

Fenac Inductive Contactless Encoders



FNC ASI 150 Series



Technical data - Electrical Ratings

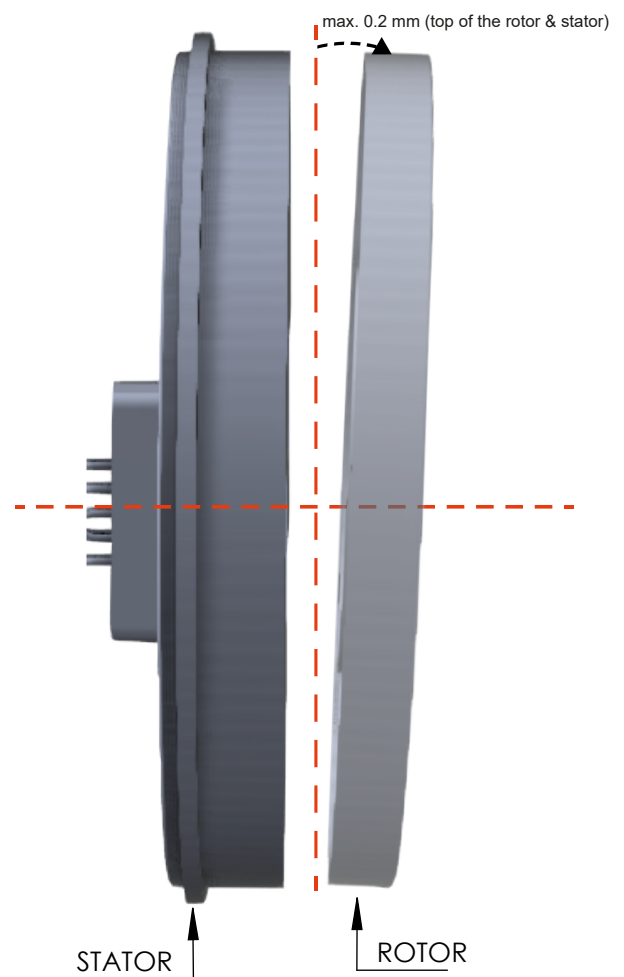
Supply Voltage	5V or 6 - 36 VDC $\pm$ 5%
Interface	SSI or BISS
Protection	Overvoltage protection Short-circuit protection
Resolution (steps/turn)	up to 21 bit
Output frequency	up to 2 MHz for SSI up to 10 MHz for BISS
Code	Binary
Output circuit	SSI data linedriver RS485
Interference immunity	DIN EN 61000-6-2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

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
Tilt	max. 0.1 mm
Materials	Anodized Aluminium
Protection DIN EN 60529	IP 67
Operating temperature	-40 ... +85°C
Weight	Rotor : 30 g Stator : 100 g

Features

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

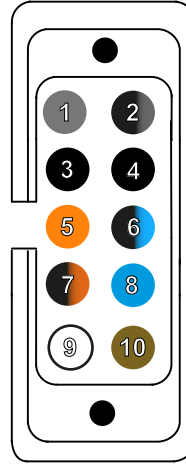


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Cable Wiring

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



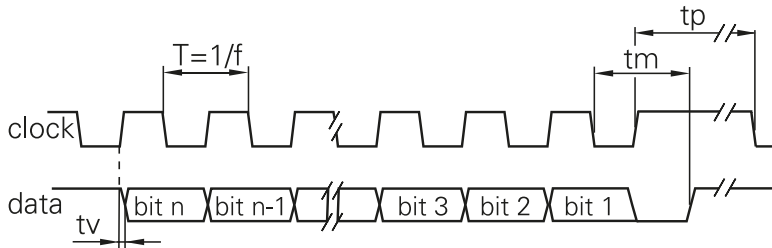
During operation;

* : 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.

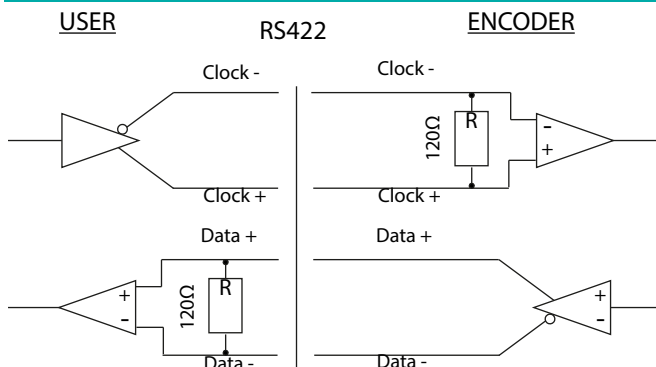
*** : If these pins are not used, please connect to 5V with a pull-up resistor.

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 tm	20 μ s
Delay time tv	<150 ns

Communication Hardware



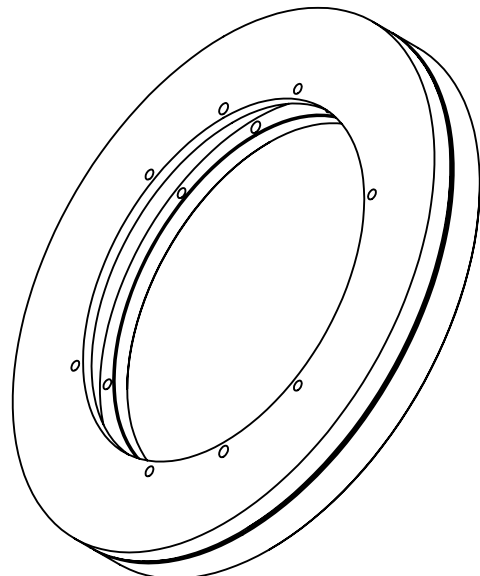
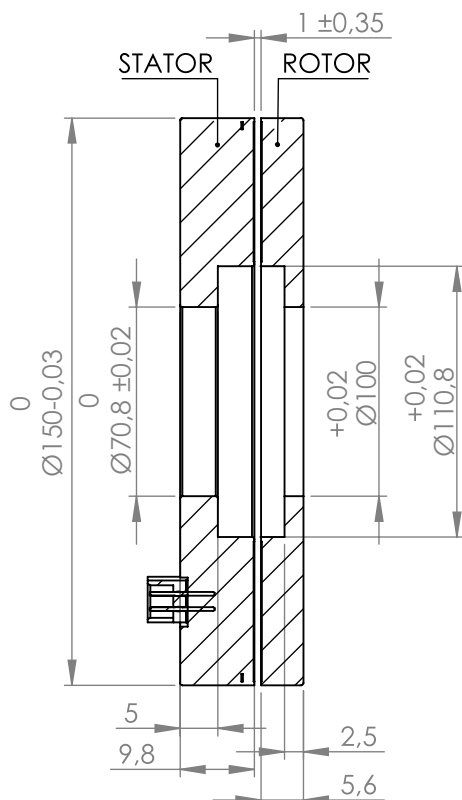
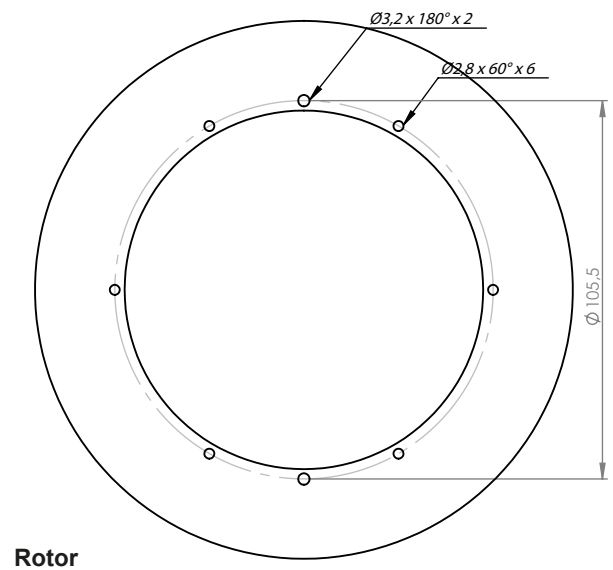
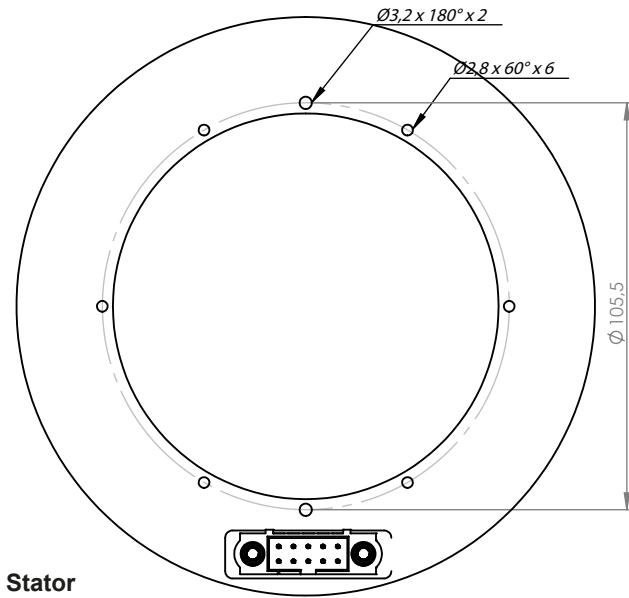
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FNC ASI 150 Series

Mechanical Dimensions

Screw Mounting Stator - Screw Mounting Rotor Version



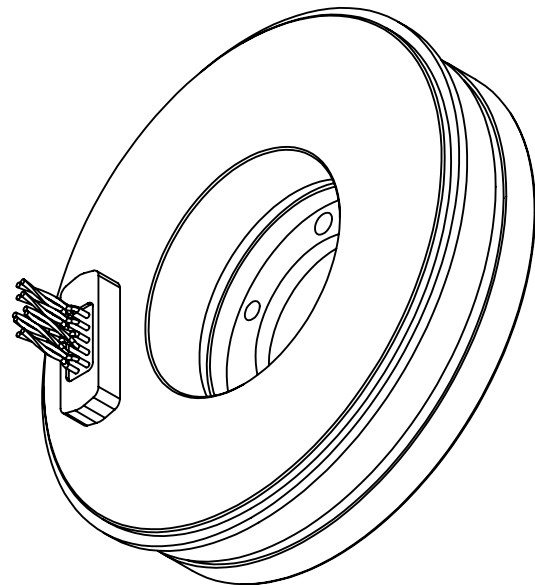
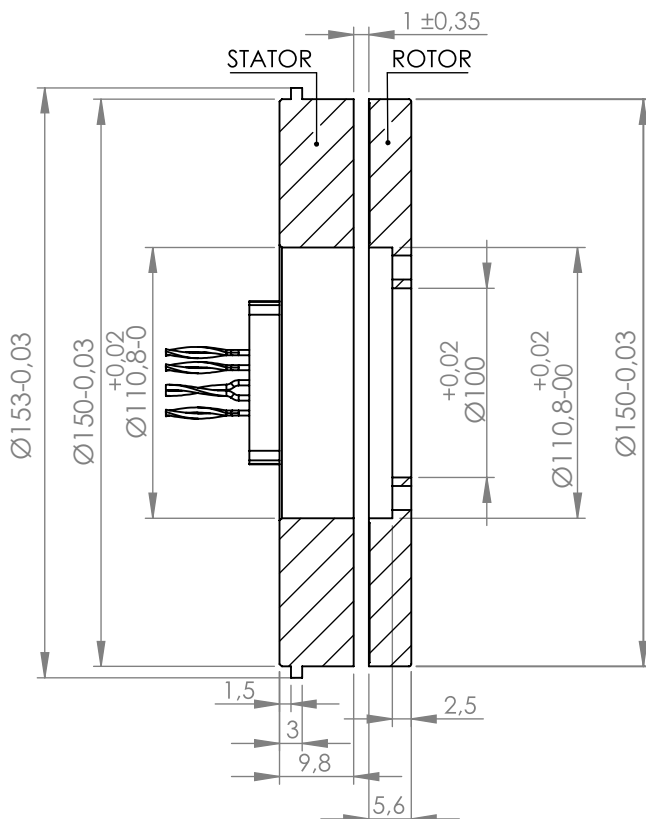
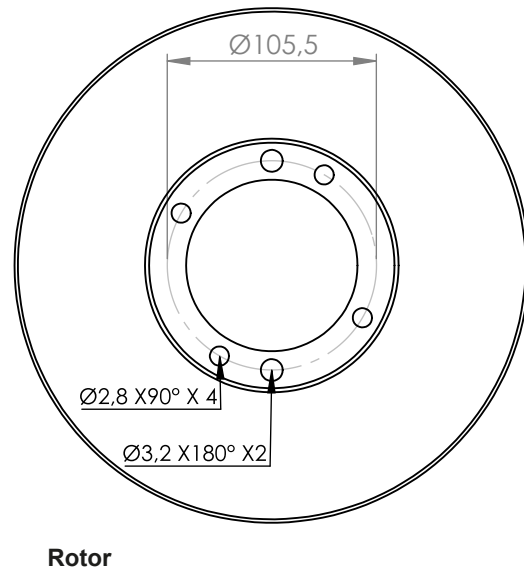
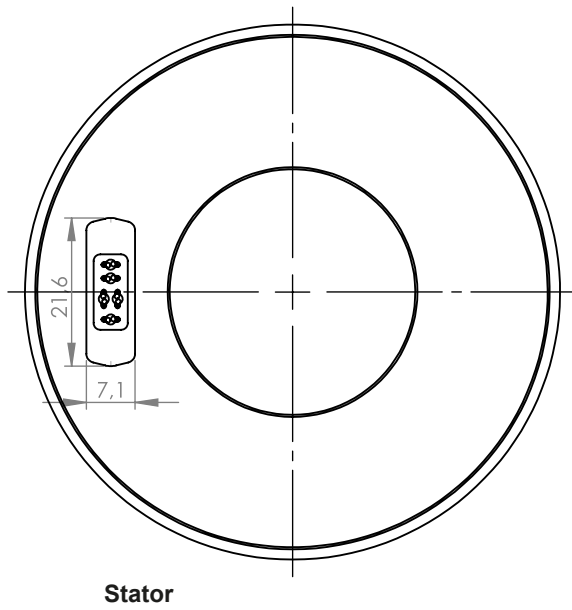
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FNC ASI 150 Series

Mechanical Dimensions

Servo Clamp Mounting Stator - Screw Mounting Rotor Version



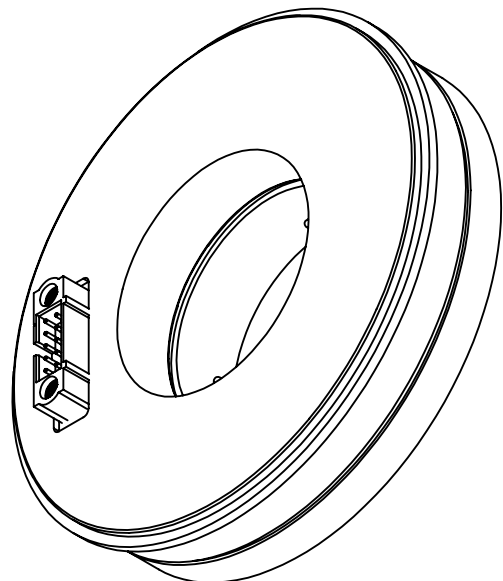
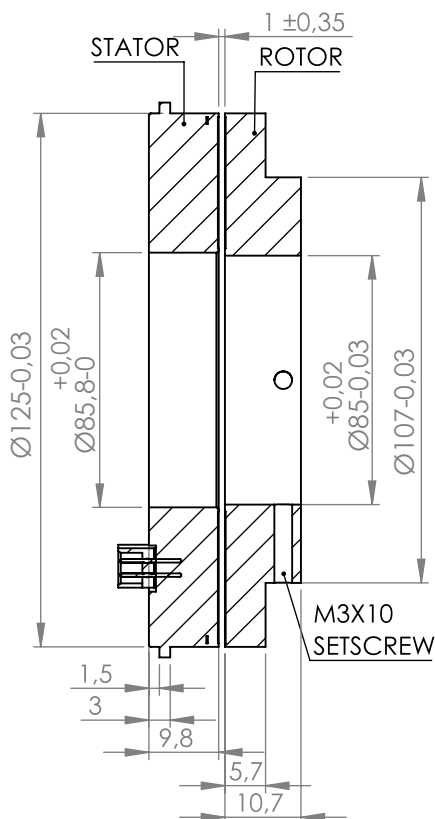
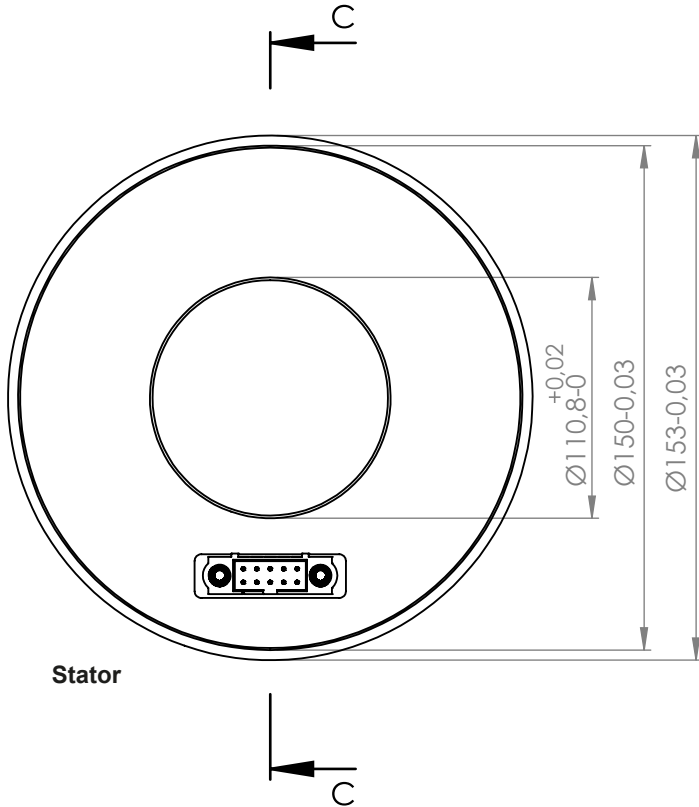
Fenac Inductive Contactless Encoders



FNC ASI 150 Series

Mechanical Dimensions

Servo Clamp Mounting Stator - Set-Screw Mounting Rotor Version



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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.

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BISS (Bidirectional Synchronized Serial Interface) Product Options

BISS-C (N =30)

D29...D8	D7	D6	D5...D0
PD	nE	nW	CRC

PD : Binary position data.

nE : Error Flag. Low active.

nW : Warning Flag. Low active.

CRC : Cyclic Redundancy Check, 0x43 polynomial

Example for 20 bit resolution:

MSB								LSB	
D29	D28	D27	...	D10	0	0	nE	nW	CRC

**Since our total data size is 22 bits and our PD is 20 bits, the last 2 bits are 0.

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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