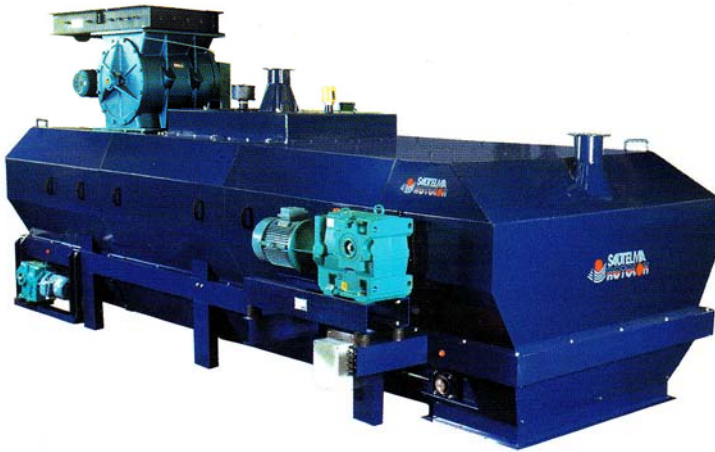


WEIGH BELT FEEDER model DLF

DEFINITION AND PRINCIPLE



The DLF weigh belt feeder extracts a product from a feed chute through the constant cross-section and according with a fixed reference flow-rate (set point), adjusts the extracted volume by varying the belt speed in such a way as to keep a constant weighted flow-rate.

The DLF weigh belt feeder was designed by Sautelma Rotolok especially for the free and very free flowing materials. The belt conveyor is extended to incorporate the calming chamber where the material is slowed down and de-aerated.

The material level in the calming chamber (chute) is kept constant by controlling the flow of the filling system which can be a rotary valve, a vibratory feeder, a motorised plug valve or a screw feeder. The weight of the material on the belt length called "weighing length" is measured by a Strain gauge load cells weighing system.

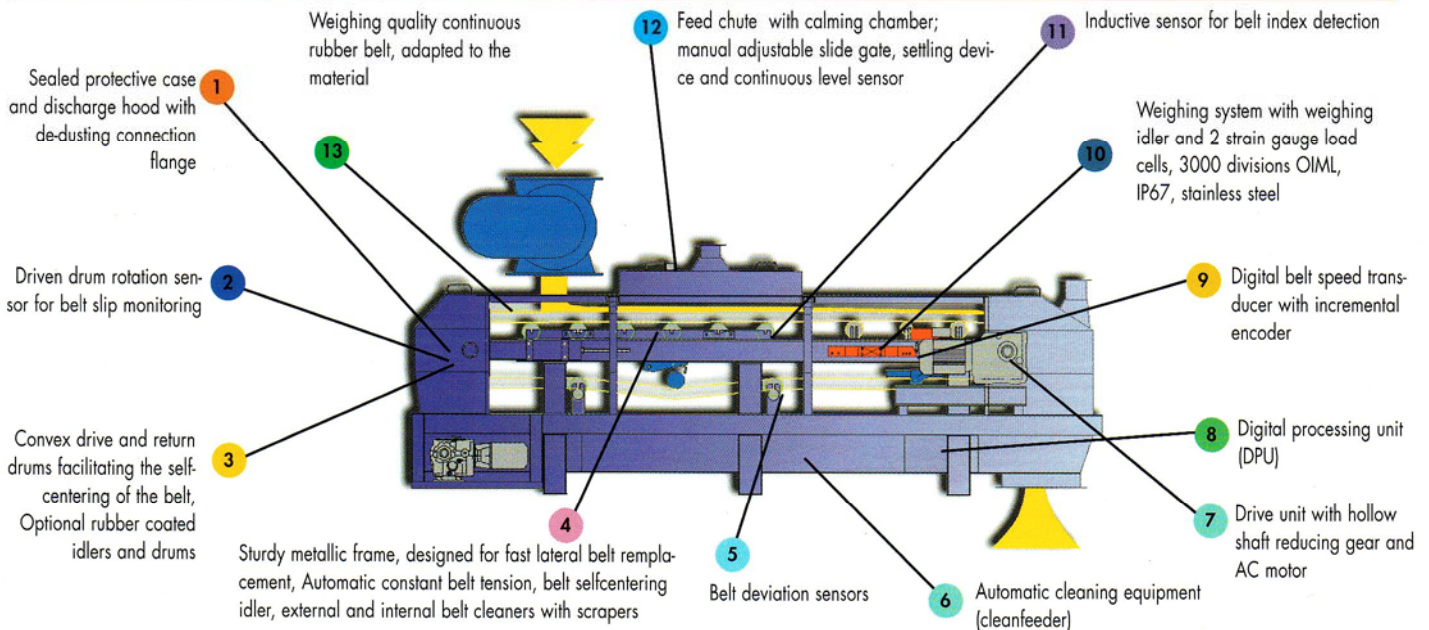
The belt speed is measured by an incremental encoder and adjusted by a variable speed gear motor.

The DLF weigh belt feeder can also be used as a continuous weigher for troughput and consumption measurement or as a charge preselection (batche) feeder.

COMPOSITION AND CHARACTERISTICS

The DLF weigh belt feeder consist of three main parts :

- A belt conveyor mounted on a support frame
- A weighing device and a belt speed transducer
- An electrical and electronic control and regulating system



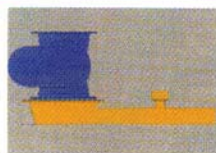
AVANTAGES

- Machine completely closed and very clean when de-dusted
- Easy feeding and handling of very free flowing materials
- Very extensive range of flow-rates, from 1 to 30
- Troughput of up to 1000 metric tons/hour
- Fast and easy lateral belt replacement
- High weighing and feeding accuracy : +/- 0.5%

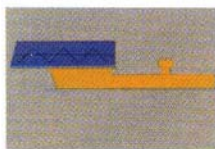
APPLICATION

- The DLF weigh belt feeder is used for the continuous weighing of all free and very free flowing materials.
- **Cement industry** : Feeding of raw mill farina to the ciln, pulverised coal and pulverised trass
- **Chemical industry** : Feeding of dry crushed phosphate, pulverised clay
- **Building materials** : Feeding of plaster, lime, clay, dry sand
- **Plastics industry** : Feeding of polyethylene and polypropylene granules
- **Aluminium** : Feeding of pulverised (fine) petrol coke, pitch, lime clay

DIFFERENT SUPPLY CONFIGURATIONS



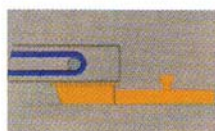
● Weigh belt feeder placed directly under the silo and filled by a rotary-type extractor with regulated flow or operating in on/off mode. Recommended for free flowing materials



● Weigh belt feeder placed under the screw conveyor. Recommended for feeding both free flowing and arching materials.



● Weigh belt feeder placed under the feed plug valve with regulated flow. Recommended for feeding of very free flowing fluidised materials.



● Weigh belt feeder placed under the (Redler) chain conveyor operating by overflow. Recommended for feeding of free flowing and very dusty materials.

SPECIAL CONFIGURATION

Stainless steel, Explosion proof

CONTROL SYSTEM

The DLN weigh belt feeder is controlled by 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 analogue signals and PFC digital signals.

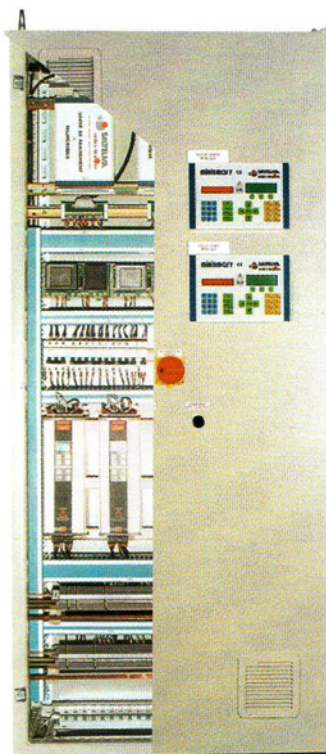
RS 485, RS 232, and RS 422 serial connections and protocols such as J-BUS/MODBUS.

In networks of the field bus type such as PROFIBUS or else.

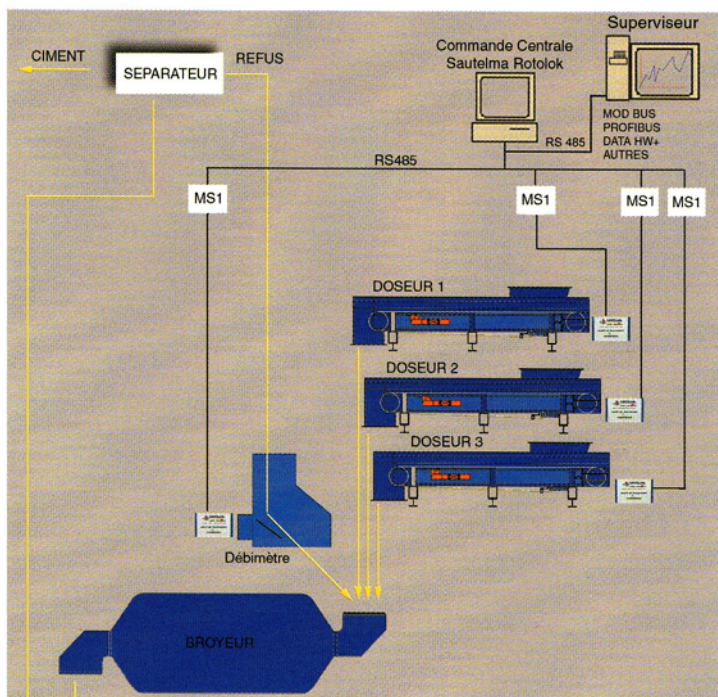
The signals from the various sensors (weight, belt speed, belt deviation, belt slipping...) can be processed locally by the Digital Processing Unit (DPU).

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.



Control cubicle



Block diagram for feeding system in a cement plant.

