



## Mini Encoder ES 24

Optical incremental shaft encoder,  
 case diameter only 24 mm, case height only 29 mm,  
 high shaft loading 10 N radial and 5 N axial,  
 high shock resistance 490 m/s<sup>2</sup>,  
 operating temperature -10 ... +70°C

### Resolution

#### Resolution (Pulses/Revolution):

100	300	360	500
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### Type explanation

#### ES 24-3-0500-24-C-R

Encoder type	Incremental
Flange diameter	ø 24 mm
Case diameter	ø 24 mm
Number of channels	3 = A + B + M
Resolutions	xxxx = Impulse pro Umdrehung
Supply voltage	12 = 4,5 ... 13 VDC 24 = 10,8 ... 26 VDC
Output driver	C R
Position of connection	R
Shaft diameter	ø 4 mm

## Technical data

### Mechanical data

Rotational speed	$\leq 6000 \text{ min}^{-1}$
Torque	$\leq 0,1 \text{ Ncm}$ (20°C)
Moment of inertia	$2 \text{ g cm}^2$
shaft loading	$\leq 10 \text{ N}$ radial $\leq 5 \text{ N}$ axial
Angular acceleration	$\leq 10^5 \text{ rad/sec}^2$
Weight	0,035 kg

### Environmental conditions

Vibration	$150 \text{ ms}^{-2}$ (50 Hz / 1h)
Shock	$490 \text{ ms}^{-2}$ (11 ms)
Operating temperature	-10 ... +70°C
Storage temperature	-30 ... +80°C
Atmospheric humidity	$\leq 85\%$ r.h.
Protection class	IP 50 (DIN 40050/IEC 144)

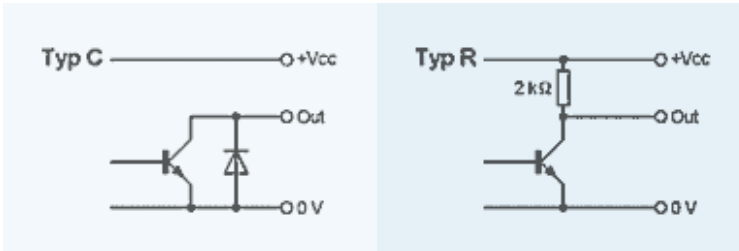
### Electrical data

Scanning type	Optical, without contact
Transmitter, infrared	LED
Receiver	Photo-Transistor
Supply voltage	$V_{cc} = 4,5 \dots 13 \text{ VDC}$ , output R, C $V_{cc} = 10,8 \dots 26 \text{ VDC}$ , output C
Power consumption	$\leq 45 \text{ mA}$ , output R $\leq 30 \text{ mA}$ , output C
Output frequency	$\leq 60 \text{ kHz}$
Signal level	High $> V_{cc} - 1 \text{ V}$ Low $< 0,4 \text{ V}$ (20 mA)
Load capacity of the outputs	20 mA, output R 30 mA, output C
Dielectric strength of outputs	+50 V

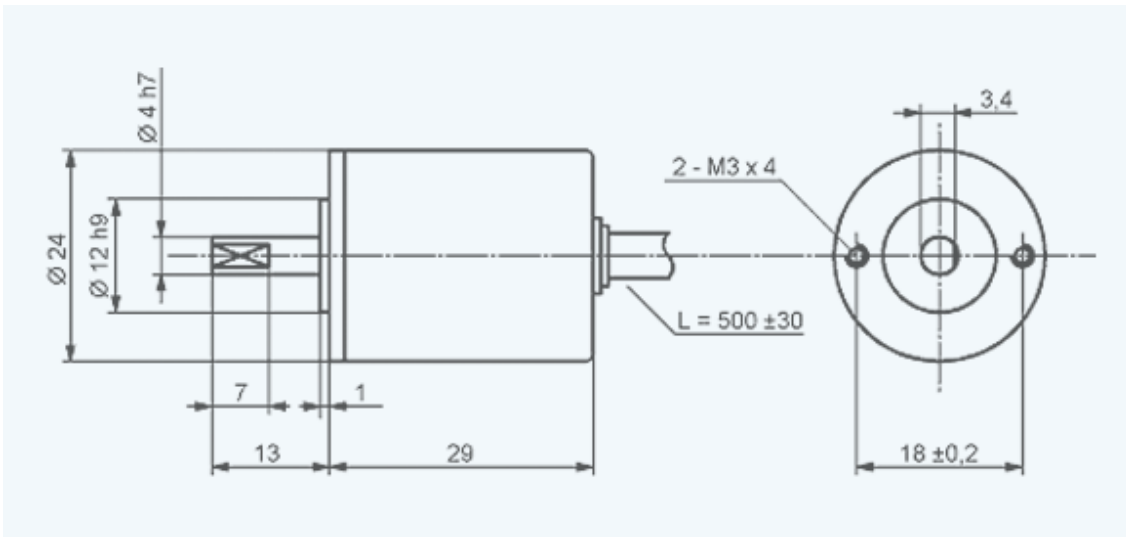
### Cable 3 channels

Wire colour	Signal
Red	+Vcc
Black	0 V GND
Blue	Signal A
White	Signal B
Yellow	Signal M
Shield	N.C.

### Output driver



### Outline drawing



Version E 525-208 · Subject to change

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