

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

| | |
|---|---|
| Max. resolution (number of steps per revolution x number of revolutions) | 2,979 X 16 |
| Resolution per measuring step | ≥ 5.2 μA ¹⁾ |
| Measurement range | 0° ... 5,760°, programmable |
| Minimum measuring ranges | ≥ 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 |
| SSI | |
| Code sequence parameter adjustable | CW (clockwise) ¹⁾ |

¹⁾ Default clockwise - CCW possible via Keyboard programming.

Electrical data

| | |
|--|--|
| Connection type | Cable, radial, 1.5 m |
| Supply voltage | 19 ... 33 V DC |
| Power 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 |
| Operating torque | 0.2 Ncm |
| Permissible Load capacity of shaft | 20 N / axial 40 N / radial |
| Moment of inertia of the rotor | 10 gcm ² |
| Bearing lifetime | 1 x 10 ⁶ revolutions |
| Angular acceleration | ≤ 500,000 rad/s ² |
| Operating speed | ≤ 10,000 min ⁻¹ |

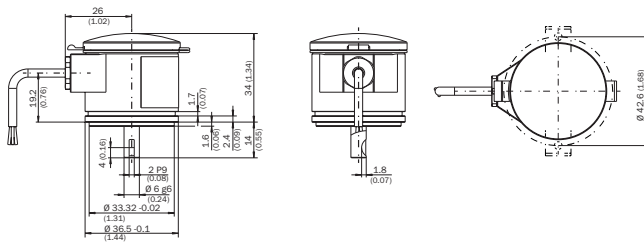
Ambient data

| | |
|--------------------------------------|-------------------------------------|
| EMC | EN 61000-6-2 EN 61000-6-4 |
| Enclosure rating | IP65 |
| Permissible relative humidity | 90 % |
| 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) |

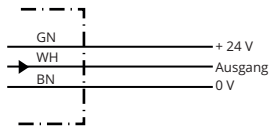
Classifications

| | |
|-----------------------|----------|
| ECl@ss 5.0 | 27270502 |
| ECl@ss 5.1.4 | 27270502 |
| ECl@ss 6.0 | 27270590 |
| ECl@ss 6.2 | 27270590 |
| ECl@ss 7.0 | 27270502 |
| ECl@ss 8.0 | 27270502 |
| ECl@ss 8.1 | 27270502 |
| ECl@ss 9.0 | 27270502 |
| ECl@ss 10.0 | 27270502 |
| ECl@ss 11.0 | 27270502 |
| ETIM 5.0 | EC001486 |
| ETIM 6.0 | EC001486 |
| ETIM 7.0 | EC001486 |
| UNSPSC 16.0901 | 41112113 |

Dimensional drawing (Dimensions in mm (inch))



PIN assignment

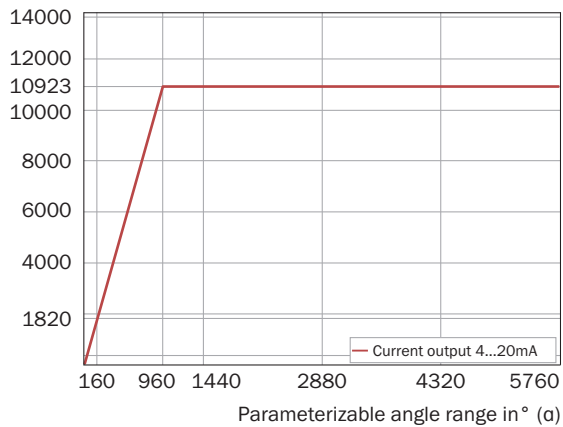


Resolution diagram

Multiturn, current output

Multiturn resolution - current

Measuring steps



Caution!

Parameterization range (α) must be at least 160°.

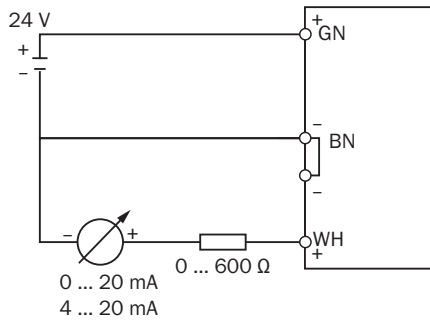
$$\text{Measuring steps } (\alpha \leq 960^\circ): \frac{\text{Angle } (\alpha) * 65535 \text{ meas. steps}}{5760^\circ}$$

$$\text{Measuring steps } (\alpha > 960^\circ): 10923 \text{ measuring steps}$$

$$\text{Output res. per measuring step: (current)} \frac{16 \text{ mA}}{\text{Measuring steps}}$$

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. |
|-----------------------------------|---|--------------|----------|
| Other mounting accessories | | | |
| | <ul style="list-style-type: none"> Description: Servo clamps, small, for servo flange (clamping claws, mounting eccentric), 3 pcs, without mounting hardware Items supplied: Without mounting hardware | BEF-WK-RESOL | 2039082 |
| Plug connectors and cables | | | |
| | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight Authorizations: UL Description: Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | DOS-1205-G | 6009719 |
| | <ul style="list-style-type: none"> Connection type head A: Male connector, M12, 5-pin, straight Authorizations: UL Description: Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² Note: For field bus technology | STE-1205-G | 6022083 |
| Shaft adaptation | | | |
| | <ul style="list-style-type: none"> Description: 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 80 Ncm; material: stainless steel bellows, aluminum hub | KUP-0606-B | 5312981 |
| | <ul style="list-style-type: none"> Description: 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 |
| | <ul style="list-style-type: none"> Description: 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 |

| | Brief description | Type | Part no. |
|---|---|------------|----------|
|  | <ul style="list-style-type: none"> Description: Bar coupling, shaft diameter 6 mm / 8 mm, maximum shaft offset radial ± 0.3 mm, axial ± 0.2 mm, angle $\pm 3^\circ$, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub | KUP-0608-S | 5314179 |
|  | <ul style="list-style-type: none"> Description: Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. speed 10,000 rpm, -30°C to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub | KUP-0610-B | 5312982 |
|  | <ul style="list-style-type: none"> Description: 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 |
|  | <ul style="list-style-type: none"> Description: Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial ± 0.3 mm, axial ± 0.4 mm, angular $\pm 2.5^\circ$; max. speed 12,000 rpm, -10° to $+80^\circ\text{C}$, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin | KUP-0610-F | 5312985 |
|  | <ul style="list-style-type: none"> Description: Bar coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radial ± 0.3 mm, axial ± 0.3 mm, angular $\pm 3^\circ$; max. speed 10,000 rpm, -10° to $+80^\circ\text{C}$, max. torque: 80 Ncm, material: fiber-glass reinforced polyamide, aluminum hub | KUP-0610-S | 2056407 |

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