

GSi Lumonics

WESTWIND

The Westwind Speed Sensor

The

Westwind Air Bearings Ltd

Speed Probe Sensor

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Brief Description

Due to the obsolescence of the Infineon FP212L100 speed sensor Westwind Air Bearings Ltd have been pro-active in testing alternative speed sensing devices and after rigorous evaluations have proven an alternative. During this period we have worked closely with Sieb & Meyer to ensure a seamless change over from the historically used sensor

Both old and new device is an Analogue sinusoidal differential magnetic biased sensor coupled with an amplifier circuit that switches in response with moving ferrous target (e.g. cut outs in the spindle shaft) with operation frequencies in excess of the existing device

The speed sensor assembly has been designed to fit within the dimension envelope of the old device to prevent any backwards compatibility problems.

Note :- The new sensor has an in-built amplifier and so it is no longer viable to test the sensor as a stand-alone device by measuring the resistance between wires alone. A 5 volts supply is required to be applied and the output signal to be measured when a target passes across the sensor face, this is recommended to be carried out with the sensor fitted within the spindle and using the SCE020 speed sensor test box, this unit can be used in conjunction with the Westwind test set or with a 5 volt supply, the resultant signal can be measured with a suitable oscilloscope or via the test set (see test box set-up details).

Warning :- This device has no inbuilt reverse polarity protection and therefore it is essential that the correct wiring is adhered to as per the outline drawing of the spindle

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Specification

Input Voltage = 5 V single supply operation less than 20mV ripple +/- 100mV range

Rail to rail input common mode voltage range

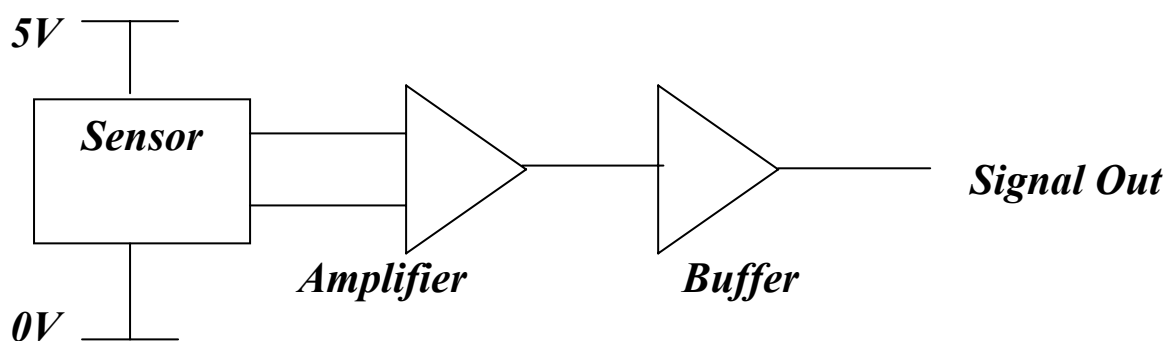
Output voltage = 400mV to 1.8V peak to peak

Driving load capability = 250 ohm

Typical max supply current = 1.1A (dependant on load resistance)

Offset voltage = 2.5V

Block Diagram



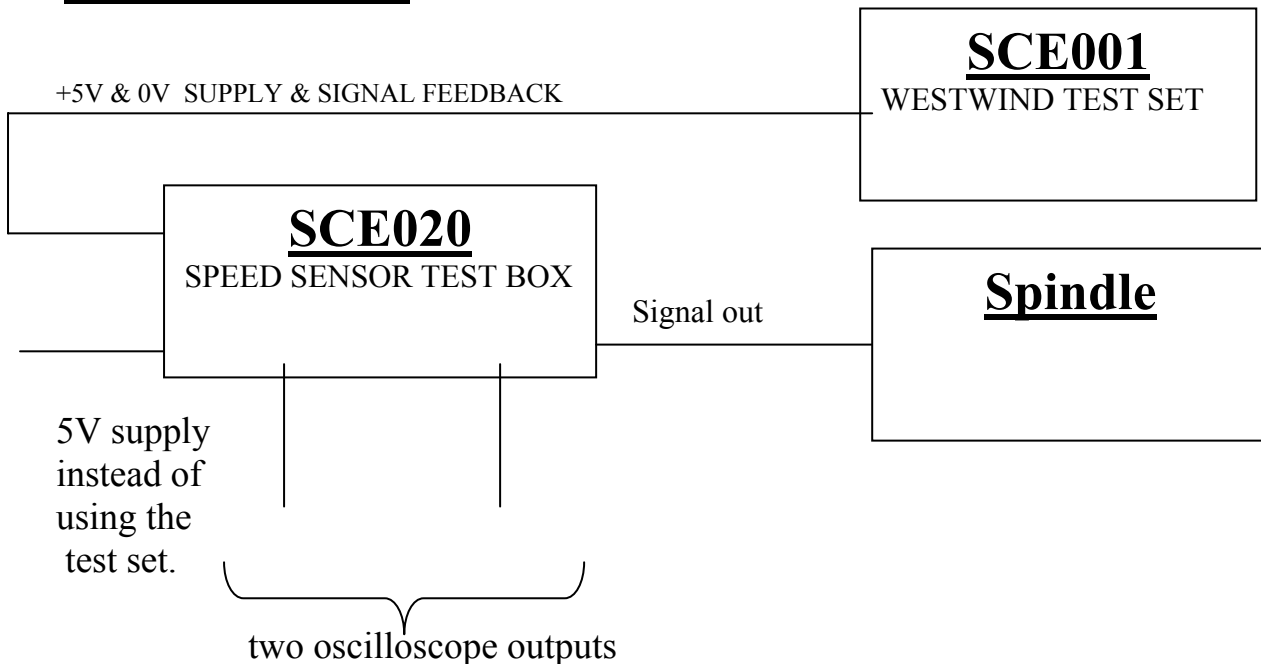
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Test box set-up

Block Diagram



Description

The SCE020 has been designed to allow ease of testing of the new speed sensor with the minimum requirement for any other test equipment interfacing with the existing Westwind test set.

The SCE020 has been designed to ensure that the signal output is fully compatible with the Sieb & Meyer drive units.

The option of operating and testing the speed sensor without the need for a Westwind test set has been included, for this operation a 5 volt supply is required with less than 20Mv ripple +/- 100Mv range and a 2 channel oscilloscope 20MHz is suffice.

The two oscilloscope outputs' gives you the ability to monitor the analogue sensor waveform and view a simulation of the Sieb & Meyer drive interface digital signal.