

# **GAS & STEAM FLOW METER**

## **GFM -250 & SFM-250**

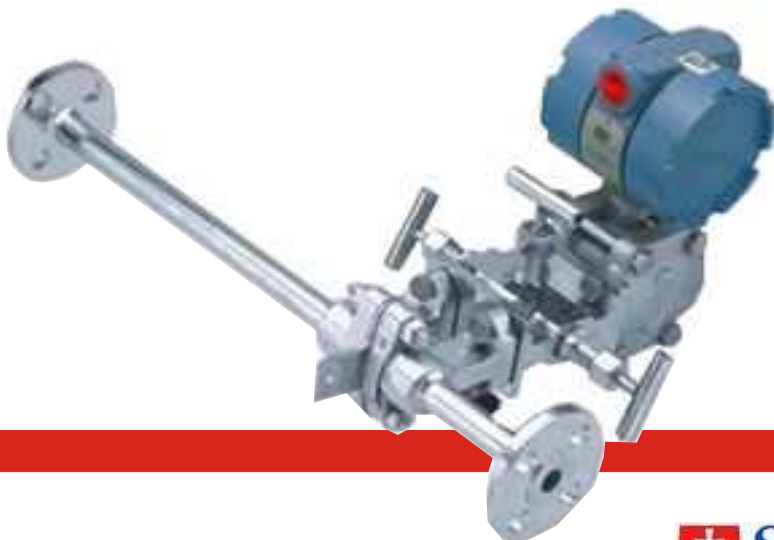
### **Orifice Flow Assembly With Mass Flow Computer**



### **ORIFICE FLOW METERING SYSTEM**



**ORIFICE**



# GFM-250 & SFM 250 GAS , AIR & STEAM FLOW METERING SYSTEM

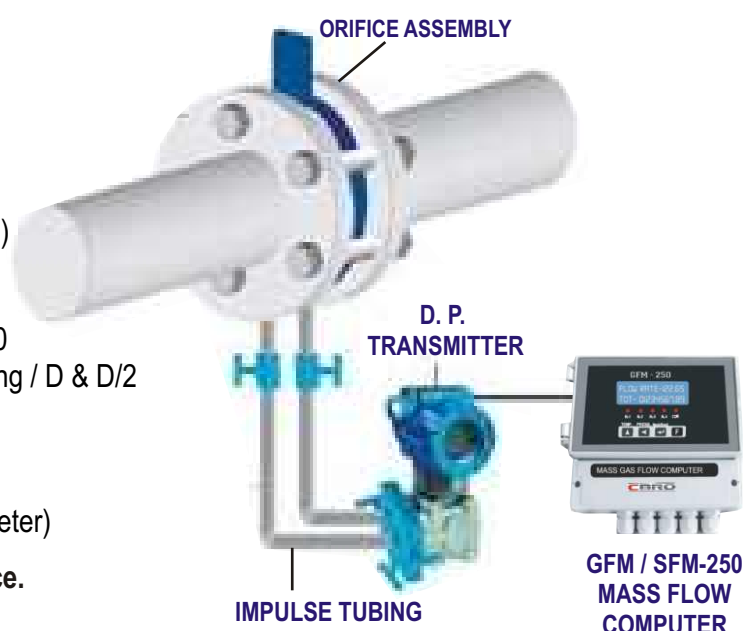
## INTRODUCTION

Use our GFM/SFM series flow meter for measuring flow rates of Bio-gas, LPG, compressed air, steam (saturated & superheated) in closed pipes. The flow meter is suited for wide range of applications where affordability, reliability and ruggedness are of prime importance. In conventional system of measurement, the differential pressure generated by orifice plate is measured by D. P. transmitter. The output from D.P. transmitter after square rooting is accepted as proportional to flow - rate. This assumption is true only when density is constant. Unfortunately, density of compressible fluid is never constant. The density of compressible fluid changes with line pressure & line temperature. Thus, introducing errors in flow rate measurement.

## GFM / SFM 250 FLOW METER ASSEMBLY SPECIFICATIONS:

1. Service : Bio-Gas, Compressed Air, Compressed Gas, LPG, Steam.  
Composition : User to specify.
2. Size : ½" to 14"
3. Type of Flow meter : Differential Pressure Type.
4. Flow Element : Orifice / Integral Orifice / Nozzle
5. MOC of Flow Element : SS 316
6. Density Compensation : Can be provided.
7. Type of Flanges : WNRF (Weld Neck Raised Face) / SORF (Slip On Raised Face)
8. MOC of Flange : C.S / S.S / P.P.
9. Flange Rating : ANSI 150 / ANSI 300 / ANSI 600
10. Type Of Taps : Flanged Tapping / Corner Tapping / D & D/2
11. No. Of DP Tappings : 1 Pair
12. No. Of Drain Tappings : 1 Pair
13. Design Standard : BS - 1042 / ISO : 5167
14. Accuracy :  $\pm 1\%$  of actual reading (Flowmeter)

\* Specifications are subject to change without prior notice.



## CBRO MAKE INTEGRAL ORIFICE ASSEMBLY :

The INTEGRAL ORIFICE ASSEMBLY is a flow element capable of adapting to DP transmitter to make a compact, complete flow metering transmitting device without the need of separate impulse piping.

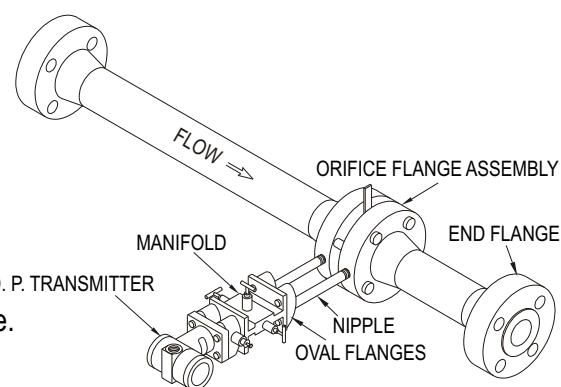
## ADVANTAGES OF INTEGRAL ORIFICE :

1. It provides simple & cost-effective solution.
2. Increase in reliability.
3. Installation cost reduces.
4. Time is saved because the unit is supplied as one complete solution.

## APPLICATION :

GFM/SFM-250 series is most suitable for compressible fluids, which are difficult to measure because of variations in their pressure and temperature.

- Sectors generating & Consuming Steam.
- Measuring Compressor Efficiency.
- Measuring Bio-Gas, LPG Consumption & Many Other



GFM / SFM SERIES FLOW METER

ORIFICE FLANGE ASSEMBLY WITH PIPE RUN  
MANIFOLD, DP TRANSMITTER & END FLANGES

# GFM-250 SFM-250 MASS FLOW COMPUTER



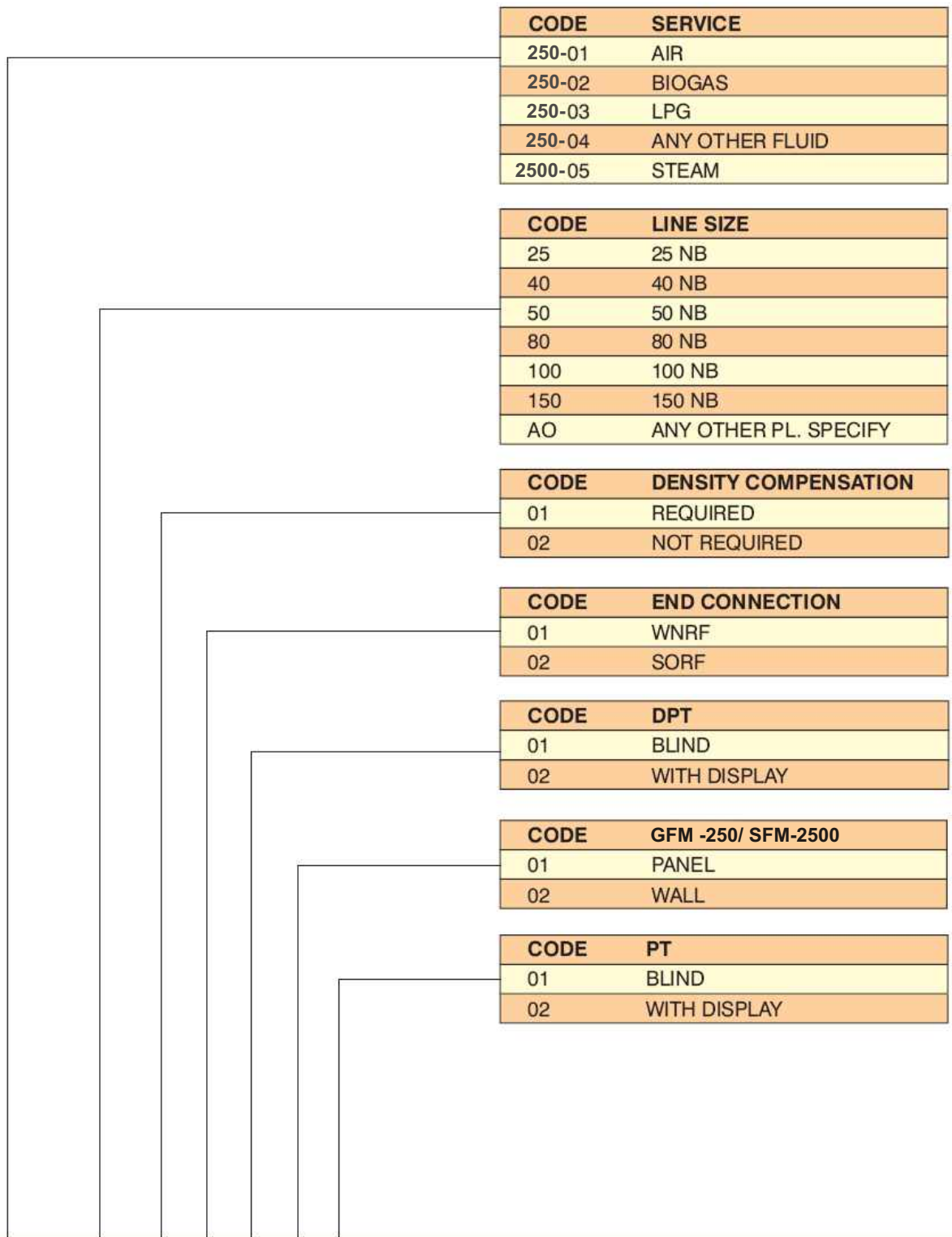
WITH  
FLAMEPROOF  
ENCLOSURE

Technical Specification :-		
<b>Input</b>	Input Type	<b>Flow</b> : 0 ~ 20mA DC , 4~20mA DC , 0-10 V DC <b>Pressure</b> : 4~20mA DC / 0-10 V DC or Other linear type <b>Temperatures</b> : RTD PT-100 3 wire / 4-20 mA
	Transmitter power supply	24 V DC @ 30 mA max, isolated from I/P & O/P
	Range limits	0.1 to 99999 Programable with decimal point selection
	Accuracy	+/- 0.25 % of span
	Input impedance	>330 K for Voltage & 100 R for current
	Input mode	Linear or square root
	<b>Indication</b>	Indication
Status indication		LEDs for Relay status & Communication
Parameter display		Volumetric flow / Mass flow / Pressure / Temperature / Mass total
<b>Calculation</b>	Gas Calculation (GFM - 250)	AGA3 - On line density correction
<b>Calculation</b>	Steam Calculation(SFM-250)	Saturated steam, Superheated steam, Both – In Auto mode
<b>Output</b>	Communication	Modbus RTU RS- 485/RS- 232 communication
	Analog Current & Voltage outputs	0/4~20 mA, 0~5V, 0~10V, 1~5V DC, fully 3 port isolated
	Wireless communication	GSM/GPRS base mobile (sms) communication
<b>Communication</b>	Communication Protocol & method	Modbus RTU RS-485 / RS-232 communication
	Programmable parameter & Connectable number	Baud rate, Parity, Node address, Stop bit & 0-256 unit
	Wireless communication	GSM / GPRS base mobile (sms) communication
<b>Programmable Parameters</b>	Display Parameters	Flow Rate, Gas/Steam Pressure, Temperature
	Programming of parameters	Through 4 tactile keys
<b>Other</b>	(A) Dimensions (B) Panel cutout (C) Mounting	(A) 96(H) x 96(W) x 100(D) (B) 92 x 92 (C) panel mounted
	(A) Supply voltage (B) Power consumption	(A) 110/230 V AC, 50/60 Hz (B) 4 watt maximum
	Operating ambient temperature and humidity	• 0~50 °C • Below 90%, non condensing
<b>Flame Proof</b>	Gas group	I IIA IIB as per IS 2148/1981
	Enclose certification	Enclosure is certified by C.M.R.I., Dhanbad
	Display glass	Clear glass thognet type A as per IS 2206
	Degree protection	IP 65 as per IS 2147
	Material of constructions	Aluminum alloy
	Cable entry	3 x 3/4 " ET (GFM-250) / 5 x 3/4" ET (SFM-250)
	External keys	4 nos push buttons

## Ordering Information:-

GFM-250/ SFM-250	1	2	3	4	5	6	7
<b>EXT. Housing</b>	<b>Input type</b>	<b>Flow Principle</b>	<b>Aux power</b>	<b>Analog output</b>	<b>TPS</b>	<b>Comm.</b>	
96x96 panel mounted   P	3 x 4-20 mA   1	Orifice type   O	230V Ac   1	None   N	None   N	None   N	
Wall mounted   W	2 x 4-20 & RTD   2	Vertex type   V	24 V DC   2	4-20 mA   M	24V DC   2	RS-232   2	
Flame proof housing   F		Venturi type   N	12 V DC   3	0-10 V DC   V	12V DC   1	RS-485   4	
						GSM   5	

**ORDERING INFORMATION:**



**GFM** 250-01 50NB 01 01 01 01 01 **SAMPLE ORDERING INFORMATION**

**Users**



INDIA SAUDI ARABIA SINGAPORE UAE USA INDONESIA MALAYSIA

**Manufactured by :**

**CBRO INCORPORATION**

Reg. Corr. Address : B-204, Princeton Tower, Hiranandani Estate,  
G. B. Road, Dist - Thane - (W) - 400607, INDIA.

Telefax : +91 251 2271336, Cell : +91 9321727262

Email - [cbroincorporation@hotmail.com](mailto:cbroincorporation@hotmail.com), Website : [www.cbroidia.com](http://www.cbroidia.com)



Reg. No. 305/Q-050