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# Trigger Pulse Generator

A programmable trigger for ADCs and transient recorders

V490

## Features

- **Trigger pulse generation for VXI ADCs, transient recorders and other instruments**
- **Selection of one of eight analog input channels as trigger source**
- **Programmable threshold level**
- **Programmable slope selection**
- **Differential inputs avoid false triggers**
- **High input impedance avoids loading effect**

## Typical Applications

- **Acoustic/vibration measurements**
- **Sonar (hydro-acoustics)**
- **Automotive safety testing**
- **High-speed dynamic tests**

## General Description

The Model V490 is a single-width, C-size, register-based, VXIbus module which generates a trigger pulse for KineticSystems V4xx-series waveform recorders or any other device requiring a rising-edge, TTL-level trigger input. Up to eight differential analog signals are monitored by the V490. When the signal level on a pre-selected channel passes through a programmed threshold value, a 1  $\mu$ s trigger pulse (if armed) is initiated. Once initiated, the trigger signal is disabled; the circuitry must be rearmed, and the input signal must again pass through the threshold level before another trigger will be generated. A maskable interrupt is asserted when the trigger pulse is generated.

The analog input circuitry includes a buffer followed by a 500 kHz, single-pole, low-pass filter to reduce the possibility of false trigger generation from noise spikes. The choice of slope and input channel to be monitored is determined by the user as data to a VXIbus A16 Configuration register. The threshold level (in a  $\pm 10$  V range) is established by a 12-bit (one part in 4096) digital-to-analog converter on the V490. The DAC value is also received as data in an A16 Configuration register.

Front-panel LEDs indicate the instrument's current state. The *Address Received* LED flashes whenever the module is properly addressed, the *Interrupt Source* LED is illuminated when an Interrupt Request is set, and the *Armed* LED is lit when the V490 is in the armed condition. A fourth LED, *Threshold*, flashes whenever the selected input signal passes through the threshold level, independently of whether or not the module is armed.

Analog signals are brought to the V490 via a 25-socket "D" connector (DB25S) on the module's front panel. A second connector, wired in parallel to this (a DB25P pin type connector), is available for mating with analog input modules like the V425 transient Recorder. Alternate cable assemblies mate with the Model V4xx-L series of recorders. The trigger pulse is available through a single-contact LEMO connector (shell size 00). Mating cables and connectors are available.

The V490 supports both static and dynamic configuration. It may be accessed using A24/A16, D16 data transfers.



Item	Specification
Number of Input Channels	Select 1 of 8
Input Impedance	10 M $\Omega$
Output Trigger Signal	Terminated, open-collector TTL, 1 $\mu$ s, high-true
Analog In Connector Type	25S "D"
Analog Out Connector Type	25P "D"
Power Requirements	
+5 V	1.7 A
+24 V	50 mA
-24 V	300 mA
Environmental and Mechanical	
Temperature range	
Operational	0°C to +50°C
Storage	-25°C to +75°C
Relative humidity	0 to 85%, non-condensing to 40°C
Cooling requirements	10 CFM
Dimensions	340 mm x 233.35 mm x 30.48 mm (C-size VXIbus)
Front-panel potential	Chassis ground

## Ordering Information

Model V490-DA11 Trigger Pulse Generator

## Related Products

Model 5857-Axyz Cable—1-contact LEMO to Unterminated  
 Model 5857-Bxyz Cable—1-contact LEMO to 1-contact LEMO  
 Model 5857-Hxyz Cable—1-contact LEMO to BNC shielded  
 Model 5910-Z1A Connector—1-contact LEMO



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