DATA SHEET

EX1200-4003

DUAL 4 X 16 TWO-WIRE MATRIX, 300 V/2 A

FEATURES

Dual (4x16) 2-wire configuration

Configure as (8x16) or (4x32) under program control

Switch up to 300V, 2A - highest at this density in its class

Highest-performance matrix in its class - 45 MHz bandwidth, unmatched signal integrity

Extensive signal shielding employed on PCBs for excellent signal fidelity

Internal configuration relays can be used to construct larger building blocks (e.g. 8 x 16)

EX1200 series can support 4 x 192, or 8 x 96 configurations in a full rack mainframe

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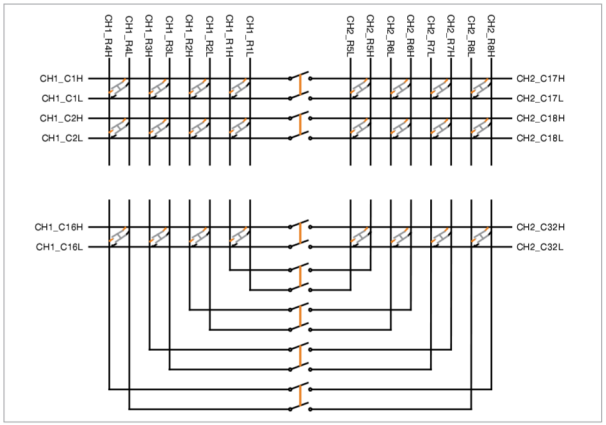
OVERVIEW

The EX1200-4003 high-density matrix module allows the user to connect any input row to any output column with a DPST relay at every row/column crosspoint. This architecture provides the framework for flexible switch system designs where multiple test instruments need to be connected to common test points. For example, a digital multimeter, counter/timer, and digitizer can be connected to the input rows and then each device can be connected to any of the output columns depending on the measurement function that is desired during the test. The connections between rows and columns occur internal to the module which greatly reduces external cabling.

The smallest building block is a (4 x 16) 2-wire matrix and rows and columns can easily be expanded to form larger matrices. A (4 x 192) 2-wire matrix can be accommodated in an EX1200 series full rack mainframe. The two banks of matrices can be connected under program control to further simplify field wiring.

Relays capable of switching up to 300 V and up to 2 A are used to maximize the range of application spaces that can be addressed with this module. All relays are failsafe which ensures that no undesired signals are present at the user interface in the case of power interruption.

BLOCK DIAGRAM



General Specifications

CHANNEL COUNT	Configurable as dual (4 x 16), or single (8 x 16) two-wire matrices
RELAY TYPE	Electromechanical, fail-safe
MAXIMUM SWITCHING VOLTAGE	300 V AC rms, 300 V DC
MAXIMUM SWITCHING CURRENT	2 A
MAXIMUM SWITCHING POWER	60 W DC, 62.5 VA
MINIMUM CONTACT RATING	100 µV
RATED SWITCH OPERATIONS	
Mechanical	1×10^8
Electrical	1×10^5 at full load
SWITCHING TIME	< 5 ms
PATH RESISTANCE	< 500 mΩ
INSULATION RESISTANCE	> 1×10^9 Ω
MAXIMUM THERMAL OFFSET PER CHANNEL (HI-LO)	< 10 µV
BANDWIDTH (-3 dB)	45 MHz (typical, 4 x 16 configuration)
CAPACITANCE	
Open channel	< 90 pF
Channel-mainframe	< 390 pF
High-low	< 170 pF
CROSSTALK (TYPICAL)	
1 MHz	< -55 dB
10 MHz	< -45 dB
ISOLATION (TYPICAL)	
1 MHz	< -60 dB
10 MHz	< -55 dB
CONNECTOR TYPE	104-pin

Ordering Information

EX1200-4003	Dual 4 x 16 two-wire matrix, 300 V/2 A
ACCESSORIES AND TOOLS	
70-0363-501	104-pin HD D-sub mating connector and backshell, with 3 ft unterminated 22 AWG wire
27-0389-104	104-pin HD D-sub mating connector with hood and pins, fixed contacts (no crimp tool required)
27-0390-104	104-pin HD D-sub mating connector, backshell and pins, crimp style
70-0297-001	Crimp tooling, includes handle and positioner, 22 AWG
70-0367-001	EX1200-TB104, differential module