

## Encoder WDG 58D



- Rugged industrial standard encoder
- Up to 25000 PPR by use of high grad electronics
- Protection to IP67, shaft sealed to IP65
- High noise immunity
- High shaft load radial 400N, axial 400N
- Maximum mechanical and electrical safety
- Full connection protection with 10 VDC up to 30 VDC
- With light reserve warning
- Optional: -40 °C up to +80 °C

[www.wachendorff-automation.com/wdg58d](http://www.wachendorff-automation.com/wdg58d)

**Available PPR** up to 25000 PPR

### Mechanical Data

- Clamping flange: Aluminium
- Cap: Aluminium, powder coated
- Cam mounting: pitch 69 mm

**Welle** Ø 12 mm  
 - Material: stainless steel  
 - Permitted load on shaft end: max. 400 N radial, max. 400 N axial  
 - Starting torque: approx. 1 Ncm at ambient temperature

**Bearings**  
 - Type: 2 precision ball bearings  
 - Service life: 4 x 10<sup>8</sup> revs. at 100 % rated shaft load, 6 x 10<sup>9</sup> revs. at 40 % rated shaft load, 5 x 10<sup>10</sup> revs. at 20 % rated shaft load

**Max. operating speed:** 8000 rpm  
**Weight:** approx. 250 g  
**Connections:** cable or connector

**Protection rating:** IP67, shaft sealed to IP65 (EN 60529)

**Operating temperature:** -20 °C up to +80 °C, 1 Vss: -10 °C up to +70 °C  
**Storage temperature:** -30 °C up to +80 °C

### Machinery Directive: basic data safety integrity level

**MTTF<sub>d</sub>:** 200 a  
**Mission time (T<sub>M</sub>):** 25 a  
**Nominale service life (L<sub>10h</sub>):** 5 x 10<sup>10</sup> revs. at 8000 rpm and 20 % rated shaft load  
**Diagnostic coverage (DC):** 0 %

### Electrical Data

**Power supply/** 4.75 VDC up to 5.5 VDC: max. 100 mA  
**Open circuit current** 5 VDC up to 30 VDC: max. 70 mA  
**consumption:** 10 VDC up to 30 VDC: max. 100 mA

**Output circuit:** TTL, RS422 compatible HTL  
 1 Vss Sin/Cos

**Pulse frequency:** TTL ≤ 5000 PPR: max. 200 kHz  
 HTL ≤ 5000 PPR: max. 200 kHz  
 TTL > 5000 PPR: max. 2 MHz  
 HTL > 5000 PPR: max. 600 kHz  
 1 Vss Sin/Cos: max. 100 kHz

**Channels:** AB, ABN and inverted signals

**Load:** max. 40 mA/channel,  
 @ 1 Vss Sin/Cos: 120 Ohm termination

**Circuit protection:** circuit type F24, G24, H24, I24, P24, R24 only

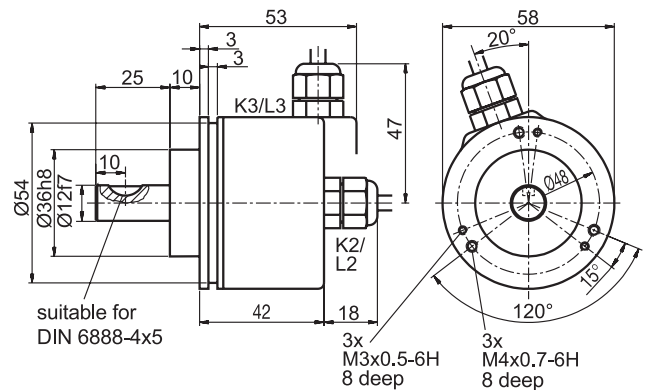
**Accuracy:** Phase offset: 90° ± max. 7.5 % of the pulse length  
 pulse-/pause-ratio: 50 % ± max. 7 %

### Further technical information on:

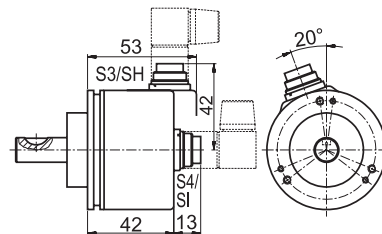
[www.wachendorff-automation.com/gtd](http://www.wachendorff-automation.com/gtd)

**Matching accessories on:** [www.wachendorff-automation.com/acs](http://www.wachendorff-automation.com/acs)

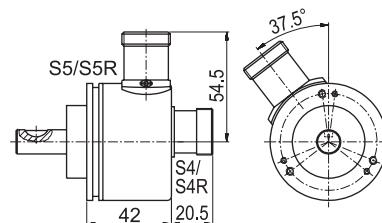
### Cable connection K2, K3, L2, L3 with 2 m cable



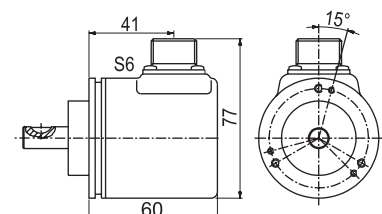
### Connector (M16x0.75) SI, SH, 5-, 6-, 8-, 12-pin and S2, S3, 7-pin



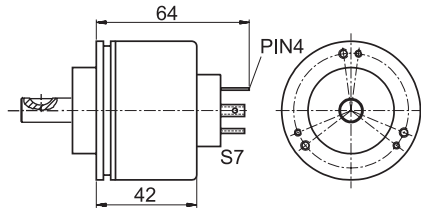
### Connector (M23) S4, S5, S4R, S5R, 12-pin



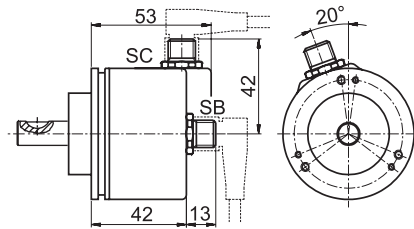
### MIL-connector S6, 6-pin



**Valve-connector S7, 4-pin**



**Sensor-connector (M12x1) SB, SC, 4-, 5-, 8-, 12-pin**



All dimensional specifications in mm.

**Options:**

**Low-temperature:**

The encoder WDG 58D with the output circuit types F24, G24, H24, I24, P24, R24, F05, G05, H05, I05, P05, R05, 245, 524 and 645 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange). When ordering please add the suffix code -ACA.

**Cable length:**

The encoder WDG 58D can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see „General Technical Data“:

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

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

Example: 3 m cable = 030

**Ordering information:**

Please see our general technical data at: [www.wachendorff-automation.com/gtd](http://www.wachendorff-automation.com/gtd)

Output circuit:					
Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order Key	
up to 2500	5 - 30	HTL	-	H30	
		HTL inverted	-	R30	
up to 5000	4,75 - 5,5	TTL	•	G05	
			-	H05	
		TTL, RS422 comp., inverted	•	I05	
			-	R05	
	10 - 30	HTL		•	G24
				-	H24
			HTL inverted	•	I24
				-	R24
		TTL, RS422 comp., inverted	•	524	
			-	245	
10000 up to 25000	4,75 - 5,5	TTL	-	F05	
		TTL, RS422 comp., inv.	-	P05	
	10 - 30	HTL		-	F24
			HTL invertiert	-	P24
		TTL, RS422 comp., inv.	-	645	
1024 2048	4,75 - 5,5	1 Vss Sin/Cos	-	SIN	

**Channels:** AB, ABN (SIN: AB)

**Pulses per revolution PPR:**  
2, 5, 10, 15, 20, 24, 25, 30, 36, 40, 48, 50, 60, 64, 72, 87, 90, 100, 120, 125, 127, 128, 150, 160, 180, 200, 216, 240, 250, 254, 256, 300, 314, 320, 360, 400, 500, 512, 571, 600, 625, 720, 750, 768, 800, 810, 900, 1000, 1024, 1200, 1250, 1270, 1440, 1500, 1800, 2000, 2048, 2400, 2500, 3000, 3600, 4000, 4096, 4685, 5000, 10000, 12500, 20000, 25000.  
1 Vss Sin/Cos 1024 PPR and 2048 PPR only  
Other PPRs on request

Electrical connections:			ABN inv.
Order key	Outgoing	Description	
<b>Cable:</b> (Length 2 m standard)			
K2	axial	shield not connected	•
L2		shield connected to encoder housing	•
K3	radial	shield not connected	•
L3		shield connected to encoder housing	•
<b>Connector:</b>			
SI5	axial	5-pin, connector	-
SH5	radial		-
SI6	axial	6-pin, connector	-
SH6	radial		-
SI8	axial	8-pin, connector	•
SH8	radial		•
SI12	axial	12-pin, connector	•
SH12	radial		•
S2	axial	7-pin, connector	-
S3	radial		-
S4/S4R	axial	12-pin, connector	•
S5/S5R	radial	(R = clockwise pin count)	•
S6	radial	6-pin, MIL-connector	-
S7	axial	4-pin, Valve-connector	-
SB4	axial	4-pin, M12-sensor-connector	-
SC4	radial		-
SB5	axial	5-pin, M12-sensor-connector	-
SC5	radial		-
SB8	axial	8-pin, M12-sensor-connector	•
SC8	radial		•
SB12	axial	12-pin, M12-sensor-connector	•
SC12	radial		•

**Options:**  
Empty = Without option  
ACA = Low-temperature -40 °C up to +80 °C  
In decimetres = Cable length

**Order No.:**

Example      WDG 58D      5000      ABN      G24      K2     

Your encoder    WDG 58D