MODEL 1030

Four Channel, 100 MHz Amplifier/Attenuator

FEATURES
- 4 Independent Channels
- 100 MHz Bandwidth
- Input range programmable from 50 mV to 50 V p-p FS
- ±1/2 Full Scale programmable offset
- Programmable ac or dc coupling
- 50 Ω or 1 MΩ programmable input impedance
- Single Width Module

DESCRIPTION
The DSP Technology Model 1030 includes 4 separately programmable, high speed, high quality, instrumentation amplifiers/attenuators. Housed in a single width CAMAC module, the 1030 is designed to compliment transient recorders and other data collection applications where bandwidths approaching 100 MHz are required.

Input sensitivity is individually programmable from ± 25 mV to ± 25 V full scale with gains from x0.01 to x10 in 1-2-5 step sequence. Individual offsets are programmable over the input range to accommodate bipolar and unipolar signals. Each input can be ac or dc coupled and grounded independently, providing maximum flexibility.

Input impedance can be individually selected either 50 Ω or 1 MΩ under program control. Recovery from a X2 overload to ±1 LSB is within 50 ns.

The output for each channel is ± 250 mV into 50 Ω. Noise is less than 2 mV RMS RTO.

\[
\frac{100}{2} = 20 \times
\]
AMPLIFIER/ATTENUATOR INPUTS
Channels: 4 per Model 1030 Amplifier/Attenuator
Impedance: 50 Ω or 1 MΩ shunted by ≤50 pf, independently programmable for each channel.
Sensitivity: ±25 mV to ±25 V in 1-2-5 sequence, independently programmable for each channel.
Accuracy is ±1%.
Coupling: ac or dc, independently programmable for each channel
Grounding: Each signal input can be independently grounded under program control.
Offset: ±1/2 full scale in 256 steps (8 bit DAC) with ±1% accuracy. Offset is independent of gain setting and is independently programmable for each channel. The ±1/2 full scale offset range accommodates bipolar, positive unipolar and negative unipolar operation.
Overvoltage Protection:
1 MΩ input:
  250 V for 1 V thru ±25 V sensitivity
  50 V for ±25 mV thru ±500 mV sensitivity.
50 Ω input:
  ±8 V
Overdrave Recovery: 50 ns to recover to within ±1 LSB from x2 overload.

AMPLIFIER/ATTENUATOR OUTPUTS
Number: One for each of the four channels
Impedance: 50 Ω
Range: ±250 mV full scale into 50 Ω
Noise: ±2 mV RMS
BANDWIDTH
(for signal amplitudes up to full scale)
  dc to ≥ 100 MHz (3 dB)
  dc to ≥ 75 MHz (1 dB)
FRONT PANEL
SELECT (Channel number select): A push button switch. The channel whose status is displayed by LEDs increments by one each time the button is pressed.
LED READOUT (4 Red LEDs): Displays the channel selected by the SELECT switch.
N (Green LED) Lit indicates module addressed by computer.
GND (Red LED) Lit when the selected channel input is grounded.
AC (Red LED) Lit when the selected channel input is ac coupled.
HZ (Red LED) Lit when the selected channel input impedance is 1 MΩ
GAIN (4 Red LEDs) Lit in binary sequence to indicate the selected channel full scale range.

PACKAGING
#1 width CAMAC Module
221 mm H, 18 mm W, 292 mm D* (8.7" x 0.7" x 11.5")
*Depth from front to rear panel.
Rear connector is 13 mm (0.5"). In conformance with the CAMAC standard for RF shielded instrumentation modules (IEEE standard 583, European Esone Report #EUR4100e).

POWER
28 W
  + 6 V  2 A
  - 6 V  1 A
  + 24 V 200 mA
  - 24 V 200 mA

TEMPERATURE
0 °C to 35 °C (32 °F to 95 °F) ambient to operate within specifications (when installed in crate with enough air flow to hold maximum air exit temperature to 55 °C (131 °F).

<table>
<thead>
<tr>
<th>Function</th>
<th>Read</th>
<th>Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel status (gain, coupling, input impedance, ground state)</td>
<td>F(0)A(0-3 is Ch 1-4)</td>
<td>F(16)A(0-3 is Ch 1-4)</td>
</tr>
<tr>
<td>Analog offset setting</td>
<td>F(0)A(4-7 is Ch 1-4)</td>
<td>A(4-7 is Ch 1-4)</td>
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<tr>
<td>Module ID number</td>
<td>F(3)a(0)</td>
<td></td>
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