

# Magnetic absolute multi-turn shaft encoder

## BMMV – MAGRES

### SSI

#### features

- multi-turn encoder / SSI
- magnetic sensing principle
- resolution: single-turn 12 bit and multi-turn 13 bit
- high resistance against shock and vibration
- zero setting input
- clamping or servo flange



58K



58S

#### 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 (at 5 VDC) <b>(05C)</b> typ. 50 mA (at 24 VDC) <b>(24C)</b>
output circuit	SSI, RS 422
signal code	Gray and binary code
max. resolution single-turn	12 bit (1 step = 5' 16")
multi-turn	13 bit (8'192 revolutions)
max. error limit	$\pm 1^\circ$
repeatability	0,3°
max. clock frequency	1 MHz
input signal	clock input, zero (zero setting: < 0,4 V, > 2 ms off state: 3,3 V or open)
counter buffering	with Lithium cell typ. 19 years
direction of rotation	looking at the flange, position counts up as the shaft rotates clockwise (CW)

#### mechanical data

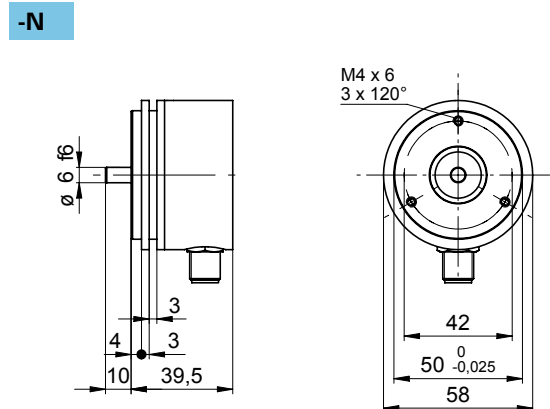
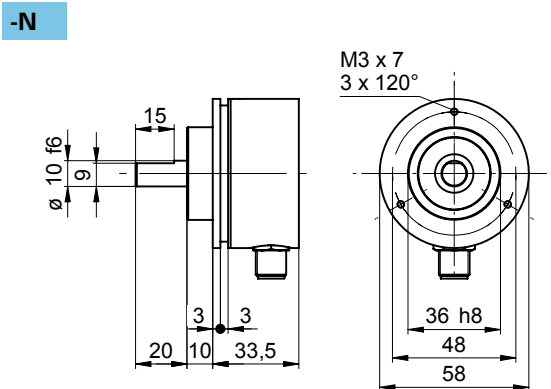
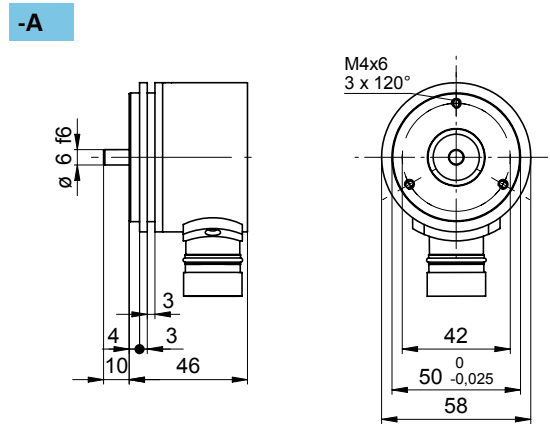
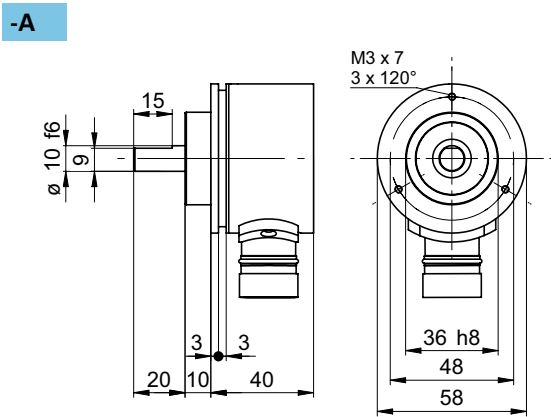
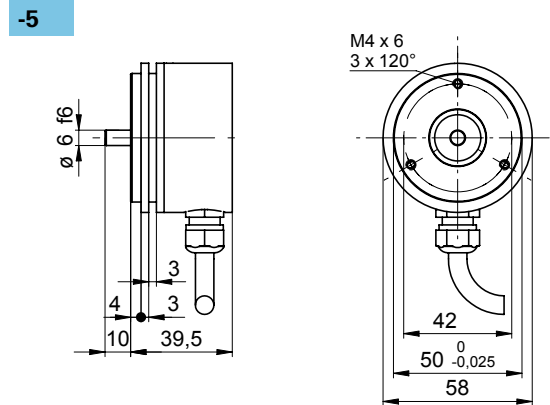
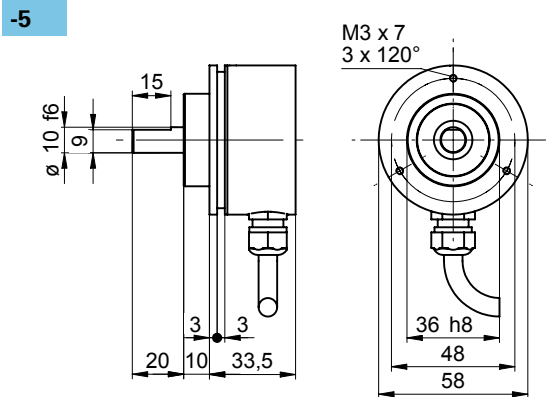
max. revolutions	12'000 rpm (mech.) 6'000 rpm (electr.)
moment of inertia C6	typ. $11,8 \times 10^{-7}$ kgm <sup>2</sup>
C0	typ. $17,8 \times 10^{-7}$ kgm <sup>2</sup>
torque	typ. 2,3 cNm (3'000 rpm / 20 °C)
max. shaft load C6	axial: 10 N    radial: 20 N
C0	axial: 40 N    radial: 60 N
product life	depending on ambient conditions (typ. 10 <sup>9</sup> revolutions.)
max. protection class	IP 65
material	housing: steel flange: aluminum
weight	approx. 300 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

**dimensions clamping flange (K)**

**dimensions servo flange (S)**



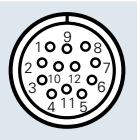
# Magnetic absolute multi-turn shaft encoder

## BMMV 58 – MAGRES

### SSI

#### assignment cable / connector M23 male

for connection reference **-A** and **-5**

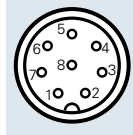


view on encoder

pin	color	signal	description
1	yellow	clock-	clock signal
2	green	clock+	clock signal
3	grey	data+	data signal
4	pink	data-	data signal
5	blue	zero	zero setting input
6	-	n.c.	-
7	-	n.c.	-
8	-	n.c.	-
9	red	d.u.	do not use
10	-	n.c.	-
11	brown	+Vs	voltage supply
12	white	0 V	voltage supply
cable data			12 x 0,14 mm <sup>2</sup>

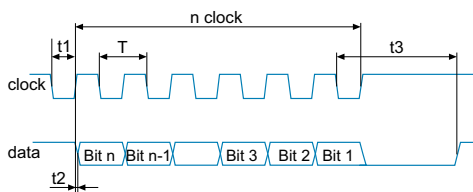
#### assignment connector M12 male

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

#### read out of position values



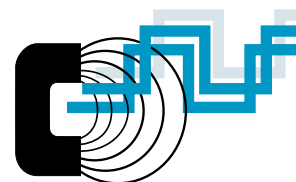
pulse times:

$T = 1 \mu\text{s}$  to  $10 \mu\text{s}$  /  $t_1 = 0,5 \mu\text{s}$  to  $5 \mu\text{s}$

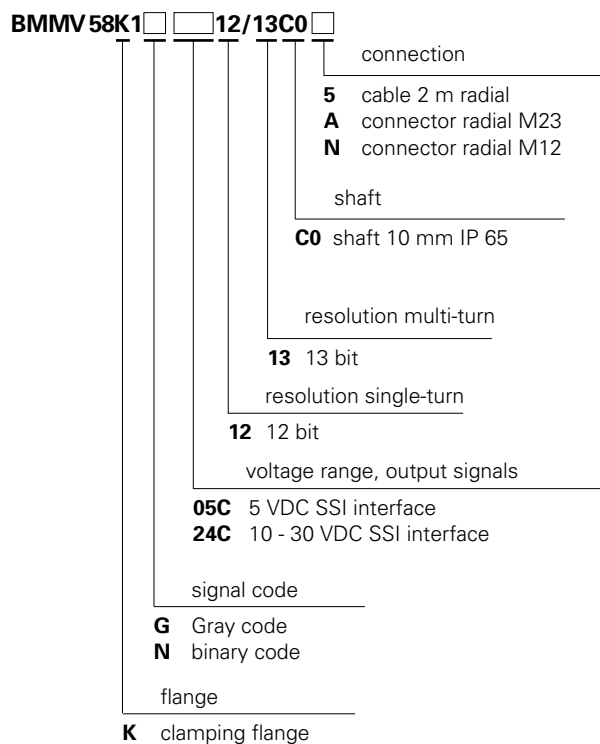
$t_2 < 0,2 \mu\text{s}$  /  $t_3 > 12 \mu\text{s}$  to  $25 \mu\text{s}$

#### SSI-data output and clock input

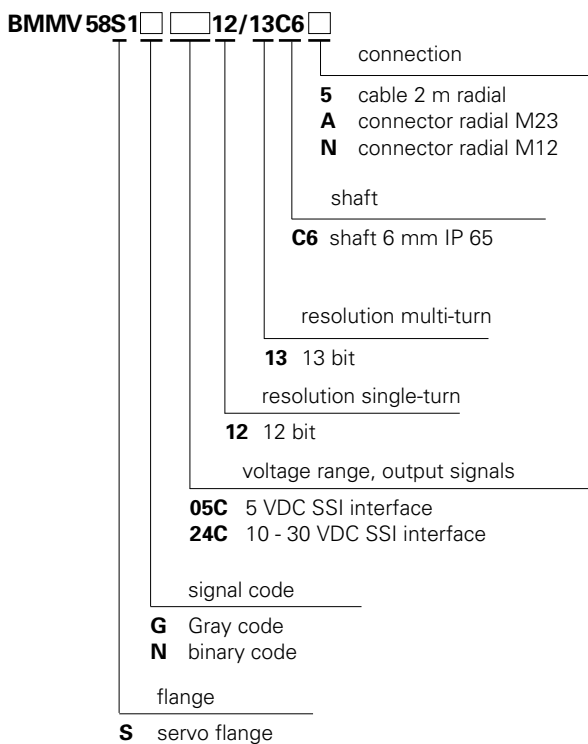
see page 2.03 chapter absolute singleturn encoder



**order designation BMMV 58K**



**order designation BMMV 58S**



**3**

**accessories**

connector M23 12-pin	part nr. 116717
cable with connector M23 (pre-assembled)	
2 m	part nr. 153334
5 m	part nr. 153335
connector M12 8-pin	part nr. 146775
cable with connector M12 (pre-assembled)	
2 m	part nr. 127844
5 m	part nr. 129332
clamping ring set	part nr. 252773
couplings	see chapter accessories