

KPCI-3130 Series Boards

Analog Outputs

NUMBER OF CHANNELS: Eight (3130), two (3132).

RESOLUTION: 19.1 μ V/count per channel.

RANGE: ± 10 V for each channel.

ACCURACY: $\pm 700\mu\text{V} \pm 0.008\%$ setting (VDC), at 25°C $\pm 1^\circ\text{C}$. To maintain this accuracy, all unused channel sense lines must be terminated (Sense HI to Output and Sense LO to GND/ Return).

TEMPERATURE COEFFICIENT: 150 $\mu\text{V}/^\circ\text{C} \pm 20\text{ppm}$ setting/ $^\circ\text{C}$. (Calibration at the operating temperature can remove this error.)

OUTPUT CURRENT: 20mA per channel, four quadrant (shunt required if current sourcing/-sinking).

SETTLING TIME: 15ms to 600 μV (typ.) for transients b/w ± 9.5 V.

DIFFERENTIAL REMOTE SENSE:

Differential remote sense eliminates errors due to long return lines.

Enable current sourcing or sinking within voltage range with use of external sense resistor.

Maintain accuracy with up to 82 Ω of loop resistance in leads.

PROTECTION: Withstand continuous short circuit of Output + to Output - (GND), 35mA draw from short-circuit (typ.).

Out of Range Alarm - can be detected as interrupt.

CAPACITIVE LOAD: Stable to 1 μF or less.

POWER UP: 0V ($\pm 15\text{mV}$) (typ.).

DATA TRANSFER MODES: Target-mode transfers only

D/A CONTROL MODES:

Target Mode: Update one D/A Converter with value by software command.

Approximately 10ms/command execution.

Readback of setting and calibration values.

D/A CALIBRATION: Separate 2 point calibration of each channel using software and a DMM; Calibration through PCI Interface

Auxiliary High-Current Digital I/O (KPCI-3130 only)

NUMBER OF BITS: 32 bits; four 74FCT652 bi-directional 8-bit registers. Each byte register is separately configurable as input or output.

DATA TRANSFER MODE: Target mode.

INPUT LOW: $V_{\text{IL}} = 0.8$ V max.; $I_{\text{IL}} = -0.2$ mA max.

INPUT HIGH: $V_{\text{IH}} = 2.0$ V min.; $I_{\text{IH}} = 20\mu\text{A}$ max.

OUTPUT LOW: $V_{\text{OL}} = 0.55$ V max.; $I_{\text{OL}} = 64$ mA max.

OUTPUT HIGH: $V_{\text{OH}} = 2.4$ V min.; $I_{\text{OH}} = -8$ mA max.
 $V_{\text{OH}} = 2.0$ V min.; $I_{\text{OH}} = -15$ mA max.

POWER ON STATE: Input (High-Z).

GENERAL

POWER INPUT:

+5V: 72mA typ.

+12V: 485mA typ., 500mA max.

POWER OUTPUT:

+5V: 1.0A max. (May also be limited by computer or bus capability.)

ENVIRONMENT:

Temperature, Operating: 0°C to 50°C.

Temperature, Non-Operating: -40°C to 100°C.

Humidity: 0 to 90% Relative (non-condensing), operating or non-operating.

EMC: Conforms to European Union Directive 89/336/EEC.

SAFETY: Meets EN 61010-1/IEC 1010.

DIMENSIONS: 175mm (6.88 in) L \times 108mm (4.25 in) H \times 20mm (0.75 in) D. Standard-Size PCI Short Card.

WARMUP: 20 minutes to rated accuracy.

ACCESSORIES AVAILABLE:

Termination:

STA-3108-D1 (Provides 50-pin digital connector compatible with KPCI-PIO-96 pinout for Digital I/O connector - 3130 only)

STP-36 (Terminates CAB-1284 into 36 screw terminals)

Cables:

CAB-1284CC (IEEE-1284C standard shielded cable with 18 twisted pairs, used for analog and digital connections to 3130)

Specifications subject to change without notice.