Counters

CMC251
- 1 Hz to 100 MHz (CH 1)
- 80 MHz to 1.3 GHz (CH 2)
- ±1 ppm Time Base
- Period Average, Period, Frequency, Totalize, Self Test
- Display Hold
- Remote Start/Stop

CDC250
- 1 Hz to 175 MHz
- Frequency Ratio
- Time Interval
- ±1 ppm Time Base
- Period Average, Period, Frequency, Totalize, Self Test
- Display Hold
- Remote Start/Stop

CMC250
- 5 Hz to 100 MHz (CH 1)
- 80 MHz to 1.3 GHz (CH 2)
- ±10 ppm Time Base
- Period Average, Period, Frequency, Totalize, Self Test
- Display Hold
- Remote Start/Stop

CMC251
The CMC251 1.3 GHz Multifunction Counter measures the frequency of sine, square, and triangle waves from 1 Hz to 1.3 GHz. The CMC251 also provides period, totalize, and pulse width measurements. The counter has two input channels. Channel A is a standard 1 MΩ input for frequency measurements up to 100 MHz. Channel B is a special 50 Ω terminated input, pre-scaled to 1.3 GHz for easy RF measurements. The time base stability is ±10 ppm/yr.

CDC250
The CDC250 175 MHz Universal Counter measures frequency of sine, square, and triangle waves from 1 Hz to 175 MHz at input levels from 20 mV to 42 V peak. The CDC250 also provides period measurements, frequency ratio, time interval, and totalize measurement functions. The CDC250 has a ±1 ppm/year, temperature-compensated time base to ensure consistent accuracy. Service technicians will find the CDC250 useful as a standard for calibrating other equipment.

CMC250
The CMC250 1.3 GHz Multifunction Counter measures the frequency of sine, square, and triangle waves from 5 Hz to 1.3 GHz. The CMC250 also provides period measurements and totalize functions. Channel A is a standard 1 MΩ input for frequency measurements up to 100 MHz. Channel B is a special 50 Ω terminated input, pre-scaled to 1.3 GHz for easy RF measurements. The time base stability is ±10 ppm/yr.

CFC250
- 1 Hz to 100 MHz
- Switchable Input Sensitivity
- 1 Hz Resolution

ORDERING INFORMATION

CFC250
100 MHz Frequency Counter

CDC250
175 MHz Universal Counter

CMC250
1.3 GHz Frequency Counter

CMC251
1.3 GHz Frequency Counter with High Stability Time Base

AVAILABLE ACCESSORIES
10X Probes, 250 MHz Order P6130

SERVICE ASSURANCE OPTIONS
These products covered by the following service assurance options:
REP4100 – Provides One Year of Post-Warranty Repair Protection
CAL4100 – Provides One Year of Calibration Services
## Key Specifications

<table>
<thead>
<tr>
<th>Channel A</th>
<th>CMC251</th>
<th>CDC250</th>
<th>CMC250</th>
<th>CFC250</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency Range</strong></td>
<td>1 Hz to 100 MHz</td>
<td>1 Hz to 175 MHz</td>
<td>1 Hz to 100 MHz</td>
<td>5 Hz to 100 MHz</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>20 mV RMS, 1 Hz to 30 MHz; 50 mV RMS, 30 MHz to 100 MHz</td>
<td>20 mV RMS, 5 Hz to 10 MHz; 50 mV RMS, 10 MHz to 100 MHz</td>
<td>20 mV RMS, 5 Hz to 10 MHz; 50 mV RMS, 10 MHz to 100 MHz</td>
<td>30 mV RMS, 5 Hz to 30 MHz; 50 mV RMS, 30 MHz to 70 MHz; 80 mV RMS, 70 MHz to 100 MHz</td>
</tr>
<tr>
<td><strong>Attenuation</strong></td>
<td>3 V to 42 V (Hi); 50 mV to 5 V (Lo)</td>
<td>3 V to 42 V (Hi); 50 mV to 5 V (Lo)</td>
<td>3 V to 42 V (Hi); 50 mV to 5 V (Lo)</td>
<td>3 V to 42 V (Hi); 50 mV to 5 V (Lo)</td>
</tr>
<tr>
<td><strong>Max Input Voltage</strong></td>
<td>1 Hz to 5 MHz: 42 V pk; 5 MHz to 100 MHz: 4.9 V pk</td>
<td>1 Hz to 5 MHz: 42 V pk; 5 MHz to 100 MHz: 4.9 V pk</td>
<td>1 Hz to 5 MHz: 42 V pk; 5 MHz to 100 MHz: 4.9 V pk</td>
<td>5 Hz to 100 MHz: 42 V pk; 100 kHz to 10 MHz: 13.8 V pk; 10 MHz to 100 MHz: 5.4 V pk</td>
</tr>
<tr>
<td><strong>Low Pass Filter</strong></td>
<td>3 dB at 100 kHz</td>
<td>3 dB at 10 kHz</td>
<td>3 dB at 100 kHz</td>
<td>100 kHz</td>
</tr>
<tr>
<td><strong>Impedance</strong></td>
<td>1.0 MΩ, paralleled by 40 pF</td>
<td>1.0 MΩ, paralleled by 40 pF</td>
<td>1.0 MΩ, paralleled by 40 pF</td>
<td>1.0 MΩ, paralleled by 40 pF</td>
</tr>
<tr>
<td><strong>Channel B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Frequency Range</strong></td>
<td>80 MHz to 1.3 GHz</td>
<td>1 Hz to 2 MHz</td>
<td>80 MHz to 1.3 GHz</td>
<td>–</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>5 mV RMS, 80 MHz to 600 MHz; 15 mV RMS, 600 MHz to 900 MHz; 35 mV RMS, 900 MHz to 1.3 GHz</td>
<td>30 mV RMS, 5 Hz to 2 MHz</td>
<td>10 mV RMS, 80 MHz to 600 MHz; 25 mV RMS, 600 MHz to 900 MHz; 50 mV RMS, 900 MHz to 1.3 GHz</td>
<td>–</td>
</tr>
<tr>
<td><strong>Impedance</strong></td>
<td>50 Ω</td>
<td>1.0 MΩ, paralleled by 40 pF</td>
<td>50 Ω</td>
<td>–</td>
</tr>
<tr>
<td><strong>Max Input Voltage</strong></td>
<td>1 V RMS</td>
<td>42 V pk</td>
<td>1 V RMS</td>
<td>–</td>
</tr>
<tr>
<td><strong>Period</strong></td>
<td>Direct: 0.4 μs to 1.0 s; Prescale: 0.04 μs to 1.0 s</td>
<td>0.5 μs to 0.2 s</td>
<td>0.4 μs to 0.2 s</td>
<td>–</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>Direct: 100 ps to 100 ns; Prescale: 10 ps to 10 ns</td>
<td>100 ps to 100 ns</td>
<td>100 ps to 100 ns</td>
<td>–</td>
</tr>
<tr>
<td><strong>Min Pulse Width</strong></td>
<td>Direct: 0.2 μs; Prescale: 20 ns</td>
<td>250 ns</td>
<td>250 ns</td>
<td>–</td>
</tr>
<tr>
<td><strong>Frequency Range</strong></td>
<td>Direct: 1 Hz to 2.5 MHz; Prescale: 1 Hz to 25 MHz</td>
<td>1 Hz to 2 MHz</td>
<td>5 Hz to 2.5 MHz</td>
<td>–</td>
</tr>
<tr>
<td><strong>Events Averaged (N)</strong></td>
<td>1, 10, 100, 1000, 10,000 cycles</td>
<td>1, 10, 100, 1000 cycles</td>
<td>1, 10, 100, 1000 cycles</td>
<td>–</td>
</tr>
<tr>
<td><strong>Totalize Range</strong></td>
<td>0 to 99,999,999</td>
<td>0 to 99,999,999</td>
<td>0 to 99,999,999</td>
<td>–</td>
</tr>
<tr>
<td><strong>Pulse Width</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Time Base Stability</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Selectable Slope</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Ratio CH A:CH B</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Display Hold</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Remote Start/Stop</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Time Interval</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Safety Certification</strong></td>
<td>ETL, CSA</td>
<td>UL, CSA</td>
<td>UL, CSA</td>
<td>UL, CSA</td>
</tr>
</tbody>
</table>