

Karta danych technicznych

Informacje o serii enkoderów obrotowych

Nr art.: 90000430

EI30-P 058 BB

Treść

- Dane techniczne
- Kod artykułu



Ilustracja może się różnić od stanu rzeczywistego

Enkoder_Seria	EI 058 BB
Enkoder_Podstawowa zasada działania	inkrementalny
Enkoder_Zasada działania	optycznie interpolowany
Enkoder_Średnica kołnierza	Ø 58 mm
Enkoder_Typ kołnierza	Otwór nieprzelotowy
Enkoder_Wał pełny/wał pusty	Wał pusty
Enkoder_Średnica wału	Ø 10 mm
	Ø 12 mm
	Ø 15 mm
	Ø 6 mm
	Ø 7 mm
Enkoder_Napięcie zasilania	Ø 8 mm
	10 ... 30 V DC
	4,75 ... 5,5 V DC
Enkoder_Układ wyjściowy	5 ... 30 V DC
	1 Vss Sin/Cos
	HTL
	HTL, odwr.
Enkoder_Liczba impulsów	TTL
	TTL, kompatybilny z RS422, odwr.
	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

Dane techniczne

Encoder EI30 P 058 BB

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. 1.6 Ncm [2.266 in-ozf] at ambient temperature
Fixing	permanently attached clamping ring

Shaft	$\varnothing$ 6 mm [$\varnothing$ 0.236"]
Advice	with adapter sleeve
Shaft length	L: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]

Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Shaft	$\varnothing$ 9.525 mm [$\varnothing$ 3/8"] Order No: 4Z
Advice	with adapter sleeve
Shaft length	L: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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
Advice	with adapter sleeve
Shaft length	L: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
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: 35 mm [1.378"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	39 mm [1.535"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	60 N [6.118 kp]

Dane techniczne

Encoder EI30 P 058 BB

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

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 6000 rpm
Diagnostic coverage (DC)	0 %

Electrical Data

Power supply/Current consumption	4.75 VDC up to 30 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

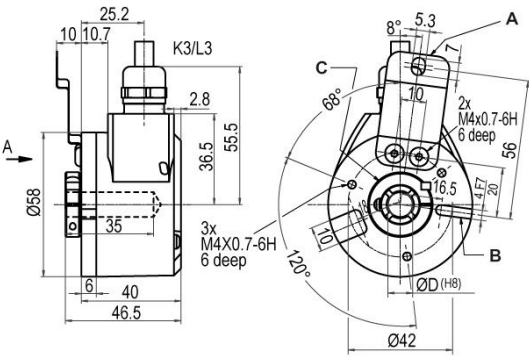
General Data

Weight	approx. 220 g [7.76 oz]
Connections	cable or connector, radial
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	Connector: -40 °C up to +85 °C, Cable: -20 °C up to +80 °C (Option ACA: -40 °C up to +85 °C). Connector: -40 °F up to +185 °F, Cable: -4 °F up to +176 °F, Option ACA: -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 ACA: -40 °C up to +85 °C) Connector: -40 °F up to +185 °F, cable: -22 °F up to +176 °F, (Option ACA: -40 °F up to +185 °F)

Dane techniczne

Encoder EI30 P 058 BB

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



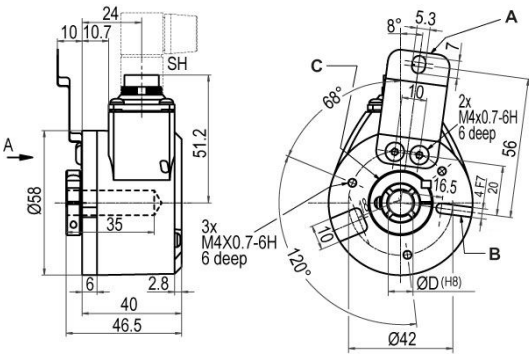
- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

All dimensions in mm

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

Assignments			
Circuit	R-N, R-C	R-N, R-C	R-C
	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

Dane techniczne

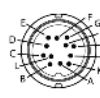
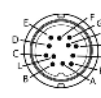
Encoder EI30 P 058 BB

Description

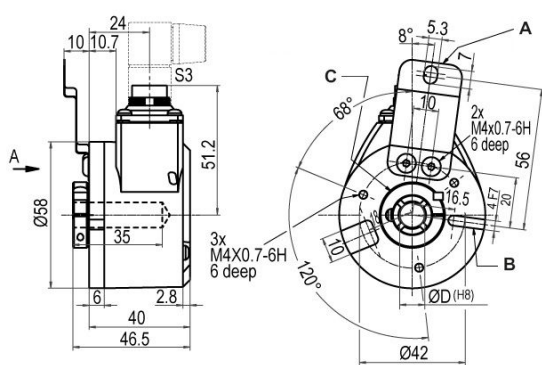
N inv. poss.

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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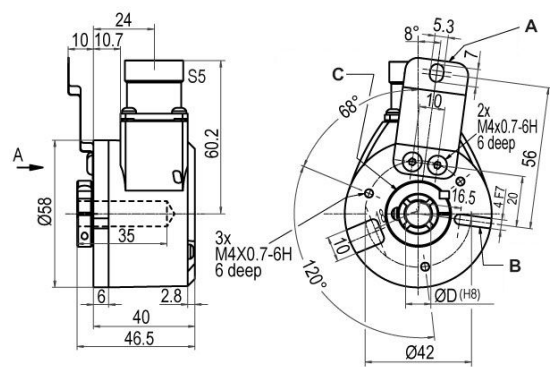
Dane techniczne

Encoder EI30 P 058 BB

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	–

Connector (M23) R12M, radial, 12-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.

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

Assignments

R12M			
12-pin			
			
Circuit	C3, C4, C5, C6, C7	C1, C2, D3, D4, D5, D6, D7	D8
GND	10	10	10
(+) Vcc	12	12	12

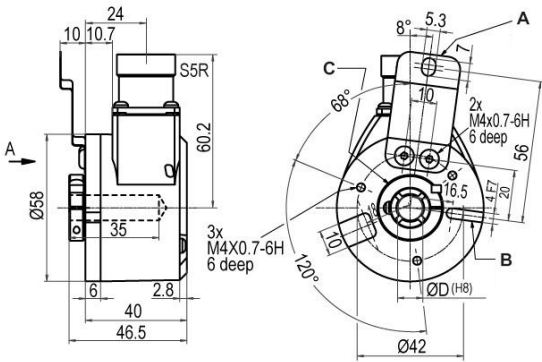
Dane techniczne

Encoder EI30 P 058 BB

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) RC12, 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

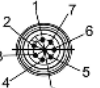
Description

N inv. poss.

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

Assignments

	RC12 12-pin	RC12 12-pin	RC12 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	–

	RS4	RS5	RS8	RS8	RS12
	4-pin	5-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	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 058 BB

Options

Low-friction bearings

Order key

The encoder EI30 P 058 BB is also available as a particularly smooth- running low-friction encoder. The starting torque is thereby changed to approx. $\leq 0.6 \text{ Ncm}$ [0.85 in-ozf] at ambient temperature and the protection class at the shaft input to IP50.

LB

Low temperature

Order key

The encoder EI30 P 058 BB with the output circuit types C1, C2, C3, C4, C5, C6, D3, D4, D5, D6 is also available with the extended temperature range $-40 \text{ }^{\circ}\text{C}$ up to $+85 \text{ }^{\circ}\text{C}$ [$-40 \text{ }^{\circ}\text{F}$ up to $+185 \text{ }^{\circ}\text{F}$] (measured at the flange).

LT

Pressure equalising membrane

Order key

The EI30 P 058 BB 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 058 BB 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 058 BB

Example Order No.	Type				
EI30 P 058 BB	EI30 P 058 BB	EI30 P 058 BB			
Shaft					
10	06; 2Z; 07; 08; 4Z; 10; 12; 3Z; 15				
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				
Channels:					
N	B, N (SIN: B)				
Output circuit					
C6	Resoluti- on ppr up to 2500	Power sup- ply VDC	Output circuit	—	Order key
		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 fre- quency) 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 058 BB

Electrical connections

Description		N inv. poss.	Order key
Cable: length (2 m standard)			
R-N	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
IP55	PE
Without option	Empty
Cable length	XXX = Decimeter

Example Order No.:	EI30 P 058 BB	10	1024	N	C6	R-N	EI30 P 058 BB	Your encoder
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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.

