DATA SHEET



EX1200-3096

96-CHANNEL 100 V/0.5 A TWO-WIRE MULTIPLEXER

FEATURES

Ultra high-density multiplexing/scanning (1x576 2-wire channels in full rack mainframe)

Two individual (1x48) 2-wire multiplexer banks programmably combinable to form a 1x96 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 EX1200-3096 high-density multiplexer is designed for scanning of multiple points to a common bus, in either 2- or 4-wire configurations. The sequencing of switch and measure operations can be tightly synchronized as part of the EX1200 embedded scan list to minimize processor overhead and increase test throughput.

Up to 576 two-wire (or 288 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. All relays also have individual control and each path allows for hot switching of up to 100 V and 0.5 A (30 W DC max).

The EX1200-3096 consists of dual (1 x 48) 2-wire multiplexer banks. Each bank can be interconnected within a module under program control (via bussing relays) and across modules via the EX1200 analog bus to configure larger multiplexers as required. This eliminates external wiring and helps reduce unterminated stubs.

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





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General Specifications

| CHANNEL COUNT | (1 x 96) 2-wire, dual (1 x 48) 2-wire, or (1 x 48) 4-wire | |
|--|---|--|
| RELAY TYPE | Electromechanical, fail-safe | |
| MAXIMUM SWITCHING VOLTAGE | 240 V AC, 120 V DC | |
| MAXIMUM SWITCHING CURRENT | 1 A | |
| MAXIMUM SWITCHING POWER | 30 W DC (resistive), 37.5 VA (resistive) | |
| RATED SWITCH OPERATIONS | | |
| Mechanical | 1 x 10 ⁷ | |
| Electrical | 1 x 10 ⁵ @ 30 V DC, 1 A (resistive) or 125 V AC, 0.3 A (resistive) | |
| SWITCHING TIME | < 3 ms | |
| PATH RESISTANCE | < 500 mΩ | |
| INSULATION RESISTANCE | > 1 X 10 ⁹ Ω | |
| MAXIMUM THERMAL OFFSET PER CHANNEL (HI-LO) | < 7 µV | |
| CAPACITANCE | | |
| Open channel | < 50 pF | |
| Channel-mainframe | < 20 pF | |
| High-low | < 50 pF | |
| BANDWIDTH (-3 dB) | 20 MHz (typical) | |
| CROSSTALK (TYPICAL) | | |
| 1 MHz | < -70 dB | |
| 10 MHz | < -50 dB | |
| ISOLATION (TYPICAL) | | |
| 1 MHz | < -55 dB | |
| 10 MHz | < -45 dB | |
| CONNECTOR TYPE | 200-pin | |

Ordering Information

| EX1200-3096 | 96-channel 2-wire, 100 V/1 A multiplexer |
|-----------------------|--|
| ACCESSORIES AND TOOLS | |
| 41-0472-034 | Strain relief bracket |
| 27-0388-200 | 200-pin mating connector |
| 27-0391-050 | Crimp pin |
| 70-0367-004 | EX1200-TB200 terminal block, differential module |
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