| Standard optical | KAH52 (tapered shaft) | Z-track + incremental |
|---|---|---|



The optical KAH52 singleturn encoders with Z-track and 2048 ppr SinCos incremental track, is specially designed for mounting on direct drives in the elevator technology.




Temperature range | Shock / vibration resistant | Magnetic field proof | Short-circuit proof | Reverse polarity protection | SinCos | Optical sensor

## Order code Tapered shaft

| 8.KAH52 | . | H | K | F | L | . | A | Z | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Type | | a | b | c | d | | e | f | | |

**a** *Flange*
H = with expanding coupling, ø 65 mm [2.56"]

**b** *Tapered shaft*
K = ø 10 mm [0.39"]

**c** *Interface / supply voltage*
F = analog, 1 x SinCos per 360° + 2048 ppr. 1 Vss (SinCos) / 5 V DC

**d** *Type of connection*
L = with PCB connector
(without cable, including sealing cap for tangential cable outlet)

**e** *Interface*
A = analog

**f** *Singleturn resolution*
Z = one sinusoidal and one cosinusoidal signal per revolution

| Cables and connectors | | Order no. |
|---|---|---|
| **Preassembled cables**<br>(suitable for type of connection L) | PCB connector (female contacts), 14-pin<br>single-ended<br>7 m [22.97'] PVC cable | **8.0000.62A1.0007** |

Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

© Fritz Kübler GmbH, subject to errors and changes. 12/2025

**Standard optical** | **KAH52 (tapered shaft)** | **Z-track + incremental**

## Technical data

### Mechanical characteristics

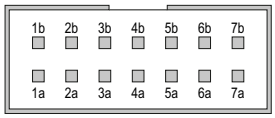
| | | |
|---|---|---|
| **Dimensionen** | diameter | ø 65 mm |
| | height | 55 mm |
| **Tapered shaft** | | ø 9.25 (1:10) |
| **Connection Method** | | expansion ring, fastening screw |
| **Maximum rotational speed** | | 2000 $min^{-1}$ |
| **Starting torque** at 20 °C [68 °F] | | < 0.01 Nm |
| **Load capacity of shaft** | radial | 80 N |
| | axial | 40 N |
| **Allowable axial deviation** | | ≤ ±0.2 mm |
| **Allowable radial deviation** | | ≤ ±0.3 mm |
| **Protection** acc. to EN 60529 | | IP40 |
| **Working temperature range** | | -40 °C ... +105 °C [-40 °F ... +221 °F] |
| **Storage temperature range** | | -40 °C ... +105 °C [-40 °F ... +221 °F] |
| **Humidity** | | 95%RH (no condensation) |
| **Weight** | | ca. 0.3 kg (excluding cable) |
| **Shock resistance** acc. EN 60068-2-27 | | |
| | acceleration | 980 $m/s^2$ |
| | testing time | 11 ms |
| | number of tests | 3 times (each direction) |
| **Vibration resistance** acc. EN 60068-2-6 | | |
| | direction | x, y, z |
| | testing time | 2 h (each direction) |
| | frequency | 10 ... 55 Hz (maintain amplitude of 1.5 mm)<br>55 ... 2000 Hz (acceleration 98 $m/s^2$) |

### Electrical characteristics

| | |
|---|---|
| **Resolution CD signal** | one Sin/Cos signal per turn |
| **Pulse rate AB signal** | 2048 ppr |
| **Output** | Sin/Cos 1 $V_{pp}$ |
| **Supply voltage** | 5 V DC (+5 %) |
| **Power consumption** | 100 mA |
| **Max. frequency -3 dB** | ≤ 100 kHz |
| **Max. cable lenght** | ≤ 30 m |
| **Signal level** | 1 $V_{pp}$ (±10%)) |
| **Offset** | $V_{off}$ = 2.5 V ±20 mV |
| **Output Signal** | A+/A- B+/B- C+/C- D+/D- R+/R- |
| **R signal amplitude** | 2 V, ±0.4 V |
| **Single-end output impedance** | 10 Ω |
| **Termination resistor ABR signal** | 100 Ω |
| **Termination resistor CD signal** | 1 kΩ |

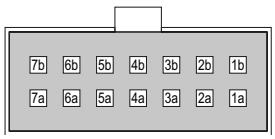
### Terminal assignment

| PCB connector (male contact), 14-pin | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function: | C- | +5 V | A- | D+ | n.c. | B+ | R- | R+ | B- | 0 V | D- | A+ | n.c. | C+ |
| Pin: | 1a | 1b | 2a | 2b | 3a | 3b | 4a | 4b | 5a | 5b | 6a | 6b | 7a | 7b |




### Terminal assignment, preassembled cables 8.0000.62A1.0007

| PCB connector (female contact), 14-pin | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function: | C- | +5 V | A- | D+ | n.c. | B+ | R- | R+ | B- | 0 V | D- | A+ | n.c. | C+ |
| Pin: | 1a | 1b | 2a | 2b | 3a | 3b | 4a | 4b | 5a | 5b | 6a | 6b | 7a | 7b |
| Core color: | WH | RD | BK | BU | – | GY | VT | OR | GR | YE | BN | LT-BU | – | PK |



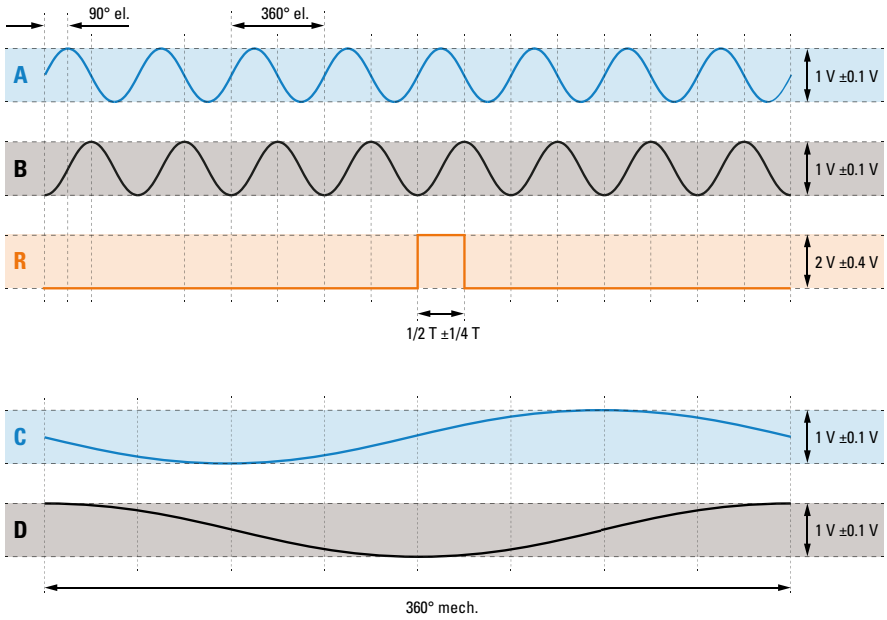


© Fritz Kübler GmbH, subject to errors and changes. 12/2025

| Standard optical | KAH52 (tapered shaft) | Z-track + incremental |
|---|---|---|

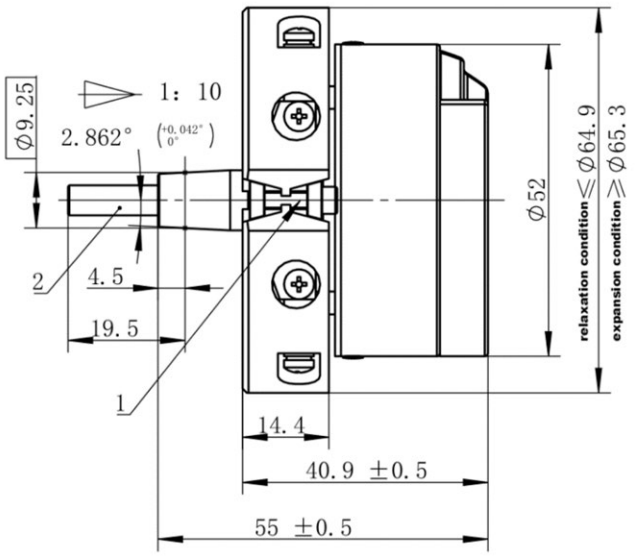
## Waveform

CW direction:
clockwise of shaft of the encoder




## Dimensions

Dimensions in mm




© Fritz Kübler GmbH, subject to errors and changes. 12/2025