

530, 530/20 Synchro/Resolver Standard



- 0.0001° Resolution
- Accuracy to 2 arc second
- Full 0-360° rotation with direct angular readout. One knob controls the tens and hundreds digits.
- Isolated inputs and outputs
- Transformation ratio variation from nominal $\pm 0.2\%$ as a function of angle
- Negligible phase shift
- Input lines fuse protected
- Single set of output terminals for synchro and resolver simplifies system hookup
- Front and rear connection terminals
- Switch selectable line to line levels

SPECIFICATIONS

The Model 530 Synchro/Resolver Standard provides the user with the ability to generate the electrical shaft position of either a synchro or resolver with a very high degree of accuracy. When connected to either a 26 or 115 Vrms reference excitation the model 530 provides switch selectable line to line outputs of 11.8, 26, or 90 Vrms in either the synchro or resolver mode. This instrument is designed to provide full 2 arc second accuracy at the operating frequency of 400 Hz and may be used with reduced accuracy up to 1600 Hz. Accuracy is maintained for all angles over the range of 0 to 359.9999 degrees with a resolution of .0001 degree.

The Model 530/20 Wideband Synchro/Resolver Standard incorporates many of the features of the model 530, with performance over the frequency range of 50 Hz to 11 kHz. Accuracy is 10 arc seconds at 60 and 500 Hz, while it is 20 arc seconds at 10 kHz. Mode and line to line voltage selection is available when selecting the 400 Hz operation. However, 60 Hz is defined as Synchro only at switch selectable line to lines.

SPECIFICATIONS

ATE Standards

North Atlantic Instruments also manufactures Synchro/Resolver Standards for Automatic Test Equipment (ATE) applications. The Model 5310 is a 36 arc second, half rack simulator that will operate from 47 Hz to 440 Hz or 360 Hz to 5 kHz and can be remotely programmed via a Binary, BCD or IEEE-488 GPIB interface. The Model 5388 is an instrument on a card complying with the VXI standard that provides accurate simulation and measurement of Synchro's and Resolvers. The Model 5300 represents the latest in a programmable Resolver/Synchro Standard. The 5300 will operate from 47 Hz to 20 kHz with a best case accuracy of 2 arc seconds. Please refer to these sections of this catalog if you have an ATE application.

F Ratings

F rating is a measure of the maximum input voltage at a particular frequency where F is expressed in Hz. To determine the maximum input voltage multiply the frequency being applied by the F rating.

For example:

Assume a typical F rating of 0.8 and an operating frequency of 100 Hz. The maximum input voltage would be $.8 \times 100 = 80$ Vrms at the 100 Hz operating frequency.

Non-standard Line to Line Outputs

Non-standard outputs may be used by applying the F rating limits and using the ratio relationship of the standard line to line levels to the reference excitation input.

For example:

If you require to drive a 1900 Hz 3.2 V synchro system with the 530/20, you would excite the 26 V excitation terminals with 3.2 Vrms, select 26 V line to line to obtain a 1:1 ratio and would get 3.2 Vrms line to line output.

Model 530

Accuracy: 2 arc seconds

Resolution: 0.0001 degrees

Frequency: 400 Hz

operable

400 - 1600 Hz

Input: 26 or 115 Vrms (selectable)

F Rating:

26V	0.08F or 35 Vrms max.
115V	0.35F or 150 Vrms max.

Modes: Synchro or Resolver (selectable)

Output L-L: 11.8, 26, 90, 115 Vrm (switch selectable)

Output Z: 0.05 ohm+j0.03ohm max.

Size: 3.5 x 19 x 15.5 in (88 x 475 x 388 mm)

Weight: 30 lbs. (14 kgs.)

Model 530/20

Mode Switch at 60 Hz Position

Accuracy:

10 arc seconds (50 Hz - 120 Hz)

20 arc seconds (120 Hz - 200 Hz)

Input: 115 Vrms

F Rating: 2.0F or 170 Vrms max.

Mode: Synchro

Output L-L: 90 Vrms

Mode Switch at 400 Hz Position

Accuracy:

20 arc seconds (120 Hz - 200 Hz)

10 arc seconds (200 Hz - 800 Hz)

30 arc seconds (800 Hz - 2 kHz)

Input: 26 or 115 Vrms

F Rating:

26V	0.5F or 40 Vrms max.
115V	2.0F or 170 Vrms max.

Mode: Synchro or Resolver (switch selectable)

Output L-L: 11.8, 26, 90, 115 Vrms

Mode Switch at 10 kHz Position

Accuracy:

30 arc seconds (1 kHz - 9 kHz)

20 arc seconds (9 kHz - 11 kHz)

Input: 26 or 115 Vrms

F Rating:

26V	0.012F or 40 Vrms max.
115V	0.05F or 170 Vrms max.

Mode: Resolver

Output L-L: 11.8, 26, 90, 115 Vrms

Resolution: 0.001 degrees

Size: 5.25 x 19 x 15 in (132 x 475 x 375 mm)

Weight: 72 lbs. (33 kgs)

NOTE: Accuracy is not warranted for non-standard inputs or outputs. The user must perform a calibration for any non-standard operation to determine accuracy.