EDM35-2VF0A024A

sHub

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE DSL®

SICK
Sensor Intelligence.
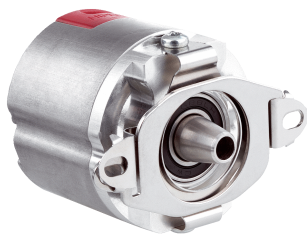
EDM35-2VF0A024A | sHub

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE DSL®

Illustration may differ

CE

Ordering information

Type	Part no.
EDM35-2VF0A024A	1106851

Other models and accessories ➜ www.sick.com/sHub

Detailed technical data

Safety-related parameters

Safety integrity level	SIL 2 (IEC 61508), SILCL3 (IEC 62061) [1]
Category	3 (EN ISO 13849-1:2015)
Systematic suitability	SC 3 (IEC61508)
Test rate	24 h
Maximum demand rate	216 µs
Performance level	PL d (EN ISO 13849-1:2015)
Basis for safety function	Safe singleturn absolute position
Safety-related resolution	13 bits
Maximum difference between Safe Position 1 and Safe Position 2	3 increments
PFH$_D$: Probability of dangerous failure per hour	31.0 x 10^{-9} [2]
T$_M$ (mission time)	20 years
Safety-related accuracy	0.135° [3]

[1] For more detailed information on the exact configuration of your machine/unit, please consult your relevant SICK branch office.

[2] At 60 °C ambient temperature.

[3] The safety-related accuracy specifies the maximum position error limit with which the safety functions can be supported. This results from the safety-related resolution: (360° / 13 bit = 0.045°). The accuracy to be used for project planning results from the maximum difference between Safe Position 1 and Safe Position 2. Thus the following relationship exists (safety-related accuracy = number of increments difference between Safe Position 1 and Safe Position 2 * 0.045).

Performance

Position	
Resolution per revolution	24 bit
System accuracy	± 25 ″ [1]
Signal noise (σ)	± 1 ″ [2]
Number of the absolute ascertainable revolutions	4,096

[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] Repeatability standard deviation in accordance with DIN 1319-1:1995.

Interfaces

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

[1] From reaching a permitted operating voltage.

[2] 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

Supply voltage	7 V ... 12 V
Warm-up time voltage ramp	Max. 180 ms [1]
Current consumption	≤ 150 mA [2]
Compatible with sHub®	✓

[1] Duration of voltage ramp between 0 and 7.0 V.

[2] Current rating applies when using interface circuit suggestions as shown in HIPERFACE DSL ® manual (8017595).

Mechanical data

Shaft version	Tapered shaft
Dimensions	See dimensional drawing
Weight	≤ 100 g
Moment of inertia of the rotor	5 gcm²
Operating speed	≤ 9,000 min⁻¹
Angular acceleration	≤ 250,000 rad/s²
Start up torque	≤ 0.6 Ncm, +20 °C
Permissible movement static	± 1 mm axial [1]
Permissible movement dynamic	± 0.025 mm radial [2]
Life of ball bearings	50,000 h at 6,000 min⁻¹ (at a flange temperature of 70 °C)

[1] Temperature expansion, mechanical attachment.

[2] For SIL2 version.

Ambient data

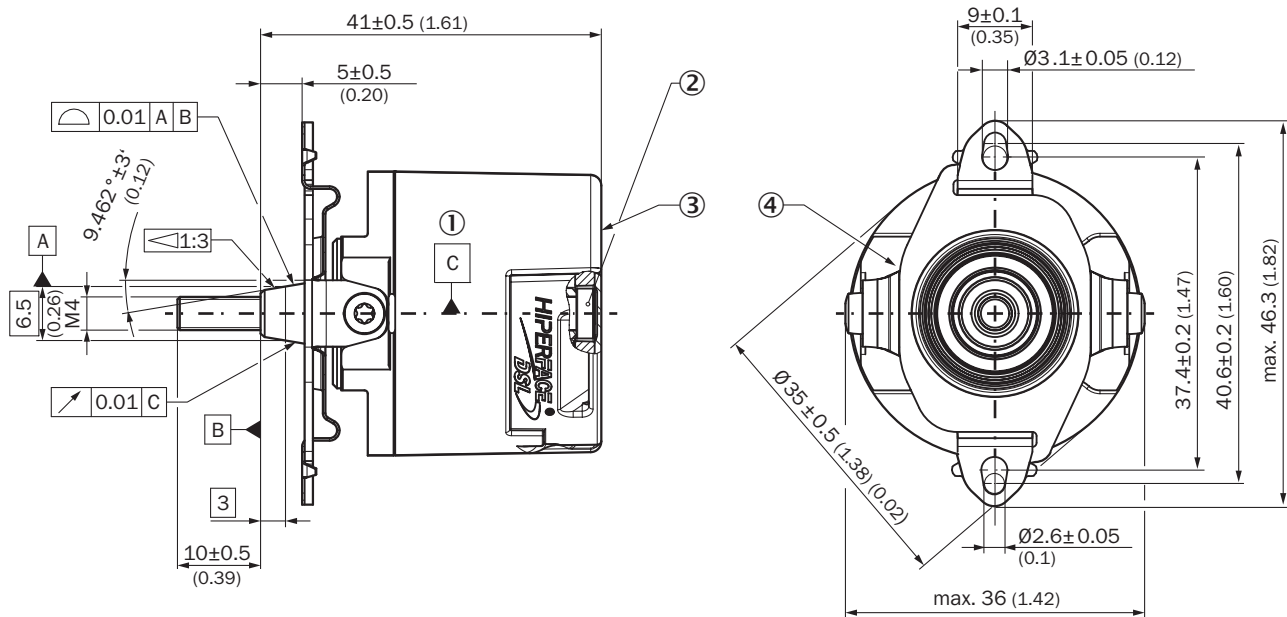|	
Storage temperature range	–40 °C ... +125 °C, without package
Relative humidity/condensation	90 %, Condensation not permitted
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27)
Frequency range of resistance to vibrations	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)
EMC	According to EN 61000-6-2: 2016, EN 61000-6-4: 2006, IEC 6100-6-7: 2014 [1]
Enclosure rating	IP40, When cover is closed and mating connector is attached (IEC 60529-1)

[1] 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.
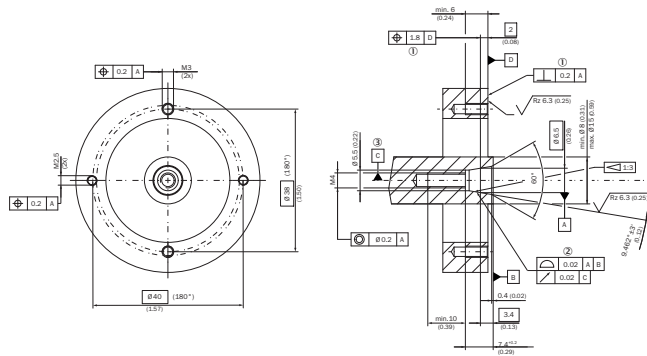
Classifications

ECLASS 5.0	27270590

ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27273805
ECLASS 11.0	27273901
ECLASS 12.0	27273901
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	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
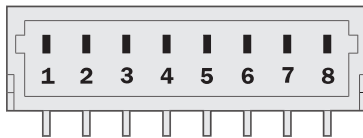
Attachment specifications

① Permanently
② Dynamic
③ Bearing of the drive shaft

PIN assignment

Supply / Communication pin assignment

V connection type

PIN	Signal	Explanation
1	+U_S	Supply
2	GND	Ground connection
3	DSL-	DSL negative
4	DSL+	DSL positive
5	RxD+	Receiver data positive
6	RxD-	Receiver data negative
7	TxD-	Sender data negative
8	TxD+	Sender data positive
Recommended mating connector: JST (GHR-08V-S)		

Diagrams

Typical inrush current (A)

7 V Us
8 V Us
12 V Us
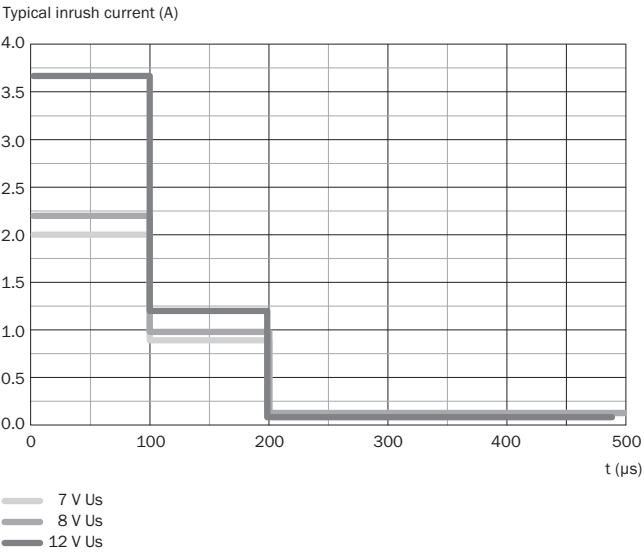
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SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals 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."

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