



Incremental encoders DKS40

DKS40-P5J00256



Model Name > [DKS40-P5J00256](#)
Part No. > [1034614](#)



Illustration may differ

At a glance

- Compact housing
- Durable, low-cost design
- Interfaces: Open collector NPN, TTL/RS-422 or HTL/push pull.
- Connection via cable outlet, for radial or axial use with open ends or fitted with an M12 connector
- Face mount flange with solid shaft
- Housing for simple clamping ring mounting
- Any line count possible from 1 to 2,048

Your benefits

- Low-cost encoder with outstanding quality
- Withstands harsh environmental conditions due to high IP protection class and rugged design
- Universal cable outlet enables axial and radial cable guidance
- Compact dimensions enable simple installation even where space is cramped



Performance

| | |
|---|-----------------------|
| Measuring step: | 90 °, Number of lines |
| Error limits binary number of lines: | 0.09 ° |
| Error limits non-binary number of lines: | 0.13 ° |
| Measuring step deviation at binary number of lines: | 0.035 ° |
| Measuring step deviation at non binary number of lines: | 0.07 ° |
| Initialization time: | 40 s |
| Pulses per revolution: | 256 |

Mechanical data

| | |
|---|--|
| Mechanical interface: | Solid shaft, Face mount flange |
| Shaft diameter: | 8 mm x 13 mm |
| Mass: | 0.18 kg |
| Start up torque: | 0.6 Ncm (+20 °C) |
| Operating torque: | 0.4 Ncm (+20 °C) |
| Maximum operating speed: | 6,000 U/min |
| Moment of inertia of the rotor: | 6 gcm ² |
| Bearing lifetime: | 2 x 10 ⁹ revolutions |
| Max. angular acceleration: | 3,6 x 10 ⁹ rad/s ² |
| Permissible shaft loading radial/axial: | 40 N, 20 N |

Electrical data

| | |
|--|--|
| Electrical interface: | 4.5 V ... 5.5 V, Open Collector NPN, Cable, universal, 0.5 m |
| Connection type: | Cable, universal, 0.5 m |
| Operating power consumption (no load): | 40 mA |
| Supply voltage: | 4.5 V ... 5.5 V |
| Output current: | 30 mA |
| Maximum output frequency: | 50 kHz |
| Reference signal, number: | 1 |
| Reference signal, position: | 90 °, electronically, gated with A and B |
| MTTFd: mean time to dangerous failure: | 600 a (EN ISO 13849-1) ¹⁾ |

¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive.

Calculation based on nominal load of components, average ambient temperature 40°C, frequency of use 8760 h/a. All

electronic failures are considered hazardous. For more information, see document no. 8015532.

Ambient data

| | |
|--|---|
| EMC: | EN 61000-6-2, EN 61000-6-3 |
| Protection class housing side with cable outlet: | IP 64 |
| Protection class shaft side: | IP 64 |
| Protection class standard: | IEC 60529 |
| Air humidity: | 90 % ¹⁾ |
| Working temperature range: | 0 °C ... +60 °C |
| Storage temperature range: | -40 °C ... +70 °C, without package |
| Resistance to shocks: | 50 g, 7 ms (EN 60068-2-27) |
| Resistance to vibration: | 20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6) |

¹⁾ Condensation of the optical scanning not permitted

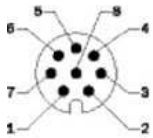
Dimensional drawing



PIN assignment

8-core cable

View of the connector side of housing



| PIN, 8-pole in M12 | Color of wires | Signal OC | Signal TTL, HTL | Explanation |
|--------------------|----------------|-----------------|-----------------|--|
| 1 | Brown | Not connected | A | Signal line |
| 2 | White | A | A | Signal line |
| 3 | Black | Not connected | B | Signal line |
| 4 | Pink | B | B | Signal line |
| 5 | Yellow | Not connected | Z | Signal line |
| 6 | Lilac | Z | Z | Signal line |
| 7 | Blue | GND | GND | Ground connection of the encoder |
| 8 | Red | +U _s | +U _s | Supply voltage |
| Screen | Screen | Screen | Screen | Screen connected to encoder housing. Connect screen on control side. |

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