# 7710

**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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7710</td>
<td>20-channel Solid-state Differential Multiplexer Module</td>
</tr>
</tbody>
</table>

## 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:** 300VDC or 300Vrms (425V peak) maximum between any terminal and chassis.
- **RELAY LIFE (Typ.):** >10⁷ operational hours max. signal level or 10⁶ operations (guaranteed by design).
- **RELAY DRIVE CURRENT:** 6mA per channel continuous, 25mA during initial pulse.
- **CHANNEL RESISTANCE (per conductor):** <5Ω
- **CONTACT POTENTIAL:** <1V per pair.
- **OFFSET CURRENT:** <5nA @ 25°C (per channel); additional 0.1mA°C @ >23°C.
- **CONNECTOR TYPE:** 3.5mm removable screw terminals, #20 AWG wire size.
- **ISOLATION BETWEEN ANY TWO TERMINALS:** >10⁷Ω, <100pF
- **ISOLATION BETWEEN ANY TERMINAL AND EARTH:** >10⁷Ω, <100pF
- **CROSSTALK (CH-CH, 300kHz, 500Ω load):** <=-40dB
- **INSERTION LOSS (50Ω Source, 50Ω load):** <0.5dB below 1MHz, <5dB 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.

**ENVIRONMENTAL**

- **OPERATING ENVIRONMENT:** Specified for 0°C to 50°C.
  - Specified for 80% R.H. at 35°C.
- **STORAGE ENVIRONMENT:** -25°C to 65°C.
- **WEIGHT:** 0.45kg (1 lb).

## ACCESSORIES AVAILABLE

- 7601 Type K Thermocouple Wire, 30.5m (100 ft)

## SERVICES AVAILABLE

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

## SCANNING SPEEDS (see mainframe specifications for details)

<table>
<thead>
<tr>
<th>Multiple Channels, Into Memory</th>
<th>Channels/s</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2700</td>
</tr>
<tr>
<td>7710 Scanning DCV</td>
<td>180/s</td>
</tr>
<tr>
<td>7710 Scanning DCV with Limits or Time Stamp On</td>
<td>170/s</td>
</tr>
<tr>
<td>7710 Scanning DCV alternating 2Ω</td>
<td>45/s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multiple Channels, Into and Out of Memory to GPIB or Ethernet</th>
<th>Channels/s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2700</td>
</tr>
<tr>
<td>7710 Scanning DCV</td>
<td>145/s</td>
</tr>
<tr>
<td>7710 Scanning DCV with Limits or Time Stamp On</td>
<td>145/s</td>
</tr>
<tr>
<td>7710 Scanning DCV alternating 2Ω</td>
<td>40/s</td>
</tr>
</tbody>
</table>

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.