Analog output board,
4/6/8 channels, 12-bit

ADDI-DATA®

PA 358

8/6/4 outputs

12-bit resolution

Voltage or current outputs

Unipolar/bipolar

Watchdog

Trigger

EMI filters

LabVIEW™

LabWindows/CVI™

The PA 358 for PC/XT/AT is a 12-bit analog output board which is ready to operate immediately after power-on/reset and requires no software initialization. Either 8, 6 or 4 individually configurable channels are available.

The output channels are protected against voltage reversal and equipped with EMI filters. They can be used in unipolar or bipolar mode and with the following voltage or current output ranges: 0-10 V, ±10 V, 0-5 V, ±5 V, 0(4)-20 mA. The analog output occurs without any phase shift: all channels are simultaneously updated to a previously programmed value through parallel triggering.

A watchdog supervises the output channels.

If no software access occurs on one of the channels after a defined time, then all channels are reset to a predetermined output value (unipolar or bipolar zero of the DACs).

Features

- Outputs: 8, 6 or 4 analog outputs
- 12-bit resolution
- Output ranges: 0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-20 mA, 4-20 mA
- Setting time: 3,5 µs typ., max 10 µs
- Each channel can be set in unipolar/bipolar through jumper (mixed bipolar/unipolar mode possible)
- Voltage or current outputs
- Reset of the DAC to a defined output value (unipolar or bipolar zero)
- Separate setting of each channel or simultaneous for all channels
- Driver for high capacitive loads
- Watchdog for the monitoring of the outputs
- Addressing through DIP switches
- Software trigger

Safety features

- Watchdog function
- All analog outputs with EMI suppression filters
- Voltage reversal protection
- Short-circuit protection
- Each channel has its own ground line
- Noise neutralization of the PC voltage supply

EMC tested acc. to 89/336/EEC

- IEC 61326: electrical equipment for measurement, control and laboratory use

Applications

- Industrial machine automation
- Motor control
- Programmable voltage source
- Programmable current sink
- Electronic test
- Heater control
- ...

Software drivers

A CD-ROM with the following software and programming examples is supplied with the board.

Standard drivers for:
Windows NT/98/95, Windows 3.11, MS-DOS

Samples for the following compilers:
Microsoft C 6.0
Borland C 3.1
Visual Basic 1.0
Turbo Pascal 7.0

On request:
LabVIEW 5.01
LabWindows/CVI 5.01
Microsoft VC++ 5.0
Borland C++ 5.01
Visual Basic 4.0
Delphi 4

Current driver list on the web: www.addi-data.com

Analog output board, 4/6/8 channels, 12-bit

Specifications

Analog outputs

Number of outputs:	8, 6 or 4
Output type:	current or voltage outputs
Output filter:	EMI
Resolution:	12-bit
Output ranges:	0-10 V, ±10 V, 0-5 V, ± 5 V, 0(4)-20 mA voltage range selectable for each channel, mixed bipolar/unipolar mode possible
Setting time (typ.):	Unipolar: 2 µs - bipolar: 3 µs - max. 10 µs
Bipolar zero offset:	± 10 mV
Unipolar zero offset:	± 0.5 mV
Max. load:	± 5 mA // 500 pF
Watchdog time:	5 ms, 500 ms, 5 s

Noise immunity

Test level:	- ESD: 4 kV
	- Fields: 10 V/m
	- Burst: 2 kV/4 kV Netz
	- Conducted radio interferences: 10 V

Physical and environmental conditions

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Dimensions:	153 x 114 mm
System bus:	ISA, AT slot
Place required:	short board
Operating voltage:	+5 V, ±5 % mA, + 12 V from PC, external 24 V for version PA 358-4C, PA 358-6C, PA 358-8C
Current consumption:	current outputs, at 5 V: 60 mA ± 5 %
	voltage outputs, at 5 V: 260 mA ± 5 %
Front connector:	37-pin SUB-D male connector
Temperature range:	0 to 60 °C (with forced cooling)

Simplified block diagram
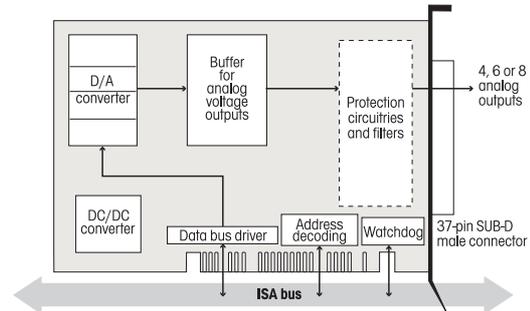
Pin assignment – 37-pin SUB-D male connector
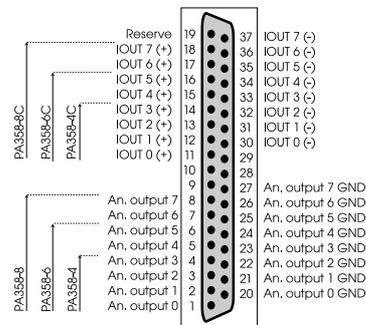
ADDI-DATA connection
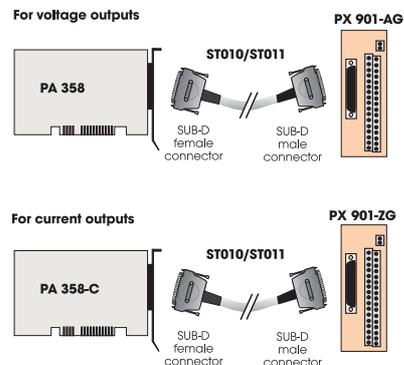
Terminal board PX 901-AG with cable ST010
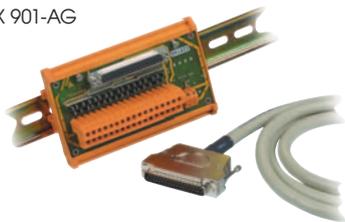
ADDIALOG PA 358

Analog output board, 4/6/8 channels, 12-bit. Incl. technical description and software drivers.

Versions

PA 358-8:	8 analog voltage outputs
PA 358-6:	6 analog voltage outputs
PA 358-4:	4 analog voltage outputs
PA 358-8C:	8 analog current outputs
PA 358-6C:	6 analog current outputs
PA 358-4C:	4 analog current outputs

Connection:

PX 901-A:	Terminal board with transorb diodes, for connecting the analog outputs
PX 901-AG:	Screw terminal board with housing
PX 901-ZG:	Screw terminal board for current outputs for DIN rail
ST010:	Standard round cable, shielded, twisted pairs, 2 m
ST011:	Standard round cable, shielded, twisted pairs, 5 m