



Online Data sheet

Encoder WDGA 58S RS485

www.wachendorff-automation.com/wdga58srs485

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 WDGA 58S absolute RS485 magnetic, with EnDra® Technology



EnDra®
Technologie

RS485

- Resistance to salt mist (IEC 60068-2-11) succeeded
- Protection: IP67 + IP69k (high pressure / steam cleaning)
- EnDra®: maintenance-free and environmentally friendly
- RS485
- Single-turn/Multi-turn (max. 16 bit /32 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition

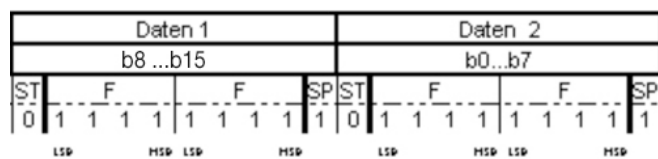
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Salt mist IEC 60068-2-11, high pressure / steam cleaning

Mechanical Data		Sensor data	
Housing		Single-turn technology	innovative hall sensor technology
Flange	clamping flange	Single-turn resolution	up to 65,536 steps/360° (16 bit)
Flange material	Aluminum, anodized natur	Single-turn accuracy	± 0.0878° (12 bit)
Housing cap	steel case chrome-plated, magnetic shielding	Single-turn repeat accuracy	± 0.0878° (12 bit)
Housing	Ø 58 mm	Internal cycle time	600 µs
Shaft(s)		Multi-turn technology	patented EnDra® technology no battery no gear.
Shaft material	stainless steel	Multi-turn resolution	up to 32 bit.
Starting torque	approx. 1 Ncm at ambient temperature	Environmental data	
Shaft	Ø 10 mm	ESD (DIN EN 61000-4-2):	8 kV
Shaft length	L: 18 mm	Burst (DIN EN 61000-4-4):	2 kV
Max. Permissible shaft loading radial	100 N	includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61326-1
Max. Permissible shaft loading axial	100 N	Vibration: (DIN EN 60068-2-6)	300 m/s ² (10 Hz up to 2000 Hz)
Bearings		Shock: (DIN EN 60068-2-27)	5000 m/s ² (6 ms)
Bearings type	2 precision ball bearings	Design:	according DIN VDE 0160
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	Turn on time:	<1,5 s
Max. operating speed	3600 rpm	Duty information	
Machinery Directive: basic data safety integrity level		Customs tariff number:	90318020
MTTF _d	1000 a	Country of origin:	Germany
Mission time (TM)	20 a	Interface	
Nominale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 3600 rpm	Interface:	RS485
Diagnostic coverage (DC)	0 %	Configuration inputs:	
Electrical Data		Positive direction of counting: (View on shaft)	DIR = GND -> cw DIR = +Ub -> ccw
Power supply/Current consumption	4,75 VDC up to 32 VDC: typ. 50 mA	Set to zero:	Preset = apply +Ub for 2 s
Power consumption	max. 0.5 W	Baud rate:	Standard: 9600 bit/s Other baud rates on request
Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 80 mA	Polling cycle:	Standard: 20 ms (Tolerances: +/- 2 ms) Other polling cycles on request
Power consumption	max. 0.44 W	Telegram length:	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: <ul style="list-style-type: none"> • CRC-CCITT 16 bit ($X^{16}+X^{12}+X^5+1$) • Startvalue 0x1021, • Start/Stopbits aren't included • Präambel (0xABCD) is included, • Byte-wise 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



LED-behaviour:

At Start / while booting:	- red gleam (< 2,3 s)
Malfunction:	- constant red gleam (> 2,3 s)
Normal function:	- constant green gleam
No supply:	- no gleam

General Data

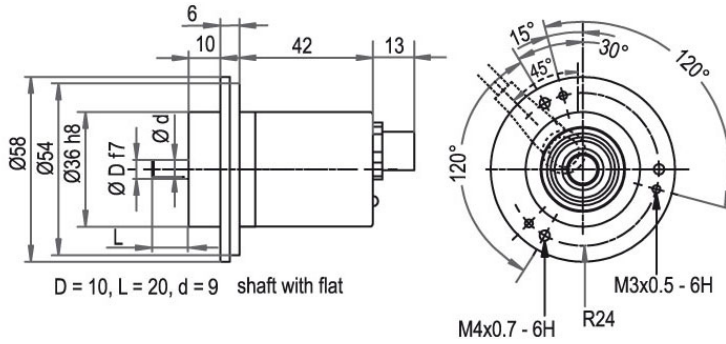
Weight	approx. 200 g
Connections	connector outlet
Protection rating (EN 60529)	IP67+IP69K all around
Operating temperature	-40 °C up to +85 °C
Storage temperature	-40 °C up to +100 °C

More Information

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

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

Connector, M12x1 CB8, axial, 8-pin

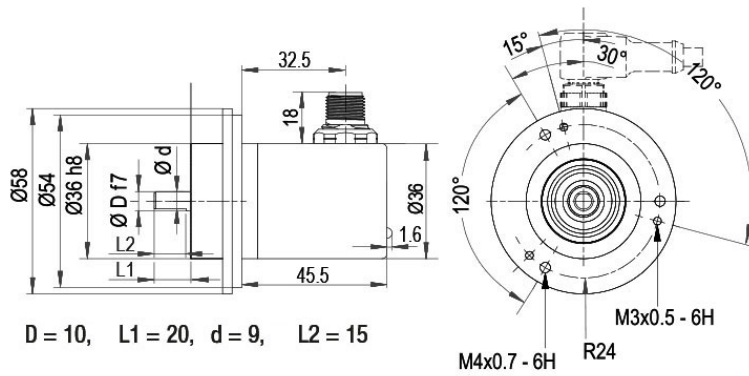


Description

CB8 axial, 8-pin, shield connected to encoder housing

Assignments	
	CB8
S- (GND)	1
S+ (DCin)	2
A (DATA+)	5
B (DATA-)	6
PRESET	7
DIR	8
Shield	housing

Connector, M12x1 CC8, 8-pin, radial



Description

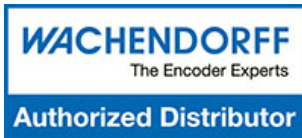
CC8 radial, 8-pin, shield connected to encoder housing

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

Example Order No.	Type	Your encoder	
WDGA 58S	WDGA 58S	WDGA 58S	
	Shaft	Order key	
10	Ø 10 mm	10	
	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	
	Software	Order key	
A	up to date release	A	
	Code	Order key	
B	binary	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	
	Electrical connections	Order key	
CB8	Connector:		
	sensor-connector, M12x1, 8-pin, axial, shield connected to encoder housing	CB8	
	sensor-connector, M12x1, 8-pin, radial, shield connected to encoder housing	CC8	

Example Order No.	WDGA 58S	10	14	18	EI	A	B	0	0	CB8
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WDGA 58S										Example Order No.
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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-sales-en/>

WACHENDORFF

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