

Thermo Scientific Ramsey Model 90-150

Conveyor Weighing of Bulk Materials

The Thermo Scientific™ Ramsey™ Model 90-150 Low Capacity Weighbelt Feeder offers accurate weighfeeding of light materials at low feed rates. Its unique design and construction features provide a consistent flow of materials, offer increased sensitivity for more accurate weighing of the lightest materials, and permit quick and easy cleaning and maintenance. These features work together to augment the performance of your process and improve your bottom line.



Cantilevered frame and quick release take-up for easy belt removal



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 well 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 90-150 low capacity weighbelt feeder is designed for weighfeeding applications with low feed rates and light belt loading requirements. It accommodates flow rates as low as 54 kg (120 lb) per hour up to 22,680 kg (50,000 lb) per hour, and belt loadings of 3 kg/m (2 lb/ft) to 30 kg/m (20 lb/ft).

**Thermo Scientific Ramsey
Model 90-150 Low Capacity
Weighbelt Feeder**

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Ramsey Model 90-150 Low Capacity Weighbelt Feeder



Ramsey Micro-Tech 9105 Field Mount Weighbelt Feeder Controller



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 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. The microprocessor-based electronics integrate the two signals to produce and display a true rate and a total weight fed. The electronics also provide an output signal for control and monitoring purposes.

Micro-Tech 9105 Weighbelt Feeder Controller

The Thermo Scientific Micro-Tech 9105 Weighbelt Feeder Controller incorporates the weighing integrator and PID/P.E.I.C. control logic into one device. The weighbelt feeder controller integrates the load cell signal from a scale/weighbridge and the input from a speed sensor to provide a true weight and

a total weight fed. The electronics also provide output signals, improved communication and the ability to upload and download information via USB for greater control and blending purposes.

Features and Benefits

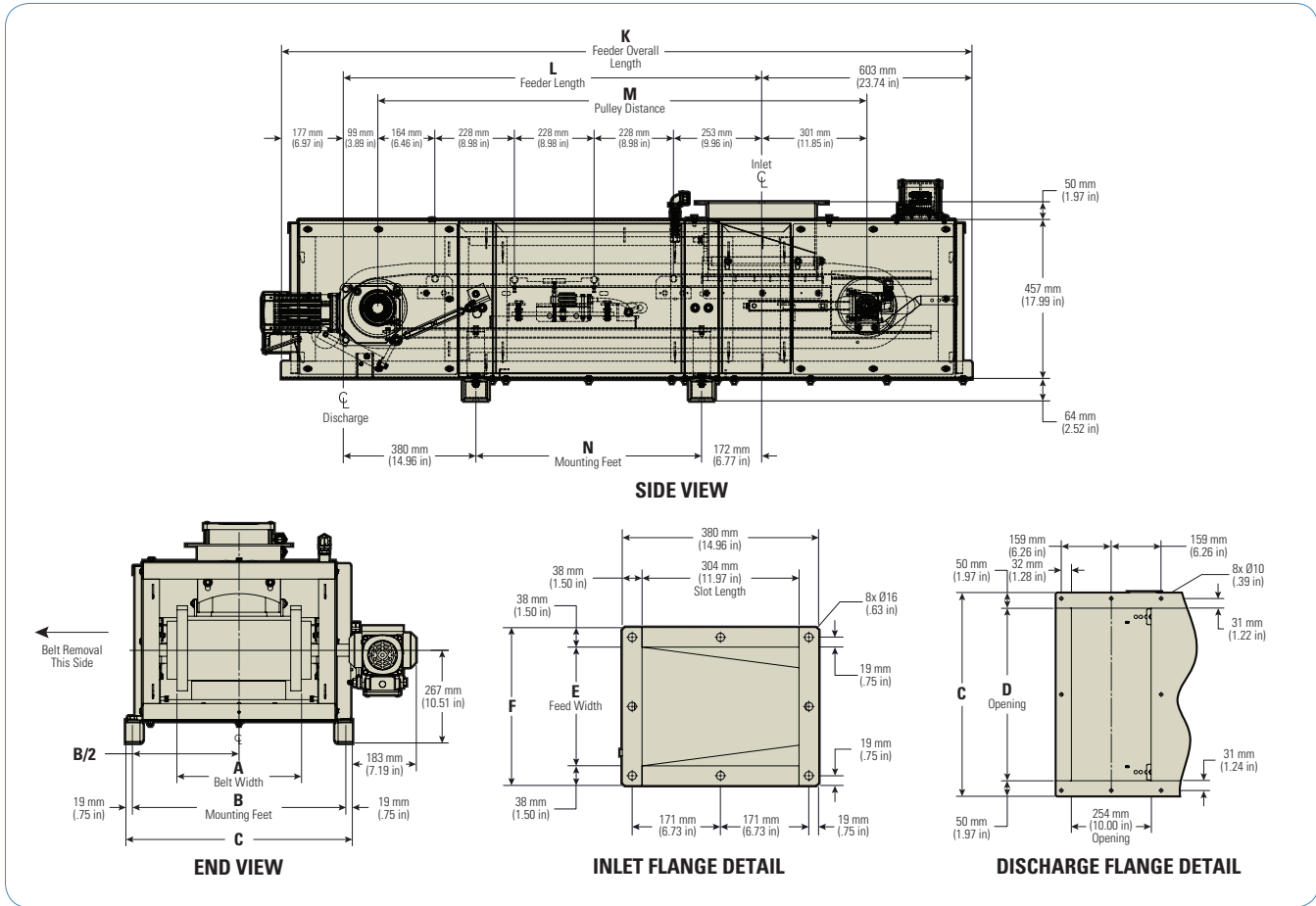
The Ramsey Model 90-150 Low Capacity Weighbelt Feeder, with its innovative design and unique features, was developed to meet the high standards and greater accuracy demands of today's food, chemical and process industries.

- **Unique Head Pulley Configuration:**
The chisel-shaped pulley configuration on the discharge end of the belt provides an even, consistent flow of difficult process materials off of the belt.
- **Tail Drive Arrangement:**
This reduces carry-side belt tensions to provide greater sensitivity for more accurate weighing of the lightest materials.
- **Cantilever Design:**
This feature permits quick and easy belt removal for cleaning and maintenance.

- **Dual Load Cell Scale:**
Dual load cells enable a higher degree of response to material weight variations.
- **Stainless Steel Construction:**
Stainless steel provides improved corrosion resistance and washdown capabilities.

Options

- Top covers
- Side covers
- Bottom covers
- Variable speed drives
- Flow/no-flow switches
- Plugged chute switches
- Class 1 and 2 rated units
- High temperature belts
- Shut-off/maintenance gates



Ramsey Model 90-150 Low Capacity Weighbelt Feeder — Variable Dimensions

1200mm Weigh Feeder Length													
Tab No	A	B	C	D	E	F	G	H	J	K	L	M	N
-14	356 (14 in)	612 (24.1 in)	650 (25.6 in)	550 (21.7 in)	230 (9.1 in)	306 (12 in)	343 (13.5 in)	200 (7.9 in)	299 (11.8 in)	1980 (78 in)	1200 (47.2 in)	1402 (55.2 in)	648 (25.5 in)
										2080 (81.9 in)	1300 (51.2 in)	1502 (59.1 in)	748 (29.4 in)
										2155 (84.8 in)	1375 (54.1 in)	1577 (62.1 in)	823 (32.4 in)
										2230 (87.8 in)	1450 (57.1 in)	1652 (65 in)	898 (35.4 in)
										2305 (90.7 in)	1525 (60 in)	1727 (68 in)	973 (38.3 in)
										2380 (93.7 in)	1600 (63 in)	1802 (70.9 in)	1048 (41.3 in)
										2455 (96.7 in)	1675 (65.9 in)	1877 (73.9 in)	1123 (44.2 in)
										2530 (99.6 in)	1750 (68.9 in)	1952 (76.9 in)	1198 (47.2 in)
-16	407 (16 in)	662 (26.1 in)	700 (27.6 in)	600 (23.6 in)	280 (11 in)	356 (14 in)	429 (16.9 in)	250 (9.8 in)	385 (15.2 in)	1980 (78 in)	1200 (47.2 in)	1402 (55.2 in)	648 (25.5 in)
										2080 (81.9 in)	1300 (51.2 in)	1502 (59.1 in)	748 (29.4 in)
										2155 (84.8 in)	1375 (54.1 in)	1577 (62.1 in)	823 (32.4 in)
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										2455 (96.7 in)	1675 (65.9 in)	1877 (73.9 in)	1123 (44.2 in)
										2530 (99.6 in)	1750 (68.9 in)	1952 (76.9 in)	1198 (47.2 in)
-18	457 (18 in)	712 (28 in)	750 (29.5 in)	650 (25.6 in)	330 (13 in)	406 (16 in)	514 (20.2 in)	300 (11.8 in)	470 (18.5 in)	1980 (78 in)	1200 (47.2 in)	1402 (55.2 in)	648 (25.5 in)
										2080 (81.9 in)	1300 (51.2 in)	1502 (59.1 in)	748 (29.4 in)
										2155 (84.8 in)	1375 (54.1 in)	1577 (62.1 in)	823 (32.4 in)
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										2455 (96.7 in)	1675 (65.9 in)	1877 (73.9 in)	1123 (44.2 in)
										2530 (99.6 in)	1750 (68.9 in)	1952 (76.9 in)	1198 (47.2 in)
2605 (102.6 in)	1825 (71.9 in)	2027 (79.8 in)	1273 (50.1 in)										

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General Specifications

Accuracy	±0.25% to 1% of set rate at 2 sigma, based on approved applications and test requirements
Belt Width	305 mm (12 in), 457 mm (18 in), 610 mm (24 in)
Feeder Length	914 mm (36 in) to 1,829 mm (72 in) centerline of inlet to centerline of discharge
Feed Rate	54.4 kg/hr to 22,680 kg/hr at 801 kg/m ³ (120 lb/hr to 50,000 lb/hr at 50 lb/ft ³) material
Belt Load	3 kg/m to 29.8 kg/m (2 lb/ft to 20 lb/ft)
Weigh Span	273 mm (10.75 in) typical
Belt	Endless polyester/monofilament carcass with FDA/USDA covers suitable for the application; Other belts available depending on application
Idlers	25.4 mm (1 in) diameter stainless steel with sealed bearings
Head Pulley	38.1 mm (1.5 in) diameter stainless steel with special chisel-shaped configuration
Speed Reducer	Motovario or equal shaft mount
Scale Weighbridge	Dual load cell, single-idler, pivotless full-floating weighbridge
Conveyor	Cantilevered frame and quick release take-up for easy belt removal; Stainless steel construction; Customer may specify belt removal on either the left or right side
Load Cell	Dual, low capacity bending beam transducers
Load Cell Excitation	10 VAC/DC recommended, 20 VAC/DC maximum
Nonlinearity	0.02% rated output
Repeatability	0.01% rated output
Hysteresis	0.02% rated output
Temperature Sensitivity	Zero: 0.0014% rated output/°C (0.0008% rated output/°F) Span: 0.0014% load/°C (0.0008% load/°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) Panel mount, chromate mid steel chassis, front panel IP65, DIN 43700, 308 mm (12 in) x 102mm (4 in) x 202 mm (7.9 in)
Temperature	Operating: -20°C to +60°C (-4°F to +140°F) Storage: -30°C to +70°C (-22°F to +158°F)
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 backlight 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

Ramsey 60-12 Digital Speed Sensor

Type	Digital, brushless
Mounting	Direct to 15.88 mm (0.625 in) diameter stub shaft on tail pulley, bend pulley, or return roll
Housing	Weather-tight, epoxy finish, cast aluminum
Mounting Hardware	Supplied with coupling, restraint arm and restraint spring
Shipping Weight	3.6 kg (8 lb)



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Australia +61 (0) 8 8208 8200 +61 (0) 8 8234 3772 fax	Chile +56 (0) 2 378 5080 +56 (0) 2 370 1082 fax	India +91 (20) 6626 7000 +91 (20) 6626 7001 fax	South Africa +27 (0) 11-822-4120 +27 (0) 11-822-3982 fax	United States & Canada +1 (800) 445-3503 +1 (763) 783-2525 fax +1 (763) 783-2500 direct
Brazil +55-11-2367-2192 +55-11-2367-2192 fax	China +86 (0) 80 0810 5118 +86 (0) 21 6445 1101 fax	Italy +39 02-950590-55 +39 02-953200-15 fax	Spain +34 (0) 91-484-5965 +34 (0) 91-484-3597 fax	
	Germany +49 (0) 208-824930 +49 (0) 208-852310 fax	Mexico +52 (55) 1253 9410 +52 (55) 1253 9424 fax	United Kingdom +44 (14) 4241 3700	

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