

Encoders

magnetic Encoder, digital outputs,
2 channels, 16 - 4096 lines per revolution

For combination with
DC-Micromotors

Series IEH2-4096

	IEH2	-16	-32	-64	-128	-256	-512	-1024	-2048	-4096	
Lines per revolution	<i>N</i>	16	32	64	128	256	512	1 024	2 048	4 096	kHz
Frequency range, up to ¹⁾	<i>f</i>	5	10	20	40	80	160	320	640	875	Channels
Signal output, square wave		2									V
Supply voltage	<i>U_{DD}</i>	4,5 ... 5,5									mA
Current consumption, typical ²⁾	<i>I_{DD}</i>				typ. 15, max. 25						mA
Output current, max. ³⁾	<i>I_{OUT}</i>	2,5									μA
Phase shift, channel A to B ⁴⁾	<i>Φ</i>	90 ± 45						90 ± 65	90 ± 75		°e
Signal rise/fall time, max. (C _{LOAD} = 50 pF)	<i>tr/tf</i>	0,05 / 0,05									μs
Inertia of sensor magnet	<i>J</i>	0,11									gcm ²
Operating temperature range		-40 ... +100									°C

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 < 0,4 V, high logic level > 4,6 V: CMOS- and TTL compatible

⁴⁾ At 5 000 min⁻¹

For combination with Motor

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

Dimensional drawing B

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

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

Characteristics

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

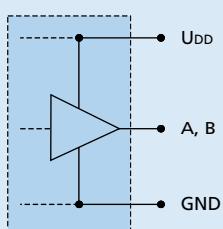
The encoder is integrated in the DC-Micromotors SR-Series and extends the overall length by only 1,4 mm.

A segmented magnetic disc provides a magnetic field which is detected and further processed by an angle sensor. The output signals of both channels consist of a square wave signal with 90° phase shift and up to 4096 impulses per motor revolution.

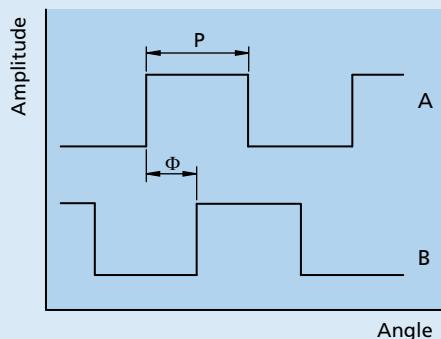
The encoder is available with different standard resolutions. The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced through a ribbon cable with connector.

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.

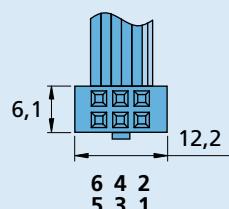
Circuit diagram / Output signals
Output circuit

Output signals

with clockwise rotation as seen from the shaft end


Connector information / Variants

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

* Note: DC-Micromotors series CXR have separate motor leads.

Connection Encoder


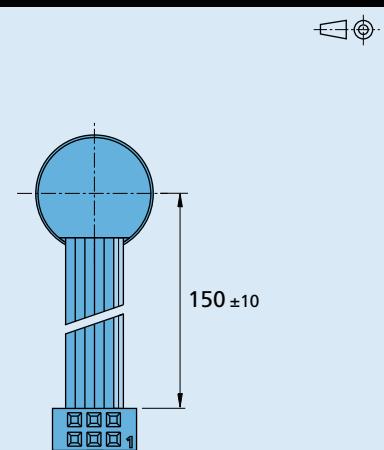
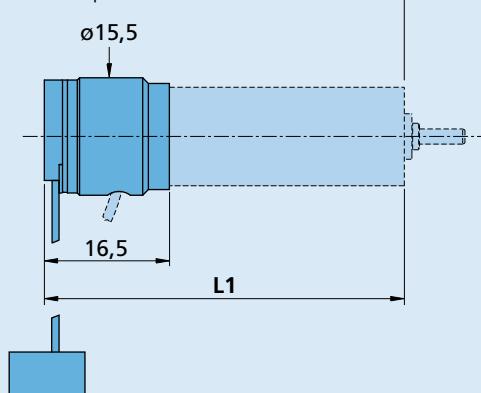
Cable
PVC-ribbon cable
6-conductors, 0,09 mm²

Full product description
Example:
1516T006SR IEH2-256

Connector
EN 60603-13 / DIN-41651,
grid 2,54 mm

Dimensional drawing A

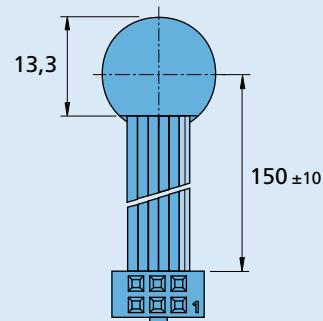
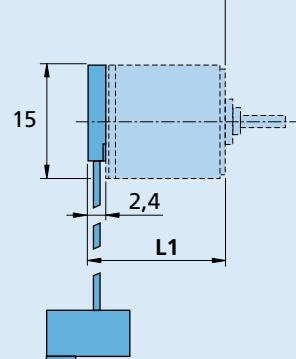
Example of combination with 1336...CXR



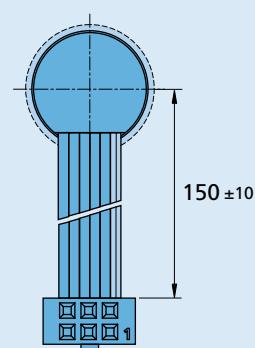
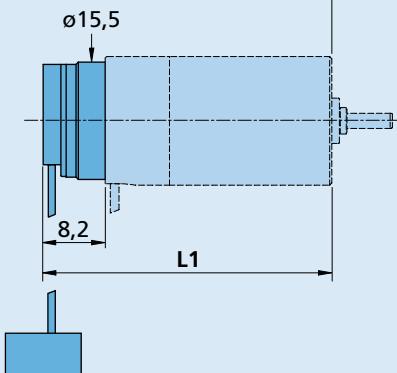
IEH2-4096

Dimensional drawing B

Example of combination with 1516...SR


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Dimensional drawing C

Example of combination with 1727...CXR


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