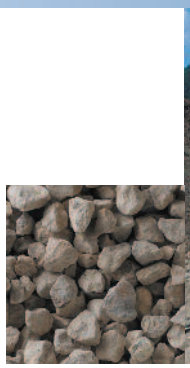
SRO Technology
Solutions in Measurement

Product Specifications

Thermo Scientific Ramsey IDEA Belt Scale System

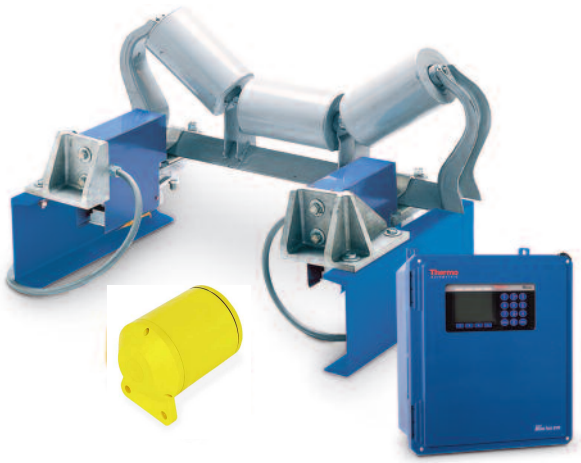
Accurate Conveyor Weighing of Bulk Materials

The Ramsey IDEA Belt Scale System provides basic rate information and totalization functions in processes involving non-critical or lower value materials with an accuracy of ±1%. This belt scale system allows you to monitor production output and inventory, or regulate product loadout, while providing vital information for the effective management and efficient operation of your business.



Features

- Economical and accurate
- Single or dual module configurations
- Reliable and easy to use electronics
- Designed for a variety of materials and applications



Specifically designed for operations where economy and ease of installation are important considerations, the Ramsey IDEA Belt Scale System from Thermo Scientific™ is ideally suited for applications in processes involving either non-critical or lower value materials. It provides basic rate and totalization functions that can be used for control and/or production output monitoring.

The Ramsey IDEA Belt Scale System continues Thermo's longstanding tradition of providing high quality, reliable and innovative weighing products to the process industries. Its patented design is the result of many years of experience in thousands of belt scale applications around the world.

How the System Operates

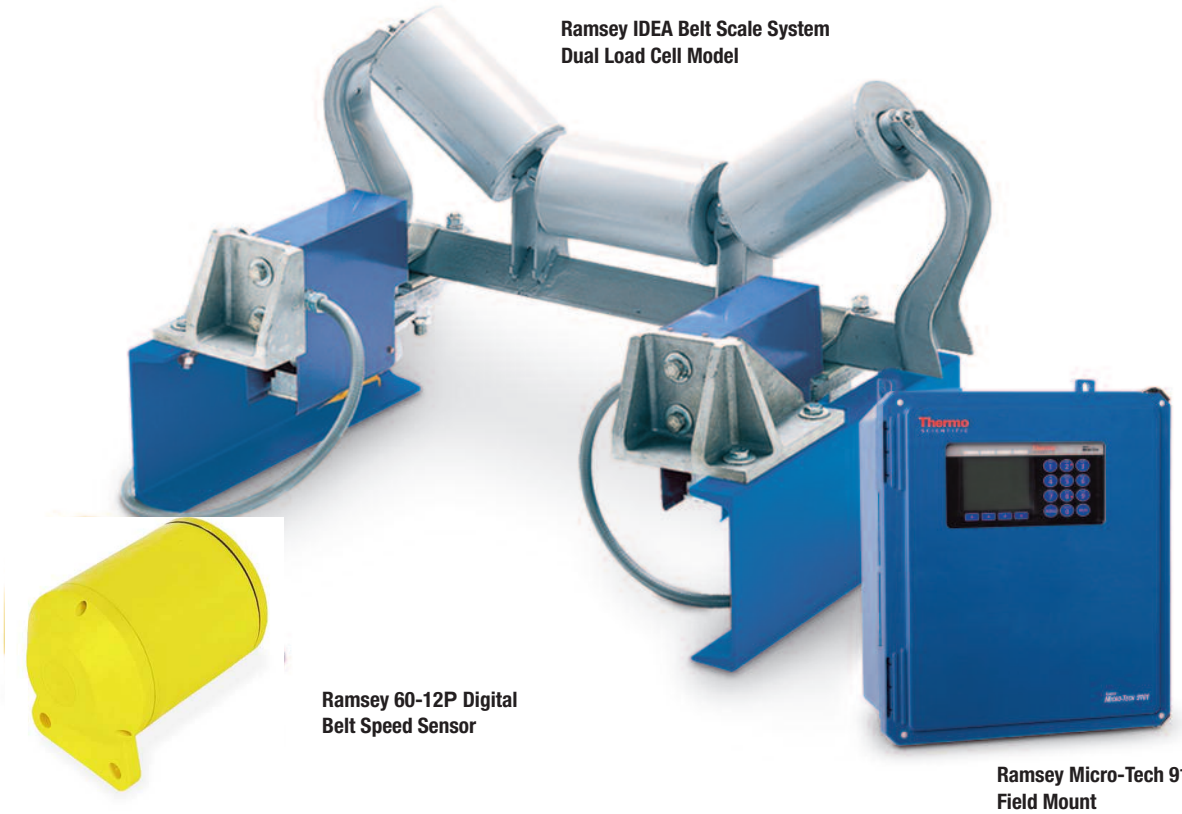
The Ramsey IDEA Belt Scale System consists of three major elements: the weighing assembly, the belt speed sensor, and an electronic integrator.

The weighing assembly consists of either one or two modules, depending on conveyor width. Compact and designed to attach to the conveyor's stringers, the modules support the weigh idler and measure the weight of material on the belt.

The speed sensor is mechanically connected to the conveyor's large diameter tail pulley and generates a stream of pulses. Each pulse represents a unit of belt travel. The frequency of the pulse stream is proportional to belt speed.

The electronics integrate the output signals from the scale module(s) and speed sensor to arrive at a rate of material flow and the total material passed over the scale. The electronics also function as the system's power supply and incorporate all the features that allow calibration, operation and diagnostics for the entire system.

Thermo SCIENTIFIC



Ramsey IDEA Belt Scale System
Dual Load Cell Model

Ramsey 60-12P Digital
Belt Speed Sensor

Ramsey Micro-Tech 9101
Field Mount

The Scale Modules

The patented Ramsey IDEA Belt Scale from Thermo Scientific is unlike any other single-idler scale. It consists of either one or two completely assembled Ramsey 10-101R Scale Modules. Each module contains a load cell in a pivotless assembly with factory installed and calibrated overload protection.

The system's single module version is for use on conveyors with belt widths up to 914 mm (36 in). This scale module mounts to a support beam that spans the conveyor stringers.

The system's dual module version is for use on conveyors with belt widths up to 1,524 mm (60 in). The weighing assembly consists of two identical modules with right and left side steel mounting brackets. Each bracket mounts directly to the conveyor stringer with two bolts.

Each module features:

- Factory installed and calibrated overload protection
- Pivotless design with no linkages to introduce errors
- No moving or wearing parts to cause potential maintenance problems
- Compact design for easy installation and alignment
- No place for material to build up and cause measurement errors
- Identical scale modules fit on any belt width and are interchangeable

The Belt Speed Sensor

Thermo's Ramsey 60-12P Digital Belt Speed Sensor is the most reliable and accurate speed-sensing device ever developed for belt scale service.

Ramsey Micro-Tech 9101 Scale Integrator

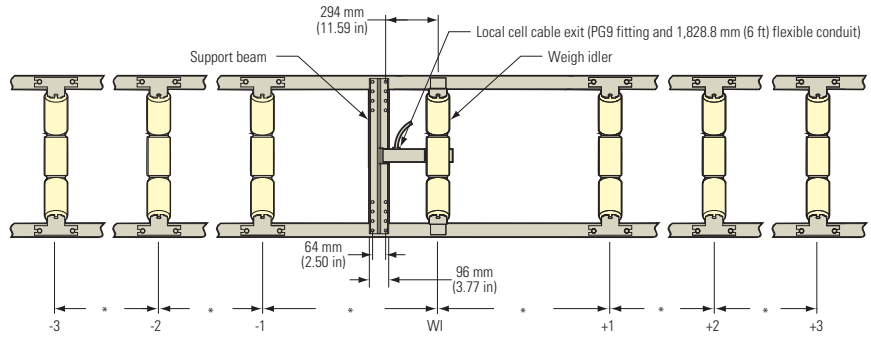
The Ramsey Micro-Tech 9101 scale integrator incorporates advanced electronic design for improved performance and serviceability. This fifth-generation electronics enables you to accurately weigh your material and monitor your process.

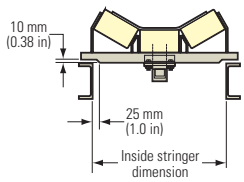
Performance Guarantee

On factory-approved installations, we warrant that the Ramsey IDEA Belt Scale System will weigh and totalize to a value within ±1% of the test value when calibrated against a known test weight, chain, or Thermo's standard electronic calibration.

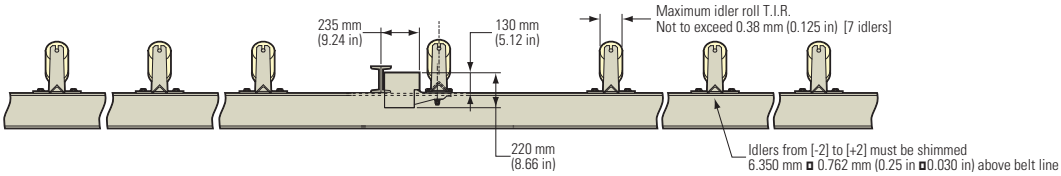
The test rate must be between 33% and 100% of the scale system's calibrated capacity. Test duration is defined as at least three circuits or revolutions of the belt, at least 400 counts on the master totalizer, and at least six minutes running time. Its warranty is subject to the scale system being installed, operated and maintained in accordance with factory instructions.

Ramsey 10-101R-1 Single Load Scale Module Dimensions

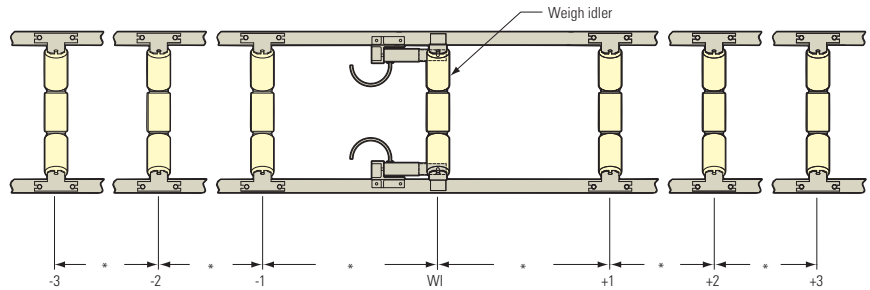


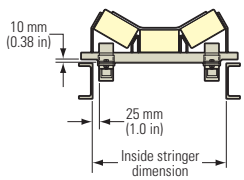


*All idler spacings in scale area must be equal.

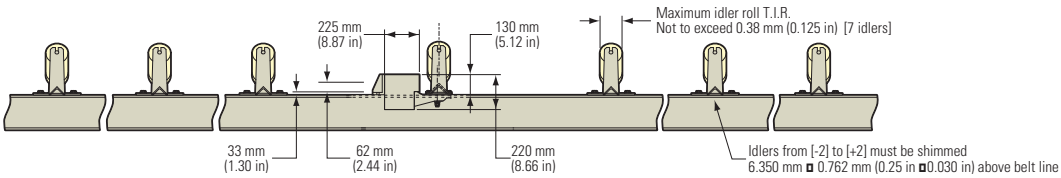


Ramsey 10-101R-2 Dual Load Scale Module Dimensions





*All idler spacings in scale area must be equal.



Thermo Scientific Ramsey IDEA Belt Scale System	
Ramsey 10-101R Scale Modules	
Minimum Net Load at Rated Capacity	15% of load cell capacity
Maximum Gross Load at Rated Capacity	80% of load cell capacity
Available Load Cell Sizes	20 kg (44 lb), 50 kg (110 lb), 100 kg (220 lb), 200 kg (441 lb), 250 kg (551 lb), 500 kg (1,102 lb)
Maximum Belt Width	Ramsey 10-101R-1: 914 mm (36 in) Ramsey 10-101R-2: 1,524 mm (60 in)
Load Cell	
Load Cell	Welded bending beam type load cell
Load Cell Output	2.0 Mv/V; ±0.1%
Excitation	10 VDC or VAC
Load Cell Rating	3000 d; Meets OIML R60 & NIST HB-44
Temperature Range	-30°C to +80°C (-22°F to +176°F) safe; -10°C to +40°C (+14°F to +104°F) compensated
Overload	150% of rated capacity
Input Impedance	380 ohms ±10
Output Impedance	350 ohms ±3
Environmental Protection	Hermetically-sealed; IP67
Load Cell Construction	Stainless steel
Cable	6 conductor, shielded, 22 AWG
Micro-Tech 9101 Belt Scale Integrator	
Enclosure	Field mount, NEMA-4X fiberglass, IP66, dust and watertight, 432 mm (17 in) x 360 mm (14 in) x 167 mm (6.6 in) Panel mount, chromate mid steel chassis, front panel IP65, DIN 43700, 308 mm (12 in) x 102 mm (4 in) x 202 mm (7.9 in)
Temperature	Operating: -20ºC to +60ºC (-4ºF to +140ºF) Storage: -30ºC to +70ºC (-22ºF to +158ºF)
Power Requirements	Field mount 100-240 VAC, 50/60 Hz Panel mount 24 VDC +10%, -15% (user supplied), 24 VDC only, optional AC module available
Display	77 mm x 58 mm viewable LCD graphic display with status indicator lights for easy reading, continuous backlit for ease of viewing indoors and outdoors, available menu languages include English, German, Italian and Spanish
Load Cell Excitation	5 VDC +/-10%, 90 mA
Outputs	Includes one solid state DC pulse output open collector for pulse output (default) or alarms
Communication	Standard serial interface RS-232C provides support for modem, RS-485, 2- and 4- wire multi-drop
Communication Protocols	Modbus RTU, Allen Bradley DF-1, Siemens
Ethernet	Ethernet/IP and Modbus/TCP
Built-in USB Port	Configuration and data storage
Expansion Slots (5)	Optional boards include 4-20 mA output board, input/output expansion boards, digital or analog input/output boards, Profibus or Standard communication board
Ratings	cCSAus, CE
Ramsey 60-12P Belt Speed Sensor	
Type	Proximity
Mounting	Tail pulley mounted
Target range	Up to 10mm
Pulses	0-6000 PPS
Output signal	Open collector
Operatiing temp range.	-20 C to +65 C
Proteciton Rating	IP66
Power Supply	10-24 VDC