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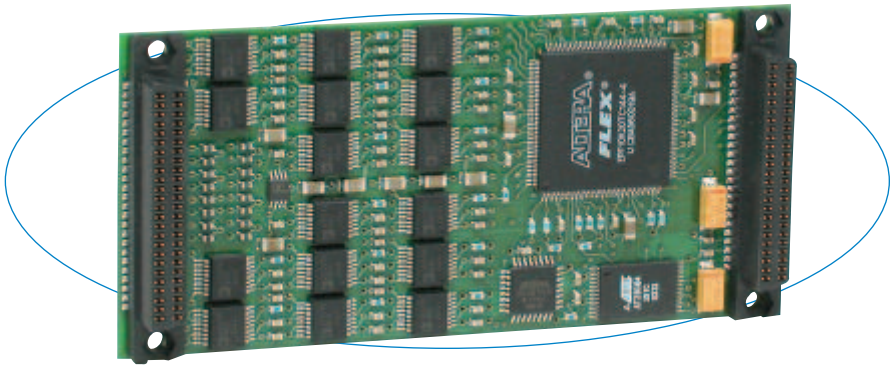
Acromag
THE LEADER IN INDUSTRIAL I/O

IP220A-x 12-Bit D/A, Analog Output



The IP220A features individual D/A converters on each channel for better performance.

The IP220A outputs analog voltage signals to drive up to 16 devices. When used with a carrier that holds four IP modules, up to 64 voltage outputs can be obtained from a single card cage slot.

Each output channel has its own 12-bit D/A converter (DAC). Individual DACs are faster, and they eliminate glitches typically caused by the re-acquisition process of sample and holds found on multiplexed output boards.

Individual channels also have double-buffered data latches. You can select to update each output when it is written to, or to update all outputs simultaneously. Simultaneous outputs better simulate linear movements in motion processes.

Features

- 8 or 16 analog voltage output channels
- Independent 12-bit D/A converters per channel with an 11.0µS settling time
- Bipolar voltage (non-isolated) outputs: -10 to +10 volts
- Double-buffered DACs
- High load capability (5mA output current)
- Built-in calibration coefficients

Benefits

- Outputs reset to 0 volts.
- Internally stored calibration coefficients ensure accuracy.
- Software provides easy selection of transparent or simultaneous output modes.
- Double-buffered DACs allow new data to be written to each channel before the simultaneous trigger updates the outputs.

Specifications

Analog Outputs

Output configuration: 8 or 16 single-ended.

D/A Resolution: 12 bits.

Output range: Bipolar, -10 to +10V.

Settling time: 11µS.

Maximum throughput rate:
Outputs can be updated simultaneously or individually.
One channel: 11µS/conversion.
Sixteen channels simultaneously: 17µS/16 channels.

System accuracy: 0.025% of 20V span maximum corrected error (i.e. calibrated) at 25°C with the output unloaded.

Data format (left–justified): Bipolar Offset Binary.

Output at reset: 0 volts.

Output current: -2 to +2mA (maximum). This corresponds to a minimum load resistance of 5K ohms with a 10V output.

Short circuit protection: Indefinite at 25°C.

IP Compliance (ANSI/VITA 4)

Meets IP specifications per ANSI/VITA 4-1995.

IP data transfer cycle types supported:
Input/output (IOSel*): DAC data, control registers, DAC offset and gain calibration coefficients.
ID read (IDSel*): 32 x 8 ID PROM.

Access Times (8MHz clock):
ID EEPROM read: 0 wait states (250nS cycle).
DAC channel data write: 1 wait states (375nS cycle).
DAC offset/gain coeff. read: 1 wait states (375nS cycle).
Control register access: 1 wait states (375nS cycle).

Environmental

Operating temperature: 0 to 70°C (IP220-8/16) or -40 to 85°C (IP220-8E/16E models).

Storage temperature: -55 to 100°C (all models).

Relative humidity: 5 to 95% non-condensing

MTBF: 4,094,686 hrs. at 25°C, MIL-HDBK-217F, notice 2

Power: +5V: 33mA typical, 45mA Maximum
+12V from P1: 150mA typical, 200mA maximum.
-12V from P1: 133mA typical, 180mA maximum.

Ordering Information

Industry Pack Modules

IP220A-8
Eight voltage outputs

IP220A-8E
Same as IP220A-8 plus extended temperature range.

5089-8
Same as IP220A-8 except requires the use of external ±15V supply

5089-8E
Same as IP220A-8E except requires the use of external ±15V supply

IP220A-16
Sixteen voltage outputs

IP220A-16E
Same as IP220A-16 plus extended temperature range.

5089-16
Same as IP220A-16 except requires the use of external ±15V supply

5089-16E
Same as IP220A-16E except requires the use of external ±15V supply

Acromag offers a wide selection of Industry Pack Carrier Cards.

Software *(see software documentation for details)*

IPSW-API-VXW
VxWorks® software support package

IPSW-API-QNX
QNX® software support package

IPSW-API-WIN
Windows® DLL driver software support package

IPSW-LINUX
Linux™ support (website download only)

See accessories documentation for additional information.

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