

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen



Clamping flange

- Diagnostic LED
- Programmable: Resolution, Preset, Offset, Direction
- Output of speed, acceleration
- Operation timer
- Option: Display "tico"
- Address and baud rate via interface parameterizable (optional)



CANopen



#### 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
Axial endplay of mounting shaft (hubshaft)	± 1.5 mm
Radial runout of mating shaft (hubshaft)	± 0.2 mm
Max. speed	max. 10 000 rpm (continuous), max. 12 000 rpm (short term)
Starting torque typ. <sup>1</sup>	≤ 0.01 Nm
Moment of inertia	ca. 3.8 x 10 <sup>-6</sup> kgm <sup>2</sup>
Vibration resistance (DIN EN 60068-2-6)	100 m/s <sup>2</sup> (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Operating temperature	-40 °C ... +85 °C
Storage temperature	-40 °C ... +85 °C
Material shaft	Stainless Steel
Material housing	Aluminum
Weight	approx. 350 g (ST) / 400 g (MT)
Connection	Cable, axial or radial M23 connector (Conin), 12 pole, axial or radial Bus cover with 3 sealed cable exits Bus cover with 2x M23 connectors (Conin), 9 pole Bus cover with 2 sealed cable exits + 1 x M12 connector for "tico" display, 4 pole

<sup>1</sup> 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), 250 mA (MT)
Resolution singleturn	10 - 16 Bit
Resolution multiturn	12 Bit

**TECHNICAL DATASHEET**

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**TECHNICAL DATA**  
electrical (continued)

Output code	Binary
Linearity	± ½ LSB (± 1 LSB for resolution 13, 14, 25, 26 Bit)
Profile/ protocol	CANopen according to DS 301 with profile DSP 406, programmable encoder according class C2
Programmable	Resolution, Preset, Offset, Direction
Integrated special functions	Speed, Acceleration, Limit values, Operating time
Baud rate	set via DIP switches within a range of 10 through 1000 Kbit/s
Bus termination resistor	set via DIP switches
Updating of values	every millisecond (adjustable), on request
Basic identifier	set via DIP switches

**ELECTRICAL CONNECTIONS**  
Bus cover with 2x M23 connectors (Conin), 9 pole

M23-PIN (Conin)	Pin insert (IN)	Socket insert (OUT)
1	CAN in +	CAN out +
2	CAN in -	CAN out-
3	CAN GND in	CAN GND out
4	N.C.	N.C.
5	N.C.	N.C.
6	N.C.	N.C.
7	UB in	UB out
8	0 V in	0 V out
9	N.C.	N.C.
screen	screen <sup>1</sup>	screen <sup>1</sup>

<sup>1</sup> screen connected with encoder housing

**ELECTRICAL CONNECTIONS**  
M23 connector (Conin), 12 pole / cable

M23-Pin (Conin)	TPE cable	Cable pairs	Signal
7	yellow	Pair 1	CAN in+
2	green		CAN in -
4	pink	Pair 2	CAN out +
5	grey		CAN out -
3	blue		CAN GND in
11	brown		CAN GND out
12	white	Pair 3	UB in
10	brown		0 V in
screen	screen		screen

**ELECTRICAL CONNECTIONS**  
Bus cover with 3 sealed cable exits

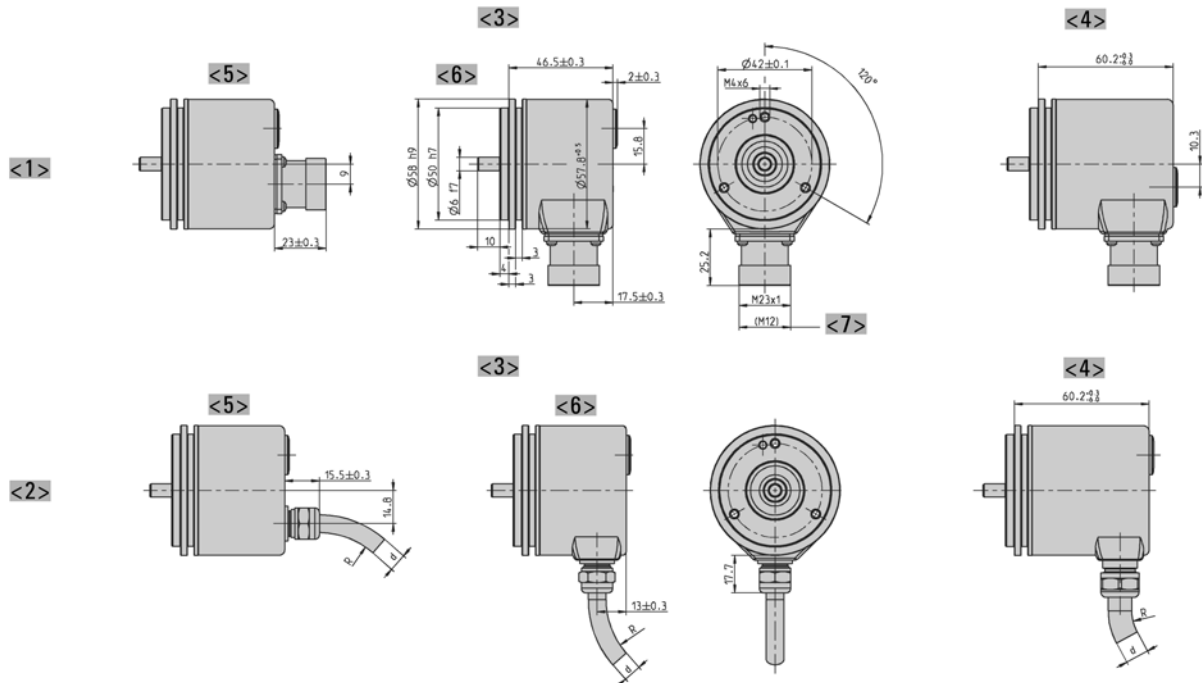
Connecting block KL 1 (10 pole)	
No.	Signal name
1	UB in (DC 10-30V)
2	0 V in
3	CAN in - (dominant L)
4	CAN in + (dominant H)
5	CAN GND in
6	CAN GND out
7	CAN out + (dominant H)
8	CAN out - (dominant L)
9	0 V out
10	UB out (DC 10-30V)

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### 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  $\varnothing$  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:  $7,1^{+1,2}$

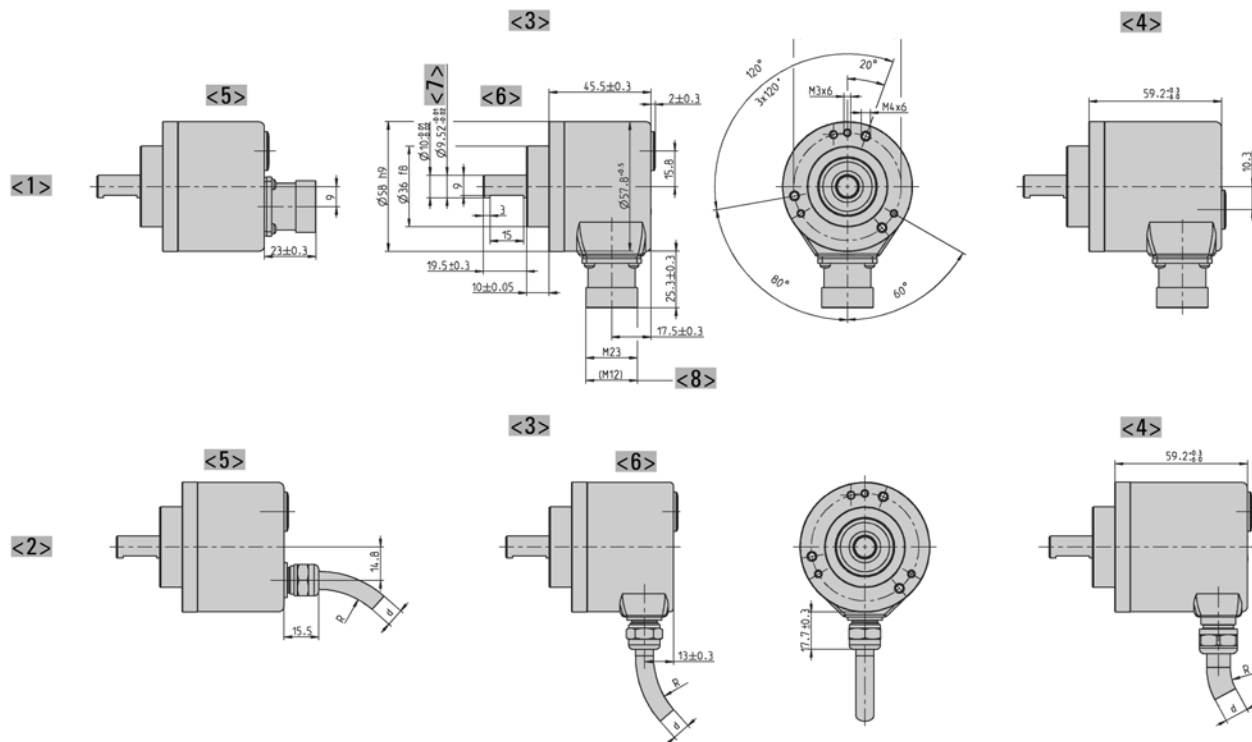
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### 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:  $7,1^{+1,2}$

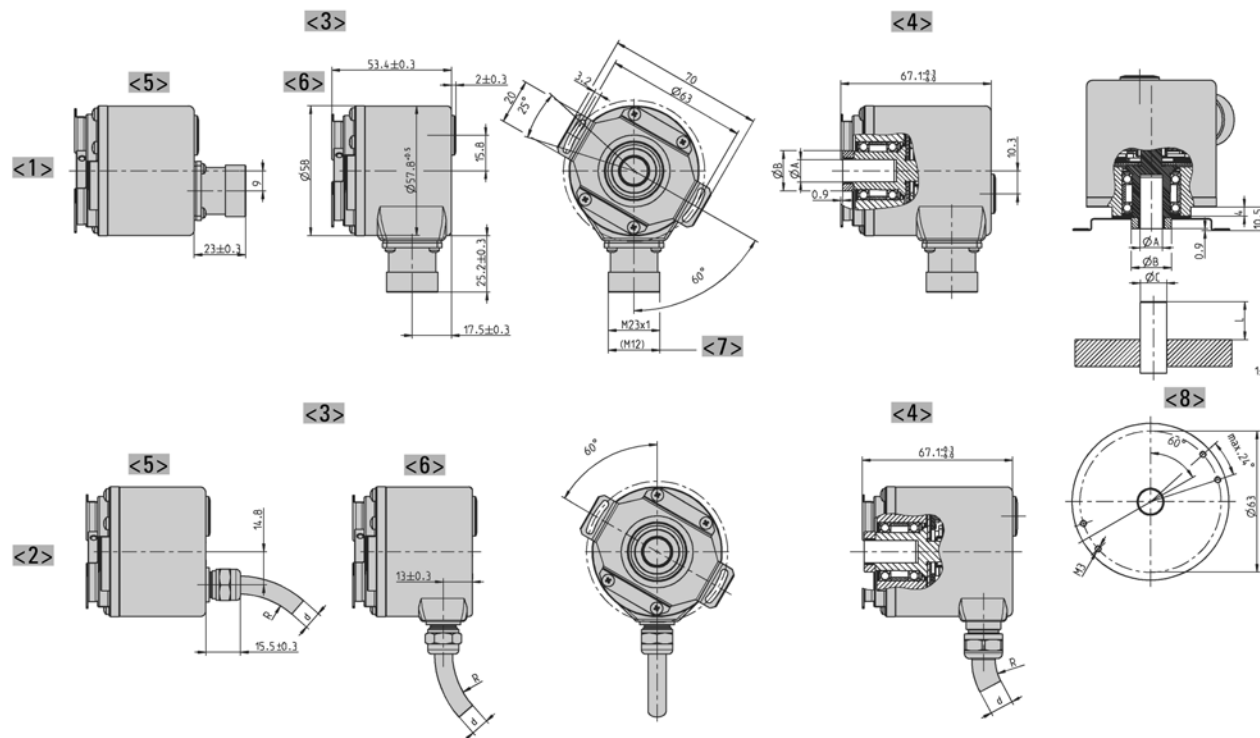
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### DIMENSIONED DRAWINGS (continued)

##### Hollow shaft "F"



	Dim.				Unit
	<5>	<6>	<3>	<4>	
Hollow shaft Ø A	10 <sup>+0.012</sup>	12 <sup>+0.012</sup>	9,52 <sup>+0.012</sup>	12,7 <sup>+0.012</sup>	mm
Connecting shaft Ø C	10 <sub>g7</sub>	12 <sub>g7</sub>	9,52 <sub>g7</sub>	12,7 <sub>g7</sub>	mm
Clamping ring Ø B	18	20	18	22	mm
L <sub>min</sub>	15	18	15	18	mm
L <sub>max</sub>	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<sup>+1,2</sup>  
 Cable Ø d ST-P: 7,8<sup>+0,9</sup>  
 Cable Ø d MT-P: 9,3<sup>+1,3</sup>  
 Cable Ø d Fieldbus: 7,1<sup>+1,2</sup>

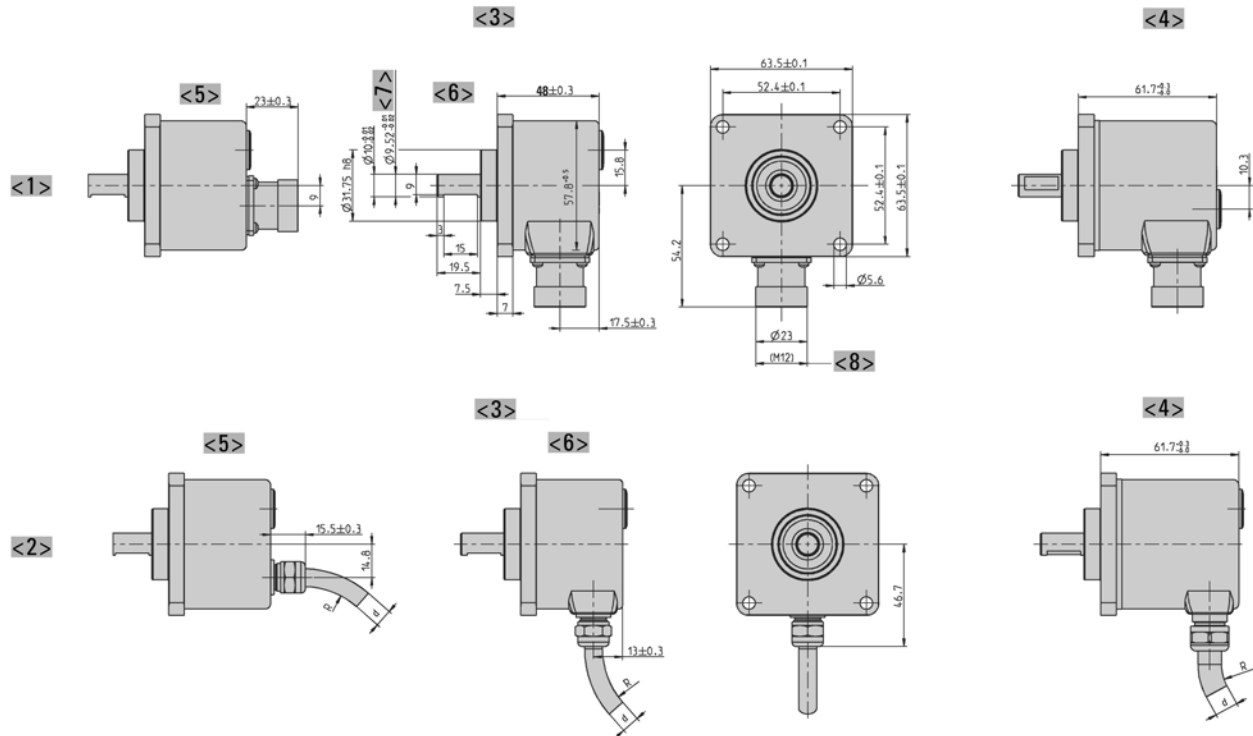
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### 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:  $7,1^{+1,2}$

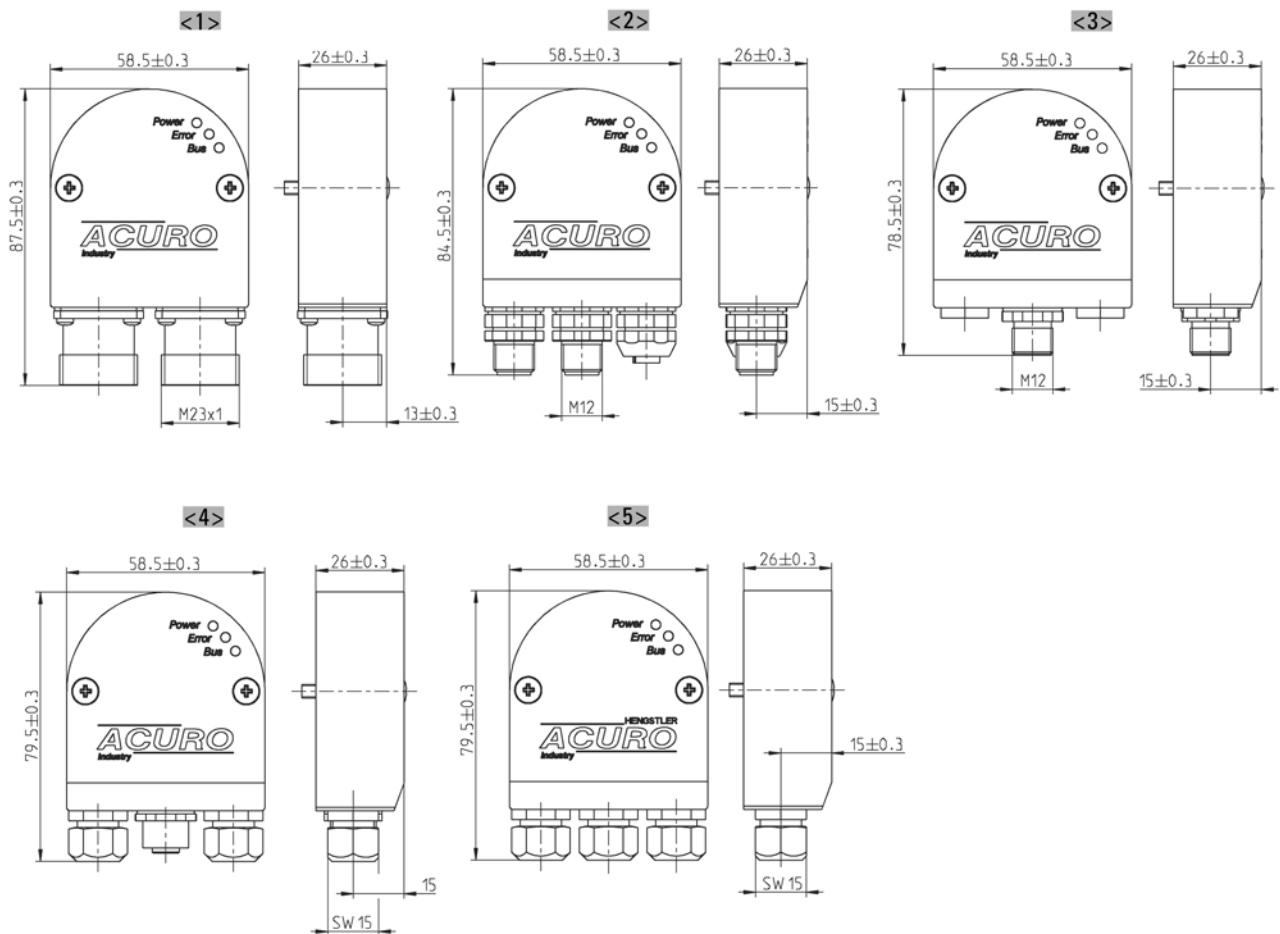
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### DIMENSIONED DRAWINGS (continued)

##### Bus covers



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

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

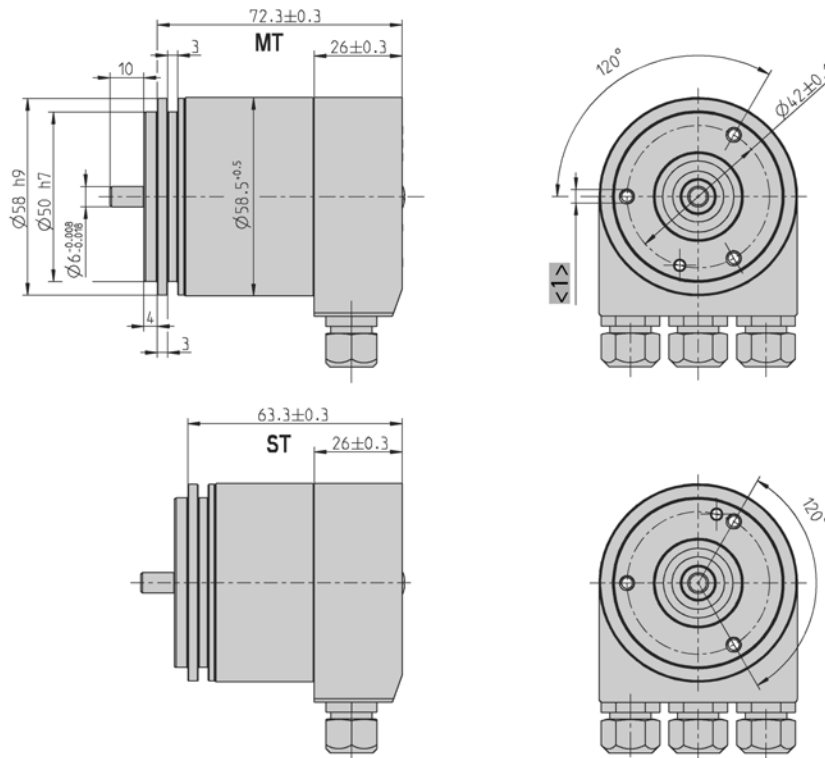
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### DIMENSIONED DRAWINGS (continued)

##### Synchro flange "S"



<1> 3xM4 (6 deep)

Dimensions in mm

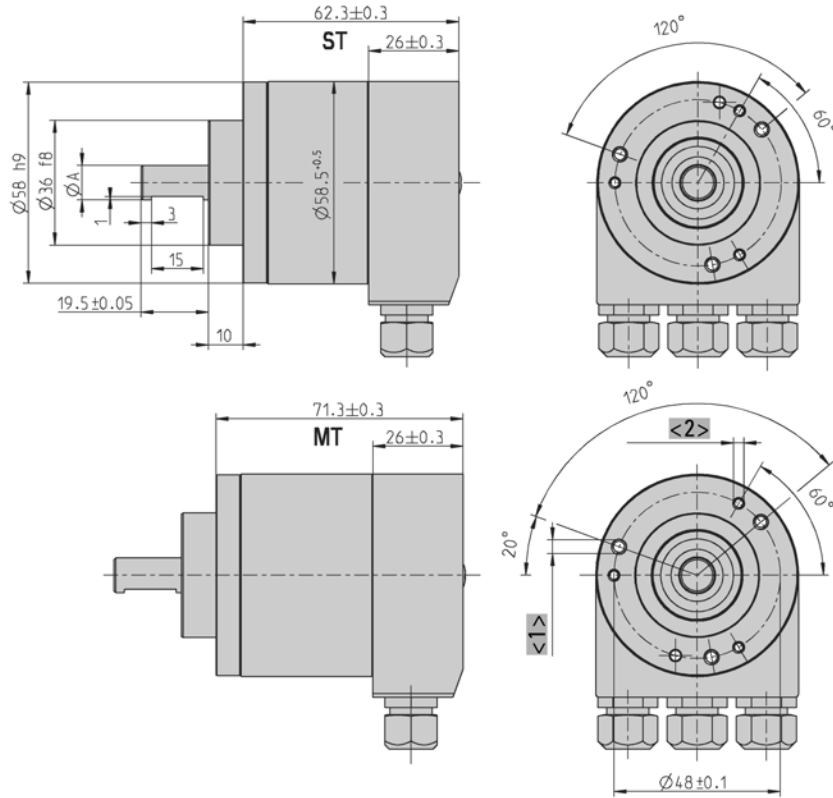


**TECHNICAL DATASHEET**

**Absolute Encoder AC 58 - CANopen**

**DIMENSIONED DRAWINGS (continued)**

**Clamping flange "K"**



	Dim.		Unit
Shaft Ø A	10 <sup>-0.01/-0.02</sup>	9.52 <sup>-0.01/-0.02</sup>	mm
Shaft code	"2"	"6"	

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

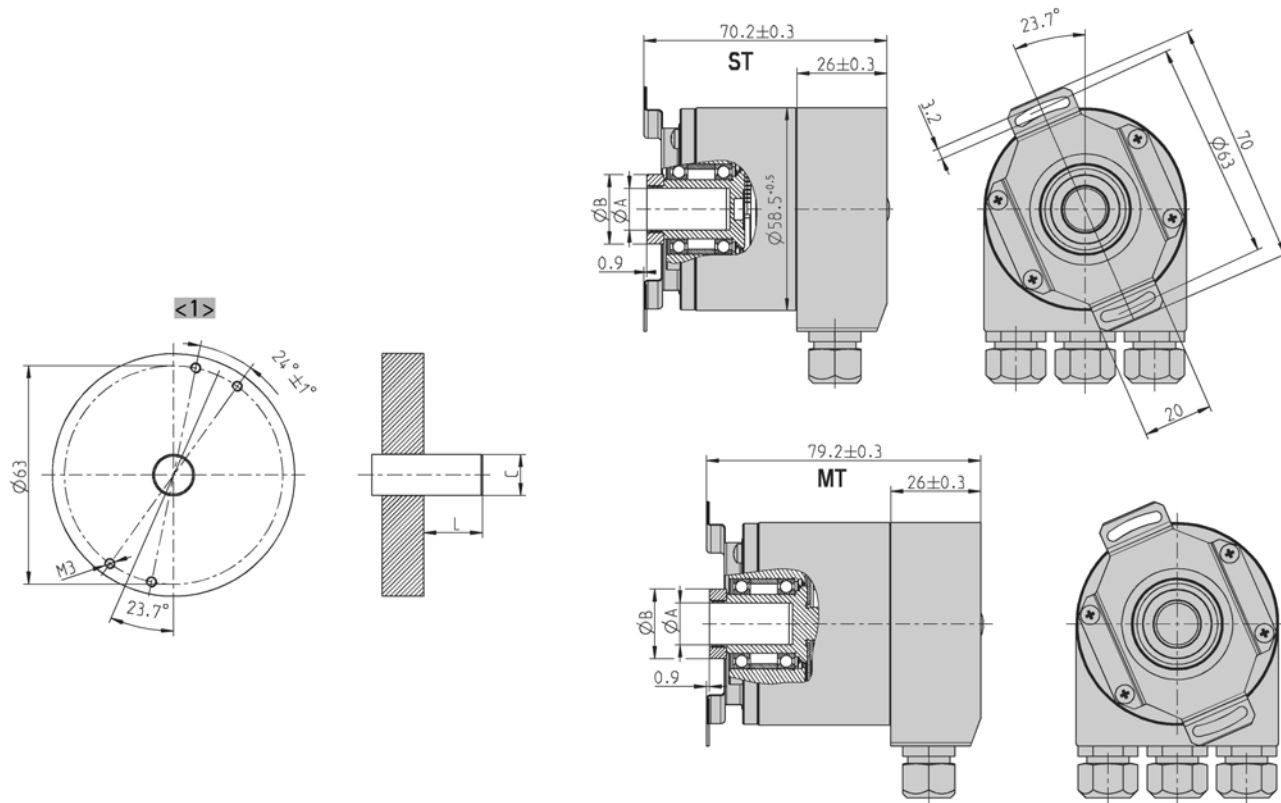
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### DIMENSIONED DRAWINGS (continued)

##### Hollow shaft "F"



	Dim.				Unit
	1	2	3	4	
Hollow shaft $\varnothing A$	10 <sup>+0.012</sup>	12 <sup>+0.012</sup>	9,52 <sup>+0.012</sup>	12,7 <sup>+0.012</sup>	mm
Connecting shaft $\varnothing C$	10 <sub>g7</sub>	12 <sub>g7</sub>	9,52 <sub>g7</sub>	12,7 <sub>g7</sub>	mm
Clamping ring $\varnothing B$	18	20	18	22	mm
L <sub>min</sub>	15	18	15	18	mm
L <sub>max</sub>	20	20	20	20	mm
Shaft code	"2"	"7"	"6"	"E"	

L = Inside length of connection shaft

<1> Customer side

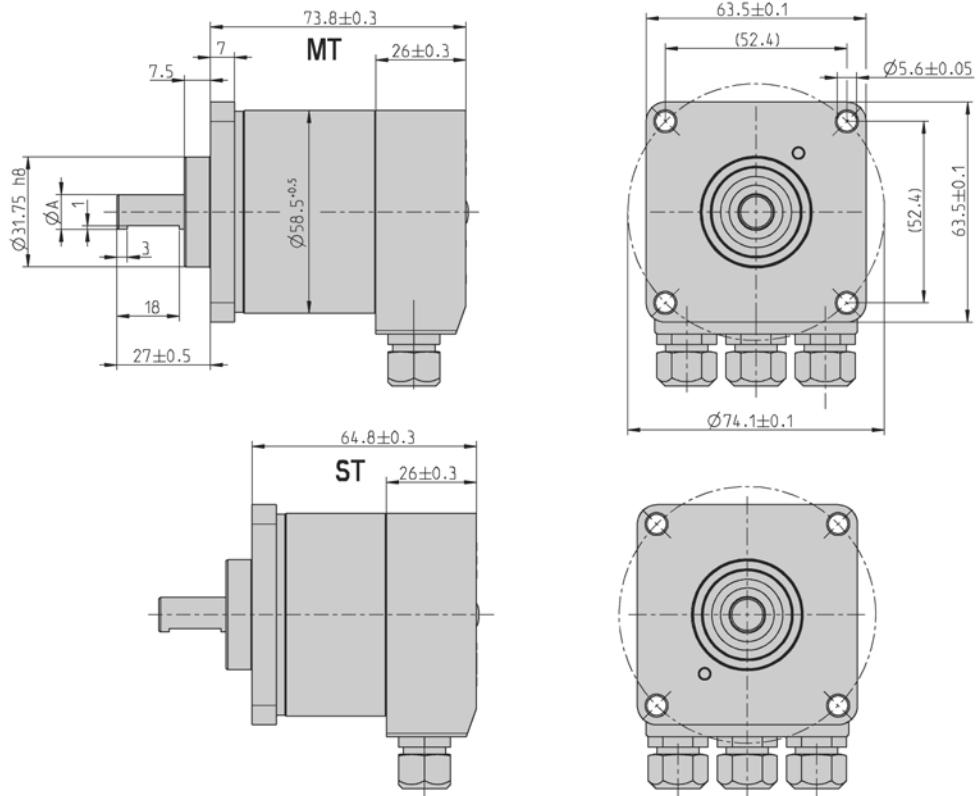
Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### DIMENSIONED DRAWINGS (continued)

##### Square flange "Q"



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

Dimensions in mm

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen

#### ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft <sup>1</sup>	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>1212</b> 12 Bit MT + 12 Bit ST <b>1213</b> 12 Bit MT + 13 Bit ST <b>1214</b> 12 Bit MT + 14 Bit ST	E DC 10 - 30 V	<b>S.41</b> Synchro, IP64, 6 mm <b>S.71</b> Synchro, IP67, 6 mm <b>K.42</b> Clamping, IP64, 10 mm <b>K.46</b> Clamping, IP64, 9.52 mm <b>K.72</b> Clamping, IP67, 10 mm <b>K.76</b> Clamping, IP67, 9.52 mm <b>F.46</b> Spring tether, IP64, hubshaft 9.52 mm, mounting with clamping ring front <b>F.42</b> Spring tether, IP64, hubshaft 10 mm, mounting with clamping ring front <b>F.47</b> Spring tether, IP64, hubshaft 12 mm, mounting with clamping ring front <b>Q.46</b> Square, IP64, 9.52 mm <b>Q.42</b> Square, IP64, 10 mm <b>Q.76</b> Square, IP67, 9.52 mm <b>Q.72</b> Square, IP67, 10 mm	<b>OL</b> CANopen <b>OC</b> CANopen - on request -	<b>A</b> Cable, axial <b>B</b> Cable, radial <b>C</b> M23 connector (Conin), 12 pole, axial, cw <b>D</b> M23 connector (Conin), 12 pole, radial, cw <b>G</b> M23 connector (Conin), 12 pole, axial, ccw <b>H</b> M23 connector (Conin), 12 pole, radial, ccw <b>I</b> Bus cover with 2x M23 connector (Conin), 9 pole, radial, cw <b>T</b> Bus cover with 2 sealed cable exits + 1 x M12 connector for "tico" display, 4 pole <b>Z</b> Bus cover with 2 sealed cable exits

<sup>1</sup> Protection class IP67 in combination with connection "A" - "H": Version without DIP switches and LED. Setting over fieldbus  
**Preferably available versions are printed in bold type.**

#### ORDERING INFORMATION

##### Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. For variants with connector on cable end please add cable length code in between. Further cable lengths on request.

Code	Cable length
without code	1.5 m
-D0	3 m
-F0	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

Example:

Cable 3 m length: ... B - D0

Cable mit 3 m length and M23 connector, cw: ... B - D0 - I

## TECHNICAL DATASHEET

### Absolute Encoder AC 58 - CANopen Accessories

#### FLEXIBLE COUPLINGS



Bellows coupling



Disk coupling



Helical coupling



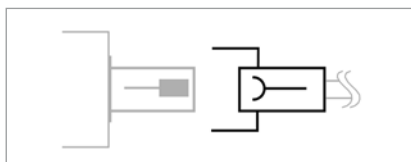
Isolated disk coupling

		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

#### CONNECTORS

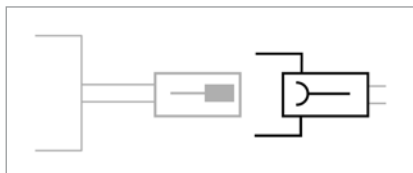


Connector (socket) matching with encoder connector	Ordering code
M23 (Conin), 12 pole, PG9, cw, mating connector for connection C/D/-I	3 539 202

## TECHNICAL DATASHEET

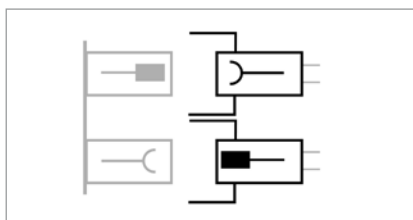
### Absolute Encoder AC 58 - CANopen Accessories

#### CONNECTORS



Connector (socket) matching with encoder cable with connector	Ordering code
M23 (Conin), 12 pole, ccw, mating connector for connection G/H/-D/-H	3 539 229

#### CONNECTORS



Connector for connecting bus cover with 2x M23	Ordering code
M23 (Conin), 9 pole, PG9, cw, pins	3 539 293
M23 (Conin), 9 pole, PG9, cw, socket	3 539 294

#### CONNECTING CABLES

Cable not made up with connectors	Ordering code
TPE cable, 12-core + screen	3 280 220 + length

#### DISPLAYS

	Ordering code
"Tico" display for connection T (Caution: Neutralizes ohmic isolation)	0 731 205
Connection cable bus cover (connection T) to "tico", 1.5 m	3 539 516

#### TECHNICAL MANUALS

	Ordering code
Technical manual, English	2 565 255 (or homepage)
Technical manual, German	2 565 090 (or homepage)

#### SOFTWARE

	Ordering code
EDS-file, as download from our homepage	www.hengstler.com