Acrison®

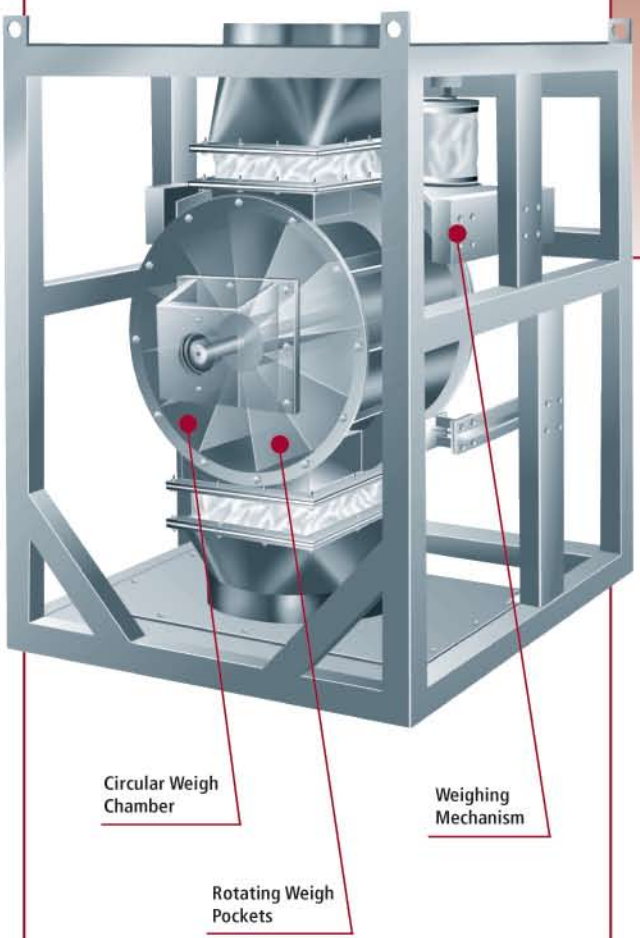
"In-Line" WEIGH FEEDERS
Model 270 Series

For Dry Solids

High Performance Weigh Feeding of Dry Solids Materials

Acrison®
Acrison®
Acrison®

"In-Line" WEIGH FEEDERS Model 270 Series



Model 270 Weigh Feeders completely confine the product being metered from inlet to outlet. In addition, side panels completely enclose the entire feeder and its weighing mechanism, prohibiting airborne dust from affecting weigh feeder performance. Portions of the side panels are clear plastic to allow visual observation of the weigh feeder system.

Model 270 Weigh Feeders offer processors an economical, precise and reliable method for accurately metering dry solid ingredients at moderate to high rates in a compact, *"in-line"* vertical configuration.

Operation

Developed in direct response to user needs, the Model 270 Series of Weigh Feeders provide accurate and dependable performance in a totally dust-tight, vertical in-line configuration. With their compact design and only one moving part, these novel weigh feeders typically require less installed space than most other type heavy-duty weigh feeders having similar throughput capacities.

In operation, a circular weigh chamber, housing a series of rotating "weigh pockets", is mounted onto an ultra high resolution Acrison weighing system. A separate variable output metering device (or prefeeder), typically a rotary valve or screw type metering mechanism attached directly to product supply, feeds material into the top inlet of the weigh feeder within which the slowly rotating constant speed "weigh pockets" continuously weigh the product. Material discharges through the bottom outlet of the feeder, which is directly (vertically) in-line with its inlet.

As material is fed into the weigh chamber, a weight signal is produced, which is instantaneously calculated into a continuous feed rate by the weigh feeder's controller. Based on this calculation, the controller modulates the speed of the prefeeder so that its output precisely matches the selected feed rate, resulting in an accurate, continuous and uniform flow of material.

Model 270 Series Weigh Feeders utilize Acrison's exclusive counterbalanced weighing system, equipped with Acrison's Ratiometric Digital Weight Resolver for superior weight sensing and trouble-free long-term operation. Also, because of the counterbalanced design of the weighing system, only the net weight of material within the feeder's weigh chamber is actually weighed, thereby producing the highest possible degree of weight sensing resolution.

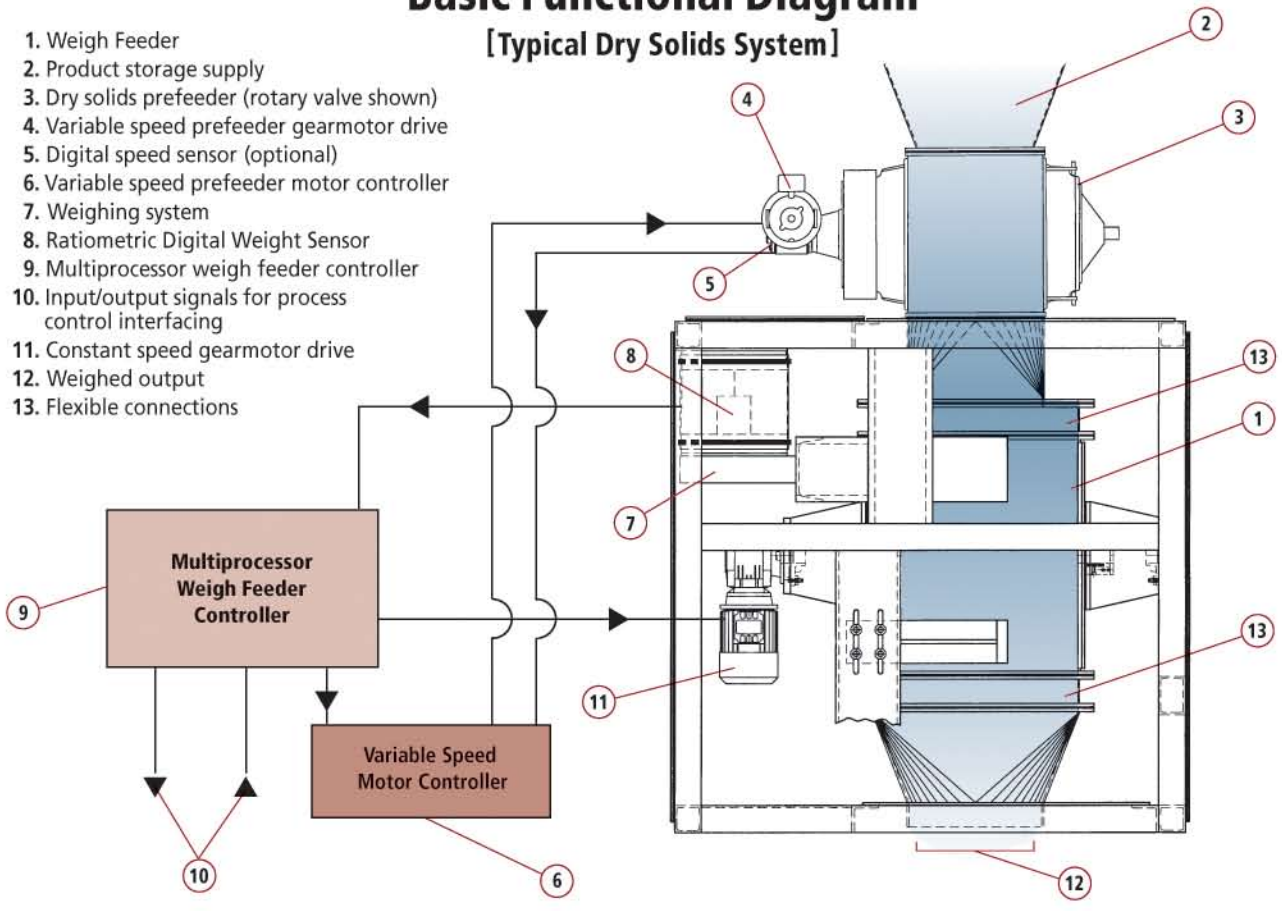
Acrison weighing systems are virtually maintenance-free mechanisms, well known for their robust construction, operational dependability, exceptional longevity, and that they do not use a load cell(s) for sensing weight. In addition, these weighing systems are permanently calibrated, adjustment-free, and carry an industry-leading unconditional five-year warranty.

Model 270 Series of "In-Line" Weigh Feeders

Basic Functional Diagram

[Typical Dry Solids System]

1. Weigh Feeder
2. Product storage supply
3. Dry solids prefeeder (rotary valve shown)
4. Variable speed prefeeder gearmotor drive
5. Digital speed sensor (optional)
6. Variable speed prefeeder motor controller
7. Weighing system
8. Ratiometric Digital Weight Sensor
9. Multiprocessor weigh feeder controller
10. Input/output signals for process control interfacing
11. Constant speed gearmotor drive
12. Weighed output
13. Flexible connections



Standard features...

- Designed with an exceptionally durable, ultra high resolution, mechanically counterbalanced, dynamic weighing system.
- Provides total product confinement.
- Completely dust-tight from product inlet to outlet.
- Has only one moving part.
- Feed rate turn-down ratio is 15:1 from the feeder's maximum feed rate capacity.
- Both the weighing system and metering mechanism are virtually maintenance-free.
- All product contact surfaces are constructed of 304 stainless steel.
- Overall feed rate capability ranges from 50 to 7355 cubic feet per hour.
- Ambient temperature operating range is -10 to 140°F
- Minimum space requirements.
- Silent when operating.
- Power requirements are either 115/1/60 or 230/460/3/60.

Optional features...

- Various materials of construction.
- Quick-disconnect construction (certain models).
- Sanitary construction typically to satisfy FDA/USDA requirements.
- High temperature construction available (contact Acrison).

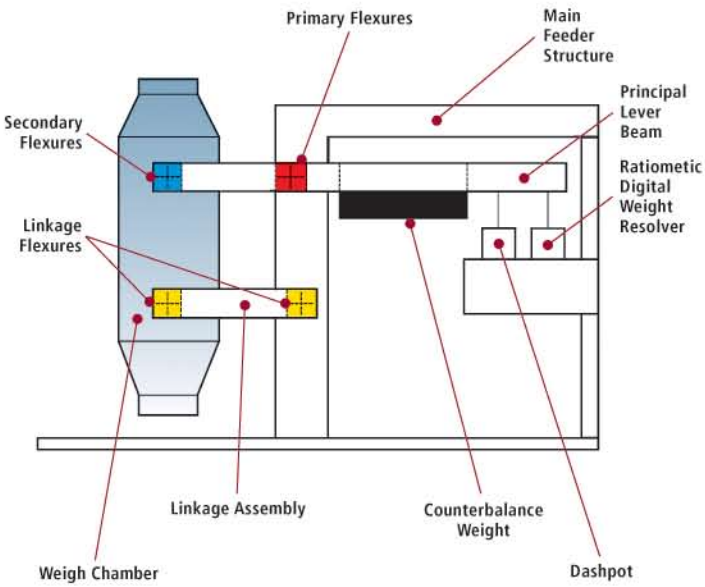
MODEL 270 SERIES OF WEIGH FEEDERS

	MODELS				
	270-0	270-1	270-2	270-3	270-4
Inlet Diameter (inches)	6 5/8	10 3/4	12 3/4	15	20
Outlet Diameter (inches)	6 5/8	10 3/4	12 3/4	18	20
Rotor Diameter (inches)	10	14	18	24	30
Motor (hp)	1/4	1/3	1/2	3/4	1
Max. Feed Rate (cu. ft./hr.)	240	695	1550	3240	7355
Height (inches)	44	47	50	60	73
Footprint (inches)	45 x 24 7/8	50 1/2 x 35 5/8	52 1/2 x 38 5/8	60 1/2 x 45 1/2	67 1/2 x 46 1/2
Approx. Weight (lbs.)	900	1250	1500	1850	3200

Metering accuracy typically ranges between ±0.25 and 1 percent or better (error) at two sigma, based on a given number of consecutive one minute weighments.

Model 270 Series of "In-Line" Weigh Feeders

Model 270 "Overhead" Weighing System



Functional Operation

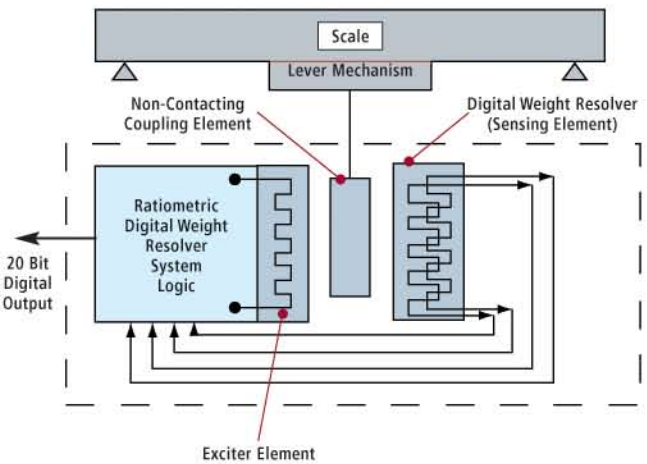
Model 270 Weigh Feeders utilize an Acrison designed and manufactured ***"Overhead"*** type Weighing System. The basic weighing system is a uniquely configured modified parallelogram lever network utilizing stainless steel flexures, also designed and manufactured by Acrison, for all pivotal connections. This technologically advanced lever weighing system is frictionless in operation, extremely stable, and very precise in its ability to sense weight; it is also ruggedly constructed for exceptionally long life and bare minimal maintenance requirements. In addition, the weighing system is counterbalanced so that only the net weight of material in the rotary weighing mechanism is weighed.

As noted in the illustration, two *Primary Flexures,* one on each side connect the *Principal Lever Beam to the Main Feeder Structure*. Two Secondary *Flexures*, also one on each side, connect the upper portion of the *Weigh Chamber* to the *Principal Lever Beam*. A *Linkage Assembly*, using two additional *Flexures*, connects the lower portion of the *Weigh Chamber* to the *Main Feeder Structure*. These novel stainless steel *Flexures provide optimum structural rigidity of the* Lever Network both in the horizontal and vertical planes, which greatly enhances permanence of scale calibration and weighing accuracy.

Operationally, as product is fed into the Weigh Chamber, the Lever Network "moves" in an extremely precise relationship to that weight. This movement is precisely and continuously sensed by Acrison's Ratiometric Digital Weight Resolver, instantly converting it into an equally precise weight signal directly proportional to weight.

In differing from the common variety of load cell type weighing systems, the physical weight sensing element of Acrison's Ratiometric Digital Weight Resolver is not attached to any part of the Lever Network and therefore, cannot be damaged by any amount of overload, shock and/or abuse that the Weighing System may experience. ***In addition, the entire Weighing Mechanism of the Weigh Feeder, including its Flexures and Ratiometric Weight Sensing System, is completely calibration and adjustment-free, and unconditionally guaranteed for five years, including its associated electronics.***

Ratiometric® Digital Weight Resolver System (RDWR)



Acrison's exclusive Ratiometric Digital Weight Resolver (RDWR) System, used with all Acrison weigh feeders, computes the linear movement of the lever mechanism (scale) into an unamplified, serially transmitted data stream having a discrete resolution of 20 bits (or the ability to sense 1 part in 1,048,576). This highly precise and advanced electronic displacement measuring technique basically consists of a sensing element and its computational logic.

The physical sensing component is composed of a series of windings collated on a common element that are equally affected by environmental changes and therefore, self-compensating. In addition, because the computational logic of the RDWR System compares relative measurements, rather than absolute values, its input power source can vary up to ±30% without affecting the output. Also, all non-weight data, both cyclic and random in nature that may be super-imposed on the actual data, are cancelled-out.

The RDWR System is linear to within 0.01 percent, repeatable to 0.005 percent, possesses long term stability of 0.005 percent (10,000 hours) and carries a 40,000 hour MTBF.

Acrison's RDWR System is FM (Factory Mutual) Approved and Listed for operation in hazardous environments... Classes I, II and III; Divisions 1 and 2; Groups C, D, E, F and G. This weight sensing system also complies with European hazardous area classifications ATEX 3D (Zone 22), 3G (Zone 2) and 2D (Zone 21).

Accurate and dependable performance in a totally dust-tight, vertical in-line configuration.

Model 270-2
(shown with dust-tight panels removed)

Model 270-3
(shown with dust-tight panels removed)

Model 270-4
(shown with dust-tight panels removed)

Model 270-3

Model 270 Series of "In-Line" Weigh Feeders

With its compact design, small footprint and minimal height requirements, the Model 270 Series of Weigh Feeders require far less "installed space" than weigh belts or weight-loss type weigh feeders having similar throughput capacities. This unique device is designed with only one moving part that continuously weighs and discharges dry solid materials in a totally dust-tight configuration (the entire feeder and weighing mechanism are completely enclosed).

Model 270-3
Typical Installation

Weigh Feeder Controllers and Control Systems

Acrison Weigh Feeder Controllers and Control Systems are universally recognized for their design superiority, unparalleled versatility, ease-of-use and operational reliability. From basic single weigh feeder controllers to multi-feeder supervisory control systems, the technologically advanced designs of these devices, including their cutting-edge software routines, provide users with unexcelled weigh feeder performance to satisfy the most demanding metering requirements across a broad spectrum of applications. With a wide range of options, accessories and interfacing capabilities, these controllers and control systems are also available in a number of different packaging configurations.

Acrison's SBC-2000 Family of Weigh Feeder Controllers presently include the Models SBC-2000-CM and SBC-2000-DSP. These small, yet powerful devices encompass the latest technologies and functional algorithms, providing users with an unprecedented number of standard and optional features, including native Ethernet and Profibus connectivity and a single operating program capable of controlling one or more Acrison weigh feeders. In particular, these controllers are ideally suited for those applications that require central computer control with minimal hardware. A variety of keyboard/display options is also available to suit specific user requirements.

Model SBC-2000-CM Controller

The Model SBC-2000-CM Controller operates a single Acrison Weigh Feeder. It consists of a single circuit board (module) designed for applications that utilize a central computer, PLC or DCS for monitoring and control, which do not require a local operator interface. The Model SBC-2000-CM Controller is typically supplied in a card rack, the size of which depends upon how many SBC-2000-CM Controllers will be required for a given application. A local Keyboard/Display unit is available as an option.

Model SBC-2000-DSP Controller

The Model SBC-2000-DSP Controller operates a single Acrison Weigh Feeder. It consists of a single circuit board (module) designed primarily for applications that require a local operator interface. Basically, the SBC-2000-DSP Controller integrates an SBC-2000-CM Control Module with a dust-tight/water-tight monochrome LCD graphic Keyboard/Display Unit (KDU), designed for panel mounting.

Model SBC-2000-DSP/C Controller

The Model SBC-2000-DSP/C Controller operates a single Acrison Weigh Feeder. It consists of a single circuit board (module) designed primarily for applications that require a local operator interface. Basically, the SBC-2000-DSP/C Controller integrates an SBC-2000-CM Control Module with a Keyboard/Display Unit (KDU) comprised of a dust-tight/water-tight aluminum keyboard utilizing piezoelectric keybutton technology and an integrated infrared transceiver, coupled with a color graphic TFT display (shown in a NEMA 12 enclosure).

Multiple Weigh Feeder Control Systems

When combined with Acrison's Acri-Data® Supervisory Control System Software hosted on a wall or desktop-mounted Microsoft® Windows® Embedded XP Platform, the Model SBC-2000-DSP, SBC-2000-DSP/C and/or SBC-2000-CM Controllers form the basis for the SBC-2000 Multiple Feeder Control System. This control system, with its color touchscreen provides the ability to operate and control up to 20 Acrison Weigh Feeders while displaying rapid data and screen updates, and includes master/slave and ratio-proportioning operation, unlimited recipe storage and retrieval, trending, event and alarm logging, automatic shut-down configurability, and more.

User PLC and DCS equipment can also serve as a host for an SBC-2000 Family Controller System.

Equipment Specifications 1-200-0601 and 1-200-0627.

All Acrison controllers are certified to UL, CSA and EC specifications.

Discover the difference!

We cordially invite you to witness a test in Acrison's state-of-the-art Customer Demonstration Facilities handling your actual product(s) with the specific equipment we recommend for the application. Usually, there is no cost or obligation for this service.

Discover the difference in technology, quality and performance of Acrison equipment.

Empire Boulevard Facility
Moonachie, NJ USA

Joseph Street Facility
Moonachie, NJ USA

Acrison products...

- Models 101 and 130 Volumetric Feeder Series
- Models V-101 and V-130 Volumetric Feeders
- Model 1015 Volumetric Feeder Series
- Model 105 Volumetric Feeder Series
- Model W-105 Volumetric Feeder Series
- Model 120 Volumetric Feeder
- Model 140 Volumetric Feeder Series
- Model 170 Volumetric Feeder Series
- Model 905-14 Volumetric Feeder
- Bin Discharger Feeders
- Model 200 Series Weigh Belt Feeders
- Model 203B Series Weigh Auger Feeders
- Model 270 Series of In-Line Weigh Feeders
- Models 402, 404, 405, 406, 407 and 410 Series ("Weight-Loss-Differential") Weigh Feeders
- Model Series 403 ("Weight-Loss-Differential") Weigh Feeders
- Model 403B(D) Batch/Dump Weighing Systems
- Model 404BZ(BU) Bulk Bag Unloader Batch Weigher
- Models 350 and 301 Continuous Blenders and Blending Systems
- Multiple Auger Bin Dischargers and Multiple Auger Bin Discharger Hoppering Systems
- Vibratory Bin Dischargers
- Model 170-BD-30 Bin Discharger
- Model 800 Series Bulk Bag Unloaders
- Model 500 Series Polyelectrolyte Preparation Systems
- Water and Waste Water Treatment Systems
- Volumetric and Gravimetric Feeder Controllers and Control Systems
- Silo Systems
- Accessory Equipment for Acrison Products
- Systems Engineering

"Visibly Different... Measurably Better"

Acrison®, Inc.

20 Empire Blvd., Moonachie, NJ 07074
201-440-8300 • Fax: 201-440-4939
Toll Free: 800-4ACRISON
Email: informail@acrison.com
www.acrison.com

Copyright 2011 — Acrison, Inc. — all rights reserved.
Acrison is a Registered Trademark of Acrison, Inc., Moonachie, New Jersey
Domestic and Foreign Patents issued and pending.

300-0069/A/5-11/7006