

TECHNICAL DATASHEET

Absolute Encoder AC 58 - EtherCAT®

- Single- and Multiturn: resolution up to 32 Bit
- Cycle time of 62,5µs min.
- Diagnostic LEDs
- Device data: position, speed, temperature, diagnostic data, alarms
- Device configuration: resolution, total measuring range, preset, offset, direction, position limits, scaling, residual value function, speed limits, temperature limits
- Wide temperature range of -40°C ... +85°C
- "Best in Class" shock and vibration specs
- Large number of variants available



TECHNICAL DATA mechanical

ACURO®
industry

EtherCAT®



| | |
|--|--|
| Housing diameter | 58 mm |
| Shaft diameter | 6 mm / 8 mm / 9.52 mm (3/8 inch) / 10 mm / 12 mm (solid shafts) 9.52 mm (3/8 inch) / 10 mm / 12 mm / 12.7 mm (1/2 inch) / 14 mm (hub shafts) Other sizes available upon request. |
| Mounting Flange | Synchro flange, Clamping flange, Tether flange, Square flange |
| Protection class shaft input (EN 60529) | IP64 or IP67 |
| Protection class housing (EN 60529) | IP65 and IP67 |
| Shaft load axial / radial | 40 N / 80 N |
| Axial endplay of mating shaft (Hub Shaft only) | ±1,5 mm |
| Radial runout of mating shaft (Hub Shaft only) | ±0,2 mm |
| Max. speed | max. 10.000 U/min (continuous duty) max. 12.000 U/min (short term) |
| Starting torque typ. ¹ | ≤ 0,05 Nm (lower values available upon request) |
| Moment of inertia | ca. 3,8 x 10 ⁻⁶ kgm ² |
| Vibration resistance (DIN EN 60068-2-6) | 300 m/s ² (5 - 500 Hz) |
| Shock resistance (DIN EN 60068-2-27) | 4000 m/s ² (2 ms) (half-sine) |
| Ambient temperature | -40 °C ... +85 °C |
| Storage temperature | -40 °C ... +85 °C |
| Material shaft | Stainless Steel |
| Material housing | Aluminium (stainless steel optional as AC61 EtherCAT) |
| Weight | approx. 420 g (ST) / 450 g (MT) |
| Connection | Bus cover with 3x M12 connectors |

¹ at 20 °C

| | | |
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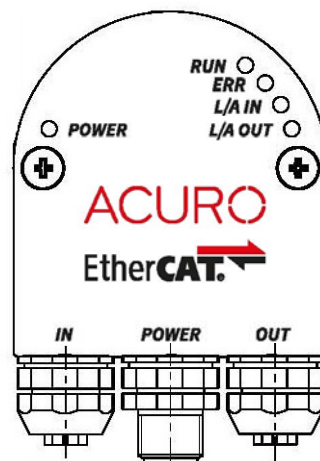
TECHNICAL DATA electrical

| | |
|---------------------------------|---|
| General design | As per DIN EN 61010-1, protection class III, contamination level 2, overvoltage class II |
| Supply voltage | DC 7 - 30 V |
| Current w/o load (typ.) | 24V: 85 mA (ST) max; 200 mA (MT) |
| Resolution Singleturn | 10 - 22 Bit |
| Resolution Multiturn | 12 Bit (total max. resolution 32 bits) |
| Output code | Binary |
| Profile/ protocol | EtherCAT CoE, FoE |
| Linearity | ±½ LSB up to 14 Bit |
| Absolute accuracy (typ.) | ±35" |
| Repeatability (typ.) | ±10" |
| Device data | position, speed, temperature, diagnostic data, alarms |
| Device configuration | resolution, total measuring range, preset, offset, direction, position limits, scaling, residual value function, speed limits, temperature limits |
| Updating of values / Cycle time | 62,5µs |

ELECTRICAL CONNECTIONS Bus cover with 3x M12 connectors

| Pin | Bus Port IN | Supply voltage | Bus Port OUT |
|--------|---------------------|---------------------|---------------------|
| 1 | TxD+ | UB in | TxD+ |
| 2 | RxD+ | N.C. | RxD+ |
| 3 | TxD- | 0 V in | TxD- |
| 4 | RxD- | N.C. | RxD- |
| Shield | Shield ¹ | Shield ¹ | Shield ¹ |

¹ shield connected to encoder housing



Specifications subject to change without notice.

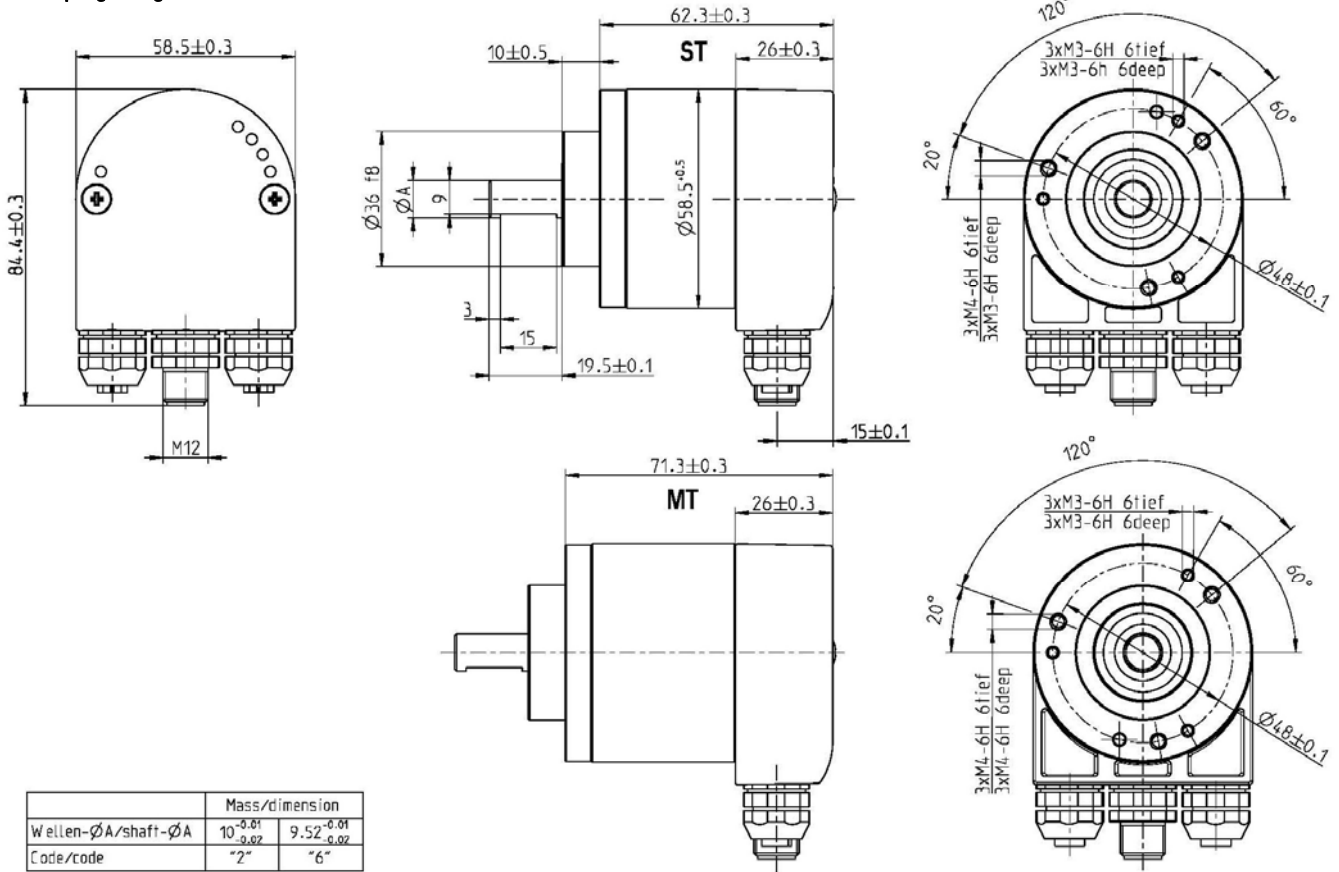
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DIMENSIONAL DRAWINGS

Clamping flange



Dimensions in mm

Specifications subject to change without notice.

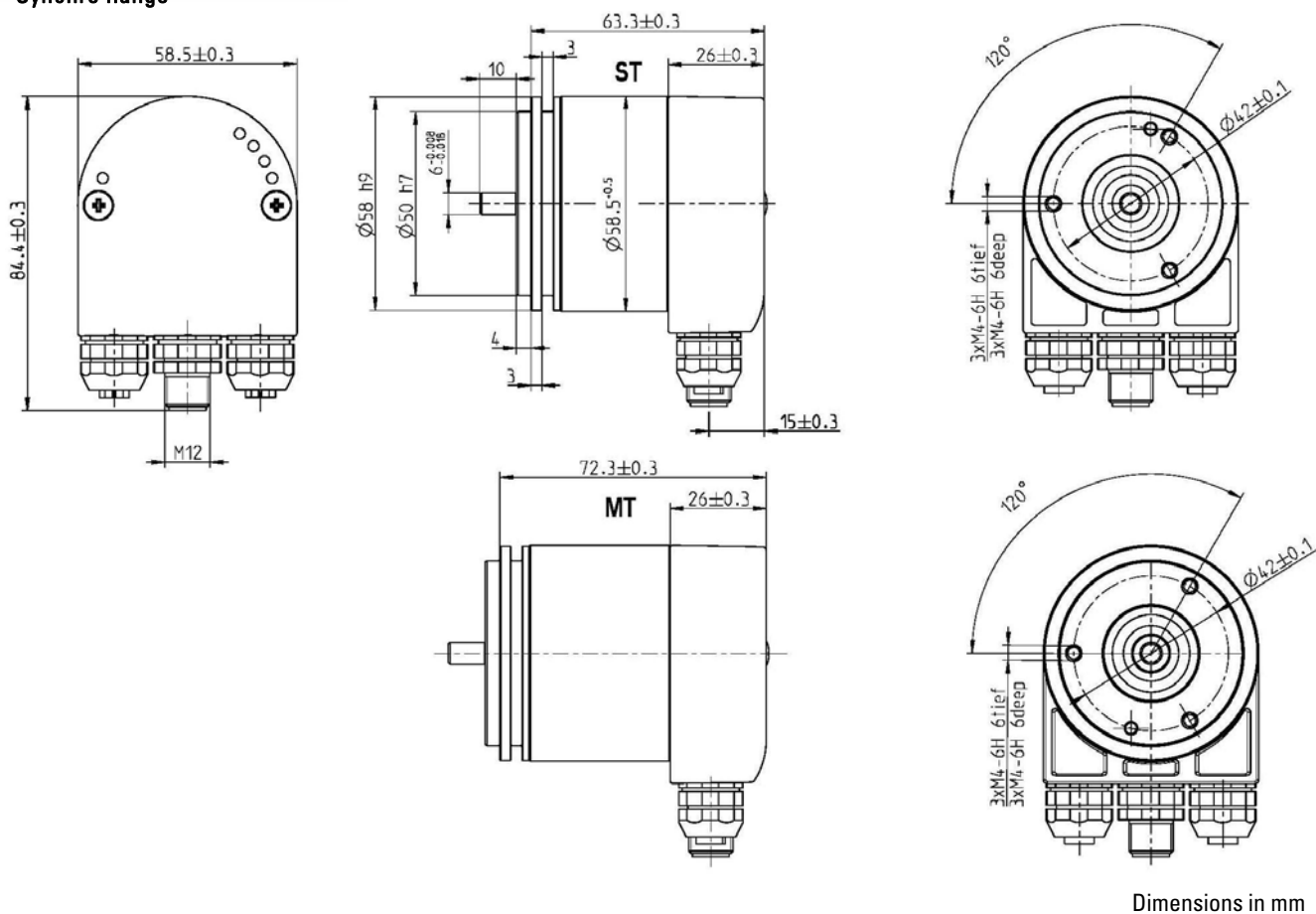
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DIMENSIONAL DRAWINGS (continued)

Synchro flange



Specifications subject to change without notice.

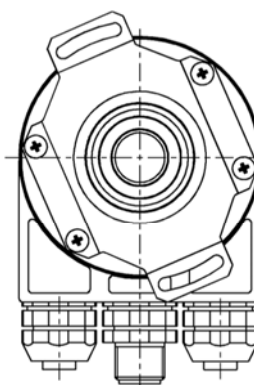
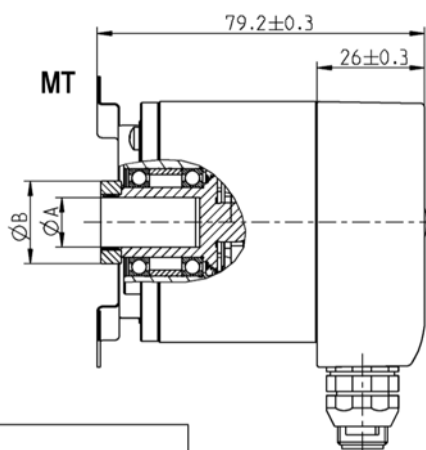
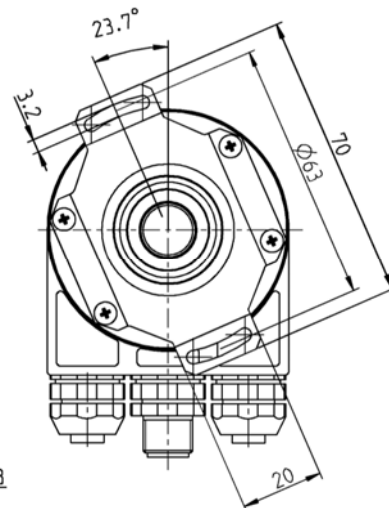
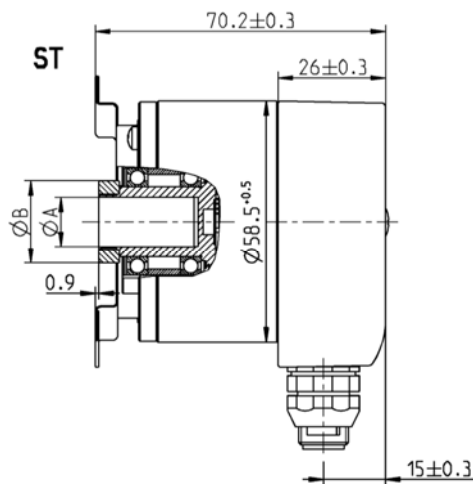
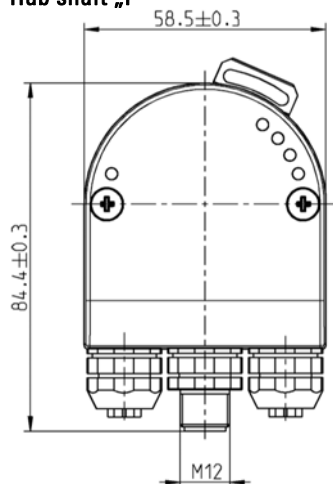
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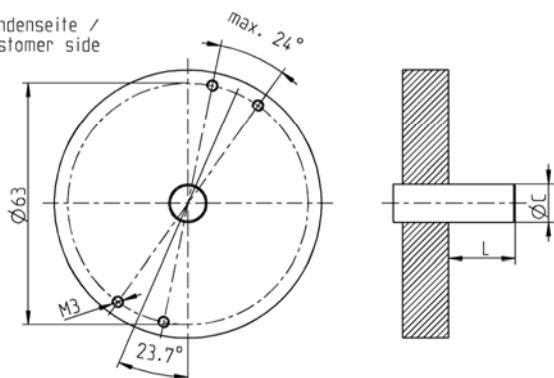
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DIMENSIONAL DRAWINGS (continued)

Hub shaft „F“



Kundenseite /
Customer side



| | Mass/dimension | | | | | Einheit/unit |
|--|----------------------|----------------------|------------------------|------------------------|----------------------|--------------|
| Hohlwellen-ØA/ hollow shaft-ØA | 10 ^{+0.012} | 12 ^{+0.012} | 9.52 ^{+0.012} | 12.7 ^{+0.012} | 14 ^{+0.012} | mm |
| Anschlusswellen-ØC/ connecting shaft-ØC | 10 _{g7} | 12 _{g7} | 9.52 _{g7} | 12.7 _{g7} | 14 _{g7} | mm |
| Klemmring-ØB/ clamping ring-ØB | 18 | 20 | 18 | 22 | 24 | mm |
| L min. | 15 | 18 | 15 | 18 | 18 | mm |
| L max. | 20 | 20 | 20 | 20 | 20 | mm |
| Wellen-Code / shaft code | "2" | "7" | "6" | "E" | "9" | |

L = Eintauchtiefe der Anschlusswelle in den Geber
L = Length of customers shaft inside of encoder

Dimensions in mm

Specifications subject to change without notice.

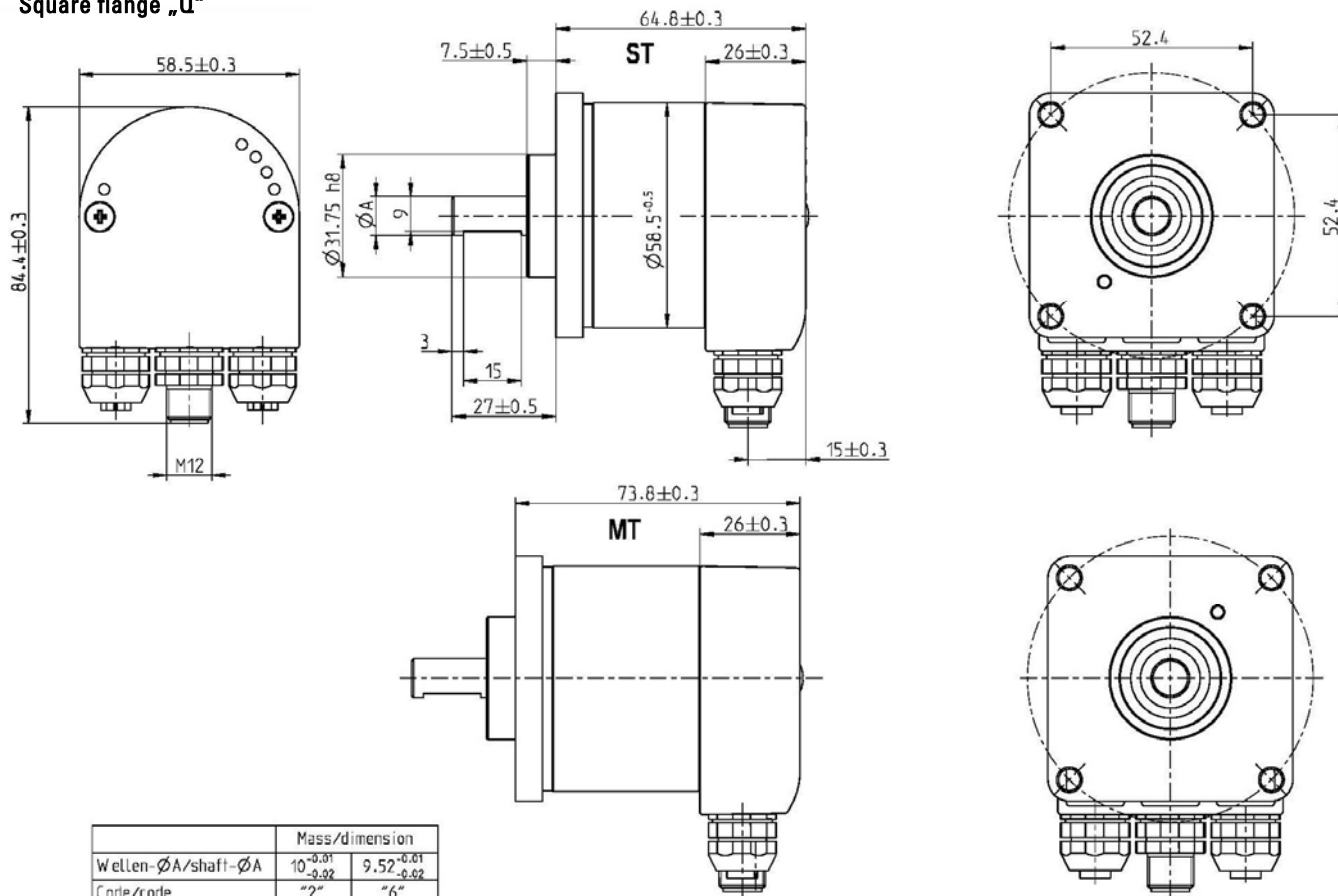
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DIMENSIONAL DRAWINGS
(continued)

Square flange „Q“



Dimensions in mm

Specifications subject to change without notice.

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ORDERING INFORMATION
EtherCAT

| Type | Resolution | Supply voltage | Flange, Protection, Shaft | Interface | Connection |
|----------------------|--|----------------------|--|----------------------|--|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| AC58 | 0010 10 Bit ST 0012 12 Bit ST 0013 13 Bit ST 0014 14 Bit ST 0016 16 Bit ST 0017 17 Bit ST 0018 18 Bit ST 0019 19 Bit ST 0020 20 Bit ST 0022 22 Bit ST 1212 12 Bit MT + 12 Bit ST 1213 12 Bit MT + 13 Bit ST 1214 12 Bit MT + 14 Bit ST 1216 12 Bit MT + 16 Bit ST 1217 12 Bit MT + 17 Bit ST 1218 12 Bit MT + 18 Bit ST 1219 12 Bit MT + 19 Bit ST 1220 12 Bit MT + 20 Bit ST Others available upon request | E DC 7 - 30 V | S.41 Synchro, IP65 ¹ , 6 mm S.71 Synchro, IP67, 6 mm K.42 Clamping, IP65 ¹ , 10 mm K.46 Clamping, IP65 ¹ , 9,52 mm K.47 Clamping, IP65 ¹ , 12 mm * K.4C Clamping, IP65 ¹ , 8 mm * K.72 Clamping, IP67, 10 mm K.76 Clamping, IP67, 9,52 mm K.77 Clamping, IP67, 12 mm * K.7C Clamping, IP67, 8 mm * F.42 Spring tether, IP65 ¹ , hub shaft 10 mm, mounting with front clamping ring F.46 Spring tether, IP65 ¹ , hub shaft 9,52 mm, mounting with front clamping ring F.47 Spring tether, IP65 ¹ , hub shaft 12 mm, mounting with front clamping ring F.4E Spring tether, IP65 ¹ , hub shaft, 12.7 mm, mounting with front clamping ring F.49 Spring tether, IP65 ¹ , hub shaft 14 mm, mounting with front clamp- ing ring * F.77 Spring tether, IP67, hub shaft, 12 mm, mounting with front clamp- ing ring Q.42 Square, IP65 ¹ , 10 mm Q.46 Square, IP65 ¹ , 9,52 mm Q.72 Square, IP67, 10 mm Q.76 Square, IP67, 9,52 mm | EC EtherCAT | R Bus cover with 3x M12 connectors |

¹ Protection class shaft input IP64 (according to EN 60529)

* Versions on request

Preferred "Flange, Protection, Shaft" versions are in bold type; these versions usually have shorter delivery times

Specifications subject to change without notice.

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Accessories

FLEXIBLE COUPLINGS



Bellows coupling



Disk coupling



Isolated disk coupling



Helical coupling

| | Hub diameter d1/d2 | Ordering code |
|------------------------|--------------------|---------------|
| Bellows coupling | 6 mm / 6 mm | 3 520 068 |
| Bellows coupling | 8 mm / 10 mm | 3 520 077 |
| Bellows coupling | 10 mm / 10 mm | 3 520 037 |
| Disk coupling | 6 mm / 6 mm | 0 070 663 |
| Isolated disk coupling | 6 mm / 6 mm | 3 520 081 |
| Isolated disk coupling | 6 mm / 10 mm | 3 520 082 |
| Isolated disk coupling | 10 mm / 10 mm | 3 520 088 |
| Helical coupling 19/28 | 5 mm / 6 mm | 3 520 035 |
| Helical coupling 19/28 | 6 mm / 6 mm | 0 070 653 |
| Helical coupling 25/32 | 6 mm / 9,53 mm | 3 520 052 |
| Helical coupling 25/32 | 6 mm / 10 mm | 3 520 066 |
| Helical coupling 25/32 | 10 mm / 10 mm | 3 520 074 |
| Helical coupling 25/32 | 10 mm / 12 mm | 3 520 065 |

MOUNTING

| | Ordering code |
|--|---------------|
| Clamping eccentric, for M4 (set of three) | 1 522 300 |
| Right angle mounting bracket (plastic), for clamping flange RI 58, AC 58 (fastening material included) | 1 522 329 |
| Tether for hub shaft versions | 1 531 188 |
| Mounting bell (plastic), for synchro flange RI 58, AC 58 (clamping eccentric and fastening material included) | 1 522 330 |
| Square flange adapter 58 x 58 mm, for clamping flange RI 58, AC 58 (fastening material included) | 1 522 326 |
| Square flange adapter 80 x 80 mm, for clamping flange RI 58, AC 58 (fastening material included) | 1 522 327 |
| Synchro flange adapter , for clamping flange RI 58, AC 58 (fastening material included) | 1 522 328 |
| Clamping eccentric for synchro flange, d6,5 for M3 (set of three) | 0 070 655 |

TECHNICAL MANUALS

| | Ordering code |
|---------------------------|--------------------------|
| Technical manual, English | 2 565 651 (or Home page) |
| Technical manual, German | 2 565 652 (or Home page) |

SOFTWARE

| | Ordering code |
|---------------------------------------|--|
| ESI file, download from our Home page | www.hengstler.com |

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