



Online Data sheet

Encoder WDGI 58H

www.wachendorff-automation.com/wdgi58h

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 WDGI 58H



Illustration similar



- Rugged industrial standard encoder
- Housing cap die cast aluminum, with particularly eco-friendly powder coating
- Up to 25000 PPR by use of high grad electronics
- Thru-Bore
- High protection class IP65, with oil seal
- Maximum mechanical and electrical safety
- High noise immunity
- Full connection protection with 10 VDC up to 30 VDC
- High output frequency 600 kHz/2 MHz
- Optional: -40 °C up to +85 °C, Pressure equalising membrane

www.wachendorff-automation.com/wdgi58h

Resolution	
Pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	hollow shaft (through-bored)
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ±0.8 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGDS10005
- Compensation	axial: ±0.5 mm, radial: ±1.5 mm, Max. operating speed: 3000 rpm
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 2.2 Ncm at ambient temperature
Fixing	permanently attached clamping ring
Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 6.35 mm, Ø 1/4"
Advice	with adapter sleeve
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	60 N
Shaft	Ø 8 mm
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 9.525 mm, Ø 3/8"
Advice	with adapter sleeve
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 10 mm
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 12 mm
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N
Shaft	Ø 12.7 mm, Ø 1/2"
Shaft length	L: 44.5 mm, L: 1.75 in
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N, 8.15 kp
Max. Permissible shaft loading axial	60 N, 6.12 kp
Shaft	Ø 14 mm
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	60 N
Shaft	Ø 15 mm
Shaft length	L: 44.5 mm
Insertion depth min.	11 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	60 N

Bearings

Bearings type	2 precision ball bearings
Nominal service life	1 x 10 ⁹ revs. at 100 % rated shaft load 1 x 10 ¹⁰ revs. at 40 % rated shaft load 1 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	6000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 6000 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. 100 mA
Operating principle	optical
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos
Pulse frequency	TTL 5000 ppr: max. 200 kHz HTL 5000 ppr: max. 200 kHz TTL more than 1200 ppr: max. 2 MHz HTL more than 1200 ppr: max. 600 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 F24, H24, P24, R24 only

Accuracy

Phase offset	90° ± max. 7.5 % of the period duration
pulse-/pause-ratio	5000 ppr: 50 % ± max. 7 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

Environmental data

ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration: (DIN EN 60068-2-6)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Electrical Safety:	according DIN VDE 0160

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

General Data

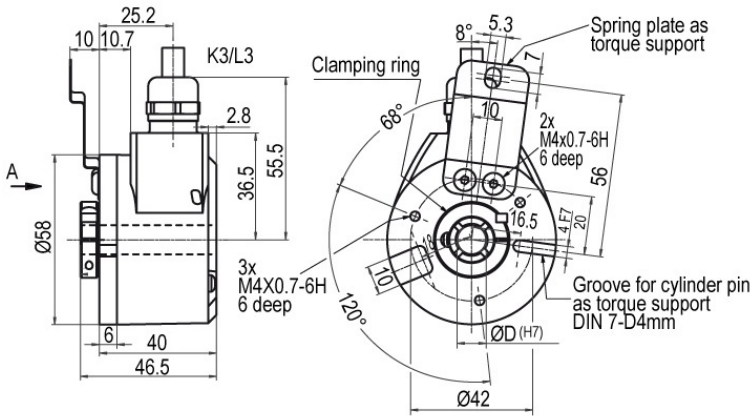
Weight	approx. 220 g
Connections	cable or connector, radial
Protection rating (EN 60529)	IP65 all around
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C) 1 Vpp: -10 °C up to +70 °C
Storage temperature	Connector: -40 °C up to +85 °C, cable: -30 °C up to +80 °C (option ACA: -40 °C up to +85 °C)

More Information

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

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

WDGI 58H: Cable connection K3, L3, radial, with 2 m cable

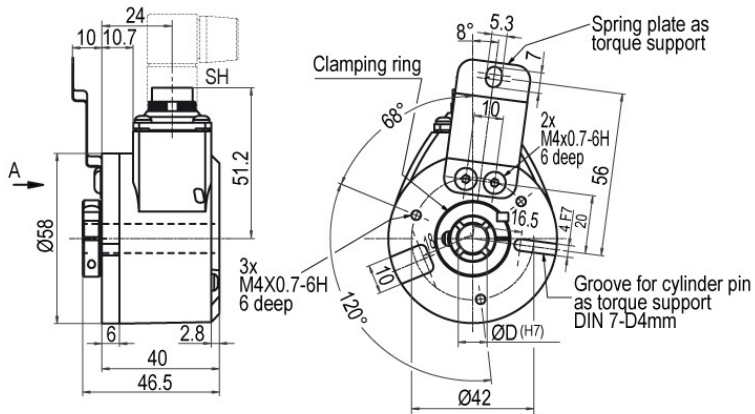


Description

		ABN inv. poss.
K3	radial, shield not connected	•
L3	radial, shield connected to encoder housing	•

Assignments			
	K3, L3	K3, L3	L3
Circuit	F05, H05, F24, H24, H30	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH
(+) Vcc	BN	BN	BN
A	GN	GN	GN
B	YE	YE	GY
N	GY	GY	-
-	-	-	-
A inv.	-	RD	YE
B inv.	-	BK, (BU at ACA)	PK
N inv.	-	VT	-
Shield	flex	flex	flex

WDGI 58H: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



Description

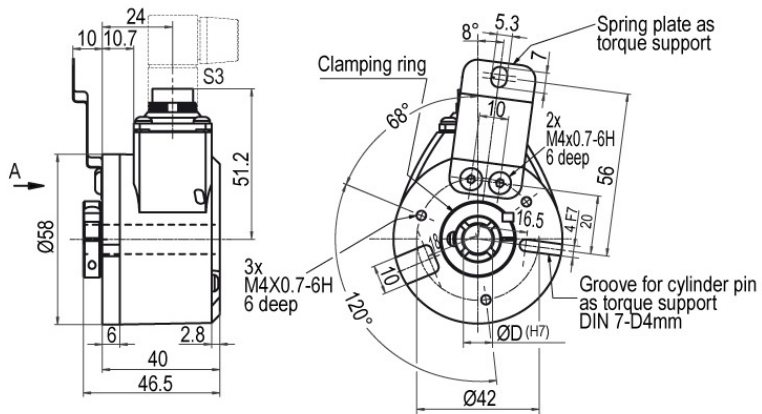
ABN inv. poss.

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 5-pin	SH6 6-pin	SH8 8-pin	SH12 12-pin	SH12 12-pin	SH8 8-pin
Circuit	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	P05, R05, P24, R24, 245, 645, R30	SIN	SIN
GND	1	6	1	K, L	K, L	1
(+) Vcc	2	1	2	M, B	M, B	2
A	3	2	3	E	E	3
B	4	4	4	H	H	4
N	5	3	5	C	-	-
-	-	-	-	-	-	-
A inv.	-	-	6	F	F	6
B inv.	-	-	7	A	A	7
N inv.	-	-	8	D	-	-
n. c.	-	5	-	G, J	D, G, J	5, 8
Shield	-	-	-	-	-	-


WDGI 58H: Connector (M16x0.75) S3, radial, 7-pin



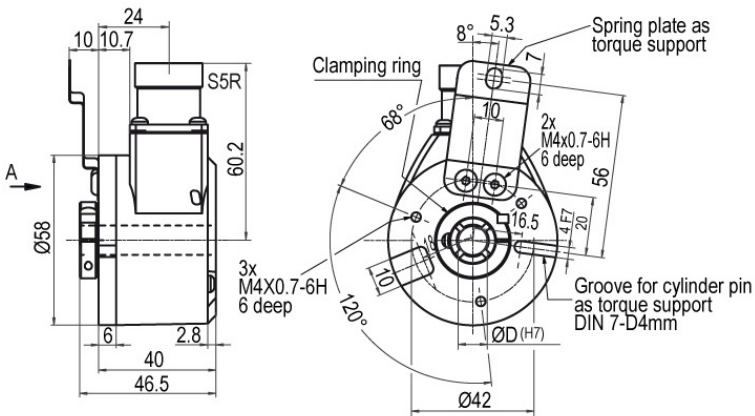
Description

S3 radial, 7-pin, Connector connected to encoder housing

ABN inv. poss.

Assignments	
	S3
	7-pin
	
Circuit	F05, H05, F24, H24, H30
GND	1
(+) Vcc	2
A	3
B	4
N	5
-	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

WDGI 58H: Connector (M23) S5R, radial, 12-pin (clockwise)



Description

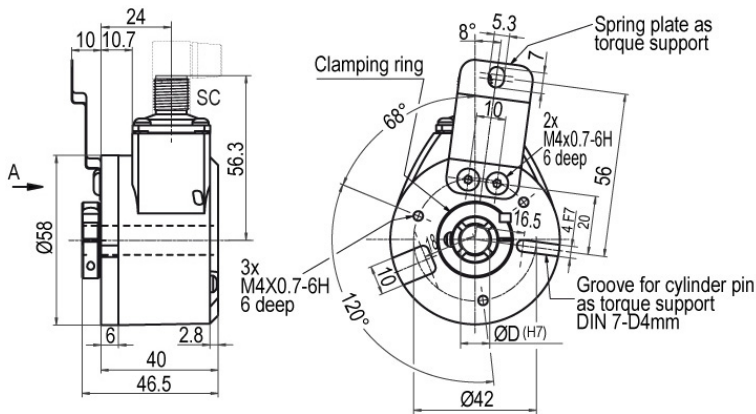
ABN inv. poss.

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

•

Assignments			
	S5R	S5R	S5R
	12-pin	12-pin	12-pin
Circuit	F05, H05, F24, H24, H30	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10
(+) Vcc	12	12	12
A	5	5	5
B	8	8	8
N	3	3	-
-	-	-	-
A inv.	-	6	6
B inv.	-	1	1
N inv.	-	4	-
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	-	-	-

WDGI 58H: Sensor-connector (M12x1) SC, radial, 4-, 5-, 8-, 12-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	•
SC12	radial, 12-pin, Connector connected to encoder housing	•

Assignments					
	SC4	SC5	SC8	SC8	SC12
	4-pin	5-pin	8-pin	8-pin	12-pin
Circuit	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	SIN	P05, R05, P24, R24, 245, 645, R30
GND	3	3	1	1	3
(+) Vcc	1	1	2	2	1
A	2	4	3	3	4
B	4	2	4	5	6
N	-	5	5	-	8
-	-	-	-	-	-
A inv.	-	-	6	4	9
B inv.	-	-	7	6	7
N inv.	-	-	8	-	10
n. c.	-	-	-	7, 8	2, 5, 11, 12
Shield	-	-	-	-	-

Options**Low temperature**

The encoder WDG1 58H with the output circuit types F24, H24, P24, R24, F05, H05, P05, R05, 245, 645 is also available with the extended temperature range -40 °C up to +85 °C [-40 °F up to +185 °F] (measured at the flange).

Order key**ACA****Pressure equalising membrane**

The WDG1 58H shaft encoder is also optionally available with a pressure equalising membrane. This prevents water from penetrating into the encoder housing in the case of high air humidity.

The IP67 protection level, temperature range and salt spray resistance are maintained. Resistant to chemicals and solvents in accordance with DIN EN ISO 2812-1.

Order key**ACR****Cable length**

The encoder WDG1 58H 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

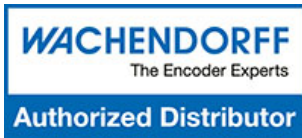
Please extend the standard order code with a three figure number, specifying the cable length in decimetres.

Example: 5 m cable = 050

Order key**XXX = Decimeter**

Example Order No.	Type				Your encoder
WDGI 58H	WDGI 58H				WDGI 58H
Bore size					
10	06; 2Z= Ø 6.35 mm, Ø 1/4"; 07; 08; 4Z= Ø 9.525 mm, Ø 3/8"; 10; 12; 3Z= Ø 12.7 mm, Ø 1/2"; 14; 15				
Pulses per revolution PPR:					
25	25, 36, 50, 60, 64, 4, 6, 32, 70, 88, 100, 120, 125, 150, 180, 200, 250, 256, 300, 314, 360, 400, 240, 512, 500, 600, 720, 750, 768, 800, 900, 1000, 1024, 1200, 1250, 1270, 1500, 1800, 2000, 2048, 3000, 2500, 3600, 4000, 4096, 5000, 10000, 12500, 20000, 25000, 8192, 10240, 16384, 20480, 8000				
Channels:					
AB	AB, ABN				
Output circuit					
H30	Resolution PPR	Power supply VDC	Output circuit	-	Order key
	up to 2500	5 - 30	HTL (TTL at 5 VDC)	-	H30
		5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	-	R30
	up to 5000	4.75 - 5.5	TTL	-	H05
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05
		10 - 30	HTL	-	H24
		10 - 30	HTL inverted	-	R24
	(higher frequency) 1200 up to 25000	10 - 30	TTL, RS422 comp., inverted	-	245
		4.75 - 5.5	TTL	-	F05
		4.75 - 5.5	TTL, RS422 comp., inverted	-	P05
		10 - 30	HTL	-	F24
		10 - 30	HTL inverted	-	P24
		10 - 30	TTL, RS422 comp., inverted	-	645
	1024, 2048	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		
sensor-connector, M12x1, 12-pin, radial	•	SC12			
Options					
Description	Order key				
Low temperature	ACA				
Pressure equalising membrane	ACR				
Cable length	Cable length				
Without option	Empty				

Example Order No.=	WDGI 58H	10	25	AB	H30	K3		WDGI 58H						Your encoder
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For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
<https://www.wachendorff-automation.com/contact-sales-en/>

WACHENDORFF

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