

**State of California**  
Department of Food and Agriculture  
Division of Measurement Standards

Certificate Number: 4851(a)-03  
Page 1 of 3

***California Type Evaluation Program***  
***Certificate of Approval***  
***for Weighing and Measuring Devices***

**For:**

Wholesale Terminal Automated System Controller  
Personal Computer  
Model: TMS-3000  
Version: 4.3A-A1 or Greater

**Submitted by:**

Sorrento Electronics, Inc.  
4949 Greencraig Lane  
San Diego, CA 92123  
Tel: (858) 522-8300  
Fax: (858) 522-8339  
Contact: Bill Gratza

**Standard Features and Options**

Motion detection and primary weight indication are provided by the certified primary weight indicator.

Weigh-in/weigh-out capabilities (identified by date and time on the weight ticket)  
Multiple scale interface with scale identification  
Multiple mass flow meter interface with meter and product identification  
Vehicle, customer, and product ID  
Touchscreen display  
Printing capability  
Temperature compensation  
Category 3 audit trail  
PRIM II (mass flow meter controller)

**Minimum System Requirements:**

Computer display  
Alphanumeric keyboard  
Operating system: Windows NT and OS/2  
Pentium Processor, 64 MB RAM  
Program language: C++

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: November 21, 2003



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Mike Cleary, Director

**Sorrento Electronics, Inc.**  
**Wholesale Terminal Automated System Controller**  
**Model: TMS-3000**

**Application:** The system controller is approved for the management and collection of weighing and liquid measuring device information. The system controller must be connected to approved mass flow meters, weighing elements, and indicating elements. When used at a petroleum loading rack with a meter system, the meter system must be approved and compatible.

**Identification:** The identification tag is located on the right-hand side of the central processing unit. The same information is also continuously displayed on the left bottom corner of the operator's screen under the "WeightsMeasure" button. Identification compliance can be verified on the weights and measures audit trail screen (see Sealing item 3).

**Sealing:** The configuration parameters that control the system are protected by a password that is retained by the manufacturer. The system utilizes a Category 3 audit trail. The PRIM II assembly panel (back room controller) also requires a physical security seal to prevent access to the pulser boards located in the panel box. The pulser boards are covered by a plexiglas plate which can be sealed by threading the wire seal through holes in the mounting bolts.

To access the audit trail mode on Version 4.3 up to 6.0, select the following buttons in sequence:

- (1)  "Utils" button from operation menu on the main menu
- (2)  "TrmCfg" button from application utilities mode
- (3)  "WeightsMeasure" button from system setup mode

The audit trail will display two event counters which indicate the number of times the system has been configured and calibrated with associated values. Additionally, the audit trail provides an event log which lists the historical changes and can be printed for reference.

Version 6.0 and higher screen: To access the screen, click on "TMS Utilities" first (this opens up the tree menu), then click on the "Terminal config" menu option, and then click on "wgt, & mea." option.

**Operation:** When used with an approved mass flow meter and approved scale system the PRIM II assembly is connected between the mass flow meters and the TMS-3000 system controller. The PRIM II is designed to convert electronic pulses to weight data. The system controller records the weight data from the PRIM II as the net weight of the product. Gross weights are calculated from the mass flow meters net weight and tare weights from the vehicle scales. The inbound (tare) weights are identified with time and date on the weight tickets. Motion detection and weight indication are provided by the certified vehicle scale primary weight indicators.

When used at a wholesale petroleum loading rack: The TMS-3000 system collects the gross meter volume and temperature from an approved meter system. The TMS-3000 system corrects the product gross volume to 60 °F (15 °C), then sends this information to the Bill of Lading printer.

**Sorrento Electronics, Inc.**  
**Wholesale Terminal Automated System Controller**  
**Model: TMS-3000**

**Test Conditions:** This certificate supersedes Certificate of Approval Number 4851-99 and is issued to add Temperature Compensation capability. The system was tested at a loading rack facility with gasoline and diesel products and then placed into service. Approximately 30 days later the system was retested to ensure the device maintained its accuracy.

**Certificate of Approval Number 4851-99:** The system was interfaced with multiple weighing elements, Fairbanks Model 90-9201 indicating elements (Certificate of Approval Number 3961(a)-93) and multiple Micro Motion Model CMF mass flow meters (Certificate of Approval Number 4206-95). A field test was performed to evaluate accuracy of calculations and compatibility of multiple weighing elements, indicating elements, and mass flow meters. The emphasis of the evaluation was on the system controller design, operation, performance, marking requirements, print format, interaction with the weighing system, and audit trail information. Several simulated weighments, momentary power loss, and motion detection tests were conducted.

Results of this evaluation indicate the system complies with applicable requirements.

**Type Evaluation Criteria Used:** Title 4, California Code of Regulations, 2003 Edition

**Tested By:** Ronald Flores (CA), 4851-99, Dan Reiswig (CA) 4851(a)-03