

# Ramsey Model 90-100

## Heavy Duty Weighbelt Feeder

The Ramsey Model 90-100 heavy duty weighbelt feeder offers accurate weighfeeding of a variety of demanding industrial applications with high feed rates. Its endless belt design allows the belt to be changed with minimum downtime, and its heavy duty construction provides larger pulleys and a very sturdy and rugged frame for increased accuracy, augmenting the performance of your process and improving your bottom line.

### Features

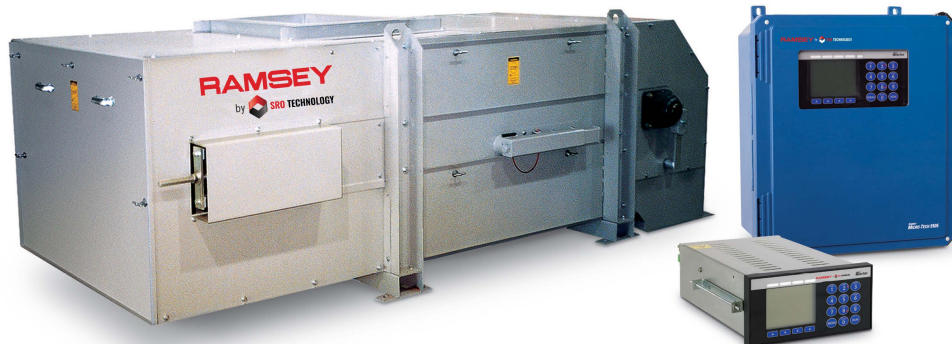
- Heavy duty construction accommodates heavy loading
- Designed for demanding weighing applications
- Open, partially enclosed or fully enclosed construction
- Variable or constant speed motor
- Proven reliability
- Customized designs to fit your application



Precise feeding of process materials is often critical to maintaining product quality. A feeder that weighs accurately and reliably can reduce material waste, help maintain blend consistency and increase profits.

We have over 40 years of experience designing and manufacturing weighbelt feeders. Every feeder is designed to meet the specific needs of the application. We work closely with our customers to ensure that each system meets their expectations for performance and dependability.

The Ramsey Model 90-100 weighbelt feeder is designed for very demanding industrial applications with high feed rates and heavy loading requirements. It accommodates flow rates up to 816 metric tons (900 tons) per hour, and belt loadings up to 446.5 kg/m (300 lb/ft).

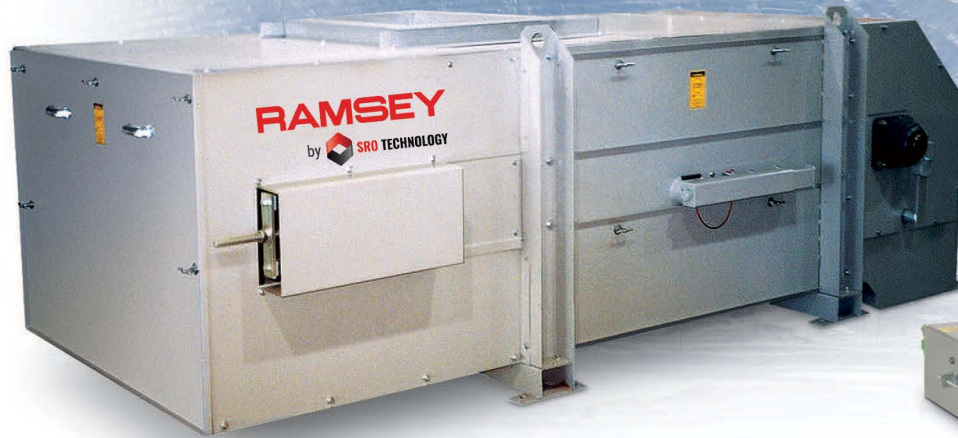


**Ramsey Model 90-100 Heavy Duty Weighbelt Feeder**

**Ramsey Micro-Tech 9105 Field Mount**

**Ramsey Micro-Tech 9105 Panel Mount**

**RAMSEY**  
NORTH AMERICA



**Ramsey Model 90-100 Heavy Duty Weighbelt Feeder**

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### Theory of Operation

Material is fed onto the feeder through an inlet feed section equipped with a manually adjustable vertical slide gate to control material height. The scale carriage/weighbridge assembly contains a strain gauge load cell that measures the gravitational force of the material and converts this force measurement into an electrical output signal proportional to belt loading.

A digital speed sensor continuously monitors the belt speed and sends a representative signal to the electronics.

The microprocessor-based Ramsey Micro-Tech electronics completes the weighing system by integrating the signals from the scale load cell and the speed sensor to produce an instantaneous rate. The electronics also provide an output signal to enable additional control and monitoring of the weighbelt feeder.

If your interest is in blending or batching applications, the Ramsey Micro-Tech electronics is also available in a feeder controller version that allows the user to regulate the speed of the feeder. We manufacture a complete line of weighbelt feeders so you can be confident that we have a product to fit your application.

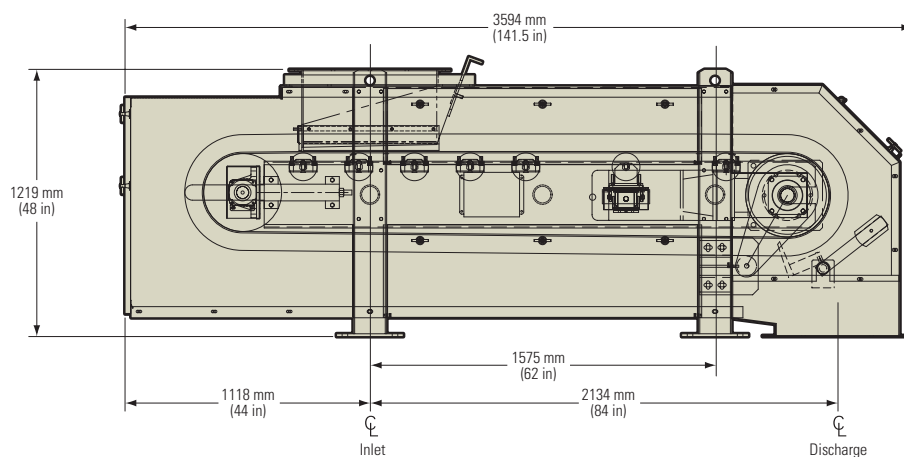
### Features and Benefits

The Ramsey Model 90-100 heavy duty weighbelt feeder incorporates our highly respected Ramsey Series 30 or Ramsey IDEA single-idler, pivotless weighframes for the accurate measurement of your bulk materials. Other special features and benefits include:

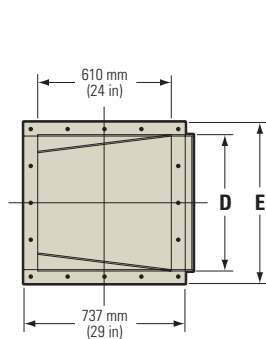
- Endless Belt Design: Extendable legs are included to permit easy replacement of the feeder's endless belt with minimum downtime.
- Heavy Duty Construction: Larger pulleys and a very rugged, heavy-duty frame make this an ideal feeder for difficult, high-rate applications.
- Choice of Belt Widths: Available in several belt widths from 457 mm (18 in) to 1,829 mm (72 in) and longer.
- Various Feeder Lengths: Customize your feeder length to fit your application, from 2,134 mm (7 ft) to 6,096 mm (20 ft) and longer.
- Speed Drives: Choose from constant speed or variable speed drives.
- Structure Design: Choose from open, partially open, or fully enclosed designs.
- Other Available Options: Drag-type bottom clean out, belt misalignment switches and safety pull switches.

### Options

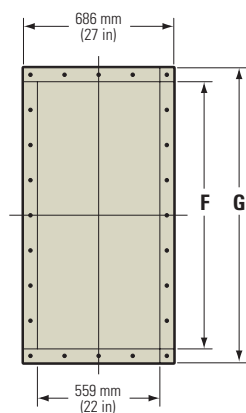
- Top covers
- Side covers
- Bottom covers
- Scavenger clean-out
- Variable speed drives
- Flow/no-flow switches
- Run-off switches
- Safety pull switches
- Plugged chute switches
- Class 1 and 2 rated units
- Stainless steel construction
- Liners
- High temperature belts
- Shut-off/maintenance gates



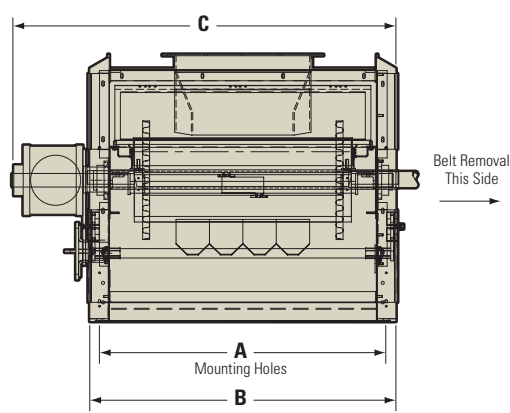
**SIDE VIEW**



**INLET FLANGE DETAIL**



**DISCHARGE FLANGE DETAIL**



**END VIEW**

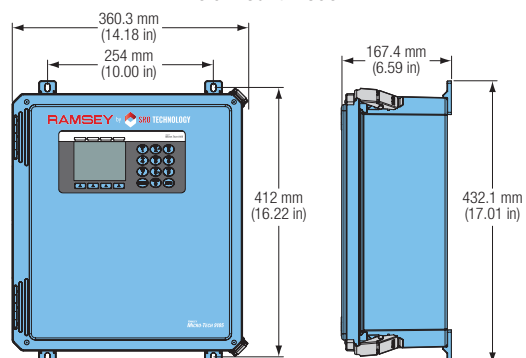
**Ramsey Model 90-100 Heavy Duty Weighbelt Feeder — Variable Dimensions**

| BELT<br>WIDTH | LENGTH (mm) |      |      |     |     |      |      |
|---------------|-------------|------|------|-----|-----|------|------|
|               | A           | B    | C    | D   | E   | F    | G    |
| 457 mm        | 851         | 940  | 1295 | 305 | 432 | 762  | 889  |
| 610 mm        | 1003        | 1092 | 1448 | 406 | 533 | 914  | 1041 |
| 762 mm        | 1156        | 1245 | 1600 | 508 | 635 | 1067 | 1194 |
| 914 mm        | 1308        | 1397 | 1753 | 610 | 737 | 1219 | 1346 |
| 1067 mm       | 1461        | 1549 | 1905 | 711 | 838 | 1372 | 1499 |
| 1219 mm       | 1613        | 1702 | 2057 | 813 | 940 | 1524 | 1651 |

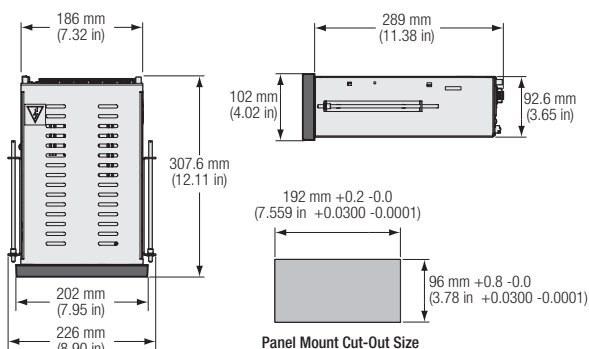
| BELT<br>WIDTH | LENGTH (in) |    |    |    |    |    |    |
|---------------|-------------|----|----|----|----|----|----|
|               | A           | B  | C  | D  | E  | F  | G  |
| 18 in         | 33.5        | 37 | 51 | 12 | 17 | 30 | 35 |
| 24 in         | 39.5        | 43 | 57 | 16 | 21 | 36 | 41 |
| 30 in         | 45.5        | 49 | 63 | 20 | 25 | 42 | 47 |
| 36 in         | 51.5        | 55 | 69 | 24 | 29 | 48 | 53 |
| 42 in         | 57.5        | 61 | 75 | 28 | 33 | 54 | 59 |
| 48 in         | 63.5        | 67 | 81 | 32 | 37 | 60 | 65 |

**Ramsey Micro-Tech 9105 Impact Weigher Electronics**

**Field Mount Model**



**Panel Mount Model**





## Ramsey Model 90-100

### General Specifications

|                         |                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy                | ±0.5% based on approved applications and test requirements                                                                                                                                        |
| Belt Width              | 457 mm (18 in) to 1,829 mm (72 in); Wider belts available with other designs                                                                                                                      |
| Feeder Length           | 2,134 mm (7 ft) to 6,096 mm (20 ft) or longer, centerline of inlet to centerline of discharge                                                                                                     |
| Feed Rate               | 0.9 metric tons/hr to 816 metric tons/hr at 801 kg/m <sup>3</sup> (1 ton/hr to 900 tons/hr at 50 lb/ft <sup>3</sup> ) material; Higher feed rates available                                       |
| Belt Load               | 26 kg/m to 446.5 kg/m (17.5 lb/ft to 300 lb/ft)                                                                                                                                                   |
| Weigh Span              | 610 mm (2 ft) typical, variable depending on application                                                                                                                                          |
| Belt                    | Endless polyester carcass belting with Grade 2 SBR covers suitable for most applications with corrugated sidewalls or 25.4 mm (1 in) vanner edges; Other belts available depending on application |
| Idlers                  | Depending on application, 102 mm (4 in), 127 mm (5 in) or 152 mm (6 in) diameter idlers rated CEMA C or D; Higher rated idlers available for severe applications                                  |
| Head Pulley             | 356 mm (14 in) diameter, rubber lagged; Larger sizes and special designs available depending on application                                                                                       |
| Speed Reducer           | Sumitomo or equal shaft mounted gear reducer; Other styles available                                                                                                                              |
| Scale Weighbridge       | Unitized, single-idler, pivotless full-floating Ramsey Series 30 or Ramsey IDEA platform scale system                                                                                             |
| Conveyor                | Heavy duty frame with extendable side supports for easy belt removal; Customer may specify belt removal on either the left or right side                                                          |
| Load Cell               | Single platform type strain gauge transducer in compression                                                                                                                                       |
| Load Cell Excitation    | 10 VDC recommended, 15 VDC maximum                                                                                                                                                                |
| Nonlinearity            | <0.03% rated output                                                                                                                                                                               |
| Repeatability           | <0.01% rated output                                                                                                                                                                               |
| Hysteresis              | <0.02% rated output                                                                                                                                                                               |
| Temperature Sensitivity | Zero: <0.0009%/°C (<0.0005%/°F)<br>Span: <0.0014%/°C (<0.0008%/°F)                                                                                                                                |

### Micro-Tech 9105 Weighbelt Feeder Controller

|                         |                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)<br>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: -20°C to +60°C (-4°F to +140°F)<br>Storage: -30°C to +70°C (-22°F to +158°F)                                                                                                                                                 |
| Power Requirements      | Field mount 100-240 VAC, 50/60 Hz<br>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                                                                                                                                                                                                                     |
| Inputs/Outputs          | Includes one dual analog input/output board; 2 analog inputs and 2 analog outputs selectable 0-20 or 4-20 mA                                                                                                                            |
| 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 (4)     | 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                                                                                                                                                                                                                              |
| Pending Approvals       | SIL-2, Tick Mark, GOST and other ATEX classifications                                                                                                                                                                                   |

### Digital Speed Sensor

|          |                    |
|----------|--------------------|
| Type     | Digital, brushless |
| Mounting | Direct to shaft    |
| Housing  | Weather-tight      |

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