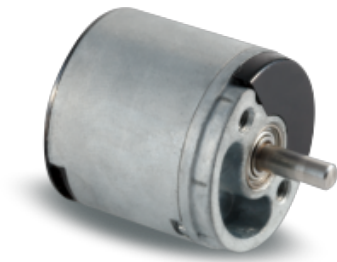


Case diameter 18 mm  
Resolution up to 1 600 pulses per revolution



## Micro Encoder ES 181

Optical incremental shaft encoder, Micro size for industrial use

### Resolution

#### Resolution (Pulses/Revolution):

100	160	200	300
360	400	500	800
1000	1024	1600	

### Type explanation

#### ES 181-3-500-05-C

Encoder type	Incremental
Flange diameter	ø 18 mm
Case diameter	ø 18 mm
Number of channels	3 = A + B + M 6 = AA + BB + MM
Supply voltage	05 = 5 VDC ±10% 12 = 12 VDC ±10%
Output driver	D-RS422 C
Shaft diameter	ø 2.5 mm

## Technical data

### Mechanical data

Rotational speed	? 6000 min <sup>-1</sup>
Torque	? 0,01 Ncm (20°C)
Breakaway torque	? 0,05 Ncm
Moment of inertia	0,1 g cm <sup>2</sup>
shaft loading	? 2 N radial ? 2 N axial
Angular acceleration	? 10 <sup>4</sup> rad/sec <sup>2</sup>
Operational life of ball bearings	> 2 x 10 <sup>5</sup> h (100 min <sup>-1</sup> )
Weight	0,02 kg

### Environmental conditions

Vibration	150 ms <sup>-2</sup> (50 Hz / 1h)
Shock	490 ms <sup>-2</sup> (11 ms)
Operating temperature	-10 ... +70°C
Storage temperature	-30 ... +80°C
Atmospheric humidity	? 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 <sub>cc</sub> = 5 VDC ±10% V <sub>cc</sub> = 12 VDC ±10%
Power consumption	50 mA max.
Output frequency	? 50 kHz
Signal level	Low < 0,5 V (20 mA)
Load capacity of the outputs	20 mA
Dielectric strength of outputs	+50 V

### Cable 2 channels

Wire colour	Signal
Red	+Vcc
Black	0 V GND
Blue	Signal A
White	Signal B

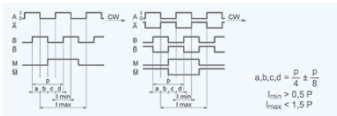
### Cable 3 channels

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

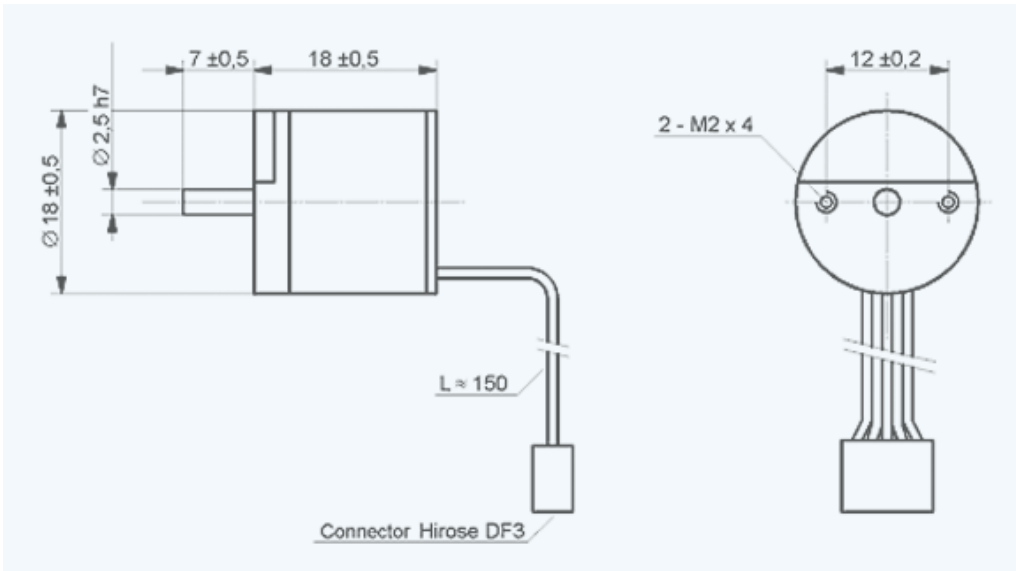
### Output driver



### Output channels / Output signals



### Outline drawing



Version E 503A-209 · Subject to change

