statum motion

STD-130

Absolute Position Sensor

The **STD-130** is a contact-less optical reflective absolute position sensor. It has Integrated dual sensing heads and advanced processing, which gives it a very high precision over a low profile and redundant core.

The **STD-130** support SSi & BiSS-C interfaces.

The wide assembly tolerance of the **STD-130** makes it easy to install and align, its plug and-play approach makes it simple to design into any application.

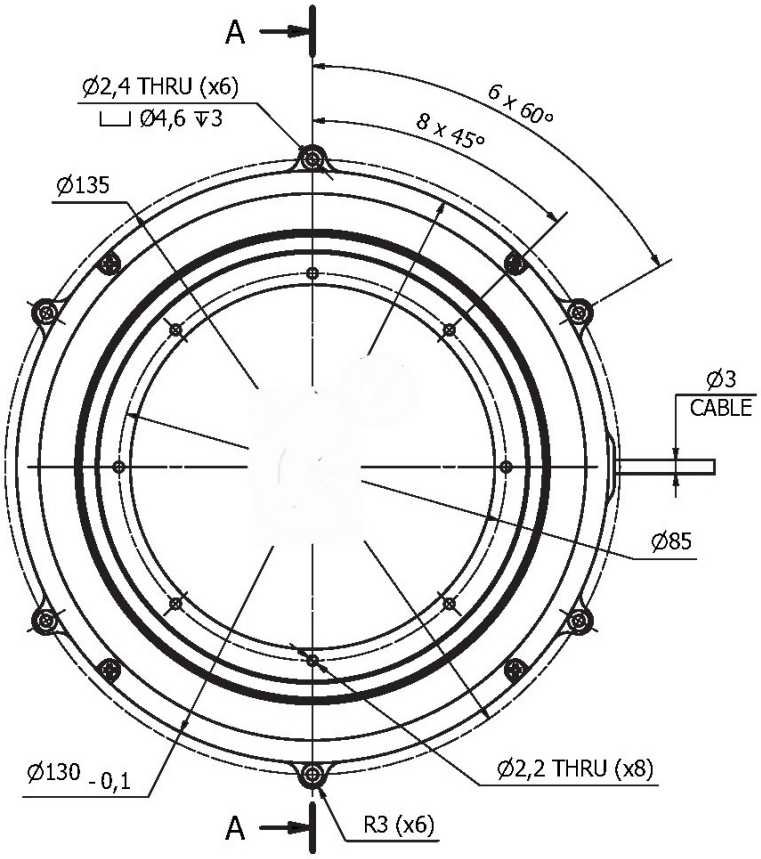
High precision single turn, optical reflective absolute position sensor

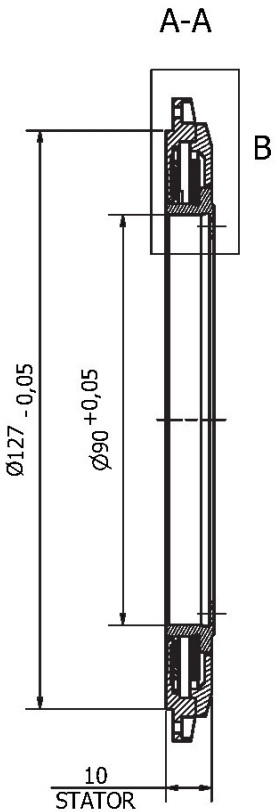
- Contact less
- Dual core, redundant - Duplus core technology
- Low profile
- High resolution
- High accuracy

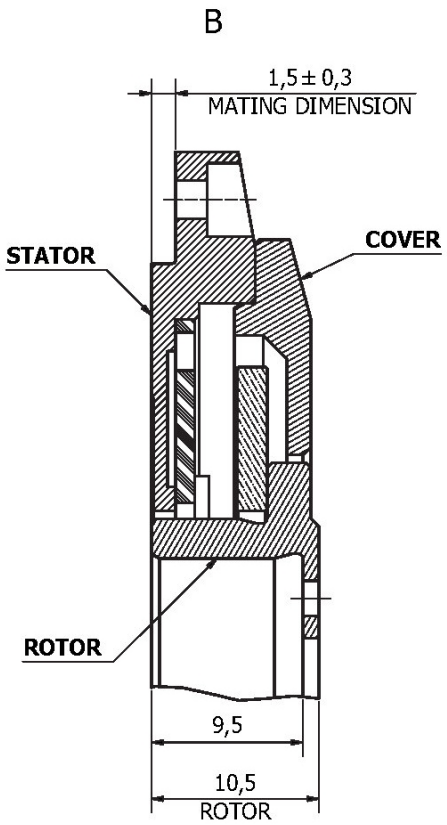
Dimensions		
OD stator	mm	130
ID rotor	mm	90
Height	mm	10

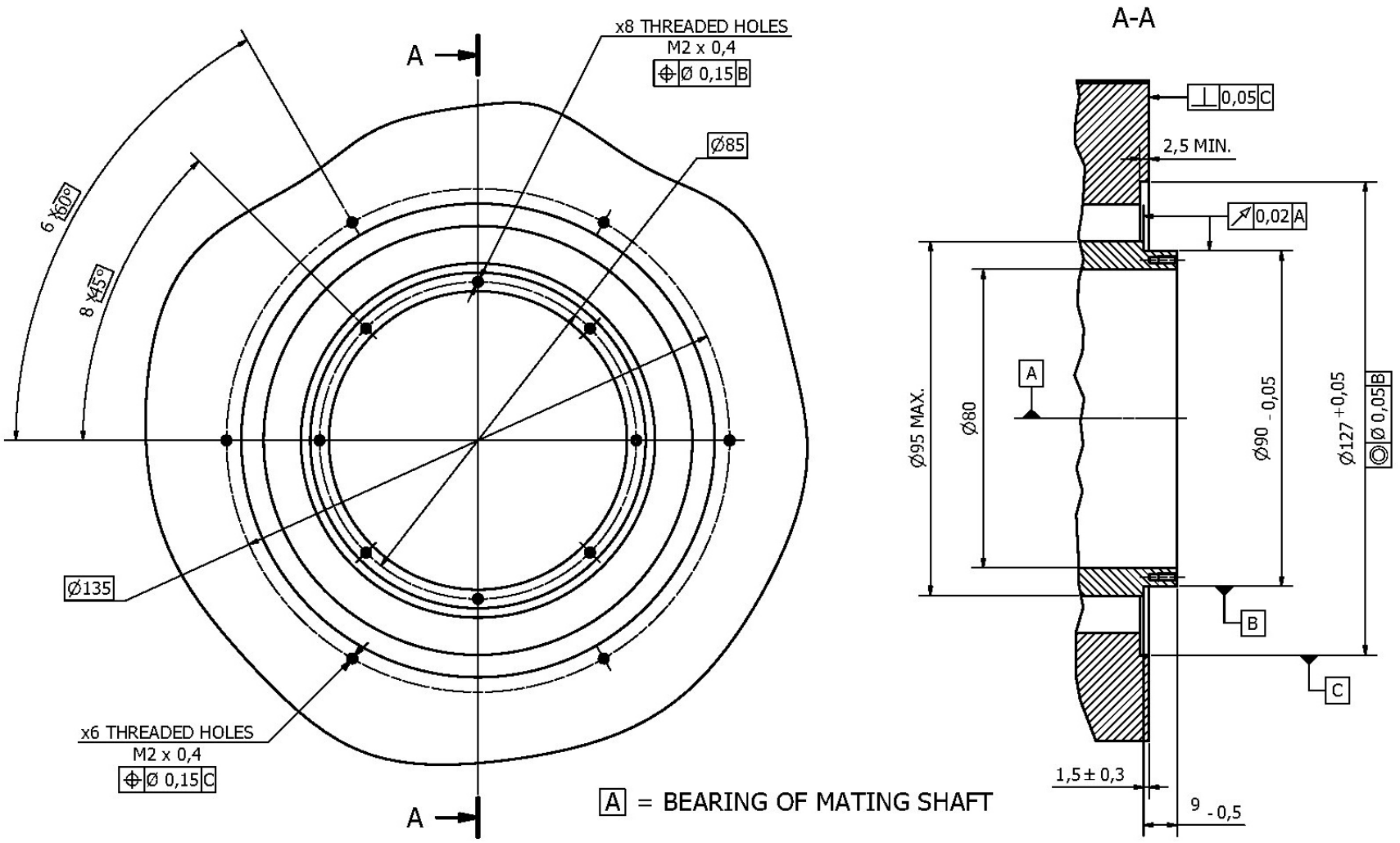
Environment Condition's	
Temperature, operational	-40 to 100 C˚
Humidity	95% relative humidity, Non condensing, IEC 60068-2-78
IP rating	IP 40 , (enclosed)
Shock	1000 m/s², 6 ms, ½ sine, 3 axes
Vibration	100 m/s² max @ 55 Hz to 2000 Hz, 3 axes
EMC compliance	IEC 61326-1

Characteristic's		
Resolution[1]	bit	18 - 22
Accuracy [INL]	mdeg	± 2
Repeatability	count	± 1
Data latency	µsec	20
Startup time	msec	20
Current consumption	mA	150
Power supply	VDC	5 ± 5%
Rotation speed, max	RPM	5,000
Rotor moment of inertia	kgm^2	< $6x10^{-8}$
Permissible radial run-out	mm	± 0.4
Rotor / Stator air gap	mm	1.75 ± 0.5
Weight	gr	95


A
Ø2,4 THRU (x6)
⌴ Ø4,6 ↧3
6 x 60°
8 x 45°
Ø135
Ø3
CABLE
Ø85
Ø130 - 0,1
Ø2,2 THRU (x8)
R3 (x6)
A


A-A
B
Ø127 - 0,05
Ø90 +0,05
10
STATOR


B
1,5 ± 0,3
MATING DIMENSION
STATOR
COVER
ROTOR
9,5
10,5
ROTOR



Mounting requirements

Mounting

(1) Stator

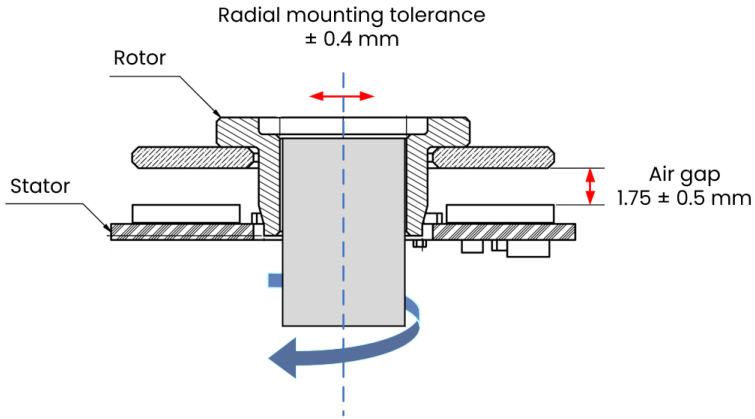
Place the sensor Stator into Ø 127 mm centering circumferential hole of the application. Align three equally spaced mounting holes (6 x 60°) of the stator housing with the threaded holes (M2 x 0,4) of the application . Fasten with three screws (DIN 912 - M2 x 5). Recommended tightening torque Md = 0,3 Nm.

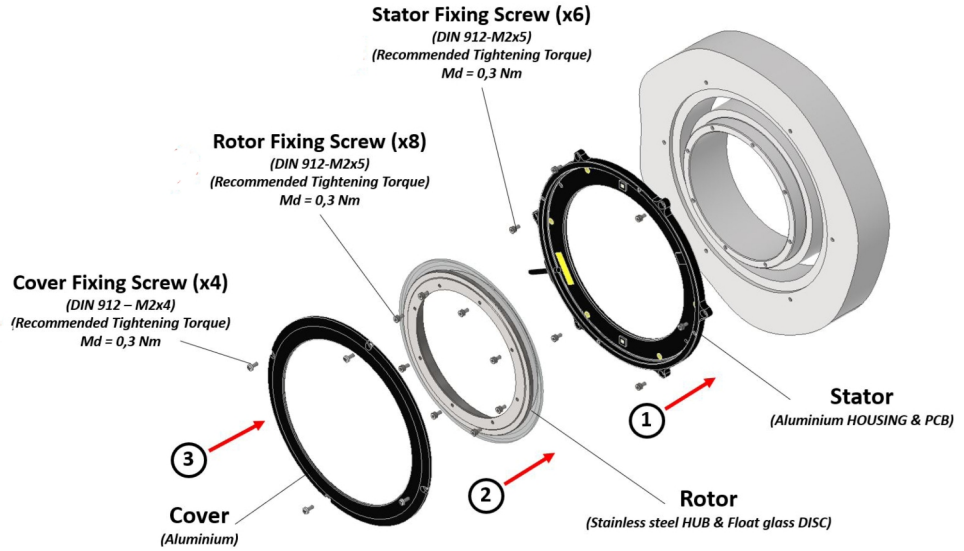
(2) Rotor

Ensure the disc of the Rotor (Disc/Hub assembly) is clean and free of damage.

Place the Rotor by using screw (DIN 912 - M4 x 8) and rotor pressing washer. Recommended tightening torque Md = 1,2 Nm.

NOTE: in dynamic applications where high accelerations and mechanical vibrations are present, the use of thread locking adhesive is strongly recommended. (e.g. Loctite 242)





STATUM MOTION sensors on-axis calibration is used for high-precision fine-tuning, but it is not necessary in most cases.

Off-axis calibration is performed on all sensors during production as part of final quality assurance and testing to determine their general performance and characteristics. On-site setup is available for many parameters, such as rotation direction, "zero setup" and more with statum studio SW tool.

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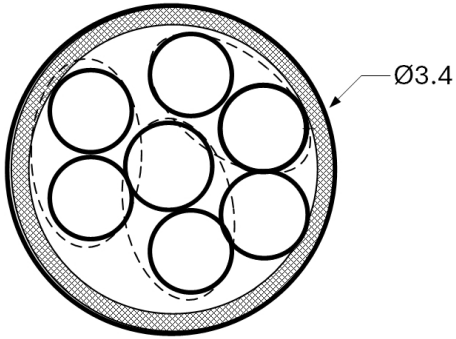
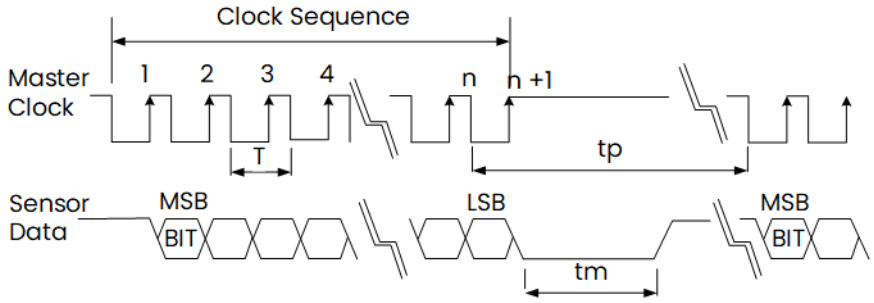
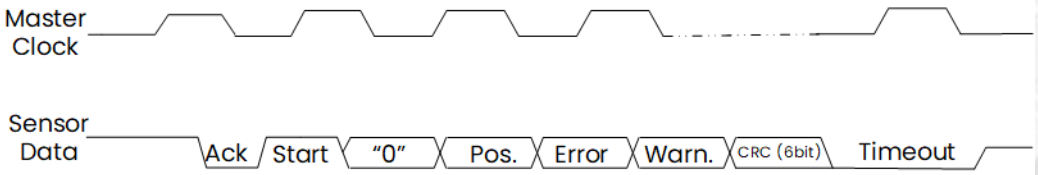


Cable	Twisted pair , Ø3.4 ±0.15 mm (7 wires)
Wire	AWG 30 25/44 tinned copper Insulation - PFE Ø0.15 OD Ø0.6 ±0.05 mm
Shield	Thinned copper braided 95%
Filler	PTFE
Binder	EPTFE
Jacket	FPE Black
T. Rating	-55 ˚C : + 150 ˚C

DB9	Function	Color
6	Return	Black
4	5 VDC	RED
7	Data +	Green
8	Data -	Yellow
2	Clock +	Gray
3	Clock -	Blue
	"0" reset	White
	Shield	



	Description	Recommended
f	clock frequency (max)	1.8 MHz
tp	pause time	> 21 µsec
tm	transfer time (monoflop time)	= 20 µsec
BIT	Build In Test (MSB , Optional)	



	Description	
Pos.	Number of data bits	18 - 22
Error	Error bit – active low	1
Warn.	Warning bit – active low	1
CRC	CRC polynomial inverted	6

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Sensor manufactured by statum motion are warranted to be free from defects in materials and workmanship for a period of 12 months from the date of shipment.

Warranty Coverage
This warranty covers the replacement or repair of faulty encoders at no charge, provided that the following conditions are met:

- The sensor was installed, operated, and stored in accordance with the manufacturer's instructions.
- The sensor was not subjected to improper installation, misuse, or abuse.
- The sensor was not disassembled or repaired by the customer.

Product specifications are subject to change without prior notice.
The product images shown are for illustration purposes only and may not be an exact representation of the product

Ordering

STD130	a	b	c	d	e	f

a	b	c	d	e	f
Resolution[1]	Comm.	Cable	Length	Board	Custom
18-22[1]	B – Biss C S - SSi	1 – Flying leads 2 – DB9 connector	1 – 250 mm 2 – 500 mm	1 - Standard 2 - Conformal coating	

1 - higher resolution – optional up to 26 bit.

Stator board protection	
PCB assemble	IPC 610 Class 3
PCB	IPC 620 Class 3
Sensor harness assembly	IPC-A 620 Class 3
Conformal coating (optional)	UVCL ; UV cure conformal coating

RoHS CE TUV CERT ISO 9001 TIC 100% QUALITY CONTROL

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Kiryat Tivon Israel

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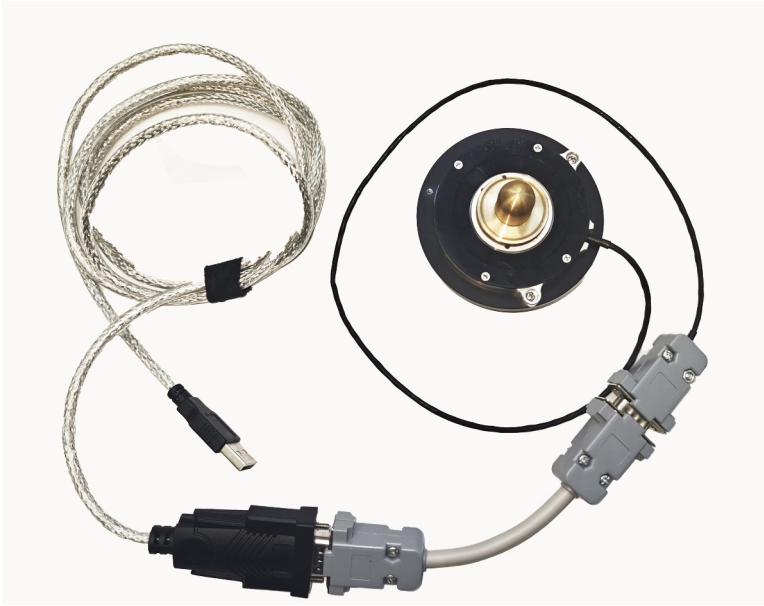
statum motion **Studio** provides an intuitive interface for configuring of the position sensors.
It operates with the statum compact protocol over RS422, offering features such as functionality verification, zero setup, jitter testing and more.



statum motion **Demo Kit** includes a position sensor mounted on a rotating jig and an RS422 to USB converter.