

ONLINE DATA SHEET
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Incremental encoders
DKS40

DKS40-A5J02048



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Incremental encoders
DKS40

Model Name > DKS40-A5J02048
Part No. > 1034816





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

CE

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:	2,048

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 gcm²
Bearing lifetime:	2 x 10^9 revolutions
Max. angular acceleration:	3,6 x 10^9 rad/s²
Permissible shaft loading radial/axial:	40 N, 20 N

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Electrical data

Electrical interface:	4.5 V ... 5.5 V, TTL/RS422, 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:	200 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.

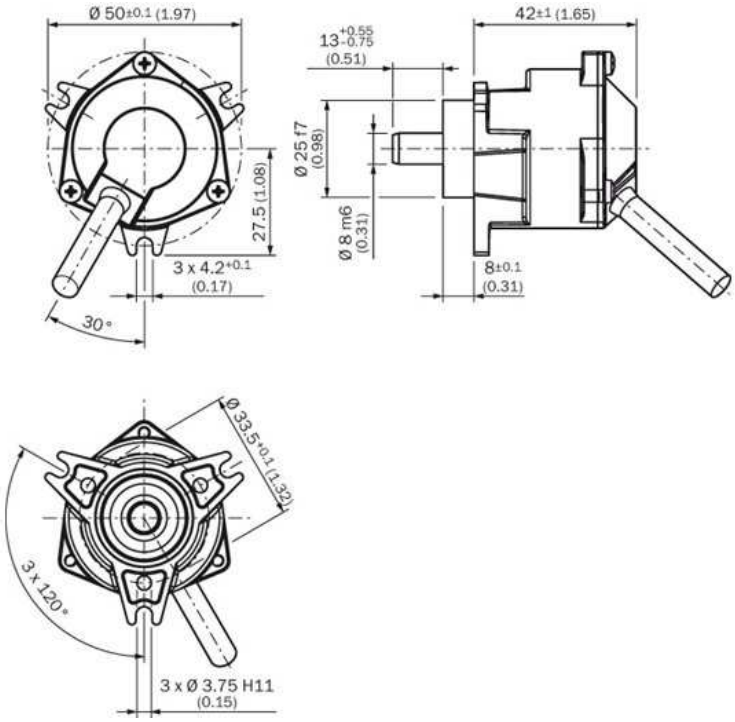
Ambient data

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

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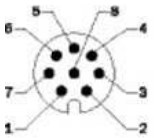
Dimensional drawing



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	$\overline{A}$	Signal line
2	White	A	A	Signal line
3	Black	Not connected	$\overline{B}$	Signal line
4	Pink	B	B	Signal line
5	Yellow	Not connected	$\overline{Z}$	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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