



# ELECTRONIC TRUCK REGISTER 6000 Series

## Features

- Rugged
- Temperature compensation
- Complies with international Metrology standards
- Prints delivery tickets
- Nema 4X or IP65 enclosure



## Applications

- Petroleum tankers with Metered deliveries
- LPG trucks
- Aircraft refuelling
- Anhydrous Ammonia
- Chemical trucks
- Heating oil trucks

## Overview

In truck applications where electronic registers must be able to operate in adverse conditions, the 6000 series offers an economical solution for flow measurement & control.

Designed to operate with turbine, positive displacement or coriolis flowmeters, the Series 6000 meets the requirements for custody transfer of liquids throughout the world.

- Rugged facia and switches
- High quality connectors
- Backlite display
- Mounting feet
- Conformal coated electronic assemblies similar to that used by the military.

Specifically designed for truck Installations, the Series 6000 is a register that will survive in the toughest of environments for electronics.

### Preset or Start/Stop Mode

The 6000 Series can be programmed to operate as either a Preset system where the required quantity is entered prior to a delivery, or as a Start/Stop system where an unspecified quantity can be delivered.

Both modes have relay outputs which can be used to control pumps and valves.

## DELIVERY DOCKET

Product: Liquid Petroleum Gas

Truck ID	001234
Unit ID	001
Delivery No.	0002
Date	17/08/2001
Start Time	15:05
Finish Time	15:05
Status	000

Net Acc Total Finish	Ltrs	0.0
Net Acc Total Start	Ltrs	0.0
Gross Delivery Total	Ltrs	0.0

Net Delivery Total	Ltrs	0.0
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Product Temperature	°C	17.5
Converted Volumes Corrected To	15.0°C	
Density at 15.0°C:	540.0 (kg/m <sup>3</sup> )	(manual)

X \_\_\_\_\_  
Customer sign to verify delivery.

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ISO 9002 Lic 5941  
Standards Australia



## Custody Transfer Approval

The series 6000 includes a dual pulse integrity check of the input signal and temperature compensation to API Tables as required for custody transfer.

Temperature compensation is selectable to include Compensation for general petroleum, LPG or other products. If temperature compensation is not required, it can be disabled.

## Truck Interlocks

Because the Series 6000 is designed for truck applications, special features, unique to truck applications, are incorporated into the system including:

- A low frequency input cutoff which will ignore spurious flowmeter pulses which may be caused by Pipe vibration as the vehicle travels between deliveries.
- A transaction timeout which is incorporated into the Software to prevent a partial delivery at one location and then a continued delivery at a second location without resetting the register (termed "riding the ticket")
- Delivery totals continue to be displayed even if power is disconnected.
- A printer integrity test which will signal an error message if there is a printer problem.
- 12 volt DC and 24 volt DC operation.

## Communications

The Series 6000 can operate in one of the modes:

### 1. Printer only

Interfaces to an industry standard slip printer or standard line printers.

### 2. On-board computer

With an on-board computer, transaction results can be uploaded to the computer at the end of the delivery.

## Physical

### Displays

Batch total: 6 digit (11.8mm high) backlit LCD with automatic ranging.

### Keypad Buttons

Switches: Four heavy duty switches.  
Weights & Measures Seal: A program access switch, located behind a screw on the rear facia, can be affixed with a lead seal to prevent tampering.

### Standard Enclosure

Dimensions: 144mm (5.7") wide x 72mm (2.8") high x 190mm (7.5") deep. The connector backshells will extend the depth to 235mm (9.3").

Material: Anodised Aluminium.  
Sealing: IP65 (Nema 4X) weatherproof.  
Weight: 2.0 Kg. (approx.)  
Cable connection: Four "D" style connectors.

### Explosionproof Enclosure

Dimensions: 285mm (11.2") wide x 287mm (11.3") high x 231mm (9.1") deep.

Approvals: Cenelec and CSANRTL/C applied for.

## Operational

**Power Requirements** 12V DC or 24V DC. 2 watt maximum.

**Operating Temperature** -10 to 60° C.

**Communications** Dual RS232 shared port.

**Interface** CE compliance.

## Inputs and Outputs

### Flow Inputs

Input frequency: 0 to 10kHz. with single pulse Input  
0 to 2kHz. with dual (quadrature) Input  
Note: Dual pulse is for pulse verification only and does not detect reverse flow.

### Pulse Integrity (Dual pulse only)

If a pulse failure is detected, the system will alarm and stop flow on that channel.

Note: This is in accord with API standards Chapter 5, Section 5: AS2702 - 1984; and ISO 6551 - 1982.

**K-Factor** - Linear: Single point 0.01 to 50000.0  
- Non-linear: 10 points 0.01 to 50000.0

### Temperature inputs

Input Signal: RTD (4 wire)  
Range: -10 to 60°C  
Input circuit: 12 bit AD converter.  
Correction: To API table 24B/54B for gasoline, diesel, jet fuel; Table 34/54 for LPG; and table 24A/54A for crude oil. Also correction for anhydrous ammonia is available.

### Valve control outputs (dual stage on/off)

Max contact voltage: 28 V D.C. or 28 V A.C.  
Max current: 3A  
Pulse Output: Scaled pulse output  
Pulse Width: 10mSec  
Max Frequency: 49 Hz.

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