AVTECH ELECTROSYSTEMS LTD.
NANOSECOND WAVEFORM ELECTRONICS
SINCE 1975

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INSTRUCTIONS

MODEL AVR-4-P-EPRIE

+40 TO +400 VOLT,

10 – 100 Hz, 500 ns – 5 us

PULSE GENERATOR MODULE

SERIAL NUMBER: 14132

WARRANTY

Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech shall at its option repair or replace said defective item. This warranty does not apply to units which have been dissembled, modified or subjected to conditions exceeding the applicable specifications or ratings. This warranty is the extent of the obligation assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

TECHNICAL SUPPORT

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Manual Reference: /fileserver1/officefiles/instructword/avr-4/AVR-4-P-EPRIE,ed1.odt.
Last modified February 29, 2024.

INTRODUCTION

The AVR-4-P-EPRIE is a customized high-performance DC-powered module capable of generating up to +400V into 50Ω loads at repetition rates of 10 to 100 Hz. The output pulse width is variable from 500 ns to 5 us. The rise and fall times are 15 ns or less, on a 20%-80% basis.

The AVR-4-P-EPRIE is triggered by an internal 10 to 100 Hz clock. The PRF is controlled by a one-turn locking trimpot. A coincident TTL-level sync pulse is provided for oscilloscope triggering purposes.

The amplitude and pulse width are also controlled by one-turn locking trimpots.

The output is designed to drive resistive loads of 50 Ohms or higher.

The module requires a +10V to +36V DC power supply.

This instrument is intended for use in research, development, test and calibration laboratories by qualified personnel.

ORIGINAL QUOTATION AND SPECIFICATIONS

Model number: AVR-4-P-EPRIE

Description: Customized High Voltage Pulser Module

Amplitude: < +40V to +400V, adjustable using a one-turn locking trimpot, into load resistances of 50 Ohms or higher.

Pulse width (FWHM): 500 ns to 5 us, adjustable using a one-turn locking trimpot.

Rise and fall times (20%-80%): < 15 ns

Pulse repetition frequency: 10 Hz to 100 Hz. Controlled by a one-turn locking trimpot. A coincident TTL-level sync pulse is provided.

Power required: +10V to +36V DC. Includes reverse polarity protection.

Chassis size: 3.25" H x 10" W x 5.75 D" (Bud AN-2808-AB or similar)

Connectors (SYNC, OUT): SMA female

Connectors (Power, Gnd): banana safety, red and black, Pomona 6387 or similar

Note: All trimpots and coaxial connectors will be located on one end (3.25" H x 5.75 D") of the module. All power connectors will be on the opposite end.

Price: $XXXXX Canadian Dollars each, DAP (Delivered At Place, to USA/Canada). Includes the cost of shipping and insurance, but excludes all taxes. Shipments are from Canada, via FedEx.

GST / HST taxes: extra, if applicable.

Quote valid for: 8 weeks

Terms: Net 30 days.

Note: Orders with Avtech are non-cancelable, non-refundable. Avtech does not offer returns, due to the highly-specialized, low-volume, build-to-order nature of our product line.

Estimated delivery: 8-10 weeks after receipt of order.

Avtech corporate registrations: DUNS: 208 910 836, Cage Code (USA): 0BWA5, Tax ID (USA EIN): 98-0117622

REGULATORY NOTES

FCC PART 18

This device complies with part 18 of the FCC rules for non-consumer industrial, scientific and medical (ISM) equipment.

This instrument is enclosed in a rugged metal chassis and uses a filtered power entry module (where applicable). The main output signal is provided on a shielded connector that is intended to be used with shielded coaxial cabling and a shielded load. Under these conditions, the interference potential of this instrument is low.

If interference is observed, check that appropriate well-shielded cabling is used on the output connectors. Contact Avtech (info@avtechpulse.com) for advice if you are unsure of the most appropriate cabling. Also, check that your load is adequately shielded. It may be necessary to enclose the load in a metal enclosure.

If any of the connectors on the instrument are unused, they should be covered with shielded metal “dust caps” to reduce the interference potential.

This instrument does not normally require regular maintenance to minimize interference potential. However, if loose hardware or connectors are noted, they should be tightened. Contact Avtech (info@avtechpulse.com) if you require assistance.

EC DECLARATION OF CONFORMITY

CE

We Avtech Electrosystems Ltd.
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Ottawa, Ontario
Canada K2C 3H5

declare that this pulse generator meets the intent of Directive 2004/108/EG for Electromagnetic Compatibility. Compliance pertains to the following specifications as listed in the official Journal of the European Communities:

EN 50081-1 Emission

EN 50082-1 Immunity

and that this pulse generator meets the intent of the Low Voltage Directive 2006/95/EC. Compliance pertains to the following specifications as listed in the official Journal of the European Communities:

EN 61010-1:2001 Safety requirements for electrical equipment for measurement, control, and laboratory use

DIRECTIVE 2011/65/EU (RoHS)

We Avtech Electrosystems Ltd.
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Ottawa, Ontario
Canada K2C 3H5

declare that, to the best of our knowledge, all electrical and electronic equipment (EEE) sold by the company are in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (also known as “RoHS Recast”). In addition, this declaration of conformity is issued under the sole responsibility of Avtech Electrosystems Ltd. Specifically, products manufactured do not contain the substances listed in the table below in concentrations greater than the listed maximum value.

Material/Substance	*Threshold level*
Lead (Pb)	< 1000 ppm (0.1% by mass)
Mercury (Hg)	< 1000 ppm (0.1% by mass)
Hexavalent Chromium (Cr6+)	< 1000 ppm (0.1% by mass)
Polybrominated Biphenyls (PBB)	< 1000 ppm (0.1% by mass)
Polybrominated Diphenyl ethers (PBDE)	< 1000 ppm (0.1% by mass)
Cadmium (Cd)	< 100 ppm (0.01% by mass)
Bis(2-ethylhexyl) phthalate (DEHP)	< 1000 ppm (0.1% by mass)
Butyl benzyl phthalate (BBP)	< 1000 ppm (0.1% by mass)
Dibutyl phthalate (DBP)	< 1000 ppm (0.1% by mass)
Diisobutyl phthalate (DIBP)	< 1000 ppm (0.1% by mass)

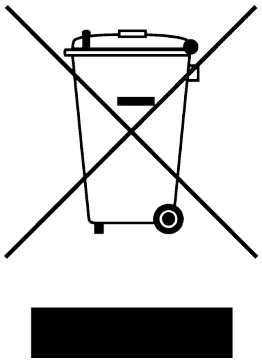
DIRECTIVE 2002/96/EC (WEEE)

European customers who have purchased this equipment directly from Avtech will have completed a “WEEE Responsibility Agreement” form, accepting responsibility for WEEE compliance (as mandated in Directive 2002/96/EC of the European Union and local

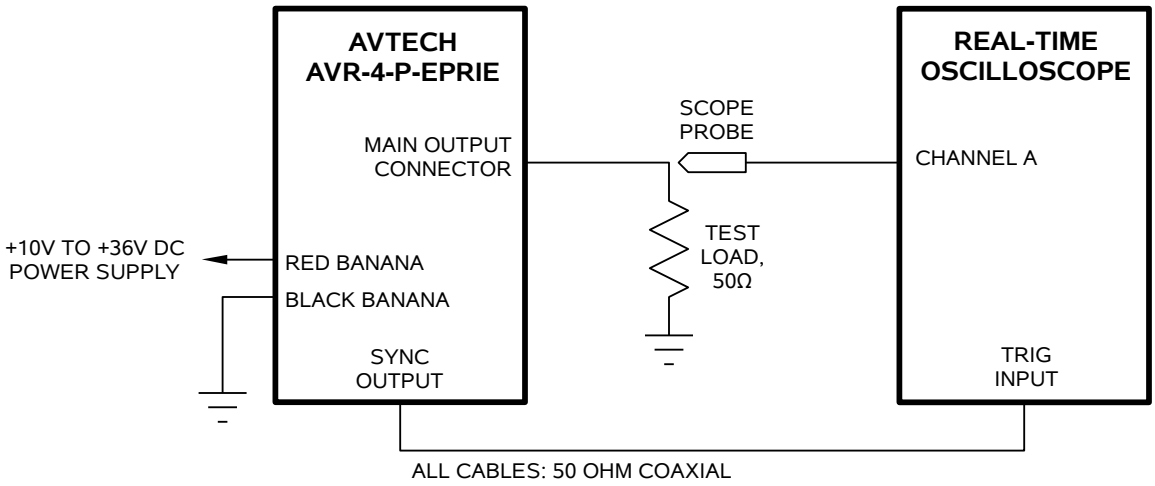
laws) on behalf of the customer, as provided for under Article 9 of Directive 2002/96/EC.

Customers who have purchased Avtech equipment through local representatives should consult with the representative to determine who has responsibility for WEEE compliance. Normally, such responsibilities with lie with the representative, unless other arrangements (under Article 9) have been made.

Requirements for WEEE compliance may include registration of products with local governments, reporting of recycling activities to local governments, and financing of recycling activities.

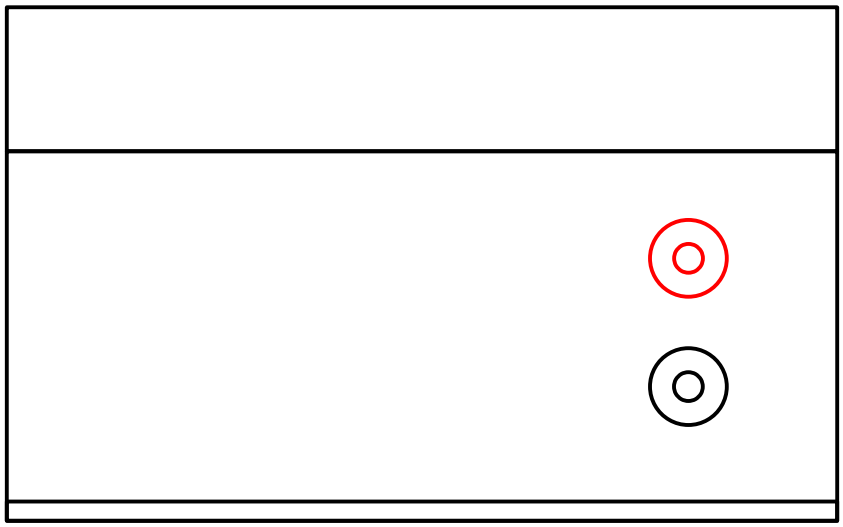


BASIC TEST ARRANGEMENT



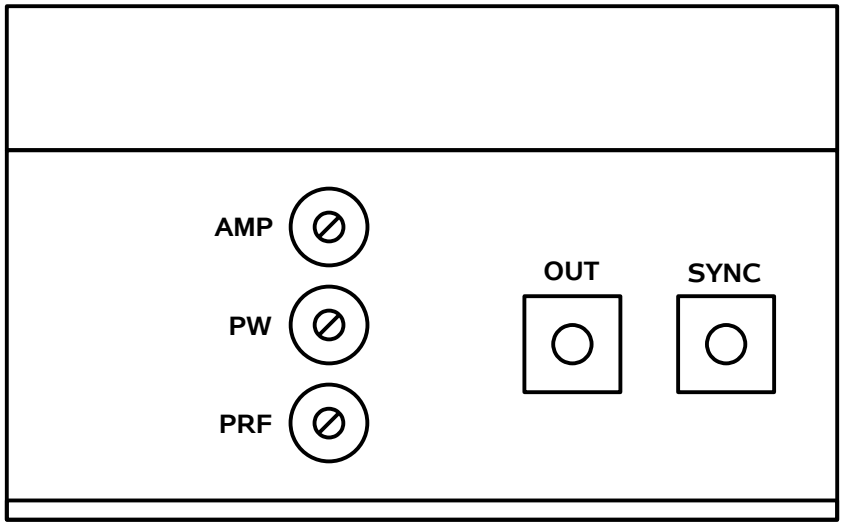
POWER SUPPLY

The AVR-4-P-EPRIE requires a DC power supply in the range of +10V to +36V. This voltage should be applied to the red banana safety socket on the end face of the manual. The black banana safety socket must be connected to ground. The locations of these sockets are shown below:



OTHER CONTROLS

The location of the OUT and SYNC connectors, and the PRF, amplitude and pulse width controls are located on the front end of the module, as shown in the figure below:



The AMP, PW, and PRF controls may be adjusted using a screwdriver. Rotating the control clockwise increases the affected parameter.

PERFORMANCE CHECK SHEET