

Medium Voltage Electrical Swivel

Model 460

Focal Technologies Corporation, a Moog Inc. company, has over 30 years of expertise in supplying standard and custom marine products for harsh environment applications and is a leading manufacturer of high performance and high quality swivels. Contact Focal for any assistance in selecting the best solution for your requirements.

Description

The Model 460 provides a rotating connection for power cables. The shaft is generally configured with hanging turret side cable pigtails that can be factory installed, and can be replaced in the field by Focal. On the ship side, the swivel is fitted with junction boxes and terminals or hatches for direct cable entry.

The hazardous area certification can be pressurized (Ex p, Model 460), flameproof (Ex d, Model 461) or oil immersion (Ex o, Model 462). The type of protection used will depend on a number of factors. The purge controller, a compressed air treatment system and the necessary piping is supplied with the Ex p swivel. Fluid and fill equipment is supplied with the Ex o swivel. Ingress Protection rating is IP66.

All 400 series products are intended for use in swivel stacks of Floating Production Systems (FPS). They are well suited for any application requiring a product that can withstand harsh marine conditions or require long life with minimal maintenance intervals. Designed and manufactured in our ISO 9001 facility under our project management system, products have a two year warranty and are provided with a complete document package.

All products can be modified to meet specific requirements. Installation, commissioning and service is available. Contact the factory for details.

Features

- 316 stainless steel housing
- Hazardous area certified / Maritime classification
- Voltage up to 36 kV
- Current is unlimited
- Large hollow bore
- IP66
- Adjustable terminals ease installation
- Temperature: -20 °C to +60 °C

Options

- Temperature sensor / Heater
- Shaft encoder
- Current transformers
- PD detection
- IP68-20 m
- Field replaceable bearing
- Model 490 Data Acquisition System



Specifications

Electrical Power	
Passes	Up to 50
Voltage	36 kV max
BIL	145 kV (36 kV rating)
Current	Up to 1000 A/ pass
Fault Current	50 kA – 1 sec
Grounding / Bonding	External ground connections Internal ground bars for stress control sleeves
Interface	
Mounting	Pedestal, designed to meet customer requirements
Access	Model 460 – Hatches to terminals Model 461 – Hatches to terminals or junction boxes Model 462 – Junction boxes
Drive	Torque ears, dimensioned as required Torque arm(s) by others, loose couple required.
Rotation rate	1 rpm, max.
Torque	Depends on configuration
Turret side entry	Model 460 – Direct entry of cable pigtails Model 461 – Direct entry of cable pigtails Model 462 – Junction box
Ship side entry	Model 460 – Direct entry of cable pigtails Model 461 – Direct or indirect entry of cable pigtails Model 462 – Junction box
Air filter/dryer	Cleans and dries an instrument air supply for the purge/pressurization system (Model 494)
Certification	
Marine ¹⁾	DNV GL, ABS, LRS or BV
Hazardous Area ¹⁾	ATEX or IECEx Model 460 – Ex p IIB T5 Gb Model 461 – Ex d IIB T5 Gb Model 462 – Ex o IIB T5 Gb

1) Available on request.

Environmental	
Temperature	-20 °C to +60 °C (operating) -20 °C to +85 °C (storage)
Ingress	IP66
Vibration	1 g in any direction
Physical	
Height	26 ft [8 m] max
Diameter	16 ft [4.9 m] max
Bore diameter	8.2 ft [2.5 m] max
Weight	Depends on configuration
All dimensions depend on the configuration	
Material	316 / 316L stainless steel
Drawing	460-0500-00 461-XXXX-00 462-XXXX-00
Options	
Heater	Model 460 and 461 only – Self-regulating heater, 120 V or 220 V, 1-5 kW
Temperature sensor	PT100 typical, with transmitter for 4-20 mA output
Ingress protection	IP68 – 20 m
Shaft encoder	Most commercially available shaft encoders can be integrated
Current Transducers	Current transducers can be supplied for remote monitoring of current
PD sensor	Partial discharge sensors can be supplied
Accessories	Supply of stress control sleeves, lugs, glands, reducers, plugs as required
Special design	Custom certification for higher voltages and currents, different enclosure sizes
Data monitoring	Model 490 data acquisition system
Conduit	Model 491 for physical protection of special cables

All specifications and information are subject to change without notice. Please contact Focal for the latest updates.

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