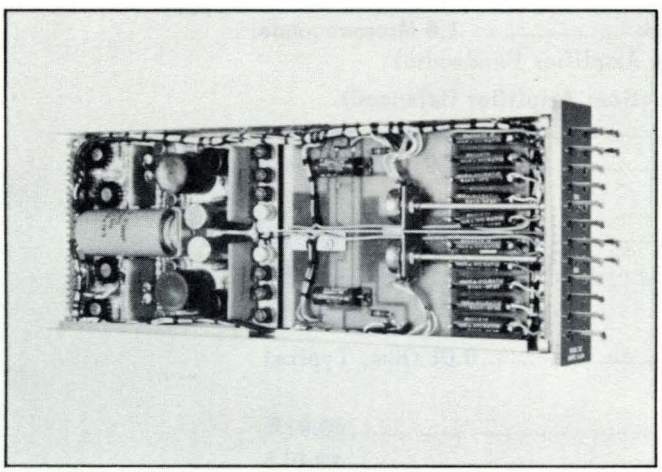
PIR

PRODUCT INFORMATION RELEASE

PACE® SOLID STATE Analog Computing Components

TRANSISTORIZED DC AMPLIFIER – TYPE 6.614

. . . by an optimum balance between gain roll-off with frequency and high frequency stability, this operational amplifier provides outstanding performance with no velocity limiting over its entire wide frequency bandwidth . . .



- **Improved computer high-speed, repetitive and iterative operation**
- **Excellent computation accuracies . . . to within ±0.01%**
- **Faster, electronic comparator switching**
- **Superior, dynamic performance in association with other PACE Solid-State Computing Components, such as, multipliers, and diode function generators.**

Type 6.614, with single-ended input and output connections and chopper drift-stabilization, is a superior computational component for use in general or special purpose analog computers.

The amplifier's low phase-shift, exceptional gain, and reduced off-set voltage – all with no velocity limiting of the output voltage over an extended frequency pass band – provide a new advance in computer performance:

Designed as a basic component for the PACE® TR-48 Computer, Type 6.614 is supplied as two independent and uncommitted operational amplifiers in a single, compact, plug-in module. Input and feedback resistors are included. Precision capacitors for integrator operation are available as separate networks. Patch-cords or 2-prong plugs, that can be inserted into a front, color-coded, patch-panel on the amplifier module, are used to make signal connection with associated computing components.

EAI

(EAI reserves the right to revise its product specifications in accordance with its continuing program of product development.)

ELECTRONIC ASSOCIATES, INC., *West Long Branch, Long Branch, New Jersey*

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SPECIFICATIONS, MODEL 6.614

OPERATIONAL

Output Voltage Range ..... ±10 Volts, Minimum

Output Current Range ..... (See Curve at Right)

Open Loop DC Gain ..... 1.8×10^7, Typical
- Gain at 100 CPS ..... 30,000, Typical
- Gain at 1000 CPS ..... 4,000, Typical

Frequency Response (Output Down 3 db; 20V P-P Input)
- 10K Feedback ..... 400 KC, Minimum
- 100K Feedback ..... 125 KC, Minimum

Phase Shift (20V P-P Input)
- 10K Feedback; 100 CPS ..... 0.008°, Typical
- 10K Feedback; 1000 CPS ..... 0.08°, Typical
- 100K Feedback; 100 CPS ..... 0.03°, Typical
- 100K Feedback; 1000 CPS ..... 0.3°, Typical

Dynamic Amplitude Error
- 10V P-P Input; 1000 CPS ..... Less Than 0.1%

Transient Response
- 0 to Full Scale; 10K Feedback ..... 1.6 Microseconds
  (No Velocity Limiting Within Amplifier Bandwidth)

Offset Voltage (At Summing Junction; Amplifier Balanced)
- 10K Feedback ..... 30 μV, Maximum
- 100K Feedback ..... 50 μV, Maximum

Noise (Over Full Bandwidth)
- 10K Feedback ..... 150 μV RMS, Typical
- 100K Feedback ..... 250 μV RMS, Typical

Output Impedance
- At 100 CPS ..... 0.01 Ohm, Typical

Summing Resistor Tolerance
- Absolute Value ..... ±0.01%
- Ratio Within Network ..... ±0.01%

Amplifier Drift (Temperature Dependence)
- 10K Inverter ..... 0.5 μV/°F, Typical
- 100K Inverter ..... 1 μV/°F, Typical

Amplifier Stability
- Functional Stability Maintained With:
  - Feedback Capacitance ..... Any Value
  - Feedback Resistance ..... 0 to 5 Megohms
  - Input Resistance ..... 500 Ohms to Infinite

Operating Temperature Range ..... +35°F to +120°F

ELECTRICAL

Power Requirements* (AC and DC Power Obtained Externally)
- 6.3V RMS, 50-60 CPS Chopper ..... 65 MA
- +30 VDC ..... 30 MA
- +15 VDC ..... 8 MA
- −15 VDC ..... 40 MA

**The stated power requirements are for a dual amplifier with no output loading. The current required at +15 and −15 volts will be greater than stated by the amount required to drive a particular load.*