



Online Data Sheet

인크리멘탈 할로우 샤프트 옵티컬 로터리 엔코더 - Ø80mm

WDG 80H 시리즈

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 80H

www.wachendorff-automation.com/wdg80h

IndustrieROBUST

Encoder WDG 80 H



1. 견고한 중공축 엔코더
- 투과형(Thru-Bore) 타입으로 공간 최소화
2. 다양한 Bore 사이즈 적용 가능
- 10, 12, 14, 15, 18, 20, 25, 27mm
3. 옵티컬(Optical) 방식으로 고정밀
- MAX 3840PPR
4. UL 및 CE 인증 제품

Resolution	
Max. pulses per revolution PPR	up to 3840 PPR
Mechanical Data	
Housing	
Flange	hollow shaft (through-bored)
Flange material	aluminum
Housing cap	aluminum, powder coated
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ± 0.8 mm, radial: ± 0.2 mm
Housing	$\varnothing 80$ mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 6 Ncm at ambient temperature
Fixing	2 x M4, DIN 913; Starting torque: 2,5 Nm
Shaft	$\varnothing 10$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Shaft	$\varnothing 12$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Shaft	$\varnothing 15$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Shaft	$\varnothing 18$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N

Shaft	$\varnothing 20$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Shaft	$\varnothing 25$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Shaft	$\varnothing 27$ mm
Shaft length	L: 46 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	100 N
Bearings	
Bearings type	2 precision ball bearings
Nomiale service life	3 x 10 ¹⁰ revs. at 100 % rated shaft load 1 x 10 ¹¹ revs. at 40 % rated shaft load 1 x 10 ¹² revs. at 20 % rated shaft load
Max. operating speed	3500 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nomiale service life (L10h)	1 x 10 ¹² revs. at 20 % rated shaft load and 3500 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. 70 mA

Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos
Pulse frequency	TTL ≤ 3840 ppr: max. 200 kHz HTL ≤ 3840 ppr: max. 200 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 G24, H24, I24, R24 only

Accuracy

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

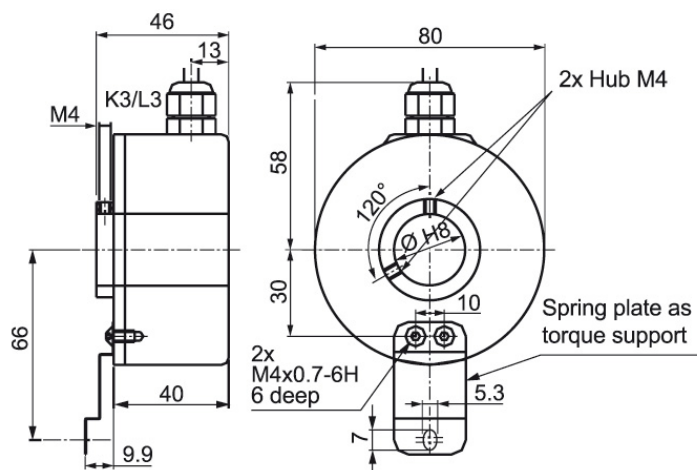
General Data

Weight	approx. 600 g
Connections	cable or connector, radial
Protection rating (EN 60529)	IP65 all around
Operating temperature	-20 °C up to +80 °C 1 Vpp: -10 °C up to +70 °C
Storage temperature	-30 °C up to +80 °C

More Information

General technical data and safety instructions
<http://www.wachendorff-automation.com/gtd>

Options
<http://www.wachendorff-automation.com/acc>

Cable connection K3, L3 with 2 m cable

Description
ABN inv. poss.
K3 radial, shield not connected

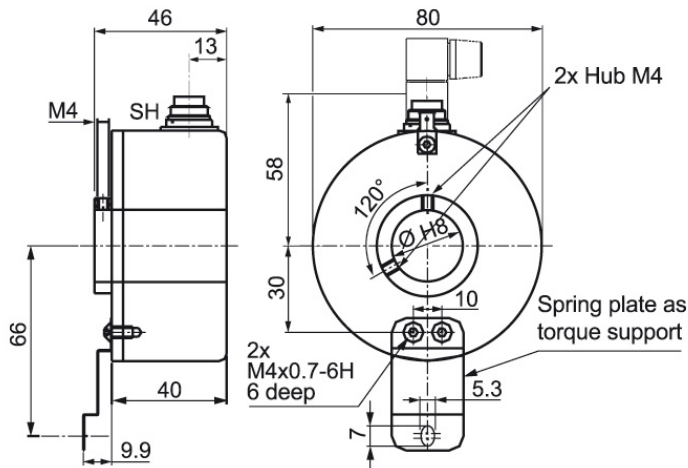
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L3 radial, shield connected to encoder housing

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Assignments

	K3, L3	K3, L3	K3, L3	K3, L3	L3	L3
Circuit	G05, G24	H05, H24, H30	I05, I24, 524	R05, R24, 245, R30	SIN	SIF
GND	WH	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY	GY
N	GY	GY	GY	GY	BK	BK
Light reserve warning	PK	-	PK	-	-	RD
A inv.	-	-	RD	RD	YE	YE
B inv.	-	-	BK, (BU at ACA)	BK, (BU at ACA)	PK	PK
N inv.	-	-	VT	VT	VT	VT
Shield	flex	flex	flex	flex	flex	flex

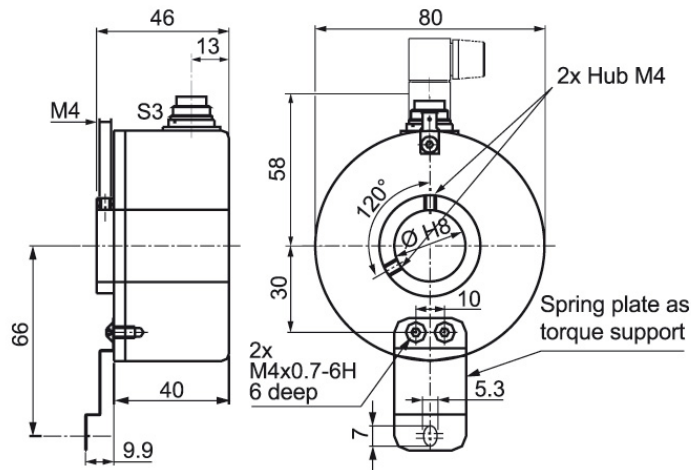
Connector (M16x0.75) SH, 5-, 6-, 8-, 12-pin

Description
ABN inv. poss.

SH5	radial, 5-pin, Connector connected to encoder housing	-
SH6	radial, 6-pin, Connector connected to encoder housing	-
SH8	radial, 8-pin, Connector connected to encoder housing	•
SH12	radial, 12-pin, Connector connected to encoder housing	•

Assignments

	SH5	SH6	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin
Circuit	H05, H24, H30	G05, G24	H05, H24, H30	H05, H24, H30	R05, R24, R30, 245	SIN	G05, G24	H05, H24, H30	R05, R24, 245, R30	SIN
GND	1	6	6	1	1	1	K, L	K, L	K, L	K, L
(+) Vcc	2	1	1	2	2	2	M, B	M, B	M, B	M, B
A	3	2	2	3	3	3	E	E	E	E
B	4	4	4	4	4	4	H	H	H	H
N	5	3	3	5	5	5	C	C	C	C
Light reserve warning	-	5	-	-	-	-	G	-	-	-
A inv.	-	-	-	-	6	6	-	-	F	F
B inv.	-	-	-	-	7	7	-	-	A	A
N inv.	-	-	-	-	8	8	-	-	D	D
n. c.	-	-	5	6, 7, 8	-	-	A, D, F, J	A, D, F, G, J	G, J	G, J
Shield	-	-	-	-	-	-	-	-	-	-

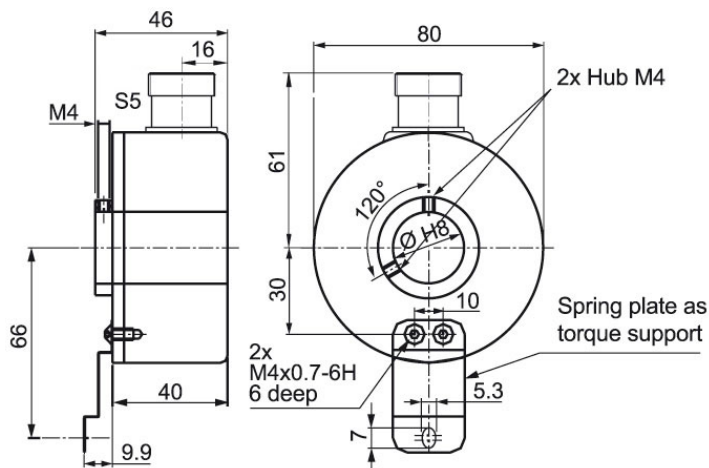
Connector (M16x0.75) S3, 7-pin



Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S3 7-pin	S3 7-pin
Circuit	G05, G24	H05, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

Connector (M23) S5, 12-pin



Description

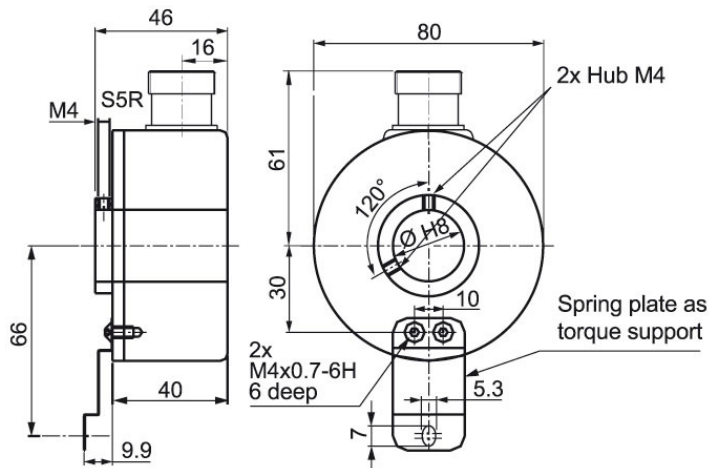
ABN inv. poss.

S5 radial, 12-pin, Connector connected to encoder housing

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Assignments						
	S5	S5	S5	S5	S5	S5
	12-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	H05, H24, H30	I05, I24, 524	R05, R24, 245, R30	SIN	SIF
GND	10	10	10	10	10	10
(+) Vcc	12	12	12	12	12	12
A	5	5	5	5	5	5
B	8	8	8	8	8	8
N	3	3	3	3	3	3
Light reserve warning	11	-	11	-	-	7
A inv.	-	-	6	6	6	6
B inv.	-	-	1	1	1	1
N inv.	-	-	4	4	4	4
n. c.	1, 2, 4, 6, 7, 9	1, 2, 4, 6, 7, 9, 11	2, 7, 9	2, 7, 9, 11	2, 7, 9, 11	2, 9, 11
Shield	-	-	-	-	-	-

Connector (M23) S5R, 12-pin (clockwise)



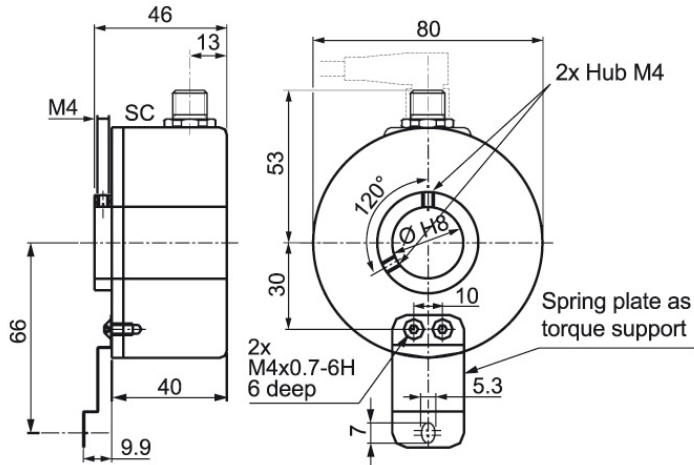
Description

ABN inv. poss.

S5R radial, 12-pin, Connector connected to encoder housing

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Assignments						
	S5R	S5R	S5R	S5R	S5R	S5R
	12-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	H05, H24, H30	I05, I24, 524	R05, R24, 245, R30	SIN	SIF
GND	10	10	10	10	10	10
(+) Vcc	12	12	12	12	12	12
A	5	5	5	5	5	5
B	8	8	8	8	8	8
N	3	3	3	3	3	3
Light reserve warning	11	-	11	-	-	7
A inv.	-	-	6	6	6	6
B inv.	-	-	1	1	1	1
N inv.	-	-	4	4	4	4
n. c.	1, 2, 4, 6, 7, 9	1, 2, 4, 6, 7, 9, 11	2, 7, 9	2, 7, 9, 11	2, 7, 9, 11	2, 9, 11
Shield	-	-	-	-	-	-

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


Description	ABN inv. poss.
SC4 radial, 4-pin, Connector connected to encoder housing	-
SC5 radial, 5-pin, Connector connected to encoder housing	-
SC8 radial, 8-pin, Connector connected to encoder housing	•

Assignments					
	SC4	SC5	SC8	SC8	SC8
	4-pin	5-pin	8-pin	8-pin	8-pin
Circuit	H05, H24, H30	H05, H24, H30	H05, H24, H30	R05, R24, R30, 245	SIN
GND	3	3	1	1	1
(+) Vcc	1	1	2	2	2
A	2	4	3	3	3
B	4	2	4	4	5
N	-	5	5	5	7
Light reserve warning	-	-	-	-	-
A inv.	-	-	-	6	4
B inv.	-	-	-	7	6
N inv.	-	-	-	8	8
n. c.	-	-	6, 7, 8	-	-
Shield	-	-	-	-	-

Options

Low temperature

The encoder WDG 80H with the output circuit types G24, I24, G05, I05 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 80H 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
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 80H	WDG 80H					WDG 80H
	Bore size					
25	10; 12; 15; 18; 20; 25; 27					
	Pulses per revolution PPR:					
1024	50, 100, 250, 500, 720, 1000, 1024, 1920, 2048, 2500, 3840 1 Vpp Sin/Cos only 1024 Other PPRs on request					
	Channels:					
ABN	AB, ABN					
	Output circuit					
G24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	5 - 30	HTL	-	H30	
		5 - 30	HTL inverted	-	R30	
	up to 3840	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	
	1024	4.75 - 5.5	1 Vpp sin/cos	•	SIF	
		4.75 - 5.5	1 Vpp sin/cos	-	SIN	
	Electrical connections					
K3	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected			•	K3	
	radial, shield connected to encoder housing			•	L3	
	Connector: (shield connected to encoder housing)					
	connector, M16x0.75, 5-pin, radial			-	SH5	
	connector, M16x0.75, 6-pin, radial			-	SH6	
	connector, M16x0.75, 8-pin, radial			•	SH8	
	connector, M16x0.75, 12-pin, radial			•	SH12	
	connector, M16x0.75, 7-pin, radial			-	S3	
	connector, M23, 12-pin, radial			•	S5	
	connector, clockwise pin count, M23, 12-pin, radial			•	S5R	
	sensor-connector, M12x1, 4-pin, radial			-	SC4	
	sensor-connector, M12x1, 5-pin, radial			-	SC5	
	sensor-connector, M12x1, 8-pin, radial			•	SC8	
	Options					
	Description			Order key		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 80H	25	1024	ABN	G24	K3		WDG 80H							Your encoder
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For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

CREKEN

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