

# Differential Hall Effect Speed Sensor D12A

**GREEN LINE**  
INDUSTRIAL SPEED SENSORS

## Product ID

Type #	Product #	Drawing #
D12A	385Z-05333	4-113.628 Rev.1

## General

Function	The D12A 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.
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## Technical data

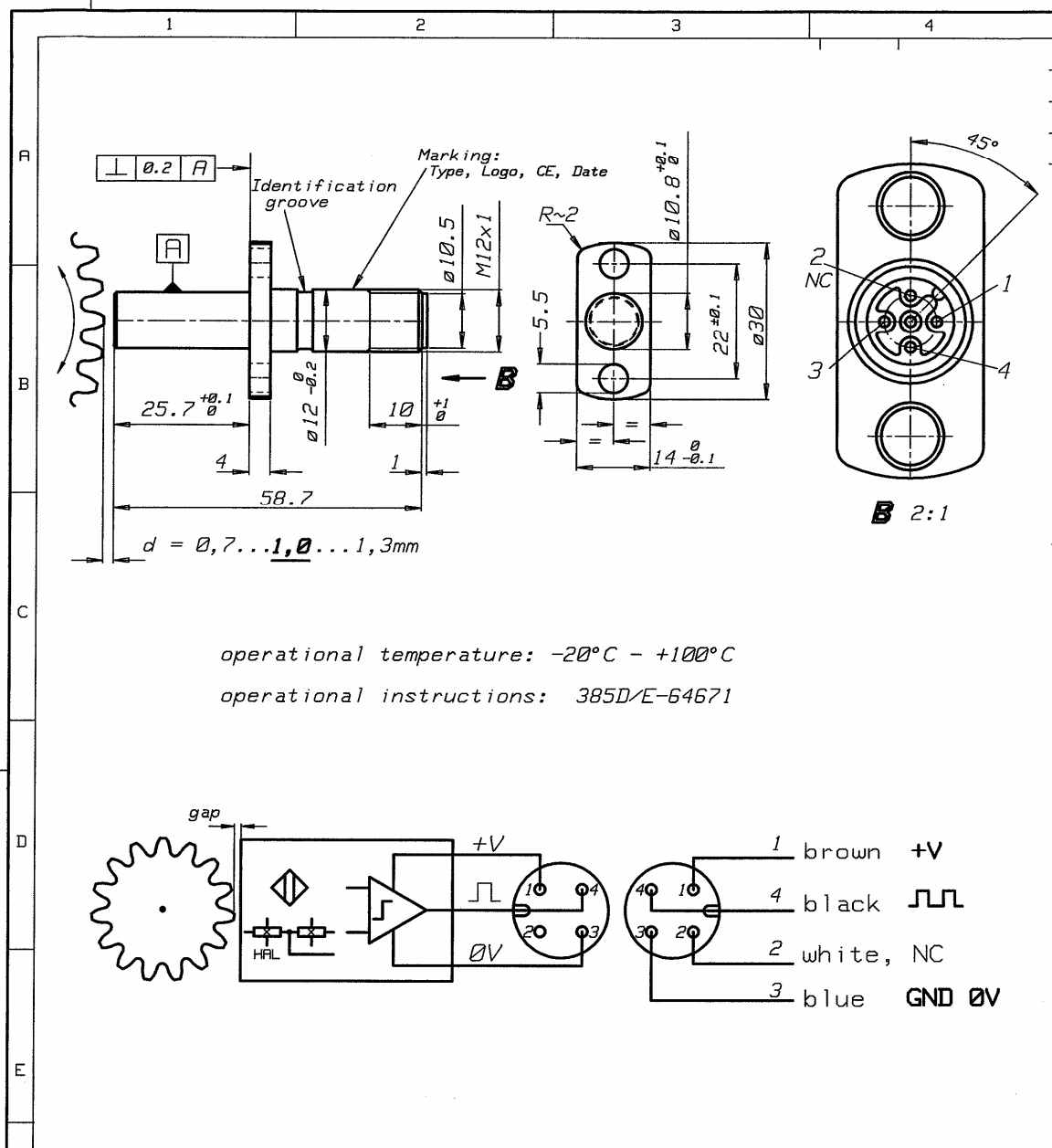
Supply voltage	8...32 VDC, protected against reverse polarity
Current consumption	Max. 15 mA (without load)
Signal output	Square wave signal from push-pull output stage, DC-coupled to the supply (negative pole = reference voltage), max. load current 30 mA <ul style="list-style-type: none"> <li>Square wave signals</li> <li>Push-pull outputs: <math>I_{max} = \pm 20</math> mA <ul style="list-style-type: none"> <li>With pull-up resistor (for <math>R=560</math> Ohm): <math>U_{low} &lt; 2.5</math> V, <math>U_{high} &gt; 0.95 \cdot U_{supply}</math></li> <li>With pull-down resistor (for <math>R=560</math> Ohm): <math>U_{low} &lt; 0.1</math> V, <math>U_{high} &gt; U_{supply}-4.0</math> V</li> </ul> </li> <li>The outputs are short-circuit proof and protected against reverse polarity.</li> </ul>
Frequency range	5 Hz...20 kHz
Housing	M12x1, tightening torque: max. 12 Nm
Connection	Connector: M12x1 thread, 4 pins, black
Protection	Sensor head: IP68 Connector: 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"> <li>Involute gear</li> <li>Tooth width <math>&gt; 10</math> mm</li> <li>Side offset <math>&lt; 0.2</math> mm</li> <li>Eccentricity <math>&lt; 0.2</math> mm</li> </ul>
Air gap between sensor and pole wheel	<ul style="list-style-type: none"> <li>Module 0.5 (DP 50.8): 0.1...0.3 mm</li> <li>Module 1.0 (DP 25.4): 0.1...1.5 mm</li> <li>Module 2.0 (DP 12.7): 0.1...2.0 mm</li> </ul>
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°C...125°C

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**Further Information**

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Safety	All mechanical installations must be carried out by an expert. General safety requirements have to be met.
Installation	<p>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.</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.



Sensor kpl. D12A		385Z-05333	Jaquet
used	Designation	Part-Nr.	Material/Remarks
1	—	16.03.07 CA	Sensor Honeywell hinzugefügt
—	6095	4.3.05 Pi	—
rev.	ecn.	date/signature	change description
D12A			
speed sensor			
JAQUET TECHNOLOGY GROUP		JAQUET AG, Thannerstrasse 15, CH-4009 Basel Tel +41 061 306 88 22, www.jaquet.com	
Dimension		0.5	>6
Tolerance		± 0.1	0.2
replaced with:		—	
replacement for:		—	
scale	drawn	6.12.04	Pi
1:1	checked	16.3.07	sh
Format	Drawing No.	Rev.	
A4	113.628	1	