

Encoders

Optical Encoders

Features:
 15 Lines per revolution
 1 or 2 Channels
 Analog output

Series 03A

		03A		
Lines per revolution	N	15		
Signal output, quasi-sinusoidal		1 or 2		channel
Supply voltage	V_{CC}	4,5 ... 5,5		V DC
LED-operating current	$I_{e \max.}$	50		mA
Collector current	$I_{c \max.}$	3		mA
Phase shift, channel A to B	Φ	90 ± 30		$^\circ e$
Signal output level ($R_e = \infty$)	$U_{ef \max.}$ $U_{eo \min.}$	0,3 2,0		Volt
Frequency range ¹⁾	f	up to 5		kHz
Inertia of code disc	J	1,2		gcm^2
Operating temperature range		- 20 ... + 85		$^\circ C$

¹⁾ Velocity (rpm) = f (Hz) x 60/N

Ordering information

Encoder type		lines per revolution		in combination with DC-Micromotors and DC-Motor-Tacho units
1 channel	2 channels	1 channel (A)	2 channels (A+B)	
03A6	03A3	15	15 + 15	free standing for independent use series 1616, 1624, 1841 series 1717, 1724, 1727 series 2230, 2233, 2251, 2356 series 2338, 2342 series 2842, 3042 series 3557
03A11	03A12	15	15 + 15	
03A21	03A22	15	15 + 15	
03A5	03A2	15	15 + 15	
03A15	03A16	15	15 + 15	
03A13	03A14	15	15 + 15	
03A7	03A4	15	15 + 15	

Features

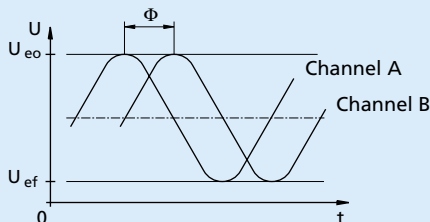
These incremental shaft encoders in combination with the FAULHABER DC-Micromotors are designed for indication and control of both, shaft velocity and direction of rotation as well as for positioning.

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

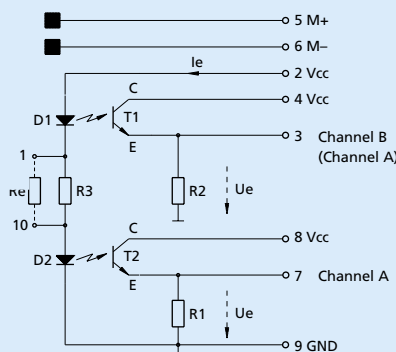
The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced with a 150 mm ribbon cable and a 10-pin connector.

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

Output signals / Circuit diagram / Connector information



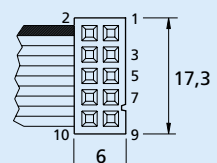
Output signals
with clockwise rotation as seen from the shaft end



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

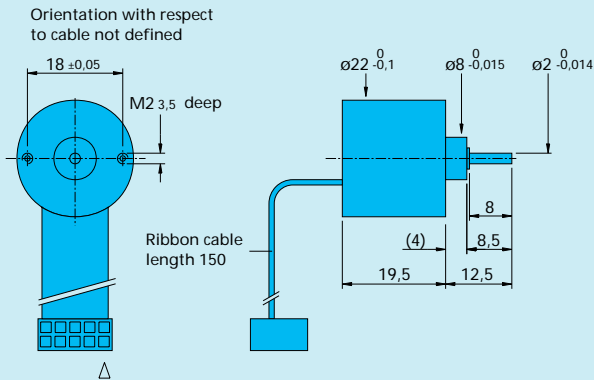
Pin Function

- 1 —
- 2 V_{CC}
- 3 Channel B (two channel-version)
Channel A (one channel-version)
- 4 V_{CC}
- 5 * Motor +
- 6 * Motor -
- 7 Channel A (two channel-version)
- 8 V_{CC}
- 9 GND
- 10 —

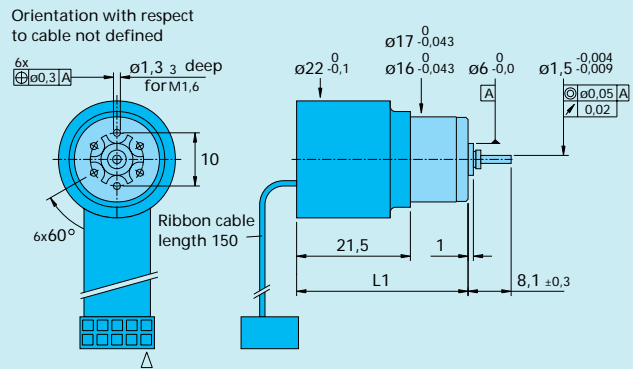


Connector
DIN-41651
grid 2,54 mm

scale reduced



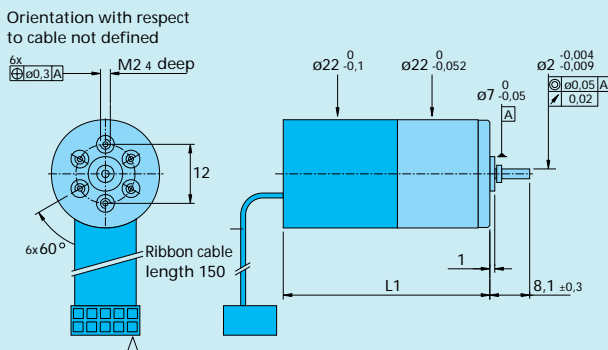
Encoder 03A6, 03A3
free standing



Encoder 03A11, 03A12
with DC-Micromotors 1616, 1624, 1717, 1724

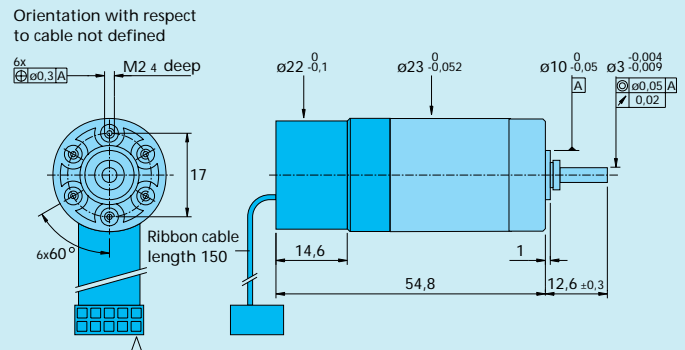
Motor type	L1
1616 / 1717	32,3
1624 / 1724	40,3

scale reduced



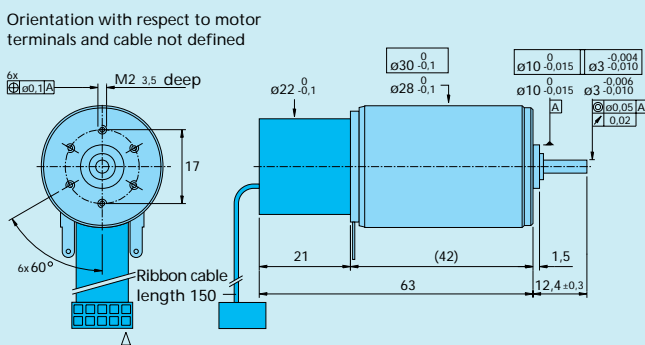
Encoder 03A5, 03A2
with DC-Micromotors 2230, 2233

Motor type	L1
2230	47,2
2233	50

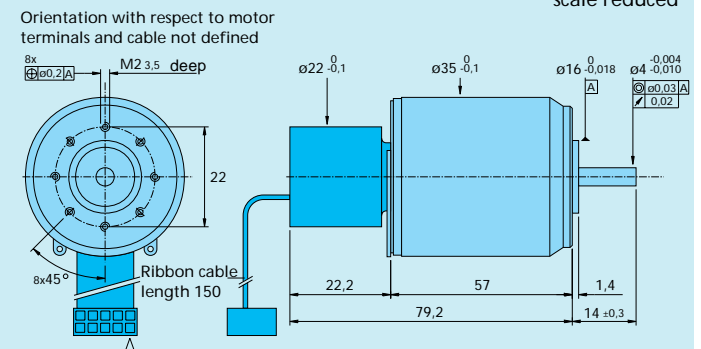


Encoder 03A15, 03A16
with DC-Micromotor 2338

scale reduced



Encoder 03A13, 03A14
with DC-Micromotors 2842, 3042



Encoder 03A7, 03A4
with DC-Micromotor 3557