

인크리멘탈 마그네틱 로터리 엔코더 - Ø24mm

WDG 24C 시리즈

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 24C

www.wachendorff-automation.com/wdg24c

IndustrieROBUST

Encoder WDG 24C



1. 초소형, 초경량 로터리 엔코더
2. 1~1024PPR 지원
3. 최대 IP67의 보호기능
4. Hall 방식으로 고정밀 측정 가능
5. CE 인증 및 UL 인증 제품

www.wachendorff-automation.com/wdg24c

Resolution	
Max. pulses per revolution PPR	1 PPR up to 128 PPR, 256 PPR, 512 PPR, 1024 PPR

Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	aluminum
Housing	Ø 24 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	0.55 x 10 ⁹ revs. at 100 % rated shaft load 8.5 x 10 ¹⁰ revs. at 40 % rated shaft load 6.8 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	6.8 x 10 ¹¹ revs. at 20 % rated shaft load and 12000 rpm
Diagnostic coverage (DC)	0 %

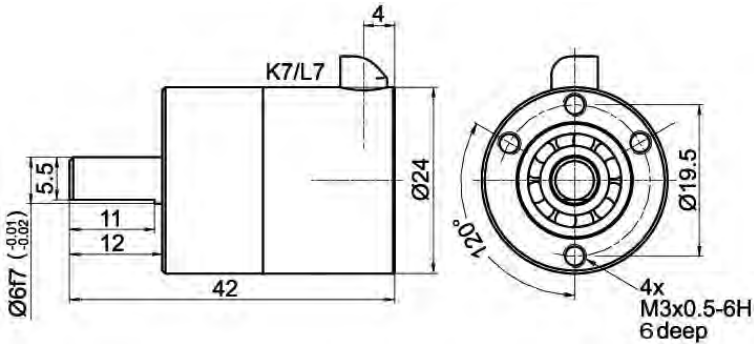
Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 40 mA
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 40 mA
Output circuit	TTL, RS422 compatible, inv. TTL HTL HTL, inv.

Pulse frequency	≤ 64 ppr: max. 20 kHz ≤ 1024 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 30 mA / channel
Circuit protection	no

Accuracy	
Phase offset	at 1 ppr up to 256 ppr: 90° ± max. 10% of the pulse length at 512 ppr: 90° ± max. 20% of the pulse length at 1024 ppr: 90° ± max. 23 % of the pulse length
pulse-/pause-ratio	at 1 ppr up to 128 ppr: 50 % ± max. 10 % at 256 ppr, 512 ppr, 1024 ppr: 50 % ± max. 20 %

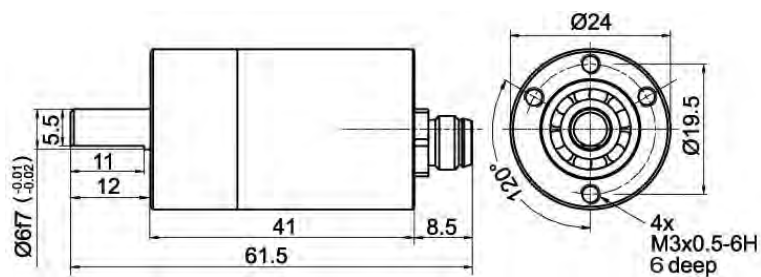
General Data	
Weight	approx. 50 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP65 all around with SK6, housing IP40 with K7, L7
Operating temperature	-20 °C up to +80 °C
Storage temperature	-20 °C up to +80 °C

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

Cable connection K7, L7 (IP40) with 2 m cable

Description	ABN inv. poss.
K7 radial, shield not connected (IP40)	•
L7 radial, shield connected to encoder housing (IP40)	•

Assignments		
	K7, L7	K7, L7
Circuit	N05, N30	M05, M30
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	PK, (BK at ACA)
N inv.	-	BU, (VT at ACA)
Shield	flex	flex

Connector SK6, 6-pin

Description
ABN inv. poss.
SK6 axial, 6-pin, Connector connected to encoder housing

-

Assignments	
	SK6
	6-pin
Circuit	N05, N30
GND	3
(+) Vcc	2
A	4
B	5
N	1
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6
Shield	-

Options

Low-friction bearings

Order key

The encoder WDG 24C is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50.

AAC

IP67 all around (with connector SK6 only)

Order key

The encoder WDG 24C can be supplied in a full IP67 version. Resistance to salt mist (IEC 60068-2-11) after 672 hours

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N

Permitted Shaft-Loading, radial: 45 N

Max. PPR: 1024 ppr

Starting-torque: approx. 1.2 Ncm at ambient temperature

Low temperature

Order key

The encoder WDG 24C with the output circuit types M05, N05, M30, N30 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

ACA

Cable length

Order key

The encoder WDG 24C can be supplied with more than 2 m cable. The max. permissible cable length is 10 metres with the output circuit M05 and N05.

XXX = Decimeter

With output circuit M30 and N30 max. 25 m. 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

Example Order No.	Type					Your encoder
WDG 24C	WDG 24C					WDG 24C
	Pulses per revolution PPR:					
64	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					
M30	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	16, 32, 64	4.75 - 5.5	TTL, RS422 comp., inverted	-	M05	
		4.75 - 5.5	TTL	-	N05	
	1-128, 256, 512, 1024	5 - 30	HTL inverted	-	M30	
		5 - 30	HTL	-	N30	
	Electrical connections					
K7	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K7	
	radial, shield connected to encoder housing (IP40)			•	L7	
	Connector: (shield connected to encoder housing)					
	connector, M8x1, 6-pin, axial			-	SK6	
	Options					
	Description			Order key		
	Low-friction bearings			AAC		
	IP67			AAO		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 24C	64	ABN	M30	K7		WDG 24C					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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주식회사 크레켄

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Online Data Sheet

인크리멘탈 마그네틱 로터리 엔코더 - Ø 30mm

WDG 30A 시리즈

Wachendorff Automation

... systems and encoders

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- 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 30A

www.wachendorff-automation.com/wdg30a

IndustrieROBUST

Encoder WDG 30A



1. 초소형, 초경량 로터리 엔코더
2. 1~1024PPR 지원
3. 최대 IP67 보호 등급
4. Hall 방식으로 고정밀 측정 가능
5. CE 인증 및 UL인증 제품

www.wachendorff-automation.com/wdg30a

Resolution	
Max. pulses per revolution PPR	1 PPR up to 128 PPR, 256 PPR, 512 PPR, 1024 PPR

Mechanical Data	
Housing	
Flange	synchro flange
Flange material	aluminum
Housing cap	aluminum
Housing	Ø 30 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	0.55 x 10 ⁹ revs. at 100 % rated shaft load 8.5 x 10 ¹⁰ revs. at 40 % rated shaft load 6.8 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	6.8 x 10 ¹¹ revs. at 20 % rated shaft load and 12000 rpm
Diagnostic coverage (DC)	0 %

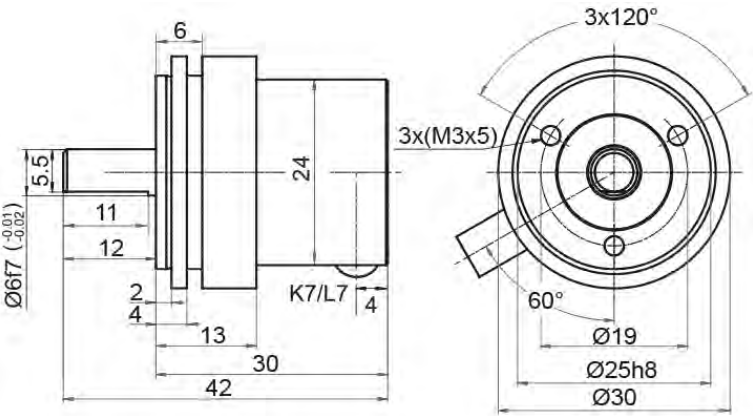
Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 40 mA
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 40 mA
Output circuit	TTL, RS422 compatible, inv. TTL HTL HTL, inv.

Pulse frequency	≤ 64 ppr: max. 20 kHz ≤ 1024 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 30 mA / channel
Circuit protection	no

Accuracy	
Phase offset	at 1 ppr up to 256 ppr: 90° ± max. 10% of the pulse length at 512 ppr: 90° ± max. 20% of the pulse length at 1024 ppr: 90° ± max. 23 % of the pulse length
pulse-/pause-ratio	at 1 ppr up to 128 ppr: 50 % ± max. 10 % at 256 ppr, 512 ppr, 1024 ppr: 50 % ± max. 20 %

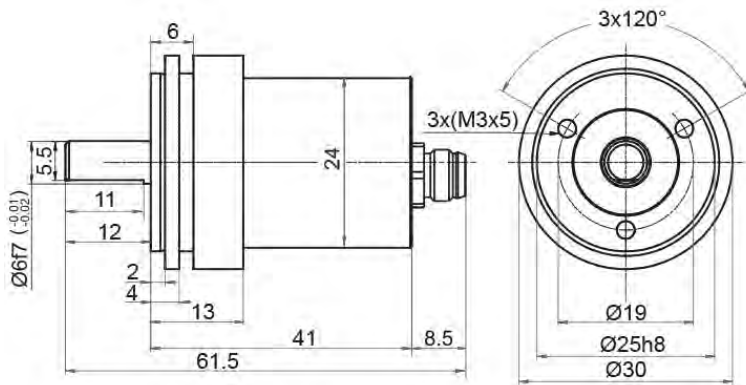
General Data	
Weight	approx. 50 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP65 all around with SK6, housing IP40 with K7, L7
Operating temperature	-20 °C up to +80 °C
Storage temperature	-20 °C up to +80 °C

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

Cable connection K7, L7 (IP40) with 2 m cable

Description		ABN inv. poss.
K7	radial, shield not connected (IP40)	•
L7	radial, shield connected to encoder housing (IP40)	•

Assignments		
	K7, L7	K7, L7
Circuit	N05, N30	M05, M30
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	PK, (BK at ACA)
N inv.	-	BU, (VT at ACA)
Shield	flex	flex

Connector SK6, 6-pin

Description
ABN inv. poss.
SK6 axial, 6-pin, Connector connected to encoder housing

-

Assignments	
	SK6
	6-pin
Circuit	N05, N30
GND	3
(+) Vcc	2
A	4
B	5
N	1
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6
Shield	-

Options

Low-friction bearings

Order key

The encoder WDG 30A is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50.

AAC

IP67 all around (with connector SK6 only)

Order key

The encoder WDG 30A with SK6 can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N

Permitted Shaft-Loading, radial: 45 N

Max. PPR: 1024 ppr

Starting-torque: approx. 1.2 Ncm at ambient temperature

Low temperature

Order key

The encoder WDG 30A with the output circuit types M05, N05, M30, N30 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

ACA

Cable length

Order key

The encoder WDG 30A 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder	
WDG 30A	WDG 30A					WDG 30A	
	Pulses per revolution PPR:						
64	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						
M30	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key		
	16, 32, 64	4.75 - 5.5	TTL, RS422 comp., inverted	-	M05		
		4.75 - 5.5	TTL	-	N05		
	1-128, 256, 512, 1024	5 - 30	HTL inverted	-	M30		
		5 - 30	HTL	-	N30		
	Electrical connections						
K7	Description			ABN inv. poss.	Order key		
	Cable: length (2 m standard, WDG 58T: 1 m)						
	radial, shield not connected (IP40)			•	K7		
	radial, shield connected to encoder housing (IP40)			•	L7		
	Connector: (shield connected to encoder housing)						
	connector, M8x1, 6-pin, axial			-	SK6		
	Options						
	Description			Order key			
	Low-friction bearings			AAC			
	IP67 all around (with connector SK6 only)			AAO			
	Low temperature			ACA			
	Without option			Empty			
	Cable length			XXX = Decimeter			

Example Order No. =	WDG 30A	64	ABN	M30	K7		WDG 30A					Your encoder
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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø40mm

WDG 40A 시리즈

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 40A

www.wachendorff-automation.com/wdg40a

Industrie ROBUST

Encoder WDG 40A



1. 내구성이 뛰어난 소형 로터리 엔코더
- 좁은 공간에 설치가 용이함
2. 옵티컬(Optical)방식으로 고분해능 구현 가능
- 4~2500PPR
3. 완전 방수로 열악한 환경에서 사용 가능
- Shaft IP65, Housing IP67
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg40a

Resolution	
Max. pulses per revolution PPR	up to 2500 PPR

Mechanical Data	
Housing	
Flange	Servo flange
Flange material	aluminum
Housing cap	aluminum, powder coated
Housing	Ø 40 mm
Cam mounting	pitch 51 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 11.5 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 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	12000 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 12000 rpm
Diagnostic coverage (DC)	0 %

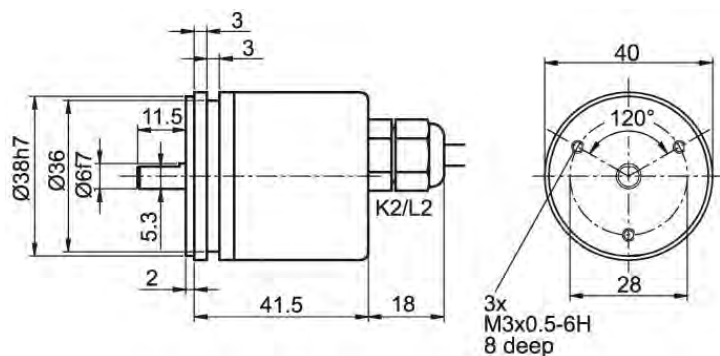
Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 70 mA

Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv.
Pulse frequency	TTL ≤ 2500 ppr: max. 200 kHz HTL ≤ 2500 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	circuit type H24 and R24 only

Accuracy	
Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	50 % ± max. 7 %

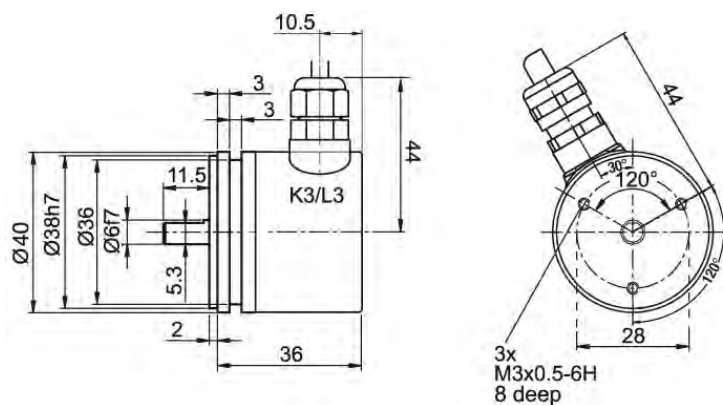
General Data	
Weight	approx. 100 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP40 for K1)
Operating temperature	-20 °C up to +80 °C
Storage temperature	-30 °C up to +80 °C

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

Cable connection K2, L2 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	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

Cable connection K3, L3 with 2 m cabel

Description

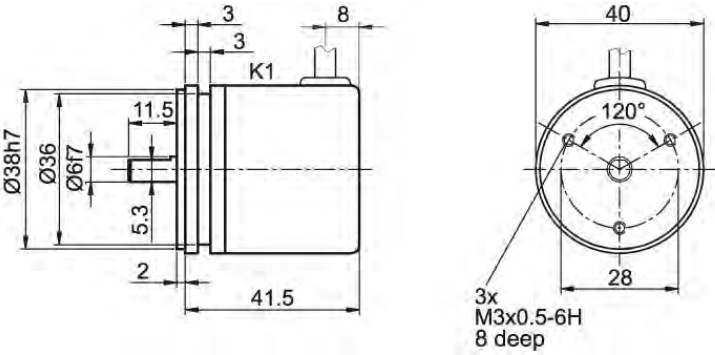
K3	radial, shield not connected
L3	radial, shield connected to encoder housing

ABN inv. poss.

-
-

Assignments		
	K3, L3	K3, L3
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

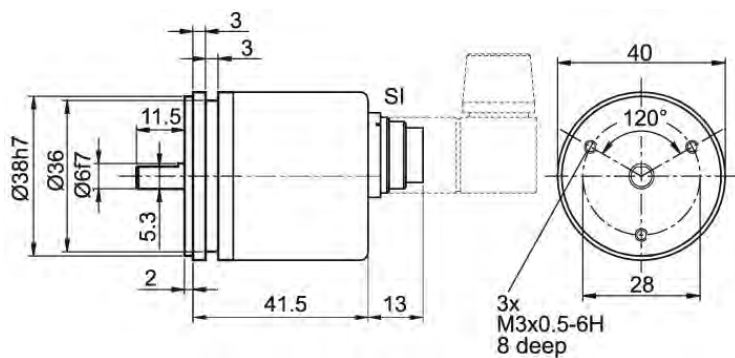
Cable K1 (IP40) with 2 m cable



Description	ABN inv. poss.
K1 radial, shield not connected (IP40)	•

Assignments		
	K1	K1
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
N inv.	-	VT
B inv.	-	BK
Shield	flex	flex

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



Description

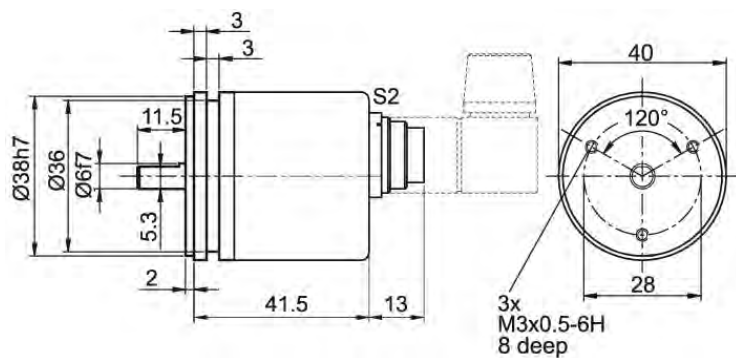
ABN inv. poss.

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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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	-	-	-	-	-	-

Connector (M16x0.75) S2, 7-pin



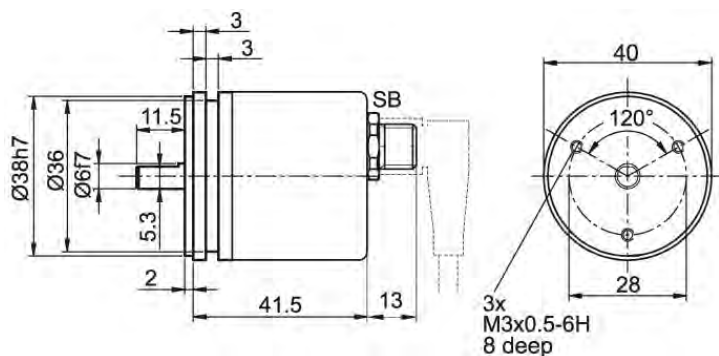
Description

ABN inv. poss.

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

-

Assignments	
	S2
	7-pin
	
Circuit	H05, H24
GND	1
(+) Vcc	2
A	3
B	4
N	5
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

Sensor connector (M12x1) SB, 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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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

Order key

The encoder WDG 40A is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50.

AAC

IP67 all around

Order key

The encoder WDG 40A can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N

Permitted Shaft-Loading, radial: 45 N

Max. PPR: 1500 ppr

Starting-torque: approx. 1.2 Ncm at ambient temperature

Low temperature

Order key

The encoder WDG 40A with the output circuit types H24, R24 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

ACA

Cable length

Order key

The encoder WDG 40A 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDG 40A	WDG 40A					WDG 40A
	Pulses per revolution PPR:					
2048	4, 9, 10, 15, 20, 25, 28, 30, 36, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500, 1800, 2000, 2048, 2500 Other PPRs on request					
	Channels:					
ABN	AB, ABN bis 2048 I/U					
	Output circuit					
H24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	4.75 - 5.5	TTL	-	H05	
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05	
		10 - 30	HTL	-	H24	
		10 - 30	HTL inverted	-	R24	
	Electrical connections					
K2	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K1	
	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, 6-pin, axial			-	SI6	
	connector, M16x0.75, 8-pin, axial			•	SI8	
	connector, M16x0.75, 12-pin, axial			•	SI12	
	connector, M16x0.75, 7-pin, axial			-	S2	
	sensor-connector, M12x1, 4-pin, axial			-	SB4	
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
	Options					
	Description			Order key		
	Low-friction bearings			AAC		
	IP67			AAO		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No.=	WDG 40A	2048	ABN	H24	K2		WDG 40A					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

CREKEN

주식회사 크레켄

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø40mm

WDG 40K 시리즈

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 40K

www.wachendorff-automation.com/wdg40k

IndustrieROBUST

Encoder WDG 40K



1. 내구성이 뛰어난 소형 로터리 엔코더
- 좁은 공간에 설치가 용이함.
2. Round 플랜지로 범용 적으로 사용 가능
3. 옵티컬(Optical) 방식으로 고분해능 구현 가능
- 4~2500PPR
4. 완전 방수로 열악한 환경에서 사용 가능
- Shaft IP65, Housing IP67
5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg40k

Resolution

Max. pulses per revolution up to 2500 PPR
PPR

Mechanical Data

Housing

Flange	Pilot flange
Flange material	aluminum
Housing cap	aluminum, powder coated
Housing	Ø 40 mm
Cam mounting	pitch 51 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 12 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 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	12000 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 12000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 70 mA

Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv.
Pulse frequency	TTL ≤ 2500 ppr: max. 200 kHz HTL ≤ 2500 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	circuit type H24 and R24 only

Accuracy

Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	50 % ± max. 7 %

General Data

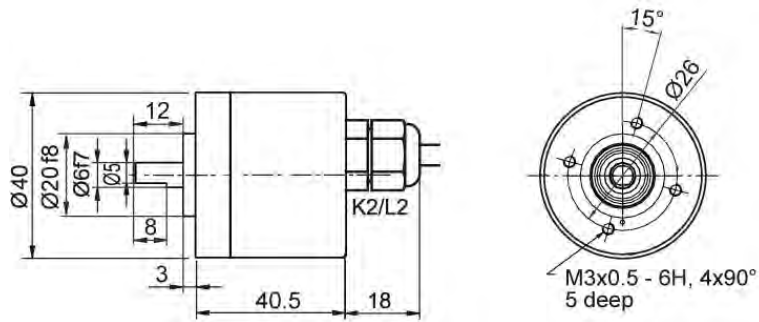
Weight	approx. 100 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP40 for K1)
Operating temperature	-20 °C up to +80 °C
Storage temperature	-30 °C up to +80 °C

More Information

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

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

Cable connection K2, L2 with 2 m cable

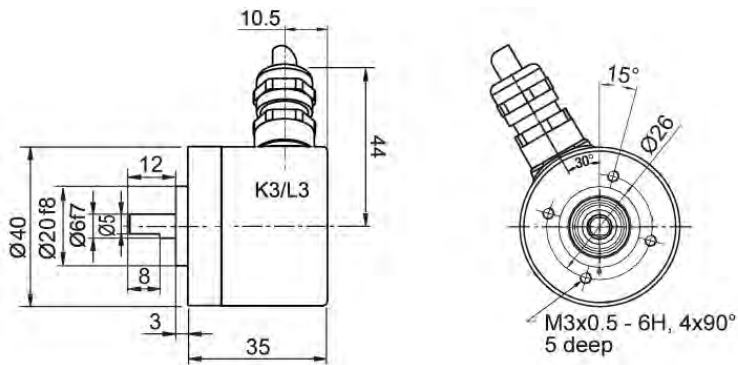


Description

ABN inv. poss.

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

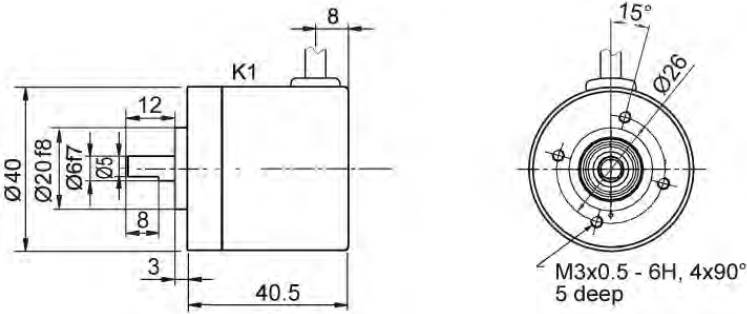
Assignments		
	K2, L2	K2, L2
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

Cable connection K3, L3 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	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

Cable K1 (IP40) with 2 m cable



Description

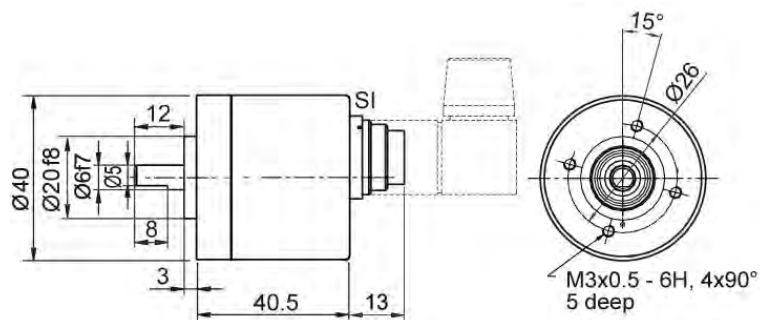
ABN inv. poss.

K1 radial, shield not connected (IP40)

•

Assignments		
	K1	K1
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
N inv.	-	VT
B inv.	-	BK
Shield	flex	flex

Cable connection (M16x0.75) SI, 5-, 6-, 8-, 12-pin



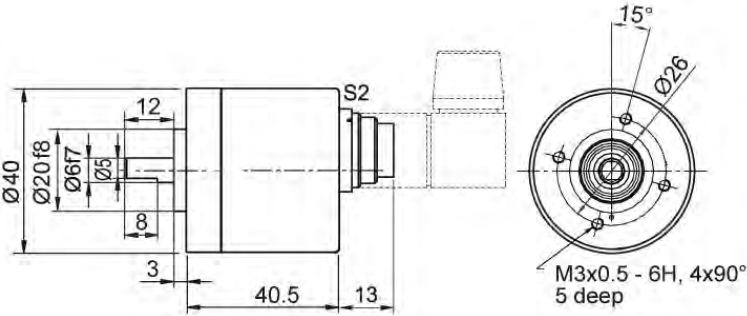
Description

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

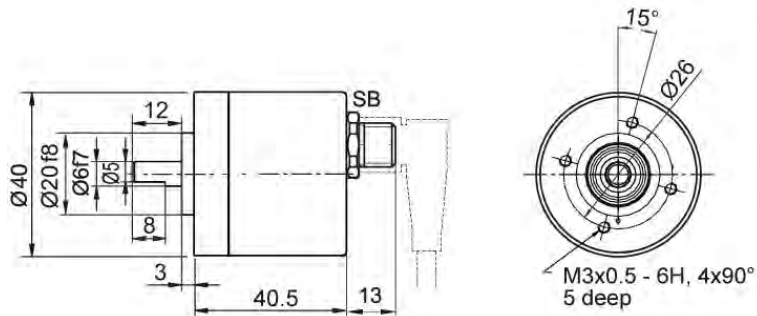
	SI5	SI6	SI8	SI8	SI12	SI12
	5-pin	6-pin	8-pin	8-pin	12-pin	12-pin
Circuit	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
GND	1	6	1	1	K, L	K, L
(+) Vcc	2	1	2	2	M, B	M, B
A	3	2	3	3	E	E
B	4	4	4	4	H	H
N	5	3	5	5	C	C
Light reserve warning	-	-	-	-	-	-
A inv.	-	-	-	6	-	F
B inv.	-	-	-	7	-	A
N inv.	-	-	-	8	-	D
n. c.	-	5	6, 7, 8	-	A, D, F, G, J	G, J
Shield	-	-	-	-	-	-

Connector (M16x0.75) S2, 7-pin**Description****ABN inv. poss.****S2** axial, 7-pin, Connector connected to encoder housing

-

Assignments	
	S2
	7-pin
	
Circuit	H05, H24
GND	1
(+) Vcc	2
A	3
B	4
N	5
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

Sensor-connector (M12x1) SB, 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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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 WDG 40K is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50.

Order key

AAC

Low temperature

The encoder WDG 40K with the output circuit types H24, R24 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 40K 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
WDG 40K	WDG 40K					WDG 40K
	Pulses per revolution PPR:					
2048	4, 9, 10, 15, 20, 25, 28, 30, 36, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500, 1800, 2000, 2048, 2500 Other PPRs on request					
	Channels:					
ABN	AB, ABN bis 2048 I/U					
	Output circuit					
H24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	4.75 - 5.5	TTL	-	H05	
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05	
		10 - 30	HTL	-	H24	
		10 - 30	HTL inverted	-	R24	
	Electrical connections					
K2	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K1	
	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, 6-pin, axial			-	SI6	
	connector, M16x0.75, 8-pin, axial			•	SI8	
	connector, M16x0.75, 12-pin, axial			•	SI12	
	connector, M16x0.75, 7-pin, axial			-	S2	
	sensor-connector, M12x1, 4-pin, axial			-	SB4	
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
	Options					
	Description			Order key		
	Low-friction bearings			AAC		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 40K	2048	ABN	H24	K2		WDG 40K					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

CREKEN

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø40mm

WDG 40S 시리즈

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 40S

www.wachendorff-automation.com/wdg40s

IndustrieROBUST

Encoder WDG 40S



1. 내구성이 뛰어난 소형 로터리 엔코더
- 좁은 공간에 설치가 용이함.
2. Screw 타입의 플랜지로 설치가 간편함
3. 옵티컬(Optical) 방식으로 고분해능 구현 가능
- 4~2500PPR
4. 완전 방수로 열악한 환경에서 사용 가능
- Shaft IP65, Housing IP67
5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg40s

Resolution	
Max. pulses per revolution PPR	up to 2500 PPR

Mechanical Data	
Housing	
Flange	screw flange
Starting torque nut	max. 10 Nm
Flange material	aluminum, incl. nut M20 x 1.5
Housing cap	aluminum, powder coated
Housing	Ø 40 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.2 Ncm at ambient temperature

Shaft	Ø 6 mm
Shaft length	L: 13 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 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	12000 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 12000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 70 mA

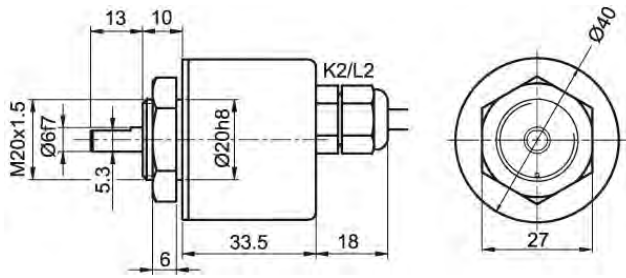
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv.
Pulse frequency	TTL ≤ 2500 ppr: max. 200 kHz HTL ≤ 2500 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	circuit type H24 and R24 only

Accuracy	
Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	50 % ± max. 7 %

General Data	
Weight	approx. 90 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65 (IP40 for K1)
Operating temperature	-20 °C up to +80 °C
Storage temperature	-30 °C up to +80 °C

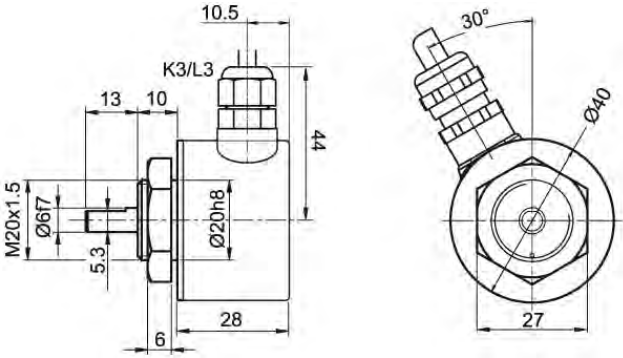
More Information	
General technical data and safety instructions http://www.wachendorff-automation.com/gtd	
Options http://www.wachendorff-automation.com/acc	

Cabel connection K2, L2 with 2 m cable



Description	ABN inv. poss.
K2 axial, shield not connected	•
L2 axial, shield connected to encoder housing	•

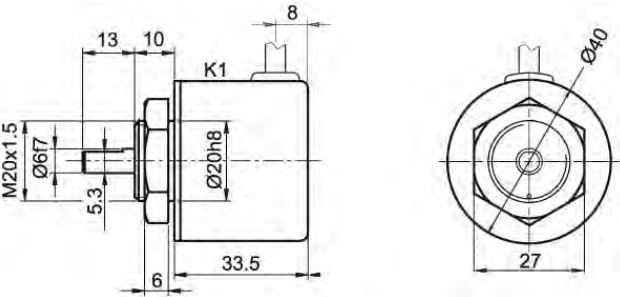
Assignments		
	K2, L2	K2, L2
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

Cable connection K3, L3 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	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
B inv.	-	BK
N inv.	-	VT
Shield	flex	flex

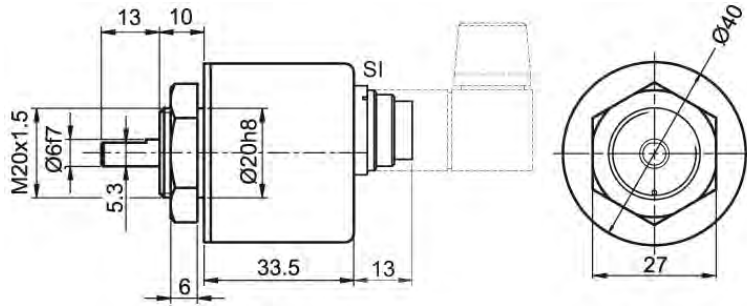
Cable connection K1 (IP40) with 2 m cable



Description	ABN inv. poss.
K1 radial, shield not connected (IP40)	•

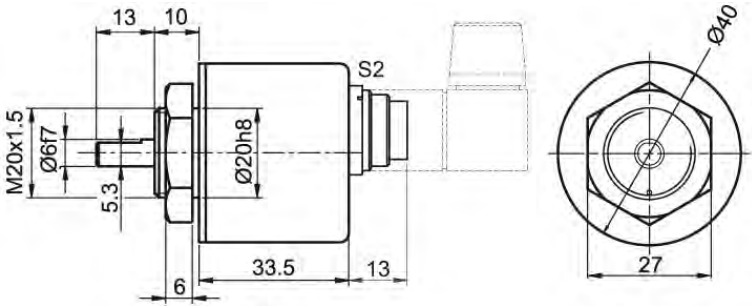
Assignments		
	K1	K1
Circuit	H05, H24	R05, R24
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
Light reserve warning	-	-
A inv.	-	RD
N inv.	-	VT
B inv.	-	BK
Shield	flex	flex

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



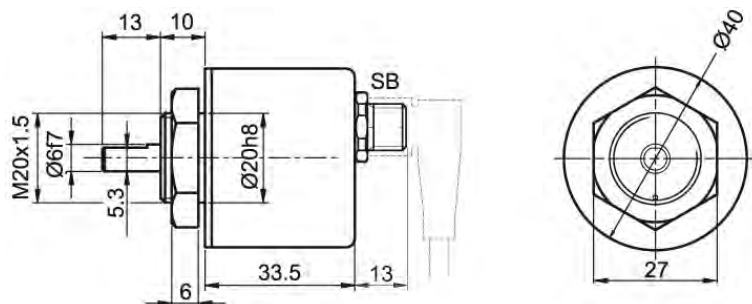
Description	ABN inv. poss.
SI5 axial, 5-pin, Connector connected to encoder housing	-
SI6 axial, 6-pin, Connector connected to encoder housing	-
SI8 axial, 8-pin, Connector connected to encoder housing	•
SI12 axial, 12-pin, Connector connected to encoder housing	•

Assignments						
	SI5 5-pin	SI6 6-pin	SI8 8-pin	SI8 8-pin	SI12 12-pin	SI12 12-pin
Circuit	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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	-	-	-	-	-	-

Connector (M16x0.75) S2, 7-pin

Description	ABN inv. poss.
S2 axial, 7-pin, Connector connected to encoder housing	-

Assignments	
	S2
	7-pin
Circuit	H05, H24
GND	1
(+) Vcc	2
A	3
B	4
N	5
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

Sensor-connector (M12x1) SB, 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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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

Order key

The encoder WDG 40S is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.1 Ncm and the protection class at the shaft input to IP50.

AAC

IP67 all around

Order key

The encoder WDG 40S can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 30 N

Permitted Shaft-Loading, radial: 45 N

Max. PPR: 1500 ppr

Starting-torque: approx. 1.2 Ncm at ambient temperature

Low temperature

Order key

The encoder WDG 40S with the output circuit types H24, R24 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

ACA

Cable length

Order key

The encoder WDG 40S 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDG 40S	WDG 40S					WDG 40S
	Pulses per revolution PPR:					
2048	4, 9, 10, 15, 20, 25, 28, 30, 36, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500, 1800, 2000, 2048, 2500 Other PPRs on request					
	Channels:					
ABN	AB, ABN bis 2048 I/U					
	Output circuit					
H24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	4.75 - 5.5	TTL	-	H05	
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05	
		10 - 30	HTL	-	H24	
		10 - 30	HTL inverted	-	R24	
	Electrical connections					
K2	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K1	
	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, 6-pin, axial			-	SI6	
	connector, M16x0.75, 8-pin, axial			•	SI8	
	connector, M16x0.75, 12-pin, axial			•	SI12	
	connector, M16x0.75, 7-pin, axial			-	S2	
	sensor-connector, M12x1, 4-pin, axial			-	SB4	
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
	Options					
	Description			Order key		
	Low-friction bearings			AAC		
	IP67			AAO		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 40S	2048	ABN	H24	K2		WDG 40S						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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주식회사 크레켄

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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø50mm

WDG 50B 시리즈

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 50B

www.wachendorff-automation.com/wdg50b

IndustrieROBUST

Encoder WDG 50B



1. 다양한 전원 전압 설정 가능
 - 4.75VDC ~ 5.5VDC
 - 10VDC ~ 30VDC
2. 옵티컬(Optical)방식으로 고 분해능 구현 가능
 - 4~2500PPR
3. 완전 방수로 열악한 환경에서 사용 가능
 - Shaft IP65, Housing IP67
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg50b

Resolution	
Max. pulses per revolution PPR	up to 2500 PPR

Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	aluminum, powder coated
Housing	Ø 50 mm
Cam mounting	pitch 61 mm

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.3 Ncm at ambient temperature
Shaft	Ø 8 mm
Shaft length	L: 15 mm
Max. Permissible shaft loading radial	120 N
Max. Permissible shaft loading axial	70 N

Bearings	
Bearings type	2 precision ball bearings
Nominal service life	2 x 10 ⁸ revs. at 100 % rated shaft load 3 x 10 ⁹ revs. at 40 % rated shaft load 2 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm

Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	2 x 10 ¹⁰ revs. at 20 % rated shaft load and 12000 rpm
Diagnostic coverage (DC)	0 %

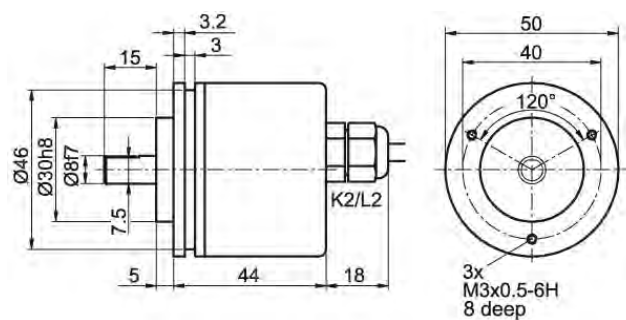
Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 70 mA
Output circuit	TTL, RS422 compatible, inv. HTL

Pulse frequency	TTL ≤ 2500 ppr: max. 200 kHz HTL ≤ 2500 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	circuit type H24 and R24 only
Accuracy	
Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	50 % ± max. 7 %

General Data	
Weight	approx. 160 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to 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	

Cable connection K2, L2 with 2 m cable



Description

ABN inv. poss.

K2 axial, shield not connected

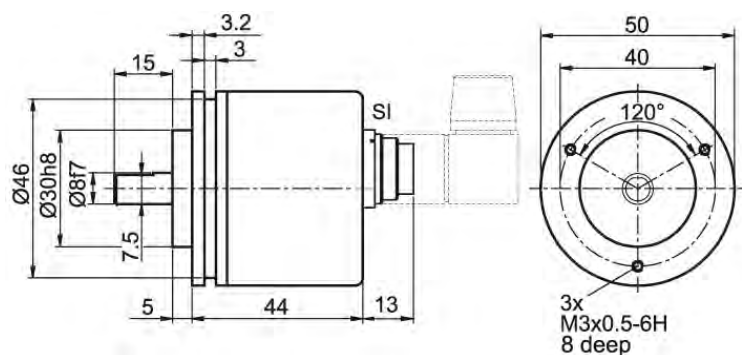
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L2 axial, shield connected to encoder housing

•

Assignments		
	K2, L2	K2, L2
Circuit	H05, H24	R05, R24
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

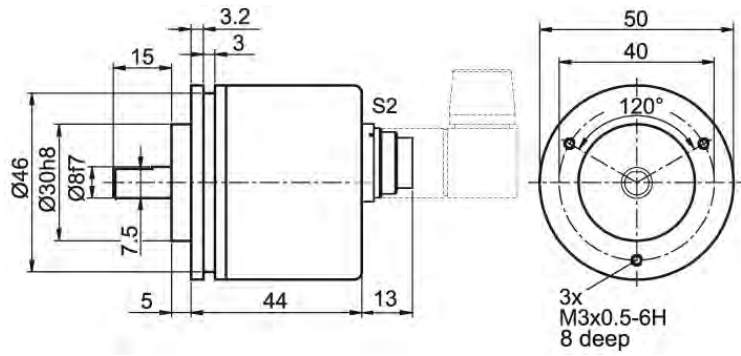
Cable connection (M16x0.75) SI, 5-, 6-, 8-, 12-pin



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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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	-	-	-	-	-	-

Connector (M16x0.75) S2, 7-pin



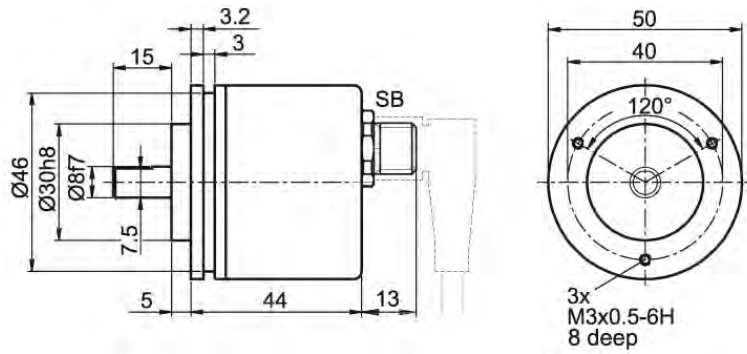
Description

ABN inv. poss.

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

-

Assignments	
	S2
	7-pin
	
Circuit	H05, H24
GND	1
(+) Vcc	2
A	3
B	4
N	5
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	6, 7
Shield	-

Sensor-connector (M12x1) SB, 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	H05, H24	H05, H24	H05, H24	R05, R24	H05, H24	R05, R24
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 WDG 50B 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 WDG 50B with the output circuit types H24, R24 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 50B 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
WDG 50B	WDG 50B					WDG 50B
Pulses per revolution PPR:						
2048	4, 9, 10, 15, 20, 25, 28, 30, 36, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500, 1800, 2000, 2048, 2500 Other PPRs on request					
Channels:						
ABN	AB, ABN bis 2048 I/U					
Output circuit						
H24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	4.75 - 5.5	TTL	-	H05	
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05	
		10 - 30	HTL	-	H24	
		10 - 30	HTL inverted	-	R24	
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	
	Connector: (shield connected to encoder housing)					
	connector, M16x0.75, 5-pin, axial			-	SI5	
	connector, M16x0.75, 6-pin, axial			-	SI6	
	connector, M16x0.75, 8-pin, axial			•	SI8	
	connector, M16x0.75, 12-pin, axial			•	SI12	
	connector, M16x0.75, 7-pin, axial			-	S2	
	sensor-connector, M12x1, 4-pin, axial			-	SB4	
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	sensor-connector, M12x1, 12-pin, axial			•	SB12	
Options						
	Description			Order key		
	Low-friction bearings			AAC		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 50B	2048	ABN	H24	K2	
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WDG 50B						Your encoder
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Here you find a list of our distributors worldwide.
http://www.wachendorff-automation.com/distributors_worldwide.html

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø53mm

WDG 53V 시리즈

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 53V

www.wachendorff-automation.com/wdg53v

IndustrieROBUST

Encoder WDG 53V



1. IP68의 완전 방수 로터리 엔코더
 - OUTDOOR 환경에 사용 가능
 - 열악한 환경에서 사용 가능
2. 내구성이 뛰어난 소형 로터리 엔코더
 - 좁은 공간에 설치가 용이함.
3. Screw 타입의 플랜지로 설치가 간편함
4. 옵티컬(Optical) 방식으로 정밀한 출력
5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg53v

Resolution

Max. pulses per revolution up to 1500 PPR
PPR

Mechanical Data

Housing

Flange screw flange
Starting torque nut max. 10 Nm
Flange material stainless steel, V2A
Housing cap stainless steel, V2A
Housing Ø 53 mm

Shaft(s)

Shaft material stainless steel, V2A
Starting torque approx. 1.2 Ncm at ambient temperature

Shaft Ø 6 mm
Shaft length L: 13 mm
Max. Permissible shaft loading radial 30 N
Max. Permissible shaft loading axial 45 N

Bearings

Bearings type 2 precision ball bearings
Nominale service life 1 x 10⁹ revs. at 100 % rated shaft load
1 x 10¹⁰ revs. at 40 % rated shaft load
1 x 10¹¹ 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 10¹¹ 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. 70 mA
Power supply/Current consumption 10 VDC up to 30 VDC: typ. 70 mA

Output circuit	TTL, RS422 compatible, inv. HTL
Pulse frequency	TTL ≤ 1500 ppr: max. 200 kHz HTL ≤ 1500 ppr: max. 200 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel
Circuit protection	circuit type H24 and R24 only

Accuracy

Phase offset 90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio 50 % ± max. 7 %

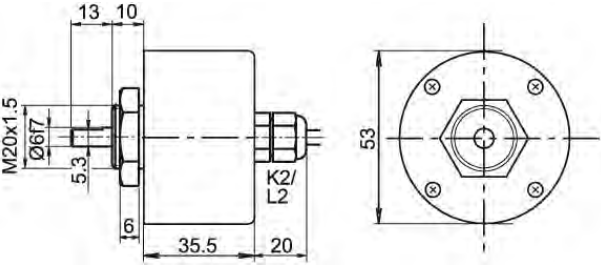
General Data

Weight approx. 470 g
Connections cable outlet
Protection rating (EN 60529) IP68
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>

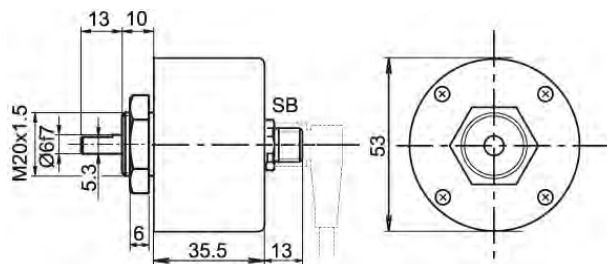
Options
<http://www.wachendorff-automation.com/acc>

Cable connection K2, L2 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	H05, H24	R05, R24
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

Sensor-connector (M12x1) SB, 4-, 5-, 8-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	•

Assignments

	SB4	SB5	SB8	SB8
	4-pin	5-pin	8-pin	8-pin
Circuit	H05, H24	H05, H24	H05, H24	R05, R24
GND	3	3	1	1
(+) Vcc	1	1	2	2
A	2	4	3	3
B	4	2	4	4
N	-	5	5	5
Light reserve warning	-	-	-	-
A inv.	-	-	-	6
B inv.	-	-	-	7
N inv.	-	-	-	8
n. c.	-	-	6, 7, 8	-
Shield	-	-	-	-

Options

Low temperature

The encoder WDG 53V with the output circuit types H24, R24 is also available with the extended temperature range -40 °C up to +80 °C (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 53V 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
WDG 53V	WDG 53V					WDG 53V
	Pulses per revolution PPR:					
1500	4, 9, 10, 15, 20, 25, 28, 30, 40, 50, 60, 90, 100, 120, 125, 128, 150, 160, 180, 200, 235, 250, 300, 314, 318, 360, 400, 500, 600, 625, 635, 720, 900, 1000, 1024, 1080, 1200, 1250, 1500 Other PPRs on request					
	Channels:					
ABN	AB, ABN					
	Output circuit					
H24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	up to 2500	4.75 - 5.5	TTL	-	H05	
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05	
		10 - 30	HTL	-	H24	
		10 - 30	HTL inverted	-	R24	
	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	
	Connector: (shield connected to encoder housing)					
	sensor-connector, M12x1, 4-pin, axial			-	SB4	
	sensor-connector, M12x1, 5-pin, axial			-	SB5	
	sensor-connector, M12x1, 8-pin, axial			•	SB8	
	Options					
	Description			Order key		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

Example Order No. =	WDG 53V	1500	ABN	H24	K2		WDG 53V						Your encoder
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http://www.wachendorff-automation.com/distributors_worldwide.html

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www.creken.co.kr



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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58S 시리즈

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 58S

www.wachendorff-automation.com/wdg58s

Industrie ROBUST

Encoder WDG 58S - Salt mist IEC 60068-2-11



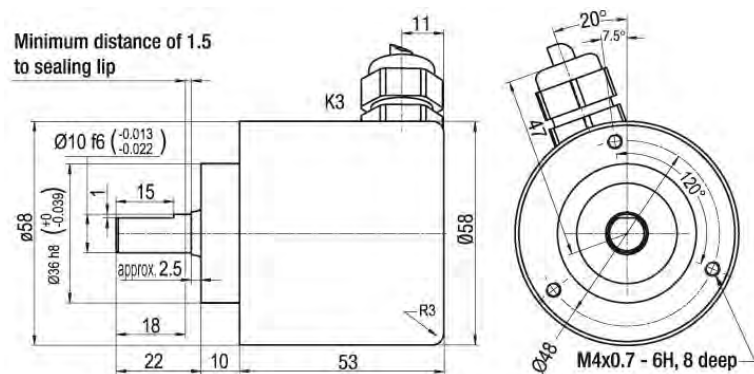
Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	clamping flange
Flange material	stainless steel, V4A
Housing cap	stainless steel, V4A
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel, V4A
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	100 N
Max. Permissible shaft loading axial	100 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	3600 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 3600 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
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos

1. IEC 60068-2-11 규격의 염수 분무 시험 통과
2. 옵티컬(Optical) 방식으로 고정밀 출력 및 고분해능
- MAX 25000 PPR
- 고정밀 기계에 사용 적합.
3. PTFE(테프론) Sealing으로 완전 방수
- IP68 및 IP69K 보호 등급
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg58s

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %
General Data	
Weight	approx. 600 g
Connections	cable outlet (TPE)
Protection rating (EN 60529)	IP67 all around and IP69K. Resistance to salt mist (IEC 60068-2-11) after 672 hours.
Operating temperature	-20 °C up to +80 °C 1 Vpp: -10 °C up to +70 °C
Storage temperature	-20 °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	

Cable connection K3, L3 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	K3, L3	K3, L3	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.	-	-	BU	BU	PK
N inv.	-	-	VT	VT	-
Shield	flex	flex	flex	flex	flex

Options

Low temperature

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

Order key

ACA

Cable length

The encoder WDG 58S 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
WDG 58S	WDG 58S					WDG 58S
		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 Vpp 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			
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		
		Options				
	Description			Order key		
	Low temperature			ACA		
	Without option			Empty		
	Cable length			XXX = Decimeter		

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

WDG 58S

Your encoder



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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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58T 시리즈

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- 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 58T

www.wachendorff-automation.com/wdg58t

IndustrieROBUST

Encoder WDG 58T - Available ex-stock



Available ex-stock



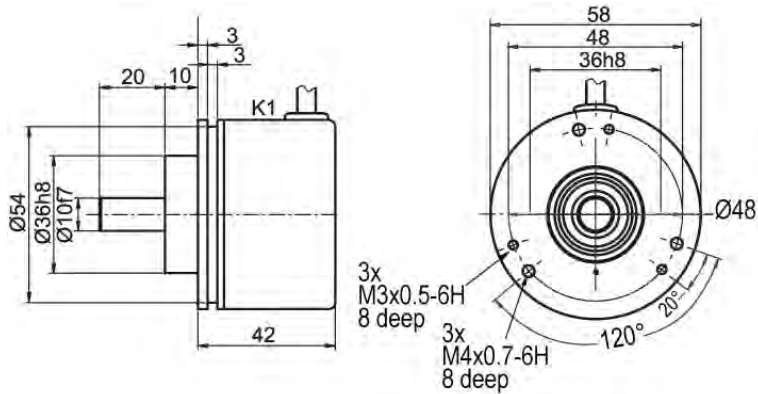
1. 산업 장비의 표준 사이즈 - 58mm
- 범용 적으로 사용 할 수 있음

2. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg58t

Resolution	
Max. pulses per revolution PPR	360 PPR, 500 PPR, 1024 PPR
Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	aluminum
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 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 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	8000 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 8000 rpm
Diagnostic coverage (DC)	0 %
Electrical Data	
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 70 mA
Output circuit	HTL HTL, inv.
Pulse frequency	≤ 1024 ppr: max. 150 kHz
Channels	ABN and inverted signals
Load	max. 40 mA / channel

Circuit protection	inverse-polarity protection only
Accuracy	
Phase offset	90° ± max. 7.5 % of the pulse length
pulse-/pause-ratio	50 % ± max. 7 %
General Data	
Weight	approx. 250 g
Connections	radial cable outlet, 1 m, shield not connected (Order key: K1)
Protection rating (EN 60529)	IP40, shaft sealed to IP54
Operating temperature	-10 °C up to +70 °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	

Cable connection K1 (IP40) with 1 m cable**Description****ABN inv. poss.****K1** radial, shield not connected (IP40)

•

Assignments	
	K1
Circuit	R30
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
Light reserve warning	-
A inv.	RD
B inv.	PK
N inv.	BU
Shield	flex

Example Order No.	Type					Your encoder
WDG 58T	WDG 58T					WDG 58T
	Pulses per revolution PPR:					
500	360, 500, 1024 Other PPRs on request					
	Channels:					
ABN	ABN					
	Output circuit					
R30	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key	
	360, 500, 1024	5 - 30	HTL inverted	-	R30	
	Electrical connections					
K1	Description			ABN inv. poss.	Order key	
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)			•	K1	

Example Order No.=	WDG 58T	500	ABN	R30	K1		WDG 58T						Your encoder
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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58V 시리즈

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 58V

www.wachendorff-automation.com/wdg58v

Industrie ROBUST

Encoder WDG 58V - Especially for food and beverage industry, acid- and alkaline resistance



Especially for food and beverage industry

Acid- and alkaline resistance



Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	clamping flange
Flange material	stainless steel, V4A
Housing cap	stainless steel, V4A
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel, V4A
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	100 N
Max. Permissible shaft loading axial	100 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	3600 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 3600 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

1. EHEDG (European Hygienic Engineering & Design Group)

- 유럽 식품 위생 인증 제품
- 제약 및 식품 공정의 정밀 기계사용

2. Ecolab의 세척 및 소독 저항에 대한 인증

- Acid & alkaline 저항성

3. IEC 60068-2-11 규격의 염수 분무 시험 통과

4. 옵티컬(Optical) 방식으로 고정밀 고분해능 지원

- MAX 25000PPR
- 고정밀 기계에 적합

5. PTFE(테프론) Sealing으로 완전 방수

- IP68 및 IP69K 보호 등급

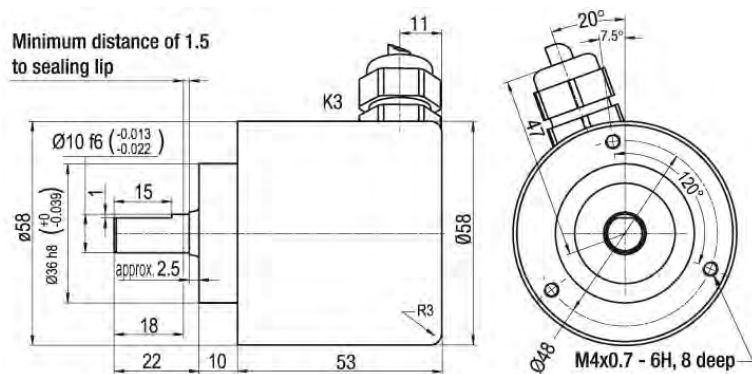
6. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdg58v

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 600 g
Connections	cable outlet (TPE)
Protection rating (EN 60529)	IP67 all around and IP69K. Resistance to salt mist (IEC 60068-2-11) after 672 hours.
Operating temperature	-20 °C up to +80 °C 1 Vpp: -10 °C up to +70 °C
Storage temperature	-20 °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	

Cable connection K3, L3 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	K3, L3	K3, L3	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.	-	-	BU	BU	PK
N inv.	-	-	VT	VT	-
Shield	flex	flex	flex	flex	flex

Options

Cable length

The encoder WDG 58V 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
WDG 58V	WDG 58V					WDG 58V
	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 Vpp 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					
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	
	Options					
	Description			Order key		
	Without option			Empty		
	Cable length			XXX = Decimeter		
Example Order No. =	WDG 58V	5000	ABN	G24	K2	Your encoder



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WDG 58A 시리즈

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... systems and encoders

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Encoder WDG I 58A

www.wachendorff-automation.com/wdgi58a

Industrie ROBUST

Encoder WDG1 58A



1. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65
2. 산업 장비의 표준 사이즈 - 58mm
- 범용적으로 사용 할 수 있음
3. 옵티컬(Optical)방식으로 고정밀, 고분해능
- MAX 25000PPR
- 고정밀 로봇 및 공작기계 사용 적합
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58a

Resolution	
Max. pulses per revolution PPR	up to 25000 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	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
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos

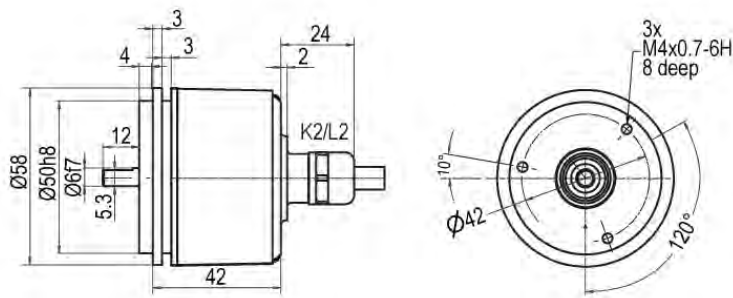
Pulse frequency	TTL ≤ 5000 ppr: max. 200 kHz HTL ≤ 5000 ppr: max. 200 kHz TTL more than 1200 ppr: max. 2 MHz HTL more than 1200 ppr: max. 600 kHz 1 Vpp sin/cos: max. 100 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel @ 1 Vpp sin/cos: min. 120 Ohm
Circuit protection	circuit type F24, 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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 230 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °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: -30 °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

ABN inv. poss.

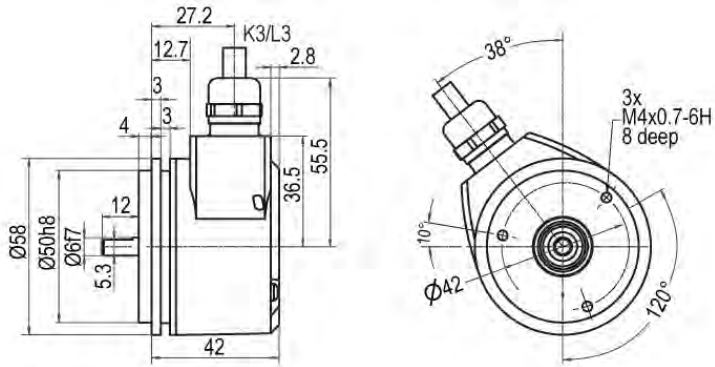
L2 axial, shield connected to encoder housing

•

K2 axial, shield not connected

•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

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

Description
ABN inv. poss.
K3 radial, shield not connected

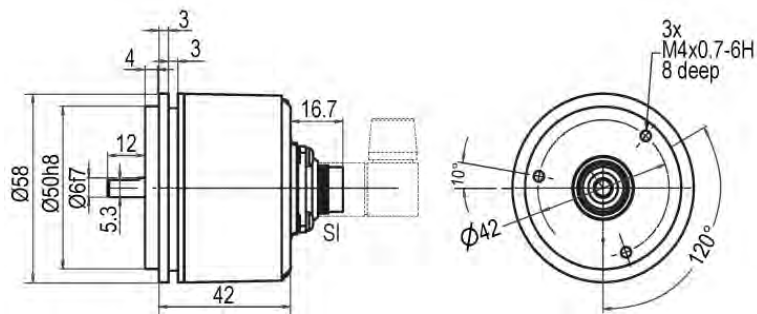
•

L3 radial, shield connected to encoder housing

•

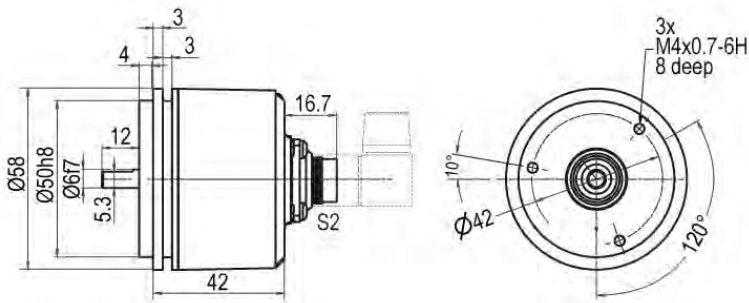
Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK,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

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	•

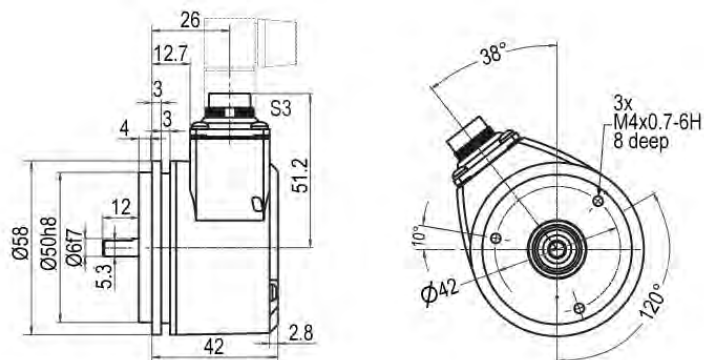
Assignments											
	SI5	SI6	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	 F05, H05, F24, H24, H30	 G05, G24	 F05, H05, F24, H24, H30	 F05, H05, F24, H24, H30	 P05, R05, P24, R24, R30, 245, 645	 SIN	 G05, G24	 F05, H05, F24, 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	-	-	-	-	-	-	-	-	-	-	-

WDGI 58A: Connector (M16x0.75) S2, axial, 7-pin**Description****ABN inv. poss.****S2** axial, 7-pin, Connector connected to encoder housing

-

Assignments		
	S2	S2
	7-pin	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	-	-

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



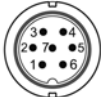
Description

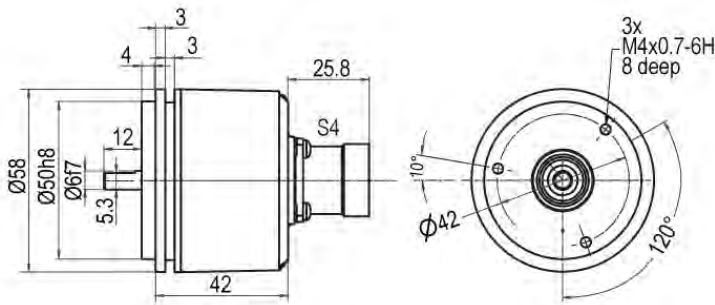
ABN inv. poss.

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

-

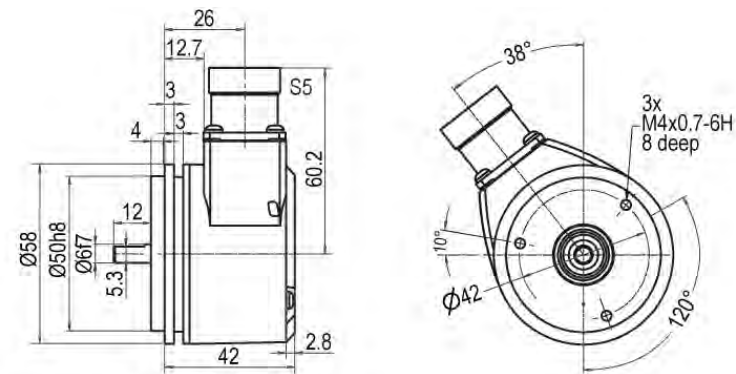
Assignments

	S3	S3
	7-pin	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	-	-

WDGI 58A: Connector (M23) S4, axial, 12-pin**Description****ABN inv. poss.****S4** axial, 12-pin, Connector connected to encoder housing

•

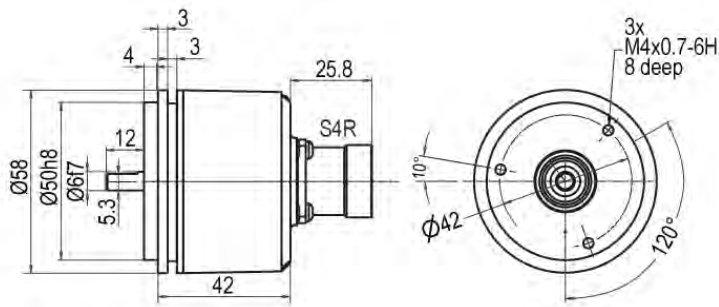
Assignments					
	S4	S4	S4	S4	S4
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-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

WDGI 58A: Connector (M23) S5, radial, 12-pin**Description****ABN inv. poss.****S5** radial, 12-pin, Connector connected to encoder housing

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

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



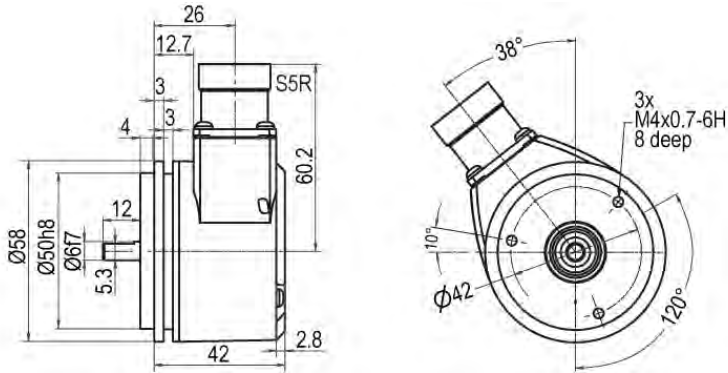
Description

ABN inv. poss.

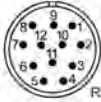
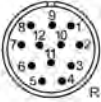
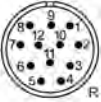
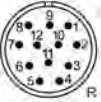
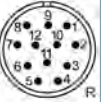
S4R axial, 12-pin, Connector connected to encoder housing

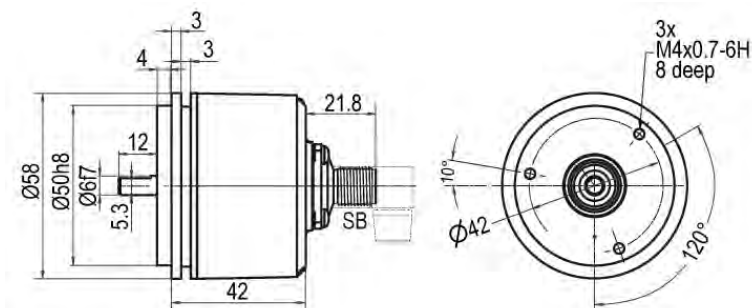
•

Assignments					
	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 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	-	-	-	-	-

WDGI 58A: Connector (M23) S5R, radial, 12-pin (clockwise)**Description****ABN inv. poss.****S5R** radial, 12-pin, Connector connected to encoder housing

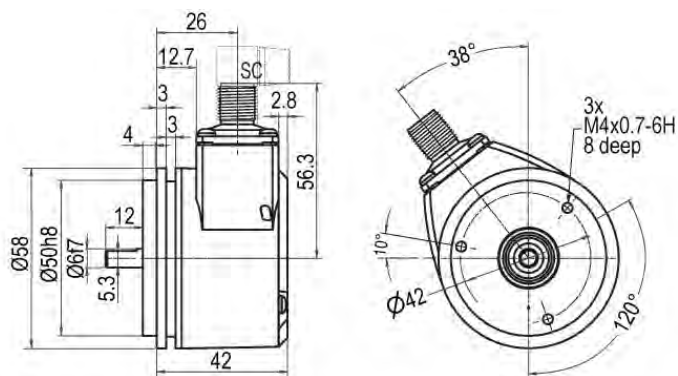
•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

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	SB5	SB8	SB8	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

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	SC5	SC8	SC8	SC8	SC12	SC12	SC12	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-friction bearings

Order key

The encoder WDGI 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.

AAC

Low temperature

Order key

The encoder WDGI 58A 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 $+85^{\circ}\text{C}$ [-40°F up to $+185^{\circ}\text{F}$] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 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.

ACR

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.

Cable length

Order key

The encoder WDGI 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type	Your encoder			
WDGI 58A	WDGI 58A	WDGI 58A			
	Shaft				
06	06				
	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 Vpp 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														
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		5000		ABN		G24		K2				
WDGI 58A														
												Your encoder		



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

CREKEN

주식 회사 크레켄

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58B 시리즈

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 58B

www.wachendorff-automation.com/wdgi58b

IndustrieROBUST

Encoder WDG1 58B



1. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65 **IP67선택 가능
2. 산업 장비의 표준 사이즈 - 58mm
- 범용 적으로 사용 할 수 있음
3. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 25000PPR
- 고정밀 기계 사용 적합
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58b

Resolution

Max. pulses per revolution up to 25000 PPR
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 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N

Advice	Ø 7 mm / Ø 8 mm / Ø 12 mm on request
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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	8000 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 8000 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

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	10 VDC up to 30 VDC, HTL only

Accuracy

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

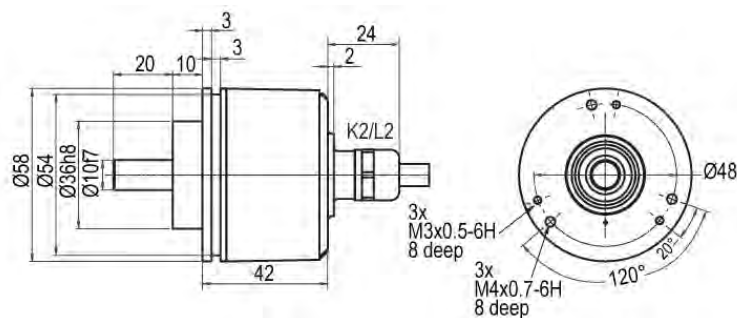
General Data

Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °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: -30 °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 58B: Cable connection K2, L2, axial, with 2 m cable

Description
ABN inv. poss.
K2 axial, shield not connected

•

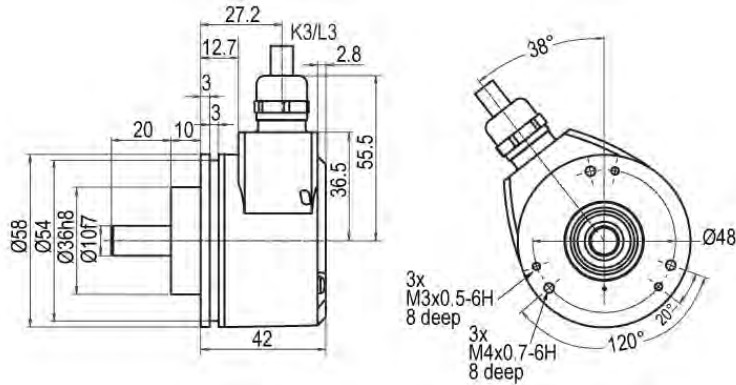
L2 axial, shield connected to encoder housing

•

Assignments

	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

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

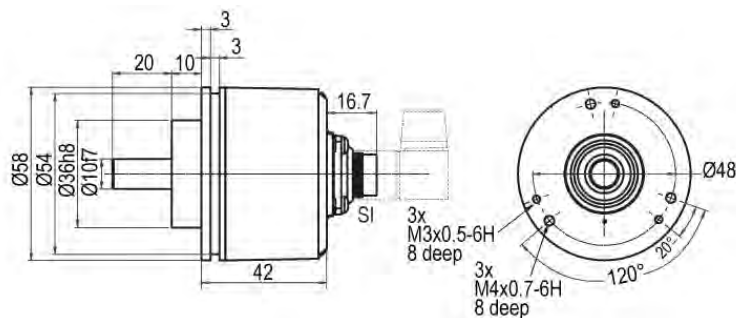


Description

ABN inv. poss.

K3	radial, shield not connected	•
L3	radial, shield connected to encoder housing	•

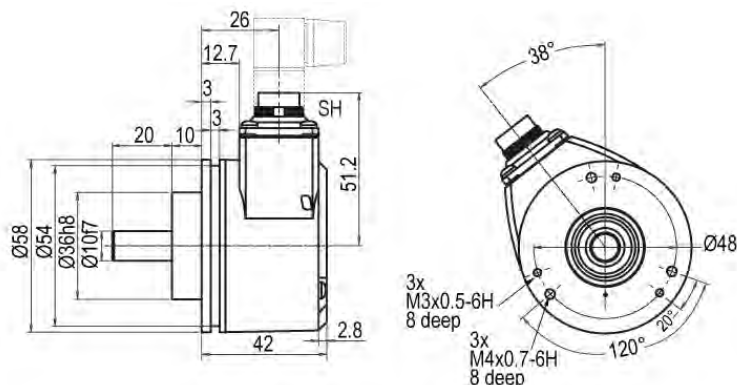
Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK,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

WDGI 58B: 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	•

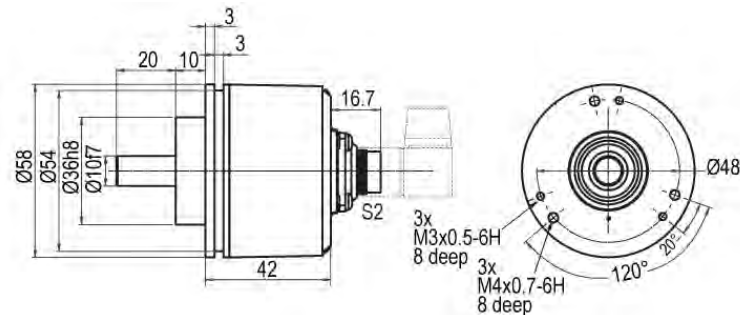
Assignments

	SI5	SI6	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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, R30, 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	-	-	-	-	-	-	-	-	-	-	-

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


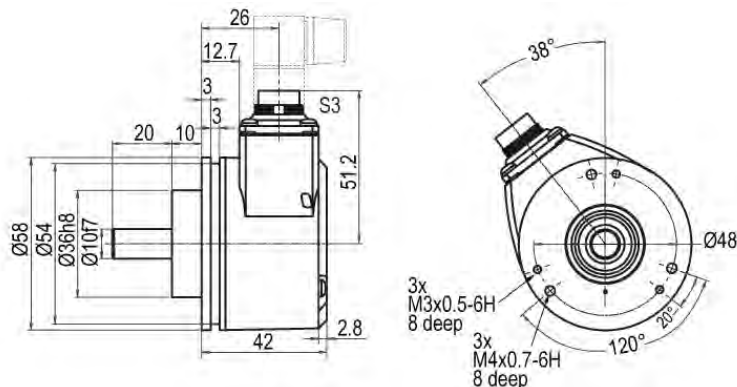
Description	ABN inv. poss.
SH5 radial, 5-pin, Connector connected to encoder housing	-
SH6 radial, 6-pin, Connector connected to encoder housing	-
SH8 radial, 8-pin, Connector connected to encoder housing	•
SH12 radial, 12-pin, Connector connected to encoder housing	•

Assignments											
	SH5	SH6	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

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

Description	ABN inv. poss.
S2 axial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S2	S2
	7-pin	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	-	-

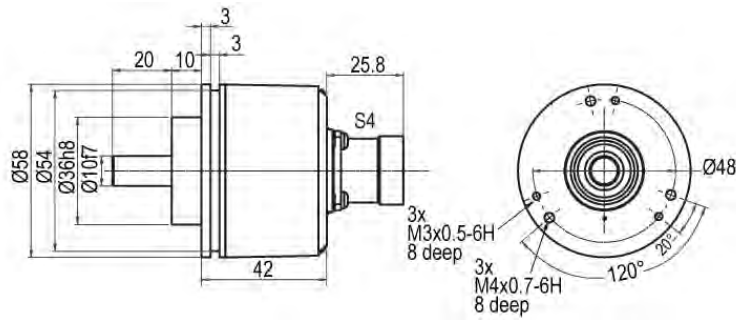
WDGI 58B: Connector (M16x0.75) S3, radial, 7-pin**Description****ABN inv. poss.****S3** radial, 7-pin, Connector connected to encoder housing

-

Assignments

	S3	S3
	7-pin	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	-	-

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



Description

ABN inv. poss.

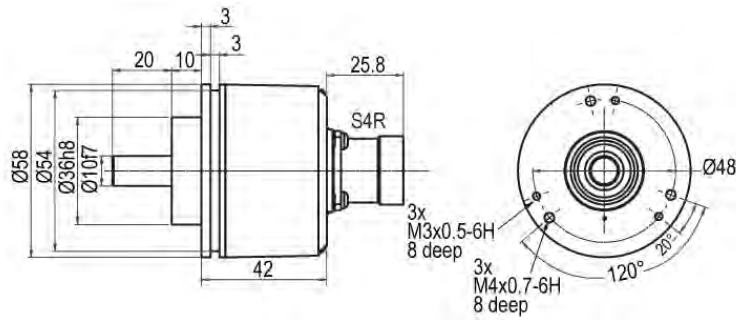
S4 axial, 12-pin, Connector connected to encoder housing

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

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



Description

ABN inv. poss.

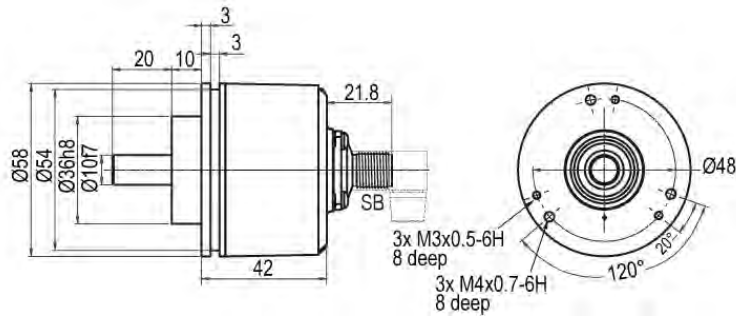
S4R axial, 12-pin, Connector connected to encoder housing

•

Assignments					
	S4R	S4R	S4R	S4R	S4R
	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	-	-	-	-	-

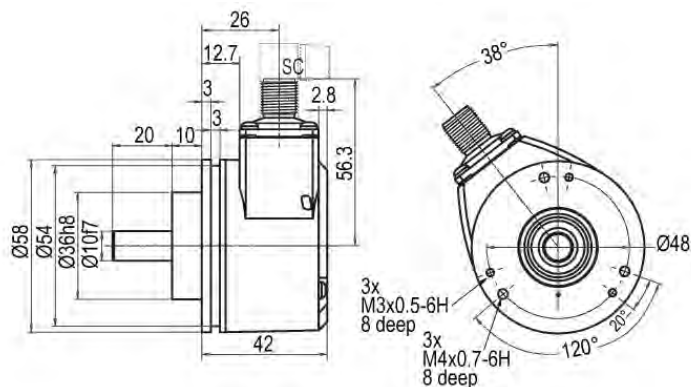
	S5R	S5R	S5R	S5R	S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1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

WDGI 58B: 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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 58B: 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	SC8	SC12	SC12	SC12	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-friction bearings

The encoder WDG1 58B is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.5 Ncm and the protection class at the shaft input to IP50.

Order key

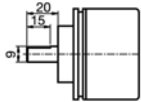
AAC

Shaft with flat

The encoder WDG1 58B can be supplied with a shaft with flat.

Order key

AAF



IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

The encoder WDG1 58B can be supplied in a full IP67 version.

Order key

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 100 N

Permitted Shaft-Loading, radial: 110 N

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature

Low temperature

The encoder WDG1 58B 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 $+85^{\circ}\text{C}$ [-40°F up to $+185^{\circ}\text{F}$] (measured at the flange).

Order key

ACA

Pressure equalising membrane

The WDG1 58B 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 58B 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 58B	WDGI 58B					WDGI 58B
	Shaft					
10	10					
	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 Vpp 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									
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		
	Shaft with flat						AAF		
	IP67						AAO		
	Low temperature						ACA		
	Pressure equalising membrane						ACR		
	Without option						Empty		
	Cable length						XXX = Decimeter		
Example Order No.= WDGI 58B 10 5000 ABN G24 K2 WDGI 58B Your encoder									



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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www.creken.co.kr



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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58C 시리즈

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 I 58C

www.wachendorff-automation.com/wdgi58c

Industrie ROBUST

Encoder WDG1 58C



1. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65
2. 산업 장비의 표준 사이즈 - 58mm
- 범용적으로 사용 할 수 있음
3. 옵티컬(Optical)방식으로 고정밀, 고해능
- MAX 25000PPR
- 고정밀 로봇 및 공작기계 사용 적합
4. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58c

Resolution	
Max. pulses per revolution PPR	up to 25000 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. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	120 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	8000 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 8000 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
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos

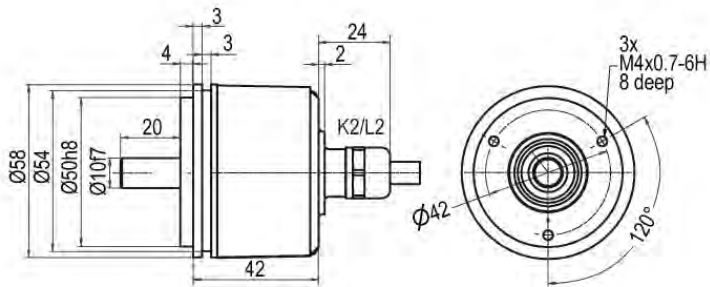
Pulse frequency	TTL ≤ 5000 ppr: max. 200 kHz HTL ≤ 5000 ppr: max. 200 kHz TTL more than 1200 ppr: max. 2 MHz HTL more than 1200 ppr: max. 600 kHz 1 Vpp sin/cos: max. 100 kHz
Channels	AB ABN and inverted signals
Load	max. 40 mA / channel @ 1 Vpp sin/cos: min. 120 Ohm
Circuit protection	circuit type F24, 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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 230 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °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: -30 °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 58C: Cable connection K2, L2, axial, with 2 m cable



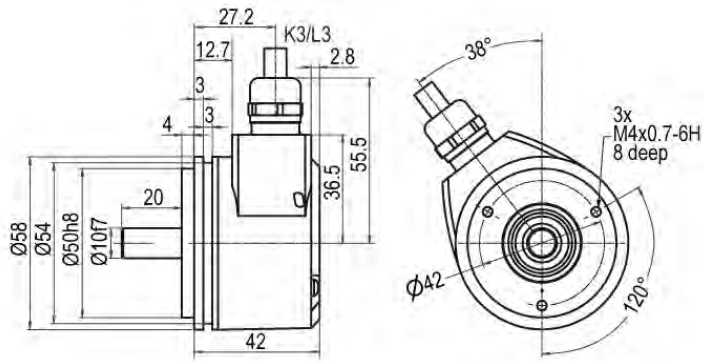
Description

ABN inv. poss.

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

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

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



Description

ABN inv. poss.

K3 radial, shield not connected

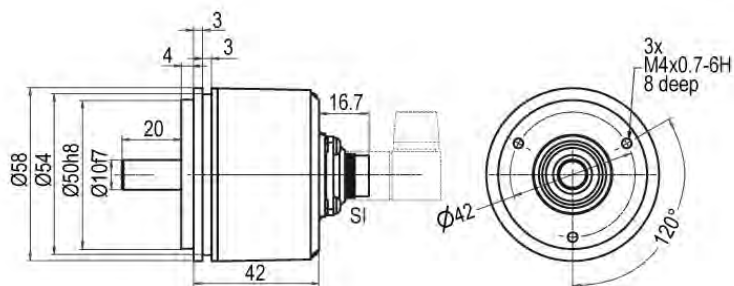
•

L3 radial, shield connected to encoder housing

•

Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	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

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



Description

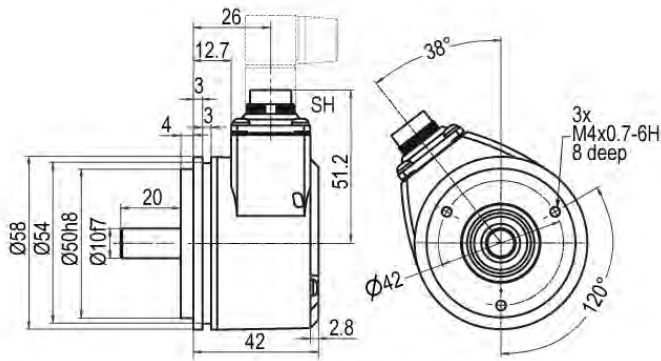
ABN inv. poss.

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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

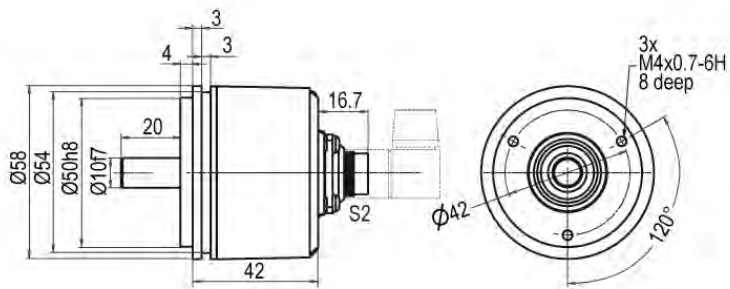
WDGI 58C: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



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	SH6 6-pin	SH8 8-pin	SH8 8-pin	SH8 8-pin	SH12 12-pin	SH12 12-pin	SH12 12-pin	SH12 12-pin	SH12 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	-	-	-	-	-	-	-	-	-	-	-

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

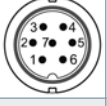


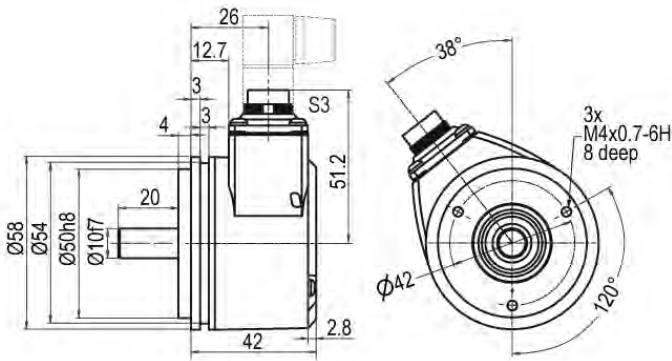
Description

ABN inv. poss.

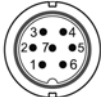
S2 axial, 7-pin, Connector connected to encoder housing

-

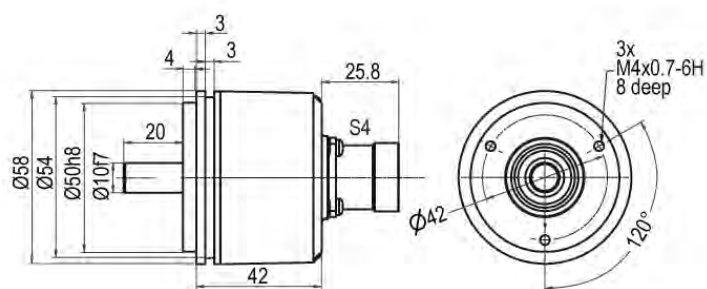
Assignments		
	S2	S2
	7-pin	7-pin
		
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

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

Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S3	S3
	7-pin	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	-	-

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



Description

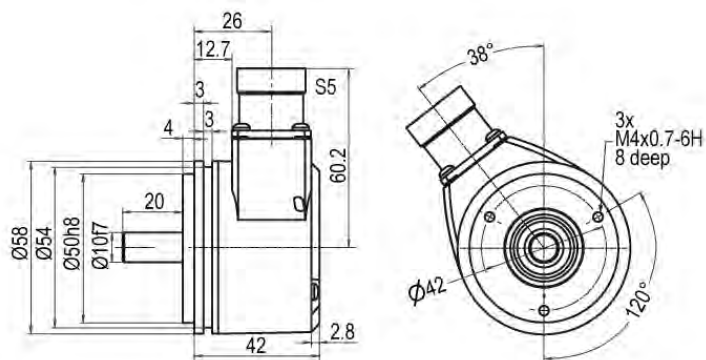
ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

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



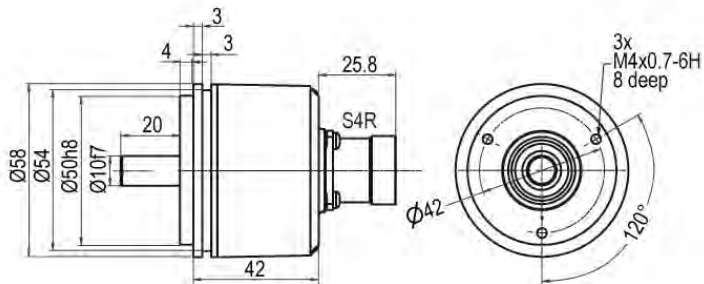
Description

ABN inv. poss.

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

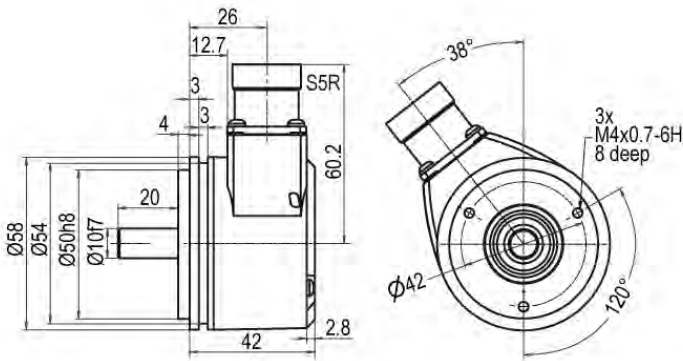
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Assignments					
	S5	S5	S5	S5	S5
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve 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	-	-	-	-	-

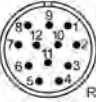
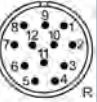
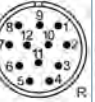
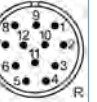
WDGI 58C: Connector (M23) S4R, axial, 12-pin (clockwise)**Description****ABN inv. poss.****S4R** axial, 12-pin, Connector connected to encoder housing

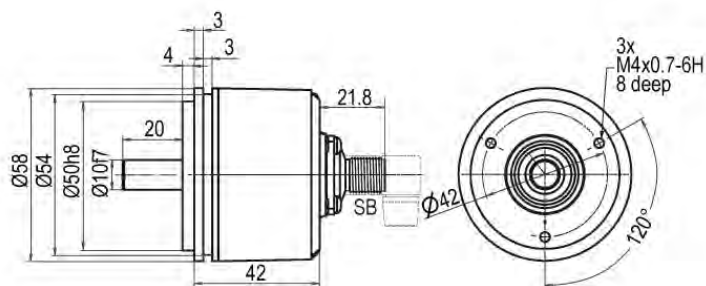
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Assignments					
	S4R	S4R	S4R	S4R	S4R
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light 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	-	-	-	-	-

WDGI 58C: Connector (M23) S5R, radial, 12-pin (clockwise)**Description****ABN inv. poss.****S5R** radial, 12-pin, Connector connected to encoder housing

•

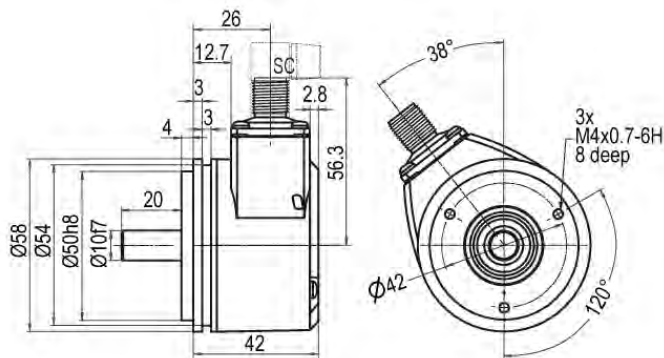
Assignments					
	S5R	S5R	S5R	S5R	S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6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

WDGI 58C: 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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 58C: 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	SC8	SC12	SC12	SC12	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

The encoder WDGI 58C 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

Order key

ACA

Pressure equalising membrane

The WDGI 58C 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 WDGI 58C 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 58C	WDGI 58C					WDGI 58C
	Shaft					
10	10					
	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 Vpp 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			
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 58C	10	5000	ABN	G24	K2		WDGI 58C								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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E-Mail: sales@creken.co.kr
www.creken.co.kr



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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58D 시리즈

Wachendorff Automation

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Encoder WDG I 58D

www.wachendorff-automation.com/wdgi58d

Industrie ROBUST

Encoder WDG1 58D



1. IP67의 보호 기능 - 방수/방진 로터리 엔코더
- Shaft sealing - IP65
2. 산업 장비의 표준 사이즈 - 58mm
- 범용 적으로 사용 할 수 있음.
3. 최강의 축 강도의 견고한 엔코더
- Radial 500N, Axial 500N
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- 고정밀 로봇 및 공작기계 사용 적합
5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58d

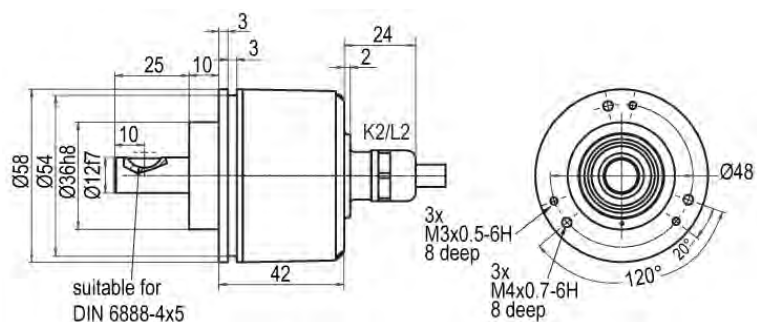
Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 58 mm
Cam mounting	pitch 69 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient 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	2 precision ball bearings
Nomiale 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
Nomiale 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	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

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
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 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

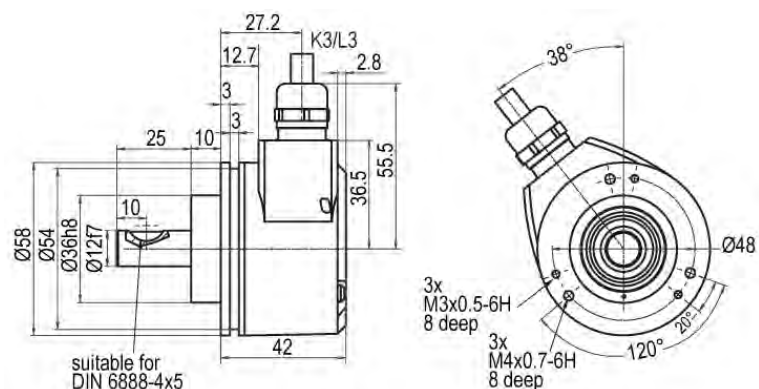
•

L2 axial, shield connected to encoder housing

•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

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

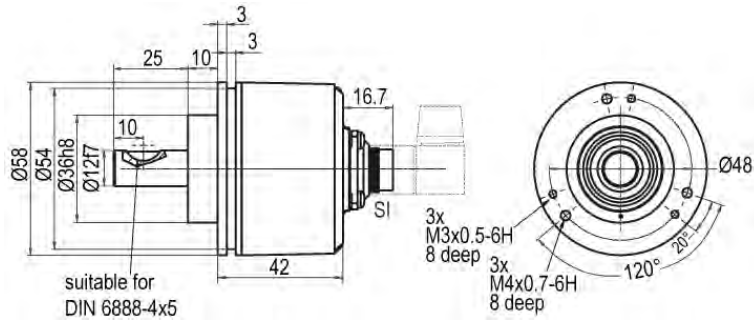


Description

ABN inv. poss.

K3	radial, shield not connected	•
L3	radial, shield connected to encoder housing	•

Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	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

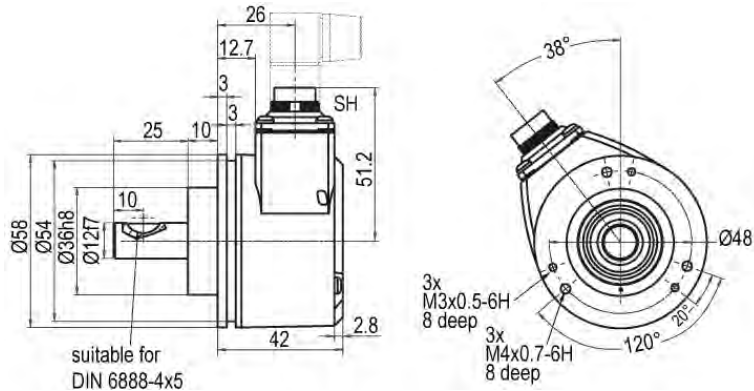
WDGI 58D: Connector (M16x0.75) SI, axial, 5-, 6-, 8-, 12-pin

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

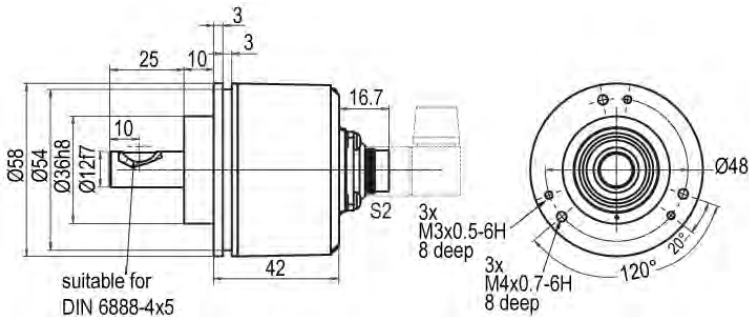
	SI5	SI6	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	 F05, H05, F24, H24, H30	 G05, G24	 F05, H05, F24, H24, H30	 F05, H05, F24, H24, H30	 P05, R05, P24, R24, R30, 245, 645	 SIN	 G05, G24	 F05, H05, F24, H24, H30	 I05, I24, 524	 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	-	-	-	-	-	-	-	-	-	-	-

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



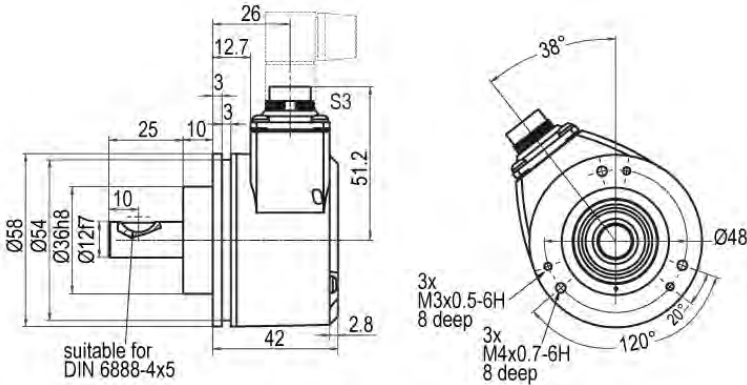
Description	ABN inv. poss.
SH5 radial, 5-pin, Connector connected to encoder housing	-
SH6 radial, 6-pin, Connector connected to encoder housing	-
SH8 radial, 8-pin, Connector connected to encoder housing	•
SH12 radial, 12-pin, Connector connected to encoder housing	•

Assignments											
	SH5	SH6	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 58D: Connector (M16x0.75) S2, axial, 7-pin**Description****ABN inv. poss.****S2** axial, 7-pin, Connector connected to encoder housing

-

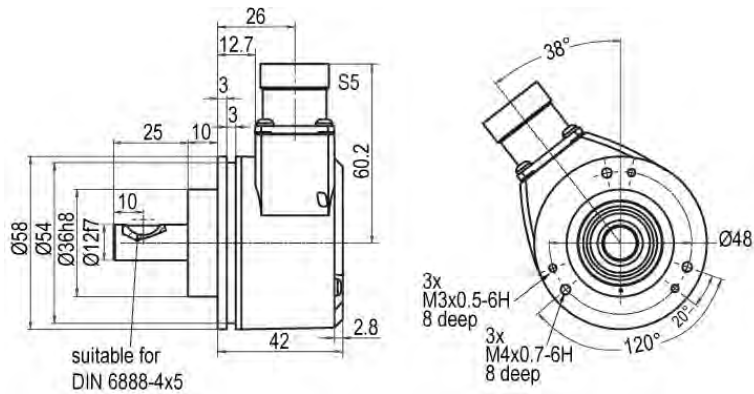
Assignments		
	S2	S2
	7-pin	7-pin
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

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	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	-	-

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



Description

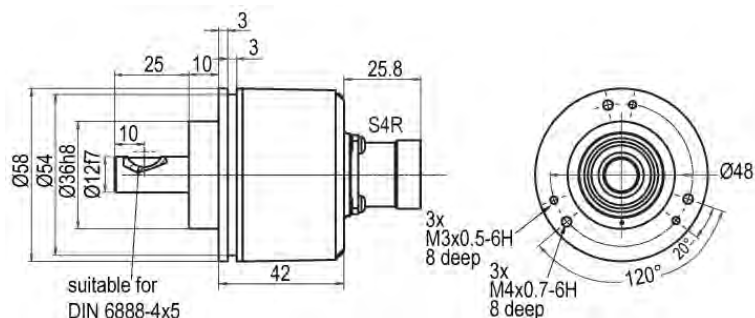
ABN inv. poss.

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

•

Assignments					
	S5 12-pin	S5 12-pin	S5 12-pin	S5 12-pin	S5 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	-	-	-	-	-

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



Description

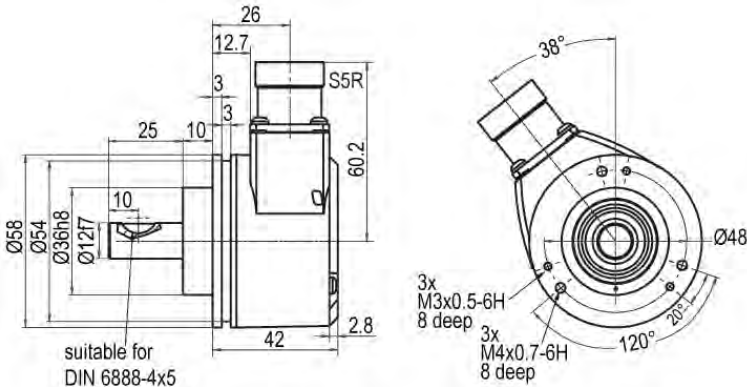
ABN inv. poss.

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

•

Assignments					
	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 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	-	-	-	-	-

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



Description

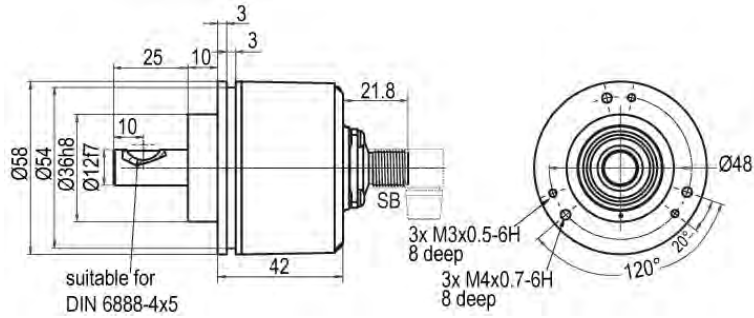
ABN inv. poss.

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

•

Assignments					
	S5R 12-pin	S5R 12-pin	S5R 12-pin	S5R 12-pin	S5R 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	-	-	-	-	-

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



Description

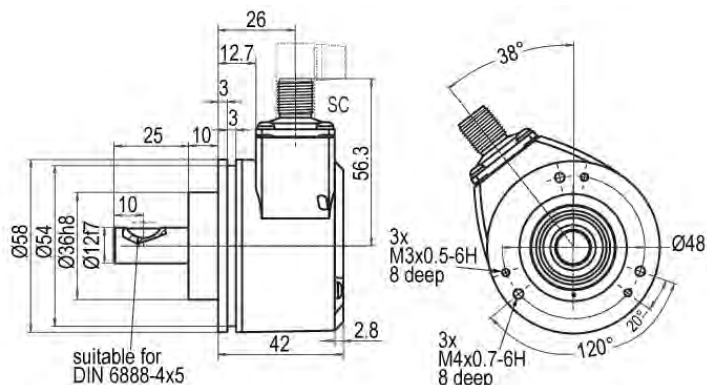
ABN inv. poss.

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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

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	SC8	SC12	SC12	SC12	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

The encoder WDGI 58D with the output circuit types F24, G24, H24, I24, P24, R24, F05, G05, I05, H05, P05, R05, 245, 524, 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 WDGI 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 WDGI 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:					
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 Vpp 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			
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	5000	ABN	G24	K2		WDGI 58D								Your encoder
---------------------	----------	----	------	-----	-----	----	--	----------	--	--	--	--	--	--	--	--------------



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

CREKEN

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E-Mail: sales@creken.co.kr
www.creken.co.kr



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E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58K 시리즈

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 I 58K

www.wachendorff-automation.com/wdgi58k

Industrie ROBUST

Encoder WDG1 58K



1. IP67의 보호 기능 - 방수/방진 로터리엔코더
- Shaft sealing - IP65

2. 산업 장비의 표준 사이즈 - 58mm
- 범용 적으로 사용 할 수 있음.

3. 옵티컬(Optical)방식으로 고정밀, 고분해능
- MAX 2500PPR
- 고정밀 로봇 및 공작기계 사용 적합

5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58k

Resolution

Max. pulses per revolution up to 25000 PPR
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 6 mm
Shaft length	L: 18 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

Bearings

Bearings type	2 precision ball bearings
Nominal service life	1 x 10 ¹⁰ revs. at 100 % rated shaft load 1 x 10 ¹¹ revs. at 40 % rated shaft load 1 x 10 ¹² 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)	1 x 10 ¹² revs. at 20 % rated shaft load and 8000 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

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data

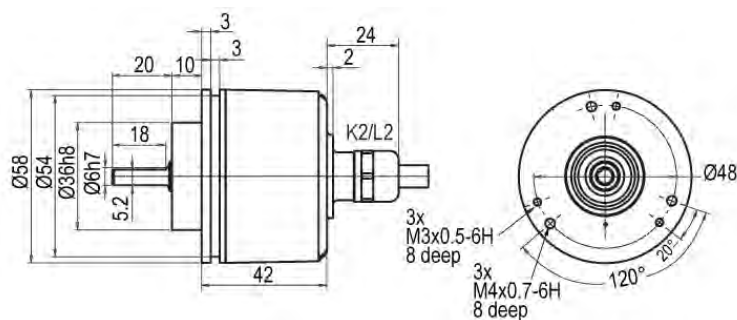
Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C) 1 Vpp: -10 °C up to +70 °C
Storage temperature	Connector: -30 °C up to +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 58K: Cable connection K2, L2, axial, with 2 m cable



Description

ABN inv. poss.

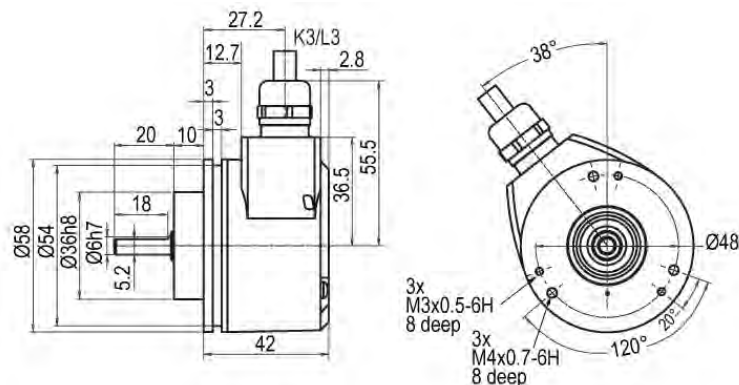
K2 axial, shield not connected

•

L2 axial, shield connected to encoder housing

•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

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

Description
ABN inv. poss.
K3 radial, shield not connected

•

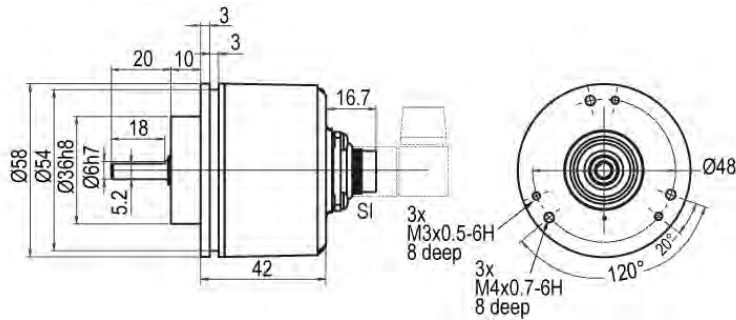
L3 radial, shield connected to encoder housing

•

Assignments

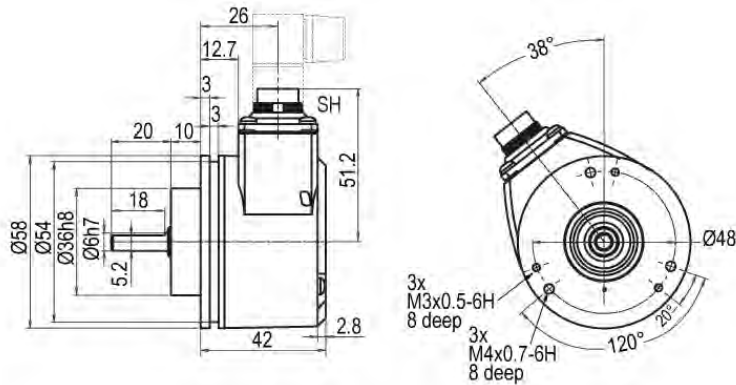
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK, (BU at ACA)	BK,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

WDGI 58K: 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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

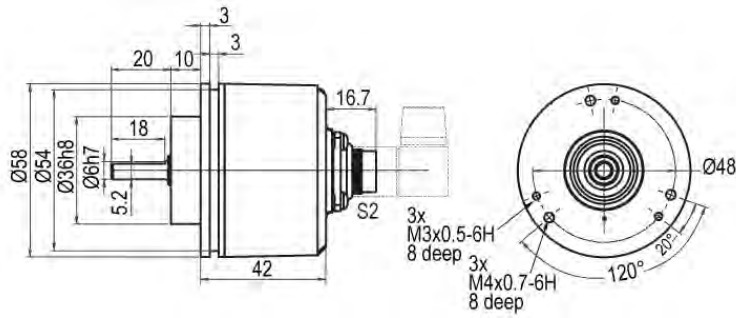
WDGI 58K: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

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



Description

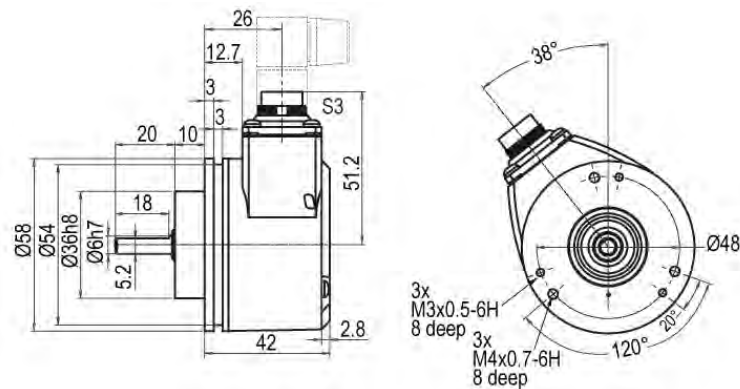
ABN inv. poss.

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

-

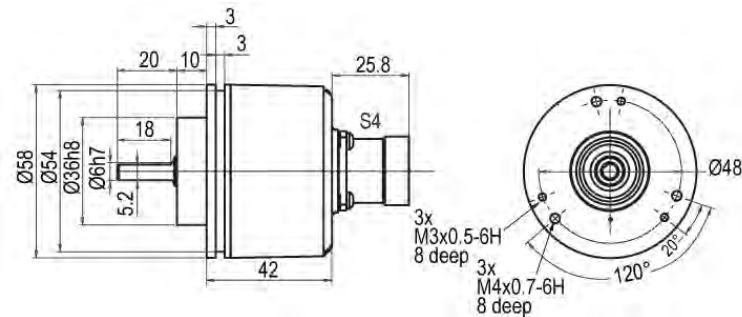
Assignments		
	S2	S2
	7-pin	7-pin
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

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



Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

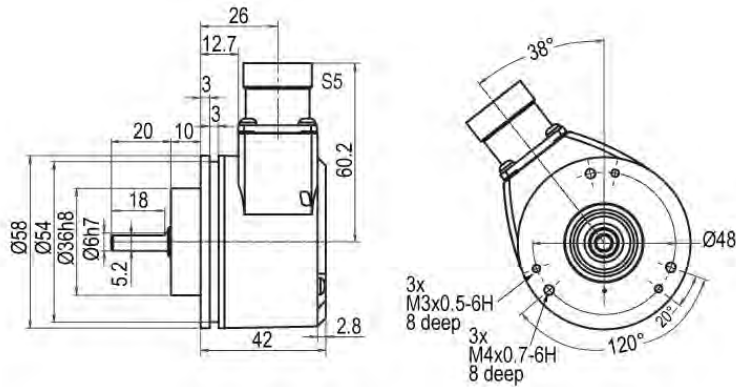
Assignments		
	S3 7-pin	S3 7-pin
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

WDGI 58K: Connector (M23) S4, axial, 12-pin**Description****ABN inv. poss.****S4** axial, 12-pin, Connector connected to encoder housing

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

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

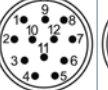
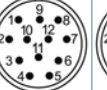


Description

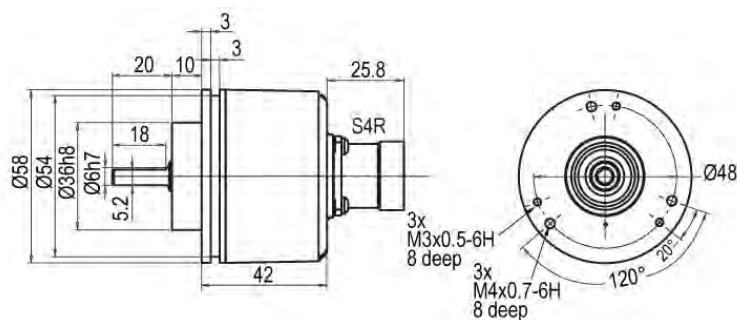
ABN inv. poss.

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

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



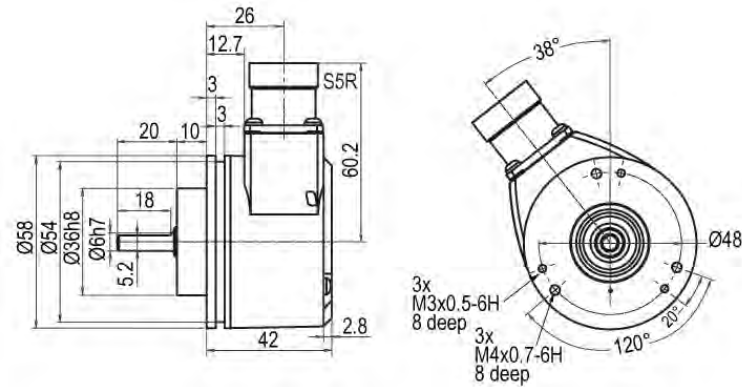
Description

ABN inv. poss.

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

Assignments					
	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 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	-	-	-	-	-

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



Description

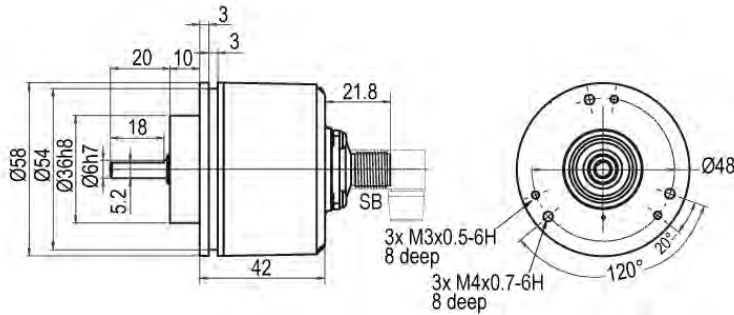
ABN inv. poss.

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

•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

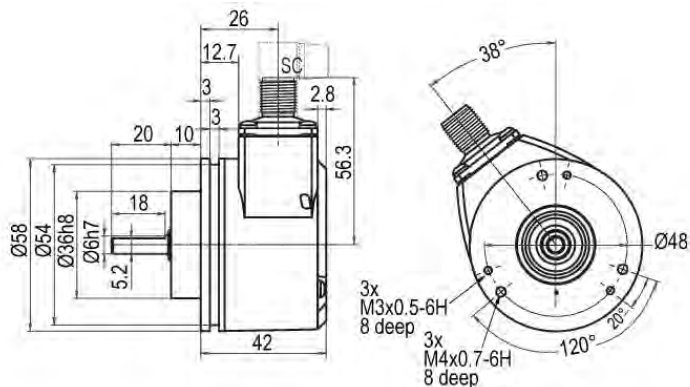
WDGI 58K: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin



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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 58K: 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	SC8	SC12	SC12	SC12	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

IP67 all around (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 58K can be supplied in a full IP67 version.

AAO

Max. RPM: 8000 rpm

Permitted Shaft-Loading, axial: 50 N

Permitted Shaft-Loading, radial: 80 N

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature

Low temperature

Order key

The encoder WDGI 58K 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 58K 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.

ACR

Cable length

Order key

The encoder WDGI 58K 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
WDGI 58K	WDGI 58K					WDGI 58K
	Shaft					
06	06					
	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 Vpp 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			
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	
	IP67	AAO	
	Low temperature	ACA	
	Pressure equalising membrane	ACR	
	Without option	Empty	
	Cable length	XXX = Decimeter	

Example Order No. =	WDGI 58K	06	5000	ABN	G24	K2		WDGI 58K								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

CREKEN

주식회사 크레켄

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Phone: 031) 608-3200 Fax: 031) 776-2320
E-Mail: sales@creken.co.kr
www.creken.co.kr



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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø58mm

WDG 58N 시리즈

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 I 58N

www.wachendorff-automation.com/wdgi58n

Industrie ROBUST

Encoder WDG1 58N



1. IP67의 보호 기능 - 방수/방진 로터리엔코더
- Shaft sealing - IP65

2. 다양한 축 (Shaft) 사이즈 지원
- 6mm, 8mm, 3/8inch, 10mm

3. 산업 장비의 표준 사이즈 - 58mm
- 범용 적으로 사용 할 수 있음.

4. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 25000PPR
- 고정밀 로봇 및 공작기계 사용 적합

5. CE 및 UL 인증 제품

www.wachendorff-automation.com/wdgi58n

Resolution

Max. pulses per revolution up to 25000 PPR
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 6 mm

Shaft length L: 20 mm

Max. Permissible shaft loading radial 220 N

Max. Permissible shaft loading axial 120 N

Shaft Ø 8 mm

Shaft length L: 20 mm

Shaft Ø 9.525 mm, Ø 3/8"

Shaft length L: 22.3 mm

Max. Permissible shaft loading radial 220 N

Max. Permissible shaft loading axial 120 N

Shaft Ø 10 mm

Shaft length L: 20 mm

Max. Permissible shaft loading radial 220 N

Max. Permissible shaft loading axial 120 N

Bearings

Bearings type 2 precision ball bearings

Nominale service life
1 x 10⁹ revs. at 100 % rated shaft load
1 x 10¹⁰ revs. at 40 % rated shaft load
1 x 10¹¹ 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
Nominale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 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
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	10 VDC up to 30 VDC, HTL only

Accuracy

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

General Data

Weight	approx. 250 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °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: -30 °C up to +85 °C, cable: -30 °C up to +80 °C, option ACA: -40 °C up to +85 °C

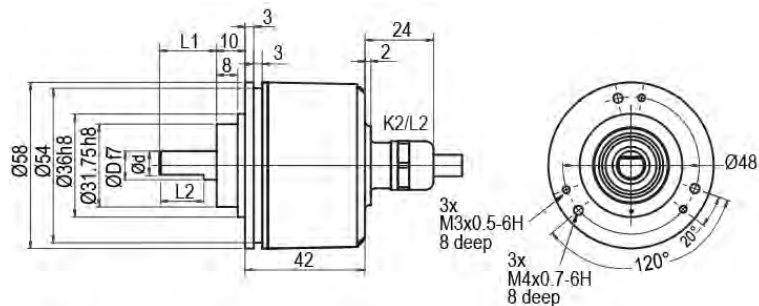
More Information

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

Options

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

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



D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

Description

ABN inv. poss.

K2 axial, shield not connected

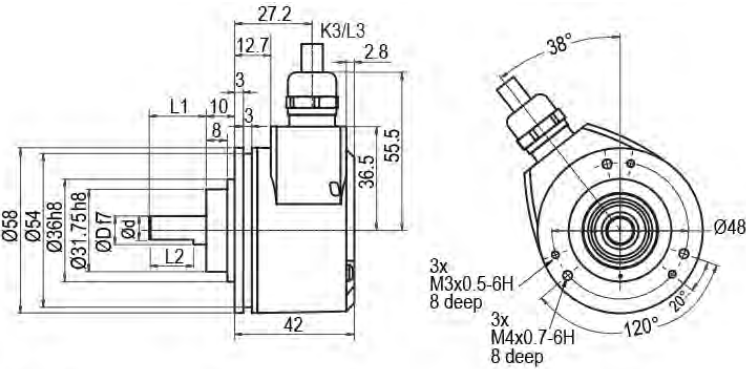
•

L2 axial, shield connected to encoder housing

•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

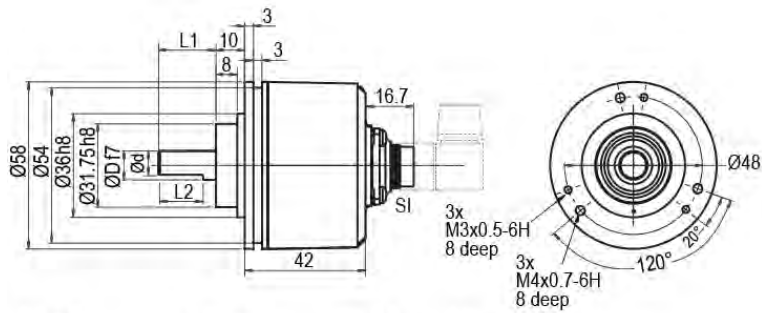
WDGI 58N: Cable connection K3, L3, radial, with 2 m cable



D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

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

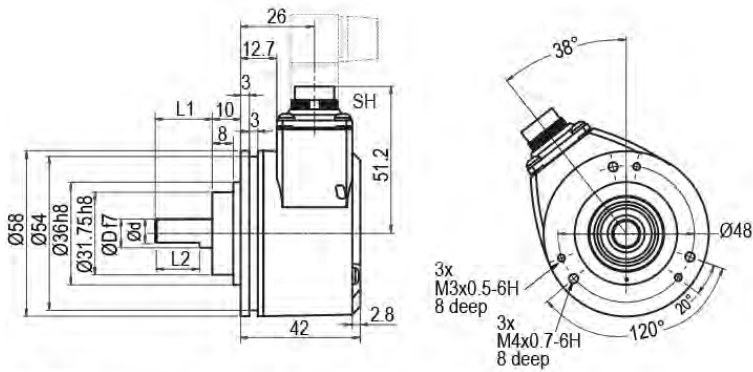
Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK,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

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


D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

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


D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

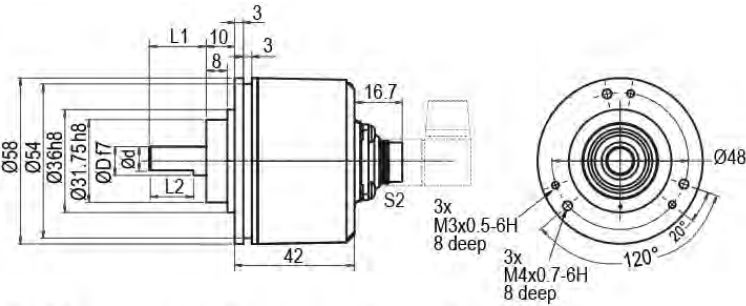
Description
ABN inv. poss.

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

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



D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

Description

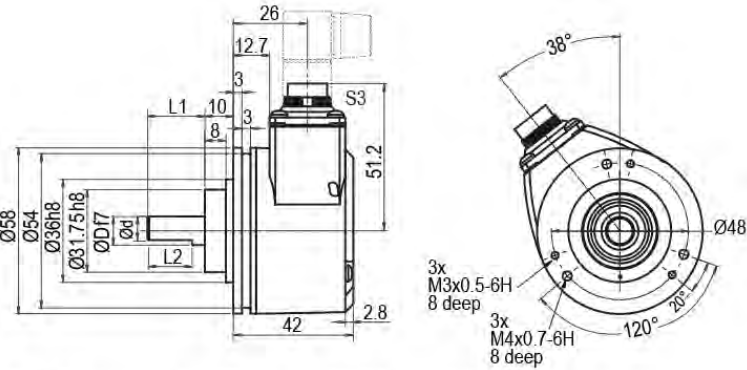
ABN inv. poss.

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

-

Assignments		
	S2 7-pin	S2 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	-	-

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

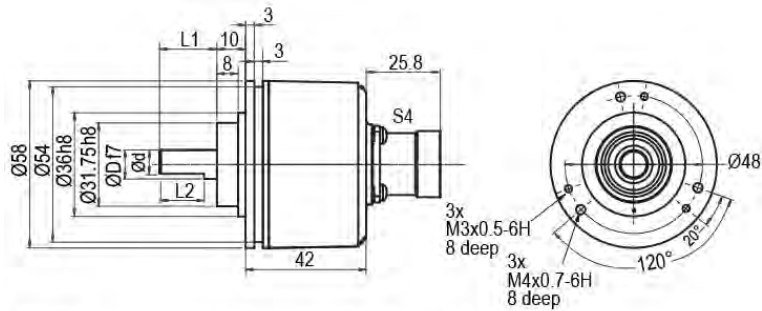


D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S3 7-pin	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	-	-

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



D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

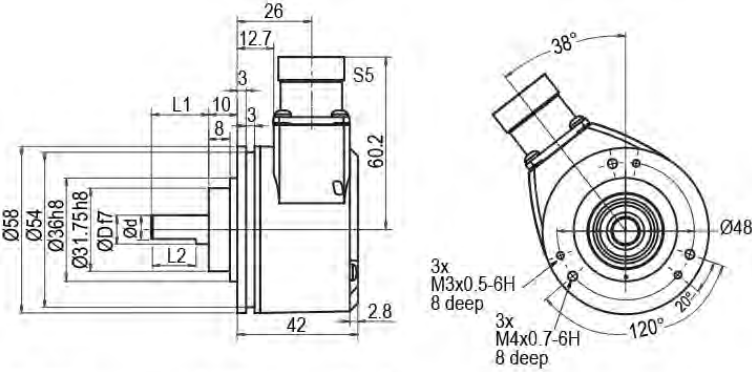
Description

ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

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

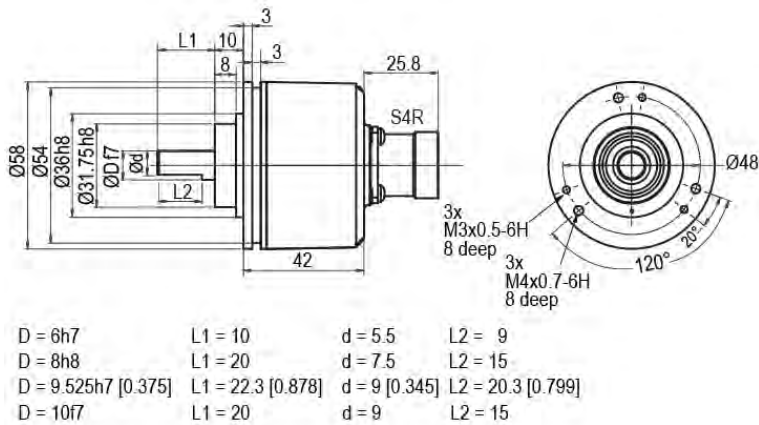
D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

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



Description

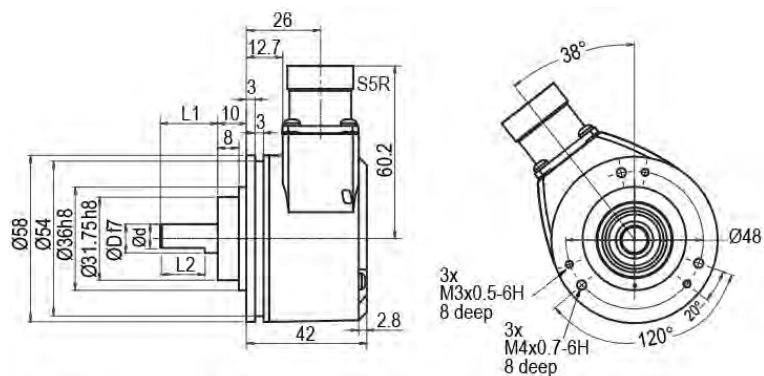
ABN inv. poss.

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

•

Assignments					
	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 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	-	-	-	-	-

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



D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

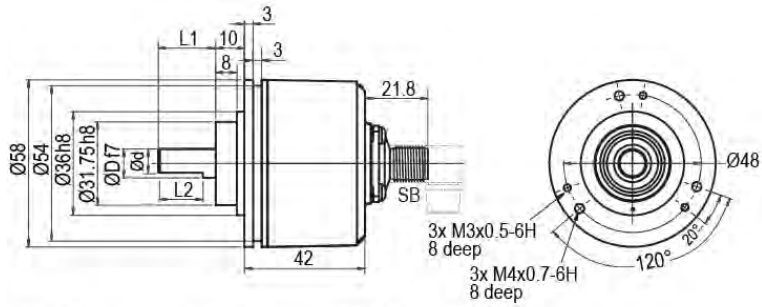
Description

ABN inv. poss.

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

•

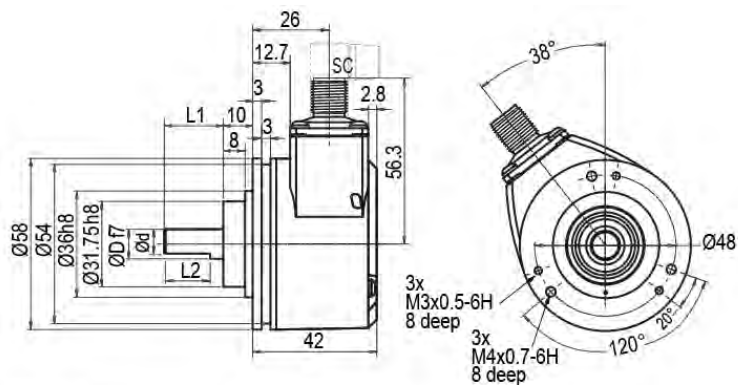
Assignments					
	S5R	S5R	S5R	S5R	S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.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

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


D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 58N: Sensor-connector (M12x1) SC, radial, 4-, 5-, 8-, 12-pin


D = 6h7	L1 = 10	d = 5.5	L2 = 9
D = 8h8	L1 = 20	d = 7.5	L2 = 15
D = 9.525h7 [0.375]	L1 = 22.3 [0.878]	d = 9 [0.345]	L2 = 20.3 [0.799]
D = 10f7	L1 = 20	d = 9	L2 = 15

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	SC8	SC12	SC12	SC12	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-friction bearings

Order key

The encoder WDGI 58N is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.5 Ncm and the protection class at the shaft input to IP50.

AAC

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 58N can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 100 N

Permitted Shaft-Loading, radial: 110 N

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature

Low temperature

Order key

The encoder WDGI 58N 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 58N 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.

ACR

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.

Cable length

Order key

The encoder WDGI 58N 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type				Your encoder
WDGI 58N	WDGI 58N				WDGI 58N
	Shaft				
10	06; 08; 4Z= Ø 9.525 mm,Ø 3/8"; 10				
	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 Vpp 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												
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				
	IP67							AAO				
	Low temperature							ACA				
	Pressure equalising membrane							ACR				
	Without option							Empty				
	Cable length							XXX = Decimeter				
Example Order No.= WDG1 58N 10 5000 ABN G24 K2 WDG1 58N Your encoder												

Example Order No. =	WDGI 58N	10	5000	ABN	G24	K2		WDGI 58N							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

CREKEN

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www.creken.co.kr



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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø63mm

WDG 63B 시리즈

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 63B

www.wachendorff-automation.com/wdgi63b

Industrie ROBUST

Encoder WDGI 63B



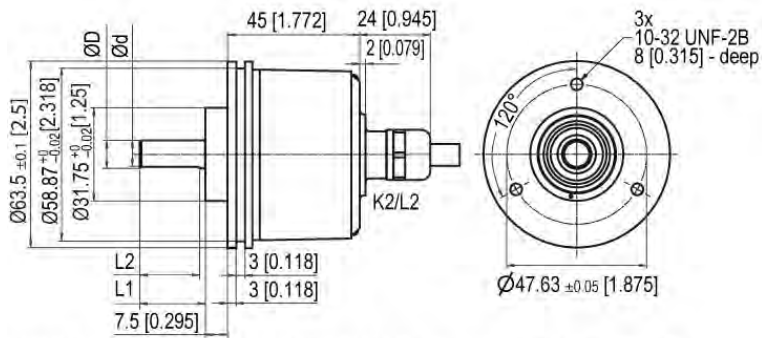
1. IP67 보호 등급의 방수/방진 로터리 엔코더
- Shaft Sealing - IP65
2. 다양한 축(Shaft) 사이즈 적용 가능
- 7mm, 8mm, 3 / 8 inch, 10mm
3. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 25000PPR
4. UL 및 CE 인증 제품

www.wachendorff-automation.com/wdgi63b

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 63.5 mm, Ø 2.5 in
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature
Shaft	Ø 9.525 mm, Ø 3/8"
Shaft length	L: 22.3 mm, L: 0.878 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N
Advice	Ø 7 mm / Ø 8 mm on request
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	8000 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 8000 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
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 1 Vpp Sin/Cos
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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %
General Data	
Weight	approx. 280 g, approx. 9.877 oz
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C), Connector: -4 °F up to +185 °F, cable: -4 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F) 1 Vpp: -10 °C up to +70 °C, +14 °F up to +158 °F
Storage temperature	Connector: -30 °C up to +85 °C, cable: -30 °C up to +80 °C, option ACA: -40 °C up to +85 °C, Connector: -22 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F)
More Information	
General technical data and safety instructions http://www.wachendorff-automation.com/gtd	
Options http://www.wachendorff-automation.com/acc	

WDGI 63B: Cable connection K2, L2, axial, with 2 m cable



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

ABN inv. poss.

K2 axial, shield not connected

•

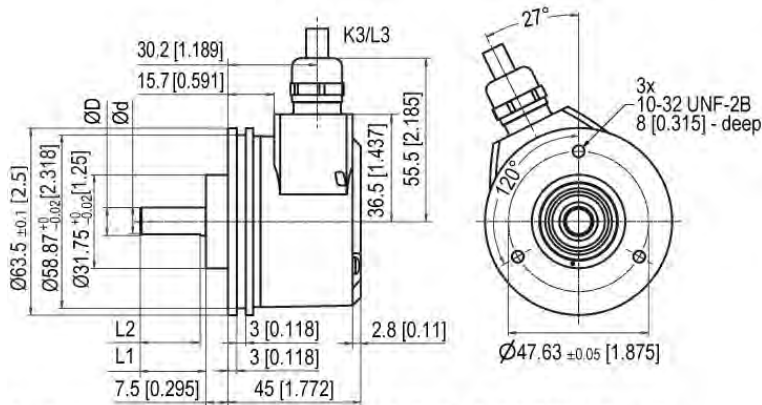
L2 axial, shield connected to encoder housing

•

Assignments

	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

WDGI 63B: Cable connection K3, L3, radial, with 2 m cable



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

ABN inv. poss.

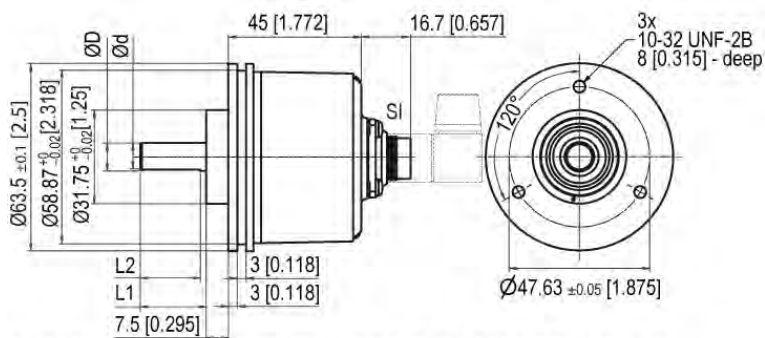
K3 radial, shield not connected

•

L3 radial, shield connected to encoder housing

•

Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	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

WDGI 63B: Connector (M16x0.75) SI, axial, 5-, 6-, 8-, 12-pin


$D = 9.525h7 [0.375]$ $L1 = 22.3 [0.878]$ $d = 9 [0.345]$ $L2 = 20.3 [0.799]$ shaft with flat
 $D = 10f7$ $L1 = 20$ $d = 10$ $L2 = 20$ shaft without flat
 $D = 7 \text{ mm}$, $D = 8 \text{ mm}$, on request

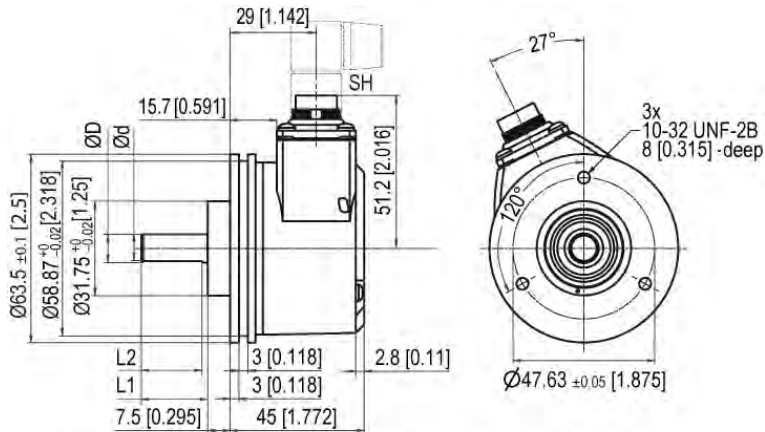
Description
ABN inv. poss.

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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 63B: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin

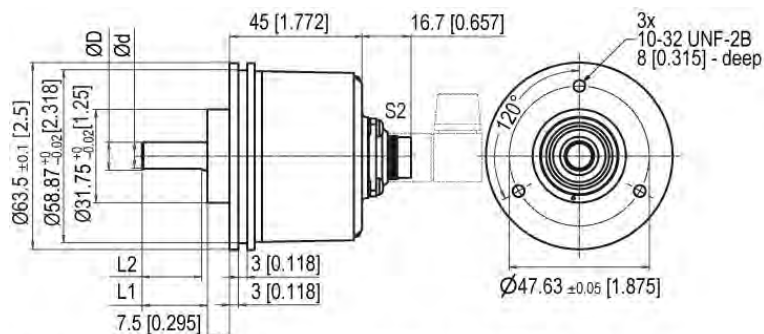


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 63B: Connector (M16x0.75) S2, axial, 7-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

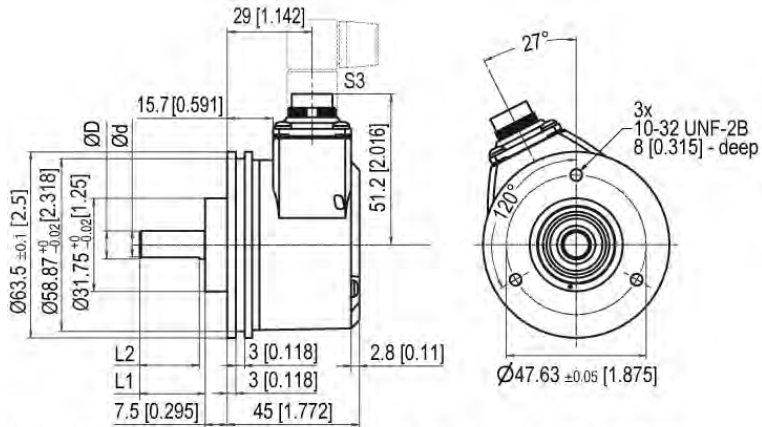
ABN inv. poss.

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

-

Assignments		
	S2	S2
	7-pin	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	-	-

WDGI 63B: Connector (M16x0.75) S3, radial, 7-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

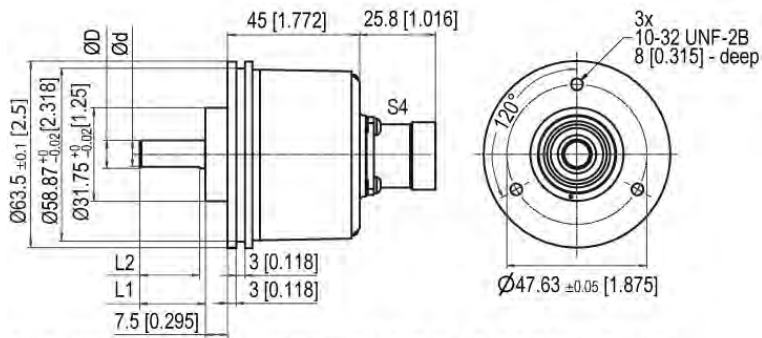
ABN inv. poss.

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

-

Assignments		
	S3	S3
	7-pin	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	-	-

WDGI 63B: Connector (M23) S4, axial, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

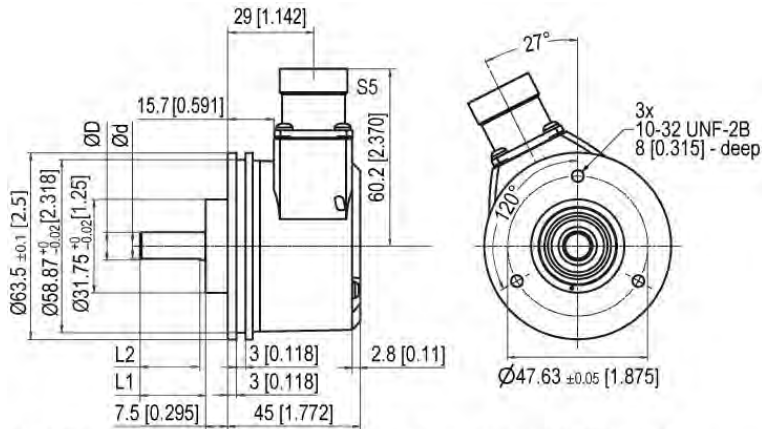
ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

WDGI 63B: Connector (M23) S5, radial, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

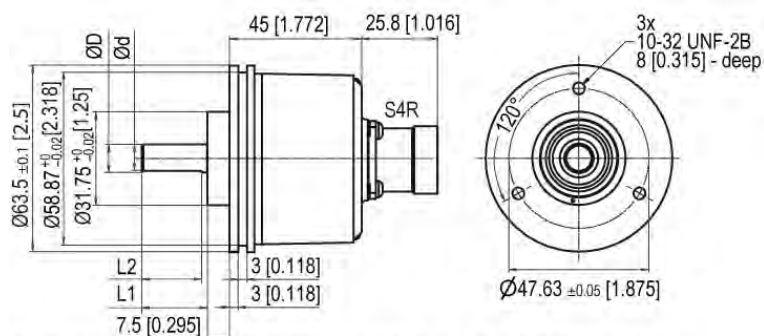
ABN inv. poss.

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

WDGI 63B: Connector (M23) S4R, axial, 12-pin (clockwise)



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

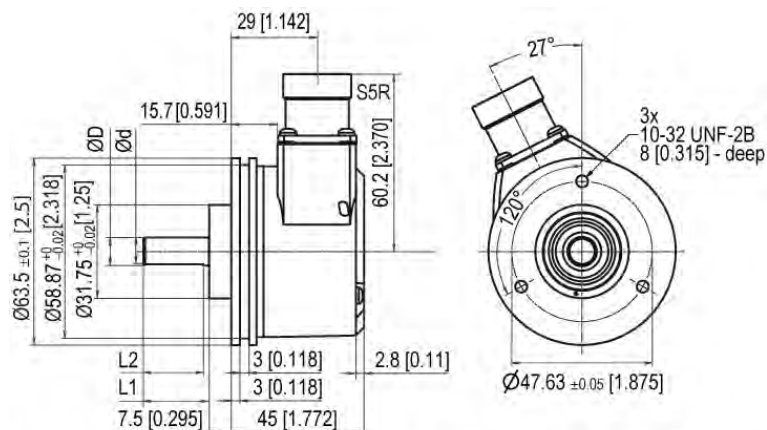
ABN inv. poss.

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

•

Assignments					
	S4R	S4R	S4R	S4R	S4R
	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	-	-	-	-	-

WDGI 63B: Connector (M23) S5R, radial, 12-pin (clockwise)



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

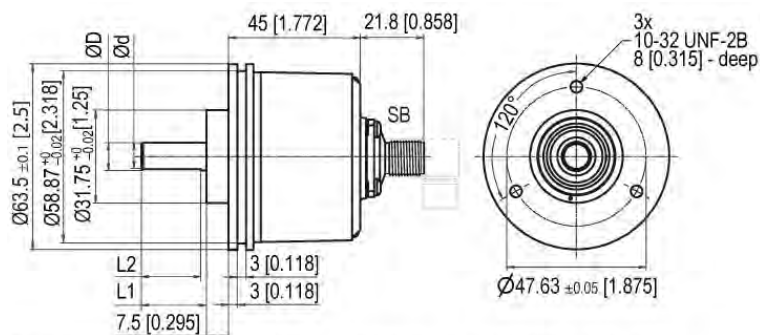
Description

ABN inv. poss.

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

•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

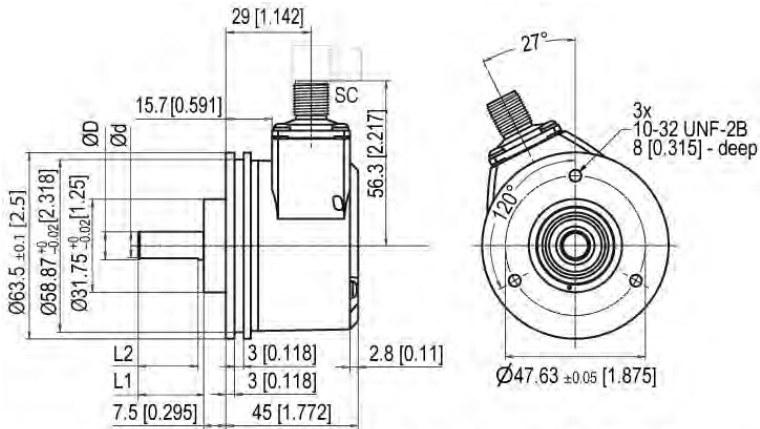
WDGI 63B: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
 D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
 D = 7 mm, D = 8 mm, on request

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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 63B: Sensor-connector (M12x1) SC, radial, 4-, 5-, 8-, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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	SC8	SC12	SC12	SC12	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	I05, I24, 524	F05, H05, F24, H24, H30	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, 11, 12	2, 5, 7, 9, 10, 11, 12	2, 5, 11, 12
Shield	-	-	-	-	-	-	-	-	-

Options

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 63B can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 100 N, 10.197 kp

Permitted Shaft-Loading, radial: 110 N, 11.217 kp

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature, approx. 5.6645 in-ozf at ambient temperature

Low temperature

Order key

The encoder WDGI 63B with the output circuit types F24, G24, I24, P24, R24, F05, G05, H05, I05, P05, R05, 245, 524, 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).

ACA

Pressure equalising membrane

Order key

The WDGI 63B 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.

ACR

Cable length

Order key

The encoder WDGI 63B 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			
WDGI 63B	WDGI 63B	WDGI 63B			
	Shaft				
4Z	4Z= Ø 9.525 mm, Ø 3/8"; 10				
	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 Vpp 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			
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	
	IP67	AAO	
	Low temperature	ACA	
	Pressure equalising membrane	ACR	
	Without option	Empty	
	Cable length	XXX = Decimeter	

Example Order No. =	WDGI 63B	4Z	5000	ABN	G24	K2		WDGI 63B								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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E-Mail: sales@creken.co.kr
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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø63mm

WDG 63Q 시리즈

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 63Q

www.wachendorff-automation.com/wdgi63q

IndustrieROBUST

Encoder WDGI 63Q



1. IP67 보호 등급의 방수/방진 로터리 엔코더
- **Shaft Sealing - IP65**

2. 다양한 축(Shaft) 사이즈 적용 가능
- **7mm, 8mm, 3/8inch, 10mm**

3. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- **MAX 25000PPR**

4. UL 및 CE 인증 제품

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR

Mechanical Data	
Housing	
Flange	square flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 63.5 mm, Ø 2.5 in

Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature
Shaft	Ø 9.525 mm, Ø 3/8"
Shaft length	L: 22.3 mm, L: 0.878 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp

Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N
Max. Permissible shaft loading axial	120 N

Advice	Ø 7 mm / Ø 8 mm on request
--------	----------------------------

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	8000 rpm

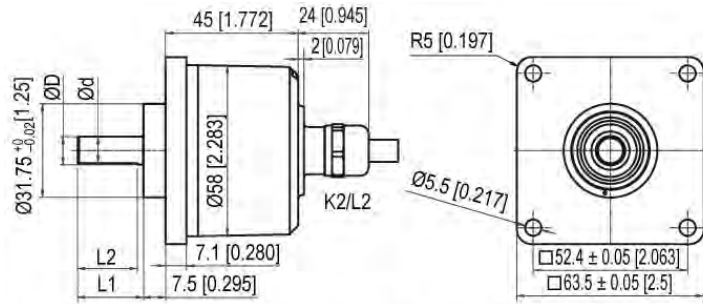
Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

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
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 1 Vpp Sin/Cos
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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 300 g, approx. 9.877 oz
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C), Connector: -4 °F up to +185 °F, cable: -4 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F) 1 Vpp: -10 °C up to +70 °C, +14 °F up to +158 °F
Storage temperature	Connector: -30 °C up to +85 °C, cable: -30 °C up to +80 °C, option ACA: -40 °C up to +85 °C, Connector: -22 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F)

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

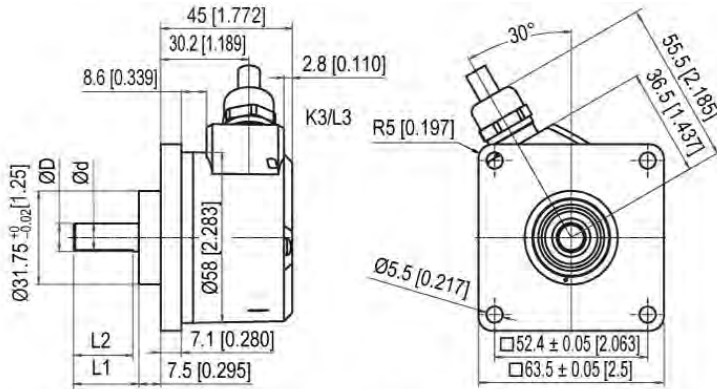
WDGI 63Q: Cable connection K2, L2, axial, with 2 m cable


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
 D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
 D = 7 mm, D = 8 mm, on request

Description	ABN inv. poss.
K2 axial, shield not connected	•
L2 axial, shield connected to encoder housing	•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

WDGI 63Q: Cable connection K3, L3, radial, with 2 m cable



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

ABN inv. poss.

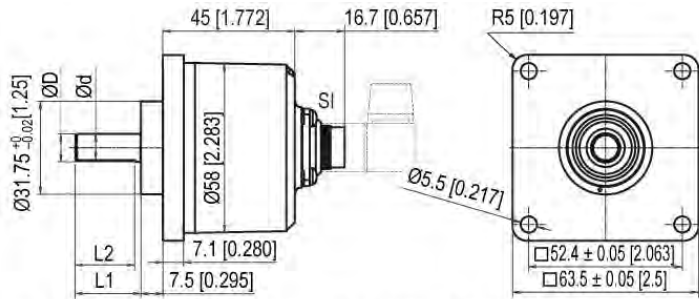
K3 radial, shield not connected

•

L3 radial, shield connected to encoder housing

•

Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	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

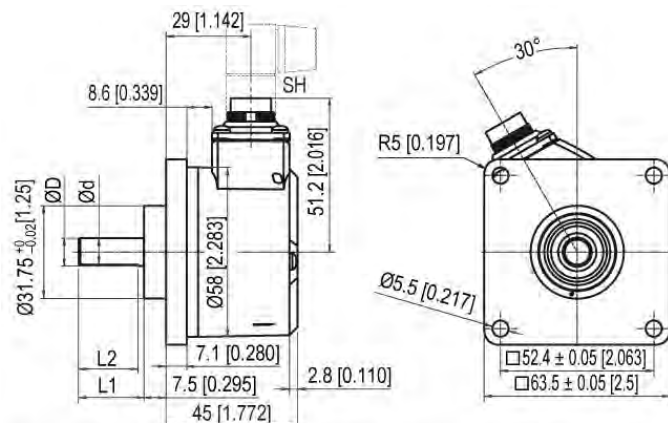
WDGI 63Q: Connector (M16x0.75) SI, axial, 5-, 6-, 8-, 12-pin


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
 D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
 D = 7 mm, D = 8 mm, on request

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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 63Q: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

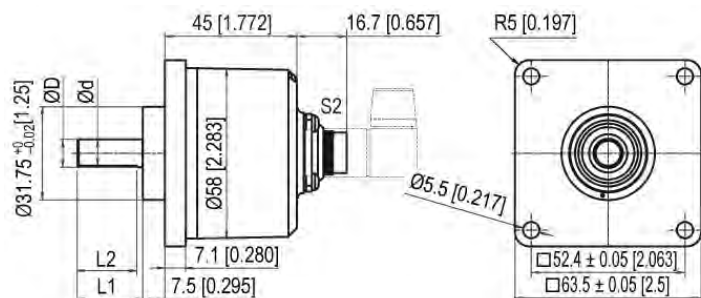
ABN inv. poss.

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 63Q: Connector (M16x0.75) S2, axial, 7-pin



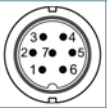
D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

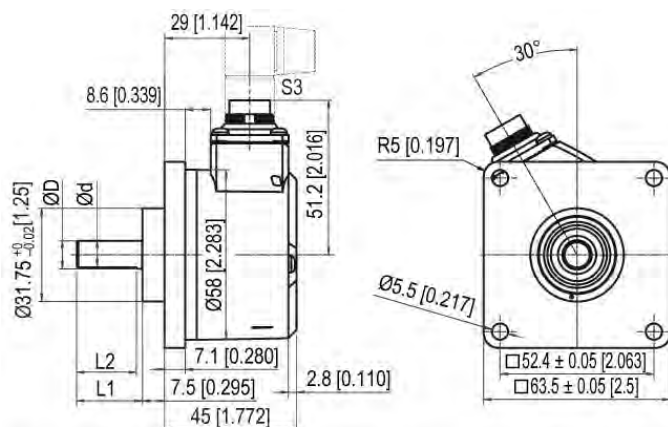
ABN inv. poss.

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

-

Assignments		
	S2 7-pin	S2 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	-	-

WDGI 63Q: Connector (M16x0.75) S3, radial, 7-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

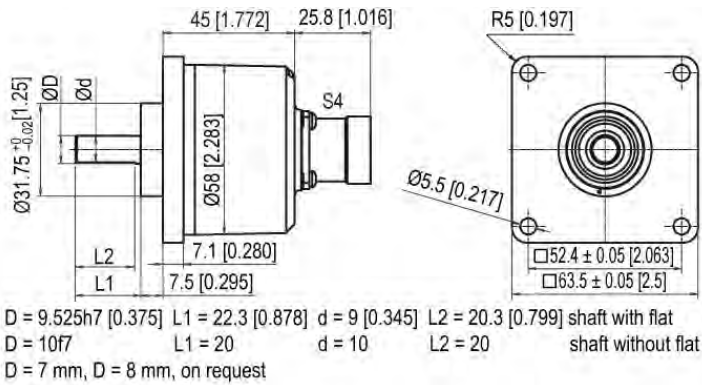
ABN inv. poss.

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

-

Assignments		
	S3	S3
	7-pin	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	-	-

WDGI 63Q: Connector (M23) S4, axial, 12-pin



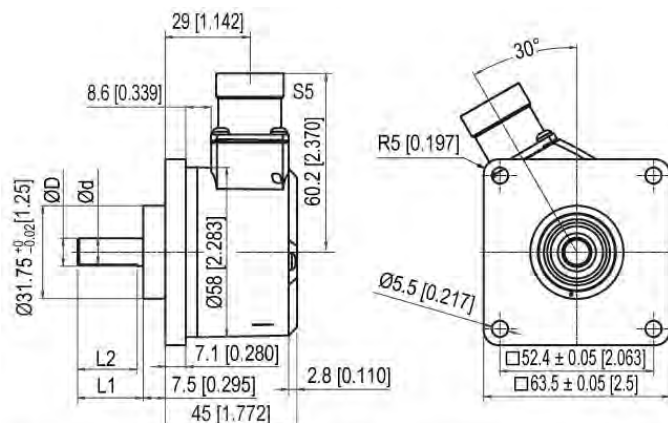
Description

ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

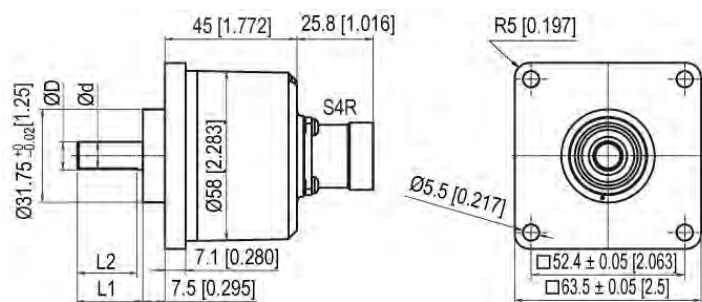
WDGI 63Q: Connector (M23) S5, radial, 12-pin


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

WDGI 63Q: Connector (M23) S4R, axial, 12-pin (clockwise)



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

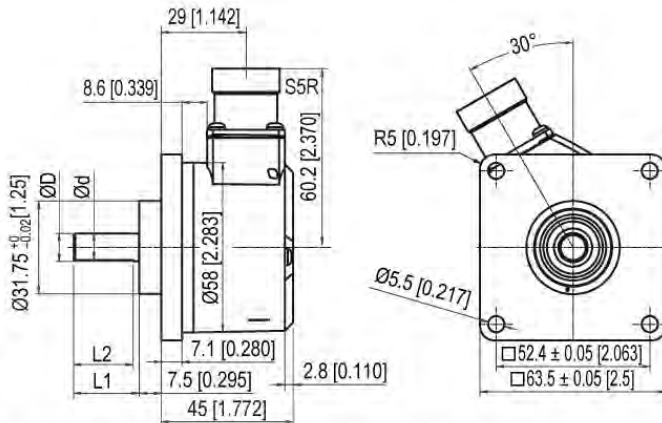
ABN inv. poss.

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

•

Assignments					
	S4R	S4R	S4R	S4R	S4R
	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	-	-	-	-	-

WDGI 63Q: Connector (M23) S5R, radial, 12-pin (clockwise)



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

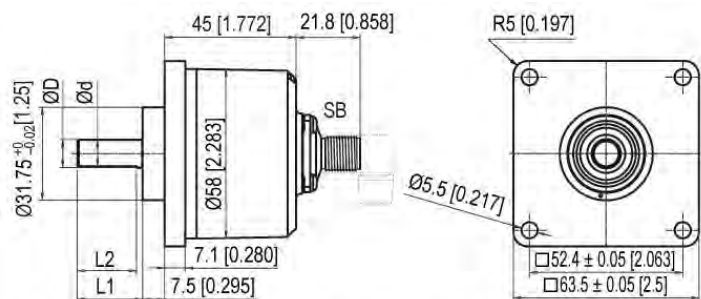
Description

ABN inv. poss.

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

•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

WDGI 63Q: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin


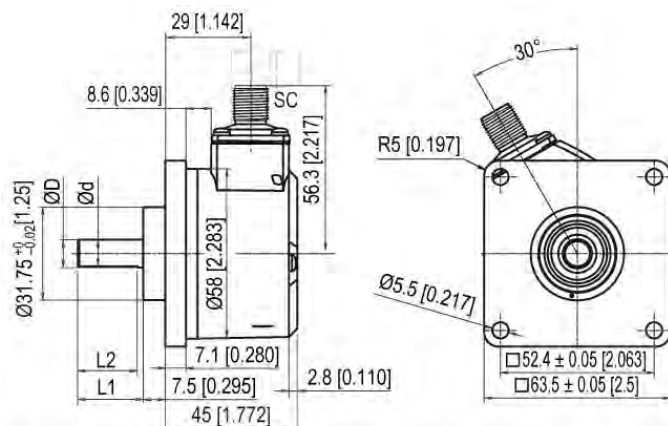
D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
 D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
 D = 7 mm, D = 8 mm, on request

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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 63Q: Sensor-connector (M12x1) SC, radial, 4-, 5-, 8-, 12-pin


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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	SC8	SC12	SC12	SC12	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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 63Q can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 100 N, 10.197 kp

Permitted Shaft-Loading, radial: 110 N, 11.217 kp

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature, approx. 5.6645 in-ozf at ambient temperature

Low temperature

Order key

The encoder WDGI 63Q 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 63Q 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.

ACR

Cable length

Order key

The encoder WDGI 63Q 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
WDGI 63Q	WDGI 63Q					WDGI 63Q
	Shaft					
4Z	4Z= Ø 9.525 mm,Ø 3/8"; 10					
	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 Vpp 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			
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	
	IP67	AAO	
	Low temperature	ACA	
	Pressure equalising membrane	ACR	
	Without option	Empty	
	Cable length	XXX = Decimeter	

Example Order No.=	WDGI 63Q	4Z	5000	ABN	G24	K2		WDGI 63Q								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

CREKEN

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø67mm

WDG 67Q 시리즈

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 67Q

www.wachendorff-automation.com/wdgi67q

IndustrieROBUST

Encoder WDGI 67Q



1. IP67 보호 등급의 방수/방진 로터리 엔코더
- Shaft Sealing - IP65

2. 다양한 축(Shaft) 사이즈 적용 가능
- 7mm, 8mm, 3 / 8inch

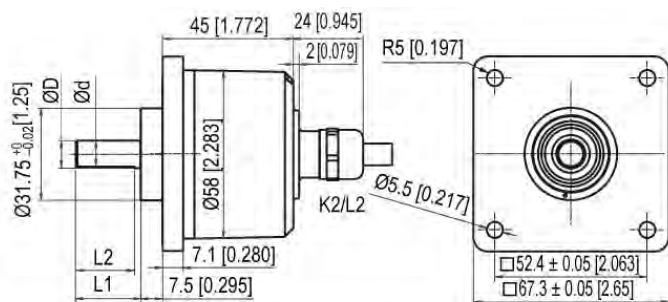
3. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 25000PPR

4. UL 및 CE 인증 제품

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	square flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 67.3 mm, Ø 2.65 in
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature, approx. 1.416 in-ozf at ambient temperature
Shaft	Ø 9.525 mm, Ø 3/8"
Shaft length	L: 22.3 mm, L: 0.878 in
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp
Advice	Ø 7 mm / Ø 8 mm on request
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	8000 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 8000 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
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 1 Vpp Sin/Cos
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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %
General Data	
Weight	approx. 300 g, approx. 10.582 oz
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C), Connector: -4 °F up to +185 °F, cable: -4 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F) 1 Vpp: -10 °C up to +70 °C, +14 °F up to +158 °F
Storage temperature	Connector: -30 °C up to +85 °C, cable: -30 °C up to +80 °C, option ACA: -40 °C up to +85 °C, Connector: -22 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F)
More Information	
General technical data and safety instructions http://www.wachendorff-automation.com/gtd	
Options http://www.wachendorff-automation.com/acc	

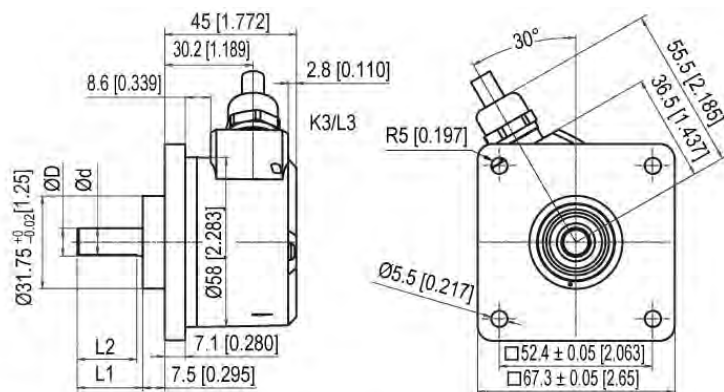
WDGI 67Q: Cable connection K2, L2, axial, with 2 m cable



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description	ABN inv. poss.
K2 axial, shield not connected	•
L2 axial, shield connected to encoder housing	•

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

WDGI 67Q: Cable connection K3, L3, radial, with 2 m cable


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description
ABN inv. poss.
K3 radial, shield not connected

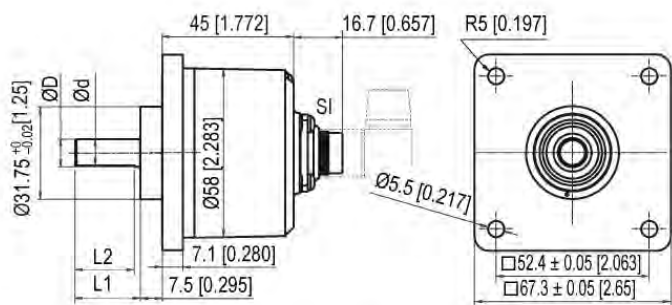
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L3 radial, shield connected to encoder housing

•

Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	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

WDGI 67Q: Connector (M16x0.75) SI, axial, 5-, 6-, 8-, 12-pin

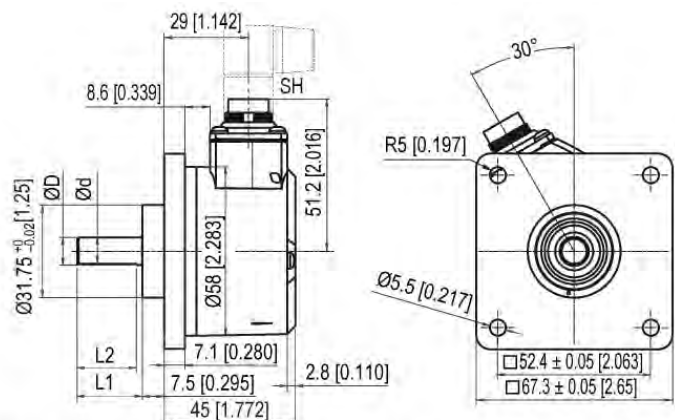


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 67Q: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

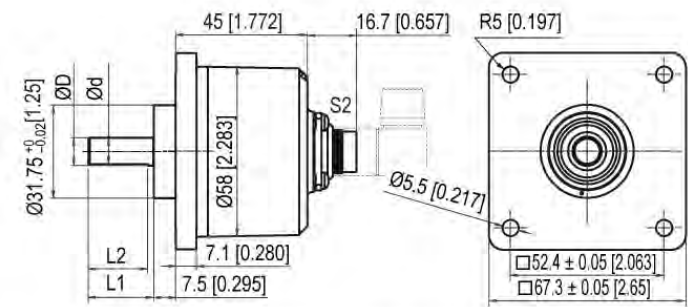
ABN inv. poss.

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 67Q: Connector (M16x0.75) S2, axial, 7-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

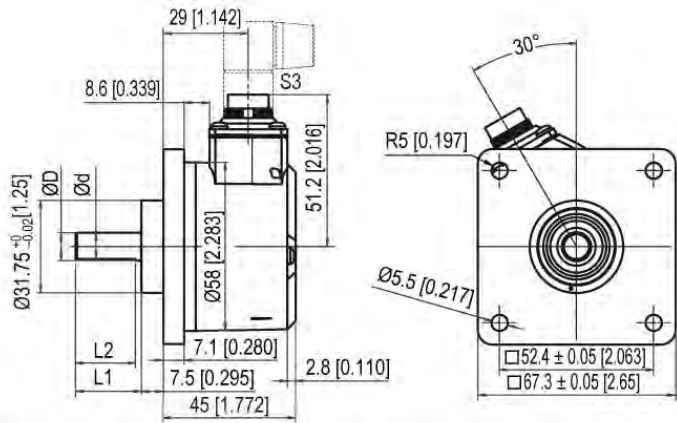
Description

ABN inv. poss.

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

Assignments		
	S2	S2
	7-pin	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	-	-

WDGI 67Q: Connector (M16x0.75) S3, radial, 7-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

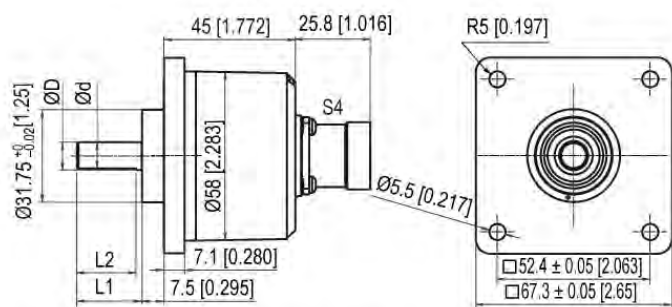
ABN inv. poss.

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

-

Assignments		
	S3	S3
	7-pin	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	-	-

WDGI 67Q: Connector (M23) S4, axial, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

Description

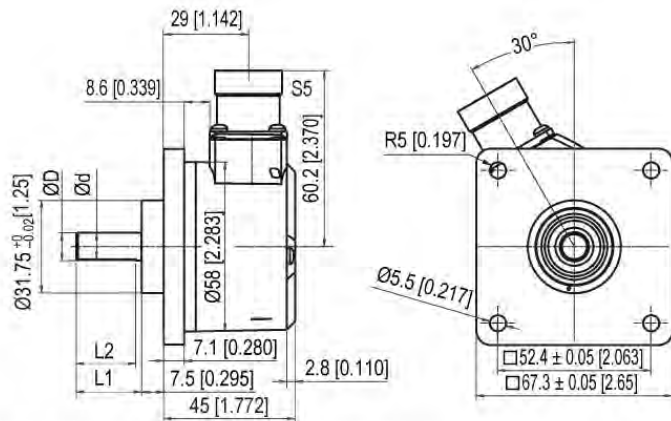
ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

WDGI 67Q: Connector (M23) S5, radial, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

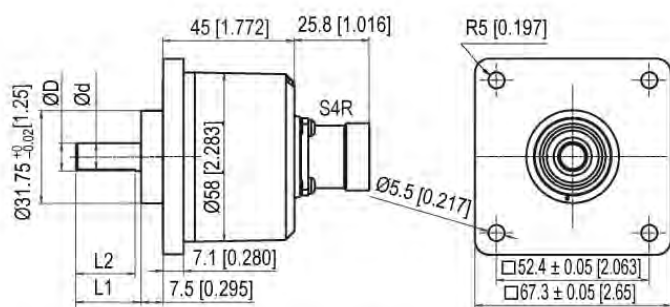
Description

ABN inv. poss.

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

WDGI 67Q: Connector (M23) S4R, axial, 12-pin (clockwise)


$D = 9.525h7 [0.375]$ $L1 = 22.3 [0.878]$ $d = 9 [0.345]$ $L2 = 20.3 [0.799]$ shaft with flat
 $D = 10f7$ $L1 = 20$ $d = 10$ $L2 = 20$ shaft without flat
 $D = 7 \text{ mm}$, $D = 8 \text{ mm}$, on request

Description

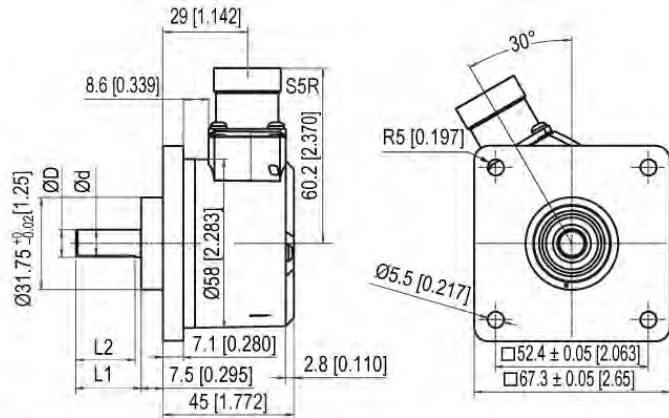
ABN inv. poss.

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

•

Assignments					
	S4R	S4R	S4R	S4R	S4R
	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	-	-	-	-	-

WDGI 67Q: Connector (M23) S5R, radial, 12-pin (clockwise)



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

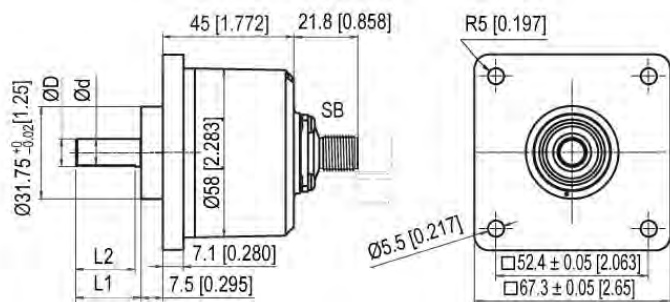
Description

ABN inv. poss.

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

•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

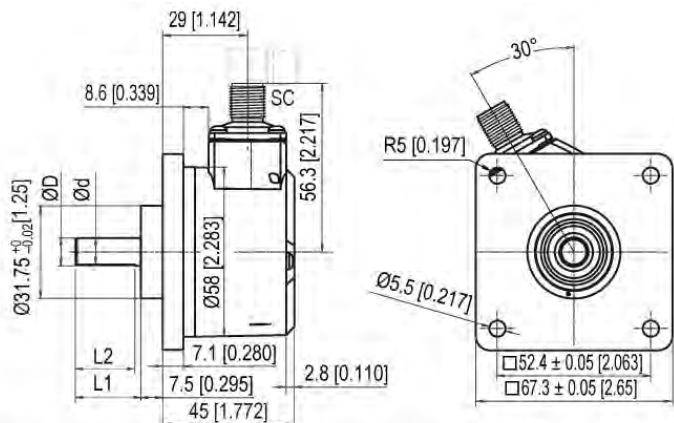
WDGI 67Q: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin


D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
 D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
 D = 7 mm, D = 8 mm, on request

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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 67Q: Sensor-connector (M12x1) SC, radial, 4-, 5-, 8-, 12-pin



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799] shaft with flat
D = 10f7 L1 = 20 d = 10 L2 = 20 shaft without flat
D = 7 mm, D = 8 mm, on request

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	SC8	SC12	SC12	SC12	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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 67Q can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 100 N, 10.197 kp

Permitted Shaft-Loading, radial: 110 N, 11.217 kp

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature, approx. 5.6645 in-ozf at ambient temperature

Low temperature

Order key

The encoder WDGI 67Q 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 67Q 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.

ACR

Cable length

Order key

The encoder WDGI 67Q 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
WDGI 67Q	WDGI 67Q				WDGI 67Q
	Shaft				
4Z	4Z= Ø 9.525 mm,Ø 3/8"; 10				
	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 Vpp 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													
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		
	IP67										AAO		
	Low temperature										ACA		
	Pressure equalising membrane										ACR		
	Without option										Empty		
	Cable length										XXX = Decimeter		
Example Order No.= WDG1 67Q 4Z 5000 ABN G24 K2 WDG1 67Q Your encoder													

Example Order No.= WDG 67Q 4Z 5000 ABN G24 K2

WDG 67Q Your encoder



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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E-Mail: wdg@wachendorff.de
www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø70mm

WDG 70B 시리즈

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- Shaft Sealing - IP65
3. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 2500PPR
4. 고출력 주파수
- 600kHz/2MHz
5. UL 및 CE 인증 제품

Resolution

Max. pulses per revolution PPR	up to 25000 PPR
--------------------------------	-----------------

Mechanical Data

Housing

Flange	clamping flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 70 mm

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature

Shaft	Ø 12 mm
Shaft length	L: 26 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	150 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	8000 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 8000 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
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
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Load	max. 40 mA / channel @ 1 Vpp sin/cos: min. 120 Ohm
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Circuit protection	circuit type F24, G24, H24, I24, P24, R24 only
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Accuracy

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

General Data

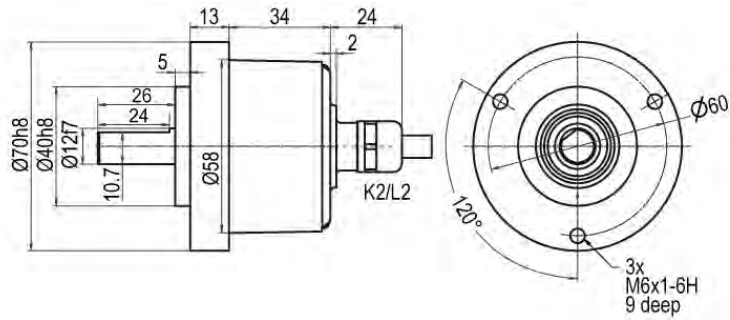
Weight	approx. 380 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C) 1 Vpp: -10 °C up to +70 °C
Storage temperature	Connector: -30 °C up to +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 70B: Cable connection K2, L2 with 2 m cable

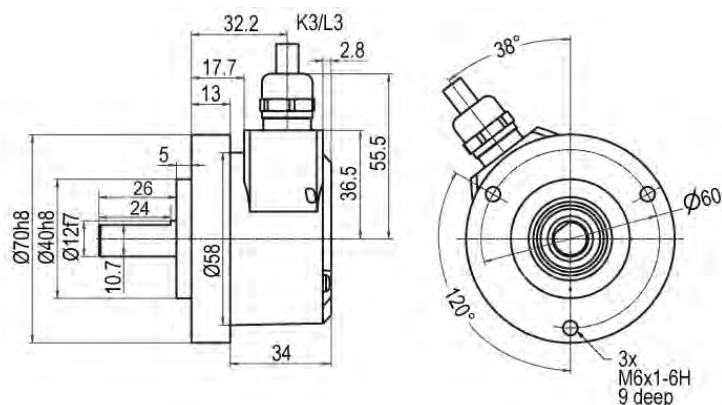


Description

ABN inv. poss.

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

Assignments					
	K2, L2	K2, L2	K2, L2	K2, L2	L2
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

WDGI 70B: Cable connection K3, L3 with 2 m cable

Description
ABN inv. poss.
K3 radial, shield not connected

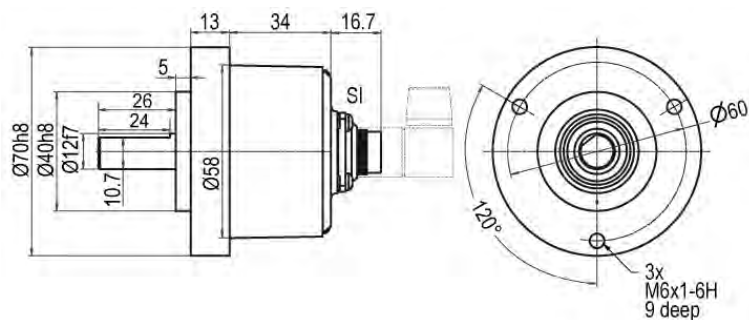
•

L3 radial, shield connected to encoder housing

•

Assignments

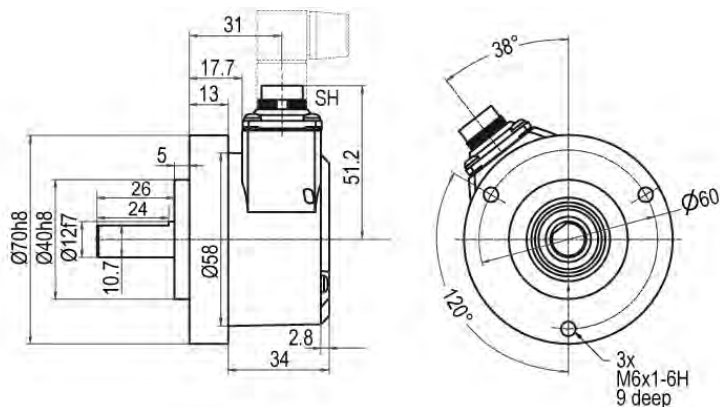
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK, (BU at ACA)	BK,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

WDGI 70B: Connector (M16x0.75) SI, 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

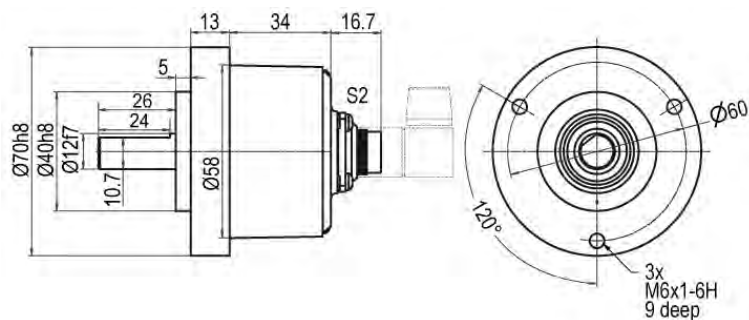
	SI5	SI6	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	 F05, H05, F24, H24, H30	 G05, G24	 F05, H05, F24, H24, H30	 F05, H05, F24, H24, H30	 P05, R05, P24, R24, R30, 245, 645	 SIN	 G05, G24	 F05, H05, F24, H24, H30	 I05, I24, 524	 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	-	-	-	-	-	-	-	-	-	-	-

WDGI 70B: Connector (M16x0.75) SH, 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	•

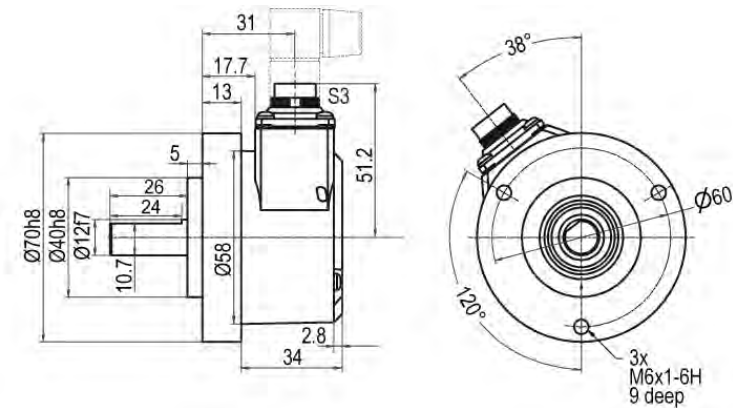
Assignments

	SH5	SH6	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

WDGI 70B: Connector (M16x0.75) S2, 7-pin

Description
ABN inv. poss.
S2 axial, 7-pin, Connector connected to encoder housing

-

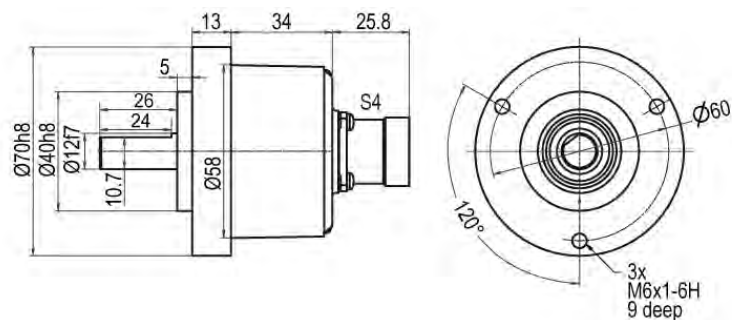
Assignments		
	S2	S2
	7-pin	7-pin
		
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
(+) Vcc	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

WDGI 70B: Connector (M16x0.75) S3, 7-pin**Description****ABN inv. poss.****S3** radial, 7-pin, Connector connected to encoder housing

-

Assignments		
	S3	S3
	7-pin	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	-	-

WDGI 70B: Connector (M23) S4, 12-pin



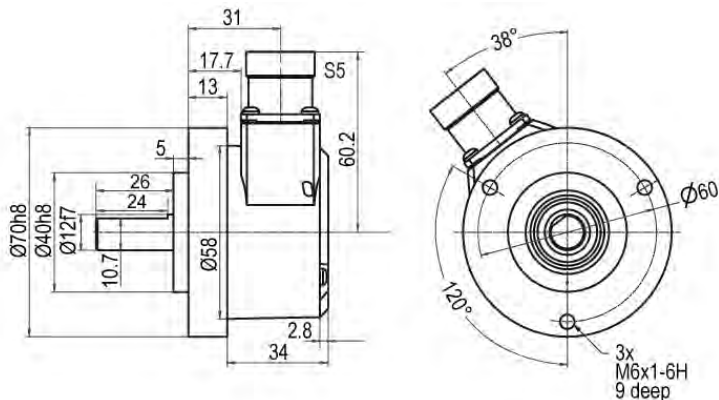
Description

ABN inv. poss.

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

•

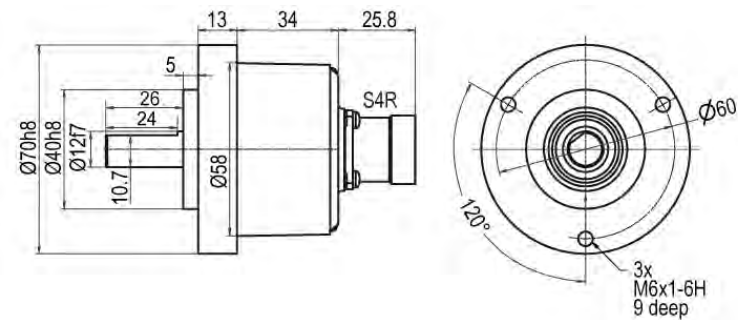
Assignments					
	S4	S4	S4	S4	S4
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-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

WDGI 70B: Connector (M23) S5, 12-pin**Description****ABN inv. poss.****S5** radial, 12-pin, Connector connected to encoder housing

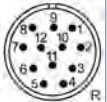
•

Assignments

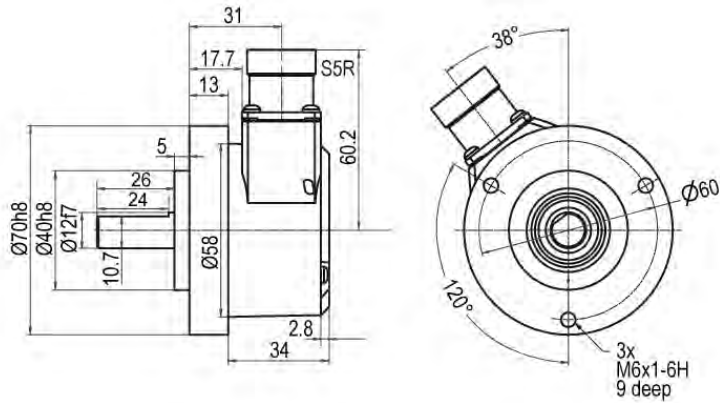
	S5	S5	S5	S5	S5
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1
N inv.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

WDGI 70B: Connector (M23) S4R, 12-pin (clockwise)**Description****ABN inv. poss.****S4R** axial, 12-pin, Connector connected to encoder housing

•

Assignments					
	S4R	S4R	S4R	S4R	S4R
	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	-	-	-	-	-

WDGI 70B: Connector (M23) S5R, 12-pin (clockwise)



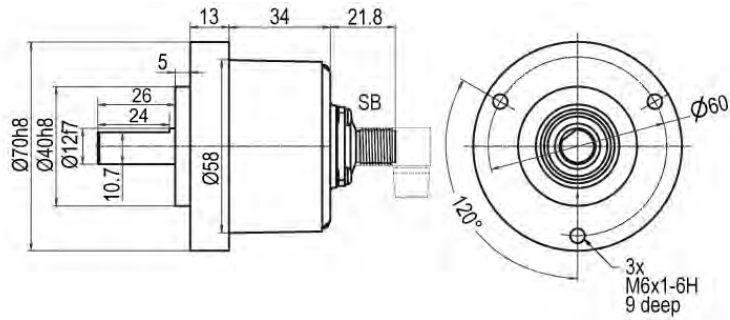
Description

ABN inv. poss.

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

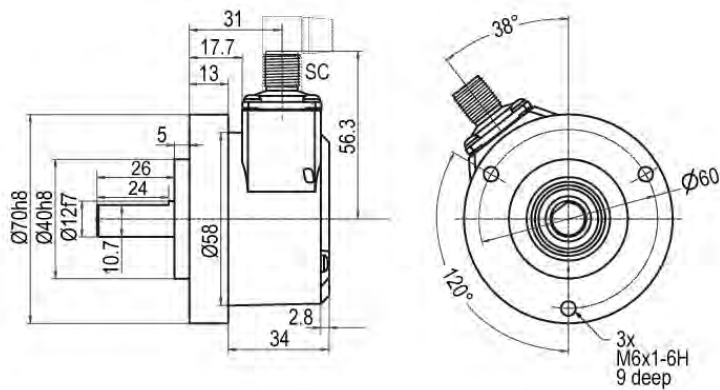
•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

WDGI 70B: Sensor-connector (M12x1) SB, 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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 70B: Sensor-connector (M12x1) SC, 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	SC8	SC12	SC12	SC12	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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 70B can be supplied in a full IP67 version.

AAO

Max. RPM: 3200 rpm

Permitted Shaft-Loading, axial: 110 N

Permitted Shaft-Loading, radial: 110 N

Max. PPR: 2500 ppr

Starting-torque: approx. 5 Ncm at ambient temperature

Low temperature

Order key

The encoder WDGI 70B 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 70B 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.

ACR

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.

Cable length

Order key

The encoder WDGI 70B 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDGI 70B	WDGI 70B					WDGI 70B
	Shaft					
12	12					
	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 Vpp 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												
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				
	IP67							AAO				
	Low temperature							ACA				
	Pressure equalising membrane							ACR				
	Without option							Empty				
	Cable length							XXX = Decimeter				
Example Order No.= WDG1 70B 12 5000 ABN G24 K2 WDG1 70B Your encoder												

Example Order No. =	WDGI 70B	12	5000	ABN	G24	K2		WDGI 70B							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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E-Mail: sales@creken.co.kr
www.creken.co.kr



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www.wachendorff-automation.de





Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø115mm

WDG 115M 시리즈

Wachendorff Automation

... systems and encoders

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- Maximum permissible loads
- 48-hour express production
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- Worldwide distributor network

Encoder WDGI 115M

www.wachendorff-automation.com/wdgi115m

IndustrieROBUST

Encoder WDG1 115 M



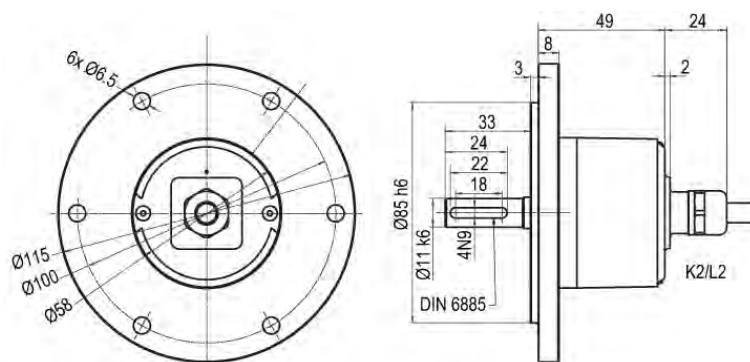
1. 타코(Tacho)플랜지 - 타코 제네레이터
- **Digital Tacho generator**
2. IP67 보호 등급의 방수/방진 로터리 엔코더
- **Shaft Sealing - IP65**
3. 다양한 축(Shaft) 사이즈 적용 가능
- **7mm, 8mm, 11mm, 12mm**
4. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- **MAX 25000PPR**
5. UL 및 CE 인증 제품

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	tacho flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 115 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 11 mm
Shaft length	L: 33 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	120 N
Advice	Ø 7 mm / Ø 8 mm / Ø 12 mm on request
Bearings	
Bearings type	2 precision ball bearings
Nomiale 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	8000 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nomiale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 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

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

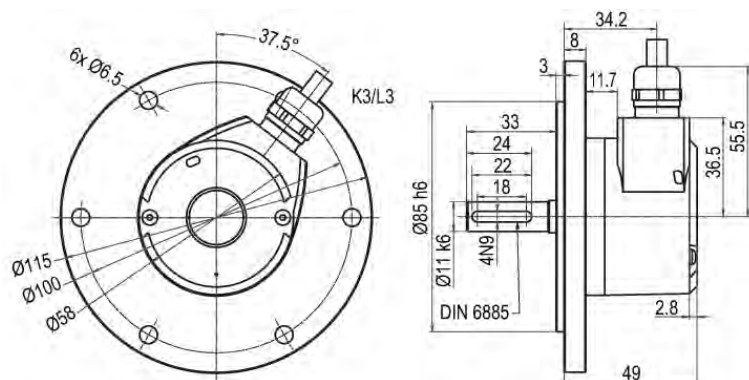
General Data	
Weight	approx. 520 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °C up to +85 °C, cable: -20 °C up to +80 °C, (Option ACA: -40 °C up to +85 °C) 1 Vpp: -10 °C up to +70 °C
Storage temperature	Connector: -30 °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 115M: 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	K2, L2	K2, L2	L2
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

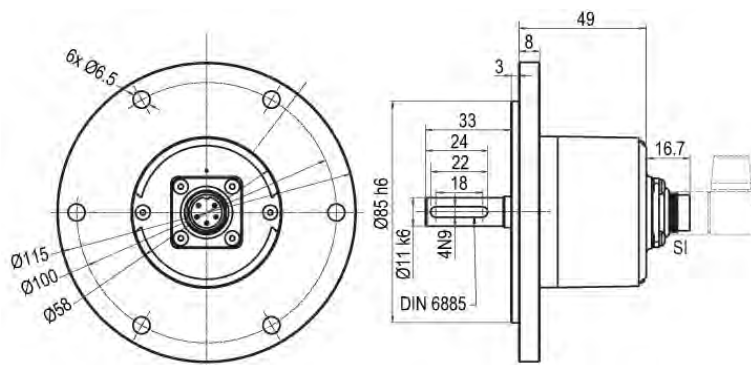
WDGI 115M: Cable connection K3, L3, radial, with 2 m cable

Description
ABN inv. poss.
K3 radial, shield not connected

•

L3 radial, shield connected to encoder housing

•

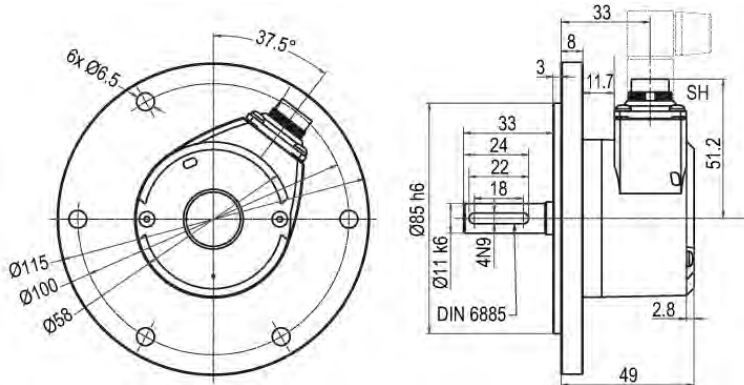
Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK,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

WDGI 115M: Connector (M16x0.75) SI, 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	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	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	-	-	-	-	-	-	-	-	-	-	-

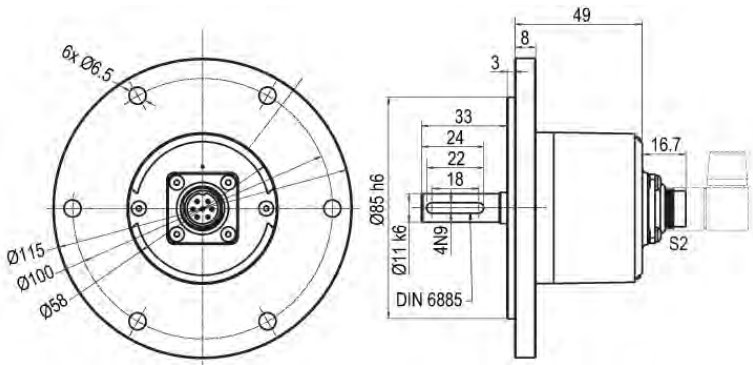
WDGI 115M: Connector (M16x0.75) SH, radial, 5-, 6-, 8-, 12-pin

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	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	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	-	-	-	-	-	-	-	-	-	-	-

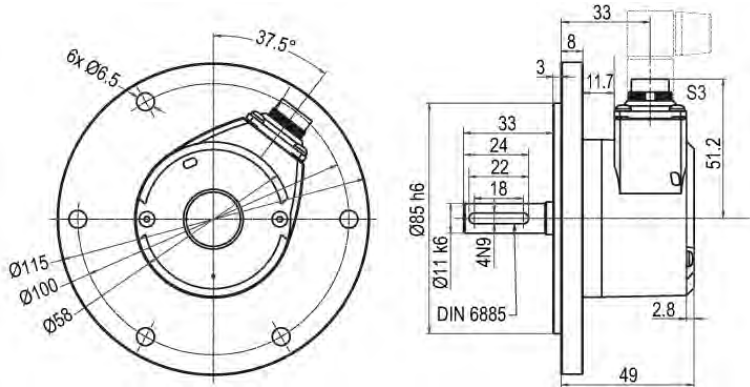
WDGI 115M: Connector (M16x0.75) S2, axial, 7-pin



Description	ABN inv. poss.
S2 axial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S2 7-pin	S2 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	-	-

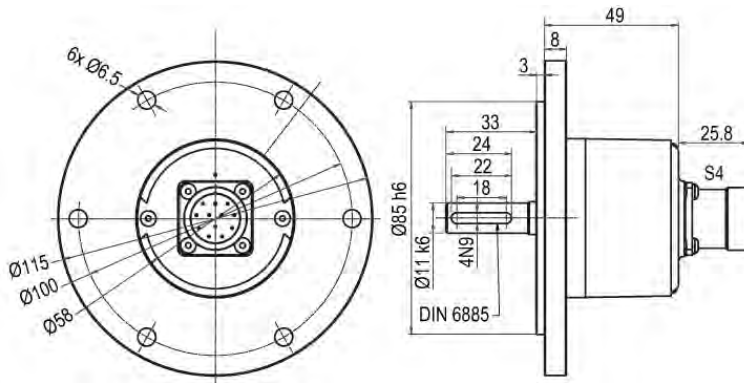
WDGI 115M: Connector (M16x0.75) S3, radial, 7-pin



Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S3 7-pin	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	-	-

WDGI 115M: Connector (M23) S4, 12-pin



Description

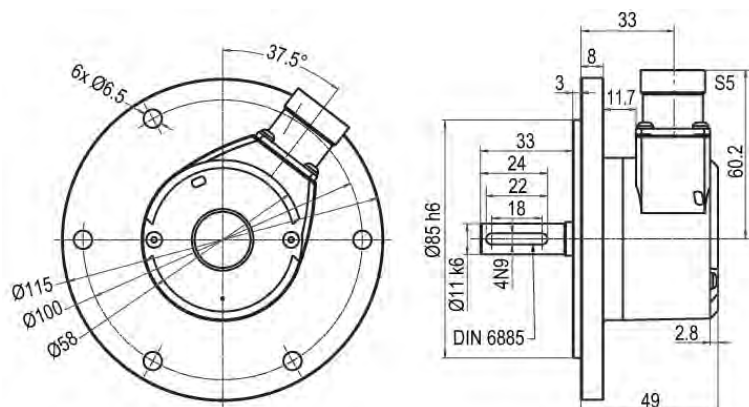
ABN inv. poss.

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

•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

WDGI 115M: Connector (M23) S5, 12-pin



Description

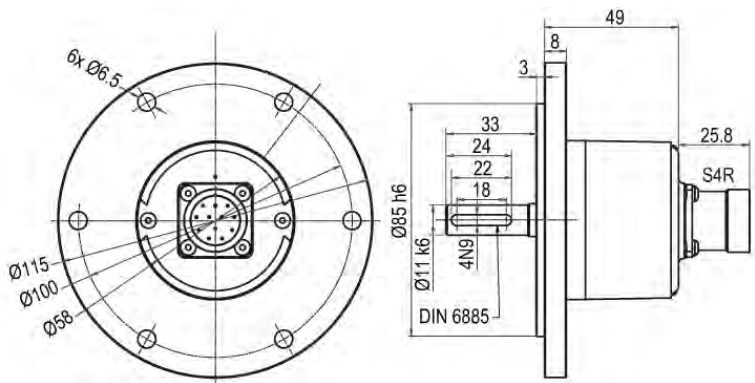
ABN inv. poss.

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

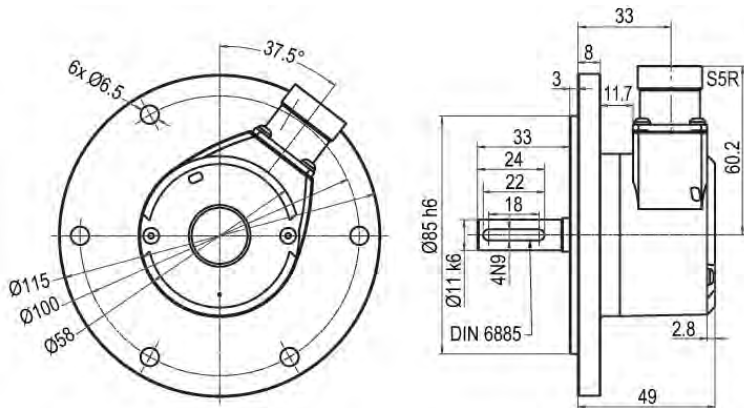
WDGI 115M: Connector (M23) S4R, 12-pin (clockwise)



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

Assignments					
	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 12-pin	S4R 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	-	-	-	-	-

WDGI 115M: Connector (M23) S5R, 12-pin (clockwise)



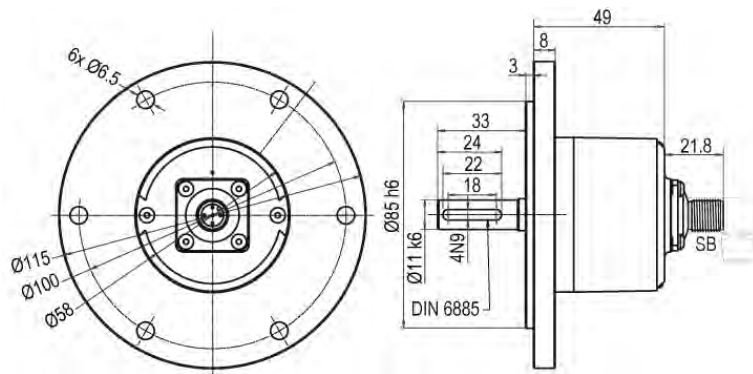
Description

ABN inv. poss.

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

•

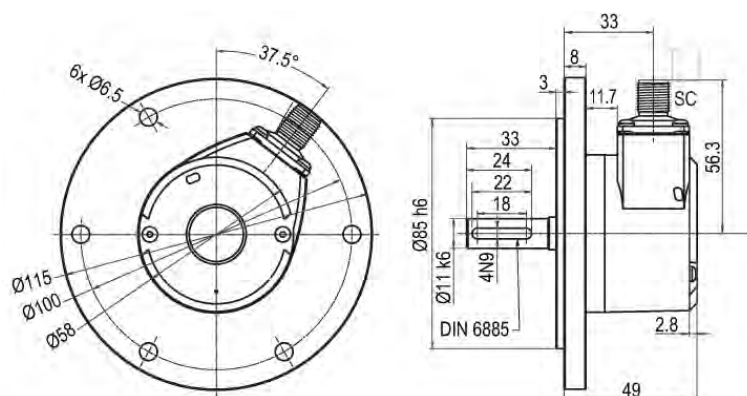
Assignments					
	S5R	S5R	S5R	S5R	S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.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

WDGI 115M: 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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 115M: 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	SC8	SC12	SC12	SC12	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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDG1 115M can be supplied in a full IP67 version.

AAO

Max. RPM: 3200 rpm

Permitted Shaft-Loading, axial: 100 N

Permitted Shaft-Loading, radial: 120 N

Max. PPR: 2500 ppr

Starting-torque: approx. 5 Ncm at ambient temperature

Low temperature

Order key

The encoder WDG1 115M 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDG1 115M 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.

ACR

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.

Cable length

Order key

The encoder WDG1 115M 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDGI 115M	WDGI 115M					WDGI 115M
	Shaft					
11	11					
	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 Vpp 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												
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				
	IP67							AAO				
	Low temperature							ACA				
	Pressure equalising membrane							ACR				
	Without option							Empty				
	Cable length							XXX = Decimeter				
Example Order No.= WDG1 115M 11 5000 ABN G24 K2 WDG1 115M Your encoder												

Example Order No.= WDG1 115M 11 5000 ABN G24 K2

WDG1 115M Your encoder



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

CREKEN

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Online Data Sheet

인크리멘탈 옵티컬 로터리 엔코더 - Ø115mm

WDG 115T 시리즈

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Encoder WDGI 115T

www.wachendorff-automation.com/wdgi115t

IndustrieROBUST

Encoder WDGI 115T



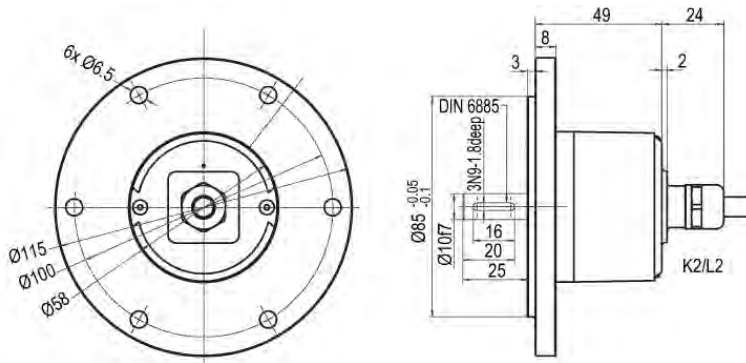
1. 타코(Tacho)플랜지 - 타코 제네레이터
- Digital Tacho generator
2. IP67 보호 등급의 방수/방진 로터리 엔코더
- Shaft Sealing - IP65
3. 고출력 주파수
- 600kHz/2MHz
4. 옵티컬(Optical) 방식으로 고정밀, 고분해능
- MAX 25000PPR
5. UL 및 CE 인증 제품

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR
Mechanical Data	
Housing	
Flange	tacho flange
Flange material	aluminum
Housing cap	die cast aluminum, powder coated
Housing	Ø 115 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 25 mm
Max. Permissible shaft loading radial	200 N
Max. Permissible shaft loading axial	120 N
Advice	Ø 7 mm / Ø 8 mm on request
Bearings	
Bearings type	2 precision ball bearings
Nomiale 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	8000 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	200 a
Mission time (TM)	25 a
Nomiale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 8000 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

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 % Output circuits F24, P24, F05, P05, 645: 50 % ± max. 10 %

General Data	
Weight	approx. 520 g
Connections	cable or connector outlet
Protection rating (EN 60529)	IP67, shaft sealed to IP65
Operating temperature	Connector: -20 °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: -30 °C up to +85 °C, cable: -30 °C up to +80 °C, option ACA: -40 °C up to +85 °C

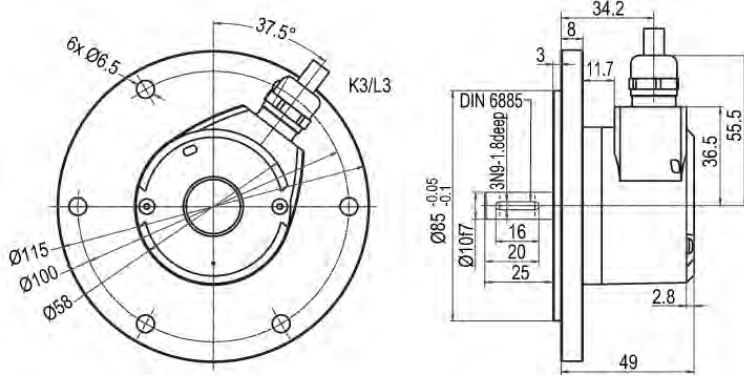
More Information	
General technical data and safety instructions http://www.wachendorff-automation.com/gtd	
Options http://www.wachendorff-automation.com/acc	

WDGI 115T: 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	K2, L2	K2, L2	L2
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

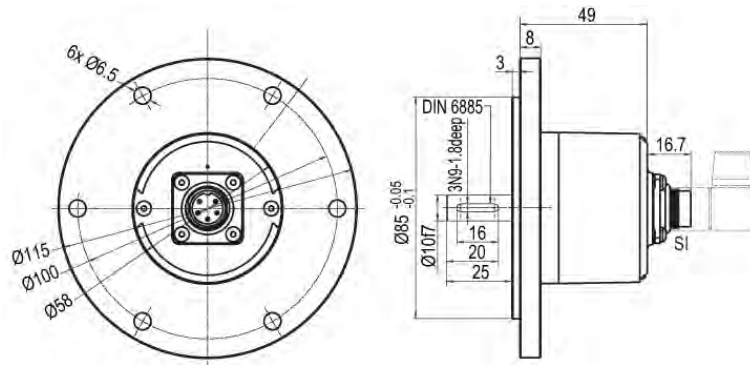
WDGI 115T: Cable connection K3, L3, radial, with 2 m cable



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

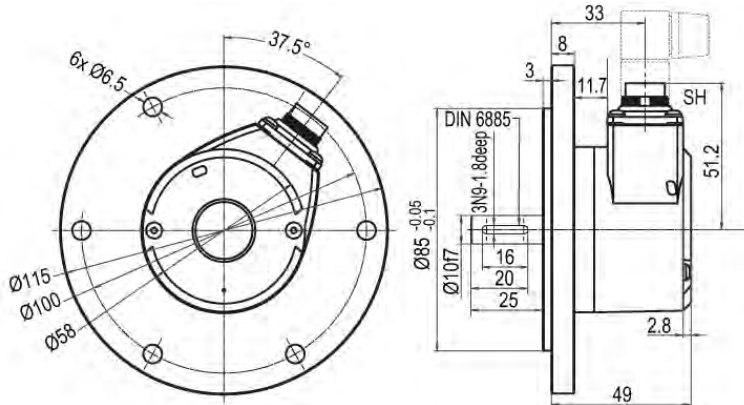
Assignments					
	K3, L3	K3, L3	K3, L3	K3, L3	L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
(+) Vcc	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-	RD	RD	YE
B inv.	-	-	BK,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

WDGI 115T: 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	•

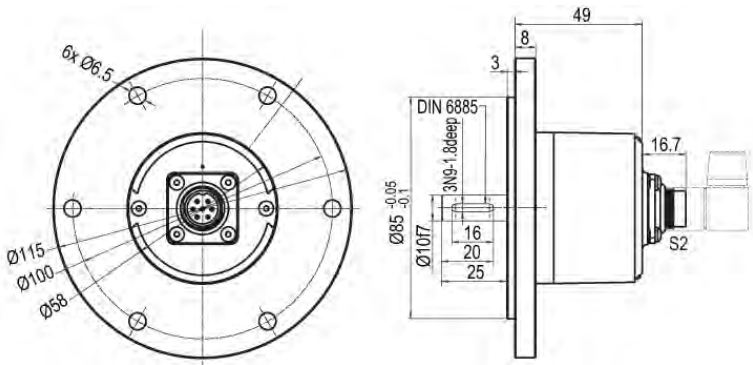
Assignments											
	SI5	SI6	SI6	SI8	SI8	SI8	SI12	SI12	SI12	SI12	SI12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	F05, H05, F24, H24, H30	G05, G24	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	SIN	G05, G24	F05, H05, F24, H24, 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	-	-	-	-	-	-	-	-	-	-	-

WDGI 115T: 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

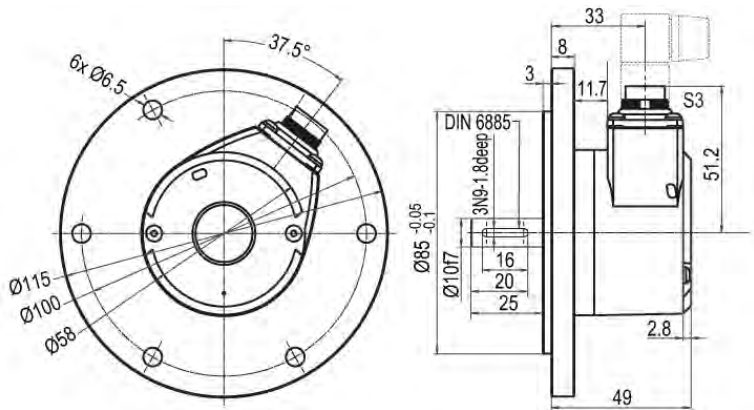
	SH5	SH6	SH6	SH8	SH8	SH8	SH12	SH12	SH12	SH12	SH12
	5-pin	6-pin	6-pin	8-pin	8-pin	8-pin	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	F05, H05, F24, H24, H30	G05, G24	F05, H05, F24, H24, H30	F05, H05, F24, H24, H30	P05, R05, P24, R24, R30, 245, 645	SIN	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, 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	-	-	-	-	-	-	-	-	-	-	-

WDGI 115T: Connector (M16x0.75) S2, axial, 7-pin

Description	ABN inv. poss.
S2 axial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S2 7-pin	S2 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	-	-

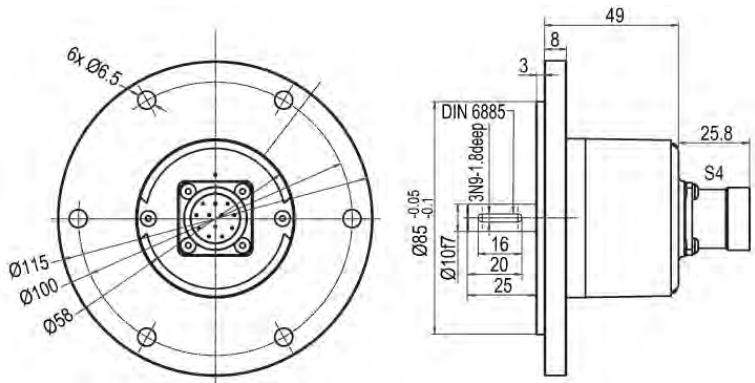
WDGI 115T: Connector (M16x0.75) S3, radial, 7-pin



Description	ABN inv. poss.
S3 radial, 7-pin, Connector connected to encoder housing	-

Assignments		
	S3	S3
	7-pin	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	-	-

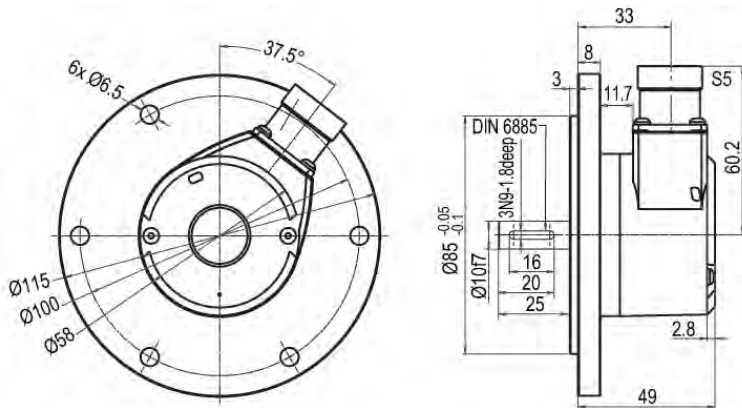
WDGI 115T: Connector (M23) S4, axial, 12-pin



Description	ABN inv. poss.
S4 axial, 12-pin, Connector connected to encoder housing	•

Assignments					
	S4	S4	S4	S4	S4
	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	-	-	-	-	-

WDGI 115T: Connector (M23) S5, radial, 12-pin



Description

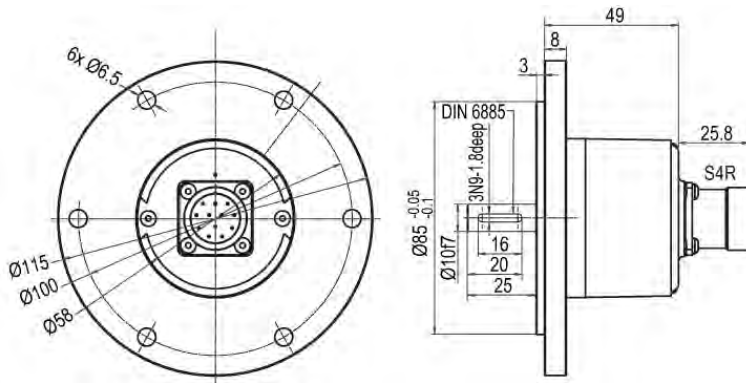
ABN inv. poss.

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

•

Assignments					
	S5	S5	S5	S5	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	-	-	-	-	-

WDGI 115T: Connector (M23) S4R, axial, 12-pin (clockwise)



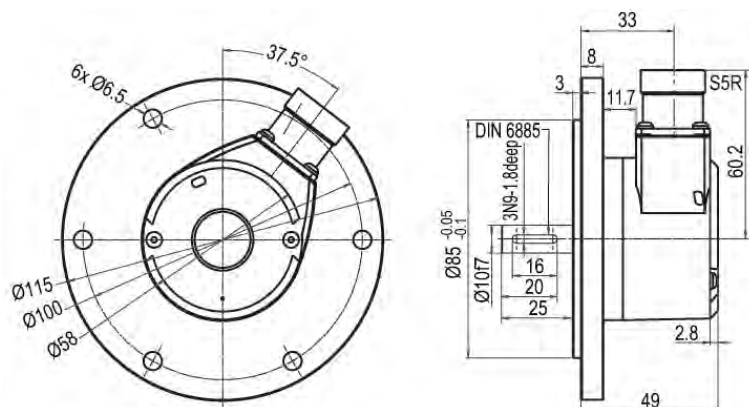
Description

ABN inv. poss.

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

•

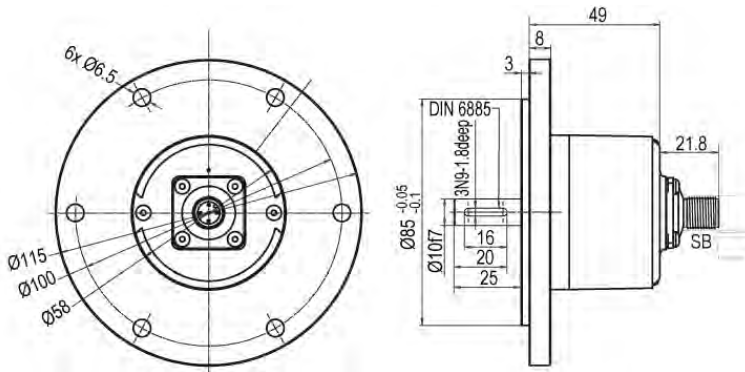
Assignments					
	S4R	S4R	S4R	S4R	S4R
	12-pin	12-pin	12-pin	12-pin	12-pin
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
(+) Vcc	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.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

WDGI 115T: Connector (M23) S5R, radial, 12-pin (clockwise)

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

•

Assignments					
	S5R	S5R	S5R	S5R	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	-	-	-	-	-

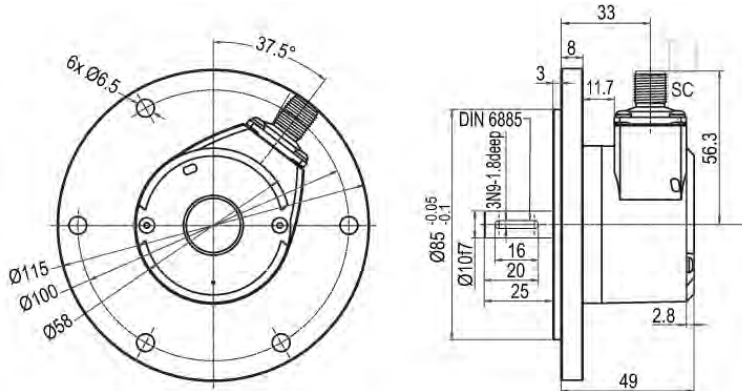
WDGI 115T: Sensor-connector (M12x1) SB, axial, 4-, 5-, 8-, 12-pin



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	SB8	SB12	SB12	SB12	SB12
	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	-	-	-	-	-	-	-	-	-

WDGI 115T: 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	SC8	SC12	SC12	SC12	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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

Order key

The encoder WDGI 115T can be supplied in a full IP67 version.

AAO

Max. RPM: 3500 rpm

Permitted Shaft-Loading, axial: 80 N

Permitted Shaft-Loading, radial: 110 N

Max. PPR: 2500 ppr

Starting-torque: approx. 4 Ncm at ambient temperature

Low temperature

Order key

The encoder WDGI 115T 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 +85 °C [-40 °F up to +185 °F] (measured at the flange).

ACA

Pressure equalising membrane

Order key

The WDGI 115T 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.

ACR

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.

Cable length

Order key

The encoder WDGI 115T 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

XXX = Decimeter

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

Example: 5 m cable = 050

Example Order No.	Type					Your encoder
WDG 115T	WDG 115T					WDG 115T
	Shaft					
10	10					
	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 Vpp 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	

Example Order No.	Type					Your encoder	
WDG 115T	WDG 115T					WDG 115T	
	Shaft						
10	10						
	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 Vpp 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		



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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