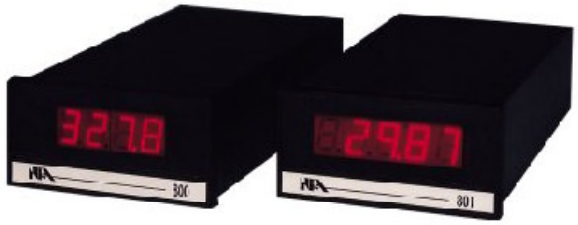
Model 800/801

Synchro/Resolver Panel Meters



- **Resolution to 0.01°**
- **Accuracy to 0.03°**
- **Synchro or Resolver input**
- **Wideband: 47 Hz to 1200 Hz**
- **Line-to-line programmable**
- **Zero offset adjust**
- **Optional Variable scaling**
- **Optional Dimmer Circuit**
- **Can be powered by reference**

GENERAL

North Atlantic Instruments has built upon its experience and engineering innovations with the development of the Model 800 and 801 Panel Meters. The small size and versatile programming of these panel meters are based on the proven design concepts of the Model 8800, 8810 and 8500 Angle Position Indicators.

Ideal for portable test sets these model have 0.1° and 0.01° resolution and can operate directly off the rotor input, thereby eliminating the need for separate power lines. Accuracies of 0.2° and 0.03° are available. The rear panel programming makes these device's extremely versatile to the design engineer or systems integrator.

Both Synchro or Resolver mode can be programmed and the unit operates over a broad frequency band of 47Hz to 1200Hz. The large 0.56" display comes in either a red or green format. The brightness of these displays makes for easy reading in almost any environment. Should the device be used in darkened environments, an optional control circuit can dim the display level.

Both models employ a Type II tracking servo loop resulting in accurate measurement, with no tracking lag error, up to the maximum tracking rate. Both the 800 and 801 also provide tristate bussable B.C.D. outputs for remote use along with a busy signal output to indicate when data is valid. Data can be transferred by monitoring the busy line and transferring data on the trailing edge of the busy pulse. An alternate method of transferring data is to apply a data freeze input pulse of at least 2 μsecond duration.

A 2.0° offset adjust is provided via the rear panel to allow for system zeroing. This allows the user to compensate for deviations in system electrical and mechanical zero.

A prime design consideration is reliability and maintainability of these devices. No potted modules are used, all discrete components are generically identified and test points are provided to facilitate signal tracing.

GENERAL SPECIFICATIONS

Reference Input

Voltage:	3 to 126 Vrms
Impedance:	100 kΩ
Frequency:	47Hz to 1200Hz

Signal Input

Configuration:	Synchro or Resolver
Voltage:	11.8, 26 or 90 V_{L-L}, programmable
Impedance:	1MΩ (transformer isolated)
Frequency:	47 Hz to 1200 Hz
Data States:	Track (5 VDC) Freeze (0 VDC)
Ka:	400
Temperature:	0 to 50°C
Power:	26V or 115 V_{rms}, 47 to 440 Hz (can be powered from reference)
Dimensions:	1.9" x 3.8" x 8.1" (48mm x 95mm x 203mm)
Cutout:	1.75" x 3.594" std DIN
Weight:	2.25 lbs. (1.0 kg)

Model 800

Resolution:	0.1°
Accuracy:	0.1° + 1 LSB
Angular Range:	0.0° to 359.9° ±179.9° Scaling 0 to 9999 (programmable)
Tracking Rate:	1500°/sec.
Acquisition Time:	1.5 seconds

Model 801

Resolution:	0.01°
Accuracy:	0.03°
Angular Range:	0.00° to 359.99° 0.00° to 359°59” (deg/min) Scaling 0 to 9999 (programmable)
Tracking Rate:	180°/sec
Acquisition Time:	1.0 seconds

PART NUMBER DESIGNATION

Model 800

800-F __ __

Option	Description
0	Without Display Dimmer (Std)
1	With Display Dimmer

Option	Description
1	0.0° to 359.9° (Std)
2	±179.9°
3	0000 to 9999 Variable Scale

Model 801

801-F __ __

Option	Description
0	Without Display Dimmer (Std)
1	With Display Dimmer

Option	Description
3	Decimal; Degrees, Red (Std)
4	Degrees; Minutes, Red
6	Decimal; Degrees, Green

Mating Connector Kit (Included with each meter)
NAI P/N: 808516-0001
Includes: EDAC, mating edge connector and two keying pins.

Model 800 and 801 Pin Assignments

Model 800 Pin #	P1 - Signal Name	P4 (option F3X) Signal Name	Model 801 Pin #	P1 - Signal Name
19	800	Spare	19	Spare
21	400	Spare	21	Spare
23	200 (or "-" for option F2X)	Spare	23	200
17	100	Spare	17	100
25	Disable Hundred's	Spare	25	Disable Hundred's**
34	80	.0002	34	80
30	40	.008	30	40
26	20	.002	26	20
38	10	.0008	38	10
42	Disable Ten's	Multiply/Divide	42	Disable Ten's**
24	8	.001	24	8
28	4	.004	28	4
32	2	.0001	32	2
36	1	.0004	36	1
40	Disable Units	Spare	40	Disable Units**
16	.8	.04	16	.8
14	.4	.02	14	.4
12	.2	.01	12	.2
10	.1	.8	10	.1
20	Disable Tenth's	Spare	20	Disable Tenth's**
22	Logic Ground	Spare	29	.08
4	Busy Signal	.1	15	.02
13	Data Freeze (open = track)	Spare	18	.04
9	Jump to 27 for 90V L-L	Spare	11	.01
3	Jump to 27 for 26V L-L	Spare	33	Disable Hundredth's**
5	Jump to 27 for 11.8V L-L	Spare	22	Logic Ground
27	L-L Jumper	Spare	4	Busy Signal
41	S1, Synchro or Resolver	Spare	13	Data Freeze (Gnd or 0 = Freeze; high or open =track
48	S2, Synchro or Resolver	Spare	41	S1, Synchro or Resolver
44	S3, Synchro or Resolver	Spare	48	S2, Synchro or Resolver
46	S4, Resolver (open for Synchro)	Spare	44	S3, Synchro or Resolver
50,39	Jump 50 to 39 for Synchro, open for Resolver	.4	46	S4, Resolver (open for Synchro)
8	R1 (Ref Hi)	.2	8	R1 (Ref Hi)
6	R2 (Ref Lo)	Spare	6	R2 (Ref Lo)
47	115V Power Hi	Spare	47	115V Power Hi
43	115V or 26V Power Lo	Spare	43	115V or 26V Power Lo
45	26V Pwr Hi or 26V Output Tap	Spare	45	26V Pwr Hi or 26V Out Tap
2	Chassis Ground*	Spare	2	Chassis Ground***
7	Spare	Spare	37	Lamp Test, LT (0 or Gnd =
11	Spare	Spare		Test; high or open = normal)
15	Spare	Spare	31	Spare (E5)
18	Spare	.08	35	+5Vdc
29	Spare	Spare	1	Chassis Ground***
31	Spare (E5)	Spare		***P1 Pins 1 & 2 only connect
33	Spare (E6)	Spare		to Chassis Gnd when unit is
35	+5Vdc	Spare		Installed in case
37	Spare	Spare	49	Chassis Ground
1	Chassis Ground	Chassis Ground		
49	Chassis Ground	Spare		

*P1 pins 1 & 2 only connect to chassis when unit is installed in case

**Tie Low to Enable Data Output

PANEL METER BLOCK DIAGRAM