

VarioPRO - Universal Converter for Automotive Applications



Full color graphic display integrated with touchscreen function

100mm x 58mm, 480 x 272 pixel

OBD2-signal conversion

CAN-signal conversion

Four analog inputs

Four analog outputs

Four programmable function keys

10 Hz GPS sensor integrated

Acceleration transducer x-y-z axis, +/-3 g, DC to 500Hz

2 GByte data memory (SD-card)- optional 32 GByte

The more complicated becoming demands when testing vehicles require more adaptable tools for signal production or for conversion of signal formats to adapt them to existing systems.

A development close to the customer has formed the base for the interpretation and development of the universal signal converter VarioPRO.

Due to the high degree in flexibility and the grouping of functions, the system can be also called "a crossbar switch" for automotive applications.

VarioPRO - Universal Converter for Automotive Applications

Standardized in all vehicles from 2009 on

VarioPRO offers the measuring of standardized OBD2 sensor data (ISO15765, J1939 as well as FMS) with conversion to analog signals, digital pulse results or to a CAN message.

Flexible signal conversion

The suitable mode of operation, the desired OBD2 sensor value, the CAN-ID or the assignment to the different output facilities is selected comfortably directly at the device, or via a PC.

Minimal set-up time / minimal set-up effort

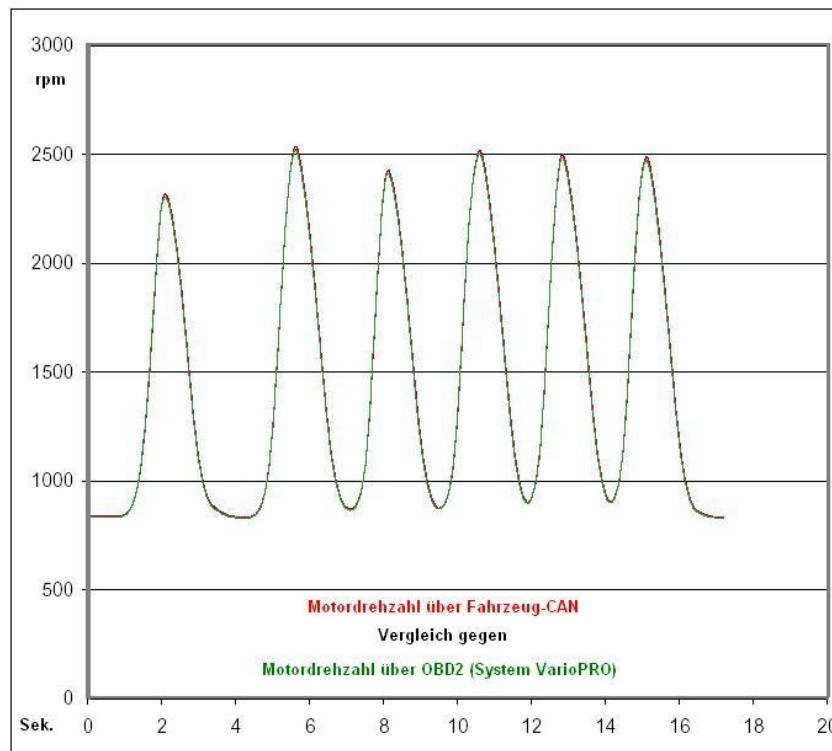
Only one cable connection! Costly startup operations and risky accesses to the vehicle CAN, combined with erroneous memory entries, are things of the past!

Application on different unknown vehicles

With the OBD2 socket measurements at unknown vehicles are also easily possible. A DBC-file is not necessary. OBD sensor values can be converted with the VarioPRO to a CAN message and be relayed to other measurement devices via the CAN output.

Measuring revolution speed without extra transducer

Measuring the engine speed to control acoustic acquisitions are current applications. Also measuring the vehicle speed for determination of the fuel consumption or as a reference value for brake testing. All signals are provided alternatively as a TTL pulse, a proportional analog voltage or as a CAN message.



Example: Measuring the engine speed from the vehicle CAN and the OBD socket results in identical figures.
Deviation for standard measurements <0.3%, with dynamic speed courses <1% (!)

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OBD - Input

- OBD2 data will be detected and converted from all diagnosis protocols
- Simultaneously a message occurs on the integrated display. (numerically or graphically)
- K-Line ISO9141, ISO13230
- KWP2000
- Diagnosis-CAN ISO15765 ,J1939-7
- FMS in the newest version
- Hybrid package



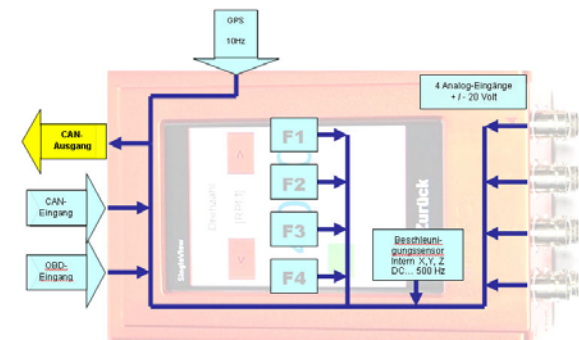
CAN - Input

- Contents of CAN messages can be filtered and converted to the analog output
- Simultaneously a message occurs on the integrated display. (numerically or graphically)
- The content of a message can derive trigger events and arrange storage processes, generate an analog output level or generate again a CAN message to a concurrent output.



CAN - Output

- Output of all measured values with individually - configureable CAN-IDs
- Available sources : CAN-input, OBD-input, analog inputs, internal acceleration signals, GPS signals or function keys



Four Analog Inputs

Standard analog input:

- Analog input (± 20 Volt) generates individual selectable CAN message

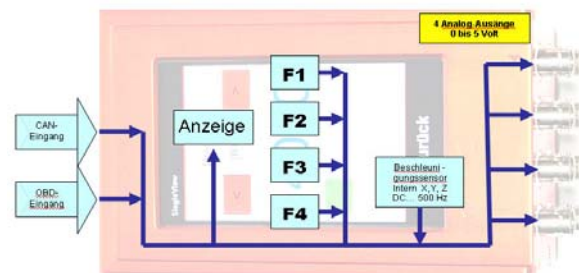
Option:

- Digital input TTL
- Frequency counter
- PWM-input, decoding from 1% to 100%



Four Analog Outputs

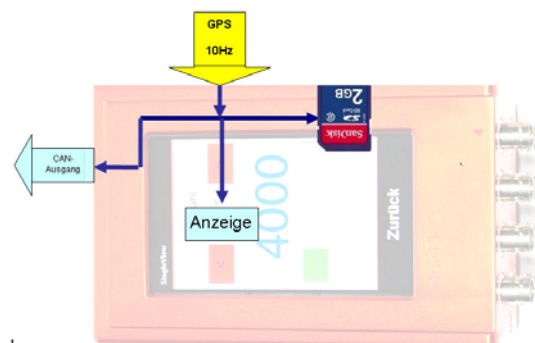
- OBD, CAN message generates analog output
- 0 to 5 Volt
- 10 kHz, sample rate per channel
- OBD, CAN message generates pulses output, 0 to 5 Volt, (revolution, speed)
- Keystroke generates output level 0 to 5 Volt.



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GPS Receiver

- Reception from up to 50 parallel satellites
- WAAS / EGNOS correction
- Up to 10Hz position and speed update rate (selectable)
- Time-to-first-fix after initialization = 1 sec
- Horizontal resolution: autonomous < 5m (< 2.5m static), SBAS < 2m
- Speed: < 0.1 m/s
- Heading: < 0.5°
- Accuracy: (CEP, 50%, 25h test, -130dbm, SEP < 3.5m)



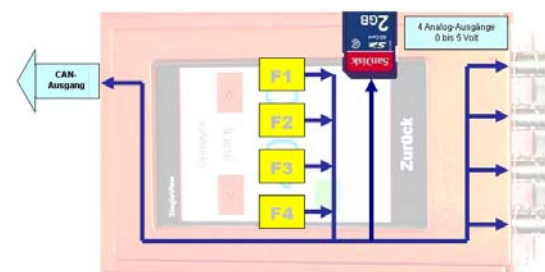
Acceleration Transducer

- Triaxial acceleration transducer with $\pm 3g$ (x,y,z)
- Autozero by keystroke when using in tilted installation situation
- Frequency range: DC to 500 Hz
- Linearity FS: 0.3%
- Temperature drift, reference +25°C, at 0g: $\pm 0.015\%$ per K
- Offset stability at 0g: $\pm 1mg$ per K
- Bandwidth: x, y, z-axis: 500Hz
- Resolution: effective 18 bit @ 500 Hz, this means 0,0636 mg / LSB @ 500Hz



4 Freely Programmable Function Keys

- Can release a CAN message
- Can control up to four analog outputs
- Can scroll through different presentation pages in the integrated display
- Can start / stop data storage



Data Storage

- All data existing in the VarioPRO can be stored on a SD-card.
- Standard up to 2 GByte - optional 32 GByte

Included in delivery:

- VarioPRO in a case
- OBD-cable, length 2 m
- USB-cable
- 2 GByte-SD-card
- GPS-antenna with magnet base and 5 m cable
- Configuration software on CD (MS-WIN-XP needed!)
- Manual

Software options:

- SW-Option XACC: Comfort test (x-acceleration)
- SW-Option GW: Limit value monitoring
- SW-Option TT: Keystroke terminal with 16 keys
- SW-Option FSP: Failure memory checking, monitoring and erasing
- SW-Option CNT/PWM: PWM, counter, frequency measuring
- SW-Option EXTRAM: SDHC 4 to 32 GB-card, class 6

Hardware options:

- Special mounting with vacuum cup
- CAN-cable adapter, 30cm 9-pin D-Sub (CAN standard)
- BNC-adapter cable, length 1m, RG178
- Up to 32 GByte-SDHC-card
- OBD-cable with right angle plug, length 50cm
- DC-cable 2 x banana plug to 9-pin D-Sub
- AC-power supply