Digital Tachograph – DTCO® 3.0

Operating instructions Company & Driver GB
Dear user,

The DTCO 1381 digital tachograph, with its system components, is an EC recording device that complies with the technical specifications according to the EC regulation (EEC) no. 3821/85 annex I B, (as amended).

The prepared data helps …
- the driver obey the law when driving
- and gives the company useful data about the performance of the driver and the vehicle (special software required).

These operating instructions were written for the company and the drivers and describe proper handling of the DTCO 1381 Release 3.0 as specified by the regulations. Carefully read these instructions and become familiar with the DTCO 1381.

Further information on the DTCO 1381, Open Source Software (OSS), as well as contact addresses are available on the Internet at: www.fleet.vdo.com

We wish you happy motoring.

Your friends at Continental Automotive GmbH

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Responsible for content:
Continental Automotive GmbH
P.O. Box 1640
78006 Villingen-Schwenningen
GERMANY

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# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release overview</td>
<td>6</td>
</tr>
<tr>
<td><strong>General instructions</strong></td>
<td>1</td>
</tr>
<tr>
<td>Means of depiction</td>
<td>8</td>
</tr>
<tr>
<td>Handling the DTCO 1381</td>
<td>9</td>
</tr>
<tr>
<td>Legal requirements</td>
<td>10</td>
</tr>
<tr>
<td>Obligations of the driver</td>
<td>10</td>
</tr>
<tr>
<td>Obligations of the company</td>
<td>11</td>
</tr>
<tr>
<td>Handling of the printouts</td>
<td>11</td>
</tr>
<tr>
<td>Handling the tachograph cards</td>
<td>12</td>
</tr>
<tr>
<td>Cleaning tachograph card</td>
<td>12</td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td>2</td>
</tr>
<tr>
<td>Display and operational elements</td>
<td>14</td>
</tr>
<tr>
<td>Brief description</td>
<td>15</td>
</tr>
<tr>
<td>First operating steps</td>
<td>17</td>
</tr>
<tr>
<td>For the company</td>
<td>17</td>
</tr>
<tr>
<td>For the driver</td>
<td>17</td>
</tr>
<tr>
<td>Display variations</td>
<td>18</td>
</tr>
<tr>
<td>Standby mode</td>
<td>18</td>
</tr>
<tr>
<td>VDO GeoLoc *</td>
<td>18</td>
</tr>
<tr>
<td>Display after ignition on/off</td>
<td>18</td>
</tr>
<tr>
<td>Standard display(s)</td>
<td>19</td>
</tr>
<tr>
<td>Data display when the vehicle is stationary</td>
<td>20</td>
</tr>
<tr>
<td>Display of messages</td>
<td>20</td>
</tr>
<tr>
<td>Production status</td>
<td>20</td>
</tr>
<tr>
<td>Out of scope</td>
<td>20</td>
</tr>
<tr>
<td>Ferry transfer or train transfer</td>
<td>21</td>
</tr>
<tr>
<td>Behaviour during low voltage / overvoltage</td>
<td>21</td>
</tr>
<tr>
<td>Power interruption</td>
<td>21</td>
</tr>
<tr>
<td>Communication error</td>
<td>22</td>
</tr>
<tr>
<td>Front interface</td>
<td>23</td>
</tr>
<tr>
<td>Tachograph settings</td>
<td>23</td>
</tr>
<tr>
<td>Remote control of the DTCO 1381 *</td>
<td>23</td>
</tr>
<tr>
<td>Entry of the official registration number</td>
<td>23</td>
</tr>
<tr>
<td><strong>Company” mode</strong></td>
<td>3</td>
</tr>
<tr>
<td>Functions of the company card</td>
<td>26</td>
</tr>
<tr>
<td>Menu functions in the &quot;company&quot; mode</td>
<td>26</td>
</tr>
<tr>
<td>Company card insertion</td>
<td>27</td>
</tr>
<tr>
<td>Enter vehicle registration number</td>
<td>28</td>
</tr>
<tr>
<td>Prepare data download</td>
<td>29</td>
</tr>
<tr>
<td>Company card withdrawal</td>
<td>30</td>
</tr>
<tr>
<td><strong>Operational mode</strong></td>
<td>4</td>
</tr>
<tr>
<td>Inserting driver card(s)</td>
<td>32</td>
</tr>
<tr>
<td>Manual entries</td>
<td>32</td>
</tr>
<tr>
<td>Correction possibilities</td>
<td>34</td>
</tr>
<tr>
<td>Country entry during manual entry</td>
<td>35</td>
</tr>
<tr>
<td>Aborting the entry procedure</td>
<td>35</td>
</tr>
<tr>
<td>Add &quot;Rest period&quot; activity</td>
<td>36</td>
</tr>
<tr>
<td>Continuing the work shift</td>
<td>37</td>
</tr>
<tr>
<td>Continuing the work shift and prefixing activities to a work shift</td>
<td>38</td>
</tr>
<tr>
<td><strong>Setting activities</strong></td>
<td>39</td>
</tr>
<tr>
<td>Manual setting</td>
<td>39</td>
</tr>
<tr>
<td>Automatic setting</td>
<td>39</td>
</tr>
<tr>
<td>Automatic setting after ignition on/off *</td>
<td>39</td>
</tr>
<tr>
<td>Handwritten activity entries</td>
<td>40</td>
</tr>
<tr>
<td><strong>Downloading driver card data</strong></td>
<td>41</td>
</tr>
<tr>
<td>Withdrawing driver card(s)</td>
<td>42</td>
</tr>
<tr>
<td>Menu guidance after withdrawing driver card</td>
<td>43</td>
</tr>
<tr>
<td><strong>Driver / vehicle change during operation</strong></td>
<td>44</td>
</tr>
<tr>
<td>Documents to be kept while driving</td>
<td>45</td>
</tr>
</tbody>
</table>

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Table of contents

Printer Handling 5

Insert paper roll ................. 48
Printout of data ................... 49
  Start printout ...................... 49
  Cancel printout .................... 49
  Things to note when printing ... 50
  Clear paper jam .................. 50

Menu functions 6

Calling up menu functions ......... 52
  When the vehicle is stationary ... 52
  Change of activities .............. 52
  Display at start of drive ........ 53
  Displaying the times of the driver card .................. 53
  Setting the language ............. 53
VDO Counter * ...................... 54
  Layout of the VDO Counter display .. 54
  Displays during trip .............. 55
  Display for activity "Break time".. 56
  Display for activity "Working time".. 56
  Display daily values ............ 57
  Display weekly values ........... 57
  Status display ................... 57

Overview of the menu structure .... 59
  Navigating in the menu functions .... 60
  Menu access blocked! ............ 61
  Leaving menu functions .......... 61
Main menu printout driver 1 / driver 2 .................. 62
  Print daily value ................. 62
  Print events ...................... 62
  Print activities .................. 62
Main menu, vehicle printout ........ 63
  Print daily value from the data memory .................. 63
  Print events from the data memory .. 63
  Print technical data ............ 63
  Print v-diagram .................. 64
  Print D1/D2 status * ............ 64
  Print speed profiles * .......... 64
  Print rpm profiles * ............ 64
Main menu entry driver 1 / driver 2 .................. 65
  Enter Begin country .............. 65
  Enter End country ............... 65
  Activating the remote control ... 66
Main menu entry vehicle ........... 67
  Enter Out beginning / end ....... 67
  Enter Beginning of ferry / train .... 67
  Set Local time ................... 68

Setting the company local time...... 68
  Make UTC correction ............. 68
  Switching on/off the vehicle recording .................. 69
  Activating additional functions ... 69
Main menu display driver 1 / driver 2 .................. 70
Main menu display vehicle ........ 71

Messages 7

A message appears ................ 74
  Characteristics of the messages ... 74
  Acknowledgement of messages ... 75
Overview of the events ............ 76
Overview of the faults ............ 78
Driving time warnings ............ 80
  VDO Counter * display ........... 80
Overview of the operational notes .... 81

Product description 8

Operating modes of the DTCO 1381 .......... 88
Tachograph cards ................ 89
  Driver card ....................... 89
  Company card .................... 89
| Control card ................................... 89 |
| Workshop card .............................. 89 |
| Locking the tachograph cards ........ 89 |
| Access rights of the tachograph cards ............................................... 90 |
| Saved data..................................... 91 |
| Driver card ..................................... 91 |
| Company card................................. 91 |
| Data memory ......................... 91 |
| VDO GeoLoc * .................................. 91 |
| Time management ......................... 92 |
| Converting to UTC time .................. 92 |
| Care and maintenance ................. 93 |
| Cleaning the DTCO 1381 .................. 93 |
| Compulsory Tachograph inspections ................................. 93 |
| Behaviour when repairing / replacing the DTCO 1381 ............. 93 |
| Disposal of the components ........... 93 |
| Technical data ......................... 94 |
| DTCO 1381 .................................... 94 |
| Paper roll .................................. 94 |
| Pictograms and printout samples ..... 9 |
| Overview of the pictograms .......... 96 |
| Pictogram combinations ............... 97 |
| Country symbols ........................ 99 |
| Symbols of the regions .................. 100 |
| Printout examples ...................... 101 |
| Daily printout from the driver card ... 101 |
| Events / faults from the driver card .. 102 |
| Daily printout of the vehicle .......... 103 |
| Events / faults from the vehicle ...... 104 |
| Over-speeding .............................. 105 |
| Technical data .................................. 105 |
| Driver's activities ...................... 106 |
| v-diagram .................................. 106 |
| Status D1/D2 diagram * ................. 106 |
| Speed profiles * .......................... 107 |
| Rpm profiles * ........................... 107 |
| Printout in local time .................. 107 |
| Explanations of printout examples ... 108 |
| Daily printout from the driver card ... 108 |
| Events / faults from the vehicle ..... 108 |
| Overview of the pictograms .......... 96 |
| Pictogram combinations ............... 97 |
| Data record purpose during events or faults ................................. 115 |
| Coding of data record purpose...... 115 |
| Coding for more detailed description ..................................... 117 |
| Appendix A ................................. 119 |
| Keyword directory ....................... 119 |
| Automatic setting of the activities after ignition on/off .. 122 |
| Accessories ................................. 123 |
| DLKPro Download Key 123 |
| DLKPro TIS-Compact 123 |
| DTCO® SmartLink 123 |
| DTCO® GeoLoc .............................. 123 |
| DLD® Short Range II and DLD® Wide Range II ..................... 123 |
| Cleaning cards and cleaning cloths ......................... 124 |
| VDO Online Shop ........................... 124 |
| Notes ........................................ 125 |
| EC Declaration of conformity 127 |
Table of contents

- Release overview

The present certified operating instructions are valid for the following DTCO 1381 device versions:

<table>
<thead>
<tr>
<th>Release version (can be seen on the model plate)</th>
<th>Certified operating instructions</th>
<th>Special operational features</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Image" alt="Rel. 3.0" /></td>
<td>BA00.1381.30 100 102</td>
<td>Current operating instructions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- New process when inserting and removing a Company Card; see page 27.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Entry of the Vehicle Registration Number and of the Country of registration using a Company Card; see page 28.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- New process when inserting and removing a Driver Card; see page 32.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- New printer operation; see page 47.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Activating the remote control; see page 66.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Use of a licence code to activate additional functions. see page 69.</td>
</tr>
</tbody>
</table>

These operating instructions do not apply for earlier device release versions!
General instructions

Means of depiction
Handling the DTCO 1381
Legal requirements
Handling the tachograph cards
1. General instructions

1. Means of depiction

You will find the following emphases in these operating instructions:

**Warning message**
A warning message points out possible risks of injury or accidents.

**Attention!**
The text beside or below this symbol contains important information to avoid loss of data, to prevent damage to the device, and to comply with legal requirements.

**Hint**
This sign will give you some advice or information which, when not observed, could lead to malfunctions.

This sign means a reference to another documentation.

Steps
1. The numbered steps describe actions – You must do something. For example you will be guided through the menu step by step and asked to make an entry.
2. Further actions are numbered consecutively.

**Symbols**
- The asterisk marks a special feature / option.

Note: Observe the instructions for the **ADR variant** * "ADR" and the option "Automatic adjustment of the activities after ignition on/off" *, as individual functions depend on the ignition.

The **VDO Counter** * supports your daily, weekly planning when "on the road".

**Menu representation**

Flashing lines or characters in the menu display are shown in **italics (1)** in these operating instructions.

**Definitions**

Driver 1 = Crewmember who is driving the vehicle at the moment or will be driving the vehicle.

Driver 2 = Crewmember who is not driving the vehicle.
1. General instructions

- **Handling the DTCO 1381**

  **Risk of Accident**
  While driving, messages can appear in the display. It is also possible that the driver card will be automatically ejected. **Do not be distracted by this; instead, continue to focus all of your attention on driving safely.**

  **Danger of injury**
  You and other persons might be injured by an open card tray. Open the card tray only for inserting a tachograph card.

  **Danger of injury**
  Depending on the volume of information printed, the thermal printing head may be very hot! Wait until the printing head has cooled before you insert a new roll of paper.

  **Danger of explosion**
  The DTCO 1381 ADR version * is designed for use in explosion-risk environments. Please observe the instructions for transport and handling of hazardous materials in explosion-risk environments.

  **Observe the following instructions in order to avoid damage to the DTCO 1381!**
  - Authorised persons are responsible for installing and sealing the DTCO 1381.
  - Do not carry out any repairs of the device or the supply lines.
  - Do not insert any other cards, such as credit cards, cards with relief printing, or metallic cards, etc. into the card slot. These type of cards will damage the card slot of the DTCO 1381!

  **DTCO 1381 connection cables and casing seal must not be damaged or removed. The DTCO 1381 may otherwise be in a non legal state with data no longer reliable.**

  **Only use type-approved paper rolls recommended by the manufacturer (original VDO printer paper). Make sure that it contains the approval mark.**
  Details refer to “Paper roll” on page 94.

  **Do not activate the button elements with sharp-edged or pointed objects such as a ballpoint pen, etc.**

  **Clean the unit with a slightly moist towel or with a microfibre cleaning cloth. (Available from your sales and service center.)**
  Refer to “Care and maintenance” on page 93.

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Legal requirements

1. General instructions

Legal Foundation

The use of tachographs is now regulated in the latest consolidated valid version of the EC regulations 3821/85 in combination with EC regulations (EC) no. 561/2006 and the relevant national laws. They require the driver and the operator of the vehicle (company) to conform to a number of obligations and responsibilities. The following list is not guaranteed to be complete or legally valid.

- Obligations of the driver
  - The driver must take care that the driver card and the tachograph will be used properly.
  - Behaviour in the event of malfunctions of the tachograph:
    - The driver must note information about the activities which are no longer properly recorded or printed by the tachograph on a separate sheet or on the rear side of the paper roll!
      ➤ Refer to “Handwritten activity entries” on page 40.
    - If away from base, for more than 1 week, the driver must ensure that the tachograph is repaired by an authorised workshop en route.
  - During mixed tachograph operation (use of vehicles with analogue [chart based] and digital tachograph), the necessary documents must be carried.
    ➤ Refer to “Driver / vehicle change during operation” on page 44.

- If the driver card is lost, stolen, damaged, or malfunctions, then the driver must at the beginning and at the end of the journey generate a daily printout from the DTCO 1381 and add his personal information. If necessary, availability periods and other working times must be inserted by handwritten entries.
  ➤ Refer to “Handwritten activity entries” on page 40.

- If the driver card is damaged or fails to operate properly, it must be sent back to the authorised authority, or its loss must be duly notified. The replacement card must be applied for within seven calendar days.

- If the driver card is lost, stolen, damaged or malfunctions, a journey may be continued without driver card for a period of 15 calendar days or longer if necessary for the vehicle to return to the company location.

Any person who makes any changes to tachographs or the signal feed in a way that influences the recording and memory of the tachographs, especially if done with fraudulent intentions, may violate laws or provisions.

The falsification, suppression, or destruction of tachograph recordings, the tachograph cards, and the printed documents is forbidden.
1. General instructions

- Inform the authorised authority immediately about the exact reasons for the renewal, replacement, or exchange of the driver card by another member state authority.
- After the end of validity, the driver must continue to carry the driver card for at least 28 calendar days (Driving Personnel Decree in Germany).

**Obligations of the company**

- Take care that, when a new vehicle is delivered, an authorised workshop immediately completes the calibration data with authorised member state and vehicle registration number.
- When inserting in the company card, you are requested, if necessary, to enter the member state and the vehicle registration number of the vehicle in the DTCO 1381. 
  
  ➤ Refer to “Enter vehicle registration number” on page 28.
- Lock the company in the DTCO 1381 at the beginning of the vehicle deployment, and lock it out again at the end.
  
  ➤ Details refer to “Company card insertion” on page 27.
- Make sure that enough authorised rolls of paper are available in the vehicle.
- Monitor the proper function of the tachograph. Observe the intervals which, according to the legal stipulations, are prescribed for the inspection of the tachograph. (Periodic (calibration) test at least every two years.)
- Download the data from the data memory of the DTCO 1381 and from the driver cards at regular intervals and store the data according to the legal stipulations.
- Have repair and calibration work done by authorised workshops only.
  
  ➤ Details refer to “Compulsory Tachograph inspections” on page 93.
- Supervise the proper use of the tachograph by the drivers. Check driving times and rest periods periodically and compare these with the legal requirements.

**Legal requirements**

- Handling of the printouts
  
  ➤ Take care that the printouts will not be damaged by strong light, sunlight, moisture, or heat (making them illegible).
- The holder of the vehicle / the company must retain the legal printouts for at least 1 year. (2 years for Working Time Directive Regulations.)
Handling the tachograph cards

1 General instructions

Possession of a tachograph card authorizes the holder to use the DTCO 1381. Areas of activity and access rights are prescribed by law. Refer to “Tachograph cards” on page 89.

The driver card is person-specific. The driver uses this card to identify himself to the DTCO 1381. The driver card is not transferable!

The company card is designed for owners and operators of vehicles with installed digital tachograph and must not be transferred to “Others”. The company card must not be used for driving!

Handle your tachograph card carefully in order to avoid loss of data and observe the instructions of the issuing authorities for tachograph cards.

- Do not bend or fold the tachograph card and do not use them for anything other than their intended purpose.
- Do not use damaged tachograph cards.
- Keep all contact surfaces clean, dry, and free of grease and oil (always use a protective cover).
- Protect the card from direct sunlight (do not allow it to lie on the instrument panel).
- Do not place it in direct proximity to strong electromagnetic fields.
- Do not use the card beyond its period of validity. Apply for a new tachograph card in a timely manner before expiry.

Cleaning tachograph card

Clean dirty contacts of the tachograph card with a slightly moistened cloth or with a microfibre cleaning cloth. (Available from your sales and service center.)

Do not use any solvents like thinner or petroleum spirits to clean the contacts of a tachograph card.
Introduction

Display and operational elements
First operating steps
Display variations
Front interface
Display and operational elements

- Display
- Menu buttons
- Card slot 1
- Driver 1 combination button
- Driver 2 combination button
- Card slot 2
- Cutting edge
- Printer drawer
- Download interface

(a) Symbol " " for ADR variant *
(ADR = European Agreement concerning the international carriage of dangerous goods by road)

The DTCO 1381 can be remotely controlled by the corresponding accessories.

Caution!
The card tray covers should not be removed in order to prevent dust and dirt penetration or water ingress!
Always keep the card trays closed.
2. Introduction

Display and operational elements

Brief description

Display (1)
All DTCO 3.0 are equipped with a negative display.

For improved legibility, the displays in this manual are displayed in the inverse (positive view).

Except for the standby mode, the display cannot be completely switched off. It is only dimmed to a minimum value.

Depending on the vehicle's operational condition, different displays will appear or data can be displayed.

Refer to “Display variations” on page 18.

Menu buttons (2)
Use the following buttons to enter, display, or print out data:

Use the paging function to select the desired function or selection. (This is possible by pressing and holding down the auto-repeat function key.)

Confirm or acknowledge desired function / selection.

Back to the last entry field, abort the entry of a country, or leave the menu one step at a time.

Card slot 1 (3)
Driver 1, who will drive the vehicle at this moment in time, inserts his driver card into slot 1.

For more details, see “Inserting driver card(s)” from page 32.

The card tray covers can be replaced if they are defective. Contact your service partner.

Driver 1 combination button (4)
Activity and ejection button for driver 1:

Press the button for a short time: The activity is changed
Details refer to “Setting activities” on page 39.

Keep the key pressed (at least 2 sec.): The card shaft is opened to insert or withdraw a tachograph card.

Driver 2 combination button (5)
Activity and ejection button for driver 2:

Press the button for a short time: The activity is changed
Details refer to “Setting activities” on page 39.

Keep the key pressed (at least 2 sec.): The card tray will then open to insert or withdraw a tachograph card.
Display and operational elements

Card slot 2 (6)
Driver 2, who is not driving the vehicle at this moment in time, inserts his driver card into slot 2 (crew operation).

Cutting edge (7)
You can use the cutting edge to tear off a printout generated by the integrated printer.

Printer drawer (8)
Printer drawer for inserting a roll of paper.

 favored by the printer drawer can be replaced if it is defective. Contact your service partner.

Download interface (9)
The download interface is located under the cover. The access rights of this interface are regulated according to the inserted tachograph card.

ADR variant * (a)

When loading and unloading hazardous materials
- The cap of the download interface on the DTCO 1381 must be closed
- No buttons on the tachograph must be pressed
- No workshop, control or company card must be inserted.

In the case of ADR variants, switch on the ignition (if required) to be able to use the printer, card, trays and display operating modules without restrictions.
2. First operating steps

- **For the company**
  1. Register your company within the DTCO 1381. Insert the company card into any card slot.
     - Details refer to “Company card insertion” on page 27.
   - The company card must not be used for driving!

  2. Withdraw the company card at the end of the registration or the download of data from the card slot.
     - Details refer to “Company card withdrawal” on page 30.

- **For the driver**
  1. Insert your driver card into the card slot at the beginning of the shift (start of working day).
     - For more details, see “Inserting driver card(s)” from page 32.

  2. Using the "Manual entry" you can add activities on your driver card.
     - For more details, see “Manual entries” from page 32.

  3. Use the activity button to adjust the activity you want to carry out at that moment.
     - Details refer to “Setting activities” on page 39.

  4. Adjust the time to the current local time.
     - Details refer to “Set Local time” on page 68.

  5. **Important!** During a rest period or break time, always set the activity to "P".

  6. Possible faults in the device or the system components will appear in the display. Acknowledge the message.
     - For more details, see “A message appears” from page 74.

  7. At the end of the shift (end of the working day) or vehicle change, you request your driver card from the card slot.
     - For more details, see “Withdrawing driver card(s)” from page 42.

  8. You can display or print activities from preceding days as well as saved events, etc. by means of the menu functions.
     - For more details, see “Calling up menu functions” from page 52.

⚠️ These operating instructions do not contain the legal requirements which are valid in the respective countries. If necessary, they must be complied with, too.
Display variations

2. Introduction

General Information
The display consists of pictograms and text with the language being automatically set as follows:

- The language will be determined by the driver card that is currently inserted in card slot 1 and/or the driver card that was most recently inserted in the DTCO 1381.
- Or the tachograph card with a higher value, such as the company card, control card.

Select language
As an alternative to the automatic language setting, you can individually set a preferred language.
⇒ Details refer to “Setting the language” on page 53.

Standby mode
In the Operational “o” mode, the DTCO 1381 will switch into standby mode after about 1 minute:
- the vehicle's ignition is off, and no message is pending.
- After ignition off, the display is dimmed to a predefined value. The display disappears after another minute (customer-specific value). Optionally an additional dimming value can be set following ignition off for easier operation of the device.
- If the DTCO 1381 is activated from stand-by mode by the pressing of a button, the display lighting is reactivated in standby mode. The pressing of this button acts solely to reactivate the display and does not result in any further action.
- Upon exiting standby mode, the DTCO 1381 switches to the last selected standard display when the vehicle became stationary.
- If the configured value of the dimming for an ADR variant is selected too high, it will be automatically reduced.

VDO GeoLoc *
You have the option of switching the recording of the position and vehicle data to on (2) or off (1). ⇒ Refer to “Switching on/off the vehicle recording” on page 69.

Display after ignition on/off

Vehicle logging on
Vehicle logging off
2. Introduction

**Ignition on:** If there is no tachograph card in card slot 1, this note (1) will appear for approximately 20 seconds and then the standard display (2) will appear.

Symbol (4) flashes for approx. 5 seconds after the driver card is inserted. This means that the recording of position data via the 'logging on' menu option is switched on.

**Ignition off:** Symbol (3) indicates that the IMS function is available. (IMS = Independent Motion Signal)

Symbol (4) indicates that the VDO GeoLoc function is switched on.

▶ **Standard display(s)**

By pressing any menu key, you can also switch over to the standard display (a), (b) or (c).

**Standard display (a):**

1. Time
   - with symbol "*" = Local time
   - without symbol "*" = UTC time
2. Symbol of the operating mode
   - "Operational"
3. Speed
4. Activity, driver 1
5. Card symbol, driver 1
6. Total odometer
7. Card symbol, driver 2
8. Activity, driver 2

**Standard display (b):**

1. Driving time "o" of Driver 1 since a valid break time.
2. Valid break time "u" in cumulative break periods of at least 15 minutes followed by 30 minutes, in accordance with regulation (EU) no. 561/2006.
3. Times of driver 2:
   - Current activity availability time "a" and duration of activity.

**Standard display (c):**

Standard displays during trip

As soon as the vehicle starts moving and no message is displayed, the previously set standard display appears automatically.
Display variations

2 Option: VDO Counter *(c)
(1) Remaining driving time "h"
("h" flashes = this part of the display is currently active).
(2) Next valid break time / daily or weekly rest period "h".
⇒ For more details, see “VDO Counter *” from page 54.
(3) The current activity is shown.

Data display when the vehicle is stationary
When the vehicle is not moving and driver card is inserted, you can call up other data of the driver card.
⇒ Refer to “Calling up menu functions” on page 52.

Display of messages
Regardless of which display currently appears or whether the vehicle is moving or stationary, messages will be displayed with priority.
⇒ Refer to “A message appears” on page 74.

Production status
If the DTCO 1381 has not yet been activated as a recording device, then "Production status", symbol "B" (1) will appear. The DTCO 1381 will not accept any tachograph cards except the workshop card.

Please make sure that the DTCO 1381 is immediately and properly brought into operation by an authorised workshop.

Out of scope
Standard display (a): Out of Scope display
The vehicle is driving outside the scope of the regulations, symbol "OUT" (2).
You can set this function through the menu.
⇒ Refer to “Enter Out beginning / end” on page 67.

The following journeys may be outside of the scope of application:
• Journeys on non-public roads.
• Journeys outside of AETR countries.
• Journeys where the vehicle does not require use of the DTCO 1381 in accordance with the regulations.

By pressing any menu key, you can switch over to the standard display (b) or (c) *
⇒ see page 19.
Display variations

2. Introduction

- Ferry transfer or train transfer

Standard display (a): Display of ferry transfer or train transfer
The vehicle is located on a ferry or on a train, symbol "A" (3).
You can set this function through the menu.
Refer to “Enter Beginning of ferry / train” on page 67.

Please ensure that this function and its current activity are set during the transport.

By pressing any menu key, you can switch over to the standard display (b) or (c)*, see page 19.

- Behaviour during low voltage / overvoltage

Do not insert a tachograph card if a card tray is open during over voltage or low voltage.

- Power interruption

The DTCO 1381 continues to save activities. The functions printing or display of data and the insertion or withdrawal of a tachograph card are not possible!

Case 2: "*" (2)
This case corresponds to a power interruption. The standard display (a) appears automatically. The DTCO 1381 cannot fulfill its role as a recording device! The driver's activities will not be recorded.

Display of the "Power interruption" message
As soon as the voltage is present again, the version of the user software (1) and the version of the software upgrade module (2) will appear for approximately 5 seconds.

Then the DTCO 1381 indicates "Power interruption".
If an error has occurred due to a card communication error with the DTCO 1381, the driver is requested to remove his card. While the card is ejected, a new attempt is made to communicate with the card. If this attempt fails too, a printout of the activities last saved for this card, starts automatically.

With this printout, the driver is able to document his mode activities. The printout must be signed by the driver. The driver can then add manually all mode activities (except for driving times) to the printout up until the driver card is inserted again.

The driver can also make a daily vehicle unit printout and enter his additional activities up to the next insertion of the card and sign it.

In the case of longer duration from the vehicle – e.g. during a daily or weekly rest period – the driver card should be removed from the card slot.

If, with correct on-board voltage, the symbol "✗" is displayed permanently, please contact an authorised workshop. When the DTCO 1381 is defective, you are obligated to note activities with handwritten entries. Refer to “Handwritten activity entries” on page 40.

 comunicación error

If an error has occurred due to a card communication error with the DTCO 1381, the driver is requested to remove his card.

With this printout, the driver is able to document his mode activities. The printout must be signed by the driver. The driver can then add manually all mode activities (except for driving times) to the printout up until the driver card is inserted again.

The driver can also make a daily vehicle unit printout and enter his additional activities up to the next insertion of the card and sign it.

In the case of longer duration from the vehicle – e.g. during a daily or weekly rest period – the driver card should be removed from the card slot.

If, with correct on-board voltage, the symbol "✗" is displayed permanently, please contact an authorised workshop. When the DTCO 1381 is defective, you are obligated to note activities with handwritten entries. Refer to “Handwritten activity entries” on page 40.

 comunicar error

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With this printout, the driver is able to document his mode activities. The printout must be signed by the driver. The driver can then add manually all mode activities (except for driving times) to the printout up until the driver card is inserted again.

The driver can also make a daily vehicle unit printout and enter his additional activities up to the next insertion of the card and sign it.

In the case of longer duration from the vehicle – e.g. during a daily or weekly rest period – the driver card should be removed from the card slot.
Front interface

- Tachograph settings
  The driver or the company (with company card) can use the front interface to make various settings. This includes, for example:
  - Entry of the vehicle registration number and the country of registration
  - VDO Counter display
  - Remote control: Activity changes when the ignition is switched on or off
  - D1/D2 status detection
  - Printout logo
  - Download reminders
  - Recording of road speed and RPM profiles
  - Pre-overspeed warning
- DTCO 1381 Remote control
  The DTCO 1381 can be remotely controlled by means of a DTCO SmartLink in combination with an APP on a Bluetooth device or on test equipment. The driver can activate the remote control on the DTCO 1381 and use a code to connect the tachograph to a mobile device. (i.e. Smartphone)
  Details refer to “Activating the remote control” on page 66.
- Entry of the official registration number
  The Entry of the vehicle registration number and the country of registration can also be entered via an APP in combination with the DTCO SmartLink.
"Company" mode

Functions of the company card
- Company card insertion
- Prepare data download
- Company card withdrawal

"Company" mode
Functions of the company card

3. "Company" mode

Functions of the company card

The company card identifies the company and registers it into the DTCO 1381, the first time that the card is inserted. Thus, the access rights to the data assigned to the company will be ensured.

The inserted company card authorises you:
- To lock-in and lock-out the company when using this DTCO 1381, for example on sale of the vehicle, expiry of the vehicle lease etc.
- If necessary (one time), the entry of the member state and the vehicle registration number of the vehicle.
- To access data from the data memory and, especially data that has been assigned specifically to this company.
- Access to data from an inserted driver card.
- To display, print out or download data via the download interface.

Menu functions in the "company" mode

In principle, follow the same procedure when navigating in the menu functions.

The company card is designed for the data management of the company only and must not be used for driving! If the company card is used for driving, a message will be displayed.

Downloading of data at regular intervals is compulsory in most member states. In the following situations download of data from the data memory is also recommended:
- Sale of the vehicle,
- Immobilisation of the vehicle,
- Replacement of a defective DTCO 1381.

In this case, you can only display, print out or download data from a driver card inserted in card slot 1.

The company takes care for the correct use of the company card(s). Please observe the legal stipulations applicable in your country!

The company card is designed for the data management of the company only and must not be used for driving! If the company card is used for driving, a message will be displayed.

In this case, you can only display, print out or download data from a driver card inserted in card slot 1.

Menu functions in the "company" mode

In principle, follow the same procedure when navigating in the menu functions.

If, however, the company card is in card slot 2, all main menus assigned to card slot 2 will remain blocked.

In this case, you can only display, print out or download data from a driver card inserted in card slot 1.

Menu access blocked!

Overview of the menu structure
3. "Company" mode

Company card insertion

1. Switch on the ignition (if required, due to an ADR variant).
2. Press either combination button for more than two seconds. The corresponding card tray is opened.
3. Open the card tray cover.
4. Insert your company card (with the chip facing upward and the arrow pointing forward) into the card tray.
5. Close the cover and push the card tray in until it engages.

The company card determines the language of the display. As an alternative, you can individually set a preferred language.

Refer to “Setting the language” on page 53.

Step / menu display | Explanation / meaning
--- | ---
6. Welcome 12:50 10:50UTC | Greeting text; The set local time “12:50” and the UTC time “10:50UTC” will appear for approximately 3 seconds (time offset = 2 hours).
7. 2 Sped. Muster | The name of the company appears. A progress bar indicates that the company card is being read.
8. or | If required, the DTCO 1381 may order you to enter the vehicle registration number.
9. | 

If the company card is inserted the first time, the company will automatically be locked-in the DTCO 1381.

The company lock function is activated. Thus, the protection of company-specific data is ensured!

After reading is complete, the standard display will appear.

The DTCO 1381 is in the "Company" mode, symbol “” (1).
Company card insertion

### "Company" mode

**Enter vehicle registration number**

<table>
<thead>
<tr>
<th>Step / menu display</th>
<th>Explanation / meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong></td>
<td>If the next query appears, select &quot;Yes&quot; and confirm.</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>Select and acknowledge the country. First character field to be entered is shown by a flashing cursor &quot;_&quot;. Select and confirm desired character. Repeat process, maximum 13 positions.</td>
</tr>
</tbody>
</table>
| **3.** | If less characters are required press key 
Confirm entry once again with the key . |
| **4.** | A technical data printout takes place automatically. |
| **5.** | Please verify your entry! Select "Yes" and confirm. If the registration number is wrong, select "No" and confirm. Step 1 appears, repeat the entry. |

**Note:** The entry of the vehicle registration number is a one-time entry. Enter the vehicle registration number in the DTCO 1381 exactly as it is on the vehicle. Any change after confirmation of the entry is only possible through an authorised specialist workshop using a workshop card.
3. "Company" mode

Prepare data download

1. Open the covering cap (1) upwards
2. Connect the Laptop (4) with the download interface (2).
3. Start the reading software.
4. Or insert the Download Key (3) into the download interface.

The symbol (6) appears during the data transmission.

Communication between the DTCO 1381 and a Bluetooth-enabled device is possible with a DTCO SmartLink (5).

Do not under any circumstances interrupt the connection to the download interface. Leave the ignition on with an ADR variant *

5. After downloading the data, make sure you always close the covering cap (1).

Data identification

Before the data is downloaded, the DTCO 1381 will attach a digital signature (identification) to the copied data. With this signature, the data can be assigned to the DTCO 1381 and permit checking of the data’s completeness and authenticity.

Remote download *

With a fleet management system, data can also be downloaded remotely following authentication of a company card.

Danger of explosion

Please observe the instructions for transport and handling of hazardous materials in explosion-risk environments.

When loading and unloading hazardous materials ...
- the covering cap (1) must be closed
- and no data may be downloaded.

Standard display (a): Identification Data transmission running

When loading and unloading hazardous materials ...

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3. "Company" mode

Company card withdrawal

You can only withdraw the company card from the card slot when the vehicle is not moving!

1. Switch on the ignition (if required, due to an ADR variant).

2. Request the card from card slot 1 or card slot 2 for ejection; see page 14.

<table>
<thead>
<tr>
<th>Step / menu display</th>
<th>Explanation / meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 2 Speed. Muster</td>
<td>The name of the company appears. A progress bar shows that the DTCO 1381 is transferring data to the company card.</td>
</tr>
</tbody>
</table>
| 4. Company lock-out | No company Lock-out
  - Use the buttons 🔄 / 🔄 to select "No" and acknowledge with the button 🔄. |
|                      | Company Lock-out
  - Select "Yes" and acknowledge with the button 🔄. The company lock function is deactivated. The saved data of your company remains, but are locked out for any other company! |

5. 13:10  0km/h  12:34 0.7km |

The company card is released; the standard display appears. As applicable, a notice may appear that the periodical inspection is pending or the validity of the company card is expiring; see page 85.

The DTCO 1381 is in the "Operational" mode again, symbol "o" (1).
Operational mode

Inserting driver card(s)
Setting activities
Downloading driver card data
Withdrawing driver card(s)
Driver / vehicle change during operation
Inserting driver card(s)

1. Switch on the ignition (if required, due to an ADR variant).
2. For driver 1, keep the Driver 1 combination button pressed for more than 2 seconds. The card tray is then opened.
3. Open the card tray cover.
4. Insert your driver card (with the chip facing upward and the arrow pointing forward) into the card tray.
5. Close the cover and push the card tray in until it engages.
6. The subsequent procedure is menu-guided, see page 33.
7. As soon as the driver card of driver 1 has been read in, driver 2 can insert his driver card into card tray 2.

Remark
Menu guidance is carried out in the language stored on the driver card. As an alternative, you can individually set a preferred language. Menu functions for the display and printout of driver data are only available when a corresponding driver card is inserted. Thus the menu item "printout driver 2", for example, is only displayed if a driver card is inserted in card slot 2.

Refer to "Setting the language" on page 53.

Manual entries

According to the EU regulations, activities, which cannot be registered on the driver card, are to be added by means of manual entry. (For details on activities, see page 39.)

Example of unknown period
The following entry scenarios are possible after each time the driver card is inserted:

- Add activity rest period "#"; example 1, see page 36.

16:31 Local time 07:35 Local time

Unknown period

In accordance with responsible driving behavior as described in the EU regulations and in the general interest of traffic safety, please do not attempt to insert the driver card(s) while the vehicle is in motion!

Refer to "Overview of the events" on page 76.
4. Operational mode

- Continue work shift; example 2, see page 37.
- Continue, end a work shift and/or prefix activities to a work shift; example 3, see page 38.

**Fundamental course of action**

- Select the desired function, activity or numeric value with the keys  /  in the entry field.
- Confirm your selection with the button .

1. **welcome**
   
   *07:35* 05:35UTC

Greeting text: The set local time "07:35" and the UTC time "05:35UTC" appear for approx. 3 seconds (time offset = 2 hours).

2. **1 Maier**
   
   **---**

The driver's last name appears. A progress bar indicates that the driver card is being read.

3. **last withdrawal**
   
   15.04.17 16:31

The date and time of the most recent card withdrawal will be displayed in local time (symbol "*"*) for approx. four seconds.

4. **1M entry addition?**
   
   no
   
   yes

- If you do not want to add any activities, select "No"; for more options see step 9.
- By selecting "Yes", you request DTCO 1381 to make manual inputs.

5. **M 15.04.17 16:31**
   
   15.04.17 07:35

"M" = Manual entry;

"n" = Entry field of the activity is flashing

6. **M 15.04.17 16:31**
   
   15.04.17 07:35
   
   16.04.17 09:35

The period between removal (1st line) and current insertion (2nd line) in local time appears.

7. **begin country**
   
   E
   
   AN

You can successively enter the logically possible variables (flashing entry fields) in the following order:

"Activity – Day – Month – Year – Hour – Minute".

The process ends when the time of the insertion operation is reached.

The following request appears before the manual entries have been accepted.

8. **begin resion**
   
   E  AN

- Select and acknowledge the country.
Inserting driver card(s)

- If required, select and acknowledge the region.
- You can abort the entry of a country with the button  

Confirm entry with "Yes".
- Select "No".
- Refer to "Correction possibilities" on page 34.

The standard display (a) appears. Symbols of the card symbol which are displayed before have the following meaning:

- "X" The driver card is in the card slot.
- "W" You can start the journey, relevant data are read in.

Symbol "W" is displayed for both card slots.
If the cards for driver 1 and driver 2 are inserted, driving can be commenced as soon as both symbols "W" are displayed for driver 1 and driver 2.
The beginning of a trip ends every started manual input. Pending manual entries for the other card slot are no longer possible.

While the driver card is being read, some functions are not possible.
- Calling up menu functions
- Requesting a tachograph card

If a menu button or the ejection button is pressed, a message will be displayed.

Correction possibilities
You can select and correct the possible variables with the key  (backspace) directly in the entry block.
In the event that you do not accept the entries at query "M confirm entry?", first step 4 appears and subsequently the first entry block (step 5) requires to be completed.

You can only successively correct the possible variables.

When pressing and holding key , you will jump to the next entry field or to the next complete entry block, respectively.
4. Operational mode

Inserting driver card(s)

▶ Country entry during manual entry

1. M 28.10.17 17:45
   📀 07.11.17 14:00
   📀? end country
   :D

   - Select and acknowledge the symbol "end country" in the first entry field "D". (Only possible when the time of the first manual entry does not match the time of the country entered during the last card removal.)
   - Select and acknowledge the country.
   Or:

2. M 07.11.17 12:10
   📀 07.11.17 14:00
   📀? best. country
   📀? best. country

   - Select and acknowledge the symbol "best. country".
   - Select and acknowledge the country.

Selecting the countries

The most recently entered country appears first. By pressing the buttons 🗁 / 🗁, the four most recently entered countries will appear. Symbol: Colon in front of the country symbol "D".

Further selection is made in alphabetic order starting with letter "A":
- using key 🗁 A, Z, Y, X, W, ..., etc.;
- using key 🗁 A, B, C, D, E, ..., etc.

☞ Refer to “Country symbols” on page 99.

Pressing and holding down the keys 🗁 / 🗁 will accelerate the selection (auto-repeat function).

▶ Aborting the entry procedure

If no entry is made during the entry procedure, the following display will appear after 30 seconds.

If the button 🗁 is pressed within an additional 30 seconds, then the entry can be continued.

After this time or when driving commences, the driver card will be read to completion and the standard display (a) will appear.

As the data entered must be verified the data will be not be saved. This affects the remote entry of data as well as direct entry in to the DTCO 1381.

Aborting the manual entry procedure by requesting the driver card.

☞ Details refer to “Card withdrawal during manual entry” on page 42.
4. Operational mode

Add "Rest period" activity

Example 1:
Withdrawal (15.04.17) Insertion (18.04.17)
16:31 Local time 07:35 Local time

Please note: Entry takes place in local time.
1. Press and hold key 
2. Automatically jumps to the last entry field (minutes flash).
3. Confirm entry with key 
4. Follow the menu guidance.
4. Operational mode

Inserting driver card(s)

4. Continuing the work shift

Example 2:

Please note: Entry takes place in local time.

1. Set and confirm first activity "x".
2. Set and confirm the day, set and confirm hours, set and confirm minutes.
3. Set and confirm second activity "x".
4. Press and hold key , until the minutes flash.
5. Confirm entry with key .
6. Follow the menu guidance.

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Inserting driver card(s)

4. Operational mode

Continuing the work shift and prefixing activities to a work shift

Example 3:

Please note: Entry takes place in local time.

1. Set and confirm first activity "x" with date, time.
2. Select and acknowledge the symbol "end country".
3. Select and acknowledge the country.
4. Set and confirm activity "?" = unknown time with date, hour.
5. Follow the same procedure until the time entries of the insertion-withdrawal process has been completed.
4. Operational mode

**Setting activities**

- = Driving time (automatic when driving)
- = Other work time
- = Availability (waiting time, co-driver time, driver 2 sleeper-cab time during a journey)
\( \ddagger \) = Break times and rest periods

**Manual setting**

The activities may be set only if the vehicle is stationary!

1. As the driver, press the mode activity button for **driver 1**; \( \Rightarrow \) see page 14. The standard display (a) appears.

2. Continue pressing the button until the desired activity (\( \ddagger \), \( \times \)) appears in the display (1). After approx. 5 seconds, the previous display appears.

3. As the 2nd crew member, press the mode activity button for **driver 2**; \( \Rightarrow \) see page 14.

**Automatic setting**

The DTCO 1381 switches automatically to the following activities:

- Automatic setting after ignition on/off *

The activity (1) and/or (2) which changes automatically on the basis of ignition on or off, appears in the standard display (a) and flashes for approx. 5 seconds. Then, the previous display will appear again.

---

**Note**

After switching the ignition on/off the default mode activity triggered automatically by the DTCO 1381 can be programmed by a company using a company card (\( \Rightarrow \) see page 23.) or at an authorised workshop (\( \Rightarrow \) see page 122.)
Setting activities

4. Operational mode

Handwritten activity entries

According to the directive, you (as driver) are obligated to note activities with handwritten entries in the following cases:

- When the DTCO 1381 is defective.
- If the driver card is lost, stolen, damaged, or if the driver card malfunctions, a daily printout from the DTCO 1381 must be generated at the beginning and end of the journey. If necessary, you must insert the availability and other working times by handwritten entries.

The rear side of the paper roll can be used to make handwritten entries (2) of your activities and to complete the printout by personal information (1).

Personal information

- First and last name
- Number of the driver card or the driving licence
- Location at the beginning of the shift
- Location at the end of the shift
- Odometer reading at the end of the shift
- Odometer reading at the beginning of the shift
- Kilometres travelled
- Date
- Personal signature

⚠️ Please observe the legal stipulations applicable in your country!
4. Operational mode

Downloading driver card data

Please make sure that only one driver card is inserted! Otherwise there will be no transfer of data.

1. Open the covering cap (1) upwards
2. Connect the Laptop (4) with the download interface (2).
3. Start the reading software.
4. Or insert the Download Key (3) into the download interface.

Communication between the DTCO 1381 and a Bluetooth-enabled device is possible with a DTCO SmartLink (5).

Standard display (a): Identification Data transmission running
The symbol (6) appears during the data transmission.

Do not under any circumstances interrupt the connection to the download interface. Leave the ignition on with an ADR variant (*).

Data identification
The copied data are provided with a digital signature (identifier). With this signature, the data can be assigned to the driver card and permit checking of the data's completeness and authenticity.

For detailed information about the reading software, please refer to the appropriate documentation.

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4. Operational mode

Withdrawing driver card(s)

1. Switch on the ignition (if required, due to an ADR variant).
2. Enter the corresponding activity; for example, at the end of the work shift to "h".
3. Eject the card from card slot 1 or card slot 2; see page 14. The subsequent procedure is menu-guided, see page 43.

Card withdrawal during manual entry
1. Eject the card from card slot 1 or card slot 2; see page 14.
2. Select and acknowledge the following queries with "No".

3. Continue, see page 43.

The manual entry is aborted, the DTCO 1381 saves the activity "?" for the unknown period.

You can withdraw the driver card from the card slot only when the vehicle is not moving!

The driver card should be removed from the card slot at the end of a daily shift. When the driver or vehicle is changed, the driver card should generally be withdrawn from the card slot. Refer to “Driver / vehicle change during operation” on page 44.
4. Operational mode

Menu guidance after withdrawing driver card

<table>
<thead>
<tr>
<th>Step / menu display</th>
<th>Explanation / meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The driver's last name appears. A progress bar shows that the DTCO 1381 is transferring data to the driver card.</td>
</tr>
</tbody>
</table>
| 2.                  | - Select and acknowledge the country.  
- If required, select and acknowledge the region.  
- Use button \( \uparrow \) to abort the entry of a country if you, for example, want to continue your work shift.  
Use the buttons \( \uparrow \) or \( \downarrow \) to select the country and confirm your selection with the \( \uparrow \) button. |
| 3.                  | The driver card is released; the standard display (a) appears.  
A message may appear in advance that the validity of the driver card is due to expire, a periodic inspection is due, or the next download of the driver card is required. \( \Rightarrow \) see page 85. |
Driver / vehicle change during operation

4. Operational mode

- Driver / vehicle change during operation

  Case 1:
  The crew exchanges positions, driver 2 becomes driver 1
  1. Withdraw the driver cards from their respective card slots and exchange them by inserting them into the other card slots.
  2. Set the desired activity.

  Case 2:
  Driver 1 and/or driver 2 leave the vehicle
  1. When removing the driver card from the DTCO 1381, the driver can generate a daily card printout.
  2. The new vehicle crew insert their new driver cards, depending on function (driver 1 or driver 2), into the card slots.

  Case 3 – Mixed operation:
  Vehicle usage with different tachograph types
  1. For example, analogue tachographs or...
  2. Digital tachographs with driver card according to EC Regulation (EEC) no. 3821/85 annex I B, e.g. DTCO 1381.

  During an inspection, the driver must be able to present the following items for the current day and for the previous 28 calendar days:
  - the driver card (1),
  - the relevant daily printouts from the digital tachograph (2), e.g., if the driver card is damaged or fails to operate properly,
  - the charts covered with data (3)
  - and, if necessary, handwritten information concerning the activities.

⚠️ Please observe the legal stipulations applicable in your country!
4. Operational mode

Documents to be kept while driving

Convalescence / Recreation holiday:

Pursuant to directive 2006/22/EC of the European Commission, the driver must have a attestation relating to the following circumstances over the previous 28 days:

- Period during which the driver was on sick leave.
- Period during which the driver was on holiday.
- Period for a journey which took place outside of the scope of application of Council Regulation (EC) No. 561/2006 or the AETR.

You will find a printable version of the form on the Internet at: ec.europa.eu

Abnormal cases:

Provided that road safety is not thereby jeopardised and to enable the vehicle to reach a suitable stopping place, the driver may depart from Drivers Hours rules to the extent necessary to ensure the safety of persons, of the vehicle or its load. The driver should indicate the reason for such departure at the latest on arrival at a suitable stopping place:

- manually on a chart
- printout from the DTCO 1381
- or in the duty roster.

Extract: Form sheet Activities
Printer Handling

Insert paper roll
Printout of data
5. Printer Handling

Insert paper roll

- Please note!
  - Use (order) only paper rolls (original VDO printer paper) on which is visible the following markings:
    - Tachograph type (DTCO 1381) with approval mark "§ 84"
    - and approval marks "§ 174" or "§ 189".

1. Press the unlocking upper edge of the printer panel and the printer drawer opens.

2. Insert a new paper roll according to the illustration and guide it via the pulley (1).

3. Push the printer drawer into the printer compartment until it engages.

4. The printer is then ready for operation and you can start a printout.

5. Danger of injury
   - Depending on the volume of information printed, the thermal printing head may be very hot. You can burn your fingers!
   - Do not reach into the printer compartment after having removed the printer drawer.

   Make sure that the paper roll does not become jammed in the printer drawer and the start of the paper (2) extends below the edge of the printer drawer!

6. Damage to the device
   - Do not insert objects into the printer compartment in order to prevent damage to the device.

   If the paper runs out during a printout, the printout must be started again via the menu function after having inserted a new paper roll.

   If the paper runs out during a printout, the printout must be started again via the menu function after having inserted a new paper roll.
5. Printer Handling

- Printout of data

- Start printout

- Printing is only possible when...
  - the vehicle is stationary and the ignition is switched on (required only for ADR variant *),
  - the printer drawer is closed and a roll of paper is inserted,
  - no other faults prevent printing.

1. Request a daily printout through the menu.
   - Refer to “Calling up menu functions” on page 52.
2. Acknowledge the menu display with the button.
3. Select and acknowledge the printout type (UTC or local time).
4. The printout will start. Wait until the printout is complete.

5. When tearing off a printout, take care that the card trays are closed, otherwise they might be soiled by paper particles.

5. Tear off the printout from the paper roll

6. The printout should be kept clean and protected from dirt, strong light, and sunlight.

- Cancel printout

1. While the printout is running, press the button and the following question will appear.

2. Use the buttons / to select the desired functions and confirm your choice with the button . The printout will be either continued or cancelled.
Printout of data

5. Printer Handling

Things to note when printing

- You will see a coloured mark on the rear side of the printout shortly before the paper roll is empty.
- When the paper roll is empty, you will see the following message.

If the paper runs out during a printout, the printout must be started again via the menu function after having inserted a new paper roll.

Clear paper jam

If a printout is not torn off properly, or if the paper roll is used up, the paper may become jammed and then prevent the next printout from continuing through the paper slot.

1. Open printer drawer.
   - Refer to “Insert paper roll” on page 48.
2. Tear off any crumpled paper from the roll and remove any remaining bits of paper from the printer drawer.
3. Insert a paper roll again and then push the printer drawer into the printer compartment until it engages.

Please observe the given warning messages!

- Refer to “Insert paper roll” on page 48.

At the beginning of each printout, there is an empty space of approx. 5 cm.
Menu functions

Calling up menu functions
VDO Counter *

Overview of the menu structure
Main menu printout driver 1 / driver 2
Main menu, vehicle printout
Main menu entry driver 1 / driver 2
Main menu entry vehicle
Main menu display driver 1 / driver 2
Main menu display vehicle
Calling up menu functions

Menu functions for the display and printout of driver data are only available when a corresponding driver card is inserted. Thus the menu item "printout driver 2", for example, is only displayed if a driver card is inserted in card slot 2.

When selecting a lower menu item and no input is made within 30 seconds, the DTCO 1381 reverts back to the last first menu level item. Any inputs not confirmed up to that point are not accepted.

When the vehicle is stationary
You can access the following information with the keys  
- Detailed times of the inserted driver card(s).
- VDO Counter * information - daily and weekly driving, work, rest / break time planning and availability.

Change of activities
1. When pressing activity button "1" / "2", the standard display (a) will appear (a).
2. If necessary, change the currently displayed activity. After 5 seconds, the DTCO 1381 switches back to the previously set display.

Display at start of drive
- For more details, see “VDO Counter *” from page 54.
- The UTC time with date as well as the set offset for the local time.
- The menu to set the desired language.
- Refer to “Setting the language” on page 53.
- Use the key  to return directly to the standard display (a).

The extensive menu functions will appear when pressing the key 

Refer to “Overview of the menu structure” on page 59.
6. Menu functions

When driving commences, the most recently set standard display (a) or (b) appears.

If activated, the standard display for the VDO Counter * can also be displayed.

Details refer to “Standard display(s)” on page 19.

▶ Displaying the times of the driver card

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:38</td>
<td>00:15</td>
</tr>
<tr>
<td>10:25</td>
<td>00:57</td>
</tr>
<tr>
<td>00:11</td>
<td>00:21</td>
</tr>
</tbody>
</table>

Data display of driver 1 and 2
(a) Times of driver 1
(b) Times of driver 2
(1) Driving time "o" of Driver 1 since a valid break time.

(2) Valid break time "\( \sigma \)" in cumulative break periods of at least 15 minutes followed by 30 minutes, in accordance with regulation (EU) no. 561/2006.
(3) Sum of driving times over two weeks
(4) Duration of the set activity

If the driver card is missing, times (except for pos. 3) which are assigned to the respective card slot "1" or "2" will appear.

▶ Setting the language

Observe the paragraph “Storing the language setting” so that the DTCO 1381 will temporarily memorise the desired language.

1. Use the buttons \( \Delta \) / \( \Box \) to select the function “select language?” and press the button \( \Box \).
2. Use the buttons \( \Delta \) / \( \Box \) to select the desired function and confirm your selection with the \( \Box \) button.

3. The DTCO 1381 indicates the action for about three seconds in the selected language.

Storing the language selection

If, at the time of the language setting, only your driver card or company card is in the card slot 1, the DTCO 1381 memorises the preferred language for your card number.

When withdrawing / inserting the tachograph card again, the menu guidance as well as all displayed texts will be in the selected language.

The DTCO 1381 reserves up to five storage areas. If all storage areas are full, the oldest saved value will be overwritten.
VDO Counter *

- Correct activity settings during the shift - no operational error. For example, unintentional setting of the work time activity "a" instead of a daily rest period "e"!
- Entry of ferry/train special condition and the current activity.

» Layout of the VDO Counter display

1. Current set activity
2. "%" = User information
3. Periods with unknown activity "%" or unsufficient data are recorded on the driver card (e.g. use of a new driver card). The VDO Counter evaluates unknown activities, as the activity "e". If a relevant time overlap is determined in the driver activities, then this will be shown in the display by the "!" symbol instead of the "?" symbol and the driver activity.
4. Remaining break time "?"
   When driving, the display indicates remaining break time available. (<>00h00 = break finished)
5. Next available driving time "?"
   Duration of the available driving time after after completion of a required break / rest period.
6. Latest start of the daily rest period "?"
   For example, with the activity "a" being set, the remaining time until the start of your next required daily rest period is displayed.

Please note!
Because of differing interpretations that may be made by the enforcement authorities with regard to the Reg. (EU) 561/2006 and the AETR Regulations and because of other system constraints the VDO Counter does not discharge the user from his obligation to register his driving, rest, availability and other working times and to evaluate them by himself to allow him compliance with the regulations in force. The VDO Counter does not claim to display the legal regulations in a generally valid and error free manner. Further information on the VDO Counter are available on the Internet at www.fleet.vdo.com.

The following conditions are obligatory in order to analyse the data and display useful Drivers Hours information:
- Complete shift time activities, including manual entries to the driver card.
6. Menu functions

(7) Beginning of the next driving time "he"
You may begin the next driving period only after the end of this time.

Displays during trip

Please observe the country-specific regulations related to working time!

Example 1:

(1) Remaining driving time.
(2) At the end of the driving time (1), at the latest the duration of break (full or continuation of the cumulative break time) shown must be taken.

Example 2:

Activity "a"; "h" = active display

Example 3:

(3) At the end of the driving time (1) at the latest, the legally stipulated rest period displayed must be taken. The rest period may be taken in two parts, the first at least 3 hours long and the second at least 9 hours long.

Example 4:

Activity "a"; "h" = active display

Example 5: OUT of scope

Activity "a"; Out of scope set

(6) The display of the remaining driving time is not active ("h" does not flash), there is no counting down. The VDO Counter evaluates activity "a" as activity "h".

Please note that the VDO Counter driving and rest period calculations correspond to (EU) 561/2006 and not to EEC Regulation 3821/85 Annex 1B. Therefore, the standard display on the DTCO may differ; see page 19.

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VDO Counter *

► Display for activity "Break time"

Example 1: Break time

Activity "h": "h" = active display
(1) Remaining break time.
(2) Remaining driving time if the break time (1) is disregarded.
(3) Duration of the next available driving time after the end of the displayed break time (1).
(4) Available driving time after a valid break time.

Example 2: Break time

Activity "h": "h" = active display
(5) Remaining break time.
(6) Duration of the available daily driving time after completion of a required break time (5).

Example 3: Daily rest period

Activity "h": "h" = active display
(7) Remaining daily rest period.
If applicable, divided into 3 + 9 hours.

Example 4:

Activity "h": "h" = active display
(8) Valid break / rest time has been completed.
Display 00h00 flashes for 10 seconds.
If the rest period is resumed, the duration of the next daily or weekly rest period changes on the VDO Counter.
(9) Start of next driving time.
Situation: The max. weekly or two weekly driving time has been completed. The daily / weekly rest period has been completed but the new daily driving time can only be started after the displayed time. (Due to no remaining time left in the current fixed week.)

► Display for activity "Working time"

Please observe the country-specific regulations related to working time!

Activity "h": "h" = active display
(1) Duration of the next daily rest period.
(2) Remaining current driving time.
(3) Remaining time till next daily rest period.
At the latest before the displayed time reaches zero, a daily rest period must begin.

Note:
The VDO Counter evaluates availability activity "a" as break time "h" during an interruption of the driving time period (but not as daily rest).
6. Menu functions

You can access further information with the keys. ▲ / ▼.

▶ Display daily values

- Activity "◆/"; ◆ = active display
- (1) Symbol for the display of the daily values.
- (2) Remaining daily driving time.
- (3) Duration of the next daily rest period.
- (4) At the latest before the displayed time reaches zero, a daily rest period must begin.

▶ Display weekly values

- Activity "◆/"; ◆ = active display
- (1) Symbol for the display of the weekly values since the last weekly rest period.
- (2) Remaining weekly driving time.
- (3) Duration of the weekly rest period. By the end of six consecutive 24-hour periods from the end of the last weekly rest period, there must be a new weekly rest period.
- (4) At the latest before the displayed time reaches zero, the weekly rest period must begin.

If the calculation for the weekly values are deactivated, these values are not displayed.

VDO Counter status display

- (1) Symbol for the status display.
- (2) Symbol for crew of two drivers (multimanning).
- Is displayed if crew operation takes place from the beginning of the work shift. The VDO Counter considers the respective valid rules in its calculations. The VDO Counter takes into consideration multimanning rules.
- (3) During this week, a further two reduced daily rest periods can be taken (maximum 3 times per week).
- (4) During this week, a further extended daily driving period (up to a max. 10 hours) can be taken (maximum 2 times per week).
- (5) Reduced weekly rest compensation. Due to a reduced weekly rest period, the time shown must be compensated together with another rest period of at least 9 hours in one block.

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The displays for the reduced (5) weekly rest periods can be deactivated for international passenger vehicle journeys.

If the calculation for the weekly values are deactivated, these values are not displayed.
### Overview of the menu structure

<table>
<thead>
<tr>
<th>Printout Print</th>
<th>Entry</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver 1</strong></td>
<td>24h day</td>
<td>Drivers 1</td>
</tr>
<tr>
<td></td>
<td>!x! event</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ activities</td>
<td></td>
</tr>
<tr>
<td><strong>Driver 2</strong></td>
<td>24h day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>!x! event</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ activities</td>
<td></td>
</tr>
<tr>
<td><strong>Vehicle</strong></td>
<td>24h day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>!x! event</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ overspeed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ techn. data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ status D1/D2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ v-profiles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ■ n-profiles</td>
<td></td>
</tr>
</tbody>
</table>

1) Menu functions only shown when the driver card is inserted in card slot 1.

2) Menu functions only shown when the driver card is inserted in card slot 2.
Overview of the menu structure

6. Menu functions

Navigating in the menu functions

The menu functions may be called only if the vehicle is stationary!
In the case of ADR variants, switch on the ignition (if required) to be able to use the printer and display operating modules without restrictions.

The procedure is always the same and will be described below in detail.

1. Press the button , you will be in the first main menu.

   The display in the first main menu with regard to the display and print menus is based on the driver cards inserted in card slots 1 and 2.
   - "printout driver 1" is displayed when a driver card is inserted in card slot 1.
   - "printout driver 2" is displayed when a driver card is inserted in card slot 2 and card slot 1 is empty.
   - "printout vehicle" is displayed when no driver cards are inserted.

This does not apply for the input menus.

1. Main menu

   The flashing action in the second line (shown in italics) indicates that there are additional selection possibilities.

2. Paging in the main menu

   Select the desired function with the keys / , for example a daily printout (4), and confirm the selection with the key .

3. Selecting a menu function

   The selected main menu (3) will appear, the possible functions will flash in the second line (4).

3. Select the desired function with the keys / , for example a daily printout (4), and confirm the selection with the key .

24h day
25.10.2017
24.10.2017
23.10.2017

4. Use the buttons / to select the desired day (5) and acknowledge the selection with the button .
6. Menu functions

5. Select the desired printing type with the keys / and confirm the selection with the key .

The DTCO 1381 reports for 3 seconds that a printout has started. If necessary, you can abort the printout.

Details refer to “Cancel printout” on page 49.

The most recently selected menu function will then appear.

6. Select another printout with the keys /.

7. Or press the button and return to the next-higher menu level.

Data access blocked
Access to saved data is regulated by access rights in accordance with the regulations and implemented by means of the respective tachograph cards. Lack of proper authentication is indicated as follows:

The data appears truncated. Personal data is partially or completely masked.

Leaving menu functions

Manually

1. Continue pressing the button , until the following question appears.

2. Use the buttons / to select “Yes” and acknowledge with the button .

Or use the button to skip the query.

The standard display (a) appears.
Main menu printout driver 1 / driver 2

From this menu you can print out the data of an inserted driver card. Select the listed functions step by step.

Switch on the ignition (if required, due to an ADR variant).

Remark
The procedure for driver 2 is identical to that for driver 1 and will not be explained separately. You can select the desired printout type prior to every printout.

"No" = Printout in local time

1. Print daily value
2. Print events
3. Print activities

A printout of all saved or still active events and faults will be made, see page 102.

A printout of all activities on the selected day will be made, see page 101.

From the selected day on, there is a printout of all activities of the last 7 calendar days, see page 106.
6. Menu functions

Main menu, vehicle printout

From this main menu you can print data from the data memory. Select the listed functions step by step. If necessary, switch on the ignition in case of the ADR variant.

Note
You can select the desired printout type prior to every printout.

"No" = Printout in local time

Printout in UTC time: yes
UTC time: no

Printout in UTC time: yes
UTC time: no

Printout from the data memory

1. Printout
   • vehicle
2. 24h
   • day
3. 24h
   • day
   25.10.2017
   24.10.2017

Print instances of over-speeding

1. Printout
   • vehicle
2. • vehicle
   • overspeed

Print technical data

1. Printout
   • vehicle
2. • vehicle
   • techn. data

A printout of all driver activities in chronological order, separated by driver 1/ driver 2 will be made, see page 103.

A printout will be made of instances when the overspeed value set in the DTCO 1381 was exceeded, see page 105.

A printout of data about vehicle identification, sensor identification, and calibration will be made, see page 105.

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Main menu, vehicle printout

- **Print v-diagram**
  1. **Printout**
     - & vehicle
  2. & vehicle
     - v-diagram
  3. v-diagram
     - 25.10.2017
     - 24.10.2017

   From the selected day on, there is a printout of speed data, see page 106.

- **Print D1/D2 status**
  1. **Printout**
     - & vehicle
  2. & vehicle
     - status D1/D2
  3. status D1/D2
     - 25.10.2017
     - 24.10.2017

   From the selected day on, there is a printout of status inputs of the last 7 calendar days, see page 106.

- **Print speed profiles**
  1. **Printout**
     - & vehicle
  2. & vehicle
     - v-profiles
  3. v-profiles
     - 25.10.2017
     - 25.10.2017

   A profile printout of the driven speeds will be made, see page 107.

- **Print rpm profiles**
  1. **Printout**
     - & vehicle
  2. & vehicle
     - n-profiles

   A profile printout of the engine speed rpm will be made, see page 107.
6. Menu functions

Main menu entry driver 1 / driver 2

You can enter the country independently of the function of inserting or withdrawing the driver card.

⚠️ According to the regulations, driver 1 and driver 2 must separately enter into the tachograph the country in which the respective driver begins or ends his shift.

Remark
The procedure for driver 2 is identical to that for driver 1 and will not be explained separately.

Enter Begin country
Select the following functions step by step:

1. entry
   - driver 1

2. - driver 1
   - begin country

3. - begin country
   28.10 11:30 D
   28.10 11:30 E

4. - begin region
   11:30 E AN

If necessary, you may be automatically asked to enter the region (step 4).

Enter End country
Select the following functions step by step:

1. entry
   - driver 1

2. - driver 1
   - end country

3. - end country
   29.10 11:30 F
   29.10 11:30 E

4. - end region
   11:30 E AN

If necessary, you may be automatically asked to enter the region (step 4).
Main menu entry driver 1 / driver 2

6. Menu functions

Activating the remote control
Select the following functions step by step:

1. entry
   driver 1

2. driver 1
   remote entries

3. Enable remote entries? Yes

4. Pair your device 12345678

If a DTCO SmartLink is inserted in the tachograph and a Bluetooth device initiates a pairing request, a code is shown on the DTCO 1381 display (step 4), which you need to enter on your Bluetooth-compatible device.

When using the remote control, the user is solely responsible for the legal completeness and correctness of the inputs and accepts this by using the remote control. The use of the remote control is not a part of the legal tachograph system. It is used under the operator's own responsibility.

The time periods in which a remote control is used can be printed and displayed. For more details, see “Daily printout of the vehicle” from page 103.
6. Menu functions

**Main menu entry vehicle**

You can perform the following entries in this main menu.

**Enter Out beginning / end**

If you use the vehicle for a journey outside of the scope of the regulations, you can set the function to “Out of Scope” and/or end it again.

Select the following functions step by step.

1. entry
   - vehicle
2. OUT begin
3. vehicle
   - OUT end

The setting “Out of Scope” ends automatically as soon as you insert a driver card into card slot 1 or withdraw a driver card from slot.

**Enter Beginning of ferry / train**

Select the ferry / train specific condition, when you are about to drive on to the ferry / train or when you have just parked up on the ferry / train.

Ferry / train operation and the VDO Counter*: Please note that the entry for the port operation “drive/movement”* must occur between the beginning of the first and before the end of the second rest period. Otherwise, the daily rest period may not be correctly recognised.

Select the following functions step by step.

1. entry
   - vehicle
2. vehicle
   - ferry/train

3. Then set your current activity.

The recording of the port operation is automatically ended as soon as a one-minute driving period has been recorded by the DTCO 1381.

If a driver card is inserted or removed, the “&” symbol automatically ends.

The “&” symbol is no longer displayed when the vehicle is moving. The display is shown again however when the vehicle stops before one minute of driving time is recorded by the DTCO 1381.
Main menu entry vehicle

6. Menu functions

- **Set Local time**

  *Please observe the legal stipulations applicable in your country!*

  Read and understand the chapter "Time management" before attempting to make any changes!

  ▶ Refer to "Time management" on page 92.

  Select the listed functions step by step.

  1. **entry**
     
     2. **entry**
     
     3. **entry**

  In the standard display, you may adjust the time to the local time zone as well as to the beginning or end of daylight-savings time in steps of ±30 minutes.

- **Make UTC correction**

  You can correct the UTC time up to a maximum of ±1 minute per week. Greater deviations can only be corrected by an authorised workshop.

  Select the following functions step by step:

  1. **entry**
     
     2. **entry**
     
     3. **entry**

  In step 3 you can enter date and hour of the company location and the difference from the UTC time.

- **Setting the company local time**

  A working time counter (referring to the local time of the company) is offered by the DTCO 1381 in order to assist working time calculations for domestic regulations. This information can be requested via the download interface. Select the following menu item to set the company local time:

  In step 3 you can enter date and hour of the company location and the difference from the UTC time.

- **UTC correct.**

  If the deviation of the displayed UTC time is more than 20 minutes, please contact an authorised workshop!
6. Menu functions

The menu function is disabled in the following situations:
- A correction has already taken place within the last seven days.
- You are trying to correct the UTC time between one minute before and one minute after midnight.

When selecting, the following note will appear for three seconds.

 UTC correct. impossible!

Switching on/off the vehicle recording
You can switch on and off the recording of the vehicle position data.
Select the following functions step by step:
1. entry
2. # vehicle
   ↑ logging
3. # vehicle
   ↑ logging, on
   ↑ logging, off

Activating additional functions
When entering a licence code you can activate additional functions on the DTCO 1381.
Select the following functions step by step:
1. entry
2. # vehicle
   $ licence code
3. $ licence code
   12345678

If the correct licence code has already been entered, it is displayed accordingly and cannot be changed. In this case, the additional functions are already activated.

The licence code can be purchased via the VDO Online shop; see page 124.

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Main menu display driver 1 / driver 2

From this menu you can display the data of an inserted driver card.

In the case of ADR variants, switch on the ignition (if required) to be able to use the data display without restrictions.

Information on the display
The data will appear on the display similar to how it appears on a printout, although one printout line (24 characters) will be shown divided onto two lines.

Example for the data display
If you page backward with the \[ \]\[ \] buttons while paging through the information, you will be able to move backward only about 20 printout lines.
Use the \[ \] button to leave the display.

Remark
Calling a function is identical to that of a printout and will not be explained separately. There is also a possibility to access any desired display in local time.

You can display all activites of the selected day or the saved or still active events and faults by paging.

Select the possible displays for driver 1 or driver 2 step by step.

Display in UTC-time yes
UTC-time no

"No" = Display in local time

23.10.2017 14:55 (UTC)
6. Menu functions

Main menu display vehicle

From this main menu you can display data from the data memory.

In the case of ADR variants, switch on the ignition (if required) to be able to use the data display without restrictions.

Information on the display
The data will appear on the display similar to how it appears on a printout, although one printout line (24 characters) will be shown divided onto two lines.

Example for the data display
If you page backward with the / buttons while paging through the information, you will be able to move backward only about 20 printout lines.

Remark
Calling a function is identical to that of a printout and will not be explained separately. There is also a possibility to access any desired display in local time.

"No" = Display in local time

Select the possible functions step by step.
By paging, you can:
- Display all driver activities in chronological order.
- Display of all saved or still active events and faults.
- Display the instances when the set overspeed was exceeded.
- Display data about vehicle identification, sensor identification, and calibration.

Or
- Display the number of the company card of the registered company. If no company is registered, then "___" will appear.

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Messages

A message appears
Overview of the events
Overview of the faults
Driving time warning
Overview of the operational notes
The DTCO 1381 permanently records the driver-based and vehicle-based data and monitors the system’s functions. Errors in a component, in the device, or in the operating procedure will be displayed immediately after occurrence and are divided functionally into the following groups:

- ! = Event
- x = Fault
- • = Driving time warning
- • = Operational notes

Characteristics of the messages

Events, faults:
- The display’s backlighting flashes for approximately 30 seconds. At the same time, the cause of the fault appears with a pictogram combination,
- plain text of the message, and error code.
- You must acknowledge these messages using button (1).
- The DTCO 1381 also saves (in the driver card’s data memory) data related to the event or the fault in accordance with the memory regulations contained in the directive. You can display or print this data through the menu function.

Driving time warnings
- This message warns the driver about excessive driving times.
- The message is backlit and must be confirmed by means of button (2).

Operational notes
- Operational notes are displayed without flashing backlighting and (with the exception of some messages) disappear automatically after 3 or 30 seconds.

Risk of Accident
- While driving, messages can appear in the display. It is also possible that the driver card will be automatically ejected due to a security breach.
- Do not be distracted by this; instead, continue to focus all of your attention on driving safely.
7. Messages

**Instrument display**

If an instrument display is built into the vehicle, the functional monitoring " " will refer to messages on the DTCO 1381.

For detailed information refer to the vehicle's operating instructions.

**Acknowledgement of messages**

1. If you press the button , the flashing of the backlighting will stop immediately.

2. Press the button again, the message disappears and the standard display (a), (b) or (c) will appear again.

**Remark**

The operational note disappears when pressing the button for the first time.

If several messages are pending, then you must acknowledge the individual messages one after the other.

If the tachograph fails to operate properly, you (as driver) will be responsible to note information about the activities which will no longer be properly recorded or printed by the tachograph on a separate sheet or on the rear side of the paper roll!

Refer to “Handwritten activity entries” on page 40.
## Overview of the events

**If an event repeats on a continuous basis, please contact an authorised workshop.**

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>!security breach</td>
<td>The following are possible causes:</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td></td>
<td>- Error in the data memory, data security in the DTCO 1381 is no longer ensured.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- The data from the sensor are no longer reliable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- The DTCO 1381 housing was opened without authorisation.</td>
<td></td>
</tr>
<tr>
<td>!security breach</td>
<td>The card lock is disturbed or defective,</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td></td>
<td>- The DTCO 1381 no longer detects a tachograph card that was previously inserted correctly.</td>
<td>If the DTCO 1381 recognises security breaches which do no longer ensure the correctness of the data on the tachograph card, the tachograph card is automatically ejected (even while the vehicle is moving). Insert tachograph card once again or have it checked if necessary.</td>
</tr>
<tr>
<td></td>
<td>- The identity or authenticity of the tachograph card is not proper or the data recorded on the tachograph card is not reliable.</td>
<td></td>
</tr>
<tr>
<td>power interruption</td>
<td>The power was disconnected or the power supplied to the DTCO 1381 / sensor was too low or too high. Under certain conditions this message can also appear when the engine starts!</td>
<td>Acknowledge message. Refer to &quot;Power interruption&quot; on page 21.</td>
</tr>
<tr>
<td>sensor fault</td>
<td>The communication with the sensor is interrupted.</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td>motion conflict</td>
<td>Contradiction in the evaluation of the vehicle movement between sensor and an independent signal source. Perhaps the function (ferry/train) was not set during the transport.</td>
<td>Acknowledge message. Contact an authorised workshop as soon as possible.</td>
</tr>
</tbody>
</table>

**DTCO 1381**
7. Messages

## Overview of the events

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="icon" alt="1 card not valid" /></td>
<td>The tachograph card has either expired, is not yet valid, or the authentication has failed. An inserted driver card which has become invalid after a change of day will be automatically written to and ejected (without request) after the vehicle becomes stationary.</td>
<td>Acknowledge message. Check tachograph card and insert it again.</td>
</tr>
<tr>
<td><img src="icon" alt="2 cards conflict" /></td>
<td>The two tachograph cards must not be inserted together in the DTCO 1381! For example, the company card is inserted together with a control card.</td>
<td>Acknowledge message. Remove the corresponding tachograph card from the card slot.</td>
</tr>
<tr>
<td><img src="icon" alt="1 card not closed" /></td>
<td>The driver card was not properly removed from the last tachograph. In some cases driver-based data will not be saved.</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td><img src="icon" alt="overspeed" /></td>
<td>The set maximum speed was exceeded for longer than 60 seconds.</td>
<td>Acknowledge message. Reduce speed.</td>
</tr>
<tr>
<td><img src="icon" alt="1 insertion while driving" /></td>
<td>The driver card was inserted after driving has begun.</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td><img src="icon" alt="1 time overlap" /></td>
<td>The set UTC time of this tachograph is behind the UTC time of the previous tachograph. This produces a negative time difference.</td>
<td>Acknowledge message. Determine the tachograph with the incorrect UTC time and make sure that an authorised workshop checks and corrects the tachograph as soon as possible.</td>
</tr>
<tr>
<td><img src="icon" alt="driving without card" /></td>
<td>Driving commenced without a driver card or without a valid driver card in card slot 1. The message also appears if a non-permissible card combination is caused by inserting the card before or while the vehicle is moving; Refer to “Operating modes of the DTCO 1381” on page 88.</td>
<td>Acknowledge message. Stop vehicle and insert valid driver card. Withdraw a possibly inserted company card / control card from the DTCO 1381.</td>
</tr>
</tbody>
</table>

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### Overview of the faults

If a fault repeats on a continuous basis, please contact an authorised workshop.

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>✝️ internal fault</td>
<td>Serious fault in the DTCO 1381, the following are possible causes:</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td></td>
<td>• Unexpected program faults or processing time faults.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Button elements blocked or pressed simultaneously for some time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Communication fault with external devices.</td>
<td>Check proper function of the button elements.</td>
</tr>
<tr>
<td></td>
<td>• Communication fault with the instrument display.</td>
<td>Check connecting cables or function of the external devices.</td>
</tr>
<tr>
<td></td>
<td>• Fault at pulse output.</td>
<td>Check connecting cables or function of the instrument display.</td>
</tr>
<tr>
<td>✝️ internal fault</td>
<td>Fault in the card mechanics, e.g. card lock is not closed.</td>
<td>Remove tachograph card and insert it again.</td>
</tr>
<tr>
<td>✝️ time fault</td>
<td>UTC time of the DTCO 1381 is not plausible or does not function properly. In order to avoid an inconsistency of data, newly inserted driver / company cards are not accepted!</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td>✝️ printer fault</td>
<td>The printer's supply voltage has failed or the temperature sensor for the printing head is defective.</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeat the process and, if necessary, switch off / on the ignition again.</td>
</tr>
</tbody>
</table>
### Overview of the faults

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>✌ download fault</td>
<td>Fault while downloading the data to an external device.</td>
<td>Acknowledge message. Repeat the data download once again. Check connecting cables (e.g. loose contact) or external device.</td>
</tr>
<tr>
<td>⦿ sensor fault</td>
<td>The sensor has indicated an internal fault after a self-test.</td>
<td>Acknowledge message.</td>
</tr>
<tr>
<td>♂1 card fault</td>
<td>A communication fault has appeared while reading / writing the tachograph card, e.g. by dirty contacts. It might not be possible to record the data completely on the driver card!</td>
<td>Acknowledge message. Clean the contacts of the tachograph card and insert it again. Refer to &quot;Disposal of the components&quot; on page 93.</td>
</tr>
</tbody>
</table>
Driving time warnings

### Driving time warnings

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>![break!] 100h15</td>
<td>This message appears after an uninterrupted driving time of 4 hours 15 minutes.</td>
<td>Acknowledge message. Please plan a rest break soon.</td>
</tr>
<tr>
<td>![break!] 100h30</td>
<td>Driving time exceeded! This message appears after an uninterrupted driving time of 4 hours 30 minutes.</td>
<td>Acknowledge message. Please take a rest break.</td>
</tr>
</tbody>
</table>

**Please note!**

The DTCO 1381 registers, saves and calculates the driving times on the basis of the rules established by the EU regulations. It warns the driver prematurely about exceeding his driving time!

However, these cumulative driving times do not anticipate the legal interpretation of "continuous driving time".

**VDO Counter * display**

After having acknowledged the second "Driving time warning", the VDO Counter * displays your driving time (1) has ended (except for Out of Scope operation). Please take a rest break at once.
7. Messages

## Overview of the operational notes

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>🛡️ please enter</td>
<td>This request will appear if no entry is made during the manual entry procedure.</td>
<td>Press button 🛡️ and continue the entry.</td>
</tr>
</tbody>
</table>
| 🛡️ printout not possible | A printout is not possible at the moment:  
  * for ADR variants, the ignition has been switched off (if required),  
  * because the temperature of the thermal printing head is too high,  
  * the printer interface is occupied by another active process, e.g. a printout in progress,  
  * or because the supply voltage is too high or too low. | You can request a printout as soon as the problem is removed. |
| 🛡️ printout delayed | An ongoing printout is interrupted or delayed because the temperature of the thermal printing head is too high. | Switch on ignition and call the desired display again.  
  Wait to cool. The printout will continue automatically as soon as the permissible condition has been reached. |
| 🛡️ no paper | The printer has no paper or the printer drawer is not correctly closed. The printout request will be rejected and/or a printout in progress will be interrupted. | ✅ Insert new paper roll.  
  ✅ Close printer drawer correctly.  
  A cancelled printing must be started again via the menu function. |

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### Overview of the operational notes

#### 7. Messages

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
</table>
| 🚪 ejection not possible | Requesting the tachograph card will be rejected:  
  - because data might be read in or transferred,  
  - the driver card needs to be read-in again within the registration time of one minute,  
  - a day change (according to UTC time) is taking place,  
  - the vehicle is moving,  
  - or, for an ADR variant, the ignition has been switched off (if required). | Wait until the DTCO 1381 enables the function or remove the problem: Stop the vehicle or switch on the ignition. Then request the tachograph card again. |
| 🚪?1 recordings inconsistent | There is an inconsistency in the order of the dates in the data recorded on the driver card. | This message can be displayed until the incorrect recordings have been overwritten by new data! Have the tachograph card checked if the message is displayed permanently. |
| 🚪 please eject the card | An error occurred when writing data to the driver card. | While the card is ejected, a new attempt is made to communicate with the card. If this attempt fails too, a printout of the activities last saved for this card is automatically started. |
| 🚪?1 card error | An error has occurred when processing the inserted tachograph card. The tachograph card is not accepted and is ejected. | Clean the contacts of the tachograph card and insert it again. If this message is displayed again, check whether another tachograph card can be read in correctly. |
| 🚪?1 wrong card type | The inserted card is not a tachograph card. The card is not accepted and is ejected. | Please insert a valid tachograph card. |
## 7. Messages

### Overview of the operational notes

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>![1] internal fault</td>
<td>Fault in the card mechanics, e.g. card lock is not closed.</td>
<td>Remove tachograph card and insert it again.</td>
</tr>
<tr>
<td>![1] internal fault</td>
<td>Fault at pulse output.</td>
<td>Check connecting cables or function of the connected control device.</td>
</tr>
<tr>
<td>![1] internal fault</td>
<td>The DTCO 1381 has a serious fault or a serious time error has occurred. For example, an unrealistic UTC time. The tachograph card is not accepted and is ejected.</td>
<td>Take care that an authorised workshop checks and, if necessary, replaces the tacho-graph as soon as possible. Please observe the listed note if the tachograph does not operate properly, see page 75.</td>
</tr>
</tbody>
</table>

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## Operational notes as information

<table>
<thead>
<tr>
<th>Picto / Reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data!</td>
<td>The menu function cannot be called up since, in the card slot, ...</td>
<td>These notes disappear automatically after three seconds. No steps must be taken.</td>
</tr>
<tr>
<td>UTC correct, impossible!</td>
<td>It is not possible to use the menu function:</td>
<td></td>
</tr>
<tr>
<td>printout started ...</td>
<td>Acknowledgement of the selected function.</td>
<td></td>
</tr>
<tr>
<td>entry stored</td>
<td>Acknowledgement that the DTCO 1381 saved the entry.</td>
<td></td>
</tr>
<tr>
<td>display not possible!</td>
<td>No data can be displayed as long as the printing is in progress.</td>
<td></td>
</tr>
<tr>
<td>please wait!</td>
<td>The tachograph card has not yet been read completely. It is not possible to call up menu functions.</td>
<td></td>
</tr>
</tbody>
</table>
7. Messages

### Overview of the operational notes

<table>
<thead>
<tr>
<th>Picto / Reason</th>
<th>Meaning</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>§ calibration in days 18</td>
<td>The next periodic inspection is due, for example in 18 days. Inspections required due to technical alterations cannot be taken into account! An authorised workshop can program when the notice should start to appear.</td>
<td>These notes disappear automatically after three seconds. No steps must be taken.</td>
</tr>
<tr>
<td>1 expires in days 15</td>
<td>The released tachograph card, for example, expires in 15 days! An authorised workshop can program the day as of which the notice should appear.</td>
<td></td>
</tr>
<tr>
<td>1 download in days 7</td>
<td>The next download of the driver card will, for example, be due in 7 days (default setting). An authorised workshop can program when the notice should start to appear.</td>
<td></td>
</tr>
</tbody>
</table>
Product description

Operating modes of the DTCO 1381

Tachograph cards
Saved data
Time management
Care and maintenance
Technical data
Operating modes of the DTCO 1381

The DTCO 1381 has four operating modes:

- Operational "O"
- Company "C"
- Control "T"
- Calibration "I"

According to the inserted tachograph card(s), the DTCO 1381 automatically changes to the following operating mode:

1. Display of the operating mode

<table>
<thead>
<tr>
<th>Operating modes</th>
<th>Card slot -1</th>
</tr>
</thead>
<tbody>
<tr>
<td>No card</td>
<td>Operational</td>
</tr>
<tr>
<td>Driver card</td>
<td>Operational</td>
</tr>
<tr>
<td>Company card</td>
<td>Company</td>
</tr>
<tr>
<td>Control card</td>
<td>Control</td>
</tr>
<tr>
<td>Workshop card</td>
<td>Calibration</td>
</tr>
</tbody>
</table>

In this condition, the DTCO 1381 only uses the tachograph card inserted in card slot 1.
8. Product description

- **Tachograph cards**

The authorities in the individual EU member states will issue the tachograph cards specified by the legislature.

- **Driver card**
  The driver uses the driver card to identify himself to the DTCO 1381. The driver card is used for normal driving operation and permits storing, displaying, printing, or downloading (with only one inserted driver card) of activities under this identity.

- **Company card**
  The company card identifies a company and authorises access to the data of this company. With the company card, the data saved in the data memory of the Vehicle Unit as well as in the inserted driver card can be displayed, printed, and downloaded. If necessary (once per unit), the entry of the authorising member state and the official registration number in the DTCO 1381.

  It is also possible to download load data remotely with the corresponding fleet management system. This company card is intended for the owners and operators of vehicles.

- **Control card**
  The control card identifies an official of a control body (like the police) and permits access to the data in the data memory. All saved data and the data of an inserted driver card are accessible. This data can be displayed, printed, or downloaded through the download interface.

- **Workshop card**
  Persons of an authorised workshop who are approved to program, calibrate, activate, test, etc. will receive the workshop card.

- **Locking the tachograph cards**
  If the DTCO 1381 accepts an inserted tachograph card, removal of the card will be mechanically blocked. It is possible to remove the tachograph card only when:
  - the vehicle is stationary,
  - the user requests removal,
  - after the data defined by the regulations has been saved on the tachograph card.

**Automatic ejection**

If the DTCO 1381 recognises a fault in the card communication, it tries to transfer the existing data to the tachograph card. The driver is informed about the fault by the message "**Eject card**" and is requested to withdraw the driver card. A printout of the activities last saved for the driver card is carried out automatically.

- **Details refer to “Communication error” on page 22.**
## Access rights of the tachograph cards

The rights to access data saved in the data memory of the DTCO 1381 are regulated by law and will be released with the corresponding tachograph card only.

<table>
<thead>
<tr>
<th>Access right</th>
<th>Without card</th>
<th>Driver card</th>
<th>Company card</th>
<th>Control card</th>
<th>Workshop card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver data</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Vehicle data</td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Parameter data</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>

- **Driver data** = Data on the driver card
- **Vehicle data** = Data in the data memory
- **Parameter data** = Data for device adaptation / Calibration

**Print**

- **V** = Unlimited access rights
- **T1** = Driver activities of the last eight days without driver identification data
- **T2** = Driver identification only for the inserted card
- **T3** = The associated company's driver activities
- **X** = not possible
8. Product description

**Saved data**

- **Driver card**
  - Data for identifying the driver.
  - After any use of the vehicle the following data:
    - Vehicles used
    - Activities of the driver, during normal driving operation at least 28 days.
    - Country entries
    - Appearing events / faults
    - Information about control activities
    - Specific conditions including Out of Scope and ferry / train operations
  - If the memory capacity is full, the oldest data will be overwritten by the DTCO 1381.

- **Company card**
  - Identifies a company and authorises access to the data of this company.
  - The following data regarding company activities:
    - Type of activity
      - Lock-in / lock-out
      - Downloading the data from the data memory
      - Downloading the data from the driver card
      - Period of time (from / to) for which the data was downloaded.
      - Vehicle ID
      - Driver Card number and card issuing Member State (when downloading a Driver Card)

- **Data memory**
  - The data memory records and saves the data required according to the Council Regulation (EEC) 3821/85, annex I B, over a time period of at least 365 calendar days:
    - The evaluation of activities occurs in 1 calendar minute intervals and the DTCO 1381 will evaluate the longest continuous activity for each interval.
    - The DTCO 1381 can save approx. 168 hours of speed values in a resolution of one second. Each second of the values are thus saved exactly with date and time.
    - Saved speed values with a higher resolution (one minute before and one minute after an unusual deceleration) can be analysed in the event of a collision.
  - These data can be read via the download interface:
    - legal download 24 hours,
    - the complete mass memory by means of special download software.

- **VDO GeoLoc**
  - The recording of position and vehicle data is possible as an option. [Refer to “VDO GeoLoc” on page 18.]
Time management

8. Product description

The DTCO 1381 saves all time entries for working time, availability time, driving time, rest time, etc. in UTC time.

UTC time corresponds to time zone "0" of the 24 time zones (-12 ... 0 ... +12) distributed across the globe.

In principle, the time shown in the display is set at the factory in UTC time. You can set the local time through the menu function.

Refer to “Set Local time” on page 68.

### Time zone offset

<table>
<thead>
<tr>
<th>Time zone offset</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00 (UTC)</td>
<td>UK / P / IRL / IS</td>
</tr>
<tr>
<td>+ 01:00 h</td>
<td>A / B / BIH / CZ / D /</td>
</tr>
<tr>
<td></td>
<td>DK / E / F / H / HR / I /</td>
</tr>
<tr>
<td></td>
<td>L / M / N / NL / PL / S /</td>
</tr>
<tr>
<td></td>
<td>SK / SLO / SRB</td>
</tr>
<tr>
<td>+ 02:00 h</td>
<td>BG / CY / EST / FIN /</td>
</tr>
<tr>
<td></td>
<td>GR / LT / LV / RO / TR /</td>
</tr>
<tr>
<td></td>
<td>UA</td>
</tr>
<tr>
<td>+ 03:00 h</td>
<td>RUS</td>
</tr>
</tbody>
</table>

**Example:**

Local time in Germany = 15:30 (daylight-savings time)

UTC time = Local time – (ZO + SO)

UTC time = 13:30 Time

UTC time = Local time – (ZO + SO)

ZO = Time zone offset

SO = Daylight-savings time offset (this offset is not used after daylight-savings time ends)

(ZO + SO) = set offset in the DTCO 1381
8. Product description

Care and maintenance

- **Cleaning the DTCO 1381**
  Clean the casing, the display and the function keys with a slightly moistened cloth or with a microfibre cleaning cloth.

  - Do not use any abrasive cleaning agents or solvents like thinner or petroleum spirits.

- **Compulsory Tachograph inspections**
  Preventive maintenance work is not required for the DTCO 1381. At least every two years, the proper operation of the DTCO 1381 must be checked by an authorised workshop.
  Follow-up inspections are necessary if:
  - changes were made to the vehicle, e.g. concerning the distance pulse or the wheel circumference,
  - a repair was made to the DTCO 1381,
  - the vehicle registration number of the vehicle has been changed,
  - the UTC time deviates by more than 20 minutes.

  Make sure that the calibration plaque is renewed during every 2 year inspection and contains the required data.
  Make sure that the supply voltage of the DTCO 1381 is not disconnected for more than 12 months at a time, for example due to disconnection of the battery from the vehicle.

- **Behaviour when repairing / replacing the DTCO 1381**
  The authorised workshops can download the data from the DTCO 1381 and hand them over to the company.
  If, due to a failure, the saved data cannot be downloaded, the workshops are instructed to document this with a certificate and to contact the company in writing.

- **Disposal of the components**
  Please dispose of the DTCO 1381 with its associated system components in compliance with the guidelines for disposing EC recording equipment effective in the respective member states.

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## Technical data

**DTCO 1381**

| Measurement range end value | 220 km/h (according to annex I B)  
|                            | 250 km/h (for other vehicle deployments) |
| **LCD**                    | 2 lines with 16 characters each |
| **Temperature**            |  
| Operation:                 | -20 to 70 °C  
| Operation ADR:             | -20 to 65 °C  
| Storage:                   | -40 to 85 °C  
| **Voltage**                | 24 or 12 Volt DC |
| **Weight**                 | 600 g (+/- 50 g) |
| **Power supply**           | Standby: max. 30 mA (12 V)  
|                           | during operation: max. 5,0 A (12 V)  
|                           | max. 20 mA (24 V)  
|                           | max. 4,2 A (24 V)  
| **EMV / EMC**              | ECE R10 |
| **Thermal printing mechanism** | Character size: 2,1 x 1,5 mm  
|                           | Print width: 24 characters/line  
|                           | Speed: appr. 15-30 mm/sec.  
|                           | Printout of diagrams |
| **Protection type**        | IP 54 |
| **Possible special equipment** |  
|                           | • ADR variants  
|                           | • Customer-specific panel, illumination of display and buttons  
|                           | • Automatic setting of the activities after ignition on/off  
|                           | • Printout and download of v-/n profiles, status entry D1/D2  
|                           | • VDO Counter, VDO GeoLoc  

**Paper roll**

| Ambient conditions | Temperature: -25 to 70 °C |
|                   |  
| **Dimensions**    | Diameter: approx. 27.5 mm  
|                   | Width: 56,5 mm  
|                   | Length: approx. 8 m |
| **Order no.**     | 1381.90030300  
|                   | You will receive original spare paper rolls from your local VDO distributor.  

### Please note!

Use (order) only paper rolls (original VDO printer paper) on which is visible the tachograph model (DTCO 1381) with approval mark "94" and the valid approval mark "174" or "189".
Pictograms and printout samples

Overview of the pictograms
Country symbols
Printout examples
Explanation of printout examples
Data record purpose during events or faults
## Overview of the pictograms

### Operating modes
- Company
- Control
- Operational
- Calibration
- Production status

### Persons
- Company
- Controller
- Driver
- Workshop / inspection centre
- Manufacturer

### Activities
- Availability time
- Driving time
- Break and rest time
- Other working time
- Valid interruption / break
- Unknown

### Devices / functions
1. Card slot 1; Driver 1
2. Card slot 2; Driver 2
- Tachograph card (read correctly)
- Tachograph card inserted; relevant data read.
- Clock
- Printer / printout
- Entry
- Display
- Recording of Position and vehicle data is switched on (e.g. VDO GeoLoc *).
- Licence code
- External saving
- Download data (copy)
- Data transmission running
- Sensor
- Vehicle / Vehicle unit / DTCO 1381
- Tyre size
- Power supply
- Remote entries

### Miscellaneous
- Event
- Fault
- Operational note / Work time warnings
- Shift beginning
- Location
- Security
- Speed
- Time
- Total / summary
- Shift end
- Manual entry of driver activities

### Specific conditions
- Recording equipment not required
- Vehicle located on a ferry or on a train

### Qualifiers
- 24h Daily
- Weekly
- Two weeks
- From or to

* DTCO 1381
### Pictograms and printout samples

#### Overview of the pictograms

<table>
<thead>
<tr>
<th>Cards</th>
<th></th>
<th>Displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRIVER</td>
<td>Driver card</td>
<td>v-diagram</td>
</tr>
<tr>
<td>COMPANY</td>
<td>Company card</td>
<td>Status D1/D2 diagram *</td>
</tr>
<tr>
<td>CONTROL</td>
<td>Control card</td>
<td>Speed profiles *</td>
</tr>
<tr>
<td>WORKSHOP</td>
<td>Workshop card</td>
<td>Rpm profiles *</td>
</tr>
<tr>
<td>No card</td>
<td>Driver's activities</td>
<td>Security information</td>
</tr>
</tbody>
</table>

#### Pictogram combinations

<table>
<thead>
<tr>
<th>Miscellaneous</th>
<th>Cards</th>
<th>Displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control location</td>
<td>DRIVER</td>
<td>v-diagram</td>
</tr>
<tr>
<td>Start time</td>
<td>COMPANY</td>
<td>Status D1/D2 diagram *</td>
</tr>
<tr>
<td>End time</td>
<td>CONTROL</td>
<td>Speed profiles *</td>
</tr>
<tr>
<td>Begin Out of Scope: Recording equipment not required</td>
<td>WORKSHOP</td>
<td>Rpm profiles *</td>
</tr>
<tr>
<td>End Out of Scope</td>
<td>No card</td>
<td>Security information</td>
</tr>
<tr>
<td>Location at beginning of work day (shift beginning)</td>
<td>From vehicle</td>
<td>Sensor information</td>
</tr>
<tr>
<td>Location at end of work day (shift end)</td>
<td>Printout driver card</td>
<td>Security information</td>
</tr>
<tr>
<td>From vehicle</td>
<td>Printout vehicle / DTCO 1381</td>
<td>Security information</td>
</tr>
<tr>
<td>Entry vehicle / DTCO 1381</td>
<td>Display driver card</td>
<td>Security information</td>
</tr>
<tr>
<td>Display driver card</td>
<td>Display vehicle / DTCO 1381</td>
<td>Security information</td>
</tr>
<tr>
<td>Local time</td>
<td>Company time</td>
<td>Over-speeding</td>
</tr>
<tr>
<td>Company time</td>
<td>UTC correction</td>
<td>Technical data</td>
</tr>
</tbody>
</table>

#### Printouts

<table>
<thead>
<tr>
<th>Printouts</th>
<th>Cards</th>
<th>Displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>24h PRE</td>
<td>Daily driver activities (daily value) from the driver card</td>
<td>Daily driver activities (daily value) from the driver card</td>
</tr>
<tr>
<td>PRE</td>
<td>Events and faults from the driver card</td>
<td>Events and faults from the driver card</td>
</tr>
<tr>
<td>PRE</td>
<td>Daily driver activities (daily value) from vehicle / DTCO 1381</td>
<td>Daily driver activities (daily value) from vehicle / DTCO 1381</td>
</tr>
<tr>
<td>PRE</td>
<td>Events and faults from DTCO 1381</td>
<td>Events and faults from vehicle / DTCO 1381</td>
</tr>
<tr>
<td>PRE</td>
<td>Over-speeding</td>
<td>Over-speeding</td>
</tr>
<tr>
<td>PRE</td>
<td>Technical data</td>
<td>Technical data</td>
</tr>
<tr>
<td>PRE</td>
<td>Driver’s activities</td>
<td>Driver’s activities</td>
</tr>
<tr>
<td>PRE</td>
<td>Periods with activated remote control</td>
<td>Periods with activated remote control</td>
</tr>
</tbody>
</table>

© Continental Automotive GmbH
Overview of the pictograms

**Events**
- ✂️ Time overlap
- ✂️ Insertion of invalid tachograph card
- 📲 Over-speeding
- 🔌 Time adjustment (by workshop)
- 📖 Cards conflict
- ✂️ Insertion of driver card while driving
- ✂️ Communication fault with the sensor
- ✂️ Over-speeding control
- ✂️ Vehicle motion conflict

**Faults**
- ✂️ Card fault
- ✂️ Display fault
- 📖 Printer fault
- 📖 Internal fault DTCO 1381
- ▼ Download fault
- ▼ Sensor fault

**Driving time warnings**
- 📖 break!

**Manual entry process**
- 📖 Entering "activities"
- 📖 Entering "unknown activity"
- 📖 Entering "location" at the end of the shift
- 📖 Entering "location" at the beginning of the shift

**Operational notes**
- ✂️ Wrong entry
- ✂️ Menu access not possible
- ✂️ Please enter
- ✂️ Printout not possible
- ✂️ No paper

**9. Pictograms and printout samples**

- ✂️ Card defective
- ✂️ Eject the card
- ✂️ Incorrect card
- ✂️ Ejection not possible
- ✂️ Process not possible
- ✂️ Recording inconsistent
- ✂️ Internal fault
- ✂️ Expires in days...
- ✂️ Calibration in days...
- ✂️ Download of driver card in days...

**VDO Counter**
- 📖 Remaining driving time
- 📖 Beginning of the next driving time
- 📖 Future driving time
- 📖 Remaining break time / rest period
- 📖 Remaining time until the beginning of the daily, weekly rest period

**DTCO 1381**
## Country symbols

### Value assignment

<table>
<thead>
<tr>
<th>Code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Austria</td>
</tr>
<tr>
<td>AL</td>
<td>Albania</td>
</tr>
<tr>
<td>AND</td>
<td>Andorra</td>
</tr>
<tr>
<td>ARM</td>
<td>Armenia</td>
</tr>
<tr>
<td>AZ</td>
<td>Azerbaijan</td>
</tr>
<tr>
<td>B</td>
<td>Belgium</td>
</tr>
<tr>
<td>BG</td>
<td>Bulgaria</td>
</tr>
<tr>
<td>BIH</td>
<td>Bosnia and Herzegovina</td>
</tr>
<tr>
<td>BY</td>
<td>Belarus</td>
</tr>
<tr>
<td>CH</td>
<td>Switzerland</td>
</tr>
<tr>
<td>CY</td>
<td>Cyprus</td>
</tr>
<tr>
<td>CZ</td>
<td>The Czech Republic</td>
</tr>
<tr>
<td>D</td>
<td>Germany</td>
</tr>
<tr>
<td>DK</td>
<td>Denmark</td>
</tr>
<tr>
<td>E</td>
<td>Spain 1)</td>
</tr>
<tr>
<td>EC</td>
<td>European Community</td>
</tr>
<tr>
<td>EST</td>
<td>Estonia</td>
</tr>
<tr>
<td>EUR</td>
<td>Rest of Europe</td>
</tr>
<tr>
<td>F</td>
<td>France</td>
</tr>
<tr>
<td>FIN</td>
<td>Finland</td>
</tr>
<tr>
<td>FL</td>
<td>Liechtenstein</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR/F0</td>
<td>Faroes</td>
</tr>
<tr>
<td>GE</td>
<td>Georgia</td>
</tr>
<tr>
<td>GR</td>
<td>Georgia</td>
</tr>
<tr>
<td>H</td>
<td>Hungary</td>
</tr>
<tr>
<td>HR</td>
<td>Croatia</td>
</tr>
<tr>
<td>I</td>
<td>Italy</td>
</tr>
<tr>
<td>IRL</td>
<td>Ireland</td>
</tr>
<tr>
<td>IS</td>
<td>Iceland</td>
</tr>
<tr>
<td>KZ</td>
<td>Kazakhstan</td>
</tr>
<tr>
<td>L</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>LT</td>
<td>Lithuania</td>
</tr>
<tr>
<td>LV</td>
<td>Latvia</td>
</tr>
<tr>
<td>M</td>
<td>Malta</td>
</tr>
<tr>
<td>MC</td>
<td>Monaco</td>
</tr>
<tr>
<td>MD</td>
<td>Republic of Moldavia</td>
</tr>
<tr>
<td>MK</td>
<td>Macedonia</td>
</tr>
<tr>
<td>MNE</td>
<td>Montenegro</td>
</tr>
<tr>
<td>N</td>
<td>Norway</td>
</tr>
<tr>
<td>NL</td>
<td>The Netherlands</td>
</tr>
<tr>
<td>P</td>
<td>Portugal</td>
</tr>
<tr>
<td>PL</td>
<td>Poland</td>
</tr>
<tr>
<td>RO</td>
<td>Romania</td>
</tr>
<tr>
<td>RSM</td>
<td>San Marino</td>
</tr>
<tr>
<td>RUS</td>
<td>The Russian Federation</td>
</tr>
<tr>
<td>S</td>
<td>Sweden</td>
</tr>
<tr>
<td>SK</td>
<td>Slovakia</td>
</tr>
<tr>
<td>SL0</td>
<td>Slovenia</td>
</tr>
<tr>
<td>SRB</td>
<td>Serbia</td>
</tr>
<tr>
<td>TM</td>
<td>Turkmenistan</td>
</tr>
<tr>
<td>TR</td>
<td>Turkey</td>
</tr>
<tr>
<td>UA</td>
<td>Ukraine</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom, Alderney, Guernsey, Jersey, Isle of Man, Gibraltar</td>
</tr>
<tr>
<td>UZ</td>
<td>Uzbekistan</td>
</tr>
<tr>
<td>V</td>
<td>Vatican City</td>
</tr>
<tr>
<td>WLD</td>
<td>Rest of the world</td>
</tr>
</tbody>
</table>

1) Refer to “Symbols of the regions” on page 100.
Country symbols

Symbols of the regions

Value assignment – Spain

<table>
<thead>
<tr>
<th>Code</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN</td>
<td>Andalusia</td>
</tr>
<tr>
<td>AR</td>
<td>Aragon</td>
</tr>
<tr>
<td>AST</td>
<td>Asturias</td>
</tr>
<tr>
<td>C</td>
<td>Cantabria</td>
</tr>
<tr>
<td>CAT</td>
<td>Catalonia</td>
</tr>
<tr>
<td>CL</td>
<td>Castile-León</td>
</tr>
<tr>
<td>CM</td>
<td>Castile-La Mancha</td>
</tr>
<tr>
<td>CV</td>
<td>Valencia</td>
</tr>
<tr>
<td>EXT</td>
<td>Extremadura</td>
</tr>
<tr>
<td>G</td>
<td>Galicia</td>
</tr>
<tr>
<td>IB</td>
<td>Balearic islands</td>
</tr>
<tr>
<td>IC</td>
<td>Canary islands</td>
</tr>
<tr>
<td>LR</td>
<td>La Rioja</td>
</tr>
<tr>
<td>M</td>
<td>Madrid</td>
</tr>
<tr>
<td>MU</td>
<td>Murcia</td>
</tr>
<tr>
<td>NA</td>
<td>Navarra</td>
</tr>
<tr>
<td>PV</td>
<td>Basque Community</td>
</tr>
</tbody>
</table>
9. Pictograms and printout samples

Printout examples

Daily printout from the driver card

© Continental Automotive GmbH
Printout examples

Points to note with "Daily printout of the driver card"  

Events / faults from the driver card
## Printout examples

### Daily printout of the vehicle

<table>
<thead>
<tr>
<th>Daily printout of the vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>27.11.2017 16:55 (UTC)</strong></td>
</tr>
<tr>
<td><strong>24h</strong></td>
</tr>
<tr>
<td><strong>Peter Schmitt</strong></td>
</tr>
<tr>
<td><strong>/L50776</strong></td>
</tr>
<tr>
<td><strong>D /123456789012345 6</strong></td>
</tr>
<tr>
<td><strong>B Continental Automotive GmbH</strong></td>
</tr>
<tr>
<td><strong>1381.12345678901</strong></td>
</tr>
<tr>
<td><strong>NFZ-Profi Service &amp; Vertrieb</strong></td>
</tr>
<tr>
<td><strong>02.04.2016</strong></td>
</tr>
<tr>
<td><strong>ABC12345678901234D /VS VM 612</strong></td>
</tr>
<tr>
<td><strong>Continental Automotive GmbH</strong></td>
</tr>
<tr>
<td><strong>11.11.2017 11:11</strong></td>
</tr>
<tr>
<td><strong>Rogenz Winfried</strong></td>
</tr>
<tr>
<td><strong>DK /456789012345678 78</strong></td>
</tr>
<tr>
<td><strong>04.01.2018</strong></td>
</tr>
<tr>
<td><strong>Rogenz Winfried</strong></td>
</tr>
<tr>
<td><strong>/L50776</strong></td>
</tr>
<tr>
<td><strong>25.11.2017 16:55</strong></td>
</tr>
<tr>
<td><strong>95 872 - 96 284 km</strong></td>
</tr>
<tr>
<td><strong>95 872 km</strong></td>
</tr>
<tr>
<td><strong>00:00 07h02</strong></td>
</tr>
<tr>
<td><strong>00h28</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>07h02</strong></td>
</tr>
<tr>
<td><strong>01h19</strong></td>
</tr>
<tr>
<td><strong>96 206 km</strong></td>
</tr>
<tr>
<td><strong>01h24</strong></td>
</tr>
<tr>
<td><strong>01h00</strong></td>
</tr>
<tr>
<td><strong>00h21</strong></td>
</tr>
<tr>
<td><strong>00h23</strong></td>
</tr>
<tr>
<td><strong>09h03</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
<tr>
<td><strong>00h00</strong></td>
</tr>
</tbody>
</table>
Printout examples

9. Pictograms and printout samples

Events / faults from the vehicle

Points to note with "Daily printout of the vehicle"
Printout examples

9. Pictograms and printout samples

- **Driver’s activities**
- **v-diagram**
- **Status D1/D2 diagram**
9. Pictograms and printout samples

Printout examples

- **Speed profiles**
  - Speed profiles

- **Rpm profiles**
  - Rpm profiles

- **Printout in local time**
  - Printout in local time

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Explanations of printout examples

9. Pictograms and printout samples

- Explanations of printout examples

On request, a company-specific logo can be applied to the printout.

Every printout consists of a string of different data blocks that are identified by block identifiers (1).

A data block contains one or several data records that are identified by means of a data record identifier (2).

A data record identifier will not be printed immediately after a block identifier!

Legend of the data blocks

1. Date and time of the printout in UTC time
   - Type of printout:
     - 24hDV = Daily printout of the driver card
     - 24hPV = Events / faults from the driver card
     - 24hAQ = Daily printout from the DTCO 1381
     - 24hAB = Events / faults from the DTCO 1381
     - 24hBF = Over-speeding
     - T = Technical data
     - D = Driver's activities
     - v = v-diagram
     - D1/D2 = Status D1/D2 diagram *
     - n = Speed profiles *
     - n = Rpm profiles *

2. Information about the cardholder of the inserted tachograph card:
   - B = Controller
   - D = Driver
   - C = Company
   - T = Workshop / inspection centre
     - Last name
     - First name
     - Card identification
     - Card valid until ...

If tachograph cards are not associated with a person, the name of the control body, the company, or the workshop will be printed instead of the person's name.

3. Information about the cardholder of the other tachograph card

   - V = Vehicle identification:
     - Vehicle identification number
     - Authorising member state and vehicle registration number

4. Identification of the tachograph:
   - T = Tachograph manufacturer
   - P = Part number of the DTCO 1381 tachograph

Every printout consists of a string of different data blocks that are identified by block identifiers (1).

A data block contains one or several data records that are identified by means of a data record identifier (2).

A data record identifier will not be printed immediately after a block identifier!
9. Pictograms and printout samples

Explanations of printout examples

<table>
<thead>
<tr>
<th>Most recent tachograph calibration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Name of workshop</td>
</tr>
<tr>
<td>• Workshop identification</td>
</tr>
<tr>
<td>• Date of calibration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most recent control:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Control card identification</td>
</tr>
<tr>
<td>• Date, time, and type of control</td>
</tr>
<tr>
<td>☰ = Downloading from the driver card</td>
</tr>
<tr>
<td>‡ = Downloading from the DTCO 1381</td>
</tr>
<tr>
<td>▼ = Printing</td>
</tr>
<tr>
<td>□ = Displaying</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List of all driver activities in the order they appear:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Calendar day of the printout and the usage counter (number of days that the card was used.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>? = Time period that the card was not inserted:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Manually entered activity after insertion of the driver card, with pictogram, beginning and duration.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insertion of driver card into slot (card slot 1 or card slot 2):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Authorising member state and vehicle registration number</td>
</tr>
<tr>
<td>• Odometer reading when card inserted</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activities of the driver card:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Beginning and duration, and driving status</td>
</tr>
<tr>
<td>☰ = Crew operation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific conditions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Time of entry and pictogram, for example: ferry or train</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Withdrawal of driver card:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Odometer reading and distance travelled since most recent insertion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attention: Possible inconsistency in the data recording since this day was saved twice on the tachograph card.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Activity not completed:</td>
</tr>
<tr>
<td>• Duration of activity and daily summaries might be given incompletely when printouts are made while the driver card is inserted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The specific condition “OUT of scope” was switched on at start of the day.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of list of all driver activities in the DTCO 1381:</td>
</tr>
<tr>
<td>• Calendar day of printout</td>
</tr>
<tr>
<td>• Odometer readings at the times 00:00 and 23:59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chronology of all activities from card slot 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time period in which no driver card was inserted in card slot 1:</td>
</tr>
<tr>
<td>• Odometer reading at the beginning of the time period</td>
</tr>
<tr>
<td>• Set activity or activities in this time period</td>
</tr>
<tr>
<td>• Odometer reading at the end of the time period and distance traveled</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insertion of the driver card:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Last name of driver</td>
</tr>
<tr>
<td>• First name of driver</td>
</tr>
<tr>
<td>• Card identification</td>
</tr>
<tr>
<td>• Card valid until ...</td>
</tr>
</tbody>
</table>
Explanations of printout examples

9. Pictograms and printout samples

- Authorising member state and vehicle registration number of the previous vehicle
- Date and time card was removed from the previous vehicle
- Odometer reading when driver card inserted
  - M = the entry was done manually
- List of activities:
  - Pictogram of the activity, beginning and duration, and driving status
  - ö = Crew operation
- Entry of specific conditions:
  - Entry time and pictogram of the condition
  - ø = Ferry transfer or train transfer
  - OUT ø = Begin (Recording equipment not required)
  - OUT = End
- Withdrawal of driver card:
  - Odometer reading and distance travelled
- Chronology of all activities from card slot 2
- The specific condition "OUT of scope" was switched on at start of the day.
- Entered locations:
  - ø = Beginning time with country and region (if applicable)
  - ø = Ending time with country and possibly region
  - Vehicle odometer reading
- Summary of times with no driver card in card slot 1:
  - Entered locations in chronological order (no entry in example)
- Total activities from card slot 1
- Summary of times with "no driver card" in card slot 2:
  - Entered locations in chronological order (no entry in example)
- Total activities from card slot 2
- Daily summary "Total values of activities" from the driver card:
  - Total driving time and distance travelled
  - Total work and availability time
  - Total rest time and unknown time
  - Total time in crew activities
- Summary of the activities, chronologically arranged by driver (cumulative for each driver for both card slots):
  - Last name, first name, card identification of the driver
  - ø = Beginning time with country and region (if applicable)
  - ø = Ending time with country and possibly region
  - Activities from this driver with:
    - Total driving time and distance travelled, total work and total availability time, total rest time, total time in crew activities.
- List of the five most recent saved events or faults on the driver card.
9. Pictograms and printout samples

Explanations of printout examples

- **12a** List of all saved events on the driver card, arranged according to type of fault and date.

- **12b** List of all saved faults on the driver card, arranged according to type of fault and date.

- **12c** Data record of the event or fault.
  - Line 1:
    - Pictogram of the event or fault
    - Date and beginning
  - Line 2:
    - Events subject to security breach are broken down with an additional code.
    - Refer to “Data record purpose during events or faults” on page 115.
    - Duration of the event or fault
  - Line 3:
    - Authorising member state and vehicle registration number of the vehicle in which the events or faults appeared.

- **13a** List of the five most recent saved or still active events / faults in the DTCO 1381.

- **13b** List of all recorded or continuing faults of the DTCO 1381.

- **13c** Data record of the event or fault.
  - Line 1:
    - Pictogram of the event or fault
    - Coding of data record purpose.
    - Refer to “Data record purpose during events or faults” on page 115.
    - Date and beginning
  - Line 2:
    - Events subject to security breach are broken down with an additional code.
    - Refer to “Coding for more detailed description” on page 117.
    - Number of similar events on this day.
    - Refer to “Number of similar events” on page 116.
    - Duration of the event or fault

- **13** List of all recorded or continuing events of the DTCO 1381.

- **14** Identification of the tachograph:
  - Tachograph manufacturer
  - Address of the tachograph manufacturer
  - Part number
  - Type approval number
  - Series number
  - Year of manufacture
  - Version and date of installation of the user software

- **15** Identification of the sensor:
  - Series number
  - Type approval number
  - Date of initial installation (first pairing with a DTCO 1381)

- **16** Calibration data
Explanations of printout examples

Listing of the calibration data (in data records):
- Name and address of the workshop
- Workshop identification
- Workshop card valid until ...

Date and purpose of the calibration:
1 = Activation; Recording of known calibration data at the time of activation
2 = Initial installation; first calibration data after activation of the DTCO 1381
3 = Installation after repair - replacement unit; first calibration data in current vehicle
4 = Periodic inspection; calibration data of a periodic inspection
5 = Entry of the vehicle registration number by the company
6 = switching off IMS

Vehicle identification number
Authorising member state and vehicle registration number
Authorising member state and vehicle registration number

Characteristic coefficient of the vehicle
Set constant in the DTCO 1381 for the speed adjustment
Actual circumference of tyre
Tyre size
Legally permitted maximum speed
Old and new odometer reading

Listing of all available data about time setting:
(in data records)
- Date and time, old
- Date and time, changed
- Name of workshop that set the time
- Address of workshop
- Workshop identification
- Workshop card valid until ...

Note: In the second data record it can be seen that the UTC time was corrected by an authorised workshop.

The most recently recorded event and the current fault:
- ! = Most recent event, date, and time
- ß = Most recent fault, date, and time

Information on “over-speeding” control:
- Date and time of the most recent control
- Date and time of the first instance of over-speeding since the most recent control and the number of subsequent over-speeding instances.

First instance of over-speeding since the most recent calibration.

The five most severe instances of over-speeding of the last 365 days.

The 10 most recently recorded instances of over-speeding. For each day the most severe instance of over-speeding is recorded.

DTCO 1381
9. Pictograms and printout samples

Explanations of printout examples

### Entries during instances of over-speeding (chronologically arranged by highest average speed):
- Date, time, and duration of over-speeding
- Highest and average speed of the over-speeding instance, number of similar events on this day

### Periods with activated remote control:
- Start time
- End time

### Handwritten information:
- Location of control
- Signature of the controller
- Start time
- End time
- Signature of the driver

### Information about the cardholder of the recorded profile:
- Last name of driver
- First name of driver
- Card identification

**Note:** Missing information about the cardholder means: no driver card inserted in card slot 1.

### Beginning of the profile recording with date and time
### End of the profile recording with date and time

### New profiles are created:
- by inserting / withdrawing a tachograph card into / from card slot 1
- by a day change
- by a correction of the UTC time
- by a voltage interruption

### Recording of speed profiles:
- List of the defined speed ranges and period in this range
- Range: $0 \leq v < 1 = \text{Vehicle stationary}$

### The speed profile is divided into 16 zones. During installation, the individual ranges can be adjusted individually.

### Recording of rpm profiles:
- List of the defined motor rpm ranges and period in this range
- Range: $0 \leq n < 1 = \text{Engine off}$
- Range: $3281 \leq n < x = \text{unlimited}$

### The rpm profile is divided into 16 zones. During installation, the individual ranges can be adjusted individually.

### Manufacturer-specific data:
- Version number of the software upgrade module (SWUM)
Explanations of printout examples

9. Pictograms and printout samples

Configuration of the "independent motion signal"
- CAN: Vehicle data bus 1 or 2
- Source: Signal source;
  speed = ABS / wheel = wheel speed / odometer (GPS) = GPS unit
- Gain: Conversion factor for adapting the unit of measurement between "independent signal source" and sensor signal.
- Factor: Factor for adaptation to the sensor signal.

Information on the installed sensor:
- OK: The installed sensor (KTAS2+) meets the requirement 161a (CR (EU) No. 1266/2009).
- ?: The sensor must be checked by an authorised workshop.

DTCO 1381 housing seal number.

Recording of the activities:
- Legend of the symbols
- From the selected day on, there are profiles of the activities of the last 7 calendar days.

Recording of the speed data on the selected day.
Recording of additional statuses, such as the use of blue lights and sirens on emergency vehicles, etc.:
- Legend of the symbols
- From the selected day on, there are profiles of status inputs D1/D2 of the last 7 calendar days.

Please note: Not a legal printout!
A printout in local time can not be used for legal purposes and is not in accordance with the relevant Regulations (e.g. retention requirements!)

Period of the printout in local time:
- ± = Start of recording
- += End of recording
- UTC +01h00 = Difference between UTC time and local time.

Date and time of the printout in local time (LOC).
Type of printout e.g. "24h" in local time "12h".

Please note: Not a legal printout!
A printout in local time can not be used for legal purposes and is not in accordance with the relevant Regulations (e.g. retention requirements!)

DTCO 1381
Data record purpose during events or faults

For each established event or each established fault, the DTCO 1381 will register and save the data according to the specified rules.

(1) Data record purpose
(2) Number of similar events on this day

The data record purpose (1) indicates why the event or fault was recorded. Events of the same type appearing several times on this day are displayed at pos. (2).

Coding of data record purpose

The following overview shows the events and faults arranged according to error type (cause) and the assignment of the data record purpose:

**Events**

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬤Cards conflict</td>
<td>0</td>
</tr>
<tr>
<td>⬤Driving without valid card</td>
<td>1 / 2 / 7</td>
</tr>
<tr>
<td>⬤Insertion while driving</td>
<td>3</td>
</tr>
<tr>
<td>⬤Card not closed</td>
<td>0</td>
</tr>
<tr>
<td>⬤Over-speeding</td>
<td>4 / 5 / 6</td>
</tr>
<tr>
<td>⬤Power interruption</td>
<td>1 / 2 / 7</td>
</tr>
<tr>
<td>⬤Sensor fault</td>
<td>1 / 2 / 7</td>
</tr>
<tr>
<td>⬤Motion conflict</td>
<td>1 / 2</td>
</tr>
<tr>
<td>⬤Security breach</td>
<td>0</td>
</tr>
<tr>
<td>⬤Time overlap</td>
<td>–</td>
</tr>
<tr>
<td>⬤Card invalid</td>
<td>–</td>
</tr>
</tbody>
</table>

**Faults**

<table>
<thead>
<tr>
<th>Picto / reason</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬤Card fault</td>
<td>0</td>
</tr>
<tr>
<td>⬤Internal fault</td>
<td>0 / 6</td>
</tr>
<tr>
<td>⬤Printer fault</td>
<td>0 / 6</td>
</tr>
<tr>
<td>⬤Display fault</td>
<td>0 / 6</td>
</tr>
<tr>
<td>⬤Download fault</td>
<td>0 / 6</td>
</tr>
</tbody>
</table>

1) This event will be saved only on the driver card.
2) This event / fault will only be saved in the DTCO 1381.
3) The DTCO 1381 will not save this event.
Data record purpose during events or faults

Overview Data record purpose

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>One of the 10 most recent (or last) events or faults.</td>
</tr>
<tr>
<td>1</td>
<td>The longest event for one of the last 10 days of occurrence.</td>
</tr>
<tr>
<td>2</td>
<td>One of the 5 longest events over the last 365 days.</td>
</tr>
<tr>
<td>3</td>
<td>The last event for one of the last 10 days of occurrence.</td>
</tr>
<tr>
<td>4</td>
<td>The most serious event for one of the last 10 days of occurrence.</td>
</tr>
<tr>
<td>5</td>
<td>One of the 5 most serious events over the last 365 days.</td>
</tr>
<tr>
<td>6</td>
<td>The first event or fault having occurred after the last calibration.</td>
</tr>
<tr>
<td>7</td>
<td>An active / on-going event or fault.</td>
</tr>
</tbody>
</table>

Number of similar events

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>For this event, it is not necessary to save &quot;Number of similar events&quot;.</td>
</tr>
<tr>
<td>1</td>
<td>One event of this type appeared on this day.</td>
</tr>
<tr>
<td>2</td>
<td>Two events of this type appeared on this day, but only one was saved.</td>
</tr>
<tr>
<td>n</td>
<td>&quot;n&quot; events of this type appeared on this day, but only one was saved.</td>
</tr>
</tbody>
</table>
9. Pictograms and printout samples

Data record purpose during events or faults

Coding for more detailed description

Events subject to security breach “!” are broken down with an additional coding (1).

Security Breach Codes relating to the DTCO 1381

10  =  No additional information
11  =  Failed authentication of the sensor
12  =  Authentication errors of the driver card
13  =  Unauthorised changes to the sensor
14  =  Integrity error, the authenticity of the data on the driver card is not assured.
15  =  Integrity error, the authenticity of the saved user data is not assured.
16  =  Internal data transmission error
17  =  Security breach in the control unit
18  =  Manipulation of the hardware
19  =  Malfunction of the hardware
20  =  No additional information
21  =  Failed authentication
22  =  Integrity error, the authenticity of the memory data is not assured.
23  =  Internal data transmission error
24  =  Unauthorized opening of the casing
25  =  Manipulation of the hardware
# Keyword directory

## A
- Accessories ........................................ 123
- Additional functions
  - Licence code .................................. 69
- ADR variant ...................................... 14
- Functional deviations ........................ 16
- Symbol on the device ......................... 14

## C
- Care and maintenance .......................... 93
- Cleaning the DTCO 1381 ........................ 93
- Compulsory tachograph inspections ......... 93
- Repair / Replacement ........................... 93
- Clear paper jam .................................. 50
- Company card ..................................... 89
  - Company card insertion ....................... 27
  - Company card withdrawal ..................... 30
  - Data on the company card .................... 91
- Enter vehicle registration number ........... 28
- Functions of the company card ............... 26
  - Menu functions in the "company" mode .... 26
- Company Lock-out ................................ 30
- Country symbols .................................. 99
  - Symbols of the regions ....................... 100

## D
- Danger of explosion .............................. 9, 29, 41
- Data download ................................... 29
- Data transfer .................................... 29
- Download key ................................... 29
- Software .......................................... 29
- Default display ................................... 19
- Definitions ....................................... 8
  - Driver 1 ......................................... 8
  - Driver 2 ......................................... 8
- Display company .................................... 71
- Display instrument ............................... 75
- Display variations ............................... 18
- Data display when the vehicle is stationary 20
  - Default display ................................ 19
  - Display after ignition on ..................... 18
  - Display of messages ........................... 20
  - Ferry transfer or train transfer ................ 21
  - Low voltage / overvoltage ...................... 21
  - Out of scope ................................... 20
  - Production status ............................... 20
  - Standby mode ................................. 18
  - VDO GeoLoc * .................................. 18
- Disposal .......................................... 93

## E
- End of paper ....................................... 50
- Enter vehicle registration number .......... 28
- Entry ............................................... 65
  - Enter Begin country ............................. 65
  - Enter Beginning of ferry / train ............. 67
  - Enter End country ................................ 65
  - Enter Out beginning / end .................... 67
  - Make UTC correction ......................... 68
  - Set Local time ................................... 68

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Keyword directory

Events ................................................. 76
Fa$ts .................................................. 78
General Information
Danger of injury ................................. 9
General instructions .............................. 7
Danger of explosion ........................... 9
Handling the DTCO 1381 .......... ......... 9
Handling the tachograph cards ... 12
Legal requirements ......................... 10
Means of depiction ............................. 8
Risk of Accident ................................. 9
Insert paper roll ................................... 48
Legal requirements ............................. 10
Handling of the printouts ........... 11
Obligations of the company .......... 11
Obligations of the driver .......... 10
Licence code ....................................... 69
Low voltage / overvoltage ............ 21
Manual entries .....................................32
Abort ing the entry procedure ........ 35
Add “Rest period” activity .......... 36
Continuing the work shift .......... 37
Correction possibilities ............... 34
Country entry ......................................35
Fundamental course of action .... 33
Not adding activities ................. 33
Prefixing activity to a shift ....... 38
Menu functions ................................. 51
Calling up menu functions ........ 52
Data access blocked ..................... 61
Display driver 1 / driver 2 .......... 70
Display vehicle ............................... 71
Displaying the times of the driver card ...
Entry vehicle ...................................67
Leaving menu functions .......... 61
Menu access blocked ................. 61
Menu entry driver 1 / driver 2 ....... 65
Navigating in the menu functions ...
Printout driver 1 / driver 2 ....... 62
Menu guidance after withdrawing
driver card .....................................43
Menu structure ................................. 59
Messages ............................................ 73
A message appears ..................... 74
Acknowledgement of messages .... 75
Operating modes .................................88
“Company” mode ......................... 25
Operational mode ......................... 31
Operating steps (first) ................. 17
For the company ......................... 17
For the driver ........................... 17
Operational elements .........................14
Card slot 1 .......................................15
Card slot 2 .......................................16
Cutting edge ................................. 16
Display ............................................15
Download interface ..................... 15
Menu buttons ............................. 15
Unlock button ............................ 15
Operational notes ......................... 81
Pictogram combinations .......... 97
Pictograms ........................................ 96
Power interruption ......................... 21
Print activities ............................. 62
Appendix

Print D1/D2 status input ...................... 64
Print daily value from the data memory 63
Print daily value from the driver card .. 62
Print events from the data memory ..... 63
Print events from the driver card ........ 62
Print instances of over-speeding ......... 63
Print rpm profiles ................................. 64
Print speed profiles ............................. 64
Print technical data ............................. 63
Print v-diagram .................................... 64
Printout examples ............................. 101
Activities from the driver card ........ 101
Daily printout of the vehicle .......... 103
Driver’s activities .............................. 106
Events / faults from the data memory .. 63
Events / faults from the driver card .... 102
Explanations .......................... 108
Over-speeding ............................ 105
Printout in local time .................. 107
Rpm profile .................................... 107
Speed profile .................................. 107
Status D1/D2 diagram ................... 106
Technical data ............................... 105
v-diagram ........................................ 106
Printout of data .......................... 49
Cancel printout ............................. 49
Start printout ............................... 49
Things to note when printing ......... 50

R
Register company ...................... 27
Remote control .......................... 66
Risk of Accident ......................... 74

S
Setting activities ........................ 39
Automatic setting ........................ 39
Automatic setting after ignition on/off .................................... 39
Handwritten activity entries .......... 40
Manual setting .......................... 39
Setting the language ..................... 53

T
Tachograph cards ......................... 89
Access rights of the tachograph cards ........................................ 90
Automatic ejection ........................ 89
Cleaning tachograph cards .......... 12
Company card .......................... 89
Control card ............................. 89
Driver card ............................... 89
Handling the tachograph cards .......... 12
Locking the tachograph cards .......... 89
Workshop card .......................... 89
Technical data .......................... 94
DTCO 1381 ............................... 94

V
VDO Counter * ................................. 54
Daily value ................................ 57
Display for activity "Break time" .......... 56
Display for activity "Working time" ........ 56
Displays during trip .................. 55
Layout of the VDO Counter display: 54
Status display ......................... 57
Weekly value ............................. 57
VDO GeoLoc * ............................... 18, 91
Vehicle recording ......................... 69

Keyword directory

Paper roll ................................. 94
Time management ................. 92
UTC time ................................. 92
Converting to UTC time ........ 92

V
VDO Counter * ......................... 54
Daily value ............................. 57
Display for activity "Break time" .......... 56
Display for activity "Working time" ........ 56
Displays during trip .................. 55
Layout of the VDO Counter display: 54
Status display ......................... 57
Weekly value ............................. 57
VDO GeoLoc * ............................... 18, 91
Vehicle recording ......................... 69

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Automatic setting of the activities after ignition on/off

The automatic setting after ignition on/off is only visible in the standard display (a). The activity flashes for approx. 5 seconds, then the previous display will appear again.

For details on the standard setting, see “Setting activities” as of page 39.

Information about the DTCO 1381

Type:
No:__________________
Year:__________________

Setting date:__________________
Signature:__________________
Appendix

Accessories

- **DLKPro Download Key**
  
  Using the DLKPro Download Key you can download and archive the legally required data from the DTCO 1381 and Driver Card.
  
  Order no. A2C59515252 with card reader enabled.

- **DLKPro TIS-Compact**
  
  Using the DLKPro TIS-Compact you can download, view and archive the legally required data from the DTCO 1381 and Driver Card.
  
  Order Numbers:
  - Europe – A2C59515262 with card reader enabled.
  - France - A2C59516565 with card reader enabled.

- **DTCO® SmartLink**
  
  The DTCO SmartLink provides a wireless connection from the DTCO 1381 to a Bluetooth enabled device (e.g. Smartphone)
  
  Order Number DTCO SmartLink Pro for iOS and Android: 1981-2000000101

- **DTCO® GeoLoc**
  
  The DTCO GeoLoc is used to record the position data of the vehicle in the DTCO 1381.
  
  Order no. A2C59517076

- **DLD® Short Range II and DLD® Wide Range II**
  
  Using a DLD Short Range II or DLD Wide Range II DLD (DownLoad Device) you can transfer DTCO 1381 and Driver Card download data via WLAN or GPRS to TIS-Web fleet management software or third party software.
  
  Order Numbers:
  - DLD Short Range II – A2C59516619
  - DLD Wide Range II – A2C59516626

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Accessories

Cleaning cards and cleaning cloths

The cleaning cards can be used to clean your DTCO 1381 card slots and cleaning cloths, Driver and Company cards.

Order Numbers:
- Cleaning cards – A2C59513382 (12 cards)
- Cleaning cloths – A2C59511849 (12 cloths)
- Cleaning cloths (set) – A2C59511838 (6 cards / 6 cloths)

VDO Online Shop

The online shop for original products and services from VDO:

www.vdoshop.co.uk
Appendix

Notes

- Notes
EG-Konformitätsklärung
EC Declaration of Conformity

Nr. HOM_004


We as manufacturer hereby declare that the following described equipment is in conformity with the relevant Union harmonisation legislation: Directive No. 94/9/EC of 23 March 1994 (until 19 April 2016) and Directive 2014/33/EU (from April 2016).

Hersteller
Manufacturer
Continental Automotive GmbH
Heinrich-Hertz-Str. 45, 78052 Villingen-Schwenningen

Gerät
equipment
Digitale Tachograph Typ DTCO 1381 x
Digital tachograph type DTCO 1381 x

EG-Baumusterprüfbescheinigung
EC type examination certificate
TÜV 03 ATEX 2324 X

Benannte Stelle
Notified body
TÜV NORD CERT GmbH, Geschäftsstelle Hannover, Am TÜV 1, 30519 Hannover, E 0044

Gerätekennzeichnung
Marking of the equipment
Ex IV[0] [IE] IIC T6

Verwendete harmonisierte Normen
Used harmonized standards
EN 60079-0: 2012
EN 60079-11: 2012
EN 60079-15: 2016

Andere angewandte Richtlinien
Other used directives
VO (EWG) Nr. 3521/85; ECE R 10

VS-Villingen, den / the 2016-02-25

Continental Automotive GmbH

Vorstandsvorsitzender
Chairman of the Board
Dr. Harald Jörden

Name / Name

Hauptordnungsführer
Managing Director
Name / Name

Unterzeichnet
Signed by

Unangefochten.

This declaration confirms the conformity of the specified equipment and does not imply any warranty for properties. The seller also warrantees accuracy of the product data to the customer or dealer.