

Subsea Valve Position Sensors



'Robust, highly accurate and reliable instrumentation with an excellent track record worldwide'



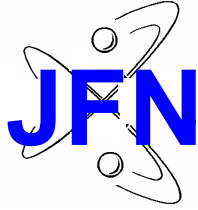
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A subsidiary of James Fisher and Sons Public Limited Company
Registered Number 4047465 VAT Registration Number 609780221

Registered Office Fisher House Michaelson Road Barrow-in-Furness Cumbria LA14 1HR



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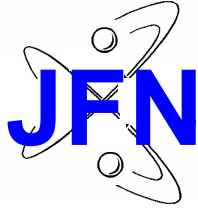
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1. JFN Introduction

JFN is a wholly owned subsidiary of the James Fisher Group, which is a leading service provider in all sectors of the marine industry and a specialist supplier of engineering services to the nuclear industry in the UK and abroad.

Based in North Yorkshire (UK), JFN operates a high quality design & manufacturing facility to enable the supply of high integrity equipment for deployment in the adverse environment of the sub-sea industries.

This document provides details of JFN's range of Valve Position Sensors & further information in respect of the company's technical capabilities in support of the products.

2. Subsea Valve Position Sensors

JFN manufacture a range of patented 2 wire, 4-20mA output, non-contacting magnetic Subsea Valve Position Sensors. Designed for extended operations (circa 20 years) with a high level of reliability and accuracy and a demonstrable track record worldwide.

The standard product range offered comprises the following:

- Pillar Mounted Single Output: **Appendix 1**
- Pillar Mounted Dual Output: **Appendix 2**
- Flush Fitting Single Output: **Appendix 3**

Technical details of each of the above units are included in the appendices identified.

3. Design Services

Although the Subsea Valve Position Sensors included in this document are offered as standard products, the potential requirement for modifications or complete bespoke solutions to address specific client applications is fully appreciated.

JFN is able to offer a comprehensive design service to:

- Ensure suitability of the product for the application
- Provide design validation against client specifications



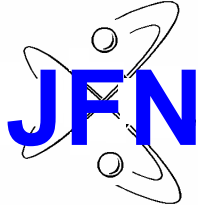
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- Undertake design modifications to the standard product
- Engineer bespoke solutions to client requirements

JFN operates state of the art 3D solid modelling design software to ensure the integrity of the product and the design process, and to improve efficiency.

4. Manufacture

All Subsea Valve Position Sensor components are manufactured, assembled & tested at the JFN Malton facility to approved quality plans & procedures.

JFN operates a CNC machine shop which is capable of accepting component design data directly from the design file; no manual input of dimensional data is required.

The accuracy of machined components may be inspected using either an integral electronic probe system installed on the CNC machine, or an independent co-ordinate measurement process.

The scheduling of work through the machine shop is managed via an Enterprise Resource Planning (ERP) software package. This facility enables the effective utilisation of the machines, raw materials & accurate cost control.

5. Installation

JFN Subsea Valve Position Sensors are designed for ease of installation and are supplied with comprehensive installation documentation as standard, however installation training courses can be arranged if required to take place at either JFN or client premises.

6. Technical Support

JFN is committed to provide in service support to supplied products. Experienced & qualified engineers are available to respond to design, performance or installation issues in a timely and professional manner.



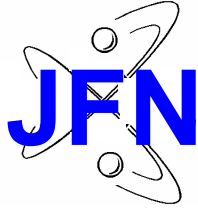
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Appendix 1

Pillar Mounted Single Output



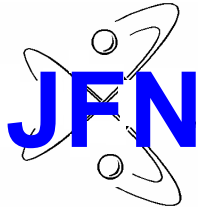
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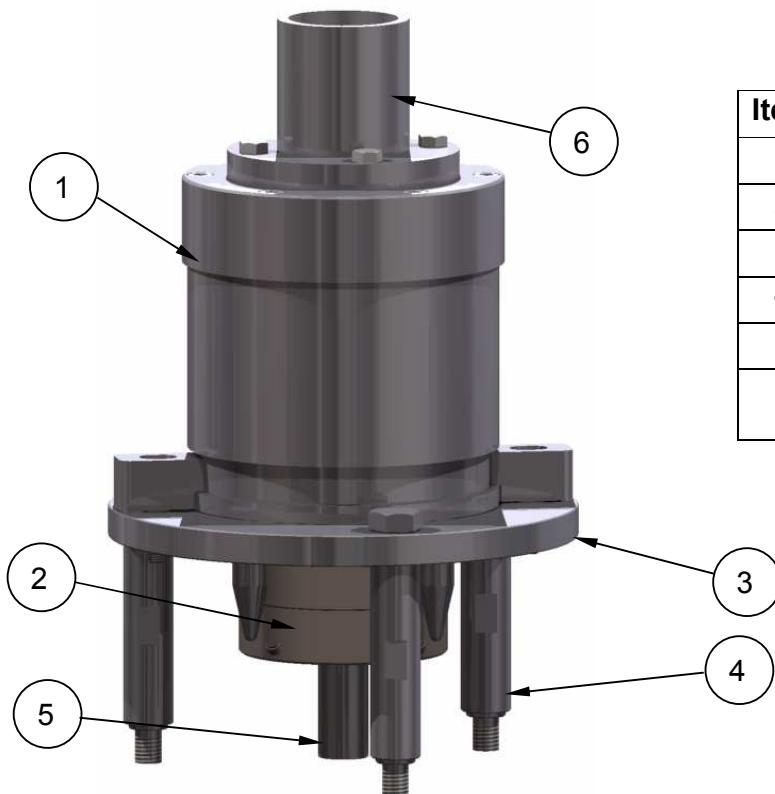
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Pillar Mounted Single Output Variant

Permits easy installation onto a wide variety of valve types whilst utilising a standard body assembly to minimise stocking requirements.



Item	Description
1	Sensor Body Assy.
2	Magnet Drivehead Assy.
3	Mounting Plate
4	Support Pillars
5	Actuator Output Shaft
6	Bulkhead Connector or Harness of Customer's choice

Design Specifications

Angle of Operation	0° to 360° (Programmed to customer requirements)
Accuracy	Better than $\pm 0.6\%$ (Better than 0.4% optional)
Resolution	Better than $\pm 0.05\%$
Input Voltage	14 to 28 VDC
Output Current (Normal Range)	4 to 20 mA
Operating Temperature	-20° to 40°C
Test Pressure	Up to 3000 PSI (To customer requirements)



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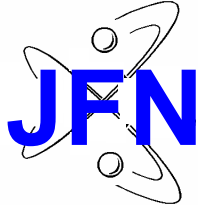
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Appendix 2

Pillar Mounted Dual Output



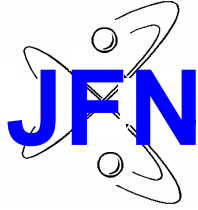
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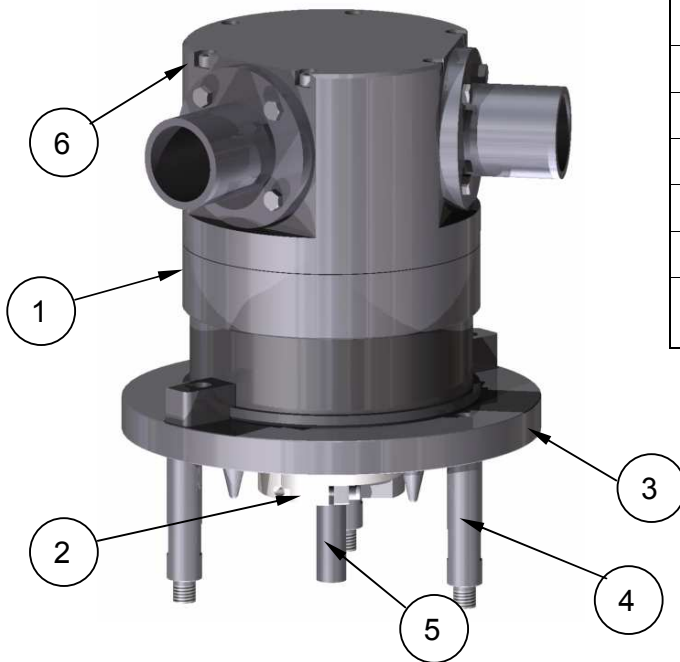
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Pillar Mounted Dual Output Variant

Fitted with two independent sets of electronics and either one or two connectors for integral redundancy, or for independent control and monitoring.



Item	Description
1	Dual Sensor Body Assy.
2	Magnet Drivehead Assy.
3	Mounting Plate
4	Support Pillars
5	Actuator Output Shaft
6	Bulkhead Connectors or Harnesses of Customer's choice

Design Specifications	
Angle of Operation	0° to 360° (Programmed to customer requirements)
Accuracy	Better than ± 0.6% (Better than 0.4% optional)
Resolution	Better than ± 0.05%
Input Voltage	14 to 28 VDC
Output Current (Normal Range)	4 to 20 mA
Operating Temperature	-20° to 40°C
Test Pressure	Up to 3000 PSI (To customer requirements)



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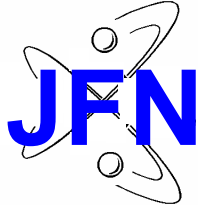
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Appendix 3

Flush Fitting Single Output



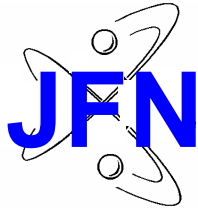
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Flush Fitting Single Output Variant

Designed to bolt directly on to the actuator for compactness and ease of installation.



Item	Description
1	Sensor Body Assy.
2	Magnet Drivehead Assy.
3	Fastening Clamps
4	Actuator Output Shaft
5	Bulkhead Connector or Harness of Customer's choice

Design Specifications	
Angle of Operation	0° to 360° (Programmed to customer requirements)
Accuracy	Better than $\pm 0.6\%$ (Better than 0.4% optional)
Resolution	Better than $\pm 0.05\%$
Body Zero Setting Adjustment	$\pm 5\%$
Input Voltage	14 to 28 VDC
Output Current (Normal Range)	4 to 20 mA
Operating Temperature	-20° to 40°C
Test Pressure	Up to 3000 PSI (To customer requirements)



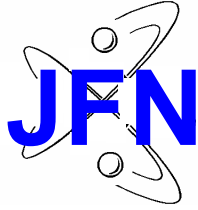
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Contact Details

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