Hoja técnica
Información sobre la serie de encoders
Código: 91000260
EM-M 036 BB IO



La figura puede variar

Contenido

- Datos técnicos
- Código de producto

Derechos a modificación técnica reservados

Serie	EM-M 036 BB
Principio básico	absoluto
Principio de funcionamiento	magnético
Diámetro de la brida	Ø 36 mm
Tipo de brida	Orificio ciego
Eje macizo/Eje hueco	Eje hueco
Diámetro del eje	Ø 6 mm
Tensión de alimentación	18 ... 30 V CC
Conmutación de salida	M12A05
	M12R05
Número de impulsos	1 ... 16 Bit / 0 ... 43 Bit

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Datos técnicos

Leuze

Encoder EM-M 058 BB IO

Mechanical Data

Flange	hollow shaft (blind-bored)
Flange material	aluminum
Housing material	Aluminum die cast, powder coated; Integrated magnetic shielding
Torque supports	incl. 1 torque support EA 10001
- 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 EA 10005
- Compensation	axial: ±0.5 mm [0.0197"], radial: ±1.5 mm [0.0591"], Max. operating speed: 3000 rpm
Flange diameter	Ø 58 mm [Ø 2.283"]

Shaft(s)

Shaft material	stainless steel
Starting torque	approx. 1.6 Ncm [2.266 in-ozf] at ambient temperature
Fixing	permanently attached clambing ring
Shaft	Ø 6 mm [Ø 0.236"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 6.35 mm [Ø 1/4"] Order No: 2Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 7 mm [Ø 0.276"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 8 mm [Ø 0.315"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 9.525 mm [Ø 3/8"] Order No: 4Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 10 mm [Ø 0.394"]
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12 mm [Ø 0.472"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 12.7 mm [Ø 1/2"] Order No. 3Z
Advice	with adapter sleeve
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 14 mm [Ø 0.551"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]
Shaft	Ø 15 mm [Ø 0.591"]
Shaft length	L: 12 mm [0.472"]
Insertion depth min.	11 mm [0.433"]
Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 kp]

Datos técnicos

Leuze

Encoder EM-M 058 BB IO

Insertion depth max.	15 mm [0.591"]
Max. Permissible shaft loading radial	80 N [8.157 kp]
Max. Permissible shaft loading axial	50 N [5.098 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	6000 rpm

Machinery Directive: basic data safety integrity level

$MTTF_d$	1300 a
Mission time (TM)	20 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	18 VDC up to 30 VDC: typ. 30 mA
Power consumption	max. 0.6 W
Operating principle	magnetic

Sensor data

Single-turn technology	innovative hall sensor technology
Single-turn resolution	65,536 steps/360° (16 bit)
Single-turn accuracy	± 0.0878° (≤ 12 bit)
Single-turn repeat accuracy	± 0.0878° (≤ 12 bit)
Internal cycle time	250 µs
Multi-turn technology	Wiegand wire technology no battery and no gear.
Multi-turn resolution	up to 32 bit with high precision value up to 43 bit.

Environmental data

ESD (DIN EN 61000-4-2):	4 kV
Burst (DIN EN 61000-4-4):	2 kV
Includes EMC:	DIN EN 61000-6-2 DIN EN 61326-2-3 DIN EN 61131-9
Vibration: (DIN EN 60068-2-6)	300 m/s^2 (10 Hz up to 2000 Hz)
Shock: (DIN EN 60068-2-27)	5000 m/s^2 (6 ms)
Electrial Safety:	DIN EN 61010-1 (VDE 0411-1) / IEC 61010-1 / UL 61010-1 / CSA C22.0 No. 61010-1-12
Turn on time:	<1s

Duty information

Customs tariff number:	90318020
Country of origin:	Germany

Interface

Interface:	IO-Link Version: V1.1.4
Protocol:	• 2.8 Adjustable Switching Sensor, multi channel • 4.2.1 Measuring and Switching Sensor, high resolution, 1 channel • 4.2.2 Measuring and Switching Sensor, high resolution, 2 channel
Baud rate:	COM 3 230.4 kBit/s
Advice:	The standard settings and customer-specific adjustments in the parameterisation can be set using ISDUs, e.g. scaling, direction of rotation, etc.

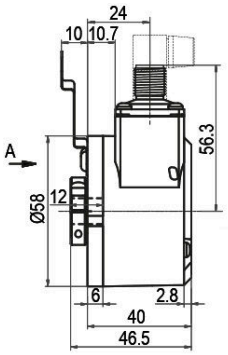
General Data

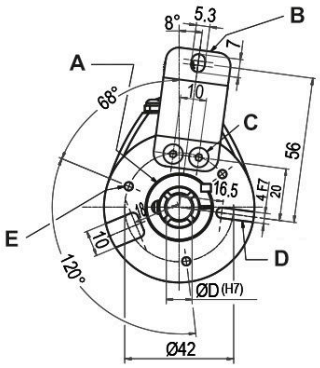
Weight	approx. 220 g [7.76 oz]
Connections	connector radial
Protection rating (EN 60529)	Housing: IP65, IP67; shaft sealed: IP65
Operating temperature	-40 °C up to +85 °C [-40 °F up to +185 °F]
Storage temperature	-40 °C up to +100 °C [-40 °F up to +212 °F]

Datos técnicos

Encoder EM-M 058 BB IO

Connector, M12x1 M12R05, radial, 5-pin





All dimensions in mm

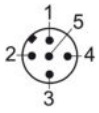
IC5 → M12R05

A Clamping ring
B Spring plate as torque support
C 2x M4x0.7 - 6H, 6 deep
D Groove for cylinder pin as torque support DIN 7-D4mm
E 3x M4x0.7 - 6H, 6 deep

Description

M12R05	radial, 5-pin, shield connected to encoder housing

Assignments

	M12R05
	
(+) Vcc	1
GND	3
CANHigh	4
CANLow	2
CANGND shield	5

Datos técnicos

Encoder EM-M 058 BB IO

Options

Low-friction bearings	Order key
The encoder EM-M 058 BB IO is also available as a particularly smooth- running low-friction encoder. The starting torque is thereby changed to approx. ≤ 0.6 Ncm [0.85 in-ozf] at ambient temperature and the protection class at the shaft input to IP50.	LB

Datos técnicos

Leuze

Encoder EM-M 058 BB IO

Example Order No.	Type	Your encoder
EM50 058 BB	EM-M 058 BB	EM50 058 BB

	Shaft	Order key
06	Ø 6 mm [Ø 0.236"] with adapter sleeve	06
	Ø 6.35 mm [Ø 1/4"] Order No: 2Z with adapter sleeve	2Z
	Ø 7 mm [Ø 0.276"] with adapter sleeve	07
	Ø 8 mm [Ø 0.315"] with adapter sleeve	08
	Ø 9.525 mm [Ø 3/8"] Order No: 4Z with adapter sleeve	4Z
	Ø 10 mm [Ø 0.394"] with adapter sleeve	10
	Ø 12 mm [Ø 0.472"]	12
	Ø 12.7 mm [Ø 1/2"] Order No: 3Z with adapter sleeve	3Z
	Ø 14 mm [Ø 0.551"]	14
	Ø 15 mm [Ø 0.591"]	15

	Single-turn Resolution	Order key
16	Single-turn resolution 1 bit up to 16 bit: (e. G. 6 bit)	16

	Multi-turn Resolution	Order key
43	Multi-turn resolution: (examples) 6 bit = 6 43 bit = 43	16

	Data protocol	Order key
42	IO-Link	42

	Power supply	Order key
2	18 V up to 30 V (standard)	2

	Galvanic isolation	Order key
0	no	0

	Electrical connections	Order key
M12R05	**Connector:** sensor-connector, M12x1, 5-pin, radial, shield connected to encoder housing	M12R05

	Options	Order key
	Without option	Empty
	Low-friction bearings	LB

Código de producto

Denominación del artículo: **EABB CCCDDEE FFFFFF GHHJKK LLMNNOPPP RR**

A	**Tipo de codificador rotatorio** I: Incremental S: Absoluto, Singleturn M: Absoluto, Multiturn
BB	**Serie** 10: Entry 30: Basic 50: Extended 70: Advanced
CCC	**Diámetro de la brida** 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	**Tipo de brida** BB: Eje hueco con orificio ciego CC: Brida de sujeción (diseño compacto) CF: Brida de sujeción (alimentos y bebidas) CH: Brida de sujeción (ejecución para carga pesada) CL: Brida de sujeción HI: Eje hueco (aislado) HO: Eje hueco HT: Eje hueco (brazo de torsión especial) RC: Brida redonda (36/40 brida de sujeción, 58 con eje de 6 mm) RE: Brida redonda (orificios ampliados) RN: Brida redonda SC: Acoplamiento de estátor SF: Brida roscada (53 brida de sujeción, 58 alimentos y bebidas) SI: Brida servo (carga del eje y protección IP ampliadas) SQ: Brida cuadrada SR: Brida roscada (36/40 brida de sujeción, 58 resistente a la corrosión) SY: Synchro (incremental), Servo (36), Synchro (58) (absoluto) TM: Tacómetro (115 con eje de 1 mm, 58 retroalimentación del motor) TS: Tacómetro (eje de 10 mm)
EE	**Diámetro del eje/orificio** 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: Orificio hueco/ciego (6 ... 72 mm)
FFFFFF	**Señal/Resolución** Axxxxx: A Bxxxxx: AB Nxxxxx: ABN P16384: Programable xx: Singleturn, 1 ... 16 bits xx: Multiturn, 0 ... 43 bits (00 con Singleturn)
G	**Separación galvánica (solo absoluto)** 0: sin 1: con
HH	**Alimentación de tensión (solo absoluto)** 0: 10 ... 32 V CC/con separación galvánica 1: 4,75 ... 5,5 V CC 2: 18 ... 30 V CC
J	**Principio de funcionamiento** M: magnético O: óptico P: interpolado ópticamente

Código de producto

KK	**Interfaz** 01: RS485 06: SSI binario 07: SSI Gray 08: Ethernet universal 35: CANopen 38: EtherCAT 42: IO-Link 48: PROFINET 58: EtherNet/IP 68: CANopen lift 78: CAN SAE J1939
LL	**Conexión eléctrica** M08: Conector redondo M8 M12: Conector redondo M12 M16: Conector redondo M16 M23: Conector redondo M23 M12BC: Conector de cubierta de bus
M	**Salida de cable** A: Axial R: Radial T: Tangencial
NN	**Número de polos** xx: Número de polos
O	**Conexión de blindaje (cable de 2 m) (opcional)** C: conectado N: no conectado
PPP	**Longitud de cable** xxx: Longitud de cable (en dm)

Nota

↳ Encontrará una lista con todos los tipos de equipo disponibles en el sitio web de Leuze: www.leuze.com.

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