WACHENDORFF
The Encoder Experts

Online Data sheet

Encoder WDGA 36J RS485

www.wachendorff-automation.com/wdga36jrs485

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 36J absolute RS485 magnetic, with EnDra®-Technology

EnDra® Technologie

RS485

- Protection rating: IP67 + IP69K, (high pressure / steam cleaning)
- 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
- 2-colour-LED as indicator for operating condition
- CRC checksum

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Mechanical Data	
Housing	
Flange	servo flange
Flange material	aluminum
Housing cap	stainless steel
Housing	Ø 36 mm
Shaft(s)	
Shaft material	stainless steel
Starting torque	approx. 1 Ncm at ambient temperature
Shaft	Ø 10 mm
Shaft length	L: 20 mm
Max. Permissible shaft loading radial	300 N
Max. Permissible shaft loading axial	300 N
Bearings	
Bearings type	2 precision ball bearings
Nominale service life	5 x 10'8 revs. at 100 % rated shaft load 5.44 x 10'9 revs. at 40 % rated shaft load 3.1 x 10'10 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)	3.1 x 10'10 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.

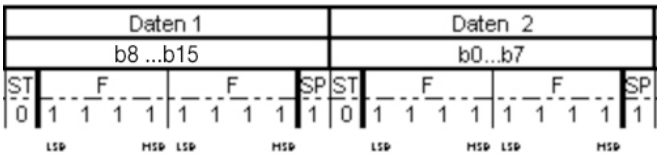
Environmental data	
ESD (DIN EN 61000-4-2):	8 kV
Burst (DIN EN 61000-4-4):	2 kV
includes EMC:	DIN EN 61000-6-2 DIN EN 61000-6-3 DIN EN 61326-1
Vibration: (DIN EN 60068-2-6)	300 m/s^2 (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s^2 (6 ms)
Design:	according DIN VDE 0160
Turn on time:	<1,5 s

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

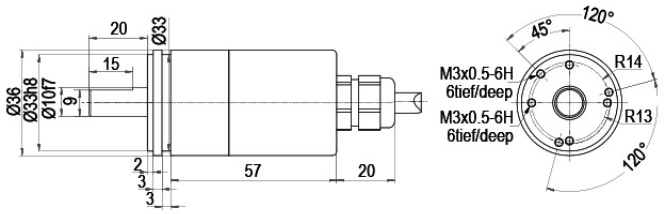


LED-behaviour:	
At Start / while booting:	- red gleam (< 2,3 s)
Malfunction:	- constant red gleam (> 2,3 s)
Normal function:	- constant green gleam
No supply:	- no gleam

General Data	
Weight	approx. 210 g
Connections	cable or 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**

Cable connection L2 axial with 2 m cable

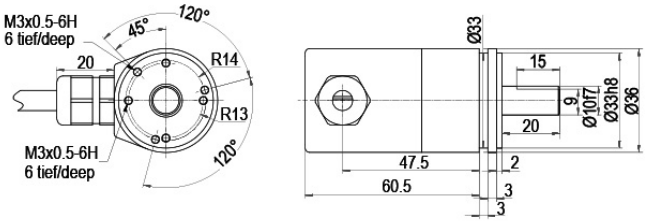


Description

L2 axial, shield connected to encoder housing

Assignments	
	L2
S- (GND)	WH
S+ (DCin)	BN
A (DATA+)	GY
B (DATA-)	PK
PRESET	BU
DIR	RD
Shield	housing

Cable connection, L3 radial with 2 m cable

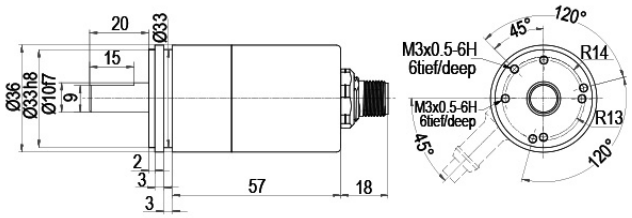


Description

L3 radial, shield connected to encoder housing

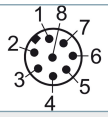
Assignments	
	L3
S- (GND)	WH
S+ (DCin)	BN
A (DATA+)	GY
B (DATA-)	PK
PRESET	BU
DIR	RD
Shield	housing

Connector, M12x1, CB8, axial, 8-pin

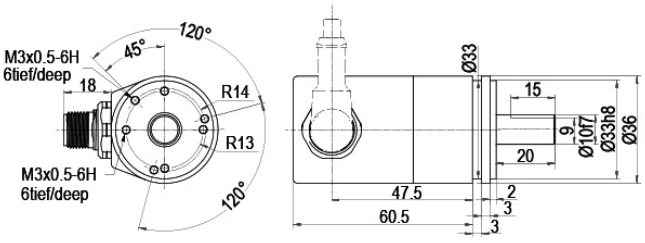


Description

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

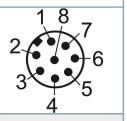
Assignments	
	CB8
	
S- (GND)	1
S+ (DCin)	2
A (DATA+)	5
B (DATA-)	6
PRESET	7
DIR	8
Shield	housing

Steckerabgang, M12x1, CC8, radial, 8-polig



Description

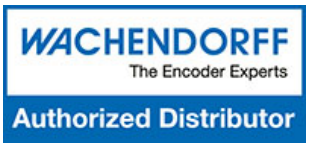
CC8 radial, 8-pin, shield connected to encoder housing

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 36J	WDGA 36J		WDGA 36J
	Shaft	**Order key**	
10	Ø 10 mm	06	
	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	**Cable:**		
	axial, shield connected to encoder housing, with 2 m cable	L2	
	radial, shield connected to encoder housing, with 2 m cable	L3	
	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 36J	10	14	18	EI	A	B	0	0	CB8

	WDGA 36J										Example Order No.



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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