DIC324
PC/104-Plus Digital I/O Module with Galvanic Isolation

Features

- 8-bit ISA bus
- 16× digital/frequency input channels
- 8× digital output channels
- Delay of input signals 25 μs
- Optical isolation of inputs/outputs between the channels 500 V
- Industrial temperature range: from –40°C to +85°C
- Power supply and current consumption: +5 V ±5%, no more than 160 mA
- Software compatibility: FDOS, FreeDOS, Linux2.6, WindowsXPe
- MTBF: no less than 710,000 hours

Overview

The module is implemented in PC/104+ standard on the basis of the nodes of DIC122 and DIC123 modules.

Electrical parameters are identical to those of DIC122 and DIC123 modules. The modules use a field-programmable bit array (FPGA), which makes it possible for you to change the algorithm for processing inputs and outputs

without changing the topology.

All channels are isolated from the system and from each other.

The channels use two-wire or single-wire connection (with common ground).

It is possible to connect signals of “potential-free" contacts type using an external (up to 52 V) power supply.

Two-wire or single-wire load connection is used.

Technical Specifications

System bus
- 8-bit ISA-bus
- 3× graphics kernels
- 6 MB cache

Digital input
- 16× digital/frequency input channels
- Single-wire or two-wire connection of signals
- Output voltages ±3.2 V ... ±52 V

Digital output
- 8× digital output channels
- Single-wire or two-wire connection of signals
- Switched output voltages/currents 60 V / 500 mA (using a differential type of load connection)

LED
- Indication of queries (addresses)

Main features
- Delay of input signals 25 μs
- Measuring frequencies over any channel
- Optical isolation of inputs/outputs between the channels 500 V
- Optical isolation of inputs/outputs between the channel and “earth” 1000 V
- Programmable time interval for de-bouncing at inputs

Additional features
- Five separable lines of IRQx hardware interrupts (where x = 3, 4, 5, 6, 7)
- Upper limit of enabling input channels is determined by the installed sets of registers

Industrial temperature range
- From –40°C to +85°C

Power supply and current consumption
- +5 V ±5%, no more than 160 mA

Dimensions
- No more than 100 × 96 × 24 mm

Module weight
- No more than 0.09 kg

Software compatibility
- FDOS
- FreeDOS
- Linux 2.6
- Windows XP (Embedded)

Resistance to electrostatic discharge
- ±4 kV for contact discharge and ±8 kV for air discharge

Resistance to mechanical stress
- Sinusoidal vibrations for frequencies from 10 to 500 Hz: with acceleration no more than 5 g
- Single shocks with duration of 11 ms with a peak acceleration no more than 100 g
- Multiple shocks with duration of 6 ms with a peak acceleration of no more than 50 g

Humidity
- Up to 80%, no condensation

MTBF
- No less than 710,000 hours

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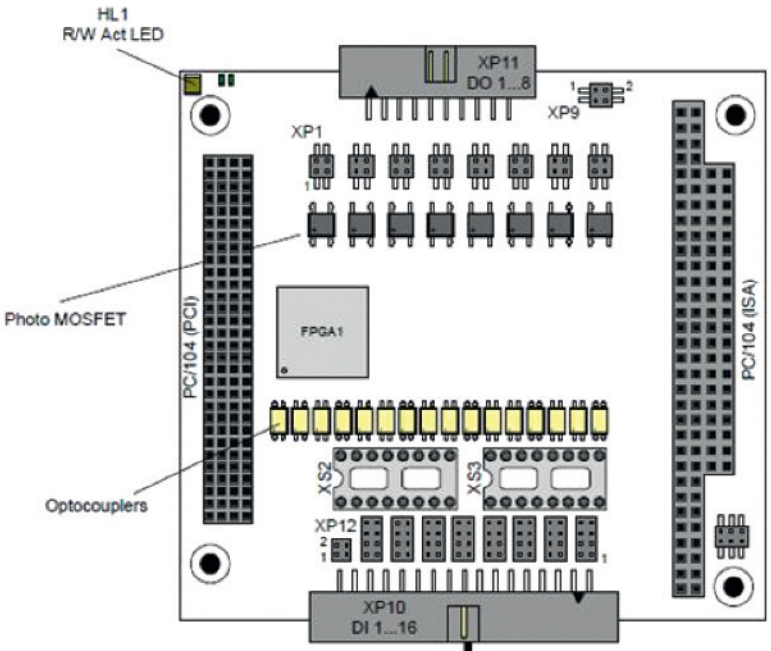
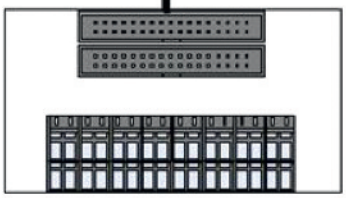
Board Layout

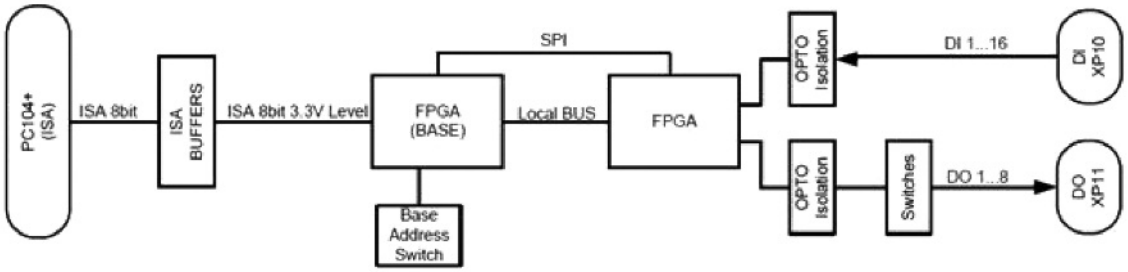


Connection cables
FC34-60



TV34

Connection to DIC324 Module is carried out by using a ribbon-cable FC34/FC20 via terminal boards TV34/TV20.



The module's board layout contains main functional elements

- FPGA (BASE) – system FPGA Xilinx XC6SLX4-2CSG225I
- FPGA1 – user FPGS Xilinx XC6SLX4-2CSG225I
- PC104+ (ISA) – edge connector of ISA bus 8 bit
- Digital_Inputs (DI) – digital input connector (XP10)
- Digital_Outputs (DO) – digital output connector (XP11)
- OPTO Isolation – represents output buffers with galvanic insulation
- Switches – keys for load switching

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Ordering Information

DIC324 Configuration

DIC324 - 01 \ Options

Configurations

01	Standard version

Options

\Coated	Conformal coating

Delivery checklist

DIC324 delivery checklist contains:

1. DIC324 Digital I/O Module with galvanic insulation
2. Packaging
3. Resistive assembly 470 Ohm 2 pieces

Additional accessories:

1. ACS00001 – Cable type FC-20, outlet IDC-20/Outlet IDC-20, length 600 mm
2. ACS00003 – Cable type FC-34, outlet IDC-34/Outlet IDC-34, length 600 mm
3. TIB96401 – Terminal board, 20 pins (TV20)
4. TIB96601 – Terminal board, 34 pins (TV34)

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PC/104 Consortium Member

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