

# Encoders

## Optical Encoders

**Features:**  
 15 Lines per revolution  
 2 Channels  
 Digital output

### Series 03B

		03B		
Lines per revolution	N	15		
Signal output, square wave		2		channel
Supply voltage	V <sub>CC</sub>	4,5 ... 5,5		V DC
Current consumption, typical (V <sub>CC</sub> = 5 V DC)	I <sub>CC</sub>	12		mA
Pulse width	P	180 ± 30		°e
Phase shift, channel A to B	Φ	90 ± 30		°e
Logic state width	S	90 ± 30		°e
Cycle	C	360 ± 10		°e
Signal rise/fall time, typical	tr/tf	0,3 / 0,1		µs
Frequency range <sup>1)</sup>	f	up to 5		kHz
Inertia of code disc	J	1,2		gcm <sup>2</sup>
Operating temperature range		- 20 ... + 85		°C

<sup>1)</sup> Velocity (rpm) = f (Hz) x 60/N

#### Ordering information

Encoder type	number of channels	lines per revolution	in combination with DC-Micromotors and DC-Motor-Tacho units
03B3	2	15	free standing for independent use
03B12	2	15	series 1616, 1624, 1841
03B22	2	15	series 1717, 1724, 1727
03B2	2	15	series 2230, 2233, 2251, 2356
03B16	2	15	series 2338
03B14	2	15	series 2342, 2842, 3042
03B4	2	15	series 3557

#### Features

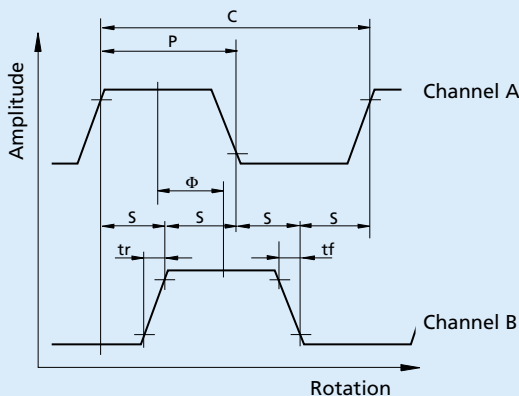
These incremental shaft encoders in combination with the FAULHABER DC-Micromotors are designed for indication and control of both, shaft velocity and direction of rotation as well as for positioning.

Two LED sources transmit light through a low inertia 15-pin crown to give two channels with 90° phase shift.

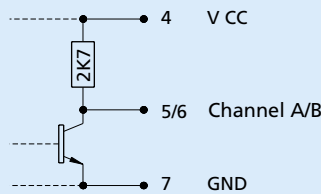
The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced with a 150 mm ribbon cable and a 10-pin connector.

Details for the DC-Micromotors and suitable reduction gearheads are on separate catalog pages.

#### Output signals / Circuit diagram / Connector information



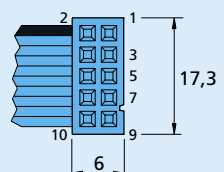
**Output signals**  
 with clockwise rotation as seen from the shaft end



**Output circuit**  
 \* Motors type 2842, 3042, 3557 have separate motor connectors

#### Pin Function

- 1 -
- 2 } \* Motor -
- 3 }
- 4 V<sub>CC</sub>
- 5 Channel A
- 6 Channel B
- 7 GND
- 8 } \* Motor +
- 9 }
- 10 -



**Connector**  
 DIN-41651  
 grid 2,54 mm

