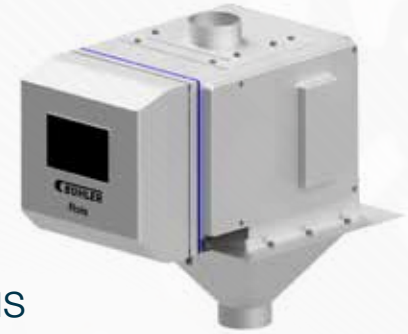
Flow balancer

Rois



For continuous dosing of granular products

Innovations for a **better world.**

BÜHLER

Make the difference in dosing
Rois – Flow balancer for granular products

Control and define process streams

Dosing applications play an extremely important role in all the food and feed processing lines. A flow balancer is technically taking over this function and is installed during process steps which are critical for process and efficiency. The Rois perfectly copes with this requirement.

Dosing – Defines product streams to downstream processes by running them under the most effective conditions and blending requirements, thereby achieving the desired product composition.

Quality

Uniquely high and repeatable accuracy down to ± 1% 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.**

Sustainability

Designed-for-purpose **DriveX** module with integrated power management system enables a compressed air free production.

Key elements
Designed for purpose

1. Inlet section
2. Housing with incorporated:
   - segment gate, actuated by DriveX
   - impact plate
   - high-precision load cell
3. Outlet chute
4. bUnify machine controller with web panel

Commodities:

- Wheat
- Rice
- Maize
- Barley
- Oat
- Oat flakes
- Rye
- Malt
- Other granular products

Rois at a glance

Turning leadership in innovation into benefits for operation & maintenance

DriveX eliminates compressed air from production

- Designed for purpose servo drive and gearbox ensures not only reduced energy requirements but also increased the life-span of the drive system
- Power management system buffer restores energy and ensures safety of the machine in case of power cuts

Unmatched accuracy of down to ± 1%

- Self-learning process algorithm continuously optimizes the weighing process
- Unique design of impact plate structure ensures direct force introduction to the load cell avoiding any cross forces influencing the measurement result
- Calibration procedure from outside enables quick and frequent re-calibration
- Availability of calibration curves cope with changing product properties

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
- Support wizards ensure most effective root cause analysis and user guidance e.g. calibrations
- Highly flexible integration into the processing line thanks to various interface options and powerful recipe management

Unmatched safety thanks to outstanding design

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

Upgrade efficiency and safety in existing processing lines

- Minimal machine height and footprint ensure flexible and compact retrofitting
- Correctly graduated ex-zoning concept ensures safe operation and avoids dangerous situations

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

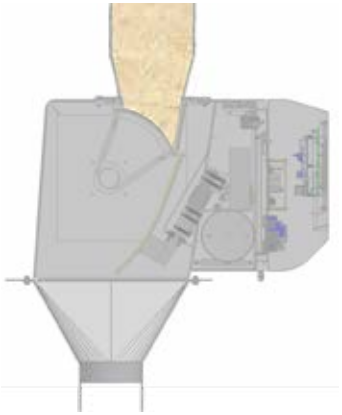
Use case: Continuous dosing
Ensure maximal quality and efficiency

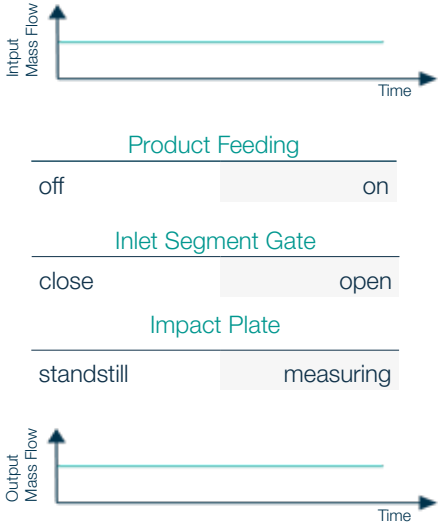
In the operation mode FlowControl, the Rois continuously doses the product with the desired process flow rate to the downstream process steps. The throughput can be freely selected, optionally in combination with a total weight of a production lot.

Insights into the Rois process

The impact plate measures the force given by the receiving product. Based on this force, the inlet segment gate defines its opening degree in order to dose at the desired process flow. This control loop automatically runs the machine at the desired dosing throughout the operation.

Standstill mode





Operation mode

Exemplary use cases:

- Dosing product to a continuously operated core machine such as hammer mill, optical sorter, etc, ensuring highest performance in the core process
- Dosing product to process steps such as cleaning, dehuling, conditioning, etc, ensuring high efficiency in the downstream processing
- Dosing product to a continuously operated raw material blending system ensuring the desired compositions of raw materials

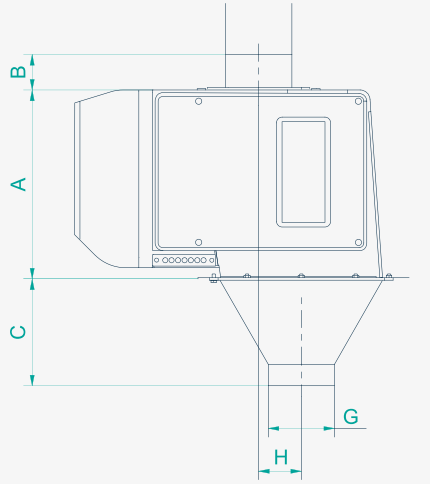
Efficiency
Accurate and consistent feeding of down-stream processes

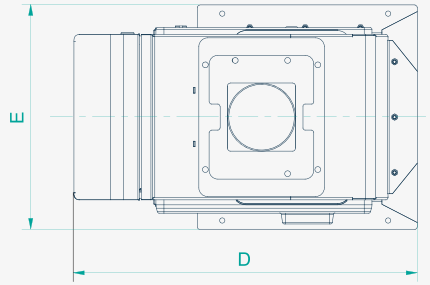
Quality
Transparency in the factory and repeatability in the process

Self optimization
Smart process interlocks based on current product properties

Technical specifications and capacities

Use case: Continuous dosing





Dimensions

Model	A	D	E	G
	[mm]	[mm]	[mm]	[mm]
10	442	808	514	100
12	442	808	514	100
15	442	808	514	100
25	442	808	514	100

Dimension may vary for different machine configurations

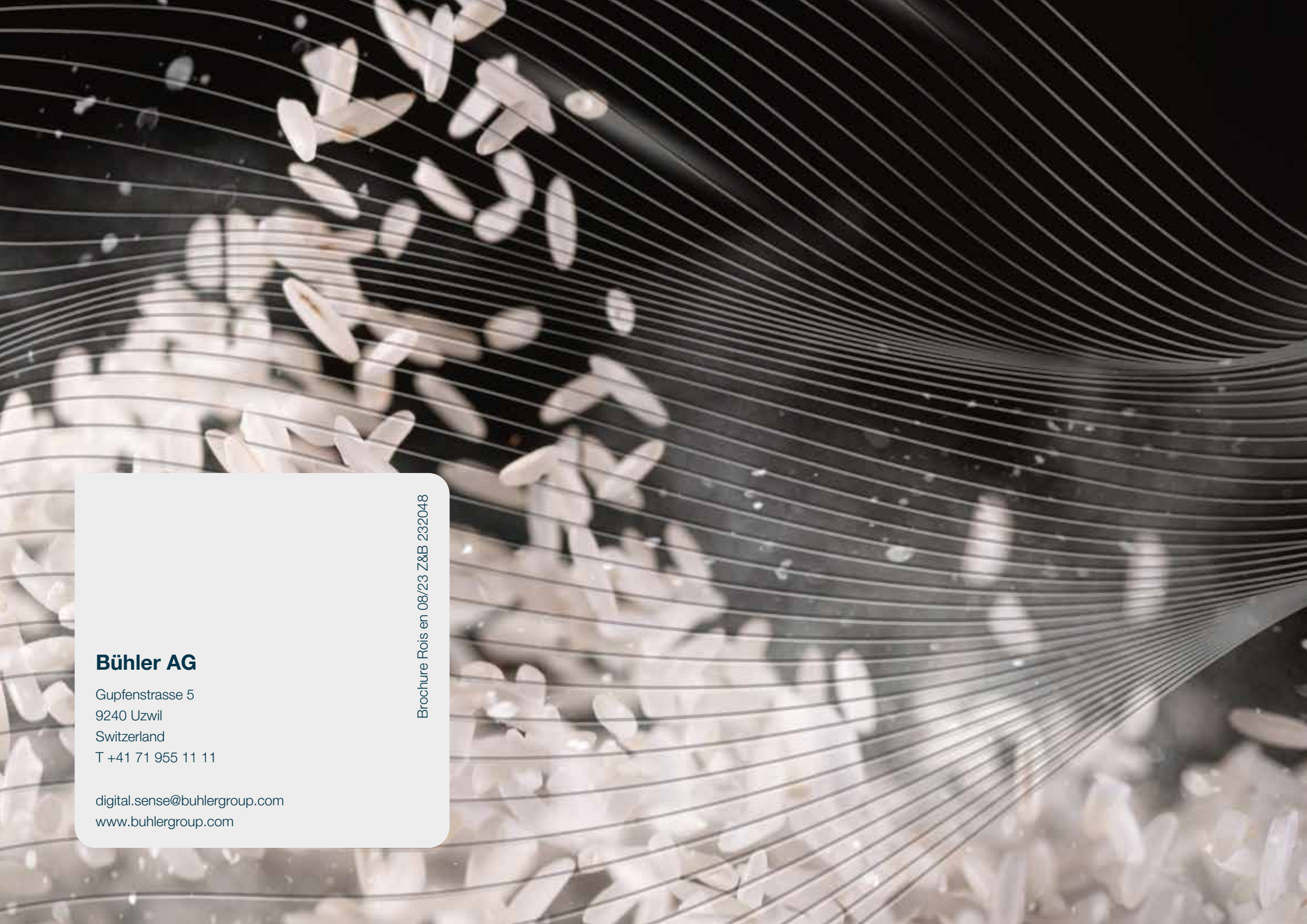
Volume flow & capacities

Model	Volume flow	Wheat	Maize
	[m^3/h]	[t/h]	[t/h]
10	up to 10	up to 7.5	up to 7.5
12	up to 20	up to 15	up to 15
15	up to 40	up to 30	up to 30
25	up to 133	up to 100	up to 100

Alternatives to dosing granular products:

Batch scale
Akrivis

Loss-in-weight scale
Varion G



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