# Modular Industrial Application

Configurator for industrial slip rings

SCHLEIFRING

# MIA – Modular Industrial Slip Rings

The basis of our MIA configuration system is the gold-on-gold contact technology. It serves the transmission of power (up to 630 V and 63 A), signals (up to 30 V and 3 A) and data as well as various bus systems. In total, **up to 120 transmission tracks** can be configured using the different modules. You can select these yourself using the configurator. An overview of the modules can be found on page 4 in the table of functional units.

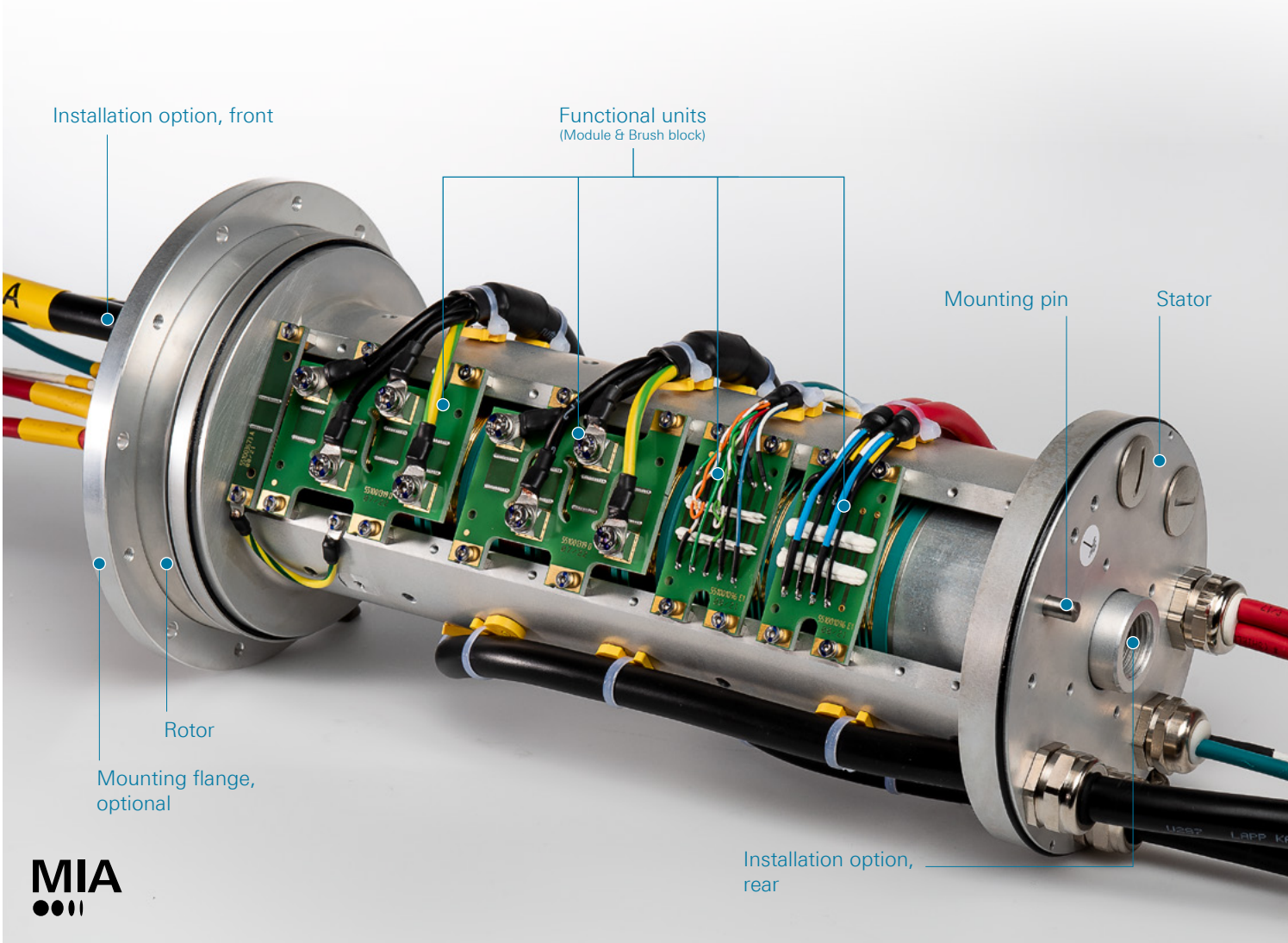
Our MIAs have a **housing diameter of 90 mm or 140 mm** depending on the module selected. The slip ring's housing length corresponds to the sum of all selected modules (116 mm to 399 mm). The standard cable length on the rotor and the stator is 3 meters. Optionally, this can be lengthened to 6, 12 or 15 meters.

The MIA slip rings are suitable for **ambient temperatures from -20 °C to +70 °C** and have protection class **IP50**.

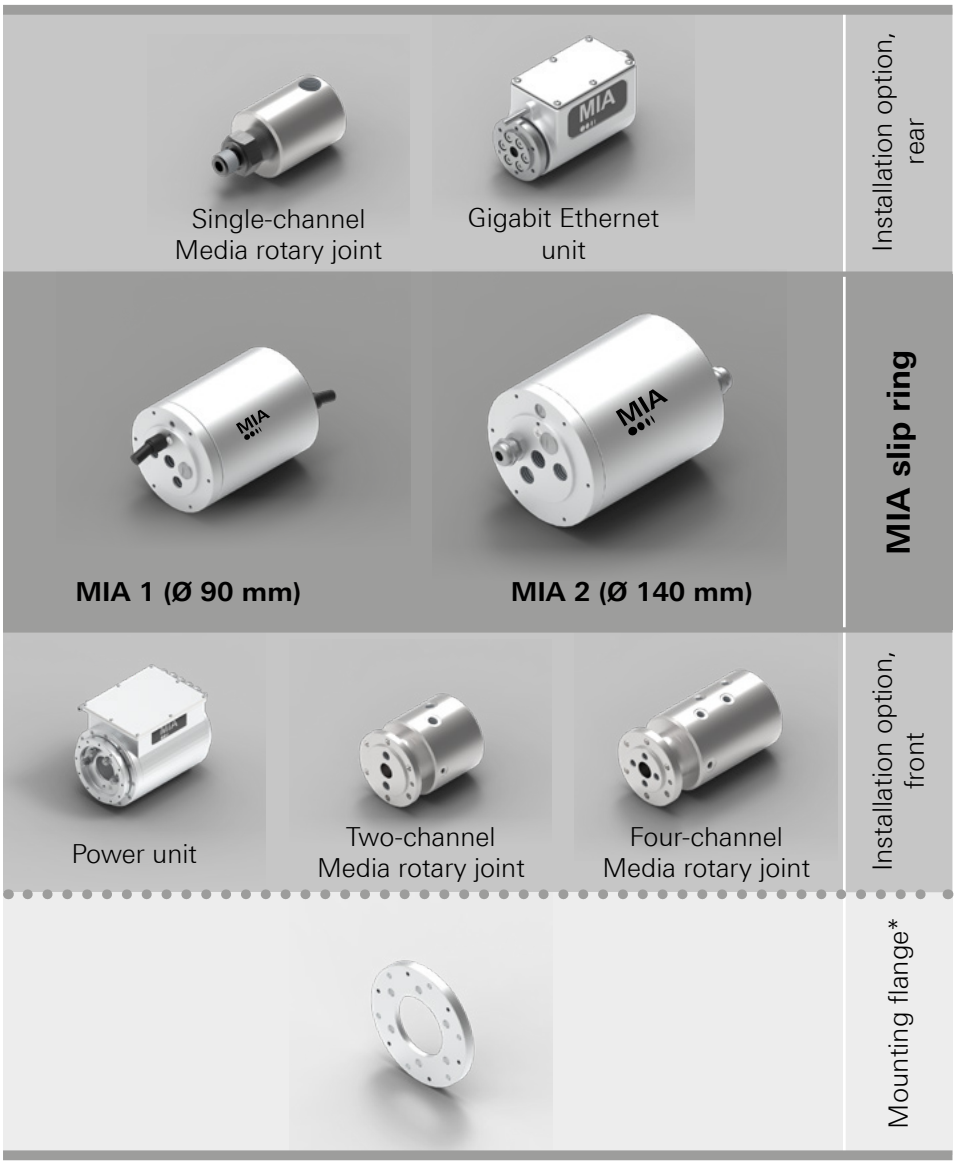
The passivated aluminium housing with free internal diameter (8 mm or 13 mm depending on the outside diameter of the slip ring) enables the conduction of media or routing of fibre optic cables.

The modular system can be extended by a power unit, a Gigabit unit or by various media rotary joints. These add-on components can also be ordered separately.

No maintenance is required. The service life of all components is designed for up to **50 million revolutions**. In the short term, rotational speed up to 400 rpm (small housing diameter) or 300 rpm (large housing diameter) can be achieved.



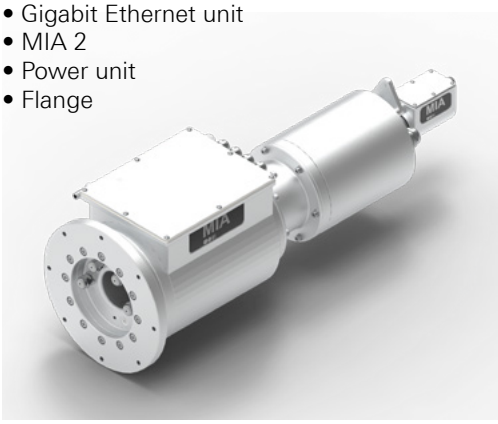
# MIA – Configuration options




You can call up the configurator directly here:

Example configuration includes:

- Gigabit Ethernet unit
- MIA 2
- Power unit
- Flange



* If the front installation option is selected, the flange can also be attached directly to the slip ring.
The slip ring as well as all add-on components can be ordered separately or as a complete system.

## MIA slip ring sizes

| | Length | Number of functional units | Slip ring length |
|---|---|---|---|
| MIA 1 Ø 90mm | L 1 | 1–2 | 116 mm |
| | L 2 | 3–4 | 192 mm |
| MIA 2 Ø 140mm | L 3 | 1-3 | 171 mm |
| | L 4 | 4–5 | 247 mm |
| | L 5 | 6–7 | 323 mm |
| | L 6 | 8–9 | 399 mm |

The modules A, B, F, and G automatically set the MIA 2 as the basic slip ring and require two functional units. (see table on page 4)

## Typical characteristics

- Compact design
- High level of contact reliability
- Good insulation against crosstalk and low electrical noise
- Almost no wear, hence long service life
- Reliable operation when subject to shock, vibration and temperature fluctuations

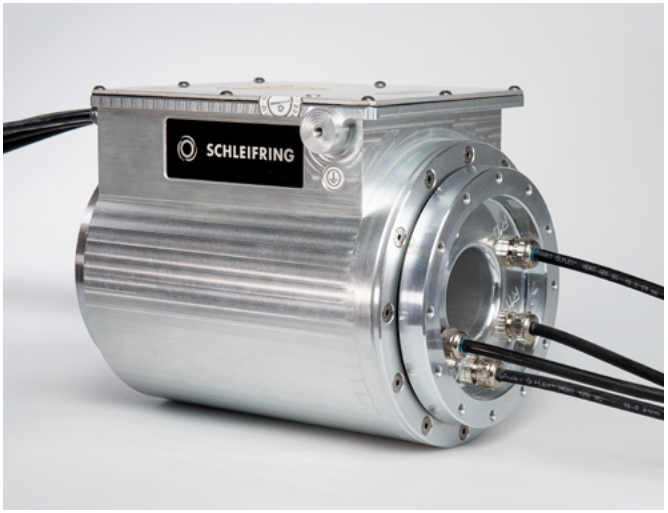
# Installation options

### Power unit

If more power is required, for example for high-performance drive motors, the power unit helps – whether as a independent unit or in conjunction with the other components in the MIA series.

The power unit can be connected to the other components via an adapter.
The cables of the MIA components as well as all other additional components can be routed through the free inner diameter of 53 mm.

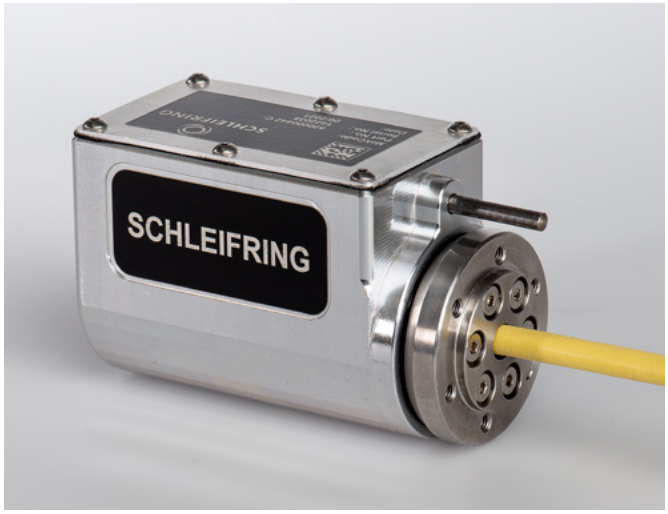
This device is available as an independent unit but can also be coupled to an MIA slip ring or a Gigabit Ethernet unit.




### Gigabit Ethernet unit

The Gigabit Ethernet unit creates a new dimension in the field of contacting data transmission, without active electronics.
There is no adaptation, user-defined adaptation or special ESD treatment required – simply plug and play.

This device is available as an independent unit but can also be coupled to an MIA slip ring or a power unit.




### Media rotary joint

Technical data

| | MIA 1 | MIA 2 |
|---|---|---|
| Pressure | max. 10 bar | |
| Medium | Air/water | |
| Temperature | max. 70 °C | |
| Single-channel | ¼" | ½" |
| Two-channel | ¼" or ½" | ¼" or ½" |
| Four-channel | ¼" or ½" | ¼" or ½" |

## Technical data for MIA slip rings and add-on devices

| Data | MIA 1 | MIA 2 | Power unit | Gigabit unit |
|---|---|---|---|---|
| **Mechanical data** | | | | |
| Housing | Aluminium, SurTec® surface finish | | | |
| Outside diameter | 90 mm | 140 mm | 199 mm | 64 mm |
| Free internal diameter | 8 mm | 13 mm | 53 mm | 0 mm |
| Installation length | L1, L2 | L3–L6 | 200 mm | 110 mm |
| Rotational speed | 200 rpm | 150 rpm | 200 rpm | 200 rpm |
| Max. rotational speed | short-term 400 rpm | short-term 300 rpm | short-term 400 rpm | short-term 400 rpm |
| Protection class | vertical or horizontal IP 50 | | | |
| Permissible operating temperature[1] | -20 °C to +70 °C | | | |
| Torque[2] | < 2 Nm | < 2 Nm | < 2 Nm | < 1 Nm |
| Service life | up to 50 million revolutions | | | |
| **Electrical data** | | | | |
| Track selection | up to 56 | up to 102 | 5 | 13 |
| Current intensity | max. 16 A | max. 25 A | max. 63 A | 1A |
| Peak current value | max. 2 × Inom for 1s | max. 2 × Inom for 1s | max. 2 × Inom for 1s | 100 MBit – max. 1 GBit |
| Rated voltage | max. 250 V AC | max. 630 V AC | max. 630 V AC | max. 24 V AC |
| Stator/rotor interface | up to 15 m cable | up to 15 m cable | 3 m cable | Connector for 3 m cable |
| Protective earthing present | > 50 V AC / 120 V DC | > 50 V AC / 120 V DC | present | > 50 V AC / 120 V DC |
| Insulation resistance | 100 MΩ at 500 V DC | | | |
| Bit error rate | | | | > $10^{-9}$ |
| Cable | see functional units | | 4 + PE x 16 mm² | M12 X-coded CAT6 |

The specified values are maximum values and can only be used for some of the versions listed.
[1] Not at maximum constant current load.
[2] Without media rotary joint.

## Technical data of functional units in the MIA slip ring

| Functional unit | Application | Tracks | Voltage (V) | Current intensity (A) | Cable |
|---|---|---|---|---|---|
| PE | Protective earth | 1 | 0 | 25 | Connecting bolt |
| A[1] | Power | 4 | 630 | 25 | 3 + PE x 4 mm² |
| B[1] | Power | 5 | 400 | 18 | 4 + PE x 2.5 mm² |
| C | Power | 4 | 250 | 16 | 4x1.5 mm² |
| D | Power | 6 | 125 | 9 | 6x0.75 mm², shielded |
| E | Signal | 14+S | 30 | 3 | 14 x 0.25 mm², shielded |
| F[1] | Signal | 16 | 125 | 6 | 16x0.5 mm² |
| G[1] | Signal | 22 | 125 | 3 | 22x0.5 mm² |
| I | Profibus | 3+8 | 30 | 3 | Profibus cable + 8x0.34 mm², shielded |
| K | Signal | 10+S | 30 | 3 | 10x0.34 mm² |
| M | CAN bus | 5+6 | 30 | 3 | CAN bus cable + 6x0.34 mm², shielded |
| P | Ethernet 100Base-TX | 7+4 | 30 | 3 | Ethernet cable CAT5e + 4x0.34 mm², shielded |
| Q | DRIVE-CLIQ | 9 | 30 | 3 | DRIVE-CLIQ cable |
| R | CC-Link | 2x (3+S) | 30 | 3 | 2x CC-Link cable |

[1] Module is only suitable for the series MIA 2.

**Correct use:**
A slip ring is a partially complete machine within the meaning of Article 1(1) of the Machinery Directive 2006/42/EC and according to Article 1 of the new Machinery Regulation (EU) 2023/1230.

Do you have any questions about MIA or do you require further information?
Contact our team of experts: **support@schleifringonline.com**

## Our configuration tool is available in the shop:

www.shop.schleifring.com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