

FNC MAS86 Series, Absolute & Incremental Axial



Features

- Off - Axis absolute rotary encoder
- Robust mechanical and electrical construction
- Corrosion resistant magnetic ring
- Outer diameter 86 mm
- Inner diameter 55 mm
- Up to 19 bit for programmable absolute encoder
- Up to 65.536 ppr for programmable incremental encoder
- <300 kHz frequency
- Magnetic system

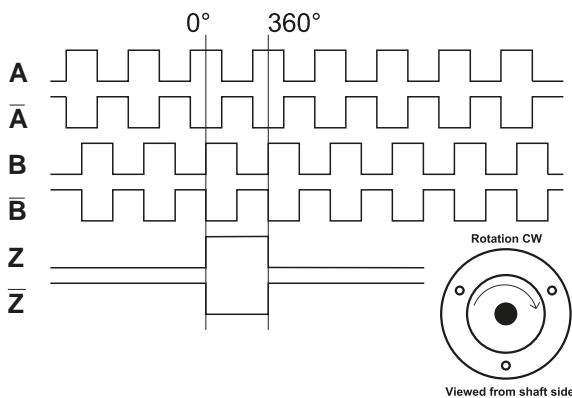
Technical data - electrical ratings

| | |
|----------------------|---|
| Voltage supply | 4.75VDC to 5.5VDC |
| Protection: | Output short circuit protection. Reverse polarity protection |
| Consumption w/o load | 60 mA |
| Output circuit | Linedriver/RS422 |
| EMC Standars | EN 61000-6-2 / EN 61000-6-4 |
| Approval | CE |

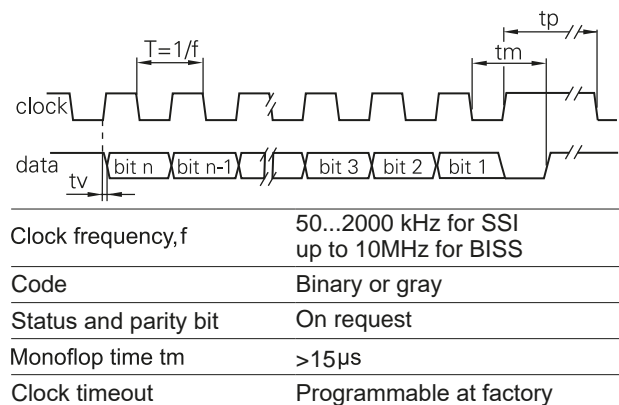
Technical data - mechanical design

| | |
|-------------------------|----------------|
| Dimensions (ring) | ø86 mm |
| Protection DIN EN 60529 | IP54, IP65 |
| Operating speed | 10000 rpm |
| Matetials | Ring: Aluminum |
| Operating temperature | -40°C...+85 °C |
| Storage temperature | -40°C ...+90°C |

Pulse Diagram for Incremental Version



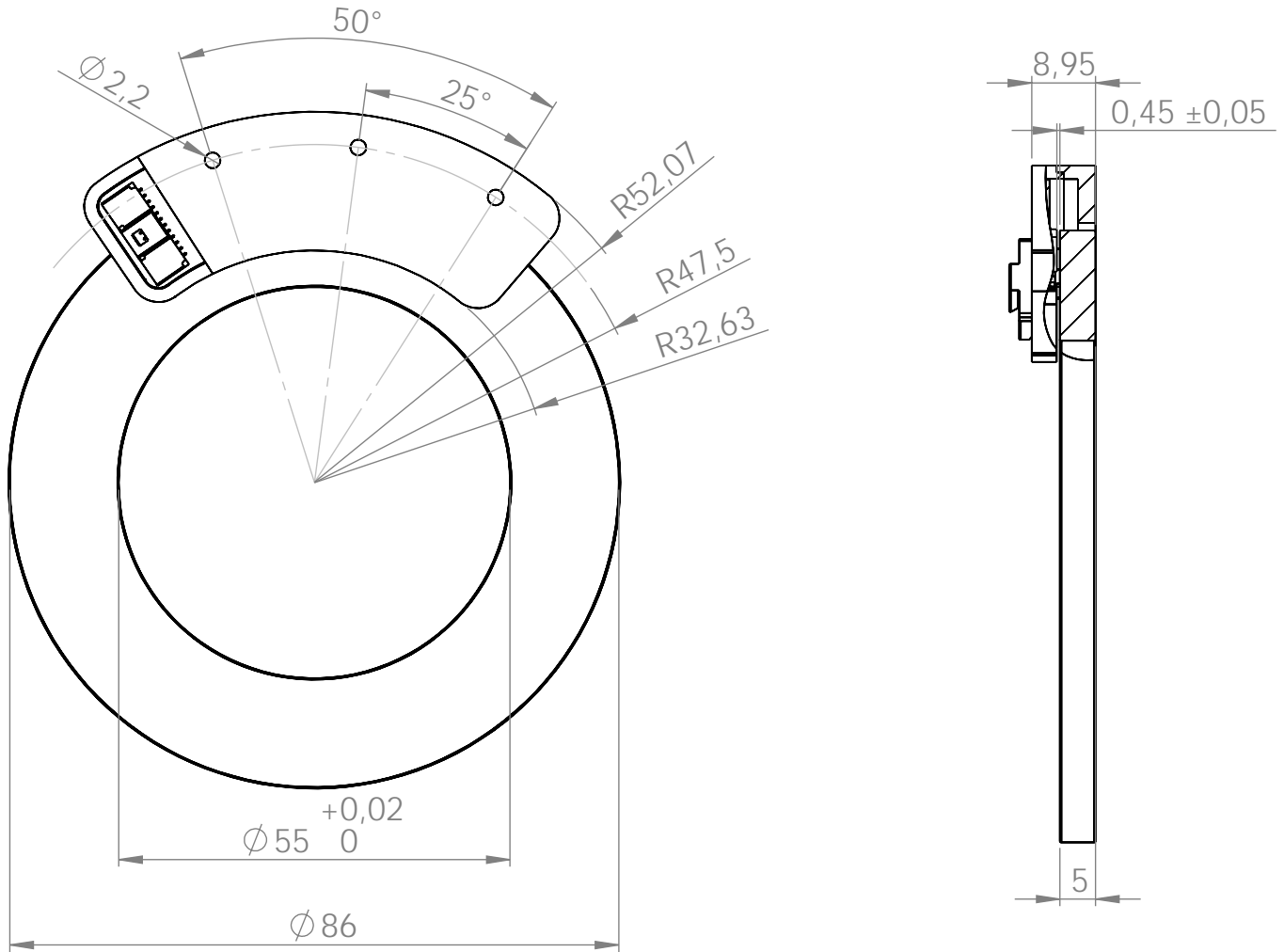
Pulse Diagram for Absolute Version



FNC MAS86 Series, Absolute & Incremental Axial

Mechanical dimension

Cover Type, Inner Diameter 55 mm



Weight

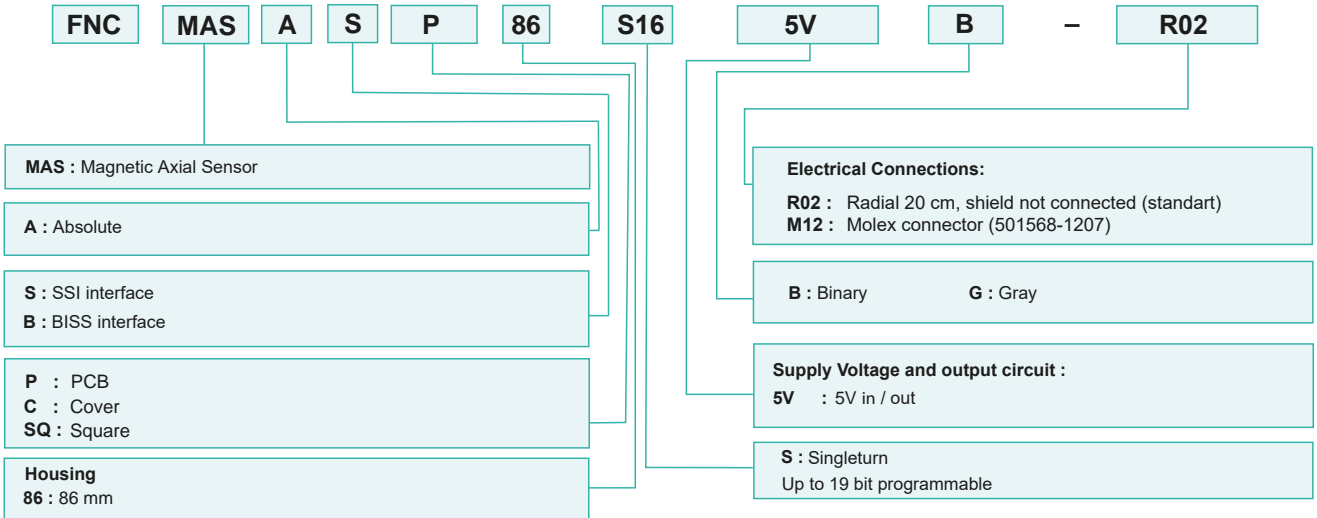
| | |
|-------------------------------|------------|
| FNC MASC86 Sensor Head | 12 g ±%10 |
| FNC MAR 8655 05 Magnetic Ring | 121 g ±%10 |

Bearingless encoders

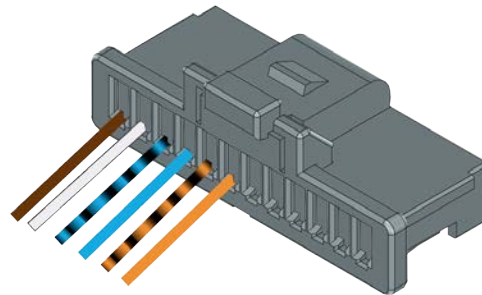
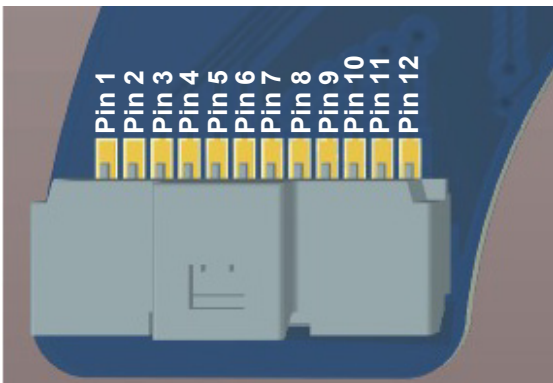
Part Number

FNC MAS86 Series, Absolute & Incremental Axial

Encoder Part Number for Absolute Version



Female Cable Part Number for Absolute Version



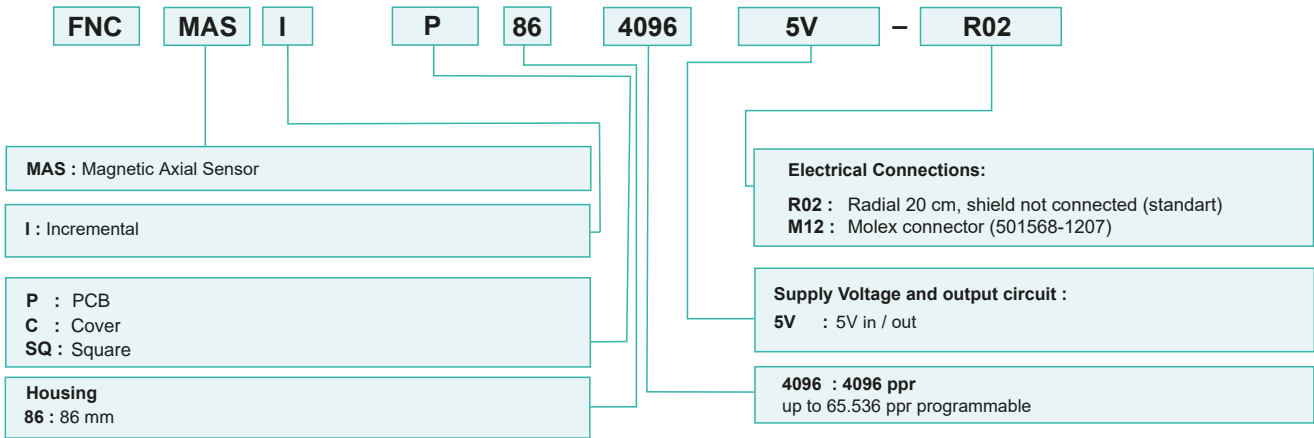
P.N. FCSF MLX1206-100: User cable for Absolute MAS Sensor
(should be bought separately for programming)

| Function | Pin | Color |
|----------|-------|--------------|
| +VB | Pin 1 | Brown |
| GND | Pin 2 | White |
| CLC- | Pin 3 | Blue-Black |
| CLK+ | Pin 4 | Blue |
| DATA- | Pin 5 | Orange-Black |
| DATA+ | Pin 6 | Orange |

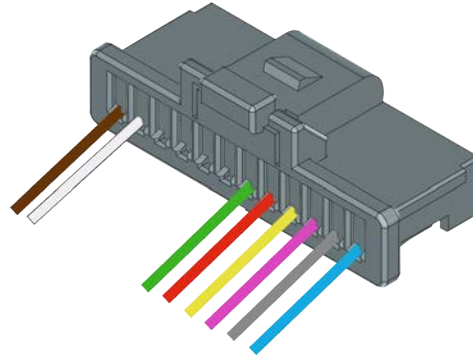
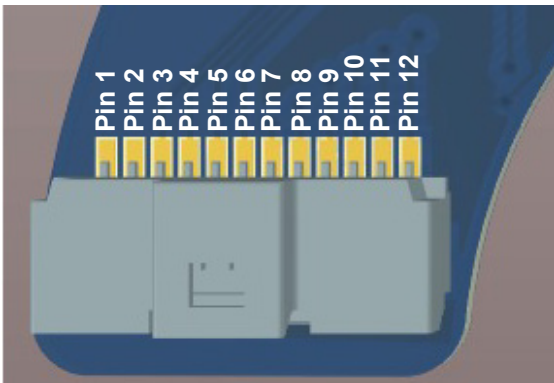
P.S. When the magnet and pcb are positioned correctly, the green led lights up constantly. The red led indicates errors received (distance, wrong positioned magnet etc.)

FNC MAS86 Series, Absolute & Incremental Axial

Encoder Part Number for Incremental Version



Female Cable Part Number for Incremental Version



P.N. FCSF MLX1208-100: User cable for Incremental MAS Sensor

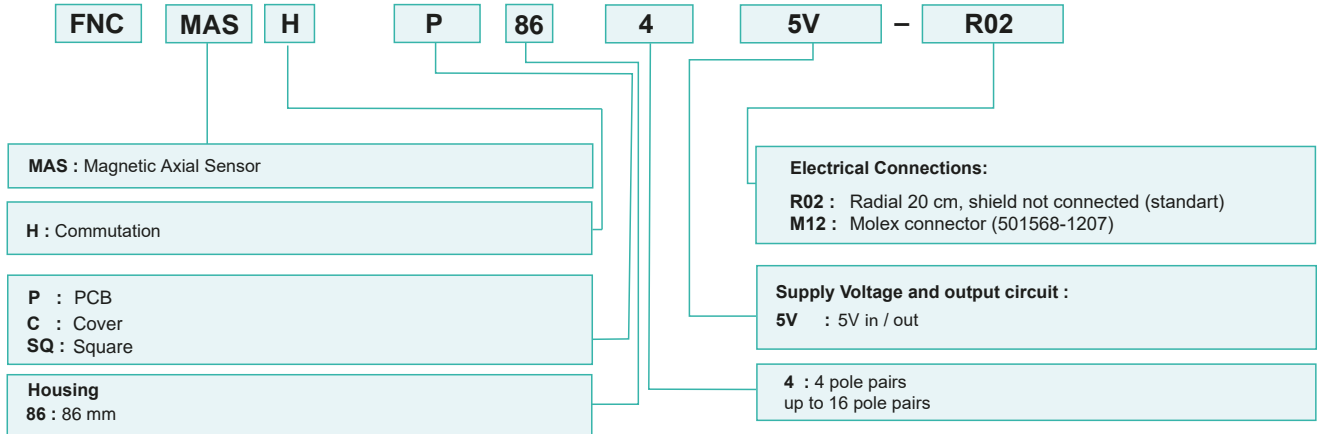
* P.N. FCSF MLX1206-100 should be bought separately for programming

| Function | Pin | Color |
|----------|--------|--------|
| +VB | Pin 1 | Brown |
| GND | Pin 2 | White |
| A | Pin 7 | Green |
| A' | Pin 8 | Red |
| B | Pin 9 | Yellow |
| B' | Pin 10 | Pink |
| Z | Pin 11 | Gray |
| Z' | Pin 12 | Blue |

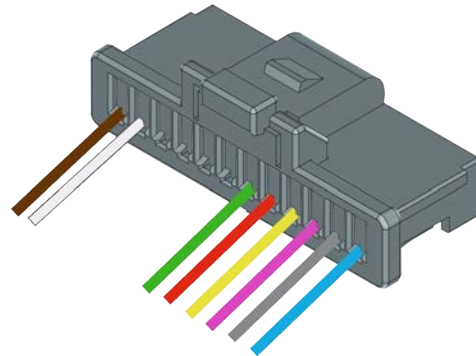
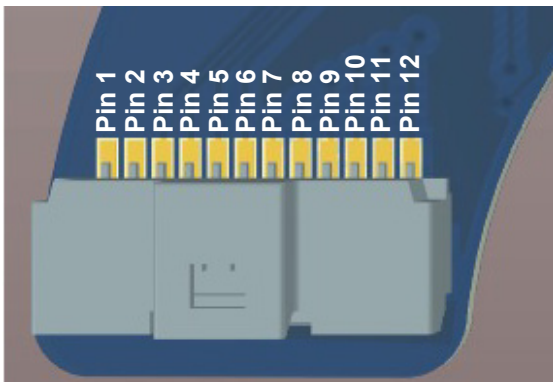
P.S. When the magnet and pcb are positioned correctly, the green led lights up constantly. The red led indicates errors received (distance, wrong positioned magnet etc.)

FNC MAS86 Series, Absolute & Incremental Axial

Encoder Part Number for Commutation Version



Female Cable Part Number for Commutation Version



P.N. FCSF MLX1208-100: User cable for Commutation MAS Sensor

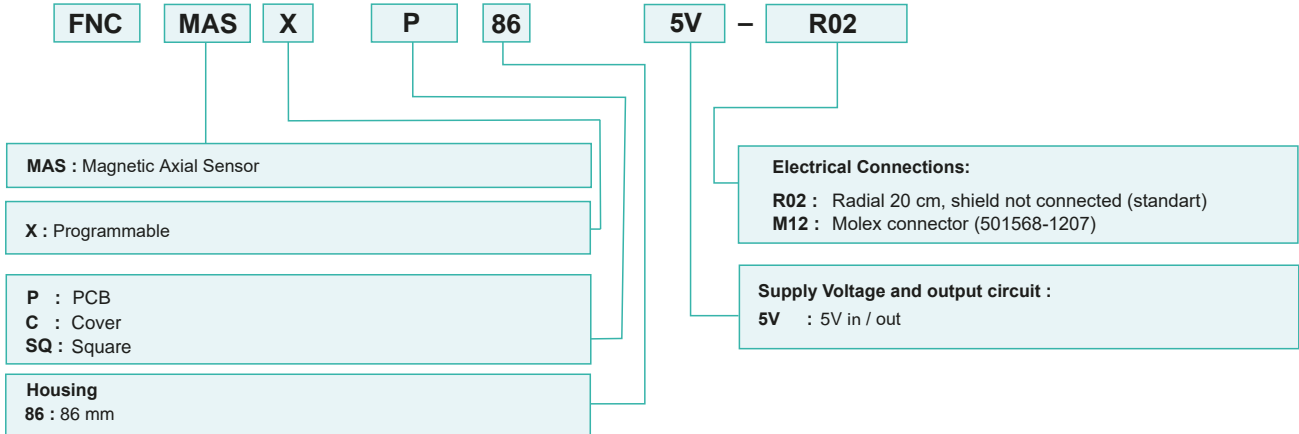
* P.N. FCSF MLX1206-100 should be bought separately for programming

| Function | Pin | Color |
|----------|--------|--------|
| +VB | Pin 1 | Brown |
| GND | Pin 2 | White |
| U | Pin 7 | Green |
| U' | Pin 8 | Red |
| V | Pin 9 | Yellow |
| V' | Pin 10 | Pink |
| W | Pin 11 | Gray |
| W' | Pin 12 | Blue |

P.S. When the magnet and pcb are positioned correctly, the green led lights up constantly. The red led indicates errors received (distance, wrong positioned magnet etc.)

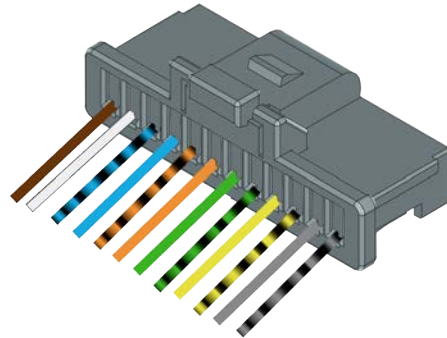
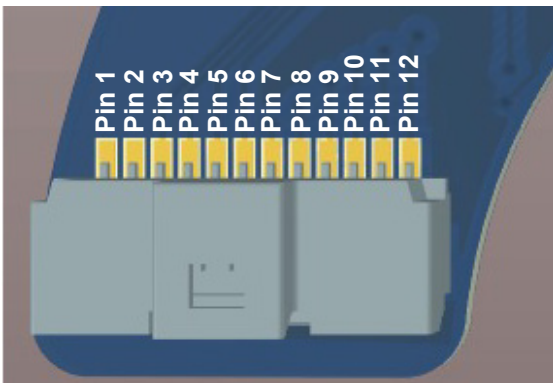
FNC MAS86 Series, Absolute & Incremental Axial

Encoder Part Number for Programmable Version



- * Programmable absolute resolution up to 19 bit
- * Programmable incremental resolution up to 65536 ppr
- * Programmable UVW pole numbers

Female Cable Part Number for Programmable Version



P.N. FCSF MLX1212-100: User cable for Programmable MAS Sensor (should be bought separately for programming)

| Function | Pin | Color |
|----------|--------|--------------|
| +VB | Pin 1 | Brown |
| GND | Pin 2 | White |
| CLC- | Pin 3 | Blue-Black |
| CLK+ | Pin 4 | Blue |
| DATA- | Pin 5 | Orange-Black |
| DATA+ | Pin 6 | Orange |
| A | Pin 7 | Green |
| A' | Pin 8 | Red |
| B | Pin 9 | Yellow |
| B' | Pin 10 | Pink |
| Z | Pin 11 | Gray |
| Z' | Pin 12 | Blue |

P.S. When the magnet and pcb are positioned correctly, the green led lights up constantly. The red led indicates errors received (distance, wrong positioned magnet etc.)

FNC MAS86 Series, Absolute & Incremental Axial

Magnetic Ring Part Number, Inner Diameter 35 mm

FNC MAR 86 55 02

Outer Diameter

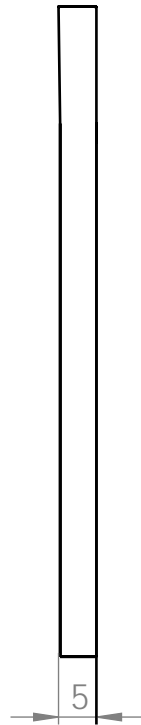
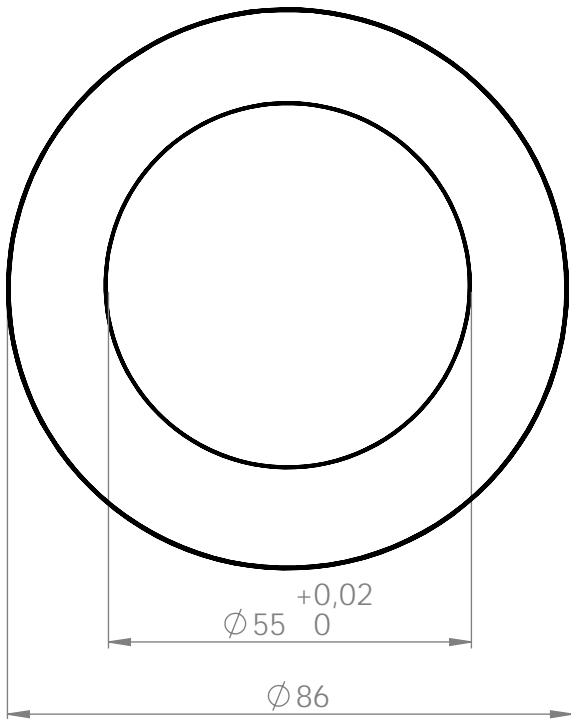
86 : 86 mm

Inner Diameter

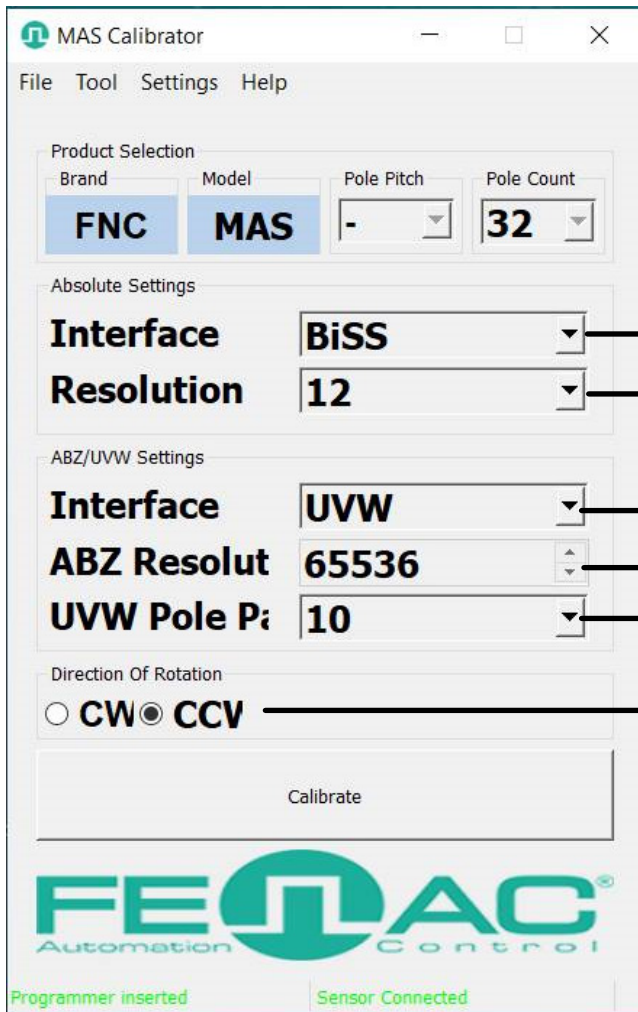
55 : 55 mm

Thickness

05 : 5 mm



FNC MAS86 Series Programming Interface



- Absolute interface can be selected as SSI or BiSS
- Resolution can be selected up to 19 bit for absolute version
- Incremental interface can be selected as ABZ or UVW
- Resolution can be selected up to 65,536 ppr for ABZ interface
- Pole pairs can be selected up to 16 ppr for UVW interface
- Direction of rotatiton can be selected as CW (clokwise) or CCW (counter clockwise)

Encoder Options

- Incremental Version** : FNC MAS IP 8640965V-M12
- Absolute Version** : FNC MAS AP 86S165VB-M12
- Commutation Version** : FNC MAS HP 8645V-M12
- Programmable Version** : FNC MAS XP 86X5V-M12



Part No: FNC MAS PT
(Programming Device)



Part No: FNC MAS CB
(Connection Box)



Magnetic Ring Options
FNC MAR 553502
FNC MAR 55202