DATA PATTERNS

DP-cPCI-4113 | 12 X 4, 2 Pole cPCI Relay Matrix Module

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KEY FEATURES AND BENEFITS

• Contact rating:
  - Max. Switching voltage of 200V DC
  - Max. Switching current of 0.5 A
  - Max. Carrying current of 1.2 A

• Upto 48 differential cross-points (standard)

• Upto 72 differential cross-points (optional)

• 2 Form A relays

• Ideal for low signal switching

• 100% tested for dynamic contact resistance

• Hot swap compliant

• Single slot 6U form factor

• Windows 2000 drivers provided

• RT Linux drivers provided

APPLICATIONS

• Data Acquisition System

• Automated test equipment

• Battery testing

• Power supply testing

• Transducer testing

DESCRIPTION

A matrix is the most versatile switch topology. It is made up of rows and columns that connect any input to any output. With matrix switching system, it is easy to connect a number of instruments or sources to various test points of the UUT. The benefit of matrix switching is simplified wiring with which the overall test system can easily and dramatically change the internal connection paths without any manual intervention.

DP-cPCI-4113 offers switching matrix in a single slot 6U sized cPCI module with flexibility to configure for 48 cross-points or 72 cross-points on factory selectable basis. The Reed Relays (Ruthenium sputtered type) used makes it ideal for applications where very low switching loss is required. These relays have internal magnetic shield with mu metal screen. This prevents signal cross talk due to relay coil magnetic fields.

All relays are arranged in matrix connecting 12 differential inputs across 4 differential outputs on facia. The flexibility of matrix switching allows connection of any input (row) to any output (column), singly or in combination, for complex signal and measurement device switching. For larger switching configurations multiple modules of DP-cPCI-4113 can be used.

CONTROL LOGIC

The Glue Logic for controlling relays is implemented on a field programmable gate array. The user can write commands for the selected channels to the primary latch. A read back is available to confirm selected commands. The Decode and control logic enables data transfer from primary to secondary latch. Buffers provided offer necessary drive for relay coils.

HOT SWAPPABLE

DP-cPCI-4113 Relay matrix card complies with PICMG 2.1 R 1.0 Hot swap specifications.

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.

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SPECIFICATIONS

INPUT CHARACTERISTICS
Cross points / nodes   48 (12 x 4 Matrix Switch)
Maximum switching voltage   200V DC
Maximum switching current   0.5A
Maximum carrying current   1.2A
Type of relay   2 Form 'A'
Power rating   10 Watts

DC CHARACTERISTICS
Maximum contact resistance   150m   (initial)
Insulation resistance   >10^{12} (relay specification)

RELAY CHARACTERISTICS
Power down stage   All relays are open
Power ON stage   All relays are open
Contact material   Sputtered Ruthenium

POWER REQUIREMENT   3.3V @ 500mA, 5V @ 2A

CONNECTORS
Backplane interface   cPCI J1 & J2 connectors
Field interface   2 x 25 Pin D connector

MECHANICAL
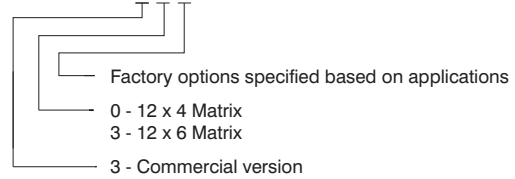Board   233mm (H) x 160mm (D)
Module   6U (H), 4T (W)

ENVIRONMENT   Commercial version only

ORDERING INFORMATION
DP   cPCI   4113   3 0 0

Factory options specified based on applications

0 - 12 x 4 Matrix
3 - 12 x 6 Matrix

3 - Commercial version

BLOCK DIAGRAM OF DP-cPCI-4113