

Karta danych technicznych

Informacje o serii enkoderów obrotowych

Nr art.: 90000110

EI30-M 058 CL

Treść

- Dane techniczne
- Kod artykułu



Ilustracja może się różnić od stanu rzeczywistego

Enkoder_Seria	EI 058 CL
Enkoder_Podstawowa zasada działania	inkrementalny
Enkoder_Zasada działania	magnetyczny
Enkoder_Średnica kołnierza	Ø 58 mm
Enkoder_Typ kołnierza	Kołnierz zaciskowy
Enkoder_Wał pełny/wał pusty	Wał pusty
Enkoder_Średnica wału	Ø 10 mm
	Ø 6 mm
	Ø 8 mm
Enkoder_Napięcie zasilania	4,75 ... 30 V DC
Enkoder_Układ wyjściowy	HTL (TTL przy 5 V DC)
	HTL, odwr. (kompatybilny z TTL/RS422 przy 5 V DC)
Enkoder_Liczba impulsów	1 ... 16384 I/U

Dane techniczne

Encoder EI30 M 058 CL

Resolution

Pulses per revolution PPR	1 PPR up to 16384 PPR
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Mechanical Data

Flange	clamping flange
Flange material	aluminum
Housing material	Stainless steel or die cast aluminum, powder coated (only M16 and M23 plugs)
Flange diameter	Ø 58 mm [Ø 2.283"]
Cam mounting	pitch 69 mm [2.717 inches]

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"] Attention: No option IP = full IP67 version
Shaft length	L: 12 mm [0.472"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 8 mm [Ø 0.315"] Attention: No option IP = full IP67 version
Shaft length	L: 19 mm [0.748"]
Max. Permissible shaft loading radial	125 N [12.746 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z Attention: No option IP = full IP67 version
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 20 mm [0.787"]
Max. Permissible shaft loading radial	220 N [22.433 kp]
Max. Permissible shaft loading axial	120 N [12.236 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	2200 a
Mission time (TM)	25 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	4.75 VDC up to 30 VDC: typ. 40 mA
Operating principle	magnetic
Output circuit	HTL (TTL at 5 VDC) HTL, inv. (TTL/RS422 comp. at 5 VDC)
Pulse frequency	HTL up to 16384 ppr: max. 600 kHz TTL up to 16384 ppr: max. 1 MHz
Channels	B N and inverted signals
Load	max. 40 mA / channel
Circuit protection	yes

Accuracy

Phase offset	90° ± max. 7.5 % of the period duration
pulse-/pause-ratio	50 % ± max. 7 %

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

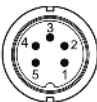
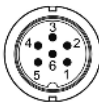
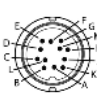
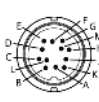
Customs tariff number:	90318020
Country of origin:	Germany

General Data

Weight	approx. 250 g [8.818 oz]
Connections	cable or connector outlet
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
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
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)

All dimensions in mm

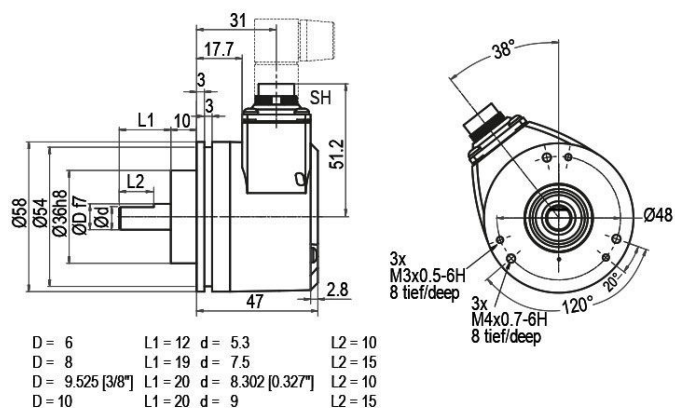
	R-IP	R-IP
Circuit	D2	D1
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
–	–	
A inv.	–	RD
B inv.	–	BK

	A5	A6	A8	A8	A12	A12
	5-pin	6-pin	8-pin	8-pin	12-pin	12-pin
						
Circuit	D2	D2	D2	D1	D2	D1
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	5	C	C
—	—	—	—	—	—	—
A inv.	—	—	—	6	—	F
B inv.	—	—	—	7	—	A
N inv.	—	—	—	8	—	D
n. c.	—	5	6, 7, 8	—	A, D, F, G, J	G, J
Shield	—	—	—	—	—	—

Dane techniczne

Encoder EI30 M 058 CL

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



All dimensions in mm

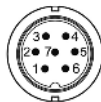
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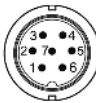
N inv. poss.

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 5-pin	R6 6-pin	R8 8-pin	R8 8-pin	R12 12-pin	R12 12-pin
Circuit	D2	D2	D2	D1	D2	D1
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	5	C	C
—	—	—	—	—	—	—
A inv.	—	—	—	6	—	F
B inv.	—	—	—	7	—	A
N inv.	—	—	—	8	—	D
n. c.	—	5	6, 7, 8	—	A, D, F, G, J	G, J
Shield	—	—	—	—	—	—

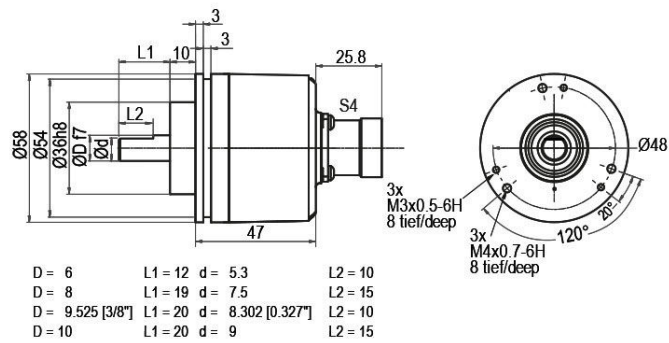
	A7 7-pin
	
Circuit	D2
GND	1
(+) Vcc	2
A	3
B	4
N	5
—	—
A inv.	—
B inv.	—
N inv.	—
n. c.	6, 7
Shield	—

	R7
	7-pin
	
Circuit	D2
GND	1
(+) Vcc	2
A	3
B	4
N	5
–	–
A inv.	–
B inv.	–
N inv.	–
n. c.	6, 7
Shield	–

Dane techniczne

Encoder EI30 M 058 CL

Connector (M23) A12M, axial, 12-pin



All dimensions in mm

Description	N inv. poss.
A12M axial, 12-pin, Connector connected to encoder housing	—

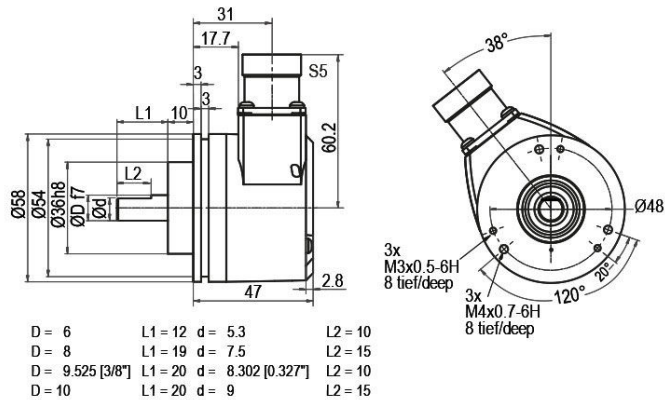
Assignments

	A12M 12-pin	A12M 12-pin
Circuit	D2	D1
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
—	—	—
A inv.	—	6
B inv.	—	1
N inv.	—	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	—	—

Dane techniczne

Encoder EI30 M 058 CL

Connector (M23) R12M, radial, 12-pin



All dimensions in mm

Description

N inv. poss.

R12M radial, 12-pin, Connector connected to encoder housing

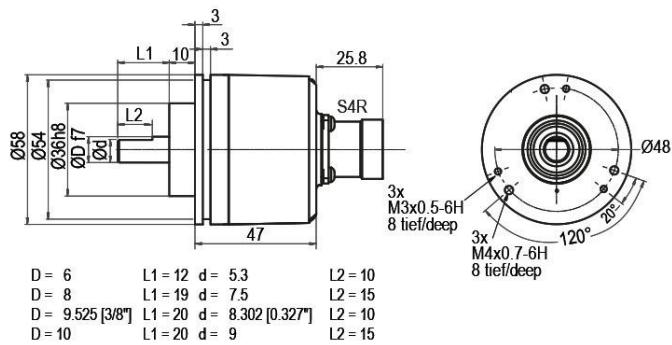
Assignments

	R12M	R12M
	12-pin	12-pin
Circuit	D2	D1
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
—	—	—
A inv.	—	6
B inv.	—	1
N inv.	—	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	—	—

Dane techniczne

Encoder EI30 M 058 CL

Connector (M23) AC12, axial, 12-pin (clockwise)



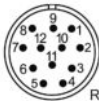
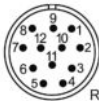
All dimensions in mm

Description N inv. poss.

AC12 axial, 12-pin, Connector connected to encoder housing

Assignments

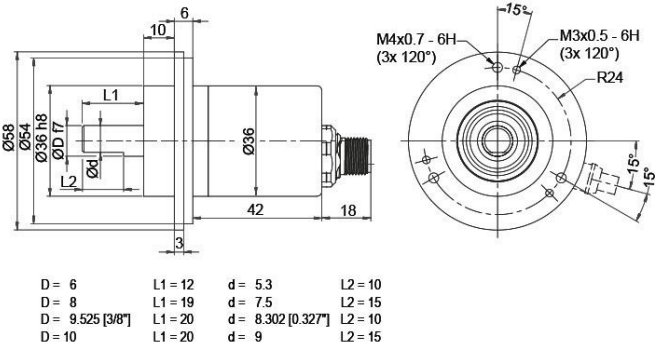
	AC12 12-pin	AC12 12-pin
Circuit	D2	D1
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
—	—	—
A inv.	—	6
B inv.	—	1
N inv.	—	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	—	—

	RC12 12-pin	RC12 12-pin
		
Circuit	D2	D1
GND	10	10
(+) Vcc	12	12
A	5	5
B	8	8
N	3	3
—	—	—
A inv.	—	6
B inv.	—	1
N inv.	—	4
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11
Shield	—	—

Dane techniczne

Encoder EI30 M 058 CL

Sensor-connector (M12x1) AS axial, 5-, 8-pin



All dimensions in mm

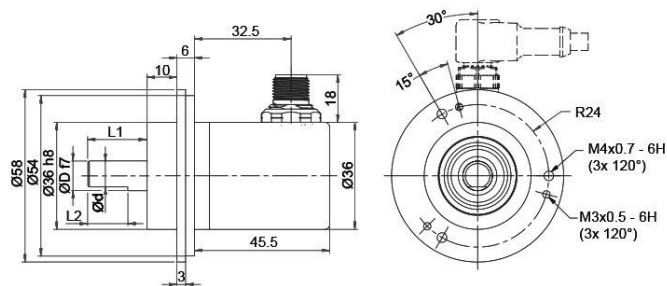
Description		N inv. poss.
AS5	axial, 5-pin, Connector connected to encoder housing	—
AS8	axial, 8-pin, Connector connected to encoder housing	•

	RS5	RS8
	5-pin	8-pin
Circuit	D2	D1
GND	3	1
(+) Vcc	1	2
A	4	3
B	2	4
N	5	5
—	—	—
A inv.	—	6
B inv.	—	7
N inv.	—	8
n. c.	—	—
Shield	—	—

Dane techniczne

Encoder EI30 M 058 CL

Sensor-connector (M12x1) RS radial, 5-, 8-pin



D = 6	L1 = 12	d = 5.3	L2 = 10
D = 8	L1 = 19	d = 7.5	L2 = 15
D = 9.525 [3/8"]	L1 = 20	d = 8.302 [0.327"]	L2 = 10
D = 10	L1 = 20	d = 9	L2 = 15

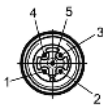
All dimensions in mm

Description

N inv. poss.

RS5	radial, 5-pin, Connector connected to encoder housing	—
RS8	radial, 8-pin, Connector connected to encoder housing	•

Assignments

	RS5	RS8
	5-pin	8-pin
		
Circuit	D2	D1
GND	3	1
(+) Vcc	1	2
A	4	3
B	2	4
N	5	5
—	—	—
A inv.	—	6
B inv.	—	7
N inv.	—	8
n. c.	—	—
Shield	—	—

Dane techniczne

Encoder EI30 M 058 CL

Options

Low-friction bearings

Order key

The encoder EI30 M 058 CL 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.

LB

Shafts sealed to IP67, only with 10 mm [0.394"] shaft

Order key

The encoder EI30 M 058 CL can be supplied in a IP67 version. (full IP67 only connection AS, RS, A-C or R-C version; not cable connection R-IP = IP40).

IP

Max. RPM: 3500 min⁻¹
 Permitted Shaft-Loading: axial 100 N [10.197 kp]; radial 110 N [11.216 kp]
 Starting-torque: approx. 4 Ncm [5.664 in-ozf] at ambient temperature

Low temperature

Order key

The encoder EI30 M 058 CL with the output circuit types D2, D1 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 M 058 CL 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.

PE

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.

Cable length

Order key

The encoder EI30 M 058 CL can be supplied with more than 2 m cable.
 The maximum cable length depends on the supply voltage and the frequency.

XXX = Decimeter

Please extend the standard order code with a three figure number, specifying the cable length in decimetres.
 Example: 5 m cable = 050

Dane techniczne

Encoder EI30 M 058 CL

Example Order No.	Type				
EI30 M 058 CL	EI30 M 058 CL	EI30 M 058 CL			
Shaft					
10	06; 08; 4Z; 10				
Pulses per revolution PPR:					
16384	1-16384 Other PPRs on request				
Channels:					
N	B, N				
Output circuit					
D1	Resolution PPR	Power supply VDC	Output circuit	—	Order key
	1-16384	4.75 - 30	HTL (TTL at 5 VDC)	—	D2
		4.75 - 30	HTL, inv. (TTL/RS422 comp. at 5 VDC)	—	D1

Dane techniczne

Encoder EI30 M 058 CL

Electrical connections

	Description	N inv. poss.	Order key
A-C	Description		
	Cable: length (2 m standard)		
	radial, shield not connected (IP40)	•	R-IP
	axial, shield connected to encoder housing	•	A-C
	radial, shield connected to encoder housing	•	R-C
	Connector: (shield connected to encoder housing)		
	connector, M16x0.75, 5-pin, axial	–	A5
	connector, M16x0.75, 5-pin, radial	–	R5
	connector, M16x0.75, 6-pin, axial	–	A6
	connector, M16x0.75, 6-pin, radial	–	R6
	connector, M16x0.75, 8-pin, axial	•	A8
	connector, M16x0.75, 8-pin, radial	•	R8
	connector, M16x0.75, 12-pin, axial	•	A12
	connector, M16x0.75, 12-pin, radial	•	R12
	connector, M16x0.75, 7-pin, axial	–	A7
	connector, M16x0.75, 7-pin, radial	–	R7
	connector, M23, 12-pin, axial	•	A12M
	connector, M23, 12-pin, radial	•	R12M
	connector, clockwise pin count, M23, 12-pin, axial	•	AC12
	connector, clockwise pin count, M23, 12-pin, radial	•	RC12
	sensor-connector, M12x1, 5-pin, axial	–	AS5
	sensor-connector, M12x1, 5-pin, radial	–	RS5
	sensor-connector, M12x1, 8-pin, axial	•	AS8
	sensor-connector, M12x1, 8-pin, radial	•	RS8

Options

Description	Order key
Low-friction bearings	LB
Shafts sealed to IP67, only with 10 mm [0.394"] shaft	IP
Low temperature	LT
Pressure equalising membrane	PE
Without option	Empty
Cable length	XXX = Decimeter

Example
Order No.:

EI30 M 058 CL 10 16384 N D1 A-C EI30 M 058 CL

Your enco-
der

Kod artykułu

Oznaczenie artykułu: **EABB CCCDDEE FFFFFFF GHJJKK LLMNOPPP RR**

A	Typ enkodera obrotowego I: Inkrementalny S: Absolutny, Singleturn M: Absolutny, Multiturn
BB	Seria 10: Entry 30: Basic 50: Extended 70: Advanced
CCC	Średnica kołnierza 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	Typ kołnierza BB: Wał pusty z otworem nieprzelotowym CC: Kołnierz zaciskowy (kompaktowa konstrukcja) CF: Kołnierz zaciskowy (produkty spożywcze i napoje) CH: Kołnierz zaciskowy (wersja do dużych obciążeń) CL: Kołnierz zaciskowy HI: Wał pusty (izolowany) HO: Wał pusty HT: wał pusty (specjalne ramię reakcyjne) RC: Kołnierz okrągły (36/40 kołnierz zaciskowy, 58 z wałem 6 mm) RE: Kołnierz okrągły (powiększone otwory) RN: Kołnierz okrągły SC: złącze stojana SF: Kołnierz skręcany (53 kołnierz zaciskowy, 58 produkty spożywcze i napoje) SI: Kołnierz pod serwowymotor (zwiększone obciążenie wału i stopień ochrony IP) SQ: Kołnierz kwadratowy SR: Kołnierz skręcany (36/40 kołnierz zaciskowy, 58 odporny na korozję) SY: Synchro (inkrementalny), Servo (36), Synchro (58) (absolutny) TM: Tacho (115 z wałem 1 mm, 58 motorfeedback) TS: Tacho (wał 10 mm)
EE	Średnica wału/otworu 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: Otwór przelotowy/nieprzelotowy (6 ... 72 mm)
FFFFFF	Sygnał/Rozdzielczość Axxxx: A Bxxxx: AB Nxxxx: ABN P16384: Programowalny xx: Singleturn, 1 ... 16 Bit xx: Multiturn, 0 ... 43 Bit (00 przy Singleturn)
G	Separacja galwaniczna (tylko absolutny) 0: bez 1: z
HH	Zasilanie napięciem (tylko absolutny) 0: 10 ... 32 V DC/z rozdzieleniem galwanicznym 1: 4,75 ... 5,5 V DC 2: 18 ... 30 V DC
J	Zasada działania M: magnetyczny O: optyczny P: optycznie interpolowany

Kod artykułu

KK	Interfejs 01: RS485 07: SSI binarny 08: SSI Gray 35: CANopen 38: EtherCAT 48: PROFINET 58: EtherNet/IP
LL	Przylącze elektryczne M08: wtyczka okrągła M8 M12: Wtyczka okrągła M12 M16: Wtyczka okrągła M16 M23: Wtyczka okrągła M23 M12BC: Wtyk obudowy magistrali
M	Wylot kablowy A: osiowy R: promieniowy T: Tangential
NN	Liczba pinów xx: Liczba pinów
O	Przylącze ekranu (kabel 2 m) (opcjonalnie) (C: podłączony N: niepodłączony
PPP	Długość kabla xxx: Długość kabla (w dm)

Wskazówka



Lista ze wszystkimi dostępnymi typami urządzeń znajduje się na stronie internetowej Leuze www.leuze.com.

