

TECHNICAL DATASHEET

Absolute Encoder AC 58 - Interbus



hubshaft with tether

- Resolution programmable (K3)
- Resolution up to 24 Bit
- Preset (K3)
- Direction (K3)
- Diagnostic LED



TECHNICAL DATA mechanical

Housing diameter	58 mm
Shaft diameter	6 mm / 10 mm (Solid shaft) 10 mm / 12 mm (Hub shaft)
Flange (Mounting of housing)	Synchro flange, Clamping flange, Tether, Square flange
Protection class shaft input (EN 60529)	IP64 or IP67
Protection class housing (EN 60529)	Connection bus cover: IP67 Connection cable or M23 (conin): IP64 (IP67 optional)
Shaft load axial / radial	40 N / 60 N
Max. speed	max. 10 000 rpm (continuous), max. 12 000 rpm (short term)
Starting torque typ. ¹	≤ 0.01 Nm
Moment of inertia	ca. 3.8 x 10 ⁻⁶ kgm ²
Vibration resistance (DIN EN 60068-2-6)	100 m/s ² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Material shaft	Stainless Steel
Material housing	Aluminum
Weight	approx. 350 g (ST) / 400 g (MT)
Connection	Bus cover with 3 sealed cable exits Bus cover with 2x M23 connectors (Conin), 9 pole Cable 1.5 m with M23 connector (Conin), 12 pole, axial or radial

¹ at 20°C

TECHNICAL DATA electrical

General design	as per DIN EN 61010-1, protection class III, contamination level 2, overvoltage class II
Supply voltage	DC 10-30 V
Max. current w/o load	220 mA (ST, recommended external fuse: T 0.25 A), 250 mA (MT, recommended external fuse: T 0.25 A)
EMC	Noise emission according to EN 50081-2 Immunity to interference according to EN 50082-2
Resolution singleturn	10 - 12 Bit
Resolution multiturn	12 Bit
Output code	32 Bit binary
Linearity	± ½ LSB

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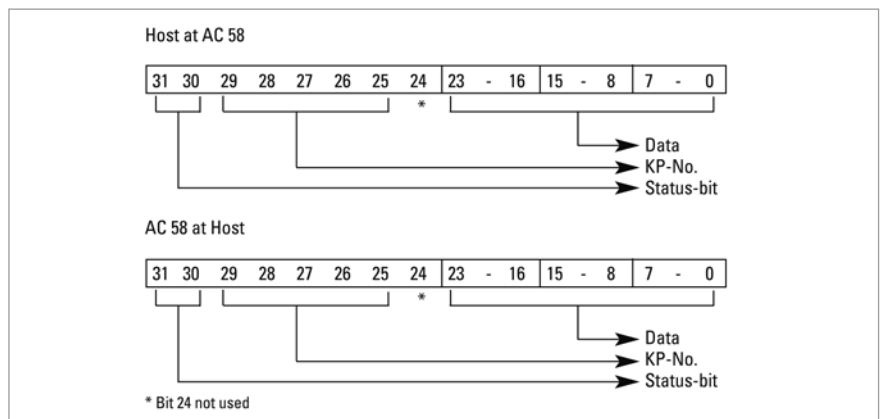
TECHNICAL DATA electrical (continued)

Profile/ protocol	ENCOM-Profil K3 = ID-Code 37, K2 = ID-Code 36
Programmable	Resolution, Preset, Offset, Direction
Output current ¹	max. 4.5 A for bus cover with 2x M23 (recommended external fuse: T 4.5 A) max. 2 A for all other connections (recommended external fuse: T 2 A)
Baud rate	500 Kbaud
Updating of values	every 600 µs

¹ Current with looped through voltage supply

DATA FORMAT Interbus K2/K3

	Differential signals (RS485) ENCOM profile K3, K2, 32 Bit, binary process data			
Data format	Supi-address	0	1	2
(as per Phoenix)	Byte-No.	3	2	1
ID-Code K2	36H (= 54 decimal)			
ID-Code K3	37H (= 55 decimal)			



PROGRAMMABLE FUNKTIONS for Interbus K3

Function (Programming directly via the bus through transfer of configuration para- meters)	Preset values (manufacturer's standard settings)	Customer-specific parameters
Code sequence for clockwise (cw) rotation	ascending	
Offset (KP-No. 05)	0	
Preset value (KP-No. 04)	0	
Scaling faktor (KP-No. 08)	1 ¹	

¹ maximum resolution

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ELECTRICAL CONNECTIONS

Cable with M23 connector (Conin), 12 pole
(Standard according to ENCOM for
remote installation bus)

Plug pin	Signal
1	D02
2	$\overline{D02}$
3	DI 2
4	$\overline{DI 2}$
5	D01
6	$\overline{D01}$
7	DI 1
8	$\overline{DI1}$
9	$\overline{RBST}$
10	GND- signal output ¹
11	0 V (supply voltage)
12	DC 10 - 30 V

¹ Due to electrical isolation not identical with 0 V (supply voltage) identisch;
used by T-manifold to set the RBST input logical on "0"

ELECTRICAL CONNECTIONS

Bus cover with 2x M23 connector
(Conin), 9 pole
(Standard according to ENCOM for remote
installation bus)

Pin	IN (9 pole pins)	OUT (9 pole socket)
1	D01	D02
2	$\overline{D01}$	$\overline{D02}$
3	DI 1	DI 2
4	$\overline{DI1}$	$\overline{DI2}$
5	GND- signal output ¹	GND- signal output ¹
6	PE ²	PE ²
7	DC10 - 30 V (SELV)	DC10 - 30 V (SELV)
8	0 V (supply voltage)	0 V (supply voltage)
9	N.C.	$\overline{RBST}$

¹ Due to electrical isolation not identical with 0 V (supply voltage) identisch;
used by T-manifold to set the RBST input logical on "0"

² Functional earthing; connected with the encoder housing

ELECTRICAL CONNECTIONS

Bus cover with 3 sealed cable exits

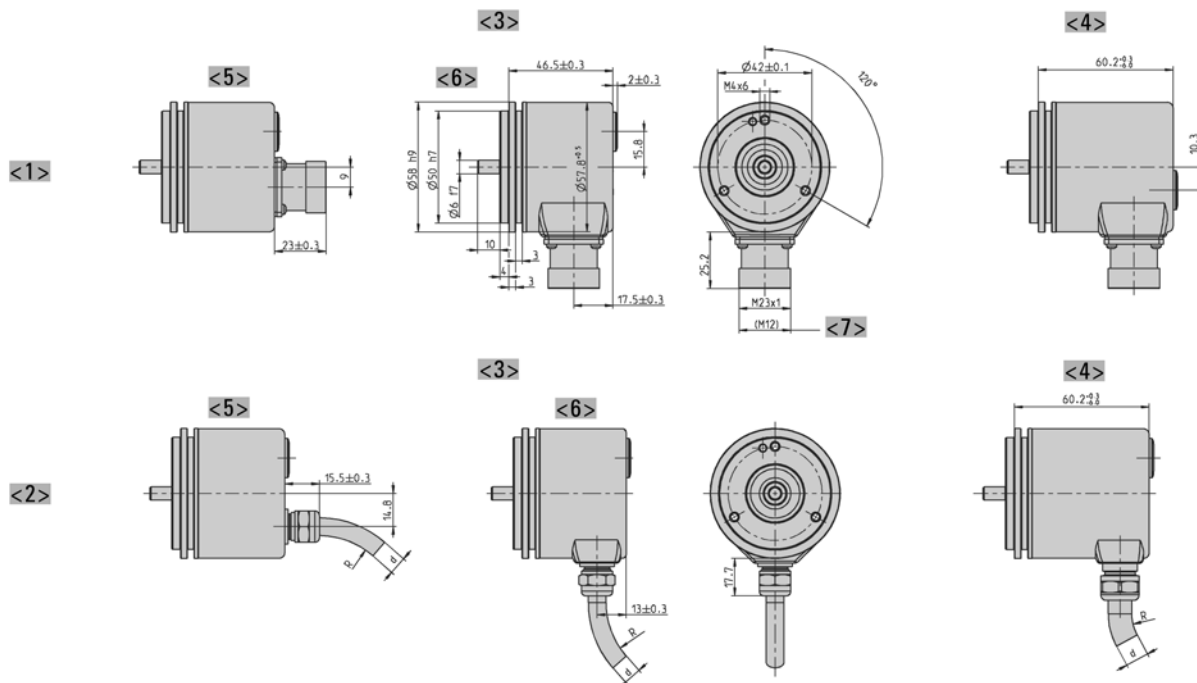
Connection clamp (12 pole)	
1	UB +
2	GND
3	DI1+
4	DI1-
5	D01+
6	D01-
7	D02+
8	D02-
9	DI2+
10	DI2-
11	RBST
12	GND

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DIMENSIONED DRAWINGS

Synchro flange "S"



<1> Connection M23 (Conin)

<2> Connection cable

<3> Interface: BiSS, SSI, ST-Parallel

<4> Interface: MT-Parallel (only with cable), Fieldbus, SSI-P

<5> axial

<6> radial

<7> Value in brackets alternative at SSI

Cable bending radius R for flexible installation $\geq 15 \times$ cable diameter

Cable bending radius R for fixed installation $\geq 7.5 \times$ cable diameter

Cable Ø d BiSS/SSI/SSI-P: $7,1^{+1,2}$

Cable Ø d ST-P: $7,8^{+0,9}$

Cable Ø d MT-P: $9,3^{+1,3}$

Cable Ø d Fieldbus: $7,1^{+1,2}$

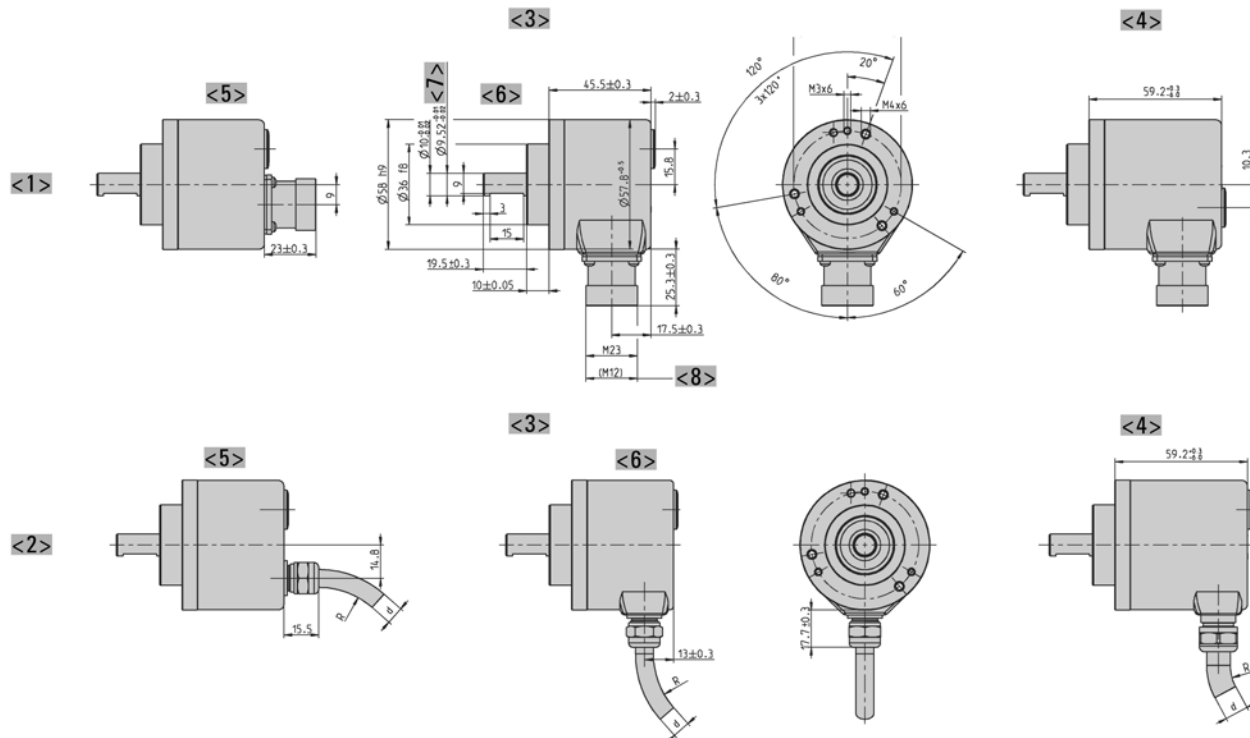
Dimensions in mm

TECHNICAL DATASHEET

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DIMENSIONED DRAWINGS (continued)

Clamping flange "K"



<1> Connection M23 (Conin)

<2> Connection cable

<3> Interface: BiSS, SSI, ST-Parallel

<4> Interface: MT-Parallel (only with cable), Fieldbus, SSI-P

<5> axial

<6> radial

<7> alternative

<8> Value in brackets alternative at SSI

Cable bending radius R for flexible installation $\geq 15 \times$ cable diameter

Cable bending radius R for fixed installation $\geq 7.5 \times$ cable diameter

Cable $\varnothing$ d BiSS/SSI/SSI-P: $7,1^{+1,2}$

Cable $\varnothing$ d ST-P: $7,8^{+0,9}$

Cable $\varnothing$ d MT-P: $9,3^{+1,3}$

Cable $\varnothing$ d Fieldbus: $7,1^{+1,2}$

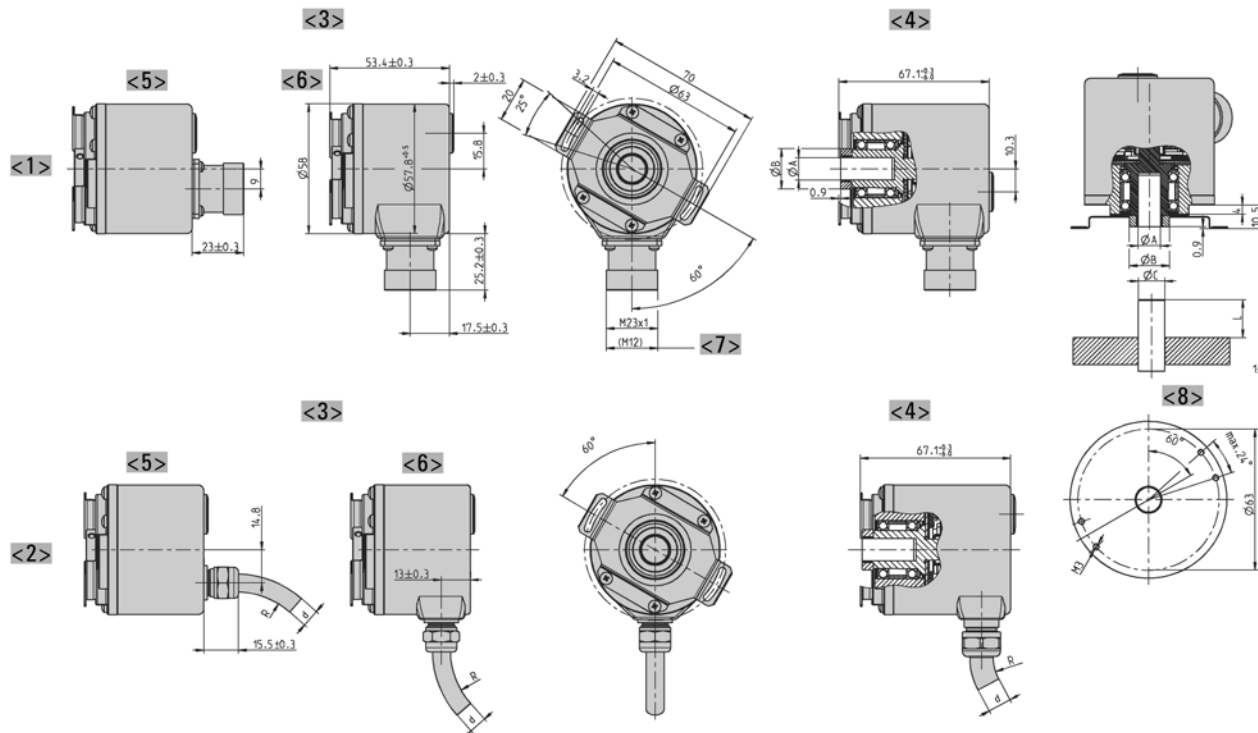
Dimensions in mm

TECHNICAL DATASHEET

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DIMENSIONED DRAWINGS (continued)

Hollow shaft "F"



	Dim.				Unit
Hollow shaft Ø A	10 ^{+0.012}	12 ^{+0.012}	9,52 ^{+0.012}	12,7 ^{+0.012}	mm
Connecting shaft Ø C	10 _{g7}	12 _{g7}	9,52 _{g7}	12,7 _{g7}	mm
Clamping ring Ø B	18	20	18	22	mm
L _{min}	15	18	15	18	mm
L _{max}	20	20	20	20	mm
Shaft code	"2"	"7"	"6"	"E"	

L = Inside length of connection shaft

- <1> Connection M23 (Conin)
 - <2> Connection cable
 - <3> Interface: BiSS, SSI, ST-Parallel
 - <4> Interface: MT-Parallel (only with cable), Fieldbus, SSI-P
 - <5> axial
 - <6> radial
 - <7> Value in brackets alternative at SSI
 - <8> Customer side
- Cable bending radius R for flexible installation $\geq 15 \times$ cable diameter
 Cable bending radius R for fixed installation $\geq 7.5 \times$ cable diameter
 Cable Ø d BiSS/SSI/SSI-P: 7,1^{+1,2}
 Cable Ø d ST-P: 7,8^{+0,9}
 Cable Ø d MT-P: 9,3^{+1,3}
 Cable Ø d Fieldbus: 7,1^{+1,2}

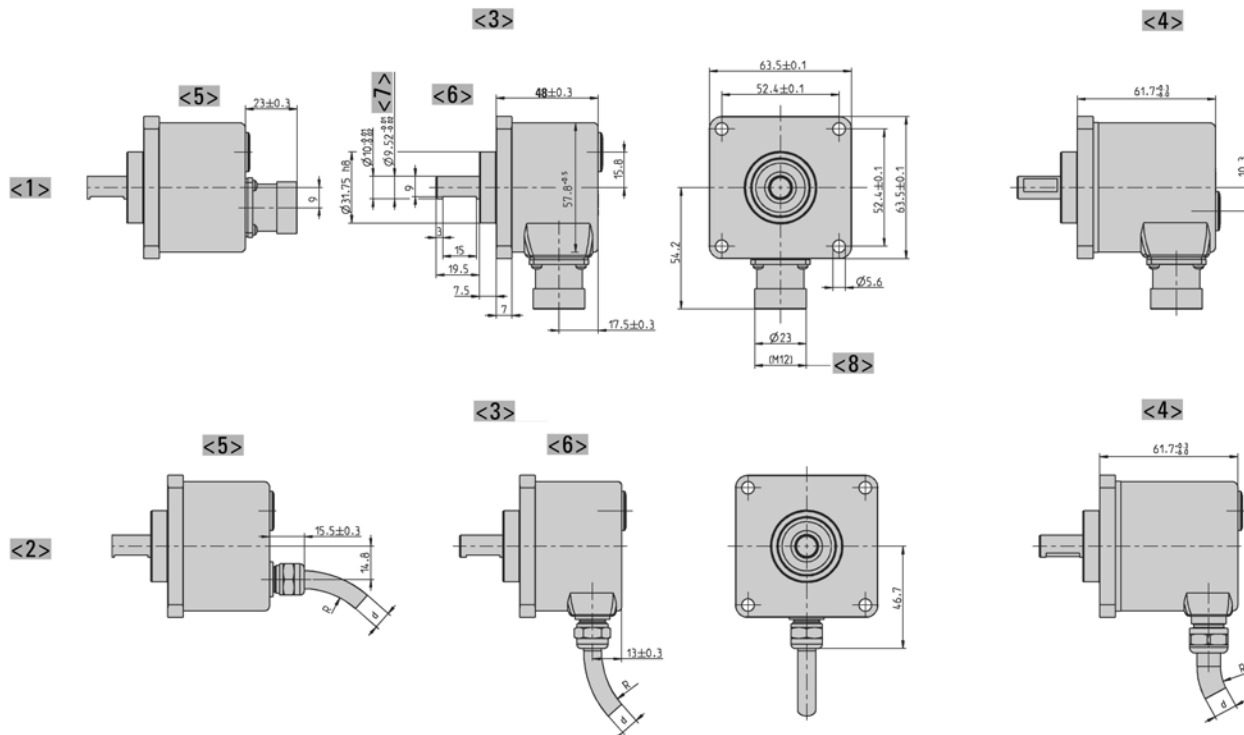
Dimensions in mm

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DIMENSIONED DRAWINGS (continued)

Square flange "Q"



- <1> Connection M23 (Conin)
- <2> Connection cable
- <3> Interface: BiSS, SSI, ST-Parallel
- <4> Interface: MT-Parallel (only with cable), Fieldbus, SSI-P
- <5> axial
- <6> radial
- <7> alternative

- <8> Value in brackets alternative at SSI
- Cable bending radius R for flexible installation $\geq 15 \times$ cable diameter
- Cable bending radius R for fixed installation $\geq 7.5 \times$ cable diameter
- Cable $\varnothing$ d BiSS/SSI/SSI-P: $7,1^{+1,2}$
- Cable $\varnothing$ d ST-P: $7,8^{+0,9}$
- Cable $\varnothing$ d MT-P: $9,3^{+1,3}$
- Cable $\varnothing$ d Fieldbus: $7,1^{+1,2}$

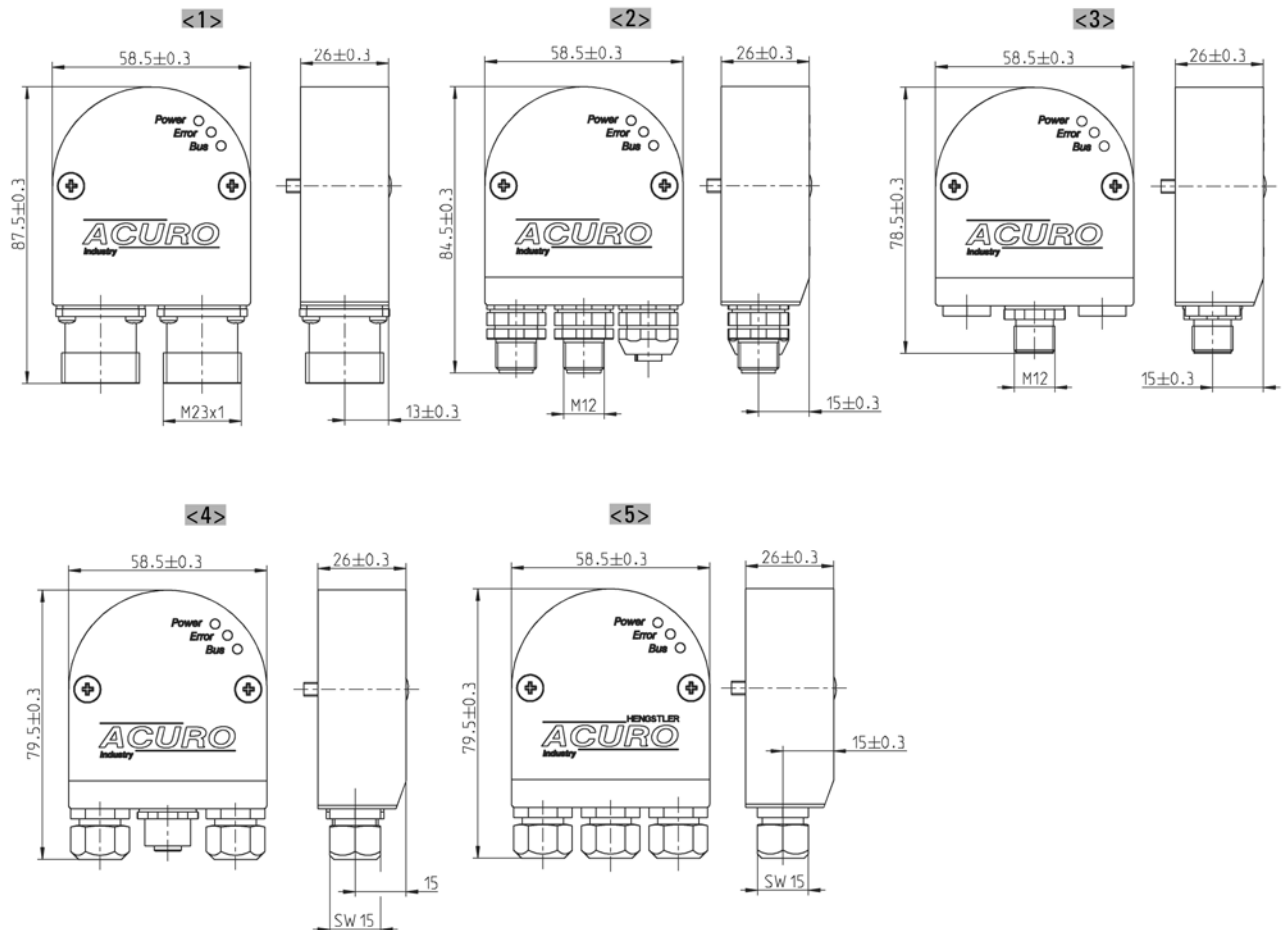
Dimensions in mm

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DIMENSIONED DRAWINGS (continued)

Bus covers



<1> Connection "I"
 <2> Connection "R"
 <3> Connection "S"

<4> Connection "T"
 <5> Connection "Z"

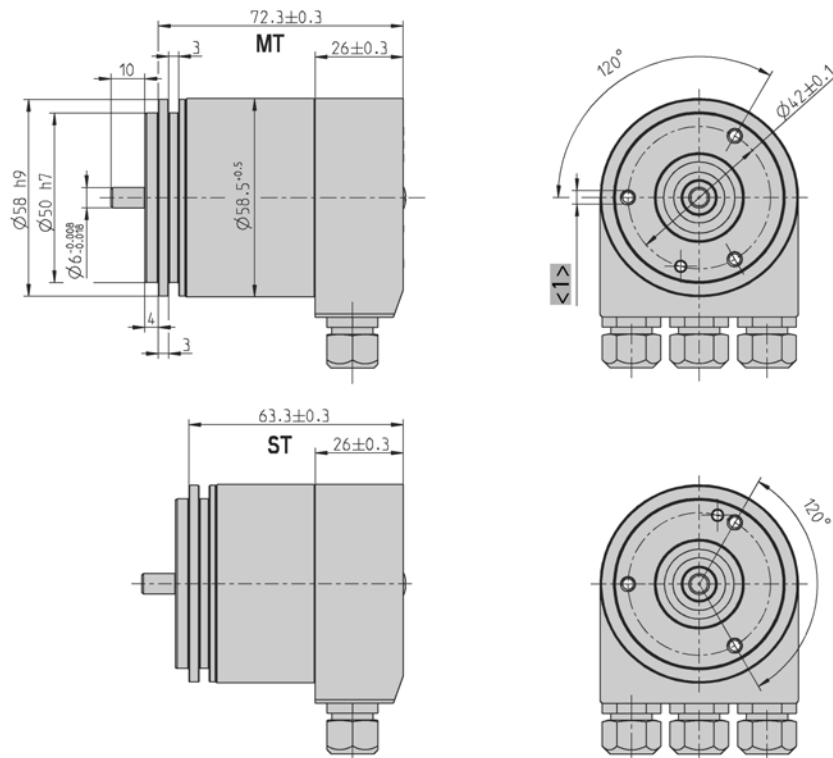
Dimensions in mm

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DIMENSIONED DRAWINGS (continued)

Synchro flange "S"



<1> 3xM4 (6 deep)

Dimensions in mm

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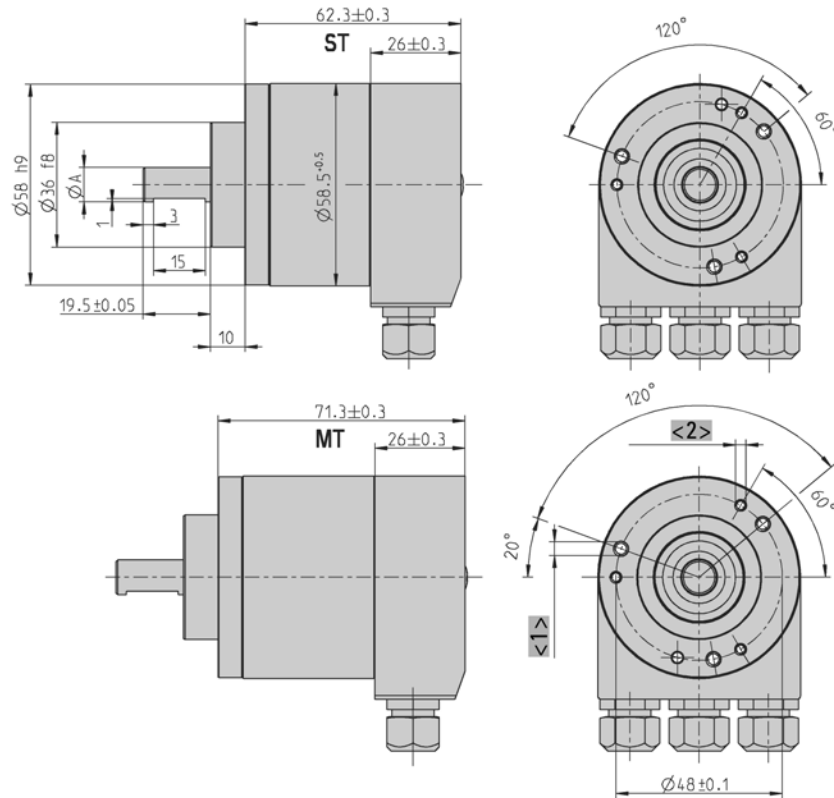
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DIMENSIONED DRAWINGS (continued)

Clamping flange "K"



	Dim.		Unit
Shaft Ø A	10 ^{-0.01/-0.02}	9.52 ^{-0.01/-0.02}	mm
Shaft code	"2"	"6"	

- <1> 3xM4 (6 deep)
<2> 3xM3 (6 deep)

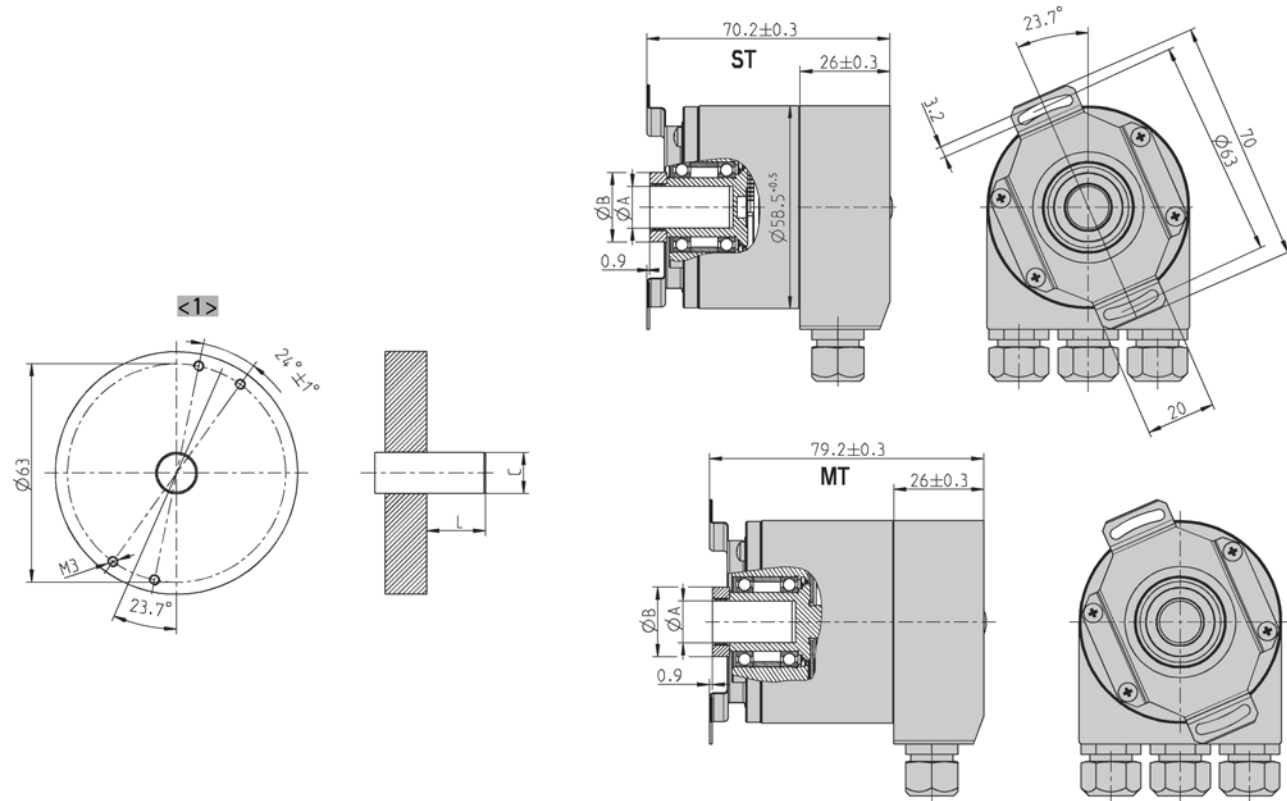
Dimensions in mm

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DIMENSIONED DRAWINGS (continued)

Hollow shaft "F"



	Dim.				Unit
Hollow shaft Ø A	10 ^{+0.012}	12 ^{+0.012}	9,52 ^{+0.012}	12,7 ^{+0.012}	mm
Connecting shaft Ø C	10 _{g7}	12 _{g7}	9,52 _{g7}	12,7 _{g7}	mm
Clamping ring Ø B	18	20	18	22	mm
L _{min}	15	18	15	18	mm
L _{max}	20	20	20	20	mm
Shaft code	"2"	"7"	"6"	"E"	

L = Inside length of connection shaft

<1> Customer side

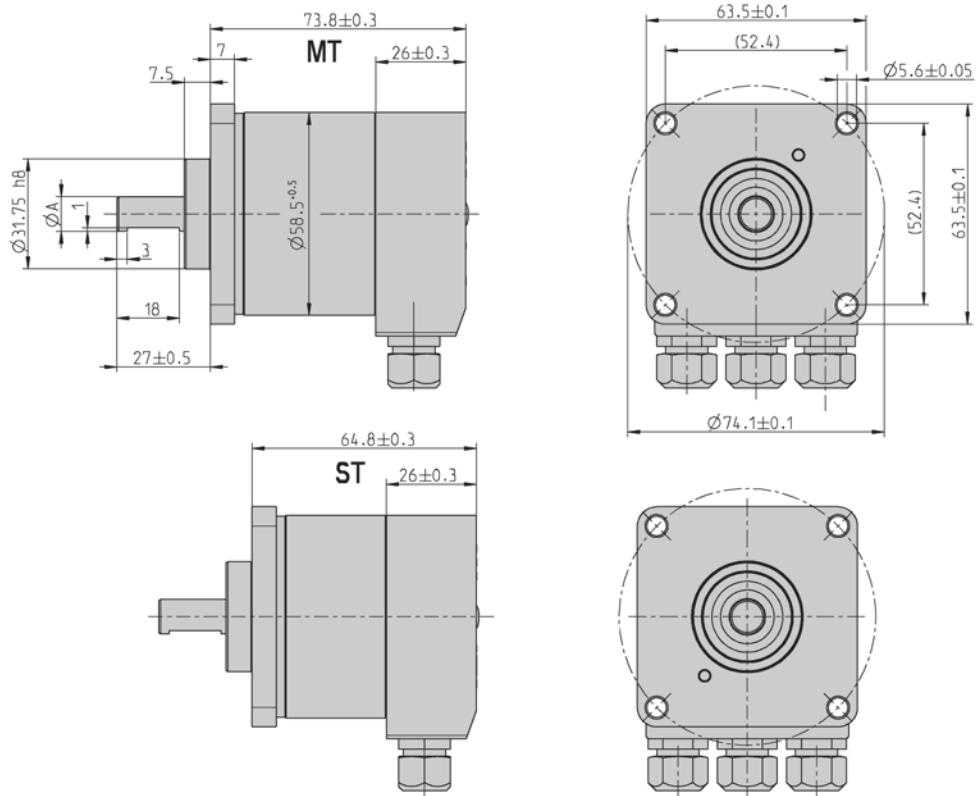
Dimensions in mm

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DIMENSIONED DRAWINGS (continued)

Square flange "Q"



	Dim.		Unit
Shaft Ø A	10 ^{-0.01/-0.02}	9.52 ^{-0.01/-0.02}	mm
Shaft code	"2"	"6"	

Dimensions in mm

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ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft ¹	Interface	Connection
☐	☐	☐	☐	☐	☐
AC58	0010 10 Bit ST 0012 12 Bit ST 1212 12 Bit MT + 12 Bit ST	E DC 10 - 30 V	S.41 Synchro, IP64, 6 mm S.71 Synchro, IP67, 6 mm K.42 Clamping, IP64, 10 mm K.46 Clamping, IP64, 9.52 mm K.72 Clamping, IP67, 10 mm K.76 Clamping, IP67, 9.52 mm F.46 Spring tether, IP64, hubshaft 9.52 mm, mounting with clamping ring front F.42 Spring tether, IP64, hubshaft 10 mm, mounting with clamping ring front F.47 Spring tether, IP64, hubshaft 12 mm, mounting with clamping ring front Q.46 Square, IP64, 9.52 mm Q.42 Square, IP64, 10 mm Q.76 Square, IP67, 9.52 mm Q.72 Square, IP67, 10 mm	I2 Interbus K2 I3 Interbus K3	I Bus cover with 2x M23 connector (Co-nin), 9 pole, radial, cw Z Bus cover with 3 sealed cable exits A-B5-C 1.5 m cable with M23 connector (Co-nin), 12 pole, axial B-B5-C 1.5 m cable with M23 connector (Co-nin), 12 pole, radial

¹ Protection class IP67 not available in combination with LED display for connection with cable (connection code A-B5-C and B-B5-C)

Preferably available versions are printed in bold type.

TECHNICAL DATASHEET

Absolute Encoder AC 58 - Interbus Accessories

FLEXIBLE COUPLINGS



Bellows coupling



Disk coupling



Helical coupling



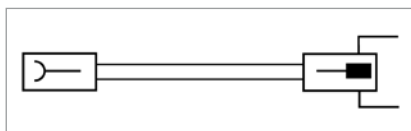
Isolated disk coupling

		Ordering code
Bellows coupling	10 mm / 10 mm	3 520 037
Bellows coupling	6 mm / 6 mm	3 520 068
Bellows coupling	8 mm / 10 mm	3 520 077
Disk coupling	6 mm / 6 mm	0 070 663
Helical coupling 19/28	5 mm / 6 mm	3 520 035
Helical coupling 19/28	6 mm / 6 mm	0 070 653
Helical coupling 19/28	6 mm / 6.35 mm	3 520 051
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 / 12 mm	3 520 065
Helical coupling 25/32	10 mm / 10 mm	3 520 074
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

MOUNTING

	Ordering code
Clamping eccentric, For M4 (set of three)	1 522 300
Clamping eccentric for synchro flange, d6,5 for M3 (set of three)	0 070 655
Fastening angle (plastic), for clamping flange RI 58, AC 58 (fastening material included)	1 522 329
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
Torque support	1 531 188

CONNECTING CABLES



Connecting cables with connector on both end	Ordering code
M23 (Conin), 12 pole, TPE cable, mating connector for connection -C (cable plug cw), 3 m	1 542 017
M23 (Conin), 12 pole, TPE cable, mating connector for connection -C (cable plug cw), 5 m	1 542 018
M23 (Conin), 12 pole, TPE cable, mating connector for connection -C (cable plug cw), 10 m	1 542 019