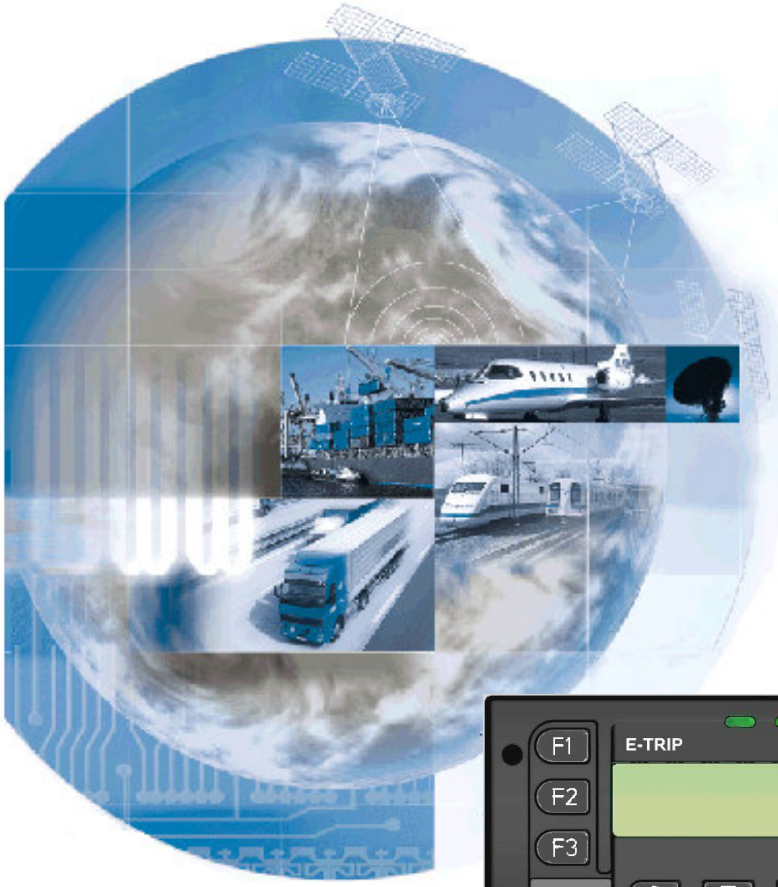


E-TRIP®

Onboard Computer
for Fleet Management

Operating Manual

Version: 2004/08/16 Order No.: 9502

Preface

Dear customer:

ELCON Systemtechnik GmbH would like to thank you for your confidence in purchasing the onboard computer **E-TRIP®**.

Please be sure to read this user manual carefully, before you bring the unit into service !

Familiarize yourself with the operation and functions of **E-TRIP®**.

Keep the user manual and other descriptive documentation for your reference.

- Should you still have questions not covered by this manual, our service partner will be happy to help you.

This user manual is subject to changes.

Copyright Notice

Printed in Germany

Trademarks

E-TRIP® is a registered trademark of ***ELCON***.

ORBCOMM® is a registered trademark of ORBCOMM

All other product names are trademarks or registered trademarks of their respective owners.

⚠ **BE CAREFUL**

Please read for your safety

Safety on the Road

⚠ **Operating the unit when driving is not allowed !**

Make sure you know how to operate **E-TRIP®** and use its functions prior to starting your trip. Certain functions that require your full attention are not accessible when the vehicle is moving. You can read the vehicle's operational data such as the oil temperature and oil pressure on the display when driving.

⚠ **While reading the display, pay sufficient attention to the road traffic.**

⚠ **Use E-TRIP® only in the pre-determined way.**

⚠ **Do not open the E-TRIP® and do not put any foreign objects into the equipment.**

⚠ **IMPORTANT NOTE** ⚠

Make sure that the smart card never remains in a hot vehicle !

STATEMENTS

1. **Statement according to FCC part 15.19:**

   This device complies 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.

2. **Statement according to FCC part 15.21:**

   Modifications not expressly approved by this company could void the user's authority to operate the equipment.

3. **Statement according to FCC part 15.105:**

   NOTE: 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. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to 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 is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

4. RF Exposure mobile:

The external antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

5. Statement according to road safety:

The use of the function ARO (Auxiliary Relay Output) of the **E-TRIP®** is not permissible in the member countries of the Economic Commission for Europe (ECE) to control the engine. It is not permitted, with the help of relay functions, to influence the control of engine management or to influence other functions affecting vehicle or road safety, in vehicles participating in public transport.

INSTALLATION

⚠ **E-TRIP® should only be installed by an authorized service center !**

⚠ **Special Note**

The maximum output power of the PSRR transmitter is 100 mW. Though this is a low power level, a minimum distance of 20 cm from the enclosure of the PSRR antenna to all persons must be kept.

⚠ **Special Note**

Using GSM functionality within North America, ONLY 1900MHz is allowed.

Antennas

For the installation of the antennas for **E-TRIP®** only the following two antennas are permissible:

1) **AEB 2400** for PSRR (DECT)
   Technical Data:

Frequencies:	2.1/2.8 GHz UMTS-BLUETOOTH
Impedance:	50 Ohms
Gain:	2.65 dBi

2) **MCA 18 90 STRIPE** for GSM
   Technical Data:
   Frequency range:

	AMPS:	824 - 894 MHz
	GSM 900:	880 - 960 MHz
	GSM 1800:	1710 - 1880 MHz
	GSM 1900:	1850 – 1990 MHz
Impedance:	50 Ohms	
Gain:	2.1 dBi	

TABLE OF CONTENTS

1 INTRODUCTION

E-TRIP® is a high-performance onboard computer for motor vehicles such as trucks, buses or cars. Having the size of a car radio, the onboard unit collects vehicle operation data, driver and environmental data and transfers them to the fleet via GSM (Global System for Mobile Communications, SMS - Short Message Service). It supports all administration tasks occurring in a modern fleet and is a basic part of a digital fleet management system.

E-TRIP® may also serve the toll collection or work as accident data recorder. The unit is able to display limit and threshold values as well as indicate alarm conditions.

E-TRIP® is a manipulation-safe unit. You are able to analyze the fuel economy of your vehicle's fleet while the driver can check the vehicle's operating data.

E-TRIP® has been designed as a modular unit. You can configure the unit according to your individual requirements.

1.1 System architecture and components

E-TRIP® comprises the following components:

- LCD (Liquid Crystal Display)
- Operation keys
- Signal generator
- LED´s
- GPS module
  for the exact location and tracing of vehicles, RSE (Road Side Equipment) is not required
- GSM (Global System for Mobile Communications) module
  for the data transfer through the mobile telephone network
- PSRR module
- ORBCOMM module (option)
- **E-TRIP Master** – the **E-TRIP**® configuration program that runs on the fleet PC
- System cards - one system card for the company - supplied by your service center
- Driver cards - one driver card for each driver

1.2 Functions

Using the full range **E-TRIP®** allows:

- to log vehicle data, tracking data and environmental data securely,
- to store these data securely,
- to transfer these data automatically and securely,
- to display data "driver-friendly", i.e. clearly and easily legible,
- to check data, and
- to control engine, fuel consumption and efficiency.

LCD (Liquid Crystal Display): two lines, each of 16 characters length, for digital readouts, menu functions and submenus, messages

Operation keys: for manual inputs, menu control, operations.

Acoustic signals: to confirm correct operation actions or signal errors.

RTC (Real-Time-Clock): battery-backed, for the correct time information, switches between standard time and daylight saving time (summer time).

GPS receiver: use of the GPS (Global Positioning System) satellite signals for vehicle's positioning, either upon request or at adjustable intervals.

PSRR: (Private Short Range Radio).The automatic data transfer between the onboard unit and the dispatcher can be realized in a short range (approximately 150 ft.).

Serial external interface: allows the connection of a temperature sensor, for example in the loading space of the vehicle.

SAE-J1708 interface: for collection of vehicle data

Acceleration and gyro sensors for three axles are important if you would like to use **E-TRIP®** as accident data recorder (future implementation).

Digital input 0/12 V: for storage and recall of the brake block erosion by using the brake pedal

ARO (Auxiliary Relay Output): Customized relay function to switch a relay via GSM.

⚠ **It is not allowed to control the motor management via this function!**

Smart card reader: for startup, driver identification, programming, service application.

2 INSTALLATION

E-TRIP® is to be installed by service personnel of a special workshop only. The correct connection and first software installation as well as configuration are reserved to specialists and mandatory for the proper and fault-free function of the unit.

The location of installation is optional and can be chosen according to your individual requirements.

Please ask your dealer for more information.

The detailed description of the installation is given in a separate document. This document is available from your vendor or service partner.

2.1 Maintenance

To clean the unit's front panel, use a clean cloth only. It should be soft, dust-laying and antistatic. Don't apply any cleaning agents in order to avoid damage of the surface.

Special cleaning measures or procedures are not required.

3 GETTING STARTED

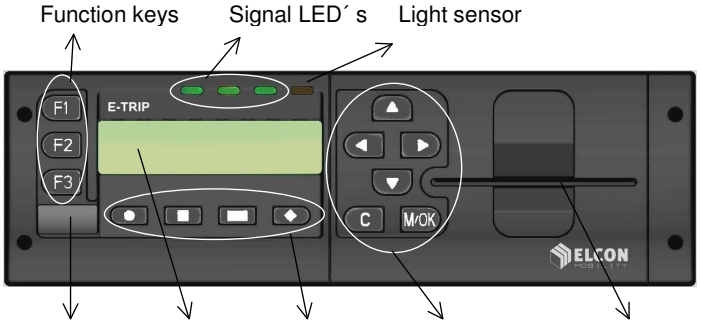


figure 1 **E-TRIP®** and its operating and signal elements

3.1 Operating Keys

E-TRIP® has 13 operating keys as shown in figure 1.

Group 1: function keys

F1 Press F1 for at least 3 s to show the detailed driver information.

F2 no function implemented

F3 no function implemented

Group 2: softkeys

● softkey 1 ▸ softkey 2

◂ softkey 3 ◆ softkey 4

Use the softkeys to operate the shortcut menus (see chapter 4.3).

Group 3: control keys

▲ cursor up ▶ cursor right

▼ cursor down ◀ cursor left

Use these keys to scroll in menus, submenus, driver information and to increment/decrement numerical values.

C Escape/Clear

- Press shortly to switch to the previous menu level, or
- to abort menu procedures, or
- for clearing entries.

M/OK Menu/OK

Press to

- switch on **E-TRIP®**, or
- invoke the main menu, or
- activate/confirm the menu selection, or
- save the values entered, or
- take over/confirm either the value selected or entered.

3.2 LED´s

Three tricolor – green, yellow and red – LED´s are located above the display (figure 1). They indicate system and error states by static and intermittent signals. For the signals and their meanings please refer to chapter 5.4 .

3.3 Bringing into service

When purchasing your **E-TRIP®**, you will receive several smart cards – a driver card for each driver and one system card. These cards need to be configured. To start with the system card, an **E-TRIP**'s individual range of functions must be defined and released in the fleet PC configuration program **E-TRIP Master** first and then in **E-TRIP®** itself.

⚠ **NOTE** The system card is the key to your system. Be sure to keep it in a safe place.

3.4 Configuring the System Card

To configure your system card with **E-TRIP Master** on your fleet PC, follow these steps:

1. Create a set of vehicle data containing the PSRR parameters as listed on the supplemental sheet you received together with your **E-TRIP®**.
2. Using the menu function *Save Database*, write all vehicle data sets you have created onto the system card.
3. Remove the configured system card from the smart card reader and proceed with chapter 3.5 .

3.5 Preparing E-TRIP®

E-TRIP® must now be registered at the fleet PC. The vehicle can be outside the radio range of the PSRR office modem as no connection to the fleet PC is being built up during this offline subscription. You need the configured system card and **E-TRIP®** will read the data from the vehicle data set automatically when you carry out the following steps:

1. Turn on the vehicle's ignition to activate **E-TRIP®**.
2. Follow the instruction on the display and insert the system card into the smart card reader slot of the unit on the right hand side (see figure 1). **E-TRIP®** will read the PSRR parameters both from the system card and from the built-in PSRR module. If they fit together, it will log-in to the fleet's PSRR office modem. Should the unit, however, be unable to read the data set, it will first produce an error code (see chapter 5.3 on page 53) on the display and then, the display text will ask you once more to insert the system card and again to attempt the fleet log-in. The successful log-in will be confirmed on the display as shown in figure 73 on page 45. See also 4.4.2 .
3. Now, remove the system card.

   The connection to the fleet PC will now be established provided that the aerial of the PSRR office modem is situated within the vehicle's radio range.
4. Connect **E-TRIP®** to a portable PC using the service cable and the socket on the lower left hand side of the unit (figure 1).
5. Start **E-TRIP Master** on your PC.
6. Download the configuration data from the PC to **E-TRIP®**.

The display will then welcome you as shown in figure 2.

figure 2 welcome screen

Should you have turned on **E-TRIP®** for the very first time after downloading the application software, the display will read as in figure 3 (left). In case you have downloaded a new application, the display will read as in figure 3 (right).

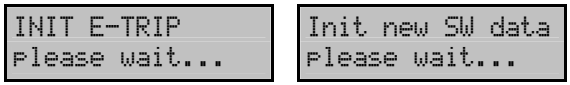


figure 3 screen after first download of application and after download of new application

All user settings will be adjusted to the default values. The configuration is then finished and **E-TRIP®** is ready to serve you !

3.6 Input PIN

Should you have no valid driver card when starting your trip, you must enter the PIN manually. This may also be necessary when you want to operate the **E-TRIP®** after the ARO (Auxiliary Relay Output) signal was sent to lock the ARO relay. This is relevant for equipment with a GSM module. To avoid manipulation, the PIN should be dynamic.

- Enter the PIN (up to 8 numerical characters) using all four cursor keys (see chapter 4.5.1).
- Confirm your entry with **M/OK.**

figure 4 input PIN

Should you need to enter your PIN because you had no driver card, you need to enter your driver ID as well (see chapter 3.7).

Once **E-TRIP®** has accepted your entries, the ARO relay is ready to operate!

3.7 Driver ID

If no driver card is inserted, the display text will ask you to enter your driver ID (up to 8 alphanumerical characters).

figure 5 input driver ID

- Enter your ID as described in chapter 4.5 .

3.8 Trip Start and Trip End

There is no need to enter the beginning of a trip. **E-TRIP®** will register the trip start automatically if there is no trip start registered after you have switched on the ignition. This is possible only after you have inserted your driver card or after you have entered the PIN together with your driver ID. Therefore, **E-TRIP®** can store your driver ID in conjunction with the time.

If you want to enter the end of your trip, you can use either the shortcut menu (see chapter 4.3) or go through the menu structure.

figure 6 input trip end

When the function is selected, the display will show the current time and date to be stored for the end of the trip.

- Invoke the menu:
  ⇨ Functions ⇨ Driving Times.. ⇨ Trip End
  and
- Press **M**/**OK** to acknowledge time and date.
  The display shows *stored.*
- If you don't want to enter the trip end time, press **C** to abort the entry.

Once you have entered the trip end, the data is written to your driver card. Only then the LED on the left hand side will signal (0.5 Hz intermittent, green) you to remove your card.

figure 7 input trip start

4 WORKING WITH E-TRIP®

E-TRIP® can be switched on by one of these actions:

- Turn on the vehicle's ignition, or
- turn on the vehicle's lights, or
- press **M/OK**, or
- wheel pulses are available at input B1, or
- the automatic acquisition of measuring values or a programmed alarm have been released through RTC.

Once you have turned on **E-TRIP®**, it will check whether an authorization to use the vehicle is available. This is the case as soon as you have inserted your driver card into the smart card reader slot of the unit. If your driver card is not available, you must enter the PIN to unlock the ARO relay instead (see chapter 3.6). In case no *Trip Start* was registered in **E-TRIP®**, enter your driver ID once (see 3.7). **E-TRIP®** will store this driver ID until *Trip End* is entered.

Initial Display

Once **E-TRIP®** has logged-in successfully (see chapter 3.5), the display shows the local time and date on the first line and

- either the speed provided that **E-TRIP®** is being used first time,
- or the driver's information displayed when **E-TRIP®** was used last

as well as the card status on the second line as in figure 8. Date and time can be set through the configuration program.

In case that **E-TRIP®** has not completed the proper shut-down procedure when turned off last time, the error code 8 will be displayed. As the file system could be damaged, please contact your service partner if this occurs. For error codes, please read chapter 5.3 on page 53.

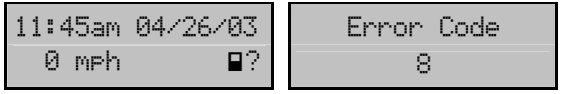


figure 8 initial display: successful and with error

Smart Card Status

A driver card or a system card may have different states that are reflected in the *card status* symbol on the right hand side of the second display line. For card states please refer to chapter 5.2 .

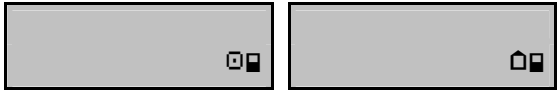


figure 9 Smart card status

4.1 Displaying Information

In the initial state **E-TRIP®** shows, depending upon configuration, up to 10 driver parameters. This driver information is indicated with the following sign ⌦.

- ⌦ Mileage Counter
- ⌦ Speed
- ⌦ Average Speed
- ⌦ Trip Odometer
- ⌦ Length of Trip
- ⌦ Fuel Consumption
- ⌦ Temperature
- ⌦ Status Display (Digital Input)
- ⌦ GPS Data
- ⌦ Vehicle Operation Data

Driver information is displayed on the left hand side of the second line of the display. In the first line time and date are displayed in nearly all driver information displays.

Press **F1** to display the complete information for approx. 3 s.

⌦ Mileage Counter

The mileage value is displayed either in km or ML (miles). Select the desired unit either during the configuration (checkbox *Miles*, see **E-TRIP - Master** manual) or through the **E-TRIP®** menu as explained in chapter 4.4.2)

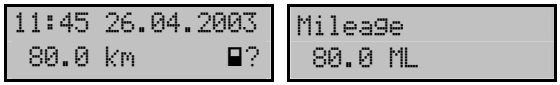


figure 10 mileage counter

⌦ Speed

The speed is displayed either in mph or km/h depending on the setting in the configuration program (checkbox *mph,* see **E-TRIP SYSTEM MANUAL**). You can adjust the unit to your local requirements as described in chapter 4.4.2 , ⇨ Speed Unit.

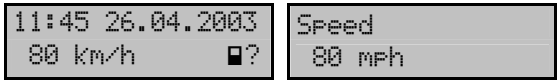


figure 11 speed

⌦ Average Speed

The average speed can be displayed either in mph or km/h depending on the setting in the configuration program (checkbox *mph,* see **E-TRIP Master** manual) or through the **E-TRIP®**, see *Mileage Counter*.

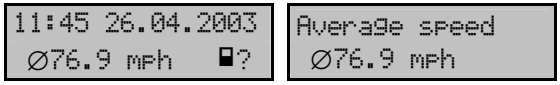


figure 12 average speed

It is possible to reset the average speed value to zero by

1. pressing **C** and
2. confirming the resulting display (figure 13) with **M/OK.**

Should you rethink your decision and not want to reset the value after step 1, press **C** once more. If you don't press any key within 30 s after step 1, the average speed value will not be reset and the previous information will be shown.

figure 13 average speed, confirm reset

⌦ Trip Odometer

The daily distance is displayed either in km or in ML depending on the setting in the configuration program (checkbox *mph,* see **E-TRIP System Manual**). You can adjust the unit to your local requirements as described in chapter 4.4.2 . The highest value that can possibly be displayed is 4294967.3 km or 2668841.9 ML.

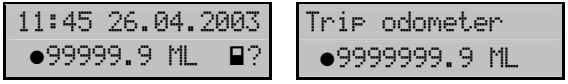


figure 14 trip odometer

It is possible to reset the trip odometer value to zero by

1. pressing **C** and
2. confirming the resulting display (figure 15) with **M**/**OK**.

Should you rethink your decision and not want to reset the value after step 1, press **C** once more. If you don't press any key until 30 s after step 1, the value will not be reset and the previous information will be shown.

figure 15 trip odometer, confirm reset

⌦ Length of Trip

The display of “Length of Trip” is intended only for the personal use of the driver. This time is independent of the “Trip time”, which is calculated from Trip Start to Trip End. “Length of Trip” is calculated only after switching on the ignition.

The length of trip is displayed in hours.

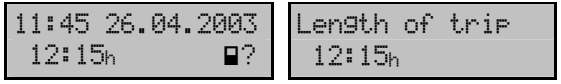


figure 16 length of trip

It is possible to reset the length of trip value to zero by

1. pressing **C** and
2. confirming the resulting display (figure 17) with **M/OK.**

Should you rethink your decision and not want to reset the value after step 1, press **C** once more. If you don't press any key until 30 s from step 1, the value will not be reset and the previous information will be shown.

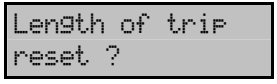


figure 17 length of trip, confirm reset

⌦ Fuel Consumption

This information requires the connection of a J1708 bus to **E-TRIP®**. The fuel consumption is displayed either in l/100 km or L/h depending on the setting in the configuration program (checkbox *mph,* see **E-TRIP System Manual**).

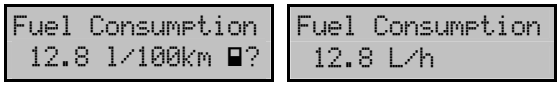


figure 18 fuel consumption

⌦ Temperature

The display of the temperature, for example in the loading space, is an option (see Cargo Temperature of E-TRIP Service Tool). It requires **E-TRIP®** equipment with a temperature sensor as well as this function to be selected in the **E-TRIP System Manual**.

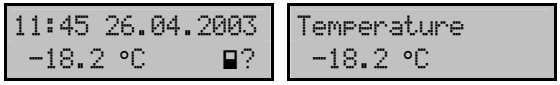


figure 19 temperature

Use the control keys ▲ and ▼ to display the lowest and highest temperatures measured since the display value was last reset to zero.

figure 20 minimum and maximum temperature values

It is possible to reset the temperature value to the actual value by

1. pressing **C** and
2. confirming the resulting display with **M/OK**.

Should you rethink your decision and not want to reset the value after step 1, press **C** once more. If you don't press any key within 30 s from step 1, the value will not be reset and the previous information will be shown.

⌦ Status Display (Digital Input)

The states of the two digital inputs available for your individual use are shown here.

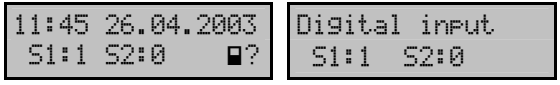


figure 21 status display (digital input)

The signals DIGIIN1 and DIGIIN2 used for this display must be connected properly.

GPS Data

GPS data helps to show the vehicle's local position. The display of GPS data requires **E-TRIP®**s equipment with a GPS module as well as the configuration of this function in **E-TRIP Master**. If **E-TRIP®** has no valid GPS data, the display will show **GPS: no signal**. If, however, valid GPS data are available, they will be displayed on one superior and one subordinate display.

GPS Data, Superior Display

Line one contains the time and date while on line two you find:

- the number of the satellites **S** that have been detected (maximum 12 satellites),
- the quality **Q** of the GPS signal (maximum 9),
- the speed and the direction (cardinal point) which the vehicle is moving to represented by one of eight arrows (resolution of 45°).

figure 22 GPS data, superior display

If the vehicle does not move, a dot is displayed instead of an arrow. An arrow pointing to the left means that the vehicle moves towards East while an arrow pointing up means that the vehicle moves towards North etc.

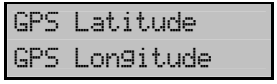
Press ▼ to read the subordinate display.

GPS Data, Subordinate Display

Line 1 displays the latitude while the second line shows the longitude of the vehicle's position.

figure 23 GPS data, subordinate display

Press ▲ to return to the superior display or **F1** to display the complete information text for approx. 3 s.



⌦ Vehicle Operation Data (SAE-J1708 Bus)

Vehicle operation data can be displayed provided that a J1708 bus exists in the vehicle and is connected to **E-TRIP®**. There are one superior and seven subordinate displays as listed in the following.

Vehicle Operation Data, Superior Display

Date and time are displayed on line 1 while line 2 shows the engine speed in revolutions per minute.

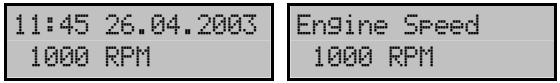


figure 24 vehicle operation data, superior display, engine speed

Use cursor keys ▲ and ▼ to display the vehicle data of the subordinate displays.

Vehicle Operation Data, Subordinate Displays

figure 25 vehicle operation data, oil pressure/boost pressure

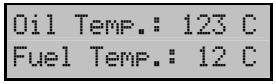


figure 26 vehicle operation data, oil temperature/fuel temperature

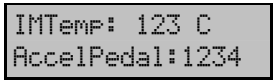


figure 27 vehicle operation data, intake manifold temperature/accelerator pedal

figure 28 vehicle operation data, cruise control status/retarder status

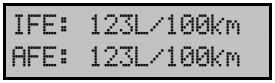


figure 29 vehicle operation data, instantaneous fuel economy/average fuel economy

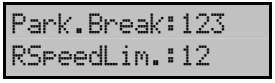


figure 30 vehicle operation data, parking brake/speed limiting status

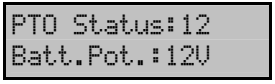


figure 31 vehicle operation data, PTO status/battery potential

4.2 E-TRIP® Setup

When

- making your individual settings,
- entering driver data, and
- sending and receiving messages

E-TRIP® guides you through a hierarchical menu structure. With three (currently) of the most frequently used functions you can be also reached directly by shortcuts (see next chapter). An overview of the complete menu structure can be found in the appendix 5.1 .

Invoke **E-TRIP®** s main menu by pressing **M**/**OK**.

- when in driver information mode and
- when the vehicle halts.

The menu will automatically shut as soon as the vehicle starts moving.

The menus and menu items are arranged in sequences. Use the cursor keys ▲ and ▼ to scroll in these sequences. Press **M**/**OK** to select the desired menu item or function. To end the current menu or menu item or return to the previous menu level, press **C**. The menu level is displayed on the upper right hand side of the display. A line of hyphens indicates that you have reached the last item of a menu. When you press ▼ you will jump to the first menu item while when you press ▲ you will return to the current menu.

4.3 Shortcut Menus

E-TRIP® has currently two shortcut menus to allow quick access to pre-defined frequently used functions when in driver information mode. The shortcut bars are invoked through the softkeys underneath the display, i.e.,

- press ● to open the first shortcut menu.

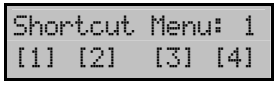


figure 32 shortcut menu 1, menu level 1

- press ▸ to open the second shortcut menu.

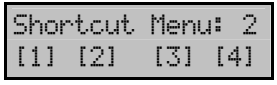


figure 33 shortcut menu 2, menu level 1

- press ◂ to open the third shortcut menu.
- press ♦ to open the fourth shortcut menu.

Using the softkeys of the **shortcut menu 1**, you will invoke the following pre-defined functions:

● key	input of *trip end, see page 26 and 14.*
▸ key	input of driver activities selected from a pre-defined list, see page 28.
◂ key	Text selection; sending message text
♦ key	send emergency call through GSM (GSM module must be installed)

Using the softkeys of the **shortcut menu 2**, you will invoke the following pre-defined functions:

● key	input of “Refuel” data, see page 28.
▸ key	input of “Drivers Daily Log”, see page 25.
◂ key	not used
♦ key	not used

The shortcut menus 3 and 4 have currently no function.

4.4 Main Menu

figure 34 main menu

Upon invoking the menu by pressing **M**/**OK**, its upper level, i.e., the main menu, will appear first. Line one displays the menu title while line two displays a menu item.

Press ▲ to reach the next menu item or ▼ to select the previous one. Once you have reached the end of the list of menu items, a line of hyphens will be displayed. Press ▼ to return to the first menu item.

To select a menu item, press **M**/**OK.** To return from a submenu to its superior menu, press **C.** The current menu level is displayed in the upper right corner of the display. When you are on the first menu level, you can shut the menu pressing **C**. When on a subordinate menu level, press **C** to reach the next superior menu level.

Pressing **C** and holding the key down at least 2 s will shut the menu and **E-TRIP®** will return to the driver information mode. This will also happen automatically if no key is operated for approx. 20 s.

The following chapters will briefly present the menus and their menu items (submenus and functions).

4.4.1 Menu: Functions

The functions menu contains menu items that can be functions or submenus. Submenus are extended by two dots at the end of the word. An overview of the functions menu can be found in the appendix 5.1 .

⇨ *Emergency Call*

To send an emergency call via GSM or ORBCOMM , either press the softkey ● and softkey ♦,

- or select the menu ⇨ Functions ⇨ Emergency Call,
- and press **M**/**OK** if you want to send an emergency call.

figure 35 emergency call

Depending on the configuration, this message can be sent to the following recipients:

- Fleet Manager
- Emergency Call recipient (Mobile Phone)

⇨ Drivers Log

E-TRIP® records the data for the drivers daily log for at least two consecutive days. More days are possible, but cannot be guaranteed. The total number which were stored by **E-TRIP®** can be read in the lower right corner of the display. In the example of figure 36 the total number is 2. The number in front of the total number is index of the actual selected day, shown in the lower left corner.

The displaying of the Drivers Log data is effected on two differently formatted screens the summary data screen and the detailed data screen. The first indicated screen shows the data, which for the vehicle and the driver were stored by **E-TRIP®**, see figure 36. The detailed data screen displays data to the Duty Status of the driver, see figure 37. Press ♦ (softkey 4) in order to change between screens.

Note:

There are two automatic change-overs, which are made by **E-TRIP®**.

- If the vehicle drives off, **E-TRIP®** switches automatically to DRIVING.
- **E-TRIP®** switches automatically from DRIVING to ON DUTY,
  if the ignition is switched off
  or
  if PTO is active and the vehicle is not moving.

  If a new duty status is entered within one minute after the automatic change from DRIVING to ON DUTY, the automatic change is ignored and only the manually entered status is stored by **E-TRIP®**.

To display the drivers log, either press ▸ (softkey 2) twice,

- or select the menu
  ⇨ Functions ⇨ Drivers Log.

figure 36 displaying drivers log

After the call of the function “Drivers Log” the current date is indicated, see figure 36. When displaying the Drivers Log data two display modes are available.

- use ▼ and ▲ for next and previous screen of summary data.
  The following screens are available:
  1) Date
  2) Total distance of the vehicle in miles or kilometers.
  3) Driver ID
  4) Driven distance today of driver shown in “Driver ID”.
  5) Duration 1: OFF DUTY time of the driver shown in “Driver ID”.
  6) Duration 2: SLEEPER time of the driver shown in “Driver ID”.
  7) Duration 3: DRIVING time of the driver shown in “Driver ID”.
  8) Duration 4: ON DUTY time of the driver shown in “Driver ID”.
- use ◄ to change to previous day.
- use ► to change to next day.
- use ♦ (softkey 4) to change between summary data and detailed data screen.
- Press **C** to abort displaying Drivers Log.

Change to the detailed data screen, to transfer drivers duty status into blank logs, see figure 37.
On detailed data screen, the following data is indicated:
1) upper left: date
2) upper right: [actual index / maximum index]
3) lower left: duty status start time
4) lower right: duty status

figure 37 duty status of drivers

- use ◄ to change to previous day.
- use ► to change to next day.
- use ♦ (softkey 4) to change between detailed data and summary data screen.
- Press **C** to abort displaying Drivers Log.

If there is **[0/0]** indicates in the upper right corner of the display, then no entries exist for the duty status for the desired day, see figure 38.

figure 38 duty status

If the data of another driver is to be indicated, the Driver ID of this driver must be entered or the driver card inserted into the smard card reader slot, see chapter ⇨ Driver ID on page 27.

⇨ Driving Times

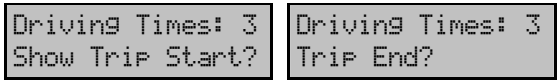


figure 39 driving times: show trip start and trip end

The system calculates driving times when it has both the start and the end of the trip. The trip start is recorded automatically when you insert your driver card, however, you need to enter the trip end manually.

- Select the menu
  ⇨ Functions ⇨ Driving Times.
- For the input of trip start and trip end, refer to chapter 3.8 on page 14.

⇨ Driver ID

If a driver does not have his driver card available, the driver can use the following function to input of his Driver ID.

When ready for application,

- select the menu
  ⇨ Functions ⇨ Driver ID,
- use ▲ and ▼ to select the appropriate character.
- use ► to set the cursor to the next position.
- use ◄ to delete the character left of the cursor.
- Press **M**/**OK** to enter it, or press **C** to abort the input.

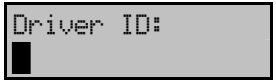


figure 40 input of driver ID

⇨ Driver Activity

E-TRIP® can register driver activities and provide each one with a time stamp. Prior to using this function, the dispatcher needs to define an individual list of maximum 32 activities in **E-TRIP Master** and download the list from the fleet PC to **E-TRIP®**. When ready for application, either press softkey ■, or

- select the menu
  ⇨ Functions ⇨ Driver Activity,
- use ▲ and ▼ to select the appropriate activity text from the menu.
  It will be displayed on the second line of the display while its number will be displayed on the first line in the right corner.
- Press **M**/**OK** to enter it, or press **C** to abort the input.

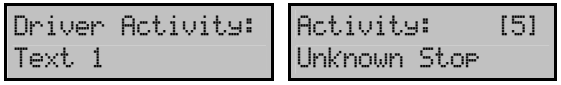


figure 41 driver activity

When purchasing your **E-TRIP®**, a number of pre-defined driver activities will be delivered in **E-TRIP Master**. Feel free to edit and extend the list. For the undefined activities, a dummy will be displayed.

⇨ Refuel

E-TRIP® can store the data, which is necessary for the calculation of fuel tax.

The input takes place in two steps.

1) Input of fuel quantity
2) Input of fuel costs

When ready for application, either press softkey ■ and afterwards softkey ●, or

- select the menu
  ⇨ Functions ⇨ Refuel,
- use ▲ and ▼ to select the appropriate digits,
- use ► to set the cursor to the next position,
- use ◄ to delete the character left of the cursor,
- use ♦ (softkey 4) to change to the desired unit.
- Press **M**/**OK** to enter the appropriate value, or
- press **C** to abort the input.

figure 42 refuel

4.4.1.1 Messages (Option)

The messages functions require the equipment of **E-TRIP®** with a GSM or ORBCOMM module. For an overview of the menu, please refer to the appendix 5.1 .

⇨ *Outgoing Message*

The outgoing list contains the last five messages, which could not be sent by **E-TRIP®** via command Text selection (see *Text selection* on page 30).

figure 43 Incoming message, menu

- Select the menu
  ⇨ Functions ⇨ Messages.. ⇨ Outgoing 5

The number following the menu command ***Outgoing*** indicates the number of messages in the outgoing list.

- To scroll in the list of outgoing messages (see figure 44), use ▼ and ▲.

The display will show date/time message and the text number in the upper right corner.

⚠ **NOTE:** The time is indicated in 24-hour format.

The maximum number of outgoing messages is 5.

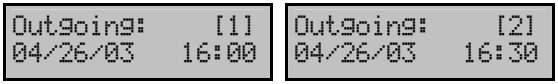
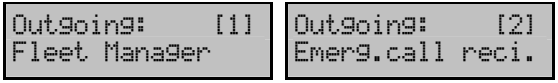


figure 44 Outgoing message, base screen

- Press softkey ▸ to send the indicated message via GSM.
- Press softkey ◂ to send the indicated message via ORBCOMM.
- To display information about the recipient, use ▶.



If the recipient is a predefined phone number, either ***Fleet Manager*** or ***Emerg.call reci.*** is indicated.

- Use ◄ to switch back to show date/time.
- To select a message and read its text, press **M**/**OK** (see figure 45). The text will appear on line 2.
- Press **C** to return to the messages menu, or press **C** and hold it down for at least 2 s to return to the driver information mode.

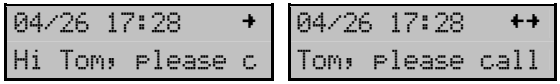


figure 45 Outgoing message, message text

- To scroll to the next or previous word of the text to read the complete message, use ► or ◄
- Press ▼ to jump to the end of the message and ▲ to jump to its beginning.
- Press **M**/**OK** to switch back to base screen (see figure 44).
- Press **C** to return to the previous display, or press **C** and hold it down for at least 2 s to return to the driver information mode.
- Press ◆ to delete the displayed message.

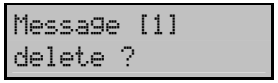


figure 46 Outgoing message, message delete

Delete Message

Prior to deleting the message, **E-TRIP®** trip will ask you (see figure 46) to confirm the deletion to avoid mistakes.

- Acknowledge the query with **M**/**OK** to finally delete the message. **E-TRIP®** will remove it from the outgoing list.
- Press **C** to abort the deletion and return to the previous display.

⇨ *Text selection*

To use this function, a list of 50 texts needs to be pre-defined in **E-TRIP Master**. The maximum text length is 160 characters. The list is transferred to **E-TRIP®** either via PSRR or downloaded through the service interface.

The lower line of the display is used for the message text. Should the text exceed the length of 16 characters, use ◄ and ► to scroll and read the complete text.

To send one of the predefined messages,

- select the text you would like to send from the list using ▼ and ▲.
- Press **M/OK** to acknowledge the selected message and send it to a predefined phone number (see ⇨ Message Setup on page 44). If the text has not been sent, an error message will be displayed and this message is added to the outgoing list, see ⇨ Outgoing Message

The number of the text will be displayed on the first line in the right corner. The arrow preceding the index points into the direction you can scroll to display the rest of the message should the text be too long to be displayed in total.

[50]: All characters of the message No. 50 are displayed.

→ **[50]:** The beginning of the message is displayed.

← **[50]:** The end of the message is displayed.

↔ **[50]:** Both the beginning and the end of the message are not displayed.

figure 47 Text selection, example

⇨ *Incoming Message*

You can receive messages via GSM or satellite (ORBCOMM) and **E-TRIP®** will indicate this both acoustically with a tone sequence ▪ ▪ ▪ ▬▬ and visually on the display and by LED (see chapter 5.4).

figure 48 Incoming message

- Select the menu
  ⇨ Functions ⇨ Messages.. ⇨ Incoming 2/1

figure 49 Incoming message, menu

The two numbers after the menu command ***Incoming*** indicate the number of messages in the incoming list (first value) and messages still being displayed or read (second value).

- To scroll in the list of incoming messages (see figure 50), use ▼ and ▲.

The display will show date/time message and the text number in the upper right corner.

⚠ **NOTE** The time is indicated in 24-hour format
The maximum number of incoming messages is 50.

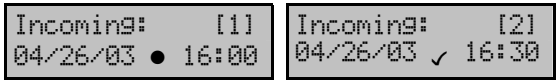
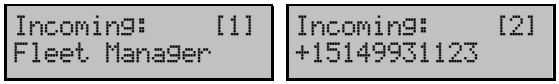


figure 50 Incoming message, base screen

- ● indicates that the message was not displayed or read.
- ✓ indicates that the message is still being displayed or was read.

- To display information about the recipient, use ►.



If the recipient is a predefined phone number, either ***Fleet Manager*** or ***Emerg.call reci.*** is indicated. If the phone number of the received message is unknown, the phone number itself is indicated.

- Use ◄ to switch back to show date/time.
- To select a message and read its text pressing **M/OK** (figure 51).

- Press **C** to return to the messages menu, or press **C** and hold it down for at least 2 s to return to the driver information mode.

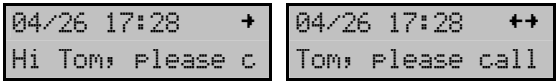


figure 51 Incoming message, message text

- To scroll to the next or previous word of the text to read the complete message, use ► or ◄
- Press ▼ to jump to the end of the message and ▲ to jump to its beginning.
- Press **M/OK** to switch back to base screen (see figure 50). The text will be legible on line 1.
- Press **C** to return to the previous display, or press **C** and hold it down for at least 2 s to return to the driver information mode.
- Press ◆ to delete the displayed message.

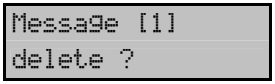


figure 52 Incoming message, message delete

Delete Message

Prior to deleting the message, **E-TRIP®** trip will ask you (see figure 52) to confirm the deletion to avoid mistakes.

- Acknowledge the query with **M/OK** to finally delete the message. **E-TRIP®** will remove it from the incoming list.
- Press **C** to abort the deletion and return to the previous display.

4.4.1.2 Warnings

The warnings of this menu pertain to speed, rpm and/or temperature values. For an overview of the menu, please turn to appendix 5.1 . Warnings are on the display for at least 10 s or until you press a key. Press **M/OK** to acknowledge a warning.

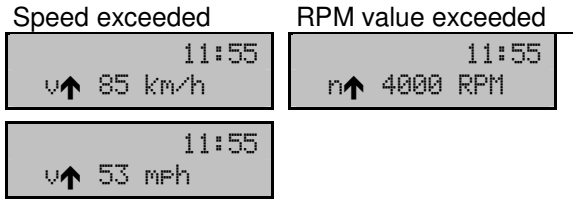
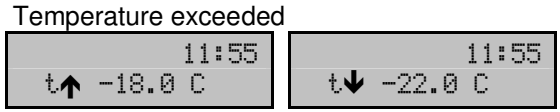


figure 53 functions, alarms



You can define their limit values yourself. A limit value must be higher than zero in order to release an alarm. When delivered, **E-TRIP®**' s warnings are not defined, i.e., the limit values are zero.

⇨ Max. Speed

If you wish to receive a warning on the display and an alarm warning tone when you have exceeded a speed value, define the speed limit as follows:

- Select the menu
  ⇨ Functions ⇨ Warnings.. ⇨ Max.Speed.
- Enter a limit value (see chapter 4.5.1) greater than zero.
- Activate/deactivate the warning using the softkey ◆ below the LCD.

⇨ Max. Engine Speed

If you wish to receive an alarm on the display and a warning tone when the engine has exceeded the RPM value, define the RPM limit value as follows:

- Select the menu
  ⇨ Functions ⇨ Warnings.. ⇨ Max.EngineSpeed.
- Enter a limit value (see chapter 4.5.1) higher than zero.
- Activate/deactivate the alarm using the softkey ◆ below the LCD.

⇨ Max. Temperature

If you wish to receive a warning on the display and an alarm tone when a certain temperature was exceeded, the temperature value must be defined in the **E-TRIP Master** and transferred to **E-TRIP®**.

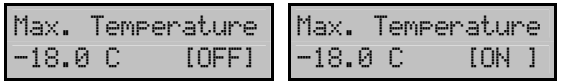


figure 54 functions, warnings, max. temperature

- Select the menu:
  ⇨ Functions ⇨ Warnings.. ⇨ Max. Temperature
- Enter a limit value (see chapter 4.5.1) within the range from -99.9 to +99.9.
- Activate/deactivate the alarm using the softkey ◆ below the LCD.

⚠ **NOTE** The temperature will be measured and stored cyclically also when the alarm function is deactivated.

⇨ Min. Temperature

If you wish to receive a warning on the display and an alarm tone when the temperature has fallen below a set limit, the temperature value must be defined in the **E-TRIP Master** and transferred to **E-TRIP®**.

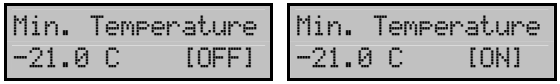


figure 55 functions, warnings, min. temperature

- Select the menu:
  ⇨ Functions ⇨ Warnings.. ⇨ Min. Temperature
- Enter a limit value (see chapter 4.5.1) from the range of -99.9 to +99.9.
- Activate/deactivate the alarm using the softkey ◆ below the LCD.

⚠ **NOTE** The temperature will be also measured and stored cyclically when the alarm function is deactivated.

⇨ Alarm Time

This function enables you to set an alarm within a time period of 24 hours. **E-TRIP®** will emit a signal tone at the defined alarm time. This requires that the ignition is switched off. Switching on the ignition will disable the set alarm.

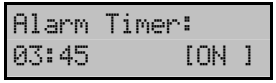


figure 56 functions, alarm time

To set an alarm

- select the menu:
  ⇨ Functions ⇨ Alarm Timer.
- Set the time.
- Activate/deactivate the alarm using the softkey ◆ below the LCD.

4.4.2 Menu: Services

Please refer to appendix 5.1 for an overview of the menu services.

4.4.2.1 Tones

In this menu, you are able to activate or deactivate the alarm tones for the

- key click,
- acknowledge tone, and
- error tone

and set their volume level.

⇨ Volume

Here, you set the volume of system alarms (see chapter 4.6).

- Select the menu:
  ⇨ Services ⇨ Tones.. ⇨ Volume
- Use ▲ to increase or ▼ to decrease the volume of the beeper.
  Eight levels are possible. The value of zero will turn off the beeper, i.e., **E-TRIP®** will not emit any acoustic signal.
- Press **M**/**OK** to confirm the selected new volume.
- Press **C** to return to the previous volume level.

figure 57 services, tones, volume

⇨ Key click

E-TRIP® is delivered with the key click active, i.e., each key pressure will be accompanied by an acoustic signal. To deactivate or reactivate the key click,

- Invoke the menu:
  ⇨ Services ⇨ Tones.. ⇨ Key Click
- Use the cursor keys to select ON or OFF,
- or, press the softkey • underneath the LCD.
- Press **M**/**OK** to confirm and take over your selection.

figure 58 services, tones, key click

⇨ Acknowledge Tone

E-TRIP® is delivered with the acknowledge tone active, i.e., each correct input will be accompanied by an acoustic signal. To deactivate or reactivate the acknowledge tone

- select the menu:
  ⇨ Services ⇨ Tones.. ⇨ Acknowledge Tone
- Use the cursor keys to select ON or OFF.
- Press **M**/**OK** to confirm and take over your selection.

figure 59 services, tones, acknowledge tone

⇨ Error Tone

E-TRIP® is delivered with the error tone active, i.e., each wrong input will be accompanied by an acoustic signal. To deactivate or reactivate the error tone

- select the menu:
  ⇨ Services ⇨ Tones.. ⇨ Error Tone
- Use the cursor keys to select ON or OFF,
- or, use the softkey • underneath the LCD.
- Press **M**/**OK** to confirm and take over your selection.

figure 60 services, tones, error tone

4.4.2.2 Display

Please refer to appendix 5.1 for an overview of the display menu.

⇨ Contrast

The contrast of the LCD is automatically adjusted through a temperature sensor located close to the LCD. This function, however, allows an adjustment of the basic contrast value.

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Contrast
- Use ▲ to increase and ▼ to decrease the contrast to one of the 10 possible values.
- Press **M**/**OK** to confirm and take over your selection.
- Press **C** to return to the previous value.

figure 61 services, display, contrast

⇨ Brightness

The LCD's brightness is automatically adjusted through a light sensor located in the front panel of **E-TRIP®** above the display. This menu function, however, allows you to adjust the basic brightness value of the LCD's background illumination.

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Brightness
- Use ▲ to increase and ▼ to decrease the brightness to one of the 20 possible values.
- Press **M**/**OK** to confirm and take over your selection.
- Press **C** to return to the previous value.

figure 62 services, display, brightness

⇨ Distance Unit

This function allows you to adjust the unit of the distance to the local unit.

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Distance Unit.
- Use ▲ and ▼ to switch between km and ML.
- Press **M**/**OK** to confirm and take over your selection.
- Press **C** to return to the previous selection.

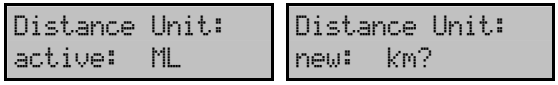


figure 63 services, display, distance unit

⇨ Speed Unit

This function allows you to adjust the unit of the speed to the local unit.

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Speed Unit.
- Use ▲ or ▼ to switch between km/h and mph.
- Press **M**/**OK** to confirm and take over your selection.
- Press **C** to return to the previous selection.

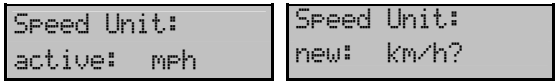


figure 64 services, display, unit speed

⇨ Temperature Unit

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Unit Temp..
- This function allows you to adjust the unit of the temperature to the local unit.
- Use ▲ and ▼ to switch between °C and °F.
- Press **M/OK** to confirm and take over your selection.
- Press **C** to return to the previous selection.

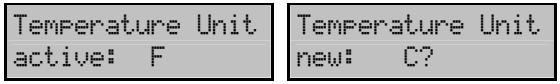


figure 65 services, display, temperature unit

⇨ Format Date/Time

To set the format of the date/time display to your individual preferences,

- Select the menu:
  ⇨ Services ⇨ Display.. ⇨ Format Time/Date.
- Press ►to display the full format **hh:mm DD.MM.YYYY**. When you
- press ◄, the display will read **active: hh:mm DD**.
- By operating ▲ or ▼ you select between the two formats.
- Press **M/OK** to confirm and take over your selection.
- Press **C** to return to the previous selection.

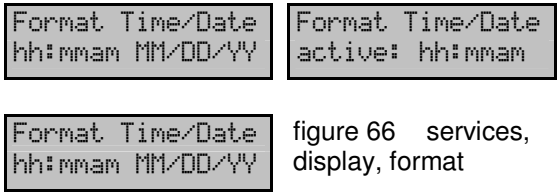


figure 66 services, display, format

⇨ *Keyboard Brightness*

To set the keyboard brightness of the keys to your individual preferences,

- Select the menu:
  ⇨ Services ⇨ Keyb.Brightness.
- By operating ▲ or ▼ you select a value between 0 and 20.
- Press **M**/**OK** to confirm and take over your selection.
- Press **C** to return to the previous selection.

4.4.2.3 Date/Time

Please refer to appendix 5.1 for an overview of the date/time menu.

⇨ *Adjustment*

E-TRIP®'s time is automatically set through GPS. The only thing necessary is to enter the time zone. This menu is available only in service mode, i.e., a workshop card must be inserted. Only then,

- you can select the menu:
  ⇨ Services ⇨ Date/Time.. ⇨ Adjustment
  and
- adjust the GMT time.

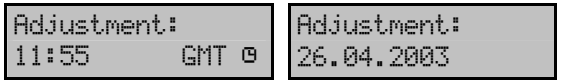


figure 67 services, make settings, GMT time and date

You can change time and date without any limitation. First, set the time and then the date by

- moving the cursor over the numbers and
- incrementing or decrementing it using ▲ and ▼
- If you press **C** during the input, all changes will be ignored and the input field will disappear.
- Press **M**/**OK** to confirm and take over the new date/time settings.

⇨ *Time Zone*

In order to have your local time displayed, use this function to select a time offset within the range -12:00 h to +12:00 h. This value will be added to **E-TRIP®** GMT time.

figure 68 services, date/time, time zone

Select the menu:
⇨ Services ⇨ Date/Time.. ⇨ Time Zone

⇨ Summer Time

If you want **E-TRIP®** to display updated summer time settings, you need to activate this function. To do so,

- select the menu:
  ⇨ Services ⇨ Date/Time.. ⇨ Summer time.

figure 69 services, make settings, date/time, summer time

E-TRIP® does this automatically, provided that the start and end of summer time have been defined in **E-TRIP Master** and downloaded to the unit before.

After the automatic switch to summer time, **E-TRIP®** displays an information for about 5 s after you have switched it on (figure 70).

figure 70 services, make settings, summer time active/not active

⇨ GMT Time

To display (editing not possible) the GMT time

- select the menu:
  ⇨ Services ⇨ Date/Time.. ⇨ GMT Time

figure 71 services, make settings, date/time, GMT time

⇨ Language

Texts can be displayed in several languages. The language to be used can be pre-defined in **E-TRIP Master**. If this is not the case, **E-TRIP®** will automatically use English. You can select another language from this menu. To do so,

- invoke the menu: ⇨ Services ⇨ Language.
- Select your language with the cursor keys and
- press **M**/**OK** to confirm and take over the new language.
- Press **C** to keep the previous language setting.

4.4.2.4 System

Please refer to appendix 5.1 for an overview of the system menu.

⇨ *PSRR connection*

Via the command *PSRR connection*, a radio connection to the fleet computer will be established, but only if the fleet computer is within the radio zone of **E-TRIP®**.

To do so, select the menu:
⇨ Services ⇨ System.. ⇨ PSRR connection

If the fleet computer is connected, the following screen will be displayed:

figure 72 services, system, PSRR connection

4.4.2.4.1 Company LOG
⇨ *Company Log-in*

⚠ **NOTE** The log-in requires the insertion of the system card.

To enable the data exchange between **E-TRIP®** and the fleet PC, the fleet needs to log-in to **E-TRIP®** once.

- Create a vehicle data set including the relevant **E-TRIP®** parameters on the fleet PC.
- Write these data to the system card.
- Insert the system card into **E-TRIP®.**
- The unit's PSRR module will then read the PSRR parameters of the vehicle data set and perform the fleet log-in even when the vehicle is outside the PSRR office modem's radio range.

figure 73 services, system, display of successful fleet log-in

E-TRIP® will try to establish a PSRR connection to the fleet computer as soon as you have removed the system card.

Together with the log-in, a status containing **E-TRIP®**' s hardware equipment will be transferred to the fleet computer and release the relevant function modules (GPS, GSM, and/or temperature sensor, etc.) in the application.

⇨ *Log-Off*

⚠ **NOTE** The log-off requires the insertion of the system card.

To log-off from **E-TRIP®**

- select the menu:
  ⇨ Services ⇨ System.. ⇨ Log-Off
- Press **M/OK** to show the log-in dialog for approx. 5 minutes should the PSRR office modem of the fleet not be reached before this time has elapsed.

figure 74 services, system, fleet log-off

If the fleet's PSRR office modem can be reached during this time, the following display will appear for approx. 5 s.

figure 75 services, system, fleet log-in

If **E-TRIP®** is logged into a PSRR station, the log-off dialog will be displayed when invoking the menu function log-in/log-off.

- Press **M/OK** and **E-TRIP®** will check whether the PSRR station where it is logged-in allows for the log-off. **E-TRIP®** will log-off if it receives an acknowledgement within 15 minutes. Further data exchange will not be possible then. If not, it will remain logged-in.
- Press **C** to abort the log-off.

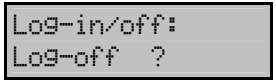


figure 76 services, system, fleet log-off

⇨ *Message Setup*

See appendix 5.1 for the menu structure. Select either the

- Recipient no. to display the telephone number of the recipient of the message, or
- the telephone number of the service center.

figure 77 message setup: recipient no., service center

Both telephone numbers are to be defined in **E-TRIP Master** or require the insertion of a system card.

4.4.3 Menu: Infos

Please refer to appendix 5.1 for an overview of the menu infos.

⇨ Malfunctions

E-TRIP® recognizes malfunctions such as

- **E-TRIP®** system errors,
- power supply failures, and
- smart card faults.

It provides them with a time stamp (GMT) and stores the last 50 of them in the mass memory. When a connection to the fleet PC is built up next time, the malfunctions are transferred to the fleet PC and then deleted in **E-TRIP®**.

To view malfunctions,

- select the menu:
  ⇨ Infos.. ⇨ Malfunctions.
  The counter shows the number of malfunctions stored and their chronological position.
- Use ▲ to display the next and ▼ to display the previous malfunction (see figure 79).
  On the second line of the display you find the decimal error code (see chapter 5.3 on page 53).
- Press **M/OK** to display the time stamp on the first line and press it once more to remove the time stamp from the display (see figure 79).

- Press **C** while displaying the screen of figure 78 and **M**/**OK** to clear all entries on this list.
- To leave the malfunctions display, press **C**.

figure 78 Infos, Malfunctions

figure 79 Malfunctions sub screen

figure 80 Malfunctions sub screen

⇨ *E-TRIP® Info*

- Invoke the menu:
  ⇨ Infos ⇨ E-TRIP-Info and
- view **E-TRIP®** system and release information on the second line of the display.
- Use the cursor keys ▲ and ▼ to scroll in the list of information and
- the keys ► and ◄ to display the full text if it does not fit on the display.
- Press **C** to abort the display of **E-TRIP®** info and return to the menu.
- Currently, the following **E-TRIP®** info is available:
  Product: **E-TRIP®**
  Project: Prototype A
  Sub Project: AVC
  ASW Ver.: 1.00
  ASW build: Apr 26 2003
  ASW release: unknown
  BSW Vers.:1.00
  BSW build: Apr 26 2003
  MMI Vers.:1.18
  PMC Version.: 1.07
  PSRR No.:????????; EMC:???
  PSRR SW Version.:???; Build:?????
  OpTime: 200,0h
  LithiumBatt:3.0V
  - - - - - - - - - - - -

⇨ Card Info

This menu allows you to read the information written to the driver card when it was personalized with **E-TRIP Master**.

To read the card info

- select the menu:
  ⇨ Infos.. ⇨Card Info.
- Use the cursor keys to scroll in the information.
- To leave the Card Info display, press **C**.

Driver name:

Driver ID:

Driver's License:

Serial No:

⇨ GSM Info

To read the GSM info

- select the menu:
  ⇨ Infos.. ⇨GSM Info.
- Use the cursor keys to scroll in the information.
- To leave the GSM Info display, press **C**.

GSM Status :	last error code
GSM quality:	ranging from 0 (bad) to 5 (good)
Msgs sent:	Number of sent messages. If a system card or workshop card is available, this counter can be deleted by the key **C**.
Version:	g18_vE6.02.10.00 Version string of the GSM module

⇨ ORBCOMM Info

To read the ORBCOMM info

- select the menu:
  ⇨ Infos.. ⇨ORBCOMM Info.
- Use the cursor keys to scroll in the information.
- To leave the ORBCOMM Info display, press **C**.

Satellite ID:	ID of the satellite which is currently communicating with **E-TRIP®**.
Sat. quality:	Quality of the satellite connection based on the number of block errors.
Msgs sent:	Total number of messages sent to the satellite. If a system card or workshop card is available, this counter can be deleted by the key **C**.
Msgs waiting:	Number of unsent messages in satellite modem output buffer.
Msgs received:	Number of messages received from satellite. If a system card or workshop card is available, this counter can be deleted by the key **C**.

⇨ PSRR Info

Provided that you have inserted the system or workshop card and **E-TRIP®** is successfully logged-in to the fleet PC, you can display the PSRR module's field strength in percent. This value will enable you to evaluate the quality of the connection to the PSRR office modem.

- Invoke the menu:
  ⇨ Infos... ⇨ PSRR Info and
- Press **M**/**OK** to start the measurement.
  Once the measurement has been started, the quality of the signal is displayed on line 2. The dots following the value indicate that the measurement is still being performed.
- Press **C** to abort the measurement.

figure 81 Infos, PSRR info

In an error case, the display will either read:

- PSRR ERROR 1:
  No RSSI display is possible when there is a connection to the service tool or to the fleet computer.
- PSRR ERROR 2:
  software error has occurred.

4.5 Input of Values

4.5.1 Numerical Values

When entering numerical values as required, for example, when defining alarm values for the speed or RPM, use the operation keys as below:

◄ Move the cursor to the left by one position. When the cursor is in position 1 (column 1), it will jump to the last position.

► Move the cursor to the right by one position. When the cursor is in position after the last character, it will then jump to position 1 (column 1).

▲ Increment the digit above the cursor.

▼ 1) Decrease the digit above the cursor.

2) Reset the input value by pressing this key for at least 2 s.

M/OK Confirm and take over the entered value.

C 1) Delete the character to the left of the cursor.

2) Leave the input mask by pressing this key for at least 2 s.

4.5.2 Reset the Input Value to Zero

▼ will reset the displayed value to zero. Press the key at least 2 s.

Pressing **M/OK** will confirm and take over the reset value.

4.6 System Warnings and Error Messages

System warnings are either optical or acoustic indications of errors or warnings. For easy use, warnings are given in the form of symbols as much as possible. A list of these symbols please find in the appendix 5.2 .

Some warnings are displayed as text messages in the language you previously selected. A message is accompanied by an acoustic signal in order to draw your attention to the error. A message is displayed for the duration of 30 s to provide for sufficient time to be read. You can acknowledge the message by pressing **M/OK** within this period of time. Should you not be able to do so, the system will acknowledge the message automatically.

Error messages and warnings are provided with a time stamp and stored in the flash memory. The fleet computer can access and read the flash memory's contents and delete it using PSRR.

defined warning speed exceeded
display time 30 s

figure 82 error messages, examples

When an error is displayed, the error code is displayed on the second line. The error codes and their meanings are listed in chapter 5.3 .

5 APPENDICES

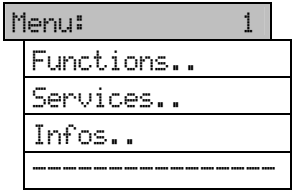
5.1 Menu Structure

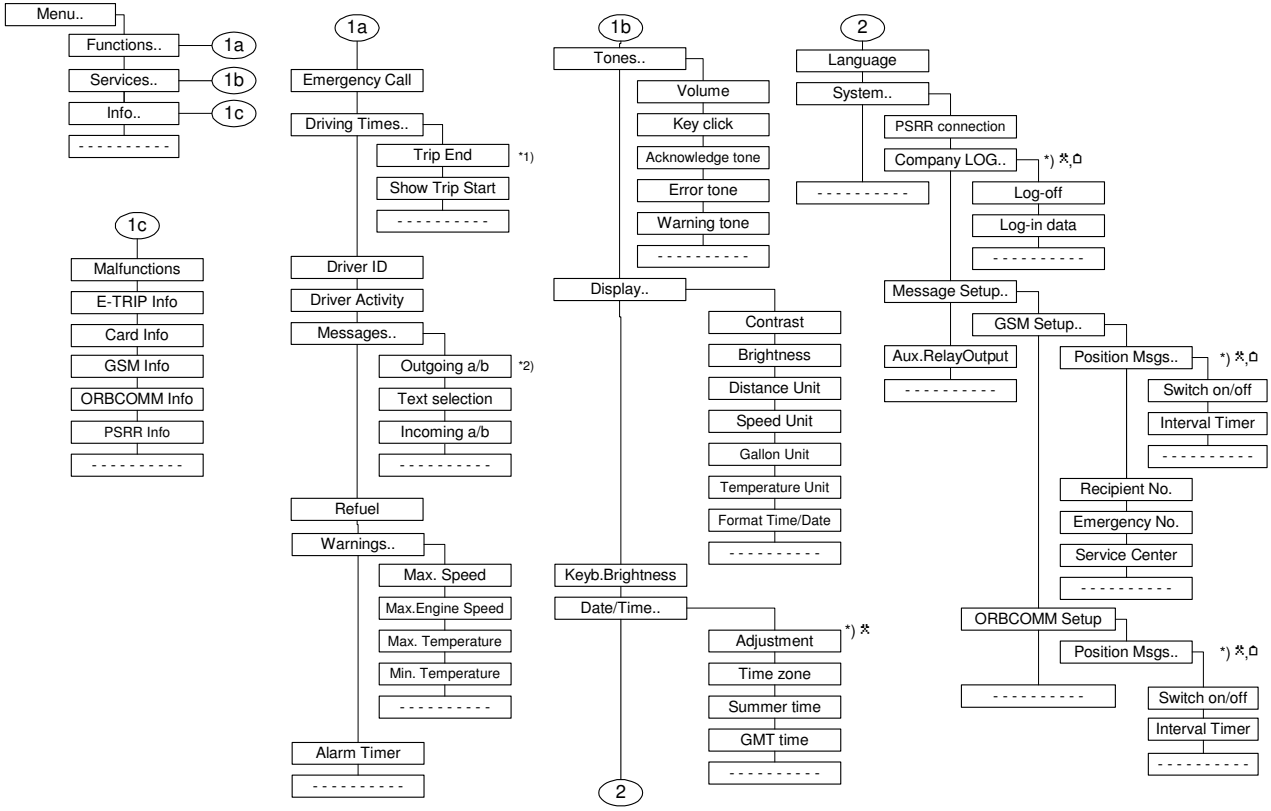
The menu is hierarchically structured. For example, if you select the menu item *services* on the upper menu level, you will be led into a subordinate menu where, in turn, you can select one of the given service options.

In the menu representation below, the menu items marked with a grey background are those that are shown on the first line of the **E-TRIP®** display. The other menu points in the figure are functions or submenus and available on the second line. Once you select a submenu, it will be displayed on the first line again.

Using the cursor keys ▼ and ▲ you can scroll in the functions backwards and forwards. Select a function by pressing **M/OK.**

When selecting a menu point from the second line, the number of the menu level on the upper right hand side of the display will be incremented. To signify this on the second line, a menu point or submenu is displayed. The name of the submenu is extended by two dots, for example *services..*




Menu..
Functions..
Services..
Info..
- - - - - - - - - -
1a
1b
1c
1c
Malfunctions
E-TRIP Info
Card Info
GSM Info
ORBCOMM Info
PSRR Info
- - - - - - - - - -
1a
Emergency Call
Driving Times..
Trip End
*1)
Show Trip Start
- - - - - - - - - -
Driver ID
Driver Activity
Messages..
Outgoing a/b
*2)
Text selection
Incoming a/b
- - - - - - - - - -
Refuel
Warnings..
Max. Speed
Max.Engine Speed
Max. Temperature
Min. Temperature
- - - - - - - - - -
Alarm Timer
- - - - - - - - - -
1b
Tones..
Volume
Key click
Acknowledge tone
Error tone
Warning tone
- - - - - - - - - -
Display..
Contrast
Brightness
Distance Unit
Speed Unit
Gallon Unit
Temperature Unit
Format Time/Date
- - - - - - - - - -
Keyb.Brightness
Date/Time..
Adjustment
*)
Time zone
Summer time
GMT time
- - - - - - - - - -
2
2
Language
System..
- - - - - - - - - -
PSRR connection
Company LOG..
*)
Log-off
Log-in data
- - - - - - - - - -
Message Setup..
Aux.RelayOutput
- - - - - - - - - -
GSM Setup..
Position Msgs..
*)
Switch on/off
Interval Timer
- - - - - - - - - -
Recipient No.
Emergency No.
Service Center
- - - - - - - - - -
ORBCOMM Setup
Position Msgs..
*)
- - - - - - - - - -
Switch on/off
Interval Timer
- - - - - - - - - -
Driver Card,
System Card,
Workshop Card

5.2 Symbols and Symbol Combinations

Symbol(s)	Equipment
	smart card
	time
	Smart Card Types
	driver card inserted, no errors
	system card inserted
	workshop card inserted
	Events
	Card inserted, reading card type
?	no card inserted
	card error or invalid card
v↑ 50 mph	programmed speed exceeded, intermittent on line 2
n↑ 3000RPM	programmed engine speed exceeded, intermittent on line 2
PIN	Input the personal identification number, up to 8 numerical characters (see: page 13)
Driver ID	Input your driver ID, up to 8 alphanumerical characters; tone sequence ——— — — — (see: page 13, Driver ID)
Message	Message received; tone sequence — — — ——— (see: page 31,⇨ Incoming Message)
Temp. ↑ -18.0°C	temperature exceeded the programmed value, intermittent on line 2
Temp. ↓ -20.0°C	temperature falls below the programmed value, intermittent on line 2

5.3 Error Codes

Code	Error Description
1	PPP connection via service interface or PSRR is active, switch to NMEA output currently not possible
2	Error when reading company data from system card
3	Company ID on system card does not comply with log-in data
4	PSRR interface unable to be opened
5	PSRR parameters unable to be read
6	PSRR subscription unable to be performed
7	Vehicle data set not found PSRR parameters on system card do not comply with those in **E-TRIP®**
8	No proper power-off performed, possibly power supply was removed from **E-TRIP®**
9	Company ID of the driver card does not comply with ID stored when logging in.
10	Error when reading driver ID
11	No **E-TRIP®** smart card inserted
12	Invalid smart card ID
13	Error when storing system data; Please refer to the product service should this error occur once more!
14	Configuration error. One or more characters within the PIN (for ARO) are not numeric.
15	Message could not be sent via GSM.
16	Message could not be sent via satellite (ORBCOMM).
17	Cannot read company key from smart card
18	Workshop service required. Lithium battery to low.
19	Workshop service required. ARO undefined

	GSM error codes:
100	GSM: Unknown error.
101	GSM: Hardware problem.
102	GSM: No SIM card inserted.
103	GSM: SIM card defect.
104	GSM: SIM wrong PIN.
105	GSM: Initializing
106	GSM: The changed configuration will only become active after the onboard computer is switched off for at least a minute.
107	GSM: Registration denied by service provider.
109	GSM: not registered
112	GSM: Network out of order (check SIM card validity period)
113	GSM: Network temporary failure
114	GSM: Network congestion
115	GSM: Invalid fleet manager or emergency number.
116	GSM: Invalid service center number.
117	GSM: Sending of SMS rejected by service provider.
118	GSM: PUK required.
119	GSM: Bad quality (check antenna).

	SAT error codes:
200	SAT: Unknown error.
201	SAT: Hardware problem.
202	SAT: Unavailable
204	SAT: Bad quality (check antenna).
205	SAT: Initializing

	GPS error codes:
300	GPS: Unknown error.
301	GPS: Hardware problem.
302	GPS: Unavailable
304	GPS: Bad quality (check antenna).

5.4 LED Codes

Static Signal

LED	Off	Green	Yellow	Red
1	Smart card able to be inserted	valid smart card inserted	reading from smart card	HW system start writing to smart card
2	trip is active; trip start has taken place	trip start ready to take place		HW system start
3		all components OK	system being initialized; BSW was started	HW system start PPP connection active
low priority → priority → high priority				

Intermittent Signal

LED	Green 0.5 Hz	Green 2 Hz	Yellow 0.5 Hz	Yellow 2 Hz	Red 0.5 Hz	Red 2 Hz
1	card ready to be removed *1.1)			power down being initiated	company log-in missing; insert system card	card write error approx. ca. 5 s
2						warning being displayed *2.6)
3	at least 1 not displayed message available		system being updated *3.3)	initialization error	HW error 2	HW error 1
low priority → priority → high priority						

*1.1) At the same time, the LCD reads that the card is to be removed. This text will be deleted when a key is pressed next time. The LED, however, keeps this status as long as the card is not removed.
*2.6) The LCD shows a warning or an error message to be acknowledged pressing **C** or **M**/**OK**.
*3.3) BSW updates system components (SW update, flash disk formatting, etc.)

5.5 Abbreviations

ARO	Auxiliary Relay Output Remote signal through GSM to lock the Auxiliary Relay Output. Customized function.
DST	Daylight Saving Time
ETC	Electronic Toll Collection
FAKRA	Commission for motor vehicle standards within DIN
FAS	Fleet Analysis System
GMT	Greenwich Mean Time; in fact identical to UTC
GPS	Global Positioning System
GSM	Global System for Mobile Communications (Cell Phone)
NMEA	National Marine Electronics Association
PIN	Personal Identification Number.
PSRR	Private Short Range Radio
RSSI	Radio Signal Strength Indication
UTC	Universal Time Coordinated (coordinated world time).

6 TECHNICAL DATA

This chapter is subject to modifications!

Smart card:

Note:

Stickers, which are to be glued on the Smart card, must cover the whole back of the Smart card.

> ⚠ **IMPORTANT NOTE** ⚠
>
> **Make sure that the Smart card never remains in a hot vehicle !**

6.1 Dimensions

Housing	(w x h x d)	179 x 50 x 176 mm
Front panel	(w x h x d)	188 x 58 x 15,2 mm
Built-in position		user-defined

Smart cards:

Maximum bending	longitudinal axis	2 cm
	traverse axis	2 cm
Maximum torsion	longitudinal axis	15°

6.2 Environmental Data

Ambient temperature:

-40 °C to +85 °C (-40 F to +185 F)

Smart card:

-30 °C to +50 °C (-22 F to +122 F)

Smart card connector:

-25 °C to +65 °C (-13 F to +149 F)

GSM module:

-20 °C to +70 °C (-4 F to +158 F)

PSRR module:

-20 °C to +70 °C (-4 F to +158 F)

LCD:

-20 °C to +70 °C (-4 F to +158 F)

Maximum relative humidity 90%
Condensation might still occur.

E-TRIP® is resistant against vibration und shock resulting from bad road conditions and vehicle resonance. It is protected against condensed water and dust as occurring during the daily use.

⚠ **NOTE** Do not treat smart cards with solvents! Avoid direct solar radiation!

6.3 Electrical Data

Power supply, nominal value	+12 V
Full functionality within operation voltage range	9 V to 36 V
Maximum power consumption during operation	20 W
Maximum performance power consumption in standby mode (mean value, without peripherals)	1 mA at 24 V

The power supply input is reverse-polled protected.

Upon disconnecting the power supply, the controller is supplied for at least further 20 ms to make sure that critical data can be written into the flash memory.

Board voltage rises above the operation value and drops below this value will result neither in data loss nor undefined states in the CPU board software or controller modules.

6.4 Standards

E-TRIP® meets the requirements laid down in the following standards:

- FCC Part 15 (47 CFR Part 15)
- FCC Part 24 (47 CFR Part 24)
- SAE J1113
- ISO 7637
- ISO 11452
- ISO 10605
- IEC 60068
- ICES 003
- CS 03
- RSS 102
- RSS 139
- UL 94
- UL 1642
- EN 60950 / 41003
- EN 300 487
- CTR 6
- EN 301 489 /-1/-6/-7/-19
- RL95/54/EG
- SAE J1455

7 INDEX

8 LIST OF FIGURES

9 AGENCY INFORMATION

AVC SYSTEMS INC.

ONBOARD TECHNOLOGIES

Canada, 115 Midpark Road, Unit #1, London, ON N6N 1B2
Phone: 001 519 681-2700
Fax: 001 519 681-3782
Mail: a.v.c@bellnet.c

Kelland International Ltd.

China, Beijing 100020
Room 1512B, No. 22
Chao wai Street, Chaoyang District
Phone: 0086 10 65 88 50 58 62
Fax: 0086 10 65 88 50 63
Mail: elcon@kellandinternational.com

10 DEALERS

BaTaLog GmbH

Germany, D-21394 Westergellersen
Drosselweg 4
Phone: +49(0) 41 35 / 80 07 97
Fax: +49(0) 41 35 / 80 07 37
Mail: info@BaTaLog.de

GESTECH 2001

Canada, 478, St.-Hubert, Laval (Québec) H7G 2Y9
Phone: 001 450 629 23 76
Fax: 001 450 629 26 13
Mail: RenaldLabrie@AOL.com

ELCON
SYSTEMTECHNIK

D – 09232 Hartmanndorf
Obere Hauptstrasse 10
Germany

www.elcon-system.de