

Encoders

optical Encoder, digital outputs,
3 channels, 500 lines per revolution, Line Driver

For combination with
Brushless DC-Motors
DC-Micromotors

Series HEDL 5540

HEDL 5540 A			
Lines per revolution	N	500	
Frequency range, up to ¹⁾	f	100	kHz
Signal output, square wave		2+1 Index and complementary outputs	Channels
Supply voltage	U_{DD}	4,5 ... 5,5	V
Current consumption, typical ²⁾	I_{DD}	57	mA
Pulse width	P	180 ± 35	°e
Index Pulse width	P_0	90 ± 35	°e
Phase shift, channel A to B	Φ	90 ± 15	°e
Logic state width	S	90 ± 35	°e
Cycle	C	$360 \pm 5,5$	°e
Signal rise/fall time, max. ($C_{LOAD} = pF$)	tr/tf	0,25 / 0,25	µs
Inertia of code disc	J	0,6	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

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	78,3		
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 index pulse is synchronized with the channel B. Each encoder channel provides complementary output signals. The single 5 volt supply and the digital output signals are interfaced with a connector.

The Line Driver offers enhanced performance when the encoder is used in noisy environments, or when it is required to drive long distances.

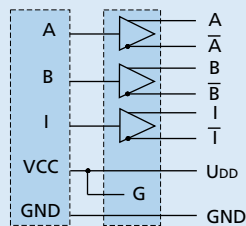
Motor with ball bearings are recommended for continuous operation at low and high speeds and for elevated radial shaft load.

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

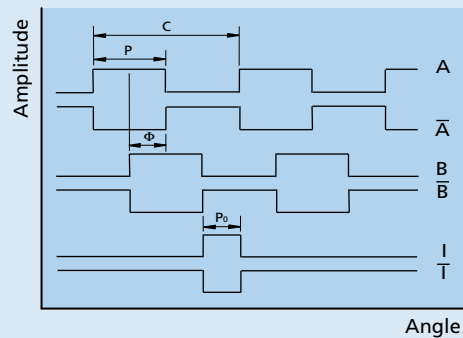
Output circuit



Recommendation:
Suggested Line Receivers:
AM26LS32, SN75175, MC3486

Output signals

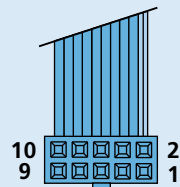
with clockwise rotation as seen from the shaft end



Connector information / Variants

No.	Function
1	N.C.
2	U _{DD} (+5V)
3	GND
4	N.C.
5	Channel A
6	Channel A
7	Channel B
8	Channel B
9	Channel I
10	Channel I

Connection Encoder



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

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

Full product description

Example:
2444S024B-K312 HEDL5540A
4490H024BS-K312 HEDL5540A

Dimensional drawing A

