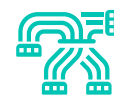


MIA slip rings

Modular Individual Application



MIA – Modular industrial slip rings

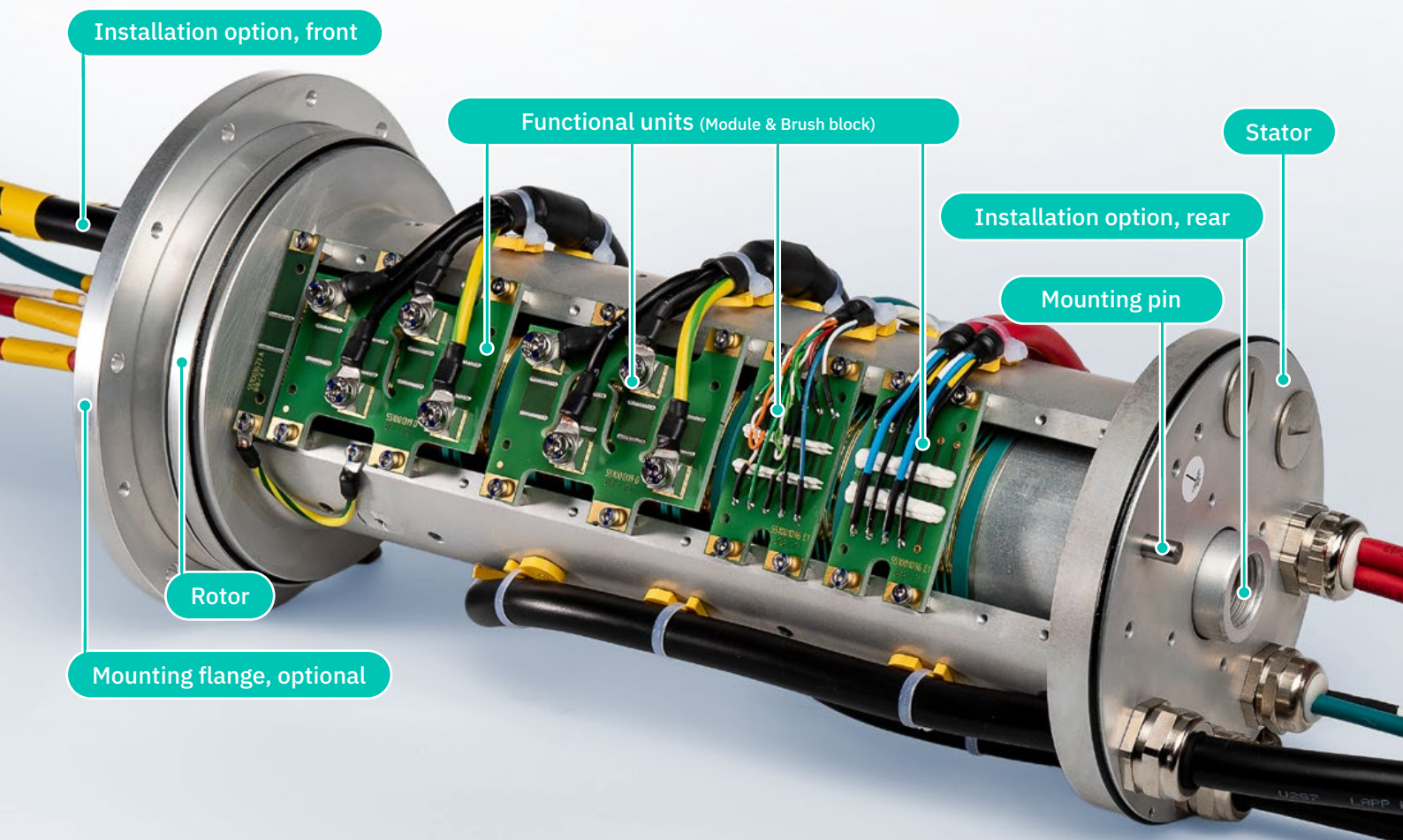
The basis of our MIA configuration system is the gold-on-gold contact technology. It serves the transmission of power (up to 630 V and 25 A), signals (up to 30 V and 3 A) and data as well as various bus systems. In total, up to 120 transmission paths can be configured using the different modules. You 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

 Single-channel media rotary joint*		 GigabitEthernet unit	Installation option, rear
 MIA 1 (Ø 90 mm)	 MIA 2 (Ø 140 mm)	MIA slip ring	
 Two-channel media rotary joint*		 Four-channel media rotary joint*	Installation option, front
			Mounting flange**

*MRJ: media rotary joint. Only in combination with adapter for MIA with two- or four-channel MRJs.
 ** 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.

- Example configurations includes: (left-to-right)
- Media Rotary Joint
 - Adapter
 - MIA2
 - Gigabit Ethernet Unit



MIA slip ring sizes

	Length	Number of functional units	Slip ring length
MIA 1 Ø 90mm	M 1	1-2	116 mm
	M 2	3-4	192 mm
MIA 2 Ø 140mm	M 3	1-3	171 mm
	M 4	4-5	247 mm
	M 5	6-7	323 mm
	M 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. (Refer to Table Functional units in the MIA slip ring.) Codes M1 to M6 can be found in the configuration code.

- 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



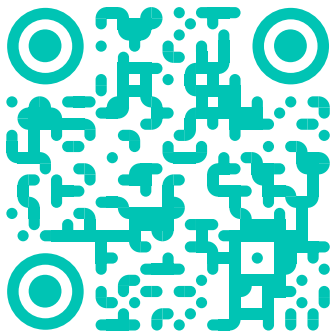
GigabitEthernet unit

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.

Do you have questions about MIA or are you looking for more information? Contact our team of experts: support@schleifringonline.com

Or schedule your configuration appointment now:



Media rotary joint (MRJ)

Various media rotary joints are available to transport physical media (compressed air / vacuum, water, oil). Adapted to their individual intended use, they are mounted on the MIA or can also be ordered separately.

	Single-channel	Two- / Four-channel
Connection*	¼" or ½"	¼" and ½"
Pressure [bar]	max. 70	max. 10
Medium	Compressed air, vacuum or hydraulic fluid	Compressed air, vacuum or water
Temperature [°C]	max. 120	max. 70
Rotational speed [min ⁻¹]	max. 3500	max. 200
Material	Aluminium, steel	Stainless steel

*For single-channel MRJs, the possible connection size depends on the corresponding MIA slip ring (Ø 90 mm = ¾" or Ø 140 mm = 1½").



Technical data for MIA slip rings and add-on devices

Data	MIA 1	MIA 2	Gigabit unit
Mechanical data			
Housing	Aluminium, SurTec® surface finish		
Outside diameter	90 mm	140 mm	64 mm
Free internal diameter	8 mm	13 mm	-
Installation length	M1, M2	M3 - M6	110 mm
Rotational speed	200 rpm	150 rpm	200 rpm
Max. rotational speed	short-term 400 rpm	short-term 300 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	< 1 Nm
Service life	up to 50 million revolutions		
Electrical data			
Path selection	up to 56	up to 102	13
Current intensity	max. 16 A	max. 25 A	1A
Peak values	max. 2 × Inom for 1s	max. 2 × Inom for 1s	100 Mbit/s - max. 1 Gbit/s
Rated voltage	max. 250 V AC	max. 630 V AC	max. 24 V AC
Stator/rotor interface	up to 15 m cable	up to 15 m cable	Connector for 3 m cable
Protective earthing present	>50 V AC/120 V DC	>50 V AC/120 V DC	not present
Insulation resistance	100 MΩ at 500 V DC		
Bit error rate	< 10 ⁻⁹		
Cable	see functional units		M12 X-CodedCAT6

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	Paths	Voltage (V)	Current intensity (A)	Cable
PE	Protective earth	1	0	25	Connecting bolt
A ¹	Power	4	630	25	3+PEx4 mm ²
B ¹	Power	5	400	18	4+PEx2,5 mm ²
C	Power	4	250	16	4x1,5 mm ²
D	Power	6	125	9	6x0,75 mm ² , shielded
E	Signal	14+S	30	3	14 x 0,25 mm ² , shielded
F ¹	Signal	16	125	6	16x0,5 mm ²
G ¹	Signal	22	125	3	22x0,5 mm ²
I	Profibus	3+8	30	3	Profibus cable + 8x0,34 mm ² , shielded
K	Signal	10+S	30	3	10x0,34 mm ²
M	CAN-Bus	5+6	30	3	CAN bus cable + 6x0,34 mm ² , shielded
P	Ethernet 100 Base Tx	7+4	30	3	Ethernet cable CAT5e + 4x0,34 mm ² , shielded

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.



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