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## SMS / text commands

Text commands can be issued by SMS, serial port (DIAG) or IP (App/Web/Perl). This overview does not cover all commands and details, please read the user guides for more info.

### Notes:

- Disable automatic spelling correction.
- Ensure phone SMS encoding is set to 7 bit GSM (8 or 16 bit not supported).
- Use exactly one blank to separate arguments.
- Do not separate the „?“ from a query command (e.g. „SERVER?“).
- Case is irrelevant on commands (PASS = pass) but may be relevant on arguments (i.e. login, password, ...).
- Wait for acknowledgement of each command sent before sending the next. If you get no reply, check spelling and try again.

## OVMS configuration

### Basic setup

Command	Function
REGISTER <i>password</i>	Register sending mobile phone as primary user (only SMS). Initial password is "OVMS".
PASS <i>newpassword</i>	Change REGISTER password (only from registered phone)
MODULE <i>vehicleid units channels cartype</i>	Set vehicle id (= server login), units ("M" / "K"), notification channels ("SMSIP") and car type

Command	Function
	("RT") <i>Note: vehicle password set by SERVER command</i>

## IP setup (GPRS)

Command	Function
GPRS <i>apn apnuser apnpassword [dnsip]</i>	Set APN config; use "-" for empty user/password/DNS <i>Note: DNS normally not needed</i>
SERVER <i>address vehiclepassword paranoidmode</i>	Configure server connection; paranoidmode "-" or "P" (end-to-end encryption = server cannot decode data, no logs etc.) <i>Note: vehicle login set by MODULE command</i>

## Troubleshooting

Command	Function
VERSION	Query firmware version
DIAG	Show LED and communication status (see "Network-State-Machine.pdf")
MODULE?	Query module config
GPRS?	Query APN config & GPRS status
SERVER?	Query server config & status
PARAMS?	Query all parameters
FEATURES?	Query all features
RESET	Restart the module

## Twizy configuration

### Range & charge alerts

Command	Function
RANGE <i>maxrange</i>	Set your max range (in user units) at 100% SOC & 20 °C
CA <i>range soc% S N Ln</i>	Set charge alerts/limits, stop and power control. Parameters and order are optional, only given values will be changed. Give sufficient range in user units and/or SOC. Stop control may be either "S" = stop or "N" = notify. "L" = set power level (n=0..7, 0=off, see feature #7).
CA <i>R</i>	Clear (reset) charge alerts/limits, stop and power control.

### Feature map

Att: Features 0-7 are volatile/lost over reboot!

Command	Function
FEATURE 1 <i>kickdownthreshold</i>	Kickdown sensitivity (default 35, lower value = faster activation)
FEATURE 2 <i>kickdowncompensation</i>	Kickdown pedal compensation point (default 120)
FEATURE 6 <i>chargemode</i>	Set charge limit mode: 0=default (notify), 1=stop charge when reaching charge limits
FEATURE 7 <i>chargepowerlevel</i>	Set max charge power level (default 0 = off), level 1..6 = ~300/600/900/1200/1500/1800 W
FEATURE 8 <i>gpsstreaming</i>	<ul style="list-style-type: none"> <li>0 = no location streaming, GPS log entry once per minute</li> <li>1 = location streaming every 2 seconds, GPS log entry per minute</li> <li>2 = no location streaming, GPS logging every 5 seconds</li> <li>3 = location streaming every 2 seconds, GPS logging every 5 seconds</li> </ul> <p>If you don't need App streaming, mode 0 is perfect for normal resolution tracks, and mode 2 is perfect for high resolution track logging.</p>

Command	Function
FEATURE 9 <i>minsoc</i>	Low SOC warning threshold (default: 0)
FEATURE 10 <i>sufficientsoc</i>	Charge notification by SOC (in %)
FEATURE 11 <i>sufficientrange</i>	Charge notification by range (in user unit)
FEATURE 12 <i>maxrange</i>	Range (in user units) at 100% SOC & 20 °C
FEATURE 13 <i>batterycapacity</i>	Running average (last 10 charges) capacity value (percentage), 0 = clear <i>Note: shown as integer, but stored as float</i>
FEATURE 14 <i>communicationflags</i>	Communication control: add... <ul style="list-style-type: none"> <li>• 2 = suppress "Access Denied" SMS</li> <li>• 4 = suppress all outbound SMS</li> <li>• 8 = suppress vehicle alerts</li> <li>• 16 = suppress vehicle info notifies</li> <li>• 32 = suppress times in SMS responses</li> <li>• 64 = send charge start notifications</li> </ul>
FEATURE 15 <i>canbusflags</i>	CAN bus access control: add... <ul style="list-style-type: none"> <li>• 1 = enable CAN write access</li> <li>• 2 = disable emergency CFG RESET</li> <li>• 4 = disable kickdown</li> <li>• 8 = disable auto power adjustment</li> </ul>

## Twizy status

Command	Function
STAT?	Query battery state of charge (SOC) and capacity, range, charge status, odometer
GPS?	Query GPS position
TEMPS?	Query temperatures
CA?	Query charge alert setup (features 10+11), charge status & charge time estimations for alerts and full charge
RANGE?	Query max range setting in user units (feature 12)
POWER	Show power efficiency (trip report)
POWER T	Show power usage sums
BATT	Show battery alert and watch status
BATT V	Show battery voltage levels
BATT VD	Show battery cell voltage deviations

Command	Function
BATT T	Show battery temperatures
BATT TD	Show battery module temperature deviations

## SEVCON tuning

### Notes:

- You need to enable CAN write access (FEATURE 15 1).
- Some commands use the STOP mode, the Twizy may signal that and beep, that's normal.
- If stuck in STOP mode, restart Twizy without entering GO, wait for 10-15 seconds.
- 3 successive CAN bus errors (for example pushing button D/N/R before GO) will cause an emergency CFG RESET. If your Twizy has a component problem or is used by inexperienced drivers, you may want to disable this by FEATURE 15 3.

## Macro settings

Macro commands automate the tuning process and can easily be reset.

Command	Function
CFG SPEED <i>max_kph warn_kph</i>	Set speed limit and warn level. max_kph: 6..111, default 80 (T45: 45) warn_kph: 6..111, default 89 (T45: 56) <i>Note: needs ON before GO</i>
CFG POWER <i>torque power_low power_high current</i>	Set torque, power and current levels. <u>With current</u> : torque: 10..254 (%), default 100 power_low: 10..254 (%), default 100 power_high: 10..254 (%), default 100 current: 10..123 (%), default none <i>Note: needs ON before GO</i>
CFG DRIVE <i>powerlevel autopower_ref autopower_min kickdown_threshold kickdown_compensation</i>	Set drive power level, optional auto power adjustment and kickdown parameters. powerlevel: 10..100 (%), default 100 autopower_ref: 0..250 (100 W), default 0/-1=off autopower_min: 0..100 (%), default 0/-1=none kickdown_threshold: 0..250, default 35 (= Feature #1) kickdown_compensation: 0..250, default 120 (= Feature #2)
CFG RECUP <i>neutral brake autopower_ref autopower_min</i>	Set recuperation power levels, optional auto power adjustment. neutral: 0..100 (%), default 18 (T45: 21) brake: 0..100 (%), default = neutral% autopower_ref: 0..250 (100 W), default 0/-1=off autopower_min: 0..100 (%), default 0/-1=none
CFG RAMPS <i>start accel decel neutral brake</i>	Set rates of torque demand changes (higher means faster).

Command	Function
	start: 1..250 (%), default 40 (T45: 30) accel: 1..100 (%), default 25 (T45: 21) decel: 0..100 (%), default 20 neutral: 0..100 (%), default 40 brake: 0..100 (%), default 40
CFG RAMPL <i>accel decel</i>	Set rpm change limits for ramps. accel: 1..100 (%), default 30 = 6000 rpm/s decel: 0..100 (%), default 30 = 6000 rpm/s
CFG SMOOTH <i>level</i>	Set smoothing level. level: 0..100 (%), default 70
CFG TSMAP <i>map trq1@spd1 trq2@spd2 trq3@spd3 trq4@spd4</i>	Change torque/speed maps. map: D = Drive, N = Neutral braking, B = Footbraking trq1..4: torque 0..100 (%) spd1..4: speed 0..120 (kph) Defaults: D: 100@33 100@39 100@50 100@66 N,B: 100@33 80@39 50@50 20@66 <i>Note: needs ON before GO</i>
CFG RESET	Reset all macro settings to their default values. <i>Note: needs ON before GO (else partial)</i>
CFG CLEAR	Clear the SEVCON fault & min/max logs.

## Profile management

A profile stores a combination of macro settings and can be loaded by command (or by button if using a SimpleConsole). The OVMS can store 3 custom profiles in EEPROM plus the current SEVCON working set in RAM.

Command	Function
CFG INFO	Output currently active profile slot# and working set parameters for these commands: SPEED, POWER, DRIVE, RECUP, RAMPS, SMOOTH
CFG SAVE <i>slot</i>	Save the current working set into an EEPROM slot. slot: 1..3
CFG LOAD <i>slot</i>	Load a profile slot into the current working set. slot: 0..3, 0=factory default config, 1..3=custom profile
CFG RESET <i>slot</i>	Reset a profile slot to the default values. slot: 1..3: reset EEPROM profile directly ...else: reset working set
CFG GET <i>slot</i>	Get (download) a complete profile base64 encoded.

Command	Function
	slot: 1..3: get EEPROM profile directly ...else: get working set
CFG SET <i>slot base64data</i>	Set (upload) a complete profile from a base64 encoded string (counterpart to CFG GET). slot: 1..3: set EEPROM profile directly, no SEVCON access ...else: set working set & try to apply changes to SEVCON base64data: encoded profile from CFG GET or cfgconv ...omit/empty = RESET profile

#### Base64 web utilities:

- <http://dexters-web.de/cfgconv>
- <http://dexters-web.de/cfgedit>

## Temporary speed limits

Command	Function
LOCK <i>kph</i>	Immediately and persistently limit the maximum speed. If kph is lower than the default reverse speed (~10 kph), the reverse speed will also be limited.
UNLOCK	Clear the speed lock and reset maximum speed to the current profile configuration. If locked by valet mode, the valet trip length will be extended by 1 km but stay active.
VALET <i>km</i>	Activate valet mode and set the allowed trip length in km. Speed will be restricted to 6 kph when exceeding trip length. Default trip length = 1 km.
UNVALET	Clear valet mode trip length restriction. If a speed lock is currently active, also clears the lock.

## Low level access

These commands provide direct access to the SEVCON configuration objects (SDO = service data object, see CANopen standard).

*Att: no backup, no easy reset, note values or save logs!*

Command	Function
CFG PRE	Enter pre-operational state ("STOP", needed for some SDOs). <i>Note: only necessary for few SDOs; see FAQ</i>

Command	Function
CFG OP	Enter operational state. As an alternative, just switch the Twizy off for 2-3 seconds, then on again & wait for 10-15 seconds.
CFG READ <i>index_hex</i> <i>subindex_hex</i>	Read CANOpen SDO object numerical contents (displays hexadecimal and decimal value). <i>index_hex</i> : SDO address (hexadecimal) <i>subindex_hex</i> : SDO field (hexadecimal)
CFG READS <i>index_hex</i> <i>subindex_hex</i>	Read CANOpen SDO object string contents. <i>index_hex</i> : SDO address (hexadecimal) <i>subindex_hex</i> : SDO field (hexadecimal)
CFG WRITE <i>index_hex</i> <i>subindex_hex</i> <i>value_dec</i>	Write CANOpen SDO object. <i>index_hex</i> : SDO address (hexadecimal) <i>subindex_hex</i> : SDO field (hexadecimal) <i>value_dec</i> : new value (decimal)
CFG WRITE0 <i>index_hex</i> <i>subindex_hex</i> <i>value_dec</i>	Write-only CANOpen SDO object (i.e. no READ before write). <i>index_hex</i> : SDO address (hexadecimal) <i>subindex_hex</i> : SDO field (hexadecimal) <i>value_dec</i> : new value (decimal)

## Low level examples

Command	Function
CFG READS 1008 0	Read SEVCON firmware name (string)
CFG READS 1009 0	Read SEVCON hardware version (string)
CFG READS 100A 0	Read SEVCON software version (string)
CFG READ 1018 3	Read SEVCON dictionary version (hex)
CFG WRITE 4623 03 0	Disable battery / BMS power protection (power limiter) <i>ATT: voids warranty on rented battery!</i> <i>Activate auto power on DRIVE &amp; RECUP to protect battery!</i>
CFG WRITE 3813 12 5000	Disable SEVCON low SOC power cutback <i>Note: BMS protection still applies unless disabled, else use auto power on DRIVE to protect battery!</i>
CFG READ 2870 06	Read current BMS discharge (=drive) power limit: $power_{kW} = \frac{value_{dec}}{256}$
CFG READ 2870 07	Read current BMS charge (=recup) power limit: $power_{kW} = \frac{65536 - value_{dec}}{256}$



See "Twizy-SDO-List.pdf" for a selection of relevant SDOs or SEVCON DVT master dictionary spreadsheet for complete SDO list & documentation.