

# Fenac Inductive Contactless Encoders



## FNC ASI 150 Series



### Technical data - Electrical Ratings

Supply Voltage	5V or 6 - 36 VDC $\pm$ 5%
Interface	SSI or BISS
Protection	Overvoltage protection Short-circuit protection
Resolution (steps/turn)	up to 21 bit
Output frequency	up to 2 MHz for SSI up to 10 MHz for BISS
Code	Binary
Output circuit	SSI data linedriver RS485
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	CE

### Features

- Non contact inductive technology
- High accuracy
- For high reliability in extreme environments
- Robust mechanical design
- Thin design

### Technical data - Mechanical Ratings

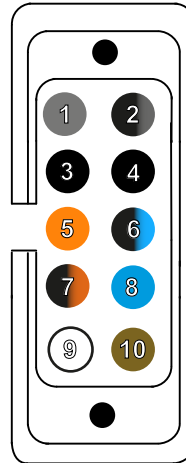
Dimensions	Outer Diameter : 150 mm Inner Diameter : 100 mm
Mounting Type	Clamping or Screw
Mounting Gap	1 mm $\pm$ 0,35
Materials	Anodized Aluminium
Protection DIN EN 60529	IP 67
Operating temperature	-40 ... +85°C
Weight	Rotor : 30 g Stator : 100 g

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### Cable Wiring

Function	Connector	Color
+VB	pin 10	Brown
GND	pin 9	White
CLK+	pin 8	Blue
CLK-	pin 6	Blue-Black
DATA+	pin 5	Orange
DATA-	pin 7	Orange-Black
ZERO*	pin 1	Gray
FACTORY ZERO**	pin 2	Gray-Black



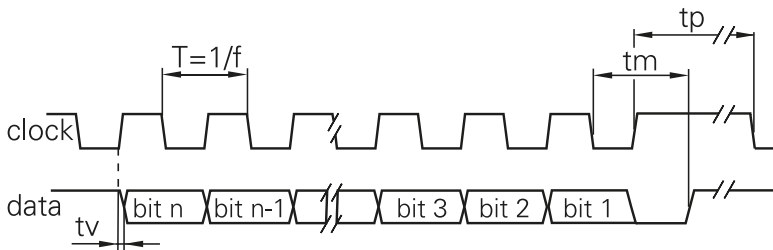
### During operation;

\* : To set the Zero position, apply GND to Zero pin for more than 100msec.

\*\* : To set the Factory Zero position to factory default, apply GND to Factory Zero pin for less than 1 second.

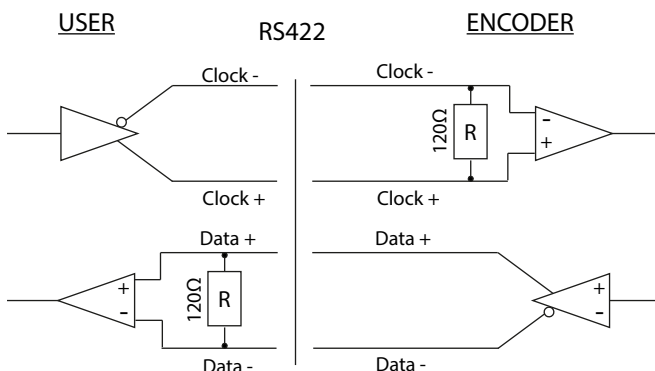
\*\*\* : If these pins are not used, please connect to 5V with a pull-up resistor.

### Communication Interface



Clock frequency, f	100 ... 2000 kHz for SSI 100 ... 10.000 kHz for BISS
Code	Binary
Status and parity bit	On request
Monoflop time $t_m$	20 $\mu$ s
Delay time $t_v$	<150 ns

### Communication Hardware



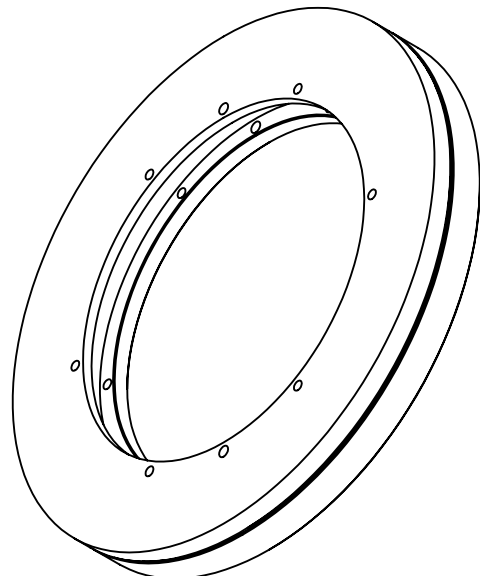
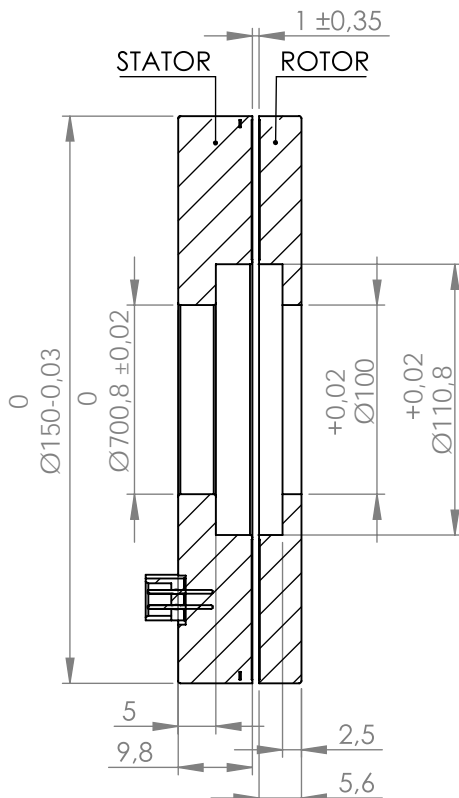
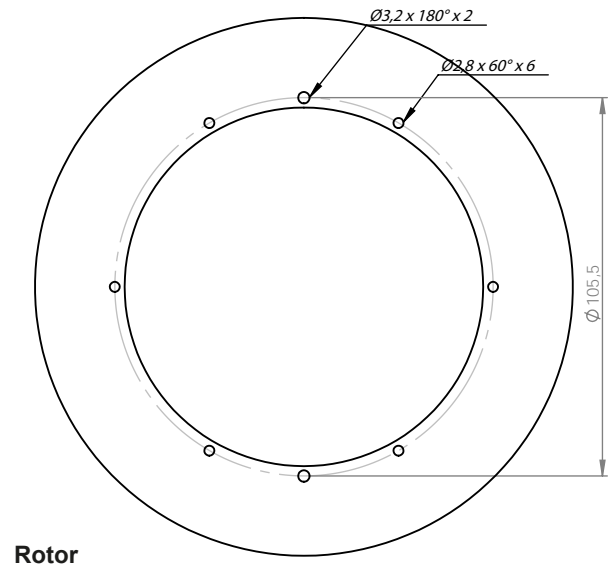
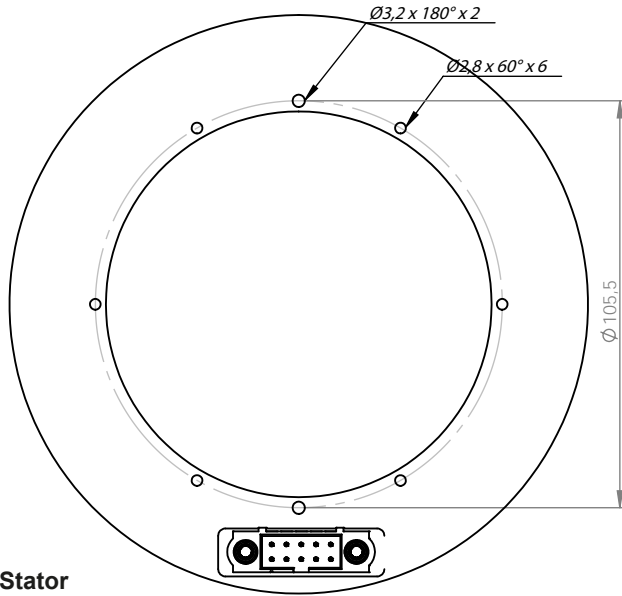
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## FNC ASI 150 Series

### Mechanical Dimensions

#### Screw Mounting Stator - Screw Mounting Rotor Version



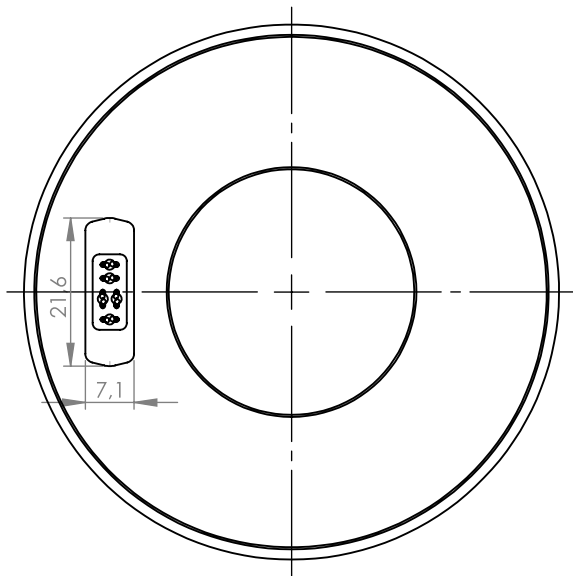
# Fenac Inductive Contactless Encoders



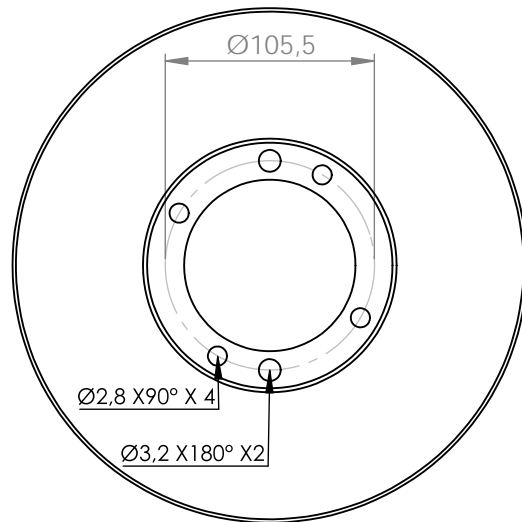
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### Mechanical Dimensions

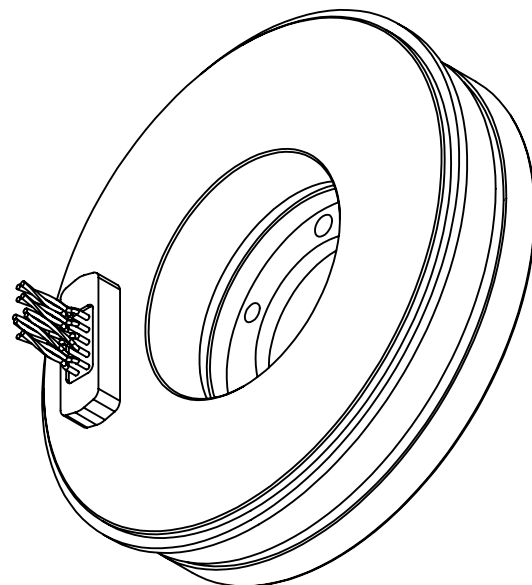
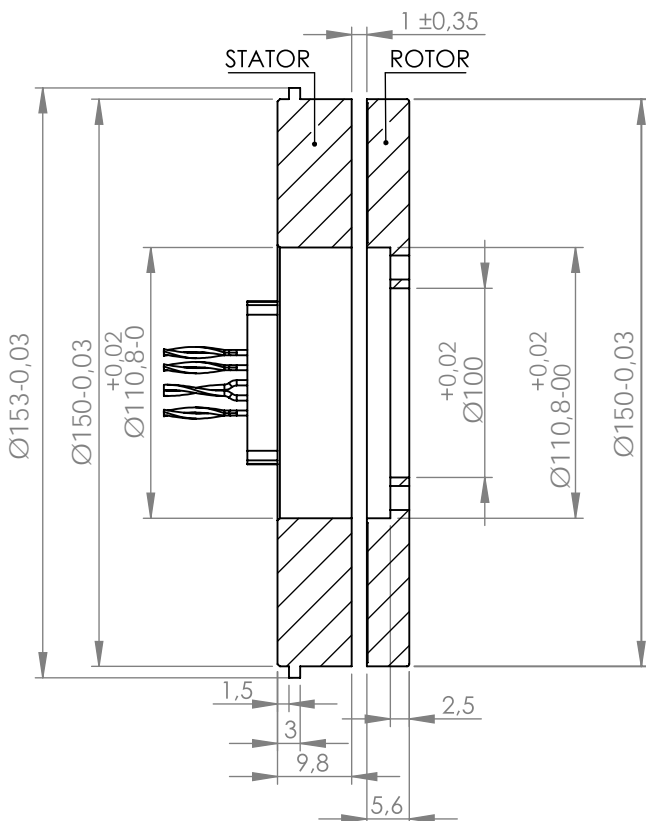
#### Servo Clamp Mounting Stator - Screw Mounting Rotor Version



Stator



Rotor



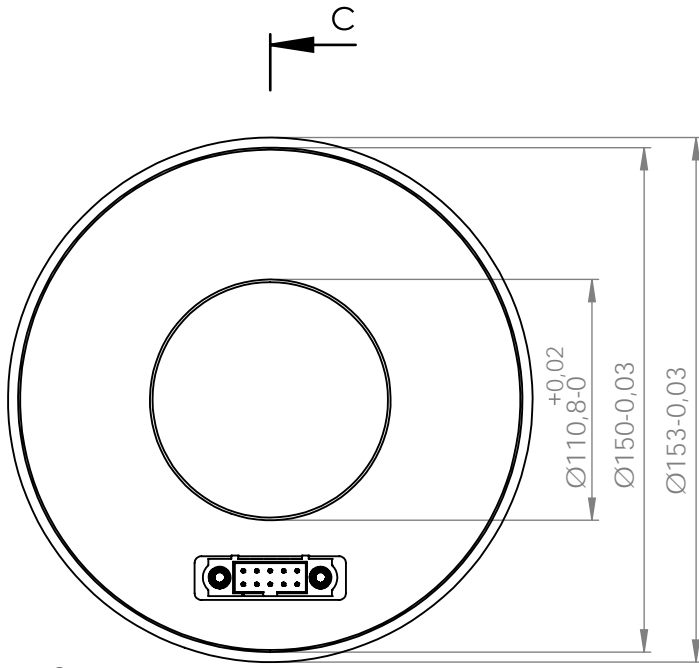
# Fenac Inductive Contactless Encoders



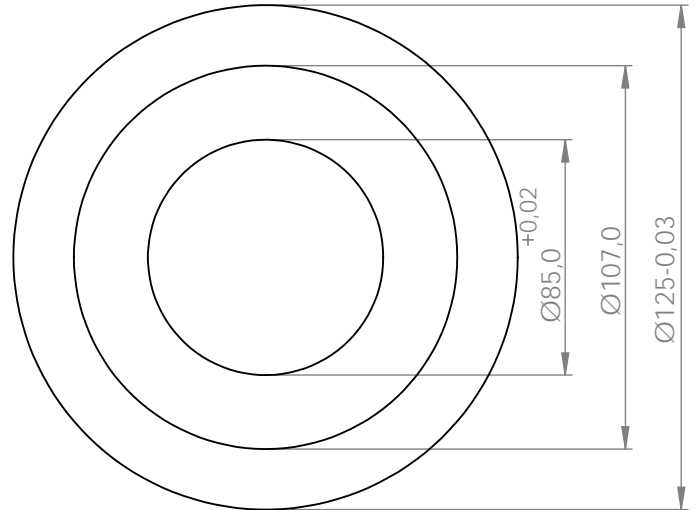
## FNC ASI 150 Series

### Mechanical Dimensions

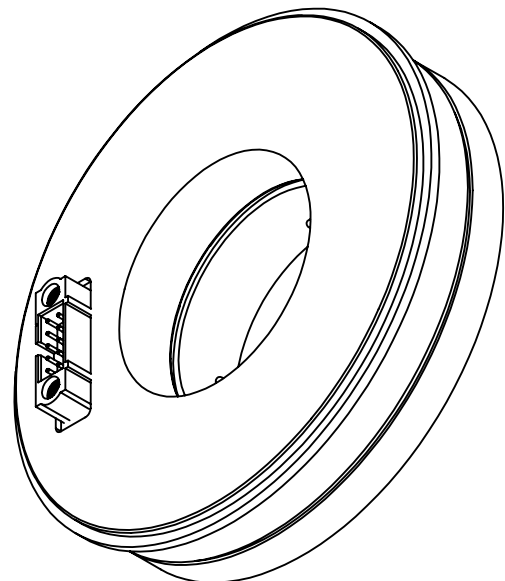
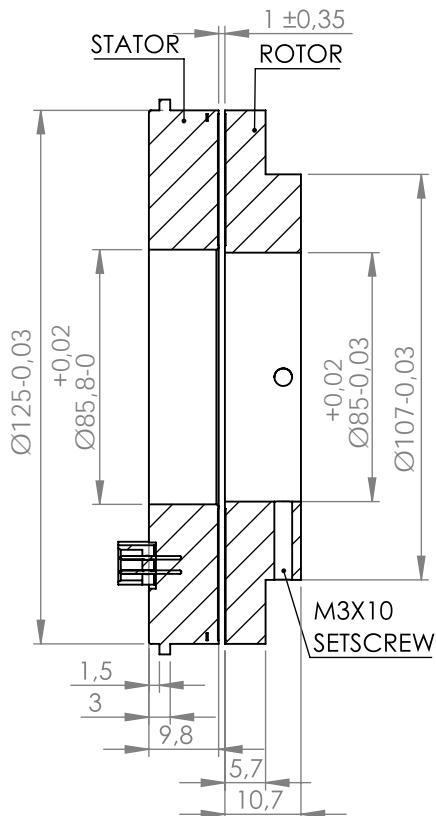
#### Servo Clamp Mounting Stator - Set-Screw Mounting Rotor Version



Stator



Rotor



# Fenac Inductive Contactless Encoders



## FNC ASI 150 Series

### SSI (Synchronized Serial Interface) Product Options

#### SSI1 (n = 24)

D23	D22	D21	D20	...	D1	D0
E	ZPD	PD				

**E** : Error Flag. Set to 1 when data is valid, otherwise 0

**ZPD** : Zero Point Default. Set to 1 when the Zero Point is at Factory Default, otherwise 0

**PD** : Binary position data. If resolution of device is less than 22 bits, then the MSBs of this field are set to 0. The LSB of this field is in D0. When PV is 0, PD[21:0] value is not defined.

#### SSI2 (n = 24)

D23...D2	D1	D0
PD[21:0]	P	A

**PD** : Binary position data. If resolution of device is less than 22 bits, then the MSBs of this field are set to 0. The LSB of this field is in D2. When Alarm bit is 1, PD[21:0] value is not defined.

**P** : Parity Bit 0 indicates an even number of 1's in data (D23-D2), 1 indicates an odd number of 1's in data.

**A** : Alarm Bit - 0 indicates normal operation, 1 indicates error condition.

#### SSI3 (n = 16)

D15	D14	D13	D12	...	D1	D0
PD [15:0]						

**PD** : Binary position data. When ERROR FLAG is 1, PD[15:0] value is not defined.

#### SSI7 (n = 30)

D29...D24	D23...D2	D1	D0
Z	PD[21:0]	P	A

**Z** : Data always 0.

**PD** : Binary position data. If resolution of device is less than 22 bits, then the MSBs of this field are set to 0. The LSB of this field is in D2. When Alarm bit is 1, PD[21:0] value is not defined.

**P** : Parity Bit 0 indicates an even number of 1's in data (D23-D2), 1 indicates an odd number of 1's in data.

**A** : Alarm Bit - 0 indicates normal operation, 1 indicates error condition.

### BISS (Bidirectional Synchronized Serial Interface) Product Options

#### BISS (n = 26)

D25...D8	D7	D6	D5...D0
PD[17:0]	nE	nW	CRC

**PD** : Binary position data.

**nE** : Error Flag. Low active.

**nW** : Warning Flag. Low active.

**CRC** : Cyclic Redundancy Check, 0x43 polynomial

# Fenac Inductive Contactless Encoders



## FNC ASI 150 Series

### Encoder Part Number

**FNC AS I 150 SM SM 1 18 5 B - A6 A**

#### Interface

**AS** : Absolute SSI  
**AB** : Absolute BISS

#### Sensing Technology

**I** : Inductive

#### Outer Diameter

**75** : 75 mm    **150** : 150 mm  
**125** : 125 mm    **225** : 225 mm

#### Stator Mounting

**SM** : Screw Mounting Stator  
**SC** : Servo Clamp Stator  
**DS** : Duplex Stator  
**EM** : External Mount Stator

#### Rotor Mounting

**SM** : Screw Mounting Rotor  
**SS** : Setscrew Mounting Rotor  
**PR** : Plain Rotor  
**DR** : Duplex Rotor

#### SSI Interface Type

**1** : SSI1  
**2** : SSI2  
**3** : SSI3  
**7** : SSI7  
 (other options on request)

#### BiSS Interface Type

**1** : BiSS-C

#### Surface finish

**A** : Anodized  
**S** : Standard  
**N** : Nickel coated

#### Electrical Connections

**A6** : 0.6 meter cable  
**C10** : 10 Pin Connector (Consult the factory)

**B**: Binary

#### Supply Voltage

**5V** : 5 VDC  
**3V** : 6 - 36 VDC

#### Resolution

up to 21 bit