
Monad Electronics

G1-805, Sitapura Industrial Area,
Tonk Road, Jaipur-302022

Phone:- +91-141-2771119, Fax:-+91-1412550005

Website:- www.monadindia.com

Email:- mail@monadindia.com, monadindia@yahoo.com



Introduction



Winner of National Award for year 2009-2010 in R&D

Monad Electronics is An ISO 9001:2015 certified company, which has been involved for over 20 year in the business of designing, manufacturing and export of Electronic Industrial products, Testing equipments , sensors and related indicating and controlling devices and allied products related to Data logging & Acquisition.

Monad is specialized in providing high end and high accuracy customized Force Transducers, Multi-Axial Force Transducers and Torque Sensors. Monad is an expert in providing import substitutes of high end Load Cells, Safe Load Indicators, etc

We are supplying to leading industries and government institutions and are also exporting our products to USA, Germany, Belgium, Turkey, Australia, U.A.E., Singapore, Spain, Brazil, New Zealand, Philippines, UK, Croatia and to the African countries.

CONTINUOUS WEIGHING SOLIDS FLOWMETERS

Solids flow meters from MONAD accurately measure and control flow rates of product so that quality and plant efficiency are consistently maintained. These flow meters have a totally enclosed design to eliminate product waste or contamination and reduce plant maintenance. Since the units are dust-tight, they provide a healthier work environment, especially when hazardous substances are monitored. They are specifically designed for minimum plant down-time.

;

MATERIALS

Solids flow meters monitor dry bulk materials in sizes from powders to granules more than 25 mm (1”) in diameter.

Handling flow rates from 200 kg/h to 5000 t/h . Material density varies from puffed wheat to iron ore while fluidity ranges from fluidized powder such as fly ash to sluggish flowing materials such as lathe turnings.

CONTINUOUS WEIGHING SOLIDS FLOWMETERS

Common Flow meter In feed Types

A solids flow meter's performance will be as repeatable and consistent as the flow of material it is measuring. The following arrangements are typical of pre-feed chute configurations used to ensure consistent flow patterns. Arrangements will vary depending on the upstream equipment or chute work. Applications should be reviewed by a solids flow meter specialist to achieve best results. During initial setup, use pre-weighing or post-weighing of material samples to calibrate flow meter and verify accuracy using the material sample weights.

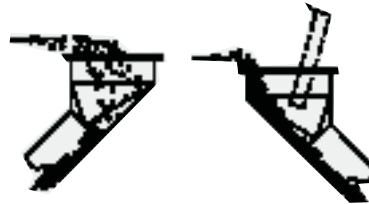
CONVEYOR BELT



BUCKET ELEVATOR



FEEDER/FLOWGUIDE TRANSITION



SHORT FALL CHUTE



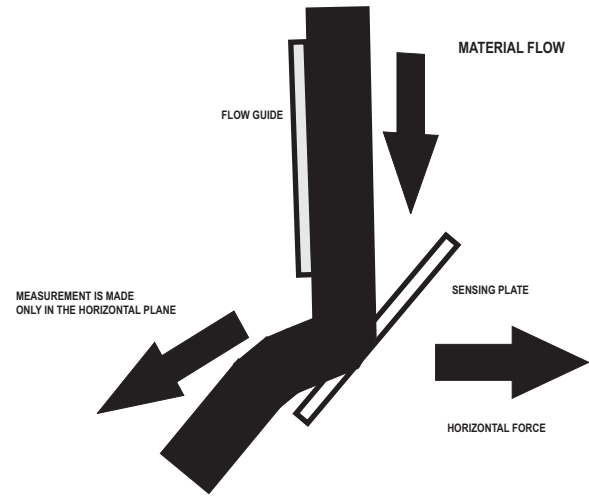
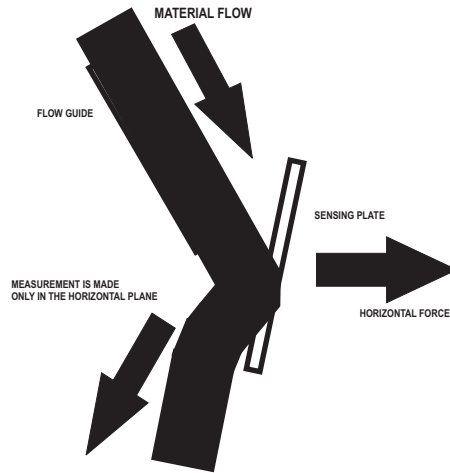
Impact Plate Solid Flow Meter

PRINCIPLE OF OPERATION

Dry bulk solids material enters the flow guide producing a mechanical deflection as it strikes the flow meter's sensing plate. It then continues on through the process unhindered, ensuring no disruption in the process or production.

The horizontal force of this deflection is converted into an electrical signal by either a deflection sensing LVDT (Linear Variable Differential Transformer) or a force sensing strain gauge load cell. The signal is then monitored and processed by the associated electronic integrator, which instantaneously displays the flow rate and integrated total weight. Since only the horizontal force is measured, vertical force due to material build-up in the non-impinging area has no effect. There is no zero drift and the need for frequent re-calibration is eliminated.

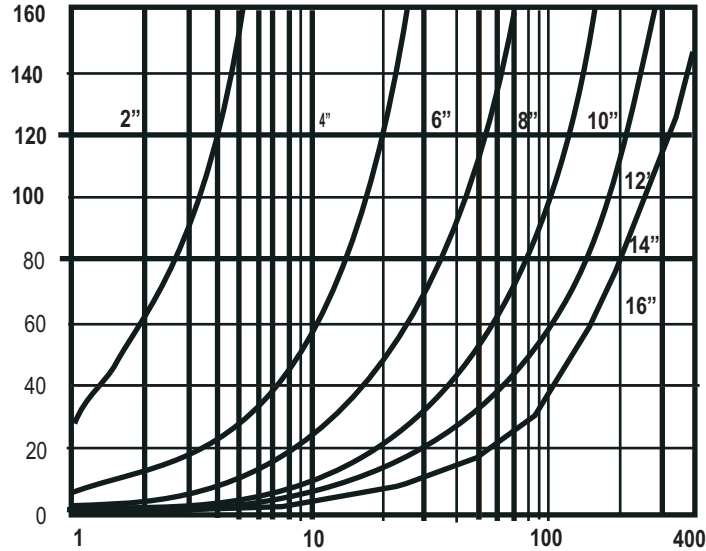
Impact Plate Solid Flow Meter



Impact Plate Solid Flow Meter



Impact Plate Solid Flow Meter

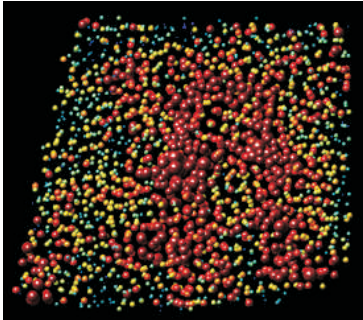


CRITERIA	MN5B	MN5C	MN5D	MN5E	MN5F
Typical industries	Food, grain, milling animal feed	Chemicals, grain, minerals, cement	Aggregates, grain, minerals, cement aggregates	Grain, cement, animal feed, fine	Grain, cement, fine aggregates
Typical applications	Grains, seeds or nuts plastic pellet production, pet food blending	Fly ash, lime dowsing in gold ore processing, cement in aerated gravity conveyor (A- series), pulverized coal in boiler and kiln feed(C-40)	Fly ash, lime dowsing in gold ore processing, cement in aerated gravity conveyor (A- series), gypsum flow for board forming line	Truck load-out on grains fly ash load-out	Load-out on grains or seeds, cement in an aerated gravity conveyor system (MA-Series)
Typical capacity	100 to 230 t/h (1 to 250 STPH)	0.2 to 40 t/h (0.2 to 44 STPH)	20 to 300 t/h (22 to 330 STPH)	100 to 300 t/h (110 to 330 STPH)	400 to 900 t/h (440 to 990STPH)
Maximum particle size	6 to 13 mm (0.25 to 0.5” depending on inlet size.	13 mm (0.5”)	25 mm (1”)	25 mm (1”)	25 mm (1”)
Maximum product temperature	65 °C	232/65°C	232/400°C	80°C	150°C
Inlet size	102 to 305 mm (4 to 12”)	51 to 254 mm (2 to 10”)	152 to 406 mm (6 to 16”)	305 X 508 mm (12 X 20”)	305X660mm(12X26”) 508X940mm(20X37”)
Accuracy	<u>±1%</u>	<u>±1%</u>	<u>±1%</u>	<u>±1%</u>	<u>±1%</u>
Turn down	3:1	3:1	3:1	3:1	3:1

Centripetal Solid Flow Meter

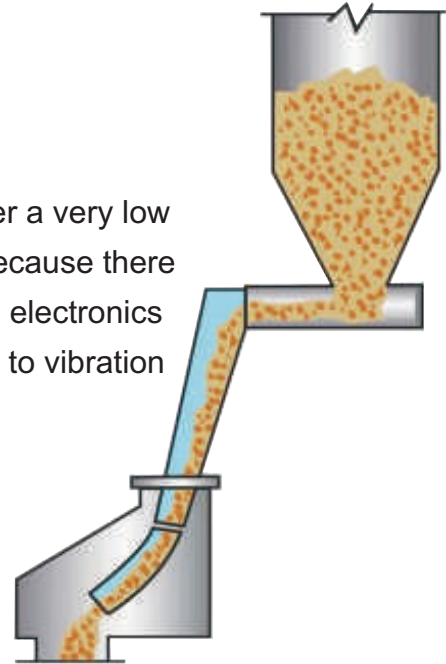
The Centripetal Flow meter from Monad is a Solid-Particle Mass Flow Meter that is durable, accurate, maintenance-free, compact, and cost-effective. It is unique and positioned to replace weigh belts, impact meters loss in weight meters and static weigh scales, where accuracy, low maintenance, and zero drift is paramount.

Accuracy is not affected by changes in product elasticity, density, or shape. The meter offers a typical accuracy of $\pm 0.25\%$ of full-scale reading at calibrated flow rate and is repeatable within $\pm 0.1\%$. The Monad's Centripetal Flow Meter has NO moving parts. Calibration and installation are simple to perform.



Centripetal Solid Flow Meter

- # Solid Construction / Low Maintenance
- # Sturdy high-grade aluminum/steel alloy construction with
- # Stainless steel flow paths makes the Monad Solid flow Meter a very low maintenance instrument. It rarely requires Re-calibration because there are no moving parts. There are no belts or drives. Plus, the electronics are located outside the process stream and are not subject to vibration from the manufacturing process.



Centripetal Solid Flow Meter

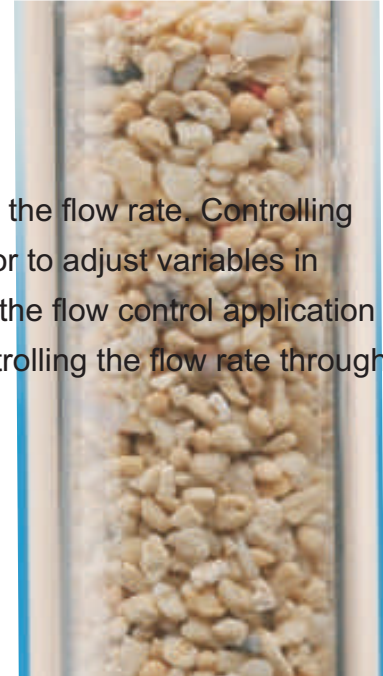
Totalizing applications include:

- On Line Batching
- Filling
- Inventory Control

The flow control output is a "real time" output that can govern the flow rate. Controlling VFD Drive or a valve with an analog signal allows the operator to adjust variables in the process to keep flow at the required output. For example, the flow control application can allow the feeding of an extruder at a constant rate by controlling the flow rate through the rotary valve.

Flow control applications include:

- Ratio control of two or more product streams
- Extruder feed control
- Continuous flow rate



Centripetal Solid Flow Meter



Centripetal Solid Flow Meter

Flexible

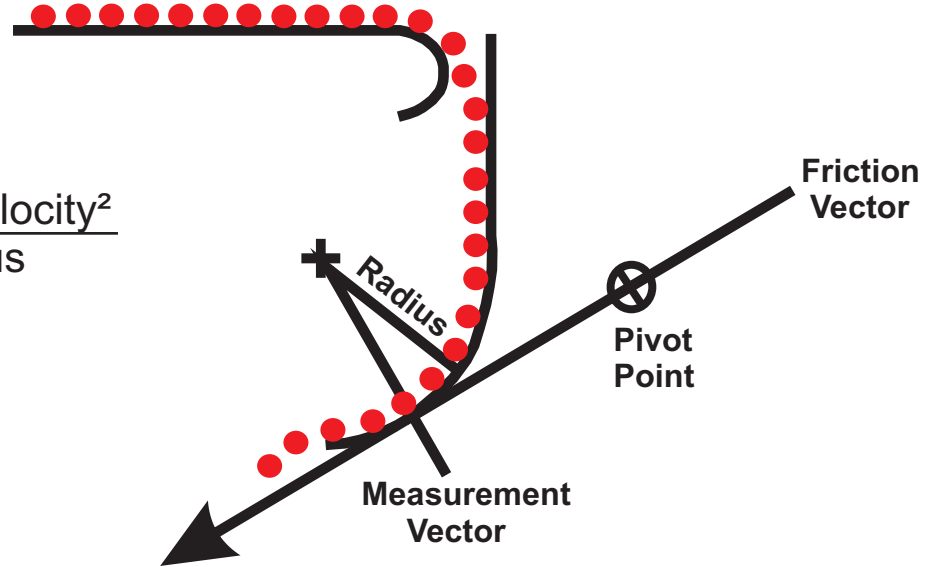
The Monad Solid Flow Meter is not affected by changes in product elasticity, density, shape or friction. Fluctuations in flow rate don't impact its accuracy. The linearity of the zero friction formula gives the Solid flow Meter its ability to measure at various densities and turndown ratios while maintaining near perfect accuracy.

Turndown Ratio

The Monad Flow Meter has a minimum 15:1 turndown capability while maintaining accuracy. The meter's unique design enables it to identify and cancel the friction component of the mass flow. The resulting signal is flow = mass rate, which is linear. The linearity allows the meter to work at 0.25% accuracy full scale. This means it is not affected by the wide variances typical to process flow.

Centripetal Flow meter

$$\text{Force} = \frac{\text{Mass} \times \text{Velocity}^2}{\text{Radius}}$$



Centripetal Solid Flow Meter

Technical Specifications :

Power supply	220 V / 50 Hz AC
Operating Temp. range	
Sensor	0°-80°/0-150°/0°-250° C
Digitizer	0°-50°C
Flow material	Powder, Granule, Grains, any flowable material
Typical Capacity	20 Kg -1000 T/Hour
Inlet Size	25-1250 mm
Outlet Size	25-1250 mm
Accuracy	± 0.1% RO