



Online Data sheet

Encoder WDGI 58A

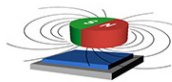
www.wachendorff-automation.com/wdgi58am

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 58A (magnetic)



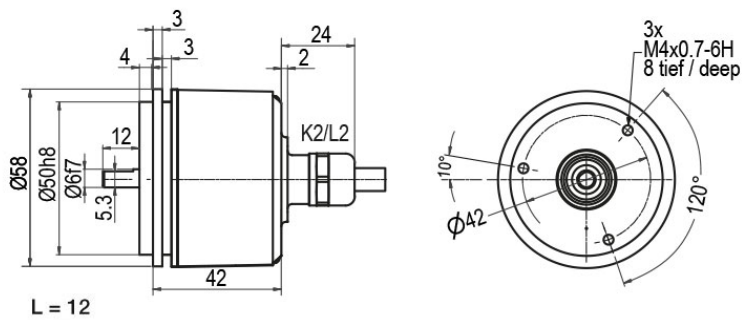
- Robust construction for industrial use
- Housing cap die cast aluminum, with particularly eco-friendly powder coating
- Protection to IP67, shaft sealed to IP65
- High electrical immunity
- Optional: -40 °C up to +85 °C, Pressure equalising membrane

www.wachendorff-automation.com/wdgi58am

Resolution	
Pulses per revolution PPR	up to 1024 PPR
Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	die cast aluminum, 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
Nominal 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
Nominal 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	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. 230 g
Connections	cable or connector outlet
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 58A: Cable connection K2, L2, axial, with 2 m cable



Description

L2 axial, shield connected to encoder housing

ABN inv. poss.

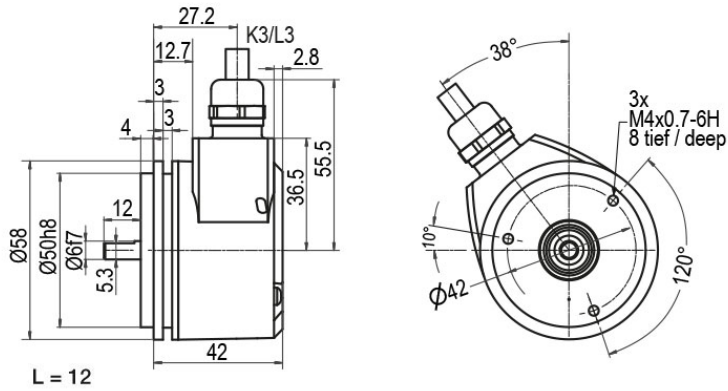
K2 axial, shield not connected

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Assignments		
	K2, L2	K2, L2
Circuit	N35	M35
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK, (BU at ACA)
N inv.	-	VT
Shield	flex	flex

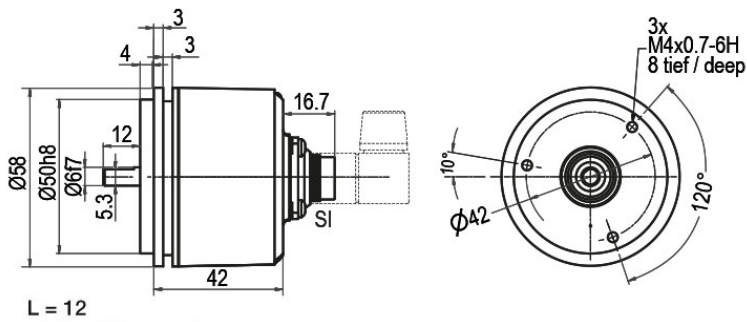
WDGI 58A: Cable connection K3, L3, radial, with 2 m cable



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

Assignments		
	K3, L3	K3, L3
Circuit	N35	M35
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK, (BU at ACA)
N inv.	-	VT
Shield	flex	flex

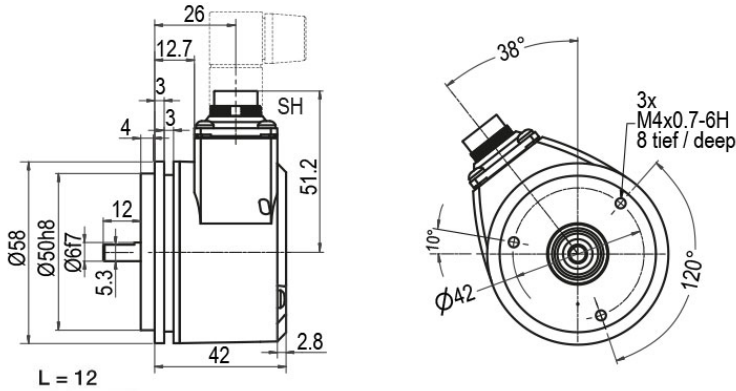
WDGI 58A: Connector (M16x0.75) SI, axial, 5-, 6-, 8-, 12-pin



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

Assignments						
	SI5	SI6	SI8	SI8	SI12	SI12
	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	-	-	-	-	-	-

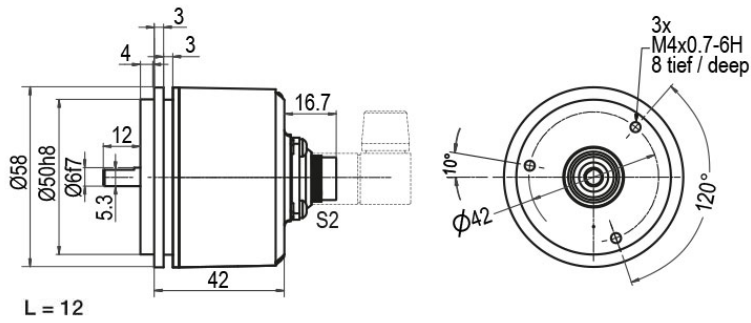
WDGI 58A: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



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	SH8 8-pin	SH12 12-pin	SH12 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 58A: Connector (M16x0.75) S2, axial, 7-pin

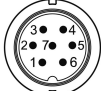


Description

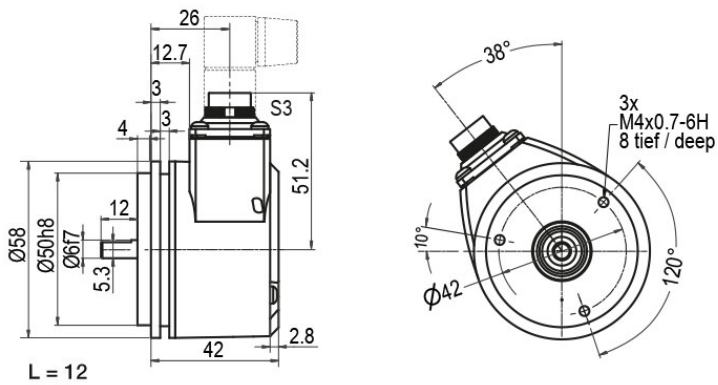
ABN inv. poss.

S2 axial, 7-pin, Connector connected to encoder housing

-

Assignments	
	S2
	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 58A: Connector (M16x0.75) S3, radial, 7-pin



Description

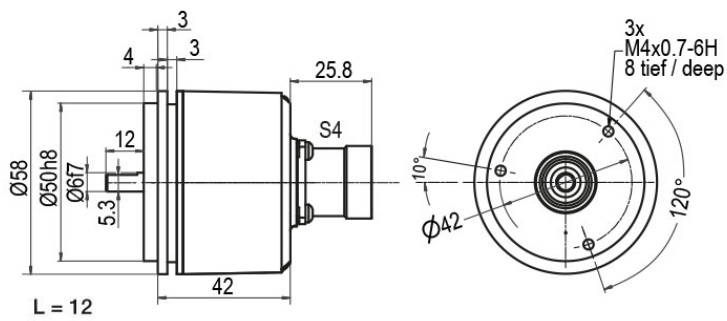
ABN inv. poss.

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

-

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 58A: Connector (M23) S4, axial, 12-pin



Description

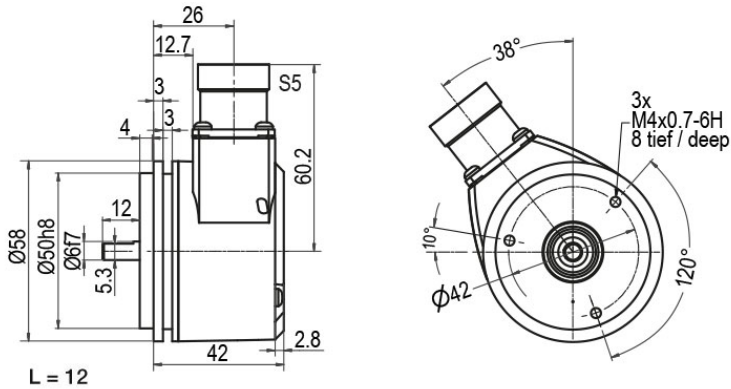
ABN inv. poss.

S4 axial, 12-pin, Connector connected to encoder housing

•

Assignments		
	S4	S4
	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 58A: Connector (M23) S5, radial, 12-pin



Description

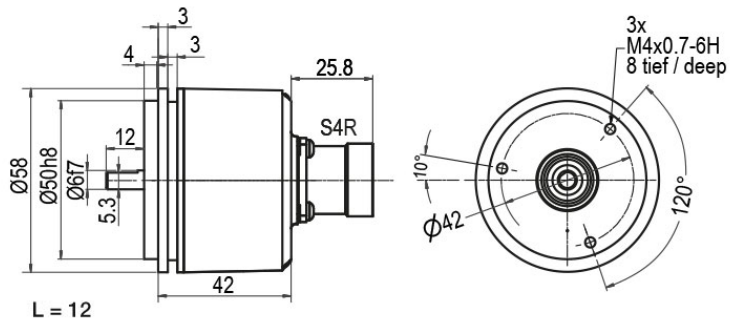
ABN inv. poss.

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

•

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 58A: Connector (M23) S4R, axial, 12-pin (clockwise)



Description

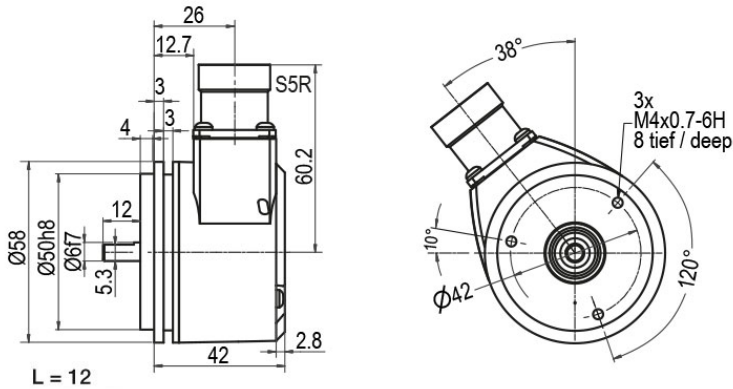
ABN inv. poss.

S4R axial, 12-pin, Connector connected to encoder housing

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Assignments		
	S4R	S4R
	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 58A: Connector (M23) S5R, radial, 12-pin (clockwise)



Description

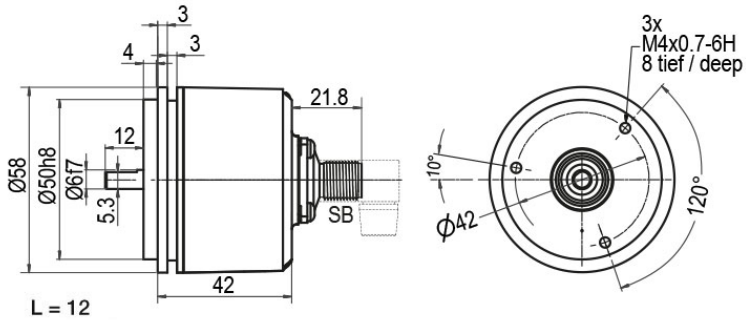
ABN inv. poss.

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 58A: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin



Description

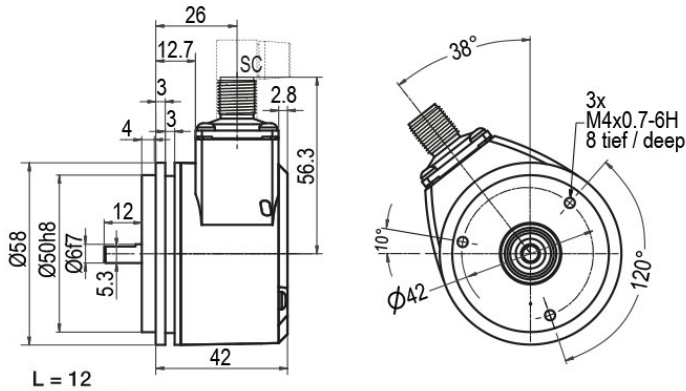
ABN inv. poss.

SB4	axial, 4-pin, Connector connected to encoder housing	-
SB5	axial, 5-pin, Connector connected to encoder housing	-
SB8	axial, 8-pin, Connector connected to encoder housing	•
SB12	axial, 12-pin, Connector connected to encoder housing	•

Assignments

	SB4 4-pin	SB5 5-pin	SB8 8-pin	SB8 8-pin	SB12 12-pin	SB12 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	-	-	-	-	-	-

WDGI 58A: 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 4-pin	SC5 5-pin	SC8 8-pin	SC8 8-pin	SC12 12-pin	SC12 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-friction bearings

The encoder WDG1 58A 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.

Order key

AAC

Low temperature

The encoder WDG1 58A 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 58A 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 58A 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.

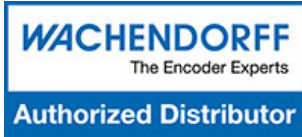
Example: 5 m cable = 050

Order key

XXX = Decimeter

Example Order No.	Type					Your encoder	
WDGI 58A	WDGI 58A					WDGI 58A	
	Shaft						
06	06						
	Pulses per revolution PPR:						
1024	1-1024 Other PPRs on request						
	Channels:						
ABN	AB, ABN						
	Output circuit						
M35	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key		
	up to 1024	5 - 30 5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC) HTL (TTL at 5 VDC)	- -	M35 N35		
	Electrical connections						
K2	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		
		Low-friction bearings			AAC		
	Low temperature			ACA			
	Pressure equalising membrane			ACR			
	Without option			Empty			
	Cable length			XXX = Decimeter			

Example Order No. =	WDGI 58A	06	1024	ABN	M35	K2		WDGI 58A						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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