

xPro  **GPS**

Speed Measurement



————— **Suchy Data Systems** —————



xProGPS - Speed Measurement based on GPS Technology

xProGPS - High Precision Speed Sensor

xProGPS is a speed sensor based on GPS Technology.

The highly precise speed signal is derived from Doppler analysis of the satellite signals. Data is provided with an update rate of 20 Hz or 100 Hz. The sensor delivers speed values from 0,1 km/h up to 500 km/h.

Compared to conventional speed sensors, e.g. an optical sensor, which will only deliver speed and distance, xProGPS provides further valuable informations:

- Position of the vehicle (Geo-Coordinates)
- Altitude above sea level
- Heading
- Lateral acceleration
- etc.

Metrological Advantages of xProGPS

- Contactless measurement
- Extremely high precision
- Almost no influence on wind resistance
- No slip
- Constant precision on wet, snowy or iced up roads
- Even usable on rough terrain (off-road vehicle test)
- No danger from externally mounted parts
- Applicable at extended temperature ranges
- Identical precision also at higher speeds
- Speed values provided well below 0.1 km/h
- No calibration necessary



Mounted within Seconds

xProGPS is operational in a second:

- Attach the magnetic antenna on top of the vehicle
- That's it – you are ready to run

Thus you don't have to mount any further mechanical attachments to the car, as it would be necessary i.e. with a 5th wheel. This is an important safety aspect for the usage on public roads.



Field of Application

A digital signal processor ensures extraordinary precise results. Using complex filter algorithms (Kalman) short drop-outs are eliminated by extrapolating the signal. Therefore the system delivers plausible data even under difficult reception conditions. This allows the operation of the sensor on wide range of vehicle tests:

- Fuel consumption tests
- Performance tests
- Coast-Down
- Brake tests
- Endurance tests
- Tests on public roads
- Course surveying
- etc.

xProGPS is used wherever highly precise speed measurement is necessary:

- Vehicle development
- Motorbike applications
- Motor sport
- Motorboat
- Railway
- Off-Road
- Airplane



Numerous Standard Interfaces

For easy adaptation to almost any measurement system xProGPS includes several standard interfaces:

- Serial output of NMEA data records
- Programmable CAN-Bus data output
- Programmable analogue output on 3 channels
- Output of distance as TTL pulses for simulation of 5th wheel
- High resolution 1 µsec trigger input for light barrier and brake pedal switch
- Integrated flash card with Windows compatible file system

xProGPS-LS Low Rate System

As an alternative to xProGPS-HS we also offer a low cost GPS receiver, which is suitable for simple applications in long-term studies, i.e. fuel consumption tests under customer conditions.

xProGPS-LS provides NMEA data records via serial interface with update rates of 1 to 4 Hz.

xProGPS-LS is a „ready-to-go“ – solution: plug, switch on, measure. Configuration of the system is not necessary.

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xProGPS Setup and Test Software Package

xProGPS-HS is supported by a comfortable setup and test software package, which runs under Microsoft Windows.

With the software you can select numerous options and parameters for xProGPS and download the setup to the system:

- Select measurement channels and output options
- Scaling of voltage range for the analogue channels
- Filter functions (Kalman filter, floating mean, etc.)
- Scaling factor for distance pulses
- Activation of built in trigger function
- Configuration of CAN-Bus data transfer
- Visualization of GPS-Data

Data Acquisition and Analysis

As an add-on to xProGPS we offer an extensive data acquisition and analysis software module. The software includes various graphical and tabular presentations for a vast of different tasks:

- Digital and graphical presentation of GPS data
- Data acquisition with several online graphs
- 3D charts
- 2D route diagram with classification function
- Classification complying with DIN 45667
- Spread sheet and statistical analysis
- Replay function for simulation of test rides



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Graphical presentations

The analysis module of xProGPS contains many different spreadsheets and graphical presentations:

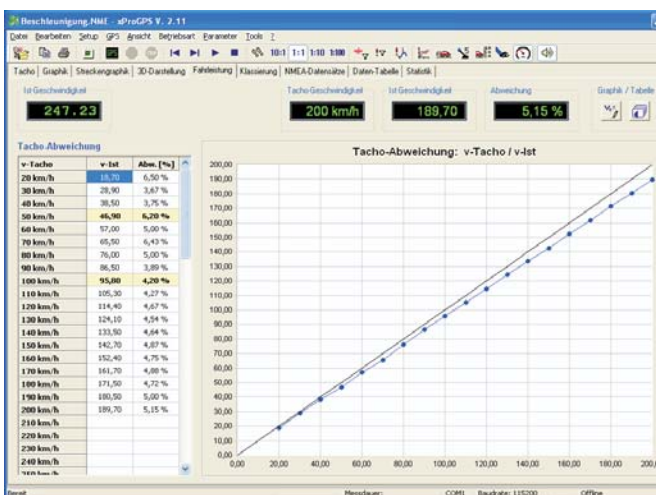
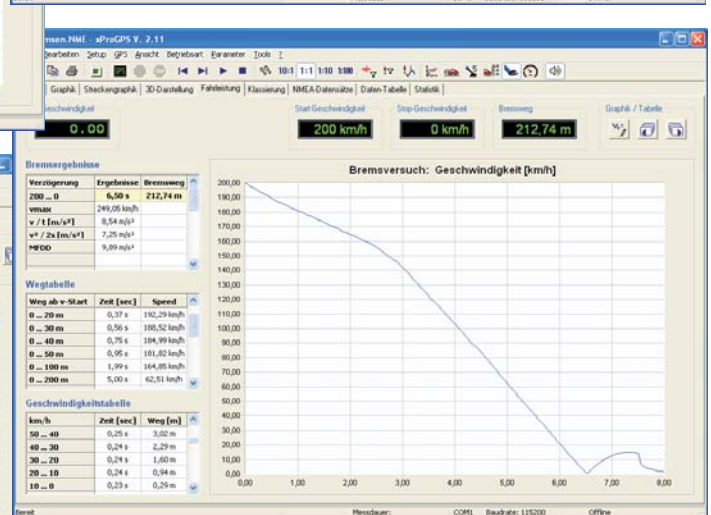
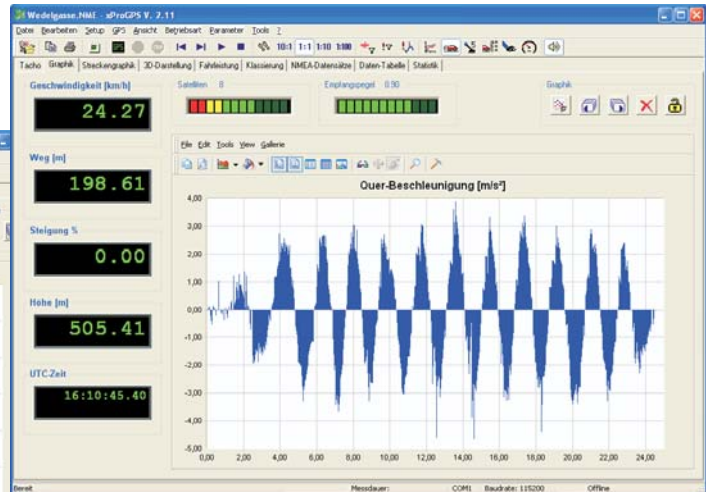
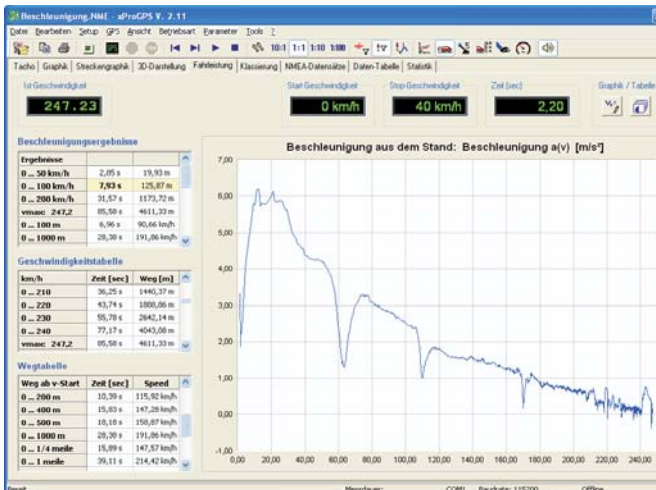
Performance Analysis

Another optional module for xProGPS offers data acquisition and analysis functions for vehicle performance tests. The driver is supported with spoken commands.

This module is best choice for:

- Standing start acceleration
- Flexibility tests
- Coast down with calculation of coefficients
- Brake tests
- Odometer deviation

- Acceleration over time
- Acceleration over speed
- Lateral acceleration over time
- 3D altitude diagram
- 3D speed profile
- Classification charts
- And much more



Further Information and technical support:

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