

CI6 Incremental Encoder

Features

Any resolution from 1 to 8192 ppr

Electronic marker set

Up to 820 kHz frequency response

Available with shaft, hub shaft or hollow shaft

2-3 day shipment

Featuring

CoreTech™
by **STEGMANN**



Technical Data and Characteristics to DIN 32878

Number of lines (Z)		1 to 8,192
Output driver		+5 V in., +5 V differential line driver (3487), RS-422 +10-30 V in., +5 V differential line driver (3487), RS-422 +10-30 V in., +10-30 V push pull
Dimensions		see drawings
Mass	Solid shaft and hollow shaft	approx. 0.3 kg
Moment of inertia of the rotor	Face mount with 10 mm shaft Servo flange with 6 mm shaft Through hollow shaft Blind hollow shaft	54 gcm ² 48 gcm ² 45 gcm ² max. 54 gcm ² max.
Measuring step		(90/Z) degrees
Reference signal	Position	90° or 80° electrical, logically linked to K1 and K2
Error limits	Binary number of lines Non-binary number of lines	0.035° 0.046°
Measuring step deviation	Binary number of lines Non-binary number of lines	0.005° 0.016°
Max. output frequency	3487 line driver Push-pull output	820 kHz 200 kHz
Max. angular acceleration		5 x 10 ⁵ rad/s ²
Max. operating speed	Face mount and servo flange With shaft seal Without shaft seal Hollow shaft designs	6,000 min ⁻¹ 10,000 min ⁻¹ 3,000 min ⁻¹
Operating torque	Face mount flange 10 mm shaft Servo flange 6 mm shaft Through hollow shaft Blind hollow shaft	typ. 0.3 Ncm typ. 0.2 Ncm typ. 1.6 Ncm typ. 0.4 Ncm
Start-up torque	Face mount flange 10 mm shaft Servo flange 6 mm shaft Through hollow shaft Blind hollow shaft	typ. 0.4 Ncm typ. 0.25 Ncm typ. 2.2 Ncm typ. 0.6 Ncm
Permissible shaft loading, solid shaft	Radial Axial	90 N 90 N
Permissible movement of the drive element (hollow shafts)	Static/dynamic radial movement Static/dynamic axial movement	±0.3/±0.1 mm ±0.5/±0.2 mm
Bearing lifetime ¹		3.6 • 10 ⁹ revolutions

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Technical Data and Characteristics to DIN 32878 (continued)

Working temperature range	-20 to +85°C
Storage temperature range	-40 to +100°C
Permissible relative humidity (condensation not permitted)	90%
EMC to EN 50082-2 and EN 50081-2	
Resistance to shocks (DIN IEC 68 Parts 2-27)	50 g/11 ms
Resistance to vibration (DIN IEC 68 Parts 2-6)	20 g/10-150 Hz
Protection class ²	
Solid shafts — Connector outlet with mating connector fitted	IP65
Blind hollow shafts — Cable outlet	IP66
Through hollow shaft	IP64
No-load operating current	10 to 32 V 5 V
	typ. 100 mA typ. 120 mA
Operation of zero-set (only with shaft stationary)	100 ms
Installation time after power on	40 ms

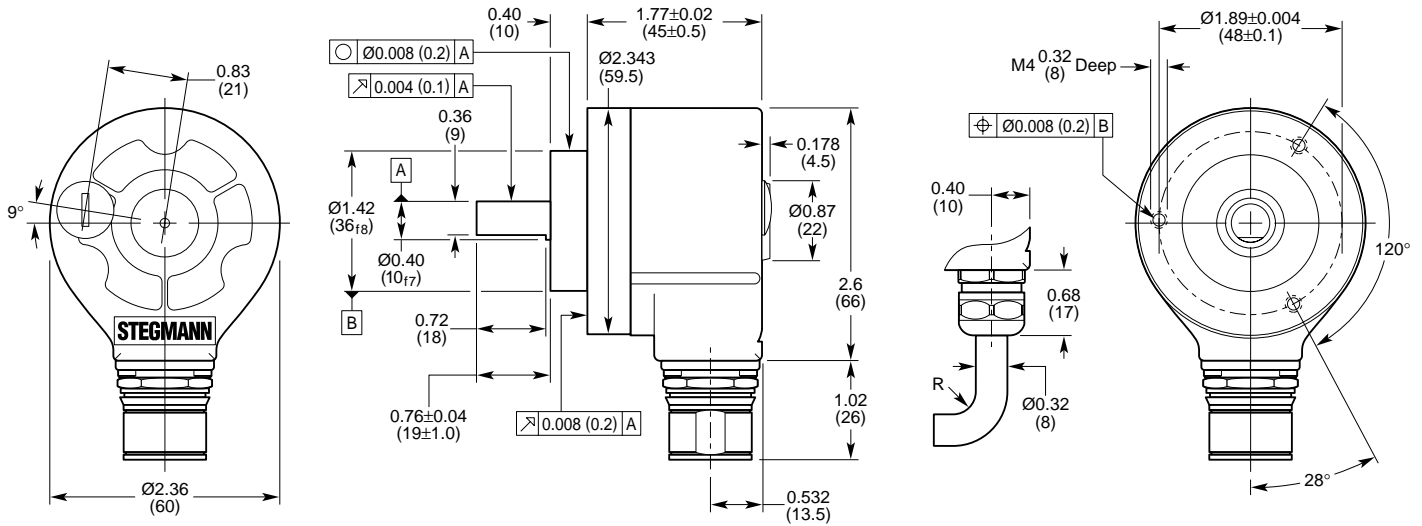
Notes: 1. Bearing lifetime is at typical loads of 20N and 10N axial. Bearing lifetime at maximum loads is 2.0×10^8 cycles.

2. Protection class is with shaft seal.

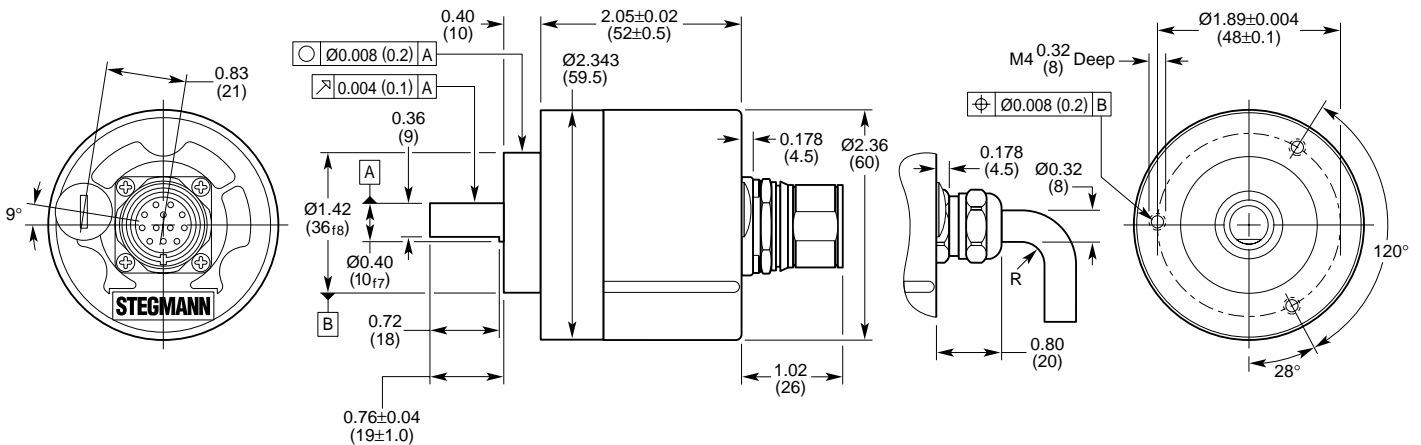
Dimensions (mm)

R = bending radius min 40 mm

Face mount flange, solid shaft 10 x 19, radial



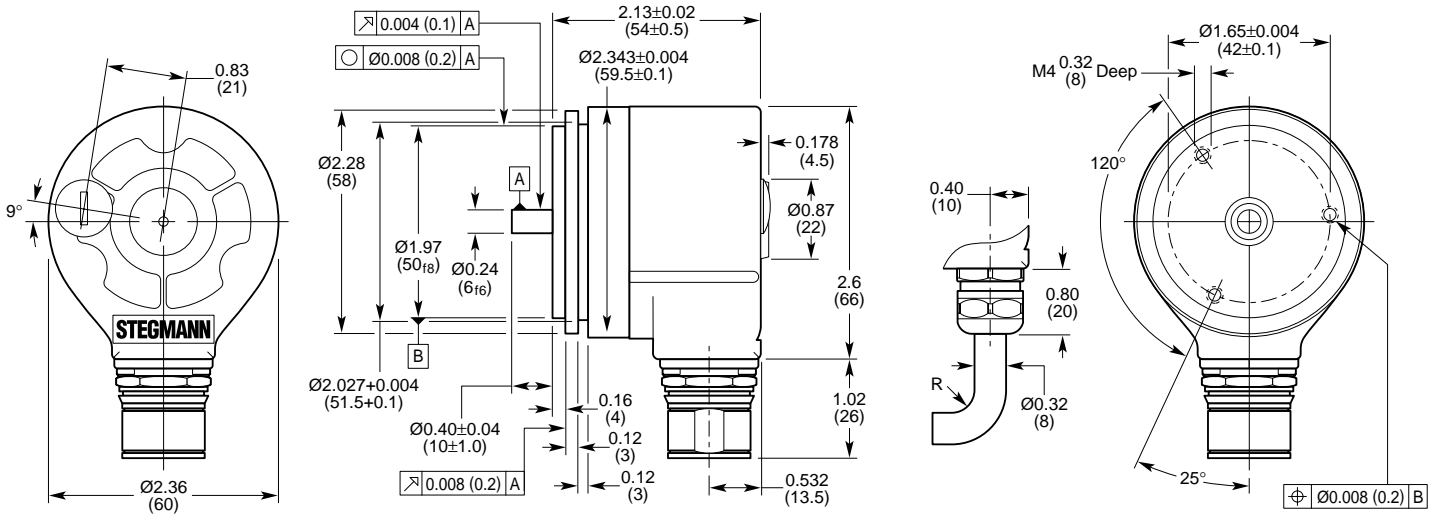
Face mount flange, solid shaft 10 x 19, axial



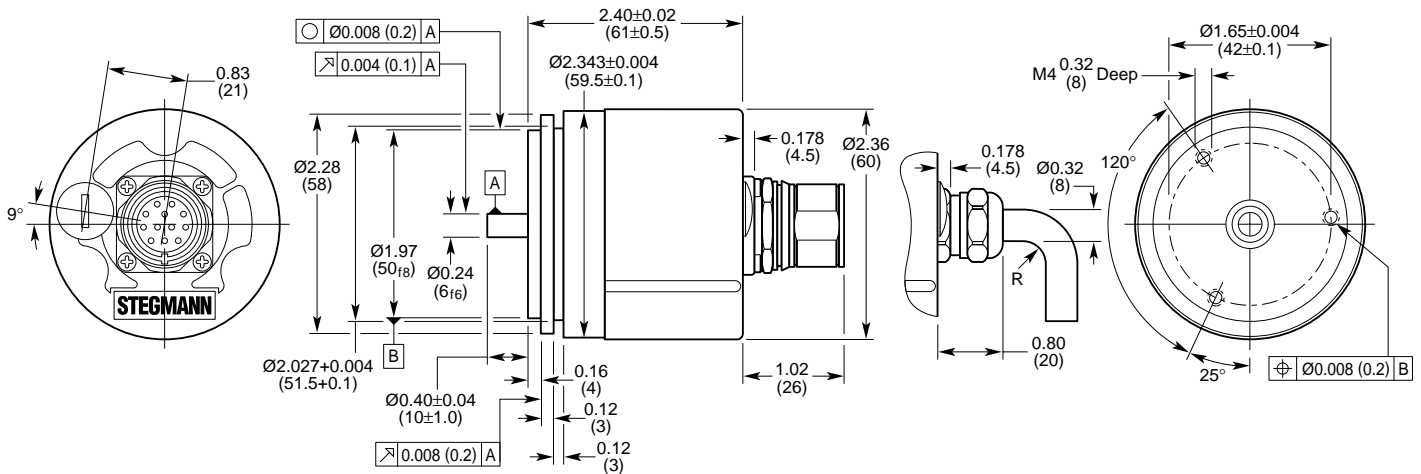
Dimensions (mm)

R = bending radius min 40 mm

Servo flange, solid shaft 6 x 10, radial



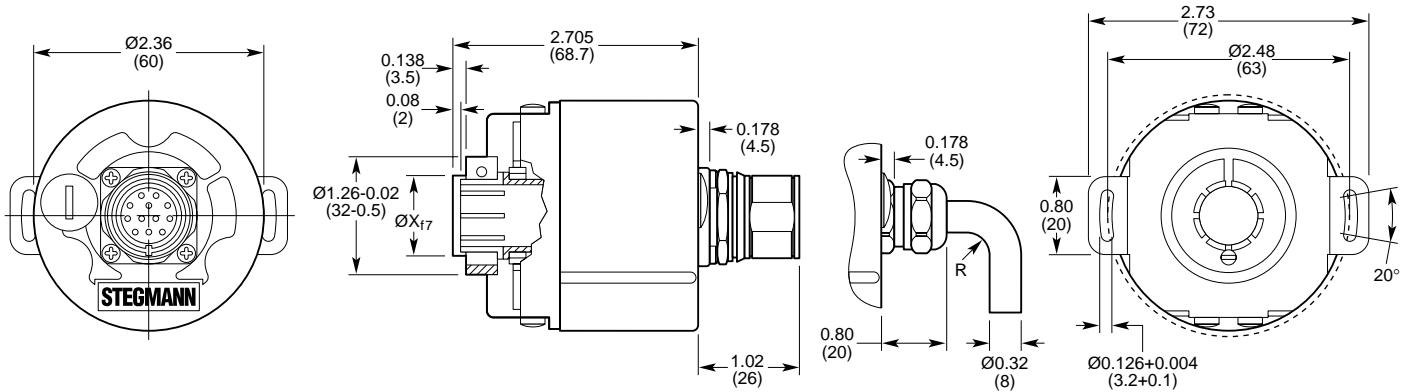
Servo flange, solid shaft 6 x 10, axial



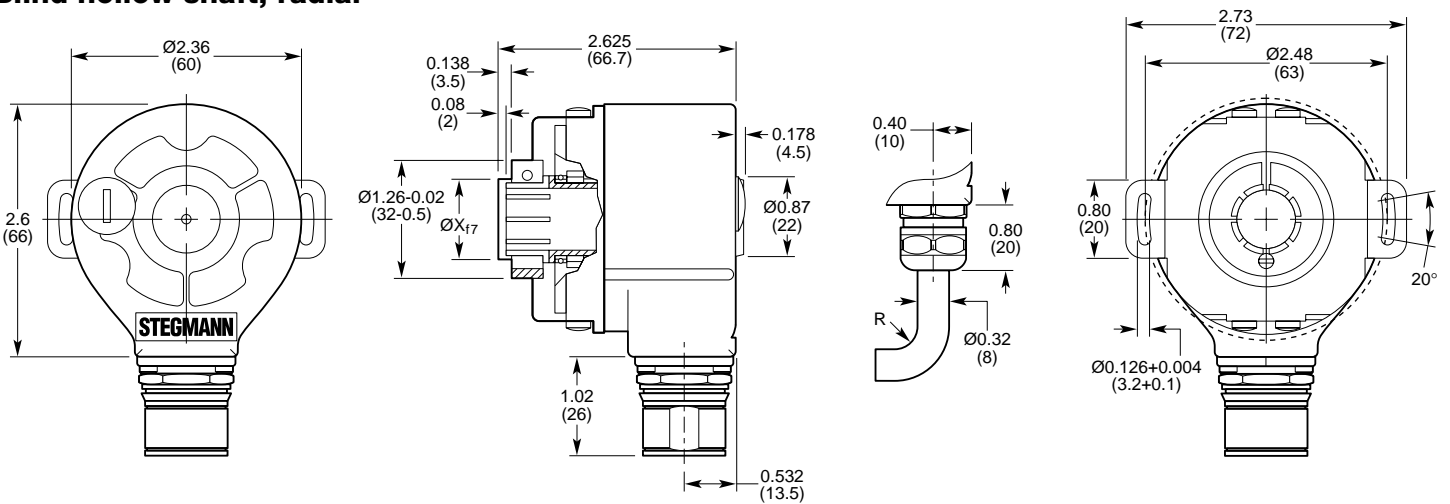
Dimensions (mm)

R = bending radius min 40 mm

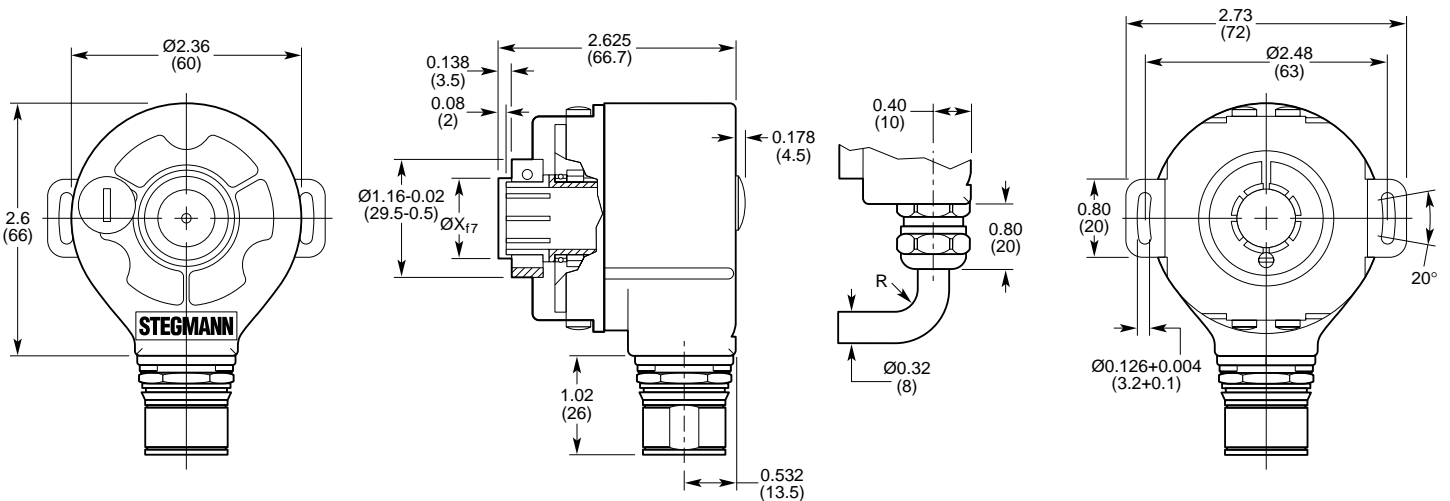
Blind hollow shaft, axial



Blind hollow shaft, radial



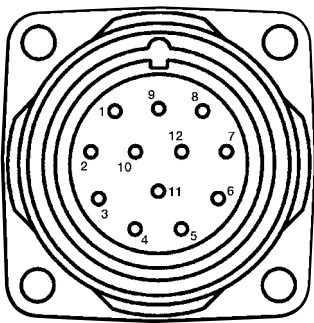
Through hollow shaft, radial



Connector and Pin Allocation

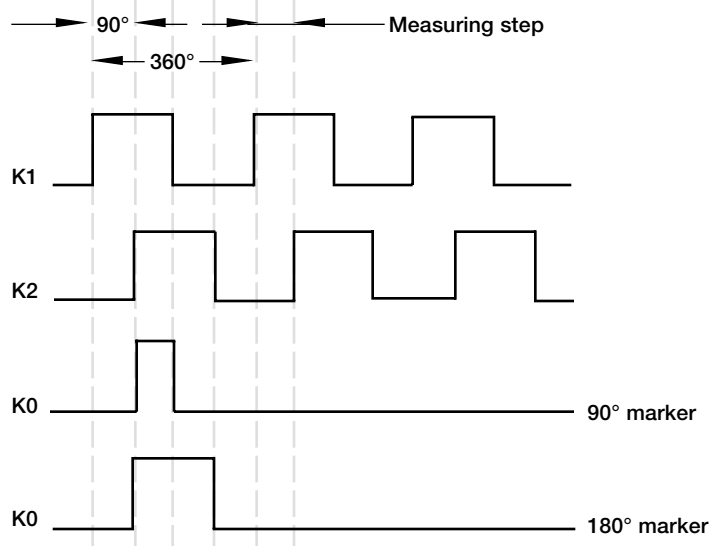
PIN	Signal 10 to 32 V	Signal 5 V	Wire Color	Explanation
1	K2_	K2_	Black	Signal line
2	Sense+	Sense+	Grey	Connected internally to Us
3	K0	K0	Lilac	Signal line
4	K0_	K0	Yellow	Signal line
5	K1	K1	White	Signal line
6	K1_	K1_	Brown	Signal line
7	N.C.	N.C.		Not connected
8	K2	K2	Pink	Signal line
9	Screen	Screen		
10 encoder	GND	GND	Blue	Zero volt connection to the
11	Sense-	Sense-	Green	Connected internally to GND
12	Us	Us	Red	Supply voltage to the encoder
Housing				Screen

CI6 Connector



Mating connectors are sold separately.

Incremental Pulse Diagram



Output waveform for CW rotation viewed from shaft end.

How To Order

Use the numbered chart below to construct your ordering code as shown below.

T1 2 - 1 - 4096 - 3 - 6 3 0
① ② ③ ④ ⑤ ⑥ ⑦ (default)

① CI6 Incremental Encoder	② Output Driver	③ Width of the Zero Pulse	④ Number of Lines*	⑤ Mounting Arrangement	⑥ Shaft Type	⑦ Electrical Connection*
T1	1 Us = 4.5-5.5 V EIA 422 A	1 90°	Max. 8, 192	1 Face mount flange Ø 60 mm	1 Solid shaft 10 x 19 mm	1 Radial connector 2 Radial cable 1.5 m 3 Axial connector 4 Axial cable 1.5 m 5 Radial cable 3 m 6 Axial cable 3 m 7 Radial cable 5 m 8 Axial cable 5 m * Other cable lengths on request
	2 Us = 10-32 V EIA 422 A	2 180°		2 Servo flange Ø 60 mm	1 Solid shaft 6 x 10 mm	
	3 Us = 10-32 V push-pull			3 Stator coupling, blind hollow shaft Ø 60 mm	Blind hollow shaft (x) 1 6 mm 2 1/4 in. 3 8 mm 4 3/8 in. 5 10 mm 6 12 mm 7 1/2 in. 8 15 mm	
				4 Stator coupling, through hollow shaft Ø 60 mm	Through hollow shaft (x) 1 6 mm 2 1/4 in. 3 8 mm 4 3/8 in. 5 10 mm 6 12 mm 7 1/2 in.	

*Specify resolution as decimal number. Final part number will have a base 32 coded resolution.



Example for ordering

A CI6 absolute encoder with an output driver of Us = 10-32 V RS-422, 90° zero pulse width, 4096 lines, stator coupling, 12 mm blind hollow shaft and axial connector = **T12-1-4096-3-630**