

DIFFERENTIAL
DOSING SCALE

GRANO



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GRANO

As a mass flow controller, the GRANO differential dosing scale precisely doses a pre-selected quantity of product and registers the total weight with gram-level accuracy. As a mass flow meter, it ensures the precise measurement of a given product stream. For an absolutely constant and exact measure of grain mixtures, the differential dosing scale is used below silos, raw product bins and tempering bins.

Innovative drive and measurement technology provides accurate weighing and control for continuous grain processing. GRANO is suitable for weight-oriented quantity measurement, output-oriented process control and recipe-oriented blending. The flow rate of a free-flowing product stream is accurately determined, the output precisely regulated, and the total weight accurately recorded. An exceptionally robust control system with touch screen and the precise SWISCA measuring cells of the differential dosing scale guarantee reliable quality assurance.

Type	Diameter mm	Height* mm	Wheat measuring t/h	Wheat dosing t/h	Barley/Corn measuring t/h	Barley/Corn dosing t/h	Oats/Malt measuring t/h	Oats/Malt dosing t/h
20	400	1042	5.6	7	4.3	5.3	3.6	4.5
35	400	1162	9.6	12	7.3	9.1	6.1	7.7
65	500	1392	19.2	24	14.6	18.2	12.3	15.4
145	500	1797	48	60	36.5	45.6	30.7	38.4
220	600	2022	64	80	48.6	60.8	41	51.2

Option DENSI

20	400	1521	5.6		4.3		3.6	
35	400	1641	9.6		7.3		6.1	
65	500	1871	19.2		14.6		12.3	
145	500	2346	48		36.5		30.7	
220	600	2571	64		48.6		41	

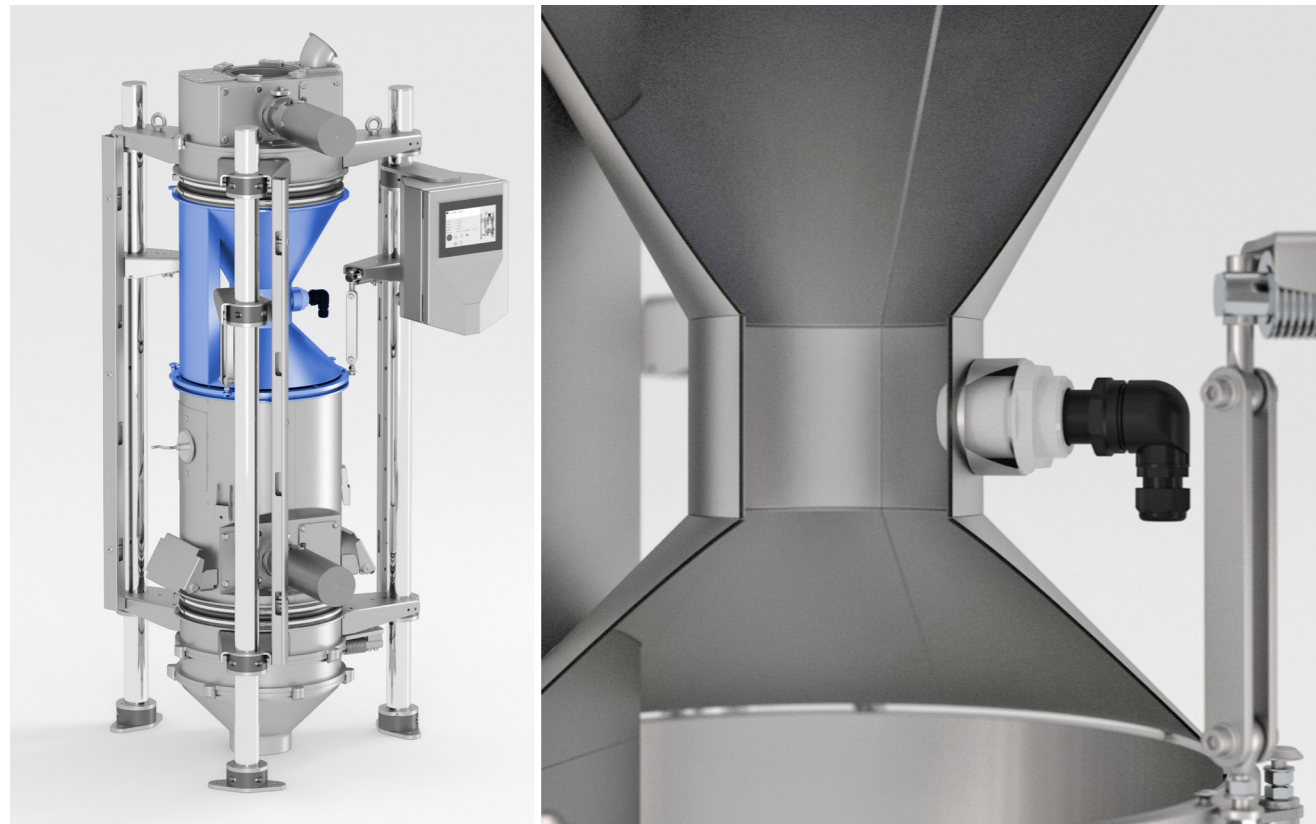
* The option GRAVI adds 80 mm to the height



DENSITY

As a mass flow controller, the GRANO differential dosing scale with the additional DENSI equipment doses a selectable output, registers the total weight and simultaneously measures the density of the product in the weighing hopper. As a mass flow meter, product flow and product density are measured online. The quality of the data for internal process monitoring can be improved by measuring the product density, because the measurement of the mass flow is dependent on the product density.

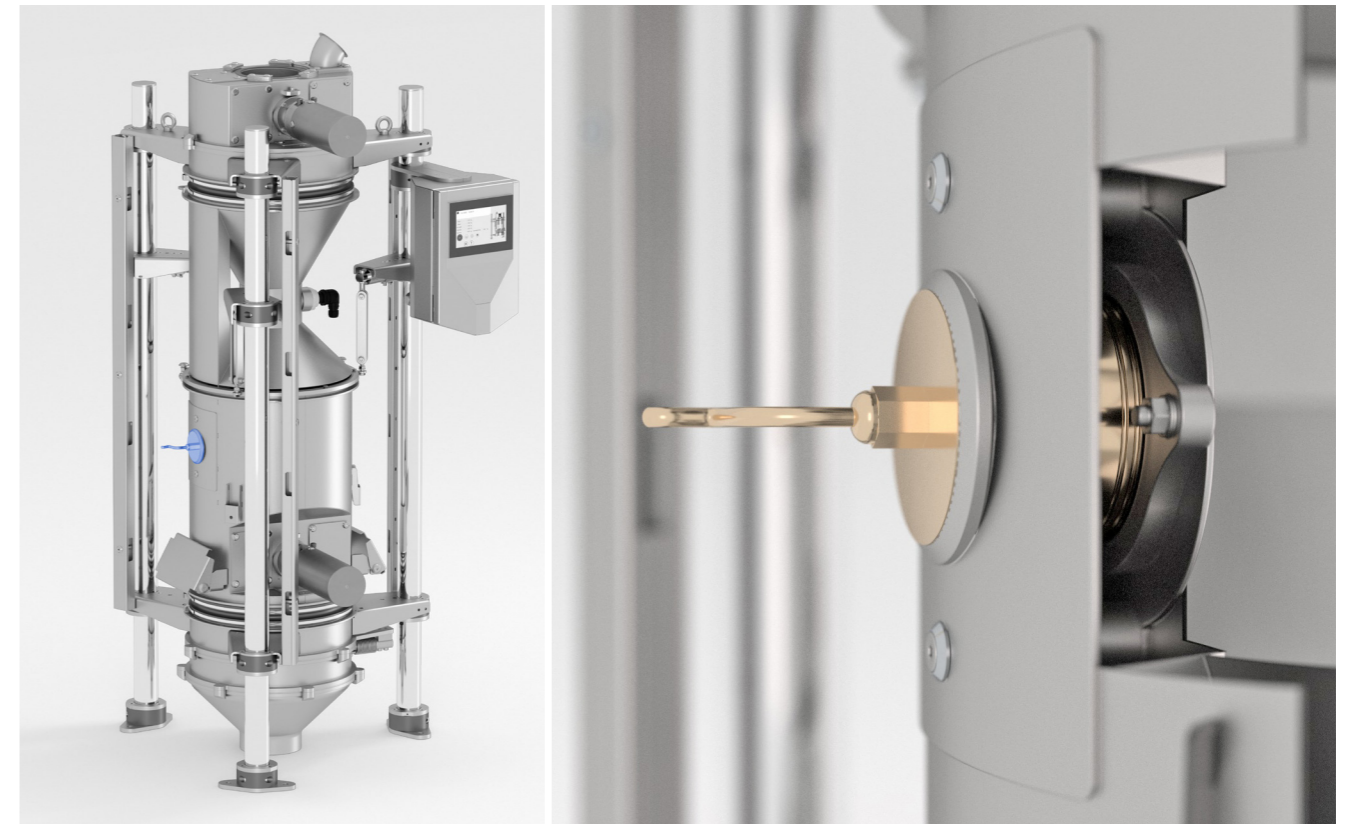
An innovative control system allows easy calibration of the density measurement and a precise comparison with empirical values determined in the laboratory. The DENSI add-on equipment can also be added to existing GRANO scales, as long as the installation conditions allow for an increase in machine height.



TEMPERATURE & MOISTURE

GRANO with the additional MOIST sensor doses a selectable output as a mass flow controller, registers the total weight and simultaneously measures the moisture and temperature of the product in the weighing hopper. As a mass flow meter, the moisture and temperature are measured online in addition to the product flow. The quality of the data for internal process monitoring can be improved by measuring the product temperature and product moisture, because the measurement of the mass flow is dependent on the product moisture.

The control system allows easy calibration of the capacitive moisture sensor and an accurate comparison with empirical values determined in the laboratory. The measurements of mass flow, temperature and moisture are also necessary to determine the exact amount of wetting water to be added. The sensor with MOIST ceramic measuring head can be easily retrofitted to existing GRANO scales.



TAKING ACCURACY TO NEW HEIGHTS

With the option GRAVI, GRANO doses a selectable capacity as a mass flow controller and registers the total weight with even higher accuracy. Innovative control technology and weighing algorithms process the force measurement after the dosing slide even during refilling.

The measurement uncertainty during refilling of the scale is compensated for by the force measurement, thereby approximately doubling the measurement accuracy. Thanks to the force measurement, the system always works gravimetrically and the opening of the dosing slide can be continuously monitored and adjusted.

The advantages of high accuracy and the continuous process of a differential scale are optimally combined. Higher accuracy is advantageous for determining the exact amount of wetting water to be added and thus ensuring constant wetting conditions. The GRAVI extension is also compatible for retrofitting onto existing GRANO differential dosing scales.



Benefits

- + Precise mass flow measurement and control
- + Energy-efficient function
- + Hygienic design



IoT-compatible control unit with intuitive touch screen operation

High-quality load cells

Energy-efficient servo drives

Metal detectable connections