WACHENDORFF
The Encoder Experts

Online Data sheet

Encoder WDGA 36E IO-Link

www.wachendorff-automation.com/wdga36e_io-link

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

IndustrieROBUST

Encoder WDGA 36E absolute IO-Link, with EnDra®-Technology

Illustration similar

EnDra® Technologie

IO-Link

- EnDra®: maintenance-free and environmentally friendly
- IO-Link, Single-turn and Multi-turn
- Device Profile for encoder Smart Sensor Profile (SSP)
- Single-turn/Multi-turn (16 bit / 43 bit)
- Forward-looking technology with 32 Bit processor
- LED as indicator for operating condition and Error message
- Monitoring the power supply
- Cam switches for position and velocity with hysterese

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Mechanical Data	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	stainless steel
- 1. Spring plate compensation	axial: ±1.2 mm [0.0472"], radial: ±0.4 mm [0.0157"]
Flange diameter	Ø 36 mm [Ø 1.417"]

Shaft(s)	
Starting torque	approx. 1.6 Ncm [2.266 in-ozf] at ambient temperature
Shaft	Ø 7 mm [Ø 0.276"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 8 mm [Ø 0.315"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 10 mm [Ø 0.394"]
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12 mm [Ø 0.472"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12.7 mm [Ø 1/2"] Order No. 3Z
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 14 mm [Ø 0.551"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 15 mm [Ø 0.591"]
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	with adapter sleeve
Insertion depth min.	10 mm [0.394"]
Insertion depth max.	14.5 mm [0.571"]
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
Nominale 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	6000 rpm

Machinery Directive: basic data safety integrity level	
$MTTF_d$	1300 a
Mission time (TM)	20 a
Nominale service life (L10h)	1 x 10'11 revs. at 20 % rated shaft load and 6000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data	
Power supply/Current consumption	18 VDC up to 30 VDC: typ. 30 mA
Power consumption	max. 0.6 W
Operating principle	magnetic

Sensor data	
Single-turn technology	innovative hall sensor technology
Single-turn resolution	65,536 steps/360° (16 bit)
Single-turn accuracy	± 0.0878° (≤ 12 bit)
Single-turn repeat accuracy	± 0.0878° (≤ 12 bit)
Internal cycle time	250 µs
Multi-turn technology	patented EnDra® technology no battery and no gear.
Multi-turn resolution	up to 32 bit with high precision value up to 43 bit.

Environmental data	
ESD (DIN EN 61000-4-2):	4 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61326-2-3 DIN EN 61131-9
Vibration: (DIN EN 60068-2-6)	300 m/s² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s² (6 ms)
Electrial Safety:	DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No 61010-1-12
Turn on time:	<1 s

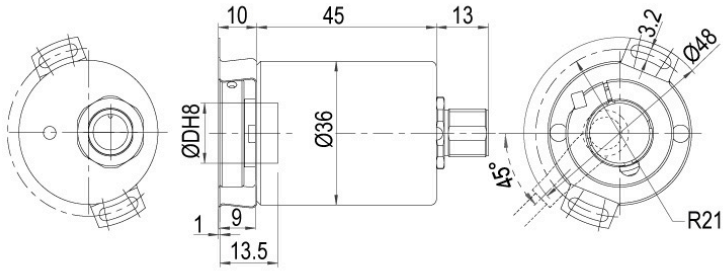
Duty information	
Customs tariff number:	90318020
Country of origin:	Germany

Interface	
Interface:	**IO-Link Version: V1.1.4**
Smart Sensor Profile (SSP):	• 2.8 Adjustable Switching Sensor, multi channel • 4.2.1 Measuring and Switching Sensor, high resolution, 1 channel • 4.2.2 Measuring and Switching Sensor, high resolution, 2 channel
Baud rate:	COM 3 230.4 kBit/s
Advice:	The standard settings and customer-specific adjustments in the parameterisation can be set using ISDUs, e.g. scaling, direction of rotation, etc.

General Data	
Weight	approx. 110 g [3.88 oz]
Connections	connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C [-40 °F up to 185 °F]
Storage temperature	-40 °C up to +100 °C [-40 °F up to 212 °F]

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

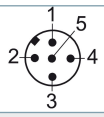
Connector, M12x1 IB5 axial, 5-pin



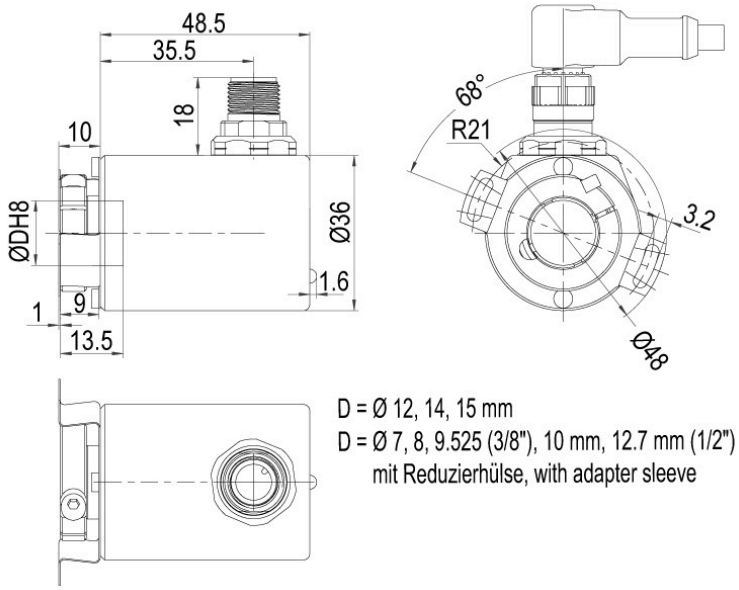
D = Ø 12, 14, 15 mm
D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
mit Reduzierhülse, with adapter sleeve

Description

IB5 axial, 5-pin, shield connected to encoder housing

Assignments	
	IB5
	
L+	1
L-	3
C/Q	4
I	2
n. c.	5

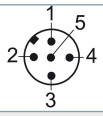
Connector, M12x1 IC5 radial, 5-pin



D = Ø 12, 14, 15 mm
D = Ø 7, 8, 9.525 (3/8"), 10 mm, 12.7 mm (1/2")
mit Reduzierhülse, with adapter sleeve

Description

IC5 radial, 5-pin, shield connected to encoder housing

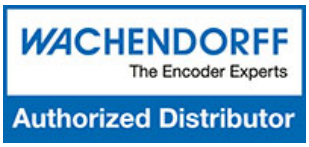
Assignments	
	IC5
	
L+	1
L-	3
C/Q	4
I	2
n. c.	5

Options

Low-friction bearings	Order key
The encoder WDGA 36E IO-Link is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to ≤ 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.	**AAC**

Example Order No.	Type		Your encoder
WDGA 36E	WDGA 36E		WDGA 36E
	Shaft	**Order key**	
08	Ø 7 mm [Ø 0.276"] with adapter sleeve	07	
	Ø 8 mm [Ø 0.315"] with adapter sleeve	08	
	Ø 10 mm [Ø 0.394"] with adapter sleeve	10	
	Ø 12 mm [Ø 0.472"]	12	
	Ø 12.7 mm [Ø 1/2"] Order No. 3Z with adapter sleeve	3Z	
	Ø 14 mm [Ø 0.551"]	14	
	Ø 15 mm [Ø 0.591"]	15	
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z with adapter sleeve	4Z	
	Single-turn Resolution	**Order key**	
16	Single-turn resolution 1 bit up to 16 bit: (e. G. 6 bit)	16	
	Multi-turn Resolution	**Order key**	
43	Multi-turn resolution: (examples) 6 bit = 6 43 bit = 43	16	
	Data protocol	**Order key**	
IL	IO-Link	IL	
	Software	**Order key**	
A	up to date release	A	
	Code	**Order key**	
B	binary	B	
	Power supply	**Order key**	
3	18 V up to 30 V (standard)	3	
	Galvanic isolation	**Order key**	
0	no	0	
	Electrical connections	**Order key**	
IB5	**Connector:**		
	sensor-connector, M12x1, 5-pin, axial, shield connected to encoder housing	IB5	
	sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	IC5	
	Options	**Order key**	
	Without option	Empty	
	Low-friction bearings	AAC	

Example Order No.	WDGA 36E	08	16	43	IL	A	B	3	0	IB5	
	WDGA 36E											Example Order No.



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/

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