



**TAMTRON**

527  
t/h

# TAMTRON BELT SCALES

**FOR INDUSTRIAL ENVIRONMENTS THAT  
REQUIRE RELIABLE ACCURACY**

Tamtron Belt Scale is an ideal solution when uninterrupted, automatic and accurate material flow monitoring is required, which can be easily integrated into a continuous bulk material handling system.

Tamtron Belt Scales are used for example for chip, sand, crushed stone, coal, ore, cement and fertilizer conveyors with mass flows of 1–10 000 t/h and belt widths typically 400–2000 mm.

# MEASUREMENT ACCURACY FOR INDUSTRIAL CONVEYOR SYSTEMS

## MEASUREMENT WITH A TOTALIZING BELT SCALE

The totalizing belt scale continuously measures the material to be transferred by the conveyor belt based on the weight and belt speed. The belt scale terminal collects and processes the measurement results and produces the amount of material (t) passed over the scale and the instantaneous mass flow (t / h) as a weighing result.

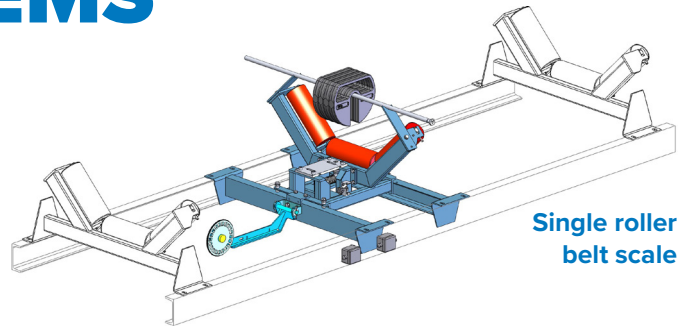
The single roller belt scale is an inexpensive and reliable basic scale. As a low-profile construction, it can be easily and quickly installed on an existing belt conveyor, where one roller is replaced by a weighing roller. A more accurate weighing result is achieved with a two-roller or multi-roller scale. Tamtron supplies totalizing belt scales also for commercial weighing in accuracy classes 2, 1, and 0.5.

## MECHANICAL STRUCTURE OF THE WEIGHING UNIT

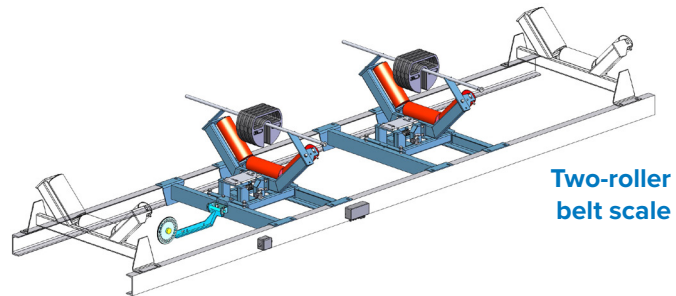
The single-roller belt scale consists of a weighing unit operating on the directional support principle and a roller stand attached to it. The load cell is selected according to the belt load and the roller stand is manufactured on a case-by-case basis according to the customer's roller profile and belt width. The weighing sensor is EU-tested (OIML R60) and sealed by welding. The scale is mounted on the conveyor frame with three adjustable fixing screws. The robust directional support structure maintains its adjustment value in long-term use and guarantees good weighing accuracy (error  $\pm 1 \dots 2\%$ ) even with eccentric belt loads.

A two-roller belt scale is constructed by placing two identical weighing units in succession. The result is better weighing accuracy (error  $\pm 0.5 \dots 1\%$ ).

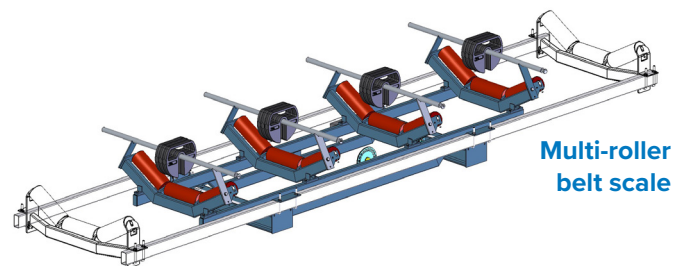
The multi-roller belt scale is supported on four weighing sensors and is usually equipped with at least four roller stands. The solution achieves the best possible weighing accuracy (error  $<\pm 0.5\%$ ).



Single roller belt scale



Two-roller belt scale



Multi-roller belt scale

## AREAS OF USE E.G.

- ▶ Building materials industry
- ▶ Power plants
- ▶ Fertilizer industry
- ▶ Mining
- ▶ Chemical industry
- ▶ Food industry
- ▶ Metallurgical industry
- ▶ Ports
- ▶ Loading and unloading equipment
- ▶ Forest industry



## SPEED SENSOR

The speed sensor used is either a model mounted on the conveyor pulley shaft or a measuring wheel which runs on the belt to be measured.

## TAMTRON BELT SCALE ELECTRONICS

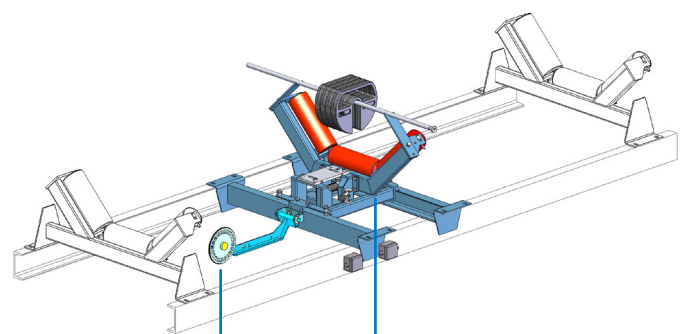
Developed for demanding industrial environments, the totalizing belt scale terminals are delivered in a sealed stainless steel housing. The scale terminal quickly reads and processes signals from the load cell and the speed sensor providing weighing results as the total material amount (t) that has passed over the scale and the instantaneous mass flow (t/h). These values can be transferred to the customer's information system using a variety of communication options.

*(More information available in the separate datasheet)*

## ADJUSTING THE BELT SCALE AND MAINTAINING ACCURACY

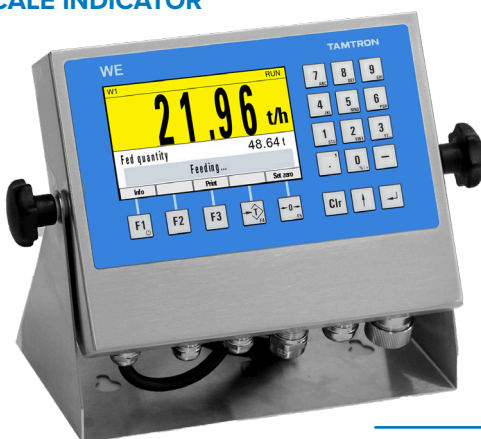
Scale operating parameters are entered into the weighing terminal, and the scale is calibrated using test weights and by running a batch of material at normal production capacity. The batch is checked with a reliable reference scale, such as a vehicle scale. Later, during a condition check, the scale is inspected using test weights, which reveal any deviation from the original calibration. This makes it easy to verify weighing accuracy during maintenance and condition monitoring.

If necessary, we also take care of the installation, connection, calibration and commissioning of the belt scales including operating instructions at the customer's premises.



← **BELT SPEED**  
← **WEIGHT OF MATERIAL**

## BELT SCALE INDICATOR



← **DATA OUT**

**ANALOG OUTPUT**  
**DIGITAL I/O**  
**SERIAL INTERFACES**  
**ETHERNET**  
**FIELD BUS CONNECTIONS**

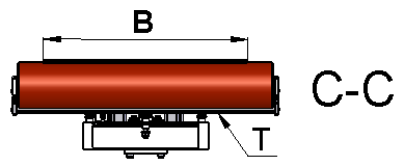
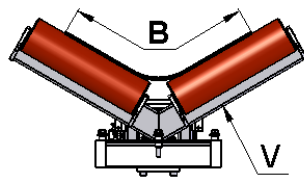
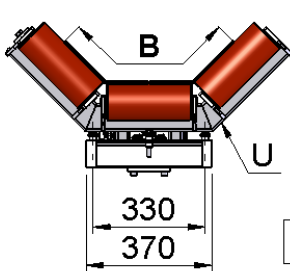
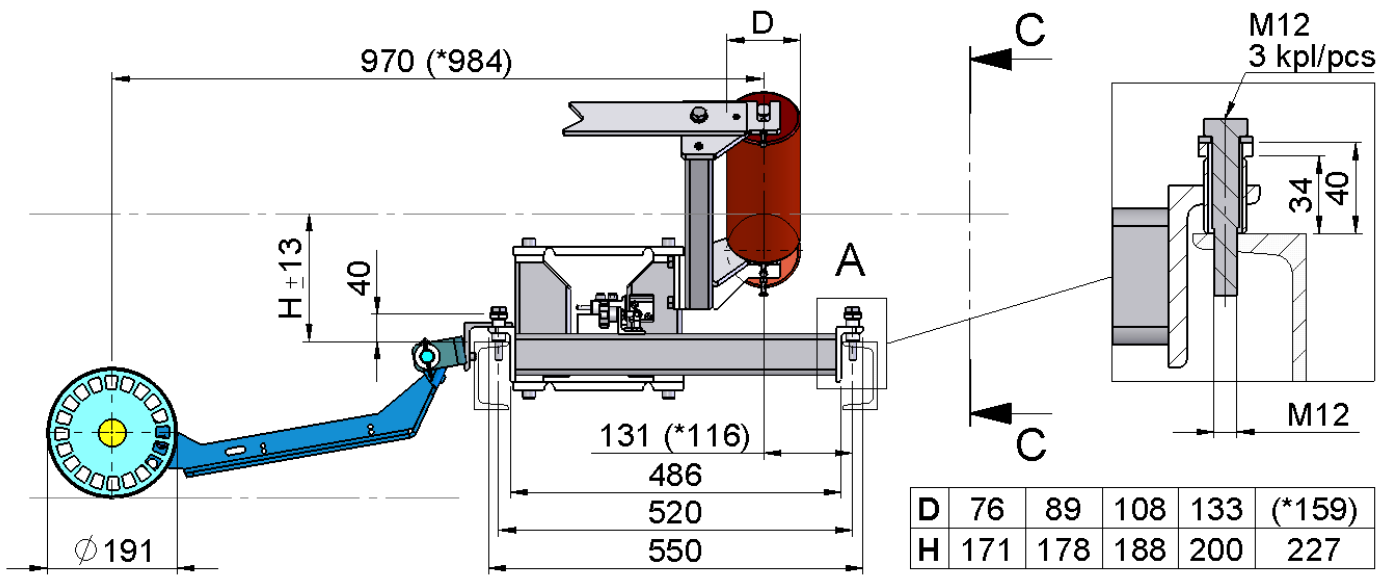
# TECHNICAL INFORMATION

## SCALE MECHANICS

- ▶ Standard surface treatment: Epoxy paint EP120/2-FeSa2½  
Color: Blue-grey RAL 5024
- ▶ We can also supply belt scales according to the customer's surface treatment specifications or made from stainless steel.
- ▶ We design the weighing idler frame and scale's attachment to the conveyor according to the conveyor structure.

## OPTIONS

- ▶ Test weights for calibrating of the scale and in-service condition monitoring
- ▶ Heated housing for scale electronics -35 ° C ... + 40 ° C
- ▶ Adjustable additional idler frames to be placed before and after the scale to simplify alignment of the weighing zone idlers during installation, supporting optimal measurement accuracy.



B	400	500	650	800	1000	1200	1400	1600
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Tamtron is a leading supplier of advanced weighing solutions, offering innovative weighing and dosing technologies, comprehensive lifecycle services, and modern cloud-based digital services. Supporting industries such as construction, mining, wood processing, waste management, logistics, and manufacturing, Tamtron operates globally with its headquarters in Finland. The company has a strong presence across Europe through its subsidiaries and worldwide partner network.