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# Tachometers



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# TACHO Units (axle end mounting)

The Speed Sensor is derived from the standard range of Sensors, typically a dual channel Sensor, that allows for detection of vehicle direction and operates down to zero speed. A steel toothed Target Wheel will typically have 60 to 100 teeth, which is bolted onto the axle end or may be magnetically attached.

An axle end housing, made from stainless steel, supports the mounting of the Speed Sensor, together with cable/ conduit strain relief if required. The housing with the Sensor is securely bolted onto the axle end.

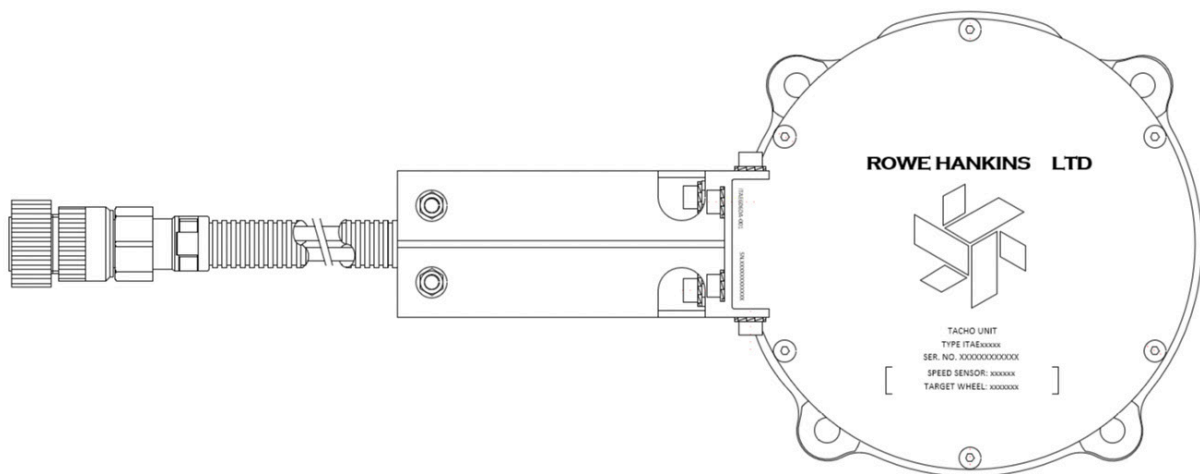
The benefit of Rowe Hankins supplying a Tacho Unit is that it is designed and tested as a subsystem ready to install onto the vehicle.

A complete Tacho Unit design meets mandatory and customer specific verification requirements which are governed by the following BS EN standards.

BS EN 50155 - Railway Applications  
Electronic equipment used on rolling stock.

BS EN 50121-3-2 - Railway Applications, Electromagnetic compatibility (pt3-2 Rolling stock - apparatus).

BS EN 61373 Category 3 - Axle mounted equipment.  
Shock and Vibration.



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Typical technical properties are listed below:

## General

Numer of pulses per revolution:	110
Number of output channels:	2
Air gap (between sensor and target):	1.0mm $\pm$ 0.5
Ambient temperature range:	-25°C to 80°C
Thermal shock:	+/- 35°C (95°F) over 30 seconds
Relative humidity:	0-98% condensing
Protection class (BS EN 60529):	IP67
Shock and Vibration:	IEC 61373 category 3 - Axle mounted equipment
Cable & Conduit Type:	2 x 4 core screened cable, low smoke, zero halogen
Cable length:	~2m
Connector type:	10-way plug (MIL-C-5015)
Estimated mass:	Tacho housing & Sensor ~6kg Target ~2.8kg

## Electrical Properties

Power supply V's:	Nominal in the range 15-24VDC
Current consumption:	Less than 60mA @ 24V
Number of signal outputs:	Two
Output waveform:	Square wave
Signal output low voltage:	0.03V @ 6mA (sink current)
Signal output high voltage:	< Vs * 0.7 at 6mA
Signal output frequency:	0 to 3 kHz
Duty cycle:	50% $\pm$ 15
Phasing between channel 1 & 2:	90° $\pm$ 36°

