



SC414 Cellular Dialer User Manual

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Suite 2, Level1; 12 Waterloo Road
Macquarie Park NSW 2113 Australia
(ACN 054 993 529)

Phone +61 2 8877 6060

Fax +61 2 8877 6099

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Change History

Revision	Date	Description of Change	Prepared By	Approved By
1	2009-12-02	Release for FCC Certification	JH	MN
2	2013-08-07	Revised corporate address. Added RF Exposure information	JH	MN
3	2013-09-02	Clarified model numbering in response to TCB query.	JH	MN

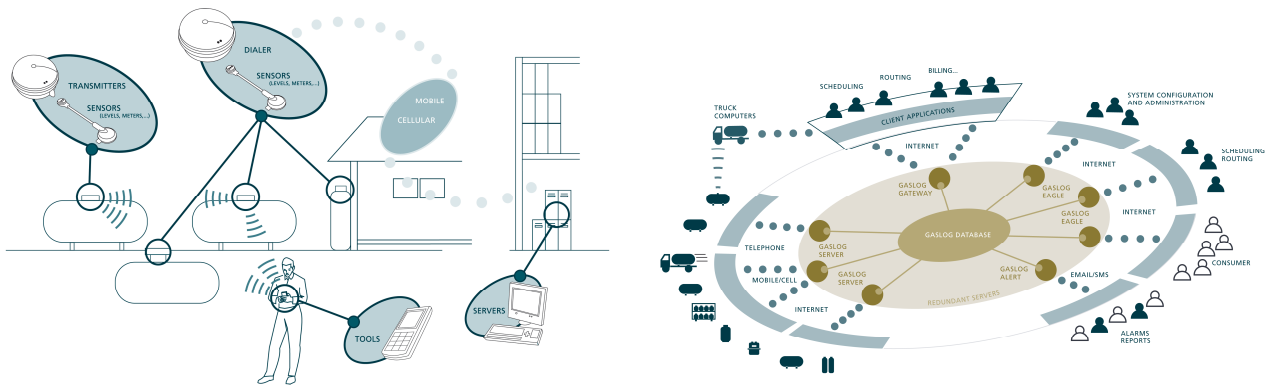
1 OVERVIEW

1.1 GASLOG System

The GASLOG System is a telemetry system designed to provide continuous monitoring of gas tank installations. Tank level, meter reading, and other status information is transferred from the remote site to the enterprise database according to a defined reporting schedule.

Sites communicate with a Server using the mobile telephone network (GSM/GPRS or CDMA, depending on model). The Server stores the site information in an industry standard SQL database that can easily be integrated into other processes in the supply chain.

The GASLOG system is highly scalable and capable of handling hundreds of thousands of customers, sites and tanks.



GASLOG System Architecture

1.2 GASLOG Model Numbering

SC414anrst – Cellular Dialer			
a =	A = ANZ (IECEX)	B = EEC (ATEX)	C = USA (AEX)
n =	6 = 868Mhz Long Range Type 2	7 = 916Mhz Long Range Type 2	
r =	3 = GSM 900/1800	4 = GSM 850/1900	5 = GSM 850/900/1800/1900
	6 = GSM + UMTS/HSPA	7 = 1xRTT CDMA	8 = 1xRTT + EVDO CDMA
s =	1 = 2 x Universal Input (3V)		
t =	1 = 2G GSM Type 1	2 = 2G GSM Type 2	3 = 3G GSM Type 1
	4 = 1xRTT CDMA Type 1	5 = 1xRTT + EVDO CDMA Type 1	



1.3 GASLOG Site Equipment

Each GASLOG cellular site consists of two primary components:

SC414 Cellular Dialer. Connects to sensors and performs data logging and Server communications via a cellular network.

Sensor(s). Senders provide locally wired tank level information for the SC414 Cellular Dialer.

2 SC414 CELLULAR DIALER INSTALLATION

NOTE: This product should only be installed by qualified personnel.

2.1 Overview

The SC414 Cellular Dialer is specifically designed to mount on LP-Gas tanks and connect to existing tank float gauges, eliminating the need for expensive intrinsic safety barriers and wiring to the tank. The SC414 periodically communicates with the GASLOG Server via a cellular network, transferring all the recorded tank level and gas usage data to the Server.

2.2 Location

The location of the Dialer is a prime consideration.

Not close to pipes, metalwork or other solid obstacles (other than the body of the tank upon which it is mounted).

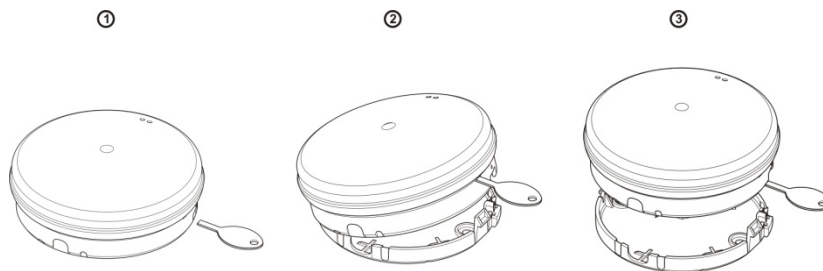
As high off the ground as possible.

The location should minimise the chance of the Dialer being subject to physical shock or vibration.

NOTE: The cellular network signal strength is often improved by mounting the Dialer higher or further away from metal objects.

2.3 Install Sender(s)

The Dialer comes with a mounting bracket attached to ease fixing of the Dialer in place. Detach the bracket using an SC663A Removal Tool.

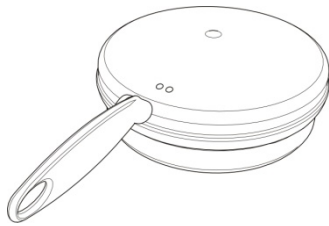


Detaching the mounting bracket

The underside of the Dialer contains two Field Sensor interface connectors and the battery compartment. Plug the cable from the Sender to one of the Field connectors.

2.4 Activation

To install the Dialer the SC414 needs to be manually activated from its normal power down state. This is done using the SC664A Activation Tool. The activation point is on the side of the case near the LEDs, as shown in the figure below. When the Activation Tool is sensed by the SC414 the red LED will illuminate.



SC414 Activation



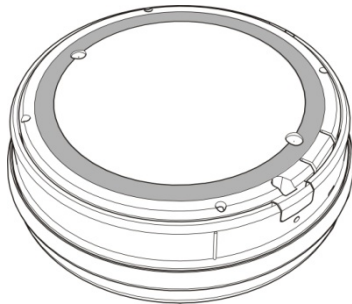
SC664A Activation Tool

The SC414 will retrieve its operational parameters from the GASLOG database during its initial activation. Configuration parameters are verified by the GASLOG database and may be queried using the GASLOG Explorer or EAGLE software tools.

2.5 Mounting a Dialer to a Tank (Adhesive Method)

Re-attach the mounting bracket to the Dialer.

Turn the Dialer upside down and apply adhesive to its base.



The mounting bracket has a defined channel moulded in, along which adhesive may be dispensed.

Turn the Dialer upright and press it lightly down onto the tank surface.

Maintain the Dialer in position until the adhesive cures

2.6 Mounting a Dialer (Screw Method)

NOTE: Do not screw into a tank!

The mounting bracket incorporates moulded features, in the form of bosses and break-out holes, to aid the location of mounting screws.

Choose a self tapping screw appropriate for the material that the structure is made from.

Hold the mounting bracket against the locating surface and, screw through the break-out hole and into the structure.

With the bracket secured in place, attach the Dialer by locating the bracket's latching features into the SC414 case and pressing the SC414 onto the bracket until the latch audibly "clicks" into place.

3 MAINTAINING THE SC414 CELLULAR DIALER

3.1 Inspection and Cleaning

The following should be inspected every time the tank is filled:

Housing is clean and has no cracks or significant abrasions

Mounting plate is securely fastened to the mounting surface

Outer sheath of the sensor cable(s) are not damaged

Sensor(s) and Meter(s) are properly fitted and fixed in place

WARNING: Potential electrostatic charging hazard:

Clean housing with damp cloth only to avoid static discharge

Do not use solvents

3.2 Battery Replacement

If the battery needs replacement, it must only be replaced with an approved cell type. Contact Silicon Controls for approved battery specifications (refer to document SP000017). Refer to Silicon Controls' publication TN00007 for the battery replacement procedure.

4 FCC PART 15 COMPLIANCE

GASLOG equipment has been tested and found to comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

GASLOG equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user may try to correct the interference by one or more of the following:

- Reorient or relocate the receiving antenna of the radio or television.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a different branch circuit than that of the receiver.
- Consult the dealer or an experienced radio/TV technician.

The user may find the following booklet helpful:

- *How to Identify and Resolve Radio-TV Interference Problems*

This booklet is available from the US Government Printing Office, Washington, D.C. 20402.

WARNING: changes or modifications to GASLOG equipment not expressly approved by Silicon Controls could void the user's authority to operate the equipment.

4.1 RF Exposure Information

This device meets the government's requirements for exposure to radio waves.

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.