Encoders

magnetic Encoder, digital outputs,
2 channels, 64 - 1024 lines per revolution

Series IE2-1024

	IE2	-64	-128	-256	-512	-1024	
Lines per revolution	*N*	64	128	256	512	1 024	
Frequency range, up to[1]	*f*	20	40	80	160	300	kHz
Signal output, square wave		2					Channels
Supply voltage	U_{DD}	4,5 ... 5,5					V
Current consumption, typical[2]	I_{DD}	typ. 9,5, max. 13					mA
Output current, max.[3]	I_{OUT}	5					mA
Phase shift, channel A to B	Φ	90 ± 45					°e
Signal rise/fall time, max. (C_{LOAD} = 50 pF)	*tr*/*tf*	0,1 / 0,1					µs
Inertia of sensor magnet[4]	*J*	0,09					gcm²
Operating temperature range		-25 ... +85					°C
MTTF[5]		12 729 000					h

[1] Velocity (min^{-1}) = *f* (Hz) x 60/*N*
[2] U_{DD} = 5 V: with unloaded outputs
[3] U_{DD} = 5 V: low logic level < 0,5 V, high logic level > 4,5 V: CMOS- and TTL compatible
[4] For the brushless DC-Servomotors the inertia of sensor magnet is: *J* = 0,14 gcm²
[5] „Mean time to failure" at maximum operating condition

For combination with Motor

Dimensional drawing A	L1 [mm]
1336 ... CXR - 123	47,5

Dimensional drawing B	L1 [mm]
1516 ... SR	18,2
1524 ... SR	26,2
1717 ... SR	19,4
1724 ... SR	26,4
2224 ... SR	26,6
2232 ... SR	34,6

Dimensional drawing C	L1 [mm]
1727 ... CXR - 123	38,2
1741 ... CXR - 123	52,2

Dimensional drawing D	L1 [mm]
1628 ... B - K313	38,8
2036 ... B - K313	46,8
2057 ... B - K313	68,3

Characteristics

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

The encoder is integrated in the DC-Micromotors SR-Series and extends the overall length by only 1,4 mm. Built-on option for DC-Micromotors and Brushless DC-Servomotors.

Hybrid circuits with sensors and a low inertia magnetic disc provide 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 through a ribbon cable with connector.

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

To view our large range of accessory parts, please refer to the "Accessories" chapter.

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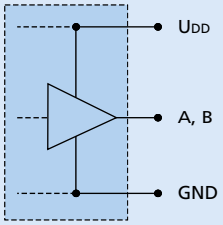
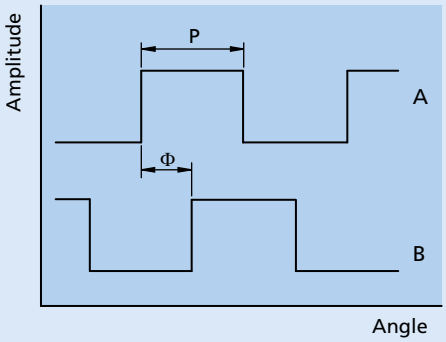
Circuit diagram / Output signals

Output circuit



Output signals
with clockwise rotation as seen from the shaft end



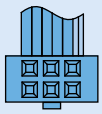
Connector information / Variants

Example product designation: **1336U012CXR-123 IE2-1024**

Option	Type	Description

Connection Encoder

No.	Function
1	Motor – *
2	Motor + *
3	GND
4	UDD
5	Channel B
6	Channel A

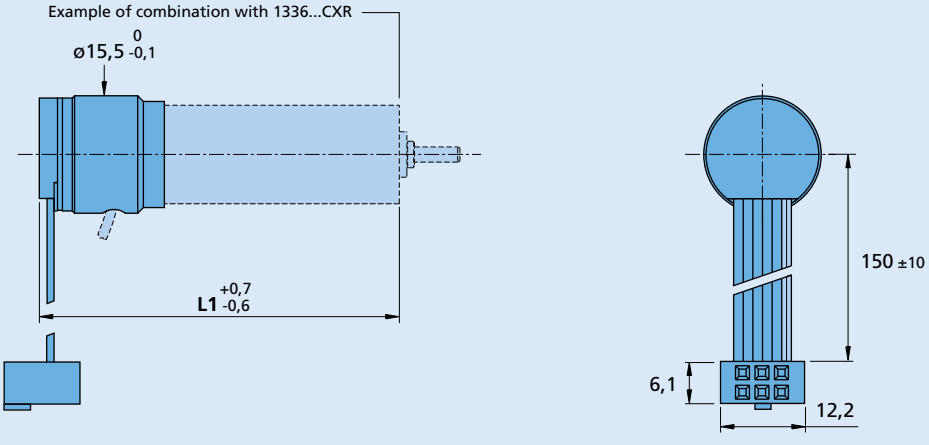


6 4 2
5 3 1

Cable
PVC-ribbon cable, 6-conductors, 0,09 mm²
Connector
EN 60603-13 / DIN-41651, grid 2,54 mm

*** Note:**
The terminal resistance of all motors with precious metal commutation is increased by approx. 0.4 Ω,and the max. allowable motor current in combination is 1A, depending on the motor can also be lower. Brushless DC-Servomotors and DC-Micromotors series CXR have separate motor leads and higher motor current is allowed.

Dimensional drawing A



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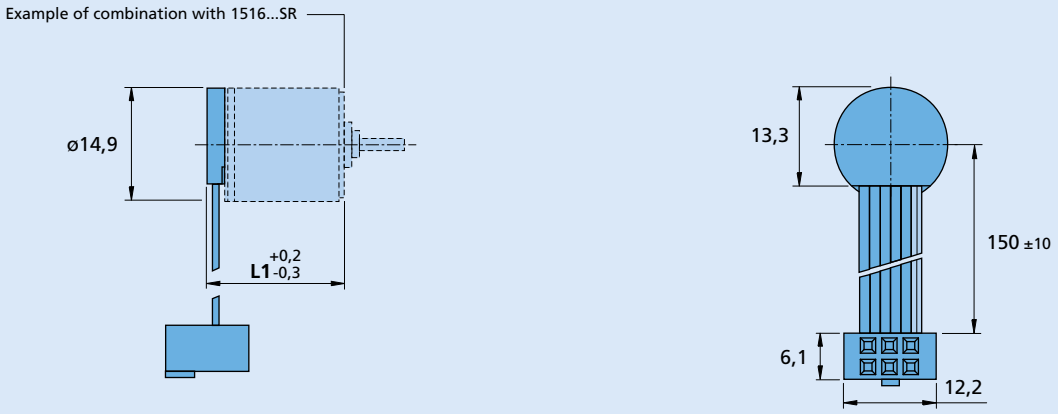
Dimensional drawing B



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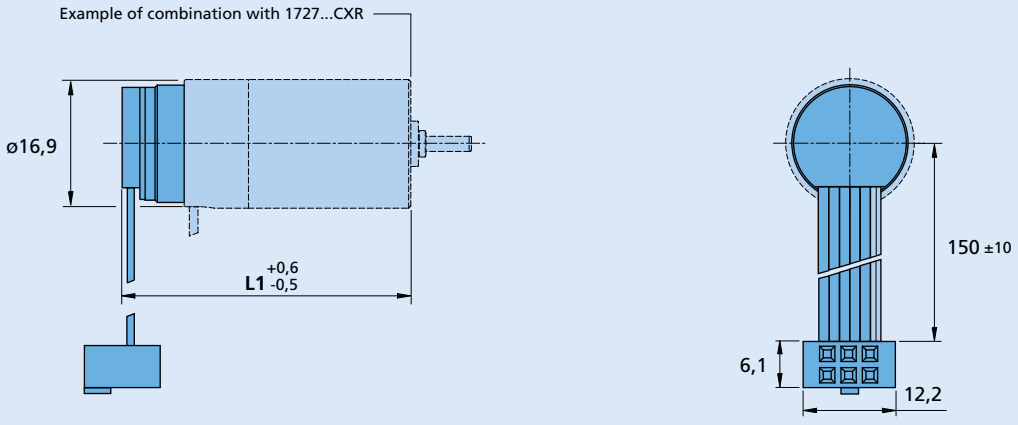
Dimensional drawing C



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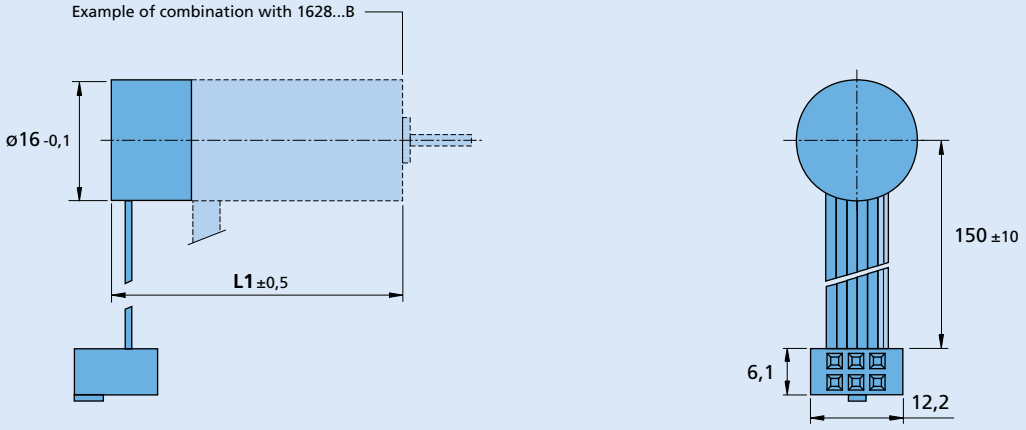
Dimensional drawing D



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