

# EDS35-0KF0A020A

EDS/EDM35

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE DSL®

**SICK**  
Sensor Intelligence.

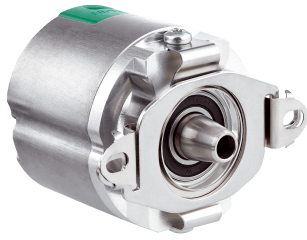


Illustration may differ



### Ordering information

Type	Part no.
EDS35-0KF0A020A	1090708

Other models and accessories → [www.sick.com/EDS\\_EDM35](http://www.sick.com/EDS_EDM35)

### Detailed technical data

#### Performance

Position	
Resolution per revolution	20 bit
System accuracy	± 50 μ <sup>1)</sup>
Signal noise (σ)	± 3 μ <sup>2)</sup>
Number of the absolute ascertainable revolutions	1
Available memory area	8,192 Byte

<sup>1)</sup> 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.

<sup>2)</sup> Repeatability standard deviation in accordance with DIN 1319-1:1995.

#### Interfaces

<b>Code sequence</b>	Increasing, when turning the shaft For clockwise rotation, looking in direction "A" (see dimensional drawing)
<b>Communication interface</b>	HIPERFACE DSL®
<b>Initialization time</b>	≤ 500 ms <sup>1)</sup>
<b>Measurement external temperature resistance</b>	32-bit value, without prefix (1 Ω) 0 ... 209.600 Ω <sup>2)</sup>

<sup>1)</sup> From reaching a permitted operating voltage.

<sup>2)</sup> Without sensor tolerance; at -40 °C ... +160 °C: NTC +2K; PTC+3K (KTY84-130/PT1000). For additional conversion function of PT1000 to KTY84/130, see technical description.

#### Electrical data

<b>Connection type</b>	Male connector, 4-pin
<b>Supply voltage</b>	7 V ... 12 V
<b>Warm-up time voltage ramp</b>	Max. 180 ms <sup>1)</sup>
<b>Current consumption</b>	≤ 150 mA <sup>2)</sup>
<b>MTTF: mean time to dangerous failure</b>	145 years (EN ISO 13849) <sup>3)</sup>

<sup>1)</sup> Duration of voltage ramp between 0 and 7.0 V.

<sup>2)</sup> Current rating applies when using interface circuit suggestions as shown in HIPERFACE DSL® manual (8017595).

<sup>3)</sup> 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 60 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

## Mechanical data

<b>Shaft version</b>	Tapered shaft
<b>Dimensions</b>	See dimensional drawing
<b>Weight</b>	≤ 100 g
<b>Moment of inertia of the rotor</b>	5 gcm <sup>2</sup>
<b>Operating speed</b>	≤ 12,000 min <sup>-1</sup>
<b>Angular acceleration</b>	≤ 250,000 rad/s <sup>2</sup>
<b>Start up torque</b>	≤ 0.6 Ncm, +20 °C
<b>Permissible movement static</b>	± 1 mm axial <sup>1)</sup>
<b>Permissible movement dynamic</b>	± 0.1 mm radial
<b>Life of ball bearings</b>	50,000 h at 6,000 min <sup>-1</sup> (at a flange temperature of 70 °C)

<sup>1)</sup> Temperature expansion, mechanical attachment.

## Ambient data

<b>Operating temperature range</b>	-40 °C ... +115 °C <sup>1)</sup>
<b>Storage temperature range</b>	-40 °C ... +125 °C, without package
<b>Relative humidity/condensation</b>	90 %, Condensation not permitted
<b>Resistance to shocks</b>	100 g, 6 ms (according to EN 60068-2-27)
<b>Frequency range of resistance to vibrations</b>	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
<b>EMC</b>	According to EN 61000-6-2, EN 61000-6-4 and IEC 61326-3 <sup>2)</sup>
<b>Enclosure rating</b>	IP40, When cover is closed and mating connector is attached (IEC 60529-1)

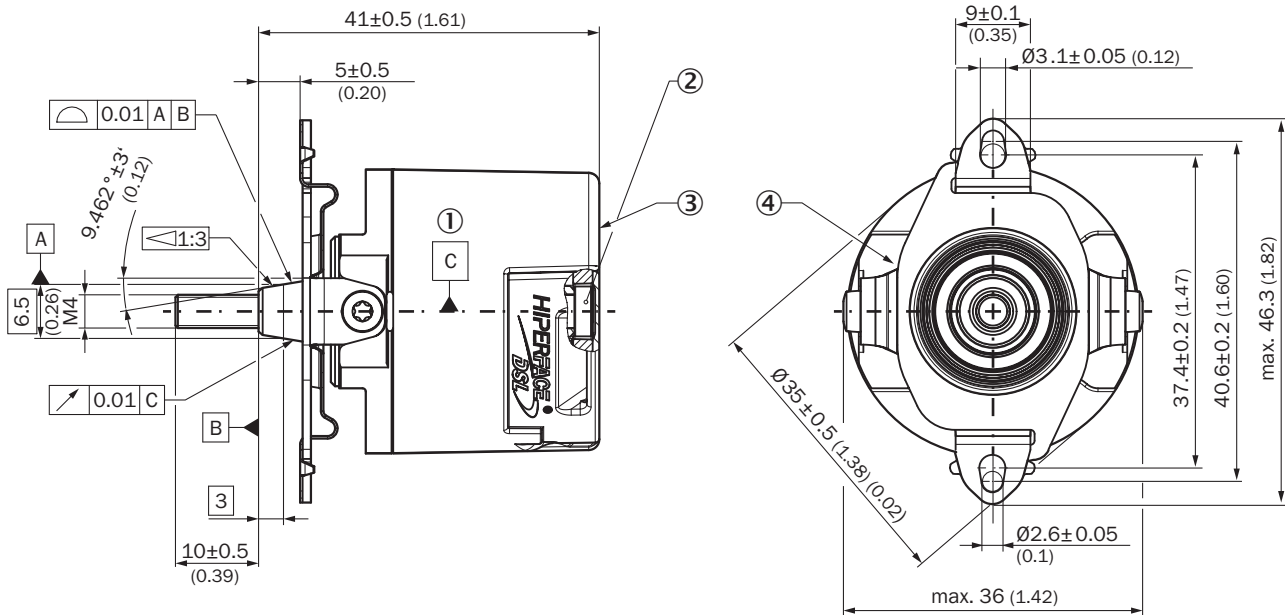
<sup>1)</sup> Given typical thermal connection between motor flange and encoder stator coupling. The max. internal sensor temperature may not exceed 125 °C.

<sup>2)</sup> According to the listed standards, EMC is guaranteed if the motor feedback system with mating connector inserted is connected to the central grounding point of the motor controller via a cable shield. If other shielding concepts are used, users must perform their own tests. Class A device.

## Classifications

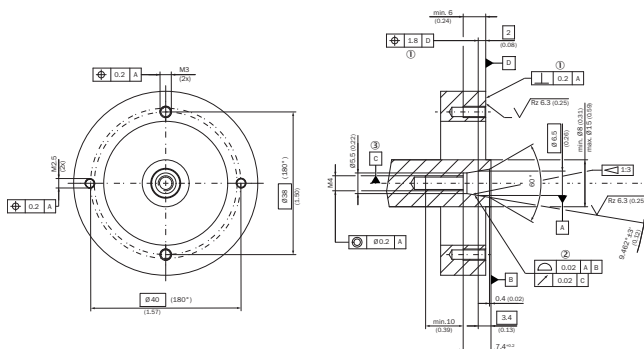
<b>ECLASS 5.0</b>	27270590
<b>ECLASS 5.1.4</b>	27270590
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270590
<b>ECLASS 8.0</b>	27270590
<b>ECLASS 8.1</b>	27270590
<b>ECLASS 9.0</b>	27270590
<b>ECLASS 10.0</b>	27273805
<b>ECLASS 11.0</b>	27273901
<b>ECLASS 12.0</b>	27273901
<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))



- ① Bearing of the encoder shaft
- ② Torx 15 cylinder screw
- ③ Measuring point for vibrations
- ④ Measuring point for operating temperature

### Attachment specifications



- ① Permanently
- ② Dynamic
- ③ Bearing of the drive shaft

### PIN assignment

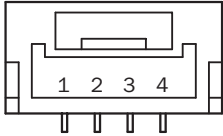
PIN assignment temperature sensor



K connection type

PIN	Signal	Explanation
1	T+	Thermistor connection
2	T-	Thermistor connection (to ground)
Recommended outer diameter of set of stranded wires: 2.2 mm ± 0.1 mm		
Recommended mating connector: Harwin M80-8990205		

Supply / Communication pin assignment

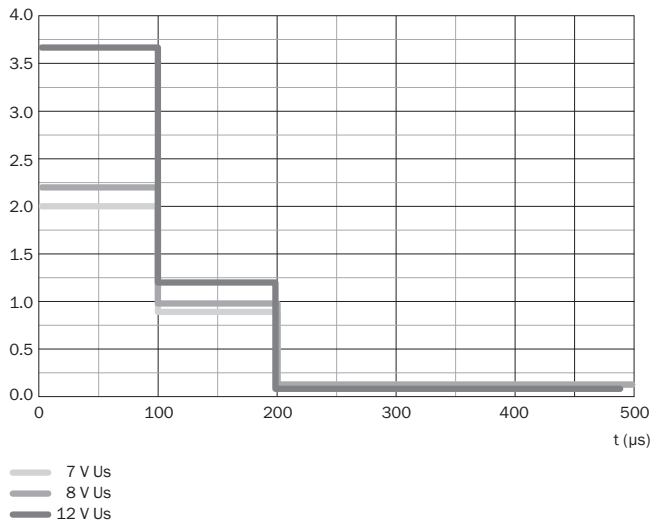


Integrated in motor cable = K

PIN	Signal	Explanation
1		Not connected - no function
2	+U <sub>S</sub> /DSL+	Supply 7 V ... 12 V
3	GND/DSL-	Ground connection
4		Not connected - no function
Recommended outer diameter of set of stranded wires: 2.8 mm ±0.3 mm		
Recommended mating connector: JST (GHR-04V-S)		




## Diagrams

Typical inrush current (A)



### Recommended accessories

Other models and accessories → [www.sick.com/EDS\\_EDM35](http://www.sick.com/EDS_EDM35)

	Brief description	Type	Part no.
Nuts and screws			
	500 pieces, Screws with Precote 85-8 coating; M4*48 (4093779)	BEF-MK-S09	2103244
	100 pieces, Screws with Precote 85-8 coating; M4*48 (4093779)	BEF-MK-S10	2103272
	10 pieces, Screws with Precote 85-8 coating; M4*48 (4093779)	BEF-MK-S11	2103274
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, stranded wire, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE DSL®</li> <li>• <b>Cable:</b> 0.2 m, 2-wire</li> <li>• <b>Description:</b> HIPERFACE DSL®, unshielded</li> </ul>	DOL-0B02-G0M2XC2	2079920
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, stranded wire, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE DSL®</li> <li>• <b>Cable:</b> 0.36 m, 2-wire</li> <li>• <b>Description:</b> HIPERFACE DSL®, twisted, shielded</li> </ul>	DOL-0B02-G0M3AC2	2108944

## 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)