# Metermatic

SEALED PARCEL DELIVERY SYSTEM (SCS 400)

Metermatic's Sealed Parcel Delivery system and innovative, powerful monitoring and analyzing software provide you with an effective tool to ensure that you receive and record detailed and accurate information regarding any changes in the load status. The system will allow you to analyse any irregular events relating to the loading, transporation and unloading of the parcel. The system is in full accordance with EN15208

- Uniquely numbered sensors assigned to the vehicle
- All vehicle compartment inlets and outlets continuously monitored
- Live on-line information on the status of all sensors and compartments
- Real time detection and recording of every opening or closing of any loading or unloading points as well as bottom valve sensor movements - date, time and position stamped and stored
- Real time monitoring of compartment retain and (optional) overfill sensors continuously records compartment status
- SMS and/or e-mail alerts when unauthorized events occur
- Driver procedure monitored to ensure correct loading / unloading procedure is followed
- Product contamination prevented / limited
- The CAN protocol ensures robust and secure data communication between the sensors and the SCS monitor.
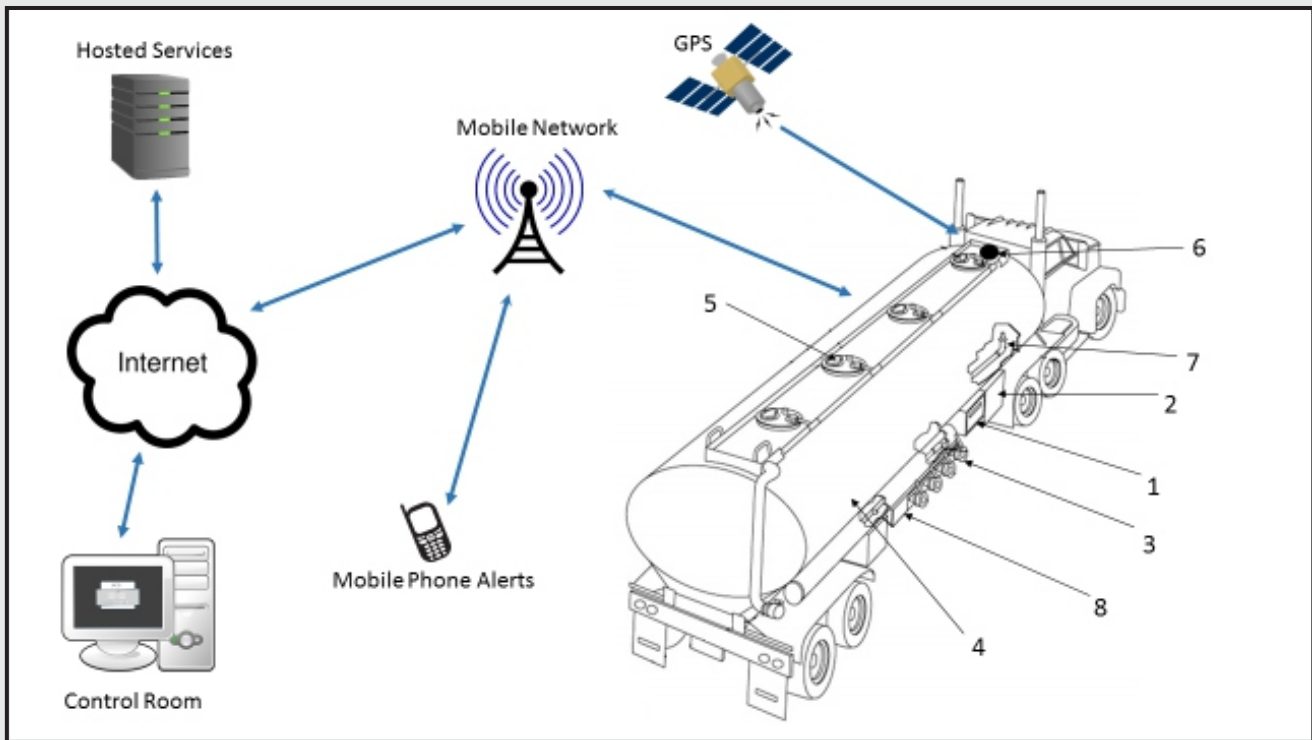
SCS Systems Components

1. SCS Monitor
    The SCS Monitor manages the system by monitoring the sensors and recording each opening and 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, time and position stamped and stored in the internal memory.

2. Pneumatic interface
    Used to interface between the pneumatic valves and the SCS Monitor.

3. API Sensor
    The API sensor fitted to the API adaptor indicates if the API adaptor is open or closed as well as if there is liquid in the manifold.

4. Retained Sensors
    An optic sensor fitted to the bottom of each compartment is used to detect any product left in the compartment.

5. Manhole Sensor
    The manhole sensor mounted on the manhole of each compartment detects when the manhole is opened and relays this to the SCS monitor.

6. Reference Sensor
    The reference sensor mounted on the top of the trailer senses the inclination of the trailer to prevent the unloading of product should the pitch and roll of the trailer exceed a set inclination.

7. Bottom Valve Sensor
    The bottom valve sensor monitors and records opening and closing of the bottom valve.

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

The SCS is a Sealed Parcel Deliver (SPD) 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. As the SCS system is a self contained system there is no requirement for equipment to be installed on the truck.

Once the compartment has been electronically sealed the sensors will continuously monitor all vehicle compartment inlets and outlets as well as bottom valve movements and any opening or closing of any of the vehicle's loading or unloading points is detected, Date, Time and Position stamped and recorded by the SCS monitor. The CAN protocol ensures robust and secure data communication between the sensors and the SCS monitor. All sensors are uniquely numbered and assigned to a vehicle thereby preventing the substitution or swapping of sensors.

If any of the compartment inlets or outlets are opened the electronic seal will be broken, system will immediately report to the host system which can send out alerts via SMS and/or e-mail should this event be unauthorised. Further, geofences can be uploaded into the host system in order to set up mobile text and e-mail exception alerts should the defined geographic boundaries be exited.

This data is transmitted via mobile network to the host system where sequences are created from the transmitted events. These sequences are displayed in the host system which is accessible to users via an easy web interface and provides useful information for the customer to analyse vehicle/driver operation.

Driver procedure can also be monitored to ensure the correct loading / unloading procedure has been followed. Any deviation from the correct sequence of events is flagged in the host system for attention.

Product contamination at loading is prevented / limited by preventing the loading of a compartment that has retained product.

Product contamination at unloading is reduced by prompting the driver to select and confirm that the correct compartment and product will be off loaded into the correct underground tank.

As an option the SCS400 system has a secure iButton which cannot be cloned or copied. Typical uses would be as a Manager tag to Manager Seal a vehicle or provided to the forecourt owner to accept fuel deliveries. It can be customized depending on customer requirements. The iButton is programmed to include the unique identity of the holder which information is linked to the event when the iButton is used and transmitted to the host system for audit and security purposes.

HOST SYSTEM

Example of live on-line information available

Real Time Information

Vehicle Registration : AA11BBGP
Status : Connected
Time Updated : 2016-04-22 05:36:08 AM
Speed : 0 km/h
Position : -26.1113533333 28.1364300000
Location : Metermatic
Signal Strength : 27

Expand all   Collapse all   Refreshing (6s)

Compartment 1
- Status - Empty
- Compartment - Dry
- API - Dry
- API - Closed
- Manhole Cover - Closed
- Bottom Valve - Closed

Compartment 2
- Status - Empty
- Compartment - Dry
- API - Dry
- API - Closed
- Manhole Cover - Closed
- Bottom Valve - Closed

Event List

View ALL

Date	Event	Status	Latitude	Longitude	Speed	Location	View
2016-08-29 08:47:29 AM	Bottom Valve Sensor	Open	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:48:07 AM	API Sensor	Open	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:48:07 AM	Compartment Status	Unsealed	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:48:09 AM	API Optic	Wet	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:48:36 AM	Retain Sensor	Wet	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:48:36 AM	Compartment Status	Loading	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:51:06 AM	Bottom Valve Sensor	Closed	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:51:23 AM	API Sensor	Closed	-26.1113533333	28.1364300000	0	Metermatic	VIEW
2016-08-29 08:51:23 AM	Compartment Status	Sealed	-26.1113533333	28.1364300000	0	Metermatic	VIEW

TECHNICAL SPECIFICATIONS

Power Requirements	:	24VDC± 15%
Battery Backup	:	Lithium-Ion battery pack (2600mA/h) with battery management
Overfill Sensors	:	Interfaces to up to 10 5-Wire overfill sensors
Retain Sensors	:	Interfaces to up to 12 2-Wire retain sensors
Communication	:	1 x RS232 / RS485
		1 x RS232
Inputs	:	2 x Proxy sensors
Displays	:	2 x Graphical LCD (240 x 160) with backlight
Keypad	:	16 Key metal & vandal proof
Enclosure	:	Powder Coated Cast aluminium
		IP65
Memory	:	4Mb non-volatile memory. Stores up 100000 events.
Sensors	:	Interfaces to up to 24 API, Manhole and Bottom Valve sensors
Operating Temperature	:	-20ºC to +60ºC

APPROVALS

The SCS system has IECEx approvals for operation in hazardous locations.

SCS Monitor (SCS-400)	IECEx ICS 15.0026X Ex d ia [ia Ga] [ib Gb] IIA T4 Gb -20ºC to +60ºC
API Sensor (API-400)	IECEx ICS 15.0009X Ex ia IIA T4 Ga -40ºC to +60ºC
Manhole Sensor (MAN-400)	IECEx ICS 15.0009X Ex ia IIA T4 Ga -40ºC to +60ºC
Bottom Valve Sensor (BVS-100)	IECEx ICS 15.0009X Ex ia IIA T4 Ga -40º to +60ºC
Reference Sensor (REF-400)	IECEx ICS 15.0009X Ex ia IIA T4 Ga -40ºC to +60ºC
Remote I/O Unit (RI0-200)	IECEx ICS 16.0005X Ex e mb ib [ibGb] [iaGa] IIA T4 Gb -40ºC to +60ºC

IEC   IECEx

Vs.1 SCS400 09.2016

Subject to change without notice