ToolDrives

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# Technical Data

## Compact Line Module

## CV064

## Description of the Compact Module

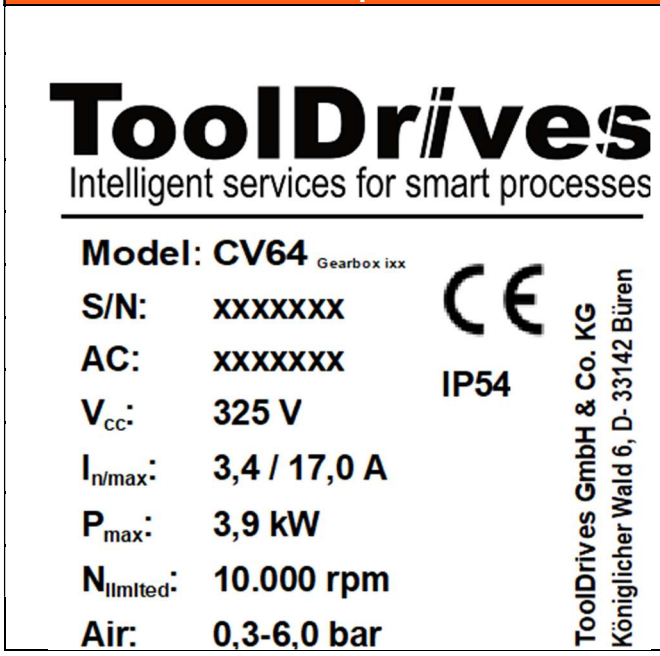
The Compact Module contains an efficiency-optimized high-performance servo motor.

The Compact Module is designed with two different **tool holders**:

1. **Tool holder ER 20 (collet),** dimension sheet see chapter 9.2.2 "Dimension sheet Compact Module with one ER 20 tool holder".
2. **BO 20 saw blade holder (optionally with BO 30 conversion kit),** for dimension sheet, see chapter 9.2.1 "Dimension module Compact Module with a saw blade holder".

## Identificaten plate

A nameplate is located on each Compact Module housing and provides detailed information about its properties.

| Nameplate | | Designation |
|---|---|---|
|  | A | Company logo |
| | B | Model nomenclature CV064 |
| | C | Serial number |
| | D | Article code |
| | E | DC link voltage |
| | F | Nominal and maximum voltage |
| | G | Maximum power |
| | H | Speed (limited) |
| | i | Operating pressure of sealing/cooling air |
| | J | CE marking |
| | K | IP protection class |
| | L | Address |

Tbl: Identificaten plate

## Type code for easy selection

Excample for a possible selection: **ER20 230V Variant A**

Saw

ER20

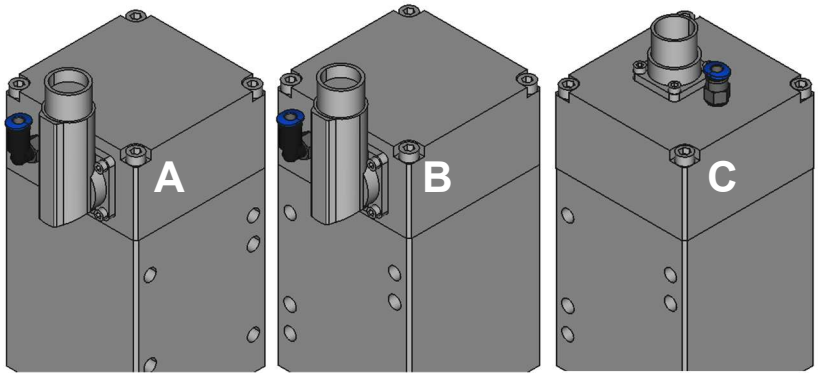
Quick Change

Quick Change with 10mm Stroke

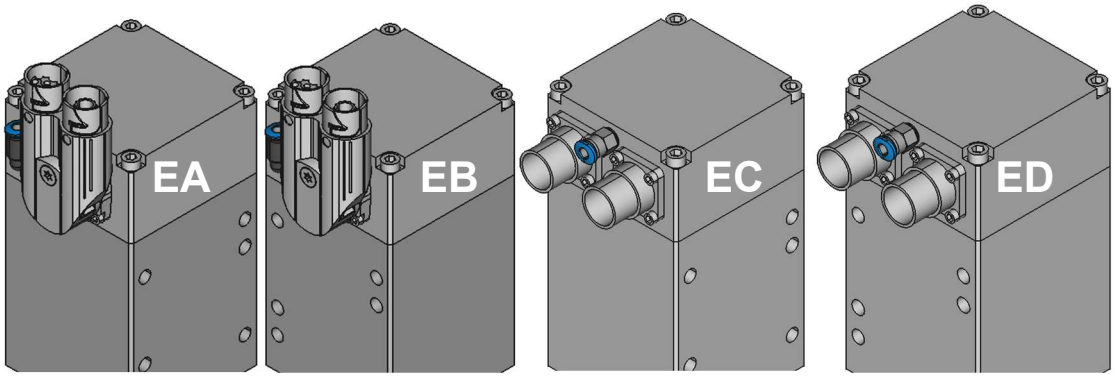
230V

400V

Connector variant in relation to the screw-on surface




Specials: Connector variant in relation to the screw-on surface for encoder versions



## Technical data

| Type code | | Saw Module | ER20 Module |
|---|---|---|---|
| **Tool holder** | | Saw blade (BO 20) | ER 20 (collet) |
| **Direction of motor** rotation (against clockwise with a view of the tool holder) | | Counterclockwise rotation (ccw) | Left / right rotating field (ccw & cw) |
| **Max. Acceleration during operation** | $m/s^2$ | 19,6 (2G) | |
| **Max. Radial force** on the motor spindle | N | 305 | |
| **Hight** | mm | 63,8 | |
| **Width** | mm | 63,8 | |
| **Length** | mm | 170,2 (+5 with Encoder) | 168,25 (+5 with Encoder) |
| **Weight** | Kg | 2,3 | 2,2 |
| **Housing temperature** | °C | < 86 | |
| **Degree of protection** | | IP 54 | |
| **Operating and environmental conditions** | | | |
| **Ambient temperature** | °C | +15 bis +40 | |
| **Relative humidity** not condensing | | ≤ 85% | |
| **Use over NN** | m | ≤ 1000 | |

Tbl: Technical data

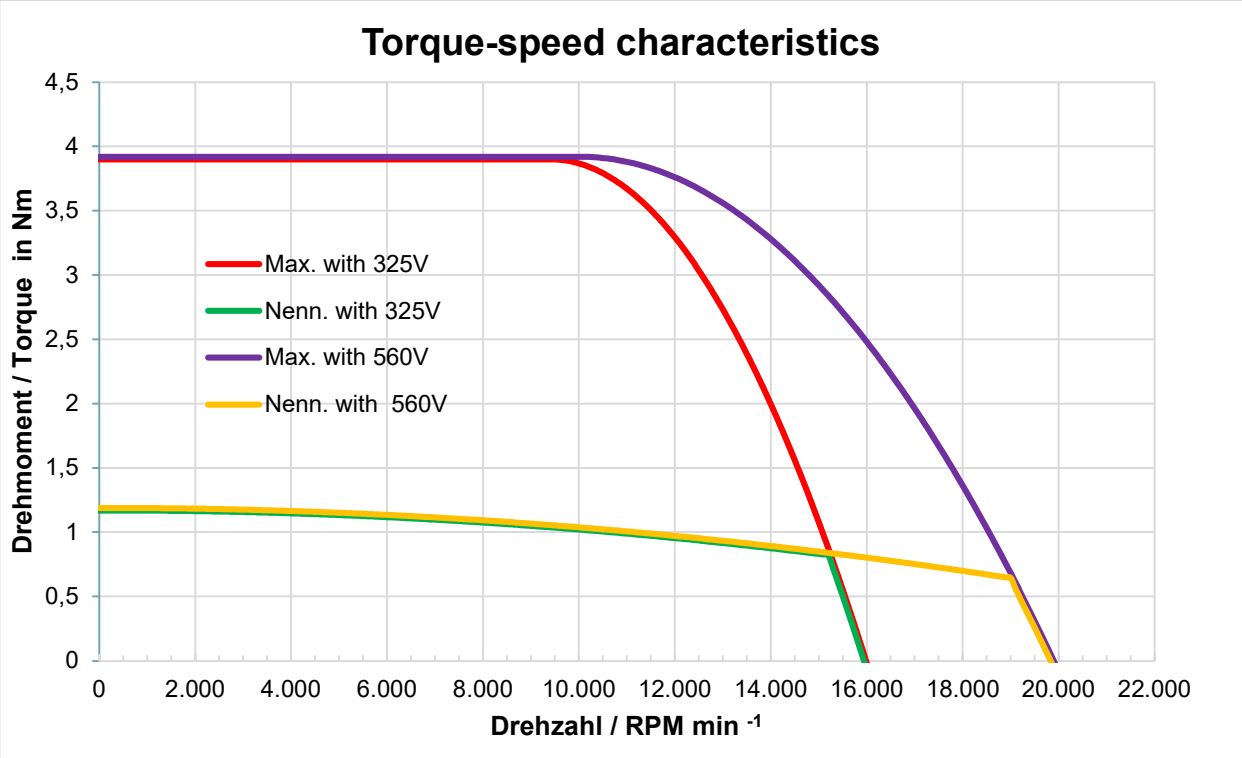
## Sealing air / cooling (specification)

Connector for sealing air hose outside diameter **4mm**

| Naming | Unit | Data |
|---|---|---|
| **Operating pressure (sealing air)** on the input side of the connector | bar | 0,3 - 1,5 |
| **Operating pressure (cooling)** for continuous operation, high speed/load | bar | up to 6.0 |
| **Water content** DIN ISO 8573-1 class 4 | °C | max pressure dew point +3°C |
| **Total oil content** DIN ISO 8573-1 class 3 | $mg/m^3$ | max 1 mg/m3 |
| **Filter class** DIN ISO 8573-1 class 3 | µm | Solids filter degree better 5 µm |
| **Sealing Air Volume Flow $Q_N$** | l/min | 25 |

Tbl: Sealing air specification

## Motor data

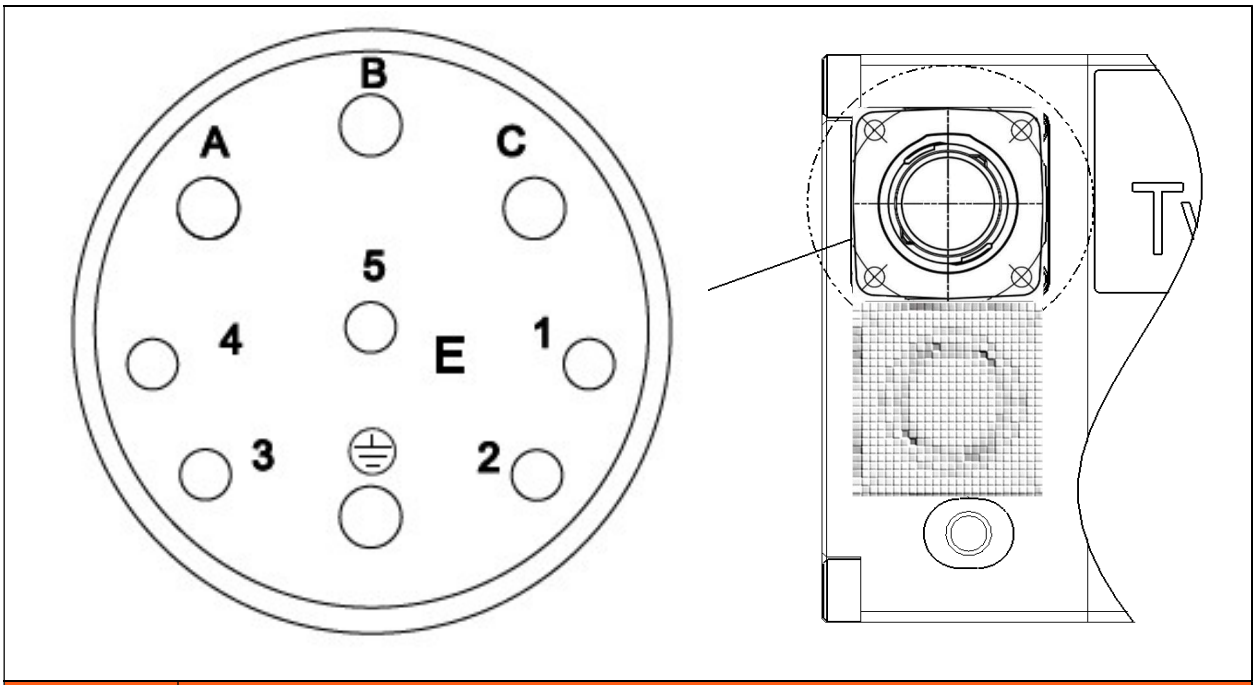



| Description | Unit | Performance Data |
|---|---|---|
| **Motor type** | | Three-phase synchronous motor |
| **DC link voltage $U_{zk}$** | V | 325 (560) |
| **Max. Power $P_{max}$** (short-term) | W | 3,9 |
| **Max. Current $I_{max}$** (short-term) | $A_{eff}$ | 17 |
| **Max. Torque $M_{max}$** (short-term) | Nm | 4 |
| **Max. Speed $n_{max}$** | $min^{-1}$ | 16.000 *1 / 20.000 *2 |
| **Nominal current $I_{nenn}$** | $A_{eff}$ | 3,37 |
| **Nominal torque $M_{nenn}$** | Nm | 0,80*1 / 0,64*2 |
| **Nominal speed $n_{nenn}$ *** | $min^{-1}$ | 15.000*1 / 19.000*2 |
| **Nominal speed $n_{nenn}$ * (Robot use)** | $min^{-1}$ | 14.000*1 / 18.000*2 |
| **Frequence at $n_{nenn}$** | | 1.000 bei 15.000 $min^{-1}$ / 1.267 bei 19.005 $min^{-1}$ |
| **Connection resistance $R_{tt}$** (Phase - Phase) | Ω | 2,05 |
| **Connection inductance $L_{tt}$** (Phase - Phase) | mH | 2,346 |
| **Torque constant $K_t$** | Nm/A | 0,236 |
| **Number of pole pairs p** | | 4 |
| *1 = 325V usage; *2 = 560V usage | | |

Tbl-8: Motor data

## Pin assignment motor connector M17 – 9-pin (on Compact Module side)

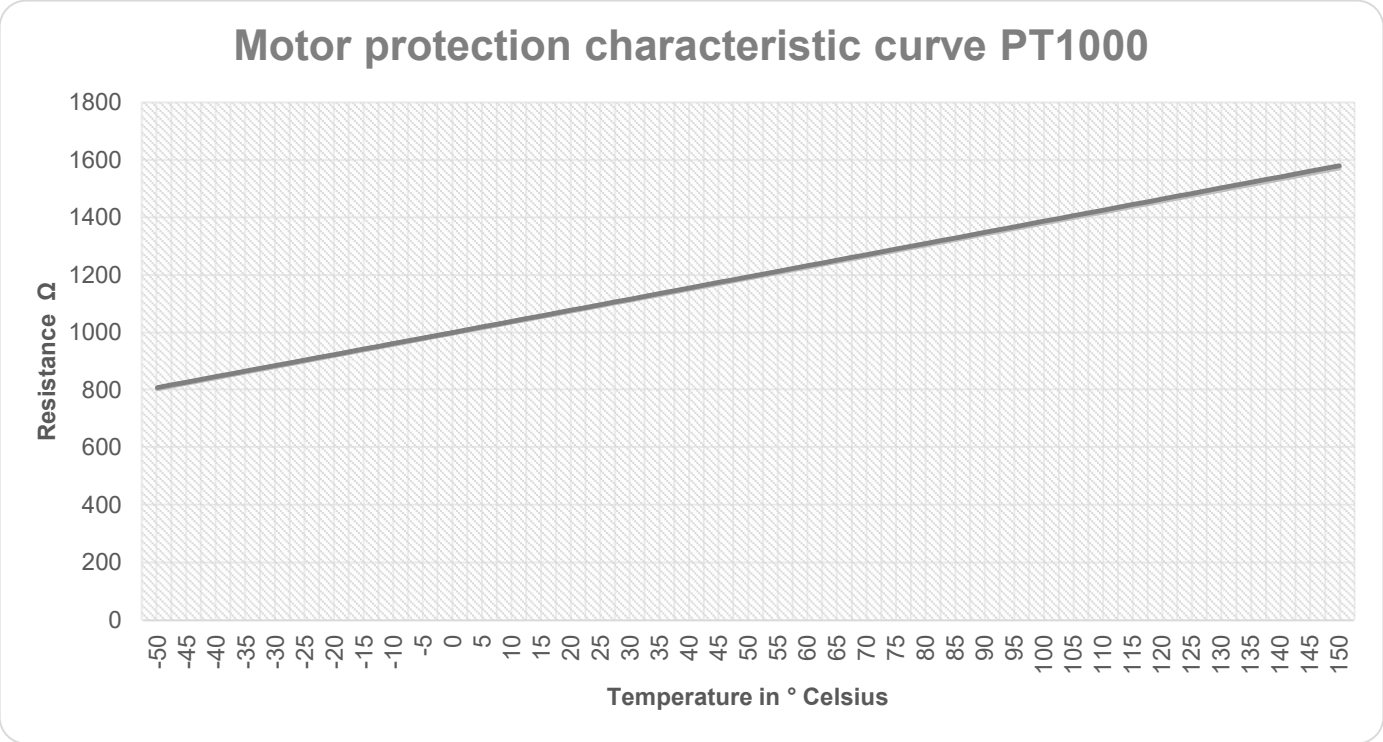
- Manufacturer: Intercontec
- Order No. connector M 17 9-pin (3 +PE; 5 signal) EEG A 201 NN 00 0500 000
- 4x contact pin 61.231.11 & 2x contact pin 61.232.11
- Pin assignment also valid when using Y and / or angled plugs




| Pin | Assignment |
|---|---|
| A | Motor / Phase U red |
| B | Motor / Phase V white |
| C | Motor / Phase W black |
| ⏚ | PE |
| 1 | Temperature sensor (KTY) red |
| 2 | Temperature sensor (KTY) blue |
| 3 | option break+ |
| 4 | option break- |
| 5 | not assigned |

Tbl: Pin assignment motor connector M17 – 9-pin (on Compact Module side)

## Motor protection protection PT1000



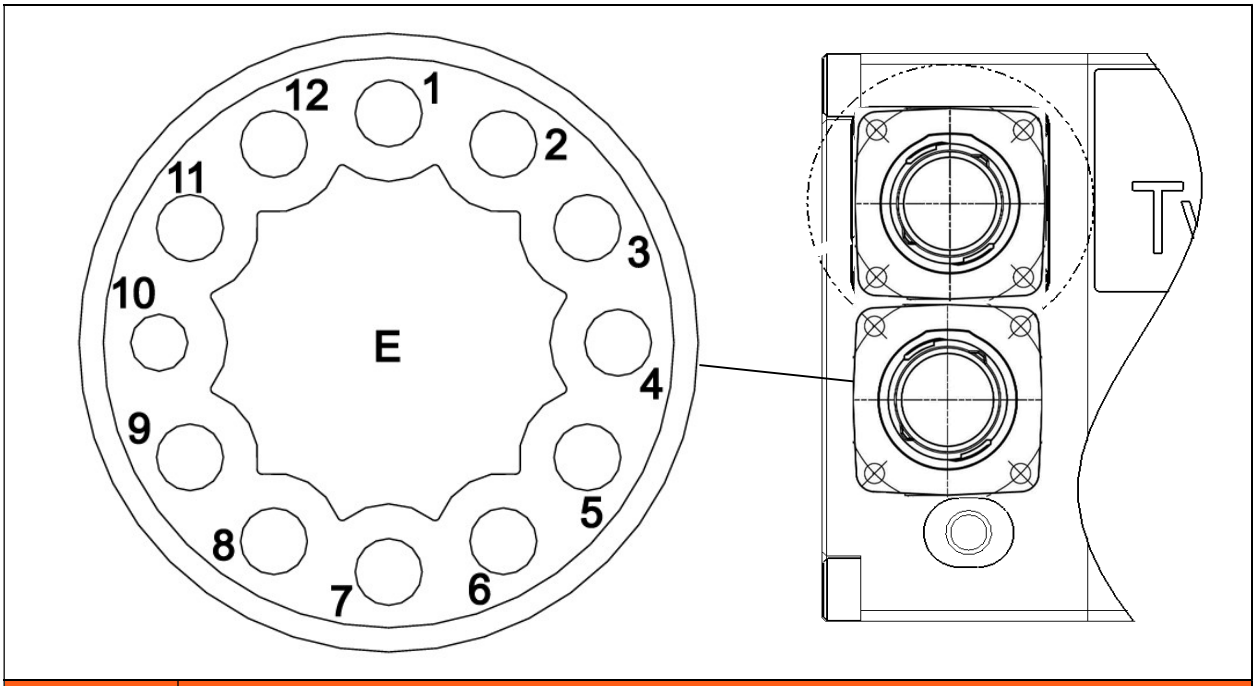

Tbl: Characteristics

| Temperatur e (°C) | R_nom (Ohm) | R_min (Ohm) | R_max (Ohm) | Temperature (°C) | R_nom (Ohm) | R_min (Ohm) | R_max (Ohm) |
|---|---|---|---|---|---|---|---|
| -50 | 807,5 | 805,38 | 809,62 | 55 | 1211,75 | 1209,54 | 1213,96 |
| -45 | 826,75 | 824,73 | 828,77 | 60 | 1231 | 1228,69 | 1233,31 |
| -40 | 846 | 844,08 | 847,92 | 65 | 1250,25 | 1247,84 | 1252,66 |
| -35 | 865,25 | 863,42 | 867,08 | 70 | 1269,5 | 1267 | 1272 |
| -30 | 884,5 | 882,77 | 886,23 | 75 | 1288,75 | 1286,15 | 1291,35 |
| -25 | 903,75 | 902,11 | 905,39 | 80 | 1308 | 1305,31 | 1310,69 |
| -20 | 923 | 921,46 | 924,54 | 85 | 1327,25 | 1324,46 | 1330,04 |
| -15 | 942,25 | 940,81 | 943,69 | 90 | 1346,5 | 1343,61 | 1349,39 |
| -10 | 961,5 | 960,15 | 962,85 | 95 | 1365,75 | 1362,77 | 1368,73 |
| -5 | 980,75 | 979,5 | 982 | 100 | 1385 | 1381,92 | 1388,08 |
| 0 | 1000 | 998,85 | 1001,15 | 105 | 1404,25 | 1401,07 | 1407,43 |
| 5 | 1019,25 | 1018 | 1020,5 | 110 | 1423,5 | 1420,23 | 1426,77 |
| 10 | 1038,5 | 1037,15 | 1039,85 | 115 | 1442,75 | 1439,38 | 1446,12 |
| 15 | 1057,75 | 1056,31 | 1059,19 | 120 | 1462 | 1458,54 | 1465,46 |
| 20 | 1077 | 1075,46 | 1078,54 | 125 | 1481,25 | 1477,69 | 1484,81 |
| 25 | 1096,25 | 1094,61 | 1097,89 | 130 | 1500,5 | 1496,84 | 1504,16 |
| 30 | 1115,5 | 1113,77 | 1117,23 | 135 | 1519,75 | 1516 | 1523,5 |
| 35 | 1134,75 | 1132,92 | 1136,58 | 140 | 1539 | 1535,15 | 1542,85 |
| 40 | 1154 | 1152,08 | 1155,92 | 145 | 1558,25 | 1554,3 | 1562,2 |
| 45 | 1173,25 | 1171,23 | 1175,27 | 150 | 1577,5 | 1573,46 | 1581,54 |
| 50 | 1192,5 | 1190,38 | 1194,62 | | | | |

Tbl: Temperature - resistance values

## Pin assignment of signal connector M17 – 12-pin (on Compact Module side)

- Additional connector for Compact Module with encoder.
- Manufacturer: Intercontec
- Order No. Connector M 17 12-pin (12 signal) EEG A 001 NN 00 0001 000
- 8 x contact pin 61.232.11
- Pin assignment also valid when using Y and / or angled plugs




| Pin | Assignment |
|---|---|
| 1 | $V_{dd}$ red |
| 2 | GDN blur |
| 3 | A grew |
| 4 | B green |
| 5 | Z white |
| 6 | A- pink |
| 7 | B- yellow |
| 8 | Z- brown |
| 9 | not assigned |
| 10 | not assigned |
| 11 | not assigned |
| 12 | not assigned |

Tbl: Pin assignment of signal connector M17 – 12-pin (on Compact Module side)

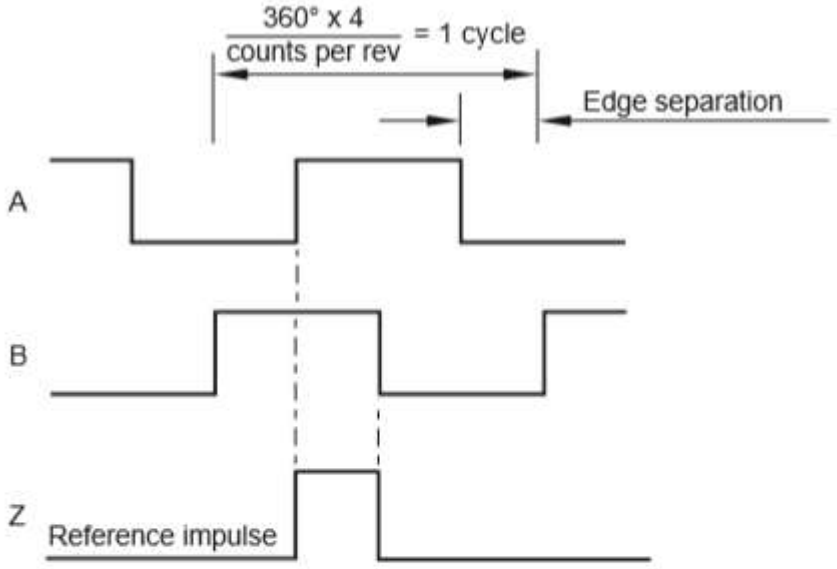
## Specification Encoder

- Manufacturer: Renishaw
- Model RM44IC encoder
- Model RM44A3 giver

| Charcteristics | |
|---|---|
| Power consumption | -Max. 35mA |
| Output signals | A, B, Z, A–, B–, Z– (RS422) |
| Accuracy | Typ. ±0.5 |
| Hysteresis | 0.18° |
| Encoder line count | 1024 |
| Maximum speed | 30,000 rpm |
| Maximum cable lengt | 50 m |
| Operating temperature | –40 °C to +125 °C (IP64)<br>–40 °C to +85 °C (IP68) |

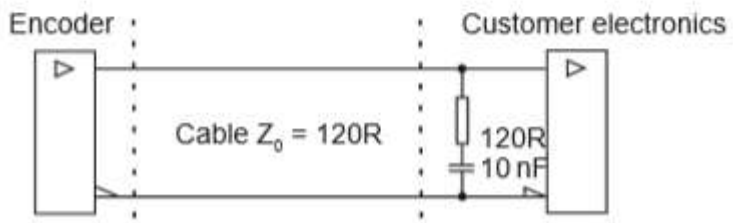
### Timing diagram

Complementary signals not shown



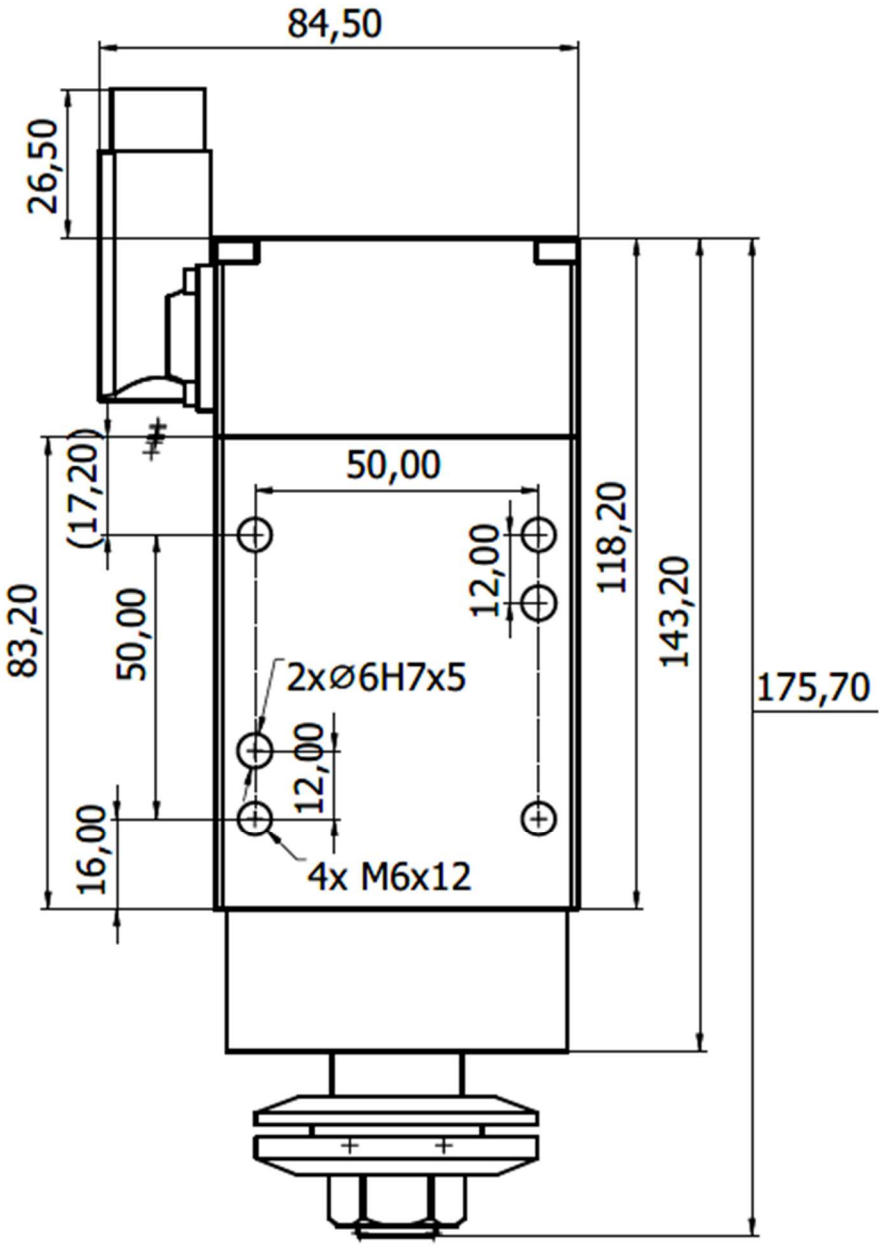

B leads A for clockwise rotation of magnetic actuator.

### Recommended signal termination

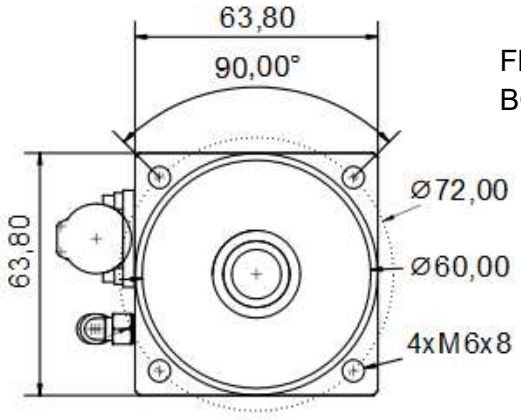


## Dimension sheets models CV064

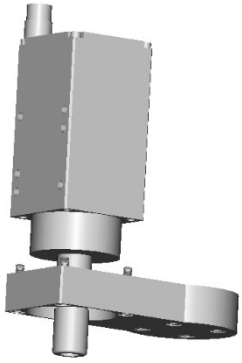
***Dimension sheet Compact Module with saw blade***



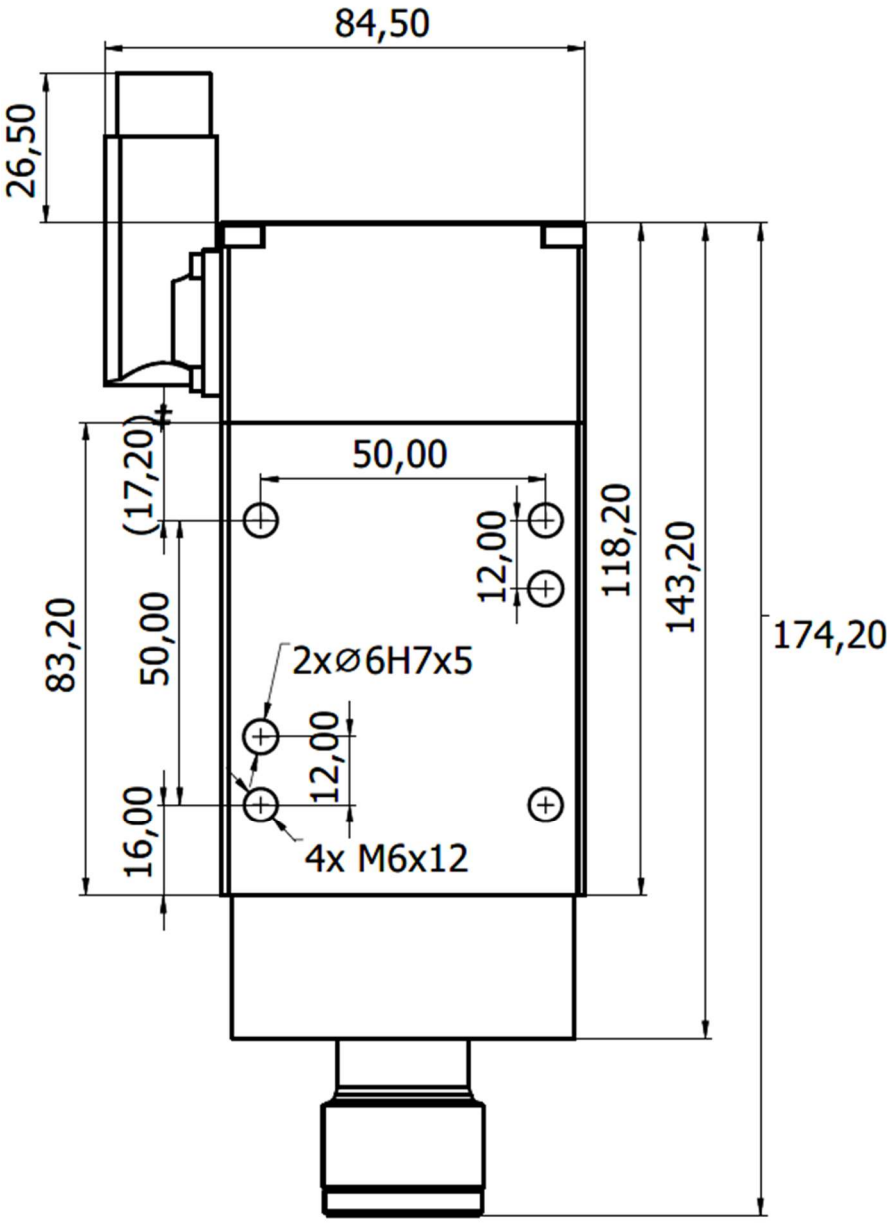

Mounting surface identical on front and back



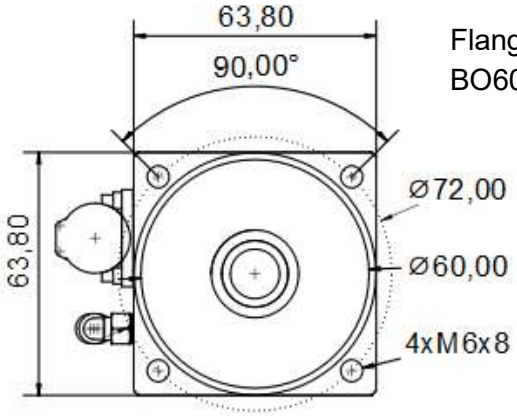

Flange dimension BO60



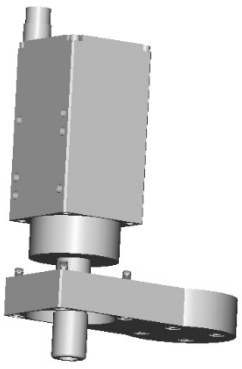
***Dimension sheet Compact Module ER20***



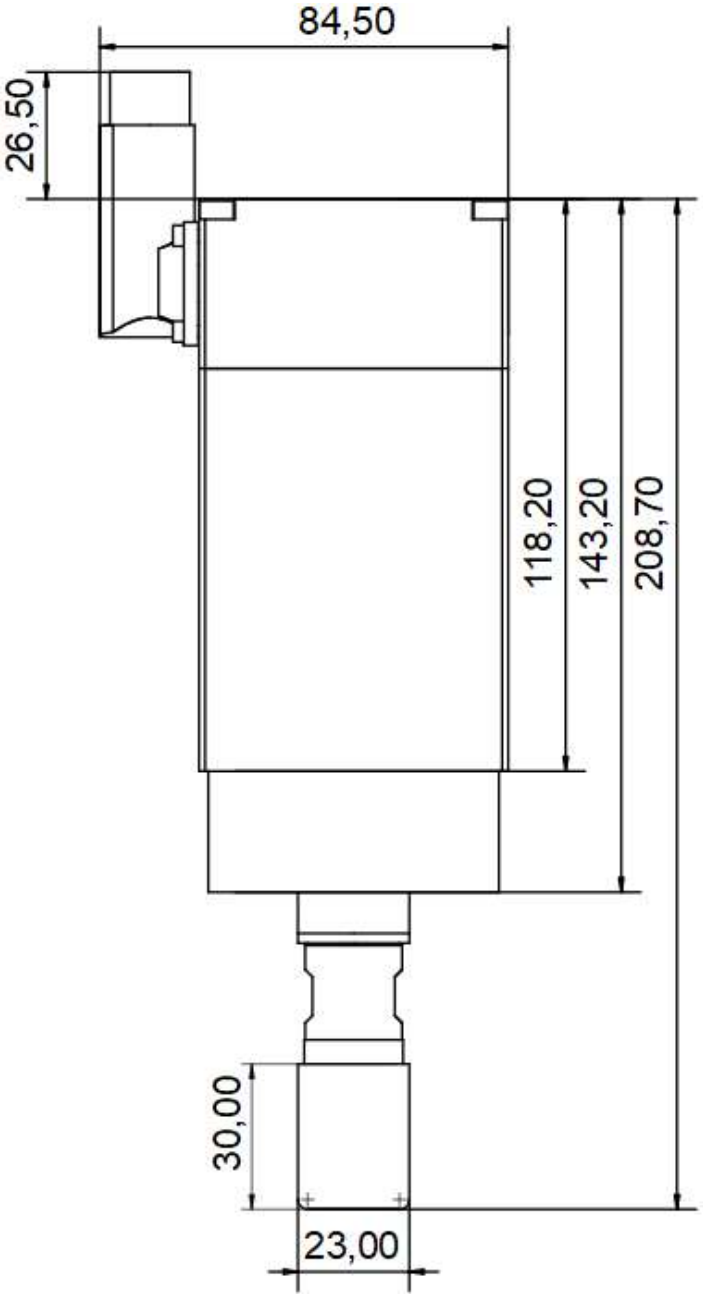

Mounting surface identical on front and back




Flange dimension BO60

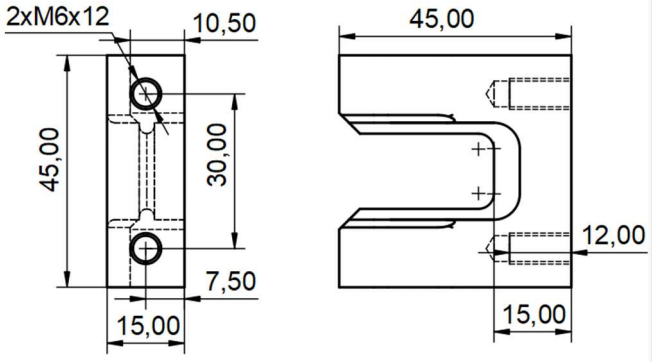


***Dimension sheet Compact Module with quick change***



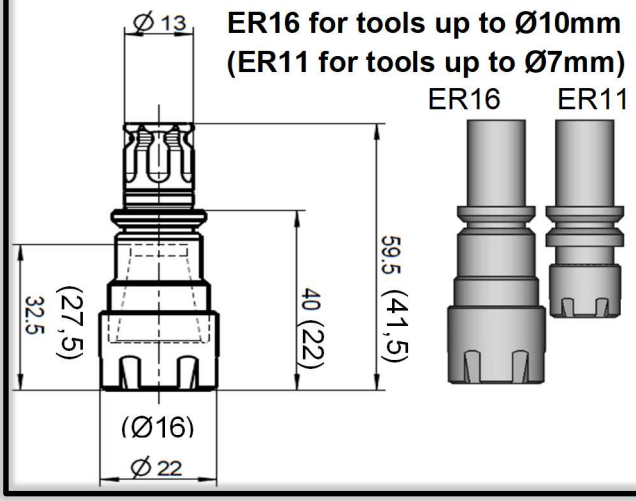

Mounting sureface,
see 9.2.1

**Details Storage:**



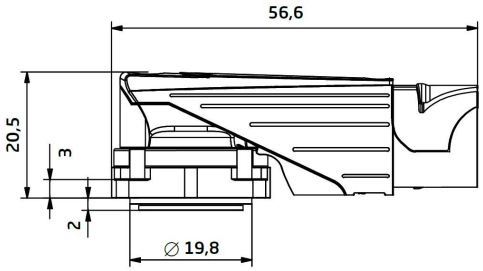

**Tool holders:**

**ER16 for tools up to Ø10mm**
**(ER11 for tools up to Ø7mm)**



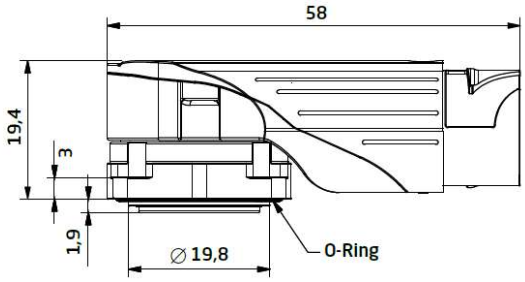
***Dimension sheet straight- und angle connector***

Angle connector for Compact Module without encoder (Self Lock)



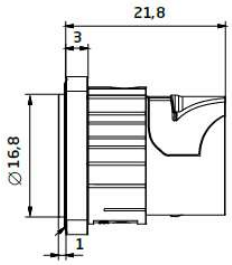


Angle connector for Compact Module with encoder (Self Lock)





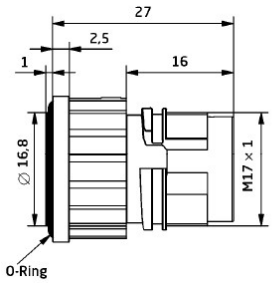
Straight connector for Compact Module with and without encoder (Self Lock)





(mit Encoder)


Straight connector for Compact Module without encoder (Drive Power Link M17)




The order codes on page 3 shows the connector varaints in the table.

*For your notes:*

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