Acrison®

Model SBC-3000™ Controllers

For Acrison Weigh Feeders

Advanced Design Technologies for Superior Performance and Operational Reliability.

Model SBC-3000 Weigh Feeder Controllers and Control Systems

Model SBC-3000 Weigh Feeder Controllers encompass leading-edge technologies and functional algorithms that provide unexcelled weigh feeder performance to satisfy the most demanding process requirements across a very broad range of applications. And with an unprecedented number of standard and optional features, accessories, and interfacing capabilities (including native Ethernet and Profibus connectivity), these controllers also provide unparalleled versatility, ease of use, and operational reliability. In particular, they are ideally suited for those applications that require central computer control with minimal hardware.

Model SBC-3000 Weigh Feeder Controller

A NEMA 12 Enclosure housing two Model
SBC-3000 Weigh Feeder Controllers

Card Rack for 17 Model SBC-3000-CM
Weigh Feeder Control Modules
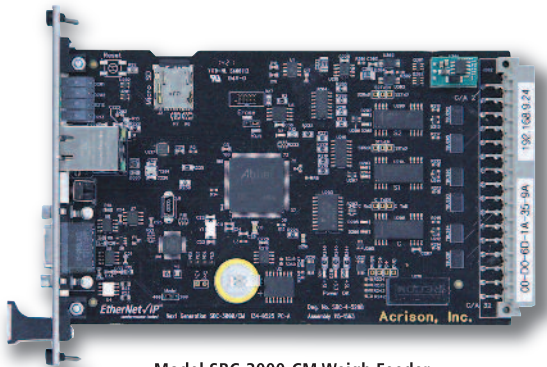
Model SBC-3000 Controller

The Model SBC-3000 Controller operates a single Acrison Weigh Feeder. The Controller integrates a single circuit module with a bright, state-of-the-art TFT color graphics display (measuring 7" diagonally), in a package designed for panel-mounting; the assembly is dust-tight/water-tight.

Model SBC-3000-CM Controller

The Model SBC-3000-CM Controller operates a single Acrison Weigh Feeder. The Controller consists of a single circuit module designed for applications that utilize a central computer, PLC or DCS for monitoring and control, which do not require a local operator interface. A local Keyboard/Display unit is available as an option.

The SBC-3000-CM Controller is typically supplied in a card rack, the size of which depends upon how many controllers will be required for a given application. Frequently used in conjunction with Acrison's Acri-Data Multi-Feeder Supervisory Control System.

The VME-style card racks typically used with SBC-3000-CM Controllers will accommodate either 6 or 17 CM Modules, as well as option modules. These card racks can be supplied with flanges for plate-mounting in an optionally supplied enclosure, or mounting in a user's existing enclosure, or on the front of an enclosure, or in a 19-inch rack mount. When mounted on the front of an enclosure, a bezel is provided.

Model SBC-3000-CM Weigh Feeder Control Module

Operational Features

The SBC-3000 and SBC-3000-CM Controllers share many design features, including identical weigh feeder control software. The core computational heart of these two controllers is identical. It provides non-volatile program memory and set point storage using state-of-the-art, low power, flash and ferro-electric memory technology. In addition, the program can be quickly updated using a PC or laptop, if required.

The use of today's advanced technologies enables SBC-3000 Controllers to utilize a single program that is configurable to control any Acrison Weigh Feeder model. The program also includes, as standard, serial/network interface protocols, and all languages currently available from Acrison, thereby providing complete compatibility between the various functions and options.

SBC-3000 Controllers support operation with either AC variable frequency or SCR/DC motor controllers using serial or analog interfaces.

Design Features

The SBC Controllers provide many functions and features derived from nearly four decades of experience with microprocessor-based weigh feeder controllers. While all functions are fully described in the Operating and Instruction Manual, the following describes some of them:

- To reduce wiring requirements, SBC-3000 Controllers contain a dedicated internal network for communicating with the applicable weigh feeder (scale) and its motor controller.
- Controllers are totally adjustment-free.
- Continuous or batch operation in volumetric or gravimetric mode.
- Internal, external or communications-based set points.
- Ratio-proportioning and master-slave control capability.
- Auto/manual hopper refill operation (LIW feeders).
- Recipe storage and retrieval (in controller) augments host recipe storage.
- 'Bumpless transfer' between operating modes.
- Auto-tuning.
- SPC information (Mean, CV, CpK, σ).
- Acri-Lok® and Batch-Lok® scale disturbance protection (LIW feeders).
- Automatic compensation for external factors.
- User-programmable alarms can also be 'latched'.
- Dual, individually clearable product throughput totalizers.
- Delayed 'run' and delayed 'stop' functions typically for blending applications.
- Maximum motor speed threshold settings and alarm.
- Selectable auto-stop of feeder should its hopper (or tank) run empty, or if 'refill' times out (LIW feeders).
- Auto pacing during 'refill' (LIW feeders).
- Configure using Web Browser.
- Language selection: English, German, French, Spanish.
- Alarm Log.
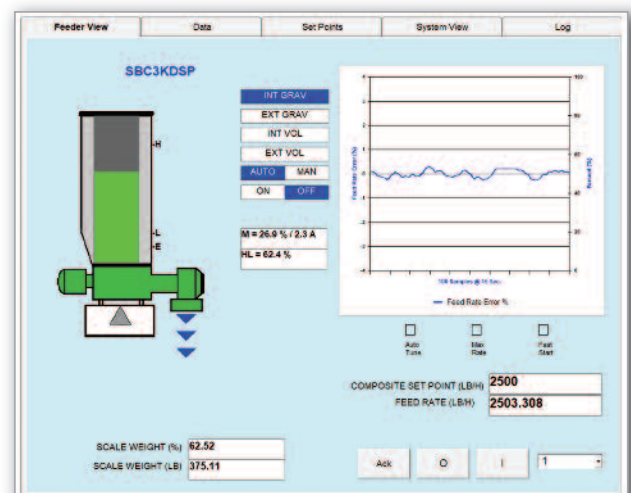
Acri-Data® Screen

- Four user-programmable digital outputs. Typical parameters available for LIW feeders are:

Off	Power On	Run	Stop
Acri-Lok	±Dev	-Dev	+Dev
Dev Alarm*	Scale Alarm*	No Scale	Low Level
Overfill	No Tach	Refill	Refill Pulse
Refill Timer [3]	High Level	Empty	Alarm2 *[2]
Alarm *[1]	Vol Mode	Overload	Batch Done
Batch Delay	Batch Run'g	Ext Mode	Batch Dev.
No Batch	Dribble	Batch-Lok	Ramping
Int Mode	Batch Mode	Fast Start	Not Dribble

[1] Acri-Lok, +Dev, -Dev, Overfill, Empty, No Tach, Refill Timer or Overload
[2] Any alarm except Acri-Lok and Overfill
[3] Ten second activation
* Multiple parameters

- Four user-programmable digital inputs. Parameters are feeder model-dependent and can be selected from the following:

Off	Clear Total	Delayed P. Run	260 Belt Mistracked
Remote Run	Alarm Ack	Start Refill	260 Belt Mistracking
Permissive Run	Jog Feeder	Batch Abort	Int/Ext Grav Change
Grav/Vol Change			

Hardware Features

- Four electrically isolated, open-collector, user-programmable digital outputs rated 30 VDC, 125 mA maximum. Additional hardware available to operate higher power devices.

- Four electrically isolated, user-programmable, dry contact closure inputs.

- One 100Base-T Ethernet port supporting Ethernet/IP and Modbus TCP applications protocols. Embedded RJ45 connector.

- Internal Modbus channel operating at 19,200 baud connects the SBC-3000 Controller, scale and motor controller, and serves as the analog and digital I/O expansion channel.

- One Profibus-DP Serial Channel capable of 12 MBaud operation. Embedded DB9 female connector.

- The SBC-3000 CM has two electrically isolated, general purpose, RS-422/485, user-configurable channels, typically for host communications suitable for connecting devices up to 4,000 feet away. Protocols available for use on these channels include: ASCIIDB/DC, MB APM/SI, Modbus RTU, Fisher EIC and Modbus 984.

Optional Equipment

The following options are available with SBC-3000 Controllers:

Redundant Power Supplies:

Features automatic switchover should the primary power supply fail.

System I/O Module:

Provides system level digital inputs and outputs, plus 1 analog input and 1 output for the SBC-3000 Controller as follows:

Inputs:
- Remote run (start/stop)
- System Permissive Run (enables run)
- Blender Zero Speed Switch (enables run)
- Supervisor Key or Reducer or Alarm Acknowledge

Outputs:
- System General Alarm
- System Running
- Blender On

Analogs:
- IN: 0 – 5 VDC
- OUT: 0 – 2.5 VDC

Analog Expansion Module:

A DIN rail-mounted module having 4 analog inputs and 4 outputs, user programmable (4 – 20 mA or 0 – 10 VDC input and output).

Packaging:

Model SBC-3000 Controllers may be optionally packaged in a variety of ways depending on user preference. Wall-mounted and free-standing enclosures are available, as are plate-mounted and loose configurations for user installation.
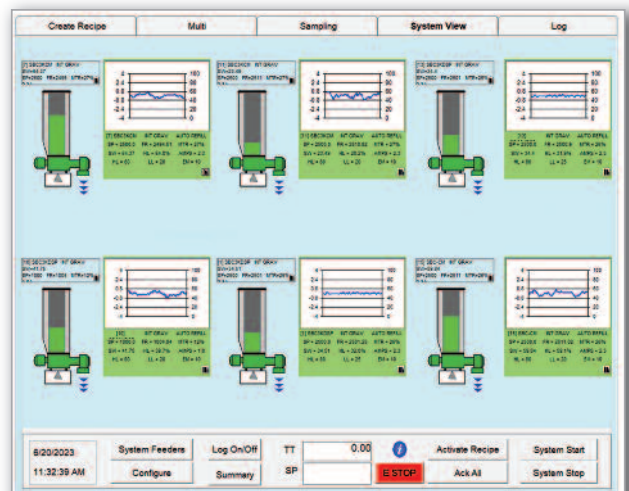
Acri-Data® Screen

Specifications

SBC-3000

- **Power:** Logic +5 VDC @ 110 mA or 8 – 32 VDC @ 720 – 200 mA or 24 VDC @ 250 mA.
- **Ambient Operating Temperature:** 0 to 50 degrees C (32 to 132 degrees F).
- **Storage Temperature:** -20 to 70 degrees C (- 4 to 158 degrees F).
- **Humidity:** Maximum 95% relative, non-condensing.
- **Dimensions (overall):** 8.62"(W) x 7.88"(H) x 1.77"(D)
- **Weight:** (Controller less Power Supply): 28 ounces (1.75 pounds).

SBC-3000-CM

- **Power:** Logic +5 VDC @ 330 mA or 8 – 32 VDC @ 200 – 67mA or 24 VDC @ 82 mA.
- **Ambient Operating Temperature:** -10 to 70 degrees C (14 to 158 degrees F).
- **Storage Temperature:** -20 to 100 degrees C (- 4 to 212 degrees F).

- **Humidity:** Maximum 95% relative, non-condensing.
- **Dimensions (Module):** 3.9 x 6.88". Front plate is 5"x 0.78"
- **Weight (Module):** 4.5 ounces (0.355 pounds).

Certifications

SBC-3000 Controllers are certified to meet the following standards when supplied in suitable enclosures and with approved power supplies:

- US : UL 61010-1
- Canada: CAN/CSA-C22.2 No 61010-1
- EC: EN/IEC 61326-1
- Ethernet/IP CONFORMANCE TESTED™ is a certification mark of ODVA.

Acri-Data® Multi-Feeder Supervisory Control System

Typically operating with either a 17 or 21 inch color touchscreen (measured diagonally), Acri-Data is a Supervisory Control System capable of supervising the operation of up to 20 Acrison Weigh Feeders while displaying real-time data and operational updates. It is also capable of master/slave and ratio/proportioning operation, unlimited recipes (including storage and retrieval), trending, event and alarm logging, automatic shut-down configurability and more. Frequently used in conjunction with Model SBC-3000-CM Controller Modules.

Acri-Data is hosted on a Microsoft Windows® operating platform (e.g., a panel-mounted embedded PC, or a desktop/laptop PC). A user's PLC or DCS can also serve as a host for SBC-3000 Controllers.

Color Touchscreens

- **Power:** Logic isolated; +24 VDC @ 4.5A (nominal), 12A (peak for 10 mS worst case).

17" Touchscreen

- **Ambient Operating Temperature:** 0 to 50 degrees C (32 to 132 degrees F).
- **Storage Temperature:** -20 to 60 degrees C (- 4 to 140 degrees F).
- **Humidity:** 10 to 90 % relative, non-condensing.
- **Dimensions:** Typically 17.32"(W) x 14.64"(H) x 3.34"(D)
- **Weight:** Varies by enclosure and configuration; typically 8.7 pounds).

21" Touchscreen

- **Ambient Operating Temperature:** 0 to 50 degrees C (32 to 132 degrees F).
- **Storage Temperature:** -20 to 60 degrees C (- 4 to 140 degrees F).
- **Humidity:** 10 to 90 % relative, non-condensing.
- **Dimensions:** Typically 22.5"(W) x 15.5"(H) x 3"(D)
- **Weight:** Varies by enclosure and configuration; typically 17.7 pounds).

Equipment Specifications 1-200-0627

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**

Acrison products...

**Joseph Street Facility
Moonachie, NJ USA**

- **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 905-18 Volumetric Feeder**
- **Bin Discharger Feeders**
- **Model 200 Weigh Belt Feeder Series**
- **Model 203B Weigh Auger Feeder Series**
- **Model 270 In-Line Weigh Feeder Series**
- **Models 402 and 404 Series, 405, 406, 407X, 408 and 410 'Weight-Loss' Weigh Feeders**
- **Model Series 403 'Weight-Loss' 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 Discharger Hoppering Systems**
- **Model 170-BD-30 Bin Discharger**
- **Model 800 Series Bulk Bag Unloaders**
- **Models 500, 515, 530, and 580 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: 800-4 ACRISON
Email: informail@acrison.com**

www.acrison.com

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