Loss-in-weight scale

Varion A

For continuous
dosing of additives

Innovations for a **better world.**

BÜHLER

Make a difference in dosing
Varion A – Loss-in-weight scale for additives

Control and define process streams

Dosing applications are extremely important in all food and feed processing lines. Dosers are technically taking over this function and are installed during process steps which are critical for process and quality. The Varion A perfectly copes with this requirement and provides operation modes for dosing.

Dosing – The Varion A provides precise and quality dosing for micro and small ingredients to both continuous as well as batch processes.

Quality

Uniquely high and repeatable accuracy down to ± 0.2% thanks to a perfect combination of **process logic**, a super-efficient **differential pressure compensation** and high-precision load cells.

Availability

Maximized up-time thanks to the powerful and extremely easy to operate **bUnify control system**, with a modern and intuitive user interface.

Safety and ease of use

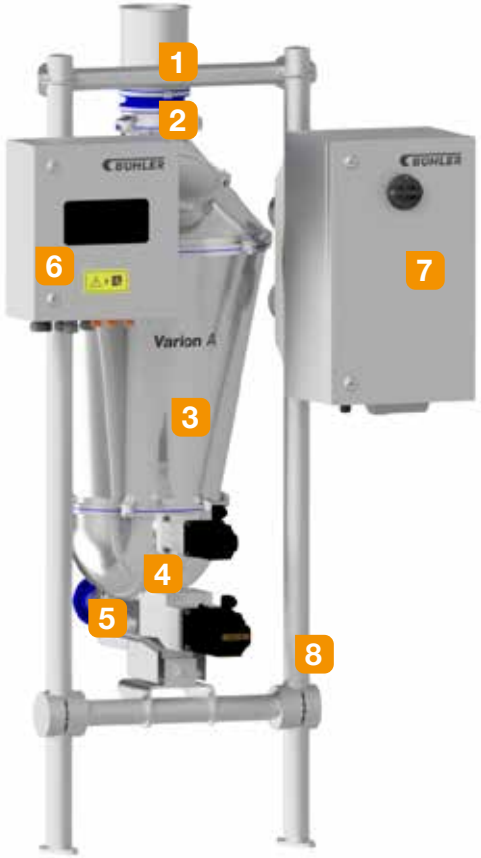
Easy and safe to operate and maintain thanks to its uniquely ergonomic, robust and hygienic design.

Digitalization

Unlimited connectivity with Bühler Insights and any plant control system ensures full transparency and utilization of the **Scales Monitoring System.**

Key elements
Designed for purpose

1. Inlet section
2. Flexible connection to decouple weighing hopper
3. Weighing hopper
4. Outlet section with stirrer, actuated by servo drive
5. Double-screw dosing feeder, actuated by servo drive
6. bUnify machine controller, with built-in web-based HMI
7. Cabinet for power section
8. Installation structure



Commodities:

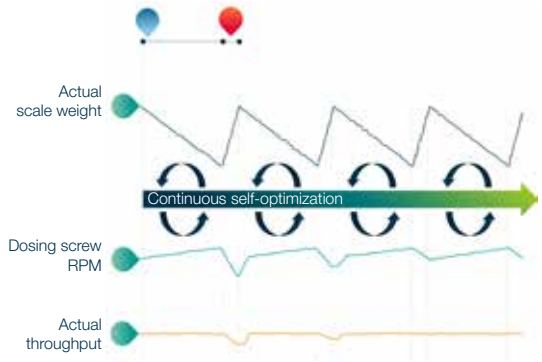
- Flour
- Protein powder
- Crystal sugar
- Vitamin powder
- Flavoring powder
- Egg powder
- Food ingredients
- Feed ingredients
- Other powdery products

Varion A at a glance

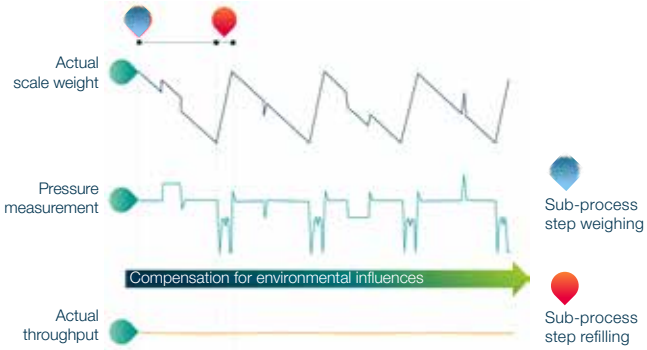
Turning leadership in innovation into benefits for operation & maintenance

Continuous self-optimization

Example: Use case continuous dosing



Compensation for environmental influences



Best accuracy of down to ± 0.2%*

- Self-learning process algorithm continuously optimizes the weighing process
- Smart differential pressure measurement system actively compensates and monitors external influences
- Separately connected high-precision load cells allow individual analysis of the measuring signals

Maximized up-time thanks to bUnify control system

- Intuitive and modern user interface enables fast and high-quality interaction when required
- Full transparency on process and machine parameters thanks to trending charts and event management
- Guiding wizards ensure the most effective root cause analysis and user guidance e.g. calibrations
- Highly flexible integration into the processing line thanks to various interface options

*Mentioned accuracy to be understood as best-case scenario and depending on operation point, product properties, environmental influences, line integration, maintenance quality, etc.

Unmatched safety thanks to outstanding design

- Operational – no product build-ups in the process zone thanks to the avoidance of complex and inaccessible areas
- Maintenance – sufficient openings for cleaning and maintenance to comfortably reach all relevant parts and sections
- Equipment – product zone free of screws and bolts protects downstream equipment
- Food – minimal accumulations of product and dust thanks to first-class hygienic design

Scales Monitoring System provides solid ground for various improvements

- Improved performance and process stability thanks to full transparency on critical machine and process parameters
- Long-term monitoring of the incoming product flow leads to maximized and uniform overall processing line efficiency
- Smart Bühler Insights dashboards ensure transparency across all organizational levels

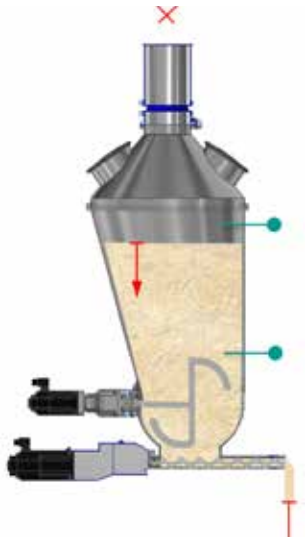
Use case: Continuous dosing
Ensure maximal quality and efficiency

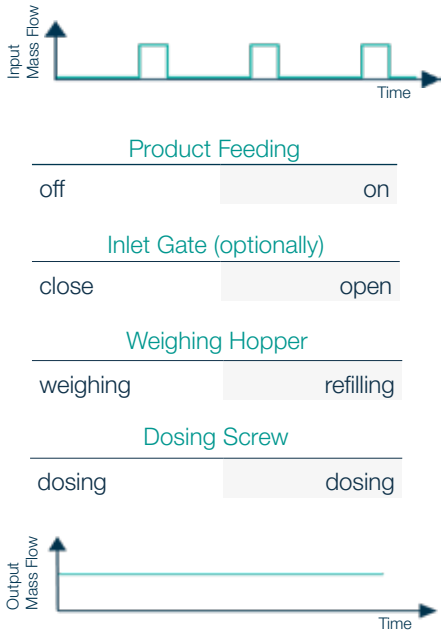
In the operation mode FlowControl, the Varion A continuously doses the product with the desired process flow rate to the downstream process steps. The throughput can be freely selected, optionally in combination with a total weight of a production lot.

Insights into the Varion A process

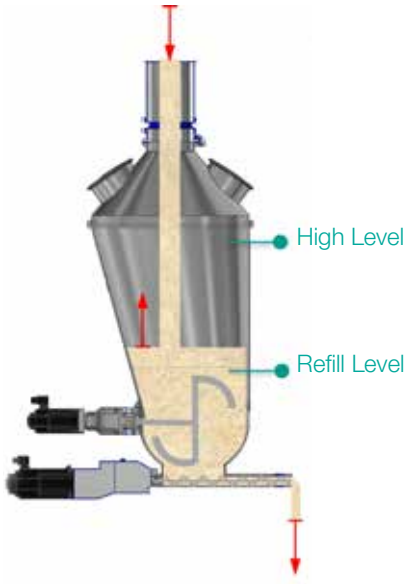
The continuous dosing is provided by two sub-process steps such as weighing and refilling. The product level in the weighing hopper is always between high and refill level.

Sub-process step weighing





Sub-process step refilling



Exemplary use cases:

- Dosing product to a continuously operated core machine such as single or twin screw extruder, ensuring highest performance in the core process
- Dosing product to a continuously operated raw material blending system ensuring the desired compositions of raw materials

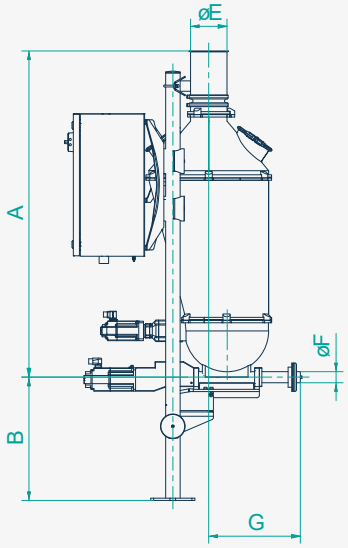
Efficiency
Most accurate and consistent feeding of core processes

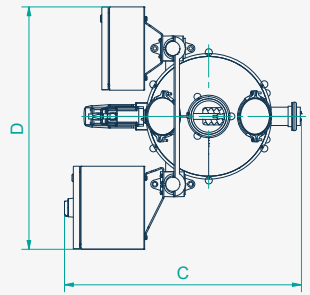
Quality
Transparency in the factory and repeatability in the process

Self optimization
Availability of relevant data as basis for smart process interlocks

Technical specifications and capacities

Use case: Continuous dosing





Dimensions

Model	A	B	C	D	øE	øF	G
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
20	1331	255-520	997	1037	ø150	2 x ø20	386
40	1331	255-520	997	1037	ø150	2 x ø40	386

Dimension may vary for different machine configurations

Capacities

Model	Throughput
	[dm^3/h]
20	up to 150
40	up to 3,000

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