



Online Data Sheet

Encoder WDG I 58E

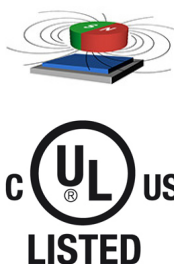
www.wachendorff-automation.com/wdgi58em

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 58E (magnetic)



- Rugged industrial standard end hollow shaft encoder
- Housing cap die cast aluminum, with particularly eco-friendly powder coating
- Maximum mechanical and electrical safety
- High protection accordingt IP67, shaft sealed to IP65, high noise immunity
- Hollow bore (blind)
- Optional: -40 °C up to +85 °C, Pressure equalising membrane

www.wachendorff-automation.com/wdgi58em

Resolution	
Pulses per revolution PPR	up to 1024 PPR

Mechanical Data

Housing	
Flange	hollow shaft (blind-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. 1.6 Ncm at ambient temperature
Fixing	permanently attached clamping ring

Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 6.35 mm, Ø 1/4"
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm

Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 8 mm
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 9.525 mm, Ø 3/8"
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 10 mm
Advice	with adapter sleeve
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Shaft	Ø 12 mm
Shaft length	L: 16 mm
Insertion depth min.	11 mm
Insertion depth max.	19 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings	
Bearings type	2 precision ball bearings

Nominale 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
Nominale 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	5 VDC up to 30 VDC: typ. 40 mA
Output circuit	HTL (TTL at 5 VDC) HTL, inv. (TTL/RS422 comp. at 5 VDC)
Pulse frequency	≤ 1024 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	no

Accuracy

Phase offset	90° ± max. 25% of the period duration
pulse-/pause-ratio	at 1 ppr up to 128 ppr: 50 % ± max. 7 % 129 ppr - 256 ppr: 50 % ± max. 9 % 257 ppr - 512 ppr: 50 % ± max. 13 % 513 ppr - 1024 ppr: 50 % ± max. 18 %

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)
Design:	according DIN VDE 0160

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

General Data

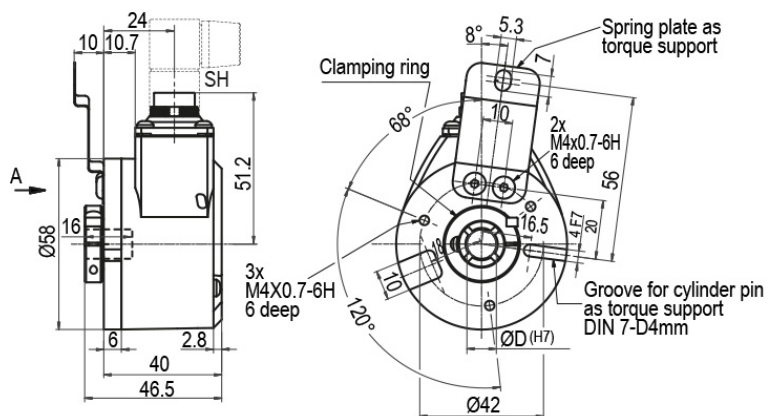
Weight	approx. 220 g
Connections	cable or connector, radial
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	Connector: -40 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C)
Storage temperature	Connector: -40 °C up to +85 °C, cable: -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>

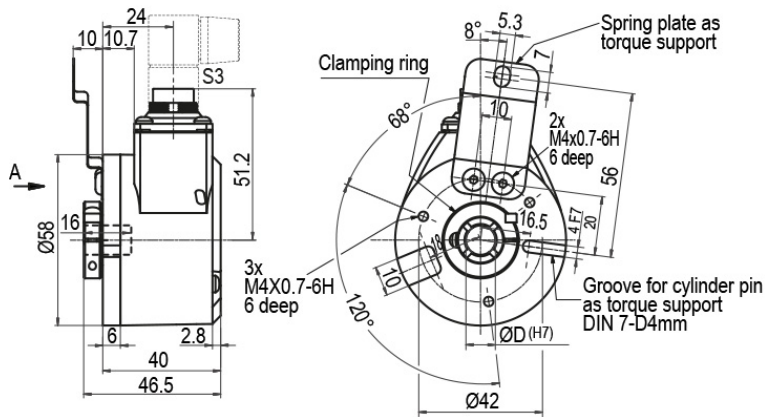
WDGI 58E: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



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	SH6	SH8	SH8	SH12	SH12
	5-pin	6-pin	8-pin	8-pin	12-pin	12-pin
Circuit	N35	N35	N35	M35	N35	M35
GND	1	6	1	1	K, L	K, L
(+) Vcc	2	1	2	2	M, B	M, B
A	3	2	3	3	E	E
B	4	4	4	4	H	H
N	5	3	5	5	C	C
Light reserve warning	-	-	-	-	-	-
A inv.	-	-	-	6	-	F
B inv.	-	-	-	7	-	A
N inv.	-	-	-	8	-	D
n. c.	-	5	6, 7, 8	-	A, D, F, G, J	G, J
Shield	-	-	-	-	-	-

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



Description

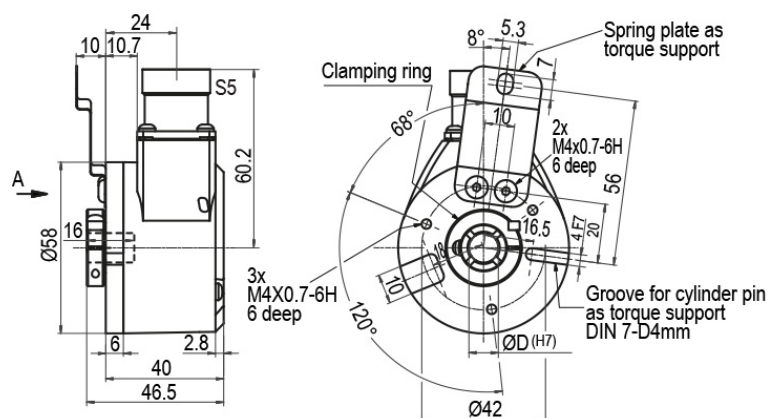
ABN inv. poss.

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

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Assignments	
	S3
	7-pin
	
Circuit	N35
GND	1
(+) Vcc	2
A	3
B	4
N	5
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

WDGI 58E: Connector (M23) S5, radial, 12-pin

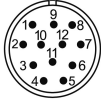
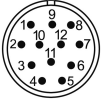


Description

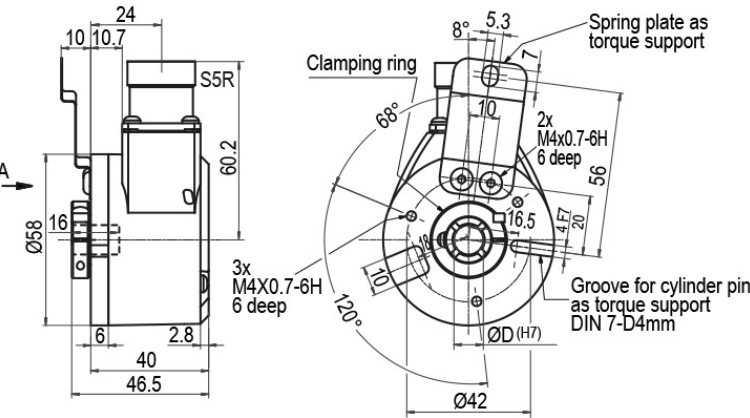
ABN inv. poss.

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

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Assignments		
	S5	S5
	12-pin	12-pin
		
Circuit	N35	M35
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
Light reserve warning	-	-
A inv.	-	6
B inv.	-	1
N inv.	-	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	-	-

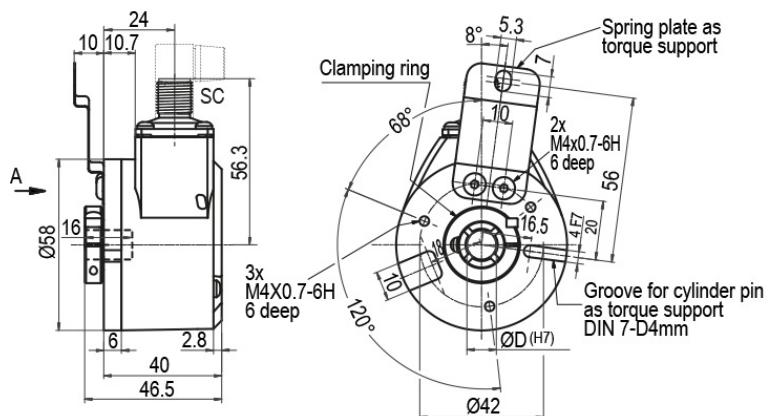
WDGI 58E: Connector (M23) S5R, radial, 12-pin (clockwise)



Description	ABN inv. poss.
S5R radial, 12-pin, Connector connected to encoder housing	•

Assignments		
	S5R	S5R
	12-pin	12-pin
Circuit	N35	M35
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
Light reserve warning	-	-
A inv.	-	6
B inv.	-	1
N inv.	-	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	-	-

WDGI 58E: 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	SC12
	4-pin	5-pin	8-pin	8-pin	12-pin	12-pin
Circuit	N35	N35	N35	M35	N35	M35
GND	3	3	1	1	3	3
(+) Vcc	1	1	2	2	1	1
A	2	4	3	3	4	4
B	4	2	4	4	6	6
N	-	5	5	5	8	8
Light reserve warning	-	-	-	-	-	-
A inv.	-	-	-	6	-	9
B inv.	-	-	-	7	-	7
N inv.	-	-	-	8	-	10
n. c.	-	-	6, 7, 8	-	2, 5, 7, 9, 10, 11, 12	2, 5, 11, 12
Shield	-	-	-	-	-	-

Options

Low temperature

The encoder WDG1 58E with the output circuit types M35, N35 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 58E 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 58E 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 58E	WDGI 58E						WDGI 58E
		Bore size					
10	06; 2Z= Ø 6.35 mm, Ø 1/4"; 07; 08; 4Z= Ø 9.525 mm, Ø 3/8"; 10; 12						
		Pulses per revolution PPR:					
1-1024	1-1024					1-1024	
		Channels:					
AB	AB, ABN						
		Output circuit					
M35	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key		
	up to 1024	5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	-	M35		
		5 - 30	HTL (TTL at 5 VDC)	-	N35		
		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 lenght			
	Without option			Empty			

Example Order No. =	WDGI 58E	10	1-1024	AB	M35	K3		WDGI 58E		1-1024					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 Automation GmbH & Co. KG
Industriestrasse 7 • 65366 Geisenheim
Germany

Phone: +49 67 22 / 99 65 25
E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de

