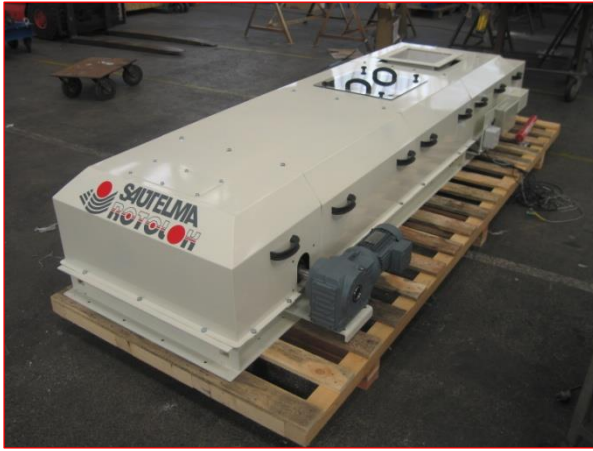


# WEIGHING BELT CONVEYOR TSRT



## OPERATING PRINCIPLE

The Belt scale is weighing equipment designed to acquire continuously material flow handled by a belt conveyor and to totalize the weighed weight.

The totalized weighed material on the conveyor is the integral of material weight per meter and the belt speed.

The material weight on a belt length called "weighing length" is detected by a load collector equipped by one or two strain gauge load cells.

The belt speed is measured by an incremental encoder or an inductive sensor fitted on the conveyor driven pulley.

## COMPOSITION AND CHARACTERISTICS

The SRT belt scale has been designed by SAUTELMA ROTOLOK to meet the high accuracy required by its customers. The system include one or two weight collection systems incorporating each 2 parallel sets of flexures supported by a single or double strain gauge load cell. The design of the weight collection system ensures that the weight is transferred correctly into the load cell, to optimize the weathers performance.

The SRT belt scale can be of the single idler type or of the two idler type (SRT/1R and SRT/2R).

La bascule SRT peut être de type simple rouleau et double rouleau (SRT/1R et SRT/2R)

Elle se compose de 3 parties principales :

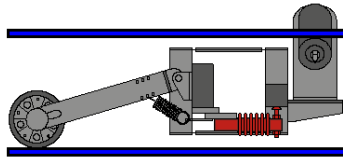
- One weighing structure (load collector) of the SRT type
- One or two high accurate strain gauge load cells and one belt speed detector
- One electronic equipment for data processing and control

Weighing structure with one or two weighed idlers stations.  
Robust design in Carbon steel  
Stainless Steel manufacturing in option

Local data processing (weight, speed), via DPU (Digital Processing Unit)  
When digital sensors are used, the signal is directly processed by the Minismart

MINISMART weighing digital electronic controller made of a central unit board with 16 bits micro-controller, digital and analogue inputs/outputs and various communication ports (serial connection, USB ports, Can open...)

Strain gauge load cells, IP 67, stainless steel.  
Depending on types and belt width, the belt scale is equipped with one or two load cells.



High resolution speed sensor by incremental coder. The SRT belt scales can also be supplied with a proximity sensor fitted on the conveyor driven pulley.



## AVANTAGES

- Simple, robust and compact equipment that can fit easily any type of conveyor.
- Easy installation requiring no special toolse
- Direct contact on weighing load cell(s) avoiding maladjustments
- Local processing and issuing of a digital weight signal which is not altered by temperature
- Automatic device to control and correct the zero
- Automatic tarring and calibration software
- The SRT belt scale is approved by the French National Measurement Institute for Trade weighing
- **Weighing accuracy is better than  $\pm 0,5\%$**

## APPLICATION

The SRT belt scale is designed to meet all weighing requirements in continuous on belt conveyor

- Quarries and sand pits: Production control and bulk shipment
- Sea port installations: Ships loading and unloading
- Mines (mining): Production control
- Coal thermo station: Control of the boilers feeding flowrate
- Construction materials: : Control of production flow and materials consumption
- Food & agriculture industry:: Control of grains production
- Sugar plants: Collection of raw materials, production control, and flow rate control.
- Tobacco: Weighing and checking the tobacco and scaferlati flowrate
- Chemistry, Fertilizers: Production control, bulk shipment



## DISPOSITIF DE CONTRÔLE COMMANDE



Control command cubicle IP55



MINISMART Key bord



Digital signal processing unit

The SRT Belt scale is monitored by the MINISMART, the SAUTELMA ROTOLOK universal controller for weighing and flow regulation. The MINISMART collects speed and weight data, performs the calculations algorithms and processes the flow rate and totalised material. It deals also with the various operating faults.

The MINISMART can operate by itself or be integrated in hierarchically structured assemblies.

It can communicate in field bus type networks such as: MODBUS, PROFIBUS, DEVICE NET, or others in an ETHERNET network.

For the belt scales equipped with a Digital Signal Processing Unit (DSPU), the weight and speed signals are locally processed by DSP which generates also the flow rate data.

The DPU is a specific electronics for signals processing equipped with a powerful DSP (Digital Signal Processor) and an analogue/digital signals converter.

From the DPU to the MINISMART, all information is transmitted via the RS 485 serial link.

The MINISMART is supplied in a standardised box and access to parameters and menus is made via the operator interface fitted on the box door. It can also be fitted in an electrical cabinet or on an operator panel.

Depending on the customer's requirements, the MINISMART can issue various signals such as:

- Instant flowrate in 4.20 mA, galvanically isolated
- Weighed material totalisation (2 impulsed outputs isolated in 24V CC)
- Two contact outputs with limit adjustable for alarms
- General fault output



Pôle d'Activité d'Eguilles – 13510 EGUILLES-France  
Tél. + 33 (0)4 42 95 44 00 – Fax. + 33 (0)4 42 20 76 27

e-mail : [Contacts@sautelma-rotolok.fr](mailto:Contacts@sautelma-rotolok.fr) – Web. [www.sautelma-rotolok.fr](http://www.sautelma-rotolok.fr)