



ARS60-A4R00200

ARS60

ABSOLUTE ENCODERS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|----------------|----------|
| ARS60-A4R00200 | 1035465 |

Other models and accessories → www.sick.com/ARS60

Detailed technical data

Performance

| | |
|---|--|
| Number of steps per revolution (max. resolution) | 200 |
| Measuring step | 360° / number of steps |
| Measuring step deviation | 0.005° binary number of steps 0.016° non-binary number of steps |
| Error limits G | 0.035° (binary number of steps) ¹⁾ 0.046° (non-binary number of steps) ¹⁾ |
| Repeatability standard deviation σ_r | 0.005° ²⁾ |

¹⁾ In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.

²⁾ In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

Interfaces

| | |
|---|---|
| Communication interface | SSI |
| Initialization time | 80 ms ¹⁾ |
| Code type | Gray |
| Code sequence parameter adjustable | CW (clockwise) increasing when viewing the clockwise rotating shaft |
| Measured value backlash | 0.005° |
| Response threshold | 0.003° |

¹⁾ Valid positional data can be read once this time has elapsed.

Electrical data

| | |
|--|--|
| Connection type | Cable, 11-wire, axial, 1.5 m |
| Supply voltage | 10 ... 32 V |
| Operating current | Typ. 60 mA |
| MTTFd: mean time to dangerous failure | 300 years (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.

²⁾ Only with shaft stationary (note initialisation time).

| | |
|--|---|
| Switching level of control inputs | Logic H = 0.7 x U _S , Logic L = 0 V ... 0.3 x U _S |
| Actuation of set button | ≥ 100 ms ²⁾ |

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.

²⁾ Only with shaft stationary (note initialisation time).

Mechanical data

| | |
|---------------------------------------|--|
| Mechanical design | Solid shaft, face mount flange |
| Shaft diameter | 10 mm |
| Shaft length | 19 mm |
| Weight | Approx. 0.3 kg ¹⁾ |
| Housing material | Aluminum die cast |
| Start up torque | Typ. 0.4 Ncm |
| Operating torque | Typ. 0.3 Ncm |
| Permissible shaft loading | 20 N (radial) 10 N (axial) |
| Operating speed | ≤ 6,000 min ⁻¹ with shaft seal ≤ 10,000 min ⁻¹ without shaft seal ²⁾ |
| Moment of inertia of the rotor | 54 gcm ² |
| Bearing lifetime | 3.6 x 10 ⁹ revolutions |
| Angular acceleration | ≤ 500,000 rad/s ² |

¹⁾ Based on devices with male connector.

²⁾ If the shaft seal has been removed by the customer.

Ambient data

| | |
|--------------------------------------|---|
| EMC | According to EN 61000-6-2 and EN 61000-6-3 ¹⁾ |
| Enclosure rating | IP65, male connector (IEC 60529) ²⁾ IP66, cable (IEC 60529) |
| Permissible relative humidity | 90 % (Condensation not permitted) |
| Operating temperature range | -20 °C ... +85 °C |
| Storage temperature range | -40 °C ... +100 °C, without package |
| Resistance to shocks | 50 g, 11 ms (EN 60068-2-27) |
| Resistance to vibration | 20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6) |

¹⁾ EMC according to the standards quoted is achieved if shielded cables are used.

²⁾ With mating connector fitted.







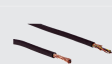


Classifications





| | |
|---------------------|----------|
| ECLASS 5.0 | 27270502 |
| ECLASS 5.1.4 | 27270502 |
| ECLASS 6.0 | 27270590 |
| ECLASS 6.2 | 27270590 |
| ECLASS 7.0 | 27270502 |
| ECLASS 8.0 | 27270502 |
| ECLASS 8.1 | 27270502 |

| PIN 12-pin | Wire colors (cable connection) 11-wire | Signal |
|---------------|---|----------------|
| 7 | N.c. | N.c. |
| 8 | Red | U _S |
| 9 | Orange | SET |
| 10 | Brown | Data - |
| 11 | Violet | Clock - |
| 12 | N.c. | N.c. |

Recommended accessories

Other models and accessories → www.sick.com/ARS60

| | Brief description | Type | Part no. |
|---|---|-------------------|----------|
| Flanges | | | |
|  | Flange adapter, adaptation of face mount flange with 36 mm centering hub to 50 mm servo flange, aluminum, including 3 flat head screws M4 x 10, Aluminum, including 3 countersunk screws M3 x 10 | BEF-FA-036-050 | 2029160 |
|  | Flange adapter, adaptation of face mount flange with 36 mm centering hub to 60 mm square mounting plate, aluminum, including 3 flat head screws M4 x 8, Aluminum, including 3 countersunk screws M4 x 8 | BEF-FA-036-060REC | 2029162 |
|  | Flange adapter, adaptation of face mount flange with 36 mm centering hub to 58 mm square mounting plate with shock absorbers, aluminum, Aluminum | BEF-FA-036-060RSA | 2029163 |
|  | Flange adapter, adaptation of face mount flange with 36 mm centering hub to 100 mm servo flange with 60 mm centering hub, aluminum, Aluminum | BEF-FA-036-100 | 2029161 |
| Mounting brackets and plates | | | |
|  | Mounting bracket for encoder with spigot 36 mm for face mount flange, mounting kit included | BEF-WF-36 | 2029164 |
| Plug connectors and cables | | | |
|  | Head A: cable Head B: Flying leads Cable: SSI, Incremental, PUR, shielded | LTG-2411-MW | 6027530 |
|  | Head A: cable Head B: Flying leads Cable: SSI, Incremental, PUR, halogen-free, shielded | LTG-2512-MW | 6027531 |
|  | Head A: cable Head B: Flying leads Cable: SSI, TTL, HTL, Incremental, PUR, halogen-free, shielded | LTG-2612-MW | 6028516 |
| Shaft adaptation | | | |
|  | Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub | KUP-0610-B | 5312982 |

| | Brief description | Type | Part no. |
|---|---|------------|----------|
|  | Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial +/- 0.3 mm, axial +/- 0.4 mm, angular +/- 2.5°; max. speed 12,000 rpm, -10° to +80 °C, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin | KUP-0610-F | 5312985 |
|  | Bellows coupling, shaft diameter 10 mm/10 mm; maximum shaft offset: radial +/- 0.25 mm, axial +/- 0.4 mm, angular +/- 4°; max. revolutions 10,000 rpm, -30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs | KUP-1010-B | 5312983 |
|  | Spring washer coupling, shaft diameter 10 mm / 10 mm, maximum shaft offset, radial ± 0.3 mm, axial ± 0.4 mm, angle ± 2.5°, torsion spring stiffness 30 Nm/rad; material: aluminum flange, glass-fiber reinforced polyamide membrane and hardened steel coupling pin | KUP-1010-F | 5312986 |
|  | 10 mm / 12 mm; maximum shaft offset: radial +/- 0.25 mm, axial +/- 0.4 mm, angular +/- 4°; max. revolutions 10,000 rpm, -30° to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum clamping hubs | KUP-1012-B | 5312984 |

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