

## Process Beltscale Thermo Ramsey Series 20.

The industry standard in bulk weighing  
on belt conveyors.

**Accuracy:  $\pm 0.5\%$ .**



### Rugged Precision Belt Scale

The Thermo Ramsey series 20 process belt scale monitors feed to crushers, mills, screens and other processes with an accuracy of  $\pm 0.5\%$ , even in the harshest applications.

The series 20 process belt scale lets you monitor production output and inventory, or regulate product loadout, while providing vital information for the effective management and efficient operation of your business.



### The Industry Standard in Beltcales

The Thermo Ramsey series 20 process belt scale incorporates the one-piece, drop-in style 10-20 weighing frame and the 60-12 belt speed sensor. It also utilizes the Ramsey™ Flex series electronic integrator.

The series 20 process belt scale represents the world standard of accuracy and performance for loadout, inventory monitoring and fee-holder type applications requiring certification.

## System Components

The Thermo Ramsey series 20 process belt scale consists of four major components: control unit (integrator), weighing frame, load cell(s) and belt speed sensor.

### Control Unit (Integrator)

As control units, the modern Ramsey™ Flex series integrators are used. These devices are characterized by their high accuracy, their ruggedness and their easy handling. Various interfaces and expandabilities make it easy to connect the belt scale with process control systems.

### Weighing Frame

Rigid and rugged, the 10-20 weighing frames remain permanently aligned within the conveyor frame. This one-piece, drop-in style weighbridge is completely assembled at the factory and is quickly and easily installed and aligned properly on the conveyor. It is designed to provide additional stiffening and support to minimize conveyor deflection. Both the single and the dual-idler models offer three-point suspension and employ trunnion-type, frictionless pivots. These sealed units are impervious to vibration, moisture and product build-up, which eliminates problems commonly associated with knife edges and bearings.

### 10-20 Weighing Frame Advantages:

- No moving or wearing parts lead to a longer life span and low maintenance costs.
- Precision strain-gauge load cell applied in tension to guarantee load cell alignment and accuracy.
- Total deflection of idler(s) less than 0.1 mm.
- Slim profile to minimize material build-up.
- Optional integrated calibration weights for quick check of weighing frame and accuracy.

### Belt Speed Sensor

The Thermo Ramsey 60-12 digital belt speed sensor is one of the most reliable and accurate speed-sensing devices ever developed for belt scale service. Direct-coupling the sensor to the conveyor tail pulley, snubbing roll, or a large diameter return roller ensures an accurate belt-travel readout. No wheels ride on the belt, which eliminates problems related to material build-up and slippage.

### 60-12 Belt Speed Sensor Advantages:

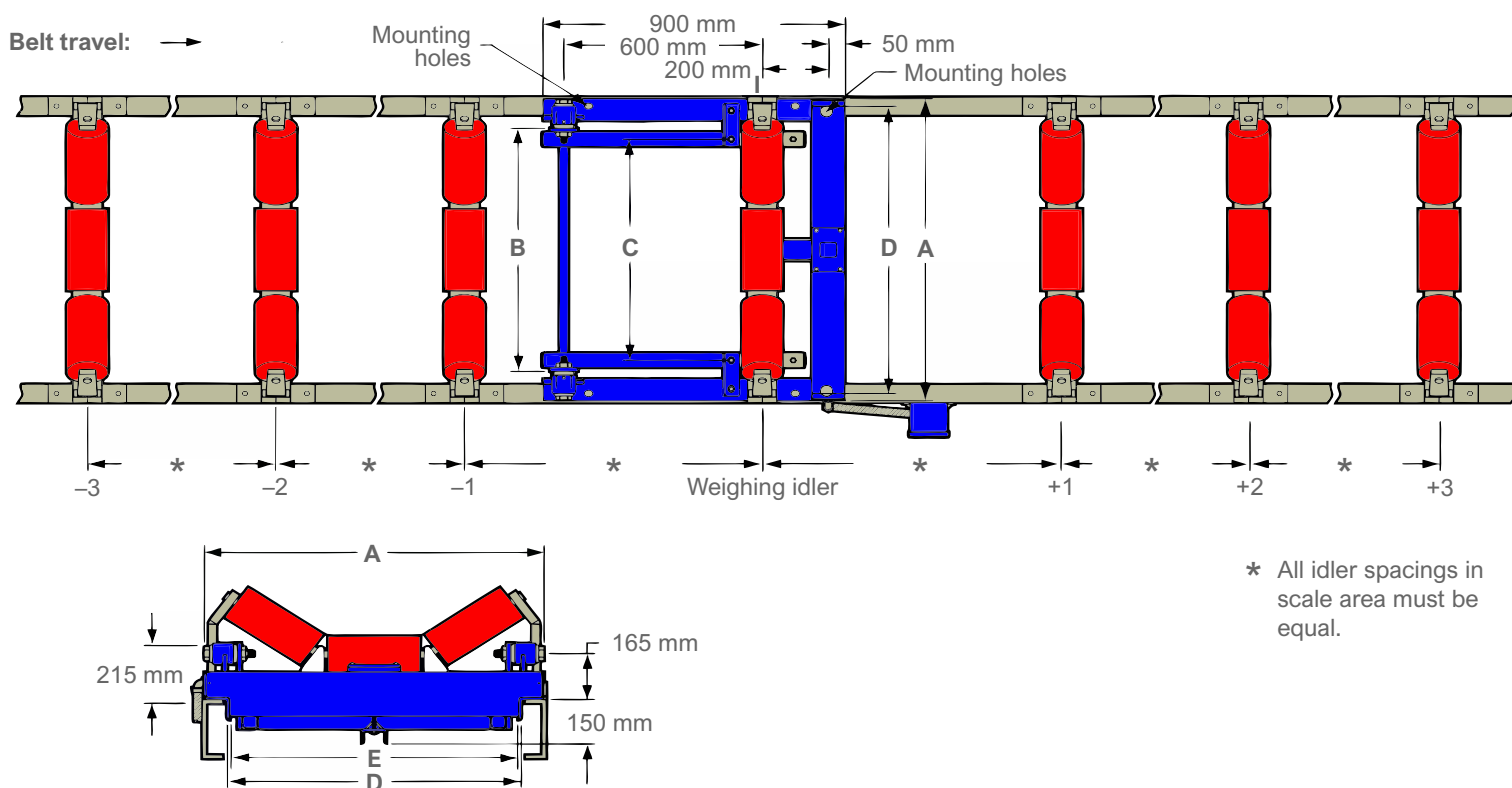
- Rugged housing, suitable for outdoor installations.
- A/C pulse generator means no brushes to adjust or replace.



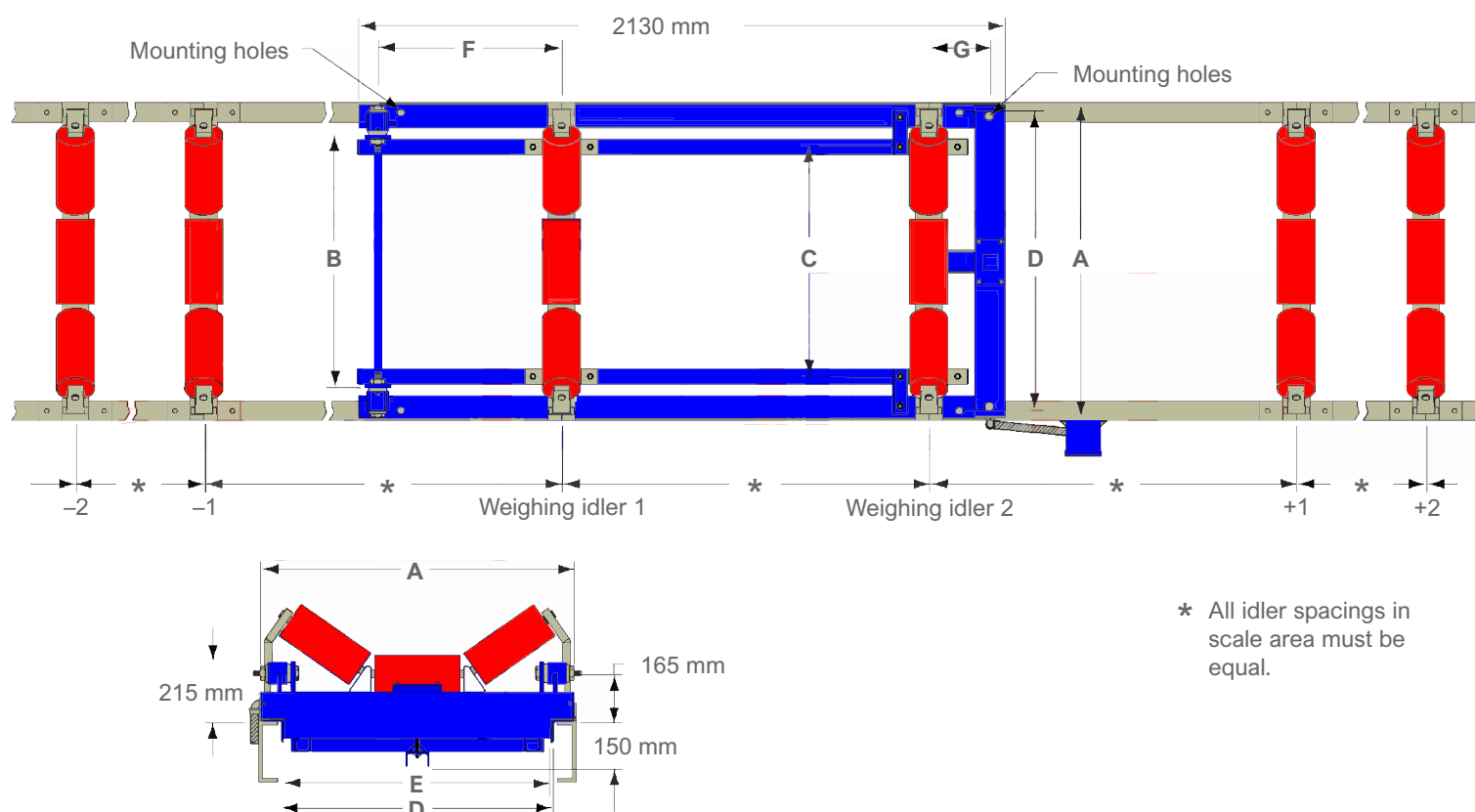
### Performance Guarantee

On installations approved by EmWeA, we warrant that the Thermo Ramsey series 20 process belt scale will weigh and totalize to a value within  $\pm 0.5\%$  of the test load when calibrated to our specifications.

## 10-20-1 Single Idler Weighing Frame:



## 10-20-2 Dual Idler Weighing Frame:



## Technical Specifications:

### 10-20 Weighing Frame:



No. of weighing idlers:	1 or 2
Clearance requirements:	fits any standard conveyor; no space required above belt line
Belt width:	from ca. 400 mm (no upper limit)
Construction:	mechanical steel tubing, coated (option: stainless steel)
Mounting:	4 or 6 bolts to conveyor stringers

### Load Cell(s)



Quantity:	1 or 2
Enclosure:	environmentally-protected „S“ type cell, stainless steel, IP 68
Mounting:	tension type
Excitation:	5 V D
Output:	2 m
Accuracy:	±0.02 % / 3000 d
Non-Linearity:	<0.03 % full span
Non-Repeatability:	<0.01 % full span
Hysteresis:	<0.02 % full span
Operating temperature:	-20°C ... +65°C (standard); different temperatures on request
Temperature sensitivity:	span: 0.0014 % full span / °K zero: 0.0027 % full span / °K
Safe load:	150 % full span
Ultimate load:	300 % full span
Sideload:	50 % full span
Certificates (standard):	CE
Certificates (optional):	ATEX, FM, OIML, MID

### 60-12 Belt Speed Sensor:



Type:	digital, brushless
Mounting:	direct to stub shaft with M16 thread hole or 16 mm trunnion, on tail pulley or bend pulley
Housing:	weatherproof, IP 65
Mounting Hardware:	supplied with coupling, restraint arm and restraint spring
Certificates (standard):	CE
Certificates (optional):	ATEX, cCSAus, PTB, OIML, MID

### Control and Display Unit (Integrator) Ramsey™ Flex:



Different variants are available for different requirements. Choose from weatherproof stainless steel housing (with or without display and control options) or panel mount. Various interfaces such as binary and analogue inputs and outputs, RS 232 / RS 485, PROFIBUS, PROFINET, EtherNet/IP, Modbus TCP/IP and Modbus RTU enable connection to process control systems and controllers. A web interface for remote control and maintenance is also integrated. We would be happy to make you an individual offer!



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