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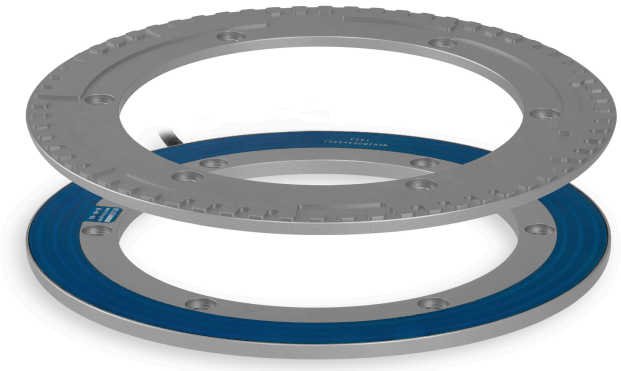
Absolute Rotary Encoder

“IND-MAX”

based on the inductive measuring principle



Technical Datasheet

2025-11 - rev.16

www.flux.gmbh

Table of contents:

1. IND-MAX Encoder specifications

IND-MAX size (OD)		75	100	125 mm	160 mm	180 mm
System data						
Type		axial, frameless, true absolute, **inductive measuring principle**				
max. Output Resolution		21 bit			22 bit	
		524’288 ppr (before x4) 2’097’152 cpr (after x4)			1’048’576 ppr (before x4) 4’194’304 cpr (after x4)	
Standard Accuracy Grades	**B**	± 0.040° | ± 144“ | ± 700 µrad				
	C	± 0.020° | ± 72“ | ± 350 µrad				
	D	± 0.010° | ± 36“ | ± 175 µrad				
	E	n.a.		± 0.005° | ± 18“ | ± 87 µrad		
Hysteresis		none				
Repeatability		1 resolution count				
Position update rate		Real-time				
Maximum speed[1]		6’000 rpm *(higher on request) / (restriction might apply for INCxx interface)*				

[1] See ***FLUX Encoders Interface Guide*** for max. speed of TTL output: https://flux.gmbh/Datasheets/FLUX-Interfaces-Guide-web.pdf

IND-MAX size (OD)		200 mm	250 mm	300 mm	375 mm
System data					
Type		axial, frameless, true absolute, **inductive measuring principle**			
max. Output Resolution		23 bit			
		2’097’152 ppr (before x4) 8’388’608 cpr (after x4)			
Standard Accuracy Grades	**C**	± 0.020° | ± 72“ | ± 350 µrad			
	D	± 0.010° | ± 36“ | ± 175 µrad			
	E	± 0.005° | ± 18“ | ± 87 µrad			
	F	± 14“ | ± 68 µrad			
	G		± 10“ | ± 48 µrad		
High Accuracy[2]	**G[2]**			± 7“ | ± 35 µrad	
Hysteresis		none			
Repeatability		1 resolution count			
Position update rate		Real-time			
Maximum speed[3]		6’000 rpm*(higher on request) / (restriction might apply for INCxx interface)*			

[2] High accuracy for grades G requires tighter mounting tolerances. Available for option “C” in ordering code. See table mounting tolerances.
[3] See ***FLUX Encoders Interface Guide*** for max. speed of TTL output: https://flux.gmbh/Datasheets/FLUX-Interfaces-Guide-web.pdf

Electrical data	
Supply voltage *(at encoder connector)*	min. 4.35 Vdc. max. 36 Vdc
Reverse polarity protection	Yes
Current Consumption *(w/o output terminations)*	max. 150 mA @ 5 Vdc max. 50 mA @ 24 Vdc

IND-MAX size (OD)	**75 mm**	**100 mm**	**125 mm**	**160 mm**	**180 mm**
Mechanical Data					
Stator base material	Anodized aluminum CTE ~ 24 ppm/°C *(see option "N" for electroless nickel surface finishing)*				
Stator weight(1)	60 g	100 g	140 g	180 g	200 g
Rotor base material	Anodized aluminum CTE ~ 24 ppm/°C *(see option "N" for electroless nickel surface finishing)*				
Rotor weight(1)	40 g	60 g	80 g	110 g	110 g
Shock	200 g, 6 ms				
Vibration	20 g, 55 .. 2000 Hz				

(1) Guiding values, without cable

IND-MAX size (OD)	**200 mm**	**250 mm**	**300 mm**	**375 mm**
Mechanical Data				
Stator base material	Anodized aluminum CTE ~ 24 ppm/°C *(see option "N" for electroless nickel surface finishing)*			
Stator weight(1)	225 g	275 g	420 g	525 g
Rotor base material	Anodized aluminum CTE ~ 24 ppm/°C *(see option "N" for electroless nickel surface finishing)*			
Rotor weight(1)	140 g	165 g	300 g	375 g
Shock	200 g, 6 ms			
Vibration	20 g, 55 .. 2000 Hz			

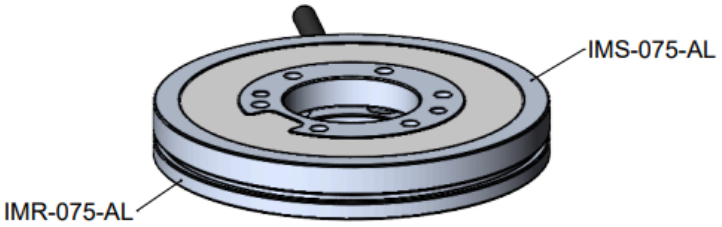
Mounting Tolerances				
	nominal axial Air-Gap	**axial tolerance**	**radial tolerance *(runout)***	**perpendicularity tolerance**
Standard accuracy grades B / C / D / E / F / G	0.50 mm	±0.30 mm *(0.20 mm - 0.80 mm)*	0.20 mm *(stator + rotor)*	0.20 mm *(stator + rotor)*
High accuracy for grade G *(select option "C" in ordering code)*	0.35 mm	±0.15 mm *(0.20 mm - 0.50 mm)*	0.10 mm *(stator + rotor)*	0.10 mm *(stator + rotor)*

Environmental data	
Standard temperature range	
Operating	-20°C .. +85°C
Storage	-20°C .. +85°C
Extended temperature range: Option "E"	
Operating	-45°C .. +105°C
Storage	-55°C .. +125°C
Ingress Protection	Standard: IP67 Option "**W**": IP68
Operating pressure	Standard: 0.05 to 7 bars Option "**H**": 0.05 to 200 bars
EMC immunity	complies with EN IEC 61000-6-2
EMC emission	complies with EN IEC 61000-6-4

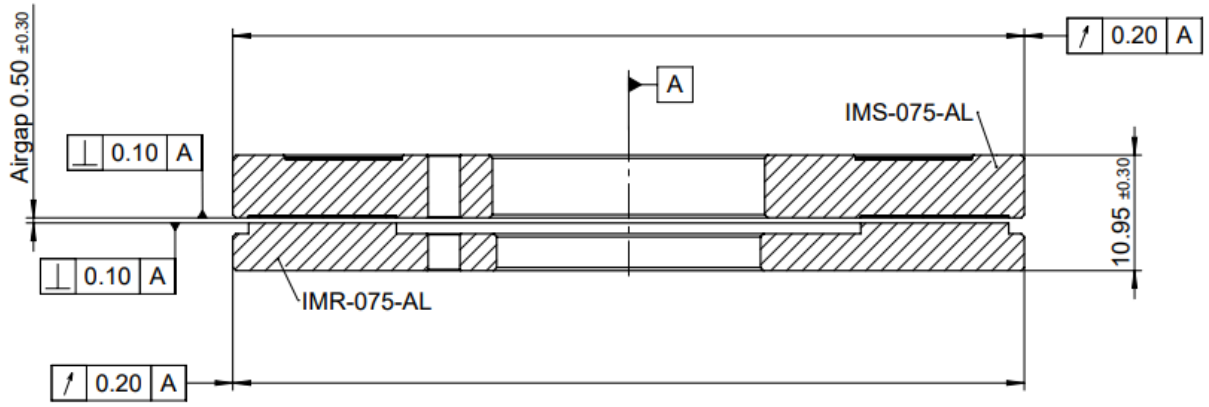
Output interfaces (See ***FLUX Encoders Interface Guide*** for complete description- www.flux.gmbh/downloads)	
Absolute: **BiSS/C**	BIS10, BIS21
Absolute: **SSI**	SSI00, SSI01, SSI02, SSI03, SSI04, SSI11, SSI20
Incremental: **A/B/Z**	INC00, INC01, INC02, INC03
Absolute: **SPI**	*contact FLUX for more details*
Absolute: **Asynchronous**	UAT00, UAT10
Other synchronous or asynchronous	*contact FLUX for more details*

2. Mechanical dimensions and mounting tolerances

2.1. IND-MAX Encoder size 075: **IND-MAX-075-AL**

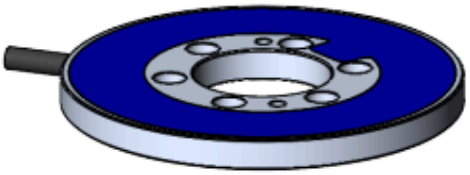


INDUCTIVE MAX Encoder
IND-MAX-075-AL
andized aluminum

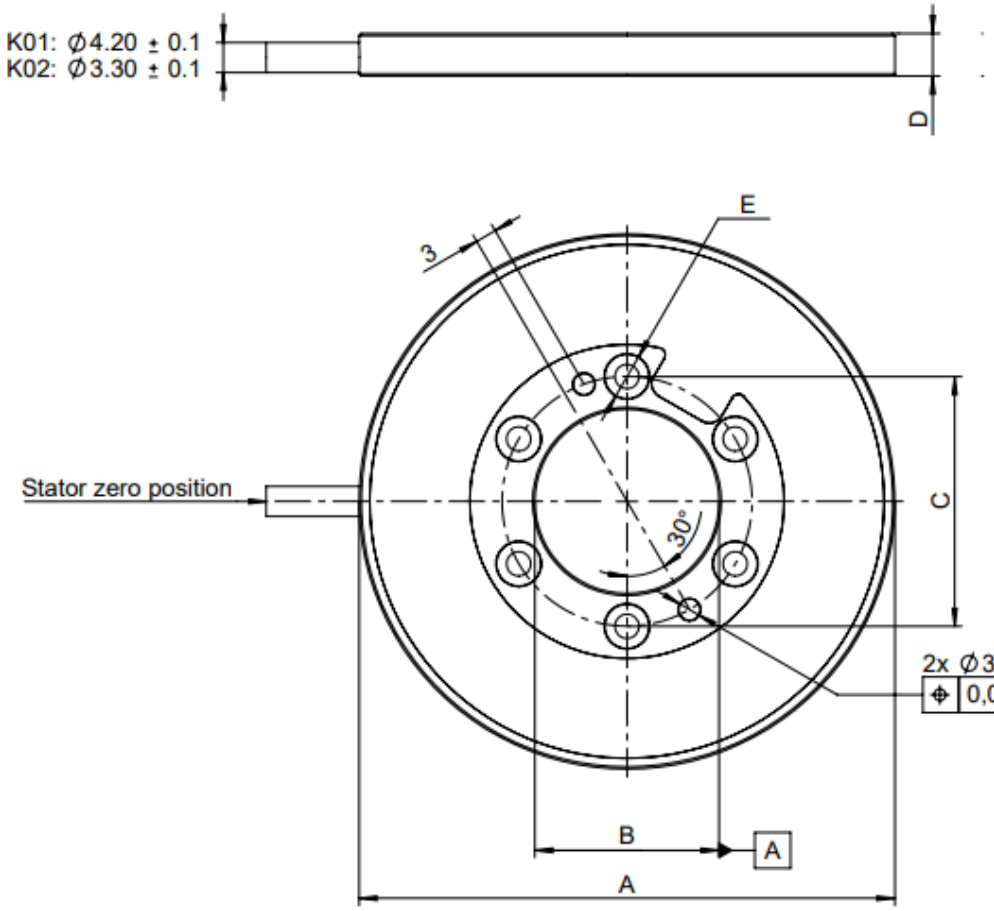


A ... axis of rotation
max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
Dimensions are mm.

2.1.1. Stator for IND-MAX-075: **IMS-075-AL**



Inductive MAX Encoder - Stator
IMS-075-AL
anodized aluminum

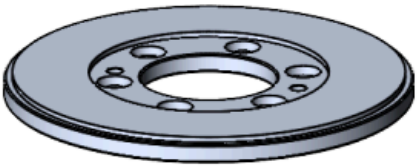


Dimensional table for size 75 mm:

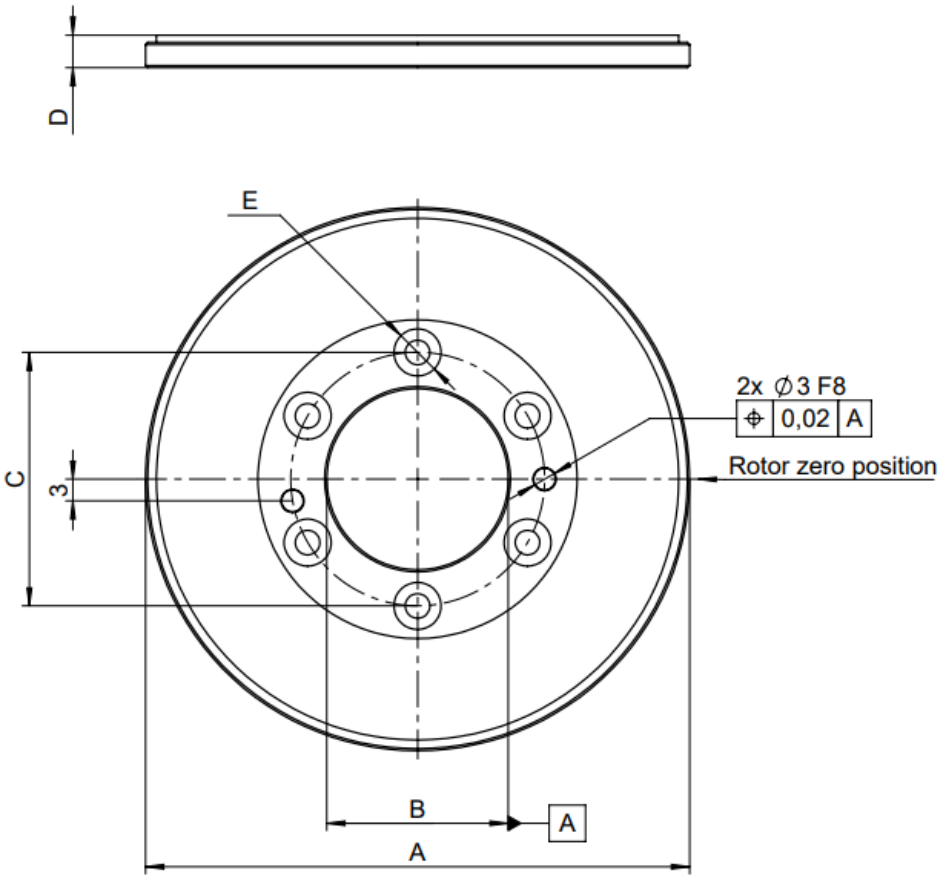
IMS-xxx-AL	A	B	C	D	E
075	**ø75 h7**	**ø25.80 H7**	**ø35**	**5.95 ±0.05**	**6 x ø3.40 (6 x 60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.1.2. Rotor for IND-MAX-075: **IMR-075-AL**



Inductive MAX Encoder - Rotor
IMR-075-AL
anodized aluminum

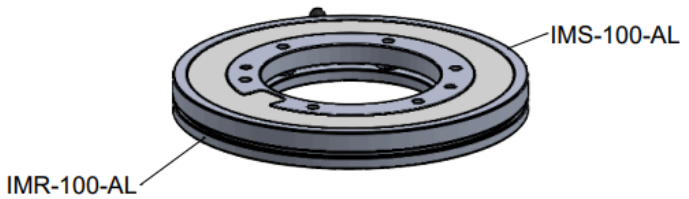


Dimensional table for size 75 mm:

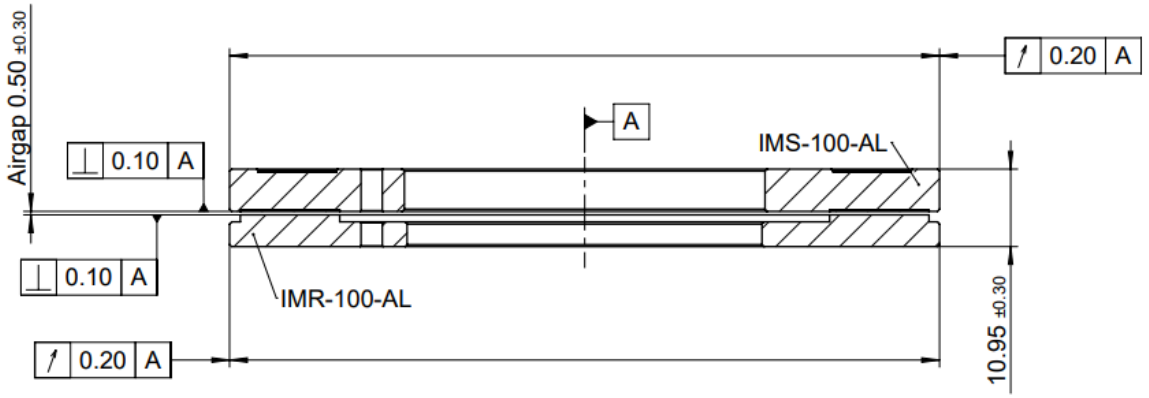
IMR-xxx-AL	A	B	C	D	E
075	**ø75 h7**	**ø25 H7**	**ø35**	**4.50 ±0.03**	**6 x ø3.40 (60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.2. IND-MAX Encoder size 100: **IND-MAX-100-AL**

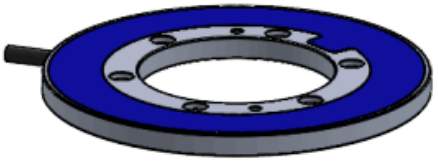


INDUCTIVE MAX Encoder
IND-MAX-100-AL
andized aluminum

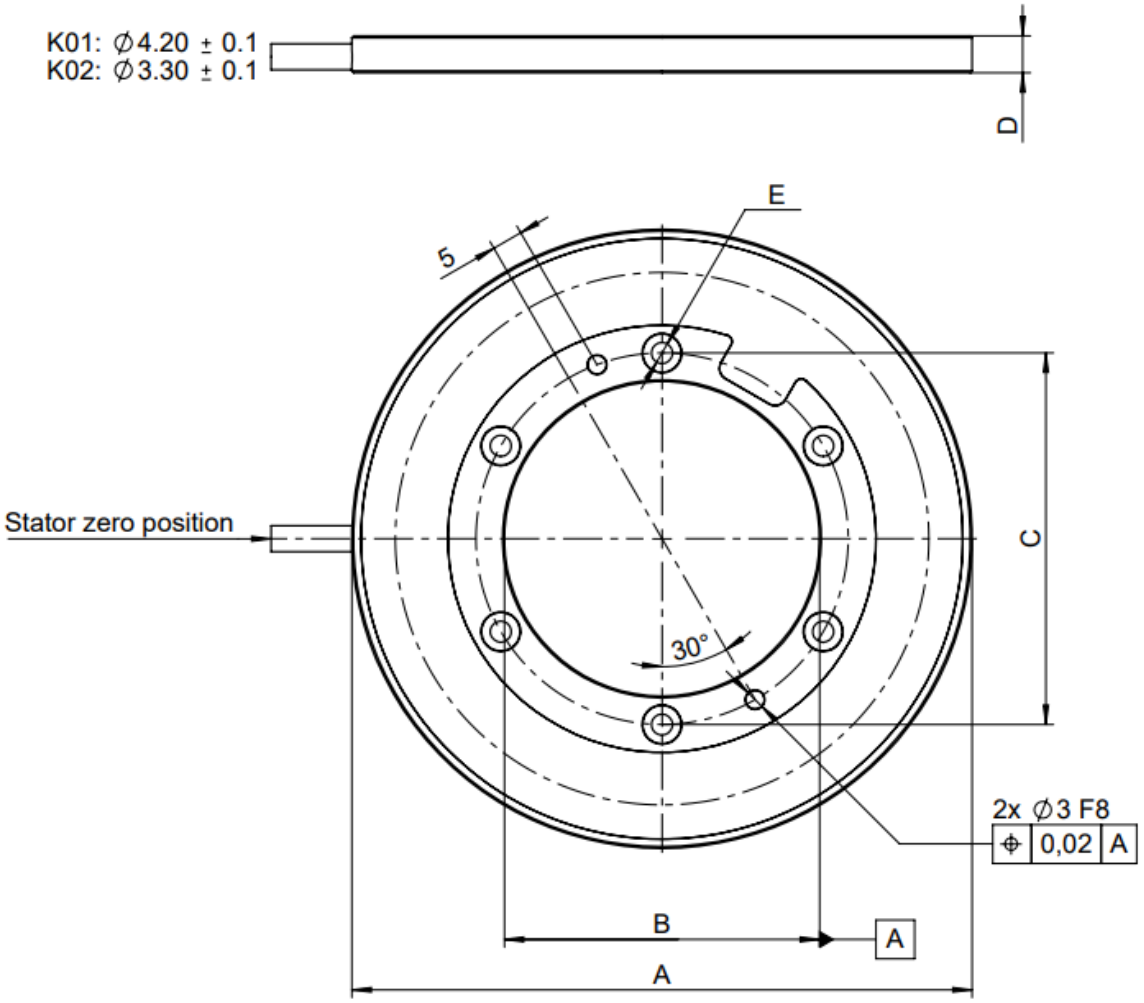


A ... axis of rotation
max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
Dimensions are mm.

2.2.1. Stator for IND-MAX-100: **IMS-100-AL**



Inductive MAX Encoder - Stator
IMS-100-AL
anodized aluminum

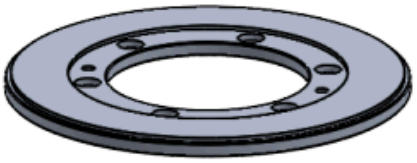


Dimensional table for size 100 mm:

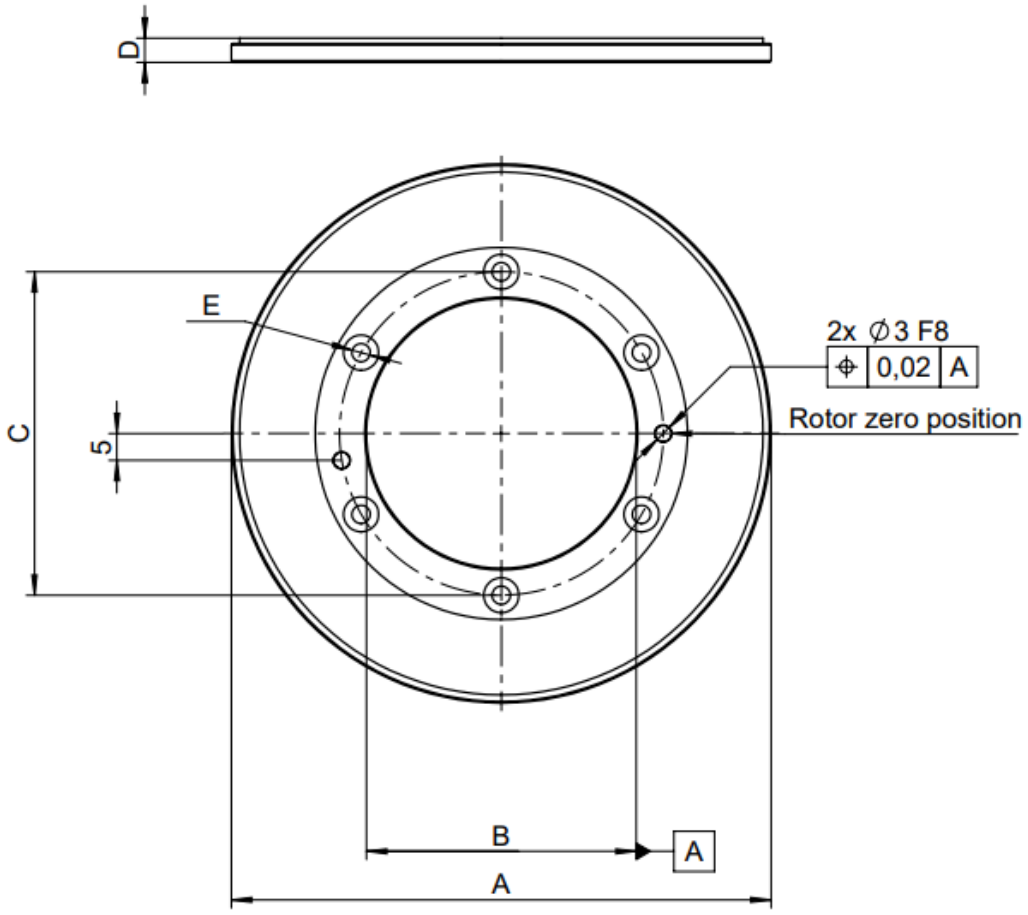
IMS-xxx-AL	A	B	C	D	E
100	**ø100 h7**	**ø50.80 H7**	**ø60**	**5.95 ±0.05**	**6 x ø3.40 (6 x 60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.2.2. Rotor for IND-MAX-100: **IMR-100-AL**



Inductive MAX Encoder - Rotor
IMR-100-AL
anodized aluminum

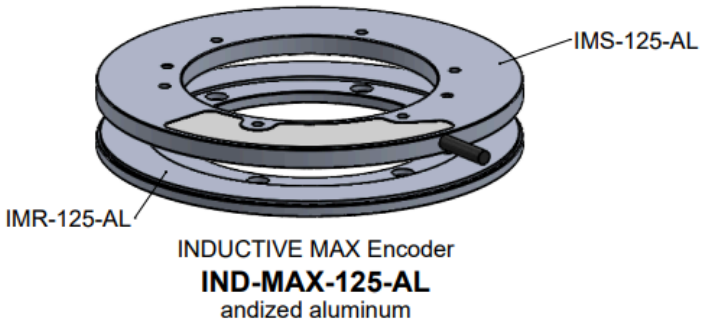


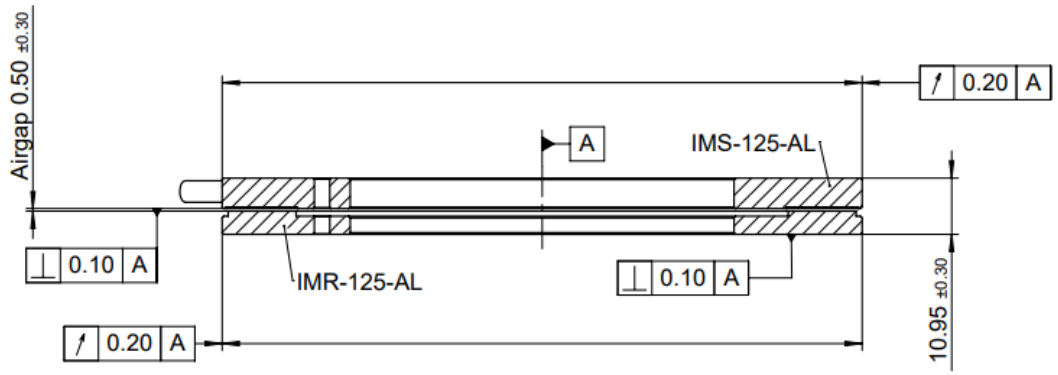
Dimensional table for size 100 mm:

IMR-xxx-AL	A	B	C	D	E
100	**ø100 h7**	**ø50 H7**	**ø60**	**4.50 ±0.03**	**6 x ø3.40 (60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.3. IND-MAX Encoder size 125: **IND-MAX-125-AL**





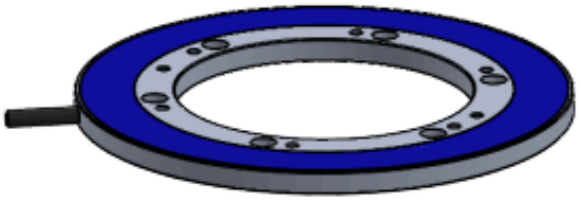
A ... axis of rotation

max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |

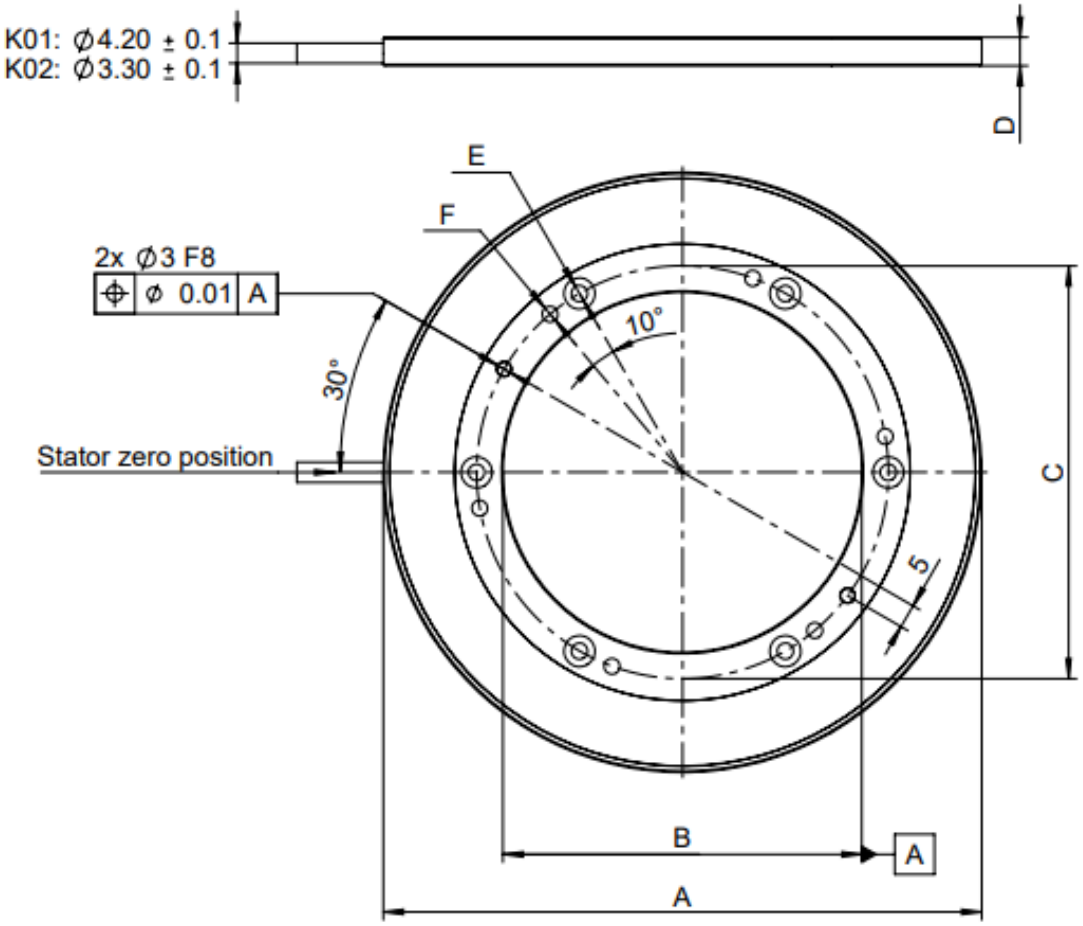
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |

Dimensions are mm.

2.3.1. Stator for IND-MAX-125: **IMS-125-AL**



Inductive MAX Encoder - Stator
IMS-125-AL
anodized aluminum



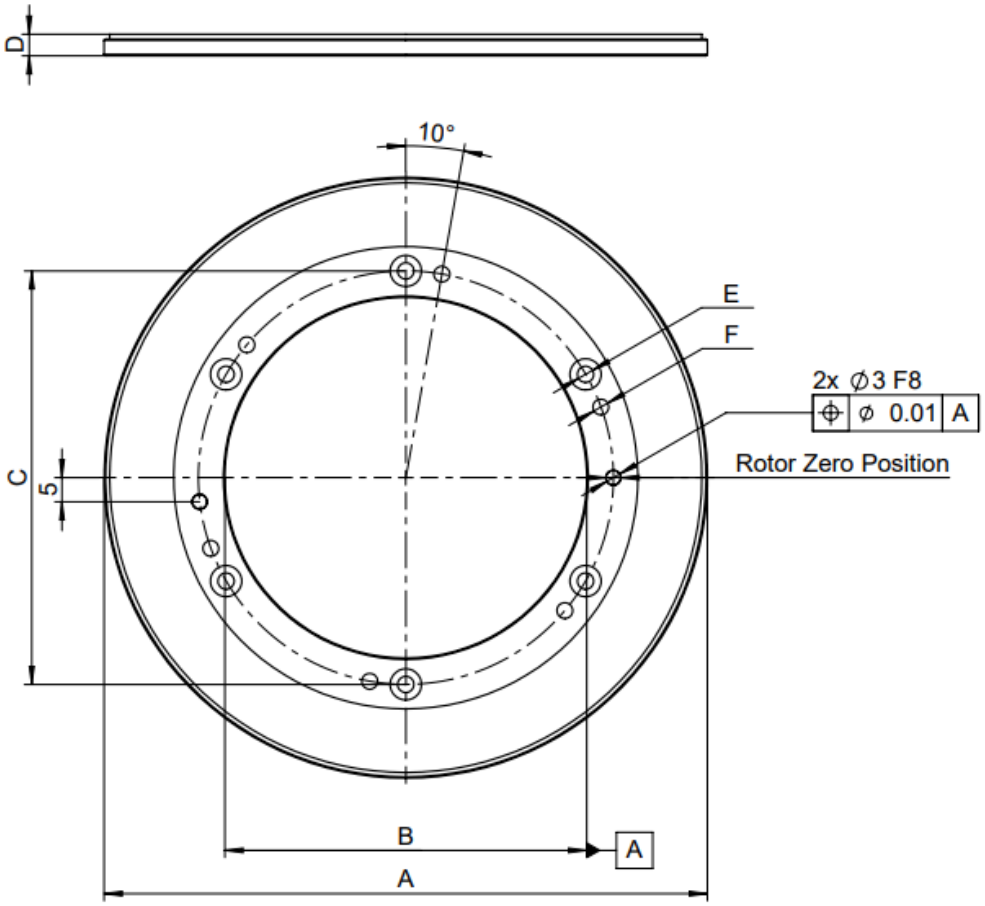
Dimensional table for size 125 mm:

IMS-xxx-AL	A	B	C	D	E	F
125	**ø125 h7**	**ø75 H7**	**ø86**	**5.95 ±0.05**	**6 x ø3.40 (60°)**	**6 x M4 (60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.3.2. Rotor for IND-MAX-125: **IMR-125-AL**

Inductive MAX Encoder - Rotor
IMR-125-AL
anodized aluminum

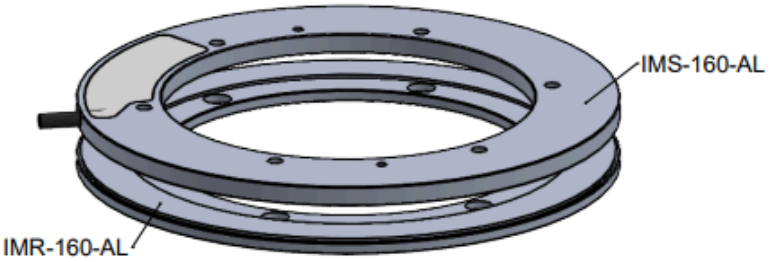


Dimensional table for size 125 mm:

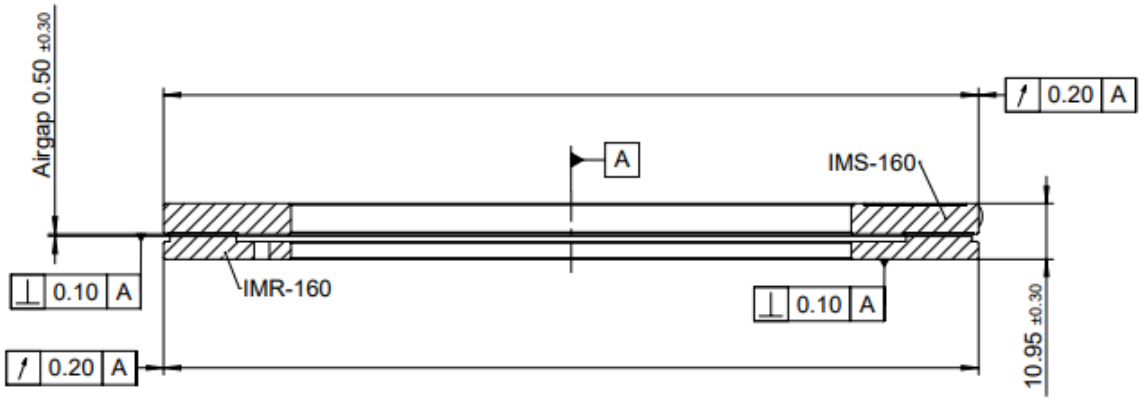
IMR-xxx-AL	A	B	C	D	E	F
125	**ø125 h7**	**ø75 H7**	**ø86**	**4.50 ±0.03**	**6 x ø3.40 (60°)**	**6 x M4 (60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.4. IND-MAX Encoder size 160: **IND-MAX-160-AL**



INDUCTIVE MAX Encoder
IND-MAX-160-AL
andized aluminum



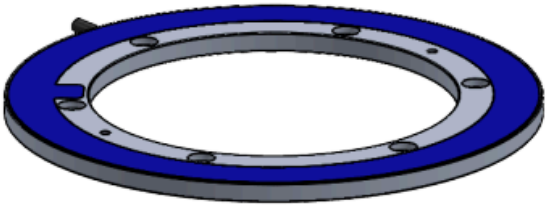
A ... axis of rotation

max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |

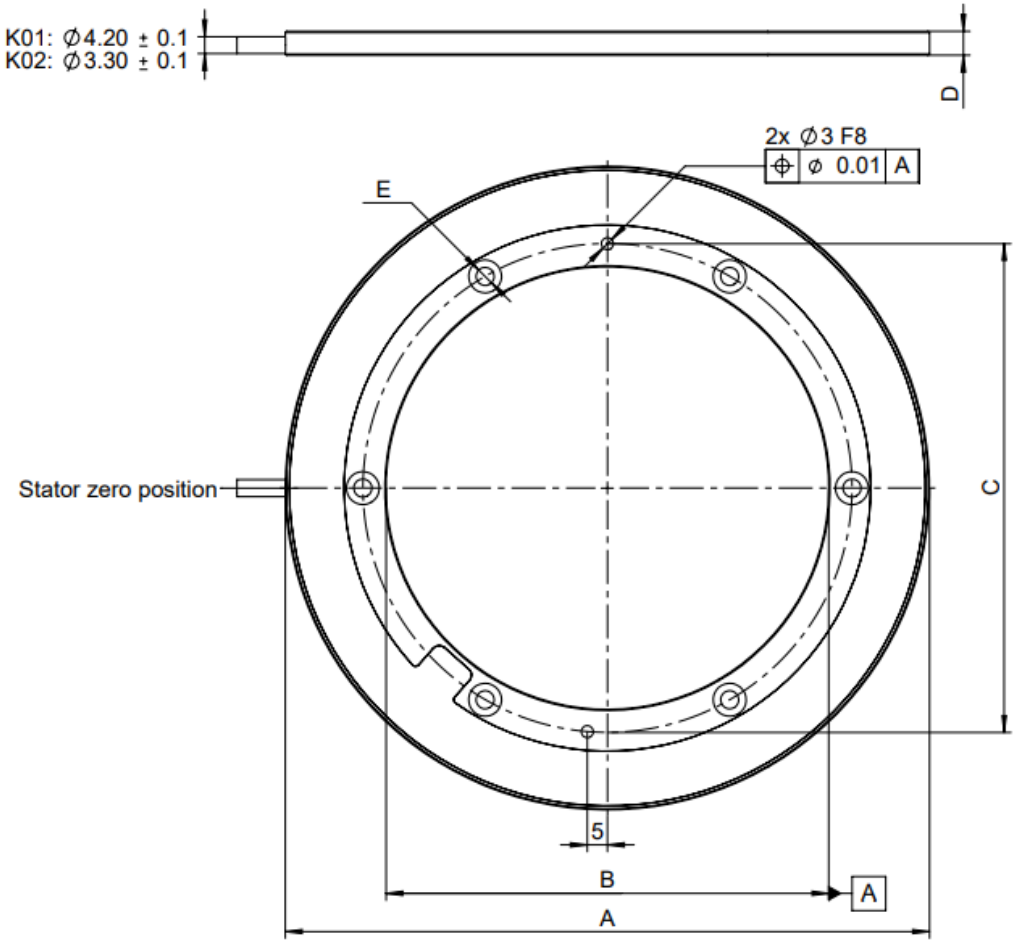
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |

Dimensions are mm.

2.4.1. Stator for IND-MAX-160: **IMS-160-AL**



Inductive MAX Encoder - Stator
IMS-160-AL
anodized aluminum

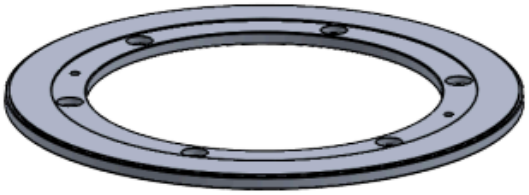


Dimensional table for size 160 mm:

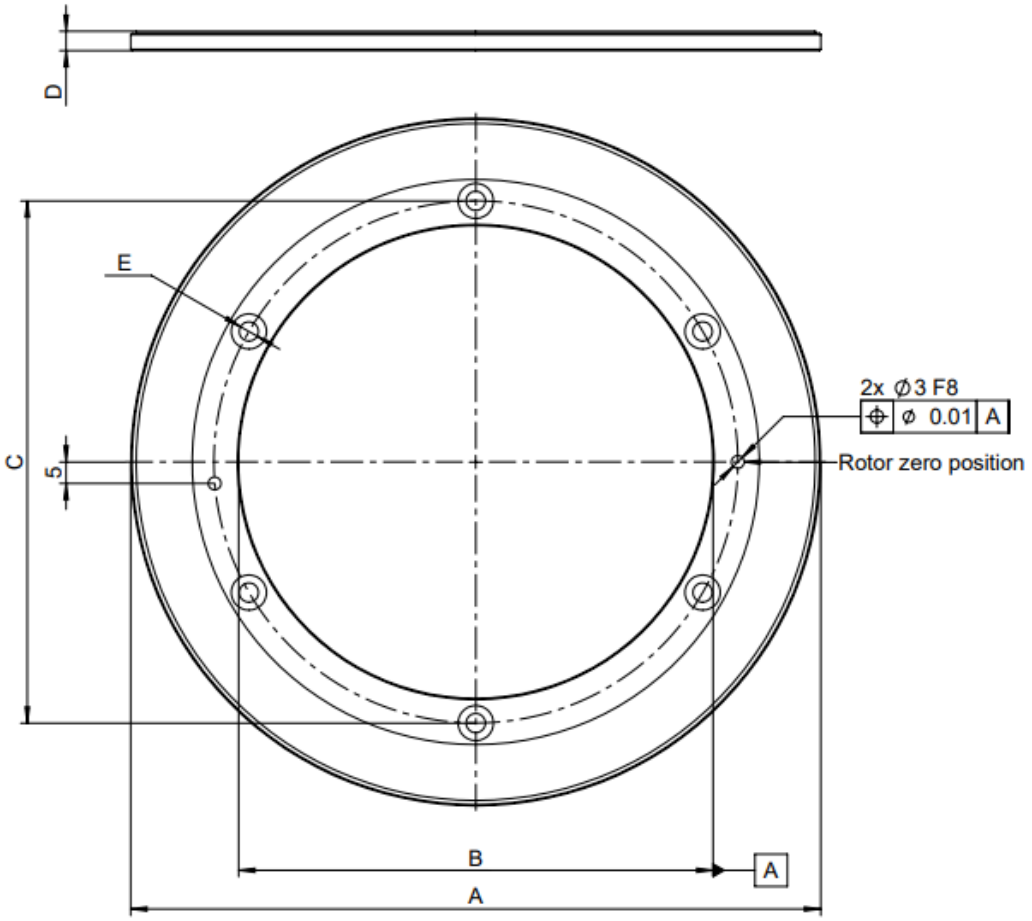
IMS-xxx-AL	A	B	C	D	E
160	**ø160 h7**	**ø110 H7**	**ø121.50**	**5.95 ±0.05**	**6 x ø4.50 (6x60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.4.2. Rotor for IND-MAX-160: **IMR-160-AL**



Inductive MAX Encoder - Rotor
IMR-160-AL
anodized aluminum

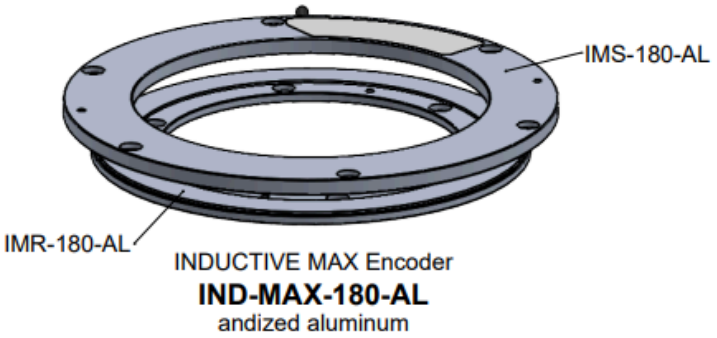


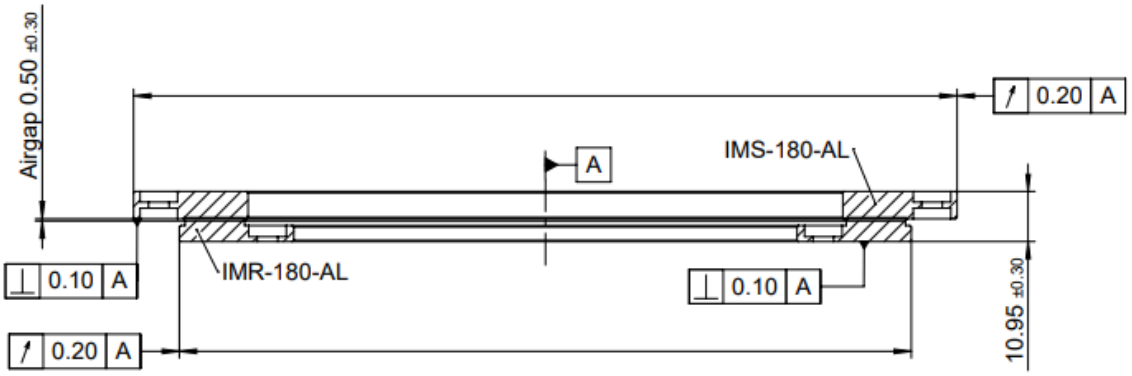
Dimensional table for size 160 mm:

IMR-xxx-AL	A	B	C	D	E
160	**ø160 h7**	**ø110 H7**	**ø121.50**	**4.50 ±0.03**	**6 x ø4.50 (6x60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

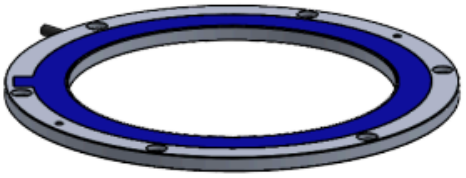
2.5. IND MAX Encoder size 180: **IND-MAX-180-AL**



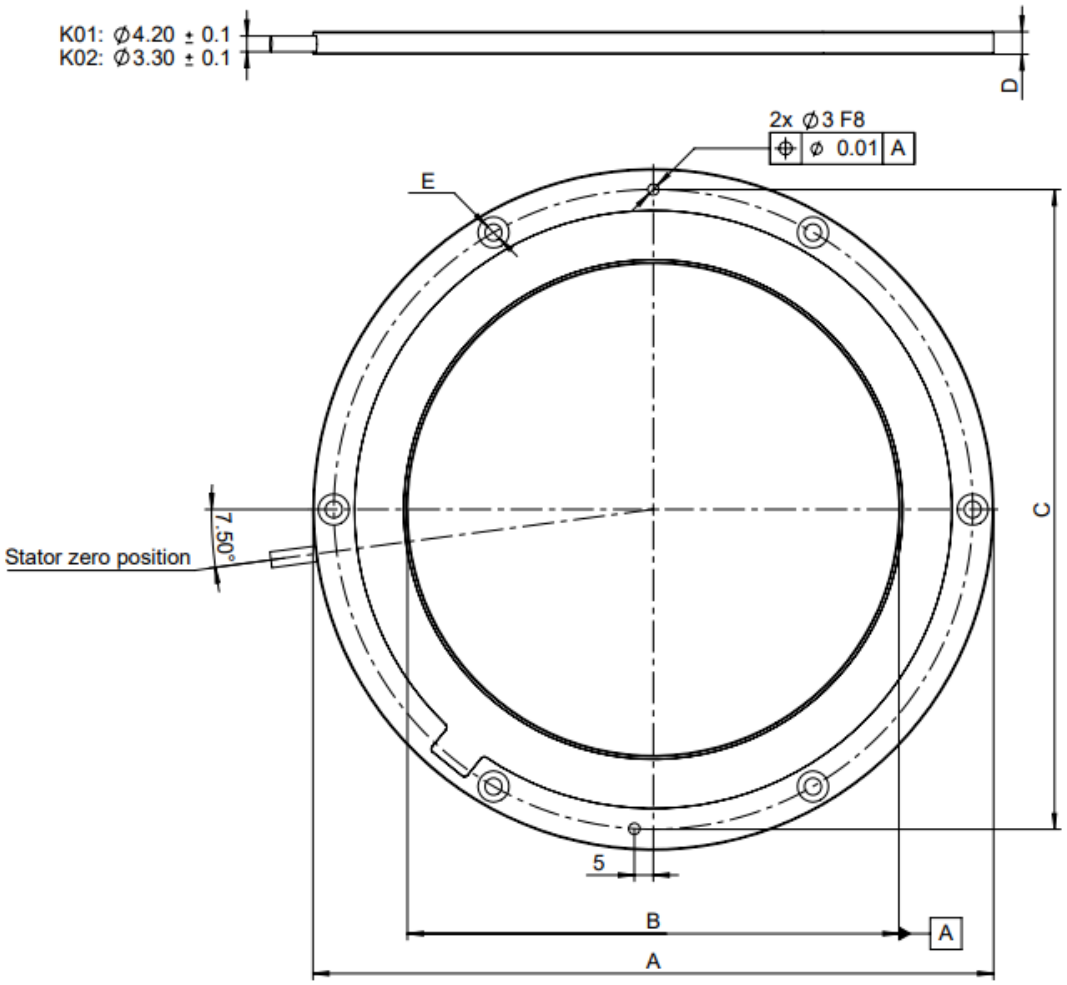


A ... axis of rotation
max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
Dimensions are mm.

2.5.1. Stator for IND-MAX-180: **IMS-180-AL**



Inductive MAX Encoder - Stator
IMS-180
anodized aluminum

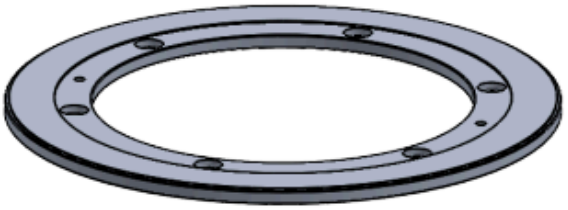


Dimensional table for size 180 mm:

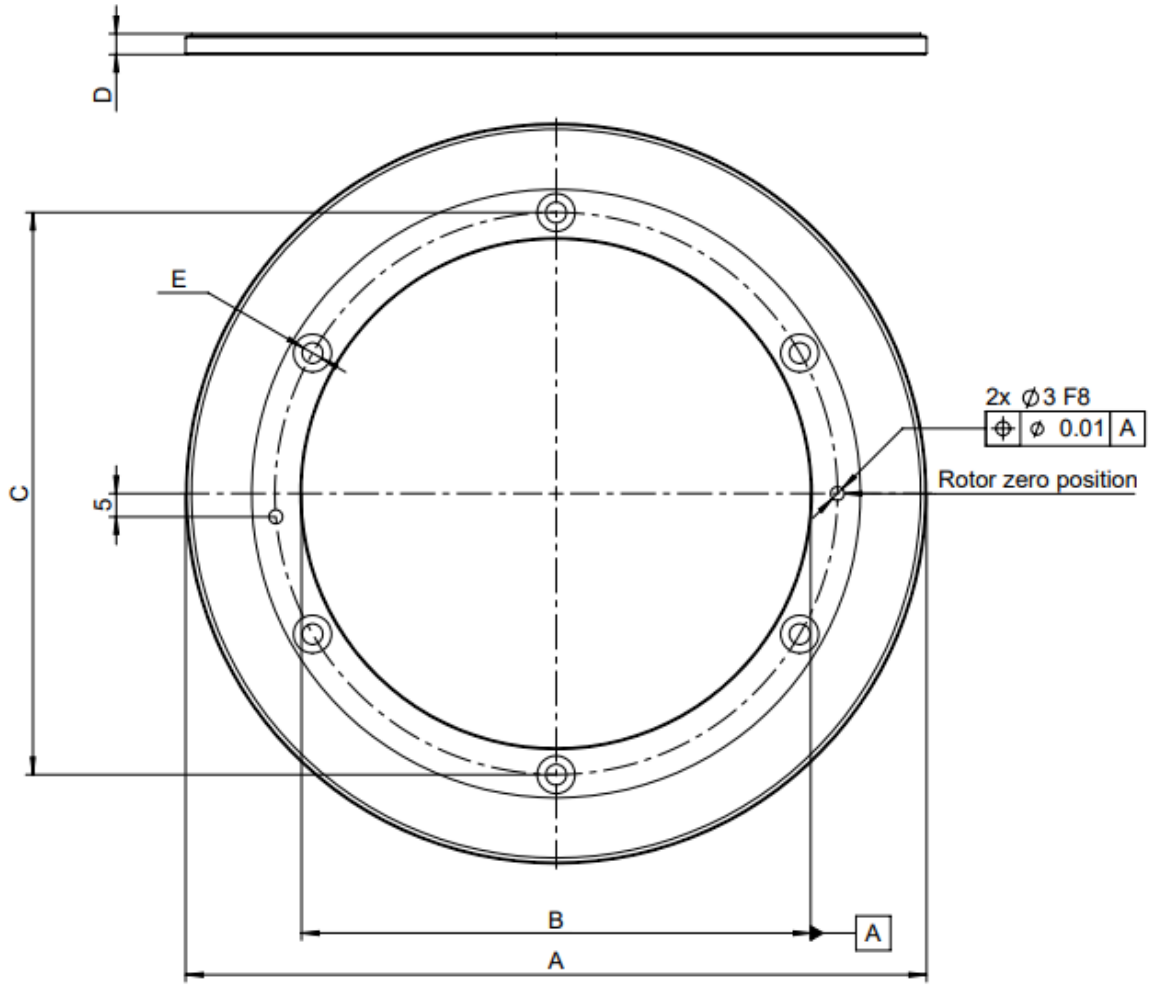
IMS-xxx-AL	A	B	C	D	E
180	**ø180 h7**	**ø130 H7**	**ø169**	**5.95 ±0.05**	**6 x ø4.50 (6x60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.5.2. Rotor for IND-MAX-180: **IMR-180-AL**



Inductive MAX Encoder - Rotor
IMR-180-AL
anodized aluminum

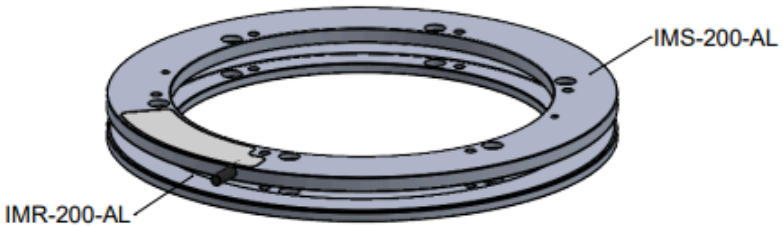


Dimensional table for size 180 mm:

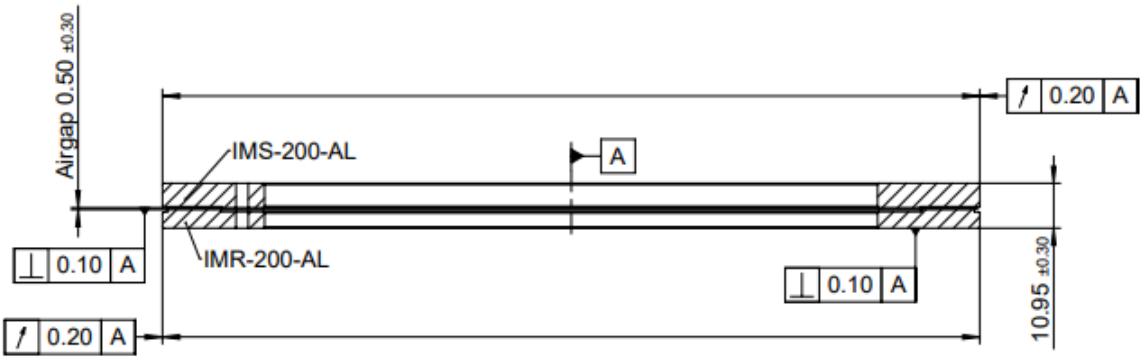
IMR-xxx-AL	A	B	C	D	E
180	**ø160 h7**	**ø110 H7**	**ø121.50**	**4.50 ±0.03**	**6 x ø4.50 (6x60°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.6. IND MAX Encoder Size 200: **IND-MAX-200-AL**



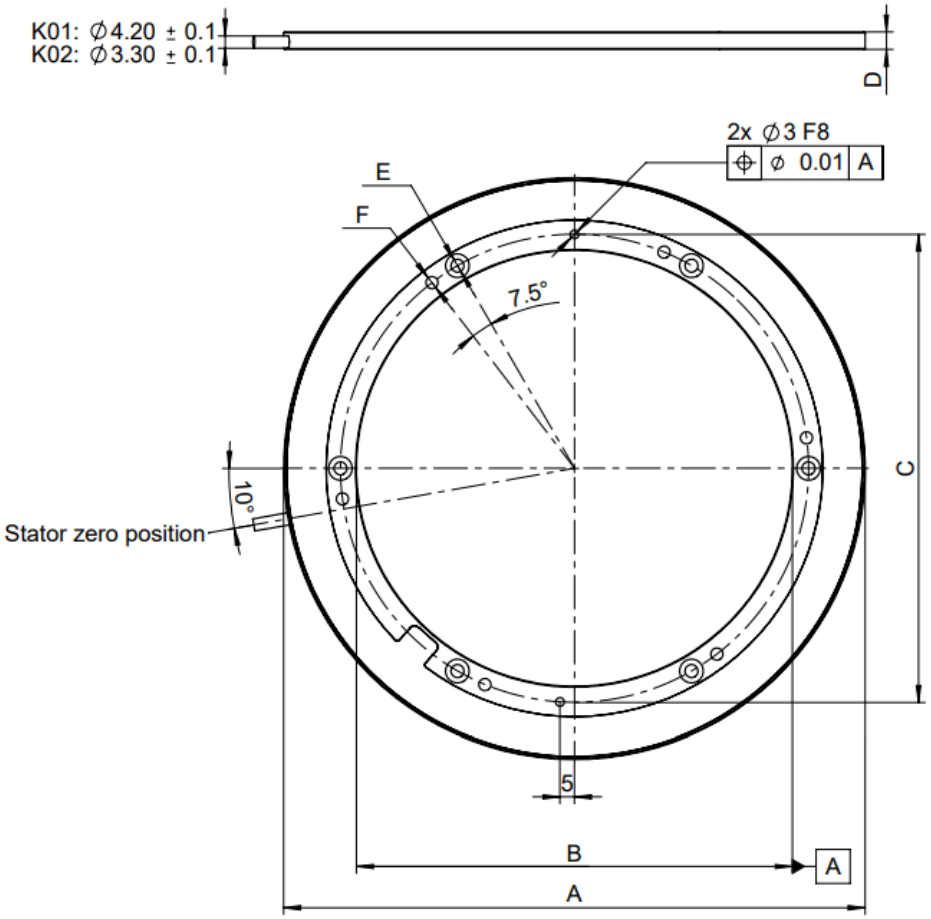
INDUCTIVE MAX Encoder
IND-MAX-200-AL
andized aluminum



A ... axis of rotation
max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
Dimensions are mm.

2.6.1. Stator for IND-MAX-200: **IMS-200-AL**

Inductive MAX Encoder - Stator
IMS-200-AL
anodized aluminum



Dimensional table for size 200 mm:

IMS-xxx-AL	A	B	C	D	E	F
200	**ø200 h7**	**ø150 h7**	**ø161**	**5.95 ±0.05**	**6 x ø4.50 (60°)**	**6 x M5 (60°)**

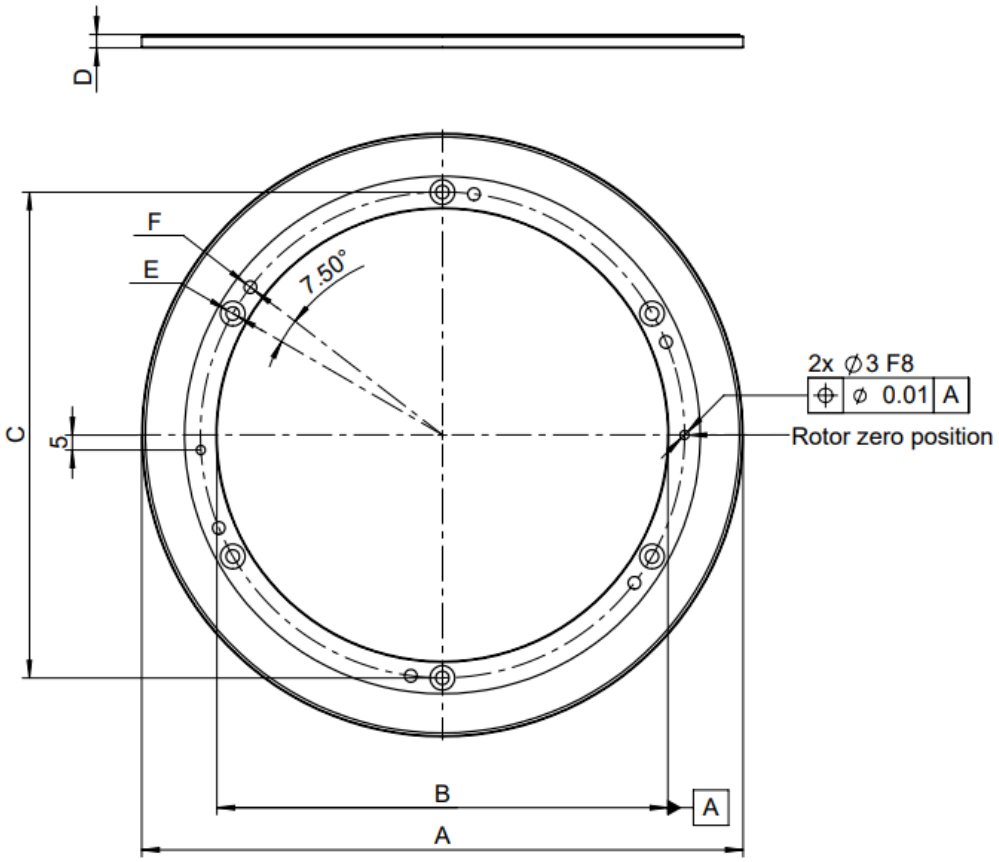
Dimensions are in mm.

Screw hole dimensions for mounting screws according ISO 7380-1.

A set of mounting screws according to Section 8.1. is included with the product.

2.6.2. Rotor for IND-MAX-200: **IMR-200-AL**

Inductive MAX Encoder - Rotor
IMR-200-AL
anodized aluminum



Dimensional table for size 200 mm:

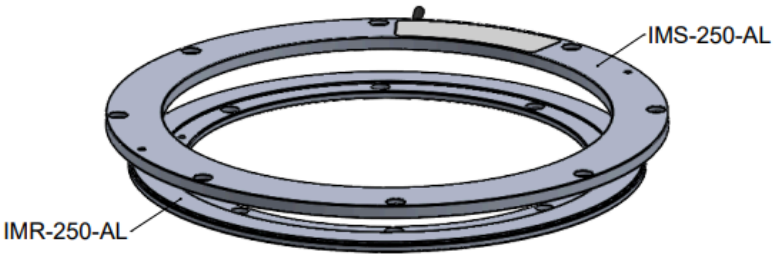
IMR-xxx-AL	A	B	C	D	E	F
200	**ø200 h7**	**ø150 h7**	**ø161**	**4.50 ±0.03**	**6 x ø4.50 (60°)**	**6 x M5 (60°)**

Dimensions are in mm.

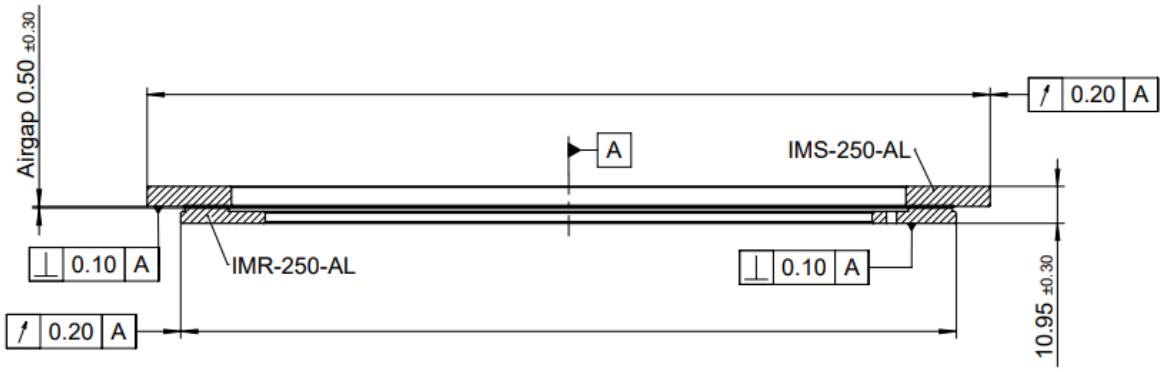
Screw hole dimensions for mounting screws according ISO 7380-1.

A set of mounting screws according to Section 8.1. is included with the product.

2.7. IND MAX Encoder Size 250: **IND-MAX-250-AL**

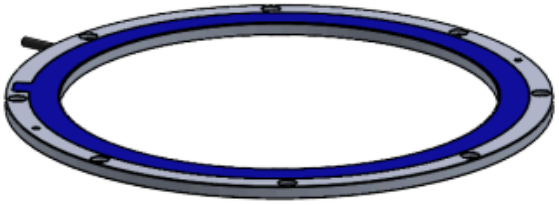


INDUCTIVE MAX Encoder
IND-MAX-250-AL
anodized aluminum

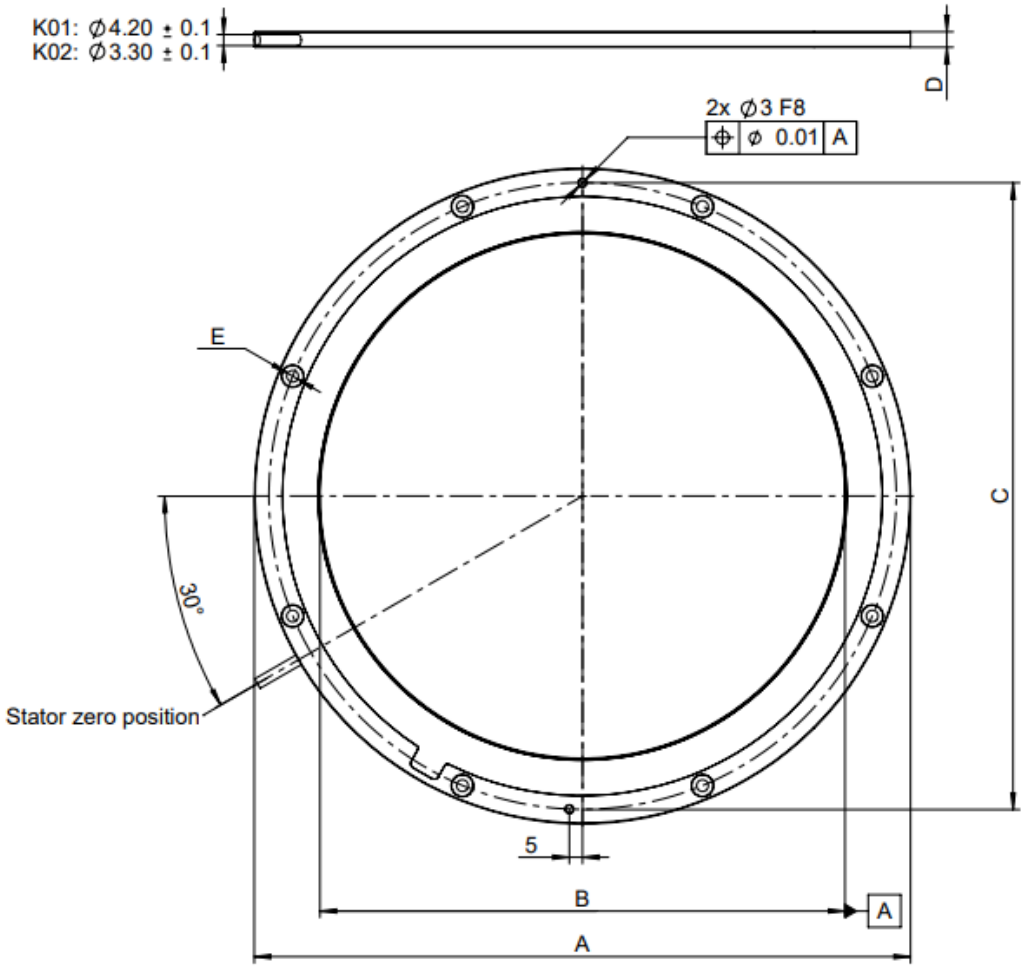


A ... axis of rotation
max. total runout IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |
Dimensions are mm.

2.7.1. Stator for IND-MAX-250: **IMS-250-AL**



Inductive MAX Encoder - Stator
IMS-250-AL
anodized aluminum

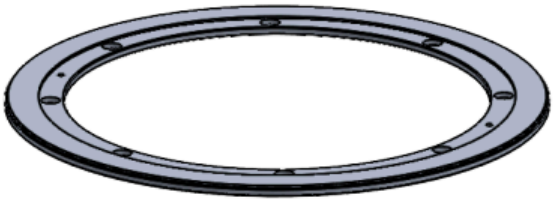


Dimensional table for size 250 mm:

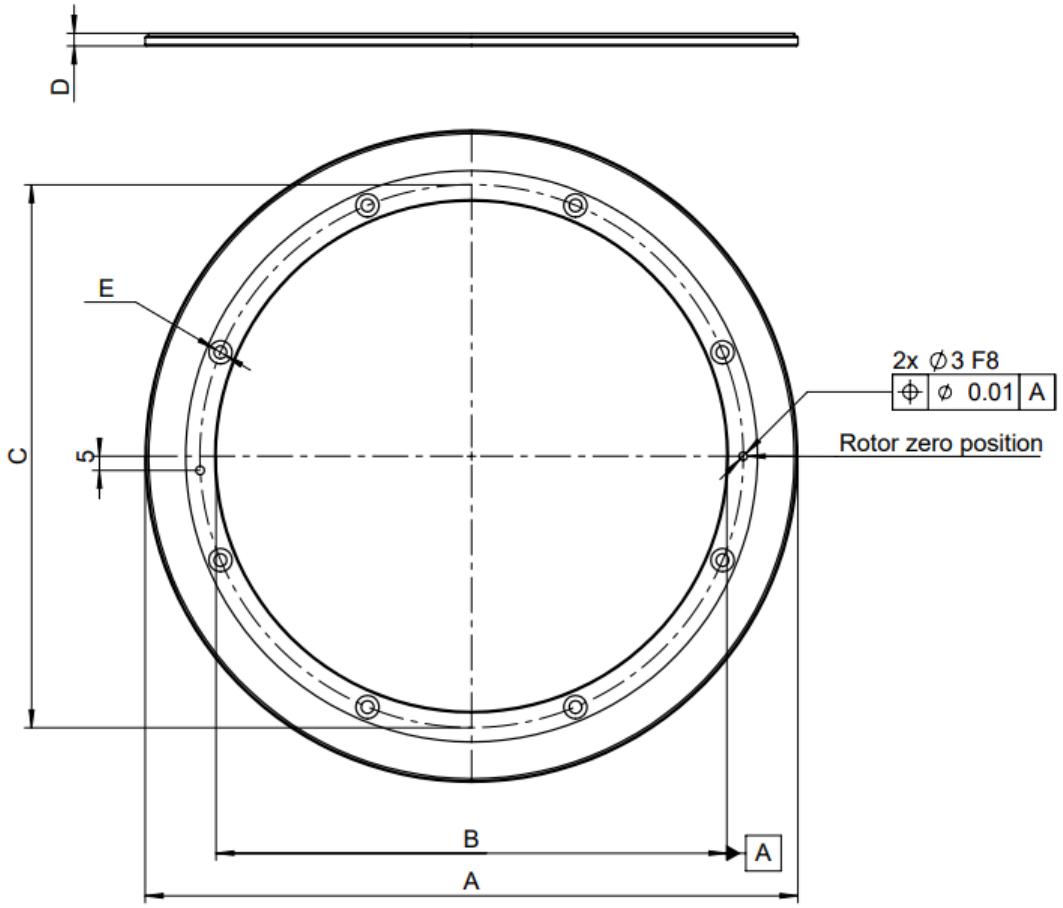
IMS-xxx-AL	A	B	C	D	E
250	**ø250 h7**	**ø200 H7**	**ø239**	**5.95 ±0.05**	**8 x ø4.50 (8x45°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.7.2. Rotor for IND-MAX-250: **IMR-250-AL**



Inductive MAX Encoder - Rotor
IMR-250-AL
anodized aluminum



Dimensional table for size 250 mm:

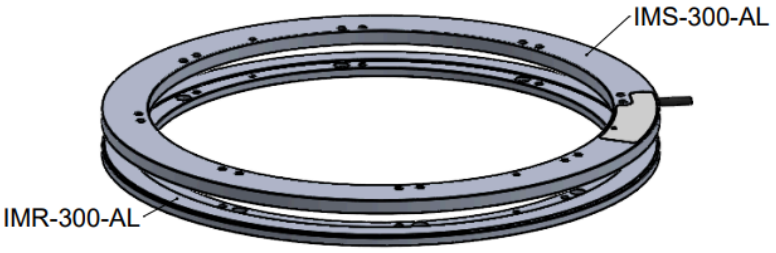
IMR-xxx-AL	A	B	C	D	E
250	**ø230 h7**	**ø180 H7**	**ø191.50**	**4.50 ±0.03**	**8 x ø4.50 (8x45°)**

Dimensions are in mm.

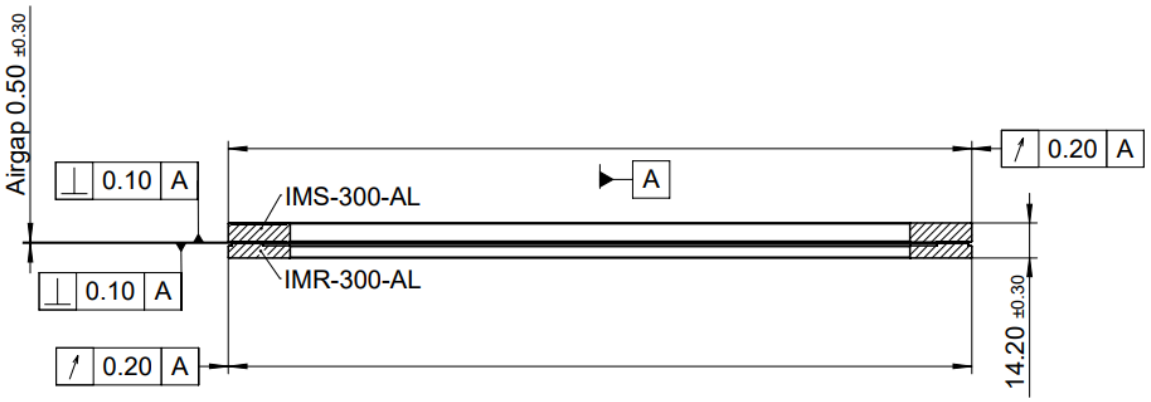
Screw hole dimensions for mounting screws according ISO 7380-1.

A set of mounting screws according to Section 8.1. is included with the product.

2.8. IND MAX Encoder Size 300: **IND-MAX-300-AL**



INDUCTIVE MAX Encoder
IND-MAX-300-AL
andized aluminum



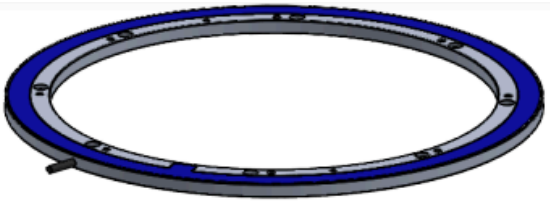
A ... axis of rotation

max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |

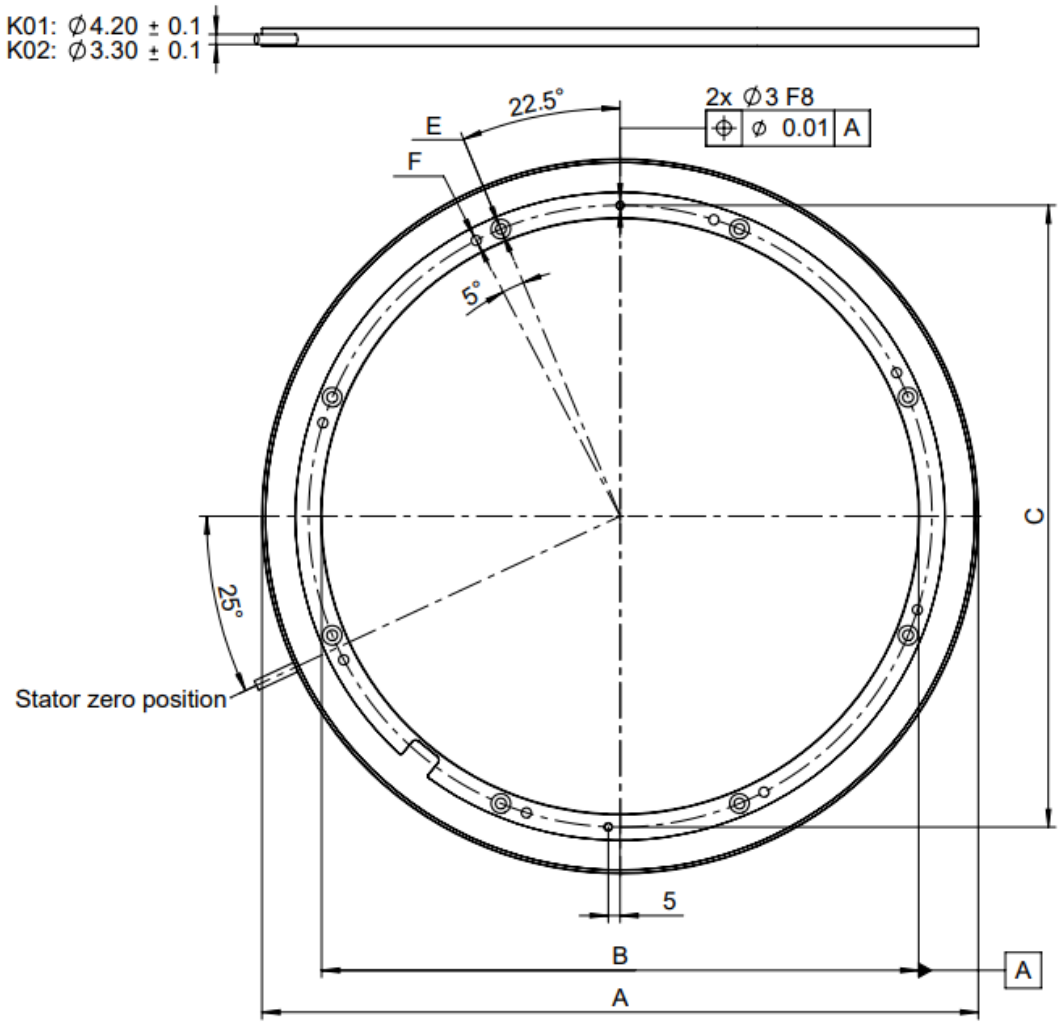
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |

Dimensions are mm.

2.8.1. Stator for IND-MAX-300: **IMS-300-AL**



Inductive MAX Encoder - Stator
IMS-300-AL
anodized aluminum



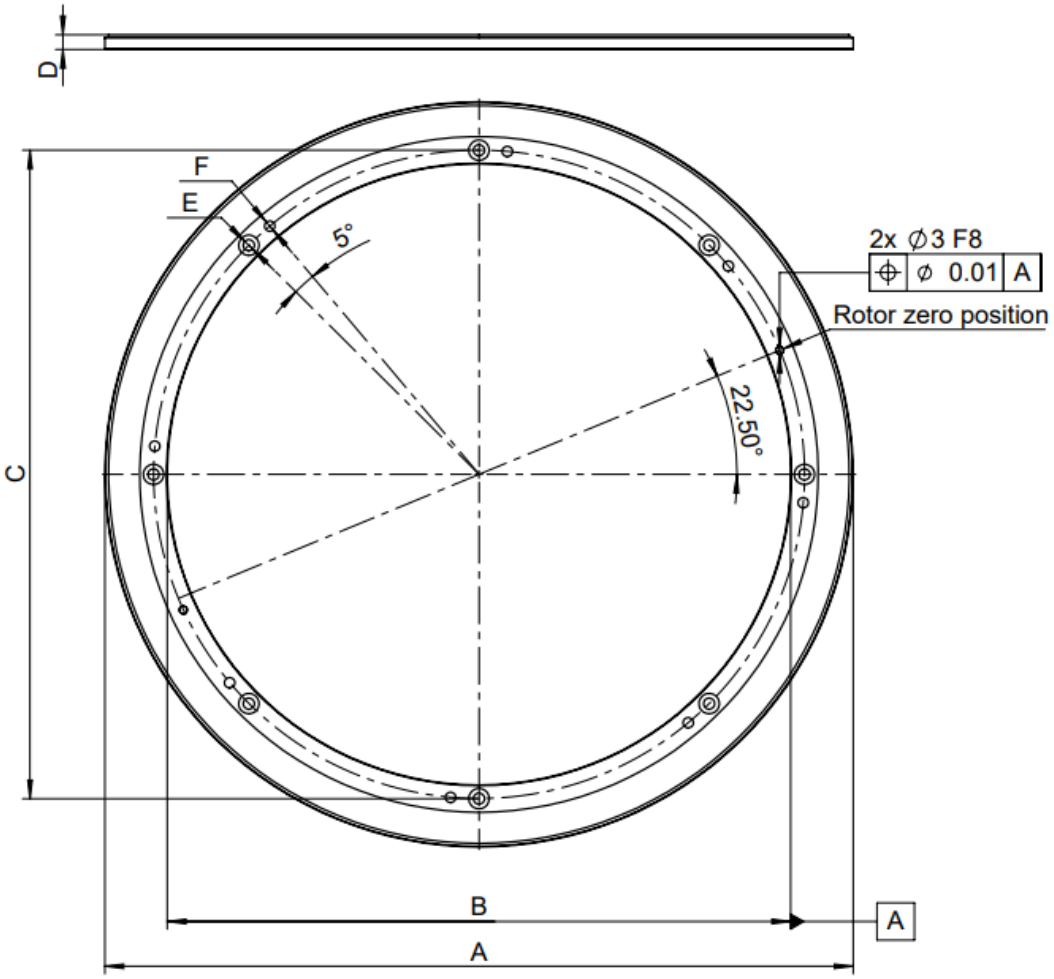
Dimensional table for size 300 mm:

IMS-xxx-AL	A	B	C	D	E	F
300	**ø300 h7**	**ø250 H7**	**ø261**	**7.75 ±0.05**	**8x ø4.50 (45°)**	**8 x M5 (45°)**

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.8.2. Rotor for IND-MAX-300: **IMR-300-AL**

Inductive MAX Encoder - Rotor
IMR-300-AL
anodized aluminum



Dimensional table for size 300 mm:

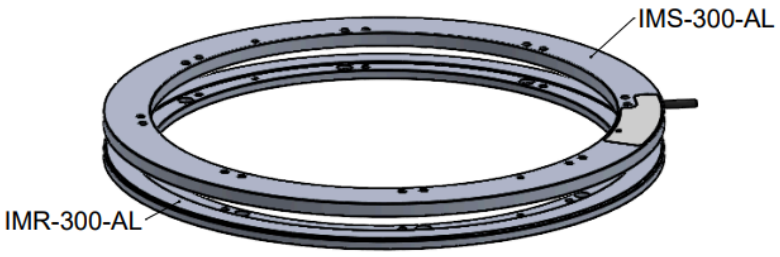
IMR-xxx-AL	A	B	C	D	E	F
300	**ø300 h7**	**ø250 H7**	**ø261**	**5.95 ±0.05**	**8x ø4.50 (45°)**	**8 x M5 (45°)**

Dimensions are in mm.

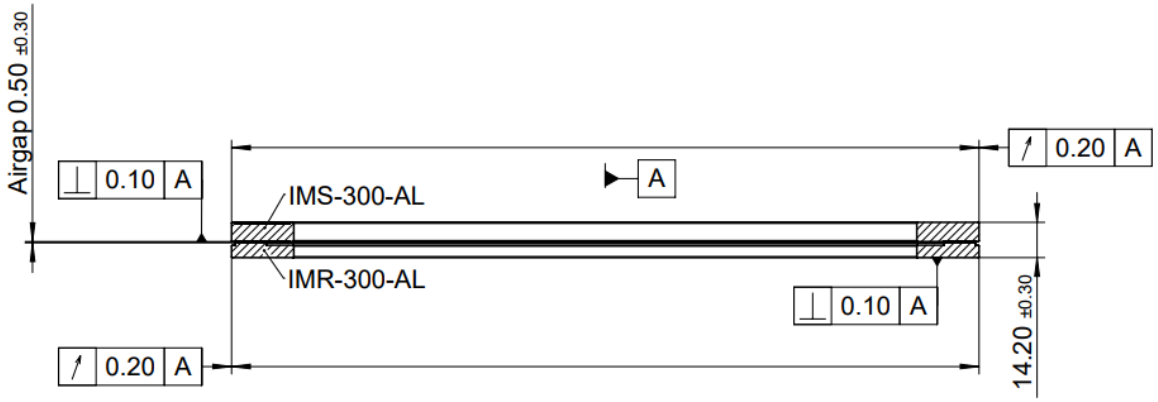
Screw hole dimensions for mounting screws according ISO 7380-1.

A set of mounting screws according to Section 8.1. is included with the product.

2.9. IND MAX Encoder Size 375: **IND-MAX-375-AL**



INDUCTIVE MAX Encoder
IND-MAX-300-AL
andized aluminum



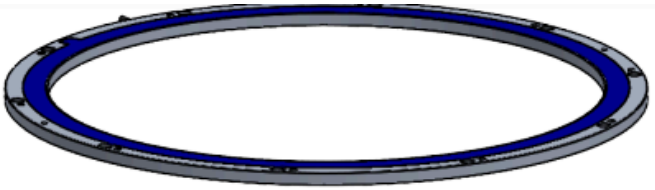
A ... axis of rotation

max. total runout IMR + IMS = 0.20mm | IMR + IMS | 0.20 | A |

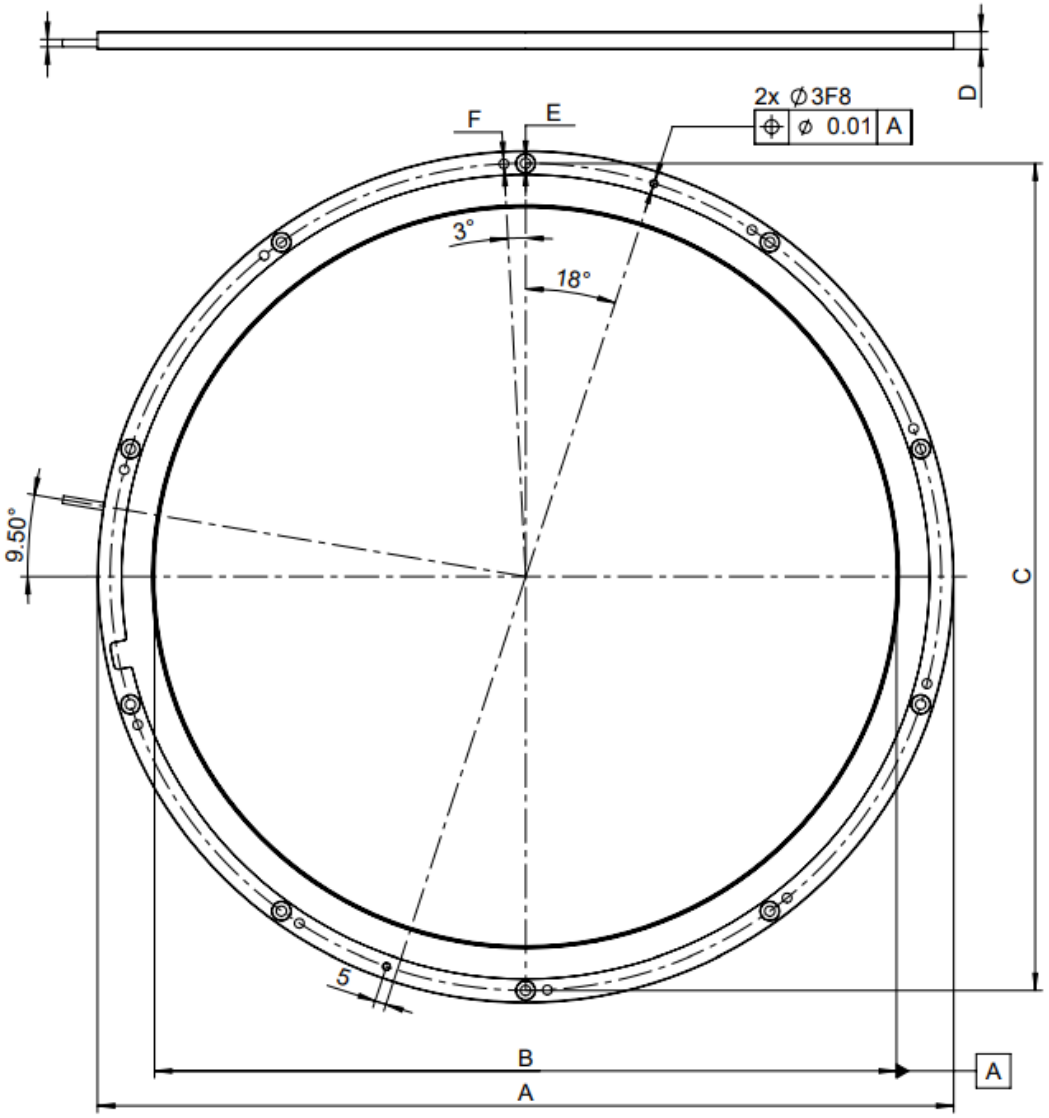
max. total perpendicularity tolerance IMS + IMR = 0.20mm | IMS + IMR | 0.20 | A |

Dimensions are mm.

2.9.1. Stator for IND-MAX-375: **IMS-375-AL**



Inductive MAX Encoder - Stator
IMS-375-AL
anodized aluminum

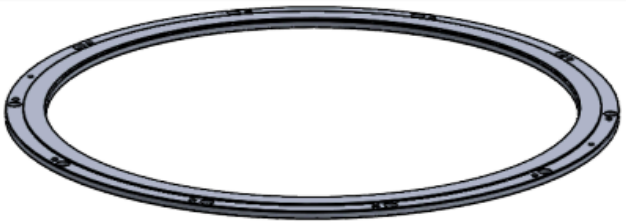


Dimensional table for size 375 mm:

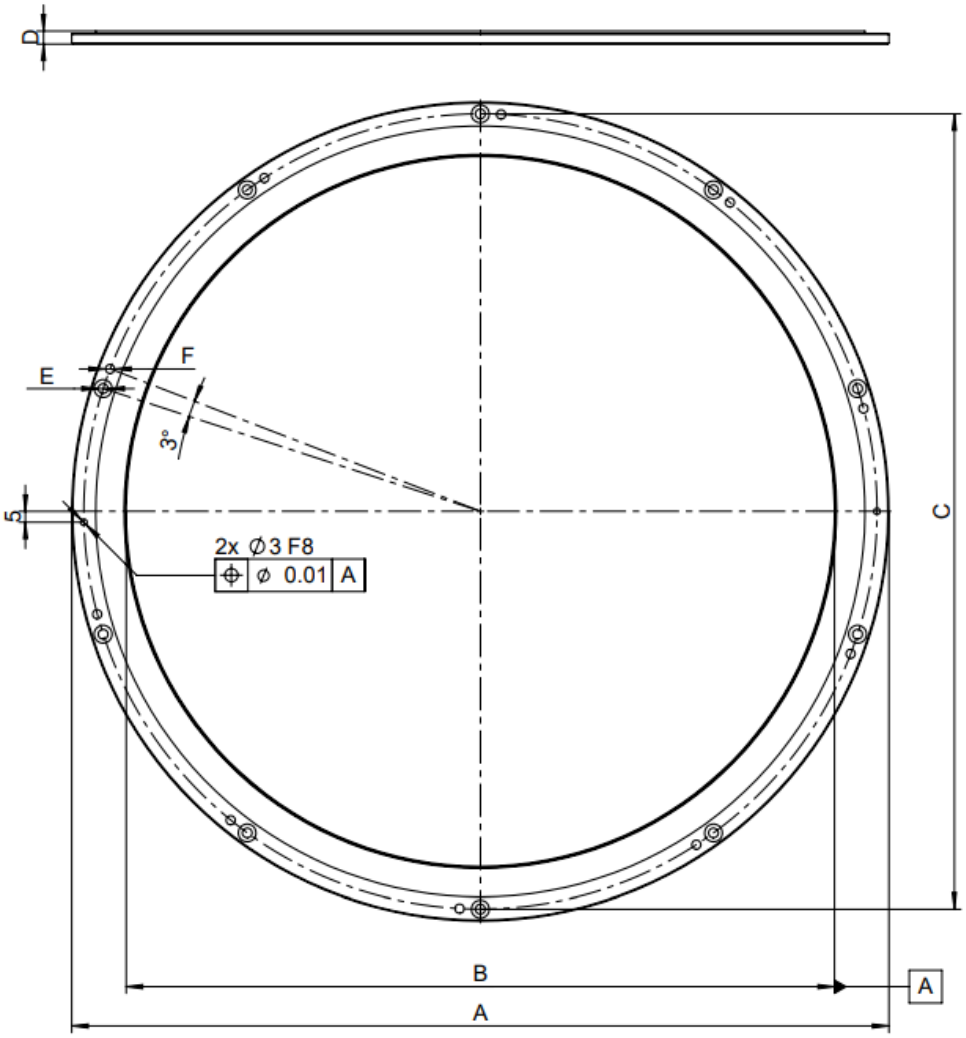
IMS-xxx-AL	A	B	C	D	E	F
375	ø375 h7	ø325 H7	ø364	7.75 ±0.05	10x ø4.50 (36°)	10 x M5 (36°)

Dimensions are in mm.
Screw hole dimensions for mounting screws according ISO 7380-1.
A set of mounting screws according to Section 8.1. is included with the product.

2.9.2. Rotor for IND-MAX-375: **IMR-375-AL**



Inductive MAX Encoder - Rotor
IMR-375-AL
anodized aluminum



Dimensional table for size 375 mm:

IMR-xxx-AL	A	B	C	D	E	F
375	ø375 h7	ø325 H7	ø364	5.95 ±0.05	10x ø4.50 (36°)	10 x M5 (36°)

Dimensions are in mm.

Screw hole dimensions for mounting screws according ISO 7380-1.

A set of mounting screws according to Section 8.1. is included with the product.

3. Interface description

Given the extensive range of interfaces provided for our encoders, we have developed a dedicated resource called the "FLUX Encoders Interface Guide." This document provides a comprehensive and detailed description of all the interfaces. You can download the document from our website at www.flux.gmbh/downloads.

Output interfaces (See ***FLUX Encoders Interface Guide*** for complete description- www.flux.gmbh/downloads)	
Absolute: **BiSS/C**	BIS10, BIS21
Absolute: **SSI**	SSI00, SSI01, SSI02, SSI03, SSI04, SSI11, SSI20
Incremental: **A/B/Z**	INC00, INC01, INC02, INC03
Absolute: **SPI**	*contact FLUX for more details*
Absolute: **Asynchronous**	UAT00, UAT10
Other synchronous or asynchronous	*contact FLUX for more details*

4. Commissioning and Debugging

4.1. Mounting and commissioning

IND-MAX encoders must be mounted in accordance with the mounting tolerances described in Chapter 1. The recommended mounting options are presented in Chapter 2.

The **IND-MAX** encoder requires no calibration or additional commissioning.

As soon as the **IND-MAX** encoders are mounted according to the specifications and powered up, they will provide high accuracy and high resolution positioning over the interface.

4.2. Debugging

The **IND-MAX** encoders are equipped with a status LED[1].

LED Color	Status	Recommended actions
No color	System is not (correctly) Powered-Up.	Check wiring connection to the motion controller
Red Color		
Continuous	System configuration error	Please contact FLUX
Fast blinking[2]	Encoder in error mode	Check encoder mounting
Slow blinking[3]	Out of operating range	Check encoder air-gap
Yellow		
Continuous	Normal operation, but error was detected	Check encoder shielding connection Check encoder mounting
Green		
Continuous	Optimal performance	
Slow blinking[3]	Normal operation, not optimal performance	Check encoder air gap

[1] Except for extended temperature applications. Please contact FLUX for more information.
[2] Fast blinking ~ 0.4 sec.
[3] Slow blinking ~ 1.6 sec

5. Optional features

5.1. Multi-turn position (memory saved)

In **IND-MAX** encoders, the multi-turn position can be automatically saved at power off and restored after powering on. Therefore, even a frameless encoder such as **IND-MAX** can implement a virtual multi-turn function.

The encoder does not have any mechanism for monitoring position changes when it is not powered up, so this function should only be used when movement is either not possible or restricted to less than ± 90° when power is turned off.

Please contact us at office@flux.gmbh for more information.

5.2. Setting zero position and counting direction

The **IND-MAX** encoder allows setting of the zero position and changing of the counting direction.

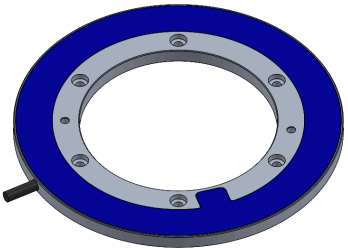
Setting a new zero is possible over:
- Debug Box + PC Software
or
- ZERO+/- wires.

Changing the counting direction is possible only over Debug Box + PC Software.

For more details, please see the full BiSS-C Interface Manual for FLUX Encoders.

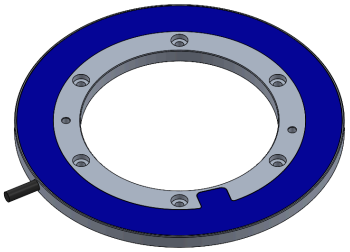
6. Cable Specification

6.1. Option “K01” - Cable

Type	Encoder with integrated radial cable output 
Outer jacket	PUR, suitable for energy chains
Halogen free	IEC 60332-1-2
Applicable Standard	UL - AWM Style 20963 80°C 30V
Temperature rating	dynamic: -40°C .. +90°C static: -50°C .. +90°C
Wrapping	4 x 2 x AWG 30 + 2 x AWG 28, TPE Isolation
Shield	Tinned copper braided. Coverage ≥ 85%
Outer diameter	4.2 ± 0.1 mm
Bending radius	21 mm single / 42 mm continuous bending
Maximum length	6 m
Certification	The product does not contain any SVHC candidate substances according EU REACH regulation 1907/2006

No.	AWG	Color	SSI & BiSS/C	A/B/Z	Comments
1	28	violet	Vdd	Vdd	Encoder Supply Voltage
2	28	black	GND	GND	Encoder Power Ground
3	30	white	ZERO-	A+	Short circuit with ZERO+ to set encoder zero
4	30	brown	ZERO+	A-	Short circuit with ZERO- to set encoder zero
5	30	green	*not connected*	B+	
6	30	yellow	*not connected*	B-	
7	30	grey	SCLK+	*not connected*	
8	30	pink	SCLK-	*not connected*	
9	30	blue	SDATA+	Z+	
10	30	red	SDATA-	Z-	

6.2. Option “K02” - Cable

Type	Encoder with integrated radial cable output 
Recommended for:	Extended temperature ranges. Highest cable flexibility.
Not applicable for:	Interfaces: **INCxx (A/B/Z)**
Outer jacket	Silicone rubber-based
Temperature rating	dynamic: -25°C .. +180°C static: -60°C .. +180°C
Wrapping	3 x 2 x AWG 30, FEP Isolation
Shield	Tinned copper braided. Coverage ≥ 95 %
Outer diameter	3.3 ± 0.1 mm
Bending radius	18 mm single / 36 mm continuous bending
Maximum length	3 m
Certification	This product contains following SVHC candidate substances according to EU REACH regulation 1907/2006: *Decamethylcyclopentasiloxane, CAS-No.: 541-02-6 > 0.1%* *Dodecamethylcyclohexasiloxane (D6), CAS-No.: 540-97-6 > 0.1%* *Octamethylcyclotetrasiloxane, CAS-No.: 556-67-2 > 0.1%*

No.	AWG	Color	SSI & BiSS/C	A/B/Z	Comments
1	30	red	Vdd	n.a.	Encoder Supply Voltage
2	30	black	GND		Encoder Power Ground
3	30	grey	SCLK+		
4	30	blue	SCLK-		
5	30	green	SDATA+		
6	30	yellow	SDATA-		

7. Ordering code

IND-MAX	-160	-B	-16	-SSI01	-K01	-100	-AL	
MAX encoder	Diameter [mm]	Accuracy Grade	Resolution [Bits/Rev]	Output Interface	Cable Type	Cable length	Material	Other options
	075	**B**	**16**	**BIS10**	**K01**	**050** - 0.5 m	**-AL** - Alu	**See options**
	100	**C**	**17**	**BIS21**	**K02**	**100** - 1.0 m		**in table**
	125	**D**	**18**	**SSI00**		**200** - 2.0 m		**below**
	160	**E**	**19**	**SSI01**		**300** - 3.0 m		
	180	**F**	**20**	**SSI02**		**400** - 4.0 m		
	250	**G**	**21**	**SSI03**		**500** - 5.0 m		
	300		**22**	**SSI04**		**600 -** 6.0 m		
	375		**23**	**SSI11**				
				SSI20				
				INC00				
				INC01				
				INC02				
				INC03				
				UAT00				
				UAT10				

For optional features, please refer to the table provided below. When placing your order, include the desired features' code in alphabetic order without using a dash and add them at the end of the ordering code. The standard configuration is represented by a blank entry.

No.	Additional feature	Letter in order code
1	High Accuracy	C
2	Extended temperature	E
3	High Pressure	H
4	Multi-turn (memory saved)	M
5	Surface finishing: Electroless Nickel Plating (conductive) instead of Anodized Surface.	N
6	High Speed	S
7	IP67	W
8	Set zero over ZERO +/- wires *(only available for Cable K01)*	Z

Cable selection matrix

	K01	K02
Interface		
INCxx Interfaces	**yes**	no
BiSS Interfaces	**yes**	**yes**
SSI Interfaces	**yes**	**yes**
Temperature range		
Minimum static	-50°C	-60°C
Minimum dynamic	-40°C	-25°C
Maximum	90°C	180°C

8. Accessories

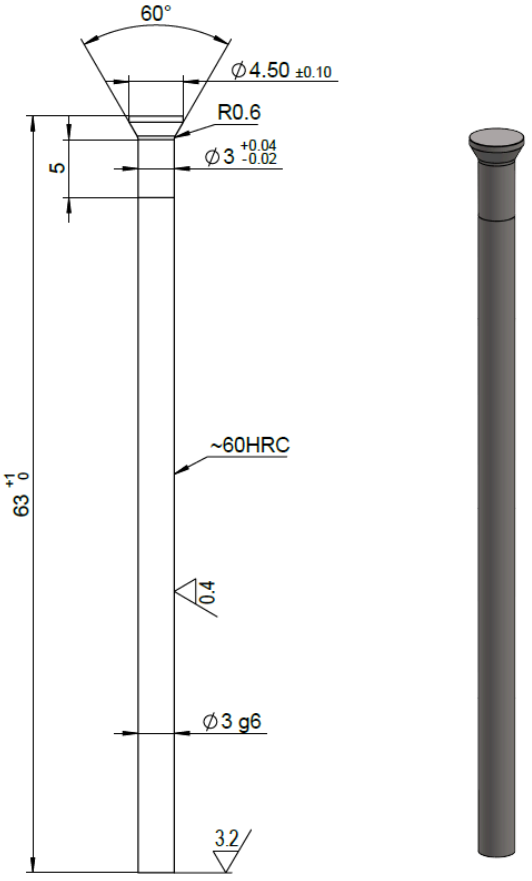
8.1. Mounting Screws

A set of mounting screws is included with the product.
NOTE: The use of a medium-strength screw retainer is recommended for secure mounting.

IND-MAX	Stator	Rotor
-075	6 x screws M3x8 TORX socket button head ~ISO 7380-1	6 x screws M3x6 TORX socket button head ~ISO 7380-1
-100	6 x screws M3x8 TORX socket button head ~ISO 7380-1	6 x screws M3x6 TORX socket button head ~ISO 7380-1
-125	6 x screws M3x8 TORX socket button head ~ISO 7380-1	6 x screws M3x6 TORX socket button head ~ISO 7380-1
-160	6 x screws M4x8 TORX socket button head ~ISO 7380-1	6 x screws M4x6 TORX socket button head ~ISO 7380-1
-180	6 x screws M4x8 TORX socket button head ~ISO 7380-1	6 x screws M4x6 TORX socket button head ~ISO 7380-1
-200	6 x screws M4x8 TORX socket button head ~ISO 7380-1	6 x screws M4x6 TORX socket button head ~ISO 7380-1
-250	8 x screws M4x8 TORX socket button head ~ISO 7380-1	8 x screws M4x6 TORX socket button head ~ISO 7380-1
-300	8 x screws M4x12 TORX socket button head ~ISO 7380-1	8 x screws M4x8 TORX socket button head ~ISO 7380-1
-375	10 x screws M4x12 TORX socket button head ~ISO 7380-1	10 x screws M4x8 TORX socket button head ~ISO 7380-1

8.2. Dowel Pins

FLUX ordering code	• **DP-3g6-63**
Material	1.2210
Quantity	pack of 2 pieces
Compatibility	With any size of IND-MAX encoder and stator See chapter 2. for dowel pin positions



Dowel pin DP-3g6-63 dimensions

9. Product labeling

See the Product Labeling Guide document available online on our download section.

10. Revision history

Date	Version	Comments
2025-02	15	IND-MAX size 300 mm added. Typo corrections.
2025-11	16	IND-MAX sizes 75 mm and 100 mm added.

All technical data is subject to change without notice.

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