Secure your deliveries

Avoid unauthorized product removal

Put a stop to product contamination

By sealing, monitoring and recording the operations of all compartment inlets and outlets with the Metermatic Sealed Parcel Delivery System

- Continuous real time monitoring and recording
- Powerful data analysis capabilities
- GPS and GPRS ready
The SCS is a Sealed Parcel Delivery system which effectively secures the load for transfer from one point to another in accordance with EN15208 and provides detailed and accurate information regarding any changes in the load status.

All vehicle compartment inlets and outlets are continuously monitored and any opening or closing of any of the vehicle's loading or unloading points is detected, date time and position stamped (subject to the vehicle being equipped with a suitable GPS/GPRS device) and recorded by the SCS Monitor. The sensors are uniquely numbered to prevent their substitution with a fraudulent sensor. The SCS also monitors and records the state of each compartment by way of the bottom valve sensors, the bottom retain sensors and, optionally, the overfill sensors. All data recorded is available for transfer via GPRS and / or can be printed.

Added benefits are:

- Assistance in the prevention of “cocktails” where:
  (a) a non compatible product is loaded into a compartment which already contains a different product, or
  (b) product is dropped into the incorrect forecourt tank.
  This is achieved by immediate availability to the operator of information regarding the status of the compartment (empty or not) as well as which product was loaded.
- Prevention of overfills by connecting the overfill sensors to the SCS monitor. Should an overfill be detected the SCS will send a signal to the gantry to allow the preset to shut it down and, as an optional extra, shut the truck bottom valve.

The SCS is available either with or without the optional Pneumatic Interface System which allows for pneumatic control of the bottom and vent valves.

**SCS System Components**

1. **Printer**
   The printer is mounted either in the cab or in a safe area on the truck. It is connected to the SCS Monitor via the Vehicle Communication Interface. It is used during the delivery process to print the status of the vehicle or compartment on arrival at the forecourt (all compartments sealed) and after the delivery has taken place. It can also be used to print recorded events for further analysis.

2. **SCS Monitor**
   The SCS Monitor manages the system by monitoring the sensors and recording each opening or closing of the manholes, API adaptors and bottom valves. Any change to the status of the wet/dry sensor is also recorded. All such events are date and time stamped and stored in the internal memory.

3. **Pneumatic Interface System (optional)**
   Used to interface between bottom and vent valves and the SCS Monitor.

4. **API Sensors**
   Fitted to each API adaptor the API sensors indicate if the API adaptor is open or closed as well as if there is liquid in the discharge lines.

5. **Overfill Sensor**
   The overfill sensor mounted at the top of each compartment may be optionally connected to the SCS Monitor in which case the Monitor will shut the bottom valve and remove the permissive from the gantry should an overfill occur.

6. **Retained Sensor**
   A wet/dry sensor fitted in the bottom of each compartment is used to detect any product left in the compartment.

7. **Manhole Sensor**
   Mounted on the manhole of each compartment, the manhole sensor detects when the manhole is opened and relays this to the SCS monitor.

8. **Inclination Sensor**
   Mounted on the truck, the inclination sensor senses the inclination of the vehicle to prevent the unloading of product should the tilt of the vehicle exceed a certain set inclination.
9. Bottom Valve Sensor
The bottom valve sensor monitors and records opening and closing of the bottom valve.

10. Remote I/O Unit
Provides the SCS-300 with the ability to control bottom valves.

11. Gantry Interface
The vehicle interfaces to the gantry rack monitor via the industry standard optic socket.

12. Battery Back-up
Battery back-up allows vehicle seals to be monitored for 72 hours if the system is disconnected from the vehicle battery.

13. Vehicle Communication Interface
Provides the interface between the SCS monitor and the printer; and the SCS monitor and a PC.

14. SCS Explorer Software for PC and PDA (Optional)
Used to configure the SCS system from a PC or PDA via a user friendly wizard. It also allows the user to download and evaluate all events recorded by the SCS monitor.

Should any of the manholes or API adaptors be opened after loading has been completed and before the vehicle arrives at the service station, the compartment status will change to display “unsealed” allowing the service station owner to refuse the load.

If one of the compartments cannot be emptied completely, the driver can change the status of that compartment from “unsealed” to “resealed” to allow the secure return of product to the gantry. If that compartment is opened again it will change back to “unsealed” and cannot be resealed again.
## TECHNICAL SPECIFICATIONS

### SYSTEM POWER
24 VDC ± 15%

### POWER SUPPLY
3 intrinsically safe output channels. Certified for operation in zone 1, housed in an Exe certified enclosure

### VEHICLE COMMUNICATION INTERFACE
Output power source, adjustable from 12V to 24V to power external communication device. e.g. Printer

- 1 x Intrinsically safe RS485 interface to SCS printer port. RS485 signal converted to RS232 which can be interfaced to a standard textprinter with DTR flow control or printers with bi-directional communication
- 1 x Intrinsically safe RS485 interface to SCS communication port. RS485 signal can be routed through to provide a RS485 interface to a secondary on truck computer.

Alternatively the RS485 interface can be routed through 2 RS232 interfaces for communication to a GPS or computer. RS485 to RS232 interfaces can be selected for Baud rates of 2400, 4800 or 9600 bps.

### BACK-UP POWER
NiMH Nickel-metal hydride battery pack (4 Ah). Standby time: 72 hours under preload condition. Battery management controlled by SCS electronics.

### OVERFILL
Can interface to Two wire and Five wire optic overfill sensors. (Up to 12 compartments)

### APPROVALS
The Safety and Control System has ATEX approvals for operation in hazardous locations. The system has been tested for conformance with the following assessment standards:

**SCS-300 Series Safety and Control System**
Sira 09ATEX2127X
Ex e ib [ia] IIA T4 (Tamb = -20°C to 60°C)

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**API-300 Sensor**
Sira 09ATEX2138X
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**Vehicle Communications Interface (VCI-200)**
Sira 02ATEX2117X
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**MAN-300 Sensor**
Sira 09ATEX2138X
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**95/54 EC Directive : 1995 : Radiated Immunity**
**IEC 61000-4-2 : 1999 : Electrostatic Discharge**
**ISO 7637-2 : 1990 : Conducted Immunity**
**ISO 7637-3 : Coupled Immunity**

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