Three chamber system | Ethernet transmission | SR120

In general slip rings are used to transmit power, signals or data, pneumatic and hydraulic, from a stationary to a rotating platform.

The transmission between the stator and rotor takes place via sliding contacts and is extremely reliable.

The slip ring SR120 is ideal for applications requiring high transmission rates. The three chamber system allows parallel transmission of signals, load and data up to 100 Mbit/s.

c UL us pending

Rugged

- Reliable operation in harsh environments.
- Rugged metal housing.
- High protection level IP64.

Flexible

- Fast and easy installation.
- Modular construction.
- Wide variety of connector and cable connections.

Reliable with the three chamber system

- Reliable thanks to interference-proof transmission.
- Transmission of Ethernet, signal, load, pneumatics and hydraulics.
- Innovative contact technology, low-maintenance and durable.
- Field bus or Ethernet up to 100 Mbit/s.
- UL approval in preparation.

Application areas for slip rings

Industrial automation, bottling plants, labelling machines, rotary tables, ...

Order code [1] for standard versions

SR120	-	XX	-	XX	-	XX	-	XX	-	X	X	X	X	-	V100
Type		a		b		c		d		e	f	g	h		i

a *Type of mounting*
01 = flange mounting, rotor connections radial
02 = flange mounting, rotor connections axial

b *Number of Ethernet transmissions*
01 = 1 x Ethernet transmission up to 100 Mbit/s

c *Number of signal / data channels* [2]

d *Number of power channels* [2]

e *Max. load current*
1 = 230 V / 16 A
2 = 230 V / 25 A
3 = 400 V / 10 A
4 = 400 V / 20 A

f *Mounting position*
0 = any, only with either load or signal channels only with either data / Ethernet transmission
1 = standing and horizontal (flange down)
2 = hanging and horizontal (flange up)

g *Central lead-through*
0 = none
1 = air connection 1/4"
2 = air connection 1/2"
3 = air connection 3/8"
A = central bore, inside diameter 20 mm
B = central bore, inside diameter 15 mm

h *Protection rating*
2 = IP64

i *Version number (options)*
V100 = without options
> V100 = options on request, e.g.:
- > 20 channels
- other types of mounting
- other types of connection (cable, connector, ...)
- hydraulics connection

Connection technology		Order no.
Connector, self-assembly (straight)	M12 male connector with external thread	**05.WASCSY4S**
Cordset, pre-assembled	M12 male connector with external thread,2 m [6.56'] PUR cable	**05.00.6031.4411.002M**
	Industrial EtherNet - cable, PUR	**05.00.6031.1111.XXXM** [3]

Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

1) Series availability as from April 2016.
2) With Ethernet transmission: max. 13 channels, combination of signal / data / load channels.
Without Ethernet transmission: max. 20 channels, combination of signal / data / load channels.
3) XXXX = cable length in meters (e.g. 10 m = 0010)

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Technical data

Overall length		dep. on the number of transmission paths
Type of connection (stator and rotor)	load	cable 2 m [6.56´]
	signal / data	cable 2 m [6.56´]
	Ethernet	M12 connector 4-pin, D coded
Material pairing	load	copper / bronze
	signal / data	silver / precious metal
	Ethernet	silver / precious metal
Voltage/current loading		
load channels	order option 1	230 V AC/DC, max. 16 A, 50/60 Hz
	order option 2	230 V AC/DC, max. 25 A, 50/60 Hz
	order option 3	400 V AC/DC, max. 10 A, 50/60 Hz
	order option 4	400 V AC/DC, max. 20 A, 50/60 Hz
signal channels		48 V AC/DC, max. 2 A
Contact resistance		
	load channels	≤ 1 Ohm (dynamic) [1]
	signal / data channels	≤ 0,1 Ohm (silver / precious metal) [2]
Insulation resistance		10^3 MOhm, at 500 V DC
Dialectric strength		1000 V eff. (60 sec.)
Speed max. (signal / data channels)		300 min^{-1} (depends on installation position and numbers of channels)
Service life (signal / data channels)		typ. 500 million revolutions (at room temperature) depends on installation position

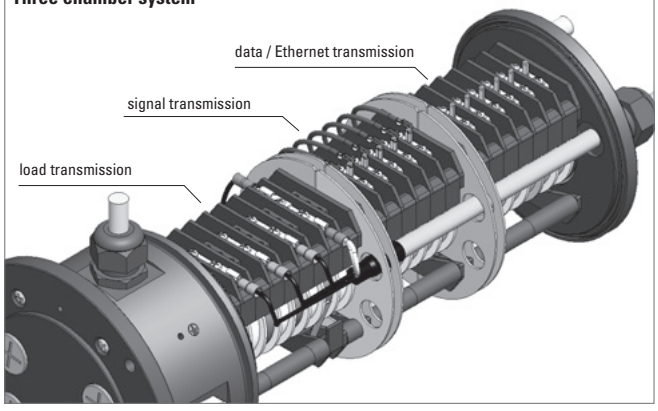
Maintenance cycles	maintenance free (if necessary all 100 million revolutions)
Maintenance	Remove contact abrasion dust – do not use compressed air
Operating temperature	-35° ... +85°C [-31°F ... +185°F]
Protection acc. to EN 60529	max. IP64
Transmission paths	max. 20 (> 20 on request)

Air connection (media lead-through no. 1 - 3)

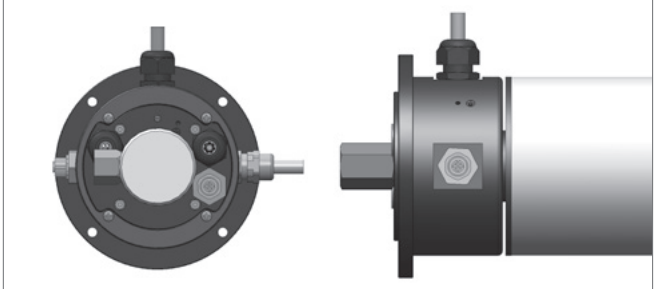
Air pressure max.	10 bar (150 psi)
Vacuum max.	7 kPa (2" Hg)
Speed max.	300 min^{-1}

Technology in detail

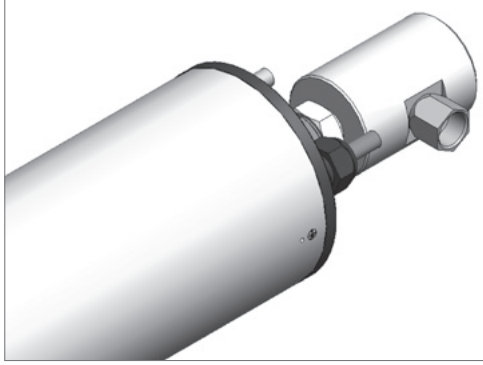
Three chamber system



Connector, cable gland

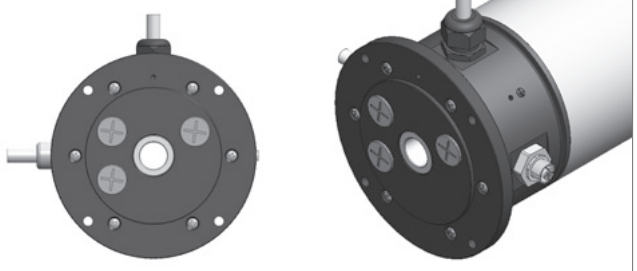


Air connection



Central bore

For the central lead-through of electrical connections, media channels, etc.



1) Voltage measurement, ambient temperature, DC series connection, ohmic load, min. 4 A test current.
2) 2-wire resistance measurement, ambient temperature, 6.5-digit digital multimeter or similar, values without testing cable.

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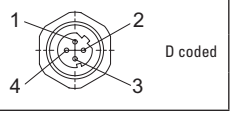
Terminal assignment

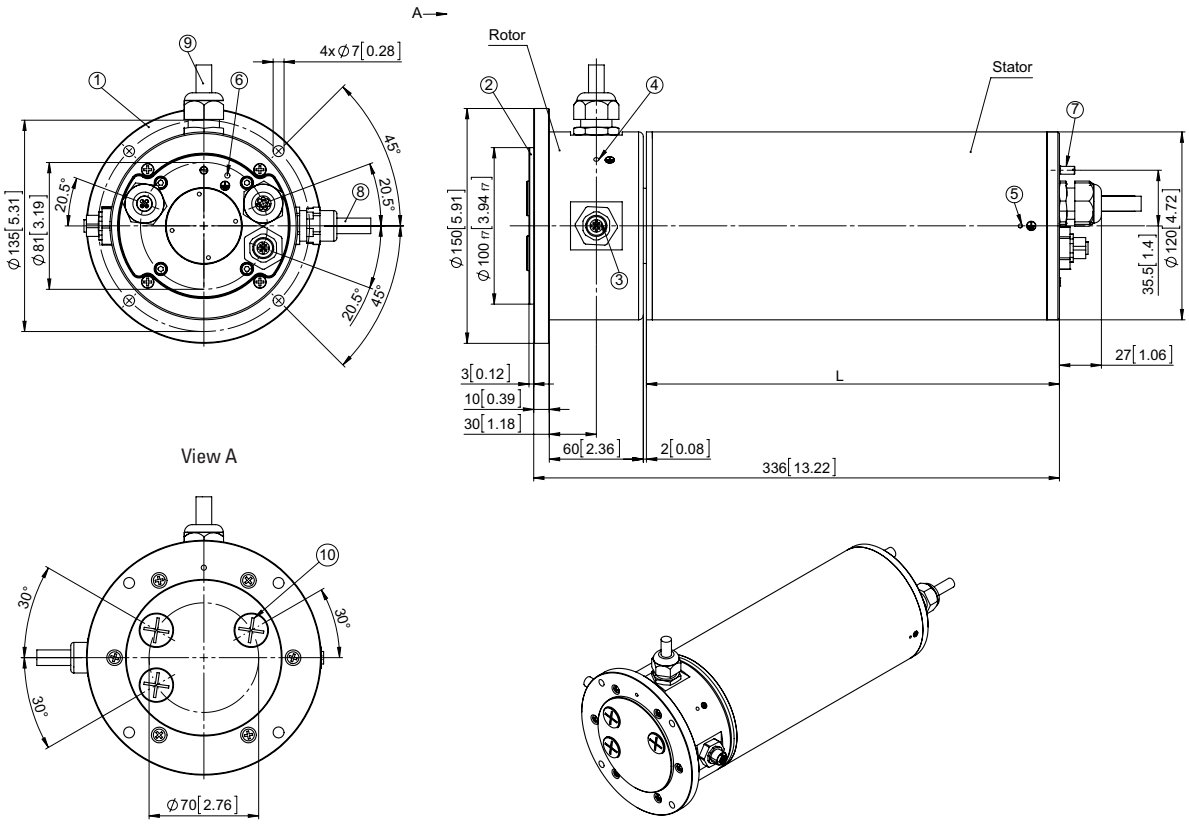
M12 connector					
Signal:	Transmit data +	Receive data +	Transmit data -	Receive data -	
Abbreviation:	TxD+	RxD+	TxD-	RxD-	
Pin:	1	2	3	4	

Dimensions

Dimensions in mm [inch]

Standard version

Example: Type SR120-02-01-06-04-3102-V100



View A

1 – Mounting flange
2 – Centering diameter
3 – M12 female connector (4-pin)
Ethernet (data transmission) (D-coded)
4 – Grounding PE (optional connectivity)
5 – Grounding PE (optional connectivity)
6 – Grounding PE (optional connectivity)
7 – Anti-rotating-pin
8 – 2 m [6.56´] connecting cable for power transmission
9 – 2 m [6.56´] connecting cable for signal transmission
10 – Blind plug – depending on order code rotor connections exit axially

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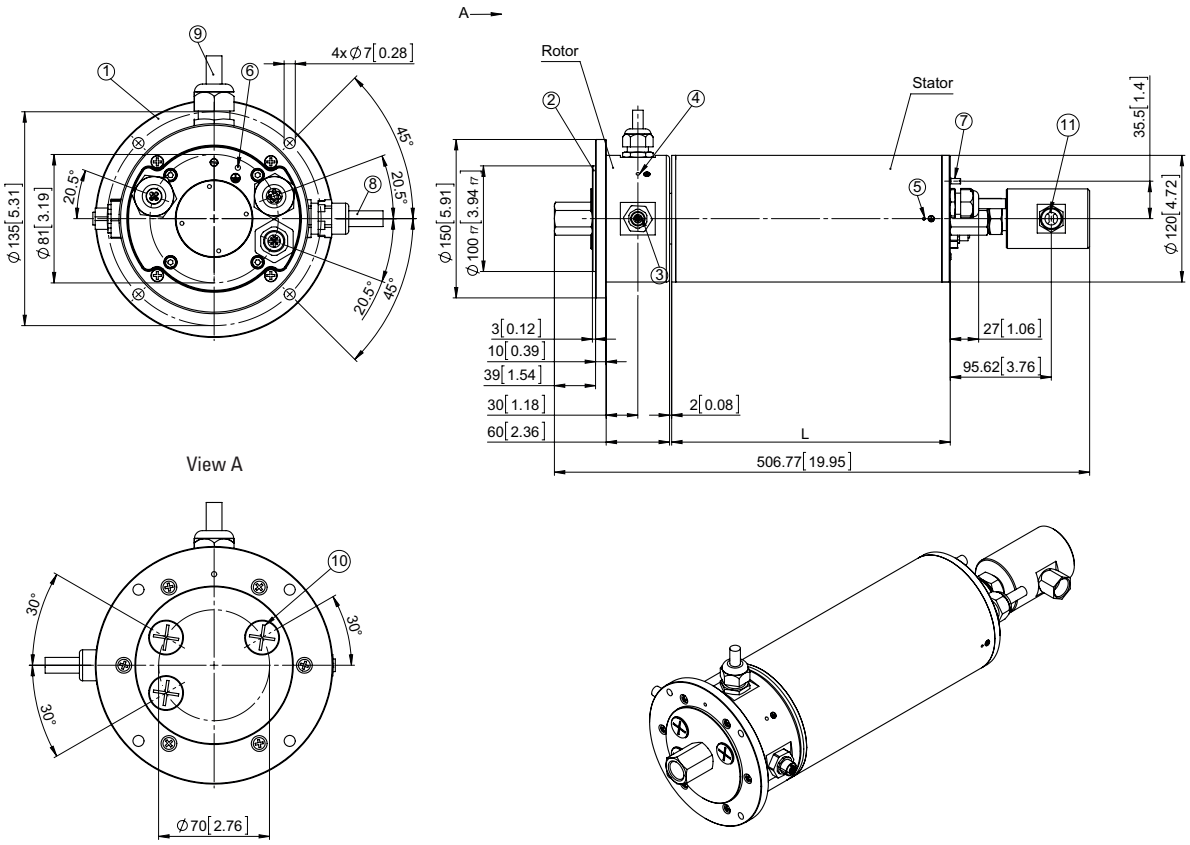
Dimensions

Dimensions in mm [inch]

Version with media lead-through

Example: Type SR120-02-01-06-04-31X2-V100



1 – Mounting flange
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3 – M12 female connector (4-pin)
Ethernet (data transmission) (D-coded)
4 – Grounding PE (optional connectivity)
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6 – Grounding PE (optional connectivity)
7 – Anti-rotating-pin
8 – 2 m [6.56´] connecting cable for power transmission
9 – 2 m [6.56´] connecting cable for signal transmission
10 – Blind plug – depending on order code rotor connections exit axially
11 – Media lead-through – depending on order code connection thread G 1/2, G 1/4, G 3/8