



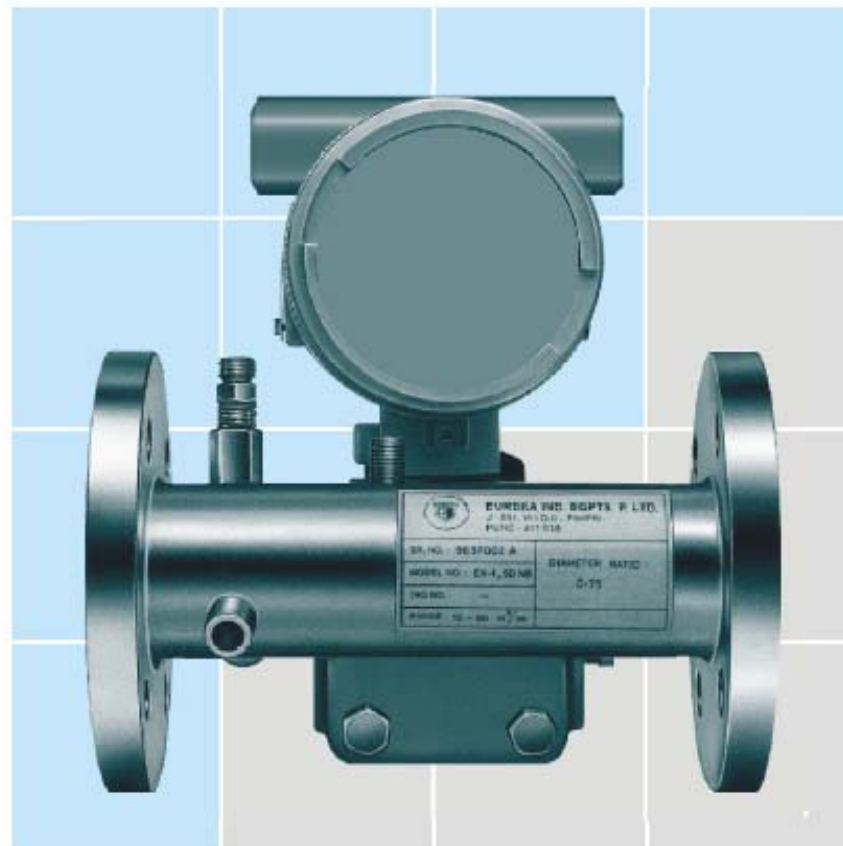
EUREKA



RWTV

EUREKONE FLOWMETER

A perfect solution for industry's difficult flow measurement problems



EUREKA INDUSTRIAL EQUIPMENTS PVT. LTD.

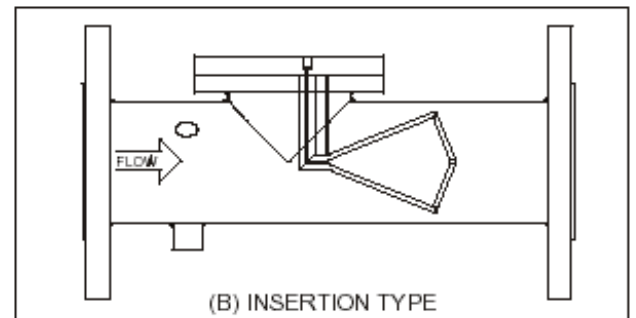
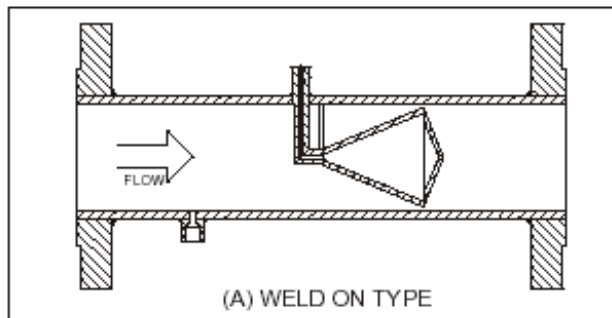
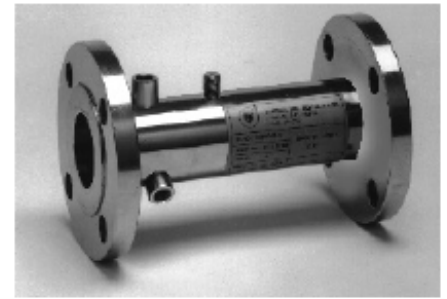
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The **EUREKONE FLOWMETER** is a new differential pressure flowmeter device that accurately measures flow of various fluids over wider flow range than any other conventional differential pressure flowmeter such as venturies, orifice plates, etc. The basic principle is bernoulli's theorem for the conservation of energy in fluid flow through a pipe. The divergent shape of the cone sensor centered in the line, reshapes the velocity profile to create an improved profile. The configuration of a typical **EUREKONE FLOWMETER** is shown in fig. A/ B



The pressure difference between the static line pressure and the lower pressure created just after the cone sensor can be measured via two pressure sensing taps. One placed slightly upstream of the cone sensor & the other in the downstream face of the cone sensor itself and is related to flow rate through the meter.

ACCURACY :

The **EUREKONE FLOWMETER** is able to operate accurately over wider flow ranges than any other differential pressure flow meters. An accuracy of better than $\pm 1\%$ of actual flow is achievable to the majority of the applications.

REPEATABILITY :

The **EUREKONE FLOWMETER** exhibits a repeatability of better than $\pm 0.1\%$. The high repeatability creates a very steady output signal. This is because the shape of the cone sensor is specifically designed to dampen the amplitude of the oscillation for the measured pressure field.

RANGEABILITY :

The **EUREKONE FLOWMETER** is more rangeable than any other differential pressure devices because it reshapes and flattens the fluid velocity profile (fig. 2). Flow rate turndown of upto 10 to 1 are easily measured.

LONG TERM PERFORMANCE :

The **EUREKONE FLOWMETER** has no moving parts like bearings & gears. So problems which are typical to rotary meters such as turbine flowmeter and displacement type meters are eliminated. As the cone sensor has divergent shape, the flow is directed away from the critical edge & the edge is not damaged by foreign solid particles present in the stream. There are no stagnant fluid areas for gaseous build up or solids entrapment as it is in the orifice plates. The performance is therefore unaffected by these common problems.

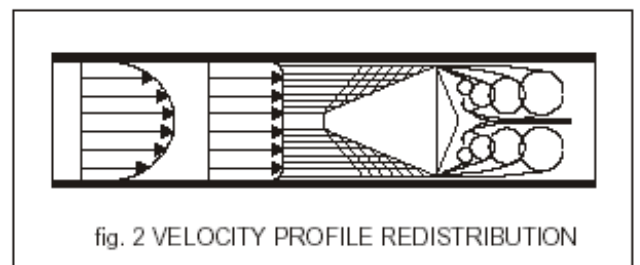


fig. 2 VELOCITY PROFILE REDISTRIBUTION

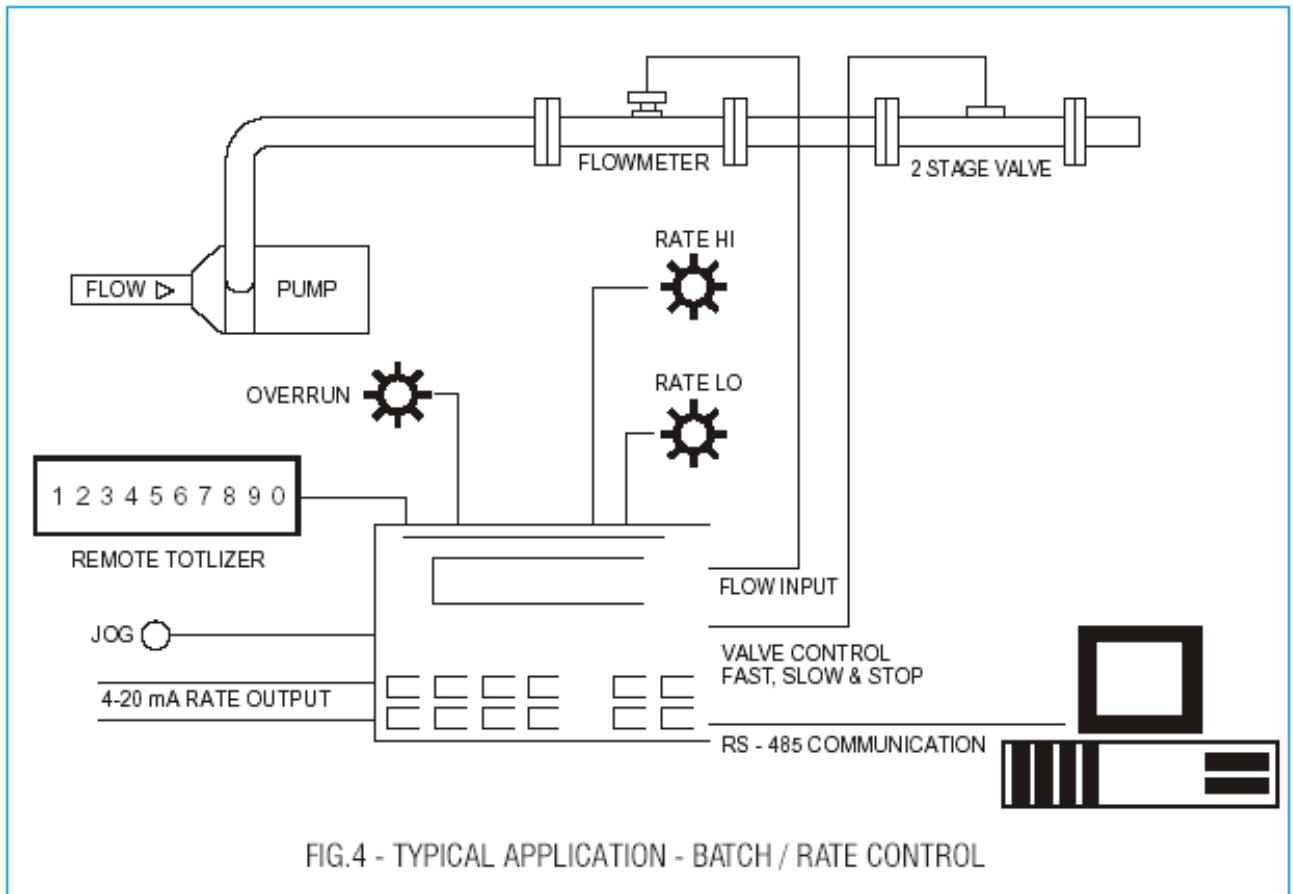
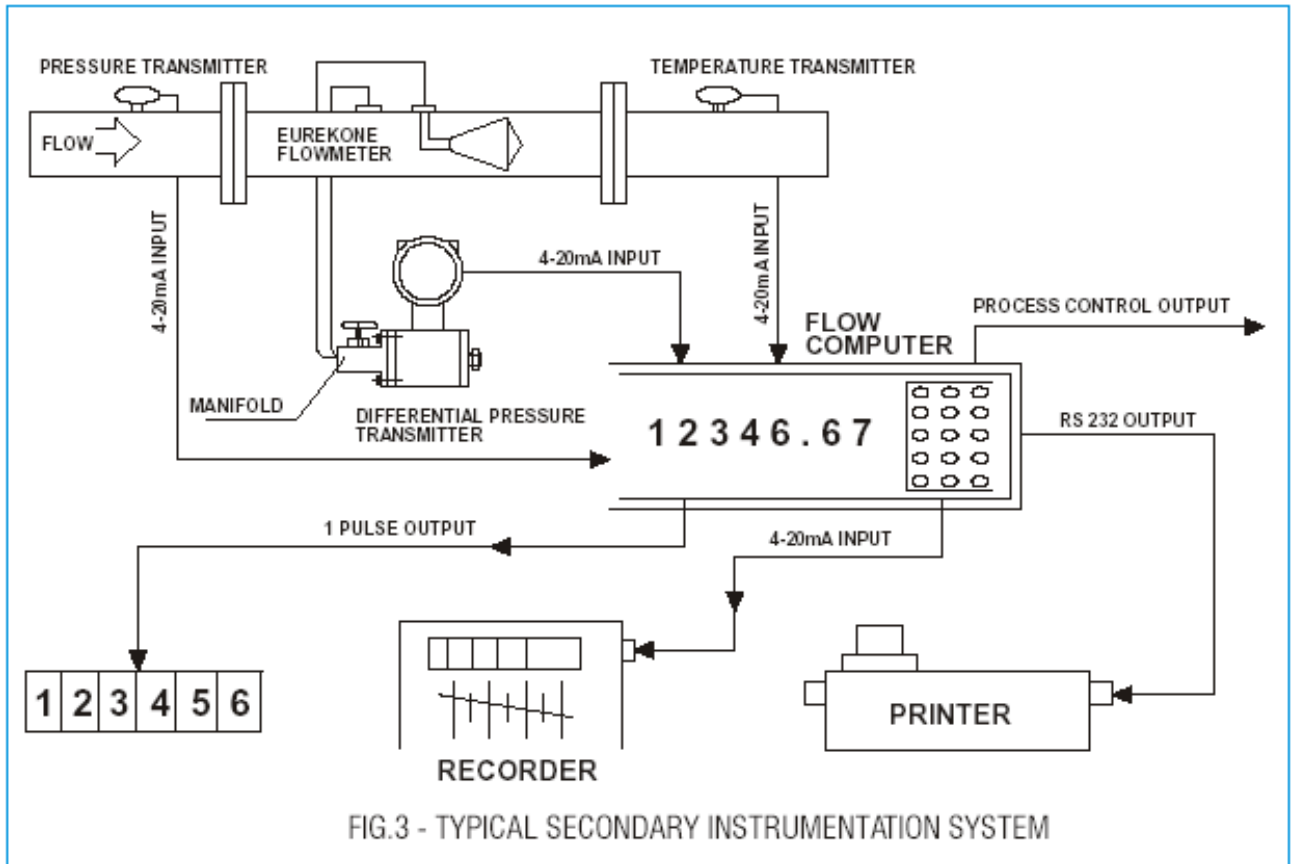
SIGNAL STABILITY :

The output of the D.P. transmitter when connected across **EUREKONE** is highly stable as compared to output of D.P. transmitter when connected across orifice.

Due to special design of cone sensor, the flowmeter does not allow debris, condensation or particles from the fluid to accumulate.

SECONDARY INSTRUMENTATION

The EUREKONE FLOWMETER works with any standard differential pressure gauge, D.P. Transmitters, Manometers, etc. The EUREKONE FLOWMETER can be incorporated into an existing system without having to invest in new instrumentation. EUREKONE FLOWMETER combined with D.P. transmitter and flow computer forms a complete system to meet stringent applications as shown in fig. 3 & 4



INSTALLATION REQUIREMENTS :

The velocity profile is reshaped by the cone sensor & hence there is no need for long upstream straight pipe lengths. Typically installation piping requirements are about 3 diameters upstream & 5 diameters downstream for all type of pipe fittings present upstream. The EUREKONE FLOWMETER may be installed in either horizontal or vertical piping.

APPLICATIONS :

The EUREKONE FLOWMETER finds application in the measurement of flow of Water, Steam, Air, Nitrogen, Hydrogen, Coke oven gas, Propane, Argon, Neon, Exhaust gases & many more fluids.

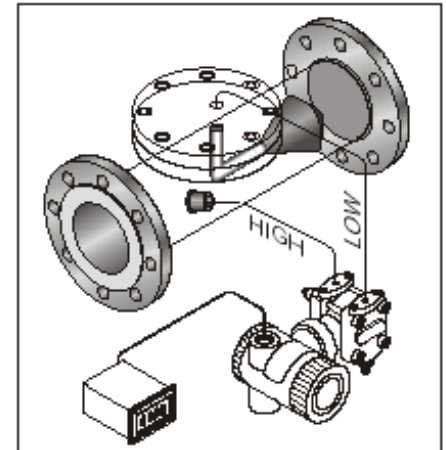
SPECIFIC APPLICATIONS :

- 1) Monitoring air / water / steam consumption.
- 2) Wet gas measurement.
- 3) Oil measurement.
- 4) Condensate measurement.
- 5) Measurement of liquid containing particles is also possible.
- 6) Any media which is difficult to handle by other differential flow meters can be measured.

GENERAL SPECIFICATIONS

Accuracy	: ±1% of actual flow
Repeatability	: ±0.1%
Pressure loss	: Varies with beta ratio but usually very low
Beta ratio	: 0.4 to 0.9
Installation	: 3 Pipe diameters upstream 5 Pipe diameters downstream
Materials (STD.)	: SS 304, SS 316, Carbon steel
Pressure	: 20 Bar, higher on request
Temperature	: 300°C, higher on request
Line size	: 2" - 6"
Type of connection	: Weld on or insertion type
End connections	: Flanged as per ANSI B 16.5

Eurekone Flowmeter Size	min. R_D	max. R_D	Flow range based on water at ambient temp.
2" NB	1.93E + 04	4.27E + 05	2.5 - 19 M3/HR to 4.8 - 47 M3/HR
3" NB	4.4E + 04	5.3E + 05	8 - 45 M3/HR to 16 - 100 M3/HR
4" NB	2.1E + 04	6.9E + 05	4 - 80 M3/HR to 10 - 160 M3/HR
6" NB	3.12E + 04	8.56 E + 05	11 - 155 M3/HR to 43 - 450 M3/HR



EUREKONE FLOWMETER is most superior compared to other flow meters. Following comparison proves the superiority of EUREKONE.

EUREKONE FLOWMETER	ORIFICE PLATE
A) Low installation cost	High installation cost due to very long straight pipe runs requirements.
B) Same accuracy with dirty particles content fluids.	Subject to abrasion and loss of accuracy
C) Reliable for any application	Not reliable for wet gas or condensate measurement
D) Low pressure loss	High pressure loss
E) High tur n down ratio	Low turn down 4:1
F) Maintenance free	Requires routine maintenance
EUREKONE FLOWMETER	ULTRASONIC
A) Low cost	Very high cost
B) High Accuracy	Accuracy not guaranteed
C) Wide range of applications including high temp.	Not suitable for high temp. fluids.
D) Long term accuracy	Requires periodic calibration
EUREKONE FLOWMETER	VORTEX
A) Low cost	High cost
B) Low installation cost	High installation cost due to requirement of long straight runs.

NOTE

EUREKONE FLOWMETER can be used for any medium, provided Reynolds number is within the limit specified above.

SCOPE OF SUPPLY

Our standard scope of supply includes EUREKONE FLOWMETER + D.P. transmitter of reputed make. Secondary instrumentation like flow indicator, totalizer will be supplied against request. Power supply required for DPT - 24 VDC. O/P - 4 to 20mA two wire systems.

DATA REQUIRED FOR SIZING

Fluid, Flow range, Op. temp., Op. pressure, Density, Viscosity at an op. temp.