Titan Industries, Inc.

Innovative Technologies, Global Solutions

Titan Batch Injector Systems

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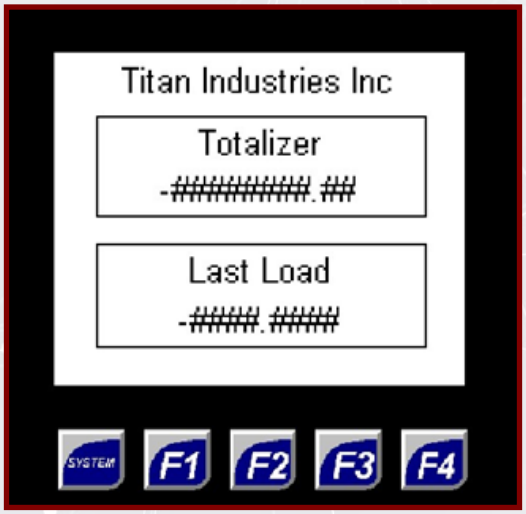
Overview

The Titan Batch Injector is our solution for customers who need to additize a load in a single shot. Providing a simple user interface, the Titan Batch Injector, is easy to operate and maintain, and couples seamlessly with any of Titan's family of injectors. Additionally, it can be custom tailored to fit the individual customer's needs (i.e. Custom Reporting options, multiple injection points, custom auto-disaster recovery, etc.)

Idle Screen / Main Totals

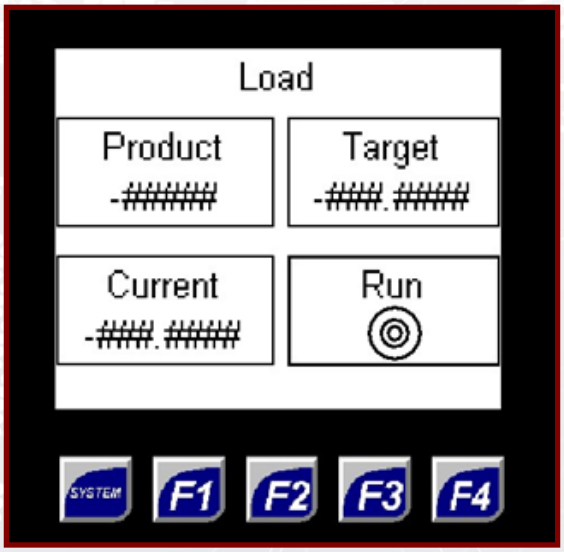


This Screen displays both the current grand totals and the last load totals. This screen is the idle state of the controller and will be displayed until a load starts. The nominal max for the Additive Totalizer is 99,999,999 gallons. The Last Load totals show the final totals for the last completed load and will continue to display those totals until the start of the next load or calibration. The controller will automatically change to the load screen when a new load starts.

- **Totalizer** – Takes the user to the Load Entry Screen.
- **Last Load** – Takes the user to the Menu Screen.

Pressing the F1 key allows the user to scroll through the available screens.

Load Screens



This the standard **Load Screen** for the Titan Batch Injector. All numbers on this screen reset at start of new load. Screen will then display The Target Additive Quantity, the Total Loaded Amount, and the Remaining Amount left in the load.

- **Product** – This is adjusted by using the buttons on the exterior of the enclosure labeled: 10,000; 1,000; 100; 10; 1.
- **Target** – This is automatically calculated using the treat rate programmed into the Injection Controller.
- **Current** – This is the Totalizer for the current load and will zero at the start of the load.
- **Start** – Pressing this button, located on the exterior of the enclosure will start the load.
- **Stop** – Pressing this button, located on the exterior of the enclosure will stop the load currently running and return the unit to the idle screen.

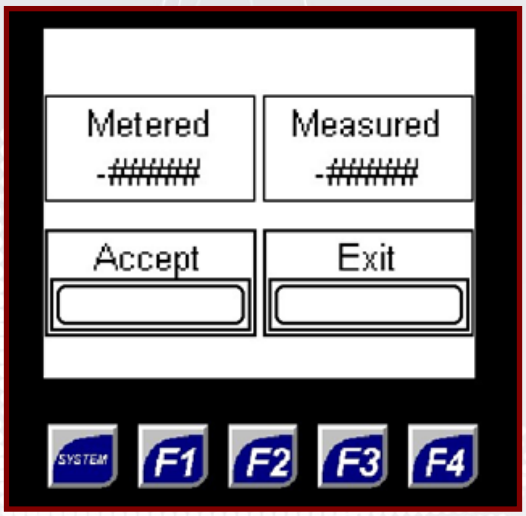
Pressing the F1 key allows the user to scroll through the available screens.

Calibration Screen

This is the **Calibration Screen**, used for the calibration functions of the Blend Controller. Pressing the **Start** button will begin the calibration process.

Pressing the F1 key allows the user to scroll through the available screens.

Calibration Screen #2



This is the **Calibration Screen**, used for the calibration functions of the Blend Controller. Pressing the screen on the start button on the previous screen will begin the calibration process. The injector will dispense approximately 200cc's of additive, and will display the amount on the screen under the "**Metered**" heading.

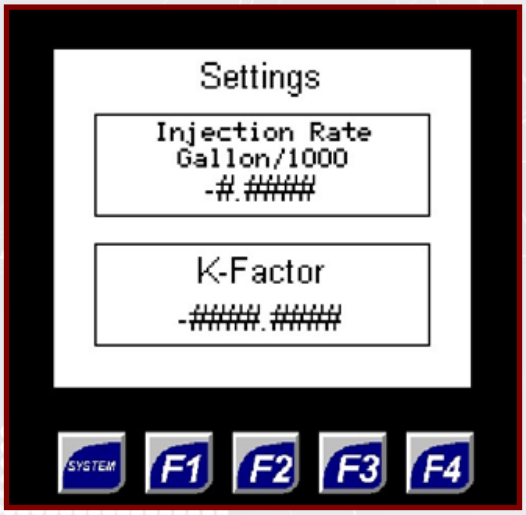
• To calibrate using the auto-calibrate feature, enter the measured amount from the beaker into the box labeled **Measured**, by pressing the screen on the **Measured** box and using the number pad.

• Pressing the **Accept** button will accept the changes and return the unit to the **Idle Screen.**

• Pressing the **Exit** button will take the user back to the Idle Screen without making any changes to the K-Factor.

Pressing the F1 key allows the user to scroll through the available screens.

Rates Screen



This is the **Rates Screen**, to edit these values press the screen to edit the desired value, and then press **enter** to save the value using the number pad.

• **Injection Rate** – This value is the Amount of Product (in gallons) per gallon of product to be loaded.

• **K-Factor** – This allows the user to manually enter the additive K-Factor rather than using the auto-calibration feature.

Pressing the F1 key allows the user to scroll through the available screens.

Technical Specifications

- Digital DC Inputs:
  - Inputs per module: 12 including 4 configurable HSC inputs
  - Input Voltage Range: 12 VDC/24 VDC
  - Absolute Max Range: 35 VDC
  - Max Upper Threshold: 8 VDC
  - Min Lower Threshold: 3 VDC
  - HSC Max Switching Rate: 10kHz Totalizer/Pulse, Edges; 5 kHz Frequency/Pulse, Width

- Required Power (Steady State): 150 mA @ 24 VDC
- Primary Power Range: 10-30 VDC
- Operating Temperature: -10° to 60° C
- Storage Temperature: 14° to 140° F (-10° to 60° C)
- Clock Accuracy: ± One Minute/Month at 20C

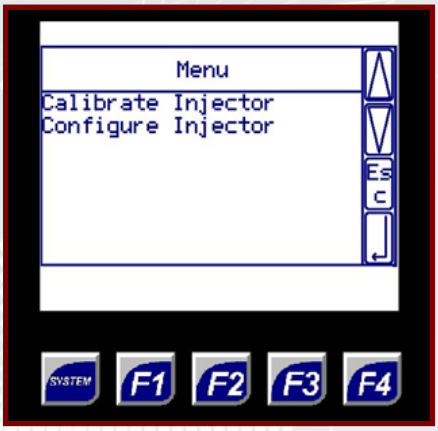
Features include:

- Product and additive totalizers
- Menu driven interface with a large, easy to read touch-screen LCD display
- User-friendly on screen calibration function
- Individual load information can be saved to MicroSD card for transportability and data retrieval
- Capable of both serial and Ethernet communications
- Modular outputs for pump start and alarm

Start Up Screen

The Titan Logo appears as the first screen when powering up the system. This screen will display for 3 seconds and then the Titan Batch Injector goes to the Idle Screen. This screen also displays the Version Number for the firmware installed in the Blend Controller. This information will be helpful in troubleshooting should a problem arise.

Menu Screen



This is the main setup screen. To access the **Setup Screen** press and hold the **F1** key while in the **Idle Screen**. From this menu, all Setup pages are available. To access a specific menu, just press the 'button' on the screen of the section you wish to view. To return to the **Idle Screen**, press the **Exit** button at the bottom of the screen.

- **Calibrate Injector** – Highlight this button and press **Enter** to bring up the **Calibration Screen.**
- **Configure Injector** – Highlight this button and press **Enter** to bring up the **Configuration Screen.**

Configuration Screen

This screen allows manual entry of the K-Factor, and setting the Injection Rate.

- **Additive K Factor** - Pressing this button brings up the on screen keypad. The user can then manually enter the K-Factor.
- **Injection Rate** - Pressing this button brings up the on screen keypad. The user then enters the Injection Rate in Gallons of Additive per 1000 Gallons of Product.
- **Exit** - Pressing this button take the user back to the Idle Screen.