NXI-3201 Series Programmable DC Electronic Load Module

Product Introduction

NXI-3201 series is a high-precision, highly integrated, full-featured modular programmable DC electronic load module developed by NGI. It adopts NXI architecture, designed for integration applications, supports CC/CV/CP/CR/LED and other operating modes, with OCP/OVP/OPP/OTP and other multiple protection functions. NXI-3201 series can be widely used in many fields, such as low power switching power supply, DC/DC converter, LED power supply, automotive electronics, research and education, etc.

Application Fields

Low power supply test,
such as AC/DC power, DC/DC converter,
LED power, communication power, etc.

Test of automotive wiring harness,
connector, fuse, relay, etc.

Discharge test of lithium battery,
storage battery, etc.

Main Features

- Power range: 20W/25W/50W
- Voltage range: 0~20V/0~60V/0~100V
- Current range: 0~1A/0~5A/0~10A
- Dual measurement range for voltage, current, resistance and power
- Convenient for multi-channel power test with synchronous load
- Multiple test mode: CC/CV/CR/CP/CCD/CVD/CPD/CRD/LED
- Editable rise and fall slew rate for voltage and current; Adjustable circuit loop response speed
- OCP/OPP/short circuit simulation
- Sequence(SEQ) test, auto test, Von/Voff test mode
- With single/double slots, applicable to NXI-F1000 chassis
- 12VDC power supply, LAN communication for individual control
- Supporting SCPI/Modbus-RTU protocol and external trigger

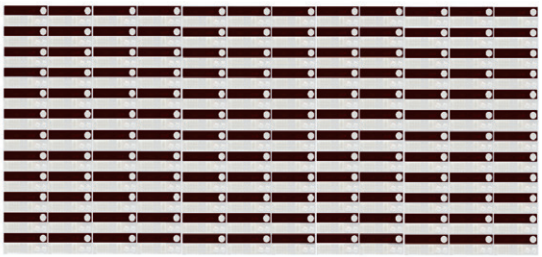
Ultra-high integration, 4U chassis with up to 16 channels

NXI-3201 can be integrated with NXI-F1080 and other chassis, supporting up to 16 channels in a single device. Each channel is electrically isolated. It can be controlled separately or simultaneously. The ultra-high integration in multi-channel batch test system applications reduces test cost and instrument occupation for users.

Ultra-high integration; lindustry first

▲ NXI-F1080

VS

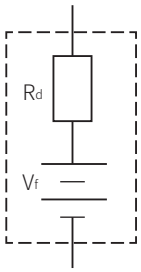


▲ Traditional Electronic Load

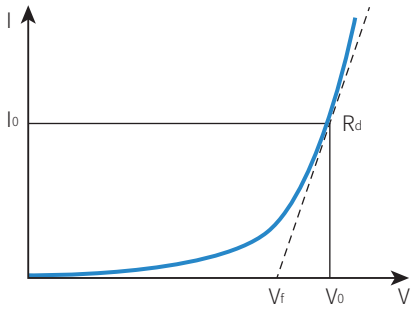
LED light simulation to test LED driving power

The electronic load has LED light simulation function. As shown in the figure, the LED equivalent circuit is to connect the resistance R_d with the voltage source V_f in series. Its I-V curve is equivalent to tangent of the real LED nonlinear I-V curve at the operating point (V_o, I_o). With built-in LED mode, NXI-3201 boosts efficient testing of LED power supplies compared to conventional electronic loads.

LED Equivalent Circuit

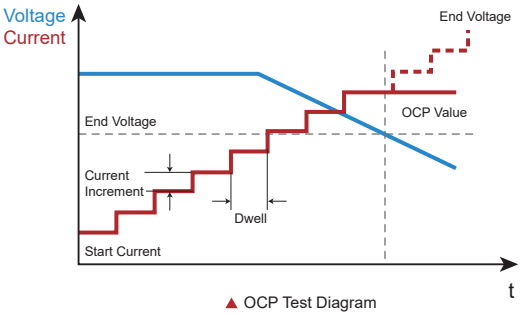


LED I-V Curve



OCP (over current protection) test

During OCP test, NXI-3201 will load under CC mode and check whether the DUT voltage is lower than end voltage. If lower, NXI-3201 will record the present loading current as the test result and shut the input to stop the test. If the DUT voltage is higher than end voltage,NXI-3201 will increase the loading current until the DUT voltage is lower than end voltage or it reaches the Max. loading current.



▲ OCP Test Diagram

Technical Data Sheet

Model	NXI-3201-20/10		NXI-3201-20/5		NXI-3201-20/1		NXI-3201-60/1		NXI-3201-60/5		NXI-3201-100/1	
Max. Current	10A		5A		1A		1A		5A		1A	
Max. Voltage	20V		20V		20V		60V		60V		100V	
Max. Power	50W		50W		20W		50W		50W		25W	
Min. Operating Voltage	0.5V@0.5A	1.5V@10A	0.5V@0.25A	0.7V@5A	0.5V@0.05A	0.5V@1A	0.5V@0.05A	0.5V@1A	0.5V@0.25A	0.8V@5A	0.5V@0.05A	0.5V@1A
Slots	Double slots(8HP)				Single slot(4HP)		Double slots(8HP)				Single slot(4HP)	
CC Mode												
Range	0~500mA	0~10A	0~250mA	0~5A	0~50mA	0~1A	0~50mA	0~1A	0~250mA	0~5A	0~50mA	0~1A
Setting Resolution	0.01mA	1mA	0.01mA	0.1mA	0.001mA	0.1mA	0.001mA	0.1mA	0.01mA	0.1mA	0.001mA	0.1mA
Setting Accuracy (23±5°C)	0.05% + 0.05%F.S.											
Readback Resolution	0.001mA	0.1mA	0.001mA	0.01mA	0.0001mA	0.01mA	0.0001mA	0.01mA	0.001mA	0.01mA	0.0001mA	0.01mA
Readback Accuracy (23±5°C)	0.05% + 0.05%F.S.											
CV Mode												
Range	0~1V	0~20V	0~1V	0~20V	0~1V	0~20V	0~3V	0~60V	0~3V	0~60V	0~5V	0~100V
Setting Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	10mV
Setting Accuracy (23±5°C)	0.025% + 0.025%F.S.											
Readback Resolution	0.01mV	0.1mV	0.01mV	0.1mV	0.01mV	0.1mV	0.01mV	0.1mV	0.01mV	0.1mV	0.01mV	1mV
Readback Accuracy (23±5°C)	0.025% + 0.025%F.S.											
CR Mode												
Range	0.2Ω~500Ω	4Ω~10kΩ	0.3Ω~1kΩ	6Ω~20kΩ	0.4Ω~2kΩ	8Ω~40kΩ	0.4Ω~5kΩ	8Ω~100kΩ	0.3Ω~1kΩ	6Ω~20kΩ	0.4Ω~5kΩ	8Ω~100kΩ
Setting Resolution	0.01Ω	1Ω	0.1Ω	1Ω	0.1Ω	1Ω	0.1Ω	1Ω	0.1Ω	1Ω	0.1Ω	1Ω
Setting Accuracy (23±5°C)	(Vin/Rset)*0.1%+0.1%F.S.											
CP Mode												
Range	0~2.5W	0~50W	0~2.5W	0~50W	0~1W	0~20W	0~2.5W	0~50W	0~2.5W	0~50W	0~1.25W	0~25W
Setting Resolution	0.0001W	0.001W	0.0001W	0.001W	0.0001W	0.001W	0.0001W	0.001W	0.0001W	0.001W	0.0001W	0.001W
Setting Accuracy (23±5°C)	0.1%+0.1%F.S.											
Slew Rate												
Current Range	0.01~50A/ms	0.01~1000A/ms	0.01~25A/ms	0.01~500A/ms	0.01~5A/ms	0.01~100A/ms	0.01~50A/ms	0.01~1000A/ms	0.01~25A/ms	0.01~500A/ms	0.01~5A/ms	0.01~100A/ms
CCD Mode												
T1&T2	0.016ms~60000ms/0.016s~60000s											
Resolution	1μs/1ms											
Others												
Test Terminal	Pluggable terminal, 4pin											
Operating Power	12VDC±10%, <0.5A											
Communication Interface	LAN											
Temperature	Operating temperature: 0°C~40°C; Storage temperature: -20°C~60°C											
Operating Environment	Altitude: <2000m; Relative humidity: 5%~90%RH(non-condensing); Atmospheric pressure: 80~110kPa											
Dimension	130.5mm(H)*20mm(W)*230.5mm(D)(Single Slot w/puller)						130.5mm(H)*40mm(W)*230.5mm(D)(Double Slot w/puller)					

Note 1: For more and latest information, please contact NGI.
Note 2: All specifications are subject to change without notice.