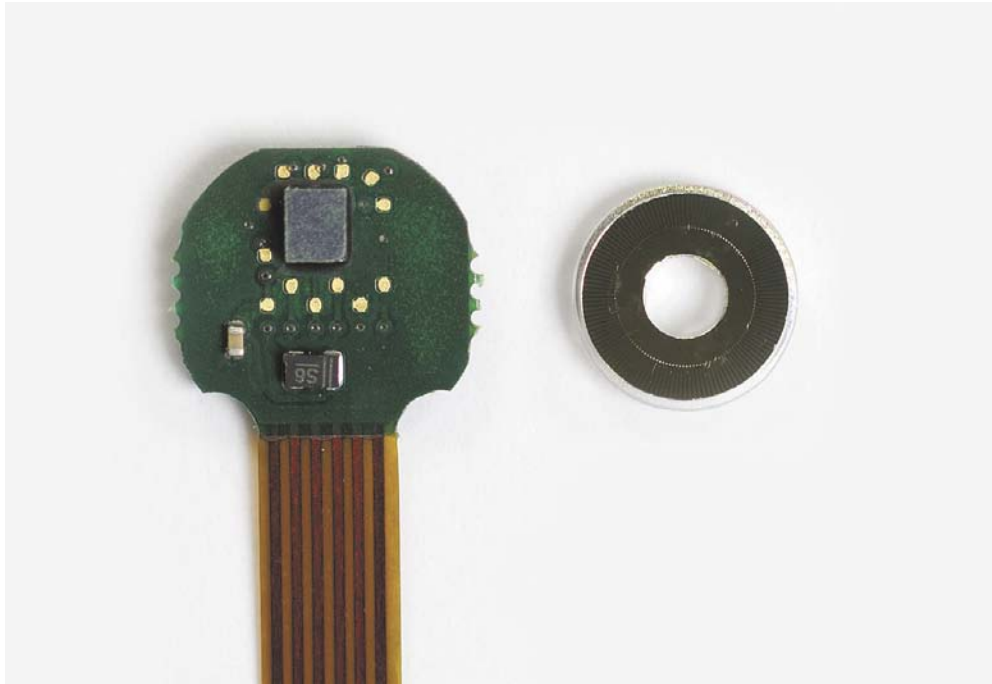




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Bad Ragaz in November 2013

ELESTA GmbH introduces a new, 3-channel, optical miniature encoder system with a diameter of less than 7 mm and a pitch of 128 code lines that meets the demands for high precision in speed and position detection.

The optical encoder EOI R007 works according to a special light reflection principle, the light source and light sensor sitting on the same level compared to a code wheel to be sampled. In contrast to standard code wheels, all 128 segments (code lines) of the code wheel have a special surface geometry.

The light emitted from the light source is focused and reflected such that almost the entire quantity of light is used in the light sensor for signal formation. In addition to the up to two times higher luminous efficacy and a drastically reduced power consumption of the whole encoder of only approx. 20 mW, the low self-capacitance of the CMOS output circuit provides for steep and absolutely accurate pulse edges, so that even at very high speeds, precise signals are delivered. Speeds greater than 100,000 rpm are detectable.

With the use of the 128 pulses on the channels A and B, which have a phase difference of 90°, the system is expandable to 512 pulses per revolution.

# Elesta relays GmbH - Encoder

## Data sheet



### Technical Data

Electrical data (after Calibration)	unit	min	typ	max
Supply voltage	V	3	5	6
Supply current	mA	2	4	6
Power Dissipation	mW	6	20	36
Output short circuit current with GND @ OUT = 1	mA	-	20	30
Output short circuit current with VDD @ OUT = 0	mA	-	20	30
Output drive current (Output Voltage ~ 4.5V)	mA	-	2.5	-
Speed	RPM	-	24'000	-
Frequency (rise time dependent)	kHz	-	1000	-
Signal rise time (R <sub>L</sub> =1kΩ, C <sub>L</sub> =47pF, C <sub>osc</sub> =12pF)	ns	-	300	-
Signal outputs (3 channels), CMOS/TTL compatible	-	-	A, B, Z	-
Duty cycle for A and B	%	45	50	55
Phase error between A and B (90°e)	%	0	5	10
Operating temperature	°C	-20	-	85
Storage temperature	°C	-20	-	85
Burst			on request	
ESD			on request	
Isolation values			on request	

Mechanical data	unit	min	typ	max
Code wheel diameter	mm		4.4	
Code wheel thickness	mm		1.1	
Resolution (code wheel lines)	-		128	
Shaft diameter	mm		1.5	
X, Y position tolerances	mm	-	-	±0.2
Distance between code wheel and light sensor	mm	0.2	0.3	1.2
Shock stability	-		on request	
Vibration	-		on request	
Package type	-		on request	



08.04.2013

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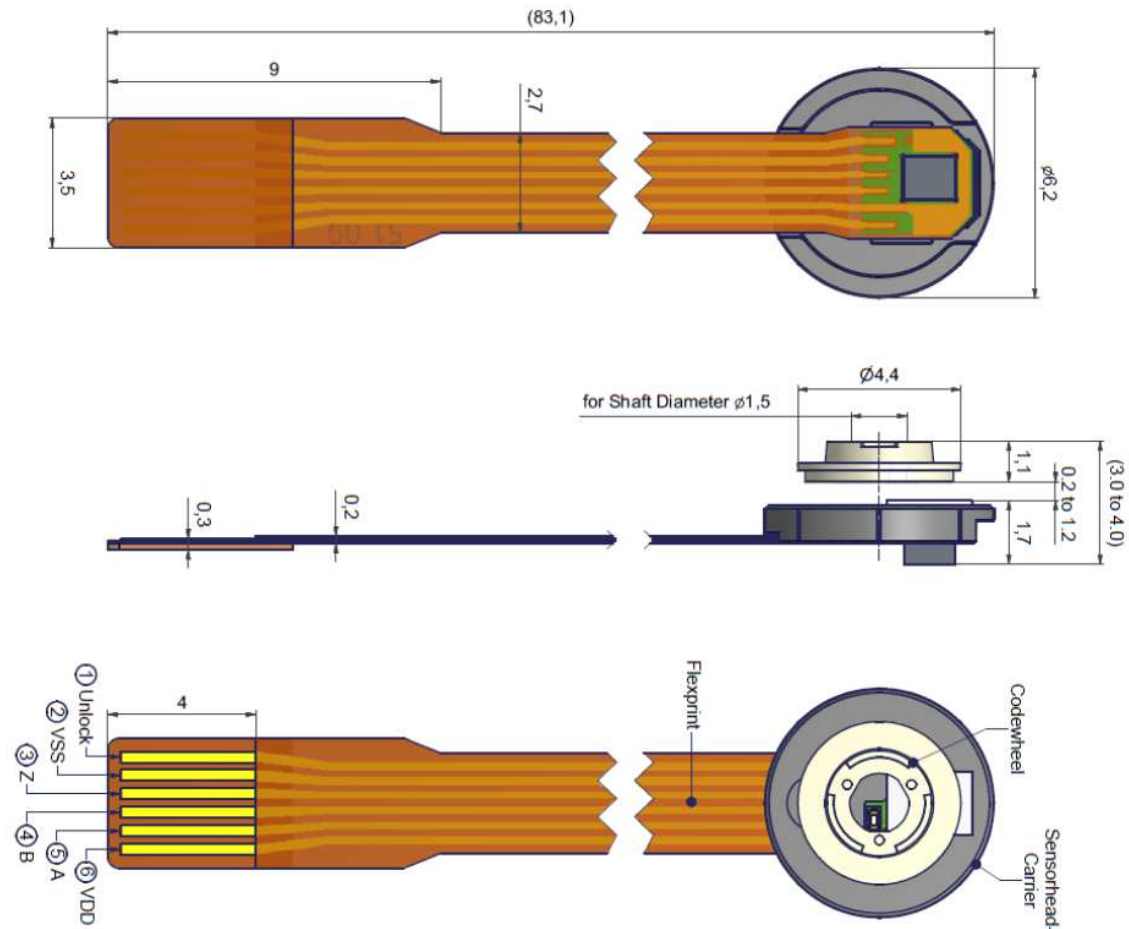
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## Data sheet



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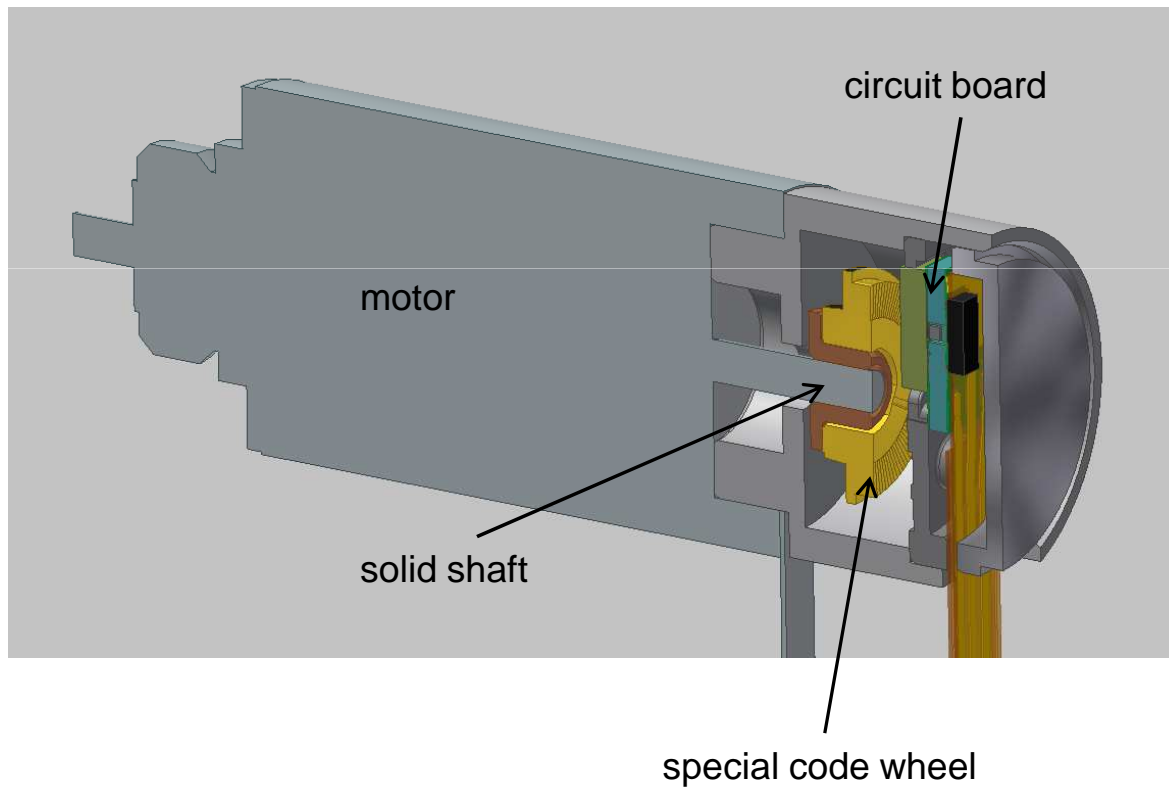
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## Installation example



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# Elesta relays GmbH - Encoder

## Market sectors



### Primary users

- Small motor manufacturers
- Valve manufacturers
- Pump manufacturers
- Medical appliance manufacturers
- Rehabilitation appliance manufacturers
- Robot manufacturers
- Remote control manufacturers

### Fields of application

- Robot technology
- Printing technology
- Medical and healthcare appliances
- Process technology
- Aerospace and transport
- Metrology

### Applications

- Dose dispensers
- Actuators
- Positioning systems
- Level control systems
- Rotational speed, angular position and distance measurements
- Potentiometers



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