Wachendorff Automation GmbH & Co. KG
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Encoder WDGA 36A absolute CANopen magnetic, with EnDra® - Technology

EnDra® Technology

CANopen®

- EnDra®: maintenance-free and environmentally friendly
- CANopen, Single- and Multiturn
- Communication Profile according to CiA 301
- Device Profile for encoder CiA 406 V3.2 class C2
- Single-/Multiturn (14 bit / 40 bit)
- Forward-looking technology with 32 Bit processor
- 2-colour-LED as indicator for operating condition and error message appropriate CiA 303-3

www.wachendorff-automation.com/wdga36acan

Specifications:

Mechanical Data

Housing:	steel case chrome-plated, magnetic shielding
Flange type:	synchro
Flange material:	Aluminium
Shaft material:	stainless steel
Shaft Ø:	6 mm
Shaft length:	11.5 mm
Permissible shaft loading:	80 N radial 50 N axial
Starting torque: (at ambient temperature)	< 0.3 Ncm
Bearings type:	2 precision ball bearings
Service life:	1.4×10^8 revs. at 100 % rated shaft load 2.0×10^9 revs. at 40 % rated shaft load 1.7×10^{10} revs. at 20 % rated shaft load
Operating speed max.:	12,000 min^{-1}
Weight:	112 g
Connection:	connector or cable

Machinery Directive:	**basic data safety integrity level**
$MTTF_d$:	1000 a
Mission time (T_M):	20 a
Normal service life ($L_{10}h$):	$1,7 \times 10^{10}$ revs. at 12,000 min^{-1} 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) with high precision value up to 40 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 cabel outlet K6: IP20
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: (DIN EN 60068-2-6)	50 m/s^2 (10-2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s^2 (6 ms)
Design:	appropriate DIN VDE 0160

Interface	**CAN**
Protocol:	CANopen - Communication profil CiA 301 - Device Profile for encoder CiA 406 V3.2 class C2
Node number:	0 up to 127 (default 127)
Baud rate:	10 kBaud up to 1 MBaud with automatic bit rate detection

The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e. g. PDOs, Scaleing, Heartbeat, Node-ID, Baud rate, etc.

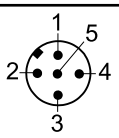
Programmable CAN transmission modes

- **Sychronous mode:** when a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.
- **Asynchronous mode:** a PDO message is triggered by an internal event. (e.g. change of measured valued, internal timer, etc.)

Electrical Data:

Supply voltage:	10 VDC up to 30 VDC max. 50 mA
Power consumption:	max. 0.5 W

Electrical connections

		
Connector/ cable	M12 x1	cable
Definition	CB5 axial, 5-pin	K6, axial
U_B	2	bn
Ground (GND)	3	wh
CAN_{High}	4	gn
CAN_{Low}	5	ye
CAN_{GND}/Schirm	1	gy

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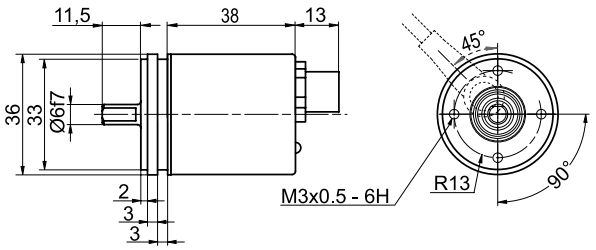
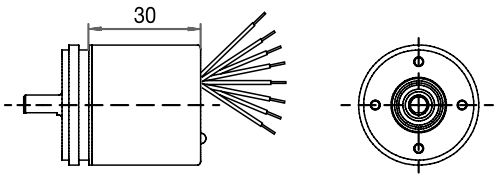
Connector, M12 x 1, 5-pol. CB5



Cable outlet, K6:



All dimensional specifications in mm.

Ordering information:

Data protocol: CANopen	=	CO
Multiturn 18 bit:	=	18
40 bit:	=	40
No Multiturn:	=	00
Singleturn resolution 12 bit:	=	12
Shaft diameter 6 mm	=	06
Flange design: 36 mm, synchro flange	=	36A
Software: up to date release	=	A
Code: binary	=	B
Power supply: standard 10 V up to 30 V	=	0
Galvanic isolation: no	=	0
Connection: Cable outlet:		
axial, with 8 cm loose wires, IP20	=	K6
Connector: 5-pin, axial	=	CB5

Order-No.:

Example	WDGA	36A	06	12	18	CO	A	B	0	0	CB5
Your encoder	WDGA	36A	06	12		CO	A	B	0	0	