



## Online Data sheet

### Encoder WDGI 50V

[www.wachendorff-automation.com/wdgi50v](http://www.wachendorff-automation.com/wdgi50v)

#### Wachendorff Automation

##### ... systems and encoders

- Complete systems
- Industrial rugged encoders to suit your application
- Standard range and customer versions
- Maximum permissible loads
- 48-hour express production
- Made in Germany
- Worldwide distributor network

# Encoder WDGI 50V

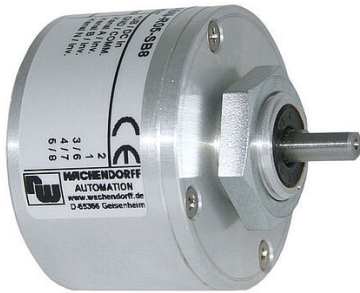


Illustration similar



- Extremely rugged and economical encoder with short measurements
- Easy screw mounting
- Protection to IP67 all around
- Optional: -40 °C up to +85 °C [-40 °F up to +185 °F]

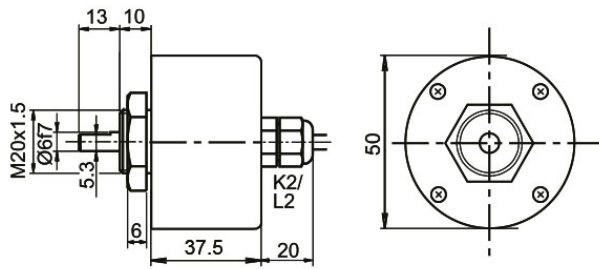
[www.wachendorff-automation.com/wdgi50v](http://www.wachendorff-automation.com/wdgi50v)

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Flange	screw flange
Starting torque nut	max. 8 Nm
Flange material	stainless steel, V2A
Housing material	stainless steel, V2A
Flange diameter	Ø 50 mm [Ø 1.969"]
Shaft(s)	
Shaft material	stainless steel, V2A
Starting torque	approx. 1.2 Ncm [1.699 in-ozf] at ambient temperature
Shaft	Ø 6 mm [Ø 0.236"]
Shaft length	L: 13 mm [0.512"]
Max. Permissible shaft loading radial	30 N [3.059 kp]
Max. Permissible shaft loading axial	45 N [4.589 kp]
Bearings	
Bearings type	2 precision ball bearings
Nominal service life	1 x 10 <sup>9</sup> revs. at 100 % rated shaft load 1 x 10 <sup>10</sup> revs. at 40 % rated shaft load 1 x 10 <sup>11</sup> revs. at 20 % rated shaft load
Max. operating speed	6000 rpm
Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	2200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1 x 10 <sup>11</sup> revs. at 20 % rated shaft load and 6000 rpm
Diagnostic coverage (DC)	0 %
Electrical Data	
Power supply/Current consumption	4.75 VDC up to 30 VDC: typ. 40 mA
Operating principle	magnetic
Output circuit	HTL (TTL at 5 VDC) HTL, inv. (TTL/RS422 comp. at 5 VDC)
Pulse frequency	HTL up to 16384 ppr: max. 600 kHz TTL up to 16384 ppr: max. 1 MHz
Channels	ABN and inverted signals

Load	max. 40 mA / channel
Circuit protection	no
Accuracy	
Phase offset	90° ± max. 7.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %
Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 m/s <sup>2</sup> (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Electrical Safety:	according DIN VDE 0160
Duty information	
Customs tariff number:	90318020
Country of origin:	Germany
General Data	
Weight	approx. 470 g [16.578 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67 all around
Operating temperature	Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C (Option ACA: -40 °C up to +85 °C). Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F, Option ACA: -40 °F up to +185 °F
Storage temperature	Connector: -40 °C up to +85 °C, Cable: -30 °C up to +80 °C (Option ACA: -40 °C up to +85 °C) Connector: -40 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F)

More Information	
General technical data and safety instructions <a href="http://www.wachendorff-automation.com/gtd">http://www.wachendorff-automation.com/gtd</a>	
Options <a href="http://www.wachendorff-automation.com/acc">http://www.wachendorff-automation.com/acc</a>	

**Cable connection L2 with 2 m cable**



Alle Abmessungen in mm / All dimensions in mm

**Description**

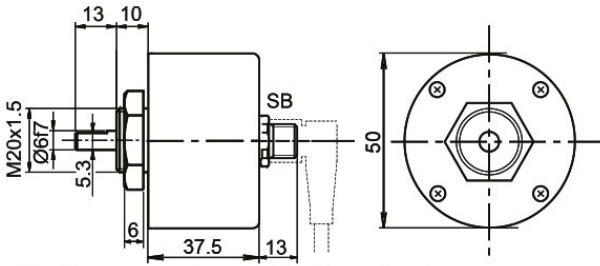
**ABN inv. poss.**

**L2** axial, shield connected to encoder housing

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Assignments		
	L2	L2
<b>Circuit</b>	N35	M35
<b>GND</b>	WH	WH
<b>(+) Vcc</b>	BN	BN
<b>A</b>	GN	GN
<b>B</b>	YE	YE
<b>N</b>	GY	GY
<b>-</b>	-	-
<b>A inv.</b>	-	RD
<b>B inv.</b>	-	BK, (BU at ACA)
<b>N inv.</b>	-	VT
<b>Shield</b>	flex	flex

**Sensor-connector (M12x1) SB, 5-, 8-pin**

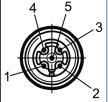
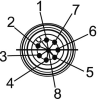


Alle Abmessungen in mm / All dimensions in mm

**Description**

**ABN inv. poss.**

- SB5** axial, 5-pin, Connector connected to encoder housing -
- SB8** axial, 8-pin, Connector connected to encoder housing •

Assignments		
	<b>SB5</b>	<b>SB8</b>
	<b>5-pin</b>	<b>8-pin</b>
		
<b>Circuit</b>	N35	M35
<b>GND</b>	3	1
<b>(+) Vcc</b>	1	2
<b>A</b>	4	3
<b>B</b>	2	4
<b>N</b>	5	5
<b>-</b>	-	-
<b>A inv.</b>	-	6
<b>B inv.</b>	-	7
<b>N inv.</b>	-	8
<b>n. c.</b>	-	-
<b>Shield</b>	-	-

**Options****Low temperature**

The encoder WDG1 50V with the output circuit types N35, M35 is also available with the extended temperature range -40 °C up to +85 °C [-40 °F up to +185 °F] (measured at the flange).

**Order key****ACA****Cable length**

The encoder WDG1 50V can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see <https://www.wachendorff-automation.com/download-gtd-incremental-encoders/>

Please extend the standard order code with a three figure number, specifying the cable length in decimetres.

Example: 5 m cable = 050

**Order key****XXX = Decimeter**

Example Order No.	Type					Your encoder
WDGI 50V	WDGI 50V					WDGI 50V
	<b>Shaft</b>					
06	06					
	<b>Pulses per revolution PPR:</b>					
16384	1-16384 Other PPRs on request					
	<b>Channels:</b>					
ABN	ABN					
	<b>Output circuit</b>					
M35	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	-	<b>Order key</b>	
	1-16384	4.75 - 30	HTL (TTL at 5 VDC)	-	N35	
		4.75 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	-	M35	
	<b>Electrical connections</b>					
L2	<b>Description</b>			<b>ABN inv. poss.</b>	<b>Order key</b>	
	<b>Cable: length (2 m standard, WDG 58T: 1 m)</b>					
	axial, shield connected to encoder housing			•	L2	
	<b>Connector: (shield connected to encoder housing)</b>					
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	<b>Options</b>					
	<b>Description</b>			<b>Order key</b>		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No.=	WDGI 50V	06	16384	ABN	M35	L2		WDGI 50V						Your encoder



For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
<https://www.wachendorff-automation.com/contact-en/wachendorff-world-wide/>

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