

Encoder WDGA 58E absolute RS485 magnetic, with EnDra®



EnDra®
Technologie

RS485

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

www.wachendorff-automation.com/wdga58ers485

Mechanical Data

Housing	
- Flange:	Aluminium
- Cap:	Aluminium, powder coated
- Torque Support:	
1. Spring plate Compensation:	Incl. 1 spring plate WDGDS10001 axial: max. 1.5 mm, radial: max. 0.1 mm
Max. operating speed:	6000 rpm up to max. protection rating +60 °C (Accessories)
2. Cylinder pin Compensation:	axial: max. 1 mm, radial: max. 0.3 mm
Max. operating speed:	3000 rpm
Hollow bore (blind)	
- Material:	stainless steel
- Diameter:	6, 12 or 14 mm 8, 10 mm with adapter sleeve
- Permitted load on shaft end:	max. 80 N radial max. 50 N axial
- Starting torque:	approx. 1.6 Ncm at ambient temperature
Attachment:	permanently attached clamping ring
Bearings	
- Type:	2 precision ball bearings
- 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
Weight:	approx. 220 g
Connections:	cable or connector, radial
Protection class (EN 60529):	IP67, shaft sealed to IP65

Machinery Directive: basic data safety integrity level

MTTF _d :	1000 a
Mission time (T _M):	20 a
Normal service life (L _{10h}):	1 x 10 ¹¹ revs. at 6,000 min ⁻¹ and 20 % rated shaft load
Diagnostic coverage (DC):	0 %

Sensor data

Singleturn technology:	innovative hall sensor technology
Singleturn resolution:	up to 16,384 steps/360° (14 bit)
Singleturn accuracy:	< ± 0.35°
Singleturn-repeat accuracy:	< ± 0.20°
Intern cycle time:	≤ 600 µs
Multiturn technology:	patented based EnDra® technology no battery and no gear
Multiturn resolution:	up to 32 bit

Ambient data

Operating temperature:	-40 °C bis +80 °C
Storage temperature:	-40 °C bis +100 °C

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

Vibration: 50 m/s² (10 Hz up to 2000 Hz)
(DIN EN 60068-2-6)

Shock: 1000 m/s² (6 ms)
(DIN EN 60068-2-27)
Design: appropriate DIN VDE 0160
Turn on time: <1.5 s

Configuration inputs:

Positive direction of counting: DIR = GND ⇔ cw
DIR = +Ub ⇔ ccw
(View on shaft)
Set to zero: Preset = apply +Ub for 2 s

Electrical Data:

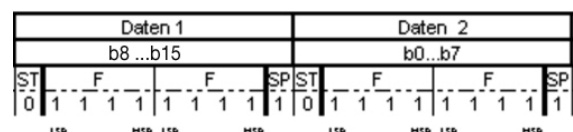
Supply voltage: 10 VDC up to 30 VDC;
4.75 VDC up to 5.5 VDC
max. 80 mA
Power consumption: max. 0.8 W

Example RS485-Protocol: (other Protocol variants on request)

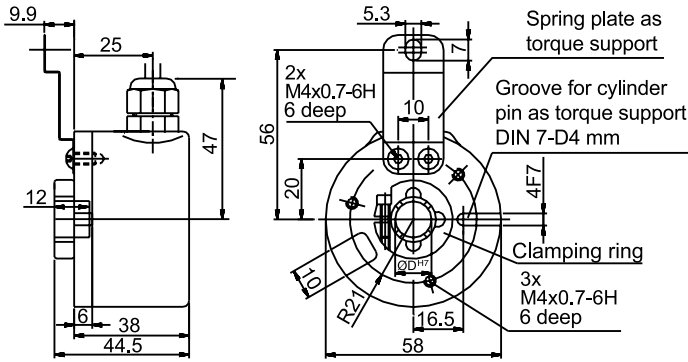
Baudrate: selectable 500 bit/s up to 1 Mbit/s
Standard: 9600 bit/s
Pollingcycle: automatic sending selectable
1 ms up to 1000 ms
Standard: 20 ms (Tolerances: +/- 2 ms)
Telegramdimension: 6 Byte Singiturn, 8 Byte Multiturn
Telegramcomposition: 2 Byte Präambel, 2/4 Byte user data,
2 Byte CRC
Bytecomposition: Startbit (0) and Stopbit (1),
Bytes are Big-Endian and LSB-first,
no Paritybit
CRC-Definition :
• Code: CRC-CCITT 16 bit (X¹⁶+X¹²+X⁵+1)
• Startvalue 0x1021,
• Start/Stopbits aren't included,
• Präambel (0xABCD) is included,
• Bitwise 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.



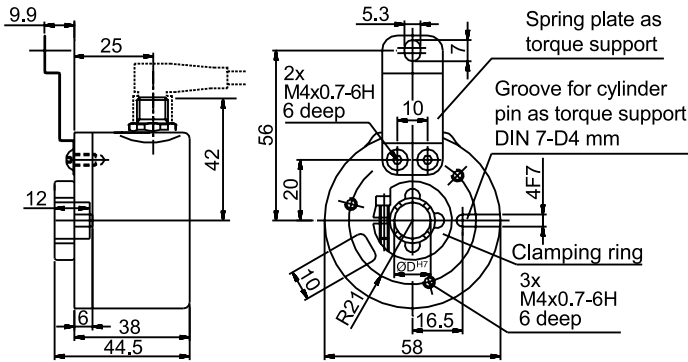
Cable outlet L3:



Connection configuration

Connector/ cable	M12 x1	cable outlet
Description	CC8 radial, 8-pin	L3, radial
S- (GND)	1	wh
S+ (DCin)	2	bn
A (DATA+)	5	gy
B (DATA-)	6	pk
PRESET	7	bu
DIR	8	rd
Shield	housing	housing

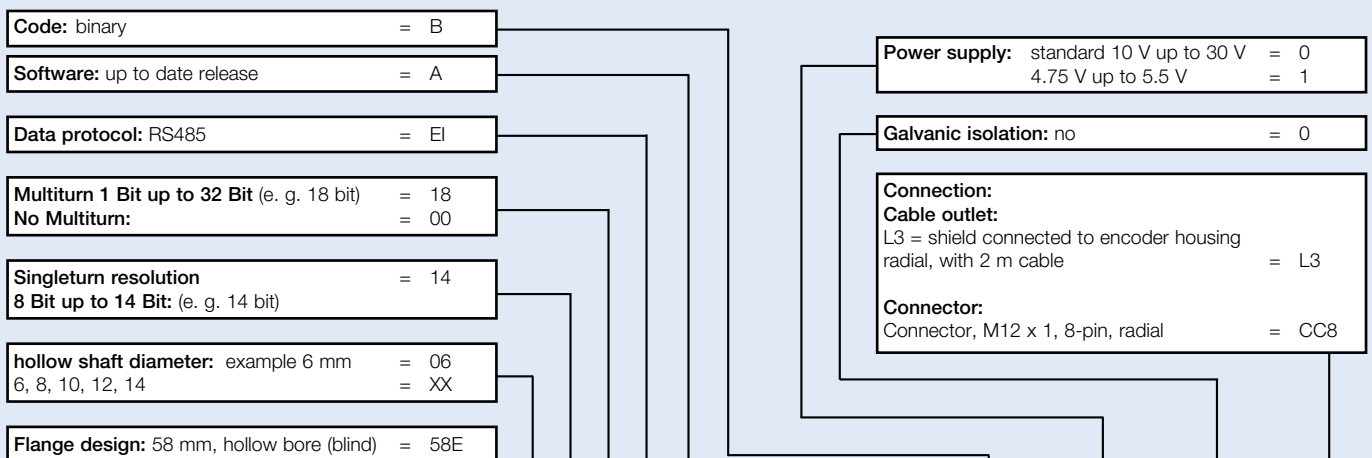
Connector, M12 x 1, 8-pol. CC8



All dimensional specifications in mm.

Suitable accessories for encoders WDGA absolute RS485 on request.

Ordering information:



Order-No.:

Example	WDGA	58E	06	14	18	EI	A	B	0	0	CC8
Your encoder	WDGA	58E				EI	A	B		0	