

KEYSIGHT TECHNOLOGIES (AGILENT HP)

34901A

The Keysight 34901A is a 20-channel multiplexer module designed for the 34970A and 34972A Data Acquisition/Switch Units. It provides high-performance multi-function switching with a scanning rate of up to 60 channels per second, integrated cold junction compensation, and two dedicated fused 1A current channels, making it the most versatile and dense multiplexing solution for diverse data acquisition applications.

SPECIFICATIONS

General

Interfaces	Internal backplane interface to 34970A/34972A mainframes
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Physical

Power Supply	Powered directly from mainframe backplane
Operating Temperature	0 °C to 55 °C °C

Channel & Configuration

Number of Channels	20 (configured as 2-wire) or 10 (configured as 4-wire)
Dedicated Current Channels	2 channels (fused, 1 A max switching current)
Total Channels	22 channels
Configurable Channel Pairs	Yes, for 4-wire resistance measurements
Internal Cold Junction Compensation Sensor	Yes (built-in thermocouple reference junction)
Connection Type	Built-in screw terminals
Relay Technology Type	Armature latching
Measurement Configuration Types	DC Volts, AC Volts, 2-wire Ohms, 4-wire Ohms, Temperature (Thermocouple, RTD, Thermistor), Frequency, Period, DC Current, AC Current

Input Voltage & Current Limits

Maximum Switching Voltage (DC)	300 V
Maximum Switching Voltage (AC RMS)	300 V
Maximum Switching Current (DC)	1 A
Maximum Switching Current (AC RMS)	1 A
Maximum Switching Power (W)	50 W
Maximum Switching Power (VA)	50 VA
Maximum Common Mode Voltage (Channel to Channel)	300 V
Maximum Common Mode Voltage (Channel to Earth)	300 V

DC & Signal Integrity Characteristics

Thermal Offset (Thermal EMF)	< 3 μV
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AC & RF Performance

Bandwidth (-3 dB limit)	10 MHz (with 50 Ω source/load)
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Switching Dynamics & Lifetime

Maximum Scanning Speed	60 channels/second
Mechanical Life Expectancy	100,000,000 cycles
Electrical Life Expectancy (at rated load)	100,000 cycles
Built-in Relay Cycle Counter Support	Yes (stored in non-volatile memory on module)

Physical & Hardware Specifications

Terminal Block Type	Integrated screw terminal
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Environmental & Safety Compliance

Storage Temperature Range	-40 °C to 70 °C
Operating Humidity Limit	80% R.H. at 40 °C (non-condensing)
Operating Altitude Limit	2000 meters

System Compatibility & Accessories

Compatible Mainframes	Keysight / Agilent 34970A, 34972A
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Measurement Capabilities

Supported Thermocouple Types	B, E, J, K, N, R, S, T
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TECHNOLOGY

Armature Relay

APPLICATIONS

Data Acquisition, Multiplexing, Temperature & Electrical Testing

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