



E58HAM

Variable Reluctance Speed Sensor

Product ID

Type #	Product #	Drawing #
E58HAM	385Z-05903	115876

General

Function The E58HAM series variable reluctance (VR) speed sensors consist of an iron core, an inductive coil, and a permanent magnet. A ferrous pole wheel passing the sensor face changes the magnetic field strength, resulting in an AC voltage being induced in the coil. The frequency of the output signal is proportional to the speed of the moving target. The amplitude of the signal depends on speed, air gap, geometry of target, magnetic properties of target material, and the electrical load. VR sensors, also known as passive or electromagnetic sensors, do not require an external supply. These sensors are developed for high temperature applications up to 200°C.

Technical data

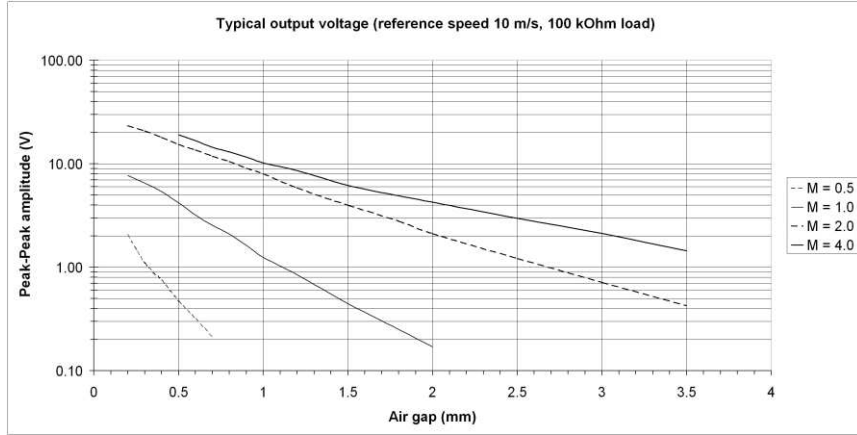
Coil properties Inductance @ 1 kHz: 170 mH ± 10%
 Resistance: 850 Ohm ± 10%
 Magnet polarity: north pole towards front face
 Pole piece: diameter 2.7 mm

Polarity Upon approach of ferrous metal, the signal pin is positive with respect to GND.

Signal output The signal frequency is proportional to the target speed. The signal amplitude shown in the figure is valid for a load of 100 k Ohm, and is affected by air gap, target geometry and material. It is also proportional to the linear speed of the teeth.

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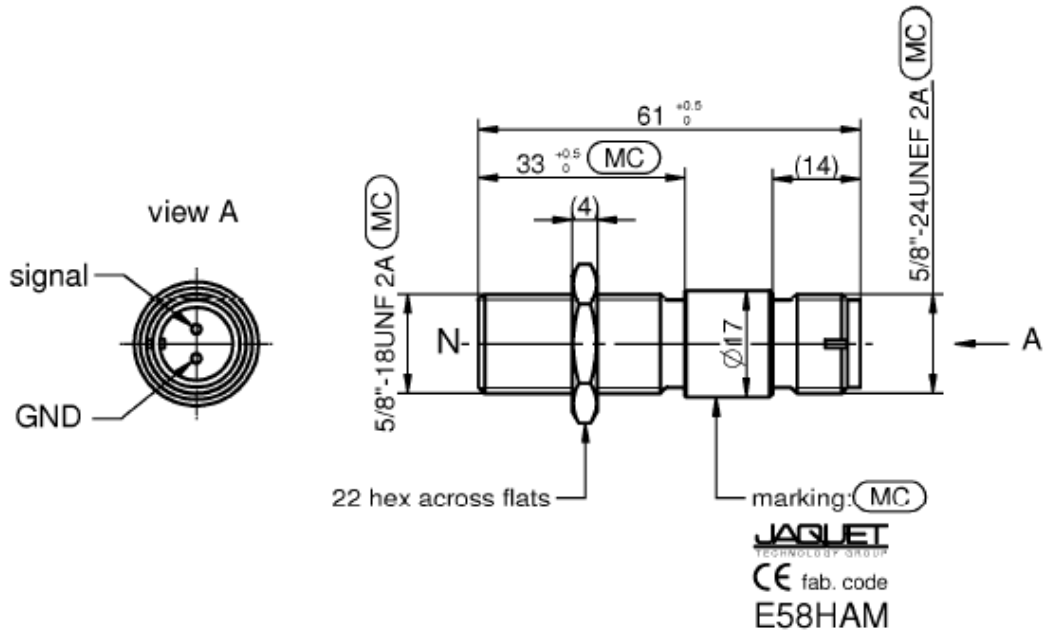
Frequency range	Up to 20 kHz, lower limit depending on application
Housing	5/8"-18 UNF-2A, tightening torque: max. 35 Nm
Connection	Connector mates with straight plug MS3106A-10SL-4S, 2 pins
Requirements for pole wheel	Toothed wheel of a magnetically permeable material (e.g. Steel 1.0036) Optimal performance with Involute gear Tooth width > 10 mm Side offset < 0.2 mm Eccentricity < 0.2 mm
Air gap between sensor and pole wheel	Depending on lowest circumferential speed which has to be detected and on trigger level. See figure
Insulation	Housing and electronics galvanically isolated (Test: 500 V, 50 Hz for 1 minute)
Protection	Sensor head: IP68 Connector: IP67
Operating temperature	-40°C...125°C

Further Information

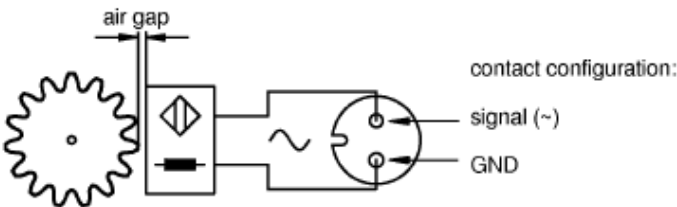
Safety	All mechanical installations must be carried out by an expert. General safety requirements have to be met.
Installation	<p>The sensor has to be aligned to the pole wheel according to the sensor drawing independent of its rotational orientation. Deviations in positioning may affect the performance and decrease the noise immunity of the sensor. During installation, the smallest possible pole wheel to sensor gap should be set. The gap should however, be set to prevent the face of the sensor ever touching the pole wheel. The amplitude of the output signal is not influenced by the air gap.</p> <p>A sensor should be mounted with the middle of the face side over the middle of the pole wheel. Dependent upon the wheel width, a certain degree of axial movement is permissible. However, the middle of the sensor must be at minimum in a distance of 3 mm from the edge of the pole wheel under all operating conditions.</p> <p>A solid and vibration free mounting of the sensor is important. Eventual sensor vibration relative to the pole wheel can induce additional output pulses.</p> <p>The sensors are insensitive to oil, grease etc. and can be installed in arduous conditions.</p>
Maintenance	Product cannot be repaired
Transport	Product must be handled with care to prevent damage of the front face.
Storage	Product must be stored in dry conditions. The storage temperature corresponds to the operation temperature.
Disposal	Product must be disposed of properly; it must not be disposed as domestic waste.

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connecting diagram:



mates with straight plug MS3106A-10SL-4S

Upon approach of ferrous metal pin signal is positive with respect to pin GND.

FOR TECHNICAL SPECIFICATIONS SEE OPERATING INSTRUCTIONS

(CC) Critical characteristic

(MC) Major characteristic

Dimensions in mm

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