

DEUTA REDBOX® 2K



»DEUTA REDBOX® 2K – Ready for the future«

DEUTA REDBOX® 2K is the forward-looking high-performance generation of the existing DEUTA REDBOX models. The new multi-functional recorders offer higher performance and can be flexibly deployed to all types of vehicles due to its wide-range power supply.

With these characteristics, the DEUTA REDBOX® 2K-platform provides planning security to vehicle builders and vehicle fleet operators. The combination possibilities of the modules methodically cover the vehicle- and country-specific requirements of a vehicle data recorder.

Whatever area of operation you are planning for your DEUTA REDBOX® 2K, the basic equipment is identical: A uniform platform for all REDBOX recorder variants. Consistently developed, produced, tested and qualified by DEUTA staff, actively accompanied by our obsolescence management and our in-house board production. Whether you plan to use your DEUTA REDBOX® 2K as a data logger or as a multi-functional recorder within a complex communication structure: The DEUTA REDBOX® 2K is equipped for all application scenarios. DEUTA configures the right REDBOX for any area of application – quickly and flexibly.

Flexibility through standardisation

- Compact 19" hardware design
- Future-proof performance through multiple vehicle bus system and I/O expansion
- More flexibility through numerous in- and outputs
- Can be used to record data from various train safety systems, e.g. ETCS
- Can be flexibly used for all application areas in railway traffic – from streetcars to high-speed trains
- GPS
- Optional Safe+ module up to SIL4
- Optional protected memory storage for legal data





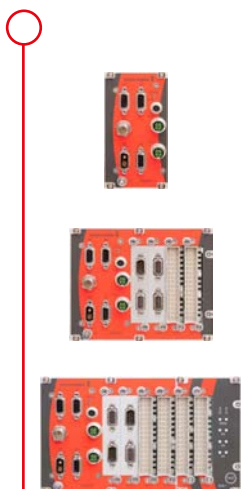
Functional improvements:

- Faster data transfer when reading trip data via USB and Ethernet
- Improved service mode using the web interface
- Separation of legal and machine-technical data
- Able to process multiple video signals
- Multiple data storage areas can be configured, including on different physical storage media
- User configuration tool (optional)

Non-functional improvements:

- Uses high-performance ARM CPU
- Robust data recorder with improved thermal management
- Higher reliability due to improved MTBF values
- Improved mechanical protection of data storage
- Optimised housing components for simplified maintenance
- Reduction of component variations due to configurable hardware modules
- Higher availability due to automated testing and inspection scenarios

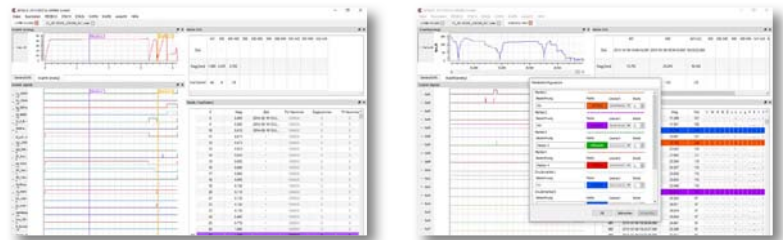
<p>Wide range power supply</p> <p>24 - 110 V DC</p> <p>MVB GPS</p>	<p>Processor board</p> <p>ARM-CPU + NETX500</p>	<p>Multi-interface card</p> <p>Profibus, RS-485 RS-422, CAN TTY, IBIS, LZB, MVB- Master 2x Ethernet Gbit</p>	<p>Interface card</p> <p>Analogue outputs Analogue inputs Relays Digital outputs Digital inputs Frequency inputs</p>	<p>Safe+ Module</p>	<p>DEUTA PMU Protected data storage</p> <p>for legal data according to worldwide standards</p>
<p>Basic equipment</p>		<p>2 -4 expansion cards</p>		<p>Safe+ module</p>	<p>PMU</p>



DEUTA REDBOX® 2K	
General information	
Basic configuration	DEUTA REDBOX® 2K in 19" cassette
Operating voltage	Rated voltage: 24 to 110 V DC
Power consumption	max. 30 W
Protection category	IP 20
Temperature range	Operation: -25 °C to +70 °C; Storage: -40 °C to +85 °C
Storage medium	Internal microSD card with 16 GB available storage
Location and time synchronisation	GPS receiver via TNC socket, connection an active or passive GPS antenna can be configured
Real-time clock	RTC with TCXO: ± 2 minutes/per year across the entire temperature range
Interfaces	
Diagnostic interface	Gbit-Ethernet
Service interface	Gbit-Ethernet, USB 2.0
Bus interfaces	MVB (Standard), optional Gbit-Ethernet, CAN, Profibus, RS485, RS422, IBIS, LZB
Inputs/outputs	
Analogue outputs voltage or current	0-10 V , 0/4-20 mA
Analogue inputs voltage or current	±10 V, 0/4-20 mA
Digital outputs	with Open Collector transistor output, max. 100 mA
Digital inputs	High level: +12 to +154 V DC
Frequency inputs for digital sources	Rectangle input, fmax = 10 kHz, Imin. 2 mA
Frequency inputs for AC encoder	suitable for 20 V / 80 V encoders
Maintenance function	
CodePlug	for the continued use of vehicle specific data when exchanging devices
Internal web server	entry of vehicle data, display of process values
Dimensions as a 19" cassette	
Width	14 HP: with no expansion cards 32 HP: with four expansion cards 44 HP: with three expansion cards and Safe+ module
Height	3U
Depth	171 mm without plugs and mating plugs
Weight	1 to 3 kg (depends on variant)
Additional functions	
Protected memory unit	Protected Memory Unit PMU22, PMU23, PMU24 or PMU25 Connection via USB 2.0 interface, Standards GM/RT 2472, IEEE Std. 1482.1-1999 FRA Guideline 49, FRA 49 CFR Part 229, Sect. 229.135 Appendix D)
MVB- Master	MVB Master expansion card
Safe+ module	Safety functions up to SIL4 Driver safety switch SiFa, detection of standstill, detection of rollback, monitoring of speed limit, monitoring of maximum speed, secure analogue output
Removable memory card (optional)	a memory card that can be removed via the front plate without using tools for the purpose of vehicle data archival
Removable SolidStateDisk (optional)	for the storage of video data
Applied standards	EN50155, EN50121-3-2, EN45545-2, EN50126, EN50128, EN50129



»Analysis software & web interface«



Data download and analysis – as you wish

The user interface of the ADS4 presents all data clearly at a glance with freely configurable windows and tabs. Speed, analogue and digital signals, ETCS data and train security data are displayed synchronously. You have the choice of viewing the data chronologically (time-based) or over a certain stretch of the track (route-based). The table display shows decoded signals and messages chronologically. Additional items of information such as vehicle number, owner and data scope are also provided.

Easy download

The data medium protects the travel data from manipulation. You can optionally download the data from the recorder using an access protected USB stick, a removable SD card, or an Ethernet connection. A password reliably protects the output of your travel data against unauthorised access. ETCS data, train security, video and audio data are read in with filter functions for data input and output.



Monitoring worldwide

With the integrated REDBOX web interface, you can access diagnostic and service functions without using specific service software. Parameters such as recorder status, status of the data memory or communication status are under your control at all times. The web browser makes the adaptation to different operating systems unnecessary.

DEUTA-WERKE

Paffrather Straße 140 | 51465 Bergisch Gladbach | Deutschland

Telefon +49 (0) 2202 958-100 | Fax +49 (0) 22 02 958-145
support@deuta.de | www.deuta.com | www.icontrust.de



DEUTA-WERKE GmbH | Paffrather Str. 140 | 51465 Bergisch Gladbach | Germany | Phone +49 (0) 2202 958-100 | Fax +49 (0) 22 02 958-145 | Mail: support@deuta.de | www.deuta.com
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