Product Training Slip Ring Assemblies 5100
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- Product Manager for Motorized Reels, Spring Reels, Slip Ring Assemblies at CoE Germany
- With CONDUCTIX-WAMPFLER since October 2001
- 30 years old

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2. Main Characteristics
3. Options / Accessories
4. Product Documentation
5. Key Figures
6. Competitors
7. Application examples
Rotary Joints – general overview

Slip Ring Assemblies
- Low voltage SRA
- Medium voltage/high voltage SRA for motorized cable reels

Rotary Joints
- Fiber optic rotary joints
- Rotary joints for fluids and gases
- Accessories

This presentation is limited to the standard low voltage SRA program 5100
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Main characteristics of SRA – program 5100

**Standard program 5100**

- Energy and data/signal transmission between a stator and a rotor
- Different environmental conditions like salt water, dust and dirt, standard temperature range -20°C … 60°C
- Amperage A= mA … 400A
- Voltage U= 1V … 1.000V
- Some types are useable for data transfer, max. data rate 500kBit (0 … 20mA, 1 … 10V)
- All rings are available as stand alone solution (with or without housing)
- Possibility to combine different sizes of rings (energy + signal/data transmission)
- Also a combination with a rotary joint for fluids is possible
Main characteristics of SRA – program 5100

Size overview

<table>
<thead>
<tr>
<th>Typ</th>
<th>Amperage [A]</th>
<th>Voltage [V]</th>
<th>Ring-Ø [mm]</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES/GS 30</td>
<td>mA - 16</td>
<td>400 (415)</td>
<td>30</td>
<td>1)</td>
</tr>
<tr>
<td>ES/GS 45/1</td>
<td>mA - 25</td>
<td>400 (415)</td>
<td>45</td>
<td>1)</td>
</tr>
<tr>
<td>ES/GS 45/2</td>
<td>47</td>
<td>1000</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>ES/GS 45/3</td>
<td>25</td>
<td>1000</td>
<td>45</td>
<td>-</td>
</tr>
</tbody>
</table>

1) = possibility to add multi-layered rings for data transmission
Main characteristics of SRA – program 5100

Size overview

<table>
<thead>
<tr>
<th>Standard-Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typ</td>
</tr>
<tr>
<td>ES/GS 18</td>
</tr>
<tr>
<td>ES/GS 13</td>
</tr>
<tr>
<td>ES/GS 15</td>
</tr>
<tr>
<td>ES/GS 16</td>
</tr>
<tr>
<td>ES/GS 19</td>
</tr>
<tr>
<td>ES/GS 21</td>
</tr>
<tr>
<td>ES/GS 29</td>
</tr>
</tbody>
</table>

1) = possibility to add multi-layered rings for data transmission
Main characteristics of SRA – program 5100

Size overview

<table>
<thead>
<tr>
<th>Typ</th>
<th>Amperage [A]</th>
<th>Voltage [V]</th>
<th>Ring-Ø [mm]</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES/GS 260</td>
<td>mA - 47</td>
<td>1000</td>
<td>260</td>
<td>1) 2)</td>
</tr>
</tbody>
</table>

1) = possibility to add multi-layered rings for data transmission
2) = special slip ring body for tube passage

ES = Ø max. 160mm
GS = Ø max. 145mm
## Size overview

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GS 323</td>
<td>400</td>
<td>1000</td>
<td>320</td>
<td></td>
<td>1)</td>
</tr>
</tbody>
</table>

1) = used for big quantity of rings and several combinations of rings
Main characteristics of SRA – program 5100

**Slip rings for data transfer**

- Type 30, 45/1, 18, 170-285 can be delivered with multilayer coated rings and special brushes for data transmission.
- The SRA’s are tested for a data rate up to 500kBit.
- Field experience: Also higher data rates are possible, but we can’t quantify it at the moment.

For data transmission:
- special silver brushes
- multilayer coated rings
Main characteristics of SRA – program 5100

Combinations of different sizes of SRA

- Current collector (Type 18, 25A or data and signal transmission)
- Slip rings
- Drive arm for the slip ring assembly
- Entries for wiring
- Ball steering rim
- Wiring on a clamping board
- Current collector (Type 15, 90A)
- Current collector (Type 19, 150A)
- Current collector (Type 21, 250A)
Main characteristics of SRA – program 5100

Which sizes of SRA’s could be combined?

• 45/1 (ML and MS) 45/2 / 45/3
  • Max quantity of rings limited by the stability of the ring assembly

• 29 / 21 / 19 / 16 / 15 / 13 / 18
  • Each combination possible also with rings for data transmission
Slip Ring Assembly - classification

<table>
<thead>
<tr>
<th>GS 13-02 / 18 32 / 22ML / LI/KK</th>
</tr>
</thead>
<tbody>
<tr>
<td>With housing/without housing</td>
</tr>
<tr>
<td>1. Type of slip ring</td>
</tr>
<tr>
<td>Number of rings</td>
</tr>
<tr>
<td>2. Type of slip ring</td>
</tr>
<tr>
<td>Number of rings</td>
</tr>
<tr>
<td>Number of multi layer coated rings</td>
</tr>
<tr>
<td>Accessories</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Protection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1P95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Slip Ring Assembly - classification

GS 13 - 02 / 18 32 / 22ML / LI/KK

- **GS**: Slip ring body with housing (ES: Slip ring body without housing)
- **13-02**: Slip ring type 13 (I=50A), 2 rings
- **1832**: Slip ring type 18 (I=25A), 32 rings
- **22ML**: Slip ring type 18 with multi layer coating for data transmission, 22 rings
- **Accessories**: Li – strand wiring/pre-wiring
  - KK – Clamping box
  - HZ – heating
  - DG – phase rotation indicator
  - DD – Single channel/multi channel rotary joint
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Options and accessories

- Heating in the housing
- Air ventilation plug
- Pre wiring according to customers requirements on flange and ring side possible
- External terminal cabinets
- Special coating for aggressive environment, e.g. waste water treatment, salt water
- Door to open the slip ring housing sidewise
- Sight window

![Diagram of slip ring housing with labels for options and accessories]
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Slip Ring Assembly – documentation

- Product information: Available as printed version and download from the homepage
- Catalogue: Available as printed version and download from the homepage
- Questionnaire: Available as printed version (catalogue) and download from the homepage
- Operating and maintenance instructions, available in several languages
- Product presentations available on request
Slip Ring Assembly – documentation

- Slip ring assembly catalogue
- Questionnaire for SRA

You can download the current documents from the homepage

Downloads

Here we placed several downloads such as catalogue, technical documentations, technical illustrations, images and our latest press releases.

You need Acrobat Reader to view this documents.

Keyword
File type
Languages
Search
## Configuration/set up: Questionnaire

### Construction of the slip ring body energy transfer

<table>
<thead>
<tr>
<th>Number of poles</th>
<th>Amperages [A]</th>
<th>Voltage [V]</th>
<th>Frequency [Hz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ PE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ PE</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>+ PE</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>+ PE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Environmental conditions
- Temperature:  
- Dust:  
- Humidity: [%]  
- Chemistry-Atmosphere:  

### Data transmission or low voltage (up to 50V)

- PE: □ yes □ no
- Number of insulated screens/poles
- Analog
- Digital
- Data transfer rate [kb/s]
- Transmission protocol e.g. Profinet, Fast-Ethernet

### Construction

- **Slip Ring Body:**
  - Slip Ring Body without housing IP00
  - Enclosed Slip Ring Body
    - Steel housing max. IP54, plastic housing max. IP66
- **Housing:**
  - Removable to the top
  - Divided for lateral opening (steel housing)
  - With lateral vision panel and mounting window (steel housing)
- **Wiring:**
  - Ring connection via clamping board
  - Pre-wiring
    - Ring side [m] from flange current collector
    - Current collector side [m] from housing
  - Single strand □ Cable □

For more details:
Take site 24 of catalogue 5100 into consideration

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**Construction of the rotary joint gases and fluids**

<table>
<thead>
<tr>
<th>Number of channels</th>
<th>Nominal width [mm]</th>
<th>Compression [bar]</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Configuration/set up: Questionnaire

## Application conditions
- Duty cycle: [ % ED ]
- Rotational speed: 1/min
- Standstill operation: [ yes | no ]

(Standstill oper. = rotational speed < 1/min and more than 60% of the max. current load of more than 10 min)

## Space requirements
- Max. free diameter: [ mm ]
- Max. mounting height: [ mm ]
- Required tube passage inside Ø: [ mm ]

## Accessories
- Mounting position: [ vertical standing (standard) | vertical hanging | horizontal ]
- End switch: [ Number of ]
- Heating: [ 24V | 110V | 230V ]

## Application area of the slip ring body | rotary joint, special conditions, special accessories

## Customer Data
- Company:
- FAX:
- Address:
- Phone:
- E-Mail:

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For more details:

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Competitors in the market

- MORGAN-REKOFAM → www.morgan-rekofa.de
- STEMMANN → www.stemmann.de
- LABEL SAS → www.label.fr
- BGB Engineering ltd. → bgbengineering.com
- Schleifring&Apparatebau GmbH → www.schleifring.de
- Dietrich Bürstenthalte GmbH → www.carbonelorraine.com
- Deutsche Carbone AG → www.carbonelorraine.com
- Walter Kraus Elektrotechnik GmbH → www.kraus.de
- Gesellschaft für Antriebstechnik mbH
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Typical applications for SRA

Circular scraper bridges in waste water treatment plants

- Rotates without interruption
- No fast movements
- Transmission of energy and signals/data
- Very aggressive environment
- Enclosed standard SRB, housing made of stainless steel or painted with C5M
Typical applications for SRA

Revolving stages in theatres
- Only a few revolutions per day
- Transmission of energy and signals/data
- Stand still operations
- Customized SRB, combination of different types, housing made of steel, divided into 2 parts
Typical applications for SRA

**Carousels – amusement rides**

- Rotate all the day, deceleration and acceleration
- Transmission of energy and signals/data, sometimes also fluids and gases
- Very high safety regulations
Typical applications for SRA

Wrapping machines – process automation

- Rotate all the day, stop&go
- Transmission of energy and signals/data
- Standard SRB without housing
Typical applications for SRA

Rotating die-casting equipment – process automation

- Rotate all the day, stop&go
- Transmission of energy and signals/data
- Customized SRB with housing made of steel
Typical applications for SRA

Building machines, earth mover –
  industrial automation

- Rotate all the day, stop&go
- Stand still operations
- Transmission of energy and signals/data, also of fluids
- Customized SRB
thanks for your attention