

DATA SHEET



EX1200-3048

48-CHANNEL 300 V/2 A MULTIPLEXER

FEATURES

High-density 300 V/2 A multiplexing scanning (up to 288 two-wire channels in 1U footprint)

High current bank available for current measurement up to 3A

Two individual (1x24) 2-wire multiplexer banks programmably combinable to form a 1x48 multiplexer

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

Internal capacitive discharge relays keep high voltages from disturbing sensitive measurement points

Supports thermocouple, RTD, and thermistor measurements

Optional screw-terminal junction box includes built-in cold-junction compensation

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



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OVERVIEW

The EX1200-3048 is a high-density multiplexer modules designed for scanning of multiple points to a common bus, in either 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, temperature/voltage monitoring, PCB testing, and those in which multiple points need to be switched to a common resource. All relays also have individual control, and each path allows for hot switching of up to 300 V and 2 A (60 W DC max). Two dedicated channels have the capability to directly measure current up to 3 A.

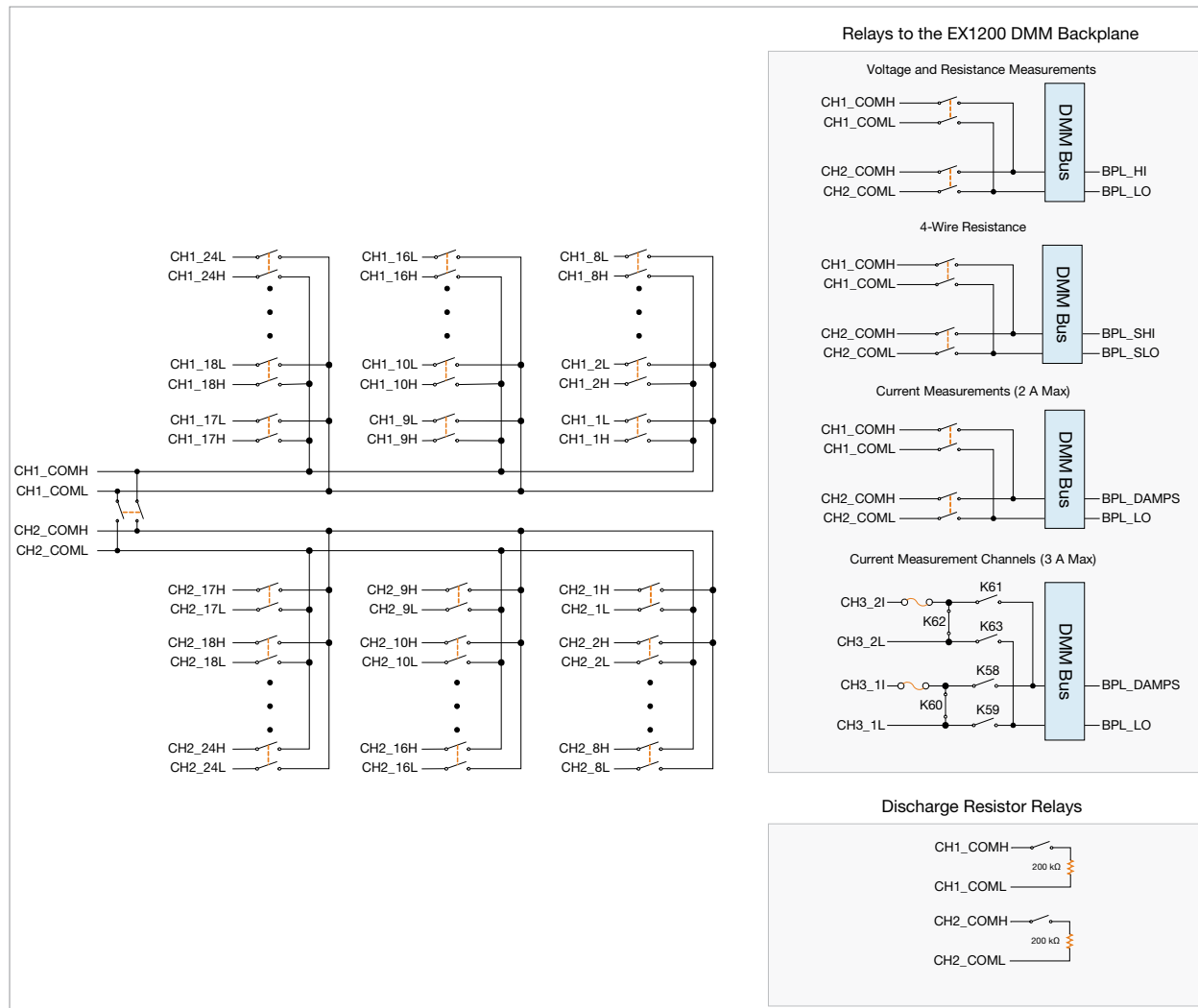
The EX1200-3048 consists of dual (1x24) 2-wire multiplexer banks. Each bank can be interconnected within a module under program control (via bussing relays) to form a 1 x 48 multiplexer. The EX1200 analog bus can be used to configure larger multiplexers which eliminates external wiring and helps reduce unterminated stub effects. Up to 288 two-wire (or 144 four-wire) channels can be accommodated in a single EX1200 full rack mainframe for maximum density or mixed and matched with other EX1200 plug-ins for flexibility.

Internal residual voltage discharge relays 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.

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.

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BLOCK DIAGRAM



General Specifications

CHANNEL COUNT	48 two-wire or 24 four-wire
RELAY TYPE	Electromechanical, fail-safe
MAXIMUM SWITCHING VOLTAGE	300 V DC, 300 V AC rms
MAXIMUM SWITCHING CURRENT	2 A
MAXIMUM SWITCHING POWER¹	60 W DC, 125 VA
MINIMUM CONTACT RATING²	10 mV DC, 10 µA (resistive)
RATED SWITCH OPERATIONS	
Mechanical	1 x 10 ⁸ (no load)
Electrical	1 x 10 ⁶ @ 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 ⁹ Ω
MAXIMUM THERMAL OFFSET PER CHANNEL (HI-LO)	< 3 µV
CAPACITANCE	
Open channel	< 50 pF
Channel-mainframe	< 20 pF
High-low	< 50 pF
BANDWIDTH (-3 dB)	35 MHz (typical)
CROSSTALK	
100 kHz	< -55 dB
1 MHz	< -45 dB
10 MHz	< -30 dB
CONNECTOR TYPE	104-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

EX1200-3048	48-channel, 300 V/2 A multiplexer
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