



# Online Data Sheet

## Encoder WDGI 58K

[www.wachendorff-automation.com/wdgi58k](http://www.wachendorff-automation.com/wdgi58k)

### 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 58K (optical)



- Rugged industrial standard encoder
- Housing cap die cast aluminum, with particularly eco-friendly powder coating
- Up to 25000 PPR by use of high grad electronics
- Protection to IP67, shaft sealed to IP65
- Maximum mechanical and electrical safety
- Full connection protection with 10 VDC up to 30 VDC
- High output frequency 600 kHz/2 MHz
- Optional:
  - 40 °C up to +85 °C,
  - Protection to IP67 all around,
  - Pressure equalising membrane

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Resolution	
Pulses per revolution PPR	125 ppr

Mechanical Data	
<b>Housing</b>	
Flange	clamping flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 58 mm
Cam mounting	pitch 69 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 6 mm
Advice	Option AAO: shaft length = 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	1 x 10 <sup>10</sup> revs. at 100 % rated shaft load 1 x 10 <sup>11</sup> revs. at 40 % rated shaft load 1 x 10 <sup>12</sup> revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1 x 10 <sup>12</sup> revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

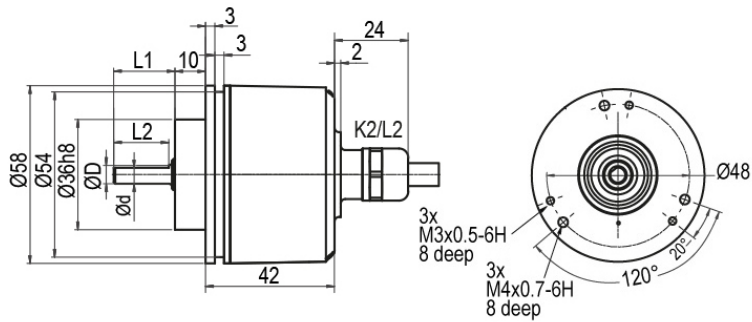
Electrical Data	
Power supply VDC	10 - 30 VDC
Current consumption	typ. 70 mA
Signal shape	square-wave
Output circuit	HTL
Channels	AB, ABN
Output	push-pull
Load	max. 40 mA / channel

Signal level mA	at 20 mA
Signal level H>	H > V <sub>cc</sub> - 2.5 VDC
Signal level L	L < 2.5 VDC
Output frequency	max. 200 kHz
Circuit protection	yes
Light reserve warning	yes

Environmental data	
<b>Environmental data:</b>	
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)
Design:	according DIN VDE 0160

General Data	
Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C) 1 V <sub>pp</sub> : -10 °C up to +70 °C
Storage temperature	Connector: -40 °C up to +85 °C, cable: -30 °C up to +80 °C (option ACA: -40 °C up to +85 °C)

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>	

**WDGI 58K: Cable connection K2, L2, axial, with 2 m cable**


D = 6h7      L1 = 20      d = 5.2      L2 = 18

Option AAO:

D = 6h7      L1 = 10      d = 5.5      L2 = 9

**Description**
**ABN inv. poss.**
**K2** axial, shield not connected

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Assignments	
	<b>K2</b>
<b>Circuit</b>	G24
<b>GND</b>	WH
<b>(+) Vcc</b>	BN
<b>A</b>	GN
<b>B</b>	YE
<b>N</b>	GY
<b>Light reserve warning</b>	PK
<b>A inv.</b>	-
<b>B inv.</b>	-
<b>N inv.</b>	-
<b>Shield</b>	flex

## Options

### IP67 all around (not for 1 Vpp Sin/Cos) - Shaft length = 10 mm

#### Order key

The encoder WDG1 58K can be supplied in a full IP67 version.

**AAO**

Max. RPM: 8000 rpm

Permitted Shaft-Loading, axial: 50 N

Permitted Shaft-Loading, radial: 80 N

Max. PPR: 25000 ppr

Starting-torque: approx. 4 Ncm at ambient temperature

### Low temperature

#### Order key

The encoder WDG1 58K with the output circuit types F24, G24, H24, I24, P24, R24, F05, G05, H05, I05, P05, R05, 245, 524, 645 is also available with the extended temperature range -40 °C up to +85 °C [-40 °F up to +185 °F] (measured at the flange).

**ACA**

### Pressure equalising membrane

#### Order key

The WDG1 58K shaft encoder is also optionally available with a pressure equalising membrane. This prevents water from penetrating into the encoder housing in the case of high air humidity.

**ACR**

The IP67 protection level, temperature range and salt spray resistance are maintained.

Resistant to chemicals and solvents in accordance with DIN EN ISO 2812-1.

### Cable length

#### Order key

The encoder WDG1 58K can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see [www.wachendorff-automation.com/atd](http://www.wachendorff-automation.com/atd)

**XXX = Decimeter**

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDGI 58K	WDGI 58K					WDGI 58K
	<b>Shaft</b>					
06	06					06
	<b>Pulses per revolution PPR:</b>					
125	125					125
	<b>Channels:</b>					
AB	AB					AB
	<b>Output circuit</b>					
G24	<b>Resolution PPR</b>	<b>Power supply VDC</b>	<b>Output circuit</b>	<b>Light reserve warning</b>	<b>Order key</b>	G24
	up to 5000	10 - 30	HTL	•	G24	
	<b>Electrical connections</b>					
K2	<b>Description</b>			<b>ABN inv. poss.</b>	<b>Order key</b>	K2
	Cable: length (2 m standard, WDG 58T: 1 m) axial, shield not connected			•	K2	
	<b>Options</b>					
	<b>Description</b>			<b>Order key</b>		
	IP67			AAO		
	Low temperature			ACA		
	Pressure equalising membrane			ACR		
	Cable length			Cable length		
	Without option			Empty		

<b>Example Order No.=</b>	WDGI 58K	06	125	AB	G24	K2		WDGI 58K	06	125	AB	G24	K2		<b>Your encoder</b>
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For further information please contact our local distributor.  
Here you find a list of our distributors worldwide.  
<https://www.wachendorff-automation.com/contact-sales-en/>



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