Encoders

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

For combination with
DC-Micromotors

Series IEH2-4096

		- 16	- 32	- 64	- 128	- 256	- 512	- 1024	- 2048	- 4096	IEH2
Lines per revolution	N	16	32	64	128	256	512	1 024	2 048	4 096	
Frequency range, up to [1]	f	5	10	20	40	80	160	320	640	875	kHz
Signal output, square wave		2									Channels
Supply voltage	U_{DD}	4,5 ... 5,5									V
Current consumption, typical [2]	I_{DD}	typ. 15, max. 25									mA
Output current, max. [3]	I_{OUT}	2,5									mA
Phase shift, channel A to B [4]	Φ	90 ± 45							90 ± 65	90 ± 75	°e
Signal rise/fall time, max. (C_{LOAD} = 50 pF)	tr/tf	0,05 / 0,05									µs
Inertia of sensor magnet	J	0,11									gcm²
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]	Dimensional drawing C	<L1 [mm]	
1336 ... CXR - 123	47,5	1727 ... CXR - 123	38,2	
		1741 ... CXR - 123	52,2	
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			

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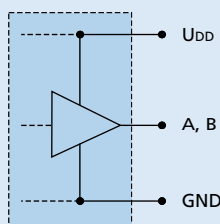
The encoder is available with different standard resolutions. The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced through a ribbon cable with connector.

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.
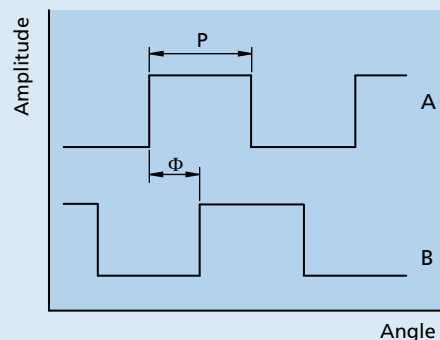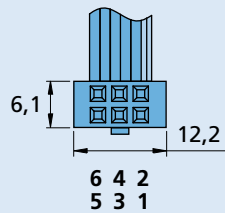
Circuit diagram / Output signals

Output circuit

Output signals
with clockwise rotation as seen
from the shaft end

For notes on technical data and lifetime performance
refer to "Technical Information".
Edition 2017

Connector information / Variants

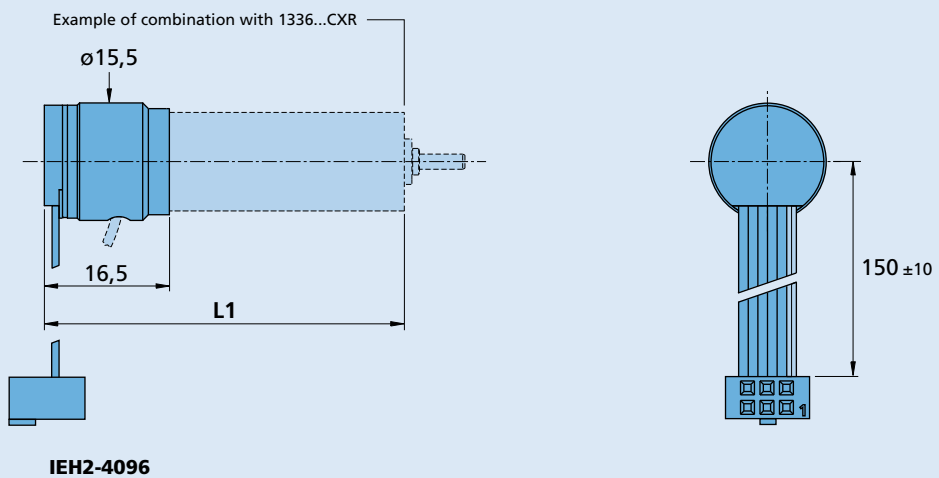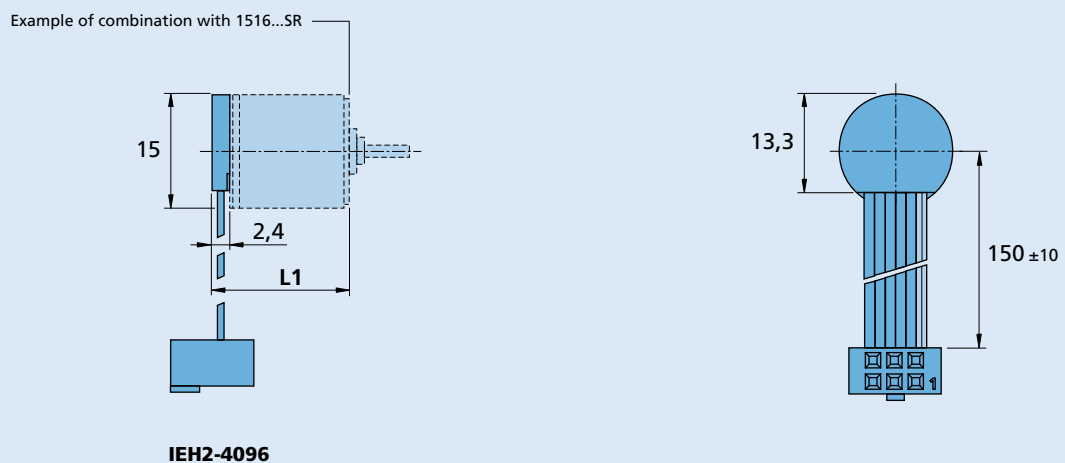| No.	Function
1	Motor –
2	Motor +
3	GND
4	U_{DD}
5	Channel B
6	Channel A

Connection Encoder

6,1   12,2

6 4 2
5 3 1

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

Connector
DIN-41651
grid 2,54 mm

Full product description
Example:
1516T006SR IEH2-256

Dimensional drawing A

Example of combination with 1336...CXR

ø15,5

16,5

L1

150 ±10

IEH2-4096

Dimensional drawing B

Example of combination with 1516...SR

15

2,4

L1

13,3

150 ±10

IEH2-4096

For notes on technical data and lifetime performance
refer to "Technical Information".
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Dimensional drawing C

Example of combination with 1727...CXR

ø15,5

8,2

L1

IEH2-4096

150 ±10

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refer to "Technical Information".
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Specifications subject to change without notice.