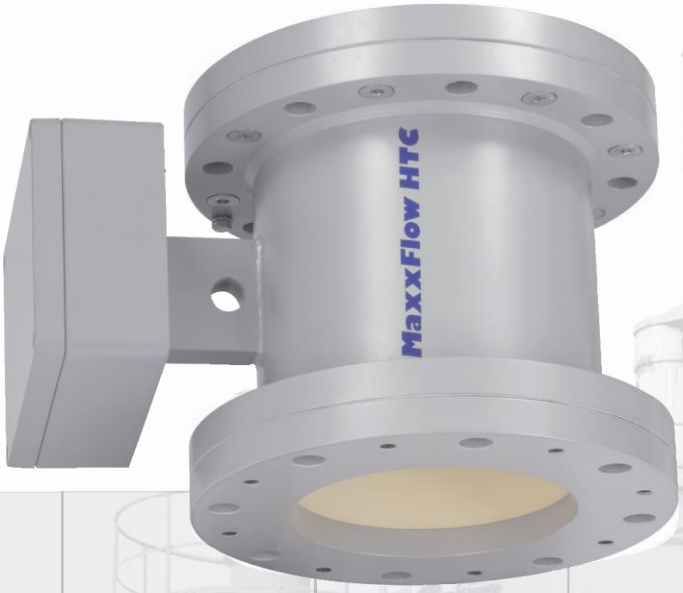
Bulk solids measurement for high throughput rates

"Supplying intelligent measuring systems for industry since 1995"

Development
Production
Sales
Commissioning
After-Sales



MaxxFlow HTC application overview

The successor to the Impact Plate!

Past

Today

www.onthelevel.com

System features

Areas of use

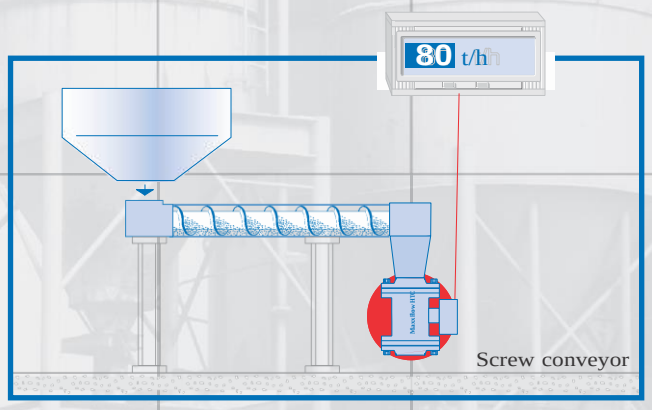
The MaxxFlow HTC was developed specifically for measuring the volume of bulk goods and solids with high throughput rates.

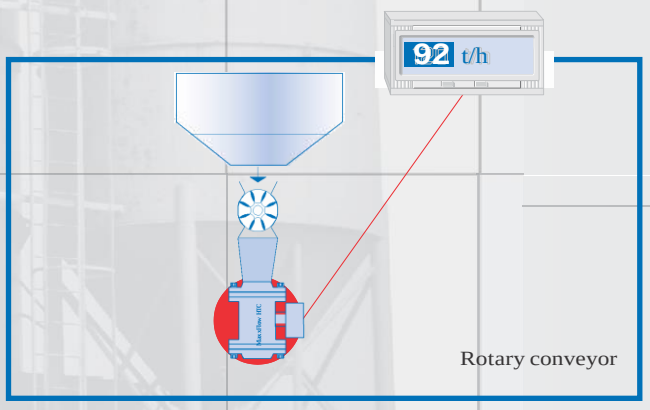
As a result of its completely open cross-section and low installation height, the MaxxFlow HTC is ideal for places where previously only a sophisticated mechanical solution such as impact plate scales or measuring chutes were possible.

The MaxxFlow HTC is installed independently of the pipeline direction (vertical or angled) but always after mechanical transport equipment such as bucket wheel feeders or screw conveyors.

Benefits of the MaxxFlow HTC:

- For pipelines and ducts
- No upper limit on throughput volume
- Pressure-resistant up to 10 bar
- 100 % dust-tight
- Measurement independent of the flow speed
- Heat-resistant up to 120 °C
- Independent of pipeline direction
- Ceramic internal tube for coarse processes (no wear from abrasive media)
- Low installation height of just 300 mm
- Non-contact measuring process (no mechanical components in the stream of material)



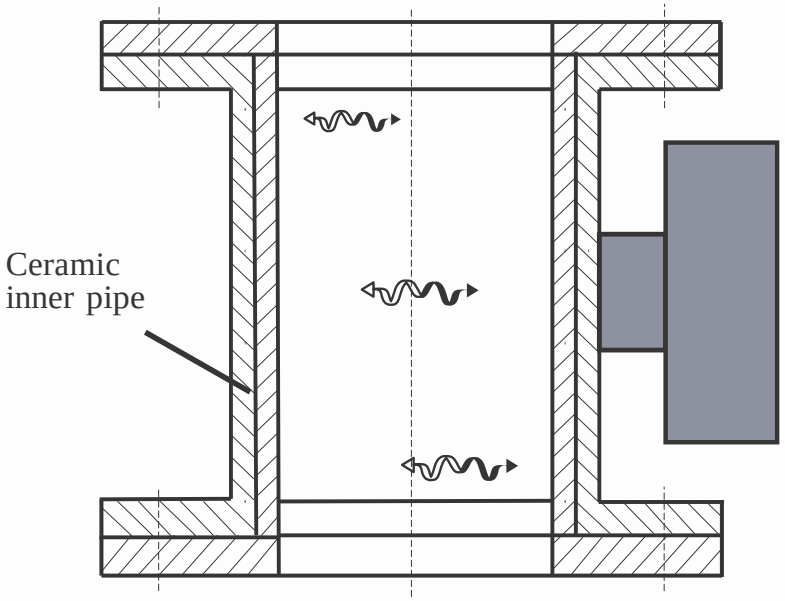


Function

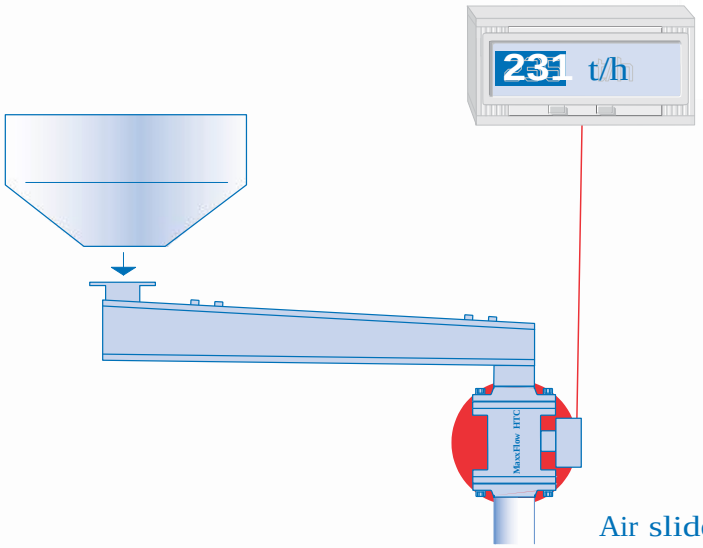
The material for measurement falls or slides through an infeed section after the transport equipment and then passes the sensor. As it passes through this section the MaxxFlow HTC records the material density and speed. Since the material falls from a constant height after being discharged from the transport equipment, the speed of the product stream is accelerated but constant at the location of the sensor.
As a result of this constant speed, the speed measurement does not have to be enabled in every case and instead can be calculated as a constant dependent on the falling height.
The mass flow is calculated as follows:

$Q\ (kg/s) = K\ (kg/m^3) \times v\ (m/s) \times A\ (m^2)$

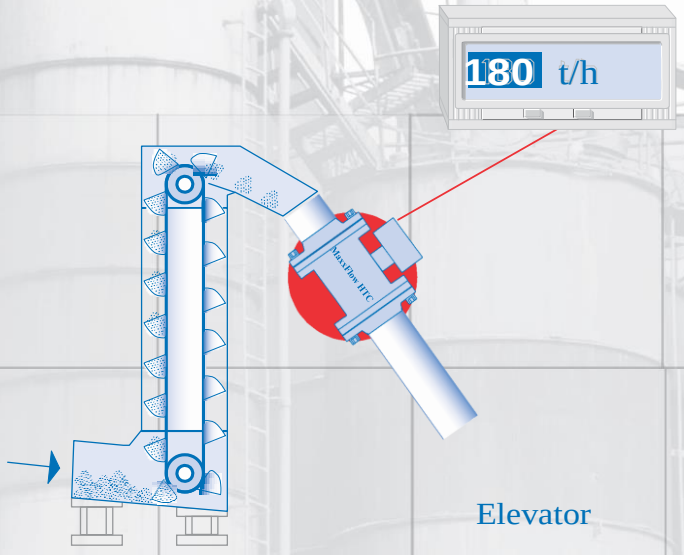
A homogeneous measurement field is generated in the measuring tube by connecting a high frequency electromagnetic alternating field to it. The measuring tube (internal sensor tube) is made of wear-resistant ceramic. Bulk goods inside the measuring field attenuates the amplitude of the alternating field. This produces a measuring signal which is proportionate to the concentrate of bulk goods in the sensor (kg/m^3).
If the material speed varies, for example as a result of a different initial speed, this can also be measured. This is done using a run-time measurement using two other electrodes which are behind the internal ceramic tube.



Installations



Air slide

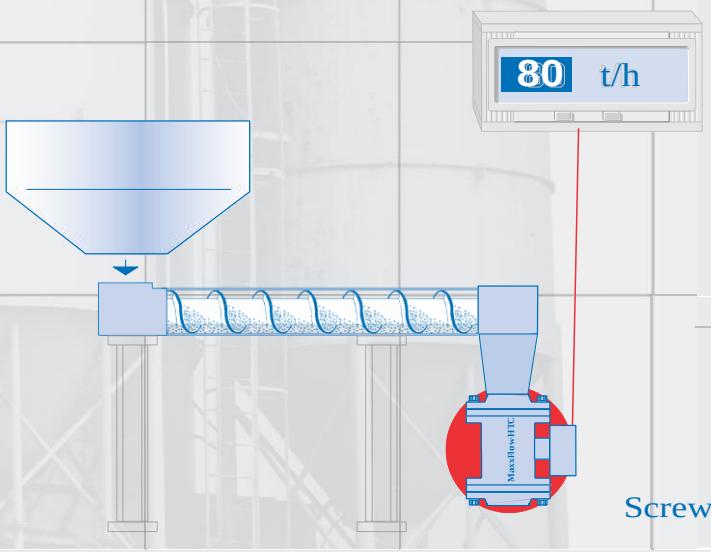


Elevator

The sensor can essentially be installed after any mechanical transport equipment.

Its installation location is not subject to any conditions.

Free fall and angled lines are equally possible.



Screw feeder

Calibration

- The MaxxFlow HTC requires very little calibration.

  Discharging and weighing reference volumes which can quickly amount to many tonnes is now a thing of the past.

  You place the slide under the sensor and fill the measuring tube through a port above it.
  The required material movement is therefore less than 10 litres!

- The zero adjustment is conducted when the sensor is clear.

  When the sensor is filled (full adjustment) the density signal corresponds precisely to the bulk density of the material.

  The adjustment is completed at the touch of a button.

  This process can be repeated easily after every material change.

Volume measurement of ready-mixed cement

Customer:	Cement works (Australia)
Product:	Ready-mixed cement
Transported volume:	Up to 170 t/h
Transport equipment:	Screw conveyor
Installation location:	In free fall after screw conveyor (truck loading)

How were measurements taken previously:
The trucks were filled and then checked on a truck scale. If there was too much material in the truck, it had to be blown out.

According to the customer, the MaxxFlow HTC system provides the following benefits compared to the previous system:

- Continuous volume measurement (we know how much material is in the truck before it is weighed)
- No need to blow out the truck silo since overloading is avoided
- The system ensures that the trucks are given the perfect load
- It saves time and money
- Smooth operation

Volume measurement of potato starch

Customer:	Food manufacturer (Germany)
Product:	Potato starch
Transported volume:	60 to 80 t/h
Transport equipment:	Troughed chain conveyor
Installation location:	In free fall after screw conveyor

According to the customer the MaxxFlow HTC system provides the following benefits:

- Simple upgrade / installation
- Low installation height compared to impact plate scale
- Zero wear as it has no mechanical parts (non-contact)
- Continuous material volume meter
- Quality assurance during the manufacturing process

Volume measurement of raw meal

Customer:	Cement manufacturer (Germany)
Product:	Raw meal
Transported volume:	80 to 100 t/h
Transport equipment:	Metering roller
Installation location:	In free fall after metering roller

According to the customer the MaxxFlow HTC system provides the following benefits:

- Low design height
- Unlimited throughput volumes
- Simple upgrade
- Calculation of the actual volume of material transported
- Assurance of the required mixture for production
- Documentation of the transported volumes

Volume measurement of salt

Customer:	Salt manufacturer (Germany)
Product:	Salts
Transported volume:	10 to 60 t/h
Transport equipment:	Troughed chain conveyor
Installation location:	In free fall after screw conveyor

According to the customer the MaxxFlow HTC system provides the following benefits:

- No wear (ceramic internal tube)
- Space-saving, simple installation
- Continuous volume measurement with no mechanical parts
- Simple upgrade
- Independent of pipeline direction
- Assurance of the required transport volume
- Quality assurance during the manufacturing process

Volume measurement of cement

Customer:	Plant engineer (ready-mixed concrete plants)
Installation location:	After bucket wheel feeder
Volume:	35 to 50 t/h

Customer benefits:

- Continuous volume measurement
- The measurement is used as a guide value for metering the additive

Volume measurement of raw meal

Customer:	Cement works (Switzerland)
Product:	Raw meal
Transported volume:	250 t/h
Transport equipment:	Air vibration conveyor
Installation location:	After air vibration conveyor

How were measurements taken previously:
Impact plate scale

According to the customer the MaxxFlow HTC system provides the following benefits compared to the previous system:

- Low purchase price
- Simple upgrade
- Zero maintenance
- Simple calibration
- Dust-tight
- No parts in the stream of material
- Low installation height (300 mm or 12 in)

Volume measurement of fly ash

Customer:	Plant engineer (ready-mixed concrete plants)
Installation location:	Truck preloading area
Product:	Fly ash
Installation location:	After bucket wheel feeder
Volume:	120 t/h

Customer benefits:

- Preloading of trucks

Volume measurement of lime

Customer:	Lime works
Product:	Lime
Transported volume:	80 to 100 t/h
Transport equipment:	Air vibration conveyor
Installation location:	After screw conveyor

Customer benefits:

- Replacement of impact plate scales
- Internal process control

To

GTS, Inc.
PO Box 799
Shalimar, FL 32579 USA

Phone +1 850 651 3388
Fax +1 850 651 4777

info@onthelevel.com
www.onthelevel.com

Fax response: *+1 850 651 4777*

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Contact

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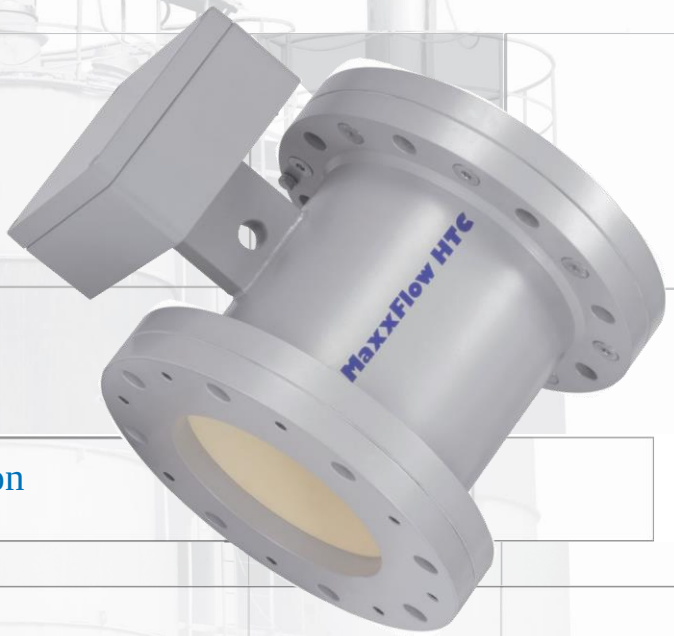
Yes,

I am interested

☐ MaxxFlow HTC



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☐ Please call me at this number:

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☐ I would like a visit from a GTS Representative.
We would like to arrange an appointment.

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