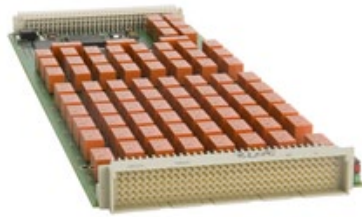# EX1200-3072

72-CHANNEL 2-WIRE 300 V/2 A MULTIPLEXER

FEATURES

High-density 300 V/2 A multiplexing scanning
(up to 432 two-wire channels in 1U footprint)

Two individual (1x36) 2-wire multiplexer banks
programmably combinable to form a 1x72 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

VTI Instruments

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OVERVIEW

The EX1200-3072 high-density multiplexer module is 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, semiconductor and 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).

The EX1200-3072 consists of dual (1x36) multiplexer banks. Each bank can be interconnected within a module under program control (via bussing relays) to form a (1 x 72) 2-wire mux. The EX1200 analog bus can be used to configure larger multiplexers as required to eliminate external wiring and helps reduce unterminated stubs effects. Up to 432 two-wire (or 216 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.

BLOCK DIAGRAM
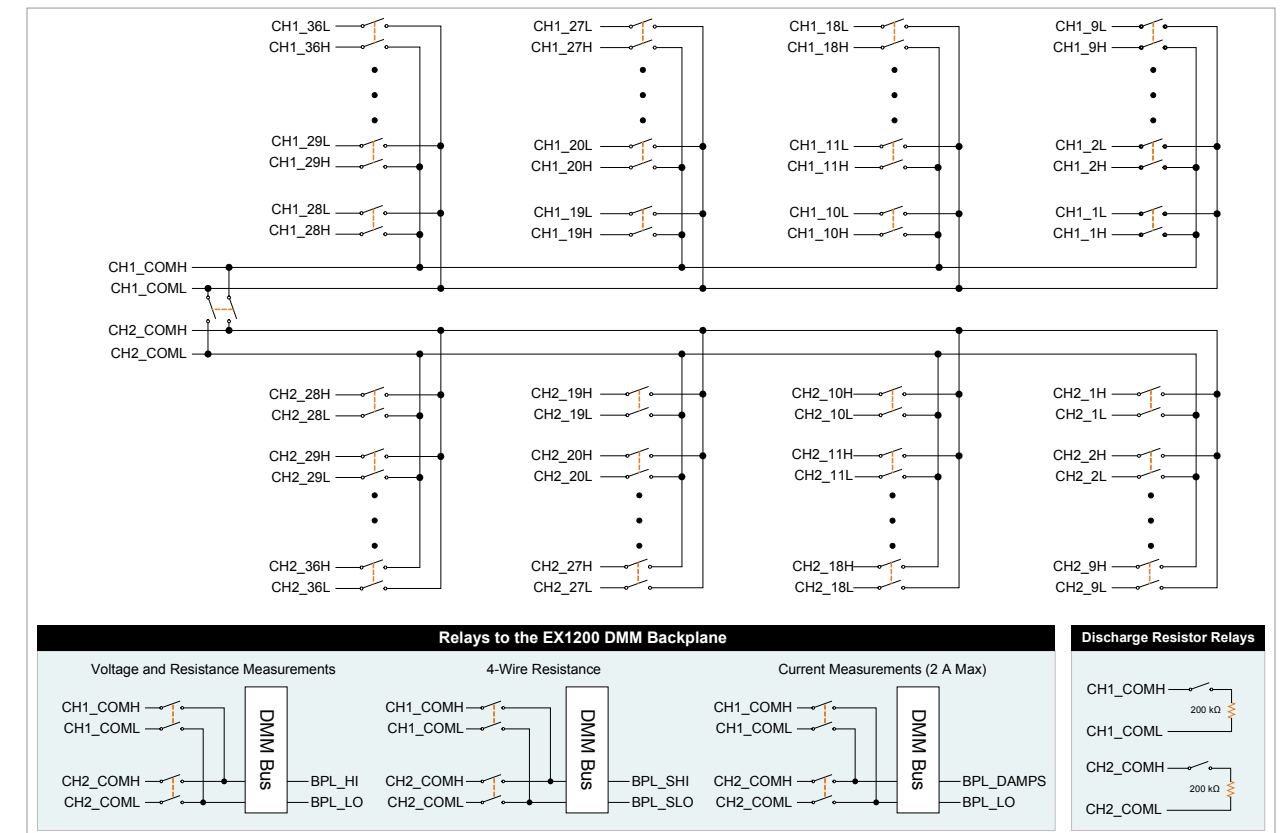
General Specifications

CHANNEL COUNT	(1 x 72) 2-wire, dual (1 x 36) 2-wire, or (1 x 36) 4-wire
RELAY TYPE	Electromechanical, fail-safe
MAXIMUM SWITCHING VOLTAGE	300 V AC rms, 300 V DC
MAXIMUM SWITCHING CURRENT	2 A
MAXIMUM SWITCHING POWER[1]	60 W DC, 125 VA
MINIMUM CONTACT RATING[2]	10 mV DC, 10 µA (resistive)
RATED SWITCH OPERATIONS	
Mechanical	1×10^8 (no load)
Electrical	1×10^6 @ 50 V DC, 0.1 A resistive or 10 V DC, 10 mA (resistive)
SWITCHING TIME	< 3 ms
PATH RESISTANCE	< 500 mΩ
INSULATION RESISTANCE	$> 1 \times 10^9$ 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)	40 MHz (typical)
CROSSTALK (TYPICAL)	
1 MHz	< -70 dB
10 MHz	< -50 dB
ISOLATION (TYPICAL)	
1 MHz	< -55 dB
10 MHz	< -35 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

EX1200-3072	72-channel, 300 V/2 A multiplexer
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
70-0367-002	EX1200-TB160-1 terminal block, differential module