

Online Data Sheet

Encoder WDG 63Q

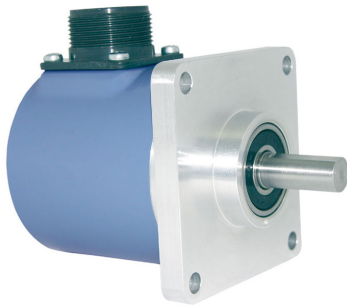
www.wachendorff-automation.com/wdg63q

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



- 3/8" stainless steel shaft
- Up to 25000 PPR by use of high grad electronics
- Protection to IP67, shaft sealed to IP65
- Full connection protection with 10 VDC up to 30 VDC
- With light reserve warning
- Optional: -40 °C up to +80 °C [-40 °F à +176 °F], Protection to IP67 all around

www.wachendorff-automation.com/wdg63q

Resolution	
Max. pulses per revolution PPR	up to 25000 PPR

Mechanical Data	
Housing	
Flange	clamping flange
Flange material	aluminium
Housing cap	aluminium, 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: 22.2 mm, L: 0.874"
Max. Permissible shaft loading radial	220 N, 22.434 kp
Max. Permissible shaft loading axial	120 N, 12.237 kp

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 %

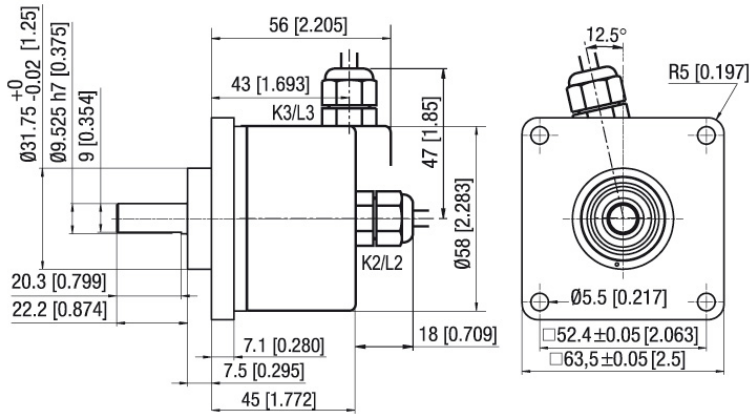
Electrical Data	
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: max. 100 mA 5 VDC up to 30 VDC: max. 70 mA 10 VDC up to 30 VDC: max. 100 mA

Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos
Pulse frequency	TTL 5000 ppr: max. 200 kHz HTL 5000 ppr: max. 200 kHz TTL more than 5000 ppr: max. 2 MHz HTL more than 5000 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	50 % ± max. 7 %

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	-20 °C up to +80 °C, -4 °F up to +176 °F 1 Vpp: -10 °C up to +70 °C, -14 °F up to +158 °F
Storage temperature	-30 °C up to +80 °C, -22 °F up to +176 °F

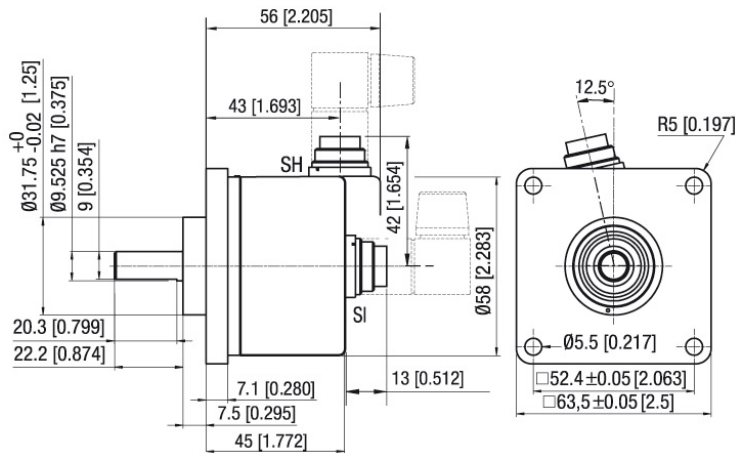
More Information	
General technical data	http://www.wachendorff-automation.com/gtd
Options	http://www.wachendorff-automation.com/acc

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

Description
ABN inv. poss.

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

Assignments

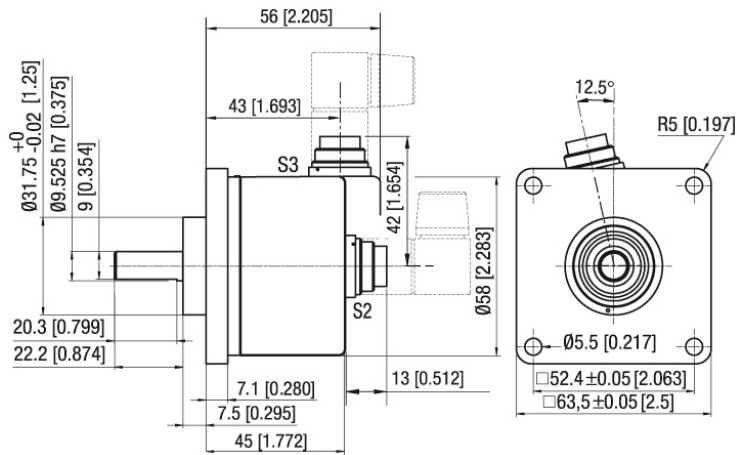
	K2, K3, L2, L3	K2, L2, K3, L3	K2, L2, K3, L3	K2, L2, K3, L3	K2, L2, K3, L3
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	WH	WH	WH	WH	WH
+UB	BN	BN	BN	BN	BN
A	GN	GN	GN	GN	GN
B	YE	YE	YE	YE	GY
N	GY	GY	GY	GY	-
Light reserve warning	PK	-	PK	-	-
A inv.	-	-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

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

Description
ABN inv. poss.

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



Assignments

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

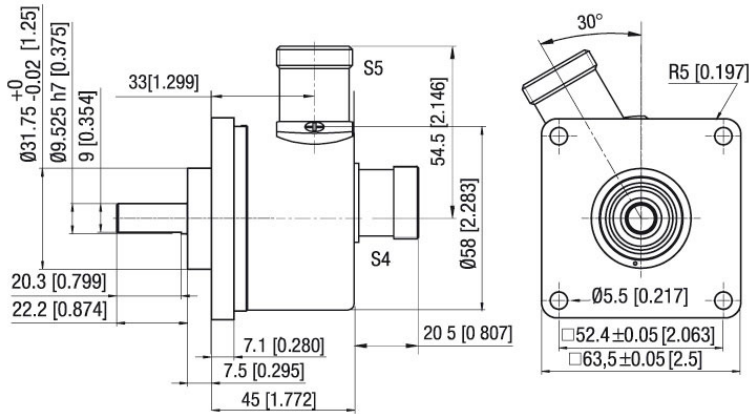
Connector (M16x0.75) S2, S3, 7-pin

Description
ABN inv. poss.

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

Assignments

	S2, S3 7-pin	S2, S3 7-pin
		
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	1	1
+UB	2	2
A	3	3
B	4	4
N	5	5
Light reserve warning	6	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	7	6, 7
Shield	-	-

Connector (M23) S4, S5, 12-pin



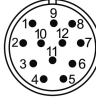
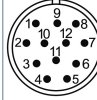
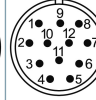
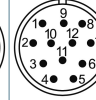
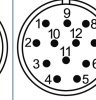
Description

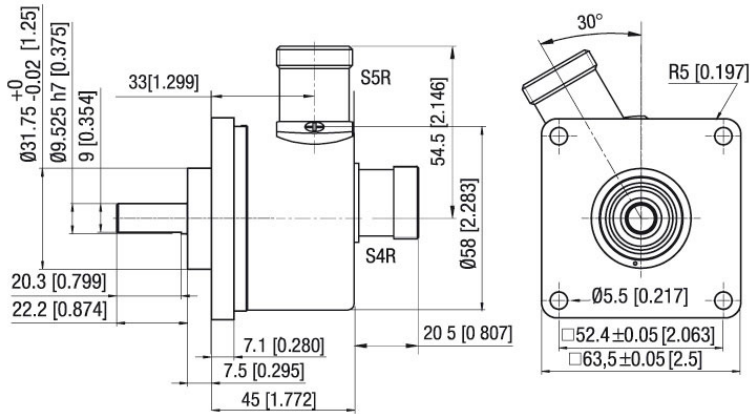
ABN inv. poss.

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

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-

Assignments

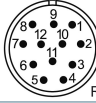
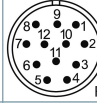
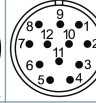
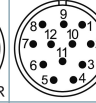
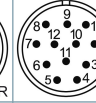
	S4, S5	S4, S5	S4, S5	S4, S5	S4, S5
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
+UB	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1
N inv.	-	-	4	4	-
n. c.	1, 2, 4, 6, 7, 9	1, 2, 4, 6, 7, 9, 11	2, 7, 9	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	-	-	-	-	-

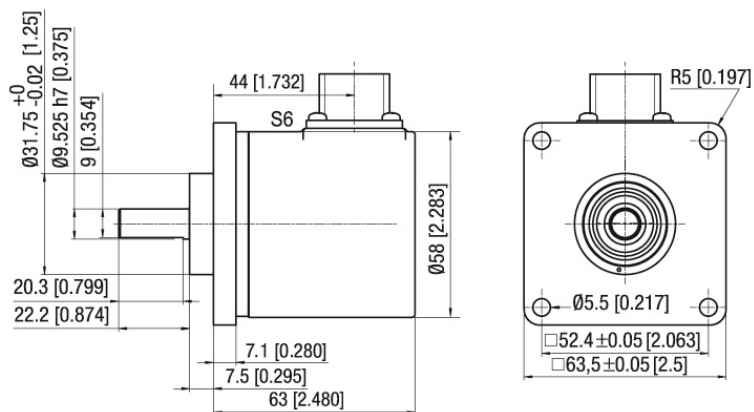
Connector (M23) S4R, S5R, 12-pin (clockwise)

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

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

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

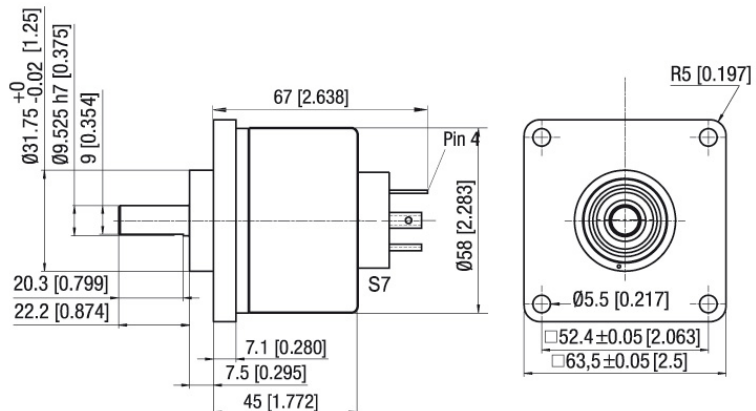
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Assignments					
	S4R, S5R	S4R, S5R	S4R, S5R	S4R, S5R	S4R, S5R
	12-pin	12-pin	12-pin	12-pin	12-pin
					
Circuit	G05, G24	F05, H05, F24, H24, H30	I05, I24, 524	P05, R05, P24, R24, 245, 645, R30	SIN
GND	10	10	10	10	10
+UB	12	12	12	12	12
A	5	5	5	5	5
B	8	8	8	8	8
N	3	3	3	3	-
Light reserve warning	11	-	11	-	-
A inv.	-	-	6	6	6
B inv.	-	-	1	1	1
N inv.	-	-	4	4	-
n. c.	1, 2, 4, 6, 7, 9	1, 2, 4, 6, 7, 9, 11	2, 7, 9	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	-	-	-	-	-


MIL-connector S6, 6-pin

Description
ABN inv. poss.
S6 radial, 6-pin,

-

Assignments		
	S6 6-pin	S6 6-pin
		
Circuit	G05, G24	F05, H05, F24, H24, H30
GND	A	A
+UB	F	F
A	C	C
B	B	B
N	D	D
Light reserve warning	E	-
A inv.	-	-
B inv.	-	-
N inv.	-	-
n. c.	-	E
Shield	-	-

Valve-connector S7, 4-pin

Description
ABN inv. poss.
S7 axial, 4-pin, Connector connected to encoder housing

-

Assignments	
	S7
	4-pin
	
Circuit	F05, H05, F24, H24, H30
GND	1
+UB	2
A	3
B	4
N	-
Light reserve warning	-
A inv.	-
B inv.	-
N inv.	-
n. c.	-
Shield	-

Options

Low temperature

The encoder WDG 63Q with the output circuit types F24, G24, H24, I24, P24, R24, F05, G05, I05, P05, 645 is also available with the extended temperature range -40 °C up to +80 °C [-40 °F up to +176 °F] (measured at the flange).

Order key

ACA

Cable length

The encoder WDG 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: 3 m cable = 030

Order key

XXX = Decimeter

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

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

Order key

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

Example Order No.	Type				Your encoder
WDG 63Q	WDG 63Q				WDG 63Q
Pulses per revolution PPR I/U (PPR):					
5000	2, 5, 10, 15, 20, 24, 25, 30, 36, 40, 48, 50, 60, 64, 72, 87, 90, 100, 120, 125, 127, 128, 150, 160, 180, 200, 216, 236, 240, 250, 254, 256, 300, 314, 320, 360, 400, 500, 512, 571, 600, 625, 720, 750, 768, 800, 810, 900, 1000, 1024, 1200, 1250, 1270, 1440, 1500, 1800, 2000, 2048, 2400, 2500, 3000, 3600, 4000, 4096, 4685, 5000, 10000, 12500, 20000, 25000 1 Vss Sin/Cos only 1024, 2048 Other PPRs on request				
Channels:					
ABN	AB, ABN (SIN: AB)				
Output circuit					
G24	Resolution PPR	Power supply VDC	Output circuit	Light reserve warning	Order key
	up to 2500	5 - 30	HTL	-	H30
		5 - 30	HTL inverted	-	R30
	up to 5000	4.75 - 5.5	TTL	•	G05
		4.75 - 5.5	TTL	-	H05
		4.75 - 5.5	TTL, RS422 comp., inverted	•	I05
		4.75 - 5.5	TTL, RS422 comp., inverted	-	R05
		10 - 30	HTL	•	G24
		10 - 30	HTL	-	H24
		10 - 30	HTL inverted	•	I24
		10 - 30	HTL inverted	-	R24
		10 - 30	TTL, RS422 comp., inverted	•	524
		10 - 30	TTL, RS422 comp., inverted	-	245
	10000 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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