SRO Technology Ramsey Series 14
Precision belt scale system

For high accuracy or basis-of-payment applications requiring certification by government and regulatory agencies

The SRO Technology Ramsey Series 14 precision belt scale system is specifically designed for high accuracy or basis-of-payment applications requiring certification by government and regulatory agencies. It is extremely accurate to within +/-0.125% and is the most widely certified belt scale in the world. This precision belt scale system 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.

Applications
This highly precise belt scale system represents the world standard of accuracy and performance for loadout, inventory monitoring and fee-holder type applications requiring certification.

Performance Guarantee
On factory-approved installations, we warrant that the Ramsey Series 14 precision belt scale system will weigh and totalize to a value within ±0.125% of the test load at flow rates between 25% and 100% of the scale system's calibrated capacity when calibrated against an actual weighed material test. Furthermore, we warrant that the scale system will repeat to within 0.1% of consecutively run, simulated calibration tests.

The Ramsey Series 14 belt scale system incorporates the Ramsey 10-14 low-deflection, full-floating unitized weighbridge and the **SRO Technology** Ramsey 61-12N Belt Speed Sensor. Both are well-proven on hundreds of precision belt weighing installations.

It also utilizes the SRO Technology Ramsey Flex integrator and the Ramsey Flex quad digitizer, which are the products of 60 years of design and application experience with high-accuracy belt scales.

RAMSEY
by **SRO TECHNOLOGY**

Features & Benefits

System Components

The system has four major components: integrator, weighbridge, belt speed sensor and load cell digitizer.

The Weighbridge

Three- or four-idler suspension-type Ramsey 10-14 weighbridges feature full-floating unitized assemblies with no pivots and no moving parts. All weighbridges are constructed of structural steel tubing and are factory pre-assembled with checkrods to facilitate fast and easy field installation. Only eight bolts are required to mount the unit to conveyor stringers. Four environmentally sealed precision strain gauge load cell assemblies are applied in tension to support the weighbridge.

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. The Quad digitizer is designed to take the input from four individual load cells or load cell pairs for improved performance and troubleshooting capabilities.

Quad Digitizer
for four load cell/multiple load cell input

The 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. 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.

Weighbridge Advantages

• Rigid structural steel tubing construction with check rods maintains positive alignment

• No moving or wearing parts lead to a longer life span

• No adjustments needed

• Factory pre-assembled and easily installed

• Four strain gauge load cells applied in tension

• Full-floating, pivotless weigh platform

Electronics Advantages

• State of the art microprocessor based electronics with 7" HMI touchscreen display

• Web based interface to manage integrator from network PC

• Improved communications capabilities

• Easy to use and calibrate, with on-board system diagnostics

Specifications

Ramsey 10-14 Weighbridge	
Weigh Span	Three or four idler suspension; 2,743 mm (108 in) minimum weigh span
Clearance Requirements	Fits any standard conveyor; no space required above belt line
Load Cells	Four (4) environmentally protected "S" type cell, excitation 10 ±5% VDC, safe to 150% of load call capacity
Weighbridge Construction	Rigid mechanical tube construction
Certifications	NTEP (National Type Evaluation Program) approved when used with Micro-Tech 9301/9301-D or Micro-Tech 9201 OIML/MID approved when used with Micro-Tech 9301/9301-D or Micro-Tech 9201

Ramsey Flex Integrator	
Enclosures	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)
Temperature	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)
Electronics	Arm Cortex A7 792 MHz Microprocessor Internal 32 GB Storage µSD Card Load Cell Sensor 24 Bit 100 Hz Sigma Delta Screen 7 Inch (17.5 cm) WSVGA 1024x600 Colour 900 Nits Capacitive Touch Screen-less version for harsh environments LED indicators for maintenance (internal) Real Time Clock Battery CR1220
Power Supply	24 VDC or 110-230 VAC 50/60 Hz, 15 W Wide voltage tolerance range (+-10%) Isolation/Circuit Breaker to be provided by installer
Inputs	Two 4-20 mA isolated current inputs Two 0-5 V voltage inputs Four optically isolated 24 V @12 mA digital inputs
Outputs	Two 4-20 mA isolated current outputs Two 0-5 V voltage outputs Four optically isolated 24 V @100 mA digital push pull outputs Two serial ports (RS232/RS485)
Bus Interfaces	MODBUS RTU, MODBUS TCP, ETHERNET I/P, PROFINET, PROFIBUS Supports Dual CANbus for Digitizers 10-1000m cable
Regulatory Marks	cCSAus, CE, ROHS

Ramsey Flex Digitizer

Enclosures	Stainless steel 316, 1.6 mm enclosure Weight 2 kg Rear Mount IP66 (dust and watertight)
Temperature	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)
Power Supply	Via the integrator CANbus cable
Inputs	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
Bus Interfaces	CANbus
Regulatory Marks	cCSAus, CE, ROHS

Ramsey 61-12N-64P Speed Sensor

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

UMP Tech
Phone: +1 (877)722-1711
201 E 37th St,Tucson, AZ 85713
www.ump-usa.com
sales@ump-usa.com

Find out more at **srotechnology.com/ramsey-series-14**

RAMSEY by SRO TECHNOLOGY