

Fiche technique

Informations sur la gamme de codeurs rotatifs

Art. n°: 90000110

EI30-M 058 CL

Contenu

- Caractéristiques techniques
- Code d'article



Figure pouvant varier

Série d'encodeurs	EI 058 CL
Principe de base encodeur	incrémental
Principe de fonctionnement encodeur	magnétique
Diamètre de bride encodeur	Ø 58 mm
Type de bride encodeur	Bride de serrage
Arbre plein/arbre creux encodeur	Arbre creux
Diamètre d'arbre encodeur	Ø 10 mm
	Ø 6 mm
	Ø 8 mm
Tension d'alimentation encodeur	4,75 ... 30 V CC
Commande de sortie encodeur	HTL (TTL à 5 V CC)
	HTL, inv. (TTL/RS422 compatible à 5 V CC)
Nombre d'impulsions encodeur	1 ... 16384 I/U

Caractéristiques techniques

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

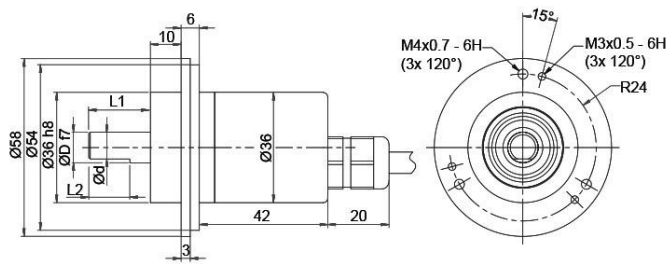
General Data

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)

Caractéristiques techniques

Encoder EI30 M 058 CL

Cable connection A-C axial with 2 m cable



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

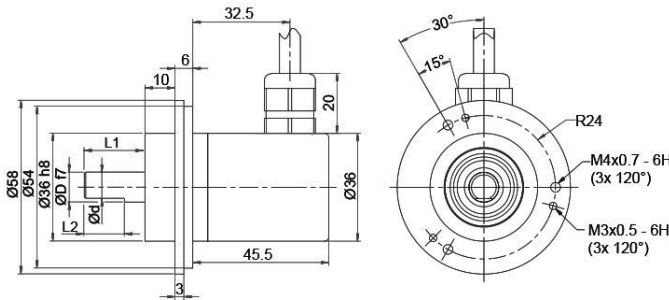
Description N inv. poss.

A-C axial, shield connected to encoder housing

Assignments

	A-C	A-C
Circuit	D2	D1
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
—	—	—
A inv.	—	RD
B inv.	—	BK, (BU at LT)
N inv.	—	VT
Shield	flex	flex

Cable connection R-C radial with 2 m cable



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

Encoder EI30 M 058 CL

N inv. poss.

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	R-C	R-C
Circuit	D2	D1
GND	WH	WH
(+) Vcc	BN	BN
A	GN	GN
B	YE	YE
N	GY	GY
–	–	
A inv.	–	RD
B inv.	–	BK, (BU at LT)
N inv.	–	VT
Shield	flex	flex

[illegible]

N inv. poss.

•

	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

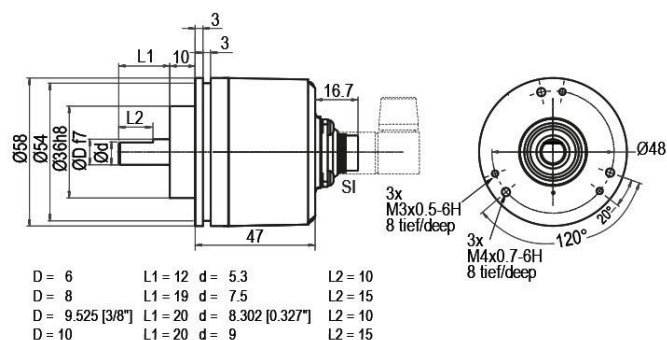
Caractéristiques techniques

Encoder EI30 M 058 CL

Assignments

N inv.	–	VT
Shield	flex	flex

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	•

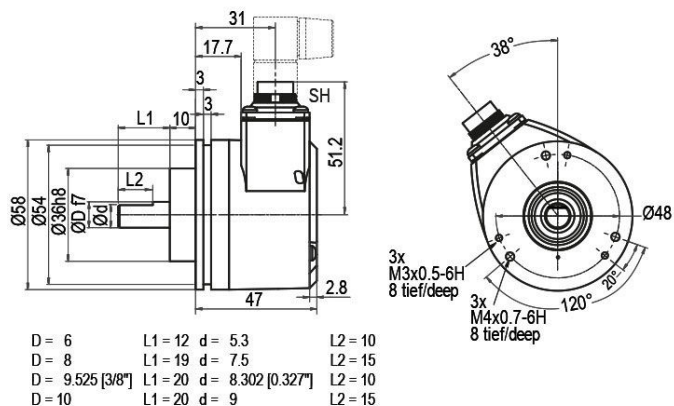
Assignments

	A5 5-pin	A6 6-pin	A8 8-pin	A8 8-pin	A12 12-pin	A12 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	–	–	–	–	–	–

Caractéristiques techniques

Encoder EI30 M 058 CL

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



All dimensions in mm

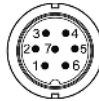
Description

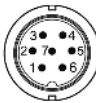
N inv. poss.

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	R6	R8	R8	R12	R12
	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	—	—	—	—	—	—

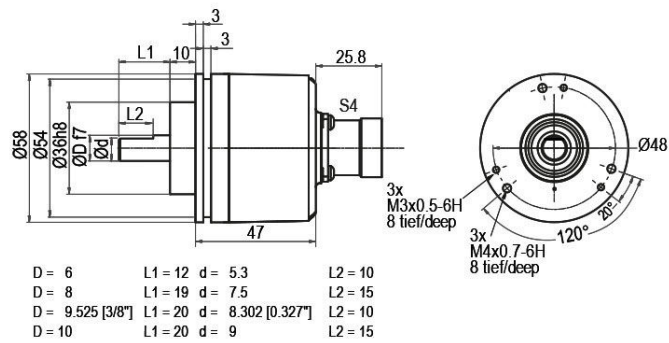
	A7 7-pin
	
Circuit	D2
GND	1
(+) Vcc	2
A	3
B	4
N	5
–	–
A inv.	–
B inv.	–
N inv.	–
n. c.	6, 7
Shield	–

	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	–

Caractéristiques techniques

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

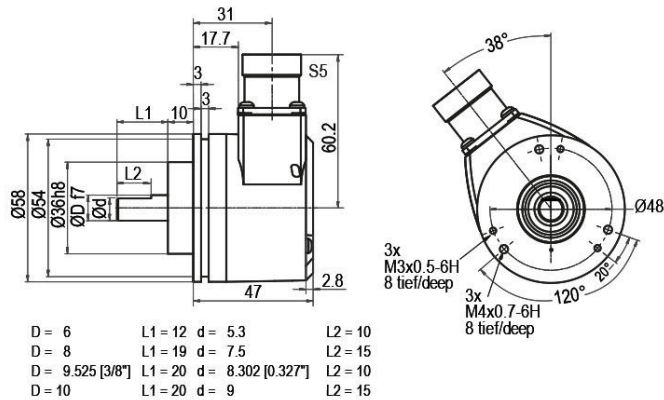
Assignments

	A12M	A12M
	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	—	—

Caractéristiques techniques

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

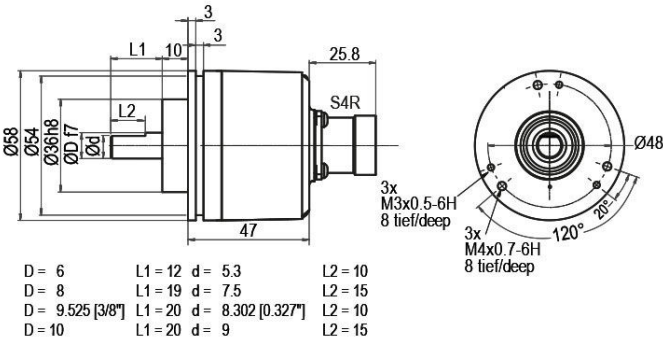
Assignments

	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	—	—

Caractéristiques techniques

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

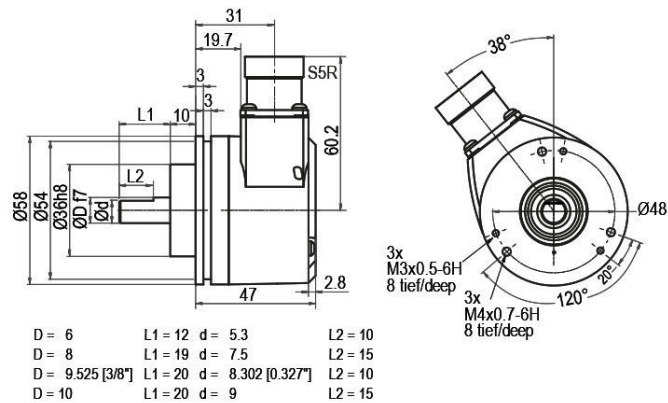
Assignments

	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	—	—

Caractéristiques techniques

Encoder EI30 M 058 CL

Connector (M23) RC12, radial, 12-pin (clockwise)



All dimensions in mm

Description

N inv. poss.

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

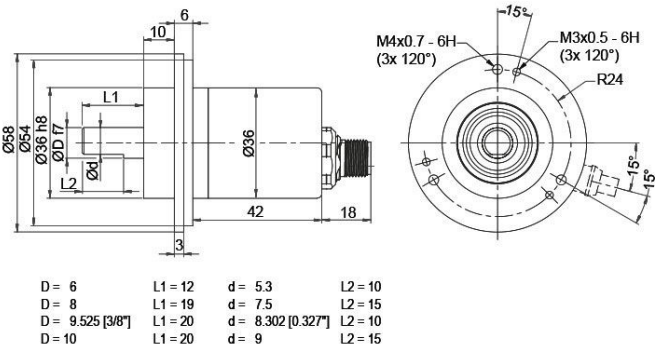
Assignments

	RC12	RC12
	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	—	—

Caractéristiques techniques

Encoder EI30 M 058 CL

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



All dimensions in mm

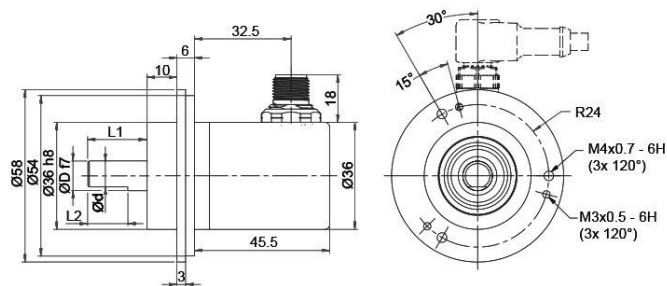
Description		N inv. poss.
AS5	axial, 5-pin, Connector connected to encoder housing	—
AS8	axial, 8-pin, Connector connected to encoder housing	•

	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	—	—

Caractéristiques techniques

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 5-pin	RS8 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	—	—

Caractéristiques techniques

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

Caractéristiques techniques

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

Caractéristiques techniques

Encoder EI30 M 058 CL

Electrical connections

	Description	N inv. poss.	Order key
A-C	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

Code d'article

Désignation d'article : **EABB CCCDDEE FFFFFFF GHJJKK LLMNOPPP RR**

A	Type de codeur rotatif I : Incrémental S : Absolu, mono-tour M : Absolu, multi-tour
BB	Série 10 : Entry 30 : Basic 50 : Extended 70 : Advanced
CCC	Diamètre de bride 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	Type de bride BB : Arbre creux avec alésage Sackloch CC : Bride de serrage (forme compacte) CF : Bride de serrage (aliments et boissons) CH : Bride de serrage (exécution pour charges lourdes) CL : Bride de serrage HI : Arbre creux (isolé) HO : Arbre creux HT : Arbre creux (supports de couple spéciaux) RC : Bride ronde (bride de serrage 36/40, 58 avec arbre de 6 mm) RE : Bride ronde (alésages étendus) RN : Bride ronde SC : Accouplement statorique SF : Bride à vis (bride de serrage 53, 58 Aliments et boissons) SI : Bride synchro (charge sur l'arbre étendue et protection IP) SQ : Bride carrée SR : Bride à vise (bride de serrage 36/40, 58 résistante à la corrosion) SY : Synchro (incrémental), Servo (36), Synchro (58) (absolu) TM : Tacho (115 avec arbre de 1 mm, rétroaction moteur 58) TS : Tacho (arbre de 10 mm)
EE	Diamètre arbre/alésage 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 : Alésage creux/Sackloch (6 ... 72 mm)
FFFFFF	Signal/résolution Axxxxx : A Bxxxxx : AB Nxxxxx : ABN P16384 : programmable xx : Mono-tour, 1 ... 16 bit xx : Multi-tour, 0 ... 43 bit (00 pour mono-tour)
G	Isolation galvanique (absolu uniquement) 0 : sans 1 : avec
HH	Alimentation en tension (absolu uniquement) 0 : 10 ... 32 V CC/avec isolation galvanique 1 : 4,75 ... 5,5 V CC 2 : 18 ... 30 V CC
J	Principe de fonctionnement M : magnétique O : Optique P : optiquement interpolé

Code d'article

KK	Interface 01 : RS485 07 : SSI binaire 08: SSI Gray 35 : CANopen 38 : EtherCAT 48 : PROFINET 58 : EtherNET/IP
LL	Raccordement électrique M08 : Connecteur rond M8 M12 : Connecteur rond M12 M16 : Connecteur rond M16 M23 : Connecteur rond M23 M12BC : Connecteur boîtier réseau
M	Sortie de câble A : Axial R : Radial T : Tangentiel
NN	Nombre de pôles xx : Nombre de pôles
O	Connexion blindage (câble 2 m) (en option) C : raccordé N : non raccordé
PPP	Longueur de câble xxx : Longueur de câble (en dm)

Remarque



Vous trouverez une liste de tous les types d'appareil disponibles sur le site Internet de Leuze à l'adresse www.leuze.com.

