

DS1142A

30A glitch amplifier



Enabling the Latest Innovations

New benchmark in power fault injection

The 30 A Glitch Amplifier is a high-performance device designed to deliver stable power and precise voltage glitching to targets with high current demands, such as embedded processors. It supports continuous current delivery up to 30 A, ensuring reliable operation of the device under test even during glitching. This amplifier features three selectable amplification modes — 1x, 2x, and 4x. It supports three glitching modes: Normal (N) for standard glitching, Voltage Follower (V) for closely tracking input signals, and Crowbar (C) for aggressive fault injection.

Related Products

Model	Description
DS1142A	30A glitch amplifier
DS1324A	30A glitch needle
E36154A	Power supply
DS2101A	Inspector fault injection software
DS1040A	Amplifier unit

Technical Specifications and Characteristics

DS1142A characteristics

General characteristics	Description
Description	30A glitch amplifier
Front panel connectors	
Input connectors	BNC
Mechanical (nom)	
Size	185 mm x 110 mm x 321 mm
Weight	4.0 kg
Technical specifications	
Power supply	24V
Input voltage	0.9A
Current no load	MAX 15A
Current full load	400W
MAX power consumption	15A blade fuse
Fuse	Reverse voltage protection. Over and under voltage.
Protection	4 mm Banana plug Red (+) and Black (-)
Connector	24V
Signal input	
Voltage	-3.0V – +6.0V
Coupling	DC
Max Input power	0.75W
Impedance	50 Ω $\pm$ 1.5%
Reference input	
Voltage	0.0V – +6.0V
Coupling	DC
Max input power	0.75W
Impedance	10 k Ω $\pm$ 5%
Bandwidth	< 1 KHz
Voltage accuracy	< +0.2V
Output	
Output voltage high	$\geq$ +12.0V
Output voltage low	$\leq$ -4.0V
Continuous current	30A
Peak current	45A (max 1s)
Max power	250W continuous
Peak power	350W (1s)
Impedance	0.015 Ω

Technical specifications

Output	
Propagation delay	Max 25 ns
Rise time	< 2.5 ns (10A)
Fall time	< 2.5 ns (10A)
Capacitive load	Max 10 μ F
Connector: WP-PLUG REDCUBE	Full power capabilities
Connector: Spade type	Up to 15A
Connector: N type	Up to 20A (30A high power versions)
Voltage monitor	
Output voltage	-4.0V – +12.0V (no load) -2.5V – 6.0V (50 Ω load)
Output impedance	50 Ω
Max power out	1.5 W
Connector	SMB
Current monitor	
Signal	Power over signal
Power	2 x 6.0V - 8.0V
Measurement type	Rogowski Coil. Airgap toroid (67 core material)
Frequency coil	500 MHz
Preamp	20x amplification
Frequency preamp	2 GHz
Protection	
Power input	Out of range Reverse voltage Overcurrent
Power output	Short circuit Current up to 50A Auto restart
Temperature	Temperature controlled fan speed Maximum working temperature
Environmental conditions	
Temperature	10 °C – 30 °C
Humidity	Operating: 80% RH, non-condensing, up to +40 °C Non-operating: 95% RH, non-condensing, up to +40 °C; decreasing linearly to 50% RH at +65 °C

Regulatory characteristics

Safety

Complies with the current versions of the following standards (dates and editions are cited in the Declaration of Conformity):

- IEC/EN 61010-1
- Canada: CSA C22.2 No. 61010-1
- USA: UL std no. 61010-1

EMC

Complies with the essential requirements of the European EMC Directive as well as the current editions of the following standards (dates and editions are cited in the Declaration of Conformity):

- IEC/EN 61326-1
- CISPR Pub 11 Group 1, class A
- AS/NZS CISPR 11
- ICES/NMB-001

This ISM device complies with Canadian ICES-001.

Cet appareil ISM est conforme à la norme NMB-001 du Canada

South Korean class A EMC declaration

Information to the user:

This equipment has been conformity assessed for use in business environments. In a residential environment this equipment may cause radio interference.

- This EMC statement applies to the equipment only for use in business environment.

Ordering Guide

Contact your Keysight representative or authorized partner for more information, or to place an order:

www.keysight.com/find/contactus

Additional software

Model	Description
DS2102A	Inspector fault injection professional

Definitions

Specification (spec)

Describes the performance of parameters covered by the product warranty and are valid for the unit's operation within the stated environmental range unless otherwise noted. Specifications include production guardbands to account for the expected statistical performance distribution, measurement uncertainties, and changes in performance due to environmental conditions. Standard calibration services offered by Keysight will ensure all these specifications are measured and a related statement of compliance with specification provided in the resulting calibration report.

Characteristic

Characteristics describe product performance that is useful in the application of the product, but that is not covered by the product warranty. Characteristics are often referred to as nominal or typical values.

Typical (typ)

Intended to provide additional information including the expected performance of an average unit that is not covered by the product warranty. These characteristics are shown in italics or labeled as 'typical'. Performance of a customer unit to typical specifications may or may not be measured during a calibration service.

Nominal (nom)

A general, descriptive term that does not imply a level of performance. It is not covered by the product warranty. Represents the value of a parameter that is most likely to occur; the expected mean or mode of all instruments at room temperature (approximately 23 °C). These characteristics are shown in italics or labeled as 'nominal'. Performance of a customer unit to nominal specifications may or may not be measured during a calibration service.

Additional information

The data contained in this document is subject to change.

Confidently Covered by Keysight Services

Prevent delays caused by technical questions, or system downtime due to instrument maintenance and repairs with Keysight Services. Keysight Services are here to support your test needs with expert technical support, instrument repair and calibration, software support, training, alternative acquisition program options, and more.

A KeysightCare agreement provides dedicated, proactive support through a single point of contact for instruments, software, and solutions. KeysightCare covers an extensive group of instruments, application software, and solutions and ensures optimal uptime, faster response, faster access to experts, and faster resolution.

Keysight services

Offering	Benefits
KeysightCare  KEYSIGHTCARE	KeysightCare provides elevated support for Keysight instruments and software, with access to technical support experts that respond within a specified time and ensure committed repair and calibration turnaround times (TAT). KeysightCare offers multiple service agreement tiers, including KeysightCare Assured, Enhanced, and Application Software Support. See the KeysightCare data sheet for details.
KeysightCare Assured	KeysightCare Assured goes beyond basic warranty with repair services that include committed TAT and unlimited access to technical experts.
KeysightCare Enhanced	KeysightCare Enhanced includes all the benefits of KeysightCare Assured plus Keysight's accurate and reliable calibration services, accelerated, and committed TAT, and technical response.
Keysight Support Portal & Knowledge Center	All KeysightCare tiers include access to the Keysight Support Portal where you can manage support and service resources related to your assets such as service requests, and status, or browse the Knowledge Center.
Education Services	Build confidence and gain new skills to make accurate measurements, with flexible Education Services developed by Keysight experts. Including Start-up Assistance.
Alternative acquisition options	
KeysightAccess	Reduce budget challenges with a subscription service enabling you to get the instruments, software, and technical support you want for your test needs.

Recommended services

Maximize your test system up-time by securing technical support, repair, and calibration services with committed response and turnaround times. 1-year KeysightCare Assured is included in every new instrument purchase. Obtain multi-year KeysightCare upfront to eliminate the need for lengthy and tedious paperwork and yearly requests for maintenance budget. Plus, you benefit from secured service for 2, 3, or 5 years.

Service	Function
KeysightCare Enhanced¹	Includes tech support, warranty and calibration
R-55B-001-1	KeysightCare Enhanced – Upgrade 1 year
R-55B-001-2	KeysightCare Enhanced – Extend to 2 years
R-55B-001-3	KeysightCare Enhanced – Extend to 3 years (Recommended)
R-55B-001-5	KeysightCare Enhanced – Extend to 5 years (Recommended)
KeysightCare Assured	Includes tech support and warranty
R-55A-001-2	KeysightCare Assured – Extend to 2 years
R-55A-001-3	KeysightCare Assured – Extend to 3 years
R-55A-001-5	KeysightCare Assured – Extend to 5 years
Start-Up Assistance	
PS-S10	Included – instrument fundamentals and operations starter
PS-S20	Optional, technology & measurement science standard learning

1. Available in select countries. For details, please view the [datasheet](#). R-55B-001-2/3/5 must be ordered with R-55B-001-1.