



Online Data Sheet

Encoder WDGI 58D

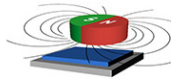
www.wachendorff-automation.com/wdgi58dm

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 58D (magnetic)



- Rugged industrial standard encoder
- Housing cap die cast aluminum, with particularly eco-friendly powder coating
- Protection to IP67, shaft sealed to IP65
- High noise immunity
- High shaft load radial 500N, axial 500N
- Maximum mechanical and electrical safety
- Optional: -40 °C up to +85 °C, Pressure equalising membrane

www.wachendorff-automation.com/wdgi58dm

Resolution	
Max. pulses per revolution PPR	up to 1024 PPR

Mechanical Data	
Housing	
Flange	clamping 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. 1 Ncm at ambient temperature
Shaft	Ø 12 mm
Shaft length	L: 25 mm
Max. Permissible shaft loading radial	500 N
Max. Permissible shaft loading axial	500 N

Bearings	
Bearings type	3 precision ball bearings
Nominal service life	2 x 10 ⁸ revs. at 100 % rated shaft load 3.5 x 10 ⁹ revs. at 40 % rated shaft load 2.5 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	2.5 x 10 ¹⁰ revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

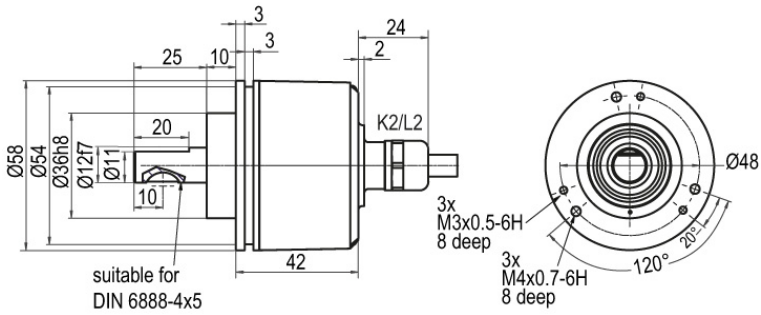
Electrical Data	
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 40 mA
Output circuit	HTL HTL, inv.
Pulse frequency	1024 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel

Circuit protection	no
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Accuracy	
Phase offset	90° ± max. 25% of the period duration
pulse-/pause-ratio	at 1 ppr up to 128 ppr: 50 % ± max. 7 % at 256 ppr: 50 % ± max. 9 % at 512 ppr: 50 % ± max. 13 % at 1024 ppr: 50 % ± max. 18 %

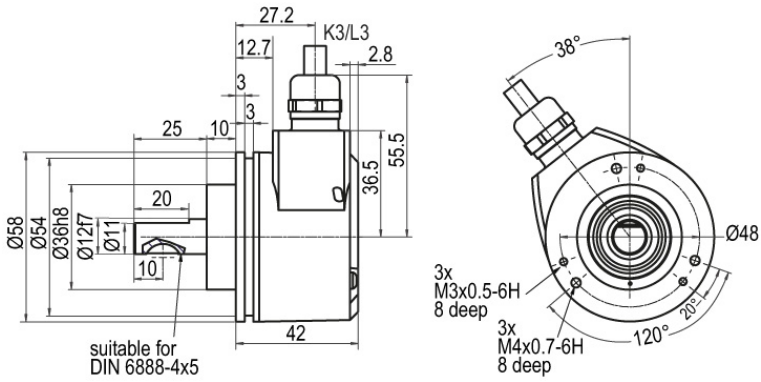
General Data	
Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-20 °C up to +80 °C
Storage temperature	-30 °C up to +80 °C

More Information	
General technical data and safety instructions http://www.wachendorff-automation.com/gtd	
Options http://www.wachendorff-automation.com/acc	

WDGI 58D: Cable connection K2, L2, axial, with 2 m cable

Description
ABN inv. poss.

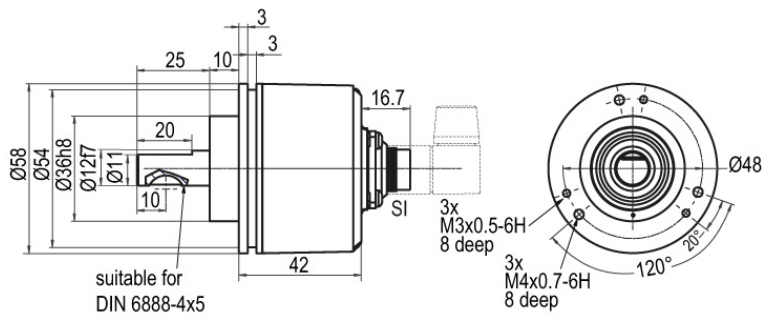
K2	axial, shield not connected	•
L2	axial, shield connected to encoder housing	•

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


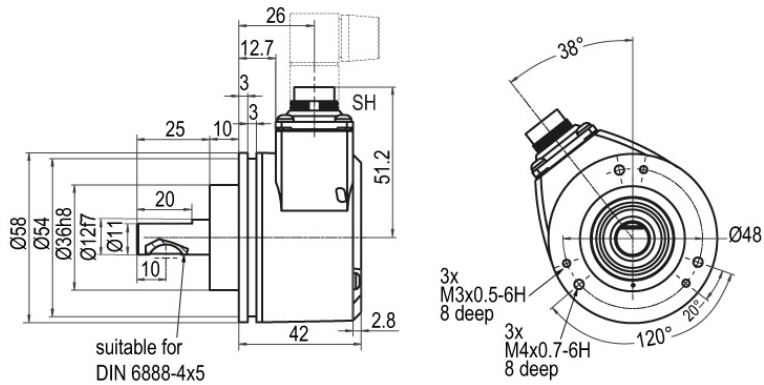
Description	ABN inv. poss.
K3 radial, shield not connected	•
L3 radial, shield connected to encoder housing	•

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



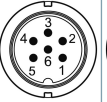
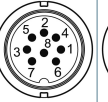
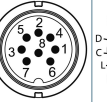
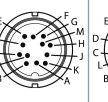
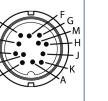
Description	ABN inv. poss.
SI5 axial, 5-pin, Connector connected to encoder housing	-
SI6 axial, 6-pin, Connector connected to encoder housing	-
SI8 axial, 8-pin, Connector connected to encoder housing	•
SI12 axial, 12-pin, Connector connected to encoder housing	•

Assignments	SI5 5-pin	SI6 6-pin	SI8 8-pin	SI8 8-pin	SI12 12-pin	SI12 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	-	-	-	-	-	-

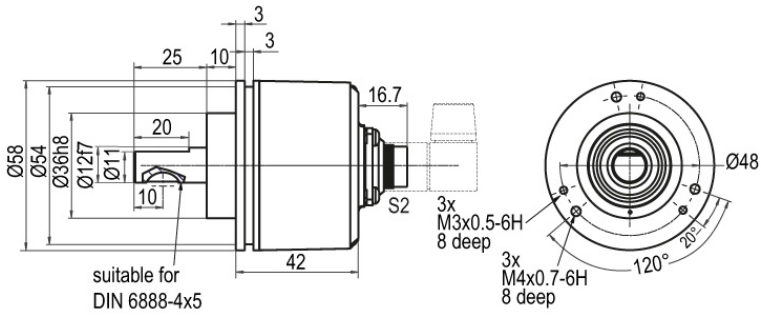
WDGI 58D: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin

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 58D: Connector (M16x0.75) S2, axial, 7-pin




Description

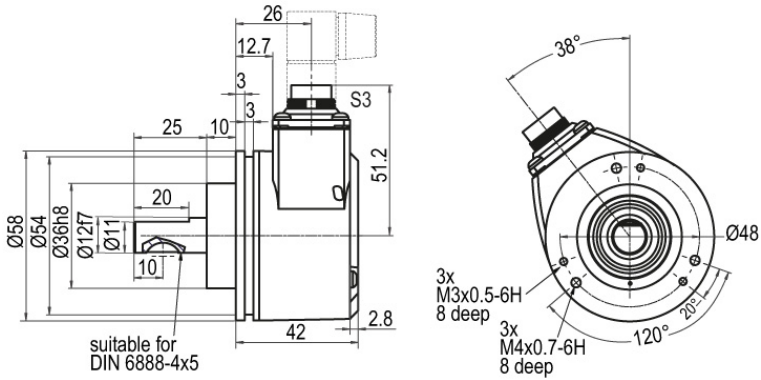
ABN inv. poss.

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




Description

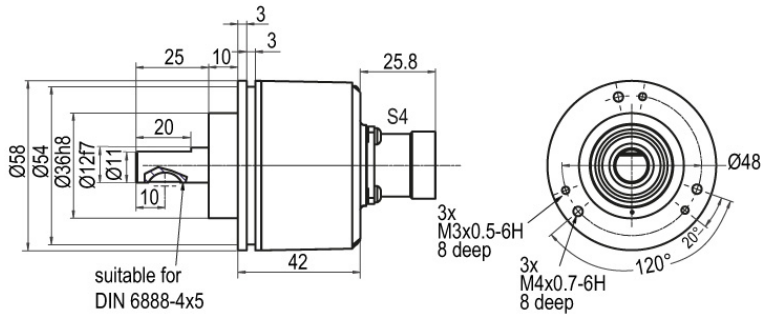
ABN inv. poss.

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

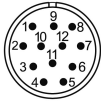
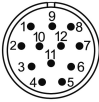


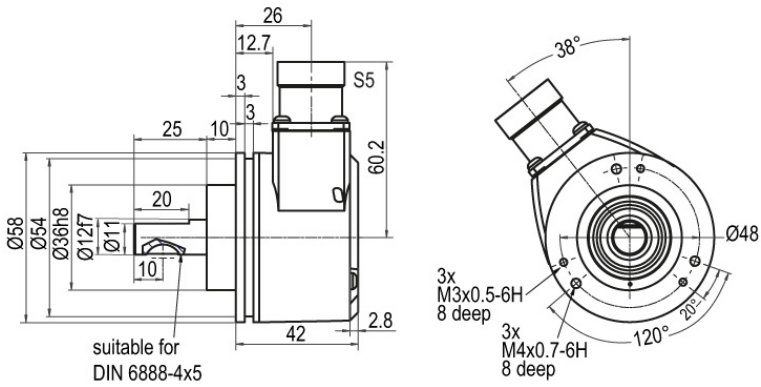
Description

ABN inv. poss.

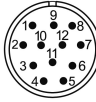
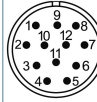
S4 axial, 12-pin, Connector connected to encoder housing

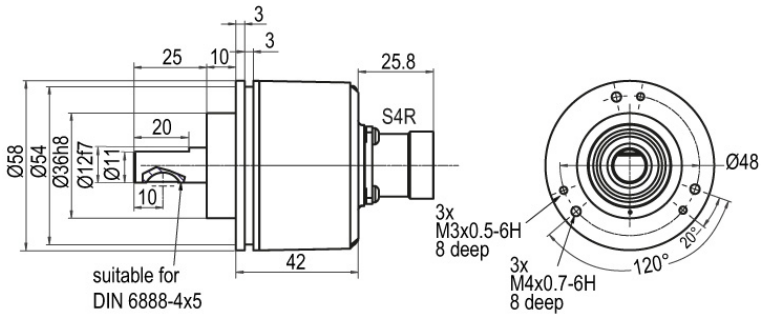
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Assignments		
	S4	S4
	12-pin	12-pin
		
Circuit	N35	M35
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
Light reserve warning	-	-
A inv.	-	6
B inv.	-	1
N inv.	-	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	-	-

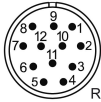
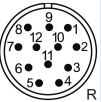
WDGI 58D: Connector (M23) S5, radial, 12-pin

Description
ABN inv. poss.
S5 radial, 12-pin, Connector connected to encoder housing

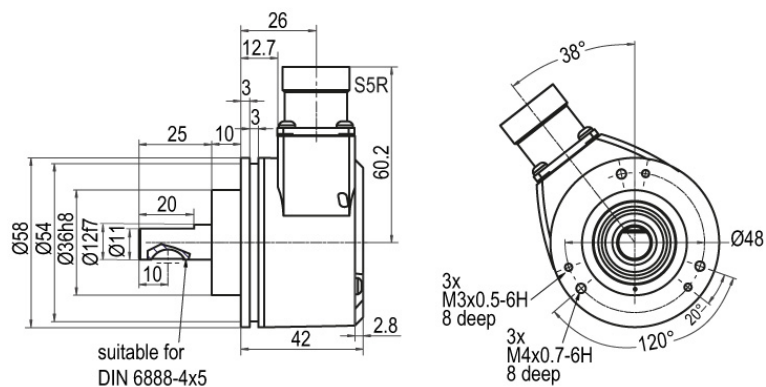
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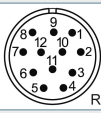
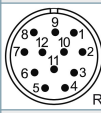
Assignments		
	S5	S5
	12-pin	12-pin
		
Circuit	N35	M35
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
Light reserve warning	-	-
A inv.	-	6
B inv.	-	1
N inv.	-	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	-	-

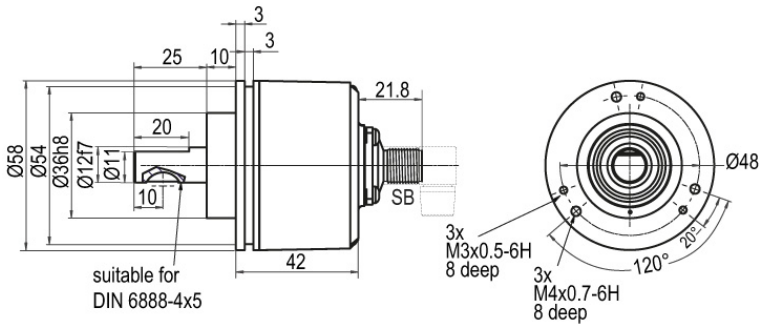
WDGI 58D: Connector (M23) S4R, axial, 12-pin (clockwise)

Description
ABN inv. poss.
S4R axial, 12-pin, Connector connected to encoder housing

•

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

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

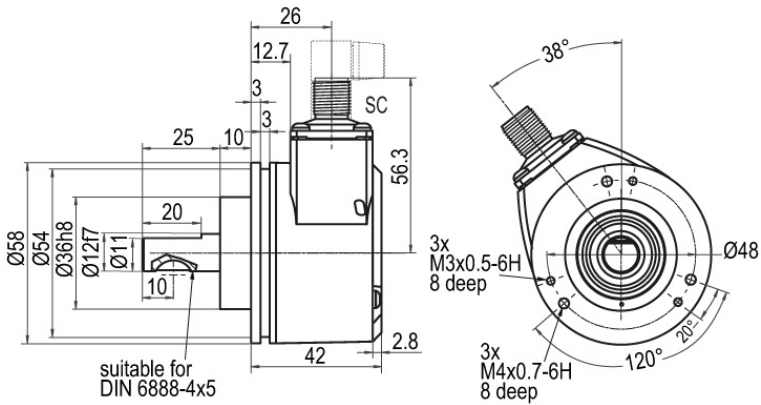
Assignments		
	S5R 12-pin	S5R 12-pin
		
Circuit	N35	M35
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
Light reserve warning	-	-
A inv.	-	6
B inv.	-	1
N inv.	-	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	-	-

WDGI 58D: 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	SB5	SB8	SB8	SB12	SB12
	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	-	-	-	-	-	-

WDGI 58D: 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 58D 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 58D 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 58D 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 58D	WDGI 58D					WDGI 58D
Shaft						
12	12					
Pulses per revolution PPR:						
1024	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 256, 512, 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	HTL	-	N35	
		5 - 30	HTL inverted	-	M35	
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 temperature				ACA		
Pressure equalising membrane				ACR		
Without option				Empty		
Cable length				XXX = Decimeter		

Example Order No. =	WDGI 58D	12	1024	ABN	M35	K2									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/>



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