

## Encoders

optical Encoder, digital outputs,  
2 channels, 100 - 500 lines per revolution

For combination with  
Brushless DC-Motors  
DC-Micromotors

### Series HEDS 5500

		HEDS 5500 C	HEDS 5500 A	
Lines per revolution	$N$	100	500	
Frequency range, up to <sup>1)</sup>	$f$	100	100	kHz
Signal output, square wave		2		Channels
Supply voltage	$U_{DD}$	4,5 ... 5,5		V
Current consumption, typical <sup>2)</sup>	$I_{DD}$	17		mA
Pulse width	$P$	180 ± 45		°e
Phase shift, channel A to B	$\Phi$	90 ± 20		°e
Logic state width	$S$	90 ± 45		°e
Cycle	$C$	360 ± 5,5		°e
Signal rise/fall time, max. ( $C_{LOAD} = \text{pF}$ )	$tr/tf$	0,25 / 0,25		µs
Inertia of code disc	$J$	0,6		gcm <sup>2</sup>
Operating temperature range		-40 ... +100		°C

<sup>1)</sup> Velocity (min<sup>-1</sup>) =  $f$  (Hz) x 60/ $N$

<sup>2)</sup>  $U_{DD} = 5$  V: with unloaded outputs

#### For combination with Motor

Dimensional drawing A	<L1 [mm]		
2230 ... S	52,8		
2233 ... S	55,6		
2036 ... B - K312	56,8		
2057 ... B - K312	75,8		
2057 ... BHS - K312	75,8		
2444 ... B - K312	64,9		
3056 ... B - K312	76,1		
3564 ... B - K312	84,1		
4490 ... B - K312	116,3		
4490 ... BS - K312	116,3		

#### Characteristics

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

A LED source and lens system transmits collimated light through a low inertia metal disc to give two channels with 90° phase shift.

The single 5 volt supply and the two or three channel digital output signals are interfaced with a 5-pin connector.

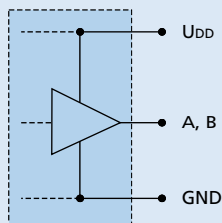
Motors with ball bearings are recommended for continuous operation at low and high speeds and for elevated radial shaft load.

Details for the Motors and suitable reduction gearheads are on separate catalogue pages.

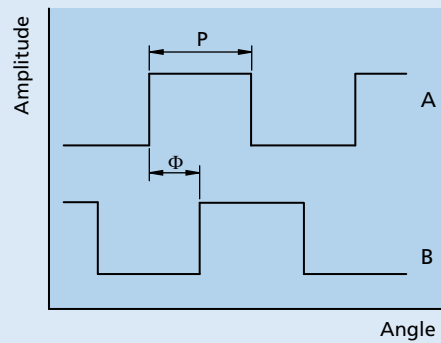
To view our large range of accessory parts, please refer to the "Accessories" chapter.

**Circuit diagram / Output signals**

**Output circuit**



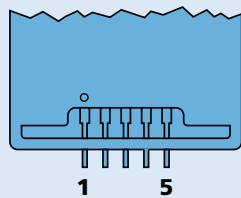
**Output signals**  
with clockwise rotation as seen  
from the shaft end



**Connection information**

No.	Function
1	GND
2	N.C.
3	Channel A
4	U <sub>DD</sub>
5	Channel B

**Connection Encoder**



**Recommended connector**  
AMP 103686-4/640442-5,  
Molex 2695/2759  
FCI 65039-032/4825x-000

**Full product description**

■ Example:  
2444S024B-K312 HEDS5500C  
4490H024BS-K312 HEDS5500A

**Dimensional drawing A**

