



Online Data sheet

Encoder WDGN 36S

www.wachendorff-automation.com/wdgn36s

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 N 36S via Smartphone (NFC) configurable



Illustration similar



Wachendorff Apps WDG N

- Due to high quality electronics any number of pulses up to 16384 via NFC configurable
- HTL/TTL via NFC configurable
- Protection class IP67, at shaft input IP65
- High output frequency up to 1 MHz
- Reverse polarity protection and short-circuit protection at 4.75 VDC to 32 VDC

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Configurable via NFC

Resolution	
Pulses per revolution PPR	1 PPR up to 16384 PPR
Mechanical Data	
Flange	screw flange
Starting torque nut	max. 8 Nm
Flange material	aluminum, incl. nut M20 x 1.5
Housing material	Stainless steel, NFC cover: Thermoplastic polyamide
Flange diameter	Ø 36 mm [Ø 1.417"]
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 0.3 Ncm [0.425 in-ozf] at ambient temperature
Shaft	Ø 6 mm [Ø 0.236"]
Shaft length	L: 13 mm [0.512"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Bearings	
Bearings type	2 precision ball bearings
Nominal service life	1.4 x 10 ⁸ revs. at 100 % rated shaft load 2 x 10 ⁹ revs. at 40 % rated shaft load 1.7 x 10 ¹⁰ revs. at 20 % rated shaft load
Max. operating speed	12000 rpm
Machinery Directive: basic data safety integrity level	
MTTF _d	1200 a
Mission time (TM)	25 a
Nominal service life (L10h)	1.7 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 32 VDC: typ. 80 mA
Operating principle	magnetic
Output circuit	HTL HTL, inv. TTL TTL, RS422 compatible, inv.
Pulse frequency	HTL up to 16384 ppr: max. 600 kHz TTL up to 16384 ppr: max. 1 MHz

Channels	BAS: ABN + inverted signals ADV: CH1, CH2, CH3, CH4; + inverted signals
Load	max. 40 mA / channel
Circuit protection	inverse-polarity and short-circuit protection
Nullimpuls setzen:	Setzen: SET = +UB für 2 s Deaktiviert: SET = GND
Accuracy	
Phase offset	90° ± max. 8.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %
Configurable via NFC:	
BASIC: (BAS)	
Channels:	ABN and inverted
HTL / TTL	freely selectable
Pulses / revolution:	1 ppr up to 16384 ppr freely selectable
Advanced (ADV):	
Channels:	4 channels configurable + inv. signals (ABN possible)
HTL / TTL:	freely selectable
Pulses / revolution:	1 ppr up to 16384 ppr freely selectable
Number of pulses for each channel:	individually selectable
Set zero pulse:	yes
Pulse width and position:	Width and position adjustable
Environmental data	
Noise immunity:	
ESD (DIN EN 61000-4-2):	8 kV
EMC: (DIN EN 61000-4-3):	10 V/m
Burst (DIN EN 61000-4-4):	2 kV
High frequency fields (DIN EN 61000-4-6):	10 V
Surge (DIN EN 61000-4-5):	2 kV
Radio interference:	According DIN EN 55011
NFC:	
EMC:	According ETSI EN 301 489
RED:	According ETSI EN 300 330

Electrical safety:	DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No 61010-1-12
Vibration: (DIN EN 60068-2-6)	300 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

General Data

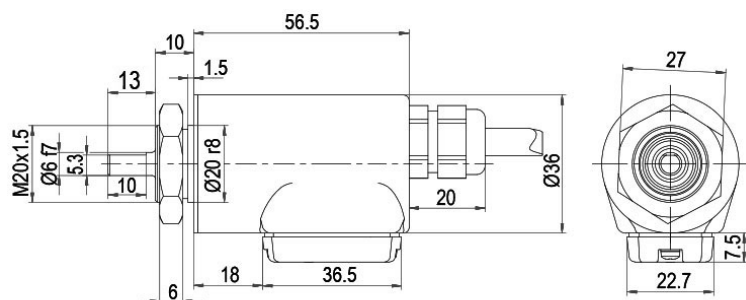
Weight	approx. 130 g [4.586 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40
Operating temperature	Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C. Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F.
Storage temperature	Connector: -40 °C up to +100 °C, Cable: -30 °C up to +80 °C Connector: -40 °F up to +212 °F, Cable: -22 °F up to +176 °F

More Information

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

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

Cable connection L2 axial with 2 m cable (BAS)



Alle Abmessungen in mm / All dimensions in mm

Description

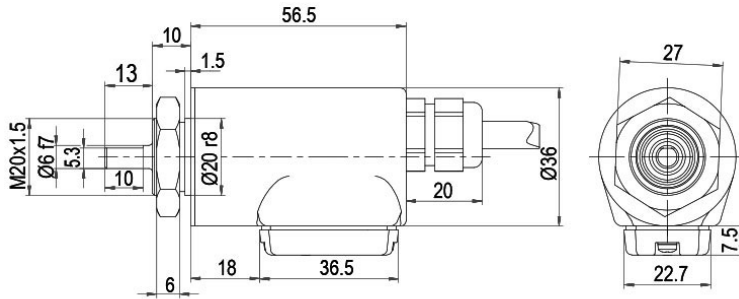
ABN inv. poss.

L2 axial, shield connected to encoder housing

•

Assignments	
	L2
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable connection L2 axial with 2 m cable (ADV)



Alle Abmessungen in mm / All dimensions in mm

Description

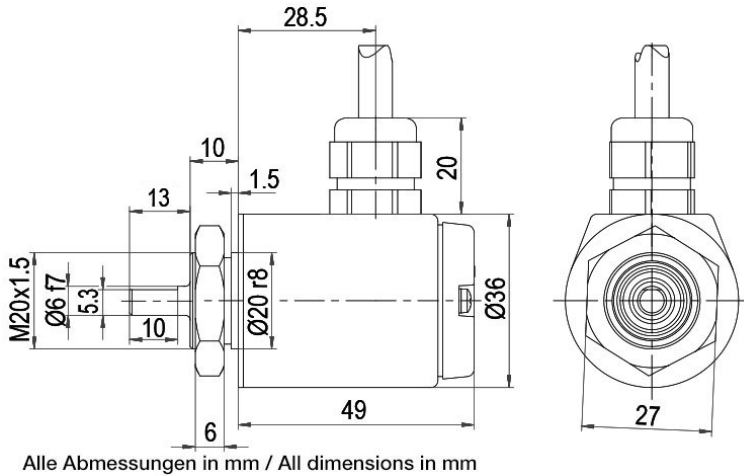
ABN inv. poss.

L2 axial, shield connected to encoder housing

•

Assignments	
	L2
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Cable connection L3 radial with 2 m cabel (BAS)

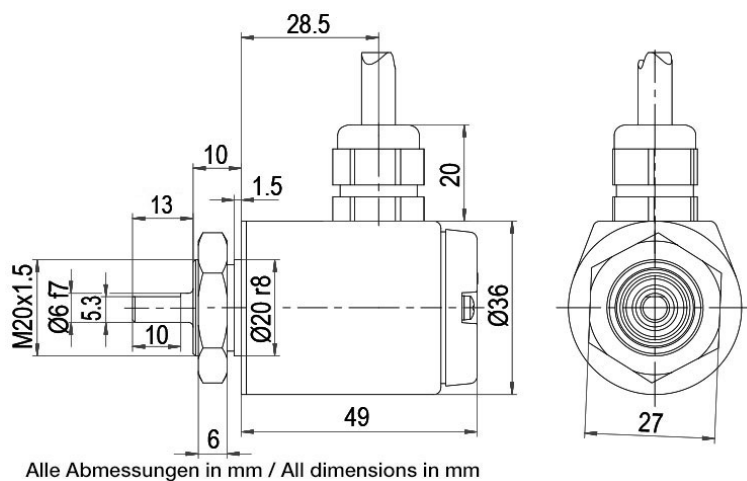


Description	ABN inv. poss.
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L3	radial, shield connected to encoder housing	•
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Assignments	
	L3
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable connection L3 radial with 2 m cabel (ADV)



Description

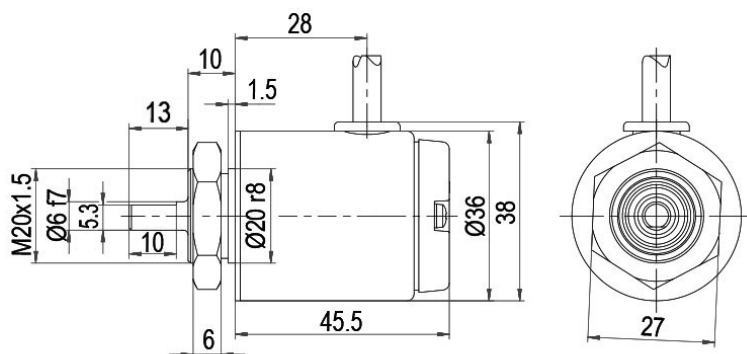
ABN inv. poss.

L3 radial, shield connected to encoder housing

•

Assignments	
	L3
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Cable K1 (IP40) radial with 2 m cable (BAS)



Alle Abmessungen in mm / All dimensions in mm

Description

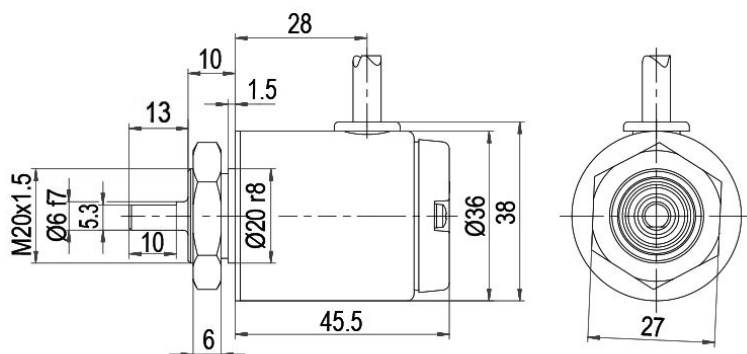
ABN inv. poss.

K1 radial, shield not connected (IP40)

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Assignments	
	K1
Circuit	BAS
GND	WH
(+) Vcc	BN
A	GN
B	YE
N	GY
A inv.	RD
B inv.	BK
N inv.	VT
Shield	flex

Cable K1 (IP40) radial with 2 m cable (ADV)



Alle Abmessungen in mm / All dimensions in mm

Description

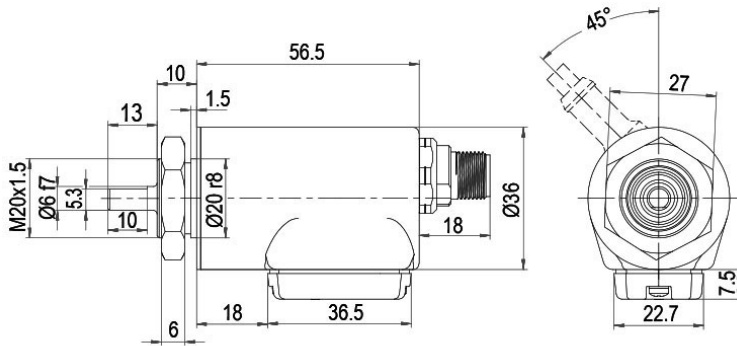
ABN inv. poss.

K1 radial, shield not connected (IP40)

•

Assignments	
	K1
Circuit	ADV
GND	WH
(+) Vcc	BN
CH1	GN
CH2	YE
CH3	GY
CH4	GYPK
SET	PK
CH1 inv.	RD
CH2 inv.	BK
CH3 inv.	VT
CH4 inv.	RDBU
Shield	flex

Sensor connector (M12x1) SB axial, 8-pin (BAS)



Alle Abmessungen in mm / All dimensions in mm

Description

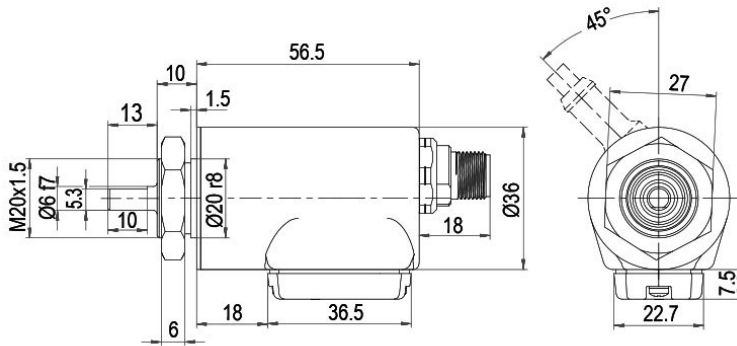
ABN inv. poss.

SB8 axial, 8-pin, Connector connected to encoder housing

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Assignments	
	SB8
	8-pin
Circuit	BAS
GND	1
(+) Vcc	2
A	3
B	4
N	5
A inv.	6
B inv.	7
N inv.	8

Sensor connector (M12x1) SB axial, 12-pin (ADV)



Alle Abmessungen in mm / All dimensions in mm

Description

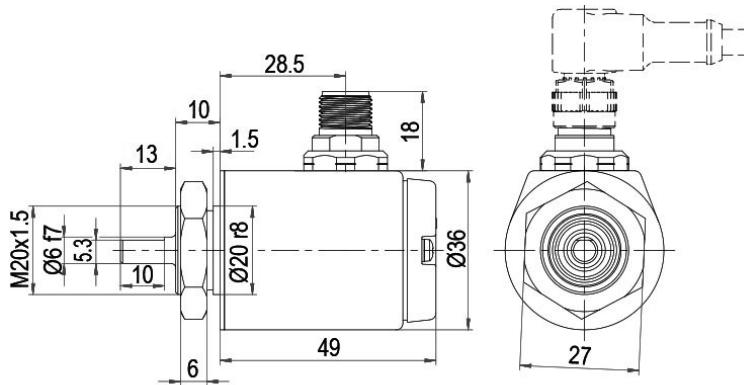
ABN inv. poss.

SB12 axial, 12-pin, Connector connected to encoder housing

•

Assignments	
	SB12
	12-pin
	
Circuit	ADV
GND	3
(+) Vcc	1
CH1	4
CH2	6
CH3	8
CH4	11
SET	5
CH1 inv.	9
CH2 inv.	7
CH3 inv.	10
CH4 inv.	12
n. c.	2

Sensor-connector (M12x1) SC radial, 8-pin (BAS)



Alle Abmessungen in mm / All dimensions in mm

Description

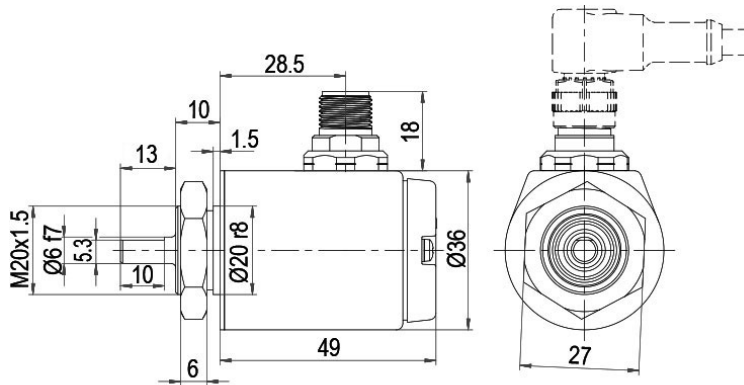
ABN inv. poss.

SC8 radial, 8-pin, Connector connected to encoder housing

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Assignments	
	SC8
	8-pin
Circuit	BAS
GND	1
(+) Vcc	2
A	3
B	4
N	5
A inv.	6
B inv.	7
N inv.	8

Sensor-connector (M12x1) SC radial, 12-pin (ADV)



Alle Abmessungen in mm / All dimensions in mm

Description	ABN inv. poss.
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ABN inv. poss.

SC12 radial, 12-pin, Connector connected to encoder housing

Assignments	
	SC12
	12-pin
	
Circuit	ADV
GND	3
(+) Vcc	1
CH1	4
CH2	6
CH3	8
CH4	11
SET	5
CH1 inv.	9
CH2 inv.	7
CH3 inv.	10
CH4 inv.	12
n. c.	2

Options

Low-friction bearings

The encoder WDG 36S is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to $\leq 0.25 \text{ Ncm}$ [0.354 in-ozf] and the protection class at the shaft input to IP50.

Order key

AAC

Cable length

The encoder WDG 36S can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency; see <https://www.wachendorff-automation.com/download-gtd-incremental-encoders/>

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

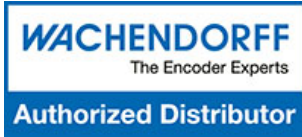
Example: 5 m cable = 050

Order key

XXX = Decimeter

Example Order No.	Type					Your encoder
WDGN 36S	WDGN 36S					WDGN 36S
	Shaft					
06	06					
	Pulses per revolution PPR:					
X	1-16384 configurable Other PPRs on request					
	Channels:					
X	X (BAS=ABN, ADV= CH1,CH2,CH3,CH4)					
	Output circuit					
BAS	Resolution PPR	Power supply VDC	Output circuit	-	Order key	
	configurable	4.75 - 32	configurable HTL, TTL (A,B,N + inv.)	-	BAS	
	1-16384	4.75 - 32	configurable HTL, TTL; 4 channels+inv.	-	ADV	
	Electrical connections					
L2	Description	ABN inv. poss.		Order key		
	Cable: length (2 m standard, WDG 58T: 1 m)					
	radial, shield not connected (IP40)	•		K1		
	axial, shield connected to encoder housing	•		L2		
	radial, shield connected to encoder housing	•		L3		
	Connector: (shield connected to encoder housing)					
	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				
	Without option	Empty				
	Cable length	XXX = Decimeter				

Example Order No.=	WDGN 36S	06	X	X	BAS	L2		WDGN 36S							Your encoder
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For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
<https://www.wachendorff-automation.com/contact-en/wachendorff-world-wide/>

WACHENDORFF

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