



**FI1500 Flow Indicators
user manual**

**Bedienungsanleitung
FI1500 Durchflussanzeiger**

**Manuel d'utilisation des FI1500
Indicateurs de débit**

**Manual de usuario de los
indicadores de caudal FI1500**

www.webtec.com

Introduction

Flow Indicators are designed for continuous monitoring or intermittent use commissioning and servicing hydraulic systems up to 350 bar, 5000 psi. The large clear 63 mm (2 1/2") diameter dial ensures that quick checks can be made to determine pump performance and setting of flow control valves. They can be used on mobile and industrial hydraulic circuits. Also lubrication and coolant systems using oil. These direct acting flow indicators can be installed in hazardous areas or on applications where no power is available. The flow indicator design ensures good reliability and minimises the effects of contamination.

The FI range of products can be divided into two families:

1. FI750
2. FI1500

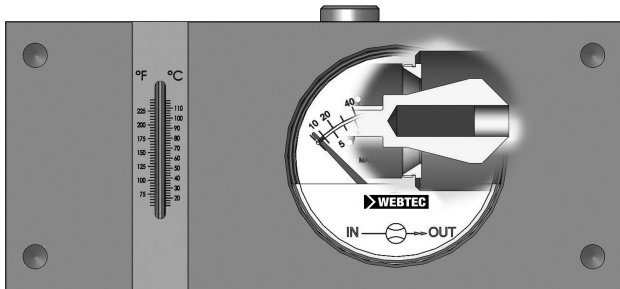
This manual covers the FI1500 range of products.

Before first operating the equipment read the whole of these instructions. Safety may be impaired if they are not followed.

Webtec have been designing and manufacturing flow meters and hydraulics components for over 50 years. We operate within a Quality Management System that complies with the requirements of BS EN ISO 9001:2000 which is externally audited and certificated each year. Beyond compliance to the standard, Webtec is committed to continually improving in everything we do; with particular emphasis on understanding what matters to our customers and suppliers, and designing our systems and work to meet their needs. We are always keen to hear from customers who may have special requirements not covered by our standard ranges.

Basic operation

The flow indicator consists of a sharp edged orifice and tapered metering piston. The piston movement is directly proportional to the flow rate and the sharp edge orifice minimises the effects of viscosity. The piston is magnetically coupled to the rotary pointer assembly which registers on a clear 63 mm (2 1/2") scale displayed in lpm and USgpm. The FI1500 flow indicators should not be installed in circuits where the flow is reversed. See our RFI series for reverse flow capability.



Specification

- **Ambient temperature:** -10 to 50°C (14 to 122°F)
- **Fluid temperature:**
Continuous: 20 to 80°C (65 - 176°F)
Intermittent use (less than 10 minutes) >80 to 110°C (>176 - 230°F)
- **Humidity:** 10 - 90 % RH
- **Fluid:** see model configuration
- **Seals:** FKM as standard (EPDM available on request)
- **Accuracy:** 4% of full scale (calibrated at 28 cSt)
- **Pressure:** 350 bar (5,000 psi)
- **Flow range:** see model configuration
- **Dimensions:** 199 x 87 x 74 mm (7.8" x 3.4" x 2.9")
- **Weight:** Aluminium: 3.2 kg (7 lbs), Brass: 9.2 kg (20.2 lbs)

Installation guidance

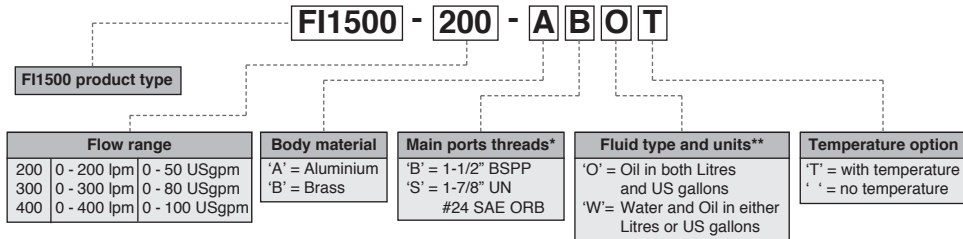
The unit can be installed in any position, horizontal or vertical or anywhere in between. The unit is designed to panel mount or pipe mount. When panel mounting ensure that rear and bottom faces of the unit are at least 12 mm (1/2") from any ferrous material such as an iron panel or base. The piston contains a magnet that can be affected by close proximity of ferrous material. The front face can be mounted directly to ferrous panels. Four 3/8" UNC x 14 mm deep holes are provided for this purpose.

The indicator can be connected into pressure or return lines, however, do not reverse flow; the flow indicator may be damaged and will act as a non return valve.

Problems are generally few but debris from contaminated oil sometimes adheres to the piston or lodges between piston and seat. This jams the piston partially open, causing the flow needle to fail to return to zero. For recalibration or repair please contact the service centre listed on the rear cover of this manual. Care should be taken to ensure that the flow block is installed in a position that is not subjected to excessive pulsation as this can cause incorrect readings. Connections can be by flexible hoses or steel pipes.

For heavy-duty applications, for example installation close to a piston pump, consult the Webtec Products sales office.

Model configuration



* Pressure ports follows main port - 'B' main port - 1/4" BSPP pressure port
'S' main port - 1/4" NPTF pressure port

** Units on 'W' fluid type follow main port - Scale in litres for BSPP main ports
Scale in US gallons for UNF main ports

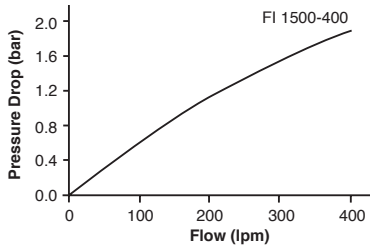
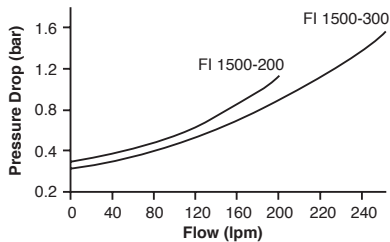
Models available as standard

Model number	
FI1500 - 200 ABO	FI1500 - 300 ASOT
FI1500 - 300 ABO	FI1500 - 400 ASOT
FI1500 - 400 ABO	FI1500 - 200 BBW
FI1500 - 200 ABOT	FI1500 - 400 BBW
FI1500 - 300 ABOT	FI1500 - 200 BBWT
FI1500 - 400 ABOT	FI1500 - 400 BBWT
FI1500 - 200 ASO	FI1500 - 200 BSW
FI1500 - 300 ASO	FI1500 - 400 BSW
FI1500 - 400 ASO	FI1500 - 200 BSWT
FI1500 - 200 ASOT	FI1500 - 400 BSWT

Webtec are always happy to hear from customers who have unique requirements please contact Webtec or your local distributor to discuss your requirements

Technical Information

Typical pressure drop curves. Oil viscosity 25 centistokes. (1 bar = 14.5 psi, 10 lpm = 2.64 USgpm)



Maintenance and service

For calibration, please return the flow indicator to Webtec or your local distributor.

Calibration

The FI1500 is calibrated at a mean viscosity of 28 cSt using ISO32 hydraulic mineral oil to ISO11158 category HM.

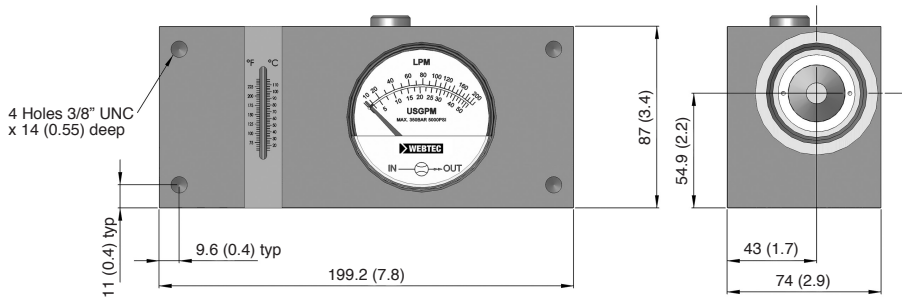
Recommended period between calibrations is 12 months. Maximum period between calibrations is 36 months. Unit accuracy may be affected by operating cycle, fluid condition or extended periods between recalibrations.

Accessories

Pressure gauge optional 63 mm (2 1/2") diameter glycerine filled pressure gauge fitted directly into a connection in the block or remotely connected by micro bore hose. For accessories specifications please consult Webtec or your local distributor.

Installation

Dimensions in Millimetres (Inches)



Manufacturer's Limited Warranty

Webtec Products Ltd. warrants to the original purchaser, for the period of one year from the date of purchase, that the product is free from defect in materials and workmanship. This warranty does not cover any part of the product that has been damaged due to abuse or operation beyond the specifications stated by Webtec Products Ltd. in the associated literature. Webtec Products Ltd. sole obligation under the warranty is limited to the repair or the replacement of parts, at no charge, found to be defective after inspection by Webtec Products Ltd. or one of its divisions. Repair or replacement of parts will be at Webtec Products Ltd. discretion. Authorisation from Webtec Products Ltd. is required before any product can be returned under warranty. Cost of shipping and handling is covered during the first 12 months from the date of purchase. Webtec Products Ltd. is not liable for any consequential damages or any contingent liabilities arising out of the failure of the product, component part or accessory. The above warranty supersedes and is in place of all other warranties, either expressed or implied and all other obligation or liabilities. No agent, or representative or distributor has any authority to alter the terms of this warranty in any way.

Begrenzte Garantie des Herstellers

Webtec Products Ltd. garantiert an den Erstkäufer, über einen Zeitraum von einem Jahr ab Verkaufsdatum, dass das Produkt frei von Fehlern in Material und Verarbeitung ist. Diese Garantie erstreckt sich nicht auf Teile des Produkts, welche durch Missbrauch, fehlerhafter Bedienung oder Bedienung über die Grenzen der Spezifikationen (wie von Webtec Products Ltd in der Literatur angegeben) hinaus, entstanden sind. Die einzige Verpflichtung von Webtec Products Ltd. unter dieser Garantie, ist beschränkt auf die kostenlose Reparatur oder den Ersatz von Teilen, welche für defekt befunden wurden, nach einer Inspektion von Webtec Products Ltd, oder einer ihrer Divisionen. Reparatur oder Ersatz von Teilen erfolgt nach Ermessen von Webtec Products Ltd. Eine Ermächtigung durch Webtec Products Ltd ist notwendig, bevor ein Produkt unter Garantie retourniert werden darf. Versand-und Bearbeitungsgebühren sind, während den ersten 12 Monaten ab Verkaufsdatum, gedeckt. Nach 12 Monaten ab Verkaufsdatum sind Versand und Bearbeitungsgebühren nicht durch die Garantie gedeckt. Webtec Products Ltd. ist nicht haftbar für Folgeschäden oder Folgekosten, welche durch einen Ausfall oder einer Fehlfunktion des Produkts, Zubehörs, Teile davon oder Komponententeile entstehen könnten. Obige Garantie ersetzt und ist anstelle aller anderen Garantien, welche angeführt oder angedeutet wurden und anstelle aller anderen Verpflichtungen und Verbindlichkeiten. Kein Wiederverkäufer, Agent oder Distributor hat ein Recht die Konditionen dieser Garantie in irgendeiner Weise zu ändern.

Garantie limitée du fabricant

Webtec Products Ltd. garantit à l'acheteur original, pendant un an à compter de la date d'achat, que le produit est libre de tout défaut dans les matériaux ou défaut de fabrication. La présente garantie ne couvre aucune partie du produit ayant été endommagée suite à tout usage abusif ou non conforme aux spécifications formulées par Webtec Products Ltd. dans la documentation associée. La seule obligation de Webtec Products Ltd. aux termes de la garantie est limitée à la réparation ou au remplacement, à titre gratuit, des pièces défectueuses après inspection par Webtec Products Ltd. ou l'une de ses divisions. La réparation ou le remplacement des pièces est décidé à la discrétion de Webtec Products Ltd. Une autorisation de Webtec Products Ltd. est requise avant qu'un produit puisse être retourné sous garantie. Les frais d'expédition et de manutention sont couverts pendant les 12 premiers mois à compter de la date d'achat. Webtec Products Ltd. n'est pas tenue pour responsable de tous dommages indirects et dénie toute responsabilité contingente qui résulterait de toute panne du produit, de ses composantes ou de ses accessoires. La garantie annule et remplace toutes les autres garanties, explicites ou implicites, et toute autre obligation ou responsabilité. Aucun agent, représentant ou distributeur n'est autorisé à modifier de quelque façon que ce soit les conditions de la présente garantie.

Garantía limitada del fabricante

Webtec Products Ltd. garantiza al comprador original, por un período de un año a partir de la fecha de compra, que el producto carece de defectos de materiales y mano de obra. Esta garantía no cubre ninguna pieza del producto que se haya dañado debido a abuso u operación fuera de las especificaciones indicadas por Webtec Products Ltd. en los folletos relacionados. La única obligación de Webtec Products Ltd. de acuerdo a esta garantía se limita a la reparación o sustitución de piezas, sin cargo alguno, que se hallen defectuosas tras inspección por parte de Webtec Products Ltd. o una de sus divisiones. La decisión de reparar o sustituir piezas será a discreción de Webtec Products Ltd. Antes de que se pueda devolver bajo garantía cualquier producto se requerirá autorización de Webtec Products Ltd. Está cubierto el coste de transporte y manipulación durante los primeros 12 meses a partir de la fecha de compra. Webtec Products Ltd. no es responsable de ningún daño consecencial ni de pasivos contingentes que se ocasionen debido al fallo del producto, de una pieza componente o de un accesorio. Esta garantía anula y sustituye cualquier otra garantía, bien explícita o implícita, y cualesquiera otras obligaciones o responsabilidades. Ningún agente, representante o distribuidor posee autoridad para modificar las condiciones de esta garantía de ninguna forma.

For Sales & Service contact - Auskunft & Beratung
Contact Service commercial & maintenance - Para más información sobre ventas y servicios contactar con



St. Ives, Cambs, PE27 3LZ, UK

Tel: +44 (0) 1480 397 400 - sales-uk@webtec.com

中国

Tel: +852-34624900 - sales-hk@webtec.com

Deutschland

Tel: +49 (0)231-9759-747 - vertrieb-de@webtec.com

France

Tel: +33 (0) 3 27 82 94 56 - ventes-fr@webtec.com

U.S.A & Mexico

Tel: +1-800-932-8378 - sales-us@webtec.com

www.webtec.com

Webtec reserve the right to make improvements and changes to the specification without notice.

Webtec behält sich das Recht vor, Verbesserungen oder Änderungen der Spezifikationen ohne Ankündigung vorzunehmen.

Webtec se réserve le droit d'améliorer et de changer ses spécifications sans préavis.

Webtec se reserva el derecho de realizar mejoras y cambios a las especificaciones sin previo aviso.

Designed and produced by Webtec - Entwickelt und hergestellt von Webtec - Conçu et produit par Webtec - Diseñado y producido por Webtec

F1500-MA-MUL-2275.pdf - FT10145 - Issue E - 01/17



Certificate No.8242