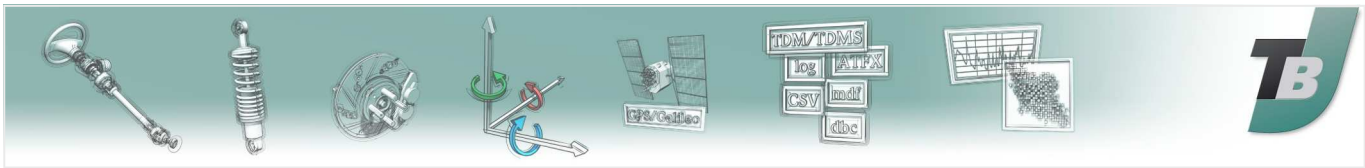

VarioPRO

Signal-router, Loggerunit

CAN-Router / CAN-Gateway

4 analog inputs / 4 analog outputs

10 Hz GPS-receiver integrated

32 G-Byte data memory via exchangable SD-card

Full-graphic display integrated including GUI

Comprehensive functional modules (option!)

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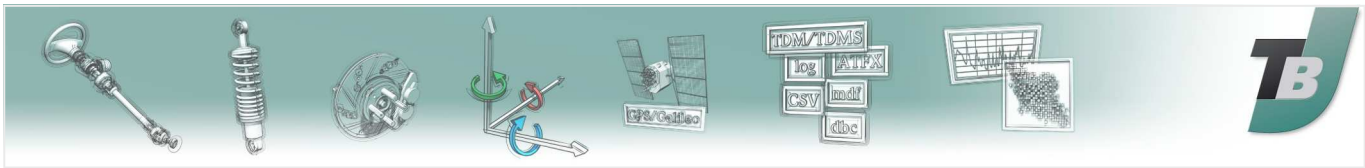


Adjustment and flexibility required!

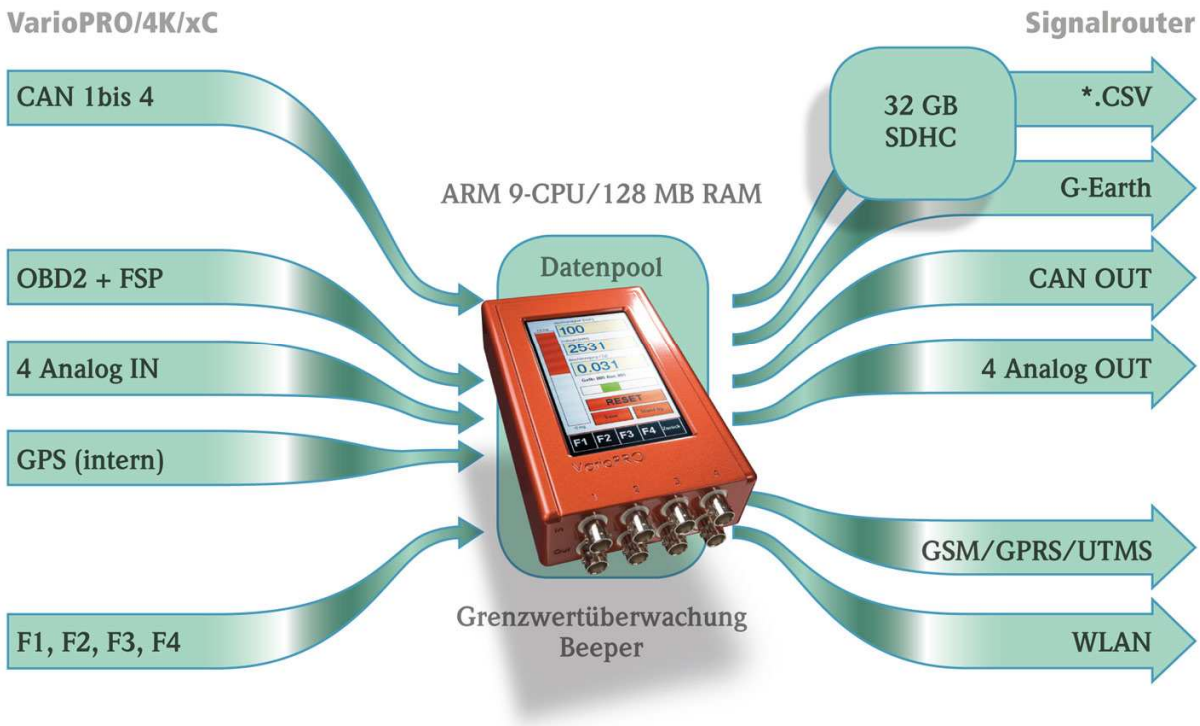
With the continuously increasing number of data networks in the automotive measurement technology, the requirements concerning analysis and measurement systems rise in the test drive. Along with it goes the necessity to implement networks and network segments for the connection with downstream network nodes with various operational parameters. This, in turn, requires flexible signal routers and gateway functions.

Flexible assistant VarioPRO

With its versatile interface equipment the system VarioPRO can be used as a signal converter, signal router, CAN-gateway and display device.

Via the touch screen of the instrument or the PC-configuration software the necessary operational parameters are comfortably selected. Via up to 4 CAN-channels all the signal inputs for CAN2.0 A&B can be output with selectable baud rates and individual CAN-IDs. For a comfortable and timesaving use on different vehicles the instrument settings can be stored with incorporated different dbc-files. (dbc-files are not included in the delivery!) Complementary, all the incoming signals can be converted into proportional pulse sequences and/or analog voltage.

From a range of optionally available application modules the system can be upgraded for the use on special applications.



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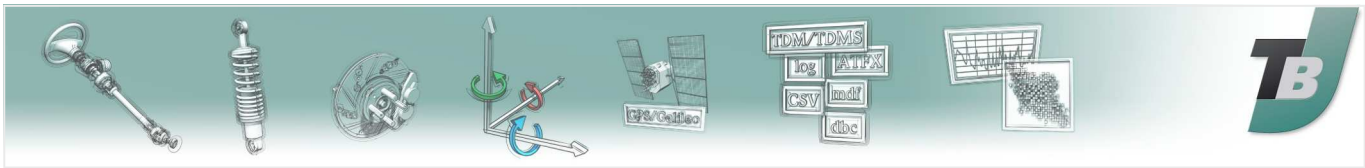


Signal tap via OBD2

Minimum of setup times/minimum of setup costs!

Only one cable link! Costly and time-consuming setup work and precarious accesses to the vehicle-CAN connected with error memory records are a thing of the past!

Sensorless tapping of the engine's rpm

Among the common applications is the tapping of the engine's rpm in order to control acoustic measurements; also the tapping of the vehicle speed in order to determine the fuel consumption; besides, it serves as a reference magnitude concerning brake measurements. All the signals are either output as TTL-impulse, as proportional analog voltage or as CAN-ID.

Application on third-party vehicles

Via the OBD2-jack it is also possible to tap third-party vehicles.

No dbc-file is required! By using the VarioPRO, OBD-sensor values can be converted into CAN-IDs and can be transferred to downstream networks for further processing via a CAN-output.

Costumer-specific connector sockets

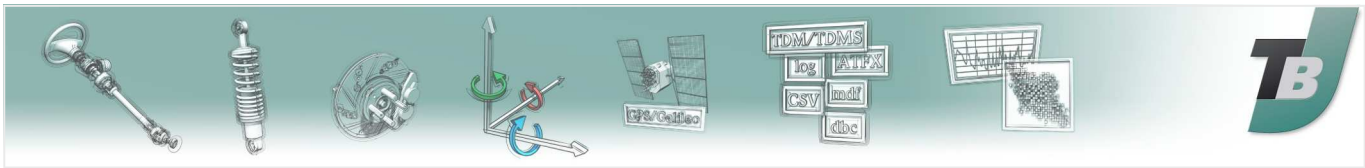
Being equipped with costumer-specific connector sockets the VarioPRO can be integrated economically and time-saving into already existing measurement setups as a signal router or logger.

Interface equipment on demand:

In order to meet various requirements the system VarioPRO can be optionally equipped with the established interfaces of the automotive measurement technology.

The functions listed on page 1 are available with all the basis systems. Furthermore, the first step can be made on the basis of a number of instrument variants:

VarioPRO/4K/1C/STD = 1 CAN-transceiver, without galvanic isolation
VarioPRO/4K/2C/STD = 2 CAN-transceiver, without galvanic isolation
VarioPRO/4K/4C/STD = 4 CAN-transceiver, without galvanic isolation
VarioPRO/4K/4C/GTR = 4 CAN-transceiver, <u>with</u> galvanic isolation and a selectable 120 Ohm terminating resistor for each channel



For various fields of application the universal hardware platform can be optionally extended with adequate function modules:

Option GW: Level crossing monitoring regarding all the incoming signals and error memory contents.

Option GSM/GPRS: Wireless data transmission, continuously or depending on trigger events.

Option GEARTH: Data projection in Google Earth TM, synchronized to the roads and proving grounds.

Option Hybrid: Reading, converting, display and signal output of OBD-sensor values on hybrid vehicles (vehicle models by request!)

Option FSP: Read out error memory, display FSP contents, delete FSP

Option CNT/PWM: Pulse width decoding, PWM-meter, frequency measurement, pulse divider.

Option TT: Button terminal with 20 function keys for function control and single output of individual CAN-ID.

Scope of supply:
Basic unit VarioPRO4K/xC
OBD-cable, 2 metres
USB-cable
2 GB SD-card
GPS-antenna, magnetic base, cable of 5 metres
configuration software on CD (MS-WIN-XP required!)
manual

HW options:
carrying case
Mounting plate including suction cup for VarioPRO
CAN-cable adapter, 30 cm, 9-pole sub D in compatibility with vector standards
BNC-connection cable, 1 metre, RG 178
32 GB SDHC-card
AC-power supply

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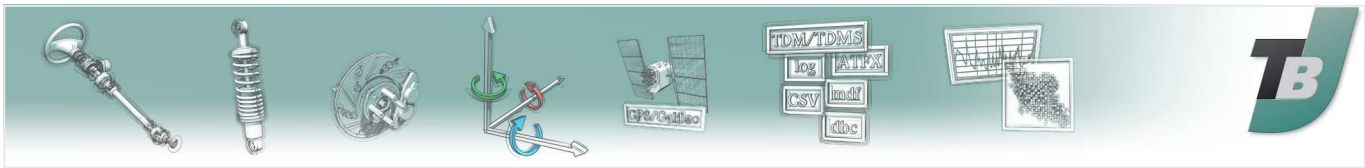


Option: GW, level crossing monitoring

Trigger generation by level crossing of all the signals

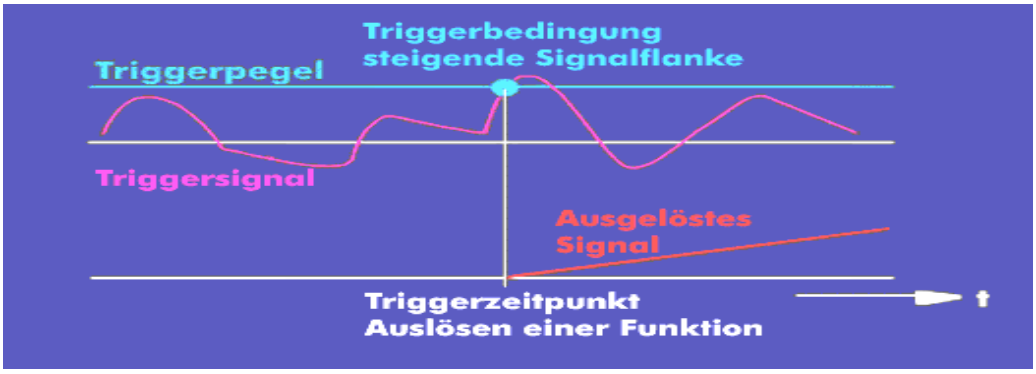
Trigger generation by error memory records (option FSP!)

Distribution of individual CAN-ID depending on trigger events

Logic output high/low depending on trigger events

Storage depending on trigger events

Data distribution depending on trigger events (option GSM/GPRS/UMTS, email!)



Option CNT/PWM: PWM-meter and pulse width decoding

Pulse width decoder, PWM-meter function, pulse distributor

Determination of PWM-degree 0-100%

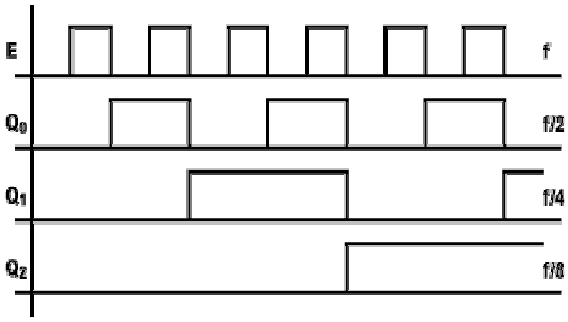
Determination of PWM-carrier frequency 1-10 kHz

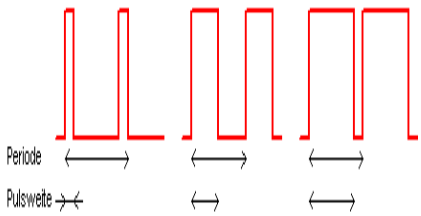
Display/storage of PWM-degree together with other measurands from the analog input, OBD2, CAN-input, GPS

Output of PWM-degree via proportional analog output

Output of PWM-degree via CAN-ID

Pulse distributor 1:255 including edge regeneration





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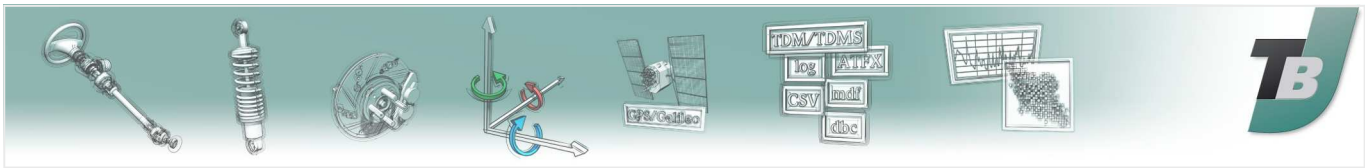
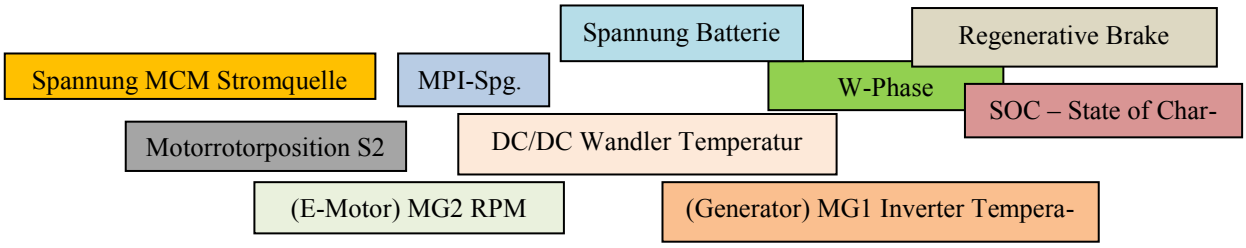


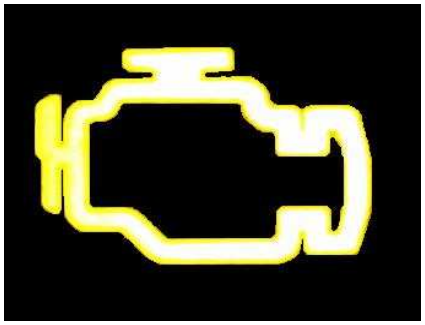
Option Hybrid, OBD2 on third-party-hybrid vehicles

Tapping of specific sensor sizes on third-party-hybrid vehicles
Comfortable access via the OBD2-jack
Numerical display of hybrid-specific magnitudes
Conversion into scaled analog voltages + CAN-ID
Display/storage of hybrid values together with further measurands from the analog input, OBD2, CAN-input, GPS.



Option: FSP, read out/reset error memory

Display of the error memory records of several ECUs
Access via the “OBD2-diagnosis-CAN” according to ISO 15765
Automatic vehicle and error detection
Display of the number of error memory records (P1, P0, P2, P3 and U0)
Display of the errors in the standardised ISO-HEX-Code (e.g. P0100)
Optionally: Error records in plain language according to ISO 15765
Optionally: Error records in plain language according to customer requirement
Reset of engine control lamp and FSP at the touch of a button



P0100 Luftmassen/Mengenmesser Signal zu groß/ klein
P0101 Luftmassenmesser Signal nicht im Sollbereich
P0110 Ansaugluftemperatur Sensor Spannung zu hoch/ niedrig
P0115 Motor Kühlmitteltemperatur Signal zu groß
P0335 Kurbelwellen-Positionsgeber "A" Funktionsstörung
P0335 Kurbelwellen-Positionsgeber "A" Stromkreis offen
P0340 Nockenwellen-Positionsgeber Signal zu groß/ klein
P0340 Signal Nockenwellensensor nicht vorhanden
P0038 Lambdasondenheizung Kontrollschaltkreis hoch (Bank 1 Sensor 2)
P0042 Lambdasondenheizung Kontrollschaltkreis (Bank 1 Sensor 3)

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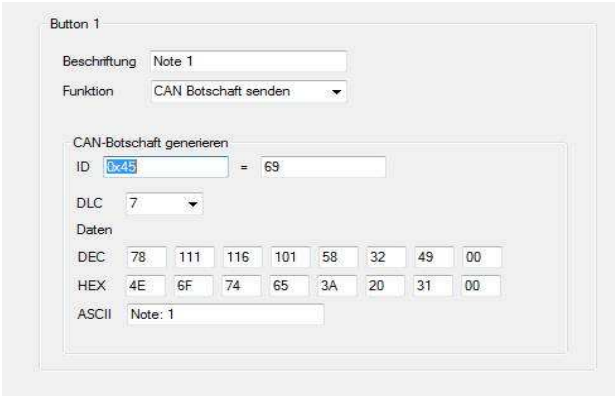
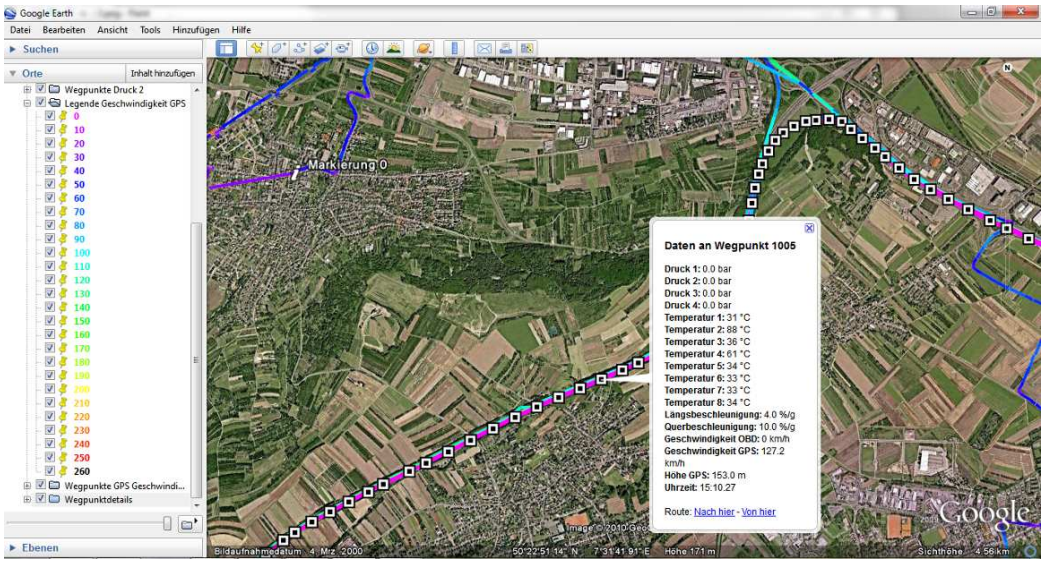
Option: TT, 20 programmable function keys

20 function keys that can be labelled individually
Individual key labelling, e.g. note 1 to 10
Signal generation to control external instruments
e.g. analog output logic high>low / low>high
Output of predefined individual CAN-ID by keystroke
Insertion of different markers into the data stream



Option: GEARTH, data projection in Google Earth

Data converter VarioPRO/Google Earth
Road-synchronous fade-in of up to 8 measurement signals
Defintion of route waypoints including numerical display of up to 16 individually selectable signal values
Detection and display of “waypoints” every second.



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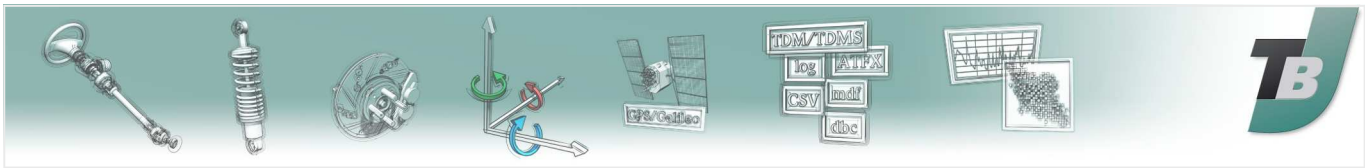

Related systems:

VarioVIEW7,

Intelligent 7”-touch display

Intelligent interaction driver/measurement system
Interface equipment as required
Online calculation of message contents including online display
Display elements with free assignment of functions via PC-SW

Comprehensive system extensions / options:

4CAN, OBD2, LIN2.x, Ethernet, GPS, GSM/GPRS, 32 GB SDHC-memory.
Extended Operation temperature -30°C up to +70°.!)

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OBD/CANID,

Converter OBD2 to CAN-ID

Conversion of OBD-sensor values into CAN-ID
Selectable interrogation cycle for OBD-sensor values
Processing of OBD-sensor values into dbc-files
OBD-sensor values can be integrated into CAN-measurement chains

Comprehensive system extensions / options:

Integrated GPS-receiver, (10 Hz)
M-CAN-loop via 2x6-pole Fischer or 2x10-pole Lemosa

OBD/RPM

OBD2-converter into engine´s rpm

OBD/V

OBD2-converter to vehicle speed

Comfortable tap via vehicle OBD2-jack. No tooling times!
Speed signal or rpm signal obtained after 5 seconds!
Signal output as proportional analog voltage in mV/rpm or mV/km/h
Signal output as proportional TTL-pulse sequence
Numerical and graphical signal display

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