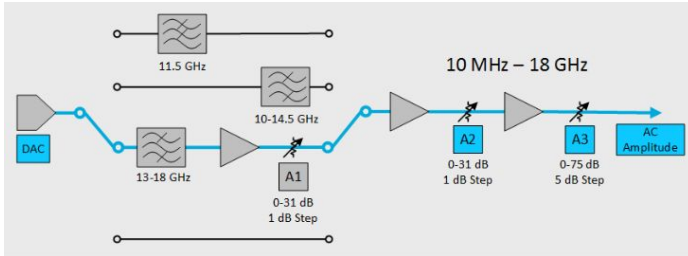


Arbitrary Waveform Generators

AWG70001A Option AC Datasheet



The AWG70001A, with Option AC, provides you with an additional high output amplitude connector. Option AC adds a single-ended AC coupled Planar Crown connector to the front panel of the single channel AWG70001A Arbitrary Waveform Generator. User controls are added to allow switching the output path between the standard Direct output connectors or the AC output connector. When switched to the AC path, additional user controlled amplification and attenuation is added to the signal path.

In AC output mode, you can choose one of the four signal filter paths and set the output amplitude, letting the instrument to automatically set the step attenuators in the selected filter path. For greater control, you can manually set the attenuation of the step attenuators for your selected filter path.

KeyFeatures

- No filter: -70 to +25 dBm at 1 GHz CW calibration frequency
- 11.5 GHz Low Pass: -70 to +25 dBm at 1 GHz CW calibration frequency
- 10 GHz – 14.5 GHz Band Pass: -77 to +18 dBm at 11 GHz CW calibration frequency
- 13 GHz – 18 GHz Band Pass: -90 to +20 dBm at 14 GHz CW calibration frequency

AWG70001A Option AC output specifications

These specifications apply to the optional AC output connector. Refer to the AWG70000 series datasheet for all other instrument specifications.

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

Output connector Aeroflex/Weinschel Planar Crown Universal Connector System with SMA female adapter

Number of analog AC outputs AWG70001A: 1

Type of outputs single ended

Output impedance 50 Ω

Frequency range

Filter	Value
No filter	10 MHz to 18 GHz
Low pass	10 MHz to 11.5 GHz
Band pass (10 to 14.5 GHz)	10 GHz to 14.5 GHz
Band pass (13 to 18 GHz)	14 GHz to 18 GHz

Amplitude

Range (for a CW signal at specified frequencies in each path)

Filter path	Description
No filter	25 dBm to -70 dBm at 1 GHz
	18 dBm to -77 dBm at 13 GHz
Low pass	25 dBm to -70 dBm at 1 GHz
Band pass (10 GHz to 14.5 GHz)	18 dBm to -77 dBm at 11 GHz
Band pass (13 GHz to 18 GHz)	20 dBm to -90 dBm at 14 GHz
	18 dBm to -90 dBm at 18 GHz

Accuracy (at calibration frequency)

Filter path	Description
No filter	±0.5 dB at 1 GHz, ambient 16 °C to 26 °C
	±1.5 dB at 1 GHz, ambient 0 °C to 50 °C
Low pass	±0.5 dB at 1 GHz, ambient 16 °C to 26 °C
	±1.5 dB at 1 GHz, ambient 0 °C to 50 °C
Band pass (10 GHz to 14.5 GHz)	±1.5 dB at 11 GHz, ambient 16 °C to 26 °C
	±3.0 dB at 11 GHz, ambient 0 °C to 50 °C
Band pass (13 GHz to 18 GHz)	±1.5 dB at 14 GHz, ambient 16 °C to 26 °C
	±3.5 dB at 14 GHz, ambient 0 °C to 50 °C

Resolution 0.01 dB

Amplitude flatness

Specifications include the sin(x)/x roll off of the DAC at 50 GS/s.

Filter	Description
No filter	± 3 dB, 10 MHz to 10 GHz
	± 4 dB, 10 MHz to 13 GHz
Low pass	± 3 dB, 10 MHz to 10 GHz
Band pass (10 GHz - 14.5 GHz)	± 3.5 dB, 10 GHz to 14.5 GHz
Band pass (13 GHz - 18 GHz)	± 4.5 dB from 13 GHz to 18 GHz

Harmonic distortion

AWG70001A operating at 50 GS/s.

2nd Harmonic at output frequency

Frequency range	Value
< 1 GHz	< -34 dBc
1 GHz - 4 GHz	< -30 dBc
> 4 GHz	< -28 dBc

3rd Harmonic at output frequency

Frequency range	Value
< 1 GHz	< -50 dBc
1 GHz - 4 GHz	< -45 dBc
> 4 GHz	< -33 dBc

Amplifier 1 dB compression

AWG70001A operating at 50 GS/s.

No filter

Filter	Frequency	Value
No filter	1 GHz	> 25 dBm
	13 GHz	> 22 dBm
Low Pass filter	1 GHz	> 25 dBm
Band Pass (10 to 14.5 GHz)	11 GHz	> 22 dBm
Band Pass (13 to 18 GHz)	14 GHz	> 22 dBm
	18 GHz	> 20 dBm

Switching time

The time required for the attenuators and amplifiers to settle to the specified output amplitude after an amplitude change.

20 ms

Ordering information

Models

AWG70001A AC

AWG70001A with Option AC

Option AC adds a single-ended AC coupled output connector with additional amplification and attenuation.

ASEAN / Australasia (65) 6356 3900
Belgium 00800 2255 4835*
Central East Europe and the Baltics +41 52 675 3777
Finland +41 52 675 3777
Hong Kong 400 820 5835
Japan 81 (3) 6714 3010
Middle East, Asia, and North Africa +41 52 675 3777
People's Republic of China 400 820 5835
Republic of Korea +822 6917 5084, 822 6917 5080
Spain 00800 2255 4835*
Taiwan 886 (2) 2656 6688

Austria 00800 2255 4835*
Brazil +55 (11) 3759 7627
Central Europe & Greece +41 52 675 3777
France 00800 2255 4835*
India 000 800 650 1835
Luxembourg +41 52 675 3777
The Netherlands 00800 2255 4835*
Poland +41 52 675 3777
Russia & CIS +7 (495) 6647564
Sweden 00800 2255 4835*
United Kingdom & Ireland 00800 2255 4835*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Canada 1 800 833 9200
Denmark +45 80 88 1401
Germany 00800 2255 4835*
Italy 00800 2255 4835*
Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90
Norway 800 16098
Portugal 80 08 12370
South Africa +41 52 675 3777
Switzerland 00800 2255 4835*
USA 1 800 833 9200

* European toll-free number. If not accessible, call: +41 52 675 3777

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