



# Online Data Sheet

## Encoder WDG 58R

[www.wachendorff-automation.com/wdg58r](http://www.wachendorff-automation.com/wdg58r)

### 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 WDG 58R (optical)



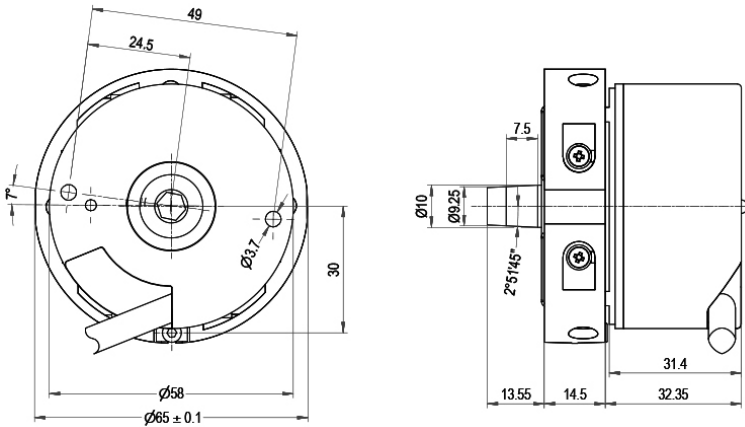
- Rugged industrial standard encoder
- Up to 25000 PPR by use of high grad electronics
- Maximum mechanical and electrical safety
- High noise immunity
- Full connection protection with 10 VDC up to 30 VDC
- High output frequency 600 kHz/2 MHz

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Resolution	
Pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	stator coupling
Flange material	aluminum
Housing cap	aluminum
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø Conus 1/10; 9.25 mm
Shaft length	L: 16.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
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>	200 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 5,5 VDC: typ. 100 mA
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 100 mA
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos

Pulse frequency	TTL 5000 ppr: max. 200 kHz HTL 5000 ppr: max. 200 kHz TTL more than 1200 ppr: max. 2 MHz HTL more than 1200 ppr: max. 600 kHz 1 Vpp sin/cos: max. 100 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel @ 1 Vpp sin/cos: min. 120 Ohm
Circuit protection	circuit type F24, G24, H24, I24, P24, R24 only
Accuracy	
Phase offset	90° ± max. 7.5 % of the period duration
pulse-/pause-ratio	5000 ppr: 50 % ± max. 7 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %
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)
Design:	according DIN VDE 0160
Duty information	
Customs tariff number:	90318020
Country of origin:	Germany
General Data	
Weight	approx. 220 g
Connections	cable output, 2 m, tangential
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-20 °C up to +80 °C 1 Vpp: -10 °C up to +70 °C
Storage temperature	-20 °C up to +80 °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>	

**WDG 58R: Cable connection T3, tangential, with 2 m cable**



**Description**

**ABN inv. poss.**

**T3** tangential, shield connected to encoder housing

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Assignments					
	T3	T3	T3	T3	T3
<b>Circuit</b>	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
<b>GND</b>	WH	WH	WH	WH	WH
<b>(+) Vcc</b>	BN	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE	GY
<b>N</b>	GY	GY	GY	GY	-
<b>Light reserve warning</b>	PK	-	PK	-	-
<b>A inv.</b>	-	-	RD	RD	YE
<b>B inv.</b>	-	-	BK, (BU at ACA)	BK, (BU at ACA)	PK
<b>N inv.</b>	-	-	VT	VT	-
<b>Shield</b>	flex	flex	flex	flex	flex

## Options

### Cable length

The encoder WDG 58R 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)

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	
WDG 58R	WDG 58R					WDG 58R	
<b>Pulses per revolution PPR:</b>							
1024	4, 6, 25, 32, 36, 50, 60, 64, 70, 88, 100, 120, 125, 150, 180, 200, 240, 250, 254, 256, 300, 314, 360, 400, 500, 512, 600, 625, 720, 750, 768, 800, 810, 900, 1000, 1024, 1200, 1250, 1270, 1500, 1800, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000, 8000, 8192, 10000, 10240, 12500, 16384, 20000, 20480, 25000 1 Vpp Sin/Cos only 1024, 2048 Other PPRs on request						
<b>Channels:</b>							
ABN	AB, ABN (SIN: 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>		
	up to 2500	5 - 30	HTL (TTL at 5 VDC)	-	H30		
		5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	-	R30		
	up to 5000	4.75 - 5.5	TTL	•	G05		
		4.75 - 5.5	TTL	-	H05		
		4.75 - 5.5	TTL, RS422 comp., inverted	•	I05		
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05		
		10 - 30	HTL	•	G24		
		10 - 30	HTL	-	H24		
		10 - 30	HTL inverted	•	I24		
		10 - 30	HTL inverted	-	R24		
		10 - 30	TTL, RS422 comp., inverted	•	524		
		10 - 30	TTL, RS422 comp., inverted	-	245		
		(higher frequency) 1200 up to 25000	4.75 - 5.5	TTL	-	F05	
			4.75 - 5.5	TTL, RS422 comp., inverted	-	P05	
	10 - 30		HTL	-	F24		
	10 - 30		HTL inverted	-	P24		
	10 - 30		TTL, RS422 comp., inverted	-	645		
	1024, 2048	4.75 - 5.5	1 Vpp sin/cos	-	SIN		
	<b>Electrical connections</b>						
T3	<b>Description</b>			<b>ABN inv. poss.</b>	<b>Order key</b>		
	Cable: length (2 m standard, WDG 58T: 1 m) tangential, shield connected to encoder housing			•	T3		
<b>Options</b>							
	<b>Description</b>			<b>Order key</b>			
	Without option			Empty			
	Cable length			XXX = Decimeter			

<b>Example Order No.=</b>	WDG 58R	1024	ABN	G24	T3							<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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