

XP8900

PLCBus™
Digital-to-Analog
Converter

Features

- 12-bit digital resolution
- $\pm 10\text{VDC}$ bipolar voltage output
- 4 or 8 channels
- On-board power supply for PLCBus-powered operation
- Source/sink up to 2 mA per channel on internal power, 7 mA per channel with external power.
- Connectors for external analog voltage supply
- On-board EEPROM for software calibration constants
- Guaranteed monotonic conversion output

The XP8900 series provides four or eight 12-bit digital-to-analog converters. The XP8900 is designed as an expansion product for Z-World controllers equipped with a PLCBus port. Each DAC channel produces a bipolar output voltage ranging from -10VDC through $+10\text{VDC}$.

The XP8900 configuration jumpers allow you to address up to 8 XP8900 boards on a single PLCBus. The XP8900 consumes little power and has a low-power standby mode.

The available boards are

XP8900	8 DAC channels
XP8910	4 DAC channels

Interface

PLCBus connections are simple using a 26-wire ribbon cable. A PLCBus cable is included with the XP8900.

The 8 output channels, with individual grounds, and terminals for external analog power, also with individual grounds, appear on the Wago (spring-type) connector.

The DAC output channels require no end-user configuration. Simply use the Z-World software to produce a DAC channel's output voltage.

External power

You may choose to supply $\pm 12\text{VDC}$ power to the XP8900 instead of deriving it from the PLCBus $+24\text{VDC}$ circuit to prevent PLCBus loading or to have greater control over the DAC output signals.

Software

Dynamic C® is the Z-World development system. It includes many function libraries (in source code) that provide support for PLCBus boards, including the XP8900. The software interface is simple: select a channel and specify a voltage.

Innovation in Control Technology



XP8900 Specifications

Board Size	4.0"×2.835"×0.73" 101.6 mm × 72 mm × 18.5 mm.
Operating Temp.	-40°C to +70°C.
Humidity	5% to 95%, non-condensing.
Input Power	+24VDC, requiring approximately 30 mA. Accepts optional external ±12VDC for analog power. Each channel can sink/source 2 mA or 7 mA with external power.
Outputs	Eight 12-bit DAC channels generating voltage output in the range -10VDC to +10VDC. Slew rate: 1V/μs (in DAC), 0.5V/μs in op-amp. Settling time: not more than 10 μs. Relative accuracy: ±16 LSB (prior to op-amps) Gain temp. coeff: -5 ppm of fullscale range per degree C.

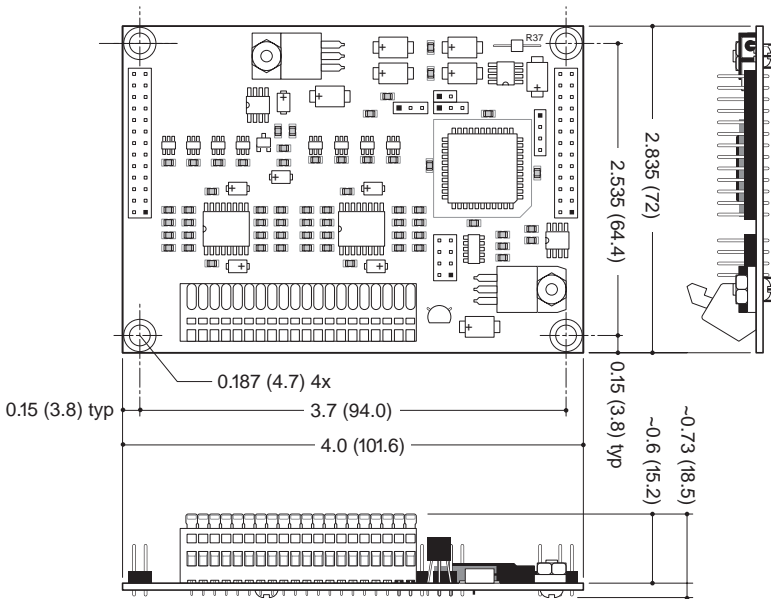


Figure 1. XP8900 Dimensions

Versions

- XP8900** Provides 8 12-bit DAC channels. Specifications are given to the left.
- XP8910** Provides 4 12-bit DAC channels with all the characteristics of the XP8900.

Options and Upgrades

In sufficient quantity, Z-World can build the XP8900 with 1 to 8 DAC channels, with 12-, 10- or 8-bit DACs, or with custom-defined output voltage ranges.

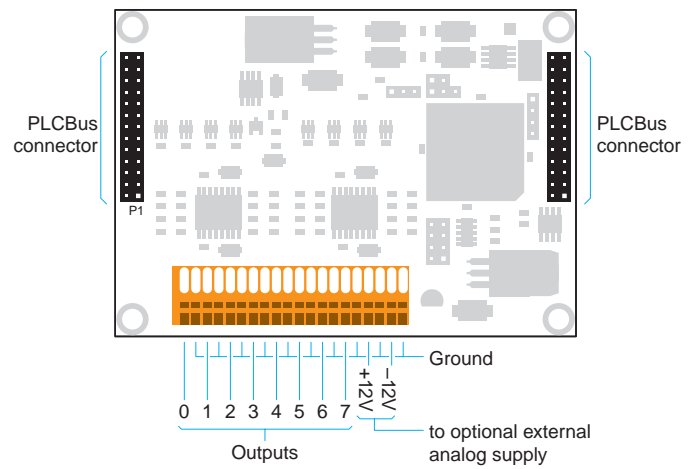


Figure 2. XP8900 Interface

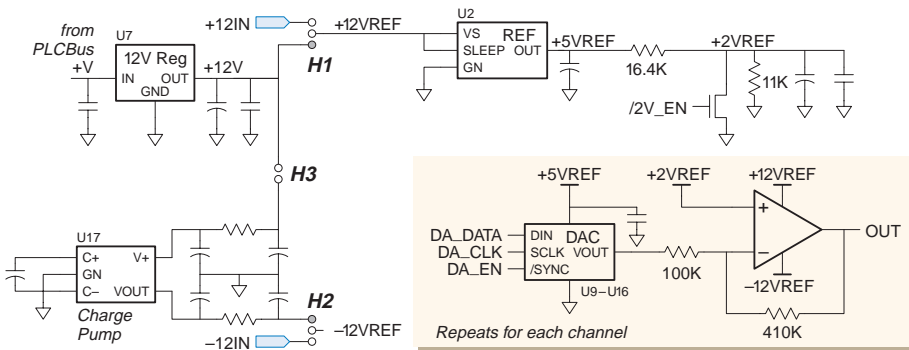


Figure 3. The DAC Channels

GND	1	○	2	VCC (+5V)
attention /AT	3	○	4	+V (normally +24V)
strobe /STBX	5	○	6	GND
A3X	7	○	8	GND
A2X	9	○	10	GND
A1X	11	○	12	GND
D6X	13	○	14	D7X
D4X	15	○	16	D5X
D2X	17	○	18	D3X
D0X	19	○	20	D1X
/WR	21	○	22	LCD
/RD	23	○	24	A0X
(+5V) VCC	25	○	26	GND

Figure 4. The PLCBus Signals



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