TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2



Clamping flange

- Diagnostic LED
- Poll and auto mode
- Programmable: Direction, limit values
- Option: Display "tico"

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)	IP67 or 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. [1]	≤ 0.01 Nm
Moment of inertia	ca. 3.8 x 10^{-6} kgm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (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

[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), 250 mA (MT)
Resolution singleturn	10 - 14 Bit
Resolution multiturn	12 Bit

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2

TECHNICAL DATA
electrical (continued)

Output code	Binary
Linearity	± ½ LSB (± 1 LSB for resolution 13, 14, 25, 26 Bit)
Profile/ protocol	CAN 2.0 A
Programmable	Direction, Limit values
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
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 [1]	screen [1]

[1] 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

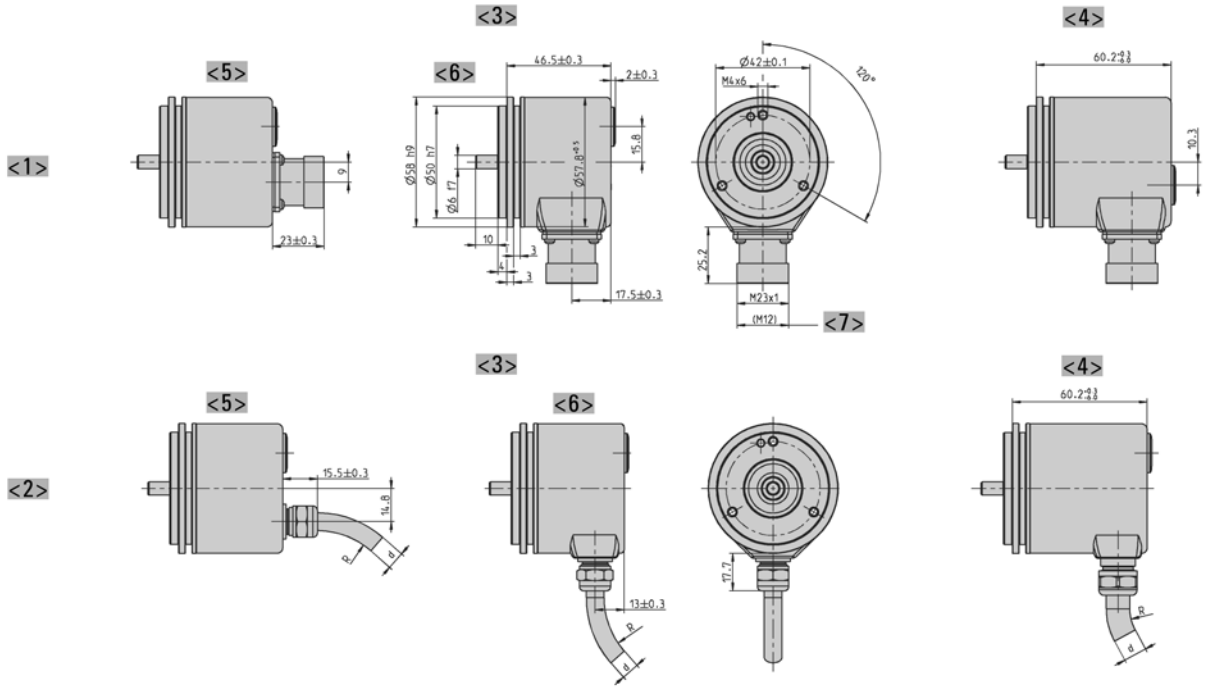
Connecting block KL 1 (10 pole)	
No.	**Signal name**
1	UB in (DC 10-30V)
2	0 V in
3	CAN in - (dominant L)
4	CAN in + (dominant H)
5	CAN GND in
6	CAN GND out
7	CAN out + (dominant H)
8	CAN out - (dominant L)
9	0 V out
10	UB out (DC 10-30V)

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2

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 ≥ 15 x cable diameter
Cable bending radius R for fixed installation ≥ 7.5 x 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

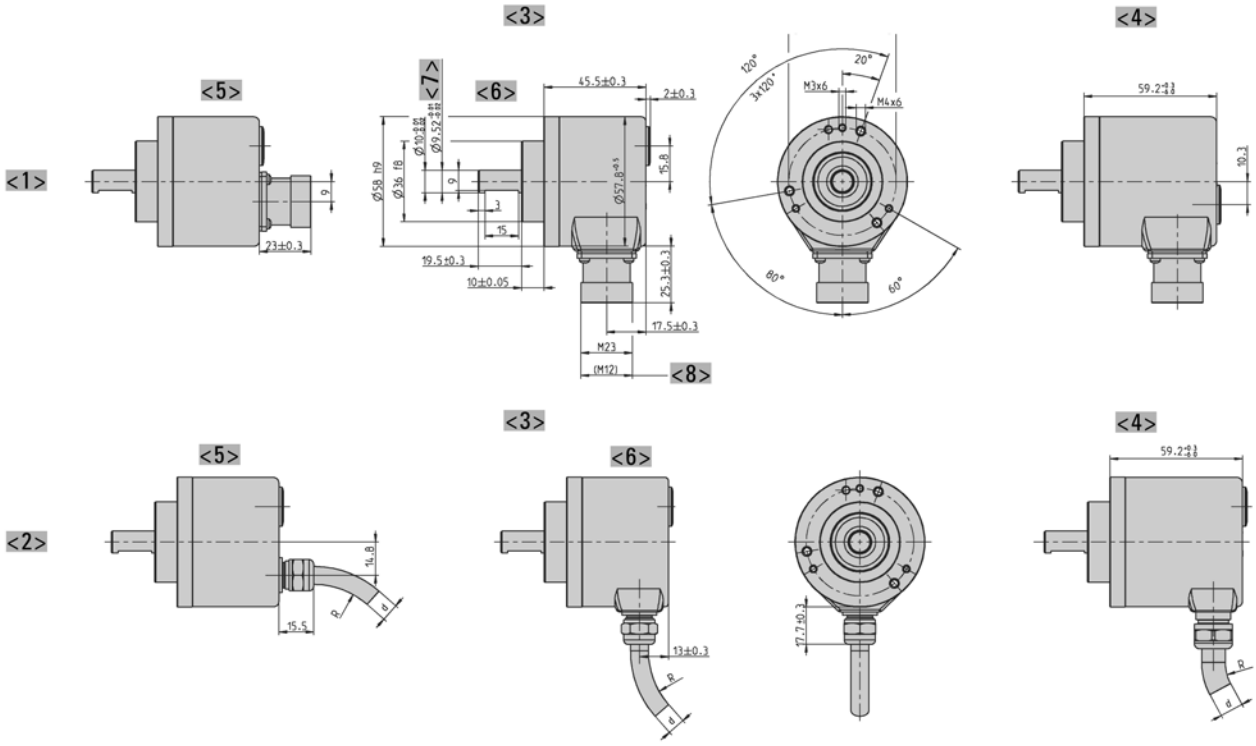
Dimensions in mm

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2

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 ≥ 15 x cable diameter
Cable bending radius R for fixed installation ≥ 7.5 x 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 $^{+1,2}$

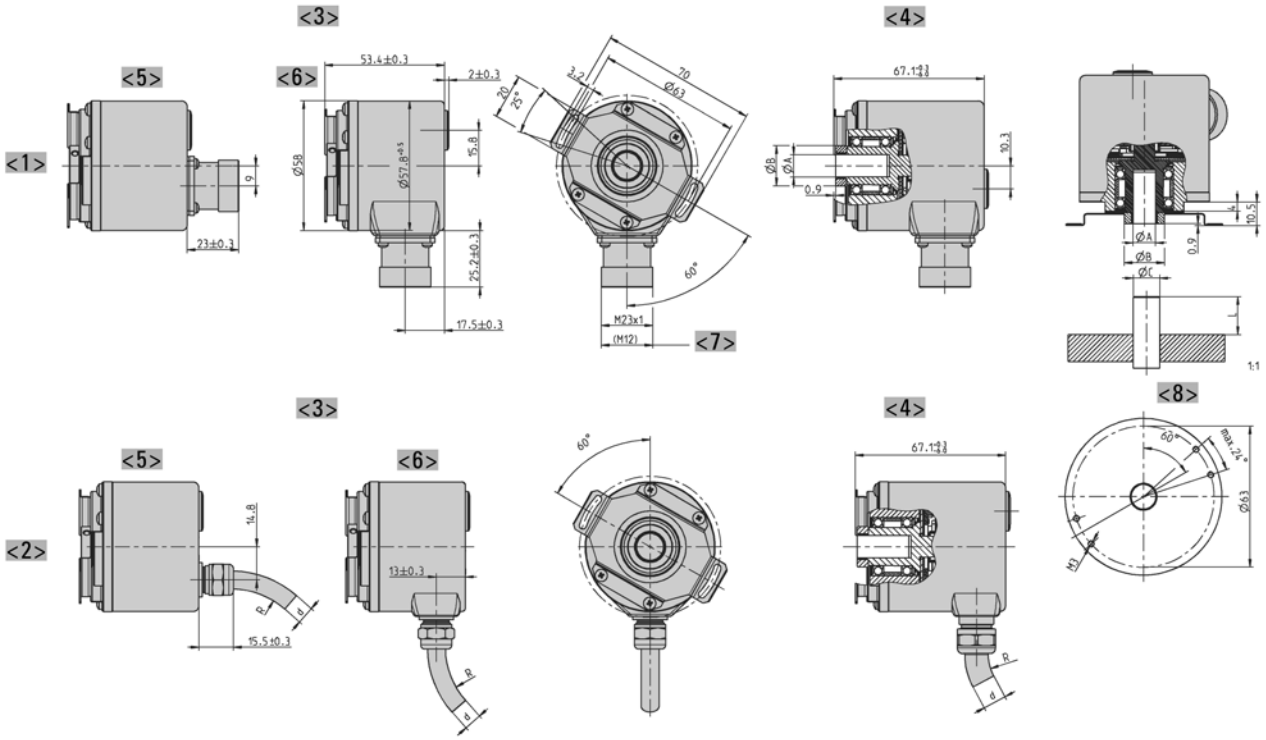
Dimensions in mm

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2

DIMENSIONED DRAWINGS (continued)

Hollow shaft "F"



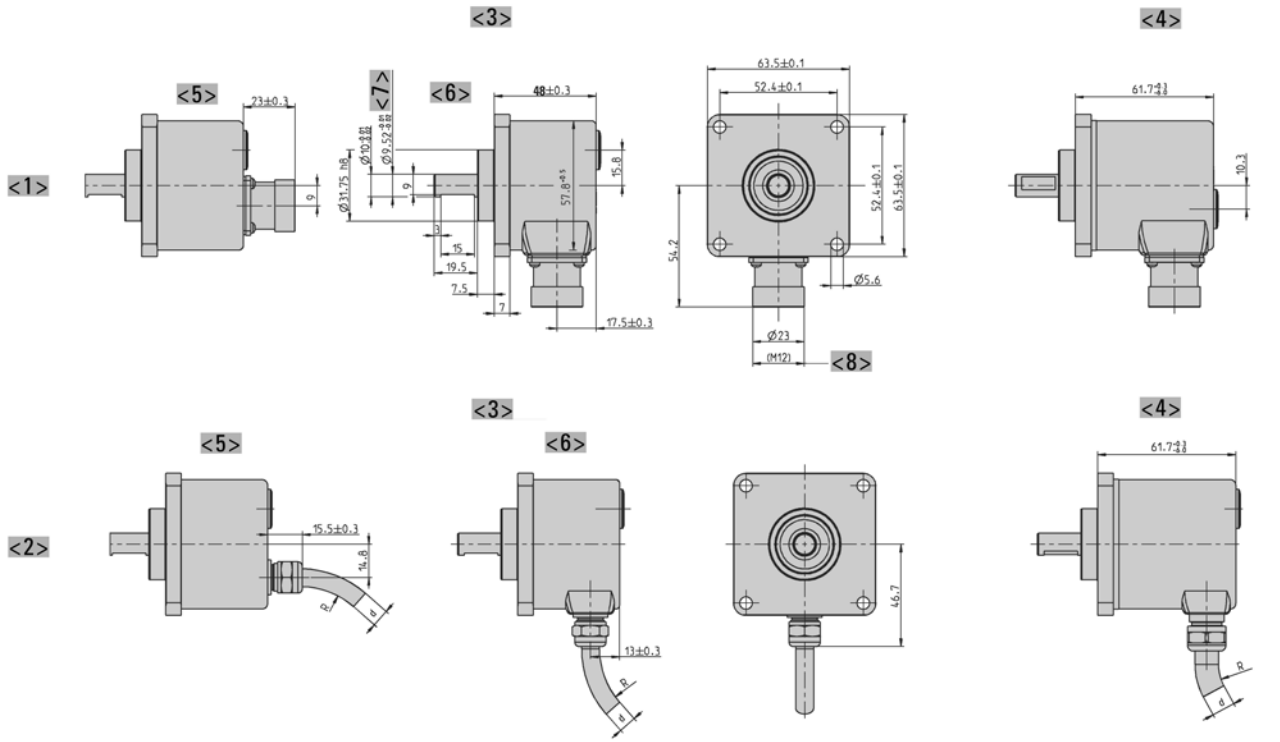
	Dim.				Unit
Hollow shaft Ø A	10 +0.012	12 +0.012	9,52 +0.012	12,7 +0.012	mm
Connecting shaft Ø C	10 g7	12 g7	9,52 g7	12,7 g7	mm
Clamping ring Ø B	18	20	18	22	mm
L_{min}	15	18	15	18	mm
L_{max}	20	20	20	20	mm
Shaft code	"2"	"7"	"6"	"E"	
L = Inside length of connection shaft					

<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 ≥ 15 x cable diameter
Cable bending radius R for fixed installation ≥ 7.5 x 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

DIMENSIONED DRAWINGS (continued)

Square flange "Q"



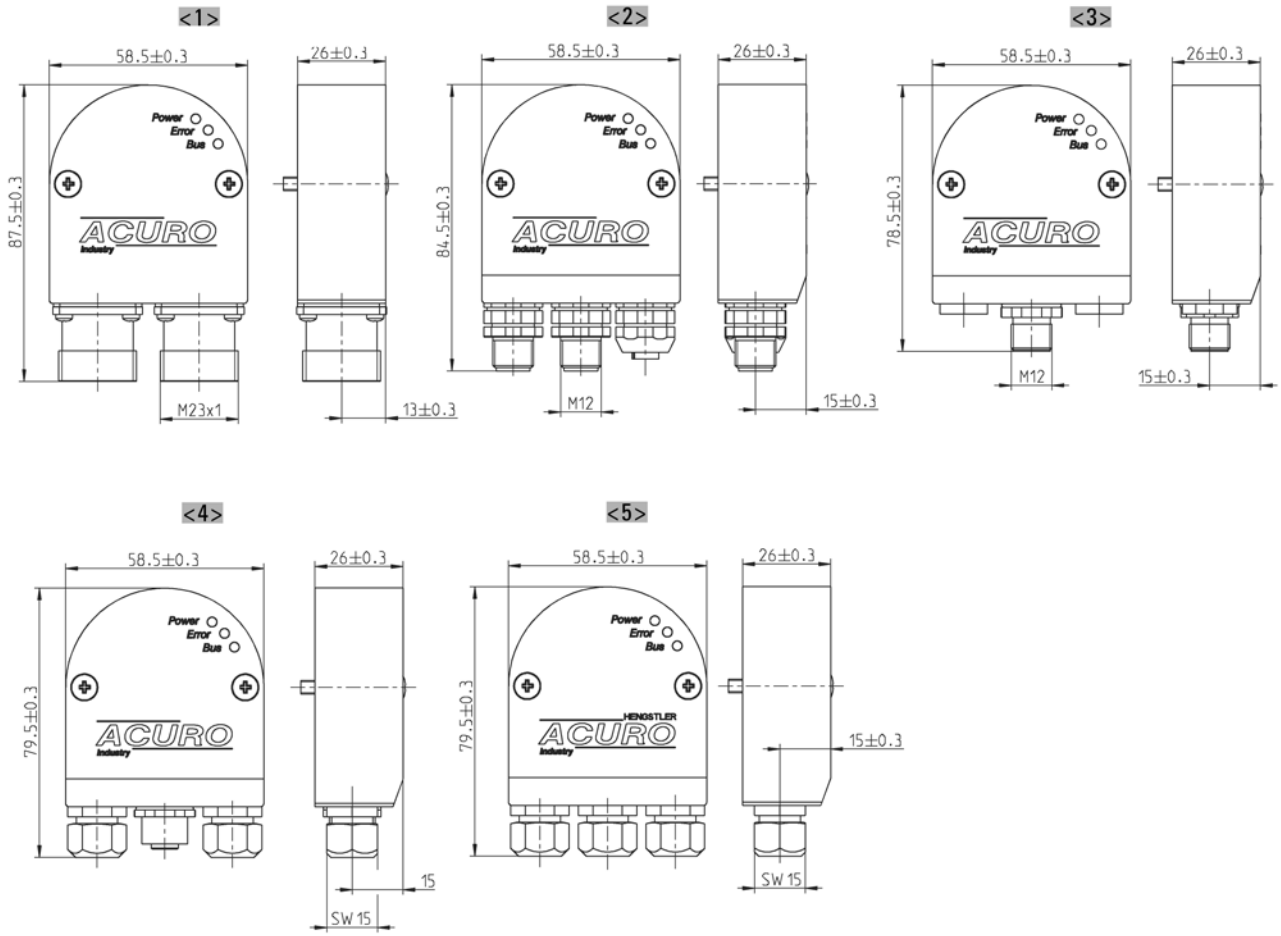
<1> Connection M23 (Conin)
<2> Connection cable
<3> Interface: BiSS, SSI, ST-Parallel
<4> Interface: MT-Parallel (only with cable), Fieldbus, SSI-P
<5> axial
<6> radial
<7> alternative

<8> Value in brackets alternative at SSI
Cable bending radius R for flexible installation ≥ 15 x cable diameter
Cable bending radius R for fixed installation ≥ 7.5 x 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

DIMENSIONED DRAWINGS (continued)

Bus covers

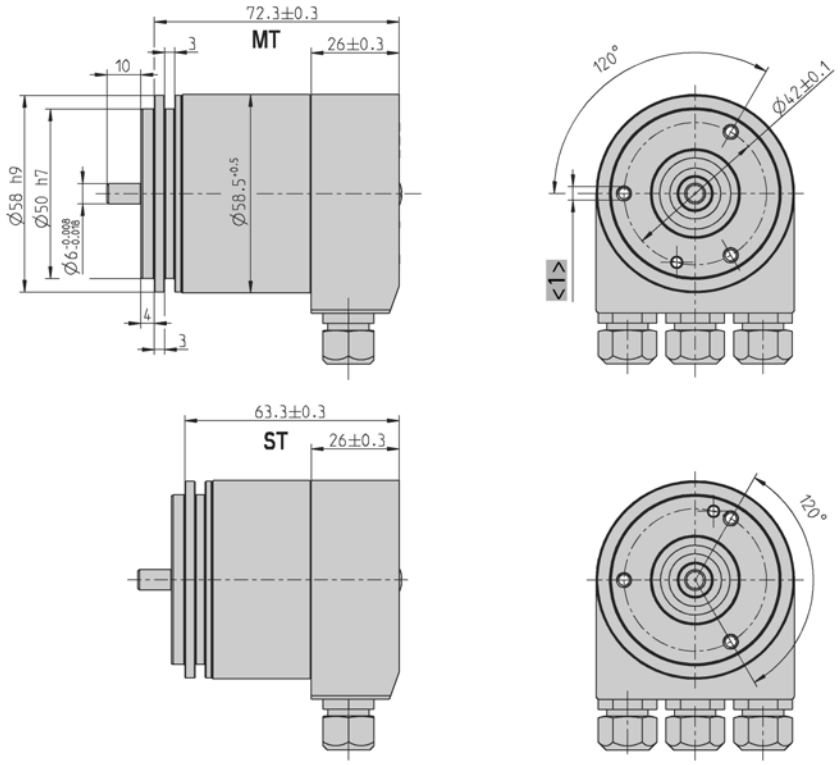


<1> Connection "I"
<2> Connection "R"
<3> Connection "S"
<4> Connection "T"
<5> Connection "Z"

Dimensions in mm

DIMENSIONED DRAWINGS (continued)

Synchro flange "S"

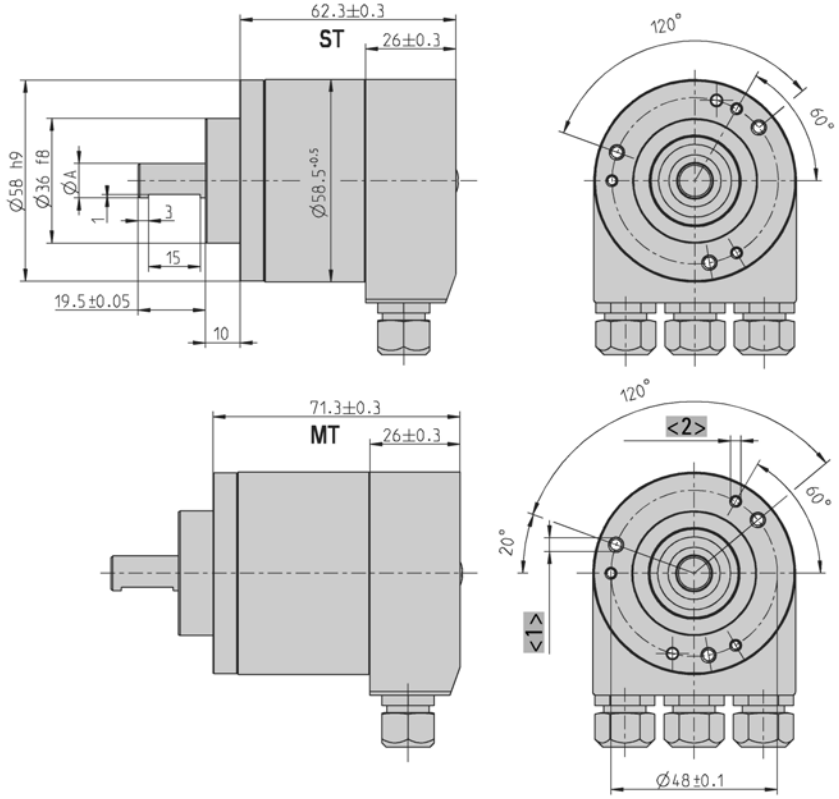


<1> 3xM4 (6 deep)

Dimensions in mm

DIMENSIONED DRAWINGS (continued)

Clamping flange "K"



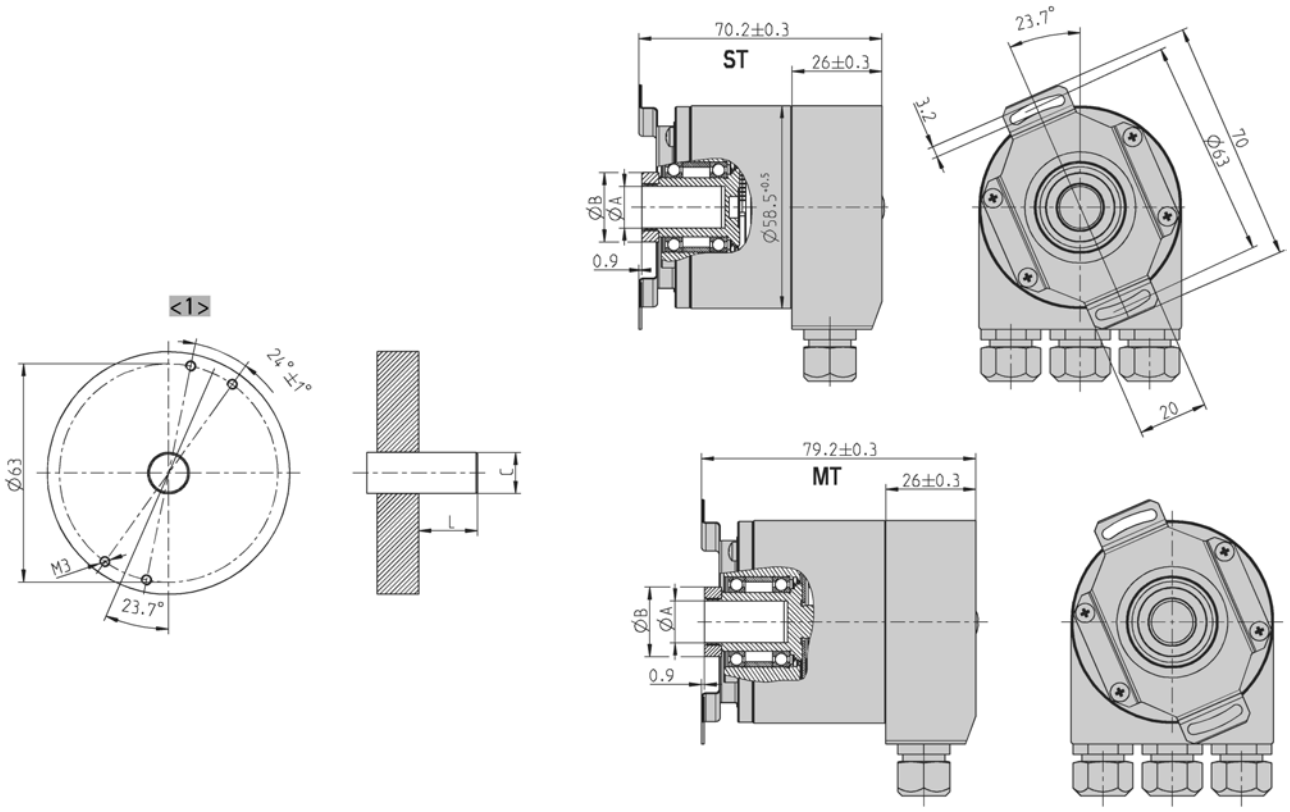
	Dim.		Unit
Shaft Ø A	10 $^{-0.01/-0.02}$	9.52 $^{-0.01/-0.02}$	mm
Shaft code	"2"	"6"	

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

Dimensions in mm

DIMENSIONED DRAWINGS (continued)

Hollow shaft "F"



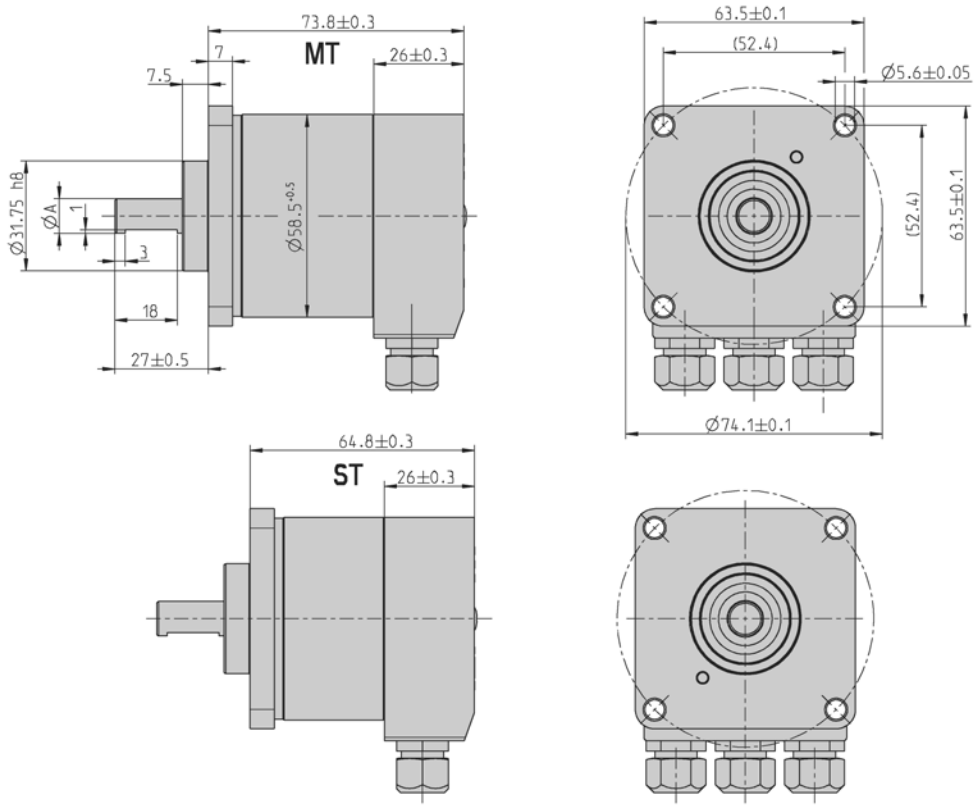
	Dim.				Unit
Hollow shaft Ø A	10 +0.012	12 +0.012	9,52 +0.012	12,7 +0.012	mm
Connecting shaft Ø C	10 g7	12 g7	9,52 g7	12,7 g7	mm
Clamping ring Ø B	18	20	18	22	mm
L_{min}	15	18	15	18	mm
L_{max}	20	20	20	20	mm
Shaft code	"2"	"7"	"6"	"E"	
L = Inside length of connection shaft					

<1> Customer side

Dimensions in mm

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

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2

ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft [1]	Interface	Connection
☐	☐	☐	☐	☐	☐
AC58	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST **1214** 12 Bit MT + 14 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	**CL** CANLayer2	**A Cable, axial** **B Cable, radial** **C M23 connector (Conin), 12 pole, axial, cw** **D M23 connector (Conin), 12 pole, radial, cw** **G** M23 connector (Conin), 12 pole, axial, ccw **H** M23 connector (Conin), 12 pole, radial, ccw **I** Bus cover with 2x M23 connector (Conin), 9 pole, radial, cw **T Bus cover with 2 sealed cable exits + 1 x M12 connector for "tico" display, 4 pole** **Z Bus cover with 2 sealed cable exits**

[1] Protection class IP67 not available in combination with cable and M23 connector (Conin) for connection code "A" - "H"

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 connectorr, cw: ... B - D0 - I

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2
Accessories

FLEXIBLE COUPLINGS


Bellows coupling


Disk coupling


Helical coupling

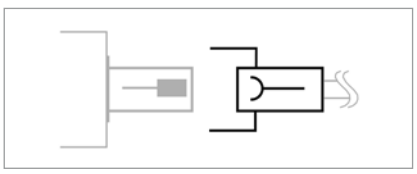

Isolated disk coupling

		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

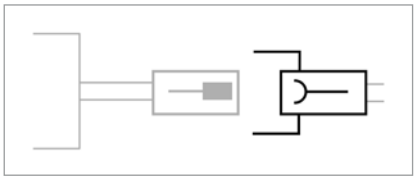


Connector (socket) matching with encoder connector	Ordering code
M23 (Conin), 12 pole, PG9, cw, mating connector for connection C/D/-I	3 539 202

TECHNICAL DATASHEET

Absolute Encoder AC 58 - CANlayer2
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

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