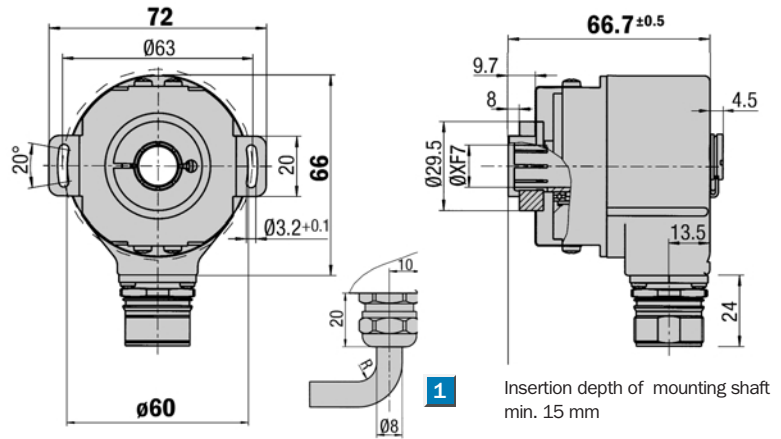
 **Number of steps**
2 to 32,768
Absolute Encoder Singleturn

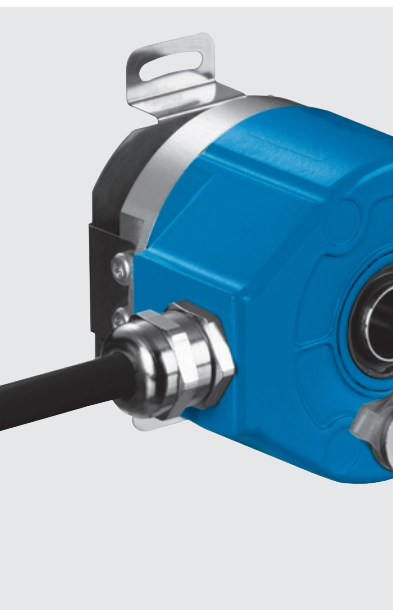
- Connector or cable outlet
- Protection class up to IP 64
- Electrical Interfaces
SSI or Parallel
- Zero adjustment directly on
the encoder or via a remote line

Dimensional drawing through hollow shaft, radial exit

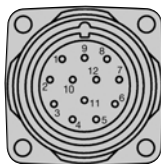


1 R = bending radius min. 40 mm

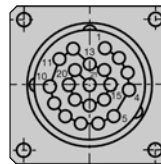
General tolerances according to DIN ISO 2768-mk



PIN and wire allocation see page 18



View of the connector M23 fitted to the encoder body SSI



View of the connector M23 fitted to the encoder body Single, Parallel

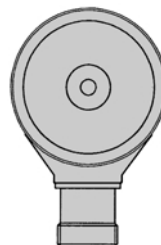
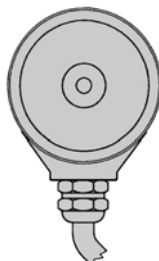
Accessories

- Connection systems
- Mounting systems
- Collets
- Adaptor modules

Connection type

Radial cable

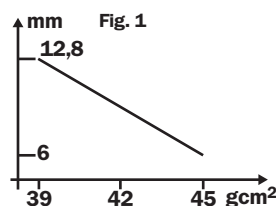
Radial connector



Technical Data acc. to DIN 32878		ARS 60 through hollow shaft		Flange type									
				through									
Hollow shaft diameter	6, 8, 10, 12 mm, 1/4", 3/8", 1/2"												
Number of steps per revolution	00002 ... 32,768, see ordering information												
Electrical interfaces	SSI or Parallel												
Mass ⁴⁾	Approx. 0.3 kg												
Moment of inertia of the rotor	See Fig. 1												
Code direction ²⁾	CW												
Measurement range	1 revolution												
Measuring step	360°/number of steps												
Repeatability	0.005°												
Error limits													
binary number of steps	0.035°												
non-binary number of steps	0.046°												
Measuring step deviation													
binary number of steps	0.005°												
non-binary number of steps	0.016°												
Measured value backlash	0.005°												
Response threshold	0.003°												
Max. angular acceleration	5 x 10 ⁵ rad/s ²												
Max. operating speed	3,000 min ⁻¹												
Operating torque	Typ. 1.6 Ncm												
Start up torque	Typ. 2.2 Ncm												
Permissible movement of the drive element													
radial movement static/dynamic	± 0.3/± 0.1 mm												
axial movement static/dynamic	± 0.5/± 0.2 mm												
Bearing lifetime	3.6 x 10 ⁹ revolutions												
Working temperature range	- 20 ... + 85 °C												
Storage temperature range	- 40 ... + 100 °C												
Permissible relative humidity ³⁾	90 %												
EMC ⁴⁾													
Resistance													
to shocks ⁵⁾	50/11 g/ms												
to vibration ⁶⁾	20/10 ... 2000 g/Hz												
Protection class acc. IEC 60529													
connector outlet ⁷⁾	IP 64												
cable outlet	IP 64												
Operating voltage range (U_s)	10 ... 32 V												
Operating current													
SSI	Typ. 60 mA												
Parallel	Typ. 90 mA												
Switching level of the control inputs													
	Logic H = 0.7 x U _s												
	Logic L = 0 V ... 0.3 x U _s												
Operation of zero-set ⁸⁾	≥ 100 ms												
Initialisation time after power on	40 ms												

¹⁾ For an encoder with connector outlet
²⁾ Increasing when viewing the clockwise rotating shaft
³⁾ Condensation not permitted

⁴⁾ To DIN EN 61000-6-2 and DIN EN 61000-6-3
⁵⁾ To DIN EN 60068-2-27
⁶⁾ To DIN EN 60068-2-6
⁷⁾ With mating connector fitted
⁸⁾ Only with shaft stationary (note initialisation time)



Order information see pages 16/17

Order information SSI Interface

Absolute Encoder Singleturn ARS 60 SSI, through hollow shaft

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Electrical interface	Mechanical interface	Connection type	Resolution
10 ... 32 V, SSI, Gray = A	Through hollow shaft ¹⁾ = D	Connector M23, 12 pin, radial = A	Any number of steps from 00002 up to 32,768 possible. Always 5 characters in clear text.
10 ... 32 V, SSI, Gray Excess = B	¹⁾ Collets for 6, 8, 10, 12 mm and 1/4", 3/8" and 1/2" as accessories, separate order item (see below).	Cable 11 core, radial 1.5 m = K	
		Cable 11 core, radial 3 m = L	
		Cable 11 core, radial 5 m = M	

Order example: Absolute Encoder Singleturn ARS 60 SSI

10 ... 32 V, SSI, Gray; through hollow shaft; connector M23, 12 pin, radial; number of steps 8,192

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-	A	D	A	0	8	1	9	2

Please enter your individual encoder here

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Collets for blind hollow shaft encoder

Type	Part no.	Shaft diameter
SPZ-006-AD-D	2 029 192	6 mm
SPZ-1E4-AD-D	2 029 193	1/4"
SPZ-008-AD-D	2 029 194	8 mm
SPZ-3E8-AD-D	2 029 195	3/8"
SPZ-010-AD-D	2 029 196	10 mm
SPZ-012-AD-D	2 029 197	12 mm
SPZ-1E2-AD-D	2 029 198	1/2"

Order information Parallel Interface

Absolute Encoder Singleturn ARS 60 Parallel, through hollow shaft

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Electrical interface	Mechanical interface	Connection type	Resolution
10 ... 32 V, parallel, Gray = F	Through hollow shaft ¹⁾ = D	Connector M23, 21 pin, radial = A	Any number of steps from 00002 up to 32,768 possible, with the following electrical interfaces: 10 ... 32 V, parallel, Gray 10 ... 32 V, parallel, Gray Excess 10 ... 32 V, parallel, BIN
10 ... 32 V, parallel, Gray Exc. = G	¹⁾ Collets for 6, 8, 10, 12 mm and 1/4", 3/8" and 1/2" as accessories, separate order item (see below).	Cable 22 core, radial 1.5 m = K	
10 ... 32 V, parallel, BIN = H		Cable 22 core, radial 3 m = L	
10 ... 32 V, parallel, BCD = J		Cable 22 core, radial 5 m = M	Number of steps from 00002 up to 07999 possible, with the electrical interface: 10 ... 32 V, parallel, BCD Always 5 characters, in clear text.

Order example: Absolute Encoder Singleturn ARS 60 Parallel

10 ... 32 V, Parallel, Gray; through hollow shaft; connector M23, 21 pin, radial; number of steps 8,192

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-	F	D	A	0	8	1	9	2

Please enter your individual encoder here

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	Point 13	Point 14
A	R	S	6	0	-								

Collets for blind hollow shaft encoder

Type	Part no.	Shaft diameter
SPZ-006-AD-D	2 029 192	6 mm
SPZ-1E4-AD-D	2 029 193	1/4"
SPZ-008-AD-D	2 029 194	8 mm
SPZ-3E8-AD-D	2 029 195	3/8"
SPZ-010-AD-D	2 029 196	10 mm
SPZ-012-AD-D	2 029 197	12 mm
SPZ-1E2-AD-D	2 029 198	1/2"