



**Absolute encoders
ARS60 SSI/Parallel**

ARS60-BDA04096



Model Name > **ARS60-BDA04096**
Part No. > **1031539**



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: | 4,096 |
| Max. number of revolutions: | 1 |
| Resolution power: | 4,096 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: Through hollow shaft

| | |
|---|--|
| Shaft diameter: | 6 mm 8 mm 10 mm 12 mm 14 mm 15 mm 1/4 " 3/8 " ¹⁾ 1/2 " ¹⁾ |
| Mass: | 0.3 kg |
| Start up torque: | 2.2 Ncm |
| Operating torque: | 1.6 Ncm |
| Maximum operating speed: | 3,000 /min |
| Bearing lifetime: | 3.6 x 10 ⁹ revolutions |
| Max. angular acceleration: | 500,000 rad/s ² |
| Permissible movement axial static/dynamic: | ± 0.5 mm, ± 0.2 mm |
| Permissible movement radial static/dynamic: | ± 0.3 mm, ± 0.1 mm |
| Operation of zero-set: | ≥ 100 ms ²⁾ |

¹⁾ Collets for 6, 8, 10, 12, 14 mm and 1/4 ", 3/8 " and 1/2 " as accessories, separate order item. For 15 mm shaft diameter collet is not needed. 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

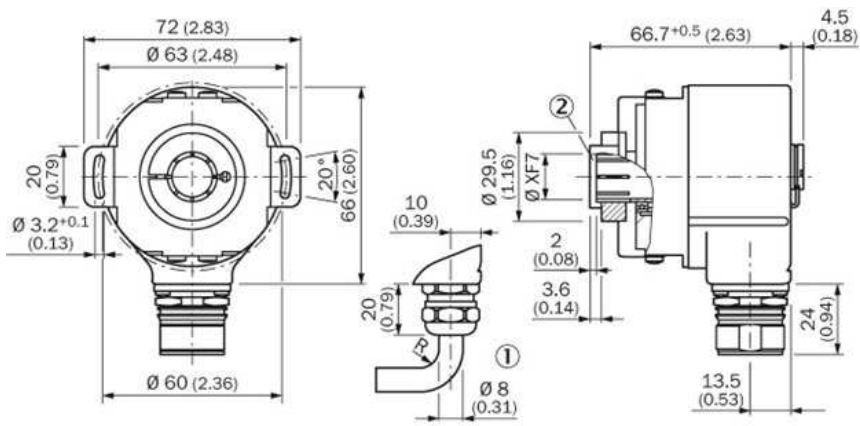
| | |
|-----------------------|-------------------------------|
| Electrical interface: | Connector M23, 12-pin, radial |
|-----------------------|-------------------------------|

Ambient data

| | |
|--------------------------------|--|
| EMC: | (according to EN 61000-6-2 and EN 61000-6-3) ¹⁾ |
| Enclosure rating: | IP 64 (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⁾

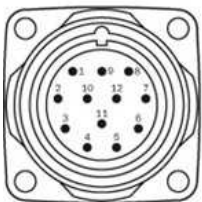
Dimensional drawing



PIN assignment

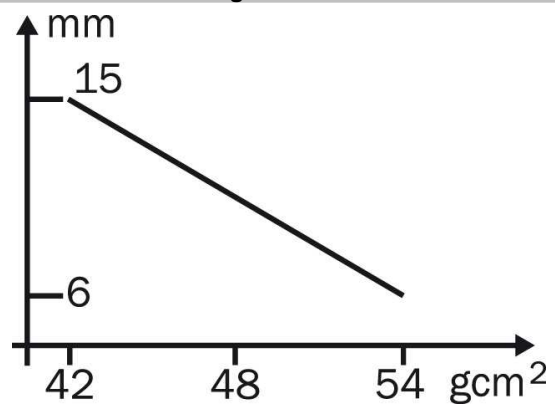
- Allocation for encoder with 12-pin connector; SSI interface

| 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

Drehzahlbetrachtung



Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com