

VXI-5390

One 0.001° Synchro/Resolver Measurement and Two 0.001° Synchro/Resolver Simulators



- Two Independent Channels of Simulation
- Synchro/Resolver Simulation and Measurement down to 2 V_{L-L}
- 0.001° Simulation and Measurement resolution
- Simulators will drive loads of up to 6 VA
- Message Based

GENERAL

The NAI 5388/5390/5393 series Synchro/Resolver Processors are the highest performing and flexible combination of synchro/resolver simulation and angular position measurement currently available in the VXIbus format. They are available with one Synchro/Resolver measurement channel and up to three Synchro/Resolver simulation channels.

The superior performance of these products makes them the ideal VXIbus instruments for testing systems that receive several synchro signals simultaneously, such as fire control (azimuth and elevation), inertial navigation (roll, pitch and yaw) and in general-purpose avionics testing. To simulate a rotating device, a programmable Rate Mode is provided which includes CW or CCW rotation and slewing between two angles. The low line-to-line capability and a broad frequency range are unique in the market. This means no compromise in accuracy and no need for a custom designed product to meet your synchro/resolver ATE requirements.

MEASUREMENT CHANNEL SPECIFICATIONS

SYNCHRO MODE

Input Voltage	11.8 to 90 V _{L-L} , programmable
Reference Voltage	2 to 115 V _{rms} , programmable
Frequency	360 Hz to 2.0 kHz
Accuracy	±±.004°

RESOLVER MODE

Input Voltage	2 to 26 V_{L-L} , programmable		
Reference Voltage	2 to 115 V_{rms} , programmable		
Frequency	360 Hz to 2.0 kHz		
Accuracy	2 to 11.7 V_{L-L}	$\pm 0.006^\circ$	360 Hz to 1 kHz
		$\pm 0.0075^\circ$	1 kHz to 2 kHz
	11.8 to 26 V_{L-L}	$\pm 0.004^\circ$	360 Hz to 1 kHz
		$\pm 0.0052^\circ$	1 kHz to 2 kHz

COMMON SPECIFICATIONS

Signal and Reference Input Impedance	200 k Ω
Resolution	0.001 $^\circ$
Angular Range	0 to 359.999 $^\circ$
Auto Phase Correction	Corrects for phase shifts of up to 80 $^\circ$ between stator and rotor inputs.
Trigger Input	TTL
Data States	Track or Freeze
Tracking Rate	150 $^\circ$ /sec
Settling Time	2 sec. for 180 $^\circ$ step change

SIMULATION CHANNEL SPECIFICATIONS

The 5390 has two completely independent synchro/resolver simulation channels. Their frequency range is 360 Hz to 2.0 kHz. Angular resolution is 0.001 $^\circ$ and the angle can be programmed in either 0 to 360 $^\circ$ or $\pm 180^\circ$ format. Remote sense lines are provided on the output connector to preserve simulation accuracy driving heavy loads in remote locations.

SYNCHRO MODE

Output Voltage	11.8 to 90 V _{L-L} , programmable		
Frequency	360 Hz to 2.0 kHz		
Accuracy	360Hz-1Hz	0.0075°	No Load
		0.0325°	5 VA
		0.0375°	6 VA
	4kHz-2kHz	0.015°	No Load
		0.060°	5 VA
		0.070°	6 VA
		(Loading spec. assumes balanced 70° inductive load.)	

RESOLVER MODE

Output Voltage	2 to 26 V _{L-L} , programmable		
Frequency	360 Hz to 2.0 kHz		
Accuracy	360Hz-1Hz	0.006°	No Load
		0.031°	5 VA
		0.036°	6 VA
	4kHz-2kHz	0.010°	No Load
		0.040°	5 VA
		0.045°	6 VA
(Loading spec. assumes balanced 70° inductive load. Below 11.8 V _{L-L} output current is limited to 0.5 A max.)			

COMMON SPECIFICATIONS


Resolution	0.001°
Rate Mode	The 5390 can be programmed to simulate a constant CW or CCW rotation, or rotation between a programmed start and stop angle, at a velocity of 0.001 to 1000°/s. The velocity can be changed dynamically, the new rate starting at the current angular position.
Ref. Input Voltage	2 to 115 V _{rms} , programmable
Ref. Input Impedance	200 kW
Output Impedance at 400 Hz	0.03 W 11.8 V _{L-L} 0.15 W 26 V _{L-L} 2.0 W 90 V _{L-L}
Output Load	6 VA maximum

GENERAL SPECIFICATIONS

Interface	VXIbus Native
Size	VXIbus C-size standard, single slot
Device Type	Message based
Protocol	Word serial
Front Panel Connectors	D-type Simulator 2 x 15 pin female Angle Position Indicator 9 pin male Mating connectors are supplied.
Cooling Requirements	6V-A load .19mm H ₂ O @ 4.1 liters/s No load 1.9 mm H ₂ O @ 1.4 liters/s
EMC/RFI	Conforms to VXIbus standard
Operating Temperature	0 to 55°C
Storage Temperature	-40 to 75°C
Humidity	95% maximum, non-condensing
Weight	3.25 lb. (1.5 kg)
Power Requirements	+5 Vdc 2.2A +12 Vdc 260 mA -12 Vdc 200 mA ±24 Vdc 80 mA no load 0 .7 A peak/350 mA at 6 VA load

PART NUMBER DESIGNATION

The 5390 is available with non-standard combinations of line-to-line levels and frequencies. Contact the factory for details.

5390 - F  Interface
1 = VXI Native