



**Absolute encoders
ARS60 SSI/Parallel**

ARS60-A1B00512



Model Name > **ARS60-A1B00512**
Part No. > **1031395**



Illustration may differ

At a glance

- Absolute singleturn encoder
- Resolution: up to 15 bits (32,768 increments)
- Electrical interface: SSI with gray code type or gray capped
- Electrical interface: Parallel with gray, gray capped, binary, BCD code type
- Zero-set function
- Mechanical interfaces: face mount flange, servo flange, blind and through hollow shaft
- Enclosure rating: Up to IP66

Your benefits

- Optical and magnetic variants for the widest range of requirements
- Reduced maintenance costs thanks to magnetic, wearless scanning in single and multiturn design
- High level of productivity due to optical encoders with a high level of precision and fast calculation of positions
- Robust design for maximum system availability, even in extreme environmental conditions
- Absolutely compact - specially suited in cases where installation space is tight
- Flexible integration in all common networks



Performance

| | |
|--------------------------------------|--|
| Max. number of steps per revolution: | 512 |
| Max. number of revolutions: | 1 |
| Resolution power: | 512 x 1 |
| Error limits: | 0.035 ° (binary number of steps) 0.046 ° (non-binary number of steps) |
| Repeatability (Ta not constant): | 0.005 ° |
| Measuring step deviation: | 0.005 °, 0.016 ° |
| Measuring step: | 360 ° /number of lines |
| Initialization time: | 80 ms ¹⁾ |

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

Mechanical data

| | |
|-----------------------|---------------------------|
| Mechanical interface: | Solid shaft, Servo flange |
| Shaft diameter: | 6 mm |
| Mass: | 0.3 kg |

| | |
|-------------------------------------|--|
| Start up torque: | 0.25 Ncm |
| Operating torque: | 0.2 Ncm |
| Permissible Load capacity of shaft: | 10 N (axial), 20 N (radial) |
| Maximum operating speed: | 10,000 /min (without shaft seal), 6,000 /min (with shaft seal) ¹⁾ |
| Moment of inertia of the rotor: | 48 gcm ² |
| Bearing lifetime: | 3.6 x 10 ⁹ revolutions |
| Max. angular acceleration: | 500,000 rad/s ² |
| Operation of zero-set: | ≥ 100 ms ²⁾ |

¹⁾ If the shaft seal has been removed by the customer ²⁾ Only with shaft stationary (note initialisation time)

Electrical data

| | |
|--|--------------------------------------|
| Operating voltage range: | 10 V DC ... 32 V DC |
| Operating power consumption (no load): | 60 mA |
| MTTFd: mean time to dangerous failure: | 300 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.

Interfaces

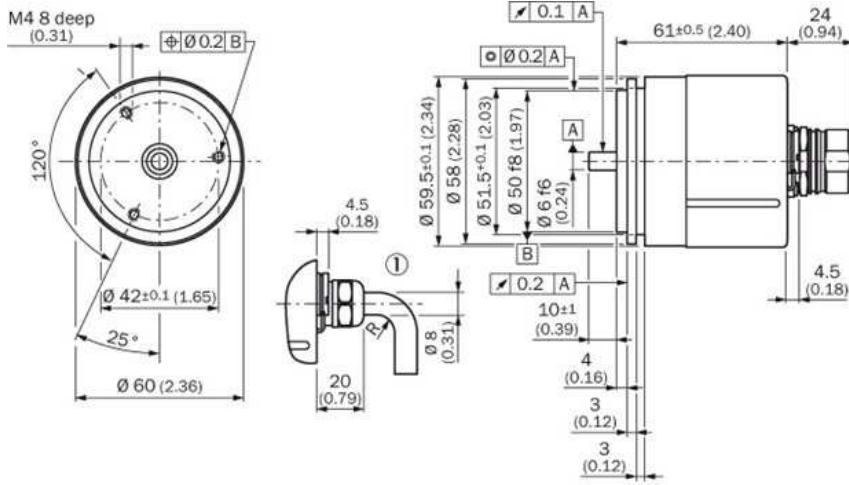
| | |
|-----------------------|------------------------------|
| Electrical interface: | Connector M23, 12-pin, axial |
|-----------------------|------------------------------|

Ambient data

| | |
|--------------------------------|--|
| EMC: | (according to EN 61000-6-2 and EN 61000-6-3) ¹⁾ |
| Enclosure rating: | IP 65 (according to IEC 60529), with mating connector fitted |
| Permissible relative humidity: | 90 % (condensation of the optical scanning not permitted) |
| Working temperature range: | -20 °C ... 85 °C |
| Storage temperature range: | -40 °C ... 100 °C |
| Resistance to shocks: | 50 g (according to EN 60068-2-27) |
| Resistance to vibration: | 20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6) |

¹⁾

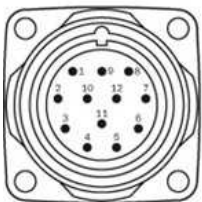
Dimensional drawing



PIN assignment

- Allocation for encoder with 12-pin connector; SSI interface

| Signal | 12-pin connector | 11-core cable outlet |
|----------------|------------------|----------------------|
| GND | 1 | Blue |
| Data (+) | 2 | White |
| Clock (+) | 3 | Yellow |
| N. C. | 4 | - |
| V _R | 5 | Pink |
| N. C. | 6 | - |
| N. C. | 7 | - |
| U _s | 8 | Red |
| SET | 9 | Orange |
| Data (-) | 10 | Brown |
| Clock (-) | 11 | Lilac |
| N. C. | 12 | - |



View of the connector M23 fitted to the encoder body SSI

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