

Smart Shipper's TiMan Monitoring Computer

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* These features are not on earlier models.

Overview

The TiMan Monitoring Computer, in equipped Smart Shipper shipping containers, is a custom designed, from the circuit board up, custom built, computer to monitor the conditions experienced by products being shipped in a Smart Shipper.

Why did we design and make our own monitoring computer when there are devices already available to do so?

Here are a few reasons.

- 1) DRY ICE. The monitoring devices out there do not function at those temperatures. The TiMan Monitoring Computer can monitor dry ice shipments.
- 2) DURABILITY. The drop in units available ride inside the shipping compartment with the product. This seems easy. However, when not properly secured the devices can be easily damaged during a shipment. The TiMan Monitoring Computer is secured in the shipping container with shock absorbers to virtually eliminate damage unless exposed to extraordinary abuse.
- 3) SECURITY. If you ship using drop in units you know that they get lost and frequently “walk” away. The continuous replacement of damaged, lost or stolen drop in units is a cost frequently overlooked. It is a lot more difficult to “lose” an entire box, and can you imagine putting a Smart Shipper in your pocket to steal it?
- 4) FEATURES. We wanted to do things with our unit that others either do not offer, or if they do, it is difficult to set up. Example, how does one set up a drop in to monitor when the box is opened? Those that offer the ability usually have a plug in switch that must be precisely installed with each shipment. Not easy. And, if the sensor comes unplugged it is useless for the rest of the shipment. Our system does this automatically.
- 5) DATA TRANSFER TIME. Other units can take several minutes to download their data, even for short shipments. We did not want our customers wasting that much time. So, we developed a compression method which allows for a week long shipment, temperatures logged every hour, to download with our TiMan Memory Retrieval PC Software in less than 4 seconds.

We could go on and on. However, we would rather get on to showing you what our TiMan Monitoring Computer can do.

Use

The TiMan Monitoring Computer built into the Smart Shipper is an easy to use device. This manual will explain its functions in detail. However, due to our LCD display the monitoring computer give instructions as you use it. Once this manual is read and understood, most people can use the TiMan Monitoring Computers without having to refer to this manual for anything but abnormal circumstances.

Turning on the Screen

The only instruction which cannot appear on the LCD screen is turning on the display. There are three buttons on the TiMan Monitoring Computer. Two oval buttons are on the right side. These are for your input. There is one round button to the left. This button is only used to turn ON the display. The display will go off either after certain inputs or after a time out period. Note: If you allow the time out to occur the computer will revert back to the state it was in before you turned on the screen. If it was in a shipment it will continue that shipment. If it was not in a shipment, even if you answer a couple of questions about starting a shipment it will NOT start a shipment unless you finish the start shipment sequence.

Once the display is turned on the TiMan Monitoring Computer will go through a series of screens.

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Above: The first gives our web site address. This is a place that you can go to get information about all of our products. For example, you can download this manual, a manual for the TiMan Memory Retrieval Software, instructions on how to pack your Smart Shipper, and much more.

11/25/03 14:25
TiMan v1.1

Above: The second gives you the time and date in the TiMan Monitoring Computer's clock. This time is Eastern Standard Time without compensation for Daylight Savings Time. The time is set at the factory, and cannot be changed except a the factory. Also on this screen is the firmware version. Example: "TiMan v1.1". Make sure that the firmware version matches the version number in the title of this manual. If it does not then get online at www.eSmartShipper.com and download the correct manual. Also, have the firmware version handy if you ever need to contact us regarding your product.

Turning on the Screen (continued)

Self diagnostic
OK 1

Self diagnostic
failed 16

Above: The third screen shows the results of the self diagnostic. Every time the computer is turned on it tests its ability to perform all of the major functions needed to monitor your shipment. If the test was successful the screen will display "Self Diagnostics OK" along with a number. This number is almost always one. If the test was not successful the display will read "Self Diagnostics failure" also, along with a number. Take note of the number. With this number we can determine exactly which component(s) are not functioning properly. Regardless of which component(s) are not functioning we do not recommend that you use the computer's data.

After these first three screens the displays are based on whether the unit is in a shipment or not. Therefore, The remainder of the screen explanations will appear in the start shipment and end shipment instructions.

Starting a Shipment

If you are starting a new shipment then you must be starting a TiMan Monitoring Computer which is not currently logging a shipment. If it is logging follow the instructions to End Shipment first then return to these instructions.

Battery 51%

Above: The first screen (after the common screens described in section "Turning on the Screen") is the battery check screen. The display gives a percent of battery life remaining. The standard set of batteries should last a little over 6 months. Therefore, one can calculate the remaining battery life. I.E. 51% would be about 3 months left.

Note: The batteries do not perform well under -20c. If your shipment is going to be exposed to temperatures less than -20c outside, and the batteries are at a low percentage the computer may not log all of the data at the coldest temperatures. When the batteries return to above -20c the computer should work fine even at low battery percentages.

Start a YES>
shipment? NO>

Above: The next screen is the Start Shipment screen. It is pretty self explanatory. If you select NO then see the Charging Batteries section of the manual. If you select YES you will have one more question to answer before the shipment begins logging.

Item FROZEN>
REFRIGERATED>

Above: This screen is asking the spoil point for your product. If you select FROZEN then any temperature below 0c or 32f will be considered OK. If you answer REFRIGERATED then the temperature must remain above 0c/32f and below 8c/45f to be considered OK. We realize that each product shipped will have its own temperature range of acceptability and this may be a few degrees different than these. However, these temperatures are simply approximate guides. The TiMan Monitoring Computer can use this information for several uses including calculating the insulative properties of the insulation so that when the unit is next in shop for batteries, etc., we can make judgments as to the integrity of the insulation, from this data alone, before opening the box.

After answering this question the screen goes off. The computer, however, is still on. It is logging the shipment information. Congratulations. You have just started a shipment.

Ending a Shipment

If you are ending a shipment then you must be starting a TiMan Monitoring Computer which is currently logging a shipment.

Item CONTINUE>
in transit END>

Above: The first screen (after the common screens described in section “Turning on the Screen”) is the CONTINUE/END screen. The display is asking a simple question. If you answer CONTINUE then the screen will go off and the computer will continue logging as if you had never turned on the screen. If, however, you answer END then you will be asked a few questions which will determine what you want to do with the data logged during the shipment.

Download YES>
data out NO>

Above: The next screen asks if you wish to download data out at this time. If you answer NO then the TiMan Monitoring Computer will go into a hibernation mode awaiting the next shipment. If you answer YES the TiMan Monitoring Computer will ask you how you wish to do this.

Read direct?>
Write to TmT?>

Above: This screen is asking “Read direct?>” which means you have a PC running the TiMan Memory Retrieval Software with the wand ready to download the data.

You have 8 min.
to read END>

Above: You now have approximately 8 minutes to touch the wand to the i-button on the side of the lid to download the data. The actual download should take less than 4 seconds. When your download is complete select END to turn off the TiMan Monitoring Computer before the 8 minute timer expires. This both saves both battery life in the unit as well as time for you. If you have another shipment to go out with this Smart Shipper you do not have to wait 8 minutes before starting the logging on the next shipment.

You have 2 min.
Attach TmT token

If you answer “Write to TmT” then you see the above screen. You now have approximately 2 minutes to attach the TmT token to the i-button on the side of the lid. The download of data should be less than 4 seconds and then the TiMan Monitoring Computer will go into hibernation mode awaiting the next shipment.

Note: A TmT is a TiMan memory Token. This is a memory device used to store shipment data until the data can be removed from the TmT with a PC running TiMan Memory Retrieval Software.

Charging the Batteries (Feature not on earlier models.)

To charge the batteries, first plug in the proper charger. Then, turn on the TiMan Monitoring Computer when NOT in a shipment. After the startup (covered on page 2 and 3) the first question asked is...

Start a YES>
shipment? NO>

Press the button associated with "NO>" at the above screen. Then you will see...

Charge YES>
Battery? NO>

Press the button associated with "YES>" at the above screen. Then you will see...

Battery XXXX
reconditioning

The "XXXX" will be a number which can be used to troubleshoot should a problem arise. The "reconditioning" will toggle between the left and right side of the screen. This will go on for a period of time, from a few minutes to a few hours depending on the condition of the batteries. After this, the following screen will appear.

Batt. X hrs left
charging

The "X" will be a number representing the approximate charging time (in hours) remaining. The "charging" will toggle between the left and right side of the screen. After the charge you should see the following...

Charging
Complete!

At this time you should disconnect the charger and press the round "on" button to the left of the TiMan Monitoring Computer screen. If you then Press the button associated with "NO>" to all questions, the computer will go off.

Data from Old Shipments (Feature not on earlier models.)

At the end of each shipment you are given the opportunity to download the data out of the TiMan Monitoring Computer. For whatever reasons you may have, you may choose not to download the data. You may have downloaded the data and still wish to do so again. In order to achieve this, simply turn on the TiMan Monitoring Computer when NOT in a shipment. Then, after the startup (covered on page 2 and 3) the first question asked is...

```
Start a  YES>
shipment? NO>
```

Press the button associated with "NO>" at the above screen. Then you will see...

```
Charge YES>
Battery? NO>
```

Press the button associated with "NO>" at the above screen. Then you will see...

```
Retrieve YES>
old data? NO>
```

Press the button associated with "YES>" at the above screen. (The next screens may take a little while to come up.) It will next display the following...

```
Start XX/XX/XX>
EARLIER>
```

The "XX/XX/XX" represents the date on the TiMan Monitoring Computer when the shipment was started. The first one to be displayed is the last shipment made. If you press the button associated with the date you can then download the data from that shipment. If this is not the correct shipment, press the button associated with "EARLIER>" and the TiMan Monitoring Computer will go in REVERSE CHRONOLOGICAL ORDER to the next shipment, and so on, until it wraps back around to the first one displayed. If you choose not to download any shipments, simply press the round "on" button left of the screen and press the button associated with "NO>" until the TiMan Monitoring Computer shuts off.

Troubleshooting

The only troubleshooting which can be performed by the end user is to take note of the code displayed after the Self Diagnostic failure. By calling us with that code we can determine precisely which components are malfunctioning. If you are the owner of the Smart Shipper, we can give an estimate of repair costs as well as inform you as to what incorrect data you can expect from this component failure.

Warranty Information

Repair or replacement of the hardware due to defect are written as part of your sales contract. Please refer to that document for details.

We have manufactured Smart Shippers to be very durable. However, due to the abusive conditions to which the Smart Shippers are exposed during even normal use we make NO warranties expressed or implied as to the accuracy of the data logged, the ability to download the data, or lost or damaged data. We also make no warranty as to the integrity of the insulation, and its ability to maintain your product temperatures. And, therefore, we accept no liability for ANY losses due to any failure of any or all components of the Smart Shipper.