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- Low Line-to-Line Voltage capability
- Broad Frequency Range
- High Accuracy
- Programmable Rotation
- Self Test
- Message Based

The Model 5388 IAC (Instrument on a Card) is a multifunctional instrument that combines a Synchro/Resolver Simulator (SIM) and Angle Position Indicator (API) on a single C-size VXI (VME bus Extension for Instrument) card.

The Model 5388 is configured for message based serial communications protocol which complies to VXIbus specifications. Typical applications include synchro or resolver alignment, gyro testing, fire control system testing, and servo system alignment.

Specifications (@ 25°81C± 5°C)

Item	Specification
ANGLE POSITION MEASUREMENT	
Signal Input	
Configuration	Synchro or Resolver
Voltage	2 to 90 V L-L, Programmable
Impedance	200 k ohms
Frequency	400 Hz to 10 kHz 47 Hz to 400 Hz
Reference Input	
Configuration	Synchro or Resolver
Voltage	2 to 115 Vrms
Impedance	200 k ohms
Frequency	400 Hz to 10 kHz 47 Hz to 400 Hz

Resolution	0.001 degrees	
Accuracy	(11.8-90 Vrms)	(2-11.7 Vrms)
400 Hz	0.002° + (2 x API Resolution)	0.004° + (2 x API Resolution)
2 kHz	0.003° + (2 x API Resolution)	0.006° + (2 x API Resolution)
10 kHz	0.013° + (2 x API Resolution)	0.018° + (2 x API Resolution)
Angular Range	0.000 to 359.999 degrees	
AutoPhase Correction	±80 degrees	
Data States	Track or Freeze	

Tracking Rate

400Hz - 10kHz with Line-to-Line voltage ≥ 10 Vrms:
100 x (API Resolution / 0.001) degrees/second Minimum
47 Hz - 399Hz or Line-to-Line voltage < 10 Vrms:
50 x (API Resolution / 0.001) degrees/second Minimum

Settling Time

400Hz - 10kHz with Line-to-Line voltage ≥ 10 Vrms:
API Resolution = 0.001 2.5 second for 180° step change
API Resolution = 0.01 1.5 second for 180° step change
API Resolution = 0.1 1.0 second for 180° step change
47 Hz - 399Hz or Line-to-Line voltage < 10 Vrms:
API Resolution = 0.001 4.5 second for 180° step change
API Resolution = 0.01 3.0 second for 180° step change
API Resolution = 0.1 2.3 second for 180° step change

ANGLE POSITION SIMULATOR

Signal Output

Configuration Synchro or Resolver
Line-to-Line Voltage 2 to 90 Vrms, Programmable

Item	Specification
Impedance @ 400 Hz	$\frac{11.8\text{ V}}{.4 + j.01\Omega}$ $\frac{26\text{ V}}{.4 + j.03\Omega}$ $\frac{90\text{ V}}{.6 + j.1\Omega}$
Frequency	400 Hz to 10 kHz 47 Hz to 400 Hz
Reference Input	
Voltage	2 to 115 Vrms, Programmable
Impedance	200 k ohms minimum
Frequency	400 Hz to 10 kHz 47 Hz to 400 Hz
Resolution	0.001 degrees
Accuracy @ 400 Hz	0.003 degrees No Load 0.004 degrees 1.5 VA load 0.006 degrees 3.0 VA load 0.009 degrees 6.0 VA load
@ 10kHz	0.015 degrees No Load 0.03 degrees 1.5 VA load* *Loading Spec assumes to a 70° Inductive Load

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Cage Code: OVGU1

5388 Rev A 1.0

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Angular Range	0.000 to 359.999 degrees
Data States	Track or Freeze
Tracking Rate	
Programmable	0.001 to 999.999 deg/sec
Functions	Fixed Angle, Constant Velocity, Triangular, Variable
GENERAL	
Interface	VXI Standard 1.2 MATE/CIIL
Connectors	P1 - Standard 15-pin, D-Type, male (supplied). See table 7-1. P2 - Standard 9-pin, D-Type, female (supplied). See table 7-1.
Calibration Interval	1 Year
Control	Messaged Based, word serial
Configuration	Single C-size VXI Standard
POWER	
+5 Vdc	2.2 A
+12 Vdc	260 mA
-12 Vdc	200 mA
±24 Vdc	80 mA - No Load 450mA rms - 6 VA Load 900mA Peak - 6 VA Load

Item	Specification
Temperature	
Operating	0 to 50 degrees C
Storage	-40 to 75 degrees C
Humidity	95% maximum noncondensing
Dimensions	9.187" x 13.386" x 1.2" 233 mm x 340 mm x 30 mm
Weight	6.2 lbs. (2.8 Kgs)
Cooling Requirements	
6 VA Load	1.9 mm H ₂ O @ 2.3 liter/sec
No Load	1.9 mm H ₂ O @ 1.4 liter/sec

FEATURES AND OPTIONS

The Model 5388 is available with various options and custom configurations. To determine features and options, a two digit number is assigned in accordance with table 1-1.

For example, a Model 5388 with no MATE Language option and 400 Hz to 10 kHz Simulator would have a feature/option number of 5388-F11.

VXI 5388-F	1	1
	F1	F2
VXI 5388-F11		

Table 1-1. Features and Options

Feature		Option
No.	Description	
F1	MATE Language	1. NATIVE Only 2. MATE/CIIL and NATIVE
F2	Frequency	1. 400 Hz to 10 kHz 2. 47 Hz to 400 Hz

Table 2-1. Front Panel Controls and Indicators and Setup Switch Locations

Control/Indicator	Function
Status Indicators	
POWER	Power on indicator. When lit, indicates system is receiving +5 Vdc.
FAIL	Indicator lights on power-up. Indicator goes out after unit successfully passes system self-test procedures. If indicator stays lit device has failed self-test.
MODID	Modular Identification. When lit, indicates device is selected by a high state on the P2 MODID line. NOTE: Illumination of this indicator depends upon controller in slot 0.
SFI	Sysfail Inhibit. Lights when the controller sets (to 1) the Sysfail Inhibit bit in the device's control register. Disables unit from driving the SYSFAIL line and locking up system.
RST	Reset. Lights when controller sets (to 1) the Reset bit in the device control register. When Reset bit is cleared (to 0) the device will begin another self-test sequence.
J1	Digital-to-Synchro Simulator (SIM).
J2	Synchro-to-Digital Angle Position Indicator (API).

Front Panel Controls and Indicators and Setup Switch Locations (continued)

Table 3-1. J1 Pin Designations

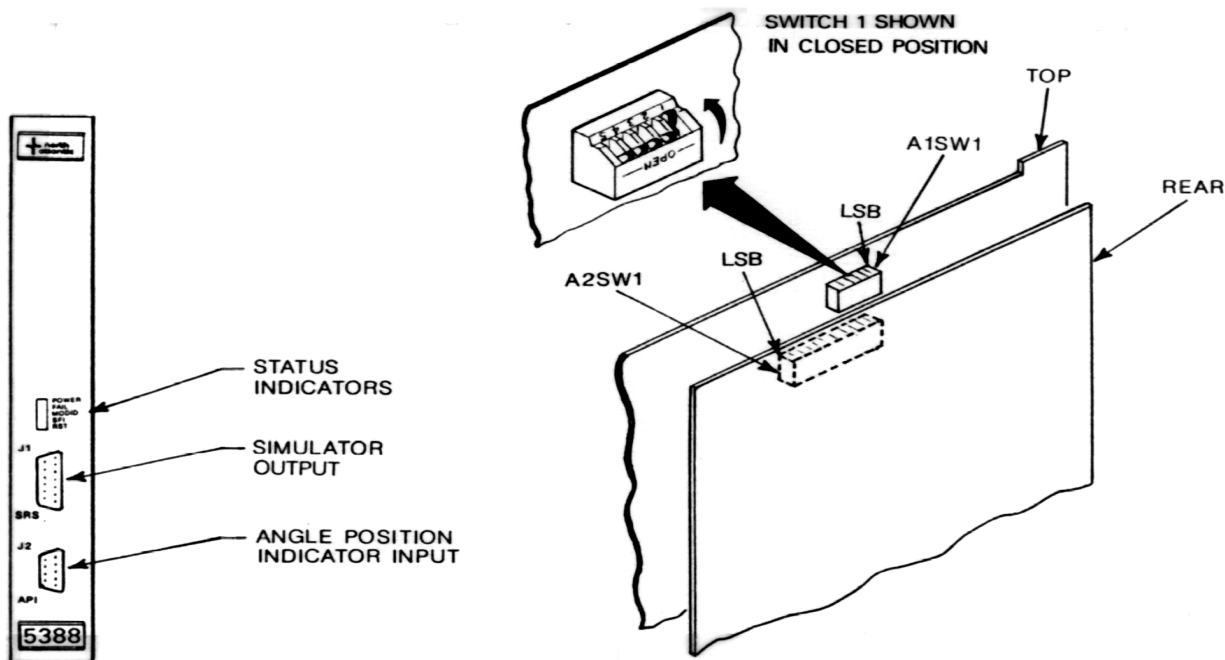
Pin	Signal Name	Function
1	SRSS1	} Simulator Outputs
2	SRSS2	
3	SRSS3	
4	SRSS4	
5	SRSRH	} Reference Inputs
6	SR SRL	
7	SPARE	
8	SPARE	} Used for test purposes only
9	GND	
10	FBS1	} Simulator Sense Inputs
11	FBS2	
12	FBS3	
13	FBS4	

Table 3-2. J2 Pin Designations

Pi	Signal Name	Function
1	APIS1	} Angle Position Indicator Inputs
2	APIS2	
3	APIS3	
4	APIS4	
5	APIRH	} Angle Position Indicator Reference Inputs
6	APIRL	
7	SPARE	
8	SPARE	} Used for test purposes only
9	GND	

Mating Connector Kit (Supplied)

Part # 784022



VXI Address Selection. The Model 5388 allows the selection of 256 (0-255) VXI address locations. To set and assign a VXI address to a card slot, proceed as follows:

- a. Select desired VXI card cage slot (e.g., slot 5).
- b. Locate 8-position binary switch A2SW1 and set switch for desired address (figure above).

CAUTION

The Model 5388 cannot use VXIbus card slot 0. Slot 0 is reserved for a controller device only (e.g., a CPU).

For example, to select VXI address 37 set switch A2SW1 as follows:

A2SW1 Switch Settings								Address Example	Binary Equivalent
-1 (LSB)	-2	-3	-4	-5	-6	-7	-8 (MSB)	37	0010 0101
O	C	O	C	C	O	C	C		

VXI REVISION LEVEL. The Model 5388 supports VXI Revision levels 1.2 and 1.3. The Revision level is selectable via switch A1SW1-4. When using the Model 5388 with Revision 1.2 Slot Zero Controllers set the switch to the open position. If a Revision 1.3 Slot Zero Controller is being used, set the switch to the closed position. See Figure from A1SW1 switch location.

A1SW1-4	VXI Revision
Open	1.2
Closed	1.3

VXIbus Interrupt Priority Level Switch (A1SW1)

NOTE

Once set, the position of switch A1SW1 becomes the default setting. The interrupt level may be modified using a software command. The interrupt level returns to its default setting whenever system power is cycled off to on.

A1SW1-Switch Settings			Interrupt Priority Level	Binary Equivalent
-1 (LSB)	-2	-3 (MSB)		
C	C	C	0 = No interrupt	000
O	C	C	1 = Lowest Priority	001
C	O	C	2	010
O	O	C	3	011
C	C	O	4	100
O	C	O	5	101
C	O	O	6	110
O	O	O	7 = Highest Priority	111

O = Open (Hi)
C = Closed (Low)



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