

Online Data Sheet

Encoder WDG 58A - Discontinued product

www.wachendorff-automation.com/wdg58a

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 58A

Discontinued product



- Robust construction for industrial use
- Up to 25000 PPR by use of high grad electronics
- Protection to IP67, shaft sealed to IP65
- High electrical immunity
- Full connection protection with 10 VDC up to 30 VDC
- With light reserve warning
- Optional: -40 °C up to +80 °C

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Resolution

Max. pulses per revolution PPR	up to 25000 PPR
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Mechanical Data

Housing

Flange	synchro flange
Flange material	aluminium
Housing cap	aluminium, powder coated
Housing	Ø 58 mm
Cam mounting	pitch 69 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 0.5 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	125 N
Max. Permissible shaft loading axial	70 N

Bearings

Bearings type	2 precision ball bearings
Nomiale service life	3 x 10 ⁸ revs. at 100 % rated shaft load 5 x 10 ⁹ revs. at 40 % rated shaft load 4 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	10000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	200 a
Mission time (TM)	25 a
Nomiale service life (L10h)	4 x 10 ¹⁰ revs. at 20 % rated shaft load and 10000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	4,75 VDC up to 5,5 VDC: max. 100 mA
Power supply/Current consumption	5 VDC up to 30 VDC: max. 70 mA

Power supply/Current consumption	10 VDC up to 30 VDC: max. 100 mA
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, G24, H24, I24, P24, R24 only

Accuracy

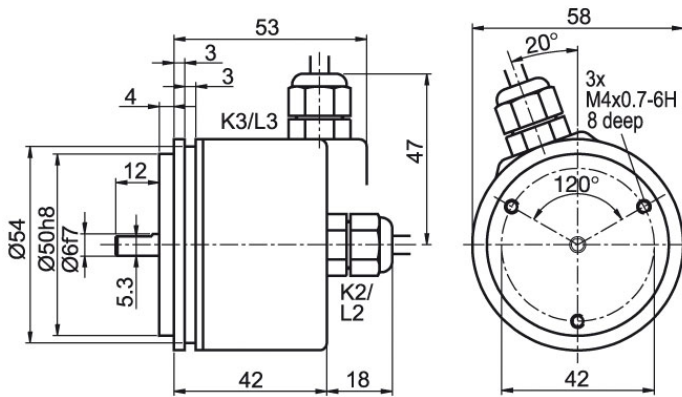
Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	5000 ppr: 50 % ± max. 7 % >5000 ppr: 50 % ± max. 10 %

General Data

Weight	approx. 230 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP65 all around with S7)
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

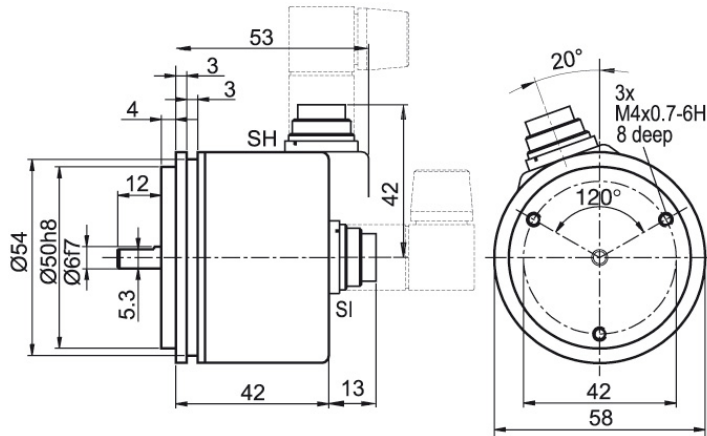
General technical data	http://www.wachendorff-automation.com/gtd
Options	http://www.wachendorff-automation.com/acc

Cable connection K2, K3, L2, L3 with 2 m cable

Description
ABN inv. poss.

K2	axial, shield not connected	•
L2	axial, shield connected to encoder housing	•
K3	radial, shield not connected	•
L3	radial, shield connected to encoder housing	•

Assignments

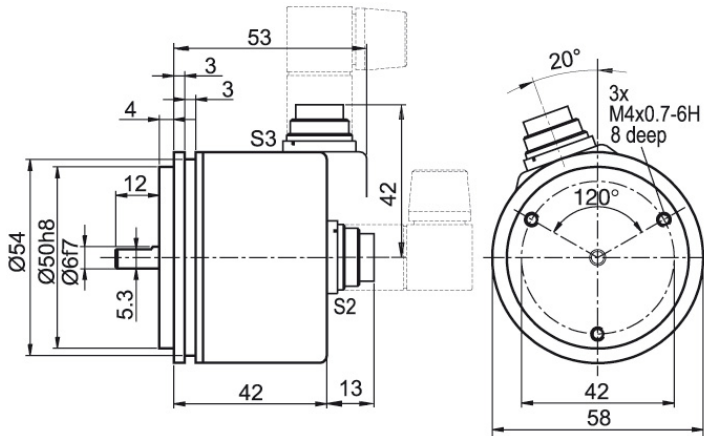
	K2, K3, L2, L3	K2, L2, K3, L3	K2, L2, K3, L3	K2, L2, K3, L3	K2, L2, K3, L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK, (BU at ACA)	BK, (BU at ACA)	PK
N inv.	-	-	VT	VT	-
Shield	flex	flex	flex	flex	flex

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


Description	ABN inv. poss.
SI5 axial, 5-pin, Connector connected to encoder housing	-
SH5 radial, 5-pin, Connector connected to encoder housing	-
SI6 axial, 6-pin, Connector connected to encoder housing	-
SH6 radial, 6-pin, Connector connected to encoder housing	-
SI8 axial, 8-pin, Connector connected to encoder housing	•
SH8 radial, 8-pin, Connector connected to encoder housing	•
SI12 axial, 12-pin, Connector connected to encoder housing	•
SH12 radial, 12-pin, Connector connected to encoder housing	•

Assignments	SI5, SH5	SI6, SH6	SI6, SH6	SI8, SH8	SI8, SH8	SI8, SH8	SI12, SH12	SI12, SH12	SI12, SH12	SI12, SH12	SI12, SH12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	F05, H05, F24, H24, H30	G05, G24	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	SIN	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	1	6	6	1	1	1	K, L	K, L	K, L	K, L	K, L
(+) Vcc	2	1	1	2	2	2	M, B	M, B	M, B	M, B	M, B
A	3	2	2	3	3	3	E	E	E	E	E
B	4	4	4	4	4	4	H	H	H	H	H
N	5	3	3	5	5	-	C	C	C	C	-
Light reserve warning	-	5	-	-	-	-	G	-	G	-	-
A inv.	-	-	-	-	6	6	-	-	F	F	F
B inv.	-	-	-	-	7	7	-	-	A	A	A
N inv.	-	-	-	-	8	-	-	-	D	D	-
n. c.	-	-	5	6, 7, 8	-	5, 8	A, D, F, J	A, D, F, G, J	J	G, J	D, G, J
Shield	-	-	-	-	-	-	-	-	-	-	-

Connector (M16x0.75) S2, S3, 7-pin

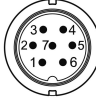



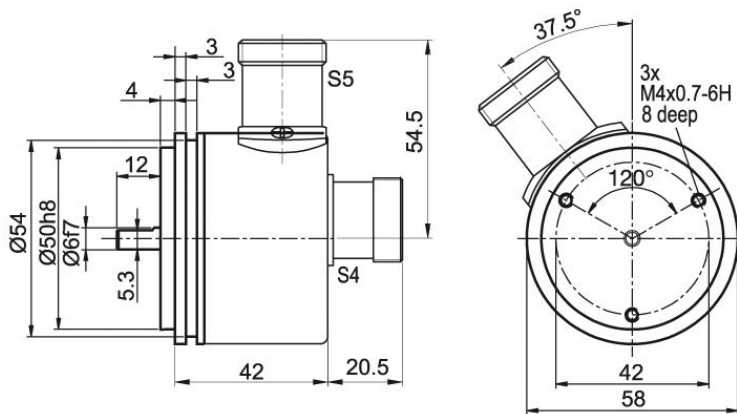
Description

ABN inv. poss.

- S2** axial, 7-pin, Connector connected to encoder housing -
- S3** radial, 7-pin, Connector connected to encoder housing -

Assignments






	S2, S3 7-pin	S2, S3 7-pin
		
Circuit	G05, G24	F05, H05, F24, 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	-	-

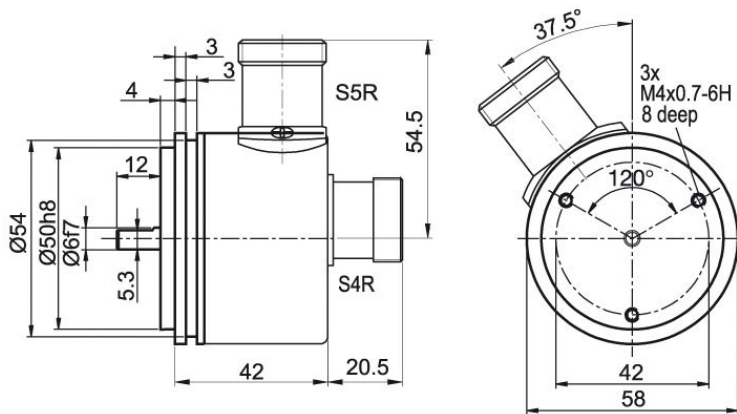
Connector (M23) S4, S5, 12-pin

Description
ABN inv. poss.

- S4** axial, 12-pin, Connector connected to encoder housing
- S5** radial, 12-pin, Connector connected to encoder housing

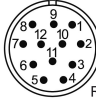
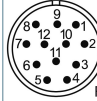
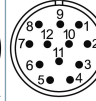
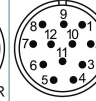
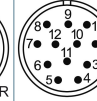
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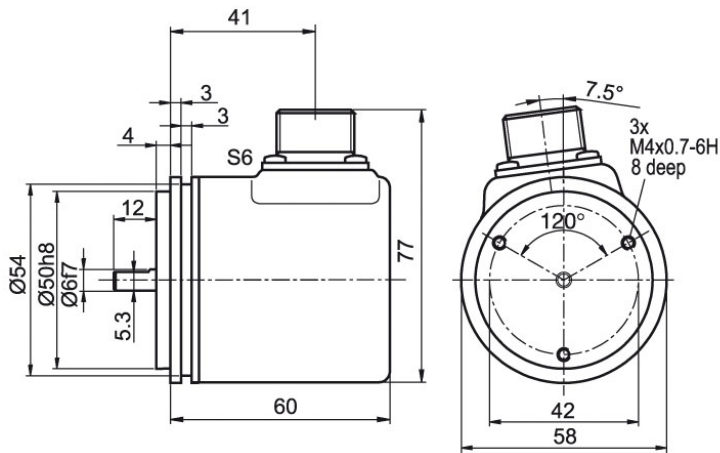
Assignments



	S4, S5	S4, S5	S4, S5	S4, S5	S4, S5
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1
N inv.	-	-	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, 3, 4, 7, 9, 11
Shield	-	-	-	-	-

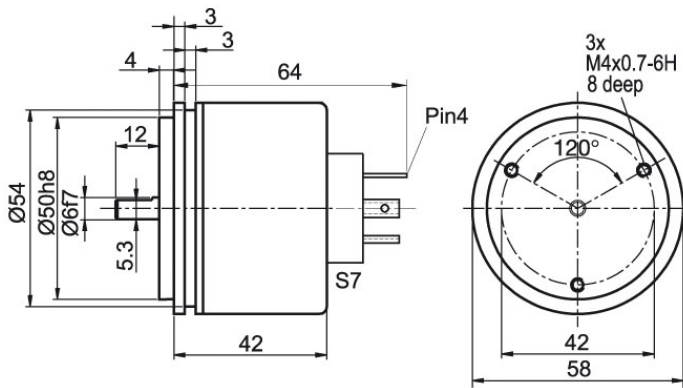
Connector (M23) S4R, S5R, 12-pin (clockwise)

Description
ABN inv. poss.


- S4R** axial, 12-pin, Connector connected to encoder housing •
- S5R** radial, 12-pin, Connector connected to encoder housing •

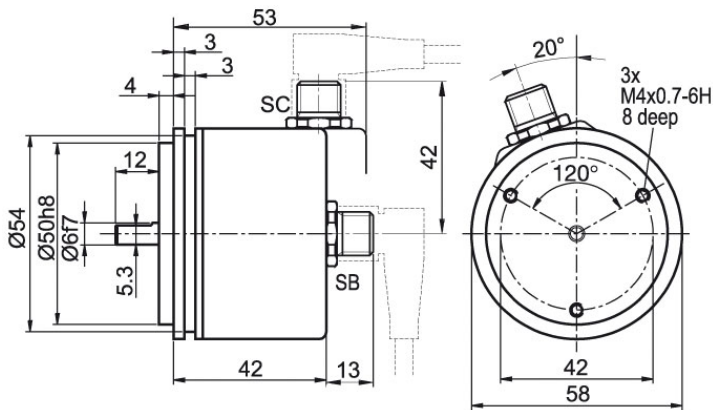
Assignments					
	S4R, S5R	S4R, S5R	S4R, S5R	S4R, S5R	S4R, S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1
N inv.	-	-	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, 3, 4, 7, 9, 11
Shield	-	-	-	-	-

MIL-connector S6, 6-pin

Description
ABN inv. poss.










Assignments		
	6-pin	6-pin
		
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	A	A
(+) Vcc	F	F
A	C	C
B	B	B
N	D	D
Light reserve warning	E	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	-	E
Shield	-	-

Valve-connector (IP65) S7, 4-pin

Description
ABN inv. poss.

Assignments	
	4-pin
	
Circuit	F05, H05, F24, H24, H30
GND	1
(+) Vcc	2
A	3
B	4
N	-
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	-
Shield	-

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


Description	ABN inv. poss.
SB4 axial, 4-pin, Connector connected to encoder housing	-
SC4 radial, 4-pin, Connector connected to encoder housing	-
SB5 axial, 5-pin, Connector connected to encoder housing	-
SC5 radial, 5-pin, Connector connected to encoder housing	-
SB8 axial, 8-pin, Connector connected to encoder housing	•
SC8 radial, 8-pin, Connector connected to encoder housing	•
SB12 axial, 12-pin, Connector connected to encoder housing	•
SC12 radial, 12-pin, Connector connected to encoder housing	•

Assignments	SB4, SC4	SB5, SC5	SB8, SC8	SB8, SC8	SB8, SC8	SB12, SC12	SB12, SC12	SB12, SC12	SB12, SC12
	4-pin	5-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin
									
Circuit	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	SIN	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30
GND	3	3	1	1	1	3	3	3	3
(+) Vcc	1	1	2	2	2	1	1	1	1
A	2	4	3	3	3	4	4	4	4
B	4	2	4	4	5	6	6	6	6
N	-	5	5	5	-	8	8	8	8
Light reserve warning	-	-	-	-	-	5	-	5	-
A inv.	-	-	-	6	4	-	-	9	9
B inv.	-	-	-	7	6	-	-	7	7
N inv.	-	-	-	8	-	-	-	10	10
n. c.	-	-	6, 7, 8	-	7, 8	2, 7, 9, 10, 11, 12	2, 5, 7, 9, 10, 11, 12	2, 11, 12	2, 5, 11, 12
Shield	-	-	-	-	-	-	-	-	-

Options

Low temperature

Order key

The encoder WDG 58A - Discontinued product with the output circuit types F24, G24, H24, I24, P24, R24, F05, G05, H05, I05, P05, R05, 245, 524, 645 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

ACA

Low-friction bearings

Order key

The encoder WDG 58A - Discontinued product is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.25 Ncm and the protection class at the shaft input to IP50.

AAC

Cable length

Order key

The encoder WDG 58A - Discontinued product 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

XXX = Decimeter

Example Order No.	Type					Your encoder
WDG 58A	WDG 58A					WDG 58A
Pulses per revolution PPR:						
5000	2, 5, 10, 15, 20, 24, 25, 30, 36, 40, 48, 50, 60, 64, 72, 87, 90, 100, 120, 125, 127, 128, 150, 160, 180, 200, 216, 236, 240, 250, 254, 256, 300, 314, 320, 360, 400, 500, 512, 571, 600, 625, 720, 750, 768, 800, 810, 900, 1000, 1024, 1200, 1250, 1270, 1440, 1500, 1800, 2000, 2048, 2400, 2500, 3000, 3600, 4000, 4096, 4685, 5000, 10000, 12500, 20000, 25000 1 Vss Sin/Cos only 1024, 2048 Other PPRs on request					
Channels:						
ABN	AB, ABN (SIN: AB)					
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 5000	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	
	(higher frequency) 1200 up to 25000	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			
Description	ABN inv. poss.	Order key	
Cable: length (2 m standard, WDG 58T: 1 m)			
axial, shield not connected	•	K2	
axial, shield connected to encoder housing	•	L2	
radial, shield not connected	•	K3	
radial, shield connected to encoder housing	•	L3	
Connector: (shield connected to encoder housing)			
connector, M16x0.75, 5-pin, axial	-	SI5	
connector, M16x0.75, 5-pin, radial	-	SH5	
connector, M16x0.75, 6-pin, axial	-	SI6	
connector, M16x0.75, 6-pin, radial	-	SH6	
connector, M16x0.75, 8-pin, axial	•	SI8	
connector, M16x0.75, 8-pin, radial	•	SH8	
connector, M16x0.75, 12-pin, axial	•	SI12	
connector, M16x0.75, 12-pin, radial	•	SH12	
connector, M16x0.75, 7-pin, axial	-	S2	
connector, M16x0.75, 7-pin, radial	-	S3	
connector, M23, 12-pin, axial	•	S4	
connector, clockwise pin count, M23, 12-pin, axial	•	S4R	
connector, M23, 12-pin, radial	•	S5	
connector, clockwise pin count, M23, 12-pin, radial	•	S5R	
sensor-connector, M12x1, 4-pin, axial	-	SB4	
sensor-connector, M12x1, 4-pin, radial	-	SC4	
sensor-connector, M12x1, 5-pin, axial	-	SB5	
sensor-connector, M12x1, 5-pin, radial	-	SC5	
sensor-connector, M12x1, 8-pin, axial	•	SB8	
sensor-connector, M12x1, 8-pin, radial	•	SC8	
sensor-connector, M12x1, 12-pin, axial	•	SB12	
sensor-connector, M12x1, 12-pin, radial	•	SC12	
Options			
Description	Order key		
Without option	Empty		
Low temperature	ACA		
Low-friction bearings	AAC		
Cable length	XXX = Decimeter		

Example Order No.=	WDG 58A	5000	ABN	G24	K2		WDG 58A					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



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