



## Slip ring specification guide

### Type of signals

Orbex differentiates signals into power circuits and signal circuits. In general, a power circuit is used to transfer power to the rotating portion of the machine, not to transfer data. Depending on the slip ring family, power circuits can transfer 5, 10, 15, or 20 amps per circuit, and standard voltages up to 460 VAC. Higher voltage are available as custom configurations.

Signal circuits are normally rated at 2 amps/circuit, and are normally used to transfer data, or power that is lower voltage and less than 2 amps per signal. Signal circuits are often used to transfer digital data, but this will be selected in the next section since high speed data often needs special cabling, shielding and/or termination.

#### Power Circuits

#	Current Rating	Voltage Rating	Dielectric Rating
Ex: 4	10A	480VAC	

#### Signal Circuits

#	Current Rating	Voltage Rating	Signal Description
Ex: 12	2A	24VDC	Thermistors, digital encoder.

### **Data circuits**

Data circuits can be Ethernet, CAN, Profibus, USB 2.0 or slower, HD-SDI, and other standard data interfaces. Ethernet transmission rates of 1000Mbps. are generally achievable on most slip rings if properly configured.

#### Data Channels

# of Channels	Data Type	Data Rate	Termination (connector type)	Special notes
Ex: 1	EtherCat	100Mbits	RJ45	Lapp 2170433 or equiv

**Slip ring form factor**

Generally, Orbex slip rings are available either as a through bore design that has a hollow shaft, or capsule slip rings that do not have a solid shaft.

Hollow Shaft            Max OD(mm)\_\_\_\_\_ Min ID(mm)\_\_\_\_\_  
Capsule Type            Max OD(mm)\_\_\_\_\_  
Length Restrictions    Max length (mm)\_\_\_\_\_

**Dynamic and Life Requirements**

Orbex slip rings have different brush and ring and bearings designs that allow for different top speeds and different operating life ratings. Standard slip rings have rated speeds of 250 rpm. With special brush construction, speeds of a few thousand rpm are possible.

Top Speed: \_\_\_\_\_            Duty Cycle: \_\_\_\_\_            Desired Life: \_\_\_\_\_

**Environmental**

Orbex slip rings are offered in IP51 and IP65. The -F option is the IP65 version and is available for most configurations. The standard temperature range is -20 to +80°C. For extended temperature ranges, the -T option increases the temperature range to -40 to +85°C. Wider temperature ranges can be addressed as custom solutions.

Required Temperature Range: \_\_\_\_\_            IP Protection Level: \_\_\_\_\_

**Special Options**

While Orbex has a wide offering of standard slip ring configuration, many of the units we ship are custom. This may be custom cables and connectors, special temperature ranges, or custom signal mixes. Please describe any customization required:

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Quantity of units required: \_\_\_\_\_