

Variable Reluctance Speed Sensor with Amplifier **GREEN LINE** EV58S

INDUSTRIAL SPEED SENSORS

Product ID

Type #	Product #	Drawing #
EV58S	385Z-05696	114945 Rev.03

General

Function	The EV58S series variable reluctance (VR) speed sensors consist of an iron core, an inductive coil, a permanent magnet and an amplifier. A ferrous pole wheel passing the sensor face changes the magnetic field strength, resulting in an AC voltage being induced in the coil. This signal is converted to a square wave signal with constant amplitude by the integrated amplifier. The frequency of the output signal is proportional to the speed of the moving target.
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Technical data

Supply voltage	5 ... 32 VDC, protected against reverse polarity
Current consumption	Max. 5 mA (without load)
Coil properties	<ul style="list-style-type: none"> 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, a pulse is generated.
Signal output	Square wave signal from NPN output transistor with internal 2.2 kΩ pull-up resistor, DC-coupled to supply (negative pole = reference voltage). The signal frequency is proportional to the target speed. The signal amplitude does not depend on air gap and target geometry.
Frequency range	Up to 20 kHz, lower limit depending on application
Housing	5/8"-18 UNF-2A, tightening torque: max. 35 Nm
Connection	Cable with open leads: 3-wire, 3 x 0.34 mm ² (AWG22), stranded wires, elastomer isolation, green casing, fire retardant, low smoke, RoHS conform and halogen free, max. outer Ø = 4.8 mm, min. bending radius = 25 mm (static) and 50 mm (dynamic), cable length according to dimensional drawing
Protection	Sensor head: IP68 Cable outlet: IP67
Insulation	Housing and electronics galvanically isolated (Test: 500 V, 50 Hz for 1 minute)
Pole wheel	Prerequisite: Toothed wheel of a ferrous material (e.g. Steel 1.0036). Optimal performance with <ul style="list-style-type: none"> 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. Typically in the order of 1mm.
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.

22 hex across flats

-marking:
def1LE
CE fab. code
type

silicone cable
0.34mm²
(AWG22)

part no.	type	A	B
385Z-05696	EV58S	50	60
385Z-05697	EV58S25	64	74
3852-05698	EV58S40	102	112

connecting diagram:

Upon approach of ferrous metal a pulse is generated.

FOR TECHNICAL SPECIFICATIONS SEE OPERATING INSTRUGTIONS

@) Critical characteristic
@) Major characteristic

part no.		material / surface treatment / remarks		project no.		dimension unit mm	CAD System SolidEdge V20	Copyrig. ht reserved according DIN 34
general tolerances according DIN ISO 2768-m						nominal size range		
						allowed tolerance		
03 08.02.10 PW end seleeve added; title block changed						first angle projection	drawn 04.02.10	drawn by PW
rev. ecn. date sig. n. change description						workflow status approved	workflow date 09.02.10	workflow user AK
AGUET TECHNOLOGY GROUP Thannerstrasse 15 CH - 4009 Basel www.jaquet.com						part name Greenline Speed Sensor EV58S, EV58S25 and EV58S40	drawing type Massbild	format A4
						scale 1:1	drawing no. 114945	rev. 03

COMPANY PROFILE

AUET

TECHNOLOGY GROUP

JAUQUET TECHNOLOGY GROUP offers the world's most versatile and advanced range of solutions for the detection, measurement, diagnosis and management of rotational speed. Our industry and application specific expertise ensures that you will achieve an optimum solution. Completely matched to your individual requirements, meeting key industrial standards and certifications, our products help boost the performance of your machinery while reducing cost of ownership.

TYPICAL INDUSTRIES SERVED

- Automotive and truck
- Diesel / Gas engines
- Hydraulics
- Railway
- Turbines
- Turbochargers
- Industrial machinery

PRODUCTS – SPEED SENSORS

- Various technologies
- Standard, custom and OEM models
- For demanding applications, up to 300,000 rpm, temperature up to 320 °C / 600 °F, high vibration, shock to 200 g, etc.
- Green Unespeed sensors for general applications
- Ex models for hazardous areas
- Polebands and target wheels available where needed

PRODUCTS – SYSTEMS

- Multi-channel overspeed protection systems
- 1-2 channel measurement, protection and control modules
- Engine diagnostic systems
- Redundant speed measurement and indication

SPECIAL PROJECT EXAMPLES

- An automotive linear movement sensor
- Integrated power and torque measurement for display and gearbox control
- Naval spec. turbine protection for nuclear submarines
- Speed measurement in turreted, tracked vehicles

QUALITY MANAGEMENT AND STANDARDS

- Quality management: TS 16949 and ISO 9001, ZELM ATEX 1020, KWU
- Sensors: GL, KWU, TÜV, ATEX, EN 50155, NF F 16-101 102, ABS, EMC
- Systems: IEC 61508 SIL 2 and SIL 3, API 670, GIL, TÜV, KWU, EX
- Environmental: RoHS - EU directive 2002/95/EC

JAUQUET – YOUR PARTNER

- Efficient and professional service - JAUQUET TECHNOLOGY GROUP is headquartered in Basel, Switzerland and has subsidiaries in Belgium, China, Germany, the Netherlands, United Kingdom and United States along with a worldwide distributor and end-user service network.
- Flexible production quantities; from 1 to millions per project
- Reduction of total costs by intelligent and cost-effective solutions
- Fast turn around time