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DTCO® 4.1a

Smart Tachograph Version 2

VDO Fleet App available for iOS and Android

The new Smart Tachograph Version 2, called DTCO 4.1a, complies with the requirements of the updated EU Regulation No. 2016/799 as well as the changes in conjunction with the Mobility Package I. In particular, the device supports the new rules for posting of professional drivers and Cabotage operations.
The DTCO 4.1a is a further development of the DTCO 4.1 and is available via a software upgrade or as a new device. It is the ideal partner for fulfilling the current and new legal requirements.
The innovative GNSS receiver (Global Navigation Satellite System) has been extended and supports Galileo authentication OS-NMA (Open System Navigation Message Authentication). This makes the DTCO 4.1a the first industrial application to offer secured GNSS functionality from a European source. An internal / external antenna is available for maximum connection flexibility.
Consequently, there is no longer the need to stop after crossing the border. Moreover, with this technology, positioning data of the vehicle is recorded at the beginning and end of the daily working time, after three hours of accumulated driving time and during a load / unload operation.
The DTCO 4.1a DSRC interface (Dedicated Short Range Communication) enables control authorities to retrieve vehicle data and information remotely such as current speed, driver activity and recorded events while driving. The DTCO 4.1a essentially consists of the proven registration unit incl. mass memory, two chip-card readers, an integrated printer and a display. In conjunction with a successfully paired KITAS 4.0 speed sensor, GNSS receiver information and an additional internal motion sensor, the DTCO 4.1a uses multiple independent sources for motion detection.
Vehicle-related activities and positioning data are stored in the integrated mass memory, which has a capacity of approx. 365 days.
Driver related data is recorded on the personal driver card (chip card), which is inserted into the digital tachograph before the trip begins. The integrated Bluetooth module does not only provide an ITS interface (Intelligent Transportation System), but also provides a convenient link to tachograph Apps such as the VDO Fleet App, which is available on iOS / Android.
The DTCO 4.1a also records digital data such as driving times, rest periods (business-friendly, 1-minute rule), speed, engine speed and additional events (via D1 / D2 interface).
Tachograph data is made available via two independent CAN interfaces that provide cyclic as well as diagnostic data.
As another special feature, the VDO counter calculates the remaining driving and rest periods in real time. Moreover working time counters provide a perfect overview on the accumulated work times of the day and the week. The driver is also able to enter the begin and end time for a ferry / train crossing period.
The DTCO 4.1a offers a full feature remote download functionality according to the latest standard in order to conveniently download driver card data as well as mass memory data.
The DTCO 4.1a is compatible with tolling services in conjunction with the VDO Link device and the VDO DSRC detached antenna. The tolling HMI is operated via the DTCO 4.1a display, buttons and buzzer.

VDO
Smart on the Road

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System components of the digital tachograph
- DIN radio format, 2 chip-card readers, printer, display, real-time clock, operating elements and memory
- Intelligent speed sensor KITAS 4.0 R1.1x or R1.21 speed sensor
- Device internal motion sensor
- Global satellite navigation system (GNSS) for the acquisition of location data
- DSRC remote communication to check the truck while driving
- Supports Galileo authentication: OSNMA (Open System Navigation Message Authentication)

Classic Data Collection
The DTCO 4.1a registers the driving, working, standby and rest times of drivers and co-drivers, the momentary velocity, the distance travelled and application-specific parameters such as speed engine and other work processes or additional events on the vehicle. Data is stored in relation to the vehicle. Driving times and rest periods are also registered on the personal driver card. Based on the new legal regulation, authenticated positioning data as well as a load or unload activities are also recorded.

DTCO 4.1a Highlights
- Internal or external GNSS antenna for easy integration and maximum flexibility
- Improved performance of the integrated Bluetooth module, which supports the ITS interface and mobile tachograph apps
- Various settings can be made by the driver via the VDO Fleet App (via Bluetooth) if a valid company card is in slot 1 or 2
- The updated VDO Counter keeps the driver constantly informed about the status of his drive and rest times like a personal assistant. “Team operation” and special conditions like ferry / train are also supported. Moreover, the new rules for international transports are considered
- Cabotage related functions like load / unload
- Working time counters ensure that the driver has full visibility over their daily and weekly working times
- Entrepreneur-friendly driving time calculation based on an interpretation accurate to the second (1-minute rule)
- Remote download / local download (now also possible via Bluetooth)
- Context-sensitive menu and simplified user guidance
- Graphical printouts

The following configuration parameters are available:
- Entry of the very first vehicle registration number
- Display of the VDO counter with extended information (historical data)
- Active remote control possible via Bluetooth and CAN
- Change of driver related activities linked to ignition on/off
- Company logo for the printouts
- Downloads reminders
- Warnings about over speeding and working time limits

Operation and functions
- Acquisition of additional data (e.g. 168 hours speed recording, mileage at vehicle stop)
- Consideration of the driver’s and co-driver’s consent for the additional recording of personal data
- Early warnings (reference to periodic inspection, reference to expiry of tachograph cards, driver card download)
- Unique user guidance with menu text
- The download status is shown on the display

Interfaces
- 2 independent CAN interfaces to the vehicle network
- External motion sensor interface (KITAS 4.0)
- Signal outputs (3x V pulse, 1x 4 pulse/m)
- Bluetooth interface (ITS interface and tachograph Apps)
- Ignition-independent info interface for telematics systems
- 6-pin front-interface for programming, calibration and data download

Technical data
1-DIN radio slot format, installation dimensions: 180 x 51 x 168 mm (W x H x D)
Protection class: IP54
Clock: Real time clock based on UTC time
Display: Negative display
Operating voltage: 24V (optional 12V)
Current consumption:
- Stand-by: typ. 12 mA (24 V) / 15 mA (12 V)*
- Normal: typ. 150mA (24V) / 200mA (12V)
- Peak: typ. 3.2A (24V) / 4.5A (12V)

Measuring range: 0 to 250 km/h
Operating temp.: -20°C to +70°C (-20°C to +65°C in ADR)
Storage temp.: -20°C to +75°C (-20°C to +65°C in ADR)
Pulse range: 2.400 to 25.000 pulse/km, max. 1.5 kHz
Inputs: KITAS 4.0 2185, speed sensor (RPM), additional inputs
Outputs: 3x V-pulses, 1x 4 pulses/m
Accuracy: According to legislation
Weight: approx. 600g
DSRC: FAKRA Interface L- Coding (optional)
FAKRA Interface K- Coding (optional)
GNSS: FAKRA Interface C- Coding

** Stand-by: Averaged Average value over 24h of a standard DTCO variant. For ADR variants see technical manual.*



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