

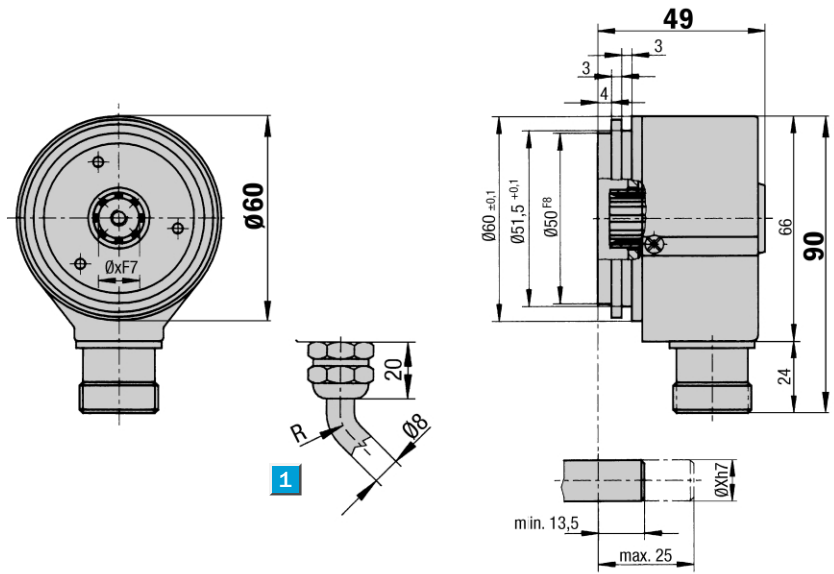
Number of lines
100 to 10,000

Incremental Encoder

- Collets for shaft diameter 6, 8, 10 and 12 mm
- Connector or cable outlet
- Electrical Interfaces TTL and HTL



Dimensional drawing blind hollow shaft

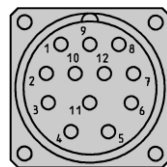


1 R = bending radius min. 40 mm

General tolerances according to DIN ISO 2768-mk

PIN and wire allocation/cable 11 core

PIN	Signal HTL	Signal TTL	Core colour (cable outlet)	Explanation
1	N. C.	\bar{B}	black	Signal line
2	N. C.	Sense +	grey	Connected internally to U_s
3	Z	Z	lilac	Signal line
4	N. C.	\bar{Z}	yellow	Signal line
5	A	A	white	Signal line
6	N. C.	\bar{A}	brown	Signal line
7	N. C.	N. C.	orange	N. C.
8	B	B	pink	Signal line
9	Screen	Screen		Housing potential
10	GND	GND	blue	Ground connection
11	N. C.	Sense -	green	Connected internally to ground
12	U_s	U_s	red	Power supply ¹⁾



View of the connector M23 fitted to the encoder body

¹⁾ Potential free to housing
 N. C. = Not Connected

Accessories

Connection systems
Mounting systems
Collets

Technical Data		DGS 65	Flange type											
			blind											
Hollow shaft diameter	6, 8, 10 and 12 mm													
Number of lines (Z) per revolution	00100 to 10,000, see order info													
Attention: number of lines > 5000	Only with TTL 4...6 V													
Electrical Interface	TTL/RS 422, 6-channel													
	HTL/push-pull, 3-channel (A, B, Z)													
Mass ¹⁾	Approx. 0.4 kg													
Moment of inertia of the rotor	25 gcm ²													
Measuring step	90°/number of lines													
Reference signal														
Number	1													
Position	90° electr. & logically interlocked with A+B													
Error limits														
100 ≤ Z < 1250	45/Z + 0.054°													
1250 < Z ≤ 10000	45/Z + 0.039°													
Measuring step deviation	45/Z °													
Max. output frequency														
TTL	300 kHz (600 at > 5000 lines)													
HTL	200 kHz													
Max. operating speed	6,000 min ⁻¹													
Max. angular acceleration	5 x 10 ⁵ rad/s ²													
Operating torque	0.1 Ncm													
Start up torque	0.3 Ncm													
Permissible shaft movement														
static	radial/axial	± 0.5 mm/± 0.5 mm												
dynamic	radial/axial	± 0.1 mm/± 0.2 mm												
Angular movement at right angles to the axis														
static	34 x 10 ⁻³ mm													
dynamic	17 x 10 ⁻³ mm													
Bearing lifetime	3.6 x 10 ¹⁰ revolutions													
Working temperature range	- 20 ... + 85 °C													
Storage temperature range	- 30 ... + 85 °C													
Permissible relative humidity ²⁾	90 %													
EMC ³⁾														
Resistance														
to shocks ⁴⁾	30/11 g/ms													
to vibration ⁵⁾	20/10 ... 2000 g/Hz													
Protection class acc. IEC 60529 ⁶⁾														
Housing side	IP 65													
Flange side	IP 66													
Operating voltage range														
Load current TTL/RS 422, 4 ... 6 V	Max. 20 mA													
	TTL/RS 422, 10 ... 30 V	Max. 20 mA												
	HTL/push-pull, 10 ... 30 V	Max. 60 mA												
Operating current range at no load														
at 24 V	100 mA													
at 5 V	120 mA													

¹⁾ For an encoder with connector outlet


²⁾ Condensation not permitted

³⁾ To DIN EN 61000-6-2 and DIN EN 61000-6-3

⁴⁾ To DIN EN 60068-2-27

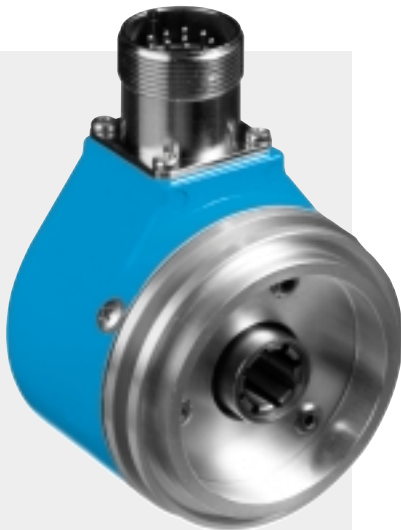
⁵⁾ To DIN EN 60068-2-6

⁶⁾ With mating connector fitted

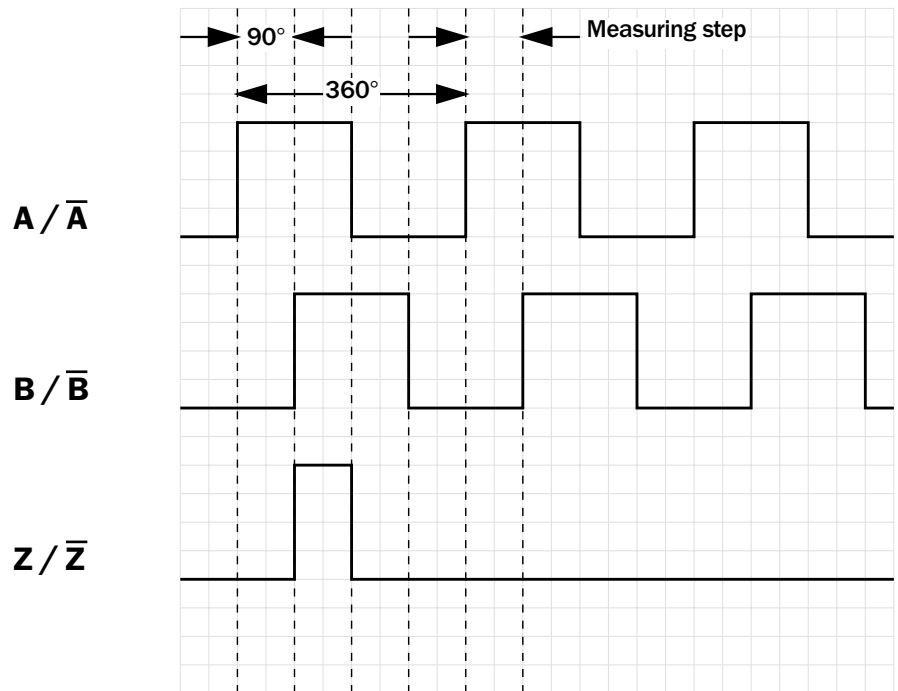
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Incremental pulse diagram

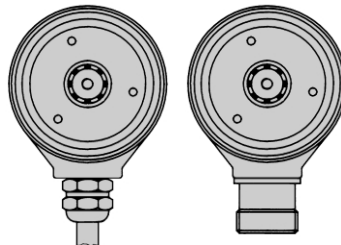


Electrical interfaces

Supply voltage	4 ... 6 V	10 ... 30 V	10 ... 30 V
Interfaces/drivers	TTL (RS 422)	TTL (RS 422)	HTL (push-pull)

Connection type

Cable radial Connector radial



Accessories

- Connection systems
- Mounting systems
- Collets

CE

Order information

Incremental Encoder DGS 65, blind 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
D	G	S	6	5	-								

Electrical interface	Mechanical interface	Connection type	Number of lines
4 ... 6 V, TTL (RS 422) = A	Blind hollow shaft ¹⁾ = A	Connector M23, 12 pin, radial = A	Always 5 characters in clear text 1
10 ... 30 V, TTL (RS 422) = C		Cable 11 core, radial 1.5 m = K	
10 ... 30 V, HTL (push-pull) = G		Cable 11 core, radial 3 m = L	
		Cable 11 core, radial 5 m = M	

¹⁾ Collets for 6, 8, 10 and 12 mm as accessories, separate order item (see below).

1 Number of lines (Z) per revolution

00100	00244	00336	00600	00785	01024	02000	04096
00125	00250	00360	00625	00800	01200	02048	05000
00150	00256	00400	00700	00900	01250	02500	07200 ²⁾
00160	00300	00500	00720	00938	01375	03000	08192 ²⁾
00180	00308	00512	00750	01000	01500	03600	10000 ²⁾
00200	00314	00570	00768	01005	01800	04000	

²⁾ Only possible with interface 4 ... 6V, TTL (RS 422) = A

Order example: Incremental Encoder DGS 65

4 ... 6 V, TTL; blind hollow shaft; connector M23, 12 pin, radial; number of lines: 360

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
D	G	S	6	5	-	A	A	A	0	0	3	6	0

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
D	G	S	6	5	-								

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
D	G	S	6	5	-								

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
D	G	S	6	5	-								

Collets for DGS 65 Encoder with blind hollow shaft

Type	Part no.	Shaft diameter
SPZ-006-DD65-A	2 029 181	6 mm
SPZ-008-DD65-A	2 029 182	8 mm
SPZ-010-DD65-A	2 029 183	10 mm
SPZ-011-DD65-A	2 019 043	11 mm
SPZ-012-DD65-A	2 029 184	12 mm