External Power Interface – IODrv 2000

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Abstract

The card connects to the printer port (EPP) and has 8 digital outputs, 8 digital inputs, 4 programmable PWM outputs, 2 analog outputs and 8 analog inputs. In addition, the card includes 2 independent counter timers with independent inputs and outputs. Using it to transfer single or timed interrupt requests is optional.

Features

The card connects to the printer port, communicates with the computer using the EPP protocol and enables data transfer rate of one mega byte per second, depending on the operation mode and the computer. The card requires a connection to an external voltage supplier with a flexible scope (12-36 Volts) and a current that is dependent on the system's needs, with which the user wants to work with.

Digital Output

The digital output includes 8 bits and enables operation of instruments that simultaneously consume up to 1 Ampere for each bit. All outputs enable inward and outward flow of current. The output voltages of the channel can be selected (using a jumper) between TTL levels and the voltage of the external supplier. All digital outputs are protected from short circuit and overload. The data change rate in the output can reach 1 MHz. A LED in the card indicates each bit in the output.

Digital Input

The digital input includes 8 bits and enables to read active digital levels within the scope of [0, 5-50] Volts. This enables to read TTL levels and levels of industrial and laboratorial equipment. In addition, passive inputs of a switch [On, Off] can be read without changing a thing. The reading data rate can reach 1 MHz. A LED in the card indicates each bit in the input.

Pulse Width Modulation (PWM) Outputs

The programmable PWM output includes 4 bits and enables operation of instruments that simultaneously consume up to 1 Ampere for each bit. All outputs enable inward and outward flow of current. The output voltages of the channel can be selected (using a jumper) between TTL levels and the voltage of the external supplier. All PWM outputs are protected from short circuit and overload. The PWM frequency is 100 KHz while the duty cycle can reach 256 levels for 0.4% - 100%. The data change rate in the output can reach 1 MHz. A LED in the card indicates each PWM bits.

Analog Outputs

There are two independent analog outputs. Each output enables a variable voltage within the scope of ±10 Volts, with resolution of 12 bit, with a current of up to 1 Ampere. All channels can be fine tuned and calibrated using a trimmer. All analog outputs are protected from short circuit and overload. The data change rate in the output can reach 100 KHz.

Analog Inputs

There are 8 independent analog inputs. Each input enables to read a variable voltage within the scope of ±10 Volts, with resolution of 12 bit. The inputs are protected from voltages of up to 50 Volts. The reading data rate can reach 100 KHz.

Counters

The card includes 2 counters with a unique architecture, which can be changed by the programmable logic. Both counters can timed externally and internally (selected by software). All counters outputs are connected outward and enable a current of up to 20 mA directly from the card.

Interrupt

The card can transfer an interrupt request to the computer through the parallel port. The interrupt can be timed by a counter or by the user.

Software

The card supplies with driver's libraries that work under any windowed operating system (9X, ME, 2K, XP) and can work with Macintosh and Linux operation systems. In addition, there's software for manual operation by the user. The libraries enable programming in any development environments, like VC++, Borland, CVI, LABVIEW and more.

Additional Equipment for Processes Control

The card is appropriately equipped for various teaching subjects, like Heat Control, Light Control, Velocity Control using a linear motor, Angle Control, Level Control, Stepper Motor Control, Sensors and much more.