Product data sheet

# ACM36-K1K0-K01

## ACS/ACM36

**ABSOLUTE ENCODERS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| ACM36-K1K0-K01 | 6039751 |

Other models and accessories ➜ www.sick.com/ACS_ACM36

## Detailed technical data

### Performance

| | |
|---|---|
| **Number of steps per revolution (max. resolution)** | 2,979 |
| **Number of revolutions** | 16 (4 bit) |
| **Max. resolution (number of steps per revolution x number of revolutions)** | 4 bit (2,979 x 16) |
| **Resolution per measuring step** | ≥ 5.2 µA [1] |
| **Resolution** | 0.11° ... 1.93° [1] |
| **Measurement range** | 0° ... 5,760°, programmable |
| **Minimum measuring range** | ≥ 336° |
| **Accuracy** | ± 0.2 % based on the programmed angle [1] |

[1] See measuring step diagram/calculation formula for details.

### Interfaces

| | |
|---|---|
| **Communication interface** | Analog |
| **Communication Interface detail** | Current / 4...20 mA |
| **Code sequence parameter adjustable** | CW (clockwise) [1] |
| **Load resistance** | ≤ 600 Ω |

[1] Default clockwise - CCW possible via Keyboard programming.

### Electrical data

| | |
|---|---|
| **Connection type** | Cable, radial, 1.5 m |
| **Supply voltage** | 19 ... 33 V DC |
| **Current consumption** | < 80 mA |
| **Reverse polarity protection** | ✓ |
| **MTTFd: mean time to dangerous failure** | 850 years (EN ISO 13849-1) [1] |
| **Electrical wiring** | 3-wire |

[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.

### Mechanical data

| | |
|---|---|
| **Mechanical design** | Solid shaft, Servo flange |
| **Shaft diameter** | 6 mm |

| | |
|---|---|
| **Shaft length** | 12.4 mm |
| **Weight** | 0.1 kg |
| **Shaft material** | Stainless steel 1,4305 |
| **Flange material** | AlMgSi |
| **Housing material** | AlMgSi |
| **Material, cable** | PVC |
| **Start up torque** | 0.5 Ncm (+20 °C) |
| **Operating torque** | 0.2 Ncm (+20 °C) |
| **Permissible shaft loading** | 40 N (radial)<br>20 N (axial) |
| **Operating speed** | ≤ 10,000 $min^{-1}$ |
| **Moment of inertia of the rotor** | 10 $gcm^2$ |
| **Bearing lifetime** | 1 x 10^6 revolutions |
| **Angular acceleration** | ≤ 500,000 $rad/s^2$ |

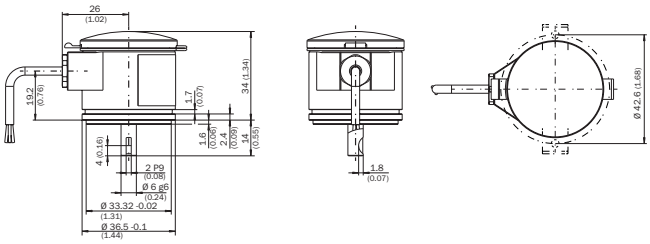
## Ambient data

| | |
|---|---|
| **EMC** | According to EN 61000-6-2 and EN 61000-6-4 |
| **Enclosure rating** | IP65 |
| **Permissible relative humidity** | 90 % (Condensation not permitted) |
| **Operating temperature range** | –30 °C ... +80 °C |
| **Storage temperature range** | –40 °C ... +100 °C, without package |
| **Resistance to shocks** | 25 g, 11 ms (EN 60068-2-27) |
| **Resistance to vibration** | 4 g, 5 Hz ... 100 Hz (EN 60068-2-6) |

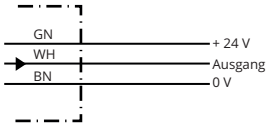
## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270502 |
| **ECLASS 5.1.4** | 27270502 |
| **ECLASS 6.0** | 27270590 |
| **ECLASS 6.2** | 27270590 |
| **ECLASS 7.0** | 27270502 |
| **ECLASS 8.0** | 27270502 |
| **ECLASS 8.1** | 27270502 |
| **ECLASS 9.0** | 27270502 |
| **ECLASS 10.0** | 27270502 |
| **ECLASS 11.0** | 27270502 |
| **ECLASS 12.0** | 27270502 |
| **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))

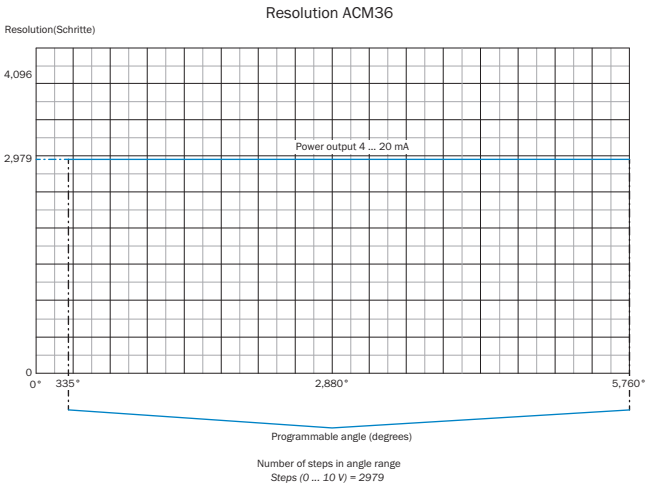



## PIN assignment




## Resolution diagram

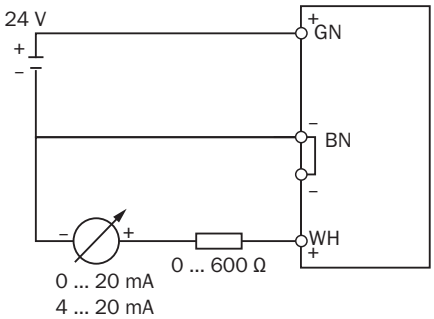
Multiturn, current output




Configured range (α) must be at least 10°

## Electrical wiring

Current output




3-wire technology

At a supply voltage of 18 V, the internal resistance of the measuring device must not exceed 600 ohm.

## Recommended accessories

Other models and accessories ➜ www.sick.com/ACS_ACM36

| | Brief description | Type | Part no. |
|---|---|---|---|
| Shaft adaptation | | | |
| | Bellows coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, –30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub | KUP-0606-B | 5312981 |
| | Double-loop coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular ± 10°; max. speed 3,000 rpm, –30 °C to +80 °C, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange | KUP-0606-D | 5340152 |
| | Claw coupling, shaft diameter 6 mm / 6 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, –30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane | KUP-0606-J | 2127057 |
| | Cross-slotted coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.3 mm, axial ± 0.2 mm, angle ± 3°; max. speed 10,000 rpm, –10° to +80 °C, max. torque 80 Ncm; material: fiber-glass reinforced polyamide, aluminum hub | KUP-0606-S | 2056406 |
| | Bar coupling, shaft diameter 6 mm /8 mm, maximum shaft offset radial ± 0.3 mm, axial ± 0.2 mm, angle ± 3°, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub | KUP-0608-S | 5314179 |
| | Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, –30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub | KUP-0610-B | 5312982 |
| | Double loop coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radially +/- 2,5 mm, axially +/-3 mm, angle +/- 10 degrees;max. speed 3.000 rpm, –30 to +80 degrees Celsius, torsional spring stiffness of 25 Nm/rad | KUP-0610-D | 5326697 |
| | Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial +/- 0.3 mm, axial +/- 0.4 mm, angular +/- 2.5°; max. speed 12,000 rpm, –10° to +80 °C, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin | KUP-0610-F | 5312985 |

| | Brief description | Type | Part no. |
|---|---|---|---|
| | Claw coupling, shaft diameter 6 mm / 10 mm, damping element 80 shore blue, maximum shaft offset: radial ± 0.22 mm, axial ± 1 mm angular ± 1.3°, max. speed 19,000 rpm, angle of twist max. 10°, –30 °C to +80 °C, max. torque 800 Ncm, tightening torque of screws: ISO 4029 150 Ncm, material: aluminum flange, damping element: polyurethane | KUP-0610-J | 2127056 |
| | Bar coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radial ± 0,3 mm, axial ± 0,3 mm, angular ± 3°; max. speed 10.000 rpm, –10° to +80 °C, max. torque: 80 Ncm, material: fiber-glass reinforced polyamide, aluminum hub | KUP-0610-S | 2056407 |
| Others | | | |
| | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Description:** Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | DOS-1205-G | 6009719 |
| | • **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded<br>• **Description:** Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm²<br>• **Note:** For field bus technology | STE-1205-G | 6022083 |

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