



Motor feedback systems rotary HIPERFACE® SRS/SRM50

SRM50S-HFA0-K22



Model Name > SRM50S-HFA0-K22
Part No. > 1051794



Illustration may differ

At a glance

- Motor feedback systems for the top performance range
- 1,024 sine/ cosine periods per revolution
- Absolute position with a resolution of 32,768 increments per revolution and 4,096 revolutions with the multiturn system
- HIPERFACE® interface: Programming of the position value and electronic type label
- Insert shaft or tapered shaft with various torque supports
- Integrated version, mounted version or stand-alone design
- Certified according to SIL2/PL d (only valid for SRS50S/SRM50S...)
- Conforms to RoHs

Your benefits

- Motor feedback system with HIPERFACE® interface
- High shock/vibration resistance thanks to built-in metal code disk
- Consistent motor design due to identical size of single and multiturn design
- To use of a motor feedback system certified to SIL2/PL d makes it easier to have your system certified.
- Very smooth running thanks to maximum ball bearing distance



Safety-related parameters

| | |
|--------------------------------------------------|--------------------------------------|
| Safety integrity level: | SIL2 (IEC 61508), SILCL2 (IEC 62061) |
| Category: | 3 (EN ISO 13849) |
| Performance level: | PL d EN ISO 13849 ¹⁾ |
| TM (mission time): | 20 a (EN ISO 13849) |
| Maximum demand rate: | Continuous (analog signals) |
| PFHD: probability of dangerous failure per hour: | 1.0 * 1E-08 ²⁾ |
| MTTFd: mean time to dangerous failure: | 1,073 a (EN ISO 13849) |

¹⁾ For more detailed information on the exact configuration of your machine/unit, please consult your relevant SICK branch office. ²⁾ The values displayed apply to a diagnostic degree of coverage of 90%, which must be achieved by the external drive system

Performance

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|---------------------------------------------------|----------------------------------------------------------------------------------|
| Number of sine/cosine periods per revolution: | 1,024 |
| Number of the absolute ascertainable revolutions: | 4,096 (Multiturn) |
| Total number of steps: | 134,217,728 |
| Measuring step: | 0.3 angular seconds at interpolation of the sine/cosine signals with e.g. 12 Bit |

| | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Differential non-linearity: | ± 7 angular seconds (Non-linearity within a sine/cosine period) |
| Operating speed: | 6,000 /min, up to which the absolute position can be reliably produced |
| Available memory area: | 1,792 Byte, 1,792 Byte (E2PROM 2048) |
| Integral non-linearity typ.: | ± 45 angular seconds (Error limits for evaluating sine/cosine period) without mechanical tension of the stator coupling |

Mechanical data

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|---------------------------------------------------------------|-----------------------------------|
| Flange type/stator coupling: | Spring mounting plate |
| Dimensions: | See dimensional drawing |
| Moment of inertia of the rotor: | 10 gcm ² |
| Maximum operating speed: | 12,000 /min |
| Maximum angular acceleration: | 200,000 rad/s ² |
| Operating torque: | 0.2 Ncm |
| Start up torque: | 0.4 Ncm |
| Permissible shaft movement, radial, static: | ± 0.5 mm |
| Permissible shaft movement, radial, dynamic: | ± 0.1 mm |
| Permissible shaft movement, axial, static: | ± 0.75 mm |
| Permissible shaft movement, axial, dynamic: | ± 0.2 mm |
| Life of ball bearings: | 3.6 x 10 ⁹ revolutions |
| Connection type: | Connector, 8-pin |
| Shaft version: | Tapered shaft |
| Angular motion perpendicular to the rotational axis, static: | ± 0.005 mm/mm |
| Angular motion perpendicular to the rotational axis, dynamic: | ± 0.002 mm/mm |
| GEWICHT01: | 0.2 kg |

Electrical data

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|-------------------------------------------|---------------------|
| Electrical interface: | HIPERFACE |
| Operating voltage range/supply Voltage: | 7 V DC ... 12 V DC |
| Recommended supply voltage: | 8 V DC |
| Output frequency for sine/cosine signals: | 0 kHz ... 200 kHz |
| Operating power consumption (no load): | 80 mA ¹⁾ |

¹⁾ Without load

Interfaces

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|--------------------------------------|--------------------------------------------------------------------------------------------------------|
| Type of code for the absolute value: | Binary |
| Code sequence: | Increasing, for clockwise shaft rotation, looking in direction "A" (see dimensional drawing) |
| Interface signals: | Parameter channel RS 485: digital, Process data channel SIN, REFSIN, COS, REFCOS: analog, differential |

Ambient data

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|---------------------------------|----------------------------------------------------------------|
| Working temperature range: | -30 °C ... +115 °C |
| Storage temperature range: | -40 °C ... +125 °C, without package |
| Relative humidity/Condensation: | 90 %, Condensation not permitted |
| Resistance to shocks: | 100 g/10 ms/according to EN 60068-2-27 |
| Resistance to vibration: | 20 g/10 Hz/2,000 Hz/according to EN 60068-2-6 |
| EMC: | (according to EN 61000-6-2 and EN 61000-6-3) ¹⁾ |
| Enclosure rating: | IP 40 (according to IEC 60529), with mating connector inserted |

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