

Encoders

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

For combination with
DC-Micromotors
Brushless DC-Motors

Series IE2-1024

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

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.

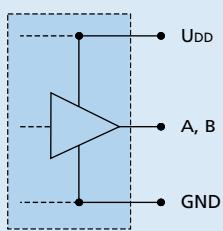
The encoder is integrated in the DC-Micromotors SR-Series and extends the overall length by only 1,4 mm. Built-on option for DC-Micromotors and Brushless DC-Servomotors.

Hybrid circuits with sensors and a low inertia magnetic disc provide two channels with 90° phase shift.

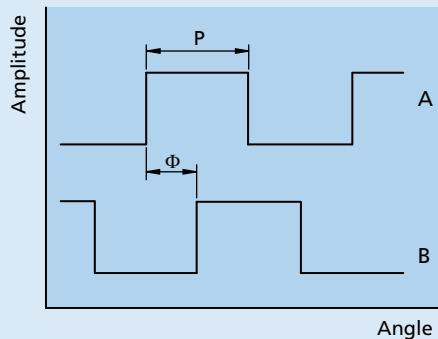
The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced through a ribbon cable with connector.

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.

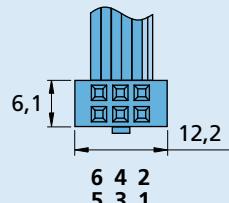
Circuit diagram / Output signals
Output circuit

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: The terminal resistance of all motors with precious metal commutation is increased by approx. 0.4 Ω , and the max. allowable motor current 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.

Connection Encoder


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

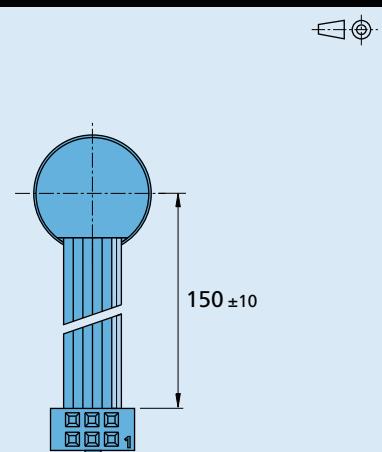
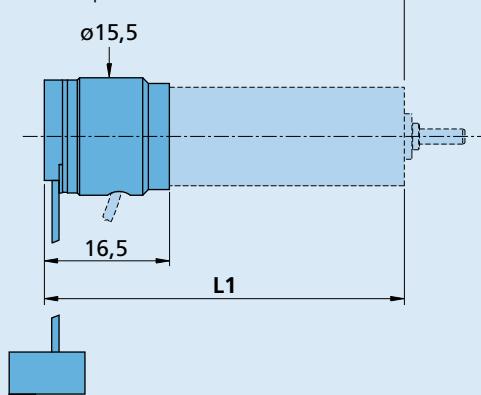
Connector
EN 60603-13 / DIN-41651,
grid 2,54 mm

Full product description

Example:
1336U012CXR-123 IE2-1024
1516T0065R IE2-256

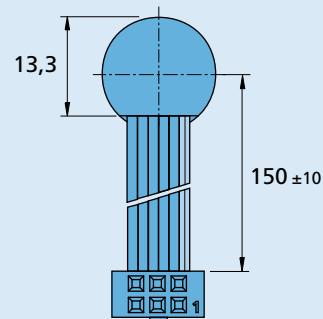
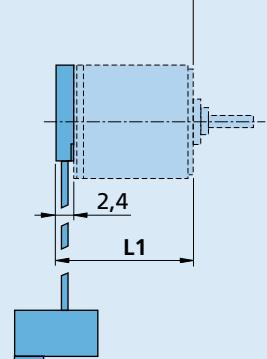
Dimensional drawing A

Example of combination with 1336...CXR

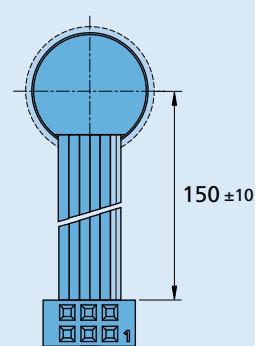
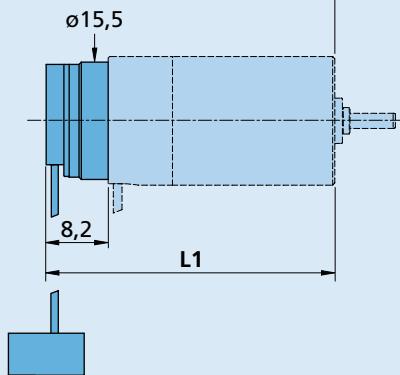

IE2-1024

Dimensional drawing B

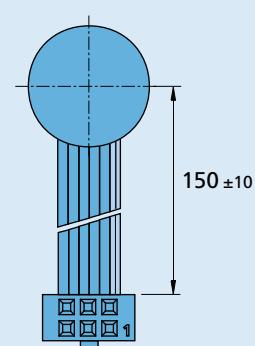
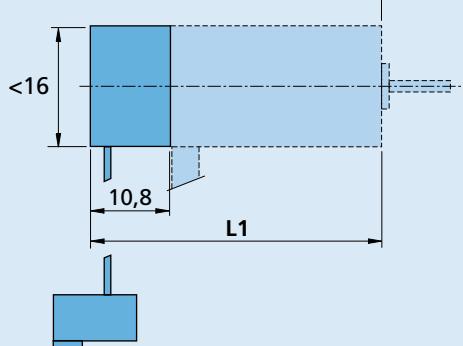
Example of combination with 1516...SR


IE2-1024
Dimensional drawing C

Example of combination with 1727...CXR


IE2-1024
Dimensional drawing D

Example of combination with 1628...B


IE2-1024