• WEIGH BELT FEEDER (mini weigh feeder) •

DEFINITION AND PRINCIPLE

The MINI weigh belt feeder extracts a product from a storage hopper through the constant cross-section and according with a fixed reference flow-rate (set point), adjusts the extracted volume by varying the belt speed to keep a constant weighted flow-rate.

The weight of the material on the belt length called "weighing length" is measured by a Strain gauge load cells weighing system.
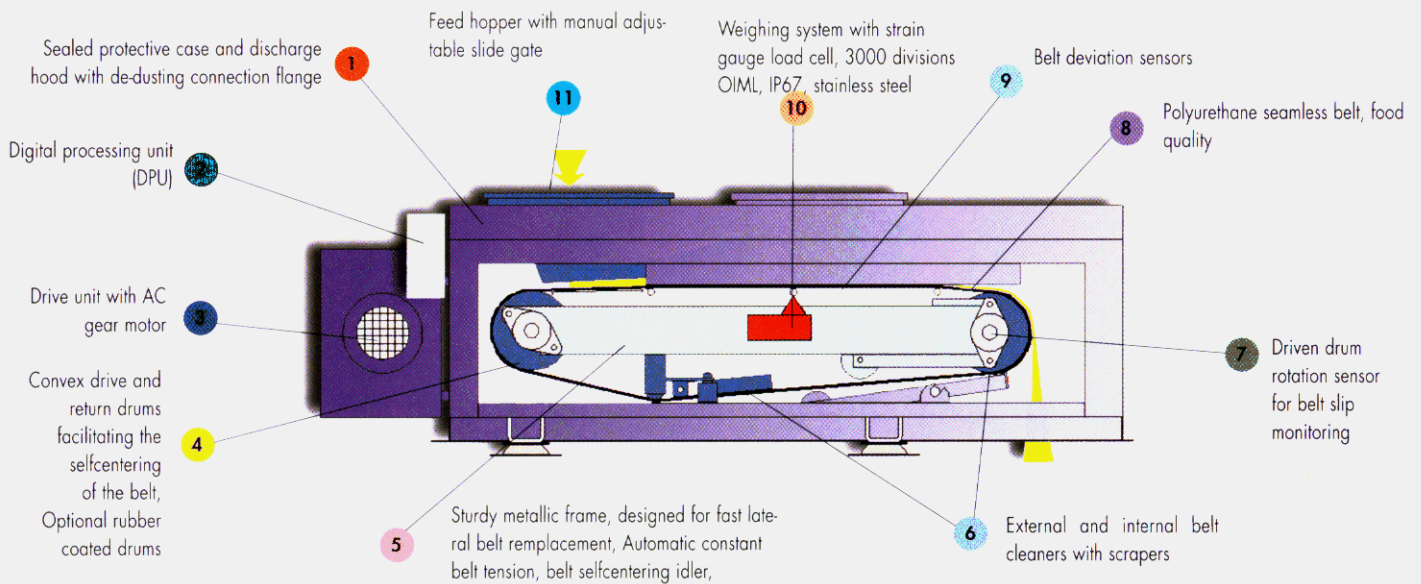
The belt speed is measured by an incremental encoder and adjusted by a variable speed gear motor.

The MINI weigh belt feeder can also be used as a continuous weigher for through-put and consumption measurement or as a charge preselection (batche) feeder.

COMPOSITION AND CHARACTERISTICS

The MINI weigh belt feeder consist of three main parts:

- A belt conveyor mounted in a closed case
- A weighing device and a belt speed transducer
- An electrical and electronic control and regulating system

Sealed protective case and discharge hood with de-dusting connection flange **1**

Feed hopper with manual adjustable slide gate **11**

Weighing system with strain gauge load cell, 3000 divisions OIML, IP67, stainless steel **10**

Belt deviation sensors **9**

Polyurethane seamless belt, food quality **8**

Digital processing unit (DPU) **2**

Drive unit with AC gear motor **3**

Driven drum rotation sensor for belt slip monitoring **7**

Convex drive and return drums facilitating the selfcentering of the belt, Optional rubber coated drums **4**

Sturdy metallic frame, designed for fast lateral belt remplacement, Automatic constant belt tension, belt selfcentering idler, **5**

External and internal belt cleaners with scrapers **6**

AVANTAGES

- Machine completely closed and very clean when de-dusted
- Fast and easy lateral belt remplacement
- Low volume of installation for a through-put up to 60 m3 per hour

- Feeding and handling of difficult and fragile products
- 100% gravimetric feeding

- Very extensive range of flow-rates, from 1 to 30
- High weighing and feeding accuracy : +/- 0.5%

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At the center of your system

APPLICATION

- The MINI weigh belt feeder is used for the continuous weighing and feeding of powders, granules, flakes and fibres.
- **Food industry :** Cereals, biscuits, confectionery, chocolate, pasta, canned food, pet food..
- **Chemical industry :** Detergents, pesticides, fertiliser, detergent products
- **Building materials :** Gypsum, plaster, starch, additive (MnO2, CaCO3)
- **Plastics industry :** Plastics, compounds, fibres
- **Aluminium :** Feeding of petrol coke, burnt or hard scraps
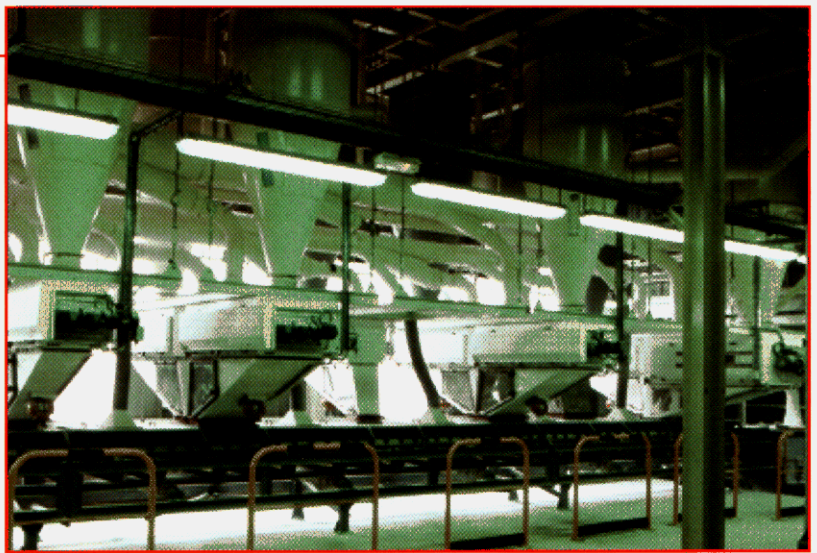
Continuous weighfeeding of detergents

DIFFERENT MODELS AND EXECUTIONS

- Standard mild steel model in painted, IP 55 or 65 protection. Recommended for feeding of free flowing powders, granules, flakes.

- Stainless steel sanitary model, IP 67 protection, water washable.
Recommended for feeding in the humid atmosphere of food industries.

- Application with independent screw feeder. Recommended for feeding a bad flowing materials

- Application with independent vibratory feeder. Recommended for feeding friable products, granules, flakes.

- Special applications : explosion proof, insulating machine, inlet and outlet pressure compensation.

Model	MD300	MD600	MD800
Belt width	300 mm	600 mm	800 mm
Flow rate	0-2 t/h	2-20 t/h	6-60 t/h
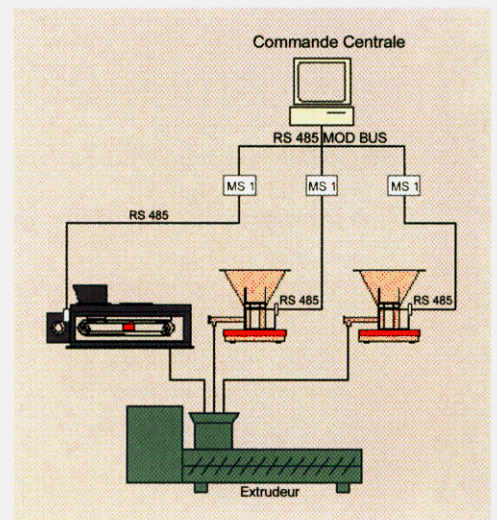
Digital communication

CONTROL SYSTEM
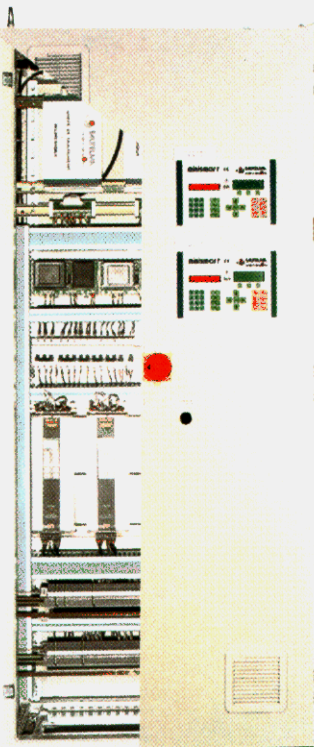
The Mini weigh belt feeder is controlled by a Sautelma's universal microprocessor controlled measuring system called MINISMART.
The MINISMART receives the set values, generates the computational algorithms and regulates the flow. It also manages any malfunctions (faults).
The MINISMART can operate by itself or be integrated in hierarchically structured assemblies.
The MINISMART can communicate with its environment through:
- Traditional wiring connections with 4.20 mA analog signals and PFC digital signals.
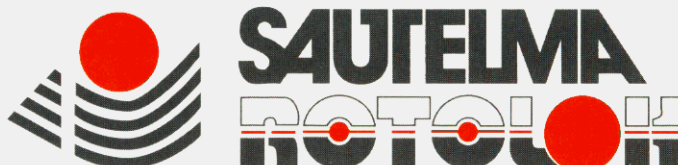- RS 485, RS 232, and RS 422 serial connections and protocols such as J-BUS/MODBUS.
- In networks of the field bus type such as PROFIBUS or else.
The signals from the various sensors (weight, belt speed, belt deviation, belt slipping...) can be processed locally by the Digital Processing Unit (DPU).
The DPU is a specialised digital processing unit which contains among other things a DSP (digital signal processor) and an analogue/digital converter.
From the DPU to MINISMART all informations are transmitted by RS 485 link
The electrical part contains: a frequency diverter, a transformer, the protection for the motors, relays and a terminal block. It is usually settled in an electrical cubicle located near the feeder unit or in the electrical control room.

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