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DATA SHEET

# ARS20-F6432768

ARS20
Absolute encoders

SICK Sensor Intelligence

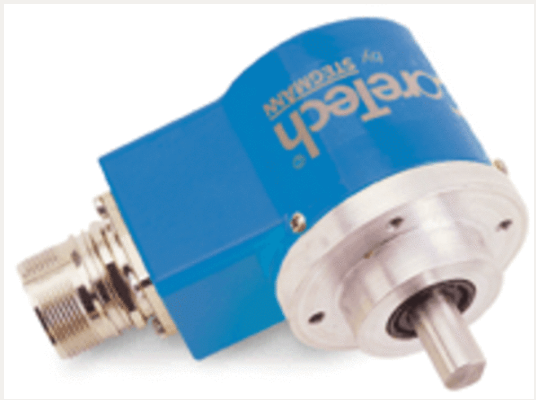


Illustration may differ

# ABSOLUTE ENCODERS

# ARS20-F6432768

## ORDERING INFORMATION

| Type | part no. |
| --- | --- |
| ARS20-F6432768 | 7101951 |

Further device versions and accessories at www.sick.com/ARS20

## DETAILED TECHNICAL DATA

### PERFORMANCE

| | |
| --- | --- |
| Number of steps per revolution (max. resolution) | 32,768 (15 bit) |
| Measuring step deviation | 0.005° binary number of steps<br>0.016° non-binary number of steps |
| Error limits G | 0.035° (binary number of steps) [1]<br>0.046° (non-binary number of steps) [2] |
| Repeatability standard deviation $\sigma_r$ | 0.005° |

[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 | Parallel data world |
| Initialization time | 40 ms |
| Code type | Gray |
| Code sequence parameter adjustable | CW (clockwise) [1] |
| Measured value backlash | 0.005° |
| Response threshold | 0.003° |

[1] Increasing when viewing the clockwise rotating shaft.

### ELECTRICAL DATA

| | |
| --- | --- |
| Connection type | Male connector, MS, 23-pin, radial |
| Supply voltage | 10 ... 30 V |
| Operating current | Typ. 90 mA |
| Switching level of control inputs | Logic H = 0.7 x $U_s$, Logic L = 0 V ... 0.3 x $U_s$ |

[1] Only with shaft stationary (note initialisation time).

| | |
|---|---|
| Actuation of set button | ≥ 100 ms [1] |

[1] Only with shaft stationary (note initialisation time).

## MECHANICAL DATA

| | |
|---|---|
| Mechanical design | Solid shaft, Servo flange |
| Shaft diameter | 3/8″ |
| Weight | Approx. 0.22 kg [1] |
| Start up torque | 3.4 Ncm |
| Operating torque | 2.6 Ncm |
| Permissible shaft loading | 20 N (radial)<br>10 N (axial) |
| Operating speed | ≤ 6,000 $min^{-1}$ with shaft seal<br>≤ 10,000 $min^{-1}$ without shaft seal |
| Moment of inertia of the rotor | 54 $gcm^2$ |
| Bearing lifetime | 3.6 x $10^9$ revolutions |
| Angular acceleration | ≤ 500,000 $rad/s^2$ |

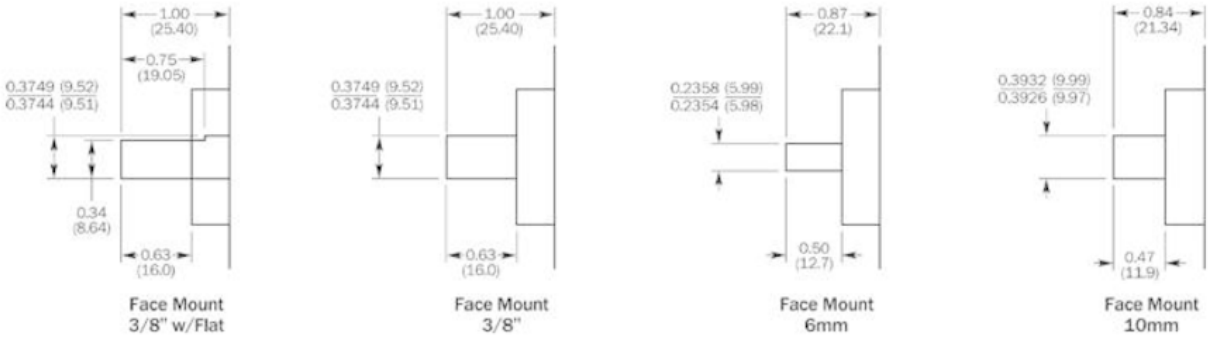
[1] Based on encoder with male connector.

## AMBIENT DATA

| | |
|---|---|
| EMC | According to EN 61000-6-2 and EN 61000-6-3 |
| Enclosure rating | IP65 (IEC 60529) [1] |
| Permissible relative humidity | 90 % (Condensation not permitted) |
| Operating temperature range | –20 °C ... +85 °C |
| Storage temperature range | –40 °C ... +100 °C |
| Resistance to shocks | 50 g, 11 ms (EN 60068-2-27) |
| Resistance to vibration | 20 g, 10 Hz ... 150 Hz (EN 60068-2-6) |

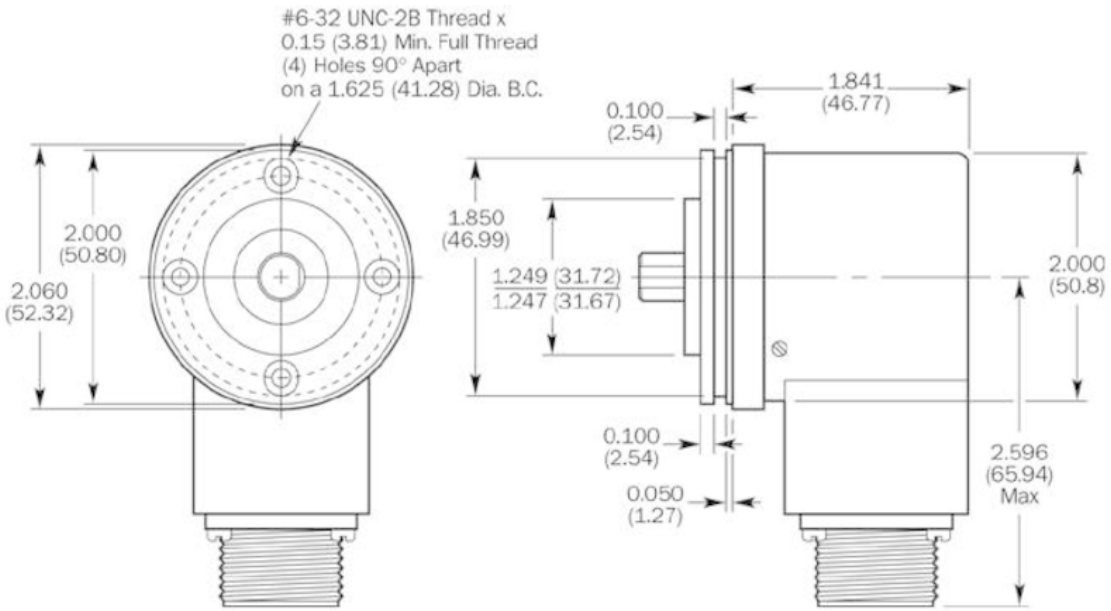
[1] With mating connector fitted.

**DIMENSIONAL DRAWING**




Dimensions in mm (inch)

**DIMENSIONAL DRAWING**




Dimensions in mm (inch)

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/7101951

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# SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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