

# Magnetic absolute single-turn shaft encoder

## BMSV – MAGRES

### SSI

#### features

- miniature single-turn encoder / SSI
- magnetic sensing principle
- resolution: 12 bit
- housing  $\varnothing$  42 mm
- high resistance against shock and vibration
- zero setting input
- shaft  $\varnothing$  10 mm or 6 mm

#### general data

voltage supply	5 VDC $\pm$ 10% ( <b>05C</b> ) 10 - 30 VDC ( <b>24C</b> )
max. supply current no load	typ. 100 mA ( <b>05C</b> ) typ. 50 mA ( <b>24C</b> )
output circuit	SSI, RS 422
signal code	Gray or binary code
max. resolution	12 bit (1 step = 5' 16'')
max. error limit	$\pm 1^\circ$
repeatability	0,3°
max. clock frequency	1 MHz
zero setting signal	zero setting: < 0,4 V, min. 2 ms off state: +Vs or open
direction of rotation	looking at the flange, position counts up as the shaft rotates clockwise (CW)

#### mechanical data

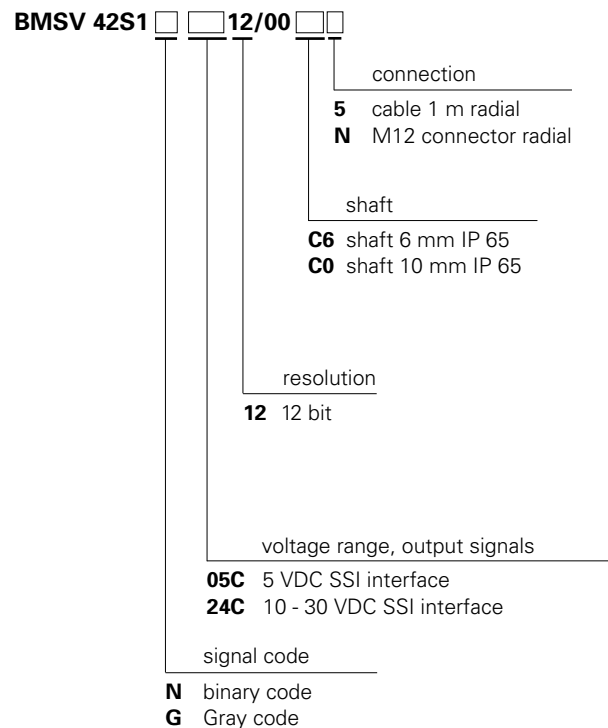
max. revolutions	12'000 rpm (mechanical) 6'000 rpm (electrical)
moment of inertia	typ. $12 \times 10^{-7}$ kgm <sup>2</sup>
torque	typ. 0,93 cNm (3'000 rpm / 20 °C)
max. shaft load	axial: 10 N      radial: 25 N
product life	dependening on ambient conditions (typ. 10 <sup>9</sup> revolutions)
max. protection class	IP 65
material	housing: steel flange: aluminium
weight	approx. 120 g

#### ambient conditions

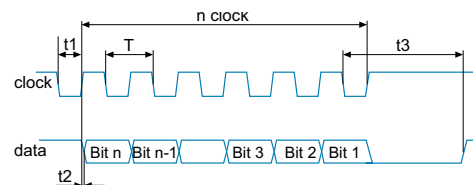
temperature range	-20...+85 °C
relative humidity	max. relative humidity 95%
vibration	IEC 60068-2-6 ( $\leq 300$ m/s <sup>2</sup> / 10 - 2'000 Hz)
shock	IEC 60068-2-27 ( $\leq 1'000$ m/s <sup>2</sup> / 6 ms)
noise immunity	EN 61000-6-2
emitted interference	EN 61000-6-3



#### order designation



#### read out of position values



pulse times:

$T = 1 \mu\text{s}$  to  $10 \mu\text{s}$  /  $t_1 = 0,5$  to  $5 \mu\text{s}$   
 $t_2 < 0,2 \mu\text{s}$  /  $t_3 > 12 \mu\text{s}$  to  $25 \mu\text{s}$

#### SSI-data output and clock input

see page 2.03 chapter absolute single-turn encoder

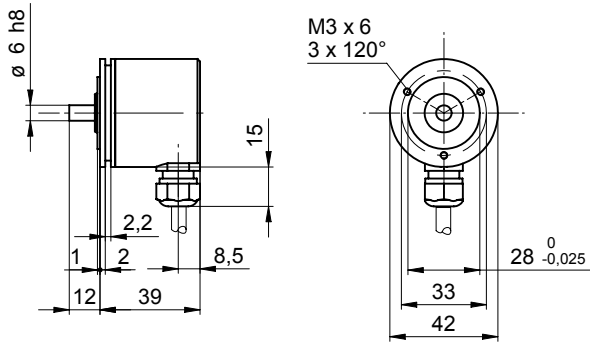
#### accessories

clamp set	part nr. 110616
couplings	see chapter accessories



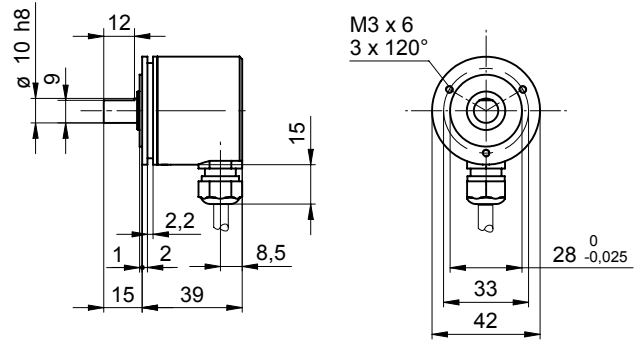
**dimensions (C6)**

**-5**

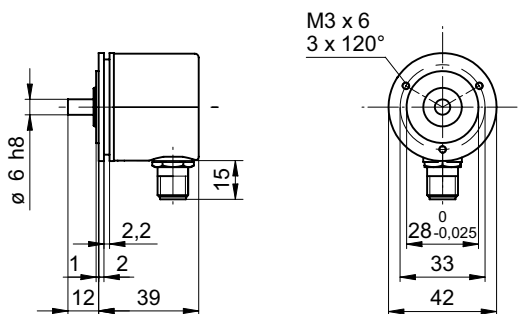


**dimensions (C0)**

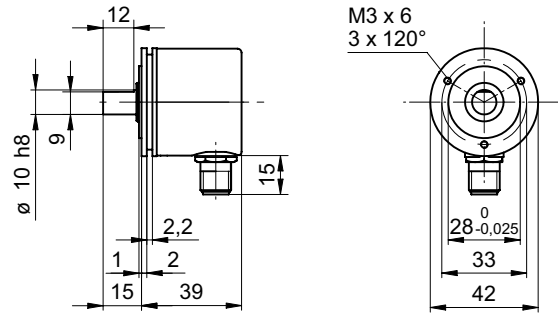
**-5**



**-N**



**-N**



**Note**

Mounting drawings see end of chapter.

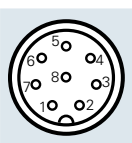
**assignment cable**

for connection reference **-5**

cable color	signal	description
brown	+Vs	voltage supply
white	0 V	voltage supply
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		housing
cable data		8 x 0,14 mm <sup>2</sup>

**assignment connector M12 male**

for connection reference **-N**



pin	signal	description
1	0 V	voltage supply
2	+Vs	voltage supply
3	clock+	clock signal
4	clock-	clock signal
5	data+	data signal
6	data-	data signal
7	zero	zero setting input
8	d.u.	do not use