

Accurate Conveyor Weighing of Bulk Materials

# Thermo Ramsey



**Series 17 Belt Scale System**

# Thermo Ramsey's Series 17 Belt Scale System with **NEW Micro-Tech 2000 Series Integrators.**

## Introduction

Thermo Ramsey's Series 17 Belt Scale System combines the time-proven reliability of our 10-17 Weighbridge and 60-12 Speed Sensor with the power and versatility of the advanced electronics in the Micro-Tech 2000 Series Integrators.

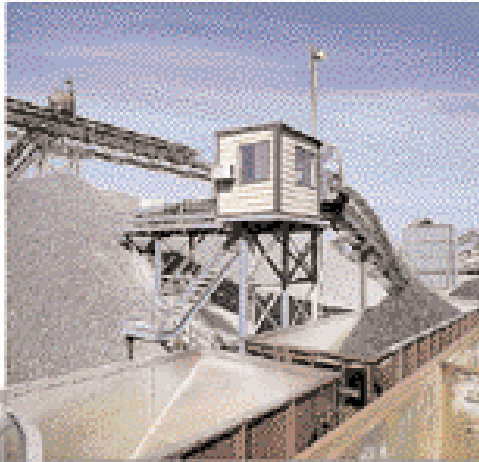
While the electronics portion of the Series 17 is the same as our Series 20 ( $\pm 1/2\%$ ) Scale System, a longer weighbridge design allows us to offer the Series 17 as a  $\pm 1/4\%$  scale system. The Series 17 is available in either 2 or 4 idler versions.

The longer weighbridge means more scale-borne time and minimizes alignment errors, which translates into better accuracy.

And the Series 17 Belt Scale System offers you something no one else can: the Micro-Tech 2000 Series Integrators.

## Applications

The Series 17 Belt Scale System is designed for plant and process operations which either run at higher rates of speed or require better-than-normal belt scale accuracy. The Series 17 can monitor production output, control loadout of product and monitor inventory, while providing vital information for the management and operation of your business.



*Four Idler Version*

# Micro-Tech 2000 Series

## The Total Solution

Thermo Ramsey introduced the first microprocessor-based belt scale in 1974. Since then, it has been our mission to create the most advanced, versatile and easy to use belt scales in the world.

The Micro-Tech 2000 Series represents more than just the next generation of belt scale electronics. It signifies a new approach to scale instrumentation, giving you more flexibility and vastly increased upgrade capabilities.

### Advanced

Each electronics model in the series is designed for a specific weighing application: belt scales, weigh feeders, impact weighers, static weighing systems, batch weighing systems, or loss in weight systems.

Because the Micro-Tech 2000 Series uses a common platform, you need to become familiar with only one basic interface.

### Versatile

Operational flexibility is provided by the numerous programmable features. This lets you customize the electronics to your specific application needs.

### Philosophy

Modern weighing equipment must be capable of interfacing with a variety of peripheral equipment for monitoring, supervisory control and data acquisition purposes. To accommodate these needs, Thermo Ramsey designed extraordinary communications capabilities into the Micro-Tech 2000 Series.

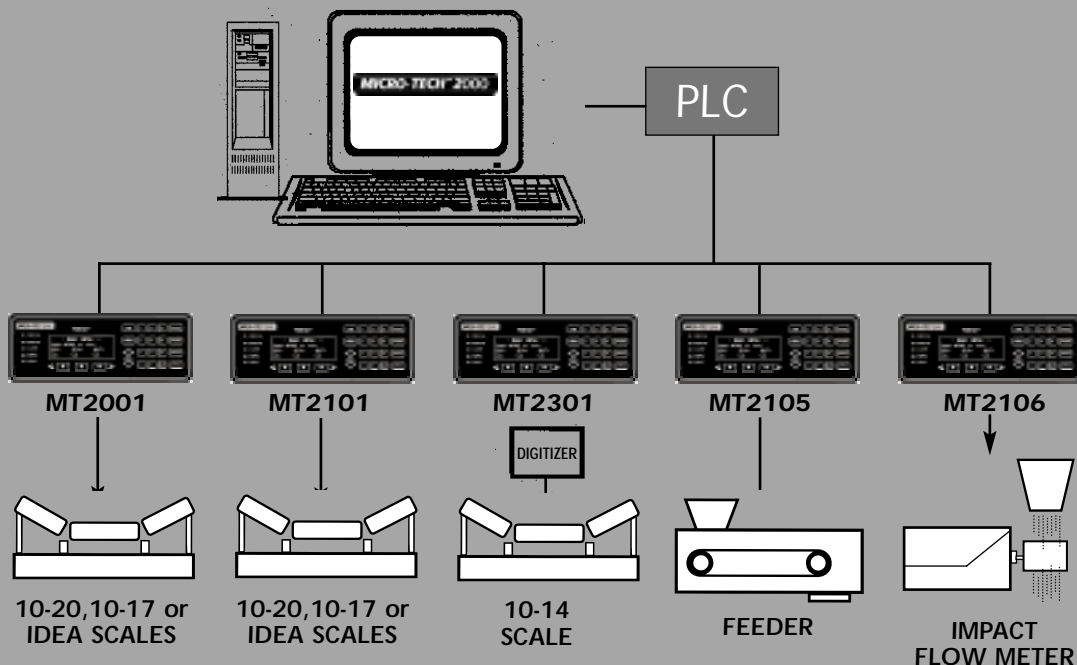
These communications capabilities let the Micro-Tech 2000 Series link to intelligent peripheral equipment such as computers, programmable logic controllers, printers, or network systems. The inputs and outputs can be used to drive relays, motor starters, lights, switches or accept inputs from magnetic card readers, micro switches, flow/no flow switches or push buttons.

*Because you're not just buying another piece of machinery, you're investing in a total system solution.*

### Human-Machine Interface

Thermo Ramsey also provides custom designed Human-Machine Interfaces (HMI) for supervisory control, data acquisition and monitoring. The HMI is a PC-based system that provides graphic displays of plant operation for the automation of continuous or discrete processes. The HMI can be used with all Thermo Ramsey weighing equipment.

## All Thermo Ramsey Weighing Equipment Thermo Ramsey Human-Machine Interface (HMI)



## Integrator

The Micro-Tech 2001 and 2101 are designed for easy operation and calibration with large, easy to read displays, straight-forward, tactile-touch keyboards, and software that prompts you, step by step, through the proper set-up and operational procedures.

All data and user instructions are displayed on a bright, 4x20-character alphanumeric, vacuum-fluorescent display. This display and keypad are used for all your interface and data entry. Two models allow you to choose the model that's right for your needs.

The Micro-Tech 2001 is designed for general belt scale applications where there are only basic external communication requirements. The Micro-Tech 2101 has greater digital I/O capabilities, which can be expanded as need arises.



◀ Micro-Tech 2001 (Field mount only)

The 2001 contains two expansion slots and is available in field mount only. The 2101 contains five expansion slots for increased input/output and is available in panel or field mount.

Micro-Tech 2101 Panel Mount ▶



## Micro-Tech Advantages

### • Part of Micro-Tech 2000 Series

All models have common operation, set-up, and calibration, reducing operator training.

### • Digital electronics

Provide accurate, drift-free performance.

### • Auto zero

With a simple keystroke the integrator will automatically compute and install a new zero.

### • Auto zero tracking

This feature initiates the auto-zero function whenever the conveyor belt runs empty.

### • Auto span

Lets you use either Thermo Ramsey pioneered, electronic calibration (standard on all units) or an applied test load, such as a chain, test weight, or material load.

### • Calibration interval reminder

Operator selectable. Automatically reminds you when it's time to recalibrate.

### • Linearization

Provides a linear output over the operating range. Improves the accuracy of the belt scale over full operating range, producing the same accuracy at 25% or at 100% of operation.

### • Numerous programmable features

Lets the user customize the integrator to fit their individual requirements.

### • Selectable analog outputs

For rate, load or speed display.

### • Selectable analog output delay

The delay can be programmed in either time or length of belt travel, giving you greater flexibility and control.

### • Programmable digital inputs

Lets operator custom program the integrator to accept inputs and/or instructions from various equipment: alarms, printers, etc.

### • Programmable digital outputs

Lets operator program up to three outputs to provide various information and/or activate ancillary equipment.

### • Independent adjustments of analog output and display damping

Lets you adjust display without affecting sensitivity of output signal used for control purposes.

### • Multi-level password protection

Provides varying levels of security for operator access.

### • CE Approval

Meets or exceeds January 1996 European market standards. Extraordinary protection from RFI, EMI and ESD. Prevents down time and maintains operating integrity.

### • UL version of the Micro-Tech 2101 is available as an option

### • Incline compensation

Can be used in conjunction with a slope sensor to automatically compensate the belt scale output for changes in conveyor angle.

### • Moisture compensation

Can be used in conjunction with a moisture meter to automatically compensate the belt scale output.

### • Loadout (Optional)

For controlling the weight of material delivered to trucks, rail cars, barges, or ships.

### • Retrofittable

Easy to upgrade all types of older Thermo Ramsey integrators as well as most competitive brands.

### • Dual speed sensor inputs

For belt slippage detection. (Model 2101 only)

## Performance Guarantee

On factory approved installations, Thermo Ramsey warrants the Series 17 Belt Scale System will weigh and totalize to a value within  $\pm 1/4\%$  of test value when calibrated against a known test weight, chain or Thermo Ramsey's standard electronic calibration.

## Weighbridge

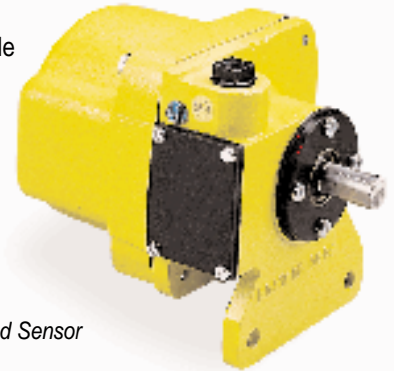
The Series 17 Belt Scale System incorporates the low deflection, rigid and rugged 10-17 Weighbridge. Available in all belt widths and idler spacings.

- Frictionless trunion-type pivots are sealed units and completely impervious to vibration, moisture and material accumulations.
- Long weigh span (four idler standard, two idler optional) minimizes belt affects.
- Rigid mechanical tube construction.
- Two super-precision strain gauge load cells mounted in tension for stability and reduction of mis-alignment errors.
- Total deflection less than .005 inches.
- Slim profile to minimize material build up problems.
- Clearance requirements: fits any standard conveyor. No space required above belt line. See specifications sheet for dimensions.

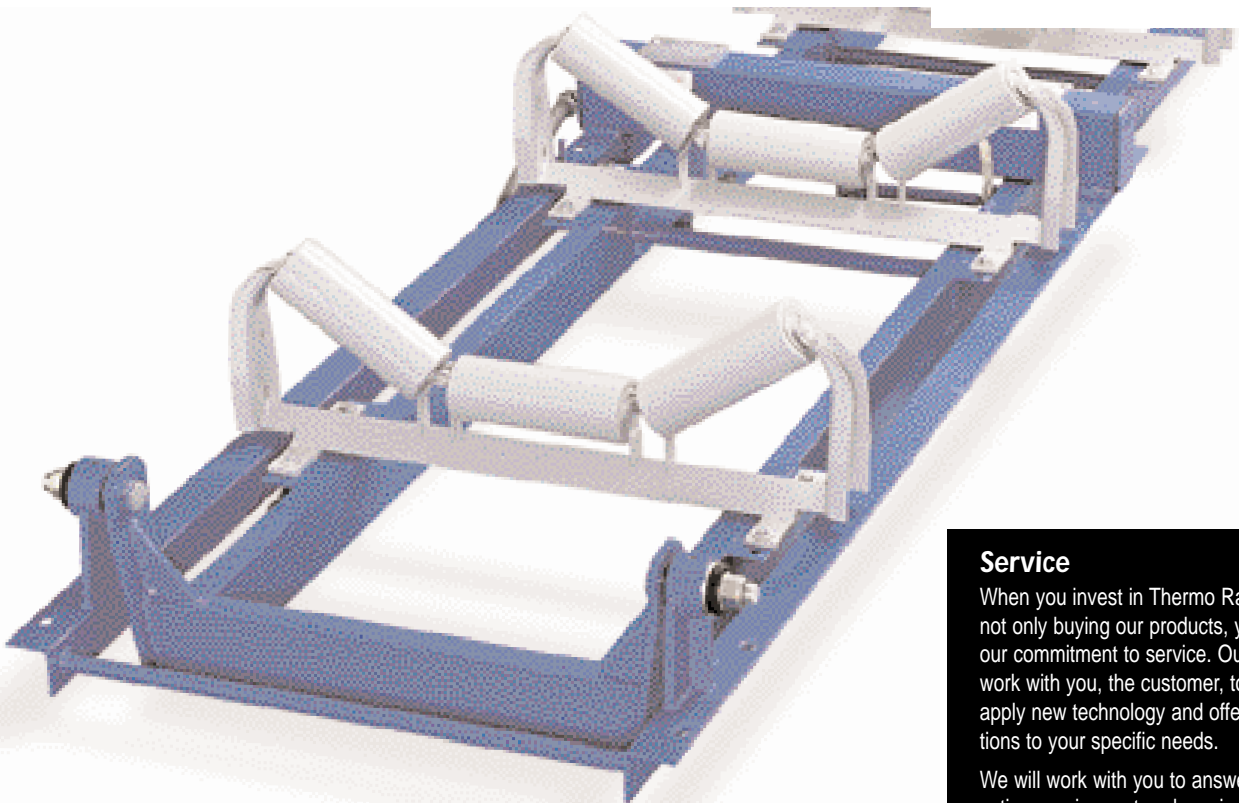
## Belt Speed Sensor

The Thermo Ramsey 60-12 Digital Belt Speed Sensor is the most reliable and accurate speed-sensing device ever developed for belt scale service. Direct-coupling the sensor to the conveyor tail pulley, snubbing roll, or the large diameter lagged return roller assures an accurate belt-travel readout. No wheels ride on the belt eliminating problems related to material build-up and slippage.

- Rugged, cast-aluminum housing suitable for outdoor installation.
- A.C. pulse generator - no brushes to adjust or replace.



60-12 Digital Belt Speed Sensor



Model 10-17 Weighbridge  
Two Idler Version

### Service

When you invest in Thermo Ramsey you're not only buying our products, you're buying our commitment to service. Our pledge is to work with you, the customer, to continuously apply new technology and offer real solutions to your specific needs.

We will work with you to answer your application requirement and service questions, to service your equipment, and to support and assist you every step of the way. No matter what your location, no matter what your need, you can count on Thermo Ramsey service.

Our service and fast parts turnaround time are just two of the things which set Thermo Ramsey apart.



### About us...

Thermo Ramsey was founded and incorporated in Minnesota in 1953. Headquartered in Minneapolis, MN our companies are located in five European countries, Canada, Mexico, Australia, and South Africa. Worldwide, Thermo Ramsey employs nearly 450 people.

In 1989 Thermo Ramsey established a Total Quality Management process and achieved ISO 9001 International Quality Standards Certification in 1993.

### Commitment to quality

To provide competitively priced, defect-free products and services that meet our customers' requirements by the promised delivery date.

### Customer satisfaction

We are dedicated to the highest level of customer satisfaction, and pledge continuous support in offering customized system solutions to our customers world-wide.

### Our products

We manufacture weighing, control and monitoring products such as: belt scale systems, weigh feeders, automatic check-weighing equipment, metal detectors, coal and mineral sampling systems, level controls and a variety of other specialty control products.

# Thermo Ramsey



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