



Model LC-2000 Single Silo Loadout Automation

Designed to accurately control truck loading from a single silo, print delivery tickets, store delivery data, and print operational reports.

Provided with a name brand, consumer grade PC, along with a PLC hardware interface. Using a computer separately from any process automation provides the user flexibility in the choice of process control components and subsequent system upgrades.



Operational Features.....

- Compatible with a single silo with a truck, hopper, or weight depletion scales.
- Supports silos with two-speed or "dribble" gates. Dribble gates can increase loading accuracy.
- Similar ticket and display formats simplify both the learning process and daily operation.
- User specified Smart Default data entry automatically enters the customer and job descriptions as last used by the selected truck or as used on the last ticket. No other data fields need to be entered unless changes need to be made.
- Fast Copy feature allows rapid and accurate data entry when multiple trucks are hauling to the same job by copying all of the data from any user selected ticket to the current load.
- Pop-up Ticket truck, customer, job, and material/mix lists allow the operator to browse through the data on file, edit the data, add new, or delete unwanted entries directly from the loadout display form without interrupting the loadout process.
- Pop-up, customer specific notepad can be used for comments, reminders, or to flag cash/credit information.
- Entering a misspelled truck, job, or customer opens the appropriate list, searches for the nearest spelling match, and allows the user to select from this list or enter a new item.
- Measurement units can be specified as English lb., TONS, Metric kg, or TONNES.
- The freefall compensation is adjusted on each drop. Individual freefall values are maintained for each silo. The target drop size is also adjusted to correct for previous drop errors. These dynamic adjustments insure accurate drops and prescribed loads.
- Time coded truck tares are entered into the truck file every time a new tare weight is obtained. On *truck scale* systems, the tare weight is automatically read and updated before each load. On *weigh batcher* or *reverse weigh* systems, the truck tare weight may be entered manually.
- Gob hopper timing on *reverse weigh* silos may be controlled externally or by the computer.



- 2-compartment *reverse weigh* silos, such as those made by CMI and others, are treated as two individual silos, each with its own weighing indicator and are not supported by this model, but instead the Multiple Silo Loadout Model—LC1000.
- A *training* mode is provided that utilizes a separate, distinct set of data files and a simulation of the truck loading process. The silo hardware is not accessed and separate data files are used, so the user can safely navigate the system without the fear of corrupting data or the need for trucks and loading of actual material.

Volumetric Loading Capability.....

- In the event the weighing scale fails or in applications with no scale at the silo location, the silo gates can be controlled on the basis of “*time open*”, so trucks can be automatically (but approximately) loaded to the target weights entered by the operator. The controlling relationship between the material delivered per unit of gate open time can be entered by the operator or if actual measured weights are subsequently entered this stored relationship will automatically be corrected.

Silo Inventory.....

- Silo inventories are displayed in bar graph and numerical form.
- *Truck Scale* and *Weigh Batcher Systems*—an external signal from most process blending systems can be used to increment an on-screen inventory that will be reduced by the amount weighed out of the silo. The resultant inventory value will give the operator a fair approximation of the actual amount of material in the silo.
- *Reverse Weigh Systems*—the actual measured silo weight is used for the current inventory.

Material Weigh In/ Weigh Out.....

- Truck scale systems have weigh-in/weigh-out capability that enables the operator to capture the first weight & store the result temporarily, later capture the second weight, and on demand, store & print a ticket .
- Truck, customer, job, material/mix, and/or cash sale ticket data fields are utilized.
- Stored tickets are included in all summary reports and kept in the ticket file in the same manner as any other transaction. Inventories are maintained for materials weighed.

Tickets.....

- Cash sale tickets can be generated for mix shipped. Each individual material has its own price which can be modified at the time of sale to include freight charges for different delivery zones. The sales tax rate may be changed at time of sale for areas with different tax rates.
- Hand generated tickets can be entered and will be included in the data base. Tickets generated in this manner will be clearly marked as such.
- Manually loaded truck tickets can be automatically generated.
- Correction tickets can be generated, stored, and/or printed as desired. This process references an existing ticket, creates avoiding ticket and finally a corrected ticket. These



three tickets are included in all summary reports and kept in the ticket file in the same manner as any other transaction. The operator can not alter the stored database of information by any other method.

- Copies of previous tickets can be printed. Copies are clearly marked as such.
- The silo loadout identifies the measurement units selected in the weighing unit and prints the ticket in English and/or Metric units as specified by the operator.
- Full featured ticket printing using up to 5-part preprinted or plain paper forms.
- A printer buffer allows data to be entered while tickets are simultaneously printing.
- User selected speed printing minimizes printer wear and maximizes printer output.

Data Files.....

- Ticket file retains the entire ticket record and is available for viewing or printing. Tickets may be archived, so that only current tickets needed remain online. Archived tickets may be recalled and included in reports.
- Truck file retains the latest truck loading parameters.
- Job file—Ten-character name/ID and 4 lines of 35 characters per job description.
- Customer file—Ten-character name/ID and 4 lines of 35 characters per customer description.
- Material file—Twenty-character material descriptions with separate price for each material.
- Data files are maintained in accounting standard xBASE format and are available to the user.

Database Backup and Reports.....

- A back-up of the entire database can be saved to the hard drive, to floppy diskettes, or delivered off-site by *optional* modem connection.
- Summary or detailed reports can include current and archived ticket data, can be sorted by truck, job, customer or material, and can be limited to a user specified range of dates.
- Reports can be printed to the printer or viewed on-screen.
- Custom reports are available.

Hardware Components.....

- Computer system—fanless, industrial grade PC.
- Programmable Controller—optionally isolated PLC plant interface. The operating temperature for the included PLC(s) is 32° to 131° F (0° to 55° C). The storage temperature for the PLC(s) is -4° to 158° F (-20° to 70° C).
- 22.5" Flat screen Monitor
- Printer—IBM compatible, Okidata Model 320.
- Digitizer—stand alone, NTEP certified, Rice Lake Model 355 commercial grade weight indicators isolate the weighing and data processing functions for maximum reliability and ease of calibration. Meets NIST's Handbook 44 Class III/IIIL classifications.



Options Available.....

- Custom reports and custom ticket formats.
- An xBASE to ASCII file conversion utility program is available to the user.
- A bar code of key delivery data can optionally be printed on the tickets.
- Remote printers are available and may be connected by parallel, serial or fiber cable, or by optional radio link. Different ticket formats can be used at each print location.
- Remote operating station allows operation from a remote location.
- SYSTEMS' RedRover remote communication software allows the database to be retrieved, viewed, and edited from the office or other remote location. The ticket file cannot be edited.

Ⓜ SAFETY NOTICE & WARRANTY DISCLAIMER

All equipment is tested for proper operation before shipping from the factory. Although no difficulty is typically expected, SYSTEMS cannot guarantee and will not warrant that this product will function safely and as described, if equipment is replaced by others, if additional equipment or software is installed, or if this equipment is used for other purposes.