Differential Hall Effect Speed Sensor D12P

GREEN LINE
INDUSTRIAL SPEED SENSORS

Product ID

Type #	Product #	Drawing #
D12P	385Z-05334	113.630 Rev.0

General

Function	The D12P series differential Hall effect speed sensors are suitable, in conjunction with a ferrous pole wheel, for generating square wave signals proportional to rotary speeds. They exhibit a dynamic function, whereby pulse generation down to 5 Hz is guaranteed. The sensor must be oriented with respect to the pole wheel as shown in the dimensional drawing.

Technical data

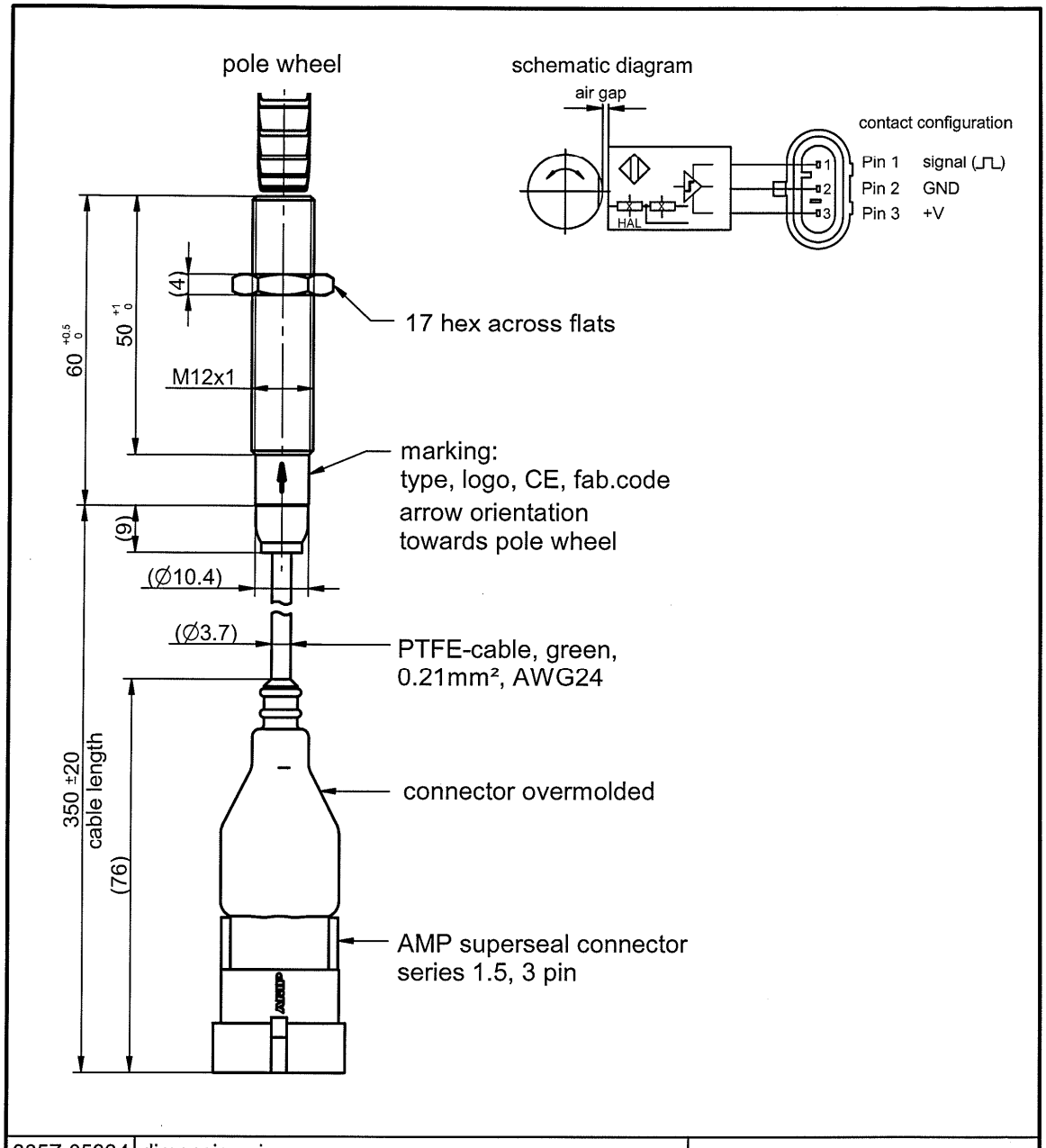
Supply voltage	8…32 VDC, protected against reverse polarity
Current consumption	Max. 15 mA (without load)

Signal output	Square wave signal from push-pull output stage, DC-coupled to the supply (negative pole = reference voltage), max. load current 30 mA
	• Square wave signals
	• Push-pull outputs: I_{max} = ± 20 mA
	  • With pull-up resistor (for R=560 Ohm): U_{low} < 2.5 V, U_{high} > 0.95 * U_{supply}
	  • With pull-down resistor (for R=560 Ohm): U_{low} < 0.1 V, U_{high} > U_{supply}-4.0 V
	• The outputs are short-circuit proof and protected against reverse polarity.

Frequency range	5 Hz…20 kHz
Housing	M12x1, tightening torque: max. 12 Nm
Connection	Cable with connector: • Cable: 3-wire, 3 x 0.21 mm2 (AWG24), stranded wires, PTFE isolation, green casing, max. outer Ø = 3.9 mm, min. bending radius = 60 mm, cable length according to dimensional drawing • Connector: AMP 282105-1, 3 pins
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 • Involute gear • Tooth width > 10 mm • Side offset < 0.2 mm • Eccentricity < 0.2 mm
Air gap between sensor and pole wheel	• Module 0.5 (DP 50.8): 0.1...0.3 mm • Module 1.0 (DP 25.4): 0.1...1.5 mm • Module 2.0 (DP 12.7): 0.1…2.0 mm
Electromagnetic compatibility (EMC)	Please contact Jaquet for further details.
Vibration & shock immunity	Jaquet Greenline sensors are approved for rough environments. Please contact Jaquet for further details.
Operating temperature	-40℃…125℃

Further Information

Safety	All mechanical installations must be carried out by an expert. General safety requirements have to be met.
Installation	These sensors use differential Hall probes. Therefore, the housing has to be aligned to the pole wheel according to the sensor drawing. 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. Within the air gap specified the amplitude of the output signals is not influenced by the air gap. 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. A solid and vibration free mounting of the sensor is important. Eventual sensor vibration relative to the pole wheel can induce additional output pulses. The sensors are insensitive to oil, grease etc. and can be installed in arduous conditions.
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.



385Z-05334	dimensions in mm						
part no.		material / remarks		application			
-	-	-/-	-	nominal size range			
-	-	-/-	-	allowed tolerance			
-	-	-/-	-	replacement for			
-	-	-/-	-	first angle projection	drawn	31.05.2007	ebi
-	-	-/-	-				
rev.	ecn.	date/signature	change description	scale 1:1	approved	19.6.07	Seek
JAQUET TECHNOLOGY GROUP Thannerstrasse 15 CH-4009 Basel www.jaquet.com	part name speed sensor Greenline D12P			format A4	drawing no. 113.630		rev. 0
				file name			113630.dft