



Conservancy Tank & Elec Meter Monitor

Keypad entry commands:

All commands consist of a letter and a digit

- A1 Enter electricity credits (kWh with no decimals) followed by #
- A2 Set user's cell number. Must be in this format: 0824191234 followed by #
- A3 Set impulse/kWh (normally 1000 or 800) followed by #
- A4 Reset default PIN (can only be done by agent)
- B1 Turn on geyser relay
- B2 Turn off geyser relay (in non latching mode)
- B3 Open door
- B4 Change geyser latching mode
- C1 Reset all flags
- D1 Show stored EEPROM parameters:
user's cell number, impulses per kWh, electricity credits.
- D2 Not used yet
- D3 Send a test SMS "Test"
- D4 Get airtime balance
- * Clear keypad entry and clear display
- # Save the number entered

SMS (received) commands:

All are in lowercase and must begin with * and end with # with no spaces:

- *elec# Get elec credit balance and return SMS
- *gon# Geyser on
- *goff# Geyser off (in non latching mode)
- *reset# Resets all flags
- *atime# Get SIM card airtime balance and return SMS
- *tank# Get tank status and return SMS, returns "Not full, Nearly full, or Full
- *doorxxxx# Open door strike lock where xxxx is the user pin
- *pinxxxxyyyy# Changes user pin where xxxx is the old pin and yyyy the new pin

Things that happen by automatically:

- On boot-up: - displays "Booting Sim800" if it finds it, displays "AT OK"
- displays "Check 4 Netwk " Checks for cell network, if it finds it, displays "Network OK"
 - displays "MemFree: " and the available free memory
 - displays "imp/kWh: " and the current imp/kWh rate
 - displays "Cell Num: " and the saved cell number if set
 - displays "Ready..."

Tank levels nearly/full – will displays a message on screen, beeps and send a SMS.

12V Battery low – displays message and sends a SMS

If the tank probes are clear for more than 1 hour the level flags get reset

When the number of flashes from the electricity meter equals the saved impulses/KWh the available electricity credit gets decremented by 1 and displayed.

When the electricity credit falls below 100 units a SMS warning gets sent.

If a cell number has no traffic for a certain period, Vodacom nukes that number. To prevent this, the unit sends out a status SMS periodically.

When a minute has elapsed, the remaining electricity credit is displayed. After a few minutes the current usage over the preceding minute is updated and displayed below the credit as W/minute. (1000W = I unit).

When the unit's DC supply falls below 11V an SMS gets sent.

LED's on front panel from left to right:

Purple	door latch relay
Blue	echo of Electricity meter flashing LED
Red	poop tank full
Yellow	poop tank 80%
Green	geyser relay

Initial setting up:

Before the unit can function properly, 3 parameters must be entered. These are saved in non volatile memory and need not be set again unless there is a change.

- 1) Set the cell number to which SMS must be sent (04)
- 2) Set the impulses per kWh (this is on the label on the pre payment meter, usually 1000 or 800)
- 3) Enter the electricity credits as shown on the pre payment meter, this needs to be updated every time you enter new voucher into your meter. Ignore decimals.

The unit is set as default, to pulse the geyser relay for ½ sec, this can be factory set to stay on until an off command is entered or received if a non latching contactor is used.

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