20-Channel Solid-State Differential Multiplexer with Automatic CJC

- 20 channels for general purpose measurements
- Scanning speeds of up to 500 channels/second
- High speed production or ATE testing up to 500 channels/s
- Long lifetime solid state relay
- Removable screw terminals for simple, quick connections

**Ordering Information**

**7710** 20-Channel Solid-State Differential Multiplexer Module

The Model 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.

**CAPABILITIES**

**CHANNELS 1–20**: Multiplex one of 20 2-pole or one of 10 4-pole signals into DMM.

**INPUTS**

- **MAXIMUM SIGNAL LEVEL**: Any channel to any channel (1–20) 60VDC or 42V rms, 100mA switched, 6W, 4.2VA maximum.
- **COMMON MODE VOLTAGE**: 500VDC or 300Vrms (425V peak) maximum between any terminal and chassis.
- **RELAY LIFE (TYP)**: >10^6 operational hours max. signal level or 10^9 operations (guaranteed by design).
- **RELAY DRIVE CURRENT**: 6mA per channel continuous, 25mA during initial pulse.

**CHANNEL RESISTANCE (per conductor)**: <5Ω.

**CONTACT POTENTIAL**: <1µV per pair.

**OFFSET CURRENT**: <3nA @ 23°C (per channel); additional 0.13nA/°C >23°C.

**RELAY DRIVE CURRENT**: <100µA.

**RELAY RESISTANCE**: <3Ω.

**ISOLATION BETWEEN ANY TERMINAL AND EARTH**: >10^9 Ω, <100pF.

**CROSS TALK (CH-CH, 300kHz, 50Ω Load)**: <–40dB.

**INSERTION LOSS (50Ω Source, 50Ω Load)**: <0.5dB below 1MHz, <3dB below 2MHz.

**TEMPERATURE ACCURACY USING INTERNAL CJC**: 1°C for K type (see mainframe specifications for details).

**GENERAL**

**CHANNELS**: 20 channels of 2-pole relay input. All channels configurable to 4-pole.

**RELAY TYPE**: Solid State Opto-Coupled FET.

**ACTUATION TIME**: <0.5ms (100mA load).

**FIRMWARE**: Specified for Model 2700 Rev. B05, Model 2750 Rev. A04, and Model 2701 Rev. A01.

**ENVIROMENTAL**

**OPERATING ENVIRONMENT**: Specified for 0°C to 50°C. Specified for 80% R.H. at 35°C.

**STORAGE ENVIRONMENT**: –25° to 65°C.

**WEIGHT**: 0.45kg (1 lb).

**ACCESSORIES AVAILABLE**

- 7401 Type K Thermocouple Wire, 30.5m (100 ft).

**SCANNING SPEEDS** (see mainframe specifications for details)

<table>
<thead>
<tr>
<th>Multiple Channels, Into Memory</th>
<th>Channels</th>
<th>2700</th>
<th>2701</th>
<th>2750</th>
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</thead>
<tbody>
<tr>
<td>7710 Scanning DCV</td>
<td>180/s</td>
<td>500/s</td>
<td>250/s</td>
<td></td>
</tr>
<tr>
<td>7710 Scanning DCV with Limits or Time Stamp On</td>
<td>170/s</td>
<td>500/s</td>
<td>250/s</td>
<td></td>
</tr>
<tr>
<td>7710 Scanning DCV alternating 2Ω</td>
<td>45/s</td>
<td>130/s</td>
<td>60/s</td>
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</tbody>
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<th>Multiple Channels, Into and Out of Memory to GPIB or Ethernet</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7710 Scanning DCV</td>
<td>145/s</td>
<td>440/s</td>
<td>210/s</td>
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</tr>
<tr>
<td>7710 Scanning DCV with Limits or Time Stamp On</td>
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