

Use of Synchronous Motors with Climatronics P/N 102083 WM-III Wind Speed Sensors

Purpose:

A synchronous motor is used to spin a wind speed sensor at a known rate to check system linearity.

Technique:

The motor should be connected to the sensor with a "hard" coupling. A piece of tubing may accelerate sensors at higher speeds. Do not use this. Climatronics motors are provided with the correct "hard" coupling for this application.

Conversions:

Meters per Second = MPH X 0.44704

Knots = MPH X 0.86897

Kilometers per Hour = MPH X 1.6094

Calculations:

Cup Type	Cupset P/N	Output Frequency	Velocity in MPH	Velocity in M/S
Lexan	102138	RPM/3	= ((Frequency / 6.95) + 0.3) = ((RPM / 20.85) + 0.3)	= ((Frequency / 15.55) + 0.13) = ((RPM / 46.64) + 0.13)
Heavy Duty Aluminum	101286	RPM/3	= ((Frequency / 6.95) + 0.5) = ((RPM / 20.85) + 0.5)	= ((Frequency / 15.55) + 0.22) = ((RPM / 46.64) + 0.22)
Stainless Steel	100160	RPM/3	= ((Frequency / 6.95) + 0.5) = ((RPM / 20.85) + 0.5)	= ((Frequency / 15.55) + 0.22) = ((RPM / 46.64) + 0.22)
Vinyl	100053	RPM/3	= ((Frequency / 6.34) + 0.5) = ((RPM / 19.02) + 0.5)	= ((Frequency / 14.18) + 0.22) = ((RPM / 42.55) + 0.22)



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