## S Smart Ephys



## **PGA** Programmable Gain Amplifier

Operating temperature Storage temperature Relative humidity	<b>PGA16</b> 10 °C to 40 °C 0 °C to 50 °C 10 % to 85 %, non-condensing	PGA32 10 °C to 40 °C 0 °C to 50 °C 10 % to 85 %, non-condensing	PGA64 10 °C to 40 °C 0 °C to 50 °C 10 % to 85 %, non-condensing	PGA1632 10 °C to 40 °C 0 °C to 50 °C 10 % to 85 %, non-condensing	PGA3264 10 °C to 40 °C 0 °C to 50 °C 10 % to 85 %, non-condensing
Dimensions (W x D x H) Weight	172 mm x 220 mm x 52 mm 1400 g	172 mm x 220 mm x 52 mm 1400 g	172 mm x 220 mm x 52 mm 1400 g	172 mm x 220 mm x 52 mm 1400 g	172 mm x 220 mm x 52 mm 1400 g
Supply voltage Supply current	± 5.7 V to ± 12 V DC 100 mA	± 5.7 V to ± 12 V DC 100 mA	± 5.7 V to ± 12 V DC 200 mA	± 5.7 V to ± 12 V DC 100 mA	± 5.7 V to ± 12 V DC 200 mA
Number of input channels	16	32	64	16	32
Input voltage	± 300 mV	± 300 mV	± 300 mV	± 300 mV	± 300 mV
Input impedance	$> 10^{12} \Omega$ paralleled by 8 pF	$> 10^{12} \Omega$ paralleled by 8 pF			
Input noise	< 2 µV <sub>RMS</sub> (full bandwidth, inputs short-circuited)	< 2 μV <sub>RMS</sub> (full bandwidth, inputs short-circuited)	< 2 μV <sub>RMS</sub> (full bandwidth, inputs short-circuited)	< 2 μV <sub>RMS</sub> (full bandwidth, inputs short-circuited)	< 2 μV <sub>RMS</sub> (full bandwidth, inputs short-circuited)
Noise density @ 1 kHz	$e_n = 25 \ nV / \sqrt{Hz}$	$e_n = 25 \ nV / \sqrt{Hz}$			
Number of output channels	16	32	64	32	64
Output voltage	± 5 V	± 5 V	± 5 V	± 5 V	± 5 V
Output current	50 mA	50 mA	50 mA	50 mA	50 mA
Output impedance	300 Ω	300 Ω	300 Ω	300 Ω	300 Ω
Bandwidth	1-5000 Hz (Optional: 10-5000 Hz, other bandwidths available on request)	1-5000 Hz (Optional: 10-5000 Hz, other bandwidths available on request)	1-5000 Hz (Optional: 10-5000 Hz, other bandwidths available on request)	Two bandwidths: 1-300 Hz, 300- 5000 Hz (Other bandwidths available on request)	Two bandwidths: 1-300 Hz, 300- 5000 Hz (Other bandwidths available on request)
Filter slope	60 db/decade	60 db/decade	60 db/decade	60 db/decade	60 db/decade
Gain  Programmable gain amplifiers with	Programmable from 10 to 5000 h 16. 32. and 64 input channels are av	Programmable from 10 to 5000	Programmable from 10 to 5000	Programmable from 10 to 5000	Programmable from 10 to 5000

Programmable gain amplifiers with 16, 32, and 64 input channels are available under the name PGA16, PGA32, and PGA64, respectively. The gain can be flexibly adjusted from 10 to 5000 with the program PGA-Control.

Amplifiers can be ordered with any bandwidth configurations by the user's choice. The name specifies the configuration. The first number after the channel number specifies the lowest frequency, followed by the highest frequency. For example, PGA16-300-3000 stands for a PGA with 16 channels, and 300 Hz to 3 kHz bandwidth.

The PGA1632 and the PGA3264 feature two different pass bands. Signals are split and the two pass bands are send to two separate channels. For 16 input and 32 output channels, or 32 input and 64 output channels, respectively.

PGA-Control program					
Operating system	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	Windows® 7, 8.1 or 10; English and German versions supported	Windows® 7, 8.1 or 10; English and German versions supported