

Encoder WDG 40S



- Robust and economical encoder with small dimensions
- Easy screw mounting
- Protection to IP67, shaft sealed to IP65
- Optional: Protection to IP67 all around
-40 °C up to +80 °C

www.wachendorff-automation.com/wdg40s

Available PPR up to 2500 PPR

Mechanical Data

Housing

- Screw flange: Aluminium incl. nut M20 x 1.5
- Cap: Aluminium, powder coated

Shaft

Ø 6 mm

- Material: stainless steel
- Permitted load on shaft end: max. 80 N radial
max. 50 N axial
- Starting torque: approx. 0.2 Ncm at ambient temperature

Bearings

- Type: 2 precision ball bearings
- Service life: 1 x 10⁹ revs. at 100 % rated shaft load
1 x 10¹⁰ revs. at 40 % rated shaft load
1 x 10¹¹ revs. at 20 % rated shaft load

Max. operating speed: 12000 rpm

Weight: approx. 90 g

Connections: cable or connector

Starting torque nut: max. 10 Nm

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

Operating temperature: -20 °C up to +80 °C

Storage temperature: -30 °C up to +80 °C

Machinery Directive: basic data safety integrity level

MTTF_d: 200 a

Mission time (T_M): 25 a

Nominale service life 1 x 10¹¹ revs. at 12000 rpm and 20 % rated

(L_{10h}): shaft load

Diagnostic coverage (DC): 0 %

Electrical Data

Power supply/ 4.75 VDC up to 5.5 VDC: max. 70 mA

Open circuit current 10 VDC up to 30 VDC: max. 70 mA
consumption:

Output circuit: TTL, RS422 compatible
HTL

Pulse frequency: TTL up to 2500 PPR: max. 200 kHz
HTL up to 2500 PPR: max. 200 kHz

Channels: AB, ABN and inverted signals

Load: max. 40 mA/channel

Circuit protection: circuit type H24 and R24 only

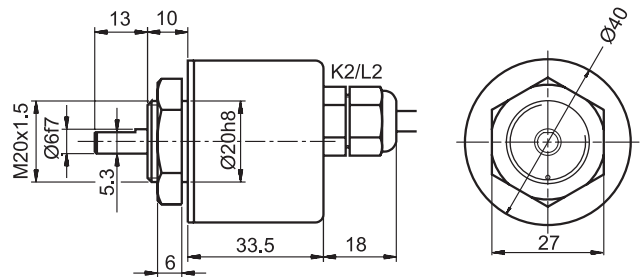
Accuracy: Phase offset: 90° ± max. 7.5 %
of the pulse length
pulse-/pause-ratio: 50 % ± max. 7 %

Further technical information on:

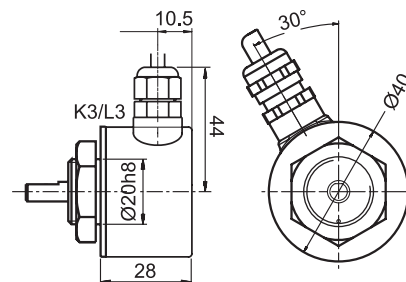
www.wachendorff-automation.com/gtd

Matching accessories on: www.wachendorff-automation.com/acs

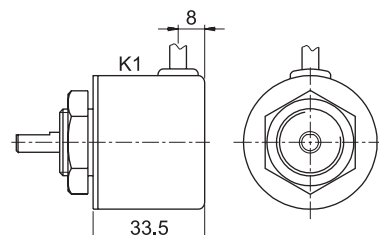
Cable connection K2, L2 with 2 m cable



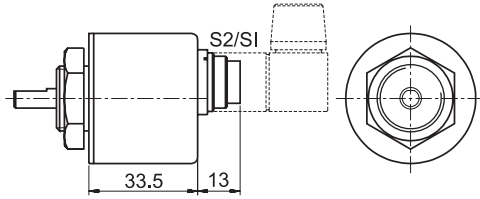
Cable connection K3, L3 with 2 m cable



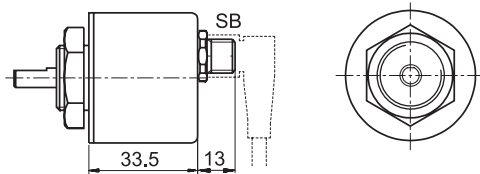
Cable connection K1 with 2 m cable



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



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



All dimensional specifications in mm.

Options:

Low-temperature:

The encoder WDG 40S with the output switch 10 VDC up to 30 VDC 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.

Low-friction bearings:

The encoder WDG 40S 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:

The encoder WDG 40S can be supplied in a full IP67 version. When ordering please add the suffix code - AAO.

Max. RPM	Permitted Shaft-Loading axial	Permitted Shaft-Loading radial	Max. PPR	Starting-torque
3500 rpm	30 N	45 N	1500 PPR	approx. 1.2 Ncm

Amended specifications for shaft sealed to IP67.

Cable length:

The encoder WDG 40S 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

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

Output circuit:				
Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order Key
up to 2500	4.75 - 5.5	TTL	-	H05
		TTL, RS422 comp., inverted	-	R05
	10 - 30	HTL	-	H24
		HTL inverted	-	R24

Channels: AB, ABN (up to 2048 PPR)

Pulses per revolution PPR:
 4, 9, 10, 15, 20, 25, 28, 30, 36, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500, 1800, 2000, 2048, 2500.
 Other PPRs on request

Electrical connections:			ABN inv.
Order key	Outgoing	Description	
Cable: (Length 2 m standard)			
K1	radial	shield not connected (IP50)	●
K2	axial	shield not connected	●
L2		shield connected to encoder housing	●
K3	radial	shield not connected	●
L3		shield connected to encoder housing	●
Connector:			
SI5	axial	5-pin, connector	-
SI6	axial	6-pin, connector	-
SI8	axial	8-pin, connector	●
SI12	axial	12-pin, connector	●
S2	axial	7-pin, connector	-
SB4	axial	4-pin, M12-sensor-connector	-
SB5	axial	5-pin, M12-sensor-connector	-
SB8	axial	8-pin, M12-sensor-connector	●
SB12	axial	12-pin, M12-sensor-connector	●

Options:
 Empty = Without option
 ACA = Low-temperature -40 °C up to +80 °C
 AAC = Low-friction bearings
 AAO = Shaft sealed to IP67
 In decimetres = Cable length

Order No.:

Example WDG 40S 2500 ABN H24 K2

Your encoder WDG 40S