

Absolute encoders - SSI

Shaft max. $\varnothing 8$ mm

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

BMSV 30R, BMMV 30R SSI - MAGRES



BMMV 30R SSI with shaft

Features

- Mini encoder single- or multiturn / SSI
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 13 bit
- Robust steel housing $\varnothing 30$ mm
- High resistance to shock and vibrations
- Operating temperature $-40...+65$ °C

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 10...30 VDC
Consumption w/o load (typ.)	100 mA (5 VDC) 50 mA (24 VDC)
Initializing time (typ.)	70 ms after power on
Interface	SSI
Steps per turn	4096 / 12 bit
Absolute accuracy	± 1 °
Sensing method	Magnetic
Code	Gray or binary
Code sequence	CW: ascending values with clockwise sense of rotation (looking at flange)
Inputs	SSI clock Reset input
Output circuit	SSI data: linedriver RS485
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL approval / E217823

BMMV 30R

Function	Multiturn
Number of turns	8192 / 13 bit

BMSV 30R

Function	Singleturn
----------	------------

Technical data - mechanical design

Dimensions (flange)	$\varnothing 30$ mm
Shaft	$\varnothing 6$ mm $\varnothing 8$ mm
Protection DIN EN 60529	IP 67
Operating speed	≤ 6000 rpm
Operating torque typ.	0.0011 Nm
Shaft loading	≤ 30 N axial ≤ 50 N radial
Materials	Housing: steel zinc-coated Flange: stainless steel 1.4305
Operating temperature	$-40...+65$ °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
Connection	Connector M12, 8-pin Cable 1 m

BMMV 30R

Weight approx.	110 g
----------------	-------

BMSV 30R

Weight approx.	100 g
----------------	-------

Absolute encoders - SSI

Shaft max. $\varnothing 8$ mm

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

BMSV 30R, BMMV 30R SSI - MAGRES

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		
for connection references -4 and -5		
Core colour	Signals	Description
brown	+Vs	Supply voltage
white	0 V	Supply voltage
grey	Data+	Data signal
pink	Data-	Data signal
green	Clock+	Clock signal
yellow	Clock-	Clock signal
blue	Zero	Zero setting input
red	d.u.	do not use
Screen	connected to housing	
Cable data	8 x 0.14 mm ²	

Connector M12 male		
for connection reference -N and -T		
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

Absolute encoders - SSI

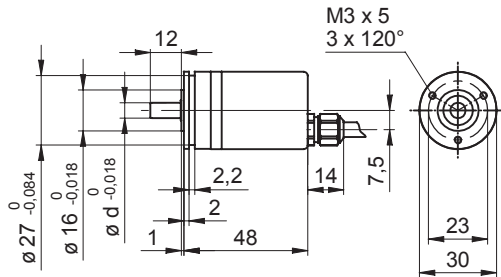
Shaft max. $\varnothing 8$ mm

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

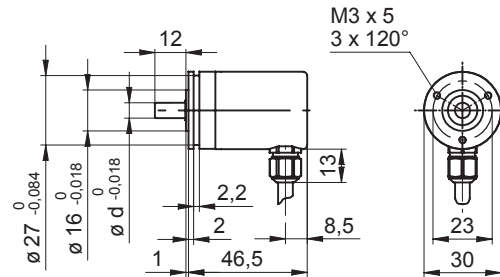
BMSV 30R, BMMV 30R SSI - MAGRES

Dimensions

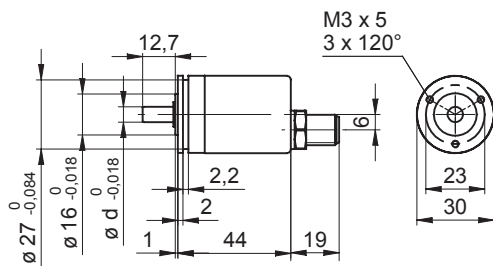
BMSV/BMMV 30R SSI, cable axial



BMSV/BMMV 30R SSI, cable radial



BMSV/BMMV 30R SSI, connector axial



BMSV/BMMV 30R SSI, connector radial

