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The Encoder Experts

Industrie ROBUST

Online Data sheet

Encoder WDGA 58F EtherCAT (cov)
www.wachendorff-automation.com/wdga58fecb

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

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Industrie ROBUST

Encoder WDGA 58F absolute EtherCAT, with bus cover and with EnDra®- Technology, 'extremely' compact

EnDra® Technologie

EtherCAT®
Conformance tested

- EnDra®: maintenance-free and environmentally friendly
- EtherCAT, Single-turn/Multi-turn
- Compact design with bus cover
- Single-turn/Multi-turn (max. 16 bit/43 bit)
- Forward-looking technology
- 2 colour-duo LED´s as indicator for operating condition and bus status and 2 L/A LED´s
- CoE, FoE, EoE

www.wachendorff-automation.com/wdga58fecb

Illustration similar

Mechanical Data

Flange	clamping flange
Flange material	aluminum
Housing material	die cast aluminum, powder coated
Intermediate piece	steel case chrome-plated, magnetic shielding
Flange diameter	Ø 58 mm [Ø 2.283"]

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1 Ncm [1.416 in-ozf] at ambient temperature

Shaft	Ø 6 mm [Ø 0.236"]
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	60 N [6.118 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 8 mm [Ø 0.315"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	60 N [6.118 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	60 N [6.118 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	60 N [6.118 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Bearings

Bearings type	2 precision ball bearings
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

Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level

MTTF$_d$	300 a
Mission time (TM)	20 a
Nominale service life (L10h)	1 x 10'11 revs. at 20 % rated shaft load and 8000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	10 VDC up to 32 VDC: typ. 125 mA
Power consumption	typ. 3 W
Operating principle	magnetic

Sensor data

Single-turn technology	innovativ 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	50 µs
Multi-turn technology	patented EnDra® technology no battery and no gear.
Multi-turn resolution	43 bit

Integrated web server:

Configurable	IP address Subnet mask Gateway address
Readable	Encoder parameters
Update	Firmware

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: (DIN EN 60068-2-6)	200 m/s² (10 Hz up to 1000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s² (6 ms)
Electrial Safety:	according DIN VDE 0160
Turn on time:	<1,5 s

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

Interface

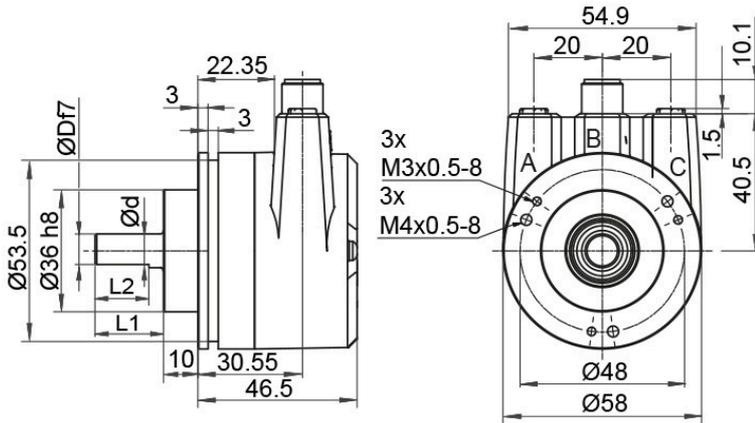|	
Interface:	**Industrial Ethernet**
Protocol:	EtherCAT
Device Profile:	CiA DS-406 V4.0.2, Class 3
Data Transfer:	100BASE-TX
Cycle time:	up to 50 µs
Function:	Multiturn
Code:	binary, CW default, programable
Programmable Parameter:	steps per revolution counts of revolution preset scale counting direction 2x 8 cam switches DC-Mode
Diagnostics: (LED)	Traffic and connection management: L/A1: Port 1 (IN) L/A2: Port 2 (OUT)
Status LED:	STAT, MOD: status of encoder and bus

General Data

Weight	approx. 700 g [24.691 oz]
Connections	bus cover
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C [-40 °F up to 185 °F]
Storage temperature	-40 °C up to +100 °C [-40 °F up to 212 °F]

More Information

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

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

WDGA 58F, EtherCAT, BI2, bus cover with 3x M12x1

D = 6, L1 = 12, d = 5.3, L2 = 10   shaft with flat
D = 8, L1 = 20, d = 7.5, L2 = 15   shaft with flat
D = 10, L1 = 20   shaft with out flat
D = 3/8", L1 = 20, d = 8.3, L2 = 10   shaft with flat

Description

BI2   Bus cover with 3x M12x1

Assignments	
	BI2
Female connector (Port1) IN	M12x1, 4-pin, D-coded
Tx+	1
Rx+	2
Tx-	3
Rx-	4

Assignments	
	BI2
connector (Power)	M12x1, 4-pin, A-coded
(+) Vcc	1
n. c.	2
GND	3
n. c.	4

Assignments	
	BI2
Female connector (Port2) OUT	M12x1, 4-pin, D-coded
Tx+	1
Rx+	2
Tx-	3
Rx-	4

Options

Low-friction bearings	Order key
The encoder WDGA 58F EtherCAT (cov) is also available as a particularly smooth-running low-friction encoder. The starting torque is thereby changed to 0.5 Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.	**AAC**

Example Order No.	Type		Your encoder
WDGA 58F	WDGA 58F		WDGA 58F

		Shaft	Order key	
10		Ø 6 mm [Ø 0.236"]	06	
		Ø 8 mm [Ø 0.315"]	08	
		Ø 10 mm [Ø 0.394"]	10	
		Ø 9.525 mm [Ø 3/8"] Order No: 4Z	4Z	

		Single-turn Resolution	Order key	
13		Single-turn resolution 1 up to 16 bit, e. g. 12 bit = 12	12	

		Multi-turn Resolution	Order key	
12		Multi-turn 18 bit: e. G. 18 bit = 18 e. G. 39 bit = 39	18	

		Data protocol	Order key	
EC		EtherCAT (with bus cover)	EC	

		Software	Order key	
U		up to date release	U	

		Code	Order key	
B		binary	B	

		Power supply	Order key	
0		10 V up to 32 V (standard)	0	

		Galvanic isolation	Order key	
1		yes	1	

		Electrical connections	Order key	
		Connection cover:		
BI2		Bus cover with 3x M12x1	BI2	

		Options	Order key	
		Without option	Empty	
		Low-friction bearings	AAC	

Example Order No.	WDGA 58F	10	13	12	EC	U	B	0	1	BI2	
	WDGA 58F										Example Order No.