

BELT WEIGH FEEDER DLN



DEFINITION AND PRINCIPLE

The DLN belt weigh feeder extracts a product from a storage hopper through the constant cross-section and according to 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 weighed flow-rate.

The weight of the material on the belt length called 'weighing length' is measured by a strain gauge load cells weighing system.

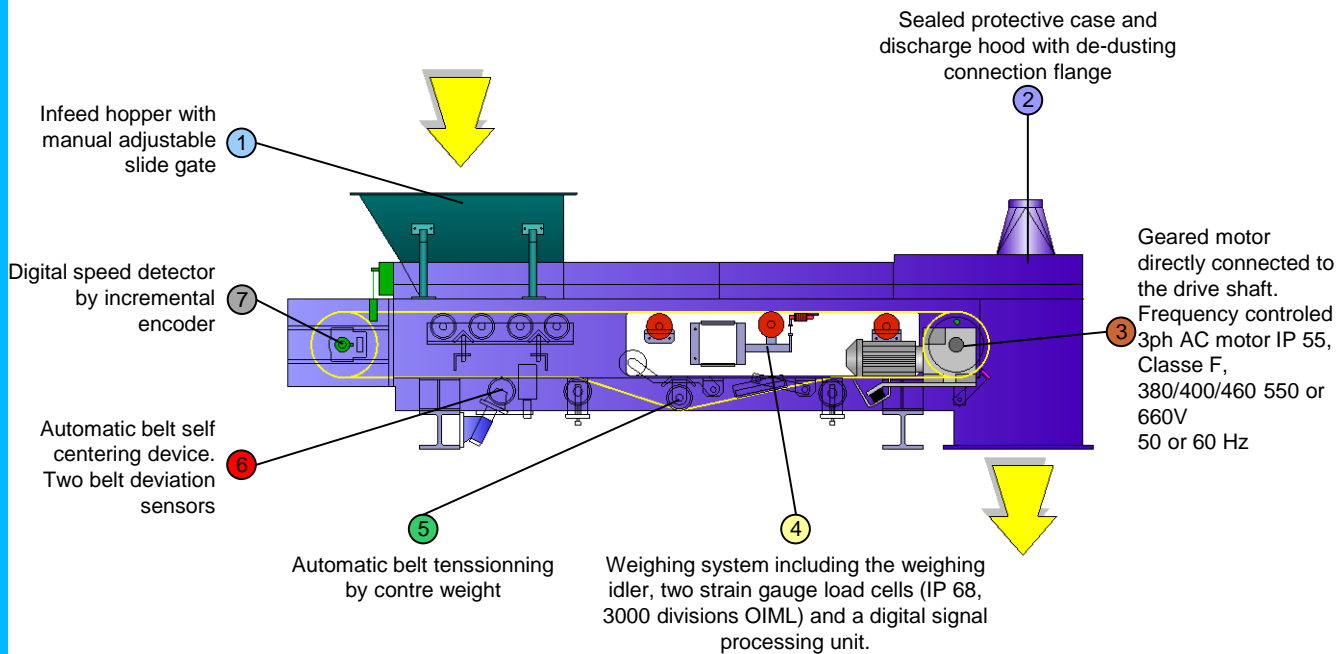
The belt speed is measured by an incremental encoder and adjusted by a variable speed gear motor.

The DLN belt weigh feeder can also be used as a continuous weigher for throughput and consumption measurement or as a charge pre-selection (batch) feeder.

COMPOSITION AND CHARACTERISTICS

The DLN belt weigh feeder consists of three main parts:

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



ADVANTAGES

- Simple and robust machine, easily adjustable to various products characteristics
- Limited dimensions for flow-rates of up to 1000 metric tons/hour.
- Easy extraction and feeding of various difficult products (arching and clogging)
- Feeding is 100% gravimetric,
- Very extensive range of flow-rates from 1 to 30
- Weighing and feeding accuracy: +/- 0,5 %

APPLICATIONS

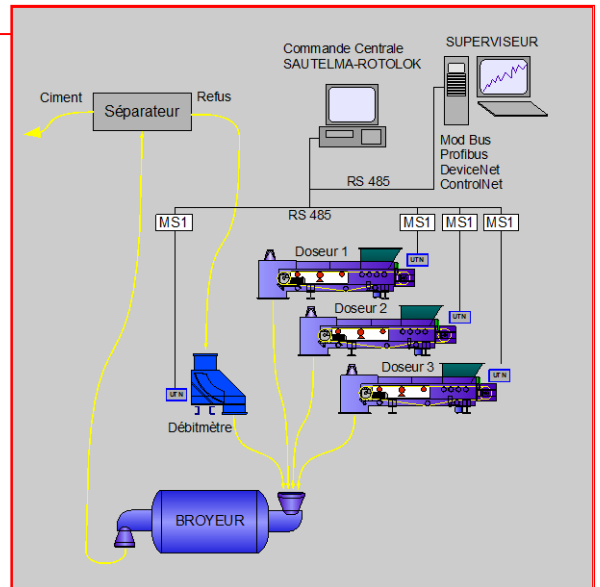
The DLN belt weigh feeder is used for the continuous weighing and feeding of materials with normal or difficult flowability.

- Cement Industry: Limestone, Clay, Pyrite, Clinker, Gypsum, Slag and other Additives
- Steel Industry: Iron ore, Coke, Additives
- Coke production: Coal, Additives
- Chemical Industry: Raw and humid phosphate, Sulphur, Potash, Urea, Fertilizers, Carbonate
- Building materials industry: Plaster, Lime, Clay, Sand, Barite, Manganese, Grits
- Aluminium: Petrol coke, raw and burnt scraps, Pitch, alumina, lime...
- Tobacco: Tobacco and Scaferlati feeding



DIFFERENT SUPPLY CONFIGURATION

- Belt weigh feeder placed directly under the silo (weighfeeding extractor). Recommended for products flowing normally.
- Belt weigh feeder placed directly under the silo and vibrating hopper. Recommended for clogging, coagulant, arching and abrasive products.
- Belt weigh feeder placed under the rotary extractor (Extromat or Centrex type). Recommended for clogging, arching and sticky products.
- Belt weigh feeder placed under the apron pre-feeder (extractor). Recommended for clogging, arching, abrasive and humid products.



CONTROL SYSTEM

The DLN Belt weigh feeder is controlled by Sautelma universal measuring system called MINISMART which use the high quality microprocessor. The Minismart receives the 'set point' value compares this value to the measured flow rate and adjusts the speed of the belt conveyor to maintain constant the gravimetric flow. It also manages the operating faults. The Minismart can operate by itself or be integrated in hierarchically structured assemblies.

The Network Communication can be insured through :

- Traditional wiring connections with 4.20mA, analogue and PFC digital signals
- RS 485 or RS 232 serial connections and protocol such as J-BUS/MODBUS
- In network field bus communications such as PROFIBUS, DEVICENET, CONTROLNET as well as ETHERNET.

The weighing signal is locally processed by Sautelmas Digital signal processing unit (UTN). The UTN is a specialised signal processing electronics device which contains among others inlets/outlets the DSP and an analogue/digital converter.

The electrical part contains: frequency inverter, transformer, motor protection, relays and terminal connection block. It is usually settled in a standard electrical cubicle located near the feeder or in the electrical room.

