

Tri-States Grain Conditioning, Inc.

DTL PLUS

DIGITAL TEMPERATURE LOGGER PLUS

The DTL Plus portable temperature monitor will read and save to memory all your grain temperatures. This information may then be downloaded directly to your PC or directly to your printer. (software included)

The most current reading along with the previous three readings are available on the DTL Plus for comparison purposes; however, an unlimited number of comparisons can be shown in spreadsheet format on your PC. It's your choice - view and print readings from all or only one of your grain temperature cables.

Simple to Program and Easy to Use

- High contrast LCD screen is easy to read in sunlight or shade.
- Operates on three AA batteries.
- Real time clock (Set it, Forget it). Runs for 10 years on a separate battery.
- Manual OHM/Resistance readings for evaluation of your temperature cables.
- Stores and prints four readings on the DTL Plus to compare and monitor temperature trends.
- Stores information in your PC for evaluation of temperatures.
- Unlimited number of comparisons on your PC in spreadsheet format.
- Can be downloaded (connected) directly to printer for a hard copy if no PC is available. (Each hard copy will display the date, time and customers company name.



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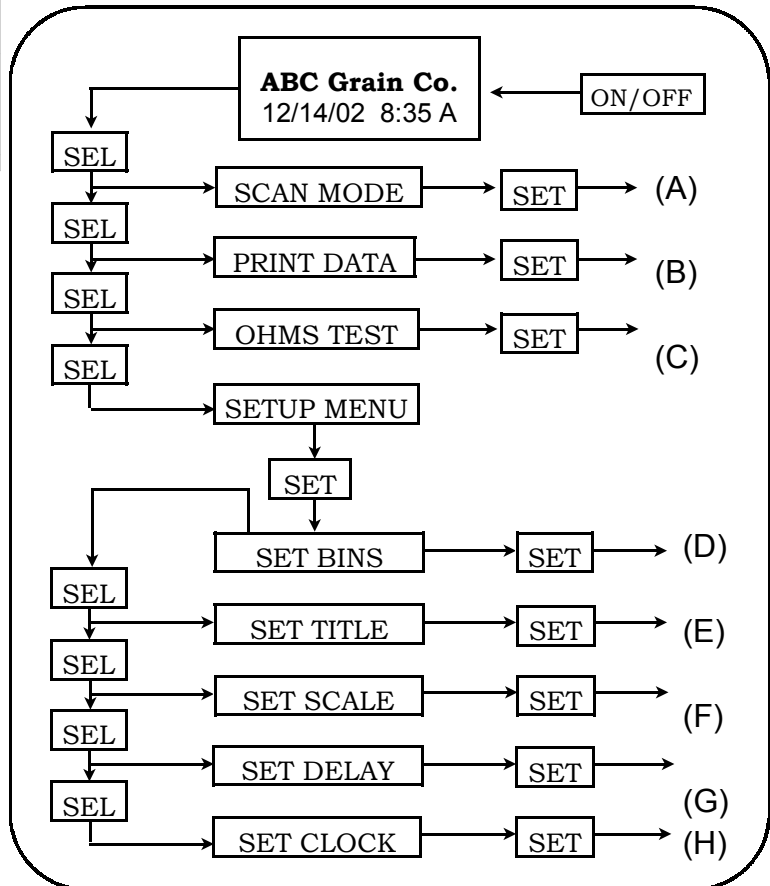
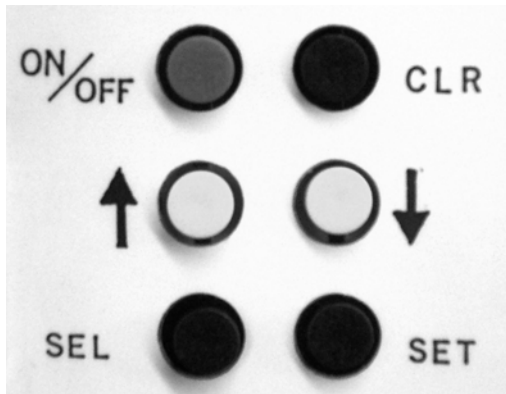
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DTL Plus Instructions

Outline of DTL Plus Program

DTL Plus Function Buttons



Description of Tasks performed by "DTL Plus Function Buttons"

SEL (select)

The "SEL" button is used to move you through the DTL Plus' four main modes: "Scan Mode", "Print Data", "Ohms Test" and "Setup Menu". The "SEL" will also move you through the "Sub Menu", located in the "Setup Menu": "Set Bins", "Set Title", "Set Scale", "Set Delay" and "Set Clock". (NOTE: refer to "Outline of DTL Plus Program")

SET

The "SET" button is used to enter you into a mode, accept a selection or readings, and to move the cursor in the "Set Clock" and "Set Title" modes, to the right.

↑↓

The "↑↓" buttons are used to increase or decrease numbers, letters, settings and to switch between F or C and between A or P.

CLR (clear)

The "CLR" button is used to reject a temperature reading, to move in reverse through the "Scan Mode" and the "Set Bins" mode, to move the cursor in the "Set Clock" and "Set Title" modes to the left, and to exit the "Ohms Test" mode.

(A) Scan (Reads Temps)

With setup completed, push "SEL". "Scan Mode" will display. Push "SET" to enter. The number of bins in your setup and the bin ready to scan will display. Use the ↑↓ to select the bin to scan, then push "SET". The number of cables in your bin and the cable ready to scan will display. Use ↑↓ to select the cable to scan, then push "SET". Your bin number, cable number and the number of sensors in the cable will display. Push "SET" to begin "Scanning...".

When Scan is complete, Sensor:01 and its reading will display. Use ↑↓ to view each sensor reading and/or push "SET". Next push "SET" to save scan, or push "CLR" not to save. Push "SET" to move to next cable to scan, or push "CLR" to move back through the "Scan Mode" (change the cable or bin to scan next).

Tip: For best results, store DTL Plus in moderate temperatures until ready to use.

(B)

Printing (Download or Hard copy)

To Download:

1. Load the DTL Plus software into the computer (you will only have to do this one time). Follow the instructions on the screen. When it says it has downloaded correctly, Go to the start button on your PC, then to programs, then to TSGC DTL Plus, Click on it once and drag it to your desktop then double click and you will have the downloading screen directly in front of you.
2. Plug the DB9F to the DB9M port on your computer.
3. Plug the AC adapter (black cord) into an electrical outlet.
4. Plug the DB25M to the parallel port on the DTL Plus.
5. Push the "ON" button on the DTL Plus then push "SEL" 2 times, "Print Data" will display.
6. Push "SET" 2 times, "Print Data" - "Printing" will display until complete.
7. The information will appear on the screen directly in front of you.

To Print (Hard copy):

1. Plug the DB36 end (of printer cable) into the printer.
2. Plug the DB25M to the parallel port on the DTL Plus.
(Turn Printer on).
3. Push the "ON" button then push "SEL" 2 times, "Print Data" will display.
4. Push "SET" 2 times, "Print Data" - "Printing" will display until complete.
5. Printer will print out data.

(C.) Ohms Test

Push "SEL" 3 times until "Ohms Test" displays. Push "SET" to begin. "Position: 01 w/reading" will display. To Ohm sensor #02, Use ↑ button. Repeat process for the rest of the sensors. Move the jackhandle to the next socket and repeat the process.

(D) Set Up

Push "SEL" 4 times until "Setup Menu" appears. Push "SET" to enter. "Set Bins" will display. Push "SET" to enter. "No Bins : ____" will display. Use $\uparrow\downarrow$ to select correct amount of bins in your system. Push "SET" to enter amount. "Bin:01 Type: ____" will display. Use $\uparrow\downarrow$ to select correct type of Bin for Bin:01. Push "SET" to enter type. "Bin:01 Cables: ____" will display. Use $\uparrow\downarrow$ to select correct amount of cables in the bin. Push "SET" to enter amount. "Bin:01 Cable:01 Sensors: ____" will display. Use $\uparrow\downarrow$ to select correct amount of sensors in the cable. Push "SET" to enter amount. The display will move to the next cable in the bin, use $\uparrow\downarrow$ to select the correct amount of sensors for this cable. Repeat until "Bin:02 Type: ____" is displayed. Repeat process for bins, cables, and sensors until setup is complete.

NOTE: At the end of the setup procedure the DTL Plus will automatically go into a data clearing function. The screen will say "Clearing Memory..." for 12 to 15 seconds. During this time the old data is erased, and the new data is entered. **DO NOT OVERRIDE THIS FUNCTION.** The instrument will not operate properly if this function is skipped over.

(E) Set Title

Push "SEL" 4 times until "Setup Menu" displays. Push "SET" to enter. Push "SEL" 1 time until "Set Title" displays. Push "SET" to enter. "Set Title ____" will display. Use $\uparrow\downarrow$ to select correct letters. "SET" will move the cursor to the right and "CLR" will move the cursor to the left. There are 16 character spaces for your Title (Company name). After the final letter is selected, press "SET" until the Title, Date and Time appear on the display.

(F) Set Scale

Push "SEL" 4 times until "Setup Menu" displays. Push "SET" to enter. Push "SEL" 2 times until "Set Scale" displays. Push "SET" to enter. "Set Scale Degrees ____" will display. Use $\uparrow\downarrow$ to select C° or F°. Push "SET" to enter your selection.

(G) Set Delay

Push "SEL" 4 times until "Setup Menu" displays. Push "SET" to enter. Push "SEL" 3 times until "Setup Delay" displays. Push "SET" to enter. "Set Delay Delay: ____" will display. Use $\uparrow\downarrow$ to select delay setting. Push "SET" to enter your selection.

(NOTE: DTL Plus is factory set at 1.5).

(H) Set Clock

Push "SEL" 4 times until "Setup Menu" displays. Push "SET" to enter. Push "SEL" 4 times until "Set Clock" displays. Push "SET" to enter. "__/__/__ (⇐Date) __: __ __ (⇐Time)" will display. Use $\uparrow\downarrow$ to select date, time and A or P. "SET" will move the cursor to the right and "CLR" will move the cursor to the left. After A or P has been selected, Push "SET" to enter selections.

RESET:

This DTL Plus instrument is similar to a computer in that it can be crashed. A crash occurs when a function it is not programmed to perform is attempted.

The DTL Plus will display a "default" company name and "0 bins" in the Setup Menu. Your company name and setup should still be stored in the DTL's memory. Resetting the DTL Plus should restore your programming.

To Reset the DTL Plus:

Turn the DTL Plus on and follow your menu instructions until "set clock" is displayed. Push your "set" button to enter the "set clock" mode.

Follow your "clock" instructions to change the complete date and time and then enter the new setting. The "default" company name will display at this time. Turn the DTL Plus off for a few seconds and then back on. The reset is complete. (your clock can be reset to the correct date and time now, if necessary).

If this doesn't reset your DTL Plus try it one more time. If you are still experiencing problems, give TSGC a call at 800-438-8367.

SPECIFICATIONS

The DTL Plus is packaged in a rugged carrying case with hinged lid and handle.

DTL Plus 06 (Std. 6TC Jackhandle)

DTL Plus 12 (12TC Jackhandle)

DTL Plus 18 (18TC Jackhandle)

Liquid Crystal Display—4"W x 1"H

Temperature Measurements:

Degrees F from -20 to +230

C from -28 to +110

Ohms 10 to 500

Thermocouple sensor: Type T

Case size: 8½"W x 7"D x 3½"H

Battery power: 3 standard AA batteries

Weight: 3 lbs.

Operating temperature: 0° to 85° C

Printer interface: 25 pin parallel port

Capacity: *Bins*—1 to 99

Cables/bin—1 to 99

TCs per cable—1 to 18

Memory—4 sets of 6000

readings (24,000 readings)