

# CU-07 TRACER unit

## User manual and unit setting instructions

The **CU-07 Tracer unit** is a device which uses a GPS receiver to detect the position of a car, a motorcycle or cargo and transmits it to a web portal via a GSM network. The web portal allows further data processing (online position monitoring, creation of a vehicle logbook, etc.). The unit uses an integrated accelerometer which detects movement and automatically controls the commencement and termination of recorded journeys. Simply speaking, if the unit is in motion, it records its geographical position and attempts to transmit it to a collecting server in real time. If the attempt to send the data fails, the unit saves it into its internal memory and sends it later.

### The unit indicates its status with an LED indicator.

Slow flashing	Logging into the system or the GPS signal has been lost
Rapid flashing	The unit is waiting for dialing-in to obtain its configuration (only the first connection after purchasing)
SOS flashing (...---...)	Unit failure
Permanently lit	Motion indication, the journey is being monitored
The LED is off	Journey termination or the unit's power supply has been disconnected

**Journey commencement** – the unit in idle state (a parked car) and consumes minimum power as it waits for vehicle motion. Once the vehicle starts moving (reaches a speed exceeding 3 km/h), the unit automatically switches into a mode in which it transmits data concerning the changing position of the vehicle. The commencement of a journey is signaled with a switched on LED indicator which is then lit permanently for the whole duration of the journey.

**Journey termination** – The journey recording is terminated automatically. If the vehicle stops moving for a period of time exceeding 30 seconds, the journey monitoring is paused and an adjustable countdown towards its termination begins (200 sec – 85 min., the default setting is 5 min, see 2.6.). If the vehicle does not start moving during the countdown, the journey is terminated (the LED indicator goes off) and any further motion performed after this period is considered a commencement of a new journey. When waiting in a traffic jam, the current journey can be terminated due to minimum vehicle motion in exceptional cases. When further motion is detected, the unit commences a new journey. You do not lose any data in such a case. The journey is just split into several consecutive parts. NOTE: If the unit is connected into a switchable socket in the car, then the journey in progress is terminated every time the power supply is switched off (usually when the ignition key is switched off).

## 1. Unit installation, connection and configuration

### 1.1. Unit installation and connection

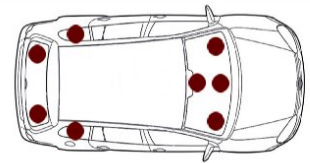
The unit can be connected to a 12 – 24 V voltage via a cigarette lighter socket (e.g. in order to test its function and to find a suitable place for installation). **However, for standard operation we recommend connecting the unit to the vehicle power supply** in a way which ensures that the voltage will not be switched off – i.e. permanent connection to a car power supply or at least into a socket with a permanent power supply. If the unit is connected into a switchable socket, it commences the journey with a certain delay as it has to detect the satellite positions and reestablish the GSM connection when the power supply is switched back on. The commencement of the journey

can then be projected as a straight line from the starting point (or better the last target point) to the place where the unit detects a correct GPS signal for the first time. The distance can range from tens to hundreds of meters.

**The unit itself should be installed in the vehicle at least 30 cm from the expected position of the driver or the passengers.** It is also advisable to install the unit **near the windows and in a horizontal position with the side marked DOWN facing the ground. The unit must not be installed on or near metal parts!!!** The device contains a GPS antenna whose correct positioning can increase the accuracy and speed with which the position of the vehicle is detected. The unit can for example be installed under the plastic parts of the dashboard, in the upper section of the boot, etc. Generally speaking, the better direct view of the sky and the horizon the unit has, the better it will project your journeys. Beware of metal-coated windscreens or possible metal dashboards (of older lorries). GPS signal reception is reduced significantly under them. In such a case the unit should be stuck to a rear view mirror or in the back of the vehicle. The unit should not be installed close to a radio receiver and loudspeakers in order to avoid the unpleasant buzzing noise in the loudspeakers when the unit is communicating (a similar effect to that caused by a mobile phone).

When the unit is connected via a connector, it is necessary to ensure that the connector cannot be ripped out of the socket (the unit would not be able to record or transmit any information about the journey). The unit can be fixed with a double-sided self-adhesive tape included in the package. Wipe the place properly before using the tape.

### Recommended places of installation



**If the unit is installed in an unsuitable place, the manufacturer cannot guarantee GPS signal reception!**

*The following applies to an installation with a permanent connection to the vehicle power supply:*

**GND – black wire**

**+U – red wire**

**We recommend having a fixed connection to the vehicle power supply done by a professional company.**

Although the device is protected with a fuse preventing its internal circuits from possible damage, we still recommend connecting its power supply via a 1A fuse which can prevent against a possible short circuit and the resulting sending of the unit to the manufacturer's service station.

### 1.2. Primary configuration of the unit

**When you have purchased the unit, you have to configure it first. To do so, you will need your mobile phone and the unit's telephone number** which you can find in the product package. We recommend configuring the unit in a place where you can receive GPS signals without any problems (i.e. in an open space and not in a garage).

The primary configuration can be done by connecting a suitably positioned unit (see 1.1) to the power supply. The unit's system LED starts flashing slowly after the connection to the voltage. All

parts of this unit are initialized during these approx. 2 minutes of flashing. If the unit is connected to the power supply for the first time after its purchase, the slow flashing **changes to rapid flashing** after the two minutes, indicating that the unit is **waiting for configuration**. When the unit has received its configuration (from your tracer service provider) it sends a confirmatory SMS reporting the successful setting to the number from which it was configured. The unit is now ready for journey recording

#### **Solving problems which might occur during primary configuration:**

**I have not received a confirmatory SMS**, even though the whole process was carried out in conformity with the instructions. Solution: try to repeat the process.

**The unit's LED indicator has started flashing SOS** in Morse code (3 dots, 3 dashes, 3 dots). Solution: a unit or SIM card failure has been detected, contact the tracer service provider.

## **2. Advanced unit configuration**

**Advanced unit configuration increases the convenience and functionality of the whole monitoring system. The configuration can be carried out via SMS messages** sent to the unit's telephone number.

Each SMS must begin with a six-digit number (the default number is 123456). **The manufacturer recommends changing this password**, see 2.1. The password should be followed with a comma and then one or more commands separated with other commas. The SMS must not exceed 160 characters.

### **2.1. Access password change**

The manufacturer recommends changing the password. **Be careful when changing the password; if you forget it, it is impossible to restart the unit to default settings. In such a case contact the manufacturer.**

**Command format:** Password,MCxxxxxxxxxxxx

where: xxxxxx is a new access password for the device

(the 6 characters should be repeated twice, only digits can be entered)

Command example:

123456,MC654321654321 (the new password will be 654321)

### **2.2. Entering drivers' telephone numbers**

If the unit is installed in a vehicle which is used by multiple drivers, it is possible to set the number of the driver who is going to drive the vehicle easily by dialling into the unit from the driver's telephone. The device memory can hold telephone numbers of up to 15 drivers who can identify themselves by dialling into the unit. The telephone number can consist of 12 digits maximum and it must be entered in the international format.

**Command format:** Password,TELx+yyyyyyyyyyyy

where: x – the unit's reference number of the telephone number (from 1 to 15);

yyyyyyyyyyyy – telephone number in international format (max.12 digits excluding the «+» sign)

Example of a command programming numbers of drivers 1 and 2: 123456,TEL1+420608234567,TEL2+420777654321

**Format of the command to erase a telephone number:**  
Password,TELx+0

Example of a command to erase driver 1's telephone number:  
123456,TEL1+0

Note: One SMS can contain multiple commands; the password is only stated at the beginning of the SMS.

### **2.3. Driver selection by dialling in**

A driver can assign himself to a journey by dialling into the unit from his telephone if his number is recorded in the unit's memory (see 2.2). The unit terminates the call automatically and the driver who has called into the unit is set for all the following journeys until another driver dials in.

### **2.4. Driver selection by an SMS command**

A driver can also be selected with an SMS command (e.g. a function for a dispatcher). In order to change the current driver's number you have to enter the following command:

**Command format:** Password,Dxx

where: xx – the two-digit number of a driver (01 to 15)

Command example: 123456,D02 (to set driver 2)

### **2.5. Journey type setting**

If you need to differentiate between various journey types (private, business, etc.), you can set it before the commencement of a journey by sending an SMS. The device enables classification into five journey types. The current journey type can be selected by sending an SMS command.

**The journey type can be changed via an SMS command without a password**, but only from telephone numbers recorded in the unit (see 2.2.). In such a case the driver's number changes automatically together with the journey type.

**Command format:** Txx

where: xx – journey type:

00 = business (default)

01 = private

02 = service

03 = foreign business (e.g. due to the price of fuel)

03 = foreign personal (e.g. due to the price of fuel)

Command example: T01 (sets a private journey) and the driver is changed according to the telephone number from which the command was sent.

**The journey type can also be changed using an SMS command with a password.** In such a case only the journey type changes - the driver remains unchanged. This command can also be sent from telephone numbers which are not recorded in the given unit (function suitable e.g. for a dispatcher).

**Command format:** Password,Txx

where: xx – journey type (see above)

Command example: 123456,T01 (sets a private journey)

### **2.6. Journey termination timer setting**

The device enables the setting of the time interval necessary for journey termination. If we set the timer to 600 sec., then the unit waits for vehicle motion detection for 10 minutes after the journey termination. If the vehicle starts moving again, the original journey continues. Otherwise the journey is terminated and the unit switches to sleep mode.

**Command format:** Password,ETx

where x – number of seconds

permitted values: 200 s. - 5100 s. (85 min.)

default setting 300 s. (5 min.)

Command example: 123456,ET600 (time-out set for 10 min.)

### **2.7. SMS command reception confirmation**

The device can confirm execution of the received SMS commands based on the following parameter setting:

**Command format:** Password,REx

where: x – can have the following values:

0 – do not confirm any received SMS commands (default)

1 – confirm with an SMS message sent to the telephone number from which the SMS command was received

Command example: 123456,RE1 (will be confirmed by SMS the number from which the SMS command was received)

## 2.8. Ascertaining the current position

The current position of the unit can be ascertained by sending a GPS command. The command requires a password. You will receive an SMS message containing information about the coordinates in degrees. If your mobile phone supports the direct browsing of links in the received messages, the SMS also includes a link to a website where you can directly view a map showing the given position.

**Command format:** Password,GPS

Example of a command to ascertain the current position:  
123456,GPS

## 2.9. Enabling SMS sending with activated roaming

The unit can confirm changes (e.g. choice of driver) by sending an SMS. Confirmatory SMS message sending is forbidden outside the national network. Enabling this function will result in increased operating costs of your unit. **The command can only be set through your monitoring service provider.**

## 2.10. Enabling data sending with activated roaming

The unit transmits data concerning the journey in progress to the server using a GPRS connection. This is forbidden outside the national GSM network. Enabling this function will result in increased operating costs of your unit.

**The command can only be set through your monitoring service provider.**

Note: If this function is not active, the data is saved in the unit and it is then transferred to the server when the unit has registered itself to the national GSM network again. You can keep more than a month of daily journeys (approx. 15 hours/day) in the memory.

## 2.11. Notification of vehicle tampering and commencement of a journey

The unit can notify you when your car is being tampered with (e.g. shocks, towing away) by calling the telephone number from which the SMS command was sent. **The notification is functional only if the unit is connected to a permanent power supply. It becomes active when the journey termination timeout has finished (see 2.6.) which is indicated by switching off the LED indicator. You can speed up the activation of this function by calling the unit's number and thus terminating the journey despite the incomplete timeout.**

Another option is a notification about the commencement of a journey (speed exceeding 3 km/h) by calling the telephone number from which the SMS command was sent. **The notification is functional only if the unit is connected to a permanent power supply, and it only becomes active when the journey termination timeout has finished (see 2.6.) which is indicated by switching off the LED indicator. You can speed up the activation of this function by calling the unit's number and thus terminating the journey despite the incomplete timeout.**

The above-mentioned "Notification" functions are not security functions and they cannot substitute a proper security system.

**Command format:** Password,Ax

where: x = 1 notification of vehicle tampering

x = 2 journey commencement notification

x = 0 notification disabled **\*(Note: see the note in chapter 2.11. "Default settings")**

Command example: 123456,A1 (the unit calls the telephone number from which the SMS command was sent for approx. 15 seconds)

## 2.12. Default settings

Default settings of the unit's settable parameters:

TELx	the drivers' telephone number list is empty
T	journey type 00 (business)
D	driver ID 01
ET	journey time-out 300 s. (5 min.)
A	dialling in (calling) 0 (disabled)
RE	SMS confirmation 0 (disabled)
MC	password set as 123456

**\* Note: when setting an SMS command concerning confirmation by calling back (see 2.7.), it is necessary to deactivate "voice mail". Voice mail accepts calls automatically even after the user's call rejection which results in increased operating costs for the unit's SIM card !**

## 3. Technical specification

Power supply voltage	= 8 - 30 V
Maximum power consumption	200 mA /12 V
Nominal current in GPRS mode	120 mA /12 V
Standby consumption	15 mA /12 V
Dimensions	160 x 42 x 19 mm,
Weight	84 g
Operating temperature range	-20 to +80°C
Comply with	ETSI EN 301 511, ETSI EN 301 489-1, EN 60950-1

*Intended for connection to a 12V or 24V power supply. The unit is intended for operation in road vehicles.*



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JABLOTRON ALARMS a.s. hereby declares that the CU-07 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC and ECE Regulation No. 10.03. The original of the conformity assessment can be found at [www.jablotron.com](http://www.jablotron.com), Technical Support section .



**Note:** Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use.

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