

Encoder WDG 100H



- Rugged and extremely thin Thru-Bore encoder for extension on power motors
- Thru-Bore, max. 45 mm bore
- Full connection protection with 10 VDC up to 30 VDC
- Easy mounting
- Meets protection class IP54
- Up to 20,480 PPR
- Optional: -40 °C up to +80 °C
Protection to IP55 all around

www.wachendorff-automation.com/wdg100h

Available PPR up to 20480 PPR

Mechanical Data

Housing

- Flange: Aluminium
- Cap: Aluminium, powder coated
- Torque Support: Incl. 1 spring plate WDGDS10001
Compensation: axial: max. 2 mm, radial: max. 0.15 mm
Max. operating speed: 3500 rpm

Thru-Bore

- Material: stainless steel
- Diameter: 25, 25.4, 28, 30, 32, 35, 36, 38, 40, 42, 45 mm
- Permitted load on shaft end: max. 200 N radial
max. 100 N axial
- Starting torque: approx. 1.5 Ncm at ambient temperature
- Attachment: 2 x Hub M4, DIN 913

Bearings

- Type: 2 precision ball bearings
- Service life: 3 x 10¹⁰ revs. at 100 % rated shaft load
1 x 10¹¹ revs. at 40 % rated shaft load
1 x 10¹² revs. at 20 % rated shaft load

Weight:

- Connections: cable or connector, radial
- Protection rating: IP54 (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_d: 200 a
- Mission time (T_M): 25 a
- Nominal service life (L_{10h}): 1 x 10¹² revs. at 3500 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 I/U: max. 2 MHz
HTL ≥ 5000 I/U: 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 H24, R24, P24 only

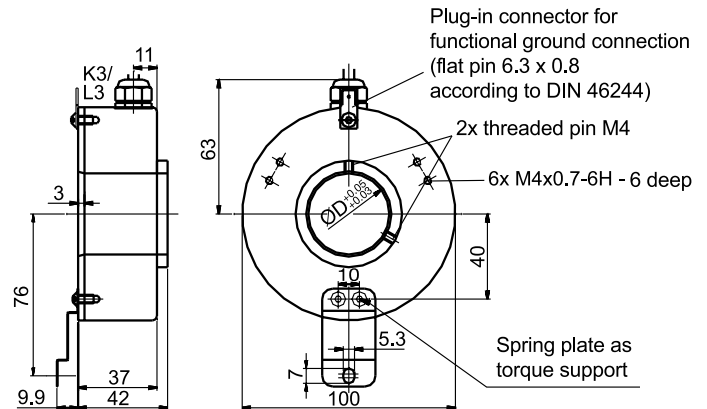
- Accuracy: Phase offset: 90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio: 50 % ± max. 7 %

Further technical information on:

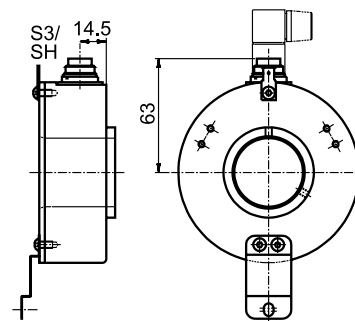
www.wachendorff-automation.com/gtd

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

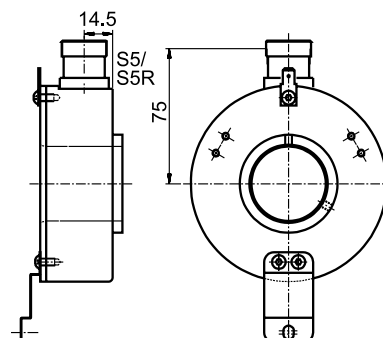
Cable connection K3, L3 with 2 m cable



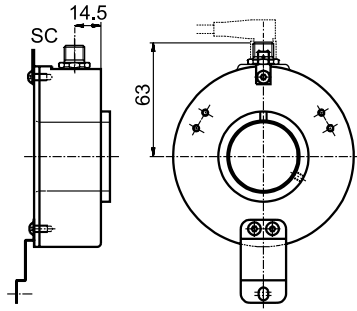
Connector (M16x0.75) SH, 5-, 6-, 8-, 12-pin, S3, 7-pin



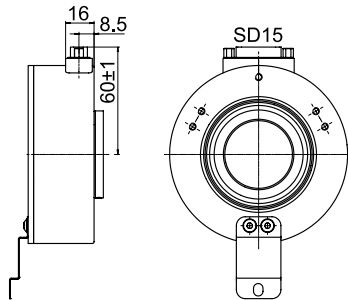
Connector (M23) S5, S5R, 12-pin



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



SUBD-Connector SD15, 15-pin



All dimensional specifications in mm.

Options:

Low-temperature:

The encoder WDG 100H with the output circuit types F24, H24, P24, R24, F05, H05, P05, R05, 245 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.

Protection to IP55 all around (not for 1 Vss Sin/Cos):

The encoder WDG 100H can be supplied with the high protection to IP55 all around. When ordering please add the suffix code - ACP.

Max. RPM	Permitted Shaft-Loading axial	Permitted Shaft-Loading radial	Max. PPR	Starting-torque
1500 rpm	100 N	120 N	5000 PPR	approx. 5 Ncm

Amended specifications for shaft sealed to IP55.

Cable length:

The encoder WDG 100H 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

Ausgangsschaltung:				
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	-	H05
		TTL, RS422 komp., inv.	-	R05
	10 - 30	HTL	-	H24
		HTL inverted	-	R24
8192 up to 20480	4,75 - 5,5	TTL	-	F05
		TTL, RS422 komp., inv.	-	P05
		10 - 30	HTL	-
1024 2048	4,75 - 5,5	HTL invertiert	-	P24
		TTL, RS422 komp., inv.	-	645
		1 Vss Sin/Cos	•	SIF
			-	SIN

Channels: AB, ABN

Pulses per revolution PPR:
512, 1000, 1024, 2048, 2500, 3600, 4096, 4500, 5000, , 8192, 10240, 16384, 20480
1 Vss Sin/Cos 1024 PPR and 2048 PPR only
Other PPRs on request

Bore size:
25, 1Z (=25.4), 28, 30, 32, 35, 36, 38, 40, 42, 45
Other diameters on request

Electrical connections:			
Order key	Outgoing	Description	ABN inv.
Cable: (Length 2 m standard)			
K3	radial	shield not connected	•
L3		shield connected to encoder housing	•
Connector:			
SH5	radial	5-pin, connector	-
SH6	radial	6-pin, connector	-
SH8	radial	8-pin, connector	•
SH12	radial	12-pin, connector	•
S3	radial	7-pin, connector	-
S5/S5R	radial	12-pin, connector (R = clockwise pin count)	•
SC4	radial	4-pin, M12-sensor-connector	-
SC5	radial	5-pin, M12-sensor-connector	-
SC8	radial	8-pin, M12-sensor-connector	•
SD15	radial	15-pin, SUBD-connector	•

Options:

- Empty = Without option
- ACA = Low-temperature -40 °C up to +80 °C
- ACP = Protection to IP55 all around
- In decimetres = Cable length

Order No.:

Example	WDG 100H	25	1024	ABN	H24	K3	
Your encoder	WDG 100H						