DATA PATTERNS

DP-cPCI-3069

64 Channel Isolated Digital Input / Interrupt Output Module

KEY FEATURES AND BENEFITS

• 32 channel isolated digital input/interrupt

• 32 channel isolated digital open collector output with 200mA sink current

• Output isolation in group of 16 channels

• Individually isolated input channels

• 32 input interrupts / state change interrupts / handshake interrupts

• User programmable masks on each input channel

• User programmable low true or high true selection on each input and handshake signal

• Jumper selectable input levels of 5, 12, 24 & 48V DC

• Self-test excluding isolation

• Time programmable debounce for input channels

• Handshake lines for both input groups with isolation

• Relay coil fly back protection

• Hot swap compliant

• 6U cPCI single slot

• Windows 2000 drivers provided

• RT Linux drivers provided

APPLICATIONS

• Digital interface

• Status setting

• Status monitoring

• Automatic test equipment

• High density industrial automation

• High Reliability System

DESCRIPTION

DP-cPCI-3069 provides 32 Channel Digital Input / Interrupt and 32 Channel Digital Output with isolation. 32 Channel Inputs and 32 Channel Outputs are divided into groups of 16 channels each and are routed to rear I/O only.

INPUT

Each input can be selected for 5V, 12V, 24V or 48V by jumper settings. Each input group has a programmable debounce circuit so as to enable a unique debounce time for each group. The debounce clock can be programmed from 1 sec to 16 sec in binary steps. The inputs are processed through a debounce circuit to ensure that false transients are not recognised. Subsequent to de-bouncing the data can be acquired in a number of modes. Capability to mask individual input channel or group interrupt allows convenient application engineering. The interrupt status is latched and available for cPCI backplane reading. All the channels are also isolated from other channels outside the goup.

DIRECT INPUT

The debounced input data can be read on command from the host bus.

LOW TRUE & HIGH TRUE LOGIC

Each input channel can be assigned as "Low True" or "High True" through software. Each input channel can generate a backplane interrupt on either "HI" to "LO" or "LO to "HI" or state change. The Low True/ High True polarity can be programmed on a per channel basis.

INTERRUPT MODE

Any input can be configured to generate an interrupt by programming the interrupt mask register. Whenever an enabled input changes to its true state, an interrupt is generated.

STATE CHANGE INPUT

The state change input block continuously compares the current data with the previous data. Whenever the change occurs in the input, the changed status is indicated via an interrupt and the changed channels are recorded for reading by the host through the cPCI interface.

HAND SHAKE INPUT

In hand shake input mode an input "Data Strobe" signal latches the data onto the input latches. Simultaneously, interrupt is raised informing the host of availability of data. When the host reads the data, the "ready for data" signal is activated. One" Data Strobe" signal and one "Data Acknowledge" signal is available for inter system communication for each group of 16 channels.
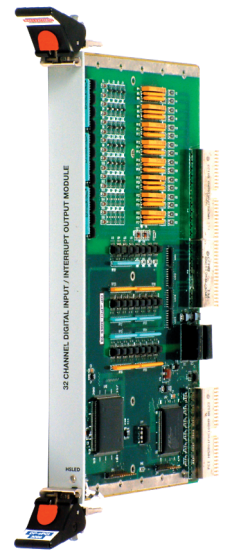
OUTPUT

The output channels are open collector output with 200mA sink current. The output channels are provided with relay coil fly back protection and can switch up to 35V (50V peak). The outputs are grouped into two groups of 16 channels each and are isolated from the backplane and from other groups. For output functions the data is written from the host into a primary latch. Subsequently the host can give the command to latch this data onto the secondary latches. The secondary latch value is driven to the output lines. The latching to secondary latch can be carried out at the group level or for all 32 channels simultaneously.

SELF TEST REGISTER

Complete built-in-self-test allows all channels in the module to be independently tested without any external circuits. Each input after isolation is fed through a software programmable switch assembly to allow either self-testing or direct reading of field inputs. The test value can be programmed by the user to carry out the self-test as desired, even when the "Field" wiring is in place at realtime.

SOFTWARE SUPPORT

The module is supplied complete with device drivers in Windows 2000 and RT Linux. Please contact factory for support in any other operating system such as VxWorks, QNX, INTime, Lynx etc.

DATA PATTERNS

DP-cPCI-3069

SPECIFICATIONS

DIGITAL INPUT

No. of channels	32 isolated input
Input control	On program command or with external handshake (strobe-in) signal
Debounce	Programmable from 1μsec to 16sec.
Minimum pulse width	100μsec + debounce time
Isolation	Input to system 500Vrms
	Input group to group 150V DC
DC Characteristics	Input voltage: 5, 12, 24, 48V DC
	Input threshold voltages (Low): 2, 4, 8,16V
	(High): 4, 8, 16, 32V

INTERRUPTS

Interrupt mode	Programmable on "strobe in" or Input interrupt or state change
Mask capability	Individual channel or group basis input masking

HANDSHAKE

External control sig.	Type input: Data strobe
	Type output: Data acknowledgment

PROTECTION

Input protection	±60V

DIGITAL OUTPUT

No. of channels	32 isolated output
I/O Level	Open collector 200mA sink
Isolation	Output to system 500Vrms
Max. Switch Voltage	35V (50V peak)
	Relay coil flyback protection provided

CONNECTORS

Backplane	cPCI
Field termination	J3 & J4 Rear I/O connector

MECHANICAL
Board 233.35mm x 160 mm

ENVIRONMENT
Commercial and Rugged versions

ORDERING INFORMATION
DP   cPCI   3069   3 0 0

Factory options specified based on applications

3 - Commercial version
6 - Rugged version

BLOCK DIAGRAM OF DP-cPCI-3069