



AVMR-2-TRF



AVMR-2-C-TRF

- 150 ps to 3 ns switchable rise/fall time option
- PRF to 3, 5, or 10 MHz
- Pulse widths variable from 10 to 200 ns
- 5, 20, and 50 Volt models

The AVMR series offers medium-voltage operation at relatively high pulse repetition frequencies. The AVMR-1 family provides pulses with amplitudes variable to 5 Volts, and pulse widths variable from 10 ns to 200 ns. The maximum pulse repetition frequency is 10 MHz. The rise time of the computer-controllable -B units is fixed at 150 ps. The rise time of the manually-controlled -C units and modules is 1 ns, and a switchable rise/fall time option allows the rise and fall times to be switched from 1 ns to 0.15 ns.

The higher-voltage AVMR-2 family provides pulses with amplitudes variable to 20 Volts, and pulse widths variable from 20 ns (10 ns for -B units) to 200 ns. The maximum pulse repetition frequency (PRF) is 10 MHz. The rise time of the computer-controllable -B units is fixed at 300 ps. The rise time of the manual -C units and modules is 3 ns, and a switchable rise/fall time option allows the rise and fall times to be switched from 3 ns to 0.3 ns.

When equipped with the switchable rise/fall time option, the rise and fall times are separately controlled by two-position switches.

Model AVMR-3 series offers amplitude to 50V, with pulse widths variable from 10 to 100 ns, and pulse repetition frequencies to 3 MHz. The rise and fall times are fixed at 2.5 ns.

Instruments with the -B suffix include a complete computer control interface (see page 8 for details). This provides GPIB and RS-232 computer-control, as well as front panel keypad and adjust knob control of the output pulse parameters. A large backlit LCD displays the output amplitude, frequency, pulse width, and delay. To allow easy integration into automated test systems, the programming command set is based on the SCPI standard, and LabView drivers are available for download at the Avtech web site (www.avtechpulse.com).

The -C versions provide output pulse parameters similar to those of the -B

models, but do not include the GPIB or RS-232 interfaces (i.e. no computer control or LCD display). The output parameters are controlled by front-panel range switches and one-turn vernier controls.

On all -C and -B models, a delay control and a sync output are provided for sampling scope triggering purposes. All models can also be triggered externally using a TTL-level pulse. All models are protected from overload conditions (such as excessively high duty cycle or short circuited load) by an automatic control feature that limits the output power for as long as the overload condition exists.

Either output polarity or optional dual output polarity can be provided. Polarity inversion in models without the switchable rise/fall time option is accomplished by means of a front-panel two-position switch. Polarity inversion in models with the switchable rise/fall time option is accomplished by means of an inverting transformer module which mates to the pulse generator output port. All models include an output DC offset or bias insertion function (similar to Model AVX-T, see page 98). The required DC offset or bias is applied directly to rear panel solder terminals. An available option provides an internally generated DC offset (0 to $\pm 5V$) which is controlled by a front-panel one-turn control. AVMR units are available with a monitor option that provides an attenuated (20 dB or X10) coincident replica of the main output pulse. Additional options include electronic control (0 to +10V) of output amplitude, pulse width and DC offset. Units with these options also include the standard front-panel controls.

All -B and -C models require 120/240V (switchable) 50-60 Hz prime power. Some AVMR units are available in a DC-powered (+24V) miniature module form (AVMR-1, AVMR-2). The modules require a TTL input trigger signal, and the output PRF equals the input trigger PRF.

Model:	AVMR-1-C ¹ AVMR-1-B ² AVMR-1	AVMR-2-C ¹ AVMR-2-B ² AVMR-2	AVMR-3-C ¹ AVMR-3-B ²
Amplitude ^{3,4} : (50 Ohm load)	Variable to 5 Volts	Variable to 20 Volts	Variable to 50 Volts
Pulse width ³ :	Variable 10 to 200 ns	-C units & modules: 20 to 200 ns -B units: 10 to 200 ns	Variable 10 to 100 ns
PRF:	0 to 10 MHz		0 to 3 MHz
Duty cycle:	-C units and modules: 20%. -B units: 10%.		30%
Rise and fall times: (20%-80%)	-C units, and modules: 1 ns fixed (standard), or 150ps/1ns switchable (-TRF option ⁵) -B units: 150 ps, fixed	3 ns fixed (standard), or 300ps/3ns switchable (-TRF option ⁵) 300ps, fixed	2.5 ns, fixed 2.5 ns, fixed
GPIB and RS-232 control ² :	Standard on -B units. Not available on -C units or modules.		
Polarity ⁶ :	Positive or negative or both (specify)		
Propagation delay:	Modules: ≤ 30 ns. -B and -C units: < 150 ns. Ext trig in to pulse out.		
Jitter:	Modules and -C units: ± 15 ps. -B units: ± 100 ps $\pm 0.03\%$ of sync delay. Ext trig in to pulse out.		
DC offset or bias insertion ^{3,7} :	Apply required DC offset to back panel solder terminals (± 50 Volts, 250 mA max)		
Trigger required:	Modules, and -B and -C ext trig mode: + 5 Volts, 10 ns or wider (TTL)		
Sync delay and output:	-B and -C units only: Sync out to pulse out delay: variable 0 to 200 ns. Sync output: +2V, 200 ns, will drive 50 Ohms.		
Monitor output option ⁸ :	Provides a 20 dB attenuated coincident replica of main output		
Connectors:	-B and -C units: Out, Monitor: SMA. Trig, Sync: BNC. Modules: In, Out: SMA. Power: Solder terminals.		
Other:	For power, dimensions, chassis material, mounting and temperature range, see the AVP Data sheet, page 24.		

1) -C suffix indicates stand-alone lab instrument with internal clock and line powering. No suffix indicates miniature module requiring DC power and external trigger. (See page 112 for additional details of the basic instrument formats).
 2) -B suffix indicates IEEE-488.2 GPIB and RS-232 control of amplitude, pulse width, PRF and delay (See page 8).
 3) For electronic control (0 to +10V) of amplitude, pulse width, or DC offset, suffix model number with -EA or -EW or -EO. Electronic control units also include standard front-panel controls.
 4) For operation at amplitudes of less than 10% of full-scale, best results will be obtained

by setting the amplitude near full-scale and using external attenuators on the output.
 5) For switchable rise/fall time option suffix the model number with -TRF. Available only on -C units and modules.
 6) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -P-PN or -N-PN for dual polarity option where the suffix preceding -PN indicates the polarity at the mainframe output. (-PN available only for -B & -C units).
 7) For internally generated DC offset option (0 to $\pm 5V$, one-turn control) add the suffix -OT to model number. -OT and -EO options not available on modules.
 8) For monitor option add suffix -M (not available on modules).