Encoder WDGA 58E RS485

www.wachendorff-automation.com/wdga58ers485

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 58E absolute RS485 magnetic, with EnDra® Technology

EnDra® Technologie

RS485

- EnDra® multiturn technology: maintenance-free and environmentally friendly
- RS485
- Single-turn/Multi-turn (max. 16 bit /32 bit)
- Forward-looking technology with 32 bit processor
- CRC checksum

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Mechanical Data	
Housing	
Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing cap	Aluminum die cast, powder coated; Integrated magnetic shielding
Torque supports	incl. 1 torque support WDGDS10001
- 1. Spring plate compensation	axial: ±0.8 mm, radial: ±0.2 mm
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories WDGDS10005
- Compensation	axial: ±0.5 mm, radial: ±1.5 mm, Max. operating speed: 3000 rpm
Housing	Ø 58 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm at ambient temperature
Fixing	permanently attached clambing ring
Shaft	Ø 6 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 6.35 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 7 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 8 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 9.525 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 10 mm
Advice	with adapter sleeve
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 12 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N
Shaft	Ø 14 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N

Max. Permissible shaft loading axial	50 N

Shaft	Ø 15 mm
Shaft length	L: 12 mm
Insertion depth min.	11 mm
Insertion depth max.	15 mm
Max. Permissible shaft loading radial	80 N
Max. Permissible shaft loading axial	50 N

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	
$MTTF_d$	1000 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	4,75 VDC up to 32 VDC: typ. 50 mA
Power consumption	max. 0.5 W
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 80 mA
Power consumption	max. 0.44 W

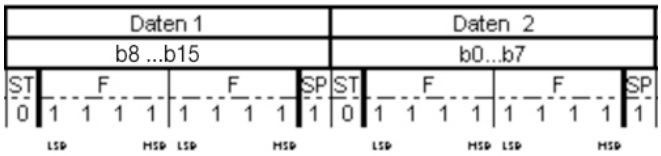
Sensor data	
Single-turn technology	innovative hall sensor technology
Single-turn resolution	up to 65,536 steps/360° (16 bit)
Single-turn accuracy	± 0.0878° (≤ 12 bit)
Single-turn repeat accuracy	± 0.0878° (≤ 12 bit)
Internal cycle time	≤ 600 µs
Multi-turn technology	patented EnDra® technology no battery no gear.
Multi-turn resolution	up to 32 bit.

Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61326-1
Vibration: (DIN EN 60068-2-6)	300 m/s^2 (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s^2 (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

Interface	
Interface:	**RS485**
Configuration inputs:	
Positive direction of counting: (View on shaft)	DIR = GND -> cw DIR = +Ub -> ccw
Set to zero:	Preset = apply +Ub for 2 s
Baud rate:	Standard: 9600 bit/s Other baud rates on request
Polling cycle:	Standard: 20 ms (Tolerances: +/- 2 ms) Other polling cycles on request
Telegram lenght:	6 byte singleturn, 8 byte multiturn
Telegram composition:	2 Byte Präambel, 2 /4 Byte user data, 2 Byte CRC
Bytecomposition:	Startbit (0) and Stopbit (1), Bytes are Big-Endian and LSB first, no Paritybit
CRC-Definition:	Code: • CRC-CCITT 16 bit (X^16+X^12+X^5+1) • Startvalue 0x1021, • Start/Stopbits aren´t included • Präambel (0xABCD) is included, • Bytewise orientation: per CRC-Refresh there is used 1 Byte
Protocol malfunction behaviour:	If encoder recognizes that it´s impossible to send a right positionvalue (e.G.: Magnet-loss), there will be send out a telegram with maximum value user Data at normalcycletime and normal Baudrate.

Protocol RS485



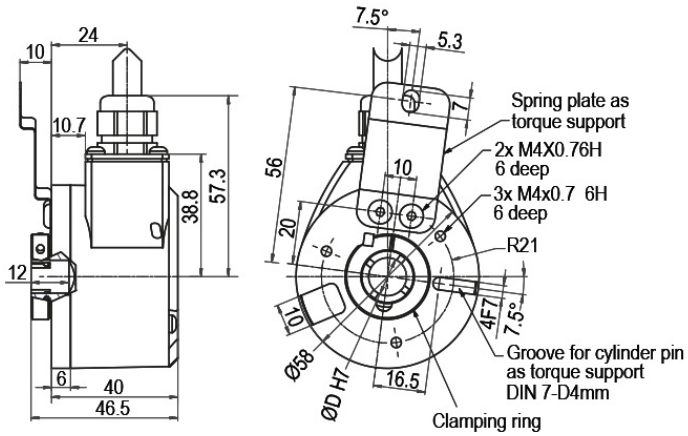
General Data	
Weight	approx. 220 g
Connections	cable or connector, radial
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65; cable outlet K1: IP40
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

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

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

Cable connection L3 radial with 2 m cable

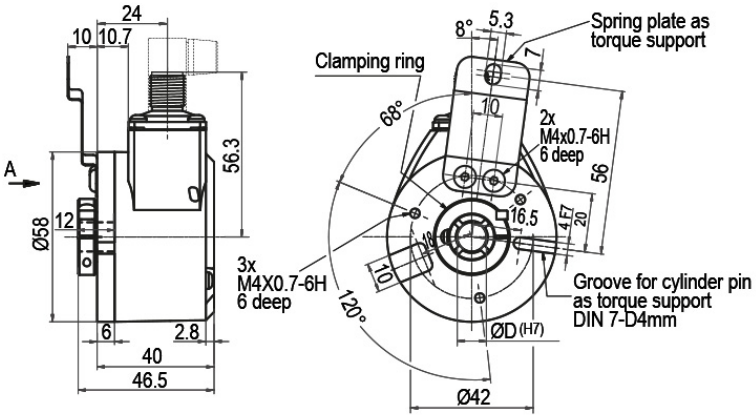


Description

L3 radial, shield connected to encoder housing

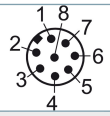
Assignments	
	L3
S- (GND)	WH
S+ (DCin)	BN
A (DATA+)	GY
B (DATA-)	PK
PRESET	BU
DIR	RD
Shield	housing

Connector, M12x1, CC8, radial, 8-pin

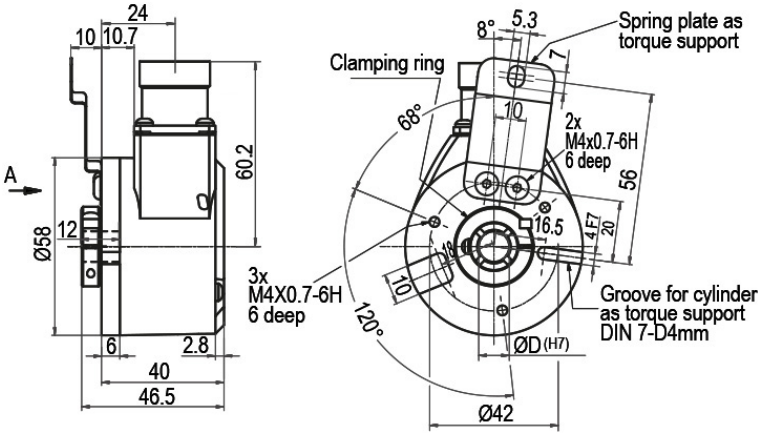


Description

CC8 radial, 8-pin, shield connected to encoder housing

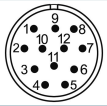
Assignments	
	CC8
	
S- (GND)	1
S+ (DCin)	2
A (DATA+)	5
B (DATA-)	6
PRESET	7
DIR	8
Shield	housing

Connector, M23, C5, radial, 12-pin



Description

C5	radial, 12-pin, shield connected to encoder housing

Assignments	
	C5
	
S- (GND)	12
S+ (DCin)	11
A (DATA+)	3
B (DATA-)	4
PRESET	9
DIR	8
Shield	housing

Example Order No.	Type		Your encoder
WDGA 58E	WDGA 58E		WDGA 58E
	Shaft	**Order key**	
06	Ø 6 mm with adapter sleeve	06	
	Ø 6.35 mm with adapter sleeve	2Z	
	Ø 7 mm with adapter sleeve	07	
	Ø 8 mm with adapter sleeve	08	
	Ø 9.525 mm with adapter sleeve	4Z	
	Ø 10 mm with adapter sleeve	10	
	Ø 12 mm	12	
	Ø 14 mm	14	
	Ø 15 mm	15	
	Single-turn Resolution	**Order key**	
14	Single-turn resolution 1 bit up to 16 bit: (e. G. 14 bit)	14	
	Multi-turn Resolution	**Order key**	
18	Multi-turn up to 32 bit (e. G. 18 bit) (Single-turn + Multi-turn max. 32 bit) No Multi-turn: 00	18	
	Data protocol	**Order key**	
EI	RS485	EI	EI
	Software	**Order key**	
A	up to date release	A	A
	Code	**Order key**	
B	binary	B	B
	Power supply	**Order key**	
0	4.75 V up to 32 V (standard)	0	
	4.75 V up to 5.5 V	1	
	Galvanic isolation	**Order key**	
0	no	0	0
	Electrical connections	**Order key**	
	Cable:		
	radial, shield connected to encoder housing, with 2 m cable	L3	
L3	**Connector:**		
	sensor-connector, M12x1, 8-pin, radial, shield connected to encoder housing	CC8	
	connector, M23, 12-pin, radial, shield connected to encoder housing	C5	

Example Order No.	WDGA 58E	06	14	18	EI	A	B	0	0	L3	
	WDGA 58E				EI	A	B		0		Your encoder

For further information please contact our local distributor.
Here you find a list of our distributors worldwide.
https://www.wachendorff-automation.com/contact-sales-en/

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