

Absolute encoders - SSI

Solid shaft with clamping or synchro flange

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

BMSV 58, BMMV 58 SSI - MAGRES



BMSV 58K SSI with clamping flange

Features

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

Technical data - electrical ratings

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

BMSV 58K, BMSV 58S

Function	Singleturn
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BMMV 58K, BMMV 58S

Function	Multiturn
Number of turns	8192 / 13 bit

Technical data - mechanical design

Size (flange)	\varnothing 58 mm
Protection DIN EN 60529	IP 65
Operating speed	\leq 12000 rpm (mechanical) \leq 6000 rpm (electric)
Operating torque typ.	0.023 Nm
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-20...+85 °C
Relative humidity	95 %
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 500 g, 6 ms
Weight approx.	300 g
Connection	Connector M12, 8-pin Connector M23, 12-pin Cable

BMSV 58K, BMMV 58K

Shaft type	\varnothing 10 mm solid shaft (clamping flange)
Flange	Clamping flange
Shaft loading	\leq 40 N axial \leq 60 N radial

BMSV 58S, BMMV 58S

Shaft type	\varnothing 6 mm solid shaft (synchro flange)
Flange	Synchro flange
Shaft loading	\leq 10 N axial \leq 20 N radial

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Part number

Singleturn clamping flange

BMSV 58K1			12/00	C0		
<u>Connection</u> 5 Cable radial A Connector M23, radial N Connector M12, radial						
<u>Solid shaft</u> C0 ø10 mm, IP 65						
<u>Resolution</u> 12/00 12 bit singleturn						
<u>Voltage supply / signals</u> 05C 5 VDC / SSI 24C 10...30 VDC / SSI						
<u>Code</u> N Binary code G Gray code						

Multiturn clamping flange

BMMV 58K1			12/13	C0		
<u>Connection</u> 5 Cable radial A Connector M23, radial N Connector M12, radial						
<u>Solid shaft</u> C0 ø10 mm, IP 65						
<u>Resolution</u> 12/13 12/13 bit single-/multiturn						
<u>Voltage supply / signals</u> 05C 5 VDC / SSI 24C 10...30 VDC / SSI						
<u>Code</u> N Binary code G Gray code						

Singleturn synchro flange

BMSV 58S1			12/00	C6		
<u>Connection</u> 5 Cable radial A Connector M23, radial N Connector M12, radial						
<u>Solid shaft</u> C6 ø6 mm, IP 65						
<u>Resolution</u> 12/00 12 bit singleturn						
<u>Voltage supply / signals</u> 05C 5 VDC / SSI 24C 10...30 VDC / SSI						
<u>Code</u> N Binary code G Gray code						

Multiturn synchro flange

BMMV 58S1			12/13	C6		
<u>Connection</u> 5 Cable radial A Connector M23, radial N Connector M12, radial						
<u>Solid shaft</u> C6 ø6 mm, IP 65						
<u>Resolution</u> 12/13 12/13 bit single-/multiturn						
<u>Voltage supply / signals</u> 05C 5 VDC / SSI 24C 10...30 VDC / SSI						
<u>Code</u> N Binary code G Gray code						

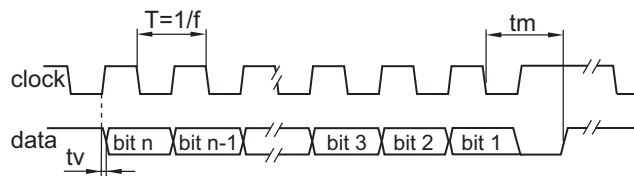
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Data transfer



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

Trigger level

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

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 BMSV 58K, BMMV 58K

10252773	Clamp set ø15 mm
11053277	Bellows coupling aluminium/stainless steel 10 mm

Mounting accessories for BMSV 58S, BMMV 58S

10252773	Clamp set ø15 mm
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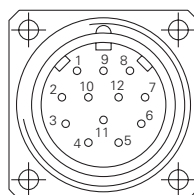
Terminal significance

+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

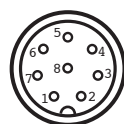
Cable / Connector M23 male for connection references -A and -5

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



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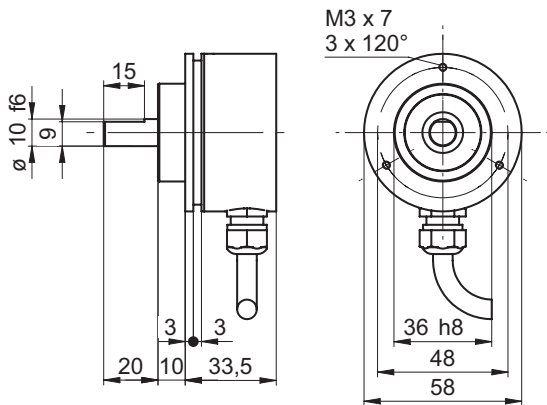
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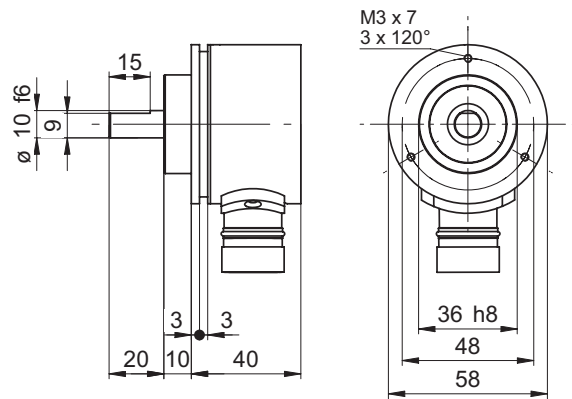
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Dimensions

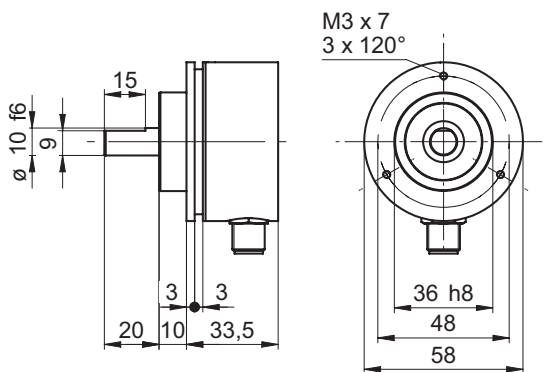
BMSV/BMMV 58 SSI clamping flange, cable radial



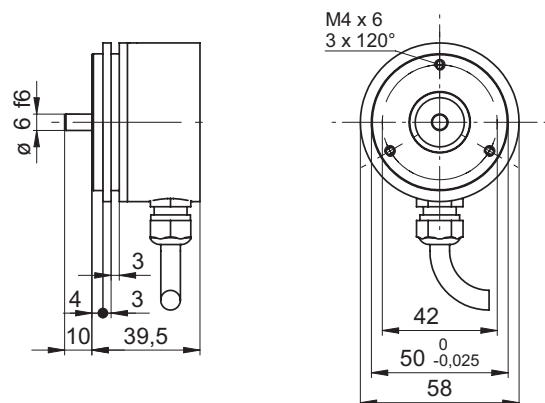
BMSV/BMMV 58 SSI clamping flange, M23 radial



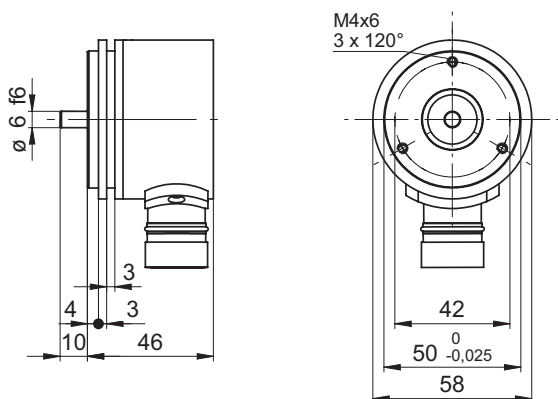
BMSV/BMMV 58 SSI clamping flange, M12 radial



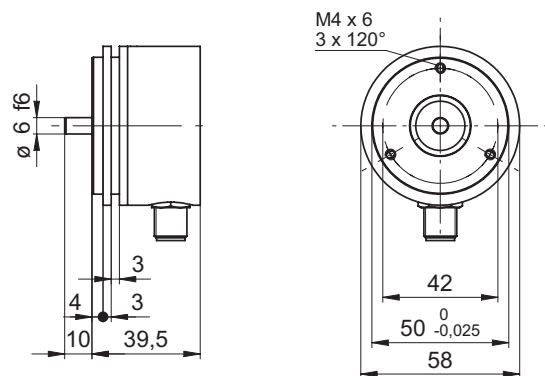
BMSV/BMMV 58 SSI synchro flange, cable radial



BMSV/BMMV 58 SSI synchro flange, M23 radial



BMSV/BMMV 58 SSI synchro flange, M12 radial



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