

## FT3 Industrial Turbine Flowmeter

The Flowquip range of threaded FT3 industrial turbine flowmeters provide a highly accurate and economical means of measuring flows of clean liquids over the range 1 to 2250 l/min with bore sizes available from 15mm to 80mm.

- ◆ **Highly accurate measurement of flow**
- ◆ **Long bearing life**
- ◆ **Robust helically milled rotor**
- ◆ **Low pressure drop**
- ◆ **Bi-directional flow capability**
- ◆ **ATEX approvals for use in hazardous areas**



### Application

Flowquip industrial turbine flowmeters can be applied to a wide range of duties in the process industry measuring both lubricating and non-lubricating liquids of low viscosity. The all-stainless steel construction gives good corrosion resistance. Furthermore the FT3 is largely unaffected by changes in liquid density and temperature. It is a very economic flow solution offering outstanding accuracy with a bearing construction which gives an extremely reliable performance over long periods. Typical applications include the measurement of water, hydraulic oils and chemicals. The flowmeter has laboratory standards of accuracy so it is also used for testing the performance of pumps, jets, turbines, engines, valves and even other flowmeters. ATEX approval means the FT3 can be installed in intrinsically safe areas (EEx ia IIC T5) when fitted with an I.S. pickoff coil.

### Principle of Operation

The FT3 is an electro-mechanical volumetric device. An important feature of the design is an extremely strong rotor construction utilising helical blades machined from solid, which is virtually indestructible. The variable inductance pickoff coil mounted on the flowmeter senses the passage of the rotor blades and emits a sine wave voltage pulse, the frequency of which is proportional to volumetric

flowrate. This signal is either fed directly to an instrument to provide a local display or into a scaler/conditioner for transmitting to a remote location. Flowquip have a range of instrumentation to suit all needs.

### Calibration

All Flowquip FT3 turbines are individually calibrated with water and are traceable to national standards. A test certificate is issued for each meter showing the derived 'K' factor which is used to set secondary instrumentation.

### Installation

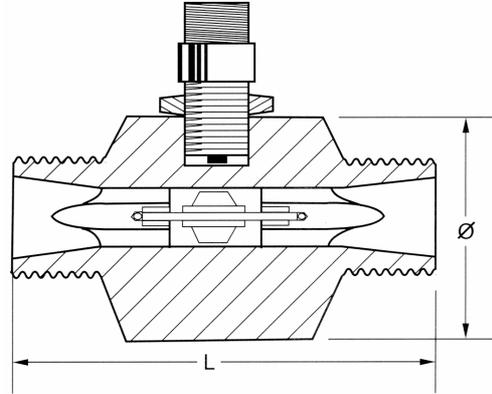
FT3 turbine flowmeters with threaded end connections are designed for mounting directly into pipelines. For best performance installation should be in a straight section of pipe of equal bore size to the flowmeter allowing at least 10 pipe diameters upstream and 5 pipe diameters downstream. All control valves should be installed downstream of the flowmeter. An upstream filter is recommended to prevent ingress of foreign matter. Preamplifiers are only needed for installations having very long transmission distances or in case of electrically or magnetically noisy environments close to pumps, motors, generators, switchgear or heavy current carrying cables. Intrinsically safe systems always require an IS pick-off coil.





## Specification

Linearity:	±0.5% of reading throughout the linear range
Repeatability:	±0.1% of reading
Pressure Drop:	0.5 bar at max. flow
Maximum overrange:	Up to 120% of the rated maximum flow rate for short duration
Max Working press.:	35 barg (special connections available up to 350 barg)
Temperature Range:	Standard pickoff -30°C to +110°C I.S. pickoff -30°C to +110°C High temp -30°C to +232°C
Body Connections:	BSP parallel external (special connections available for hydraulic applications)
Pick-off Coil:	Refer to data sheet for full details



## Materials of Construction

Body:	316 stainless steel
Sleeve bearings:	Standard - Carbon-graphite filled PTFE (max temp. 180°C) Optional - Tungsten carbide (max temp. 232°C)
Thrust balls/plate:	Tungsten carbide or ceramic
Rotor:	431 stainless steel or ferralium
Rotor shaft:	Tungsten carbide
Hangers:	316 stainless steel
Circlips:	316 stainless steel

The nominal K factor is based on water at 20°C. Each flowmeter is individually calibrated on water and will have a unique K factor.

## Flowmeter Ranges

Model Nr.	Size mm	L/min	K Factor P/litre
FT3/10	10	1-10	5000
FT3/15	15	2-20	3800
FT3/20/5	20	5-50	1080
FT3/20/8	20	8-80	1080
FT3/25/15	25	15-150	620
FT3/25	25	25-250	362
FT3/32	32	45-450	111
FT3/40	40	67-670	82
FT3/50	50	110-1100	59
FT3/80	80	225-2250	19

## Dimensions

Model Nr.	L mm	Diameter mm	Weight Kg
FT3/10	82.6	38.0	0.3
FT3/15	82.6	50.0	0.5
FT3/20/5	82.6	50.0	0.5
FT3/20/8	82.6	50.0	0.5
FT3/25/15	90.5	63.5	0.8
FT3/25	90.5	63.5	1.0
FT3/32	110.0	75.0	1.6
FT3/40	116.7	76.2	1.7
FT3/50	154.0	89.0	3.1
FT3/80	170.0	95.0	5.0

Specification subject to change without prior notice.

flowquip limited  
 p 01422 829 920  
 f 01422 829 921  
 e info@flowquip.co.uk  
 w www.flowquip.co.uk

riverside  
 canal road  
 sowerby bridge  
 west yorkshire hx6 3lf