

SCALARE: CAPACITIVE TRANSDUCER POWER AMPLIFIER



- The Scalare Amplifier is designed to drive capacitive sonar transducers and similar capacitive loads.
- It removes the need and cost of specific impedance matching required by conventional audio amplifiers over its entire operational bandwidth.
- Scalare Amplifiers are designed to drive all capacitive loads up to 200nF
- Gain adjustment from 1dB to 50dB in 1 dB steps
- Multiple output protection mechanisms

Applications

Specifically designed for capacitive sonar transducers obviating the requirement for impedance matching circuitry

For general use with capacitive loads such as ceramic transducers, transmission lines and electrostatic actuators

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Features

The Scalare Amplifier is designed to drive capacitive sonar transducers and similar capacitive loads. It provides a single channel output capable of driving high voltages (up to 100V RMS, or 282V peak to peak) at frequencies from 50Hz to 100kHz whilst remaining stable with high load capacitance from long cables and piezo-electric transducers.



Gain adjustment from 1dB to 50dB in 1 dB steps. At 50dB gain, it can deliver 100V RMS output from a 320mV RMS input signal. To avoid accidental gain adjustments, the gain control is pressed/released to enable setting. Rotation of the gain adjustment knob then adjusts the output level.

Multiple output protection mechanisms*

- Safe Operating Area Limit (instantaneous power dissipation limiting)
- Power Limit
- Voltage Limit
- Temperature Limit

* These protection mechanisms are indicated by front panel LEDs and will result in automatic gain reduction for continued operation at sustainable levels.



Scalare Amplifiers are capable of driving all capacitive loads up to 200nF, for example driving a 16.5cm diameter (83nF) spherical sonar transducer (resonant frequency) at the rated output power.



Specifications

Mains AC power input:
90 to 265V AC 50/60Hz

DC power input:
12 to 28V DC – Nominal 24V

Sine Wave Output: Up to 100V RMS

Current Limiting: > 1A at 0V out

Power Dissipation (Circulating current): > 100W

System Frequency Response:
100Hz to 50kHz (-1dB)
50Hz to 100kHz (-3dB)

Slew rate: 100V/μs

Max capacitive load: 200nF

Monitor output (into high impedance): $V_{out}/100$ (+/- 5%)

Input Connector: BNC

Output Connector: Buccaneer 4000 Series (supplied)

Dimensions 483(W); 133(H); 287(D)(mm)

Weight: 10kg (13kg in case, as supplied)