

Low Voltage Electrical Optical Swivel

Model 430 / Model 432

Description

The Model 430/432 provides a rotating connection for low voltage power, electrical signal and optical cables in a single package. The shaft is generally configured with hanging turret side cable pigtailed that are factory installed. They can be replaced in the field by Focal trained personnel. On the ship side, the swivel is fitted with increased safety junction boxes.

This model is designed to be located at the top of a swivel stack, making it the swivel of choice when a fiber optic rotary joint is required. If a hollow bore is required, the Model 440 or Model 450 is recommended.

The swivel is certified as a flameproof enclosure with increased safety junction boxes on the ship side (Ex de). It is certified for use with intrinsically safe circuits (Ex de[ib]). Ingress protection is IP66.

The Model 432 is a larger version of the Model 430 to accommodate higher currents and more electrical passes.

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 / marine classification
- Voltages to 1 kV / Currents to 200 A
- IP66
- Temperature: -20 °C to +60 °C

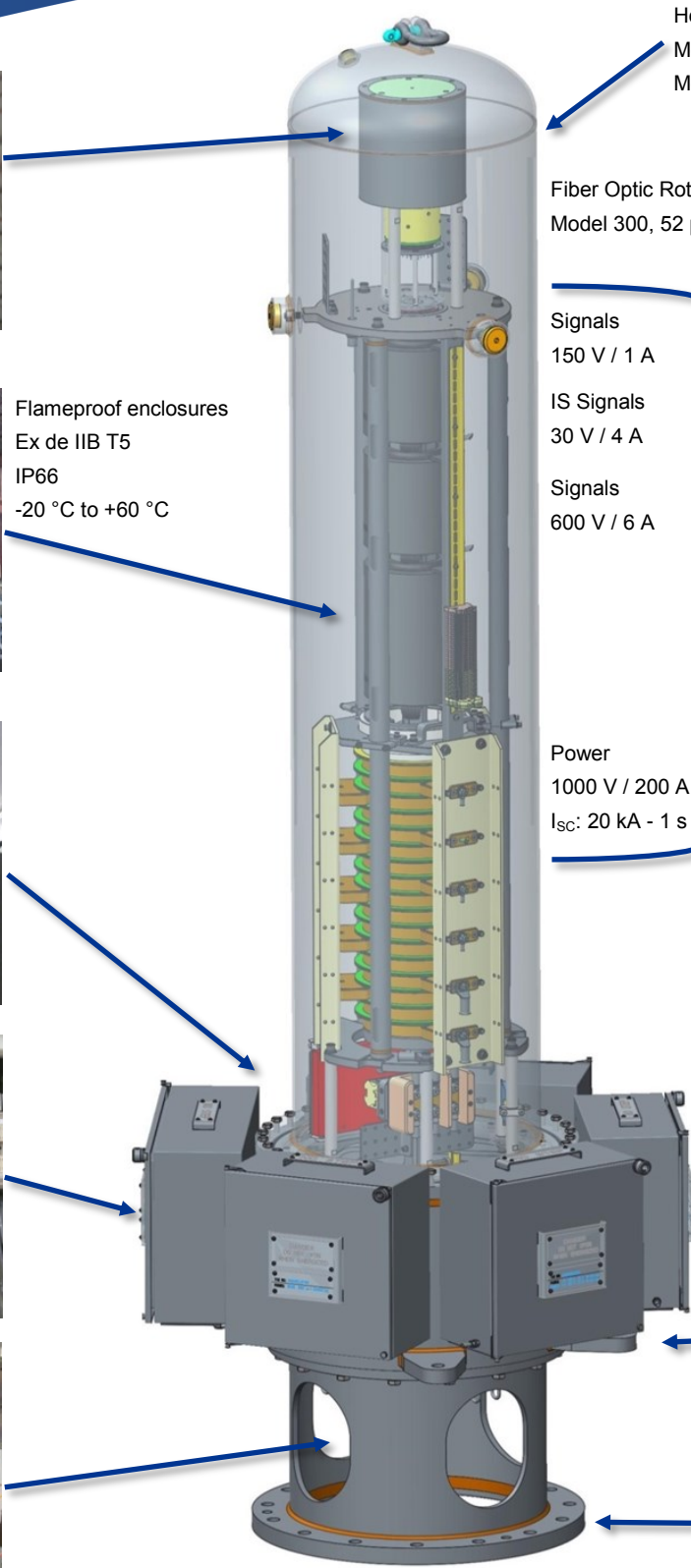
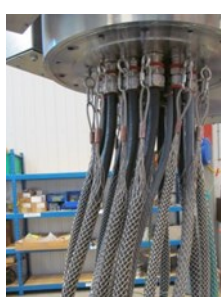
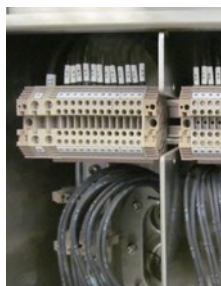
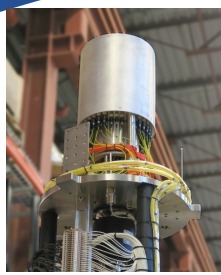
Options

- Fiber optic rotary joint
- Temperature sensor / Heater
- Shaft encoder
- IP68 - 20 m
- Extended temperature range
- Model 490 data acquisition system
- Model 491 conduit assemblies



FOCAL™

Typical Model 430/432 Design



Height and weight depend on the circuit configuration
Model 430 Ø = 20" [510 mm]
Model 432 Ø = 30" [760 mm]

Fiber Optic Rotary Joint (FORJ)
Model 300, 52 pass

Signals
150 V / 1 A
IS Signals
30 V / 4 A
Signals
600 V / 6 A

Ethernet 10/100/1000 BaseT(X)
Profibus
Video

Configuration of circuits, voltage
and current ratings are defined
by the customer

Power
1000 V / 200 A
I_{sc}: 20 kA - 1 s

Increased safety (Ex e) junction boxes based
on customer requirements

Rotating

Stationary

Flameproof enclosures
Ex de IIB T5
IP66
-20 °C to +60 °C

Specifications

Electrical Signals	
Passes	Up to 600
Voltage	600 V maximum
Current	6 A maximum
Intrinsic Safety	Certified as associated apparatus
Electrical Power	
Passes	Up to 20
Voltage	1000 V maximum
Current	200 A maximum
Fault Current	20 kA rms – 1 sec
Grounding / Bonding	External ground connections
Optical, Model 300	
Passes	Up to 52
Fiber	SM and / or MM (50 / 125 µm and 62.5 / 125 µm)
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	Pedestal, designed to meet customer requirements
Drive	Torque ears, designed to meet customer requirements, loose couple required
Rotation Rate	1 rpm, max.
Torque	Model 430 600 lb-ft [800 N-m] Model 432 1150 lb-ft [1560 N-m]
Turret Side Entry	Direct entry of factory installed cable pigtails
Ship Side Entry	Increased safety junction boxes based on customer requirements

¹ Available on request

Certification	
Marine ¹	ABS, DNV GL, LR, BV
Hazardous area	430: Ex de IIB T5 Gb Ex de[ib] IIB T5 Gb DNV 13 ATEX 2434X IECEX DNV 12.0010X (AEx, CSA) ¹
	432: Ex db eb [ib] IIB T5 Gb Ex db eb IIB T5 Gb Presafe 17 ATEX 10224X IECEX PRE 17.0026X
Environmental	
Temperature	-20 °C to +60 °C (operating) -20 °C to +85 °C (storage)
Ingress	IP66
Vibration	1 g in any direction
Physical	
Height	40 " - 110 " [1 m - 2.8 m]
Diameter (cover)	Model 430 – 20 " [510 mm] Model 432 – 30 " [760 mm]
Diameter (over JB's)	Model 430 – 50 " [1270 mm] Model 432 – 60 " [1530 mm]
Bore Diameter	Not available
Weight	Model 430 2000 – 2500 lb [900 – 1150 kg] Model 432 5000 – 6000 lb [2250 – 2700 kg]
All dimensions depend on the configuration	
Material	316 / 316L stainless steel
Drawing	430-7006-00
Options	
Shaft Encoder	Most commercially available shaft encoders can be integrated
Heater	Self-limiting heater, 120 V or 220 V, 100-500 W. T4 temperature class
Special Design	Custom certification for higher voltages and currents, different enclosure sizes
Temperature Sensor	PT100 typical with transmitter for 4 - 20 mA output
Ingress Protection	IP68-20 m
Data Monitoring	Model 490 Data Acquisition System
Conduit	Model 491 for routing fiber exposed to high temperature (120 °C)

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