



Traffic data recorder – Train protection – South Korea

한국 철도 레일와 안전장치



“The EFA 16 concept is our flexible recorder solution for a data bus fusion specifically developed for the customer. We would be pleased to make suggestions for project-specific solutions”

Andreas Blümke, DEUTA

Innovation

Consultation

The project:

Data recorder for the new train protection in South Korea

South Korea has a well-developed modern railway system. During the course of introducing a new train protection system, the requirements towards data recording were considerably expanded. Where previously the travel data (ATC) from the vehicle were routed through the MV bus (Siemens MVB type) via ICOM interface of the modular MFA 20 driver console display to the DSK 20 data-storage unit, additional ETCS data of the train protection will be recorded in the future.

The task:

Reliable data recording of the most various data busses

DEUTA has been successfully active on the Korean market for more than 25 years. While we were expanding the data recording by the storage of the ETCS data, a particular challenge was that the respective ATP system equipment was delivered by different system vendors. These vendors in turn use different bus systems to transfer the ETCS data to the recorder. For existing locomotives, a Bombardier ATP system transfers the relevant data via an additional MV bus with the help of a GPP protocol. In newly built locomotives, Ansaldo STS uses the profibus for its ATP system for data transfer. Because of the technology experience from numerous European ETCS reference projects, DEUTA was able to quickly and flexibly implement the requests of the Korean customer.

Flexibility due to Gateway technology

To guarantee the requirements towards reliable and simultaneous recording of data from the most various data busses, the new recorder concept EFA 16 was developed. EFA 16 is a product family of modular structured electronic travel data systems to record travel data in railway vehicles in a compact 19" sub-rack. A data gateway (MPU 30) was supplemented as functional expansion to the internationally proven DEUTA EFA 15 data recorder to pre-process ETCS data and was connected to a memory module (PMS 21) protected against thermal and mechanical loads. The configurable gateway enables the flexible connection of different customer- and project-specific data busses as well as the selection of relevant data for forwarding to the recorder module.

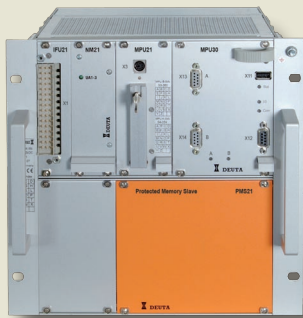
Intelligent data recording

Shortcut data are stored to the protected PMS 21 memory module. Because storage occurs at shorter recording intervals, it is possible to evaluate the last data with a higher resolution, e.g. after an accident. Long-term travel data are recorded to a removable Compact Flash card - secured by a hinged lid featuring a keylock. All additional recordings, entered train and personnel data, as well as start and stop information are allocated to the travel curve. The Compact Flash® card can be read out on a suitable PC/laptop - using the convenient ADS 3 evaluation program.



EFA 16 - Features at a glance

- Recording of travel data in railway vehicles
- Data gateway for flexible connection of most various data busses (project-specific)
- Storage of shortcut data to protected PMS 21 memory module (accident memory)
- Storage of long-term travel data to Compact Flash card
- Short-distance memory, operating data memory and maintenance data memory as ring memory
- Evaluation of travel data using ADS 3 evaluation software
- Evaluation of ETCS data using ETCSView software
- Recorder diagnosis and configuration with service software
- Installed in a compact 19" sub-rack



EFA 16

Power supply	24 to 110V DC +30/-40%
Power consumption	typical 20 – 25 W (configuration-dependent)
Temperature range	-25°C to +70°C (operation) -35°C to +85°C (storage)
Digital inputs	12
Transistor outputs	upon request
Relay output	1 alarm relay
Digital outputs	upon request
Frequency inputs	upon request
Frequency outputs	upon request
Analogue inputs	upon request
Analogue output	upon request
Memory	1 x Compact Flash min. 128 MB
Memory organisation	Short-time memory, operating data and maintenance memory
Max. resolution	1 m or 1 km/h
Accident memory	PMS 21
Service interface	RS 232 via mini DIN 8 plugs
Data bus	MVB or profibus (more upon request)
CAN	upon request
IBIS	upon request
RS 485	upon request
Width, height, depth	251.6 mm (42 TE), 265.9 (6 HE), 231 mm
Weight	6.6 kg
Protection category	IP 20

System
EFA 16





DEUTA-WERKE GmbH

Paffrather Strasse 140 · D-51465 Bergisch Gladbach, Germany
Phone+49 (0) 22 02 958-100 · Fax +49 (0) 22 02 958-145
support@deuta.de · www.deuta.de