Electrical	
Voltage	Maximum 3500 VAC
Current	Maximum 60 A per pass [1] Maximum 1000 A total current [2]
[1] Higher current ratings possible by wiring passes in parallel	
[2] All current ratings based on a 20 °C ambient temperature	

Electrical Power Performance	
Flashover Voltage	14 000 VAC
Insulation Resistance[1]	Minimum 500 MΩ @ 1 kVDC
Short Circuit Rating	2.2 kA / 1s, 5.6 kA peak
[1] Value dependent on wire type	

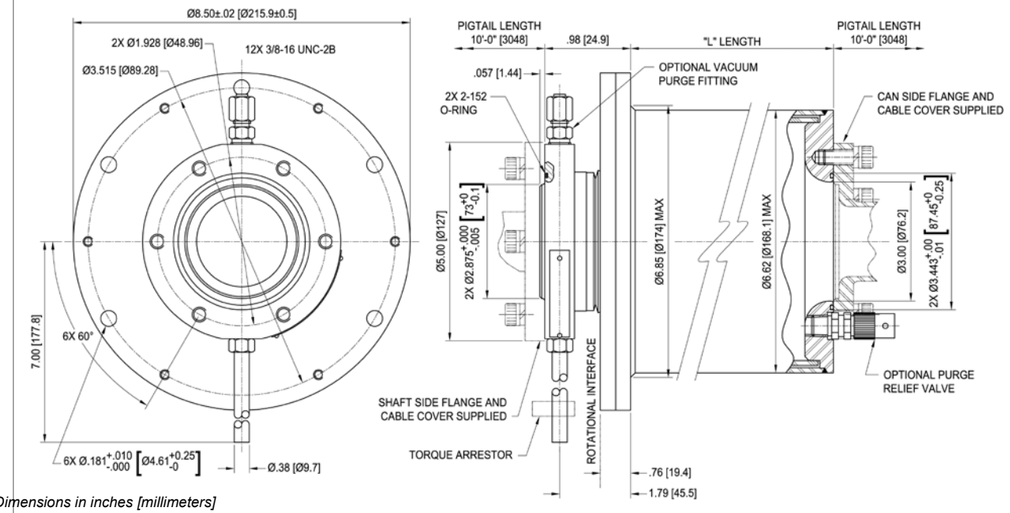
Electrical Signal Performance	
Contact Resistance	20 mΩ nominal
Insulation Resistance[1]	Minimum 500 MΩ @ 1 kVDC
Insertion Loss (Nominal) RG59 coax	1.5 dB maximum up to 30 MHz
Crosstalk (Nominal) RG59 coax	-15 dB maximum up to 30 MHz
[1] Value dependent on wire type	

Mechanical	
Rotation Speed	Maximum 50 rpm continuous [1]
Ingress Protection	IP 66
Operating Temperature	-20 °C to + 55 °C
Housing	Stainless steel (304)
Length "L"	Varies with number of electrical passes
[1] Higher rotational speeds possible. Please consult factory.	

Terminations	
Standard	Loose wire pigtails, 10 ft [3.0 m] in length
Flange and Cable Covers	Various entry threads and orientations available
Cabled Pigtails	Tinned copper braid and heat shrink installed over loose wire pigtails
Special [1]	Supply and installation of connectors, terminals, conduit, cable, glands, junction boxes
[1] Integration of customer supplied product possible	

Additional Options	
Fiber Optics	Fiber Optic Rotary Joint (FORJ) or Optical Converter
Fluid	Fluid Rotary Union (FRU)
Design Certification	ABS, DNV, BV, LRS
Submersed Applications	Fluid filling fittings or fluid filled/pressure compensated at factory Internal pressure compensation
Other Devices[1]	RF Rotary Joint, Shaft Encoder, Sensors, Heater or Heat Trace Cable
Ingress Protection	IP 66, 68 to "*X*" m
Extended Temperature Range	
[1] Integration of customer supplied product possible	

Model 159 Dimensions



Dimensions in inches [millimeters]

Model 176

Slip ring

Description

The Model 176 electrical slip rings are used in marine, industrial and defence applications. Comprised of power and signal electrical passes, the 176 provides superior performance and reliability in demanding operating environments. Highly configurable, the 176 can be customized to meet customer specific needs.

Features

- Stainless steel enclosure for open deck use
- Sealed housing design tested to IP66 standards
- Can accommodate a variety of wire and cable types
- Hazardous area certification available
- Reliable operation under shock and vibration

Benefits

- Each unit designed, manufactured, and tested in accordance with the highest quality standards
- Maintenance free operation
- More than 25 years of proven field performance
- Integration with fiber optic rotary joints and fluid rotary unions to provide a complete rotating interface solution

Typical Applications

- Remote operated vehicles (ROV)
- Winch and TMS applications
- Mine countermeasures
- Towed instrument arrays

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Electrical	
Voltage	Maximum 5000 VAC
Current	Maximum 20 A per pass [1] Maximum 720 A total current [2]
[1] Higher current ratings possible by wiring passes in parallel	
[2] All current ratings based on a 20 °C ambient temperature	

Electrical Power Performance	
Contact Resistance	20 mΩ nominal
Flashover Voltage	16 000 VAC [1]
Insulation Resistance [2]	Minimum 500 MΩ @ 1 kVDC
Short Circuit Rating	1.5 kA / 1s, 3.7 kA peak
[1] Applies to 5 kV rated passes	
[2] Value dependent on wire type	

Electrical Signal Performance	
Contact Resistance	20 mΩ nominal
Insulation Resistance [1]	Minimum 500 MΩ @ 1 kVDC
Insertion Loss (Nominal) RG59 coax	1.5 dB maximum up to 30 MHz
Crosstalk (Nominal) RG59 coax	-15 dB maximum up to 30 MHz
[1] Value dependent on wire type	

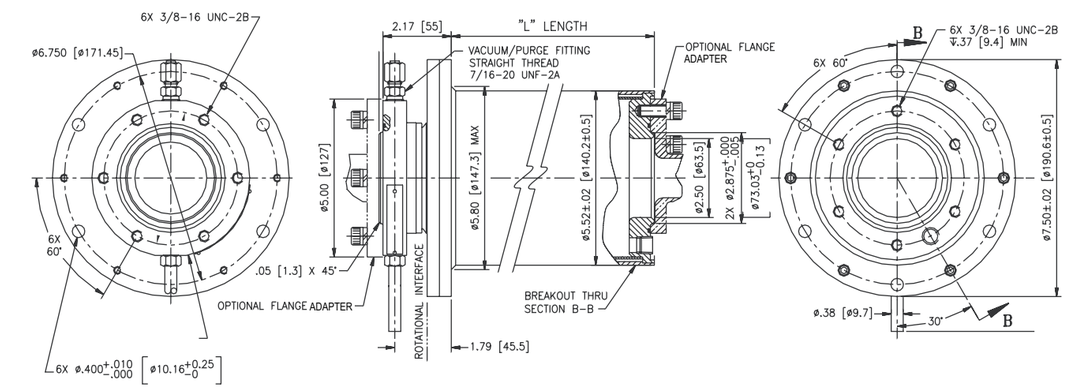
Mechanical	
Rotation Speed	Maximum 50 rpm continuous [1]
Protection Class	IP 66
Operating Temperature	-20 °C to + 55 °C [2]
Housing	Stainless steel (304)
Length "L"	Varies with number of electrical passes
[1] Higher rotational speeds possible. Please consult factory.	
[2] -20 °C to +40 °C for CSA certified Model 176-X	

Hazardous Area Option: Model 176-X	
CSA Certification	Class 1, Group C, D Zone 1 Group IIB
KEMA Certification	ATEX Ex II 2 G Ex d IIB T5 (in accordance with ATEX directive 94 / 9 / EC)
Can be supplied with purge fittings for use with a certified purge system	

Terminations	
Standard	Wire pigtails, 10 ft [3.0 m] in length
Flange & Cable Covers	Various entry threads and orientations available
Special [1]	Supply and installation of connectors, terminals, conduit, cable, glands, junction boxes
[1] Integration of customer supplied product possible	

Additional Options	
Fiber Optics	Fiber Optic Rotary Joint (FORJ) or Optical Converter
Covered Pigtails	Tinned copper braid and heat shrink installed over loose wire pigtails
Fluid Classification	Fluid Rotary Union (FRU)
Design Certification	ABS, DNV, BV, LRS
Submersed Applications	Fluid filling fittings or fluid filled / pressure compensated at factory Internal pressure compensation Model 176TMS Option. Contact factory for details.
Other Devices[1]	RF Rotary Joint, Shaft Encoder, Sensors
Ingress Protection[2]	IP 66
Extended Temperature Range	
[1] Integration of customer supplied product possible	
[2] Contact factory for higher ingress protection	

Model 176 Dimensions



Dimensions in inches [millimeters]

Model 180

Slip ring

Description

Ideal for small systems, the Model 180 is a compact, rugged unit designed for harsh operating conditions. For the hazardous area environment, the 180-X is a fully certified flameproof enclosure. When underwater operational capability is required, the 180 can also be adapted for use as a fluid filled pressure compensated unit. Available in both standard "L" lengths or custom designs.

Features

- Stainless steel enclosure for open deck use
- Sealed housing design tested to IP66 standards
- Can accommodate a variety of wire and cable types
- Hazardous area certification available
- Reliable operation under shock and vibration
- Compact size

Benefits

- Each unit designed, manufactured, and tested in accordance with the highest quality standards
- Maintenance free operation
- More than 20 years of proven field performance
- Integration with fiber optic rotary joints and fluid rotary unions to provide a complete rotating interface solution

Typical Applications

- Remote operated vehicles (ROV)
- Winch and TMS applications
- Industrial machinery
- Seismic surveying

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