SeaMetrics

FT500B
Batch Controller
Instructions

General Information

The FT500 Batch Control is a microprocessor-based unit which displays rate, batch count, and running total, and has output functions which can be used for control or remote monitoring. These include two batch relays (primary and prewarn) and programmable pulse, for telemetry and pump pacing.
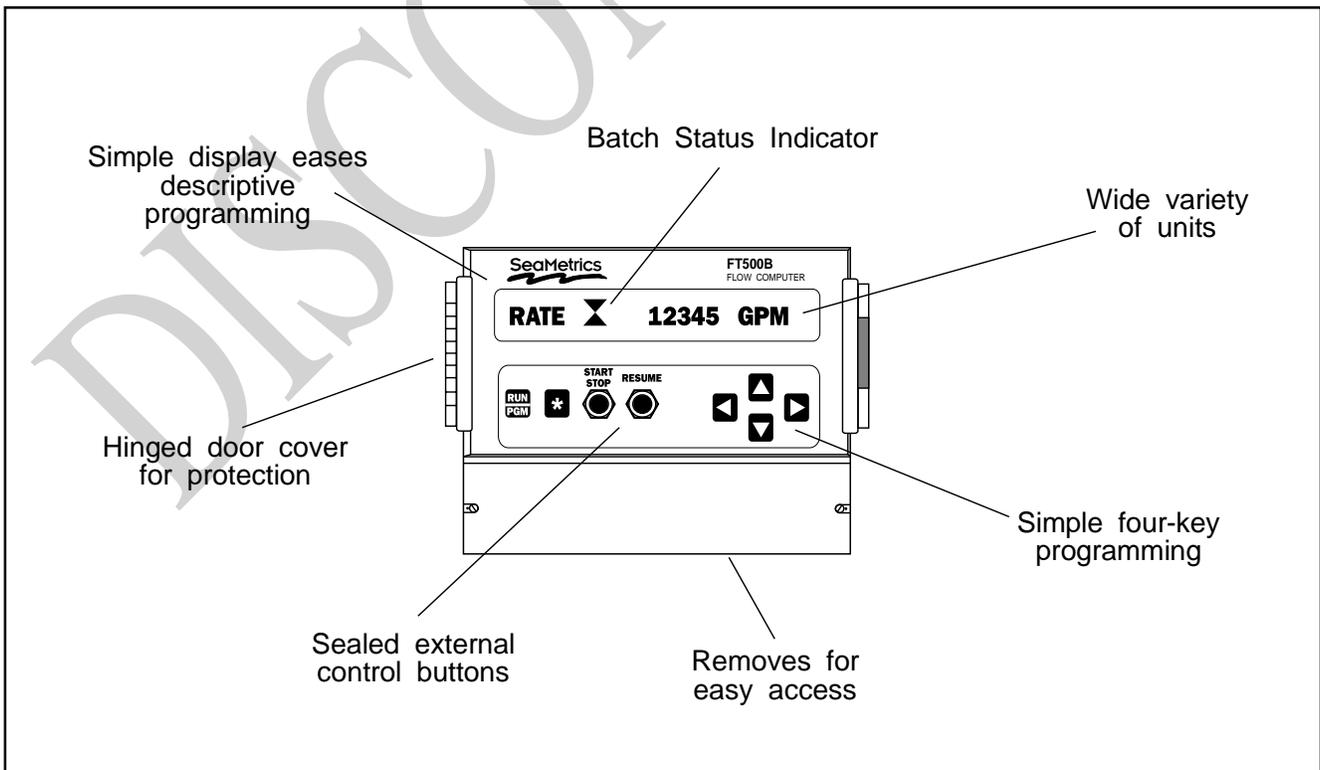
A large alphanumeric display makes reading easy, and menu-based programming eliminates the need to memorize numeric codes. Display units, high/low alarm settings, pulse output, and meter factor are some of the programmable features.

The FT500B is housed in a weathertight enclosure with hinged clear cover. Terminal access is made simple by a separate terminal compartment cover. Optional meter input connectors can be ordered for plug-in meter connection.

Specifications

Power	115 VAC, 12 VDC optional
Temperature	32° - 130° F
Enclosure	Non-metallic, NEMA 4X
Outputs	Two Form-C SPDT relay
Max. Output Load	3 A at 115 VAC
Sensor Power	12 - 16 VDC, 50 mA
Max. Cycle Size	999,999 units
Max. Output Time	9,999 seconds
Total Display	Eight-digit, resettable
Rate Display	Five-digit
Sensor Frequency	500 Hz maximum

Features

Simple display eases descriptive programming

Batch Status Indicator

Wide variety of units

SeaMetrics

FT500B
FLOW COMPUTER

RATE ⟂ 12345 GPM

RUN PGM ✳ START STOP RESUME

Hinged door cover for protection

Simple four-key programming

Sealed external control buttons

Removes for easy access

The FT500B is a batch controller designed for use with SeaMetrics flow meters. Batch size is set using the alphanumeric display, and relay outputs turn external fluid controls off or on.

Installation

Mounting. Using three screws, mount the unit to any secure surface. Drive the center screw first, before lifting the unit into place. Leave the head extending slightly. Slide the center mounting lug over this screw head, then remove the terminal cover to find the other two holes. Insert screws through these holes and tighten.

Sensor Connection. With the terminal cover removed, locate the "Sensor" terminals. Following the Connections diagram, connect flow sensor leads to the appropriate terminals. Sensor cable can be threaded in through the strain relief provided with the unit for sealing purposes.

Batch Control Connections. Follow the diagram to connect to the relay outputs. Note that both Normally Open and Normally Closed connections are provided. It is not necessary to use terminals provided for prewarn output unless a two-stage valving system is being used.

Power Connection. Following the Connections diagram, connect power. If the unit is standard 115 VAC, be sure to connect a ground wire for safety. The optional 12 VDC unit is supplied with a plug-in power converter. Observe correct polarity when connecting this unit.

Programming

Program Mode. All programming is done in Program Mode. The RUN/PROGRAM button turns this mode on and off.

Units. Select the desired units with the ▲ and ▼ keys. The FT500B will read and batch in these units.

K-Factor. Select "Meter Change". The display will read "K-factor =..." Change this number to read the K-factor which is correct for your sensor.

Update. It is not necessary to change the display update time unless the display is excessively jumpy. Update time can be increased to a maximum of 2,000 milliseconds (2 seconds).

Batch Size. Select Batch Change. The first setting is the basic batch size. Use the ▲ / ▼ buttons to set this to the desired size. The second setting is the prewarn amount. This only needs to be set if a two-stage system is being used. It represents the number of units before the end of the batch at which the K1 relay will drop out. In the typical application, the high-flow valve is connected to K1, and the low-flow valve is connected to K2. When the batch comes within the set number of units of the end, the high-flow valve will close and the low-flow will continue open until the end of the batch.

Display Contrast. Change this number only if the unit is difficult to read, due to light conditions or position on the wall.

Operation

Displays. When operating, either Batch, Rate, or Total is always displayed.

> Batch: This is the volume of flow since the START button was pushed to start the batch.
> Rate: This is the rate of flow in the selected units.
> Total: This is the running total accumulated since the beginning of operation, or since the last reset.

Batch Operation. Pushing the START button causes the output relay(s) to energize. The relays remain energized until the end of the batch unless the STOP button is pushed. The RESUME button can be used to return to operation after a mid-batch stop.

The Prewarn relay energizes at the same time as the Batch relay, so that if dual valves are being used (high flow and low flow) they will open at the same time. However, at the set number of units before batch end ("Prewarn" setting) the Prewarn relay will drop out. In this way the flow can be lowered at the end of the batch for greater precision.
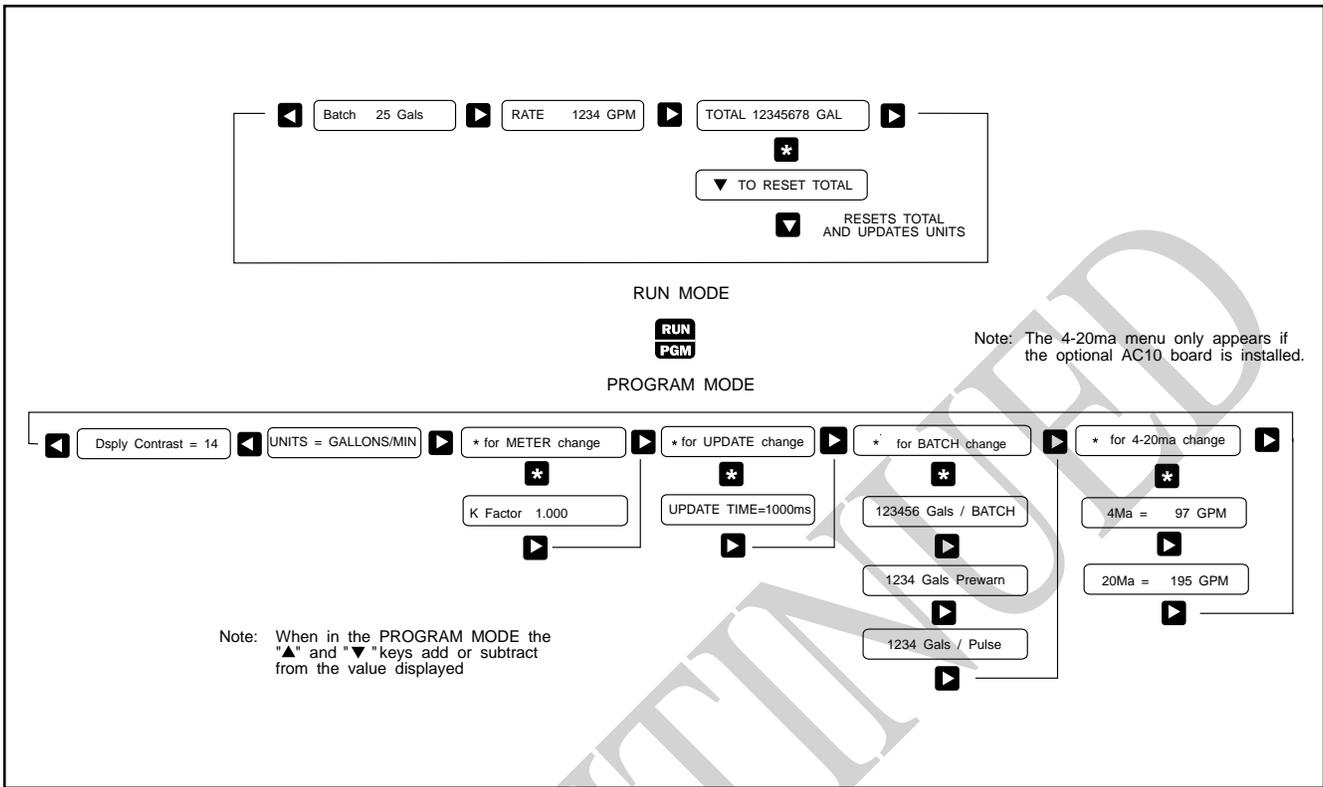
Maintenance and Repair

Front Panel Removal. The front panel must be removed to gain access to fuses, or to replace a printed circuit board. Open the clear cover. Remove the two screws on the left side and the two hex standoffs on the right. Gently loosen the panel and lift it out. The display board is attached, and will come with the panel. This exposes the fuses which are on the power supply board.
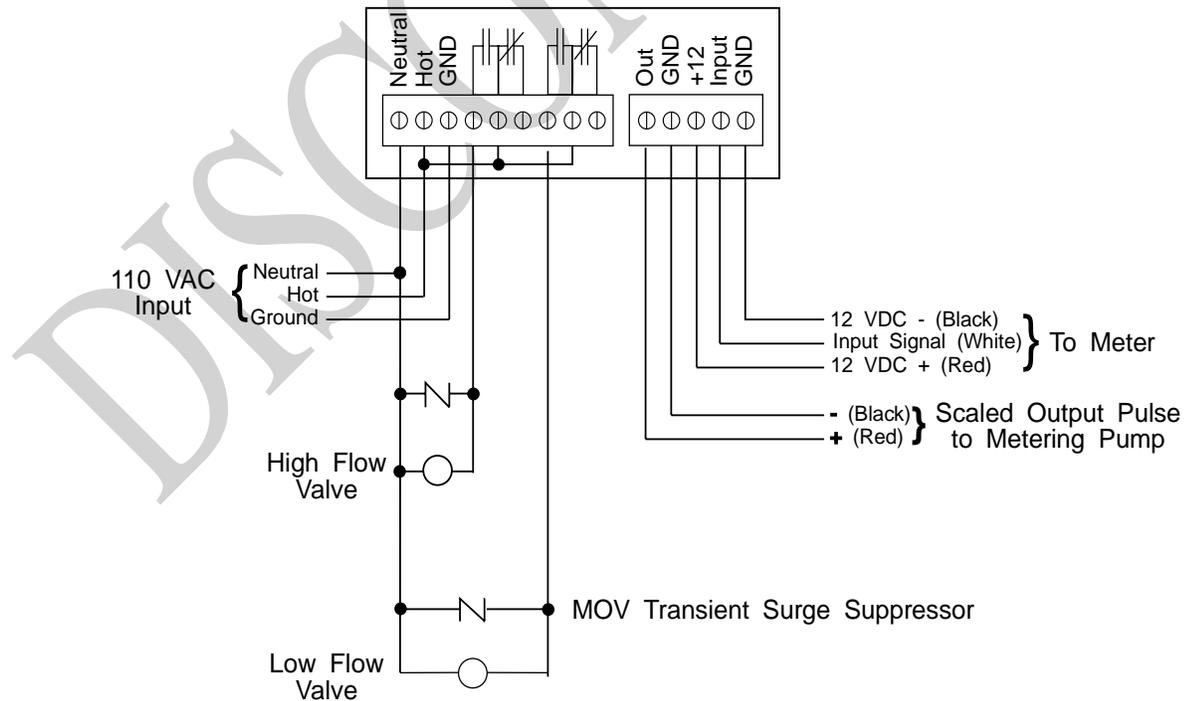
Fuses. The power supply and the pulse output circuit have fuse protection. The two fuses are on the power supply board. Replace a blown fuse with a .5 amp.

Backup Battery. Programmed settings and total flow are stored in battery-backed memory to protect them from power failure. The life of the battery is approximately ten years. It is recommended that the battery be changed well before the end of its expected life. To change the battery, first remove the front panel. The coin-shaped battery is in a holder on the under side of the display board. Remove and replace it with a BR2325 or equivalent.

Displays

Batch 25 Gals → RATE 1234 GPM → TOTAL 12345678 GAL →

▼ TO RESET TOTAL

RESETS TOTAL AND UPDATES UNITS

RUN MODE

RUN / PGM

PROGRAM MODE

Note: The 4-20ma menu only appears if the optional AC10 board is installed.

Dsply Contrast = 14 ◄ UNITS = GALLONS/MIN ► * for METER change ► * for UPDATE change ► * for BATCH change ► * for 4-20ma change ►

K Factor 1.000

UPDATE TIME=1000ms

123456 Gals / BATCH

4Ma = 97 GPM

1234 Gals Prewarn

20Ma = 195 GPM

1234 Gals / Pulse

Note: When in the PROGRAM MODE the "▲" and "▼" keys add or subtract from the value displayed

Connections

Neutral Hot GND

Out GND +12 Input GND

110 VAC Input { Neutral / Hot / Ground

12 VDC - (Black)
Input Signal (White) } To Meter
12 VDC + (Red)

- (Black) } Scaled Output Pulse
+ (Red) } to Metering Pump

High Flow Valve

MOV Transient Surge Suppressor

Low Flow Valve

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