

AUTOPAK 3000

Automated Packaging System Controller

DESCRIPTION

The **Autopak 3000** is a weighmeter and system controller specifically designed to direct the operation of automated bag, FIBC, and rigid container filling machines. Incorporating microcomputer-based technology the Autopak 3000 provides flexible and accurate control of a wide variety of packing systems. Installation is uncomplicated and easily tailored to different types of filling applications. Using the graphical user interface (GUI), the program can easily be configured to meet specific system requirements

The **Autopak 3000** incorporates many selectable features designed to make operation of the controller both easy and accurate. These functions are selected using a menu driven protocol presented on the front panel display.

Provision for process parameter entry and data monitoring are conveniently available through the front panel push-button keyboard. Weight data, process status and error messages are shown on the front panel display. The status of the controller, including the state of the eight inputs and sixteen outputs, is indicated either on the display or on annunciation indicators.

Three serial data communication ports are included as standard features. An RS-232 port is available to drive the optional printer. A second RS-232 port is available to drive an optional remote display. An Ethernet port is available to provide computer compatible data from the factory floor.

This controller design is the latest in a family of products proven in the field through years of production service, filling millions of containers in the harshest of environments.

The single module is surrounded by a steel case enclosure to prevent contamination in hostile environments. All terminations to the controller are made using the interface cable set supplied with the controller. The module is designed to be mounted inside a variety of NEMA style enclosures.



BENEFITS

Accurate — The **Autopak 3000** includes automatic checkweigh feedback and auto-tare features to insure accurate and repeatable weights. Variations of ± 1 oz. are achievable when operating in the 100 lb. scale capacity range.

Flexible — Installation and set-up is easily accomplished for a variety of packaging systems. The controller can accommodate filling systems using auger, air, impeller, pump, or vacuum transfer methods. The controller can also accommodate loss-in-weight and FIBC configurations.

Universal — The **Autopak 3000** has been successfully incorporated into systems manufactured by a wide range of equipment providers. Barrett Engineering can assist with this process. Contact the factory for details.

Reliable — The Autopak 3000 is reliable in harsh environments. The surrounding enclosure prevents contamination in dirty environments, while the signal filtering design prevents disruption from electrical noise.

Simple to Use — Process parameters are easy to program using the front panel keyboard. Logical procedures result in accurate weights.

FEATURES

Keyboard — The keyboard features integrated push-buttons with tactile feedback for confident operation. The graphics are printed on the back of the non-glare surface to protect them from scratching and wear. The overlay may be modified to comply with specific system/process requirements. The keyboard features include:

- Clear graphics.
- Two line by 16-character vacuum fluorescent alphanumeric display
- Single point status indicators
- Fully sealed membrane switches

Filling Mode — One of four standard filling modes may be selected from the set-up menu. Refer to specification.

Scale Capacity — Standard versions can deliver up to 1,000 lb (450 kg) of product. Refer to specification.

Pound / Kilogram — Units of measure may be selected from the set-up menu.

Gross / Net Filling — Gross or net weight filling may be selected from the set-up menu.

Auto-tare Control — The controller performs net weight filling with auto-tare control. The frequency of auto-tare may be specified. Refer to specification.
(continued on reverse)

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barrett engineering

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FEATURES (continued)

Check Weigh and Feedback — Weight variations are automatically detected and adjustments are calculated following each filling operation. The adjustment of internal set-points guarantees the best possible weight accuracy.

Mid-Cycle Control — Up to three mid-cycle points may be specified which allow for settling and deaeration of product during the filling operation.

Tolerance Alarms — Programmable weight tolerance alarms signal when weight errors are detected.

Statistical Data — The **Autopak 3000** accumulates statistical data including units filled, total weight, average weight, two-sigma deviation, bulk fill rate and trim fill rate. This data may be presented on the display or sent to the optional printer, and is also available through an Ethernet port.

Automated Calibration — A simple and easy to use automated calibration procedure is provided.

Formula Memory — Retention of formulas and data is supported by a battery back-up system providing protection in case of either power loss or fluctuation.

SPECIFICATION

Scale Capacity and Resolution

The standard **Autopak 3000** can control the delivery of up to 1,000 lb (450 kg) of product to a container with a resolution of 0.01 lb. Bulk filling versions can control the delivery of up to 10,000 lb (4,500 kg) of product to a container with a resolution of 0.1 lb. Other scale capacities and resolutions are available. Contact the factory for details.

Filling Modes

One of four mode sequences:

- Bulk only
- Bulk-Trim
- Bulk-Trim-Topoff
- Bulk-Topoff

Display

Type — Dot matrix, high visibility, vacuum fluorescent, alpha-numeric.

Format — two line by 16-characters.

Zero Blanking — Leading zero suppression provided.

Under Zero Indication — Minus sign at left of display; minus error message for weights 5% below zero.

Overload Indication — Overload error message at 105% of scale capacity.

Status Annunciators — System status messages appear in the display.

Process Annunciators — The status of each of the eight inputs and sixteen outputs is indicated by single point LED annunciators.

Analog Input

Excitation to the load cell is provided by an internal 5 Vdc power supply with floating output capable of driving up to four 350-ohm load cells in parallel; short circuit proof; remote sensing standard.

Analog Conversion

The load cell is monitored by an Analog-to-Digital Converter incorporating a high gain amplifier and low pass signal filter implemented in Digital Signal Processing hardware and software. Great care is taken with the design to insure weight accuracy.

Internal Resolution

The analog conversion system is designed to meet standards for commercial scales. The internal resolution after software manipulation is greater than 65,000 counts.

Calibration — Zero and Span

An automated calibration protocol is provided. When selected from the keyboard, the operator is directed by displayed messages to enter calibration weight data. Both zero and span adjustment are performed automatically.

EMI / RFI Suppression

Hardware and software filtering for rejection of mechanical and electrical interference is provided.

Input Specification

Eight inputs are available. Input function is defined by the application software. The standard input accepts 60-230 Vac signals. Special input specifications available upon request.

Output Specification

Sixteen outputs are available. Output function is defined by the application software. The standard output controls 115 - 230 Vac at up to 1 Amp.

Power Requirements

Input Voltage — 115 - 230 Vac.

Frequency — 50 / 60 Hz.

Power — 10 watts, maximum, not including output load currents.

Environmental

Temperature Range:

Operating: 0°C to 50°C (32°F to 122°F)

Storage: -20°C to 80°C (-5°F to 176°F)

Humidity: 95% RH, non-condensing

Physical

Size: 12" W x 7" H x 2" D
(305 mm x 180 mm x 50 mm)

Mounting:

Screw pattern around front panel.

Termination:

Interface cable connectors located on bottom edge of housing

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