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Features

- 24 differential digital I/O lines on a single-wide IndustryPack
- Common mode range -7 V to $+12\text{ V}$ with 70 mV hysteresis
- Each line programmable as input or output
- Each line may generate an interrupt
- Lines individually maskable and edge programmable
- Double-buffered output
- Cascadable external TTL clock triggers double-buffering

The IP-UD-ID differential digital I/O IndustryPack provides 24 flexible input/output signal lines with differential output drivers and differential inputs. Any input may be programmed to generate an interrupt. Inputs and outputs meet EIA-422 and EIA-485 specifications with an extended common mode range of $+12\text{ V}$ to -7 V . Each line may be dynamically and individually configured for either input or output, providing maximum flexibility. Outputs may be double buffered, making the IndustryPack compatible with simulation systems requiring many outputs to be latched simultaneously.

The output driver for each bit is controlled by a 24 bit register. Writing a "0" to a bit in the control register turns on the corresponding output driver. Writing a "1" turns the driver off and puts the line in a high impedance state. This is the power up default. With the driver turned off, the line may be used for input. A socketed termination resistor is placed across the plus and minus lines of each input. Each resistor is part of an eight pin SIP with four individual resistors. The socket allows the user to change the value or eliminate the termination all together. 100 Ohm resistors are the factory default.

Output lines are double buffered, with the clock source for the external latch selectable between either the internal 8 MHz IndustryPack clock or an external source with programmable polarity. The external clock source is a single ended signal, unlike the other differential I/O lines. The same clock source latches the input lines. The IndustryPack can function in a Master/Slave Mode for synchronizing multiple IndustryPacks. In this mode, the Master IndustryPack redrives the external clock source out I/O line 23. This line becomes the Master Clock, which should be wired to I/O line 24 on the Master and all Slave IndustryPacks. These features make the IndustryPack compatible with simulation systems requiring many inputs and outputs to be latched simultaneously. Slave Mode may also be used if the external clock source is differential. In this mode, only 23 I/O lines are available, as I/O line 24 becomes a dedicated clock input. The IndustryPack uses differential output latches with internal read back for verification.

The interrupt latch circuits are edge sensitive with programmable polarity and are controlled through five 24-bit registers. Each line is individually maskable and can be programmed for edge polarity.

Reset turns off the differential output driver and sets the data latch clock to the internal 8 MHz source to provide a consistent software interface.

Windows NT drivers are available.

Specifications

Form Factor	Single-wide Type I IndustryPack
IndustryPack Interface	Complies with ANSI/VITA-4
Interface Speed	8 MHz
Wait States	None
Number of Digital Lines	24 individually programmable and input or output
Input Driver	Differential with -7 V to +12V common mode voltage range 70 mV hysteresis
Output Driver	Differential EIA-422 compatible
ESD Protection	None
Interrupts	All lines Individually maskable and edge programmable
Dimensions	1.8 inches x 3.9 inches
Weight	0.06 kg (0.1 lb)
Power Requirements (no load)	+5 VDC, 60 mA typ
Environmental	Operating temperature: 0° to +70°C Humidity: 5% to 95% non-condensing Storage: -40° to +85°C

Order Information

IP-UD-ID	IndustryPack with 24 differential I/O lines and interrupts
ND-SDPACK	Windows NT IndustryPack drivers
C-IP50M-IP50M-3	Three foot 50 conductor ribbon cable
C-IP50M-IP50M-6	Six foot 50 conductor ribbon cable
C-CM50M-IP50M	Three foot Champ50 male to ribbon cable
C-HD50M-HD50M	Six foot HD50 male to HD50 male cable
C-HD50M-CM50M	Six foot Champ50 male to HD50 male cable
IP-TERM	50 screw terminal block with ribbon cable connector
IP-TERM-HD50	50 screw terminal block with HD50 female connector

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