

Lx

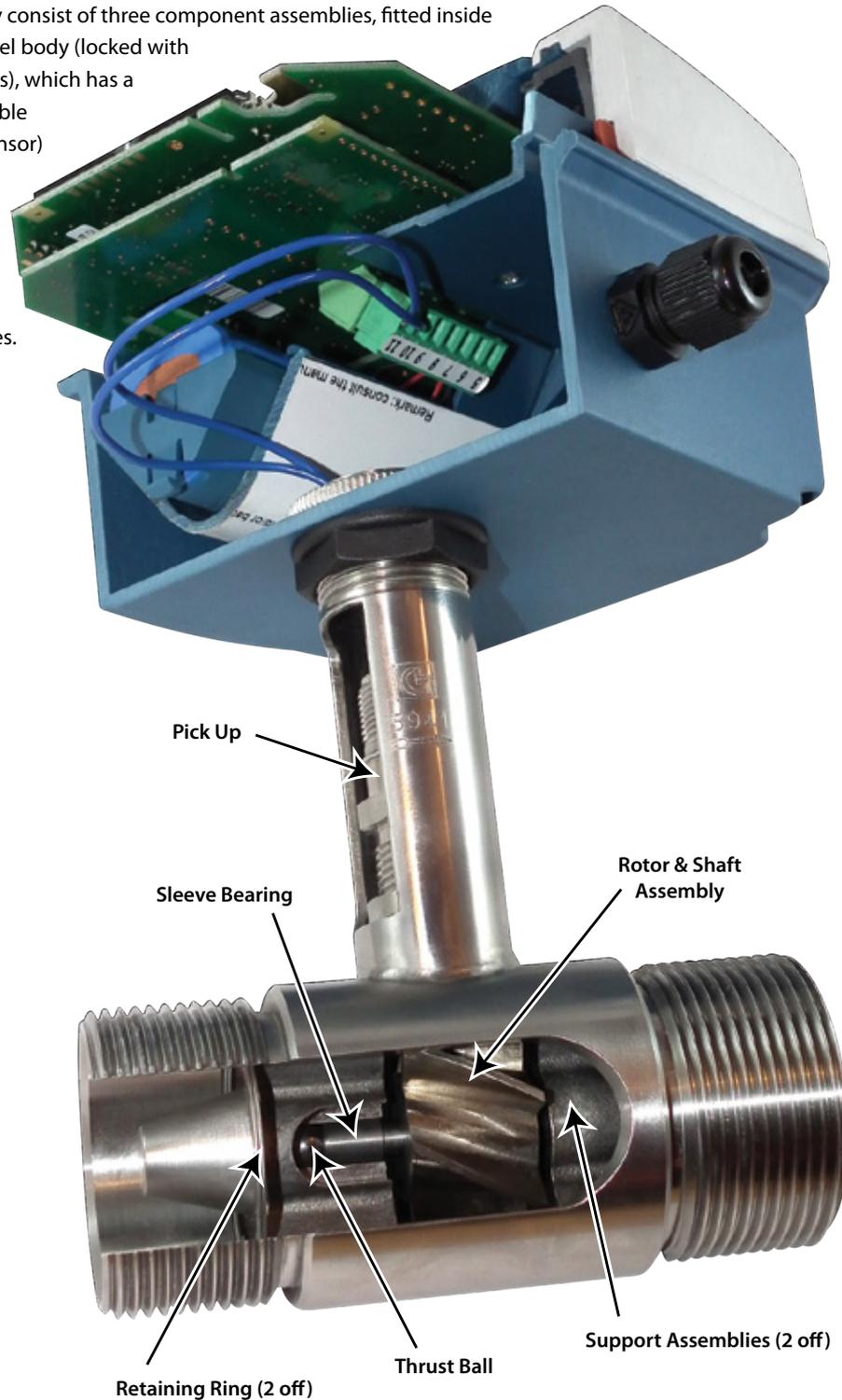
Turbine Flowmeters



Principle of Operation

The Lx range of Turbine Flowmeters meet the demand of most liquid measurement applications.

They basically consist of three component assemblies, fitted inside a stainless steel body (locked with retaining rings), which has a Pick Up (variable reluctance sensor) fitted and come in a range of threaded, flanged and tri clamp styles.



The Rotor and shaft assembly (1 off) which is mounted in sleeve bearings, fitted inside Support assemblies (2 off) is turned by the kinetic energy of the flowing fluid at an angular velocity, which in the linear range of the Flowmeter is proportional to the mean axial velocity of the fluid.

The Rotor blades sweep out the full bore of the Flowmeter except for a small tip clearance space. As the blade tips pass the magnetic Pick Up (through the housing wall) they initiate pulses. Flow rate is determined by the frequency of the pulses and Totalised Flow is obtained by summation of the pulsing electrical signal.

Specifications

Model

Lx 13	Lx 16	Lx 19	Lx 25	Lx 40	Lx 50	Lx 80	Lx 100
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Bi directional Flow Indication Model

Lxb 19	Lxb 25	Lxb 40	Lxb 50	Lxb 80	Lxb 100
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Flow Range

litres / min

2 - 20	5 - 50	14 - 140	27 - 270	55 - 550	114 - 1140	227 - 2270	454 - 4540
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Connections

Threaded

BSP Male

T1

1/2"

3/4"

3/4"

1"

1 1/2"

2"

NPT Male

T2

1/2"

3/4"

3/4"

1"

1 1/2"

2"

Overall Length

70mm

76mm

76mm

76mm

114mm

133mm

Maximum Pressure

250 bar

Hygienic

TRI Clamp

H1

3/4"

1"

1 1/2"

2"

Overall Length

64mm

64mm

88mm

100mm

Maximum Pressure

50 bar

Flanged

ANSI 150

F1

3/4"

3/4"

3/4"

1"

1 1/2"

2"

3"

4"

ANSI 300

F2

3/4"

3/4"

3/4"

1"

1 1/2"

2"

3"

4"

DIN PN 16

F3

20mm

20mm

20mm

25mm

40mm

50mm

80mm

100mm

DIN PN 40

F4

20mm

20mm

20mm

25mm

40mm

50mm

80mm

100mm

Overall Length

140mm

140mm

140mm

152mm

165mm

165mm

165mm

210mm

Maximum Pressure

F1 = 20 bar F2 = 50 bar F3 = 16 bar F4 = 40 bar

Working Temperature

- 50°C to + 282°C

Accuracy

+ / - 0.5 % of reading over Flow Range

Repeatability

+ / - 0.15 % of reading

Pressure Drop

Less than 0.5 bar at Maximum Flow

Materials

All 316 Stainless Steel with ANC1A Rotor

Bearings

Wear Resistant Tungsten Carbide Sleeve

Pick Up

S

Standard Variable Reluctance Coil

I

Intrinsically Safe Variable Reluctance Coil ATEX Ex ia IIC T6 to T3

Electronics

101 a

Totaliser / Flowrate indicator with pulse output and 4 - 20 mA output

101 ai

Intrinsically safe version ATEX Ex ia IIC T4

101 b

Batch Controller

101 bi

Intrinsically safe version ATEX Ex ia IIC T4

101 c

Totaliser / Flowrate Indicator with high and low Alarms

101 ci

Intrinsically safe version ATEX Ex ia IIC T4

101 d

Bi Directional Flow Indication (Lxb Model only)

101 di

Intrinsically safe version ATEX Ex ia IIC T4

AMP

Amplifier Board

SCALER

Scaler Board

4 - 20 mA

4 - 20 mA Board

Ordering Code:

Model

Connections

Pick Up

Electronics

or

Pick Up

Electronics

e.g. Lx 25 - T1 - S - 101 a
Lx 25 - T1 - I - 101 ai



Lxb Models

The Lxb (bi-directional) Flowmeter enables flow to be monitored in both the forward and reverse flow direction.

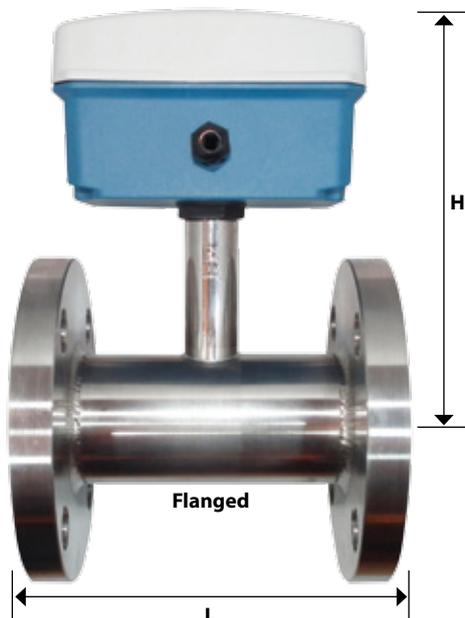
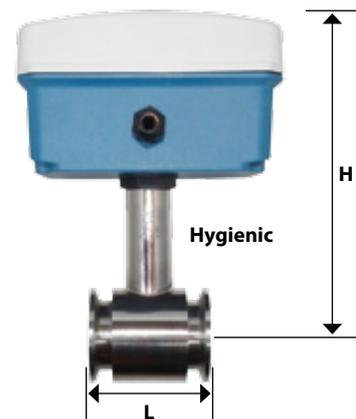
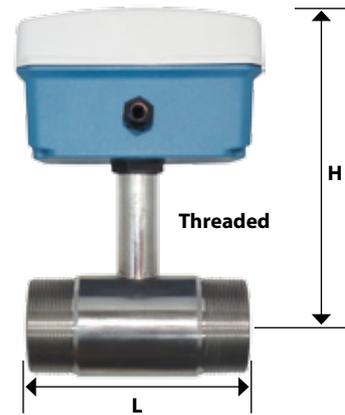
It utilises two variable reluctance sensors which are electrically out of phase from each other.

The addition of a second sensor makes it possible to monitor the forward (counting up) flow and reverse (counting down) flow with the addition of the 101 d Electronics.

Installation Dimensions

Threaded Model	L	H (max)
Lx 13	70mm	160mm
Lx 16	76mm	160mm
Lx 19 & Lxb 19	76mm	160mm
Lx 25 & Lxb 25	76mm	160mm
Lx 40 & Lxb 40	114mm	170mm
Lx 50 & Lxb 50	133mm	180mm

Hygienic Model	L	H (max)
Lx 19 & Lxb 19	64mm	160mm
Lx 25 & Lxb 25	64mm	160mm
Lx 40 & Lxb 40	88mm	170mm
Lx 50 & Lxb 50	100mm	180mm



Flanged Model	L	H (max)
Lx 13	140mm	160mm
Lx 16	140mm	160mm
Lx 19 & Lxb 19	140mm	160mm
Lx 25 & Lxb 25	152mm	160mm
Lx 40 & Lxb 40	165mm	170mm
Lx 50 & Lxb 50	165mm	180mm
Lx 80 & Lxb 80	165mm	190mm
Lx 100 & Lxb 100	210mm	220mm

Electronics

101a and 101ai (Intrinsically safe version)

- Features: Totaliser and Flowrate indication with Linearisation
Pulse output in relation to Total
4 - 20 mA output in relation to Flowrate

Power: 3.6 V Lithium Battery
8 - 30 V D.C. or 4 - 20 mA loop

101b and 101bi (Intrinsically safe version)

- Features: Preset Batch value indication
Over run Correction
Pulse output mirroring count on display
One or Two Stage Batch Control

Power: 115 - 230 V A.C.



101c and 101ci (Intrinsically safe version)

- Features: Totaliser and Flowrate indication
High and Low Alarm Flowrate monitoring
Two Alarm Outputs
4 - 20 mA output in relation to Flowrate

Power: 3.6 V Lithium Battery
8 - 30 V D.C. or 4 - 20 mA loop

101d and 101di (Intrinsically safe version)

- Features: Quadrature input for bi-directional measurement
4 - 20 mA output in relation to Flowrate
Pulse output in relation to Total
Flow Direction Output

Power: 3.6 V Lithium Battery
8 - 30 V D.C. or 4 - 20 mA loop



Amplifier Board

- Features: 5 V square wave pulse output with same frequency as the input signal

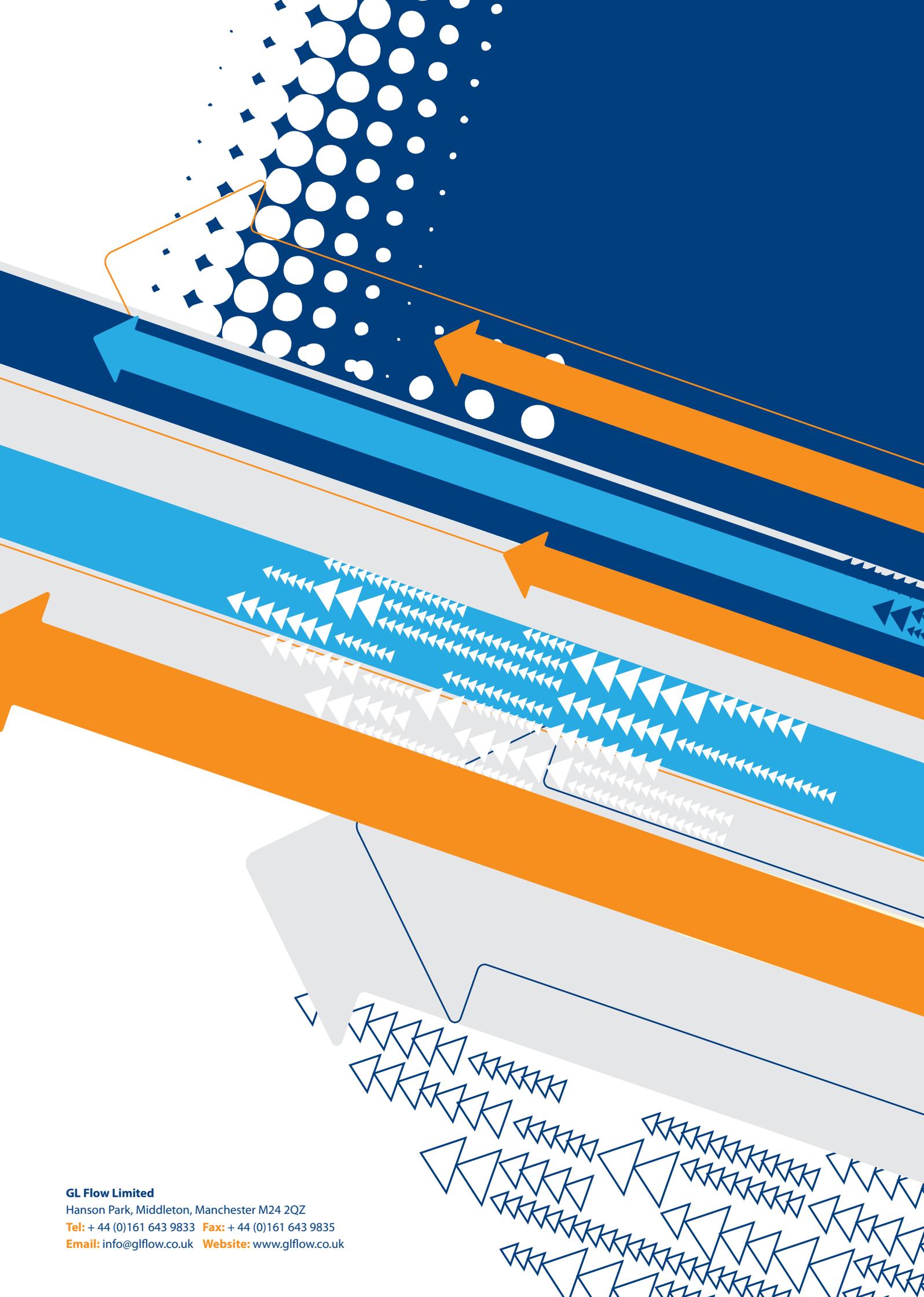
Power: 8 - 30 V D.C.

Scaler Board

- Features: Scaled pulse output
Power: 8 - 30 V D.C.

4 - 20 mA Board

- Features: 4 - 20 mA output
Power: 8 - 30 V D.C.



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