	540/10
	High Accuracy Synchro/Resolver Bridge



- Resolution to 0.0001°
- High Accuracy
- Full 0-360° rotation with direct angular readout
- Isolated inputs and outputs
- 1:1 or 9:1 Transformer ratio
- High input impedance

GENERAL

The Model 540/10 Synchro/Resolver Bridge provides the user with the ability to measure the electrical shaft position of either 3-wire Synchros or 4-wire Resolvers to an accuracy of 2 arc-seconds. Its unique bridge circuit design provides a constant null voltage gradient over the entire angular range. When the model 540/10 input is connected to the standard line to line levels of 11.8, 26, 90, 115 V_{rms}, it provides a null output in either the Synchro or the Resolver mode. This instrument is designed to provide 2 arc-seconds of accuracy at the operating frequency of 400Hz and may be used with reduced accuracy up to 5kHz (see specification section). Accuracy is maintained for all angles over the range of 0° to 359.9999° with a resolution of 0.0001°. The 540/10 is designed for use with the North Atlantic model 2250 and 2251, DAVM's.

Common Applications:

- Synchro/Resolver Transmitter (CX & RX) Testing – Phasing, Electrical Zero and Angular Accuracy
- Synchro/Resolver Transformer (CT) testing - Phasing, Electrical Zero and Angular Accuracy
- Null Testing – Total and Fundamental
- Transformation Ratio Testing
- Synchro Differential Transmitter (CDX) - Phasing, Electrical Zero and Angular Accuracy Testing

Specifications

Item	Specification
Voltage (Line-to-Line):	Nominal 11.8 to 115V _{rms}
Accuracy:	
400 Hz	2 _{arc-seconds}
1Khz	4 _{arc-seconds}
2Khz	15 _{arc-seconds}
5Khz	60 _{arc-seconds}
F Rating:	0.8F or 150 V _{rms} max.
Nominal Input Impedance (at 400Hz)*	
Synchro	500KΩ
Resolver	750KΩ
Resolution:	0.0001°
Transformer Ratio:	
Standard	1 to 1
Optional (see ordering information)	9 to 1
Null Voltage Gradient (1:1 Transformer Ratio)	4.85 x E _{L-L} μV/arc - sec
Null Voltage Gradient (9:1 Transformer Ratio)	0.55 x E _{L-L} μV/arc - sec
Output/Input	Isolated
Environmental Specifications	
Operating Temperature	0°C to +50°C
Non Operating Temperature	-55°C to +75°C
Relative Humidity	95% max (below 25°C)
	75% max (25° to 40°C)
	45% max (above 40°C)
Altitude (operating)	10,000 feet maximum
Altitude (non-operating)	40,000 feet maximum
Size	3.5" x 19" x 15.125" (89 x 482 x 384mm)
Weight (approx.)	30 lbs nominal (13.6 kg)

*Input impedance tested as follows:

Resolver Mode – tested when excited with 115V_{L-L}, 400Hz resolver data at 45° shaft angle

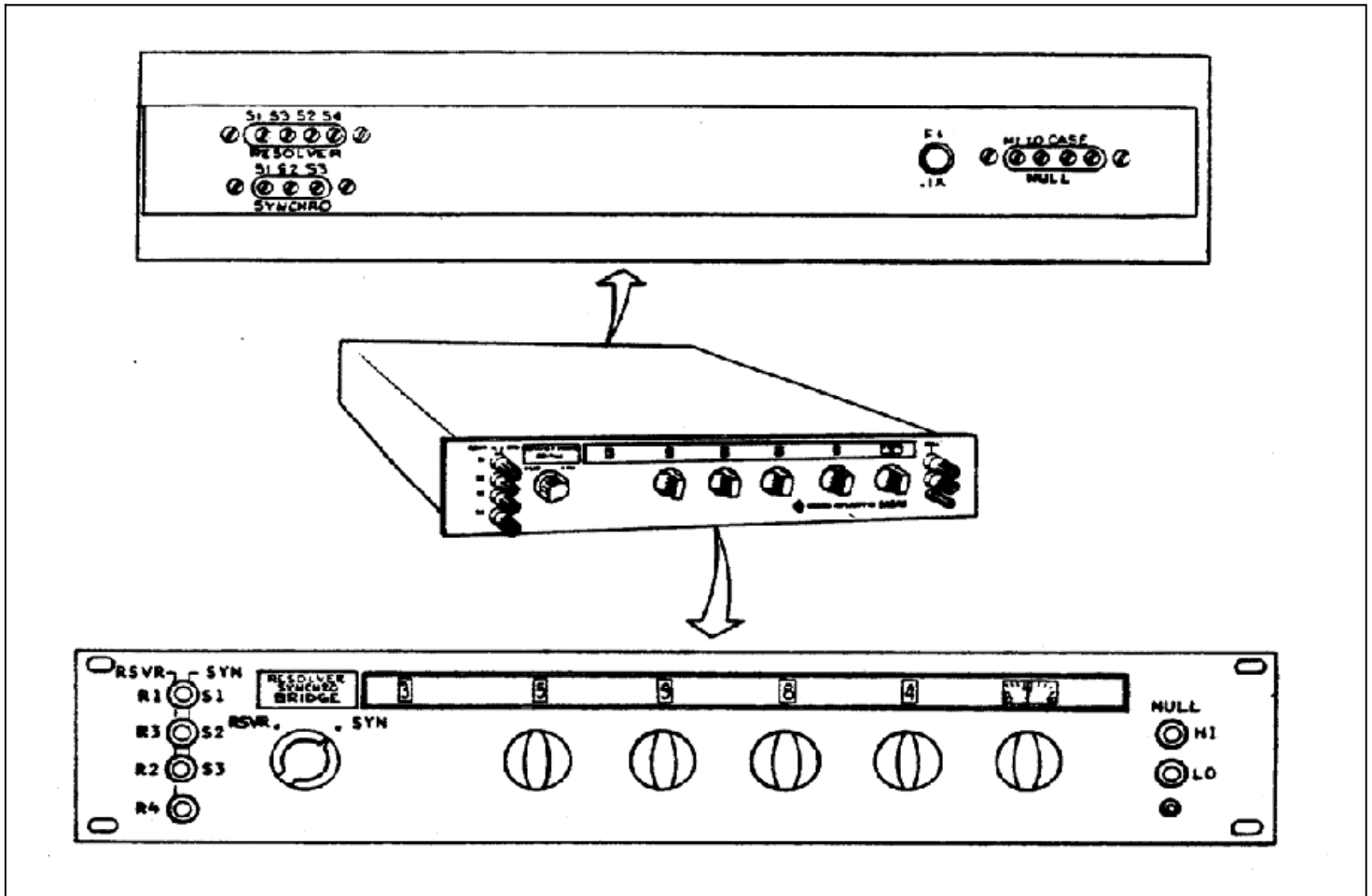
Synchro Mode – tested when excited with 115V_{L-L}, 400Hz synchro data with odd lead open

S1-S2 - 30° shaft angle

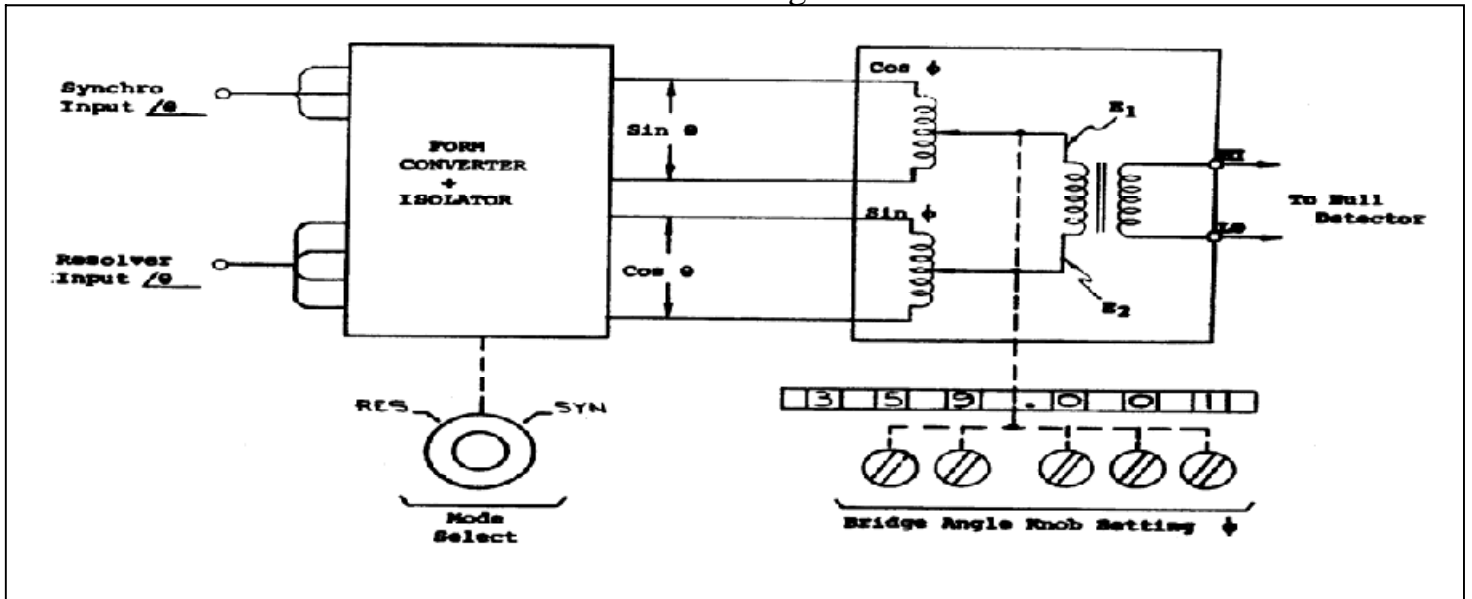
S1- S3 - 90° shaft angle

S2-S3 - 150° shaft angle

Controls & Indicators



Block Diagram



Ordering Information

The 540/10 is available in two Transformer Ratio formats. Please refer to the part numbers below when ordering:

540/10 = 1:1 Transformer Ratio

540/10-S3160 = 9:1 Transformer Ratio