

**MOOG**

# **Ethernet and High Definition Slip Ring Solutions**

*High performance slip ring solutions for reliable  
Ethernet and high definition transmission*



# Motion integration at work for you

Ethernet, developed in 1976, has become the primary LAN technology and serves as the basis for the IEEE 802.3 standard. Ethernet provides significant advantage as a robust, inexpensive and widely supported format leading to its implementation in a wide variety of data communication networks.

Moog's Ethernet slip ring solutions have been developed to provide reliable products to allow transfer of the Ethernet protocol through a rotating interface. The innovative designs meet the challenge of matching impedance, controlling crosstalk and managing losses. A wide range of product solutions are offered with combinations of data and power in multiple mechanical configurations to meet your application needs.

## ADVANTAGES

- Pre-configured for Ethernet and HD transmission
- RJ45 connector for direct plug-and-play standard (M12 and other options available upon request)
- High performance contact technology
- Available with multiple Ethernet channel, power and signal combinations

## APPLICATIONS

- 10 / 100 / 1000BaseT transmission
- Motion control
- Video over Ethernet
- CCTV IP-surveillance



## SELECTING A SLIP RING

There are three important parameters that must be considered when incorporating a slip ring in an Ethernet communication line: insertion loss, return loss and crosstalk. These parameters establish the signal to noise ratio of the transmission line and ultimately the Bit Error Rate (BER).

As the world's leading manufacturer of slip rings, Moog slip rings are uniquely suited for critical Ethernet applications. Founded over 65 years ago, the company has developed products for critical applications in military, space, medical and industrial environments. Our industrial slip ring products are based on our years of material and design experience and provide unrivaled contact technologies.

To respond to market demand for engineered Ethernet solutions, Moog has developed an extensive line of Ethernet products based on our popular capsule and through-bore products.

Model #	Features / Advantages
<b>SRA-73799 / SRA-73806</b>	<ul style="list-style-type: none"> <li>• Smallest Ethernet capsule, 0.44 inch diameter</li> <li>• Ethernet and 6, 2 amp contacts</li> </ul>
<b>SRA-73798 / SRA-73805</b>	<ul style="list-style-type: none"> <li>• 0.61 inch diameter capsule, less than 2 inch total length</li> <li>• Ethernet plus 12, 2 amp contacts</li> </ul>
<b>AC7203</b>	<ul style="list-style-type: none"> <li>• 0.87 inch diameter capsule in 4 lengths</li> <li>• Ethernet plus 2 / 5 / 10 amp circuit options</li> </ul>
<b>AC7188</b>	<ul style="list-style-type: none"> <li>• 0.87 inch diameter capsule</li> <li>• HD video plus 2 amp contacts</li> </ul>
<b>SRA-73810</b>	<ul style="list-style-type: none"> <li>• Compact, .61 inch diameter</li> <li>• HD video plus 12, 2 amp contacts</li> </ul>
<b>SRA-73811</b>	<ul style="list-style-type: none"> <li>• Compact, .87 inch diameter</li> <li>• Dual HD video connections plus 4, 2 amp contacts</li> </ul>
<b>AC7195</b>	<ul style="list-style-type: none"> <li>• 1 inch diameter capsule</li> <li>• Versatile unit with multiple Ethernet lines, 2 / 5 / 10 amp circuits and coax options</li> <li>• Ethernet and HD video capability plus 2 / 5 / 10 amp circuits</li> <li>• IP65 sealing available</li> </ul>
<b>AC7217</b>	<ul style="list-style-type: none"> <li>• 1 inch diameter capsule</li> <li>• Ethernet and HD video capability plus 2 / 5 / 10 amp circuits and coax options</li> <li>• Shorter length and lower cost option than AC7195</li> <li>• IP65 sealing available</li> </ul>
<b>AC7183</b>	<ul style="list-style-type: none"> <li>• 1.34 inch diameter capsule</li> <li>• Completely configurable circuits with multiple Ethernet, HD, 2 / 5 / 10 amp circuits and coax lines</li> </ul>
<b>SRA-73801 / SRA-73808 / SRA-73830</b>	<ul style="list-style-type: none"> <li>• 0.5 inch bore, most compact through-bore solution</li> <li>• Ethernet plus 2 amp or 8 amp circuits</li> <li>• Optional single channel FORJ on ID</li> </ul>
<b>AC6438 / AC6349 / AC7296 / AC6200 / AC4598 (AC6419) / AC6275 (AC6793) / AC6098</b>	<ul style="list-style-type: none"> <li>• Through bores from 0.5 to 4.0 inches</li> <li>• Fiber brush contacts for long life</li> <li>• Extremely reliable communication for UDP or "real-time" formats like EtherCAT® and Ethernet/IP™*</li> </ul>

All Ethernet configurations are unshielded standard, except the AC6275. Contact the factory for details on available shielded options.

\*For UDP or "real-time" Ethernet protocols, Moog recommends gold plated rings with fiber brushes for ultimate reliability. In addition to EtherCAT® and EtherNet/IP™, when properly specified and configured Moog slip rings are compatible with all of the following: CC-Link IE Field®, Ethernet PowerLink, MECHATROLINK III®, PROFINET® and Sercos III®.

# Ethernet slip ring overview

The matrix below provides an overview of the slip ring Ethernet product offerings. Detailed specification sheets are available on each product, visit [www.moog.com/components](http://www.moog.com/components). For additional designs with Ethernet, contact the factory.



SRA-73799



AC7203



AC7195



SRA-73801



AC7296

## Ethernet and High Definition Video Slip Ring Specifications

Model #	Continuous Current (amps)				Coaxial			Ethernet		Size	Bore	Rated Speed
	2	5	10	15+	RG178	RG179	HD-SDI	100BaseT	1000BaseT	DIA" x LG"	DIA"	RPM
SRA-73806	9							1		.44 x 1.16		250
SRA-73799	6								1	.44 x 1.16		250
SRA-73805	12							1		.61 x 1.79		250
SRA-73798	12								1	.61 x 1.79		250
SRA-73810	12						1			.61 x 1.79		250
AC7203	X	X	X					X	X	.87 x 1.14		250
AC7188	X	X					X			.87 x 1.68		250
SRA-73811	4						2			.87 x 1.79		250
AC7217	X	X	X		X	X	X		X	1.0 x 2.6		250
AC7195	X	X	X		X	X	X		X	1.0 x 3.5		250
AC7183	X	X	X		X	X	X	X	X	1.34 x 5.015		250
SRA-73808	12							1		1.375 x 3.5		250
SRA-73801	12								1	1.375 x 3.5		250
SRA-73830	X	8A						X	X	1.375 x 1.32 – 2.22	0.5	250
AC6438		X			X	X		X	X	2.1 x 1.6 – 3.2	0.5	250
AC6349				X	X	X		X	X	3.07 x 2.9 – 6.5	1.0	250
AC7296	X	X	X	X	X	X		X	X	3.9 X 2.13 – 7.34	1.0	250
AC6200	X		X	X	X	X		X	X	3.9 X 2.13 – 4.94	1.5	250
AC4598 / AC6419			X	X	X	X		X	X	3.9 x 2.13 – 4.94	1.5	250
AC6275 / AC6793		X	X	X	X	X		X	X	6.63 x 6.6 – 20.5	2.75	1000
AC6098			X	X	X	X		X	X	8.0 x 4.6 – 14.4	4.00	250

### ADDITIONAL FORMAT OPTIONS

The twisted pairs used for Ethernet can be configured to support multiple other data protocols. Contact the factory for details regarding possible solutions for HDMI, PROFIBUS®, USB, RS-422, RS-485, and other data protocols.

### STANDARD DATA FORMATS

Standard signal circuits can support many data formats without the Ethernet configuration. Data protocols supported by the standard circuits include but are not limited to CAN Bus, CANopen, ControlNet, DeviceNet, RS-232 and RS-423.

Moog's white paper, "When Ethernet Rotates: Ethernet and Slip Rings," provides in-depth information about how slip ring designers are able to meet the challenge of more exacting performance parameters with innovative methods of matching impedance, controlling crosstalk and managing losses.



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