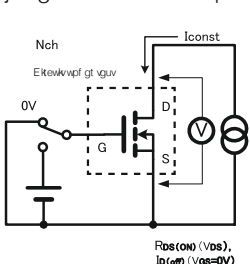


Judgments are based on impedance measurements that group together multiple components.

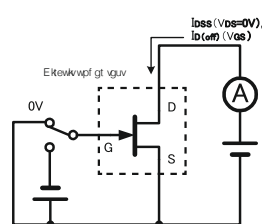
Standard model

Active-state testing of semiconductors

The FA1220-22 can measure drain-source voltage and current while applying on/off voltages to MOS-FET and J-FET gates. In this way, it can generate pass/fail judgments for FET operation under active conditions.



Pass/fail judgment based on off-current and on-resistance



Pass/fail judgment based on off-current and measured current (IDSS)

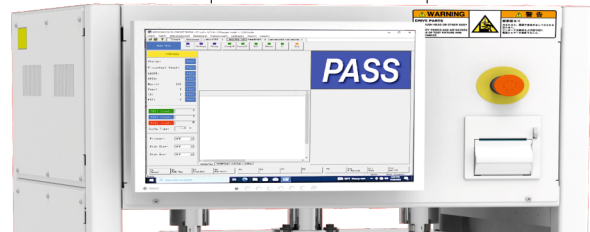
Standard model

Output of analytical data

Standard functionality allows measurement data to be output to a datafile. Additionally, an optional printer unit can be used to print test results on the production floor.

[Test Results]						
File HIOKI						
Component						
DATE	TIME	PinNo 1-1	PinNo 2-2	...	PinNo 19-19	PinNo 20-20
2010.12.1	10:00:00	6.29E+08	2.46E+08	...	3.93E+08	1.00E+12
2010.12.1	10:01:00	6.29E+08	2.46E+08	...	3.93E+08	1.00E+12
2010.12.1	10:02:00	6.29E+08	2.46E+08	...	3.93E+08	1.00E+12
2010.12.1	10:03:00	6.29E+08	2.46E+08	...	3.93E+08	1.00E+12
explanation						
Display			Description			
[Test Results]			Header			
File			Header			

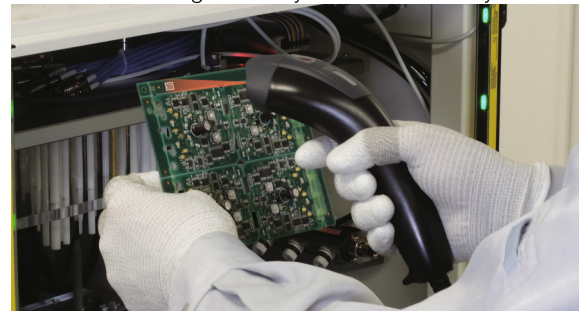
Example electronic data file output



Standard model

Automatic loading of board-specific test programs

The FA1220-22 can load test program automatically by scanning 2D codes on boards*. The proper program can be automatically loaded from a multi-model program library containing various production variants and used to configure the system automatically.

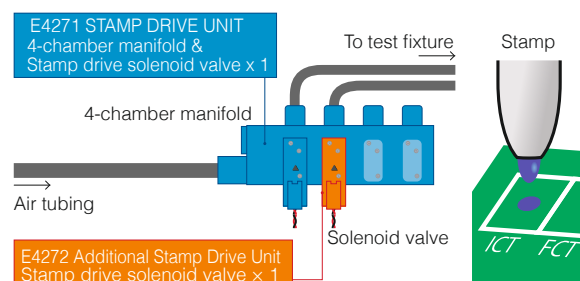


*Requires separate 2D code reader.

STAMP DRIVE UNIT E4271, ADDITIONAL STAMP DRIVE UNIT E4272

Judgment result stamps

The system can operate up to 16 stamps, which are installed on the test fixtures. Up to four E4271 units can be added to the FA1220-22. Each E4271 unit can accommodate up to three E4272 units.



Specifications

Testable board size

External dimensions	Details vary with test fixture specifications. Standard model: Max. 390 (W) x 300 (D) mm With E4273: Max. 416 (W) x 340 (D) mm
Thickness	0.8 to 2.0 mm
Others	Weight, Shape, and Mountable area vary with test fixture specifications.

Test program structure

Number of test points	Standard 512 pins (scanner boards optional) Max. 1024 pins (expandable in blocks of 128 pins)*
Group data	256 groups
Round-robin S/O data*	1024 pins*
Macro data	1024 pins/ 1024 steps (regardless of pin count)*
Component data	10000 steps
Charge data	40 groups
Pin contact data	1024 pins*
IC data	500 steps (max. 1024 pins/ step)*

* The maximum number of active pins for each test type depends on the total number of scanner board pins installed in the product.

Test types and ranges

Round-robin S/O test*	4 Ω to 400 kΩ
Macro test	1 Ω to approx. 10MΩ (impedance)
Component test	Resistance : 400 μΩ to 40 MΩ
	Capacitance : 10 pF to 400 mF
	Inductance : 1 μH to 1 H
	Impedance : 1 Ω to 10 MΩ
	Diode VF : 0 V to 25 V
	Zener diode : 0 V to 25 V
	Digital transistor : 0 V to 25 V
	MOSFET on-resistance : 0 Ω to 1 kΩ
	JFET drain current : -20 mA to 20 mA
	Photocoupler : 0 V to 25 V
	DC voltage : 0 V to 25 V
	Open : 4 Ω to 4 MΩ
	Short : 0.4 Ω to 400 kΩ
	Discharge function
	Electrolytic capacitor polarity check
IC test	IC reverse insertion test: 0 A to 500 μA/ 0 V to 4 V
	IC pin-to-pin S/O test*: 4 Ω to 400 Ω

Measurement unit

Test signals	DC constant voltage : -200 mV to 10 V, 4 ranges
	DC constant current : 200 nA to 20 mA, 11 ranges
	AC constant voltage
	During component testing : 0.1 Vrms, 1 range
	During impedance testing : 0.2 Vrms to 2.0 Vrms, 0.1 V steps
AC frequency	During component testing : 160 Hz to 160 kHz, 4 modes
	During impedance testing : 1.6 kHz to 160 kHz, 2 modes
Measurement unit	DC voltmeter : 800 μV f.s. to 25 V f.s., 8 ranges
	DC ammeter : 100 nA f.s. to 25 mA f.s., 8 ranges
	AC ammeter : 10 μArms to 10 mArms, 4 ranges
Scanner unit	E4201
	Switch type : Analog
	Number of channels : 128 per board
Judgment range	Input protection : ±15 V
Judging range	-99.9% to +999.9%, or absolute value
Guarding	5 points per step
Measurement time	Round-robin S/O test : From approx. 0.8 msec per pin
	Macro test : From approx. 2.0 msec per pin
	Component test : From approx. 0.9 msec to 280 msec per step
	Charge test : From approx. 3.0 msec per group
	Pin contact test : From approx. 1.0 msec per pin
	IC test : From approx. 1.0 msec per pin

Stamp

Number of drivable stamps		Up to 16									
Combinations of drivable stamp counts and required options	Number of drivable stamps		1	2	3	4	5	6	7	8	
	Required number of options	E4271	1				2				
		E4272	0	1	2	3	3	4	5	6	
	Number of drivable stamps		9	10	11	12	13	14	15	16	
	Required number of options	E4271	3				4				
		E4272	6	7	8	9	9	10	11	12	

Measurement control

Control device	Single-board computer
Operating system	Real-time operating system
Storage device	SD card (for booting system)
External I/O	Ethernet (LAN) 100Base-TX x 1 (for computer connection only) I/O board standard section input/output 28 points each Expansion section input/output 32 points each

Main unit control

Hardware	Personal Computer
Operating system	Windows 10 Pro 64-bit, English
Storage device	256 GB SSD
Operation	Keyboard and mouse
Display	17-inch display
Printer	Panel Mount type, Paper width 58mm
External I/O	Ethernet (LAN) 100Base-TX x 1 (Contact Hioki for more information about external connectivity.)
	USB 2.0 X4, USB 3.2 Gen 1 Type - A x4
	(Keyboard and mouse occupy 2 ports)

Architecture

Theoretical thrust when applying test fixtures	3.96 kN (at 0.5 Mpa)
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Safety

Machine safety features	Emergency stop switch
Electrical safety parts	Circuit breaker 5A,

Functional specifications

Data creation functionality	ATG function (automatically acquires values from a known-good reference board and configures guarding points)
	Acquisition of reference values, stray admittance values, and residual impedance values from known-good reference board
	Group specification
Retest functionality	Retry, retry with polarity change, retest
Control during automatic testing	FAIL stop, test jump, test hold
Test result output	Output of results to a printer or as text data for the specified unit (by test, group, step, etc.) and content (off, all results, or FAIL results) once automatic testing completes
Data output	Output of test program, statistical data, and settings data to a printer or as text data.
Self-test functions	AD function, DC function, AC function, scanner boards, test fixtures, at power-on, at automatic test
Statistics functions	Defect rate tabulation and graph display for by pin, test, group, or overall
	Hours of operation: Cumulative, subtotals Histogram data display for component testing

Other functionality

FAIL map display	Display of the names of components that received a FAIL judgment during automatic testing as a map by part position
Mask pin configuration	Setting to disable testing of specified pins
Surplus test	Used when the component at a specified step is not present (resulting in the opposite judgment of other tests)
Stop at consecutive FAIL results	Function for stopping testing when the set number of FAIL results are encountered consecutively during automatic testing
Password protection	Function for limiting the operations that can be performed by setting a password
Save/ load Hioki test program as a text file	Function for saving test program to, or loading it from, a text file
Test program selection (A/B data)	Function for loading two sets of test program and selecting which to use
Barcode support	Function for scanning barcode IDs
Automatic setup (Barcode-related function)	Function for automatically selecting test program based on scanned barcodes
Application interface	Function that enables communication between a computer and the FA1220
External I/O control	Function for controlling the FA1220 using external I/O
Overall PASS/FAIL stamp application	Function for controlling stamps based on PASS/FAIL judgments during automatic testing
Inhibit press up on Fail	Function to prohibit automatic press-up when test is FAIL judgement
Pin search with audio guidance	Function for outputting pin search results as audio
Point viewer	Function for displaying test fixture pin coordinates graphically

General specifications

Location of use	Indoors, Pollution Level 2, maximum elevation of 2000 m
Operating temperature and humidity range	Temperature 23°C ±10°C, 75% RH or less (non-condensing)
Storage temperature and humidity range	Temperature 10°C to 43°C, 75% RH or less (non-condensing)
Environment	Do not use in a setting where the product would be exposed to dust, vibration, corrosive gases, or other adverse environmental characteristics.
Vibration	Avoid use in locations with excessive vibration.
Product warranty	3 years
Power supply	Rated supply voltage: 220 to 240 V AC, 50Hz Maximum power consumption: 1 kVA
Compressed air	Pressure Primary side (supply): 0.5 MPa to 1.0 MPa (dry air) Secondary side (inside system): 0.5 MPa ±0.1 MPa
	Air consumption 130 L/min. (ANR, Calculated when testing 6 boards per minute.)
Dimensions	652 ±20 (W) x 789 ±15 (D) x 1671 ±20 (H) mm (excluding protruding parts)
Weight	235 ±20 kg
Paint color	PANTONE CoolGray 1C
Accessories	User Manual (with warranty certificate) x 1, test lead x 1, application CD x 1, positioning screws x 4,

Options

1. Basic options

			Factory option
SCANNER BOARD	E4201	Semiconductor switches, 128 channels per board Cannot be combined with other scanner board models.	Yes
64 SCANNER CABLE	1152-04	Scanner cable (64 pins), Length: 800 mm, ribbon cable	Yes

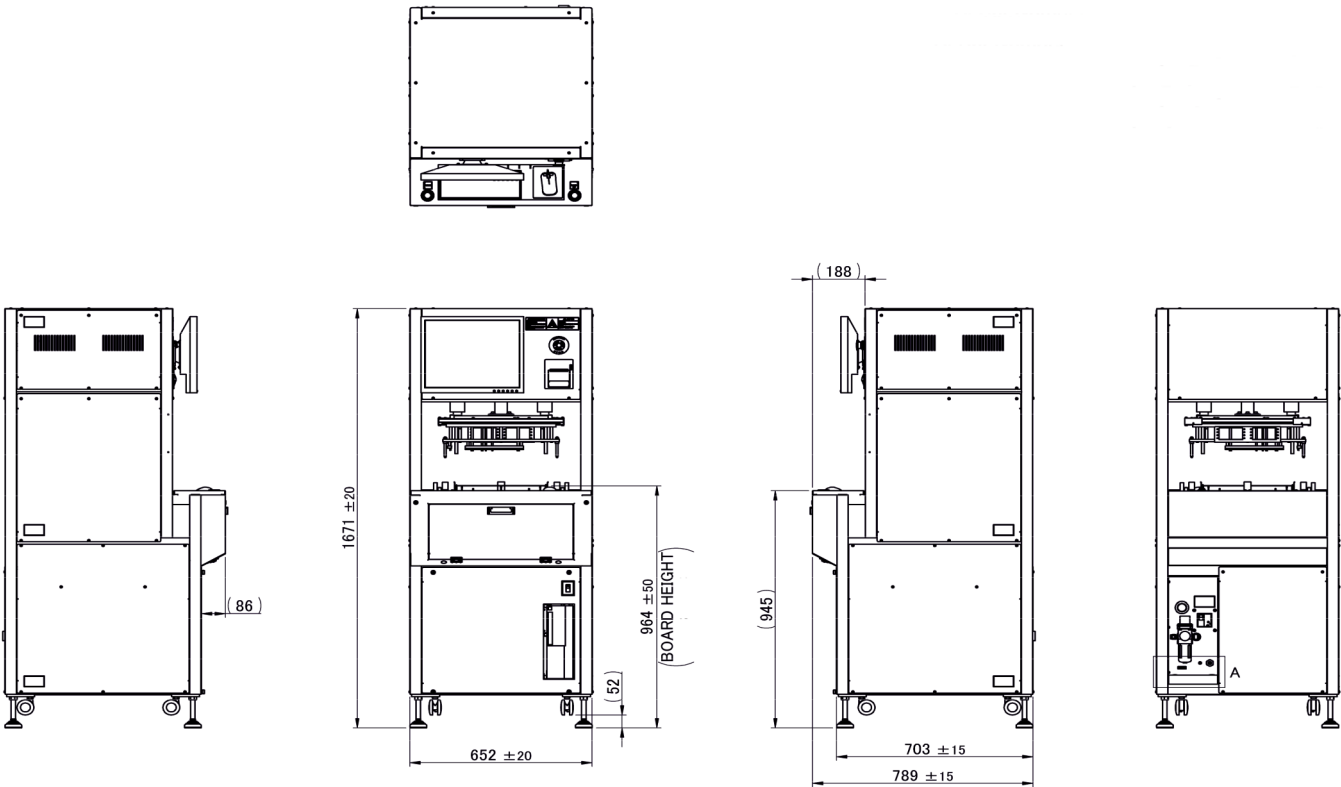
2. Productivity

STAMP DRIVE UNIT	E4271	4-chamber manifold + stamp drive solenoid valve x 1; FA1220-22 can accommodate up to 4 units.	Yes
ADDITIONAL STAMP DRIVE UNIT	E4272	Stamp drive solenoid valve x 1; each E4271 can accommodate up to 3 units.	Yes

3. Quality

LARGE TEST FIXTURE ATTACHMENT	E4273	Max. 416 (W) x 340 (D) mm	Yes
RECORDING PAPER	1197	Set of 10 rolls (length: 30 m)	No

Dimensions



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