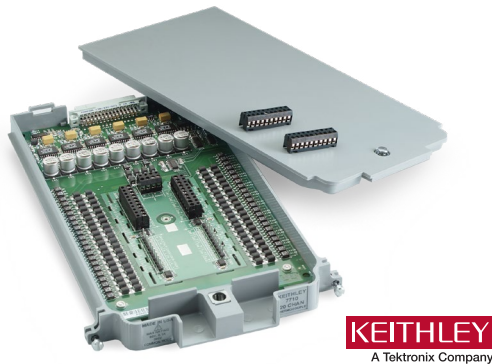# 7710 20-channel Solid-state Differential Multiplexer
with Automatic CJC

Datasheet
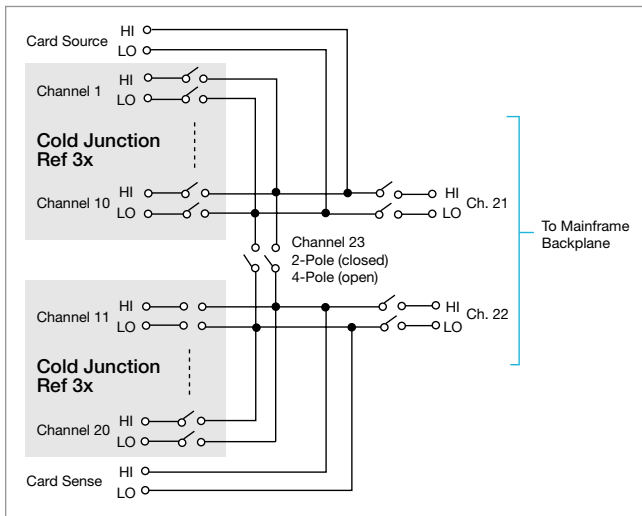
The 7710 plug-in module offers 20 channels of 2-pole or 10 channels of 4-pole relay input that can be configured as two independent banks of multiplexers. The relays are solid state, providing long life and low maintenance. Solid-state relays usually have 100 times longer life than mechanical relays. It is ideal for long-term data logging applications as well as for demanding high-speed applications.

Key Features
- 20 channels for general purpose measurements with scanning speeds up to 800 channels/s
- High speed production or ATE testing up to 500 channels/s
- Long lifetime solid state relays
- Removable screw terminals

Specifications

Capabilities

Maximum Signal Level
Any channel to any channel (1–20) 60 VDC or 42 V rms, 100 mA switched, 6 W, 4.2 VA maximum.

Common Mode Voltage
300 VDC or 300 Vrms (425 V peak) maximum between any terminal and chassis.

Contact Life >10^{10} operations at cold switching or max signal level (guaranteed by design).

Relay Drive Current 6 mA per channel continuous, 25 mA during initial pulse.

Contact Resistance <10 Ω per channel or <5 Ω per conductor. Refer to the 7710 User's Guide for measurement considerations when used on the instrument 1 Ω or 10 Ω ranges.

Contact Potential <3 μV per pair.

Offset Current <3 nA @ 23°C (per channel); additional 0.13 nA/°C >23°C.

Connector Type 3.5 mm removable screw terminals, #20 AWG wire size.

Isolation Between Any Two Terminals: >10^{10} Ω @ 23°C, > 8×10^{9} Ω @ 50°C, <100 pF.

Isolation Between Any Terminal and Earth: >10^{10} Ω, <100 pF.

Crosstalk (CH-CH, 500 kHz, 50 Ω Load): <–40 dB.

Insertion Loss (50 Ω Source, 50 Ω Load) <1 dB below 500 kHz.

Scanning Speeds (see mainframe specifications for details)

Multiple Channels, Into Memory
7710 Scanning DCV: >800.
7710 Scanning DCV alternating 2WΩ: >400.

General

Channels 20 channels of 2-pole relay input. All channels configurable to 4-pole.

Relay Type Solid state opto-coupled FET.

Actuation Time <0.5 ms (100 mA load).

Environmental and Safety
Operating Environment: Specified for 0° to 50°C. Specified to 80% R.H. at 35°C.

Storage Environment: –25° to 65°C.

EMC: Conforms to European Union EMC Directive.

Safety: Conforms to European Union Low Voltage Directive

RoHS: Conforms to European Union RoHS Directive

Weight 0.45 kg (1 lb).

Supplied Accessories
CC-92-1	Set of 20 Cable Ties
TL-23	Screwdriver

Available Services
7710-3Y-EW	1-year factory warranty extended to 3 years from date of shipment

Ordering Information
7710	20-channel Solid-state Differential Multiplexer Module
Warranty	1 year

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