

# Encoder WDGA 58A absolute CAN SAE J1939 magnetic, with EnDra® - Technology



**EnDra®**  
Technology

**SAE J1939**

**Specifications:**

**Mechanical Data**

Housing: steel case chrome-plated, magnetic shielding  
 Flange type: synchro  
 Flange material: Aluminium  
 Shaft material: stainless steel  
 Shaft Ø: 6/10 mm  
 Shaft length: 12/20 mm  
 Permissible shaft loading: 125/220 N radial  
 120 N axial  
 Starting torque: < 1 Ncm  
 (at ambient temperature)  
 Bearings type: 2 precision ball bearings  
 Service life: 1 x 10<sup>9</sup> revs. at 100 % rated shaft load  
 1 x 10<sup>10</sup> revs. at 40 % rated shaft load  
 1 x 10<sup>11</sup> revs. at 20 % rated shaft load  
 Operating speed max.: 8,000 min<sup>-1</sup>  
 Weight: 224 g  
 Connection: connector

**Machinery Directive:**

**basic data safety integrity level**  
 MTTF<sub>d</sub>: 1000 a  
 Mission time (T<sub>M</sub>): 20 a  
 Normal service life (L<sub>10h</sub>): 1 x 10<sup>11</sup> revs. at 8,000 min<sup>-1</sup>  
 and 20 % rated shaft load  
 Diagnostic coverage (DC): 0 %

**Sensor data**

Singleturn technology: innovative hall sensor technology  
 Singleturn resolution: 16,384 steps/360° (14 bit)  
 Singleturn accuracy: < ± 0.35°  
 Singleturn-repeat accuracy: < ± 0,20°  
 intern cycle time: ≤ 600 µs  
 Multiturn Technology: patented EnDra® technology  
 no battery and no gear  
 Multiturn resolution: up to 262,144 revolutions (18 bit)

**Environmental data**

Operating temperature: - 40 °C up to + 80 °C  
 Storage temperature: - 40 °C up to + 100 °C  
 Protection class (EN 60529): IP67, shaft sealed to IP65

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

- EnDra®: maintenance-free and environmentally friendly
- CAN SAE J1939 protocol
- Single-/Multiturn (14 bit / 18 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition
- High shaft load up to 220 N radial, 120 N axial

[www.wachendorff-automation.com/wdga58asaiej1939](http://www.wachendorff-automation.com/wdga58asaiej1939)

Vibration: 50 m/s<sup>2</sup> (10-2000 Hz)  
 (DIN EN 60068-2-6)  
 Shock: 1000 m/s<sup>2</sup> (6 ms)  
 (DIN EN 60068-2-27)  
 Design: appropriate DIN VDE 0160

**Interface**

CAN physical layer: ISO 11898 (High Speed CAN)  
 Protocol: CAN SAE J1939  
 Baud rate: Auto-Baud-Detection

**Standard**

**Preset configuration:** (other configurations on request)  
 Direction of counting: (View from shaft end) ccw  
 ECU-address: 0x 0A  
 Process data Identifier: 0x 18 FF 00 0A  
 PGN: 0x FF 00  
 Process data mapping: Byte 0-3 32 Bit Position Value  
 Byte 4 8 Bit Error Register

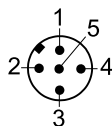
PDU timer and Position Preset can be adjusted by PGN configuration 0xEF00 (Prop. A).

PDU - Time: 50 ms (default)  
 Configuration - PGN: 0x EF 00 (Prop.A)  
 Byte 0: 0x 01  
 Byte 1: 0x FF  
 Byte 2: PDU time LSB  
 Byte 3: PDU time MSB  
 Byte 4: Preset LSB  
 Byte 5, 6 : Preset  
 Byte 7: Preset MSB

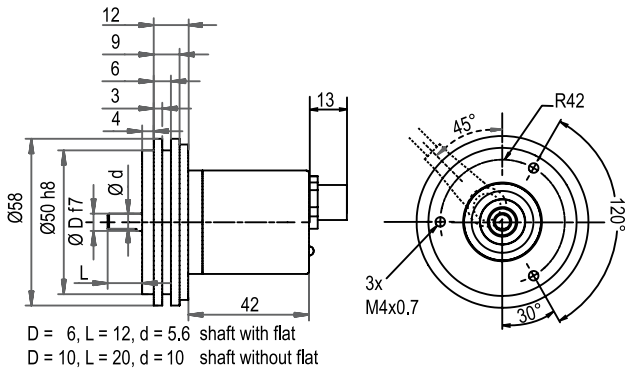
**Electrical Data:**

Supply voltage: 10 VDC up to 32 VDC  
 max. 50 mA  
 Power consumption: max. 0.5 W

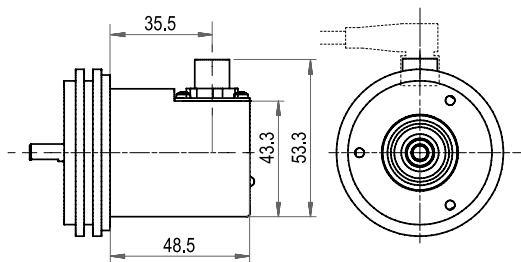
**Electrical connections, axial or radial, M12x1**

Definition	connector pin (connector-encoder)	Sensor connector pin assignment 5-pin
U <sub>B</sub>	2	
Ground (GND)	3	
CAN <sub>High</sub>	4	
CAN <sub>Low</sub>	5	
CAN <sub>GND</sub> / shield	1	

**Connector, M12 x 1, 5-pol. CB5**

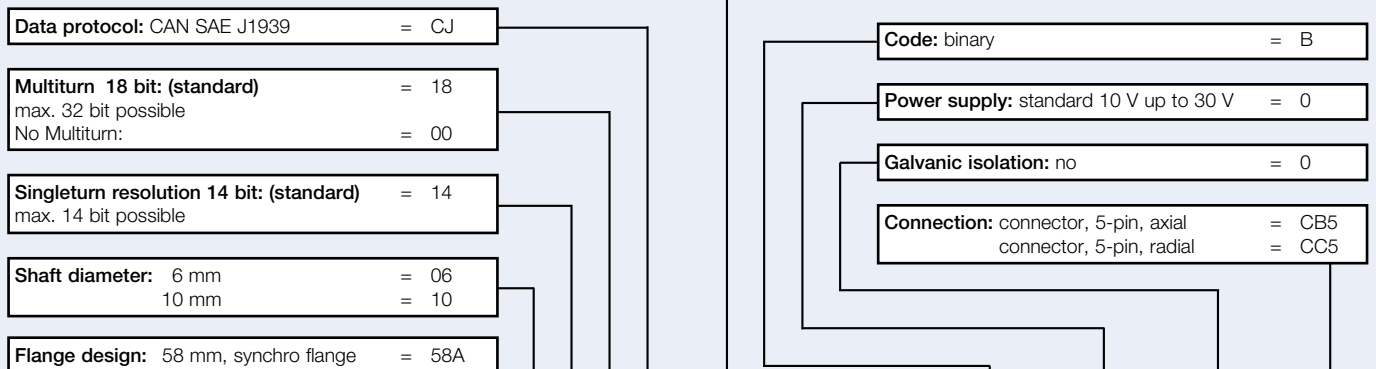


**Connector, M12 x 1, 5-pol. CC5**



All dimensional specifications in mm.

**Ordering information:**



**Order-No.:**

Example	WDGA	58A	10	14	18	CJ	A	B	0	0	CB5
Your encoder	WDGA	58A				CJ	A	B	0	0	