

# ACCESS

## Instrumentation



### A-5100 Series Liquid and Gas Insertion Turbine Meter

- **Features**
- One size fits all pipes over 4" (100mm) diameter
- Continuous, On-Line flow Measurement
- Negligible Pressure Drop
- Wide Range of Applications
- Individually calibrated turbine heads
- Ease of Repair; On-Site or Work Shop
- Can be mounted on live line via hot tap method
- Can be extracted for line "pigging"
- IP67 Totaliser with 4-20mA looped O/P, can be installed directly on to stem

### DESCRIPTION

The Model A-5100 turbine flowmeter is an extremely robust instrument which is intended for measurement of liquids and gases over a wide range of pipe sizes from 4" (100mm) to 10ft (3000mm) in diameter. The Model A-5100 is generally installed on a full-port ball-valve using a 3" 150 lb ANSI flange.

The Model A-5100 offers a wide operating range with a (typical) 10 to 1 turndown. An extensive range of different turbine heads are available to optimise the performance on any given application. Each instrument is factory calibrated and replacement insertion head assemblies can be installed easily in the field. The Model A-5100 flowmeter is recommended for application pressures up to 270 psi (18 bar).

The rotor, manufactured from magnetic stainless steel, generates a pulsed output as the blades rotate through the flux field of a magnet that is contained in the pickup assembly. This feature allows the instrument to function without the need of a power supply which enables it be installed in a remote location with a battery powered totaliser if required. The flow measurement data can be read in the field via the local display or can be transmitted to a DCS. Alternatively, a 4-20mA output can go directly into the customer's own process control system.

Turbine Meters are easy to install due to their compact design, which results in minimal downtime for installation and maintenance.

### SPECIFICATION

#### Flowmeter:

Linearity: (Liquids)  $\pm 2.0\%$  of reading over the selected meters linear range

Linearity: (Gases)  $\pm 2.0\%$  of reading over the selected meters linear range

Repeatability:  $\pm 0.2\%$  of reading

Pressure drop: Negligible

Maximum operating pressure: 18 bar (270psi).

#### Materials of construction:

Housing (Body/Flange): Carbon steel or 316 stainless steel

Sleeve bearings: tungsten carbide shaft, Stellite sleeve

Ball bearings: stainless steel ANSI 440C

#### General:

Hazardous area certification: Meter ATEX Ex ia IIC T6, Local display totaliser ATEX EEX ia IIB T4

Installation: Install in pipeline with at least 10 pipe diameters of straight length upstream and 5 diameters downstream of the flowmeter.

#### Outputs:

Standard: mV pulse typically 100mV peak-to-peak at 0.91m/s (3ft/s)

Pre-amplifiers: ISPA8700 4-20mA current modulated pulse, (FI8500 Frequency to current (4-20mA) analogue convertor (safe area use only) **Other outputs and display options are available.**

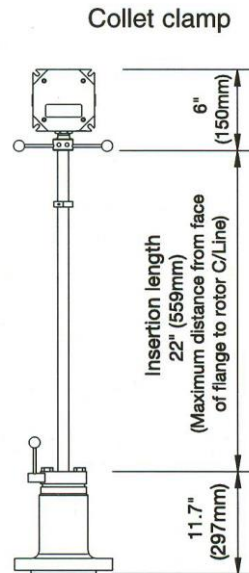
#### Electrical:

Power supply: Not required for mV pulse, 24Vdc loop for ISPA8700 and FI8500,

Termination: 2 pin Cannon as standard, Terminal block housed in conduit box, Screw terminals on pre-amplifiers, Junction box cable entry: 0.5" NPT

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**DIMENSIONS**



Flow Range & Use

TURBINE ASSEMBLY MODEL NO.	USE			FLOW RANGE	
	Liquid	Gas		m/s	ft/s
1	X		General Liquid Use	1 to 12	3 to 39
2	X		Clean Liquids	0.6 to 12	2 to 39
3		X	High Pressure Gas	2 to 30	6.5 to 98
4		X	High Pressure Gas	4 to 45	13 to 147
5	X		General liquids	0.3-5	1 to 16
6		X	Low Pressure Gas	0.6-6	1.9 to 19
7		X	Low Pressure Gas	1.2 to 12	4 to 39
8		X	Low Pressure Gas	3 to 30	10 to 98
9		X	Low Pressure Gas	5 to 50	16 to 164

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Access A-

# ACCESS

## Instrumentation

### A-5200 Series Liquid and Gas Insertion Turbine Meter



- **Features**
- One size fits all pipes over 4" (100mm) diameter
- Continuous, On-Line flow Measurement
- Negligible Pressure Drop
- Wide Range of Applications
- Individually calibrated turbine heads
- Can be mounted on live line via hot tap method
- Can be extracted for line "pigging"
- IP67 Totaliser with 4-20mA looped O/P can be installed directly on to stem.

#### DESCRIPTION

The Model A-5200 turbine flow meter is an extremely robust instrument which is intended for measurement of liquids and gases over a wide range of pipe sizes from 4" (100mm) to 60" (1500mm) in diameter. The Model A-5200 is generally installed on a full-port ball-valve using a 3" ANSI flange. The screw jack arrangement allows the head to be installed in to pipe under high pressure operating conditions.

The Model A-5200 offers a wide operating range with a (typical) 10 to 1 turndown. A range of turbine heads are available in order to optimise the performance on any given application. Each instrument is factory calibrated. The Model A-5200 flow meter can be used for high pressure applications up to 870 psi (60 bar).

The rotor, manufactured from magnetic stainless steel, generates a pulsed output as the blades rotate through the flux field of a magnet that is contained in the pickup assembly. This feature allows the instrument to function without the need of a power supply which enables it be installed in a remote location with a battery powered totaliser if required. The flow measurement data can be read in the field via the local display or can be transmitted to a DCS. Alternatively, a 4-20mA output can go directly into the customer's own process control system.

Insertion Turbine Meters are easy to install due to their compact design, which results in minimal downtime for installation and maintenance.

#### SPECIFICATION

##### Flowmeter:

Linearity: (Liquids)  $\pm 2.0\%$  of reading over the selected meters linear range

Linearity: (Gases)  $\pm 2.0\%$  of reading over the selected meters linear range

Repeatability:  $\pm 0.2\%$  of reading

Pressure drop: Negligible

Maximum operating pressure: 870psi (60 bar).

Maximum operating process temperature 120 deg C (248 Deg F)

##### Materials of construction:

Housing (Body/Flange): Carbon steel or 316 stainless steel

Sleeve bearings: Tungsten carbide shaft, Stellite sleeve

Ball bearings: Stainless steel ANSI 440C

##### General:

Hazardous area certification: Meter, ATEX Ex ia IIC T6. Local display totaliser ATEX EEX ia IIB T4

Installation: Install in pipeline with at least 10 pipe diameters of straight length upstream and 5 diameters downstream of the flowmeter.

##### Outputs:

Standard: mV pulse typically 100mV peak-to-peak at 1m/s (3ft/s)

Pre-amplifiers: ISPA8700 4-20mA current modulated pulse, FI8500 Frequency to current (4-20mA) analogue convertor (safe area use only) **Other output and display options are available.**

##### Electrical:

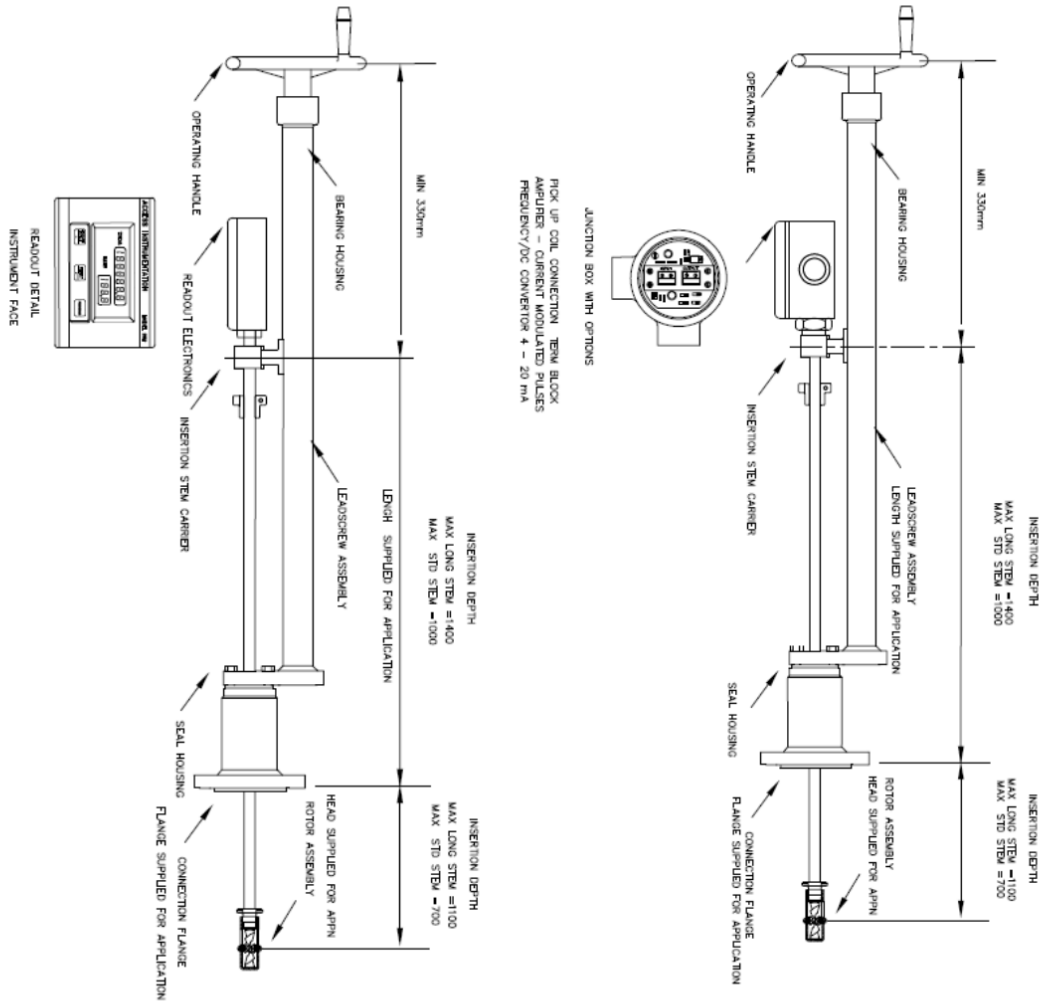
Power supply: Not required for mV pulse, 24VDC loop for ISPA8700 and FI8500,

Termination: 2 pin Cannon as standard, Terminal block housed in conduit box, Screw terminals on pre-amplifiers,

Junction box cable entry: 0.5" N

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Direction of flow is in the plane of the stem and screw jack assembly centre with the stem being upstream



Flow Range & Use

TURBINE ASSEMBLY MODEL NO.	USE		FLOW RANGE	
	Liquid	Gas	m/s	ft/s
1	X		General Liquid Use	
2	X		Clean Liquids	
3		X	High Pressure Gas over 10 Bar	
4		X	High velocity High Pressure Gas over 10 Bar	
5	X		Low velocity General liquids	
6		X	Low velocity Low Pressure Gas	
7		X	Medium velocity Low Pressure Gas	
8		X	High velocity Low Pressure Gas	
9		X	Very high velocity Low Pressure Gas	

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# ACCESS

## Instrumentation



### A-5400 Series Liquid and Gas Insertion Turbine Meter

#### Features

- One size fits all pipes over 4" (100mm) diameter
- Continuous, On-Line flow Measurement
- Negligible Pressure Drop
- Wide Range of Applications
- Individually calibrated turbine heads
- Ease of Repair; On-Site or Work Shop
- Can be mounted on live line via hot tap method
- Can be extracted for line "pigging"
- IP67 Totaliser with 4-20mA looped O/P can be installed directly on to stem

#### DESCRIPTION

The Model A-5400 turbine flow meter is an extremely robust instrument which is intended for measurement of liquids and gases over a wide range of pipe sizes from 4" (100mm) to 10ft (3000mm) in diameter. The Model A-5400 is generally installed on a full-port ball-valve using a 3" 150 lb ANSI flange.

The Model A-5400 offers a wide operating range with a (typical) 10 to 1 turndown. An extensive range of different turbine heads are available in order to optimise the performance on any given application. Each instrument is factory calibrated and replacement insertion head assemblies can be installed easily in the field. The Model A-5400 flow meter is recommended for application pressures up to 15 bar (225 psi).

The rotor, manufactured from magnetic stainless steel, generates a pulsed output as the blades rotate through the flux field of a magnet that is contained in the pickup assembly. This feature allows the instrument to function without the need of a power supply which enables it be installed in a remote location with a battery powered totaliser if required. The flow measurement data can be read in the field via the local display or can be transmitted to a DCS. Alternatively, a 4-20mA output can go directly into the customer's own process control system.

Turbine Meters are easy to install due to their compact design, which results in minimal downtime for installation and maintenance.

#### SPECIFICATION

##### Flowmeter:

Linearity: (Liquids)  $\pm 2.0\%$  of reading over the selected meters linear range

Linearity: (Gases)  $\pm 2.0\%$  of reading over the selected meters linear range

Repeatability:  $\pm 0.2\%$  of reading

Pressure drop: Negligible

Maximum operating pressure: 15 bar (225psi)

Maximum operating process temperature: 120 degC (248 degF)

##### Materials of construction:

Housing (Body/Flange): 316 stainless steel

Sleeve bearings: tungsten carbide shaft, Stellite sleeve

Ball bearings: stainless steel ANSI 440C

##### General:

Hazardous area certification: Meter ATEX Ex ia IIC T6, Local display totaliser ATEX EEX ia IIB T4

Installation: Install in pipeline with at least 10 pipe diameters of straight length upstream and 5 diameters downstream of the flowmeter.

##### Outputs:

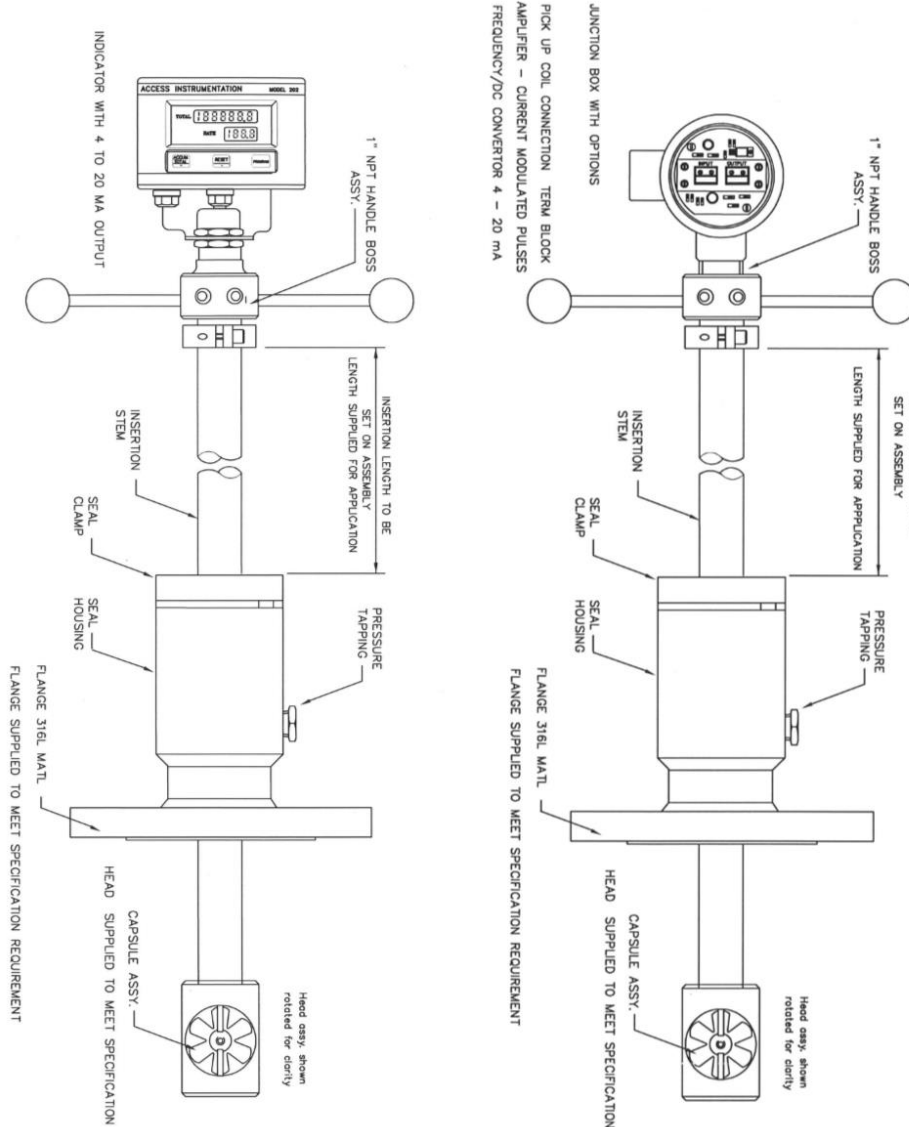
Standard: mV pulse typically 100mV peak-to-peak at 0.91m/s (3ft/s)

Pre-amplifiers: ISPA8700 4-20mA current modulated pulse output, Frequency to current (4-20mA) analogue converter. Rate totaliser 4-20mA output. **Other outputs and display options are available upon request.**

**Electrical:** Power supply: Not required for mV pulse, 24Vdc loop for ISPA8700 Screw terminals on pre-amplifier housed in enclosure. Junction box cable entry: 0.5" NPT.

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Fully programmable rate totaliser. LCD display, battery powered 4-20mA Output. Cable entry PG7 gland.



Flow Range & Use

TURBINE ASSEMBLY MODEL NO.	USE		FLOW RANGE	
	Liquid	Gas	m/s	ft/s
1	X		General Liquid Use	1 to 12 3 to 39
2	X		Clean Liquids	0.6 to 12 2 to 39
3		X	High Pressure Gas Over 10 Bar	2 to 30 6.5 to 98
4		X	High Pressure Gas Over 10 Bar	4 to 45 13 to 147
5	X		General liquids	0.3-5 1 to 16
6		X	Low Pressure Gas	0.6-6 1.9 to 19
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