



# ARS25-AFA08192

ARS25

**ABSOLUTE ENCODERS**

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	part no.
ARS25-AFA08192	7101980

Other models and accessories → [www.sick.com/ARS25](http://www.sick.com/ARS25)

## Detailed technical data

### Performance

<b>Number of steps per revolution (max. resolution)</b>	8,192 (13 bit)
<b>Measuring step</b>	360° / number of steps
<b>Measuring step deviation</b>	0.005° binary number of steps 0.016° non-binary number of steps
<b>Error limits G</b>	0.035° (binary number of steps) 0.046° (non-binary number of steps)
<b>Repeatability standard deviation <math>\sigma_r</math></b>	0.005°

### Interfaces

<b>Communication interface</b>	SSI
<b>Initialization time</b>	40 ms
<b>Code type</b>	Gray
<b>Code sequence parameter adjustable</b>	CW (clockwise) <sup>1)</sup>
<b>Measured value backlash</b>	0.005°
<b>Response threshold</b>	0.003°

<sup>1)</sup> Increasing when viewing the clockwise rotating shaft.

### Electrical data

<b>Connection type</b>	Male connector, M23, 12-pin, radial
<b>Supply voltage</b>	10 ... 30 V
<b>Switching level of control inputs</b>	Logic H = 0.7 x U <sub>S</sub> , Logic L = 0 V ... 0.3 x U <sub>S</sub>
<b>Actuation of set button</b>	≥ 100 ms <sup>1)</sup>

<sup>1)</sup> Only with shaft stationary (note initialisation time).

### Mechanical data

<b>Mechanical design</b>	Solid shaft, Square flange
<b>Shaft diameter</b>	3/8"
<b>Weight</b>	Approx. 0.35 kg <sup>1)</sup>
<b>Start up torque</b>	3.4 Ncm

<sup>1)</sup> Based on encoder with male connector.

<b>Operating torque</b>	2.6 Ncm
<b>Permissible shaft loading</b>	20 N (radial) 10 N (axial)
<b>Operating speed</b>	≤ 6,000 min <sup>-1</sup> with shaft seal ≤ 10,000 min <sup>-1</sup> without shaft seal
<b>Moment of inertia of the rotor</b>	54 gcm <sup>2</sup>
<b>Bearing lifetime</b>	3.6 x 10 <sup>9</sup> revolutions
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>

<sup>1)</sup> Based on encoder with male connector.

## Ambient data

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Permissible relative humidity</b>	90 % (Condensation not permitted)
<b>Operating temperature range</b>	-20 °C ... +85 °C
<b>Storage temperature range</b>	-40 °C ... +100 °C
<b>Resistance to shocks</b>	50 g, 11 ms (EN 60068-2-27)
<b>Resistance to vibration</b>	20 g, 10 Hz ... 150 Hz (EN 60068-2-6)

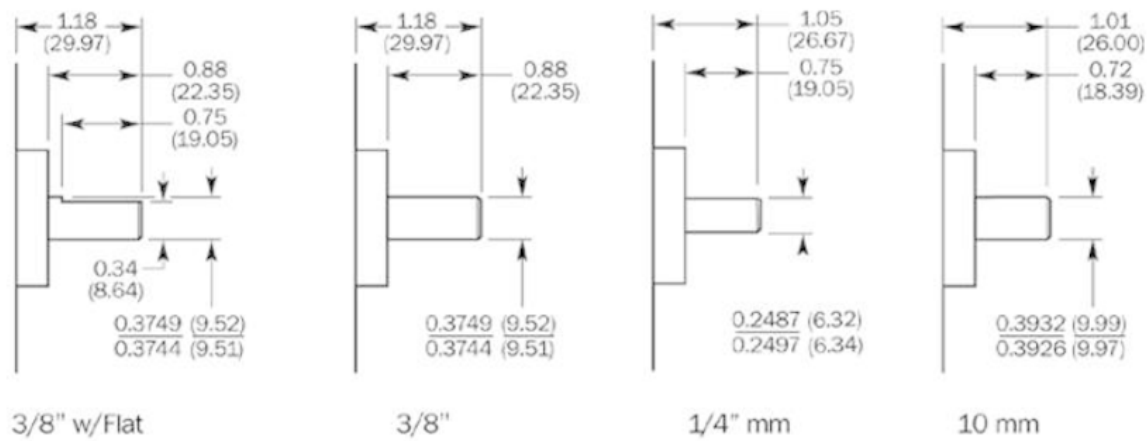
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓

## Classifications

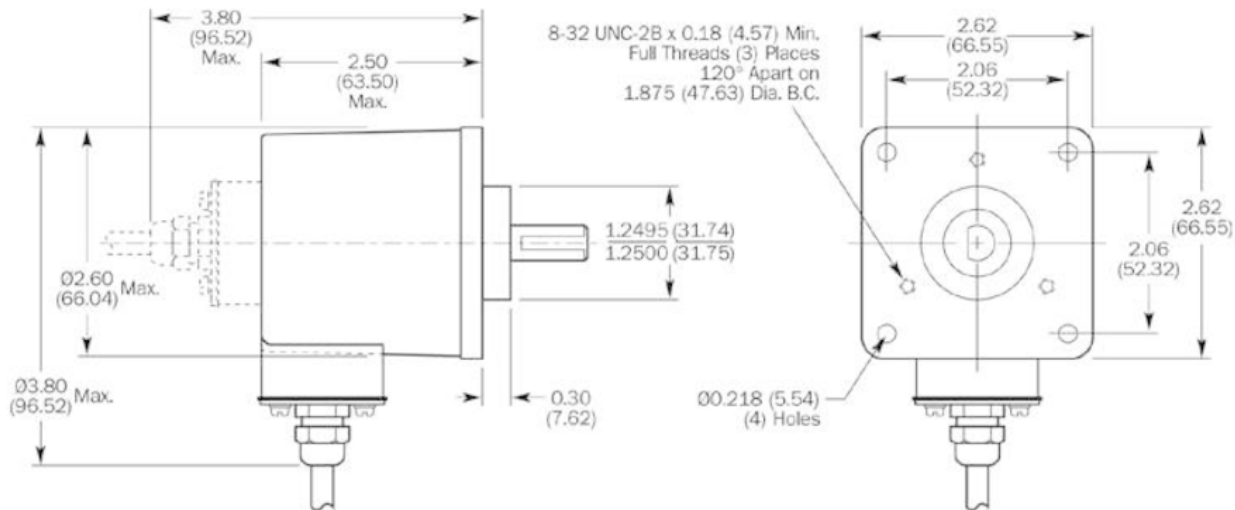
<b>ECLASS 5.0</b>	27270502
<b>ECLASS 5.1.4</b>	27270502
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270502
<b>ECLASS 8.0</b>	27270502
<b>ECLASS 8.1</b>	27270502
<b>ECLASS 9.0</b>	27270502
<b>ECLASS 10.0</b>	27270502
<b>ECLASS 11.0</b>	27270502
<b>ECLASS 12.0</b>	27270502
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>ETIM 8.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

Dimensional drawing



Dimensions in mm (inch)

Dimensional drawing



Dimensions in mm (inch)

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)