

## Encoder WDG 58B



- Rugged industrial standard encoder
- 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
- With light reserve warning
- Optional: -40 °C up to +80 °C  
Protection to IP67 all around

[www.wachendorff-automation.com/wdg58b](http://www.wachendorff-automation.com/wdg58b)

**Available PPR** up to 25000 PPR

### Mechanical Data

#### Housing

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

#### Shaft

- Ø 10 mm
- Material: stainless steel
- Permitted load on shaft end: max. 220 N radial  
max. 120 N axial
- Starting torque: approx. 1 Ncm at ambient temperature

#### Bearings

- Type: 2 precision ball bearings
- 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: 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>): 1 x 10<sup>11</sup> revs. at 8000 rpm and 20 % rated shaft load
- Diagnostic coverage (DC): 0 %

### Electrical Data

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

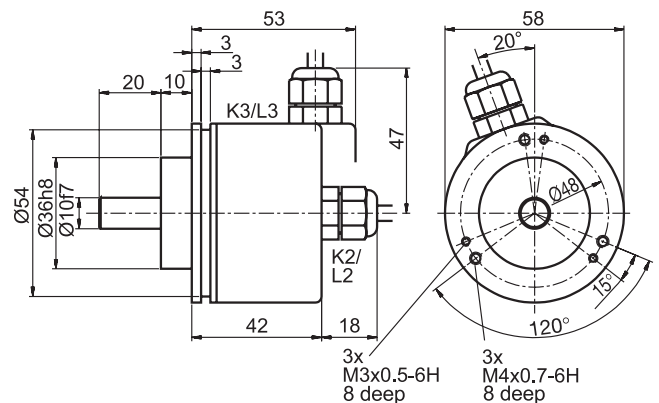
Accuracy: Phase offset: 90° ± max. 7.5 %  
of the pulse length  
pulse-/pause-ratio: 50 % ± max. 7 %

### Further technical information on:

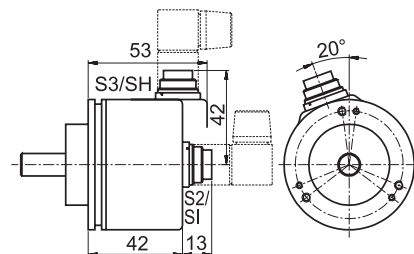
[www.wachendorff-automation.com/gtd](http://www.wachendorff-automation.com/gtd)

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

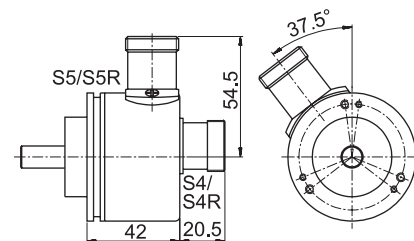
### Cable connection K2, K3, L2, L3 with 2 m cable



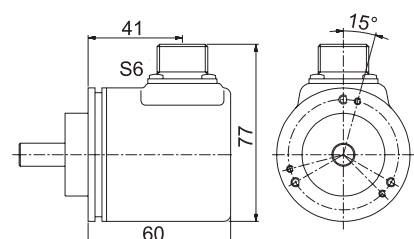
### Connector (M16x0.75) SI, SH, 5-, 6-, 8-, 12-pin and S2, S3, 7-pin



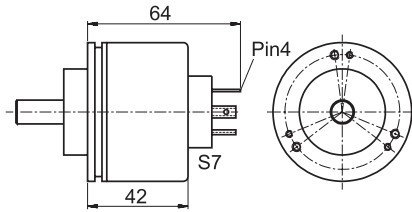
### Connector (M23) S4, S5, S4R, S5R, 12-pin



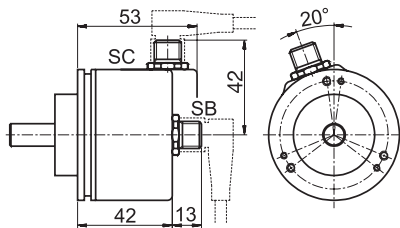
### MIL-connector S6, 6-pin



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



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



All dimensional specifications in mm.

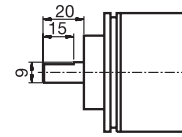
**Options:**

**Low-temperature:**

The encoder WDG 58B 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.

**Shaft with flat:**

The encoder WDG 58B can be supplied with a shaft with flat. When ordering please add the suffix code - AAF.



Drawing 58B-AAF

**Low-friction bearings:**

The encoder WDG 58B is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50. When ordering please add the suffix code - AAC.

**Shafts sealed to IP67 (not for 1 Vss Sin/Cos):**

The encoder WDG 58B can be supplied in a full IP67 version. When ordering please add the suffix code - AAO.

Max. RPM	Permitted Shaft-Loading axial	Max. PPR	Starting-torque
3500 rpm	100 N	110 N	2500 PPR
			approx. 4 Ncm

Amended specifications for shaft sealed to IP67.

**Cable length:**

The encoder WDG 58B 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	
		TTL, RS422 comp., inverted	•	H05	
		TTL	•	I05	
		TTL, RS422 comp., inverted	-	R05	
	10 - 30	HTL	HTL	•	G24
			HTL inverted	•	H24
		TTL, RS422 comp., inverted	HTL	•	I24
			TTL, RS422 comp., inverted	-	R24
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:			
Order key	Outgoing	Description	ABN inv.
<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
AAF	= Shaft with flat
AAC	= Low-friction bearings
AAO	= Shaft sealed to IP67
In decimetres	= Cable length

**Order No.:**

Example	WDG 58B	5000	ABN	G24	K2	
Your encoder	WDG 58B					