

Karta danych technicznych

Informacje o serii enkoderów obrotowych

Nr art.: 90000420

EI30-P 115 TS

Treść

- Dane techniczne
- Kod artykułu



Ilustracja może się różnić od stanu rzeczywistego

Enkoder_Seria	EI 115 TS
Enkoder_Podstawowa zasada działania	inkrementalny
Enkoder_Zasada działania	optycznie interpolowany
Enkoder_Średnica kołnierza	Ø 115 mm
Enkoder_Typ kołnierza	Kołnierz pod tachoprądnice (10 mm)
Enkoder_Wał pełny/wał pusty	Wwał pełny
Enkoder_Średnica wału	Ø 10 mm
	Ø 12 mm
	Ø 7 mm
	Ø 8 mm
Enkoder_Napięcie zasilania	10 ... 30 V DC
	4,75 ... 5,5 V DC
	5 ... 30 V DC
Enkoder_Układ wyjściowy	1 Vss Sin/Cos
	HTL
	HTL, odwr.
	TTL
Enkoder_Liczba impulsów	TTL, kompatybilny z RS422, odwr.
	10000 I/U
	10240 I/U
	12000 I/U
	12500 I/U
	1440 I/U
	15000 I/U
	16384 I/U
	20000 I/U
	20480 I/U
	25000 I/U
	2880 I/U
	3000 I/U
	3600 I/U
	4000 I/U
	5760 I/U
	6000 I/U
	7200 I/U
	7500 I/U
	8000 I/U
	9182 I/U

Dane techniczne

Encoder EI30 P 115 TS

Resolution

Pulses per revolution PPR	up to 25000 PPR
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Mechanical Data

Flange	tacho flange
Flange material	aluminum
Housing material	die cast aluminum, powder coated
Flange diameter	Ø 115 mm [Ø 4.528"]

Shaft(s)

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

Shaft

Shaft	Ø 10 mm [Ø 0.394"]
Shaft length	L: 25 mm [0.984"]
Max. Permissible shaft loading radial	200 N [20.394 kp]
Max. Permissible shaft loading axial	120 N [12.236 kp]

Advice	Ø 7 mm [0.2761"] / Ø 8 mm [0.315"] / Ø 12 mm [0.472"] on request
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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 11 x 10 ¹¹ revs. at 20 % rated shaft load
Max. operating speed	8000 rpm

Machinery Directive: basic data safety integrity level

MTTF _d	200 a
Mission time (TM)	25 a
Nominal 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 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

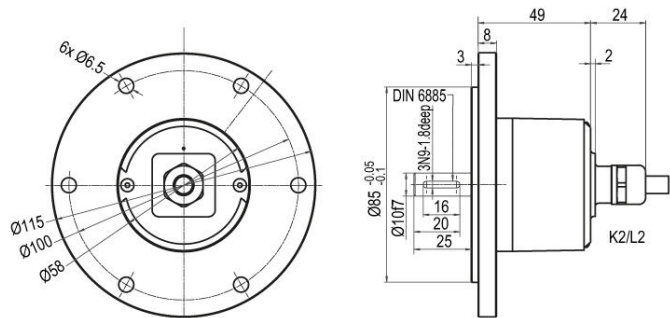
General Data

Weight	approx. 520 g [18.342 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 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)

Dane techniczne

Encoder EI30 P 115 TS

Cable connection A-N, A-C, axial, with 2 m cable



All dimensions in mm

Description

N inv. poss.

A-N	axial, shield not connected	•
A-C	axial, shield connected to encoder housing	•

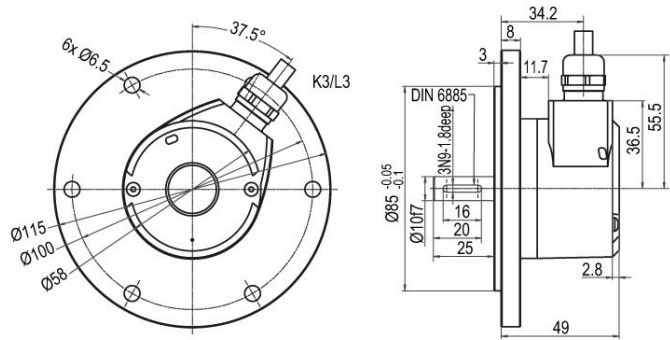
Assignments

	A-N, A-C	A-N, A-C	A-C
Circuit	C3, C4, C5, C6, C7	D3, D4, D5, D6, C1, C2, 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

Dane techniczne

Encoder EI30 P 115 TS

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



All dimensions in mm

Description

N inv. poss.

R-N	radial, shield not connected	•
R-C	radial, shield connected to encoder housing	•

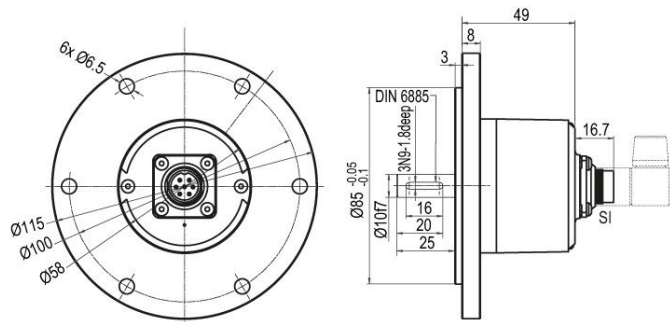
Assignments

	R-N, R-C	R-N, R-C	R-C
Circuit	C3, C4, C5, C6, C7	D3, D4, D5, D6, C1, C2, 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

Dane techniczne

Encoder EI30 P 115 TS

Connector (M16x0.75) A, axial, 5-, 6-, 8-, 12-pin



All dimensions in mm

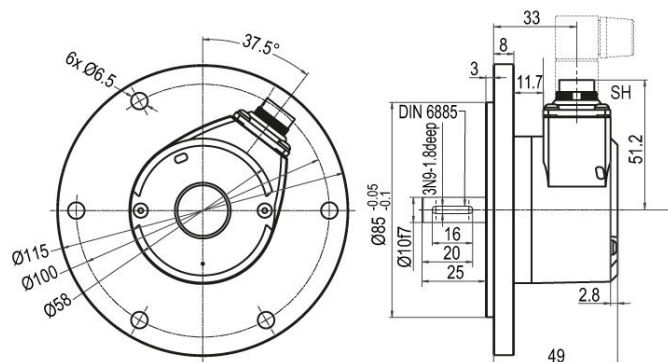
Description		N inv. poss.
A5	axial, 5-pin, Connector connected to encoder housing	–
A6	axial, 6-pin, Connector connected to encoder housing	–
A8	axial, 8-pin, Connector connected to encoder housing	•
A12	axial, 12-pin, Connector connected to encoder housing	•

Assignments					
	A5	A6	A8	A8	A12
	5-pin	6-pin	8-pin	8-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
GND	1	6	1	1	K, L
(+) Vcc	2	1	2	2	M, B
A	3	2	3	3	E
B	4	4	4	4	H
N	5	3	5	–	C
–	–	–	–	–	–
A inv.	–	–	6	6	F
B inv.	–	–	7	7	A
N inv.	–	–	8	–	D
n. c.	–	5	–	5, 8	G, J
Shield	–	–	–	–	–

Dane techniczne

Encoder EI30 P 115 TS

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



All dimensions in mm

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	•

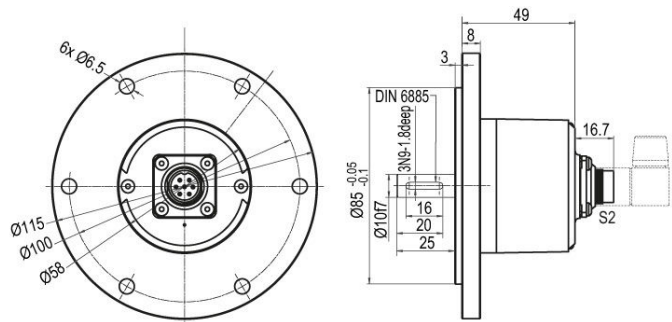
Assignments

	R5 5-pin	R6 6-pin	R8 8-pin	R8 8-pin	R12 12-pin	R12 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	—	—	—	—	—	—

Dane techniczne

Encoder EI30 P 115 TS

Connector (M16x0.75) A7, axial, 7-pin



All dimensions in mm

Description

N inv. poss.

A7 axial, 7-pin, Connector connected to encoder housing

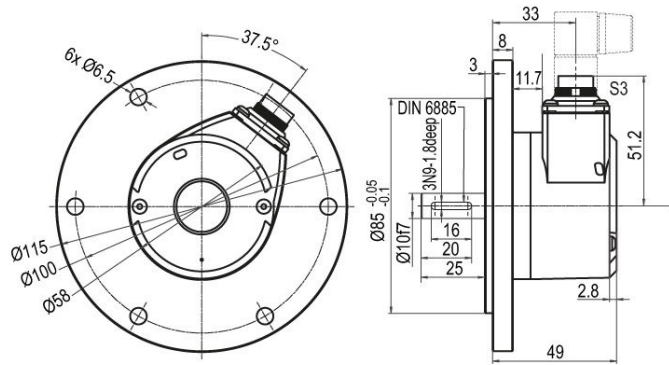
Assignments

A7	
7-pin	
Circuit	C3, C4, C5, C6, C7
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 P 115 TS

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



All dimensions in mm

Description

N inv. poss.

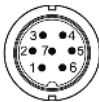
R7 radial, 7-pin, Connector connected to encoder housing

–

Assignments

R7

7-pin

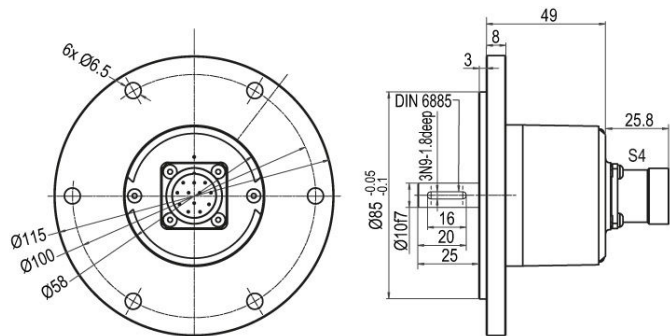


Circuit	C3, C4, C5, C6, C7
GND	1
(+) Vcc	2
A	3
B	4
N	5
–	–
A inv.	–
B inv.	–
N inv.	–
n. c.	6, 7
Shield	–

Dane techniczne

Encoder EI30 P 115 TS

Connector (M23) A12M, axial, 12-pin



All dimensions in mm

Description

N inv. poss.

A12M axial, 12-pin, Connector connected to encoder housing

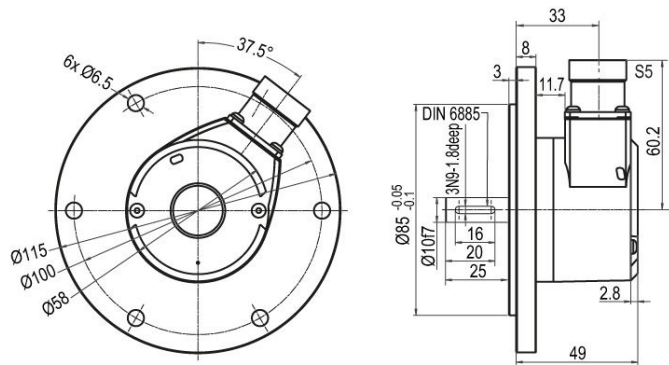
Assignments

	A12M	A12M	A12M
	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	–
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	–	–	–

Dane techniczne

Encoder EI30 P 115 TS

Connector (M23) R12M, radial, 12-pin



All dimensions in mm

Description

N inv. poss.

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

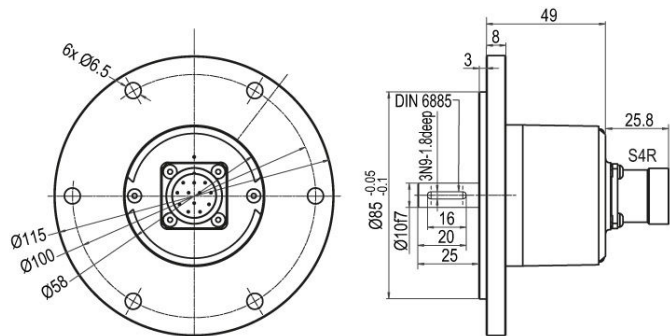
Assignments

	R12M	R12M	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
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	–	–	–

Dane techniczne

Encoder EI30 P 115 TS

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



All dimensions in mm

Description

N inv. poss.

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

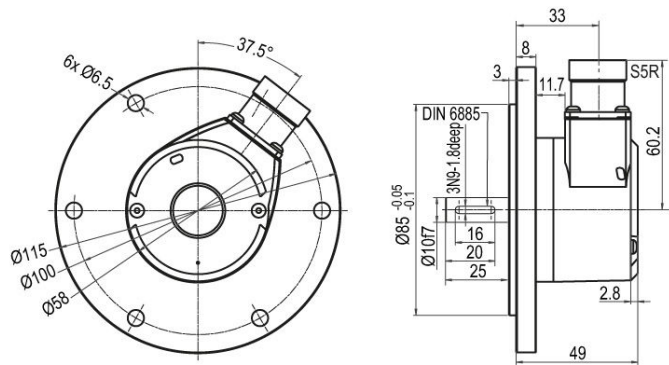
Assignments

	AC12	AC12	AC12
	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	–
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	–	–	–

Dane techniczne

Encoder EI30 P 115 TS

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



All dimensions in mm

Description

N inv. poss.

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

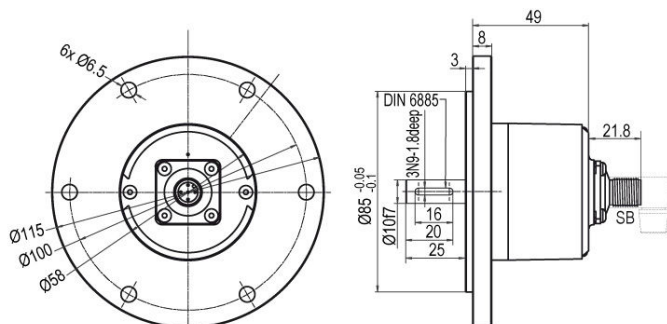
Assignments

	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	–
n. c.	1, 2, 4, 6, 7, 9, 11	2, 7, 9, 11	2, 3, 4, 7, 9, 11
Shield	–	–	–

Dane techniczne

Encoder EI30 P 115 TS

Sensor-connector (M12x1) AS, axial, 4-, 5-, 8-, 12-pin



All dimensions in mm

Description

N inv. poss.

AS4	axial, 4-pin, Connector connected to encoder housing	—
AS5	axial, 5-pin, Connector connected to encoder housing	—
AS8	axial, 8-pin, Connector connected to encoder housing	•
AS12	axial, 12-pin, Connector connected to encoder housing	•

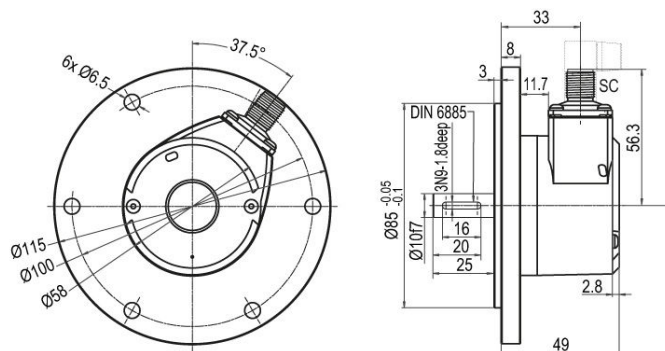
Assignments

	AS4 4-pin	AS5 5-pin	AS8 8-pin	AS8 8-pin	AS12 12-pin
Circuit	C3, C4, C5, C6, C7	C3, C4, C5, C6, C7	D3, D4, D5, D6, D7, C1, C2	D8	D3, D4, D5, D6, D7, C1, C2
GND	3	3	1	1	3
(+) Vcc	1	1	2	2	1
A	2	4	3	3	4
B	4	2	4	5	6
N	—	5	5	—	8
—	—	—	—	—	—
A inv.	—	—	6	4	9
B inv.	—	—	7	6	7
N inv.	—	—	8	—	10
n. c.	—	—	—	7, 8	2, 5, 11, 12
Shield	—	—	—	—	—

Dane techniczne

Encoder EI30 P 115 TS

Sensor-connector (M12x1) RS, radial, 4-, 5-, 8-, 12-pin



All dimensions in mm

Description

N inv. poss.

RS4	radial, 4-pin, Connector connected to encoder housing	—
RS5	radial, 5-pin, Connector connected to encoder housing	—
RS8	radial, 8-pin, Connector connected to encoder housing	•
RS12	radial, 12-pin, Connector connected to encoder housing	•

Assignments

	RS4 4-pin	RS5 5-pin	RS8 8-pin	RS8 8-pin	RS12 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
GND	3	3	1	1	3
(+) Vcc	1	1	2	2	1
A	2	4	3	3	4
B	4	2	4	5	6
N	—	5	5	—	8
—	—	—	—	—	—
A inv.	—	—	6	4	9
B inv.	—	—	7	6	7
N inv.	—	—	8	—	10
n. c.	—	—	—	7, 8	2, 5, 11, 12
Shield	—	—	—	—	—

Dane techniczne

Encoder EI30 P 115 TS

Options

Low-friction bearings

Order key

The encoder EI30 P 115 TS 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

IP67 Shafts sealed to IP67 (not for 1 Vpp Sin/Cos)

The encoder EI30 P 115 TS can be supplied in a full IP67 version.

IP

Max. RPM: 3500 rpm
 Permitted Shaft-Loading, axial: 80 N [8.157 kp]
 Permitted Shaft-Loading, radial: 110 N [11.216 kp]
 Max. PPR: 25000 ppr
 Starting-torque: approx. 4 Ncm [5.664 in-ozf] at ambient temperature

Low temperature

Order key

The encoder EI30 P 115 TS 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 115 TS 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 P 115 TS 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 P 115 TS

Example Order No.	Type				
EI30 P 115 TS	EI30 P 115 TS	EI30 P 115 TS			
Shaft					
10	10				
Pulses per revolution PPR:					
5000	2, 5, 10, 15, 20, 25, 30, 36, 40, 48, 50, 60, 64, 72, 90, 100, 120, 125, 128, 150, 160, 180, 200, 216, 240, 250, 254, 256, 300, 314, 320, 360, 400, 500, 512, 571, 600, 720, 750, 768, 800, 900, 1000, 1024, 1200, 1250, 1270, 1440, 1500, 1800, 2000, 2048, 2400, 2500, 2880, 3000, 3600, 4000, 4096, 4685, 5000, 5760, 6000, 7200, 7500, 8000, 8192, 10000, 10240, 12000, 12500, 15000, 16384, 20000, 20480, 25000 1 Vpp Sin/Cos only 1024, 2048 Other PPRs on request				
Channels:					
N	B, N (SIN: B)				
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

Dane techniczne

Encoder EI30 P 115 TS

Electrical connections

	Description	N inv. poss.	Order key
A-N	Cable: length (2 m standard)		
	axial, shield not connected	•	A-N
	axial, shield connected to encoder housing	•	A-C
	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, 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, clockwise pin count, M23, 12-pin, axial	•	AC12
	connector, M23, 12-pin, radial	•	R12M
	connector, clockwise pin count, M23, 12-pin, radial	•	RC12
	sensor-connector, M12x1, 4-pin, axial	–	AS4
	sensor-connector, M12x1, 4-pin, radial	–	RS4
	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
	sensor-connector, M12x1, 12-pin, axial	•	AS12
	sensor-connector, M12x1, 12-pin, radial	•	RS12

Options

Description	Order key
Low-friction bearings	LB
IP67	IP
Low temperature	LT
Pressure equalising membrane	PE
Without option	Empty
Cable length	XXX = Decimeter

Example
Order No.:

EI30 P 115 TS 10 5000 N C6 A-N EI30 P 115 TS

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.

