

Fiber Optic Swivel

Model 401 / Model 402

Description

The Model 401 Fiber Optic Swivel allows continuous rotation of an optical fiber system. The optical design is completely passive, so the FORJ can accommodate any data format at any of the standard transmission wavelengths.

It is configurable with a combination of multimode or singlemode channels up to a total of 31 passes. Up to 52 passes are available in singlemode only. Integral junction boxes are fitted with patch panels for easy connection of incoming cables. Any standard fiber connector type can be accommodated.

The Model 402 adds the option of up to 48 low power signals, Ethernet, or similar (50 V / 3 A). Both models can be fitted with either an incremental or absolute encoder.

The Fiber Optic Swivel is certified as a flameproof (Ex d) enclosure. Ingress protection is IP66 / IP68-20 m.

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 marine conditions or require long life with infrequent 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
- IP66 / IP68-20 m
- Integral junction boxes, bottom entry only
- Standardized design can accommodate a variety of cable entry configurations
- Temperature: -20 °C to +60 °C

Options

- Temperature sensor
- Shaft encoder
- Mounting pedestal
- Model 490 data acquisition system
- Model 491 conduit assemblies



Specifications

Electrical Signals	
Passes	Up to 48
Voltage	50 V max
Current	3 A max
Intrinsic Safety	Certified as associated apparatus
Optical, Model 300	
Passes	Up to 52
Fiber	SM and / or MM (50/125 μ m or 62.5.125 μ m)
Insertion loss, max.	Refer to Model 300 datasheet, typically less than 6 dB
Rotational variation	Refer to Model 300 datasheet, typically less than 2 dB
Return loss, min	18 dB
Interface	
Mounting	Flange with clearance holes
Access	N/A
Drive	Pin in a forked torque ear, loose couple required
Rotation rate	10 rpm, max
Torque	4 lbs-ft [6 N-m]
Turret side entry	Direct entry of factory installed cable pigtailed
Ship side entry	Direct entry of customer installed cable pigtailed
Optical connectors	Standard optical connections are via FC/PC, ST bushings. Variations can be supplied to meet customer requirements
Electrical connectors	Model 402 only – Ethernet connections include RJ-45 (8P8C), 9 Pin D-Sub, 75 Ohm BNC Jack, USB 1.0, and 5 Pin Device Net. Consult factory for additional information

1. Available on request.

Certification	
Marine ¹⁾	ABS, DNV GL LRS, BV
Hazardous area	Ex d IIB T5 Gb DNV 11 ATEX 06548X IECEX DNV 11.0016X (AEx, CSA) ¹⁾
Environmental	
Temperature	-20 °C to +60 °C (operating) -20 °C to +70 °C (storage)
Ingress	IP66 / IP68-20 m
Ship motion	1 g in any direction
Physical	
Height	Model 401 – 38" [965 mm] Model 402 – 44" [1120 mm]
Diameter (max)	16" [405 mm]
Bore diameter	n/a
Weight	Model 401 – 200 lbs [91 kg] Model 402 – 230 lbs [105 kg]
All dimensions depend on the configuration	
Material	316 / 316L stainless steel
Drawing	401-7001-00 402-7003-00
Options	
Temperature sensor	PT100 typical with transmitter for 4-20 mA output
Shaft encoder	Most commercially available shaft encoders can be integrated
Pedestal	Designed to meet customer requirements
Data monitoring	Model 490 data acquisition system
Conduit	Model 491 for routing fiber exposed to high temperature (> 80 °C)

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

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