

# Thermo Scientific Ramsey Series 17

## Belt scale system for conveyor weighing of bulk materials

### For Plant and Process Operations

The Thermo Scientific™ Ramsey™ Series 17 belt scale system is specifically designed for plant and process operations that run at high rates of speed or require the better-than-normal accuracy of  $\pm 0.25\%$ . The Ramsey Series 17 system provides vital information that allows you to effectively manage and efficiently operate your business by monitoring production output and inventory or regulating product loadout.

#### Features

- Time-proven design for challenging applications
- Multiple idler weigh span for greater accuracy
- State of the art microprocessor-based electronics with 7" HMI touchscreen display
- Web based interface to manage integrator from network PC
- Improved communication capabilities
- Easy to use and calibrate, with on-board system diagnostics

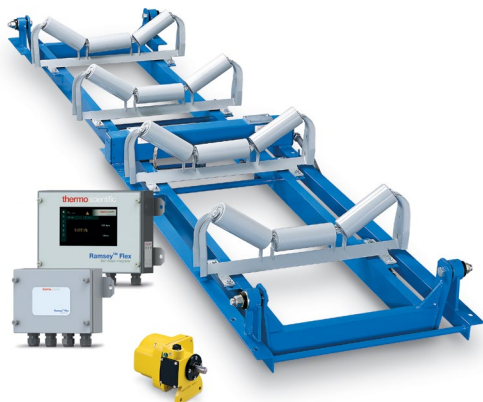
The Ramsey Series 17 belt scale system combines the time-proven reliability of the Thermo Scientific™ Ramsey™ 10-17 weighbridge and Thermo Scientific™ Ramsey™ 61-12N belt speed sensor with the powerful and versatile advanced electronics of the Thermo Scientific™ Ramsey™ Flex integrator.

The Series 17 system's long weighbridge design allows this model to be offered as a highly accurate  $\pm 0.25\%$  scale system. The longer weighbridge permits more scale-borne time, which minimizes alignment errors. This translates into better accuracy. This belt scale system is available in a two-or four-idler version.

#### Applications

The Ramsey Series 17 belt scale system is designed for plant and process operations that run at higher rates of speed or require better-than-normal belt scale accuracy.

The system can monitor production output, control product loadout, and keep track of inventory to help you effectively manage and efficiently operate your business.



## Ramsey Series 10-17 Weighbridge

The Ramsey Series 10-17 scale system includes a multiple idler weigh span (four idler standard; two idlers optional) to minimize belt effects and is available in a variety of belt widths and idler spacings. The 10-17 design includes two super-precision strain gauge load cells mounted in tension for greater stability and to minimize alignment errors. The frictionless, trunnion-type sealed pivots are completely impervious to vibration, moisture and material accumulations.

## Ramsey Flex Scale Integrator

Ramsey Flex integrator provides the intelligence to the weighing system allowing accurate production monitoring, inventory tracking and controlled product load-out. Ramsey Flex integrators convert the input from the digitizer into material flow and total conveyed mass. A single Ramsey Flex integrator can manage the inputs from two scale digitizers, i.e. two individual scales.

### Integrator options:



**Field mount with touchscreen HMI**  
for at-line interaction

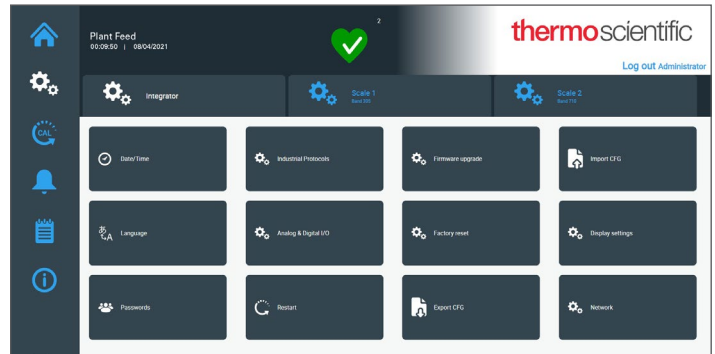


**Panel mount with touchscreen HMI**  
for centralized operation from a control room



**Blind without HMI**  
for a cost-efficient set-up for remote access or harsh environments

Ramsey Flex integrators come standard with a web-based interface allowing you to monitor and manage your belt scale system from your network PC.



## Ramsey Flex Scale Digitizer

Ramsey Flex digitizers take the output signal from the weighbridge load cells and speed sensor to the electronic integrator, providing a more robust and reliable signal than standard junction boxes.



**Single Digitizer**  
for one load cell/load cell pair input



**Quad Digitizer**  
for four load cell/multiple load cell input

## Ramsey 61-12N Belt Speed Sensor

The Ramsey 61-12N digital belt speed sensor is the most reliable and accurate speed-sensing device ever developed for belt scale service. Designed with a rugged, cast-aluminum housing suitable for outdoor installations it contains an AC pulse generator that doesn't have any brushes to adjust or replace. Direct-coupling the sensor to the conveyor tail pulley, snubbing roll, or a large diameter return roller ensure an accurate belt-travel readout.

## Performance Guarantee

On factory-approved installations, we warrant that the Ramsey Series 17 belt scale system will weigh and totalize to a value within  $\pm 0.25\%$  of the test value when calibrated against a known test weight, chain, or the Thermo Scientific standard electronic calibration. The test rate must be between 25% 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 800 counts on the master totalizer, and at least ten minutes running time. Its warranty is subject to the scale system being installed, operated and maintained in accordance with factory instructions.

## Specifications

Ramsey 10-17 Weighbridge	
<b>Weigh Span</b>	Four-idler standard minimizes belt effects; Two-idler version optional for $\pm 0.5\%$ accuracy
<b>Frictionless Pivots</b>	Trunnion-type; Sealed units are completely impervious to vibration, moisture and material build-up
<b>Weighbridge Construction</b>	Rigid mechanical tube construction
<b>Load Cells</b>	Two super-precision strain gauge load cells mounted in tension for stability and reduction of misalignment errors
<b>Total Deflection</b>	Less than 0.127 mm (0.005 in)
<b>Clearance Requirements</b>	Fits any standard conveyor; No space required above belt line
<b>Load Cell</b>	Two in parallel Environmentally protected "S" type cells Operation temperature $-40^{\circ}\text{C}$ to $93^{\circ}\text{C}$ ( $-40^{\circ}\text{F}$ to $200^{\circ}\text{F}$ )

## Ramsey Flex Integrator

<b>Enclosures</b>	Stainless Steel 316, 1.6 mm enclosure Weight 5 kg Field mount with HMI, Field mount blind or panel mount Optional weather shield/sunshade IP66 rating (dust and watertight)
<b>Temperature</b>	Operating Temperature Integrator -30 °C to 55 °C (-22°F to 131°F) Storage Temperature Integrator -30 °C to 80 °C (-22°F to 176°F)
<b>Electronics</b>	Arm Cortex A7 792MHz Microprocessor Internal 32 GB Storage µSD Card Load Cell Sensor 24 Bit 100Hz Sigma Delta Screen 7 Inch (17.5 cm) WSVGA 1024x600 Colour 900Nits Capacitive Touch Screen-less version for harsh environments LED indicators for maintenance (internal) Real Time Clock Battery CR1220
<b>Power Supply</b>	24 VDC or 110-230VAC 50/60Hz, 15W Wide voltage tolerance range (+-10%) Isolation/Circuit Breaker to be provided by installer
<b>Inputs</b>	Two 4-20mA isolated current inputs Two 0-5V voltage inputs Four optically isolated 24V @12mA digital inputs
<b>Outputs</b>	Two 4-20mA isolated current outputs Two 0-5V voltage outputs Four optically isolated 24V @100mA digital push pull outputs Two serial ports (RS232/RS485)
<b>Bus Interfaces</b>	MODBUS RTU, MODBUS TCP, ETHERNET I/P, PROFINET, PROFIBUS Supports Dual CANbus for Digitizers 10-1000m cable
<b>Regulatory Marks</b>	cCSAus, CE, ROHS

Ramsey Flex Digitizer	
<b>Enclosures</b>	Stainless steel 316, 1.6mm enclosure Weight 2 kg Rear Mount IP66 (dust and watertight)
<b>Temperature</b>	Operating Temperature Digitizer -40 °C to 70 °C (-40 °F to 158 °F) Storage Temperature Digitizer -40 °C to 80 °C (-40 °F to 176 °F)
<b>Power Supply</b>	Via the integrator CANbus cable
<b>Inputs</b>	Load Cell Sensor 24 Bit 100 Hz Sigma Delta 100 measurements per second Single Digitizer has one load cell input Quad Digitizer has four load cell inputs Speed sensor / Opto pulse sensor input
<b>Bus Interfaces</b>	CANbus
<b>Regulatory Marks</b>	cCSAus, CE, ROHS

Ramsey 61-12N-64P Speed Sensor	
<b>Type</b>	Digital, brushless, 3-wire, 64 pulses per shaft revolution
<b>Mounting</b>	Direct to 15.88mm (0.625 in) diameter stub shaft on tail pulley, bend pulley, or return roll Requires 3 conductor cable. See manual for details.
<b>Speed</b>	0-350 RPM
<b>Housing</b>	Weather-tight, epoxy finish, cast aluminium Supplied with coupling, restraint arm and restraint spring
<b>Operating Temperature</b>	-40 °C to 80 °C (-40 °F to 176 °F)
<b>Weight</b>	3.6 kg (8 lb)
<b>Regulatory Marks</b>	cCSAus, CE, ROHS

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