

Folha de dados técnicos

Informações sobre a série de encoders

N.º do art.: 90000440

EI30-P 058 HO

Conteúdo

- Dados técnicos
- Código do artigo



A imagem pode divergir

Codificador_série	EI 058 HO
Codificador_princípio básico	incremental
Codificador_princípio de funcionamento	interpolado opticamente
Codificador_diâmetro do flange	Ø 58 mm
Codificador_tipo de flange	Eixo oco
Codificador_eixo maciço/eixo oco	Eixo oco
Codificador_diâmetro do eixo	Ø 10 mm
	Ø 12 mm
	Ø 14 mm
	Ø 15 mm
	Ø 6 mm
	Ø 7 mm
Codificador_tensão de alimentação	Ø 8 mm
	10 ... 30 V CC
	4,75 ... 5,5 V DC
	5 ... 30V CC
Codificador_circuito de saída	1 Vss Sin/Cos
	HTL
	HTL, inv.
	TTL
Codificador_número de impulsos	TTL, RS422 compatível, inv.
	1000 I/U
	10000 I/U
	10240 I/U
	12500 I/U
	16384 I/U
	2000 I/U
	20000 I/U
	20480 I/U
	2500 I/U
	25000 I/U
	4000 I/U
	4096 I/U
	5000 I/U
	8000 I/U
	8192 I/U

Dados técnicos

Encoder EI30 P 058 HO

Resolution

Pulses per revolution PPR	up to 25000 PPR
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Mechanical Data

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	die cast aluminum, powder coated
Torque supports	incl. 1 torque support
- 1. Spring plate compensation	axial: ± 0.8 mm [0.0315"], radial: ± 0.2 mm [0.0079"]
- Max. operating speed	6000 rpm up to max. protection rating +60 °C
- 2. Cylinder pin 4 mm	needs accessories
- Compensation	axial: ± 0.5 mm [0.0197"], radial: ± 1.5 mm [0.0591"], Max. operating speed: 3000 rpm
Flange diameter	$\varnothing$ 58 mm [$\varnothing$ 2.283"]

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 2.2 Ncm [3.115 in-ozf] at ambient temperature
Fixing	permanently attached clamping ring

Shaft	$\varnothing$ 6 mm [$\varnothing$ 0.236"]
Advice	with adapter sleeve
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 6.35 mm [$\varnothing$ 1/4"] Order No: 2Z
Advice	with adapter sleeve
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 7 mm [$\varnothing$ 0.276"]
Advice	with adapter sleeve
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 8 mm [$\varnothing$ 0.315"]
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]

Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 9.525 mm [$\varnothing$ 3/8"] Order No: 4Z
Advice	with adapter sleeve
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 10 mm [$\varnothing$ 0.394"]
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 12 mm [$\varnothing$ 0.472"]
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 12.7 mm [$\varnothing$ 1/2"] Order No: 3Z
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 14 mm [$\varnothing$ 0.551"]
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 15 mm [$\varnothing$ 0.591"]
Shaft length	L: 44.5 mm [1.752"]
Insertion depth min.	11 mm [0.433"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Bearings

Bearings type	2 precision ball bearings
Nominal 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	6000 rpm

Dados técnicos

Encoder EI30 P 058 HO

Machinery Directive: basic data safety integrity level

MTTF _d	200 a
Mission time (TM)	25 a
Nominale service life (L10h)	1 x 10 ¹¹ revs. at 20 % rated shaft load and 6000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	4,75 VDC up to 5,5 VDC: typ. 70 mA (100 mA only C3, D3)
Power supply/Current consumption	5 VDC up to 30 VDC: typ. 70 mA
Power supply/Current consumption	10 VDC up to 30 VDC: typ. 70 mA (100 mA only C2, C4, D4)
Operating principle	optical
Output circuit	TTL TTL, RS422 compatible, inv. HTL HTL, inv. 1 Vpp sin/cos
Pulse frequency	TTL ≤ 5000 ppr: max. 200 kHz HTL ≤ 5000 ppr: max. 200 kHz TTL more than 1200 ppr: max. 2 MHz HTL more than 1200 ppr: max. 600 kHz 1 Vpp sin/cos: max. 100 kHz
Channels	B N and inverted signals
Load	max. 40 mA / channel @ 1 Vpp sin/cos: min. 120 Ohm
Circuit protection	circuit type C4, C6, D4, D6 only

Accuracy

Phase offset	90° ± max. 7.5 % of the period duration
pulse-/pause-ratio	≤5000 ppr: 50 % ± max. 7 % Output circuits C2, C3, C4, D3, D4: 50 % ± max. 10 %

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)	50 m/s ² (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Electrical Safety:	according DIN VDE 0160

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

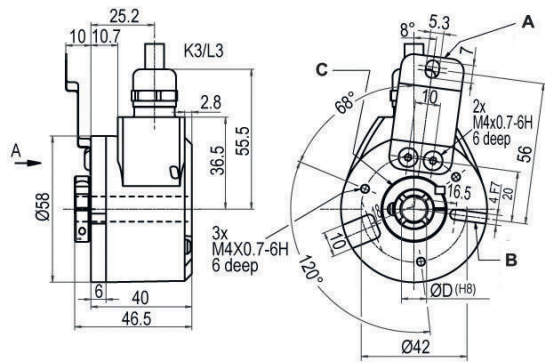
General Data

Weight	approx. 220 g [7.76 oz]
Connections	cable or connector, radial
Protection rating (EN 60529)	IP65 all around
Operating temperature	Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C (Option LT: -40 °C up to +85 °C). Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F, Option LT: -40 °F up to +185 °F 1 Vpp: -10 °C up to +70 °C [+14 °F up to +158 °F]
Storage temperature	Connector: -40 °C up to +85 °C, Cable: -30 °C up to +80 °C (Option LT: -40 °C up to +85 °C) Connector: -40 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option LT: -40 °F up to +185 °F)

Dados técnicos

Encoder EI30 P 058 HO

Cable connection R-N, R-C, radial, with 2 m cable



- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

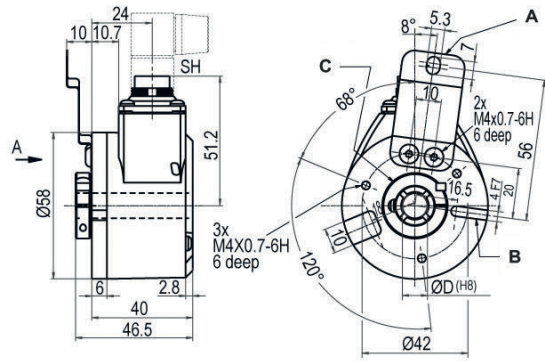
All dimensions in mm

Description		N inv. poss.
R-N	radial, shield not connected	•
R-C	radial, shield connected to encoder housing	•

Assignments

	R-NR-C	R-N, R-C	R-C
Circuit	C3, C4, C5, C6, C7	C1, C2, D3, D4, D5, D6, D7	D8
GND	WH	WH	WH
(+) Vcc	BN	BN	BN
A	GN	GN	GN
B	YE	YE	GY
N	GY	GY	–
	–	–	–
A inv.	–	RD	YE
B inv.	–	BK, (BU at LT)	PK
N inv.	–	VT	–
Shield	flex	flex	flex

Connector (M16x0.75) R, radial, 5-, 6-, 8-, 12-pin



- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

All dimensions in mm

Dados técnicos

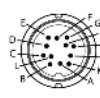
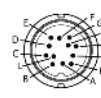
Encoder EI30 P 058 HO

Description

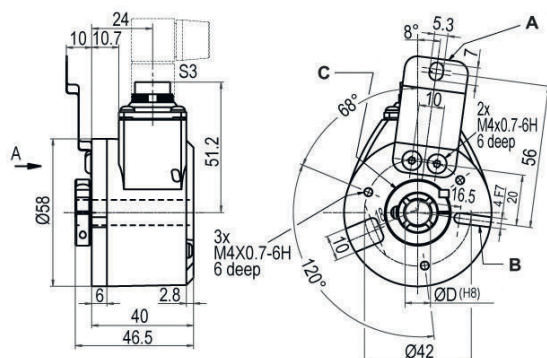
N inv. poss.

R5	radial, 5-pin, Connector connected to encoder housing	—
R6	radial, 6-pin, Connector connected to encoder housing	—
R8	radial, 8-pin, Connector connected to encoder housing	•
R12	radial, 12-pin, Connector connected to encoder housing	•

Assignments

	R5	R6	R8	R8	R12	R12
	5-pin	6-pin	8-pin	8-pin	12-pin	12-pin
						
Circuit	C3, C4, C5, C6, C7	C3, C4, C5, C6, C7	C1, C2, D3, D4, D5, D6, D7	D8	C1, C2, D3, D4, D5, D6, D7	D8
GND	1	6	1	1	K, L	K, L
(+) Vcc	2	1	2	2	M, B	M, B
A	3	2	3	3	E	E
B	4	4	4	4	H	H
N	5	3	5	—	C	—
—	—	—	—	—	—	—
A inv.	—	—	6	6	F	F
B inv.	—	—	7	7	A	A
N inv.	—	—	8	—	D	—
n. c.	—	5	—	5, 8	G, J	D, G, J
Shield	—	—	—	—	—	—

Connector (M16x0.75) R7, radial, 7-pin



All dimensions in mm

- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

Description

N inv. poss.

R7	radial, 7-pin, Connector connected to encoder housing	—
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	R12M	R12M	R12M
	12-pin	12-pin	12-pin
			
Circuit	C3, C4, C5, C6, C7	C1, C2, D3, D4, D5, D6, D7	D8
GND	10	10	10
(+) Vcc	12	12	12

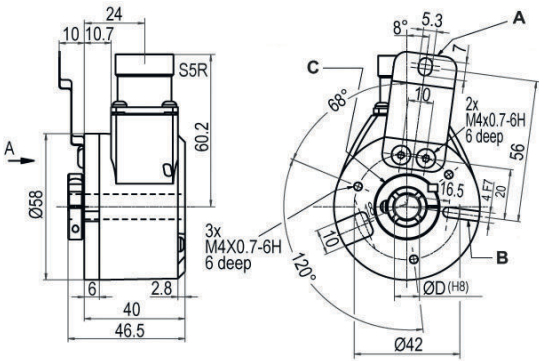
Dados técnicos

Encoder EI30 P 058 HO

Assignments

A	5	5	5
B	8	8	8
N	3	3	–
–	–	–	–
A inv.	–	6	6
B inv.	–	1	1
N inv.	–	4	–
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	–	–	–

Connector (M23) RC, radial, 12-pin (clockwise)



All dimensions in mm

- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

Description

N inv. poss.

RC12 radial, 12-pin, Connector connected to encoder housing



Assignments

	RC12	RC12	RC12
	12-pin	12-pin	12-pin
Circuit	C3, C4, C5, C6, C7	C1, C2, D3, D4, D5, D6, D7	D8
GND	10	10	10
(+) Vcc	12	12	12
A	5	5	5
B	8	8	8
N	3	3	–
–	–	–	–
A inv.	–	6	6
B inv.	–	1	1
N inv.	–	4	–

Dados técnicos

Encoder EI30 P 058 HO

Options

Low temperature	Order key
The encoder EI30 P 058 HO with the output circuit types C1, C2, C3, C4, C5, C6, D3, D4, D5, D6 is also available with the extended temperature range -40 °C up to +85 °C [-40 °F up to +185 °F] (measured at the flange).	LT
Pressure equalising membrane	Order key
The EI30 P 058 HO shaft encoder is also optionally available with a pressure equalising membrane. This prevents water from penetrating into the encoder housing in the case of high air humidity. The IP67 protection level, temperature range and salt spray resistance are maintained. Resistant to chemicals and solvents in accordance with DIN EN ISO 2812-1.	PE
Cable length	Order key
The encoder EI30 P 058 HO can be supplied with more than 2 m cable. The maximum cable length depends on the supply voltage and the frequency. Please extend the standard order code with a three figure number, specifying the cable length in decimetres. Example: 5 m cable = 050	XXX = Decimeter

Dados técnicos

Encoder EI30 P 058 HO

Example Order No.	Type				
EI30 P 058 HO	EI30 P 058 HO	EI30 P 058 HO			
Bore size					
10	06; 2Z; 07; 08; 4Z; 10; 12; 3Z; 14; 15	10			
Pulses per revolution PPR:					
1024	4, 6, 25, 36, 50, 60, 64, 70, 88, 100, 120, 125, 150, 180, 200, 240, 250, 256, 300, 360, 400, 500, 512, 600, 720, 750, 768, 800, 900, 1000, 1024, 1200, 1250, 1270, 1500, 1800, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000, 8000, 8192, 10000, 10240, 12500, 16384, 20000, 20480, 25000 1 Vpp Sin/Cos only 1024, 2048 Other pprs on request	1-16384			
Channels:					
N	B, N (SIN: B)	N			
Output circuit					
C6	Resolution PPR	Power supply VDC	Output circuit	-	Order key
	up to 2500	5 - 30	HTL (TTL at 5 VDC)	–	C7
		5 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	–	D7
	up to 5000	4.75 - 5.5	TTL	–	C5
		4.75 - 5.5	TTL, RS422 comp., inverted	–	D5
		10 - 30	HTL	–	C6
		10 - 30	HTL inverted	–	D6
		10 - 30	TTL, RS422 comp., inverted	–	C1
	(higher frequency) 1200 up to 25000	4.75 - 5.5	TTL	–	C3
		4.75 - 5.5	TTL, RS422 comp., inverted	–	D3
		10 - 30	HTL	–	C4
		10 - 30	HTL inverted	–	D4
		10 - 30	TTL, RS422 comp., inverted	–	C2
	1024, 2048	4.75 - 5.5	1 Vpp sin/cos	–	D8

Dados técnicos

Encoder EI30 P 058 HO

Electrical connections

Description		N inv. poss.	Order key
R-N	Cable: length (2 m standard)		
	radial, shield not connected	•	R-N
	radial, shield connected to encoder housing	•	R-C
	Connector: (shield connected to encoder housing)		
	connector, M16x0.75, 5-pin, radial	–	R5
	connector, M16x0.75, 6-pin, radial	–	R6
	connector, M16x0.75, 8-pin, radial	•	R8
	connector, M16x0.75, 12-pin, radial	•	R12
	connector, M16x0.75, 7-pin, radial	–	R7
	connector, M23, 12-pin, radial	•	R12M
	connector, clockwise pin count, M23, 12-pin, radial	•	RC12
	sensor-connector, M12x1, 4-pin, radial		RS4
	sensor-connector, M12x1, 5-pin, radial	–	RS5
	sensor-connector, M12x1, 8-pin, radial	•	RS8
	sensor-connector, M12x1, 12-pin, radial		RS12

Options

Description	Order key
Low-friction bearings	LB
Low temperature	LT
Pressure equalising membrane	PE
Cable length	XXX = Decimeter
Without option	Empty

Example Order No.:	EI30 P 058 HO	10	1024	N	R-N	EI30 P 058 HO	Your encoder
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Código do artigo

Nome do artigo: EABB CCDDDEE FFFFFFF GHJJKK LLMNOPPP RR

A	Tipo de encoder rotativo I: incremental S: absoluto, Singleturn M: absoluto, Multiturn
BB	Série 10: Entry 30: Basic 50: Extended 70: Advanced
CCC	Diâmetro do flange 024: 24 mm 036: 36 mm 058: 58 mm 063: 63 mm 067: 67 mm 070: 70 mm 080: 80 mm 100: 100 mm 115: 115 mm
DD	Tipo de flange BB: eixo oco com orifício cego CC: flange de fixação (modelo compacto) CF: flange de fixação (alimentos e bebidas) CH: flange de fixação (versão para cargas pesadas) CL: flange de fixação HI: eixo oco (isolado) HO: eixo oco HT: eixo oco (braço de torque especial) RC: flange redondo (flange de fixação 36/40, 58 com eixo de 6 mm) RE: flange redondo (orifícios expandidos) RN: flange redondo SC: acoplamento do estator SF: flange aparafusado (flange de fixação 53, 58 alimentos e bebidas) SI: flange servo (carga de onda ampliada e proteção IP) SQ: flange quadrado SR: flange aparafusado (flange de fixação 36/40, 58 resistente à corrosão) SY: Synchro (incremental), Servo (36), Synchro (58) (absoluto) TM: tacômetro (115 com eixo de 1 mm, feedback do motor 58) TS: tacômetro (eixo de 10 mm)
EE	Diâmetro do eixo/orifício 06: 6 mm 07: 7 mm 08: 8 mm 08: 8 mm 10: 10 mm 11: 11 mm 12: 12 mm 14: 14 mm 15: 15 mm 06-72: orifício oco/orifício cego (6 ... 72 mm)
FFFFFF	Sinal/resolução Axxxx: A Bxxxx: AB Nxxxx: ABN P16384: programável xx: Singleturn, 1 ... 16 Bit xx: Multiturn, 0 ... 43 Bit (00 em Singleturn)
G	Separação galvânica (somente absoluto) 0: sem 1: com
HH	Alimentação de tensão (somente absoluto) 0: 10 ... 32 V DC/com separação galvânica 1: 4,75 ... 5,5 V DC 2: 18 ... 30 V DC
J	Princípio de funcionamento M: magnético O: óptico P: interpolado opticamente

Código do artigo

KK	Interface 01: RS485 07: SSI binário 08: SSI Gray 35: CANopen 38: EtherCAT 48: PROFINET 58: EtherNet/IP
LL	Conexão elétrica M08: conector redondo M8 M12: conector redondo M12 M16: conector redondo M16 M23: conector redondo M23 M12BC: conector da tampa do barramento
M	Saída do cabo A: axial R: radial T: tangencial
NN	Número de polos xx: número de polos
O	Conexão blindada (cabo de 2m) (opcional) C: conectado N: não conectado
PPP	Comprimento do cabo xxx: comprimento do cabo (em dm)

Nota



→ Uma lista com todos os tipos de dispositivo disponíveis encontra-se na página da Leuze na Internet, em www.leuze.com.

