# DTCO 1381 Universal Device Rel.2.2

## Procedure for uploading OEM Parameter Sets (Release 8) to Universal DTCO® 1381 Rel. 2.2 Devices

**Precondition:** CTCII has been updated to software **version 2.13** (or later) and the Licence for the universal DTCO® has been uploaded. Also the latest list of OEM variant parameters has been uploaded ***<PARA_ZIP_FILE_M15_for_2.2.zip>*** using ***<CONTRAM_01_03.exe>*** on to your **CTCII Version 2.13** (see 'Uploading OEM parameters sets to CTC II 020216.pdf')


**There are 6 universal devices based on Release 2.2** *(All with IMS ON, Remote HMI ON, VDO Counter enabled on display and for diagnostics, GeoLoc [Mapping] and data recording (via CAN) functionality enabled and activated, RDL possible via released front K-Line)*:

**1381-2214303001 (24V, ADR Zone 2)**
*Predecessor Rel.2.1:* **1381/2210309003T**
Features a second, open CAN, D1/D2, **A4/A8 with fixed 120 Ohm resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D

**1381-2214303002 (24V, ADR Zone 2)**
*Predecessor Rel.2.1:* **1381/2210309004T**
Features a second, open CAN, D1/D2, **A4/A8 without resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D

**1381-4214302001 (24V, ADR Zone 1)**
*Predecessor Rel.2.1:* **1381/4210309003T**
Features a second, open CAN, D1/D2, **A4/A8 with fixed 120 Ohm resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D
**IMPORTANT: ADR Input on B5 (On predecessor it was D3)**

**1381-4214302002 (24V, ADR Zone 1)**
*Predecessor Rel.2.1:* **1381/4210309004T**
Features a second, open CAN, D1/D2, **A4/A8 without resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D
**IMPORTANT: ADR Input on B5 (On predecessor it was D3)**

**1381-0214203001 (12V)**
*Predecessor Rel.2.1:* **1381/0210209003T**
Features a second, open CAN, D1/D2, **A4/A8 with fixed 120 Ohm resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D

**1381/0214203002T (12V)**
*Predecessor Rel.2.1:* **1381/0210209004T**
Features a second, open CAN, D1/D2, **A4/A8 without resistor**, v/n profile, white display, 4 dimming presets based on CAN, terminal 15, terminal 58 day/night or terminal 58D

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Continental Automotive Trading UK Ltd
36 Gravelly Industrial Park
Birmingham
B24 8TA

Phone +44 121 326 1234
Fax + 44 121 326 1299
www.dtco.co.uk

Registered No. 965702 England
Registered Office: 36 Gravelly Industrial Park,
Birmingham B24 8TA

## IMPORTANT – How to switch the IMS (Independent Motion Signal) OFF

**From 1st October 2012,** EU Regulation 1266/2009 requires that in order to detect manipulation of motion data, information from the KITAS 2+ sensor must be corroborated by an **I**ndependent **M**otion **S**ignal (IMS) - using a third generation digital tachograph (i.e. DTCO Rel.2.0 / 2.0a / 2.1). Therefore in a new vehicle, if a digital tachograph is activated on or after the 1st October 2012, it MUST be a third generation type of digital tachograph (i.e. DTCO Rel.2.0 / 2.0a / 2.1).

**Please note** that there is no requirement to retrospectively apply this regulation. Thus if a vehicle had originally been fitted with a 1st generation or 2nd generation digital tachograph, the same type of DTCO can be retrofitted or a third generation digital (i.e. DTCO Rel.2.0 / 2.0a / 2.1) can be installed with the **IMS OFF**.

The Universal device OEM variant parameters are supplied with the **IMS ON** and therefore it is important for most retrofit applications to switch the **IMS OFF.**

In order to switch the **IMS OFF**, please select 'SWITCH_IMS_OFF' after you have uploaded the required OEM parameter set, via Installation Data (see below)

## CTC II – Switching the IMS OFF

The Universal device OEM variant parameters are supplied with the **IMS ON** and therefore it is important for most retrofit applications to switch the **IMS OFF.**

After you have uploaded the required OEM parameter set, select the following:

**Programming ⟶ Installation Data ⟶ IMS Signal ⟶ Source ⟶**

**Select [OFF] ⟶ ENTER**

## Representation of the loaded Parameter set

All DTCO 1381.xxxxxxxxxx Rel. 2.0, 2.0a, 2.0U1, 2.1 and 2.2

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| ***PARA_ZIP_FILE_M15_for_2.2*** | **All DTCO 2.2** | In first line of each parameter list (independent of which DTCO device you have already connected) you will always see the name representing the parameter set. |

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Continental Automotive Trading UK Ltd
36 Gravelly Industrial Park
Birmingham
B24 8TA

Phone +44 121 326 1234
Fax + 44 121 326 1299
www.dtco.co.uk

Registered No. 965702 England
Registered Office: 36 Gravelly Industrial Park,
Birmingham B24 8TA

## OEM DTCO® 1381 Rel.2.1 (2.0, 2.0a, 2.1) devices that can be emulated by the Universal DTCO® 1381 Rel.2.2 are as follows:

## 1381-2214303001 Universal DTCO® 2.2 (24v ADR Zone 2 with R):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| ALEXANDER DENNIS | 1381.1051009008 | UK Bus manufacturer |
| DAF XF/CF/LF | 1381.2051109005 | Series XF/CF/LF |
| DENNIS EAGLE | 1381.1010109008 | UK Truck manufacturer in |
| EVOBUS | 1381.1070109009 | SETRA and Mercedes buses |
| HINO | 1381.1060109002 | Japanese Light and CW Truck Manufacturer |
| IVECO EUROCARGO | 1381.1072109005 | Stralis, Eurocargo Trakker |
| IVECO STRALIS NEW | 1381.1212109004 | Phase lift STRALIS |
| KENWORTH | 1381.2050309002 | American Truck |
| MAN TG | 1381.2051009004 | TGX, TGM, TGL |
| MERCEDES AC/AX/AT | 1381.2070009004 | ACTROS, AXOR, ATEGO, UNIMOG |
| NISSAN ATLEON wR | 1381.1101009001 | Atleon |
| RENAULT D-TRUCK | 1381.2052309010 | New Truck Generation (heavy class) |
| RENAULT MAG EUR3 wR | 1381.2052300028 | Magnum, Kerax, Premium, Midlum EURO3 |
| RENAULT T-TRUCK | 1381.1212309007 | New Truck Generation (medium class) |
| SCANIA | 1381.1071409001 | P-, G-, R-Series |
| SOLARIS | 1381.1070209001 | Polish Bus Manufacturer |
| SOR | 1381.1070009006 | Polish Bus Manufacturer |
| TEMSA | 1381.1071009004 | Turkish Bus Manufacturer |
| VAN HOOL | 1381.1070009004 | Belgian Bus Manufacturer |
| VDL BUS | 1381.1070109008 | Dutch Bus Manufacturer |
| VDO UNIVERSAL | 1381.2214303001 | Reset to factory setting |
| VISEON BUS | 1381.1051009004 | German Premium Bus Manufacturer |
| VOLVO FL06 mR | 1381.2012000023 | FE/FL EURO3 |
| VOLVO NEW FE/FL | 1381.2012309010 | New Truck Generation (medium class) |
| VOLVO NEW FH | 1381.1232309007 | New Truck Generation (heavy class) |
| VOLVO FH/FM | 1381.2012009005 | Series FM/FH (TAE2) |

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Birmingham
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Birmingham B24 8TA

## 1381-2214303002 Universal DTCO® 2.2 (24v ADR Zone 2 without R):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| ACTROS NEW GEN | 1381.2010009005 | New ACTROS, AROCS, ANTOS |
| CHINA Kinglong | 1381.1070009005 | Chinese Bus importer, e.g. Kinglong, Yutong, … |
| EVOBUS B2E | 1381.1010109009 | New SETRA / Mercedes Bus platform |
| ISUZU | 1381.1050209002 | NQR, NPR |
| KENWORTH | 1381.2050309002 | American Truck |
| MITSUBISHI | 1381.1070109011 | Canter |
| NISSAN ATLEON woR | 1381.1101009001 | Atleon |
| RENAULT MAG EU3 woR | 1381.2052300028 | Magnum, Kerax, Premium, Midlum EURO3 (without CAN Resistor) |
| RENAULT MAGNUM | 1381.2052309009 | Magnum, Kerax, Premium, Midlum (TAE2) |
| SOLARIS | 1381.1070209001 | Polish Bus Manufacturer |
| VDO UNIVERSAL | **1381.2214303002** | **Reset to factory setting** |
| VOLVO FL06 oR | 1381.2012000023 | FE/FL EURO3 (without CAN Resistor) |

## 1381-4214302001 Universal DTCO® 2.2 (24v ADR Zone 1 with R) (Battery Master Switch input MUST be on B5):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| IVECO EUROCARGO | 1381.4072109003 | Stralis, Eurocargo Trakker (ADR) **IMPORTANT: The original OEM DTCO, PIN D3 is used for the Battery Master Switch input. You MUST change the wire from D3 to B5** |
| IVECO STRALIS NEW | 1381.4212109004 | Phase lift STRALIS (ADR) **IMPORTANT: The original OEM DTCO, PIN D3 is used for the Battery Master Switch input. You MUST change the wire from D3 to B5** |
| RENAULT T-Truck | 1381.4212309007 | New Truck Generation (heavy class, ADR) **IMPORTANT: The original OEM DTCO, PIN D3 is used for the Battery Master Switch input. You MUST change the wire from D3 to B5** |
| SCANIA ADR Z1-B5 | 1381.4071409004 | SCANIA P-, G-, R-Series ADR |
| VDO UNIVERSAL | **1381.4214302001** | **Reset to factory setting** |
| VOLVO NEW FH/FM | 1381.4232309007 | New Truck Generation (heavy class, ADR) **IMPORTANT: The original OEM DTCO, PIN D3 is used for the Battery Master Switch input. You MUST change the wire from D3 to B5** |

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36 Gravelly Industrial Park
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B24 8TA

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Fax + 44 121 326 1299
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Registered Office: 36 Gravelly Industrial Park,
Birmingham B24 8TA

## 1381-4214302002 Universal DTCO® 2.2 (24v ADR Zone 1 without R) (Battery Master Switch input on B5):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| VDO UNIVERSAL | **1381.4214302002** | **Reset to factory setting** |

## 1381-0214203001 Universal DTCO® 2.2 (12v with R):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| RENAULT MASTER III | 1381.0111409010 | REN Master III, NIS NV400 and OPEL Movano |
| VDO UNIVERSAL | **1381.0214203001** | **Reset to factory settings** |

## 1381-0214203002 Universal DTCO® 2.2 (12v without R):

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| FENDT VARIO | 1381.0010209002 | Tractors (AGCO-Corporation) |
| FIAT DUCATO NEW | 1381.0111009005 | From model year 2012 |
| FIAT DUCATO | 1381.0111009001 | Phase out model of Ducato |
| FORD RANGER | 1381.0250309003 | SUV and Pickup |
| FORD RANGER NEW | 1381.0250309003 | SUV and Pickup 2014 (Iceblue lighting) |
| FORD TRANSIT | 1381.0070309004 | Phase out model with day/night dimming |
| FORD TRANSIT NEW GEN | 1381.0250309006 | From model year 2013 (Icebule lighting) |
| FORD TRANSIT RHEO | 1381.0070309003 | Phase out model with Rheostat dimming |
| HMC HYUNDAI EU VAN | 1381.0250009002 | New: EU Van |
| IVECO DAILY M2009 | 1381.0111109008 | Phase out model |
| IVECO DAILY M2012 | 1381.0111109010 | From model year 2012 (Summer 2011) |
| IVECO DAILY M2014 | 1381.0111109009 | From model year 2014 (Summer 2013) |
| MERCEDES SPRINTER | 1381.0010009007 | All Sprinter versions from 2007 (NCV3) |
| MERCEDES VITO | 1381.0010009009 | (NCV2, Series 639) |
| MITSUBISHI | 1381.0070109003 | Canter |
| NISSAN CABSTAR | 1381.0101009004 | Atlas, Cabstar, Maxity |
| RENAULT NISSAN OPEL | 1381.0111409011 | REN Trafic, NIS Primastar and OPEL Vivaro |
| TEMSA | 1381.0071309004 | Turkish Bus manufacturer |
| VDO UNIVERSAL | **1381.0214203002** | **Reset to factory setting** |
| VW CRAFTER | 1381.0121009007 | Exclusively only Crafter, not T5 ! ! |

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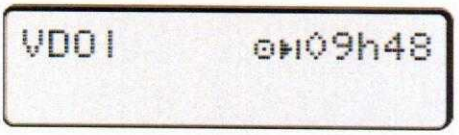
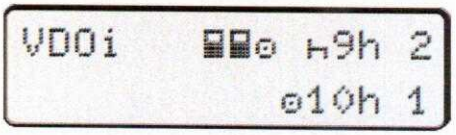
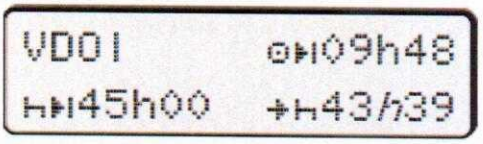
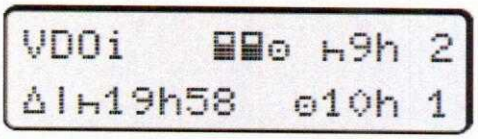
## Other Programming Possibilities

| CTCII-Display | Target DTCO | Usage |
|---|---|---|
| WeeklyDriveTime OFF | Rel.2.1 and higher | Calculation of Weekly Driving Time is deactivated. Recommended for all drivers on buses and coaches who drive according to 12-day-exception-EC 1073/2009 regulation<br>VDO Counter Mask during driving keeps unchanged<br><br>If vehicle is stationary:<br>  <br><br>Display: Weekly Driving Time<br>  <br><br>Display: Status |
| WeeklyDriveTime ON | Rel.2.1 and higher | VDO Counter<br>If vehicle is stationary:<br>  <br><br>Display: Weekly Driving Time<br>  <br><br>Display: Status |
| DCDL Reminder 7 | Rel.2.1 and higher | **Driver**card **Down**load reminder functionality<br>Will be set to 7 days (7 days (and less) before a Driver card is required to be downloaded at the latest, the driver gets reminded every card ejection) |
| DCDL Reminder OFF | Rel.2.1 and higher | **Driver**card **Down**load reminder functionality completely switched off!<br>(This is recommended if the customer uses drivercard download tools which do not fulfil the exact requirements given in Annex 1b chapter 2.65 according Parameter: 'LastCardDownload'). |
| GEOLOC Adapt | All Rel.2.0 and higher | Increase of time tolerance regarding IMS Fault |
| VDO LOGO | All Rel.1.3a and higher | Standard VDO Logo will be uploaded to DTCO<br>VDO |

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Continental Automotive Trading UK Ltd
36 Gravelly Industrial Park
Birmingham
B24 8TA

Phone +44 121 326 1234
Fax + 44 121 326 1299
www.dtco.co.uk

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Birmingham B24 8TA

## Other Programming Possibilities – Vehicle data logging (Geologging + 4 CAN messages)

| CTCII-Display | Target DTCO | Usage |
|---|---|---|
| GEOLOG BASIC CAN1 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |
| GEOLOG BASIC CAN2 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |
| GEOLOG GENERIC CAN1 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |
| GEOLOG GENERIC CAN2 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |
| GEOLOG INTENSE CAN1 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |
| GEOLOG INTENSE CAN2 | All Rel. 2.2 | For all 1381.* with Rel. 2.2 SW (V 2223) |

## Other Programming Possibilities – (Calibration behaviour)

| | Target DTCO | Usage |
|---|---|---|
| ACTIVATION ONLY | All Rel.2.2 | For all 1381 with Rel. 2.2 SW (V 2223) If set, only activation purpose (1) will be generated - Mandatory in countries where such a national regulation exists: i.e France (case 1) |
| ACTIV.& FIRST CALIB. | All Rel.2.2 | For all 1381 with Rel. 2.2 SW (V 2223) If set, activation purpose (1), first calibration (2) and installation (3) will be generated.<br>If a UNIVERSAL device is used, not necessary because set per default<br>All others (case 2) |

**Which cases exist in workshops?**

**Case 1)** National exceptions, example: France
Universal device will be parameterised first time with any OEM-Parameter set. The last step and action is to perform : ACTIVATION ONLY !

It means:

With next workshop session you can only generate or perform an activation (1) First calibration (2) and (3) cannot be generated during this session.
To make calibration purposes (2) and (3), you have to eject workshop card and re-insert it again. Then you have to measure the 'w' and 'l' and program it.

**Case 2)** No national restrictions apply:

In 'production' state you can upload any OEM- parameter set.
So you have the possibility to perform and measure in one workshop session all necessary calibration records (1), (2) and (3) in one session. So you have more or less the same situation as the truck manufacturer will have in their production to generate 'activation &first calibration', in one process!

**Please circulate to all concerned**

## Other Programming Possibilities – (Pre-overspeed alert behaviour )

| | Target DTCO | Usage |
|---|---|---|
| PreOverspd Standard | All Rel.2.x | All 1381 with Rel.2.x SW (V 2230-V 2223) |
| PreOverspd Alternat | All Rel.2.x | All 1381 with Rel.2.x SW (V 2230-V 2223) |

## Special Programming for OE Dedicated Devices

## FIAT Ducato with initially equipped DTCO from factory

There are FIAT Ducato models in the field, which have two different types of CAN architectures. These are differentiated by the IMS Settings (Second independent motion signal). In case of device exchange the 'FIAT DUCATO NEW IMS' may be required to be executed.

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| FIAT DUCATO IMS | 1381.0111009005 | Standard IMS (approx. 75% of vehicles) |
| FIAT DUCATO NEW IMS | 1381.0111009005 | 'Adapted' IMS (approx. 25% of vehicles) |

## FORD Transit with original equipped DTCO from stock

Currently FORD has approved DTCO Rel. 2.1: 1381.0250309006 and this will be installed uniformly in the current FORD Transit.

It will also serve as a substitute for all installed DTCO's in existing FORD Models. Therefore to be able to guarantee 100% backwards compatibility, adaptations must be done.

Therefore for older Transit and Ford Ranger-Models, the DTCO: 1381.0250309006 must be 'recalibrated' as a substitute.

| CTCII-Display | Original OEM-DTCO: | Usage |
|---|---|---|
| FORD RANGER IMS | 1381.0250309006 | IMS for Ford Ranger (Year 2012/2013) |
| FORD RANGER NEW IMS | 1381.0250309006 | IMS for Ford Ranger (Year 2013/2014) |
| FORD TRANSIT NEW | 1381.0250309006 | Reset to FORD Transit NEW |
| FORD TRANSIT OLD | 1381.0250309006 | Standard IMS and A2-Dimming for Transit |
| FORD TRANSIT RHEO | 1381.0250309006 | Standard IMS for Dimming Rheostat for Transit |
| FORD CAN GeoLoc | 1381.0250309006 | Standard setting for CAN1 (Connection possibility GeoLoc) |

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**Examples:**

**a) In an older Ford Transit a DTCO 1.4 1381.0070300018 has failed.** As a substitute only the DTCO 2.1:1381.0250309006 is available. To ensure 100% compatibility, using the CTCII 'FORD TRANSIT OLD' must be parameterised.

**b) In a FORD Ranger 2014 a DTCO is required to be retrofitted.** The DTCO 2.1:1381.0250309006 must be parameterised as 'FORD RANGER NEW IMS'

## Procedure for Uploading an OEM Parameter Set:

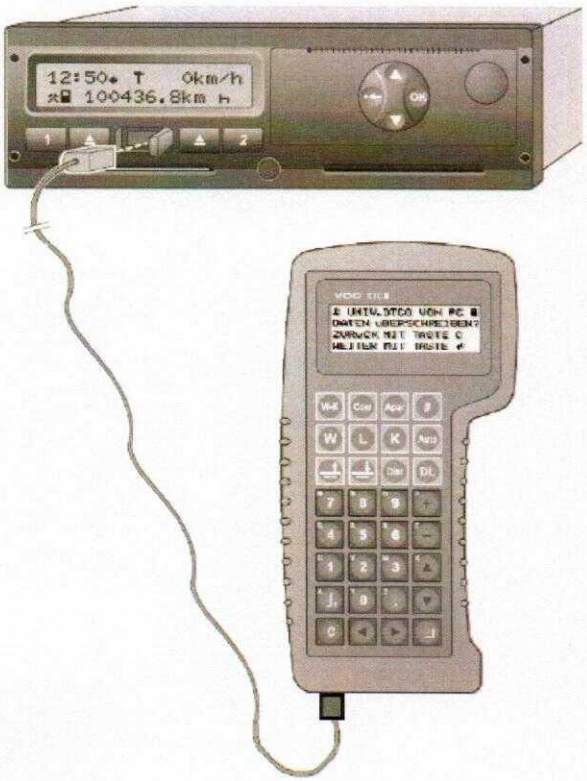
You can parameterise all known UNIVERSAL-DTCO® 2.2 by uploading ZIP file: ***<PARA_ZIP_FILE_M15_for_2.2.zip>*** using ***<CONTRAM_01_03.exe>*** on your ***CTCII with Version 2.13 or later***

## Step 1 – Workshop Card Insertion

Insert Workshop Card into DTCO unit so that it is in Calibration Mode.

## Step 2 – Connect CTC II to DTCO

Switch on and connect the CTC II to the DTCO unit using the programming cable

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## Step 3 - Programming a DTCO® Rel.2.2 universal device to run like an OEM-variant

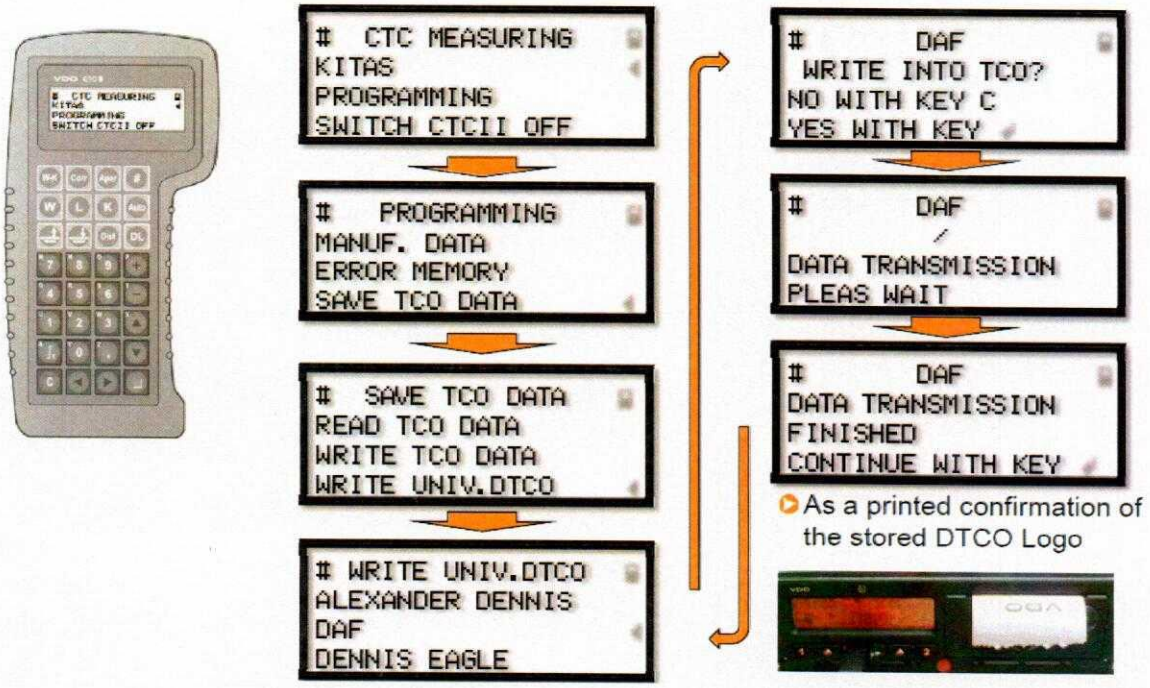
a) Scroll and Select 'PROGRAMMING'

b) Then Scroll and Select 'SAVE TCO DATA'

c) Then Scroll and Select 'WRITE UNIV.DTCO'

d) Select the applicable OEM variant parameter set (See below an example for selecting DAF)

e) When the OEM variant parameter set has been stored in the DTCO, a 'VDO' logo printout confirmation will be shown.




**Please Note** that if you load more than one OEM variant parameter set, the display may indicate 'ERROR, TCO – NEG. RESPONSE'. To start the process of re-programming a further OEM parameter, program the DTCO back to 'VDO UNIVERSAL' (i.e. factory re-set)

## Step 4 – If applicable switch IMS OFF (see page 2)

**Please circulate to all concerned**

Continental Automotive Trading UK Ltd
36 Gravelly Industrial Park
Birmingham
B24 8TA

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Fax + 44 121 326 1299
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# ADR Zone 1 Vehicles and DTCO Rel.2.2

**IMPORTANT: All OEM devices shown below, provide their ADR Input at Pin D3. If you are replacing the existing DTCO with a UNIVERSAL DTCO Rel. 2.2 (ADR Input normally at B5) please ensure that the DTCO® Pin B5 is connected to the battery master switch safely. This can be done by unpinning D3 and moving the wire to B5 input.**

| CTCII Display | Original OEM DTCO | Vehicle Type | |
|---|---|---|---|
| IVECO EUROCARGO | 1381.4072109003 | Stralis, Eurocargo Trakker (ADR) Since 2008 |  |
| IVECO STRALIS NEW | 1381.4212109004 | Phaselift STRALIS (ADR) Since 2014 |  |
| RENAULT T-Truck | 1381.4212309007 | New Truck Generation (Heavy class, ADR) Since 2014 |  |
| VOLVO NEW FH/FM | 1381.4232309007 | New Truck Generation (Heavy class, ADR) Since 2013 |  |

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