IA FLOW ELEMENTS Private Limited

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WHO ARE WE?

In 1978, **Mr. R. Balaji**, a graduate of the prestigious Madras Institute of Technology, Chennai, established Industrial Ancillaries, specializing in designing, manufacturing, and supplying primary flow elements. IA was nursed into a reliable source of supply and gained a reputation in servicing flow measurement requirements be it liquid, vapour, or gas media.

Later in 2006, **IA Flow Elements** Private Limited was formed. The company expanded its global outreach with strategic alliances.
The company has seen considerable growth servicing MENA, European, and Far East markets.

IA Flow Elements continually seeks to meet global market demand with reliable, cost-effective and industry-accepted solutions to flow metering requirements.

OUR CAPABILITIES

We design and manufacture primary flow elements and select instrumentation accessories such as Thermowell, Condensate Pots, and Instrumentation valves.

Design and sizing of flow elements complies to international standards ISO 5167, AGA-3. International standards are followed followed in raw material & end-flanges, selection, fabrication and testing.

IA FLOW follows quality systems which are compliant with latest ISO 9001:2015, and also certified by IBR.

Orifice Plates
OPS

DESIGN

The Orifice Plate is a differential pressure device suitable to measure the flow rate in a closed conduit (it is an affordable device for general applications).

TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar / Fire Safety
Type Of Elements	Square Edge Orifce / Quadrant Orifce / Conical Entrance Orifce / Segmental orifce
Material	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.
Type Of Construction	**Flange Taps**: with pressure taps on flanges (or) on carrier ring **Corner Taps**: with pressure taps on flanges, (or) on annular chambers, or on a mono-flange / plate **Radius / Pipe Taps**: With spool piece and with pressure taps welded on pipe.
Flow Calculation	As per standards. ISO 5167 / AGA 3

STANDARD LIMITS AND APPLICATION FIELDS

Dimensions:	All taps confgurations: 2”-40”
Accuracy:	• as applicable to ISO Code • Repeatability: +/- 0.1% • Max Permanent Pressure Loss shall be (50-70)% of full scale D.P • For optimal performance, Minimum Straight Length for upstream and downstream shall be maintained as per ISO 5167.
Beta Ratio:	As per standards.

NOTE: Flow Meters can be manufactured according to all Customer Specifications
Flow Meter can be supplied complete with all relevant accessories (valves / manifold / condensate pot / transmitter / fitting / tubing)

Orifice Assembly
OPA

DESIGN

The Orifice Assembly is a differential pressure device suitable to measure the flow rate in a closed conduit (it is an affordable device for general applications).

TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar / Fire Safety
Type Of Elements	Square Edge Orifce / Quadrant Orifce / Conical Entrance Orifce / Segmental orifce
Material	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.
Type Of Construction	**Flange Taps**: with pressure taps on flanges (or) on carrier ring **Corner Taps**: with pressure taps on flanges, (or) on annular chambers, or on a mono-flange / plate **Radius / Pipe Taps**: With spool piece and with pressure taps welded on pipe.
Flow Calculation	As per standards. ISO 5167 / AGA 3
Type of Flanges	ASME B16.36 Orifice Flange as standard. Others on request.

STANDARD LIMITS AND APPLICATION FIELDS

Dimensions:	All taps confgurations: 2”-40”
Accuracy:	• as applicable to ISO Code • Repeatability: +/- 0.1% • Max Permanent Pressure Loss shall be (50-70)% of full scale D.P • For optimal performance, Minimum Straight Length for upstream and downstream shall be maintained as per ISO 5167.
Beta Ratio:	As per standards.

NOTE: Flow Meters can be manufactured according to all Customer Specifications
Flow Meter can be supplied complete with all relevant accessories (valves / manifold / condensate pot / transmitter / fitting / tubing)

Restriction Orifice

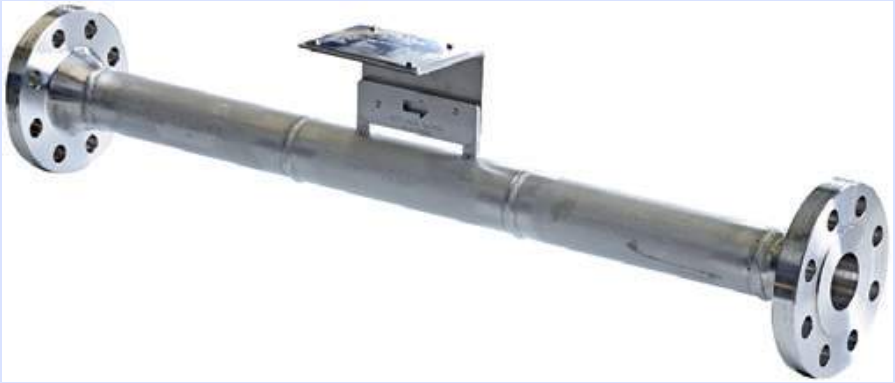
ROP/MRO

DESIGN

These devices are designed to reduce the fluid pressure. The table here below summarizes typical applications and calculation criteria.

TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar
Type Of Elements	Single Stage Restriction Critical Restriction Multistage Restriction
Material of Construction	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.
Sizing Calculation	As per standards. ISO 5167 / AGA 3 Gas Service: multistage calculation is performed to avoid to have sound velocity in the vena contracta section at each stage Liquid Service: multistage calculation shall be carried out to avoid cavitation
Accuracy	Referred to the pressure drop: +/- 2% up to 1 ½" lines & +/- 1% for above 2" lines.



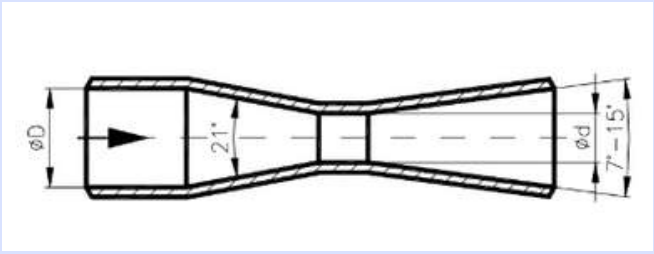
NOTE: Flow Meters can be manufactured according to all Customer Specifications
Flow Meter can be supplied complete with all relevant accessories (valves / manifold / condensate pot / transmitter / fitting / tubing)

Venturi Tubes

VTM/VTF

DESIGN

The Venturi Tube is a differential pressure device suitable to measure flow rate in a closed conduit with the minimum permanent pressure loss.



TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar
Type and Construction	Machined from bar stock or Fabricated by welded plate. For large size and very high wall thickness Venturi Meter are manufactured by forging. Conical divergent angle of 7° for low pressure loss. Conical divergent angle of 15° for Classical Venturi. Process connections: Flanged / Open-end for welding direct. Pressure Taps: With annular chamber (for classic/standard applications) / With piezometric ring (for light applications) / direct pressure taps (for high wall thickness and heavy applications)
Material of Construction	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.

STANDARD LIMITS AND APPLICATION FIELDS

Dimensions:	Machined Venturi by bar stock: 2”-10” Fabricated Venturi by welded plate: up to 48” (and above, where acceptable by the Customer) Venturi by forging: On specific demand.
Beta Ratio:	As per standards.

NOTE: Flow Meters can be manufactured according to all Customer Specifications
Flow Meter can be supplied complete with all relevant accessories (valves / manifold / condensate pot / transmitter / fitting / tubing)

Flow Nozzles

FNA

DESIGN

Flow Nozzle is a differential pressure device to measure flow rate in a closed conduit for heavy duty applications and having high flow rate.

TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar
Type Of Construction	ASME Long Radius / Long Radius with diffuser / Throat Taps Short Nozzle ISA 1932 / Venturi Nozzle
Material	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.
Type of construction	Flanged / Welding in Pipe with pins / With complete spool pipe and Flow conditioner
Flow Calculation	As per standards ISO 5167/ASME MFC-3M ; Other references: ANSI 2630 /AGA-3

STANDARD LIMITS AND APPLICATION FIELDS

Dimensions: Standard : 2”-20” / Long Radius Nozzle: 2”-24” / Venturi Nozzle: 2 ½” – 20”

Accuracy:

- as applicable to ISO Code
- Rangeability : 1-4.5
- Repeatability: (+/- 0.1%)
- Max Permanent Pressure Loss shall be (50-70)% of full scale D.P
- For optimal performance, Minimum Straight Length for upstream and downstream shall be maintained as per ISO 5167.

Beta Ratio: As per standards.

NOTE: Flow Meters can be manufactured according to all Customer Specifications. Flow Meter can be supplied with all suitable accessories (valves / manifolds / condensate pots / transmitter / fitting / tubing)

Averaging Pitot Tube

APT

DESIGN

The Averaging Pitot Tube is a differential pressure device suitable to measure the flow rate in a closed conduit. It is generally used in pipes and ducts of large size and with low flow velocity.

TECHNICAL SPECIFICATIONS

Industries	Oil & Gas / Petrochemical / Power / Carbon Black / Steel / Sugar
Type Of Elements	Circular, Tube in Tube type construction
Material of Construction	Austenitic St. Steel, Duplex, Super Duplex, Monel, High Nickel Alloy Steel, meeting to ASTM / ASME standards.
Process Connections	Threaded / Flanged Nozzle
Sizing Calculation	As per standards. ISO 5167 / AGA 3

NOTE: All Type of Sensors can be supplied with End Support and Retractable System

APPLICABLE LIMITS

Dimensions: 3" to 72" inches line size and ducts

Accuracy:

- 2.5% for Standard Element
- Repeatability: +/- 0.15% full scale flow
- Max PPL 10÷15% of full scale differential pressure

NOTE: Flow elements are manufactured based on Customer Specifications and process parameters. Flow elements can be supplied complete with all relevant accessories (valves / manifold / condensate pot / transmitter /fitting /tubing)

ACCESSORIES

METER RUN - MRA

Meter runs are a combination of both inlet and outlet piping integrated with a flow element. They are used for flow measurement of single phase aggressive and non-aggressive gases, steam or liquids.

CONDENSATE POTS-CPS

Condensate pots are used in steam applications to achieve a constant condensate level within the pressure taps.
We can offer it in carbon steel, stainless steel, with or without IBR.

THERMOWELL-TWT / TWF

Thermowells are used for a safe installation of temperature sensors into pipes. They prevent the sensor to get in physical contact with the process fluid and are therefore recommended for aggressive fluids and for high dynamical stress which could harm the temperature sensor.
We can offer it in threaded / flanged/ welded configurations.

VALVE MANIFOLD-VMx

Manifolds are used to close off or purge the pressure taps and to set the zero point of the differential pressure transmitter.
Can be offered in 2-way / 3-way / 5-way configurations and all kinds of designs for remote mounting as well as integral connection to the transmitter.


IA FLOW ELEMENTS


OXY
قطر للطاقة
QatarEnergy
أدنوك
ADNOC
Petrofac
Global Pavilion
البترول الوطنية
KNPC
Schlumberger
شركة نفط الكويت
Kuwait Oil Company
ecoPETROL
YOKOGAWA
أدجاز
ADGAS
CPECC
شركة تنمية نفط عمان
Petroleum Development Oman
ABB
MITSUBISHI
HEAVY INDUSTRIES
NOV
مؤسسة نفط
الشارقة الوطنية
SNOC
Golden Palm
Petroleum Services Co. W.L.L


TOYO ENGINEERING
KMML
Spreading Splendour
PCBL
हिन्दुस्तान पेट्रोलियम
HP
FACT
PIONEERS IN PROGRESS
CPCL
Worley
energy | chemicals | resources
HYUNDAI
ENGINEERING & CONSTRUCTION
एनटीपीसी
NTPC
राष्ट्र की सेवा में परमाणु
भाविनि
BHAVINI
ATOMS IN THE SERVICE OF THE NATION
पी डी आई एल
PDIL
UltraTech
CEMENT
The Engineer's Choice
JSW
IKN
ENGINEERING THE FUTURE
L&T Energy
Hydrocarbon
EMERSON
बी एच ई एल
BHEL


MATERIAL
STORAGE


IA FLOW ELEMENTS PRIVATE LIMITED

Notes

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ISO 9001:2015
BUREAU VERITAS Certification

UKAS MANAGEMENT SYSTEMS