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## Smart Driver II - 128 High-Voltage-Driver Data Sheet



### High-Voltage-Driver Specifications: 128 Channel

- 7 3/4" x 2 1/8" x 7 3/4" extruded aluminum chassis
- Independent Output Channels per Chassis: 128
- Maximum Output Voltage: 200V
- Small-Signal Frequency Response: 5 kHz min
- Resolution: 14 bits
- Digital Interface: USB 2.0 Full Speed
  - Up to 20 driver boxes can be run from a single USB port
- Maximum Update Rate on All Channels (Frame Rate)<sup>1</sup>: 140 Hz
- Offset and gain variations factory calibrated
- Software Drivers: C/C++ and Matlab drivers included for Windows-based systems<sup>2</sup>

<sup>1</sup> Direct interface with magneto-isolated inputs to support 35 kHz frame rates available upon request

<sup>2</sup> Linux will be supported in the future



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## Smart Driver II - 512 High-Voltage-Driver Data Sheet

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### High-Voltage-Driver Specifications: 512 Channel

- 2U 19" Rack mount aluminum chassis
- Independent Output Channels per Chassis: 128-512
- Maximum Output Voltage: 200V
- Small-Signal Frequency Response: 5 kHz min
- Resolution: 14 bits
- Digital Interfaces:
  - USB 2.0 Full Speed
    - Up to 20 driver boxes can be run from a single USB port
  - PCI/ePCI Interface Card
- Maximum Update Rate on All Channels (Frame Rate)<sup>3</sup>
  - ePCI/PCI: 6 kHz (9-10 kHz, April 2010)
  - USB: 140 Hz
- Offset and gain variations factory calibrated
- Software Drivers: C/C++ and Matlab drivers included for Windows-based systems<sup>4</sup>

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<sup>3</sup> Direct interface with magneto-isolated inputs to support 35 kHz frame rates available upon request

<sup>4</sup> Linux will be supported in the future



## Smart Driver II Specifications

### DC ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Resolution			14		Bits
Output Range		1		200	V
Offset Voltage Voltage Tempco	Zero Voltage Code		1 1	2.5	V mV/C
Gain Error Tempco	With Factory Calibration		35	0.1	% ppm/°C
DC Crosstalk				3	LSB

### AC ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Bandwidth -3dB Bandwidth	$V_o = 1 V_{p-p}$	5			kHz
Slew Rate	No Load 200 pF Load		10 3		V/us
Settling Time $\frac{1}{4}$ to $\frac{3}{4}$ Scale Step	No Load 200 pF Load		30 65		$\mu s$ $\mu s$
Cross Talk			13		$\mu V-s$
Wideband Noise	$T_A = 25 C, V_o = 100V$	1	4	10	mV <i>rms</i>