

These Turbine meters are designed for all non-aggressive gases and fuel gas such as natural gas, propane, butane, ethane, coke oven gas, town gas, acetylene, nitrogen, carbon-dioxide, air and all inert gases.

- Custody transfer application
- Ranges 10 - 4000 AM³/Hr
- Direct reading local totaliser
- Wide range ability 20:1
- Pulse transmission for remote indication (optional)
- Wall/Pipe/Meter mounted volume computer (optional)



**Typical Photograph of
Fuel Gas Turbine Flowmeter**

➤ **PRINCIPLE OF OPERATION**

The Turbine meter consists of a rotor assembly, housing body and an index head. The gas flow is narrowed to a definite cross section rotating the rotor whose angular velocity is proportional to the mean velocity of the gas flow within the ranges indicated. The rotary movement of the rotor is transmitted to a roller index by means of a magnetic coupling for local indication of total flow. Remote transmission is available by using a pulse transmitter.

➤ **GENERAL SPECIFICATIONS HF PULSE TRANSMITTER**

- Accuracy : + 1.0% for Q min. to 0.2 Q max.
+ 0.5% for 0.2 Q max. to Q max.
- Repeatability : Better than ± 0.1%

Temperature range : -10 °C to 50 °C standards.

- Maximum pressure : 100 kg/cm²
- Body Materials : Spheroidal Graphite iron or Carbon Steel
- Rotor Materials : Polyacetal or Aluminium

➤ **ACCESSORIES LF PULSE TRANSMITTER**

Pulses having pulse value "I" can be scanned in index head for tele-transmission of the index progress.

➤ **FREQUENCY TO CURRENT CONVERTER**

HF-1

Located in the index head. Pulse frequency approximately 100 Hz at Q max. This type of drive ensures high integrity of pulse sequence.

HF-2

The pulses are picked up from reference disc located next to the rotor.

HF-3

Located on the body of the turbine meter for sensing the rotation of the aluminium rotor.

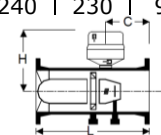
All pulse transmitters are intrinsically safe. Any damage in rotor blade can be detected by HF-2 and HF-3 pulse transmitters in conjunction with a flow computer.

➤ **FREQUENCY TO CURRENT CONVERTER**

These converters are available to convert the pulses received from various pulse transmitters to a stable 4-20 mA or 0-20 mA analog signal.

➤ **RANGE- DIMENSIONS**

Model	Size mm inch	3Q min for range m/hr			Q max. 3m/hr	Rating ANSI	dimension			Weight kg(approx)
		1:20	1:10	1:5			L	H	C	
DN 50 FG 40	50	-	-	13	65	150	150	210	60	13
DN 50 FG 65	2"	-	10	20	100	300				13
					400	400				21
					600	600				21
DN 80 FG 100	80	-	16	32	160	150	240	230	96	20
DN 80 FG 160	3"	13	25	50	250	300				25
DN 80 FG 250		20	40	80	400	400				32
					600	600				36
DN 100 FG 160	100	13	25	50	250	150	300	240	120	30
DN 100 FG 250	4"	20	40	80	400	300				35
DN 100 FG 400		32	65	130	650	400				42
					600	600				55
DN 150 FG 400	150	32	65	130	650	150	450	265	180	50
DN 150 FG 650	6"	50	100	200	1000	300				65
DN 150 FG 1000		80	160	320	1600	400				80
					600	600				100
DN 200 FG 1000	200	80	160	320	1600	150	600	300	240	70
DN 200 FG 1600	8"	130	250	500	2500	300				90
					400	400				140
					600	600				160
DN 250 FG 1000	250	80	160	320	1600	150	750	330	300	110
DN 250 FG 1600	10"	130	250	500	2500	300				160
DN 250 FG 2500		200	400	800	4000	400				180
					600	600				260



The flow rates indicated above are in actual m³/hr, at line conditions.

➤ **Approximate pressure losses**

Meter Size	Maximum Volume		Volume Flow at Pressure Differential					
	Flow	Q Max	1.25m bar	0.5"wg	2.5m bar	1"wg	5m bar	2"wg
	m ³ /hr	scfh	m ³ /hr	scfh	m ³ /hr	scfh	m ³ /hr	scfh
50mm/2"	100	3530	40	1412	56	1980	80	2824
80mm/3"	160	5468	95	3350	136	4800	160	5648
	250	8825	100	3530	141	4980	200	7060
	400	14120	120	4236	170	6000	240	8472
100mm/4"	400	14120	220	7766	315	11120	400	14120
	650	22945	240	8472	335	11825	480	16944
150mm/6"	650	22945	348	12285	501	17685	650	22945
	1000	35300	401	14155	580	20474	820	28946
	1600	56480	530	18710	750	26475	1060	37418
200mm/8"	1600	56480	640	22592	930	32829	1300	45890
	88250	2500	1020	36010	1450	51185	2040	72010
250mm/10"	88250	2500	1150	40595	1675	59130	2375	83838
	141200	4000	1700	60010	2400	84720	3400	120020

Data is for Natural Gas of SG=0.6 at 1 Bar absolute pressure.

➤ **LUBRICATION**

All turbine meters are equipped with lubricant reservoir and pump for periodical lubrication. In case of unfavorable conditions e.g., where water or hydrocarbon condensate occur in the gas as well as in the case of dust laden gas, more frequent lubrication is recommended.

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