

## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - CANopen



Version AC 61 with bus cover

- Compact design
- Protection class IP67
- High corrosion resistance
- Robust design
- Resolution up to 28 Bit (16 Bit ST, 12 Bit MT)
- Versions with cable or demountable bus cover
- Programmable: Resolution, Preset, Offset, Direction
- Output of speed, acceleration
- Applications: packaging machine for food and beverage, ship equipment (e.g. cranes, winches, cable laying ships), offshore applications



**CANopen**



#### GENERAL INFORMATION

The absolute stainless steel encoders are available in the Versions AC 59 and AC 61.

- AC 59: drawn stainless steel housing, only together with cable outlet, no access to control elements
- AC 61: machined housing, possible with cable or bus cover, access to control elements (DIP switch, Reset switch)

#### TECHNICAL DATA mechanical

Housing diameter	61.5 mm
Shaft diameter	9.52 mm / 10 mm (Solid shaft)
Flange (Mounting of housing)	Square flange 63.5 mm
Protection class shaft input (EN 60529)	IP67
Protection class housing (EN 60529)	IP67
Shaft load axial / radial	40 N / 60 N
Max. speed	max. 6000 rpm (continuous), max. 10 000 rpm (short term)
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm <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	Stainless Steel
Weight	approx. 980 g with 1.5 m cable / 1180 g with bus cover
Connection	Cable, axial or radial Bus cover with 3 sealed cable exits

#### 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)

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#### TECHNICAL DATA electrical (continued)

EMC	EN 61326: Class A
Resolution singleturn	10 - 16 Bit
Resolution multiturn	12 Bit
Output code	Binary
Linearity	$\pm \frac{1}{2}$ LSB ( $\pm 1$ 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 12 pole / cable

TPE cable	Cable pairs	Signal
yellow	Pair 1	CAN in+
green		CAN in -
pink	Pair 2	CAN out+
grey		CAN out -
blue		CAN GND in
brown		CAN GND out
white	Pair 3	UB in
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)

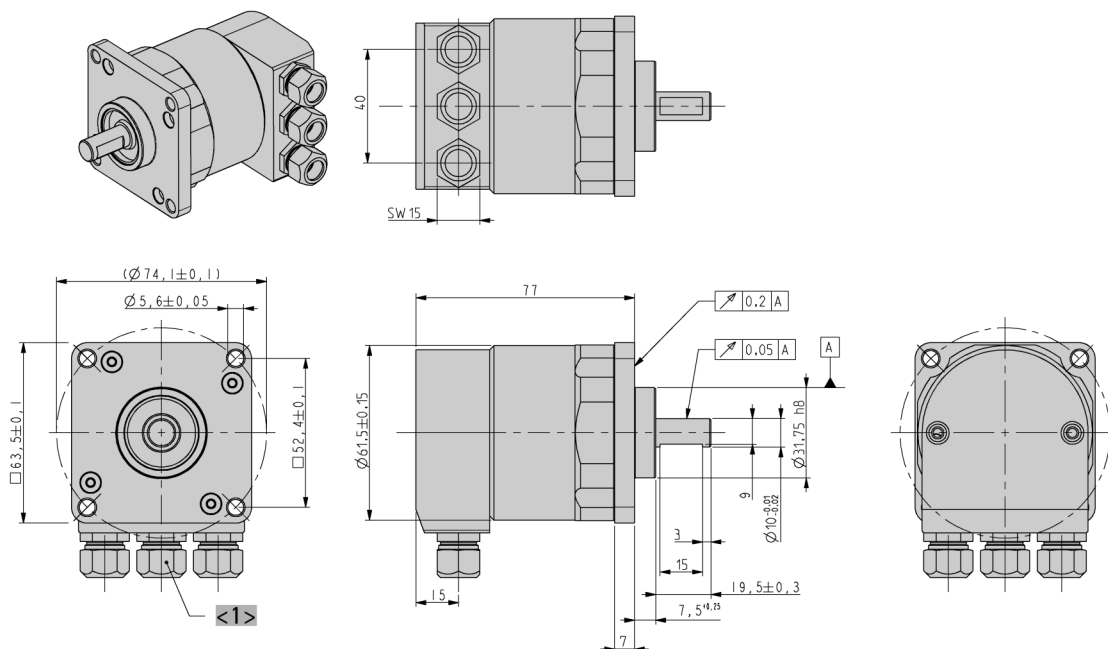
## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - CANopen

#### DIMENSIONED DRAWINGS

##### AC 61 Connection cable "Z"

Interface: Profibus, CANopen, CANlayer2, DeviceNet, Interbus

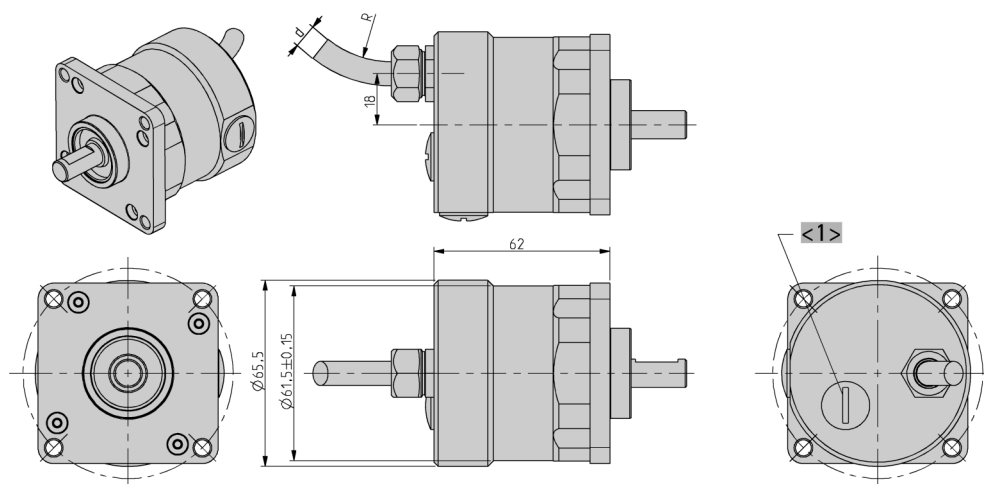


<1> Obsolete with DeviceNet

Dimensions in mm

##### AC 61 Connection cable "A"

Interface: CANopen, CANlayer2



<1> Settings

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

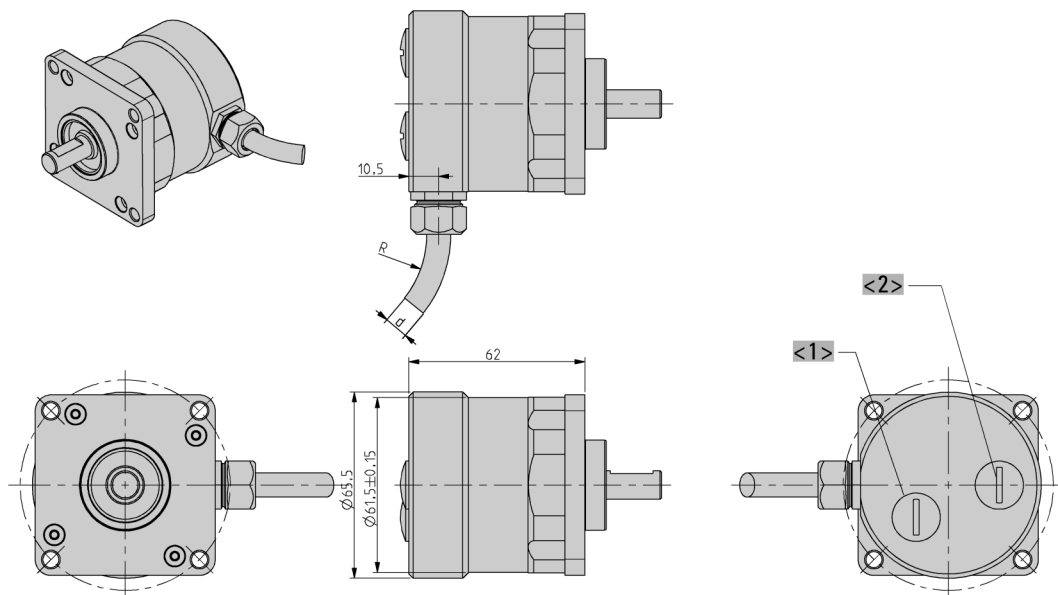
Dimensions in mm

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### Stainless Steel Encoders AC 61 - CANopen

#### DIMENSIONED DRAWINGS (continued)

AC 61 Connection cable "B"



<1> Settings CAN/ CANopen  
 <2> Preset BiSS, SSI, SSI-P, MT-Parallel  
 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

#### ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft	Interface	Connection
<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>AC61</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 <b>1216</b> 12 Bit MT + 16 Bit ST	<b>E</b> DC 10 - 30 V	<b>0.76</b> Square, IP67, 9.52 mm <b>0.72</b> Square, IP67, 10 mm	<b>0L</b> CANopen	<b>A</b> Cable, axial <b>B</b> Cable, radial <b>Z</b> Bus cover with 3 sealed cable exits

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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. 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

## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - CANopen Accessories

#### FLEXIBLE COUPLINGS



Bellows coupling

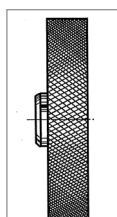


Helical coupling

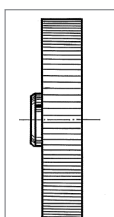


Isolated disk coupling

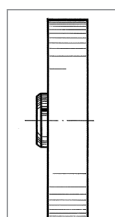
#### MEASURING WHEELS



Tread 2 + 3



Tread 4



Tread 6

		Ordering code
Bellows coupling	10 mm / 10 mm	3 520 037
Bellows coupling	8 mm / 10 mm	3 520 077
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 / 10 mm	3 520 082
Isolated disk coupling	10 mm / 10 mm	3 520 088

#### Tread 2 B

with glued-on rubber profile B = low-wear rubber surface with good grip (white)  
Applications such as paper and cardboard, measuring cables, nongreasy metals, fleece, undressed or surface-treated wood, soft and hard plastics

#### Tread 3

vulcanized rubber surface with parallel knurl  
Applications such as rubber, leather, fabrics, flooring and glass

#### Tread 4

Aluminum with parallel knurl  
Applications such as rubber, soft plastics, wood with rough surface, and to a limited extent for fabrics

#### Tread 6

plastic surface  
Applications such as wire, greasy metals and steel sections

Material	Bore diameter (mm) fitting to encoder shaft	Circumference	Tread	Width of bearing surface	Ordering code
Aluminum	10 mm	0.2 m	2 B	12 mm	0 601 049
Aluminum	10 mm	0.5 m	2 B	25 mm	0 601 151
Aluminum	10 mm	0.5 m	3	25 mm	0 601 161
Aluminum	12 mm	0.5 m	3	25 mm	0 601 166
Aluminum	10 mm	0.5 m	6	25 mm	0 601 163
Aluminum	10 mm	0.5 yd	4	25 mm	0 601 157

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### Stainless Steel Encoders AC 61 - CANopen Accessories

#### TECHNICAL MANUALS

	Ordering code
Technical manual, English, CANopen	2 565 329
Technical manual, German, CANopen	2 565 250

#### SOFTWARE

EDS-file, as download from our homepage	
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