

# SRO Technology Ramsey Series 20

## Belt scale system for conveyor weighing of bulk materials

### For Demanding Industrial Environments

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

- Crushing plants
- Chemical plants
- Asphalt plants
- Mines
- Cement mills
- Coal preparation plants
- Paper mills
- Gypsum mills
- Sand and gravel operations
- Coal-fired power plants
- Ore beneficiation processes
- Rail loadouts

Designed for general in-plant belt conveyor weighing applications in the most demanding industrial environments, the Ramsey Series 20 belt scale system lets you control feed rates to crushers, mills, screens and other processes with incredible accuracy. It can monitor production output and inventory, or control product loadout, while providing vital information for the management and operation of your business.

The Ramsey Series 20 belt scale combines the proven reliability and versatility of the following SRO Technology products: Ramsey 10-20 single idler or Ramsey 10-22 dual idler weighbridge and the Ramsey 61-12N belt speed sensor with the advanced electronics of the Ramsey Flex integrators.

For more information, see the product specification sheet on the Ramsey Flex integrators and digitizers.

#### Easy Installation

Easy to install, indoors or out, on fixed or portable conveyors, the rugged construction of the Ramsey Series 20 belt scale allows for installation in the harshest applications at a variety of locations.



## Ramsey Series 10-20 Weighbridge

The Ramsey Series 10-20 weighbridge has a slim profile to minimize material build-up, has no moving or wearing parts and utilizes precision strain-gauge load cell(s) applied in tension to guarantee load cell alignment and accuracy.

Rigid and rugged, the weighbridges 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.

## 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 SRO Technology 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. Directly 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.

## Performance Guarantee

On factory-approved installations, we warrant that the Ramsey Series 20 belt scale system will weigh and totalize to a value within  $\pm 0.5\%$  of the test value when calibrated against a known test weight, chain, or our standard electronic calibration.

## Specifications

Ramsey 10-20 Weighbridges	
<b>Weigh Span</b>	One or two idler suspension; Weigh spans from 762 mm to 1829 mm (30 in to 72 in)
<b>Weigh bridge Design</b>	Unitized assembly consisting of pivoted weigh platform and one support beam that spans the conveyor stringer; Rugged one-piece design stiffens scale's area of conveyor
<b>Weigh bridge Construction</b>	Mechanical steel tubing; Conveyor sizes 457 mm to 1829 mm (18 in to 72 in) or 400 mm to 2000 mm (15.75 in to 78.74 in) belt widths as standard
<b>Clearance Requirements</b>	Fits any standard conveyor; no space required above belt line.
<b>Load Cell</b>	Environmentally protected "S" type cell(s) Operation temperature -40°C to 93°C (-40°F to 200°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 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
<b>Power Supply</b>	24 VDC or 110-230 VAC 50/60 Hz, 15 W Wide voltage tolerance range (+/-10%) Isolation/Circuit Breaker to be provided by installer
<b>Inputs</b>	Two 4-20 mA isolated current inputs Two 0-5 V voltage inputs Four optically isolated 24 V @12 mA digital inputs
<b>Outputs</b>	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)
<b>Bus Interfaces</b>	MODBUS RTU, MODBUS TCP, ETHERNET I/P, PROFINET, PROFIBUS Supports Dual CANbus for Digitizers 10-1000 m cable
<b>Regulatory Marks</b>	cCSAus, CE, ROHS

Ramsey Flex Digitizer	
<b>Enclosures</b>	Stainless steel 316, 1.6 mm 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 15.88 mm (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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