ORDELA INC.
OAK RIDGE DETECTOR LABORATORY

ORDELA MODEL 8600P/D-T

POSITION/DETECTION-TIME ANALYZER

DESCRIPTION

The ORDELA Model 8600P/D-T is a complete rack-mounted system designed for optimum two-parameter processing and temporary storage of relative detection-time and position data from any of ORDELA's one-dimensional position-sensitive neutron counters (PSPC). The Model 8600 is packaged in a rugged aluminum enclosure that may be mounted in a standard 19-inch-wide instrument rack and contains the following functional circuits: Two passive-filter amplifiers, one summing amplifier, one timing single-channel analyzer, two timing discriminators, one time-to-pulse-height converter, one delayed-strobe time-to-pulse-height converter, one two-parameter imaging module, one high-voltage power supply and filter, and one low-voltage power supply and filter circuits.

With these circuits, the ORDELA Model 8600P/D-T contains all functions necessary for position-decoding and time-of-flight measurements with one-dimensional neutron PSPCs. It operates on ORDELA Model OP-312 software (sold separately) and connects via GPIB bus to the computer/display unit (sold separately).

SPECIFICATIONS

INPUTS:

POWER - Rear-panel ac 3-prong NEMA-type connector accepts 110/115 V or 220/230 V, 50/60 Hz input power.
PREAMPLIFIER - Rear-panel 9-pin sub-D connector to send test pulses to the PSPC, transmit power to the preamplifiers, and connect the preamplifier output pulses to the filter amplifier inputs.
PULSE GENERATOR - Rear-panel BNC connector to send test pulses to the PSPC.
STROBE - Front-panel BNC connector, requires a positive NIM pulse to start a timing interval cycle.

OUTPUTS:

SUM - Front-panel BNC connector, 100-Ohm output impedance, connects to an optional pulse-height analyzer (PHA) to measure a pulse-height spectrum of the detected neutrons.
GATE - Front-panel BNC connector, 100-Ohm output impedance, generates a positive output pulse 4-V high for each valid SUM pulse, its leading edge is coincident with the zero-level crossings of these SUM pulses.
TPHC - Front-panel BNC connector, 100-Ohm output impedance, 0 to 10 V pulse height, connects to an optional PHA to measure a neutron position spectrum independently of the timing function.
TIME - Front-panel BNC connector, 100-Ohm output impedance, 0 to 10 V pulse height, connects to an optional PHA to measure the neutron time-of-flight spectrum independently of the position function.

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GPIB- Rear-panel 24-pin standard GPIB connector, to communicate with the host computer via an INTEL 8291A GPIB Talker/Listener and a pair of INTEL 8293 GPIB Transceivers.

INDICATORS: Front-panel LEDs (red, green, and amber) to provide visual acquisition and interface status, and power and bias indication.

CONTROLS: POWER - Front-panel rocker switch, controls power to the unit from the ac power source.
H. V. BIAS - Front-panel rocker switch, controls power to the H. V. Power supply.
UPPER LEVEL - Front-panel, 10-turn potentiometer, 0 to 10 V calibration of the upper discrimination level of the SUM output pulses.
LOWER LEVEL - Front-panel, 10-turn potentiometer, 0 to 10 V calibration of the lower discrimination level of the SUM output pulses.
WALK ADJ. - Two front-panel, 20-turn potentiometers and two toggle switches activating 0/-20 dB attenuators for independent timing calibration of the timing discriminators.
STROBE DELAY - Front-panel, 10-turn potentiometer, adjusts by a factor of 1 to 11 the factory set nominal strobe delay.

POWER: 117 V-60 Hz clean line power, at 40 VA.

WEIGHT: 10 kg

DIMENSIONS: 48.3 cm wide, 12.7 cm high, 30.5 cm long

WARRANTY

ORDELA, Inc. warrants its products to be free from defects in materials and workmanship for 12 months after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness for a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the product at ORDELA's option. This warranty is void if the product is operated improperly, disassembled, or modified other than in the ORDELA laboratory.