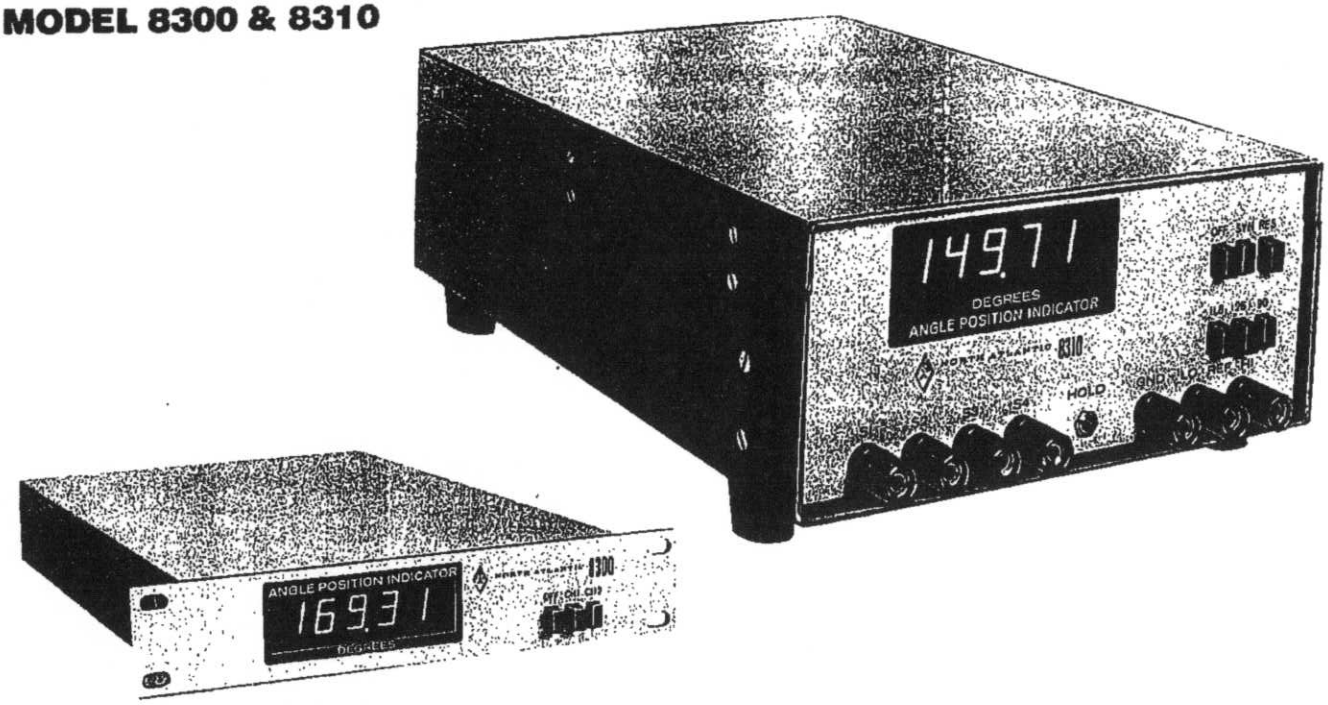
PROGRAMMABLE
0.01° RESOLUTION
MODEL 8300 & 8310



- **ACCURACY TO 0.03°**
- **HIGH RELIABILITY WITH LSI AND 100% BURN-IN**
- **BENCH TOP OR ATE**
- **CONNECTOR PROGRAMMABLE FOR SYNCHRO OR RESOLVER AT ANY STD LINE-LINE VOLTAGE**
- **NEW LAZY-EIGHT™ AMBIGUITY INDICATOR**

This new 8300 and 8310 series represent a new low cost generation of 0.01° angle position indicator. Based on North Atlantic's LSI TRIG LOGIC Processor™, the 8300 and 8310 feature two channel input and can accept all standard synchro or resolver inputs. The LSI circuit and 48 hr. burn-in assure high reliability. Input frequency range is broadband—47-440 Hz (1.2 kHz optional) and can be different for each of the two channels. Reference AGC allows reference variations between 26 and 115V.

All these variations are connector programmable, accomplished by terminal selection (and a few jumpers), at the rear connector for each of two front panel pushbutton-selected channels. The extended 47-440 Hz frequency range applies to all input combinations regardless of mode or line-line voltage.

While the model 8300 and 8310 have virtually the same internal circuitry, the 8300 is 1¾ inches high with full programming via the rear connector (except "off" and channel select). It is designed primarily for computer controlled or fixed installation applications. The model 8310 has full front and rear controls and a folding stand for bench top use. Optional mounting ears (supplied) allow rack mounting if desired.

The 8300 and 8310 employ Type II servo techniques, and yield full accuracy at dynamic speeds to ½rps (180°/second), or to 5rps at 400 Hz (optionally available). High common-mode rejection is a feature of the input transformers which provide both isolation and form conversion. The 8300 and 8310 designs, as well as all North Atlantic Angle Position Indicators, have no least significant digit jitter.

Another new operator convenience is the LAZY-EIGHT™ ambiguity indicator. This indicator provides the operator the ability to validate the display during dynamic conditions of the input signal.

The 8300 supersedes earlier North Atlantic models: the 8525, 8225, and well-known API-8025. Optional cable assemblies enable the 8300 to be plug-in compatible with any earlier model.

SPECIFICATIONS

Data Input Channels 2
Data Input (per channel) ..... Synchro or Resolver[3]
11.8V, 26V, or 90V
Data Reference Frequency (per channel) ... 47Hz to 440Hz[1]
Reference Voltage (per channel) ..... 10V to 115V
Angular Range ..... 000.00° to 359.99°
Optional ±179.99
(add -01 to part number)
Optional 000° 00' to 359° 59'
(add -02 to part number)
Absolute Accuracy (includes errors from all sources) ... 0.05°[1]
Optional (add -06 or -07 to part number) ..... 0.03°
Resolution ..... 0.01°
Data Input Impedance ..... 250K minimum
Reference Input Impedance ..... 100K minimum
Tracking Speed (full accuracy) ..... ½rps (180°/second)
Optional @ 400Hz, 5rps (1800°/second)
Settling Time ..... 1 second maximum for 180° step input
Digital Output ..... 5 decade BCD (1-2-4-8)
Data Availability ..... Continuous
Converter Busy ..... Busy-Pulse present
Not Busy-Pulse absent
Data Freeze ..... Freeze-ground
Track-open
Logic Levels ..... Logic 1-+5V (+.25V-1.5V)
Logic 0-0V (+ .6V)
TTL Compatible (10 loads)
Operating Temperature ..... 0° to 70°C
Power ..... 115V/230V or 125V/250V ±10%
47 to 440Hz
25 VA max.
Size: 8300 ..... 1¾"Hx9½"Wx12"D
8310 ..... 3½"Hx9½"Wx18"D
Weight: 8300 ..... 4 lbs. maximum
8310 ..... 6 lbs. maximum

NOTES:

1. Option-06 provides high accy (±0.03°) at 400-1200 Hz.
   Option-07 provides high accy (±0.03°) at 50-400 Hz.
2. Mating Connector kit *P/N* 783718.
   Supplied with Model 8300
   Optional with Model 8310
3. Model 8300's may have either channel pin programmed independently for synchro or resolver. Model 8310's are pre-programmed for synchro on channel 1 and resolver on channel 2.

PROGRAMMING

The following programming guide may be used for mating rear connectors on all 8300 angle position indicators. For models incorporating optional displays or optional form conversion transformers, information is available upon request.

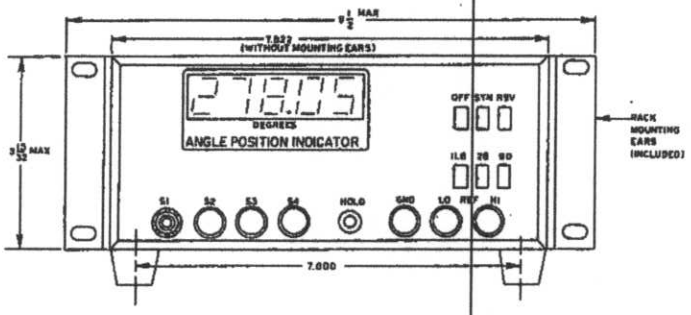
Channel 1-assigned as SYNCHRO[3] ..... S1 to Pin 5
S2 to Pin 6
S3 to Pin 7
Pin 34 to Pin 35
Channel 1-assigned as RESOLVER[3] ..... S1 to Pin 5
S3 to Pin 7
S2 to Pin 6
S4 to Pin 8
Channel 1 Reference ..... R1 to Pin 9
R2 to Pin 10
Channel 1 Line-Line-11.8V ..... (no connections)
26V ..... Pin 19 to Pin 36
90V ..... Pin 19 to Pin 37
Channel 2-assigned as SYNCHRO[3] ..... S1 to Pin 21
S2 to Pin 22
S3 to Pin 23
Pin 18 to Pin 35
Channel 2-assigned as RESOLVER[3] ..... S1 to Pin 21
S3 to Pin 23
S2 to Pin 22
S4 to Pin 24
Channel 2 Reference ..... R1 to Pin 25
R2 to Pin 26
Channel 2 Line-Line-11.8V ..... (no connection)
26V ..... Pin 20 to Pin 36
90V ..... Pin 20 to Pin 37

Digital Outputs	100°	10°	1°	.1°	.01°
X1	Pin 49	Pin 48	Pin 17	Pin 30	Pin 13
X2	Pin 50*	Pin 45	Pin 32	Pin 15	Pin 28
X4	—	Pin 46	Pin 16	Pin 31	Pin 12
X8	—	Pin 47	Pin 33	Pin 14	Pin 29

Busy-Pin 11
Data Freeze-Pin 27
Power HI-Pin 1, LO-Pin 2
Case Ground-Pin 3
Digital Ground-Pin 4
Data Freeze NOT-Pin 42

*SIGN BIT ON ±180 OPTION (.01) UNITS.

MODEL 8310



MODEL 8300