

Technisch gegevensblad Informatie over de encoderseries

Art.-nr.: 90000440

EI30-P 058 HO

Inhoud

- Technische gegevens
- Artikelsleutel



Afbeelding kan afwijken

Encoder_serie	EI 058 HO
Encoder_basisprincipe	incrementeel
Encoder_functieprincipe	optisch geïnterpoleerd
Encoder_flensdiameter	Ø 58 mm
Encoder_flenstype	Holle as
Encoder_massieve as/holle as	Holle as
Encoder_asdiameter	Ø 10 mm
	Ø 12 mm
	Ø 14 mm
	Ø 15 mm
	Ø 6 mm
	Ø 7 mm
	Ø 8 mm
Encoder_voedingsspanning	10 ... 30 V DC
	4,75 ... 5,5 V DC
	5 ... 30V DC
Encoder_uitgangscircuit	1 Vss Sin/Cos
	HTL
	HTL, inv.
	TTL
	TTL, RS422 compatibel, inv.
Encoder_aantal impulsen	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

Technische gegevens

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
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Advice	with adapter sleeve
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 10 mm [$\varnothing$ 0.394"]
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 12 mm [$\varnothing$ 0.472"]
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 12.7 mm [$\varnothing$ 1/2"] Order No: 3Z
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 14 mm [$\varnothing$ 0.551"]
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Shaft	$\varnothing$ 15 mm [$\varnothing$ 0.591"]
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Shaft length	L: 44.5 mm [1.752"]
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Insertion depth min.	11 mm [0.433"]
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Max. Permissible shaft loading radial	80 N [8.157 kp]
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Max. Permissible shaft loading axial	60 N [6.118 kp]
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Bearings

Bearings type	2 precision ball bearings
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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
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Max. operating speed	6000 rpm
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Technische gegevens

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

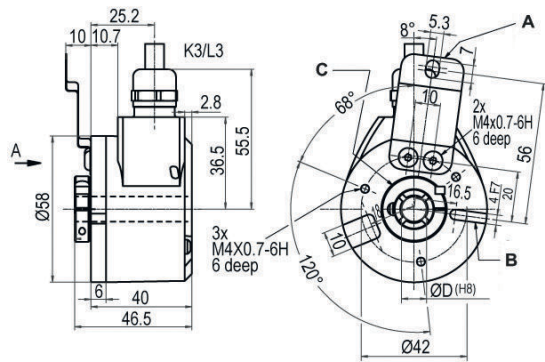
General Data

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)

Technische gegevens

Encoder EI30 P 058 HO

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



All dimensions in mm

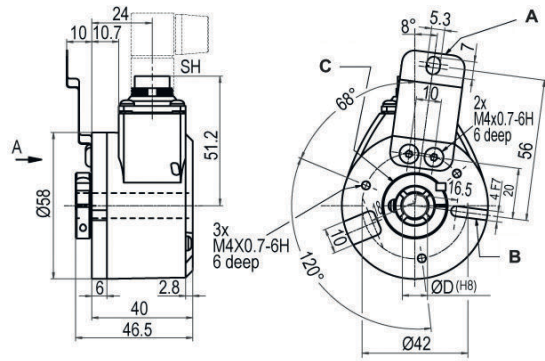
- A Spring plate as torque support
- B Groove for cylinder pin as torque support DIN7-D4mm
- B Clamping ring

Description		N inv. poss.
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



All dimensions in mm

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

Technische gegevens

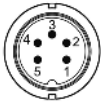
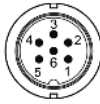
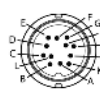
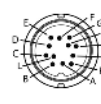
Encoder EI30 P 058 HO

Description

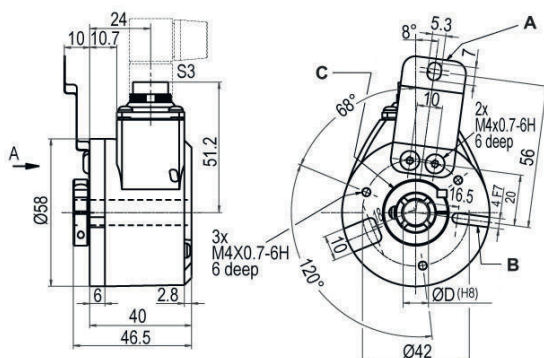
N inv. poss.

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

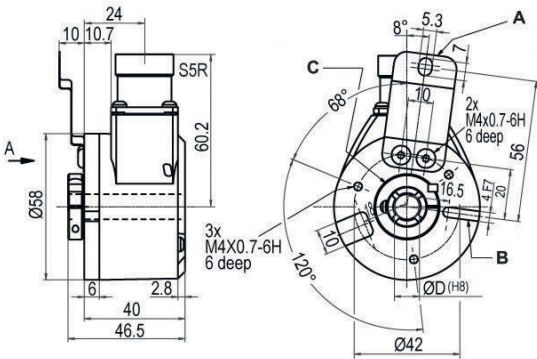
Technische gegevens

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

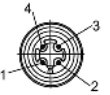
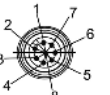
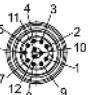
N inv. poss.

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	–

	RS5	RS5	RS8	RS8	RS8
	4-pin	5-pin	8-pin	8-pin	8-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	4	4	3	3	4
B	—	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	—	—	—	—	—

Technische gegevens

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

Technische gegevens

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

Technische gegevens

Encoder EI30 P 058 HO

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
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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Artikelsleutel

Artikelaanduiding: **EABB CCCDDEE FFFFFF GHJJKK LLMNOPPP RR**

A	Type encoder I: incrementeel S: Absolut, Singleturn M: Absolut, Multiturn
BB	Serie 10: Entry 30: Basic 50: Extended 70: Advanced
CCC	Flensdiameter 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	Flenstype BB: holle as met blindgat CC: klemflens (compacte uitvoering) CF: klemflens (voedingsmiddelen en dranken) CH: klemflens (uitvoering voor zware belasting) CL: klemflens HL: holle as (geïsoleerd) HO: holle as HT: holle as (speciale koppelsteun) RC: ronde flens (36/40 klemflens, 58 met 6 mm-as) RE: ronde flens (vergroete boringen) RN: ronde flens SC: statorkoppeling SF: schroefflens (53 klemflens, 58 levensmiddelen en dranken) SI: Servoflens (verhoogde asbelasting en IP-bescherming) SQ: vierkante flens SR: schroefflens (36/40 klemflens, 58 corrosiebestendig) SY: Synchro (incrementaal), Servo (36), Synchro (58) (absoluut) TM: snelheidsmeter (115 met as van 1 mm, 58 met motorfeedback) TS: snelheidsmeter (10 mm-as)
EE	Schacht-/boringsdiameter 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: doorlopende/blinde boring (6 ... 72 mm)
FFFFFF	Signaal/oplossing Axxxx: A Bxxxx: AB Nxxxx: ABN P16384: programmeerbaar xx: Singleturn, 1 ... 16 Bit xx: Multiturn, 0 ... 43 Bit (00 bij Singleturn)
G	Galvanische scheiding (alleen absoluut) 0: zonder 1: met
HH	Spanningsvoorziening (alleen absoluut) 0: 10 ... 32 V DC/met galvanische scheiding 1: 4,75 ... 5,5 V DC 2: 18 ... 30 V DC
J	Werkingsprincipe M: magnetisch O: optisch P: optisch geïnterpoleerd

Artikelsleutel

KK	Interface 01: RS485 07: SSI binair 08: SSI Gray 35: CANopen 38: EtherCAT 48: PROFINET 58: EtherNet/IP
LL	Elektrische aansluiting M08: ronde stekker M8 M12: ronde stekker M12 M16: ronde stekker M16 M23: ronde stekker M23 M12BC: stekker voor buskap
M	Kabeluitgang A: axiaal R: radiaal T: Tangential
NN	Aantal polen xx: aantal polen
O	Afschermingsverbinding (kabel van 2 m) (optioneel) C: aangesloten N: niet aangesloten
PPP	Kabellengte xxx: kabellengte (in dm)

Opmerking



↗ Een lijst met alle beschikbare apparaattypen vindt u op de webpagina van Leuze via www.leuze.com.

