

UniCAN Professional

- ▶ Universal stand alone data logger for acquisition of measurement data, data recording and troubleshooting on CAN busses
- ▶ For use in test fleets (low stand-by current)
- ▶ CCP data logging
- ▶ Remote access via GSM / GPRS
- ▶ Removable ATA Flash Card up to 2 Gbyte
- ▶ Robust, compact, highest data security
- ▶ Extended temperature range -40 °C to +85 °C
- ▶ Easy handling and configuration
- ▶ Variable filter- and trigger conditions
- ▶ Data analysis with Excel, DIAdem, INCA, CANoe, CANalyzer, E.D.A.S.Win, a. o.



UniCAN Professional is a **flexible stand-alone data logger** for up to 3 CAN busses. Equipped with a removable ATA Flash Card the UniCAN is perfect for mobile applications.

UniCAN Professional is able to record complete **messages** or several **measurement values** (signals). To configure the UniCAN you can use the Memory Card, a modem or RS232 interface with the included UniCAN Config software (CANdb and A2L are possible).

CAN bus interface

UniCAN Professional supports **CAN 2.0B (active)**. The device is equipped with 2, at most 3 CAN bus controllers. Drivers for **High-Speed CAN bus** (ISO 11898) or **Low-Speed CAN bus** (ISO 11519) are available. Optional also Single Wire CAN and others.

Fields of Application

The universal design makes UniCAN suitable for all fields of CAN data acquisition, long-term monitoring and diagnosis:

- ▷ **Automotive Systems**
- ▷ **Agricultural Machinery, Construction Equipment**
- ▷ **Automation**

Remote Access via GSM / GPRS

UniCAN Professional can be configured and read out with an external **GSM modem** without interruption of data recording.

The UniCAN Manager supports the central management and operation of UniCAN devices that are installed in the field.

Alternatively UniCAN Professional can be operated by a **board computer** with **serial interface**. For integration in own applications UniCAN Manager can be activated as a batch without user interaction.

Secure Data Storage

UniCAN Professional is housed compactly in a **robust metal casing**. The front cover guarantees a fixed position of the ATA Card, even under vibrations.

ATA Flash PC Cards are supported because of their proven reliability under rough conditions. For **long-term data acquisition** ATA Flash Cards up to **2 GByte** are supported.

After a voltage breakdown or removal of PC Card, an **automatic restart** of the recording occurs. After this all previously recorded data are completely available. The history is documented in a log file.



CSM CANini and Vector CANdb

CSM CANini is an independent data format for definition and management of CAN communication data. This includes the following values:

- ▷ **Description** (e.g. "RPM")
- ▷ **CAN identifier**
- ▷ **Data type** (e.g. word, byte or nbits)
- ▷ **Position within the CAN message**
- ▷ **Conversion parameters between raw value and physical value**
- ▷ **Physical unit**

CANini has an interface to **UniCAN Manager**, where the recording parameters are defined on basis of CANini data.

Alternatively to CANini, also the popular **Vector-database CANdb** can be used.

UniCAN Config and Manager

The configuration of a recording can be arranged comfortable with the **Windows programs UniCAN Manager and Config**. Herewith the data can be used which are defined in CANdb, CANini or A2L description files.

Therefore common terms (like "RPM") can be used for definition of recording parameters (triggering threshold etc.).

In addition, **common parameters** for recording are defined with UniCAN Manager:

- ▷ **Designation (for subsequent identification)**
- ▷ **User comment (max. 60 KByte)**
- ▷ **CAN bus transfer rate** (up to 1 MBit/sec)
- ▷ **Standard** (11 Bit) or **Extended** (29 Bit) **identifier**
- ▷ **Hold time after turning off ignition** ¹⁾ (100 ms up to 60 sec)
- ▷ **Memory organization (configuration as one-time or ring buffer)**

After recording UniCAN Manager is also used for data transfer to the computer. **Output of the recorded data** is in ASCII format, which can be imported into **EXCEL** and other programs for further processing. In addition, the established file-formats of well-known application and recording tools (CANalyzer, CANgraph, DIAdem, INCA) are supported.

UniCAN Manager can divide especially large volumes of data into handy packages. The number of single files can be determined by selecting of file length or time frame (day, hour, minute).

¹⁾ Available only if a permanent power supply and a dedicated „PowerControl“-signal (e.g. ignition signal) is used

CCP Data Logging

UniCAN Professional supports the CAN Calibration Protocol (CCP) and allows cyclic reading of memory variables of the ECU.

Selection of signal and parametrization is also done in **UniCAN Config** based on the imported **A2L file**. If the A2L file is incomplete, e.g. in DAQ lists or from events of the ECU, these parameters can be entered and saved by hand in the UniCAN Config.

Logger Mode

The Logger Mode is suited for **measurement data acquisition**. In this mode, up to **128 measurement data**, which are transported on the CAN bus, can be selected and written onto the Memory Card.

Measurement data which are available on the CAN bus were selected from a **CANdb** or **CANini** signal database.

Measurement data which are provided from the ECU on request are selected from the **A2L description file** of the ECU.

For recording the following logging parameters can be supplemented using the Windows Tool **UniCAN Config**:

- ▷ **Data source (CAN bus 1 or 2)**
- ▷ **Time base for measurement (1 ms, 2 ms, 5 ms, 10 ms,, 10 s, 30 s, 60 s)**

For each measured value an individual time base can be defined. Thereby the amount of data can be limited if needed.

For Logger Mode all measurement data are buffered in the input cache of UniCAN Professional, where they stay available until they are overwritten by new data from the CAN bus or until the data are written to the Memory Card according to the specified time base.

Recorder Mode

In Recorder Mode full messages are recorded. This mode is ideal for **diagnosis** and **troubleshooting** on the CAN bus. Particularly the mode is very useful to register **sporadic failures** for subsequent PC analysis. Memory capacity is only limited by the ATA Flash Card.

The recorded CAN messages are tagged with a **time stamp** (resolution: 50 µs) for the following data:

- ▷ **Messages (identifier and data content)**
- ▷ **Remote Frames (for one CAN channel)**
- ▷ **Fault conditions** on the CAN bus



In addition the following settings are possible:

- ▷ **Listen only mode (no acknowledge, selectable for one CAN channel.)**
- ▷ **Access to bit timing register (BTR)**
- ▷ **Miscellaneous filters** for CAN identifier

The messages to be recorded are chosen directly with recording conditions, or by selection of measurement data from CANdb, CANini or A2L files set automatically.

If required the data content of the CAN messages can be attached to the measurement values in UniCAN Config. This procedure enables the **recording of an arbitrary quantity of measurement values.**

Recording Conditions

In practice it is necessary to select specific measurement data from the CAN bus. For this purpose flexible **recording conditions** can be defined with **UniCAN Config**. For this the following parameters are available:

- ▷ **Data content (physical value, definition by CANdb, CANini or A2L)**
- ▷ **CAN bus traffic**
- ▷ **External digital input**

In addition for **Recorder Mode**:

- ▷ **CAN identifier**
- ▷ **Remote Frames**
- ▷ **Fault conditions on the CAN bus**

Up to 8 of these parameters can be combined with **AND** respectively **OR** to a recording condition. For each parameter the selection of either a **trigger** or **gate function** is available.

Trigger and Gate Function

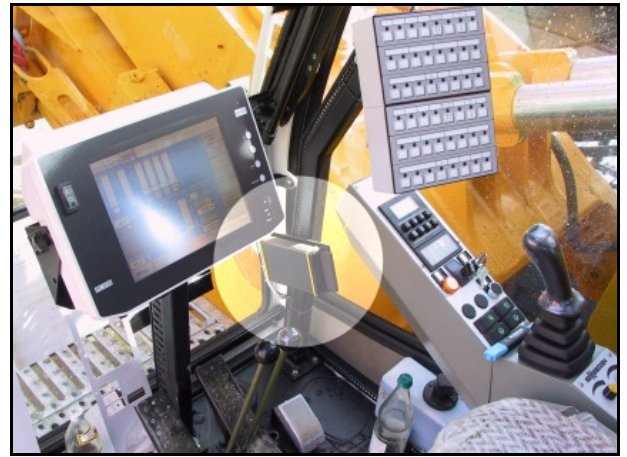
If a **trigger function** is defined for a value, then this value has to reach the specified threshold once only to fulfill the respective condition permanently.

For the **gate function** the recording occurs as long as the value is inside (or outside) a defined interval. For short-term or "single" events (appearance of identifier or fault condition) a **hold time** (1 ms up to 60 sec) can be specified to record the **post-history**.

Pre-history

Independent of the selected recording condition a **short pre-history** can be recorded (approx. 40 KByte of data).

Alternatively a **long pre-history** can be recorded. Here the limitation is solely the capacity of the



Memory Card. In this case the recording is stopped, when a user-defined **stop condition** is achieved. The recording can be continued by switching off and on the device.

Start Delay

For turn on of ignition¹⁾ a **start delay** (100 ms to 60 sec) can be defined. During this time the recording will be disabled. Through this irregular conditions on the CAN bus can be disregarded.

Log File

For Recorder and Logger Mode the following status information including time stamp are stored into a separate log file:

- ▷ **Power supply** (on / off)
- ▷ **Ignition state** (on / off)
- ▷ **Recording** (active / interrupted)

Service Functions

UniCAN Professional can be connected to a computer running a Windows operating system via a RS232 interface. The following functions are available:

- ▷ **Set Real-Time Clock** (Service Mode)
- ▷ **Online Display** (ASCII Format)

The online display is available during measurement for *control purposes* to indicate the following information in an ASCII window:

- ▷ **Time**
- ▷ **UniCAN system load**
- ▷ **CAN bus load (Recorder Mode)**
- ▷ **Measurement data** (Logger Mode)

The time interval for display of measurement data is selectable between 1 s and 10 s.

¹⁾ Available only if a permanent power supply and a dedicated „PowerControl“-signal (e.g. ignition signal) is used



Specifications UniCAN Professional

Item	UniCAN Professional as external box with slot protection cover ¹⁾
Dimensions (W x H x T) Weight	109 x 35 x 176 mm approx. 400 g
Power Supply	8 V to 32 V DC via socket LEMO 1B 3-pole ²⁾
Power Consumption	PowerDown (PowerControl OFF) approx. 2 mA at 12 V approx. 1300 mW (with ATA Flash Card, no access) approx. 1600 mW (with ATA Flash Card, access)
CAN Interface ²⁾	2 x CAN 2.0B (active): 1 x High-Speed CAN (ISO 11898), max. 1 MBit/s (500 k, 250 k, 125 k, 83.3 k, 62.5 k, ...) ³⁾ and / or 1 x Low-Speed CAN (ISO 11519), max. 125 kBit/s (100 k, 83.3 k, 62.5 k, 50 k, ...) ³⁾
Connector	D-SUB 9-pin male
RS232 Interface	automatic baud rate detection max. 115,200 Baud (115.2 k, 57.6 k, 38.4 k, 19.2 k, 9.6 kBaud)
Connector	D-SUB 9-pol female
PC Card Slot	one slot for PC Card type II at front
PC Card Types	ATA Flash Card Type II, CompactFlash Card with adapter ⁴⁾
LED Indicators	4 LED's for indication of operation modes: POWER (green) / BUSY (red) / STATUS (green) / ERROR (red)
Environment	-40 °C to +85 °C (operation and storage) humidity max. 90% (non-condensing)
Conformity	CE

¹⁾ Please ask: other mechanical versions, e.g. 3½", 19" or PCB only

²⁾ Optional also with 3-pin FRIWO socket available

³⁾ Please ask: support for other bit rates

⁴⁾ We recommend the use of **CSM SuperStore Cards Type AI**

Shipping Contents:

- ▷ **UniCAN Professional**
in external box with Installation Guide
- ▷ **RS-232 Cable**
to connect the device to a PC
- ▷ **CD with UniCAN Tools:**
UniCAN Manager and *UniCAN Config*
for Windows Vista, XP or 2000 and detailed
documentation

Additional Products and Features:

- ▷ **Power Connection Cable**
UniCAN K57 power cable LEMO 1B-pole/open
available lengths: 20 and 200 cm
- ▷ **UniCAN GSM feature activation**
Activation for optional remote access and
configuration with an external GSM modem
- ▷ **GSM / GPRS modem**
for RS232 interface
- ▷ **CCP data logging**
for readout of memory values of the ECU
- ▷ **CSM SuperStore Cards Type AI**
available in capacities up to 2 GB

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