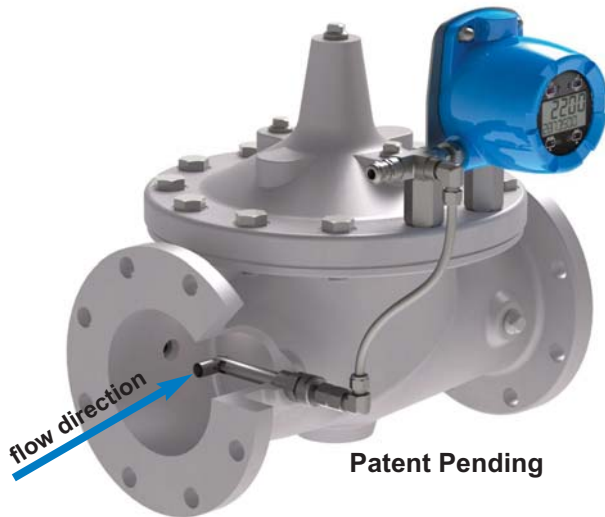




— MODEL — **X144D-AF-X**  
**Cla-Val e-FlowMeter**  
for Ground Fueling Applications



Installation view of the X144D-AF-X e-FlowMeter™

- The e-FlowMeter™ can be retrofitted to an existing Cla-Val Automatic Control Valve or factory assembled on a new valve
- Alleviates the need for an in-line meter and the associated installation costs
- Provides flow data with accuracy +/- 2% of Full Scale
- Mounts on either inlet body tapping of the Cla-Val Control Valve
- Stainless Steel Construction
- 4-20mA Loop Powered

The Cla-Val Model X144D-AF-X e-FlowMeter™ is a vortex shedding insertion flow meter designed to be retrofitted into a Cla-Val Automatic Control Valve to provide accurate flow measurement data without the need to install a separate meter.

The X144D-AF-X e-FlowMeter™ employs an innovative swivel mechanism which allows the meter to be inserted into tappings as small as 1/2-inch.

### Display Features



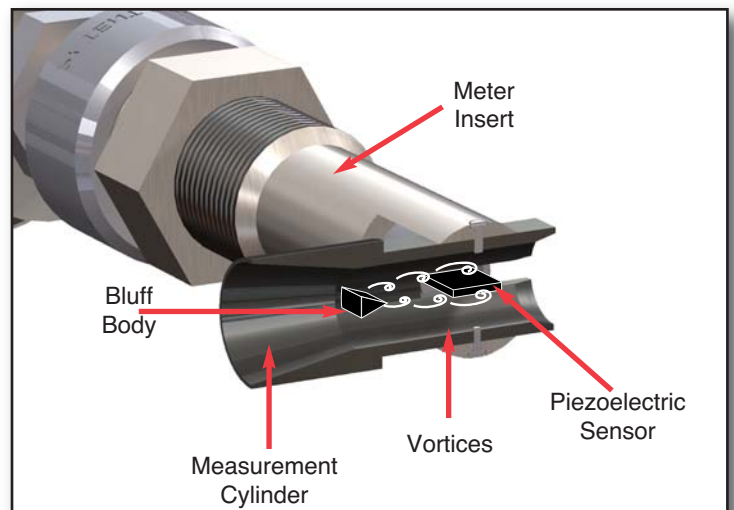
- Flow Rate Display
- Totalizer Display
- Resettable
- Password Protected
- No opening to access buttons

visit [www.cla-val.com](http://www.cla-val.com) to learn more about Cla-Val Aviation and Ground Fueling Products  
800.942.6326

### Frequency Measurement

The X144D-AF-X e-FlowMeter™ uses the vortex shedding method to measure flow. The meter is inserted into the inlet tapping of the valve and the measurement cylinder is oriented parallel to the direction of flow. The flow enters the measurement cylinder where it encounters the bluff body, generating vortices, which in turn, deflects off the piezoelectric sensor.

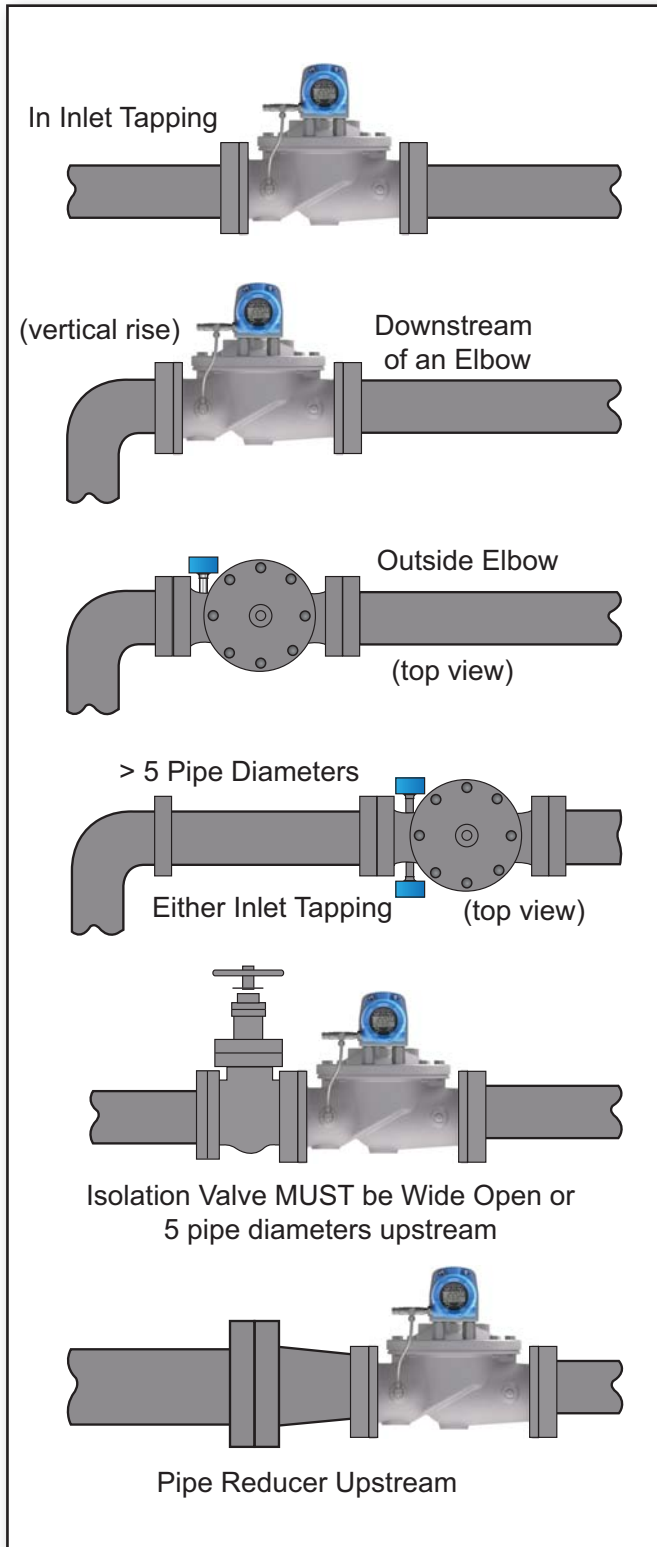
The sensor counts the vortices and communicates the data to the meter's integral circuit board. The flow data is converted to a 4-20mA signal.



## Installation Guidelines and Typical Applications

### Installation Locations

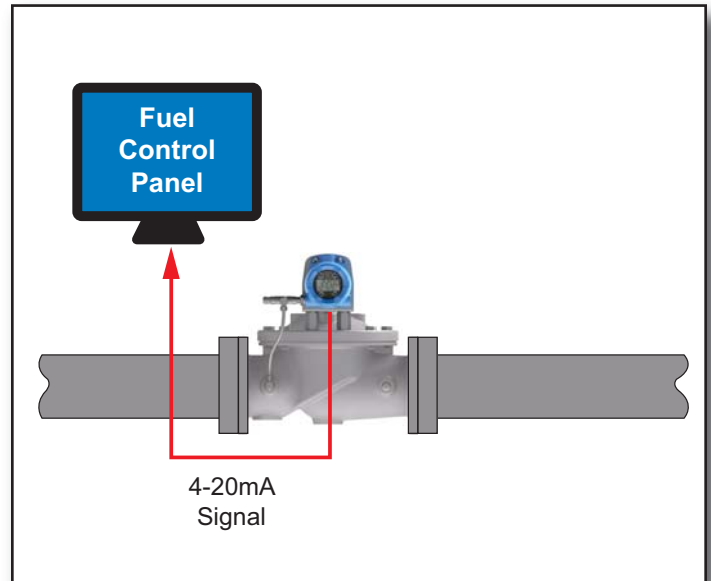
For optimum performance, it is recommended that the valve in which the X144D-AF e-FlowMeter™ is installed be located as shown below.



Note: Consult factory for other installation configurations

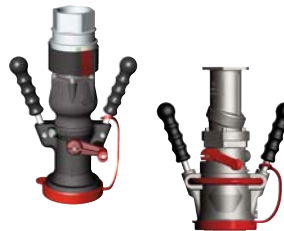
### Information Transmission

The X144D-AF e-FlowMeter™ measures and transmits flow information via a 4-20mA signal to Fuel Control Panel.



### Cla-Val Fueling Products

Cla-Val manufactures a complete range of aviation and ground fueling products including top quality automatic control valves; hydrant pit valves; couplers; and refueling nozzles for commercial and military aviation applications.



340GF Series Underwing Fueling Nozzles



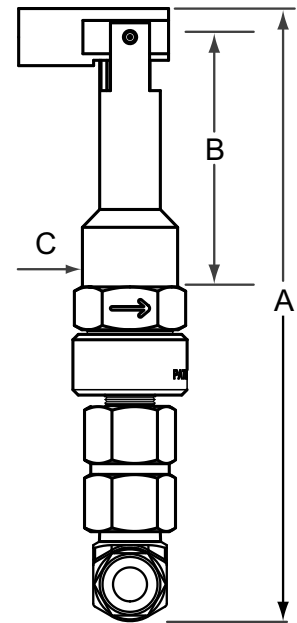
90GF Series Pressure Reducing Valve



352GF Series Hydrant Pit Valve

## X144D-AF Dimensions

X144D-AF Sizes		1	2	3	4
Full Port Valve Sizes		2, 2-1/2, 3	4, 6	8, 10	12*
Reduced Port Valve Sizes		4	6, 8	10, 12*	--
Overall Length (inches)	A	6.15	6.75	10.48	--
Insertion Length (inches)	B	2.3	2.8	6.8	--
Pipe Thread (NPT)	C	1/2"	3/4"	1"	--



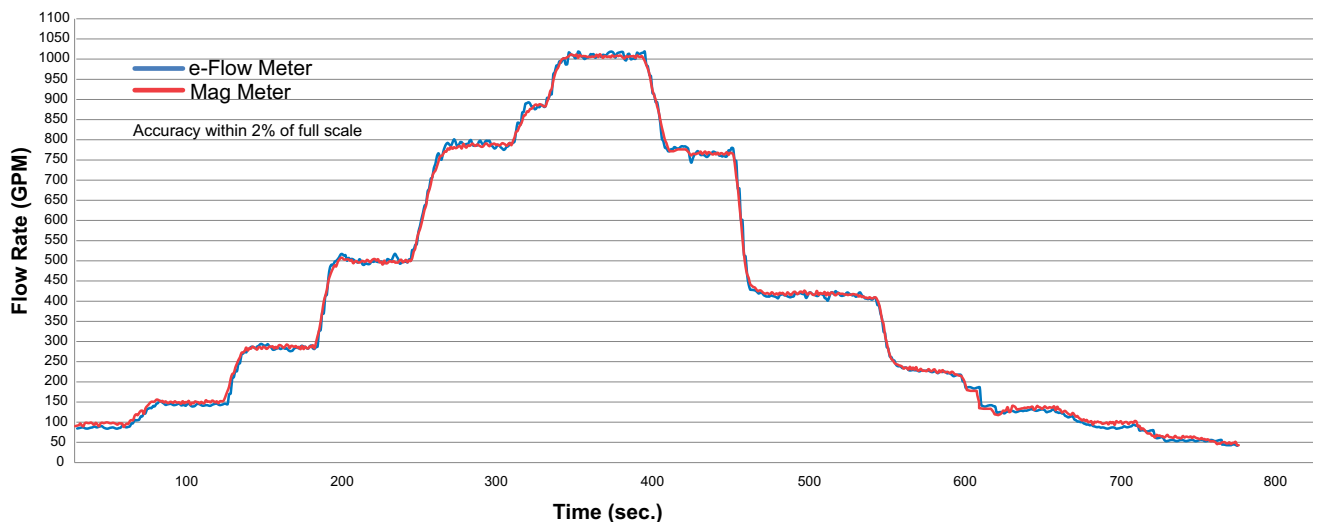
\* For 12-inch and larger, please consult factory

## X144D-AF e-FlowMeter™ Operational Flow Range

Line Size inches (mm)	*2" (50mm) (100-49 Body)	2-1/2" (65mm)	3" (80mm)	4" (100mm)	6" (150mm)	8" (200mm)	10" (250mm)	12" (300mm)
Minimum Flow (GPM)	10	10	15	25	60	100	160	230
Maximum Flow (GPM)	210	300	460	800	1800	3150	4950	7000
Minimum Flow (l/s)	0.65	0.65	1.0	1.5	3.8	6.3	10.0	15
Maximum Flow (l/s)	13.3	18.9	29	50	110	200	310	440

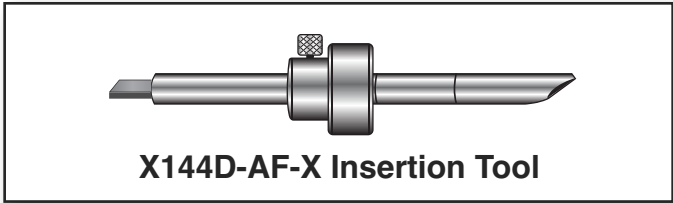
## Typical Performance

### X144 e-FlowMeter vs. Mag Meter



### Insertion Tool and Locking Ring

- Required for removal and reinsertion
- Tool allows the proper installation and alignment of the bluff body to be parallel to upstream flow.



### Cabling

- The unit is supplied with 30 feet of cable.

### Approvals

Rating: II 3 G

Ex [d] ia IIA T5

Self-certification by Cla-Val Co.  
 1701 Placentia Avenue  
 Costa Mesa, CA 92627,  
 per Annex VIII, Internal Control  
 Production per Annex VIII

### Electrical Data & Product Labeling

Mfd. by Cla-Val Co.  
 1701 Placentia Avenue  
 Costa Mesa, CA 92627 USA  
 www.cla-val.com • 800.942.6326

Model #: X144D-AF-X  
 Serial #:

Max. Voltage : 30 VDC  
 Max. Power : 750mW  
 Signal Output : 4-20mA  
 Max. Temp. : 100° C

EX [d] ia IIA T5

### X144D-AF-X e-FlowMeter Analog Range (4-20mA Scaling): Factory Settings

Port Style	Line Size inches (mm)	2" (50) (100-49 Body)	2-1/2" (65)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)	12" (300)
Full Port Valves 4mA = 0 (GPM - l/s)	20mA Range (GPM)	260	375	575	1000	2250	3900	6000	8750
	20mA Range (l/s)	16.4	23.7	36.3	63.1	140	245	380	550
Full Port Pulse Weight = 250ms	Gal/Pulse	5	6.5	9.5	17	38	65	100	150
	l/Pulse	19	25	36	65	145	245	380	565
Reduced Port Valves 4mA = 0 (GPM- l/s)	20mA Range (GPM)	not available			675	1600	2900	4500	5650
	20mA Range (l/s)				42.5	100	180	285	355
Reduced Port Valves Pulse Weight = 250ms	Gal/Pulse				11.5	26	48	75	95
	l/Pulse				44	99	180	285	360

**Note:** pulse length = 250ms



CLA-VAL

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[www.cla-val.com](http://www.cla-val.com)

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