

Encoders without bearings - absolute

Magnetic sensor bore max. $\varnothing 12$ mm

Magnetic single- or multiturn encoders / kit 12 bit ST / 13 bit MT

BMSK 58, BMMK 58 SSI - MAGRES



BMMK 58 SSI kit

Features

- Encoder kit single- or multiturn / SSI
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 13 bit
- High protection standard
- High resistance to shock and vibrations
- Reset input

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 10...30 VDC
Consumption typ.	100 mA (5 VDC, w/o load) 50 mA (24 VDC, w/o load)
Sensing method	Magnetic
Initializing time typ.	170 ms after power on
Steps per turn	4096 / 12 bit
Output stages	SSI data: linedriver RS485
Absolute accuracy	$\pm 1^\circ$
Interface	SSI
Code	Gray or binary
Code sequence	CW: ascending values with clockwise sense of rotation; looking at flange
Inputs	SSI clock Zero setting input
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL approval / E217823

BMSK 58

Function	Singleturn
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BMMK 58

Number of turns	8192 / 13 bit
Function	Multiturn

Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 12$ mm (magnet bore)
Protection DIN EN 60529	IP 67
Gap tolerance	≤ 0.3 mm axial ≤ 0.1 mm radial
Operating temperature	-20...+85 °C
Operating speed	≤ 12000 rpm (mechanical) ≤ 6000 rpm (electric)
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Materials	Housing: steel/aluminium Flange: aluminium
Relative humidity	95 %
Connection	Connector M12, 8-pin Connector M23, 12-pin Cable
Weight approx.	300 g

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Part number

Singleturn

BMSK 58S1 12/00 12

Connection
5 Cable radial
A Connector M23, radial
N Connector M12, radial

Solid shaft
12 $\varnothing 12$ mm magnet bore

Resolution
12/00 12 bit singleturn

Voltage supply / signals
05C 5 VDC / SSI
24C 10...30 VDC / SSI

Code
G Gray code
N Binary code

Multiturn

BMMK 58S1 12/13 12

Connection
5 Cable radial
A Connector M23, radial
N Connector M12, radial

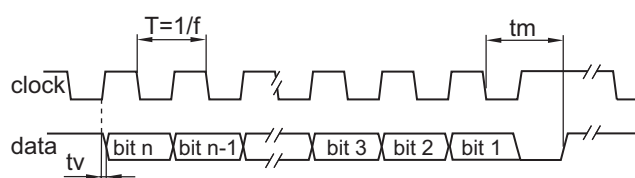
Solid shaft
12 $\varnothing 12$ mm magnet bore

Resolution
12/13 12/13 bit single-/multiturn

Voltage supply / signals
05C 5 VDC / SSI
24C 10...30 VDC / SSI

Code
G Gray code
N Binary code

Data transfer



Clock frequency f	100...1000 kHz
Duty cycle of T	40...60 %
Delay time tv	200 ns
Monoflop time tm	20 μ s + T/2

Accessories

Connectors and cables

10116717	Female connector M23, 12-pin, straight
10153334	Female connector M23, 12-pin, straight, 2 m cable
10153335	Female connector M23, 12-pin, straight, 5 m cable
10146775	Female connector M12, 8-pin, straight
10127844	Female connector M12, 8-pin, straight, shielded, 2 m
10129332	Female connector M12, 8-pin, straight, shielded, 5 m cable

Mounting accessories for BMSK 58

10110616 Clamp set $\varnothing 15$ mm

Mounting accessories for BMMK 58

10110616 Clamp set $\varnothing 15$ mm

10112432 Hexagon wrench 2.5 mm

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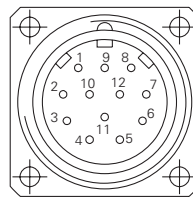
Terminal significance

+Vs	Encoder supply voltage.
0 V	Encoder ground connection relating to +Vs.
Data+	Positive, serial data output of differential linedriver.
Data-	Negative, serial data output of differential linedriver.
Clock+	Positive SSI clock input. Clock+ together with Clock- forms a current loop. A current of approx. 7 mA towards Clock+ input means logic 1 in positive logic.
Clock-	Negative SSI clock input. Clock- together with Clock+ forms a current loop. A current of approx. 7 mA towards Clock- input means logic 0 in positive logic.
Zero	Input for setting a zero point anywhere within the encoder resolution. The zero setting operation is triggered by a Low impulse. Connect to +Vs after setting operation for maximum interference immunity. Impulse duration >2 ms.
Rot. direction	Ascending position values when looking at the flange and rotating the shaft clockwise.

Terminal assignment

Cable / Connector M23 male
for connection references **-A** and **-5**

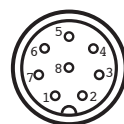
Connector	Core colour	Signals	Description
Pin 1	yellow	Clock-	Clock signal
Pin 2	green	Clock+	Clock signal
Pin 3	grey	Data+	Data signal
Pin 4	pink	Data-	Data signal
Pin 5	blue	Zero	Zero setting input
Pin 6	–	n.c.	–
Pin 7	–	n.c.	–
Pin 8	–	n.c.	–
Pin 9	red	d.u.	do not use
Pin 10	–	n.c.	–
Pin 11	brown	+Vs	Supply voltage
Pin 12	white	0 V	Supply voltage
Screen	connected to housing		
Cable data	8 x 0.14 mm ²		



Connector M12 male

for connection reference **-N**

Connector	Signals	Description
Pin 1	0 V	Supply voltage
Pin 2	+Vs	Supply voltage
Pin 3	Clock+	Clock signal
Pin 4	Clock-	Clock signal
Pin 5	Data+	Data signal
Pin 6	Data-	Data signal
Pin 7	Zero	Zero setting input
Pin 8	d.u.	do not use



Trigger level

Control inputs	Input circuit
Input level Low	<0,4 V (>2 ms)
Input level High	+Vs or open

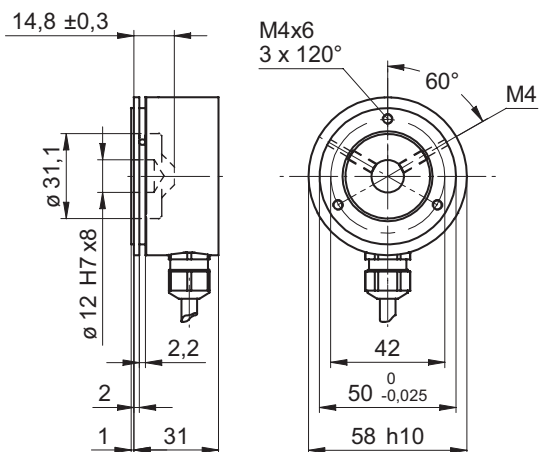
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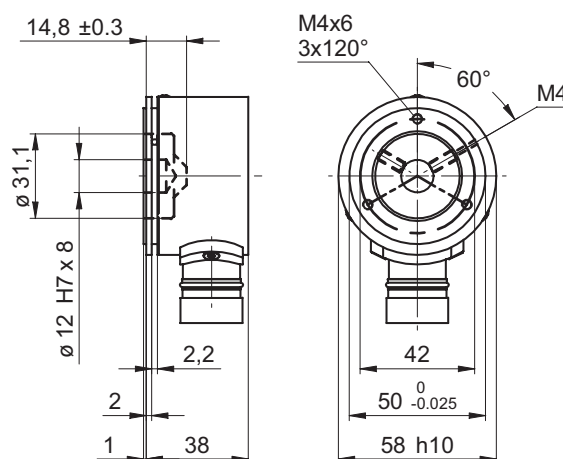
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Dimensions

BMSK/BMMK 58 SSI cable radial



BMSK/BMMK 58 SSI connector M23 radial



BMSK/BMMK 58 SSI connector M12 radial

