

UP TO 150 A, 1000 V AND 1 GBIT/S



SLIP RINGS – INDUSTRIAL LINE

TRANSMISSION OF POWER, SIGNAL
AND INDUSTRIAL ETHERNET

Slip ring platform with Gigabit transmission

The modular slip rings of the “Industrial Line” are designed for a freely usable hollow shaft of up to 100 mm or flange mounting. In addition, any form of customer-specific adaptation is possible, both mechanically and electrically.



Features

- Individual configuration for all applications: The application determines the mechanical and electrical connection.
- Particularly suitable for high-end applications
- Data transmission for Industrial Ethernet up to 1 Gbit/s
- Design of the connections as cables, plugs or terminals
- Not only for electrical currents and signals - also for the transmission of liquids and gases, an optimal solution can always be integrated in the slip ring.
- Robust overall concept

Applications

- Industrial automation
- Food processing
- Pharmacy
- Rotary tables
- Assembly lines
- Mobile working machines
- ...

Integrated sensors

In addition to the transmission of electrical currents as well as pneumatic and hydraulic, other functions for speed, position, vibration or temperature monitoring can be integrated into the slip ring concept.

Such as Kübler incremental and absolute encoders or bearingless encoders.



“High-end” transmission for Industry 4.0 / IIoT

The new slip ring platform “Industrial Line” is equipped with a so-called 1 Gbit module.

This operates without any additional electronic components and thus enables interference-free, reliable and direct transmission. The Ethernet module is a bus-independent and cost-optimized solution.












 and many more

Design examples

- Hollow shaft mounting
- Free cable ends for power and signal transmission
- RJ45 connectors for data transmission



- Flange mounting
- Industrial connectors for power transmission
- M18 connectors for data transmission
- With integrated and protected bearingless encoder

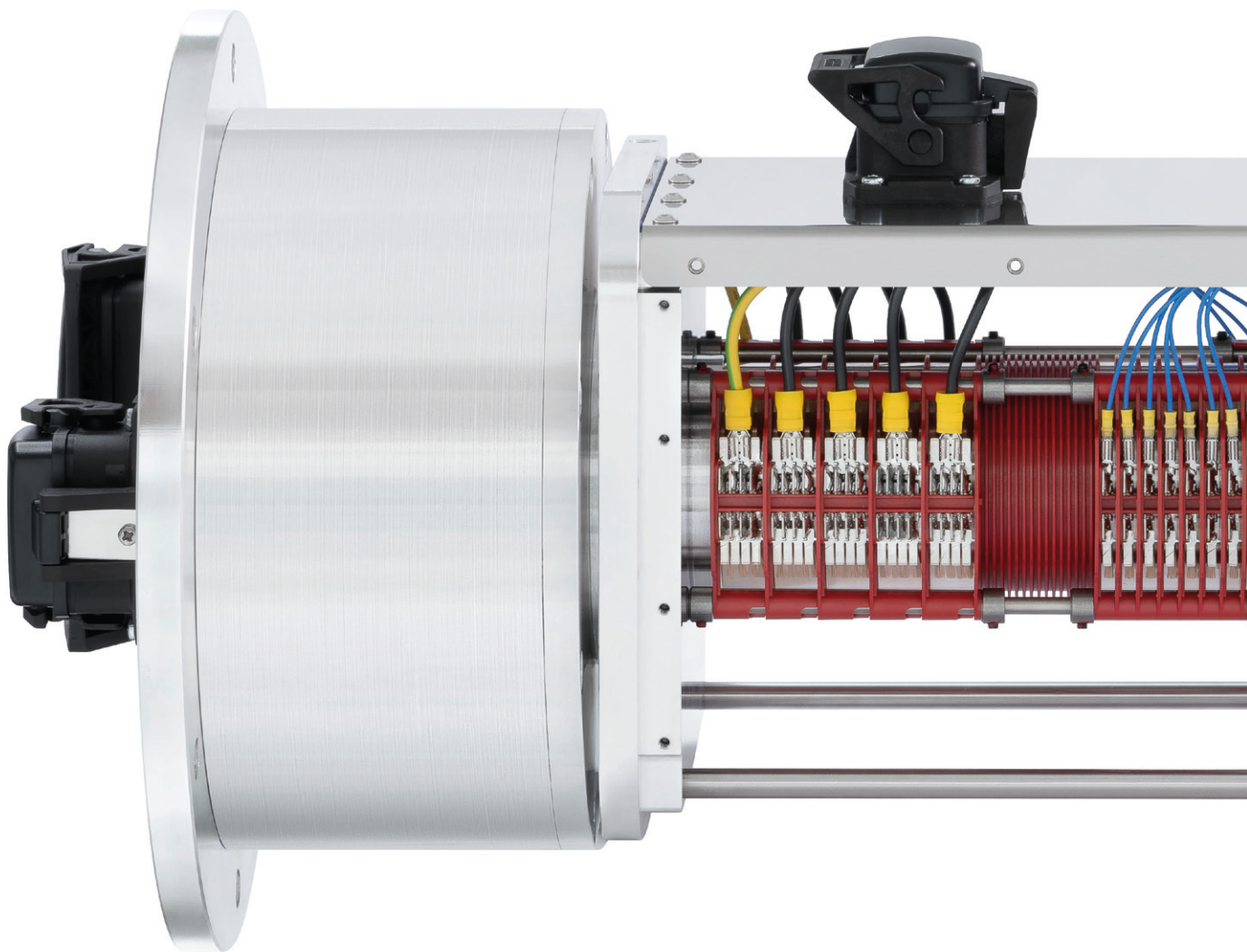


- Flange mounting
- Free cable ends for power/signal transmission (rotor side)
- M18 connectors for power and M12 connectors for data transmission (stator side)
- Single-channel compressed air feedthrough



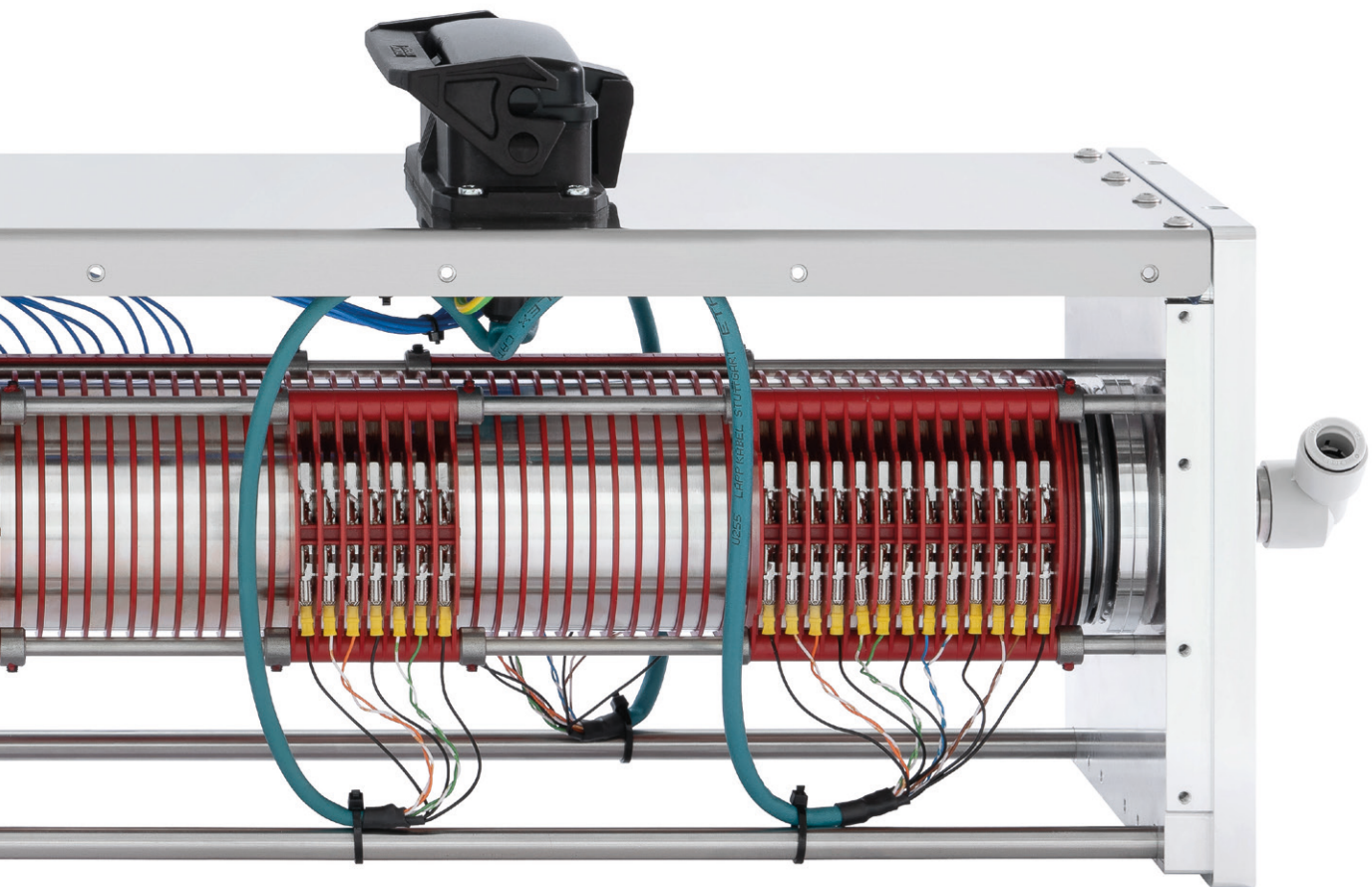
- Flange mounting
- Terminal box (stator side)
- Screw terminals (rotor side)





Power, signal and data transmission

			
Transmission type	Silver brush (multiple wires) Ring (brass, silver plated)	Brushes (copper graphite) Ring (brass)	Optical transmission singlemode / multimode
Features	• Parallel fibre bundle; multi contact • Extremely robust against shock/vibration, aging processes and assembly tolerances • Highest transmission reliability	• Suitable for transferring high powers • Even at high speeds • Extremely long service life	• FORJ – Optical fiber • EMC resistant and Tap-proof • Highest transmission rates and security
Power transmission	max. 70 A / 750 V, AC/DC • Direct or alternating current • Three-phase, motor or heating current	max. 150 A / 1000 V • Direct or alternating current • Three-phase, motor or heating current	–
Signal transmission	max. 10 A, 48 V • Direct or alternating current • Digital switching signals (I/O) • Thermocouple, PT100/1000	–	–
Data transmission	• Up to max. 100 Mbit/s (100BASE-TX) Fieldbus, Fast Ethernet, Single Pair Ethernet (SPE) • Up to 1 Gbit/s (1000BASE-TX) Gigabit Ethernet, Single Pair Ethernet (SPE)	–	Uni/bidirectional wavelength: 400 nm ... 1,600 nm



Media feedthrough

Transmission of liquids and gases.
Single-channel or multi-channel media feedthrough as screw-in version or for flange mounting.



Single-channel rotary feedthrough for compressed air with hose up to 12 mm and 10 bar, or free hollow shaft with customer-specific screw-in threads on both sides



Multi-channel for compressed air and liquids according to design with flange connection

Electrical connections

All common connection technologies for both stationary and rotating level.



Free cable ends,
open cable glands



Connectors
M12, M23, RJ45



Connecting terminals,
screw terminals



Industrial connectors for
power, signal and data
transmission



Flat terminals

Technical data

Contact resistance	
power channels	$\leq 1 \text{ Ohm (dynamic)}$
signal / data channels	$\leq 0.1 \text{ Ohm (dynamic)}$
Insulation resistance	$10^3 \text{ MOhm, at } 500 \text{ V DC}$
Dielectric strength	$1000 \text{ V eff. (60 sec.)}$
Maintenance cycles	Maintenance free (if necessary all 100 million revolutions)
Operating temperature	$-35 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C} [-31 \text{ }^\circ\text{F} \dots +185 \text{ }^\circ\text{F}]$
Protection acc. to EN 60529	Up to IP64, higher on request

Approvals

CE compliant in accordance with Low Voltage Directive	2014/35/EU

Twisted Pair Ethernet standards

Name	10BASE-T	100BASE-TX	1000BASE-T
Speed	10 Mb/s	100 Mb/s	1 Gb/s
Standard	802.3i	802.3u	802.3ab
Wires used	2 twisted pairs	2 twisted pairs	4 twisted pairs
Comments	Runs over four wires on a Category 3 or Category 5 cable.	CAT5 copper cabling with two twisted pairs.	At least Category 5 cable, with Category 5e strongly recommended copper cabling with four twisted pairs. Each pair is used in both directions simultaneously.

Kübler Group
Fritz Kübler GmbH
 Schubertstrasse 47
 78054 Villingen-Schwenningen
 Germany

Phone +49 7720 3903-0
 Fax +49 7720 21564
 info@kuebler.com

kuebler.com