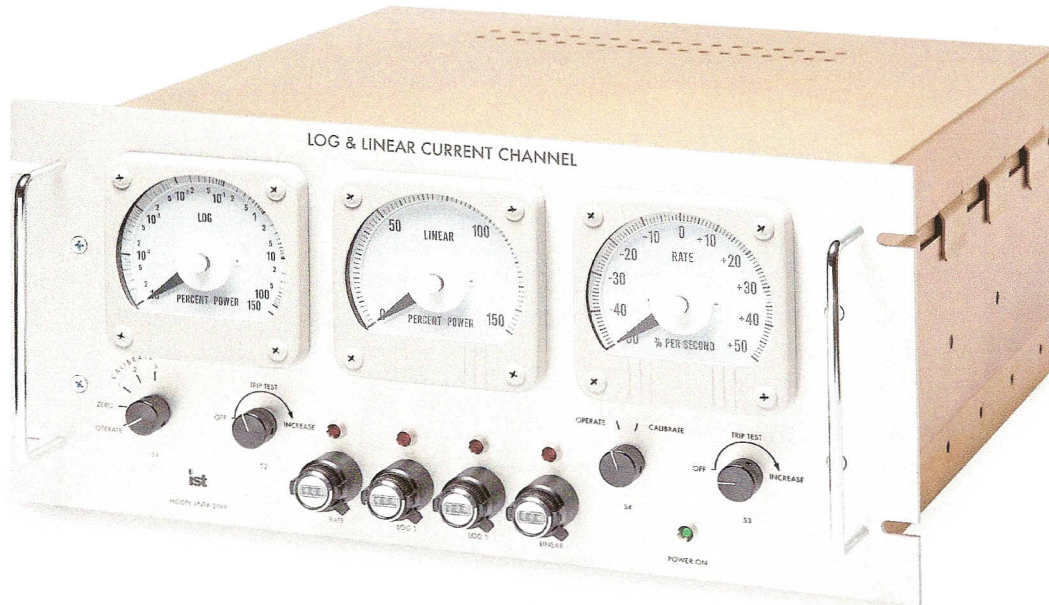




Log & Linear Current Channel Ion Chamber Amplifier



The Model NPA-2019 is an Ion Chamber Amplifier designed for use in a nuclear power reactor. The device consists of a log and linear amplifier, a rate amplifier, buffer amplifiers, alarm trips, and a high-voltage tell-tale circuit, all housed in a nuclear safety qualified drawer. It is designed to mount in a standard 483 mm (19") mounting rack.

Mean Time Between Failures:

- MTBF = 25, 697 hours (at 35°C)

Class 1E Qualifications:

- EMI/EMC per IEC 61000-4-2
- 24 hours at 85% relative humidity
- seismic per IEEE 344

Options:

- 220/230 VAC, 50/55 Hz power versions
- custom terminations available

Applications:

- nuclear reactor control or safety shutdown systems using ion chambers
- excore neutron flux monitoring

Features:

- good noise immunity
- selectable signal gains
- integral high voltage power supply for attached ion chamber
- adjustable log outputs
- rugged construction

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Specifications:

<p>Power Input</p> <p>Voltage 90 - 135 VAC Frequency 60 Hz \pm 3 Hz Power < 30 W</p> <p>Operating Ranges (inputs)</p> <p>Linear power 0 to 1.5×10^{-4} A Log power 10^{-11} to 1.5×10^{-4} A Log rate -50 to 50% %/s</p> <p>RMS Noise</p> <p>Log power < 5 mV Log rate (0.01 Hz - 400 MHz) < 5 mV Linear power < 5 mV</p> <p>Alarm</p> <p>Input impedance > 240 kΩ Reproducibility error (10 - 55°C) < 0.5% FS Thermal drift (10 - 55°C) < 0.01%/°C</p>	<p>Outputs</p> <p>Log power 0.5 - 4.088 or 0 - 10 VDC Log rate .. 0.5 (-50%/s) to 4.5 (50%/s) VDC or -10 (-50%/s) to 10 (50%/s) VDC Linear power 0.5 - 4.5 or 0 - 10 VDC Alarm (DPDT - 2 form C) ... 120 VAC @ 0.5 A</p> <p>Error</p> <p>Linear power < 1% FS Log rate < 2% FS Log power (10^{-9} - 1.5×10^{-4} A) < 1% FS Log power (10^{-11} - 1.5×10^{-9} A) < 4% FS</p> <p>Response Times</p> <p>Log power (10^{-10} - 10^{-9} A) 1 s \pm 30% Log power (10^{-8} - 10^{-7} A) 10 ms \pm 30% Log power (10^{-5} - 10^{-4} A) 1 ms \pm 30% Log rate (pole & zero) \leq 0.25 s Linear power \leq 5 ms</p>
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Ordering Information

To order, contact Mirion Technologies (IST Canada).

Phone: (519) 623-4880

Fax: (519) 623-4686

E-mail: istsales@istcanada.com