

- Compact single and multi turn encoders
- CANopen and Modbus-RTU interfaces
- Robust magnetic (EBM58) or precise optical (EBO58) sensing
- High resolution up to 18 bits
- Point-to-point connection
- Cable, M12 connections



EBO58 • EBM58

### ENVIRONMENTAL SPECIFICATIONS

Shock:	250 g, 6 ms acc. to CEI EN 60068-2-27
Vibrations:	10 g, 5-2000 Hz acc. to CEI EN 60068-2-6
Protection:	IP65
Operating temperature range:	-25°C +85°C (-13°F +185°F)
Storage temperature range:	-40°C +100°C (-40°F +212°F) (98% R.H.without condensation)

### MECHANICAL SPECIFICATIONS

Dimensions:	see drawing
Shaft diameter:	Ø 6, 8, 9.52, 10, 12 mm
Hollow shaft diameter:	Ø 14, 15
Reducing sleeves BR1-xx from Ø 15 mm to:	Ø 6, 8, 9.52, 10, 11, 12 mm
Shaft loading (axial, radial):	40 N max.
Shaft rotational speed:	12000 rpm, 9000 rpm continuous operation
Starting torque (at 20°C):	< 1 Ncm (typical)
Electrical connections:	M12 plug or cable output 1 m (3,3 ft)
Weight:	~ 250 g (8,8 oz)
Option:	• additional cable

### ELECTRICAL SPECIFICATIONS

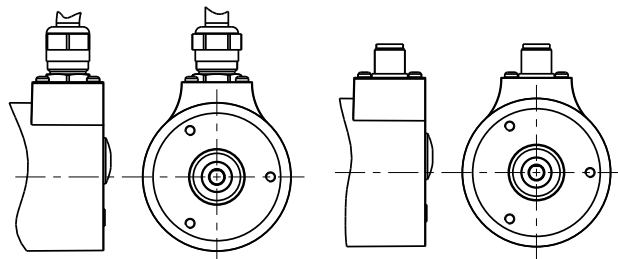
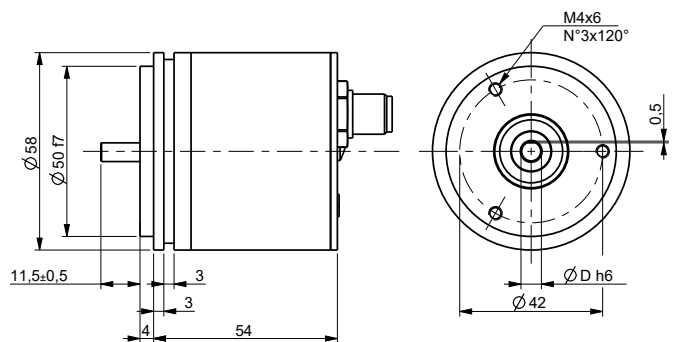
Resolution:	single turn = 262144 cpr max. multi turn = 16384 turns max.
Power supply:	+10V +30V
Power consumption:	1 W
Output circuit:	CANopen, Modbus RTU RS485
Interface:	CANopen DS301, DS406, Class 2 (RS485) Modbus RTU (RS485)
Programmable parameters:	<ul style="list-style-type: none"> <li>• Baudrate</li> <li>• Device address (Node ID)</li> <li>• Scaling function</li> <li>• Counting direction</li> <li>• Preset value</li> <li>• Two software limit switches (CANopen)</li> <li>• Transmission mode: Cyclic, Sync (CANopen)</li> <li>• Velocity output (CANopen)</li> <li>• Round loop function (CANopen)</li> </ul>
Bus termination:	programmable by Dip-switches
Protection:	against inversion of polarity and short-circuit
EMC:	electro-magnetic immunity, according to: EN 61000-4-2 EN 61000-4-4
Functions:	<ul style="list-style-type: none"> <li>• Counting direction</li> <li>• Zero setting/Preset</li> <li>• Resolution</li> <li>• Reset to default parameters</li> <li>• Firmware update (Modbus)</li> <li>• Saving parameters</li> </ul>

### MATERIALS

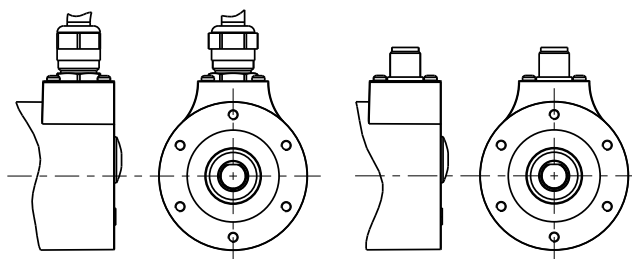
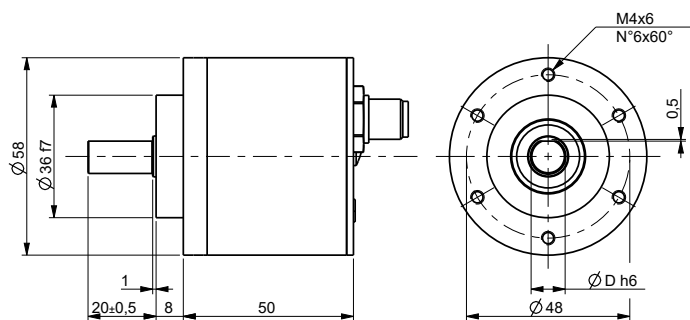
Housing:	anticorodal, UNI EN AW-6082
Flange:	anticorodal, UNI EN AW-6082 or zamac die cast
Bearings:	ABEC 5
Shaft:	stainless steel, non-magnetic, UNI EN 4305

### ACCESSORIES

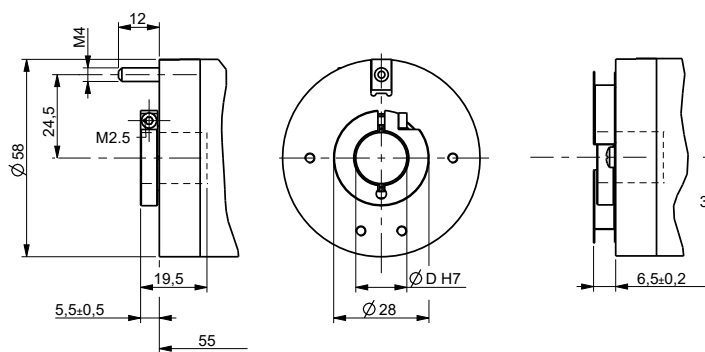
EM12FC:	M12 5 pin mating connector
PAN/PGF:	flexible couplings
BR1:	reducing sleeves
LKM-386:	fixing clamps



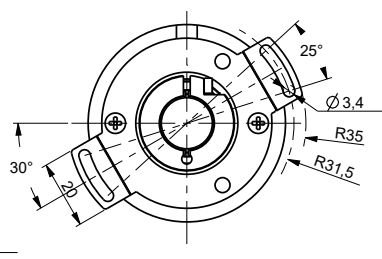
EBO58 • EBM58



EBO58S • EBM58S



EBO58C • EBM58C



EBO59C • EBM59C

## Order code EBO, optical sensing

EBO58	XX-XX	-	XXX	-	XX	-	X	X	-	X	XXXX	/Sxxx
EBO58S	Ⓐ		Ⓑ		Ⓒ		Ⓓ	Ⓔ		Ⓕ	Ⓖ	Ⓗ
EBO58C												
EBO59C												

<b>Ⓐ RESOLUTION</b> <b>(BIT SINGLETURN-BIT MULTITURN)</b> <b>13-00</b> = 13 bit (8192 cpr x 1 turn) <b>16-00</b> = 16 bit (65536 cpr x 1 turn) <b>18-00</b> = 18 bit (262144 cpr x 1 turn) <b>13-14</b> = 13 x 14 bit (8192 cpr x 16384 turns) <b>16-14</b> = 16 x 14 bit (65536 cpr x 16384 turns) <b>18-12</b> = 18 x 12 bit (262144 cpr x 4096 turns)	<b>Ⓑ INTERFACE / POWER SUPPLY</b> <b>CB2</b> = CANopen, +10V +30V <b>MB2</b> = Modbus RTU, +10Vdc +30Vdc	<b>Ⓓ PROTECTION</b> <b>P</b> = IP65	<b>Ⓕ CONNECTION POSITION</b> <b>A</b> = axial <b>R</b> = radial
	<b>Ⓒ SHAFT DIAMETER</b> <b>06</b> = 6 mm <b>08</b> = 8 mm <b>P9</b> = 9.52 mm, 3/8" <b>10</b> = 10 mm <b>12</b> = 12 mm <b>14</b> = 14 mm (EBO58C, EBO59C) <b>15</b> = 15 mm (EBO58C, EBO59C)	<b>Ⓔ OPER. TEMP. RANGE</b> <b>T</b> = -25°C +85°C (-13°F +185°F)	<b>Ⓖ CONNECTION TYPE &amp; CABLE LENGTH</b> <b>L010</b> = cable output 1 m (std.) <b>Lxx0</b> = cable out. x m (max. length 10m) <b>L050</b> = cable output 5 m <b>M5</b> = M12 5 pin plug
			<b>Ⓗ CUSTOM VERSION</b>

## Order code EBM, magnetic sensing

EBM58	XX-XX	-	XXX	-	XX	-	X	X	-	X	XXXX	/Sxxx
EBM58S	Ⓐ		Ⓑ		Ⓒ		Ⓓ	Ⓔ		Ⓕ	Ⓖ	Ⓗ
EBM58C												
EBM59C												

<b>Ⓐ RESOLUTION</b> <b>(BIT SINGLETURN-BIT MULTITURN)</b> <b>12-00</b> = 12 bit (4096 cpr x 1 turn) <b>13-00</b> = 13 bit (8192 cpr x 1 turn) <b>16-00</b> = 16 bit (65536 cpr x 1 turn) <b>12-12</b> = 12 x 12 bit (4096 cpr x 4096 turns) <b>12-14</b> = 12 x 14 bit (4096 cpr x 16384 turns) <b>13-14</b> = 13 x 14 bit (8192 cpr x 16384 turns)	<b>Ⓑ INTERFACE / POWER SUPPLY</b> <b>CB2</b> = CANopen, +10V +30V <b>MB2</b> = Modbus RTU, +10Vdc +30Vdc	<b>Ⓓ PROTECTION</b> <b>P</b> = IP65	<b>Ⓕ CONNECTION POSITION</b> <b>A</b> = axial <b>R</b> = radial
	<b>Ⓒ SHAFT DIAMETER</b> <b>06</b> = 6 mm <b>08</b> = 8 mm <b>P9</b> = 9.52 mm, 3/8" <b>10</b> = 10 mm <b>12</b> = 12 mm <b>14</b> = 14 mm (EBM58C, EBM59C) <b>15</b> = 15 mm (EBM58C, EBM59C)	<b>Ⓔ OPER. TEMP. RANGE</b> <b>T</b> = -25°C +85°C (-13°F +185°F)	<b>Ⓖ CONNECTION TYPE &amp; CABLE LENGTH</b> <b>L010</b> = cable output 1 m (std.) <b>Lxx0</b> = cable out. x m (max. length 10m) <b>L050</b> = cable output 5 m <b>M5</b> = M12 5 pin plug
			<b>Ⓗ CUSTOM VERSION</b>

Document release	Date	Description
1.0	6.02.2025	First issue