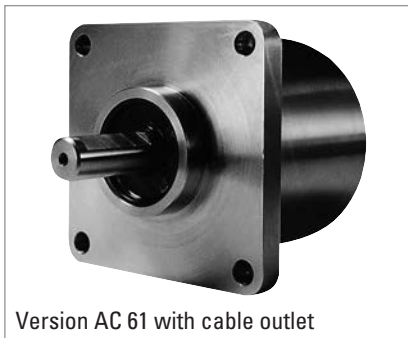


## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - SSI-P



Version AC 61 with cable outlet

- Compact design
- Protection class IP67
- High corrosion resistance
- Robust design
- Resolution up to 29 Bit (17 Bit ST, 12 Bit MT)
- Versions with cable
- Parameterization: Resolution, code type, direction, output format, warning, alarm
- Applications: packaging machine for food and beverage, ship equipment (e.g. cranes, winches, cable laying ships), offshore applications



#### 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 ... +70 °C
Storage temperature	-40 °C ... +85 °C
Material shaft	Stainless Steel
Material housing	Stainless Steel
Weight	approx. 980 g with 1.5 m cable
Connection	Cable, axial or radial

#### TECHNICAL DATA electrical

Supply voltage	DC 10-30 V
Max. current w/o load	250 mA (ST / MT)
Resolution singleturn	10 - 17 Bit
Resolution multiturn	12 Bit
Output code	Binary, Gray

## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - SSI-P

#### TECHNICAL DATA electrical (continued)

Drives	Clock and Data / RS422
Parametrization	Resolution, Code type, Direction, Output format, Warning, Alarm
Control inputs	Direction, Preset 1, Preset 2
Alarm output	Alarm bit
Status LED	Green = ok, red = alarm

#### RECOMMENDED DATA TRANSFER RATE bei SSI

The max. data transfer rate depends on the cable length. For Clock /  $\overline{\text{Clock}}$  and Data /  $\overline{\text{Data}}$  please use twisted pairs. Use shielded cable.

Cable length	Frequency
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

#### SYNCHRONOUS-SERIAL TRANSFER (SSI)

A clock brush is applied at the SSI interface, causing the encoder data to be serially clocked out. With each new clock brush (min. interval 30 ms) new data is readout. The following main parameters are programmable:

- Preset: Software-Preset and via input/pushbutton settable presets (can be inactivated)
- Offset: Relative shifting of actual encoder value.
- Scaling: The actual value of the encoder is multiplied with the factor < 1 (direct entry, increments per measuring distance or per revolution).
- Direction of rotation: Can be changed

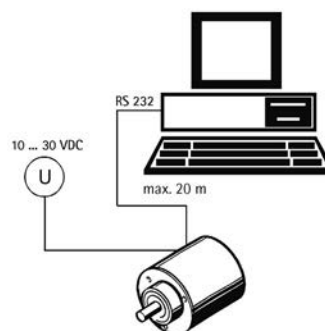
via software or input (can be inactivated)

- Output formats SSI: Tree format or standard format (MSB oriented)
- Output code: The choices are Gray or binary code, integer or two's complement representation. Selection of significant bit between 16 and 24 Bit.

In addition, programming of max. 7 status bits is possible:

- up to 4 warning positions
- overspeed
- encoder standstill
- parity
- encoder error
- direction of rotation

#### PROGRAMMING with SSI



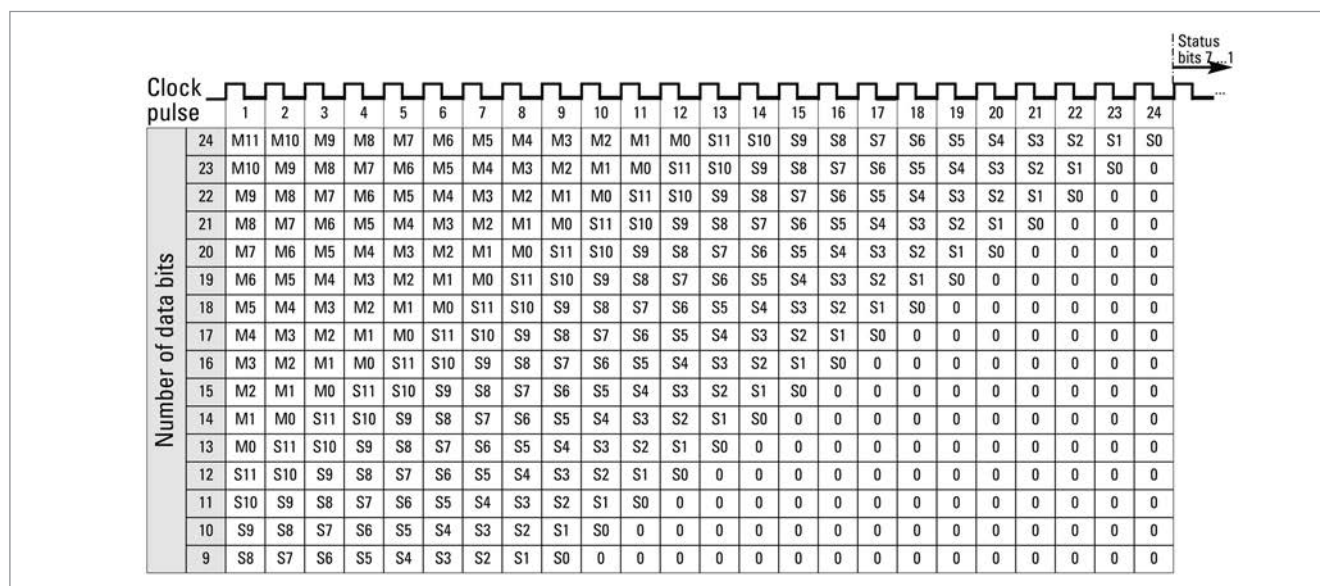
To program the absolute encoder you require a PC, the software WinSSI and the adapter cable.

The encoder is connected to the power supply and the serial interface of your PC with the adapter cable. Using the menu-assisted programme you can then configure the encoder according to the parameters you require.

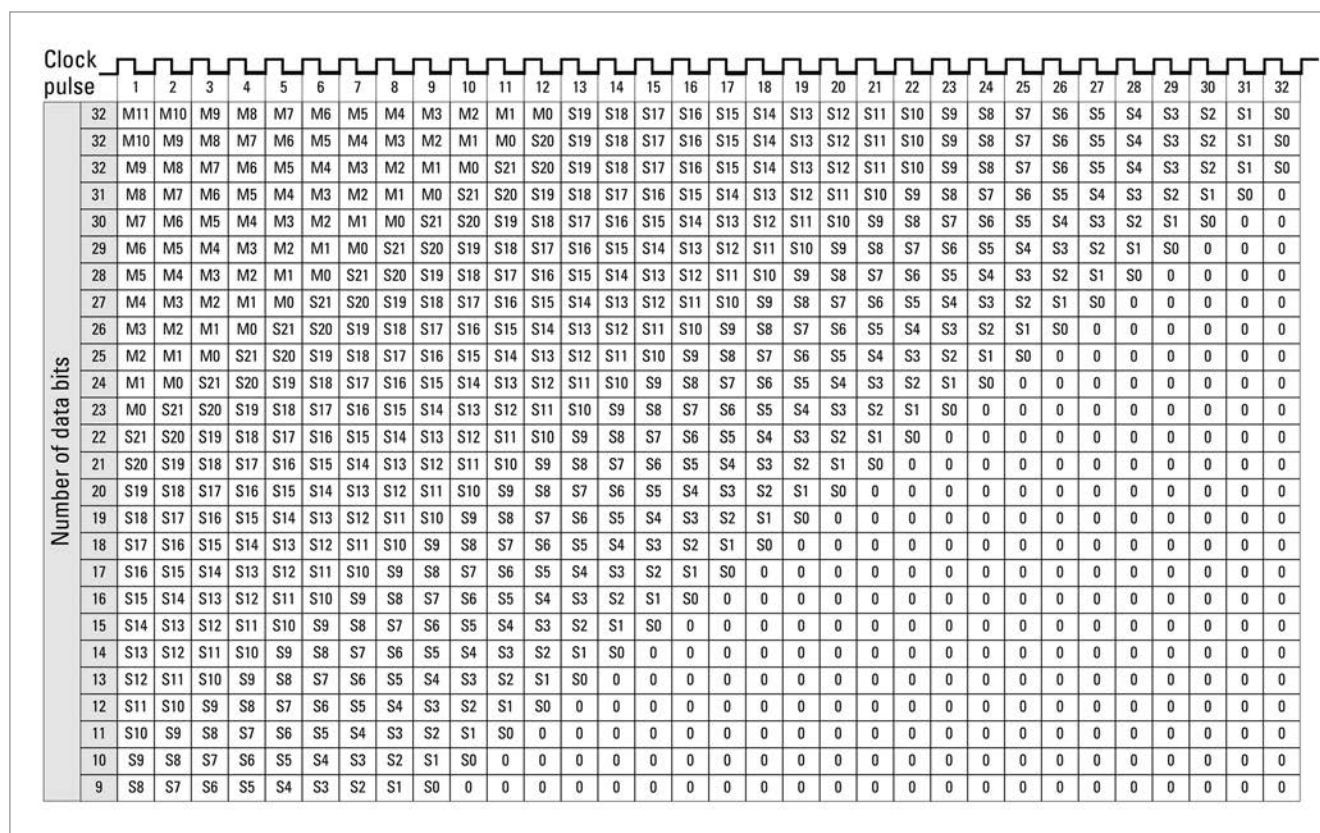
## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - SSI-P

OUTPUT FORMAT SSI, MSB oriented, Multiturn



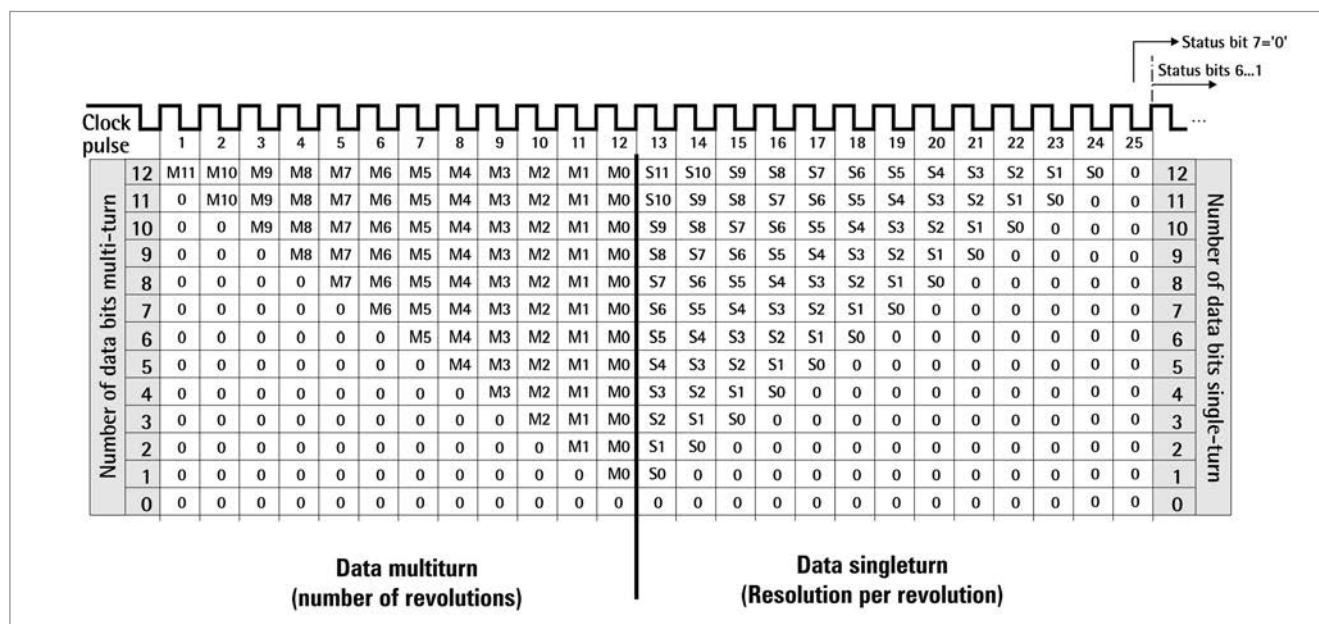
OUTPUT FORMATS SSI, MSB oriented, Multiturn (not scaleable)



## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - SSI-P

#### OUTPUT FORMAT SSI, tree format



#### ELECTRICAL CONNECTIONS 12 pole / cable

Cable Colour	Signal
green	$\overline{\text{Clock}}$
yellow	Clock
pink	Data
grey	$\overline{\text{Data}}$
brown	RS 232 TxD
white	RS 232 RxD
black	0 V signal output
blue	$\overline{\text{Direction}}$
red	Preset 1
violet	Preset 2
white <sup>1</sup>	DC 10 - 30 V
brown <sup>1</sup>	0 V (supply voltage)

<sup>1</sup> bigger cross section 0.5 mm<sup>2</sup>

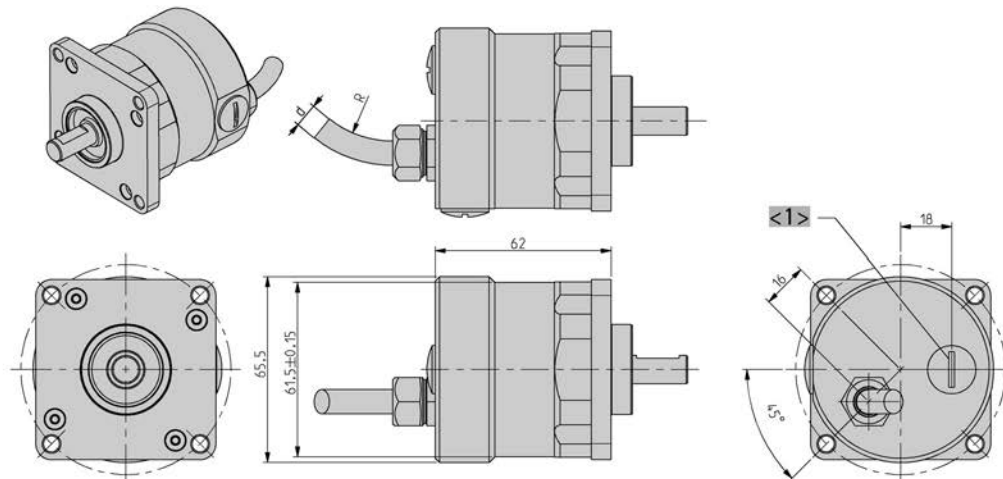
## TECHNICAL DATASHEET

### Stainless Steel Encoders AC 61 - SSI-P

#### DIMENSIONED DRAWINGS

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

Interface: BiSS, SSI, ST-/ MT-Parallel, SSI-P



<1> Preset

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

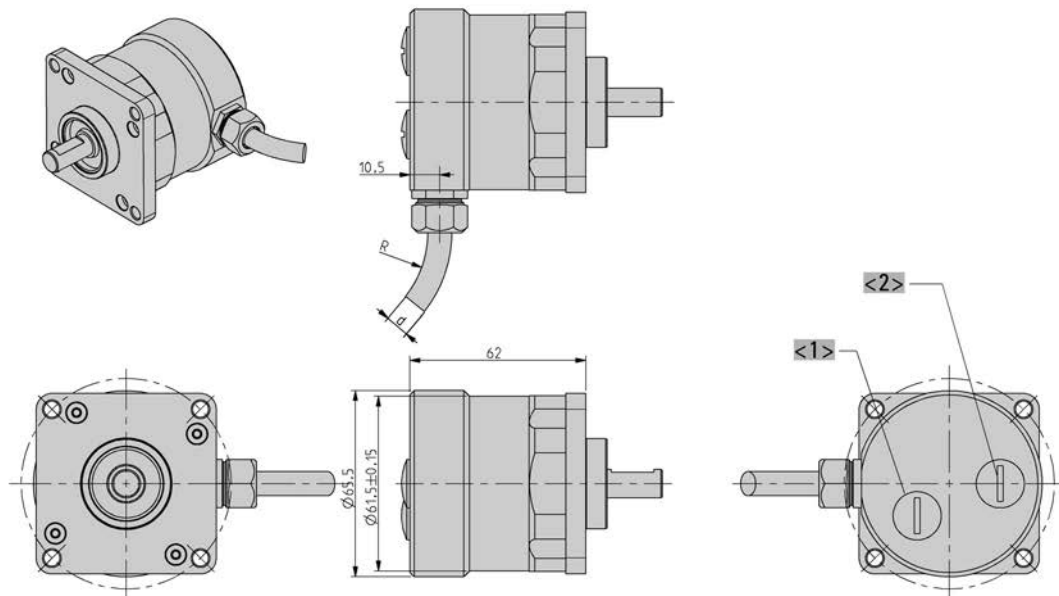
Cable  $\varnothing$  d ST-P:  $7,8^{+0,9}$

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

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

Dimensions in mm

##### 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  $\varnothing$  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

### Stainless Steel Encoders AC 61 - SSI-P

#### ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft	Interface	Connection
<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<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>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>1217</b> 12 Bit MT + 17 Bit ST higher resolution on request	<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>SP</b> SSI programmable	<b>A</b> Cable, axial <b>B</b> Cable, radial

#### 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 - SSI-P Accessories

#### FLEXIBLE COUPLINGS



Bellows coupling



Helical coupling



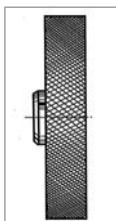
Isolated disk coupling

		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

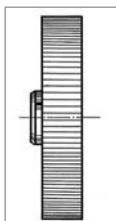
#### CONNECTING CABLES

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

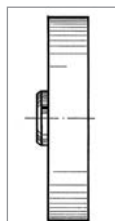
#### MEASURING WHEELS



Tread 2 + 3



Tread 4



Tread 6

##### 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	0 601 156
Aluminum	12 mm	0.5 m	3	25 mm	0 601 159

**TECHNICAL DATASHEET**

**Stainless Steel Encoders AC 61 - SSI-P  
Accessories**

**MEASURING WHEELS (continued)**

Material	Bore diameter (mm) fitting to encoder shaft	Circumference	Tread	Width of bearing surface	Ordering code
Aluminum	10 mm	0.5 m	6	25 mm	0 601 163
Aluminum	10 mm	0.5 yd	4	25 mm	0 601 157

**TECHNICAL MANUALS**

	Ordering code
Technical manual, English, SSI-P	2 565 289 (or homepage)
Technical manual, German, SSI-P	2 565 287 (or homepage)