

OLYMPUS®

Your Vision, Our Future

5800PR, 5900PR Computer Controlled Pulsers-Receivers

5627RPP-1 Remote Pulser Preamplifier



Ultrasonic Pulsers-Receivers

The computer-controlled pulser-receiver family incorporates design features to ensure optimal signal response. The pulsers are designed to provide broadband excitation for maximum broadband transducer performance. Pulser architecture ensures fast rise times that when coupled with instrument selectable energy and damping options optimize the excitation pulse for the frequency of inspection. Pulse stability is achieved through the use of a fixed, regulated high voltage source. Each model's broadband receiver is designed with a combination of input attenuation, output attenuation and gain stages for a wide dynamic range, low noise response, and fine resolution sensitivity adjustments. All attenuators use relay switched resistors for accuracy and stability. In addition, high and low pass filters improve main bang recovery and noise response.

Panametrics-NDT pulser-receivers provide the perfect building blocks for ultrasonic flaw detection, thickness gaging, materials characterization, and transducer characterization. Local control and instrument memory is ideal for ensuring repeatable results in manual test set ups. With computer control of individual settings through GPIB or RS-232, test parameters may be derived and then programmed for production volume analysis.

Two Models To Fit Your Testing Needs

Model 5800PR: 35 MHz (-3 dB) ultrasonic bandwidth is ideal for general purpose ultrasonic testing with a wide variety of metals, plastics, composites and biomedical specimens.

Model 5900PR: 200 MHz (-3 dB) ultrasonic bandwidth permits testing in applications where conventional instruments fail to provide adequate resolution. This unit is typically used with broadband transducers in the frequency range of 10 to 125 MHz with thin or non-attenuating materials.

5627RPP-1 Preamplifier

The 5627RPP-1 Remote Pulser Preamp is available as an option for the 5900PR 200 MHz Bandwidth Pulser-Receiver. The 5627RPP-1 permits use of an optimum short cable from the pulser to the transducer to avoid degradation due to attenuation and cable reflections that can occur at long cable lengths. The small, lightweight package can be hand-held or mounted to a structure and drive up to 500 feet of cable back to the 5900PR host receiver for remote applications.

Features—5800PR, 5900PR

- Broadband negative spike excitation is optimized for the frequency band of each instrument.
- Adjustable pulse energy and damping from a regulated voltage source for optimizing pulse shape
- Rise times < 1ns are available for ultra high frequency inspection.
- 100 µjoules of available energy for conventional frequency applications
- Internal pulse frequency source is crystal stabilized and uses a frequency divider to select PRF rate.
- External pulser mode allows use of an external pulse generator in conjunction with each instrument's receiver electronics.
- Superior isolation of receiver from pulser main bang when operating in through transmission mode
- Multi-position switchable high and low pass filters optimize main bang recovery and noise response.
- Packaged in a rack-adaptable 16.7" x 3.5" (419 mm x 88.9 mm) instrument cabinet

Innovation in NDT™

920-089B-EN

Specifications*

Pulser	5800PR	5900PR	5627RPP-1 (requires 5900PR)
Pulse Type (main bang)	Negative Impulse		
Rise Time: 10% to 90%	Typical: 7 nS, 10 nS max	Typical: < 1 nS, 2 nS max	Typical: < 2 nS
Available Pulse Voltage (no load)	300 V	220 V	150 V
Available Pulse Energy (typical)	12.5, 25, 50, 100 µjoules	1, 2, 4, 8, 16, 32 µjoules	1, 2, 4, and 8 µjoules
Damping	Two damping menus, selectable: Std.: 25, 50, 100, 500 ohms Ext.: 15, 17, 21, 25, 36, 50, 100 or 500 ohms	7, 10, 16, 20, 26, 30, 40, 50 ohms	6 to 50 ohms ± 10% continuously adjustable
Mode	Pulse-Echo, Through Transmission, or External Pulser		Pulse-Echo
Isolation (74 dB min)	Typical: 78 dB at 10 MHz (74 dB min)	Typical: 80 dB at 10 MHz (46 dB min)	
Remote Pulser Preamp	N/A	Compatible with 5627RPP-1	
Pulse Repetition Rate Internal	Two frequency menus selectable: Std.: 100, 200, 500, 1 k, 2 k, 5 k, 10 kHz Ext.: 80, 100, 125, 160, 200, 250, 400, 500, 625, 800, 1 k, 1.25 k, 2 k, 2.5 k, 4 k, 5 k, 10 kHz	200, 500, 1 k, 2 k, 5 k, 10 k, 20 kHz	N/A
Pulse Repetition Rate External	0-10 kHz	0-20 kHz	0-20 kHz by external trigger pulse
Synch Output Pulse	Pos. TTL compatible, precedes main bang by approx. 50 nS	Pos. TTL compatible, precedes main bang by approx. 230 nS	N/A
External Trigger Input	TTL and HCMOS compatible, capacitor coupled, optoisolated; Dual isolators accept either polarity.		TTL compatible, furnished by 5900PR syn output

RECEIVER

Maximum Bandwidth	1 kHz – 35 MHz (-3 dB)	1 kHz – 200 MHz (-3 dB)	10 MHz – 150 MHz (-3 dB)
Voltage Gain (RL = 50 ohms)	20, 40, 60 dB	26, 40, 54 dB	24 dB ±2 dB
Phase	180° inverting	Select 0 or 180°	
Attenuation (Coarse)	10, 20, 30, 40, 50 dB	0, 10, 20, 30, 40, 50 dB	
Attenuation (Fine)	0-15.9 dB, 0.1 dB increments	0-15.5 dB, 0.5 dB increments	N/A
High Pass Filter	1k, 100 k, 300 kHz or 1 MHz	1kHz, 1, 3, or 10 MHz	
Low Pass Filter	35, 20, 10, 5 MHz	200, 100, 50, 20 MHz	
Noise (referred to input)	80 µV peak-peak typical, BW=35 MHz	120 µV peak peak typical, BW=200 MHz	Typically 60 µV peak-peak referred to the input, BW=150 MHz
Max Signal Output	+/- 1 V pk., terminated in 50 ohms	+/- 1 V pk., terminated in 50 ohms	±0.3 V pk., terminated in 50 ohms
Input Impedance	500 ohms for signals < 0.5 V pk 100 ohms for signals > 0.5 V pk with coarse attenuator set < 10 dB	50 ohms for signals < 0.5 V pk 0.20 ohms at levels > 0.5 V pk with coarse attenuator set < 10 dB	
Output Impedance	50 ohms		
Maximum Input Power	0.25 W		
Power Main Requirements	100/120/220/240 VAC, +/-12.5% Uses power entry module with detachable power cord 50/60 HZ	Supplied through 5900PR; requires 5627CS cable set	
Operating Temperature	32° – 122° F (0° to 50° C)		
Size	16.7" x 3.5" x 12.7" (419 mm x 88.9 mm x 315 mm)		5.3" x 3" x 1.67" (134.6 mm x 76.2 mm x 42.4 mm)
Weight	13.3 lbs (6.0 kg)	16 lbs (7.27 kg)	1.3 lbs (590 grams)

Standard Inclusions

The 5800PR and 5900PR are shipped with an instruction manual, power cord, RS-232 cable as well as two BCB-58-4 cables and 50 ohm terminators for connection to an oscilloscope. In addition, the 5900PR includes a low impedance Microdot® transducer cable.

 PANAMETRICS-NDT™

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