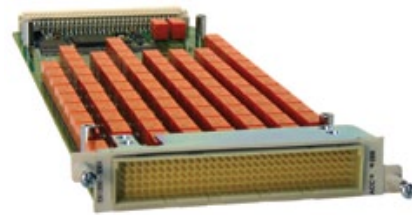


DATA SHEET



# EX1200-3001 EX1200-3001DS

(8) 1 X 8, 2-WIRE 300 V/2 A MULTIPLEXER

## FEATURES

High-density 300 V/2 A multiplexing scanning (up to 384 two-wire channels in 1U footprint)

Configure as 1-, 2-, or 4-wire multiplexers under program control

Supports thermocouple, RTD, and thermistor measurements with optional terminal block

Direct routing to EX1200 series DMM through internal analog measurement bus simplifies field wiring

On-board scanning greatly reduces overall test execution time

EX1200-3001DS adds discharge relay to bleed stray charge for sensitive measurements



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## OVERVIEW

The EX1200-3001 and EX1200-3001DS are high-density multiplexer modules designed for scanning of multiple points to a common bus, in either 1-, 2-, or 4-wire configurations. Scanning can be done either synchronously with the EX1200 DMM scan function, or asynchronously as a system switch to other devices through the hardware trigger bus or LXI LAN messages.

Applications include cable harness testing, semiconductor and PCB testing, and applications where multiple points need to be switched to a common resource. All relays also have individual relay control, and each path allows for 2 A switching.

The EX1200-3001 and EX1200-3001DS consist of eight individual (1 x 8) 2-wire multiplexers, or eight (1 x 16) 1-wire multiplexers that can be interconnected under program control (via the bussing relays) to configure larger multiplexers as required. This eliminates external wiring and helps reduce unterminated stubs. Up to 384 two-wire (or 192 four-wire) channels can be accommodated in a 1U EX1200 mainframe for maximum density or mixed and matched with other EX1200 plug-ins for flexibility.

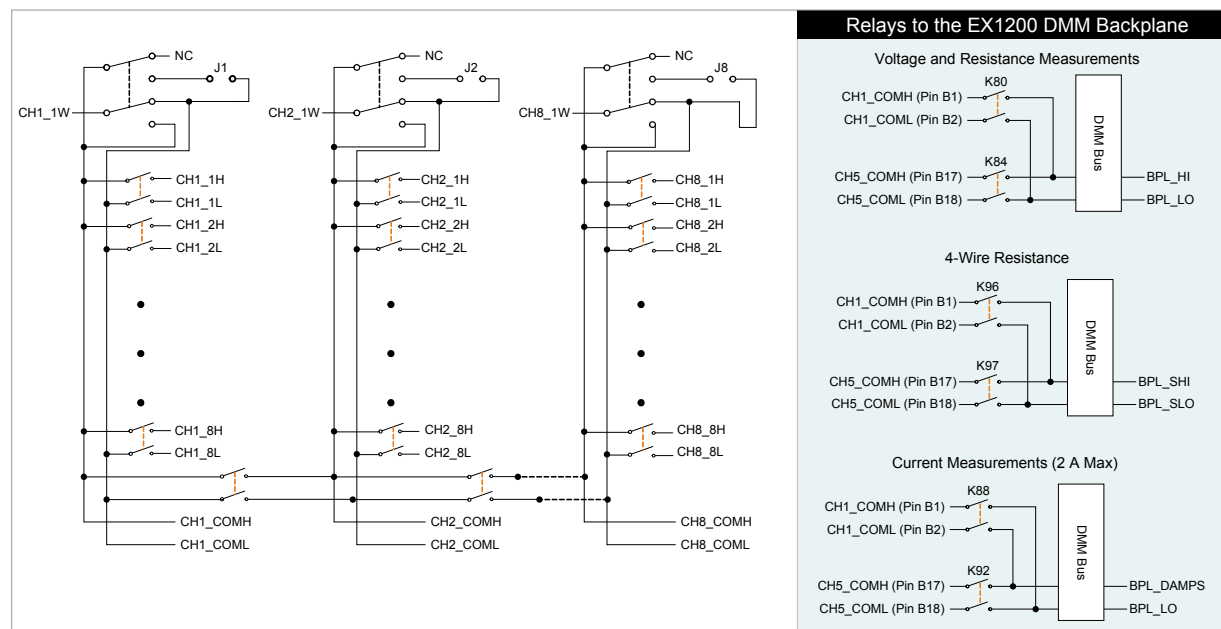
The card has internal relays that can be closed to connect directly to the EX1200 analog bus. This feature allows the card and the internal EX1200 DMM to be tightly coupled, dramatically reducing test execution times. Access to the DMM also allows 4-wire measurements to be made, providing more accurate resistance measurements that compensate for lead-length.

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Along with all having all the features of the EX1200-3001, the EX1200-3001DS has internal residual voltage discharge relays which can be enabled to momentarily short out the measurement path when changing from one input channel to the next. This dissipates any voltage held by the wiring and instrument input capacitance. These relays protect sensitive devices, such as CMOS circuits, from residual voltages caused by previous high-voltage measurements. This feature can also be disabled in low-voltage applications where maximum throughput speed is important.

The EX1200-3001 and EX1200-3001DS can be controlled programmatically using IVI-Switch compliant calls. Both path level programming and individual relay control are available. This information can be used for individual relay control through the driver. An optional terminal block provides screw termination points for external field wiring. This terminal block also includes cold junction compensation reference for more precise temperature measurements.

EX1200-3001 BLOCK DIAGRAM



General Specifications

CHANNEL COUNT	64 channels, eight (1 x 8) blocks, configured as 1 or 2-wire under programmable control
RELAY TYPE	Electromechanical, fail-safe
MAXIMUM SWITCHING VOLTAGE	300 V AC rms, 300 V DC
MAXIMUM SWITCHING CURRENT	2 A
MAXIMUM SWITCHING POWER <sup>1</sup>	60 W DC, 125 VA
MINIMUM CONTACT RATING <sup>2</sup>	10 mV DC, 10 µA (resistive)
RATED SWITCH OPERATIONS	
Mechanical	1 x 10 <sup>8</sup> (no load)
Electrical	1 x 10 <sup>6</sup> @ 50 V DC, 0.1 A (resistive) or 10 V DC, 10 mA (resistive)
SWITCHING TIME	< 3 ms
PATH RESISTANCE	< 0.5 Ω
INSULATION RESISTANCE	> 1 X 10 <sup>9</sup> Ω
MAXIMUM THERMAL OFFSET PER CHANNEL (HI-LO)	< 1 µV
CAPACITANCE	
Open channel	< 50 pF
Channel-mainframe	< 20 pF
High-low	< 50 pF
BANDWIDTH (-3 dB)	50 MHz (typical)
INSERTION LOSS	
100 kHz	< 0.1 dB
1 MHz	< 0.2 dB
10 MHz	< 0.5 dB
CROSSTALK	
100 kHz	< -90 dB
1 MHz	< -70 dB
10 MHz	< -50 dB
ISOLATION	
100 kHz	< -90 dB
1 MHz	< -70 dB
10 MHz	< -60 dB
CONNECTOR TYPE	160-pin

Notes:  
 1. Maximum switched power is derated non-linearly as voltage is increased.  
 2. This value is in reference to a resistive load. Minimum capacity changes depending on switching frequency and environmental conditions.

Ordering Information

EX1200-3001	(8) 1 x 8, 2-wire multiplexer
EX1200-3001DS	(8) 1 x 8, 2-wire multiplexer, with discharge circuit
ACCESSORIES AND TOOLS	
70-0363-504	Strain relief bracket (includes connector, recommended accessory)
70-0363-503	Strain relief bracket kit (without connector)
52-0109-000	Crimp pin (includes 100 crimp pins)
27-0088-160	Mating connector (one per board)
46-0010-000	Crimp tool (DIN)
46-0011-000	Extraction tool (DIN)
70-0363-505	160-pin, unterminated cable assembly, 3 ft
70-0367-009	EX1200-TB160-3 terminal block, differential module (EX1200-3001 only)