



# R&S®NGU401 versus Keysight N6784A



## What sets this source measure unit apart?

- ▶ Minimum residual ripple and noise to supply interference free voltage to sensitive DUTs
- ▶ Fast regulation of output voltage with minimum overshoot and very fast load recovery time
- ▶ Acquisition rate of up to 500 ksamples/s to capture extremely fast variations in voltage or current
- ▶ Voltage priority and current priority mode
- ▶ High-capacitance mode
- ▶ Modulation input

Your benefit	Features
Minimal overshoot from abrupt load changes	<ul style="list-style-type: none"> <li>▶ Optimized load recovery time of &lt; 30 μs</li> <li>▶ Handles abrupt load changes from a few nA to the ampere range without creating voltage drops or overshoots</li> </ul>
Capture fast variations in voltage/current	<ul style="list-style-type: none"> <li>▶ Acquisition rate of up to 500 ksamples/s</li> <li>▶ Voltage and current results available every 2 μs</li> </ul>
Supply positive and negative voltages and currents	<ul style="list-style-type: none"> <li>▶ Four-quadrant operation allows the R&amp;S®NGU401 to act as a source or sink in both polarities</li> <li>▶ This enables tasks such as measuring the forward and reverse characteristics of semiconductor devices in a single test operation without having to make changes to the circuit</li> </ul>
Can act as an AC source	<ul style="list-style-type: none"> <li>▶ The R&amp;S®NGU401 source measure unit provides a modulation input to connect an arbitrary generator, for instance. The output follows the modulation input signal, enabling the instrument to act as an AC source and be used to simulate glitches and unstable conditions</li> </ul>

Parameter	R&S®NGU401	Keysight N6784A
Max. voltage/current/power	±20 V / 8 A / 60 W	±20 V / 3 A / 20 W
Voltage ripple and noise (RMS)	< 500 μV (meas.)	< 1.2 mV
Current ripple and noise (RMS)	< 1 mA (meas.)	noise: < 200 μA, ripple not specified
Load recovery time	< 30 μs (meas.)	< 35 μs
Rise time/fall time	< 100 μs / < 100 μs	10 μs / not specified
Measured voltage/current ranges	2 / 6	3 / 4
Max. readback resolution	1 μV / 100 pA	1 μV / 100 pA
Max. voltage readback accuracy	< 0.02 % + 500 μV	< 0.025 % + 50 μV
Max. current readback accuracy	< 0.025 % + 15 nA	< 0.025 % + 8 nA
Max. acquisition rate (min. step)	500 ksamples/s (2 μs)	200 ksamples/s (5 μs)
High-capacitance mode (max. C)	yes (470 μF)	yes
Current priority mode	yes	yes
Modulation input	yes	no
Standalone instrument	yes	module for Keysight N6700C/N6705C base units



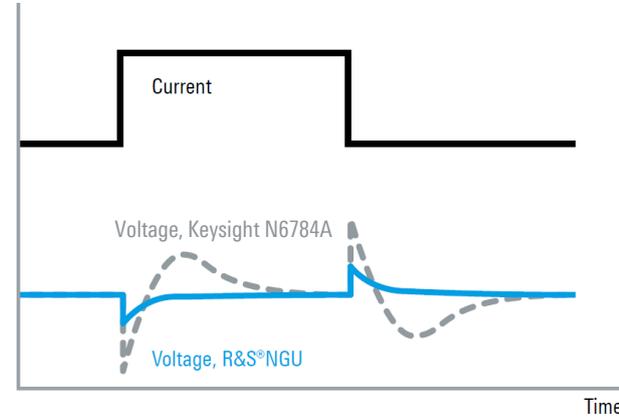
## Standalone instrument versus modular system

The R&S®NGU401 is a small standalone instrument in the half 19" format.



Keysight offers the N6700C and N6705C modular systems in the 19" format to hold up to 4 SMU units.

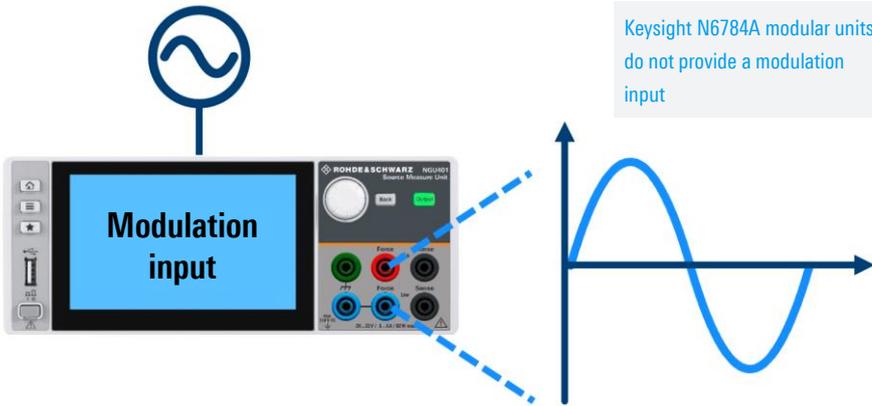
## Optimized load recovery time



Keysight N6780A modular units are slower compared to the R&S®NGU source measure units

Under challenging load conditions, most power supplies respond with slow recovery times and overshoot. Specially developed circuits in the R&S®NGU source measure units achieve a load recovery time of <math>< 30 \mu\text{s}</math> with minimal overshoot, making them perfect for supplying sensitive components with power.

## Modulation input



The R&S®NGU401 source measure unit provides a modulation input to connect an arbitrary generator, for instance. The output follows the modulation input signal, enabling the instrument to act as an AC source and be used to simulate glitches and unstable conditions.

## Power envelope of the R&S®NGU401 versus Keysight N6784A

