

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - EtherCAT®



AC58 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

ACURO®  
industry

EtherCAT®



#### TECHNICAL DATA mechanical

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. <sup>1</sup>	≤ 0,05 Nm (lower values available upon request)
Moment of inertia	ca. 3,8 x 10 <sup>-6</sup> kgm <sup>2</sup>
Vibration resistance (DIN EN 60068-2-6)	300 m/s <sup>2</sup> (5 - 500 Hz)
Shock resistance (DIN EN 60068-2-27)	4000 m/s <sup>2</sup> (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

<sup>1</sup> at 20 °C

Specifications subject to change without notice.

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## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - EtherCAT®

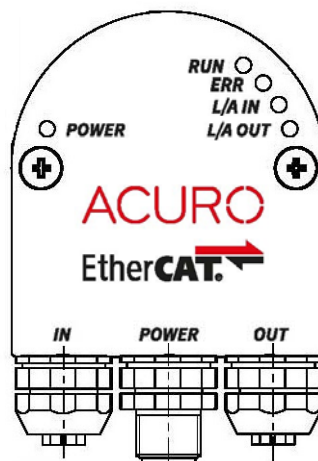
#### TECHNICAL DATA electrical

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 <sup>1</sup>	Shield <sup>1</sup>	Shield <sup>1</sup>

<sup>1</sup> shield connected to encoder housing



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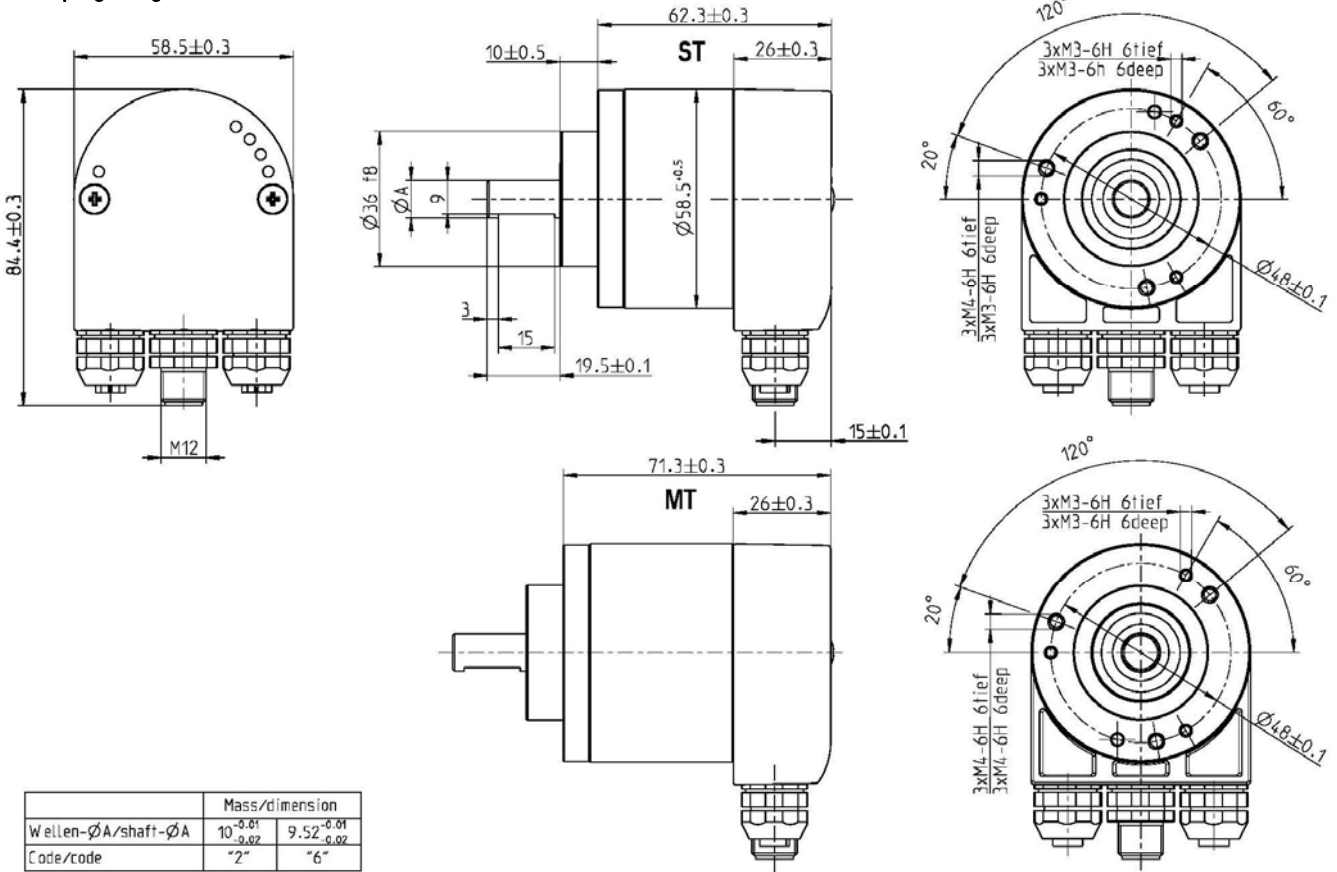
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### Absolute Encoder AC 58 - EtherCAT®

#### DIMENSIONAL DRAWINGS

#### Clamping flange



	Mass/dimension	
Wellen-ØA/shaft-ØA	10 <sup>-0.01</sup> <sub>-0.02</sub>	9.52 <sup>-0.01</sup> <sub>-0.02</sub>
Code/code	"2"	"6"

Dimensions in mm

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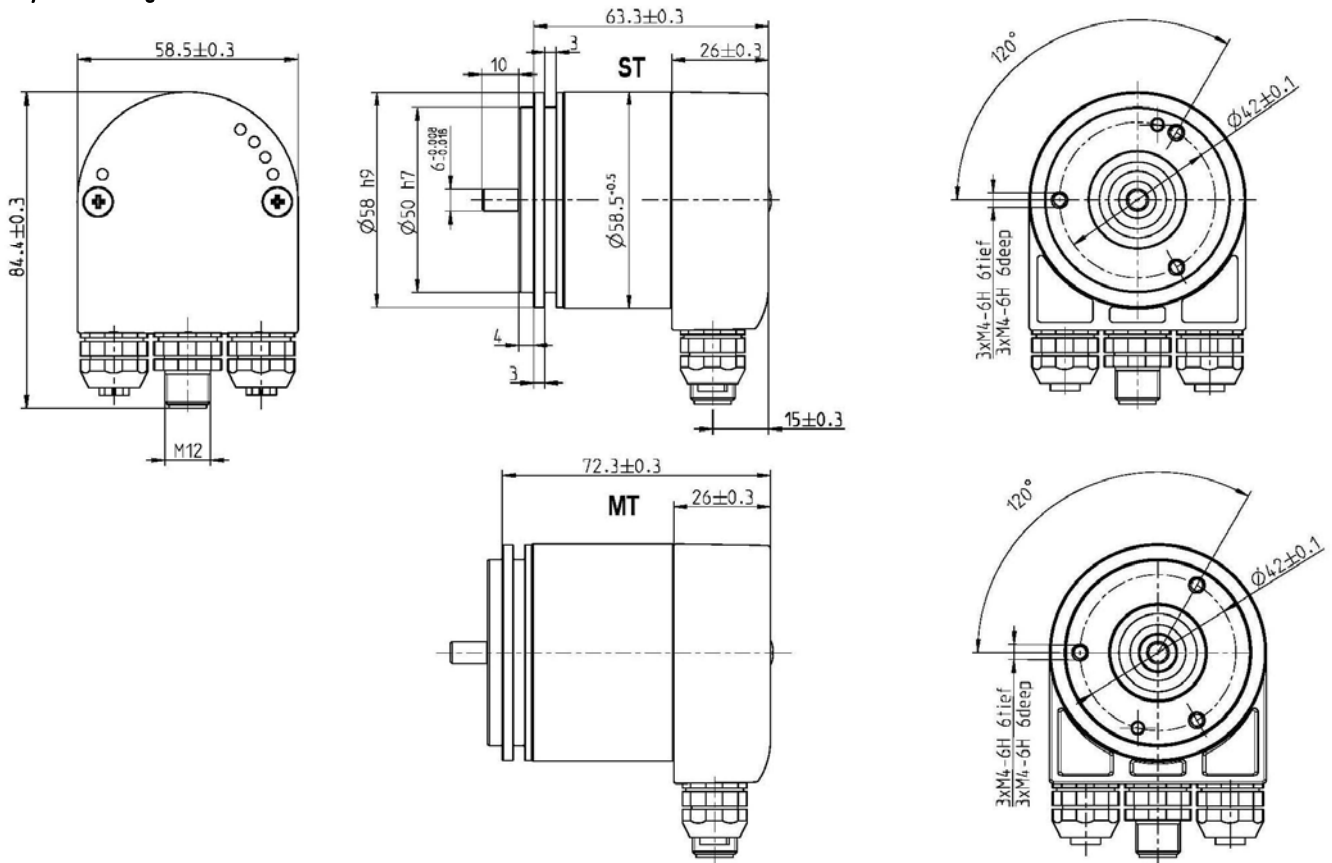
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## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - EtherCAT®

#### DIMENSIONAL DRAWINGS (continued)

#### Synchro flange



Dimensions in mm

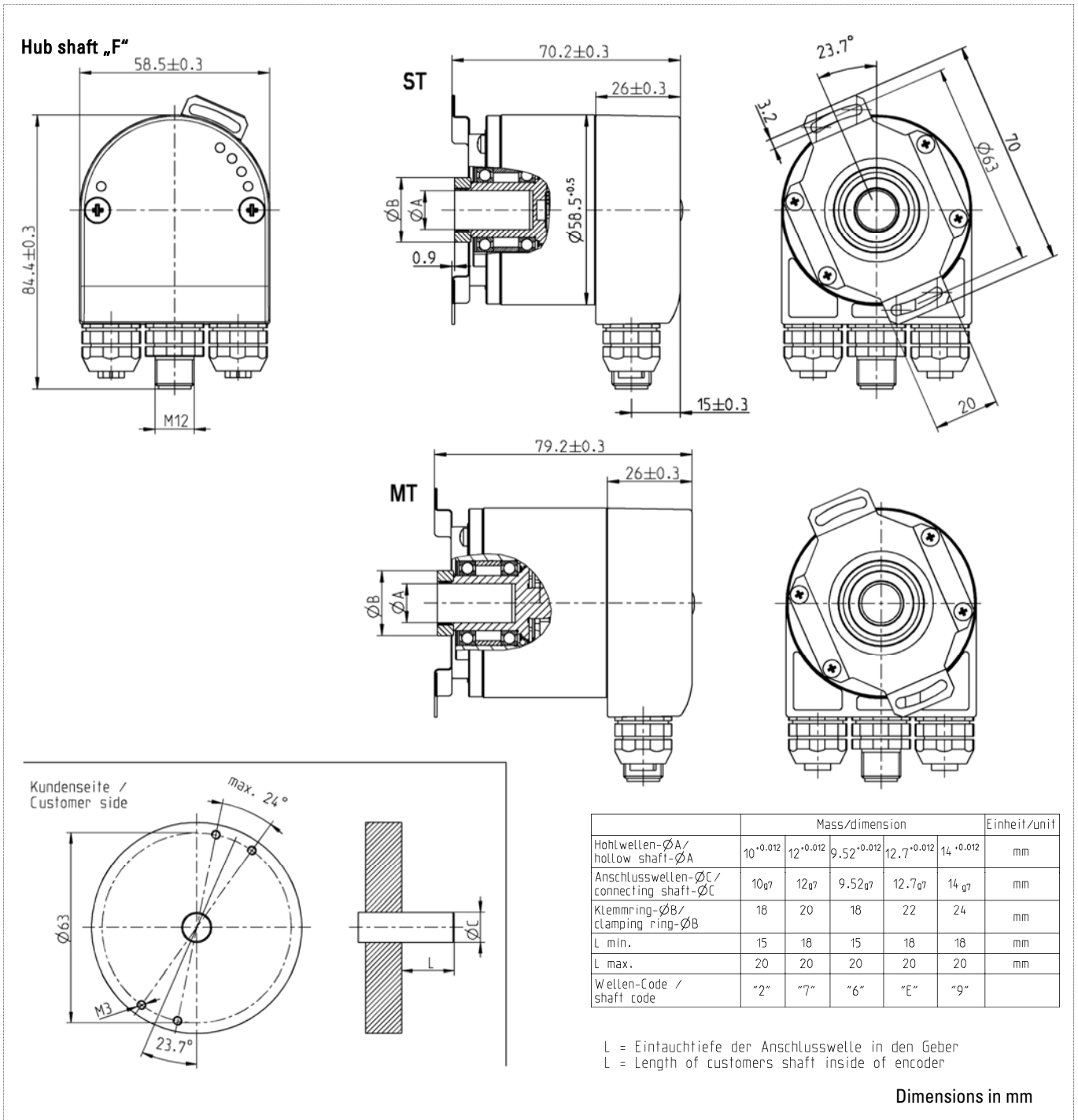
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## TECHNICAL DATASHEET

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#### DIMENSIONAL DRAWINGS (continued)



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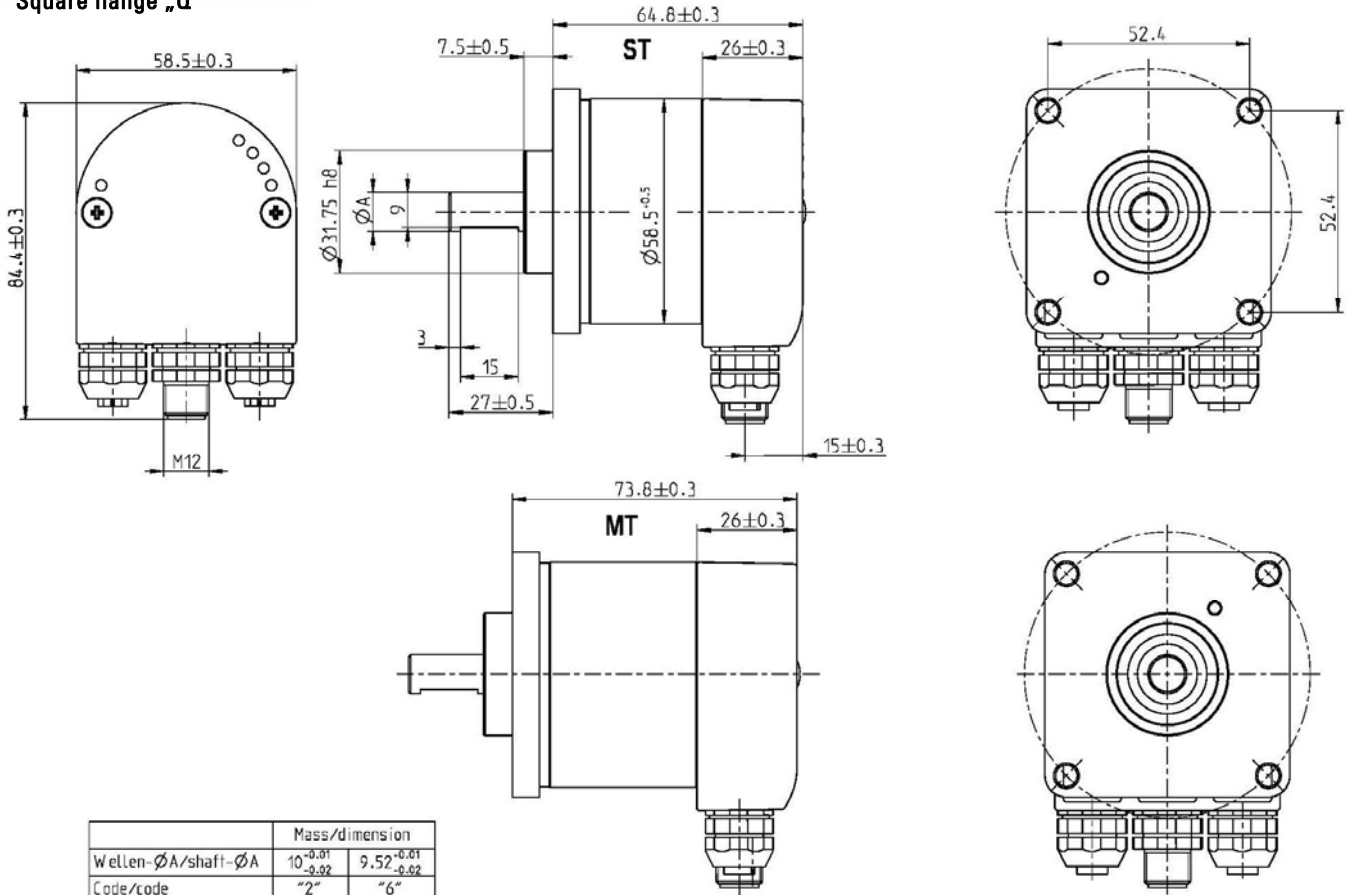
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## TECHNICAL DATASHEET

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#### DIMENSIONAL DRAWINGS (continued)

#### Square flange „Q“



Dimensions in mm

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## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - EtherCAT®

#### ORDERING INFORMATION EtherCAT

Type	Resolution	Supply voltage	Flange, Protection, Shaft	Interface	Connection
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>AC58</b>	<b>0010</b> 10 Bit ST <b>0012</b> 12 Bit ST <b>0013</b> 13 Bit ST <b>0014</b> 14 Bit ST <b>0016</b> 16 Bit ST <b>0017</b> 17 Bit ST <b>0018</b> 18 Bit ST <b>0019</b> 19 Bit ST <b>0020</b> 20 Bit ST <b>0022</b> 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	<b>S.41 Synchro, IP65<sup>1</sup>, 6 mm</b> <b>S.71 Synchro, IP67, 6 mm</b> <b>K.42 Clamping, IP65<sup>1</sup>, 10 mm</b> <b>K.46 Clamping, IP65<sup>1</sup>, 9,52 mm</b> <b>K.47 Clamping, IP65<sup>1</sup>, 12 mm *</b> <b>K.4C Clamping, IP65<sup>1</sup>, 8 mm *</b> <b>K.72 Clamping, IP67, 10 mm</b> <b>K.76 Clamping, IP67, 9,52 mm</b> <b>K.7C Clamping, IP67, 8 mm *</b> <b>F.42 Spring tether, IP65<sup>1</sup>, hub shaft 10 mm, mounting with front clamping ring</b> <b>F.46 Spring tether, IP65<sup>1</sup>, hub shaft 9,52 mm, mounting with front clamping ring</b> <b>F.47 Spring tether, IP65<sup>1</sup>, hub shaft 12 mm, mounting with front clamping ring</b> <b>F.4E Spring tether, IP65<sup>1</sup>, hub shaft, 12.7 mm, mounting with front clamping ring</b> <b>F.49 Spring tether, IP65<sup>1</sup>, hub shaft 14 mm, mounting with front clamping ring *</b> <b>F.77 Spring tether, IP67, hub shaft, 12 mm, mounting with front clamping ring</b> <b>Q.42 Square, IP65<sup>1</sup>, 10 mm</b> <b>Q.46 Square, IP65<sup>1</sup>, 9,52 mm</b> <b>Q.72 Square, IP67, 10 mm</b> <b>Q.76 Square, IP67, 9,52 mm</b>	EC EtherCAT	R Bus cover with 3x M12 connectors

<sup>1</sup> 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**

#### 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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**TECHNICAL DATASHEET**

**Absolute Encoder AC 58 - EtherCAT®**

**Accessories**

**CONNECTING CABLES**

Connecting cables with plug, Power	Ordering code
PUR cable, M12 connector, A coded, 4 pole, single ended, 2m	3 561 086
PUR cable, M12 connector, A coded, 4 pole, single ended, 5m	3 561 081
PUR cable, M12 connector, A coded, 4 pole, single ended, 10m	3 561 099
PUR cable, M12 connector, A coded, 4 pole, single ended, 15m	3 561 087
PUR cable, M12 connector, A coded, 4 pole, single ended, 20m	3 561 095
PUR cable, M12 connector, A coded, 4 pole, single ended, 40m	3 561 094
PUR cable, M12 connector, A coded, 4 pole, single ended, 50m	3 561 096

Connecting cables with plug, Encoder - Port (Drive)	Ordering code
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 2m	3 561 082
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 5m	3 561 083
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 10m	3 561 100
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 15m	3 561 088
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 20m	3 561 093
PUR cable, RJ45 + M12 connector, D coded, 4 pole, 40m	3 561 092

Connecting cables with plug, Encoder - Encoder	Ordering code
PUR cable, 2x M12 connector, D coded, 4 pole, 2m	3 561 084
PUR cable, 2x M12 connector, D coded, 4 pole, 5m	3 561 085
PUR cable, 2x M12 connector, D coded, 4 pole, 15m	3 561 089
PUR cable, 2x M12 connector, D coded, 4 pole, 20m	3 561 101
PUR cable, 2x M12 connector, D coded, 4 pole, 40m	3 561 097
PUR cable, 2x M12 connector, D coded, 4 pole, 50m	3 561 098

**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

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**Accessories**

**MOUNTING**

	<b>Ordering code</b>
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

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