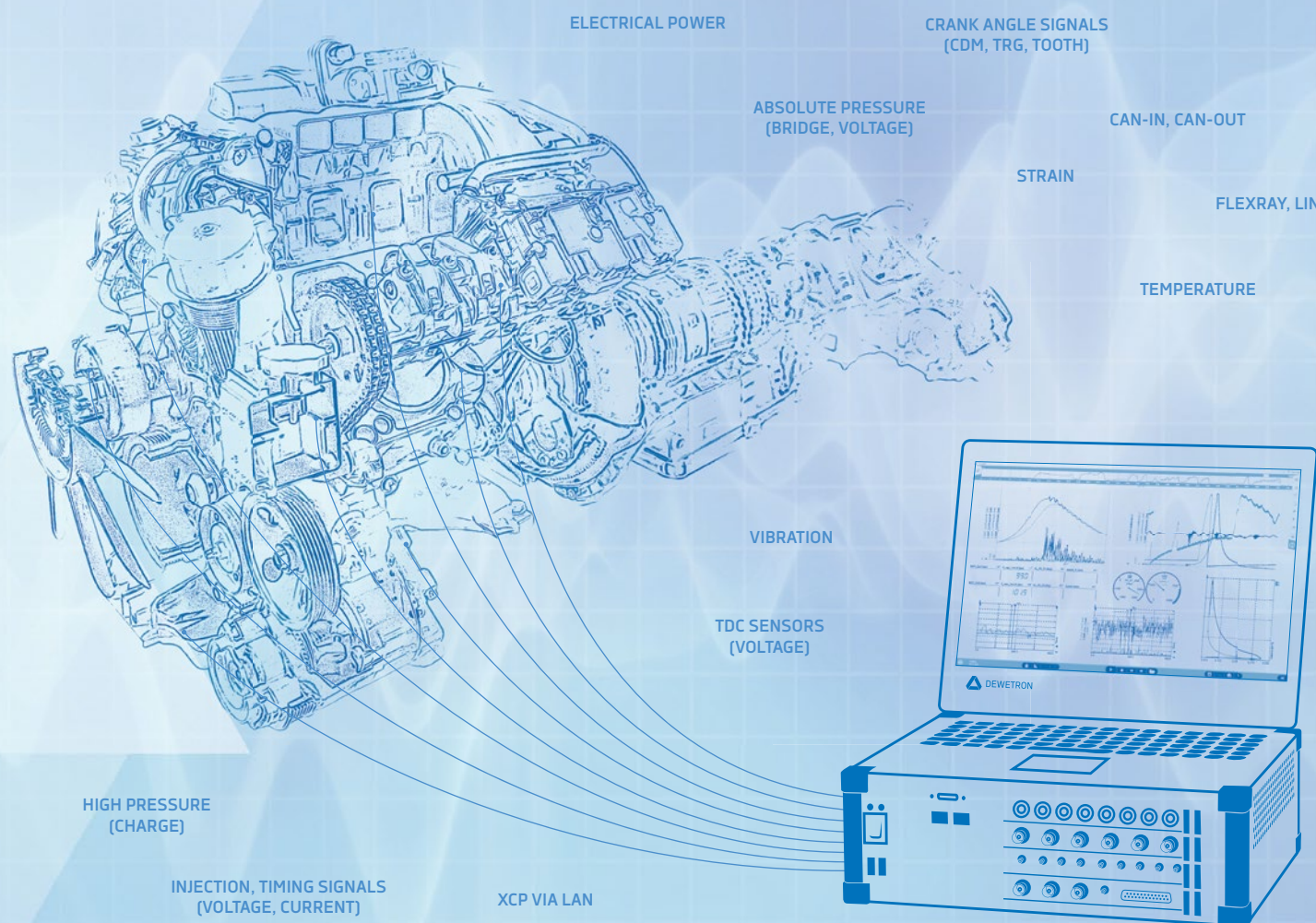




COMBUSTION ANALYSIS

DEWETRON internal combustion analyzers are suitable for mobile applications, such as real-time drive testing and also for test-bed applications. The systems support time and angle based measurement, and also provide various interfaces for test-bed automation and control.

YOUR BENEFITS

- > In-vehicle and testbed application
- > Direct pressure and angle sensor connection
- > Engine calibration
- > Cold start testing
- > CAN input and output, various testbed links
- > Time and angle based measurement

SYNCHRONOUS INPUT SIGNALS

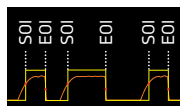
Isolated charge amplifiers, bridge amplifiers with constant current supply features, are used for high-pressure sensors and for the absolute pressure sensors of inlet and exhaust. With the freedom to swap amplifiers as needed, almost any signal like torque, current, acceleration, temperature, etc. can be measured. Voltage inputs include the start of injection, end of injection and ignition, and any other additional signal captured in time or angle domains. The isolated voltage and current inputs can be used to calculate electrical power.



HIGH PRESSURE
(charge)



ABSOLUTE PRESSURE
(bridge, voltage)



INJECTION, TIMING SIGNALS
(voltage, current)



TDC SENSORS
(voltage)

CRANK ANGLE SIGNALS
(CDM, TRG, tooth)



CAN-IN, CAN-OUT



FLEXRAY, LIN



XCP VIA LAN



VIBRATION

STRAIN

TEMPERATURE

ELECTRICAL POWER

SOFTWARE

Software provides easy to use user interface with preconfigured analysis screens. All major parameters are calculated online and can be corrected and recalculated in the Analyze mode.

- > MEP values
- > Heat release, I5, I50, SOC, EOC
- > Min. max pressure and pos.
- > Thermodynamic zero correction
- > Various average possibilities of pressure (running, overall, ...)
- > Knocking
- > Statistical values
- > CA noise
 - CA noise calculation is provided for time and angle based measurement. The open architecture allows the user to integrate an engine specific transfer filter.
- > User definable calculations
 - In case additional results or special calculations, like custom volume, are required, the open architecture provides the possibility to adapt the configuration.

MaxP	Max pressures	bar	Max(P_x_run#)
clMaxP	Max pressures	bar	Max(P_x_cur#)
IUPPos	Max pressures	deg	Max(Pos(P_x_run#)
clMPPos	Max pressures	deg	Max(Pos(P_x_cur#)
Derivates	Derivates	bar/deg	TD_Derivate(P_x_run#, #RR#, #StartDerivAngle#)
MaxD	Derivates	bar/deg	Max(DDerivative_x_cur#)
MaxDX	Derivates	bar/ms	Max(DDerivative_x_cur#/(#Speed#60)/0.36)
MDPos	Derivates	deg	Max(Pos(DDerivative_x_cur#)

FILE EXPORT

Data can be exported into various file formats (.txt, .ifl, .xls ...).

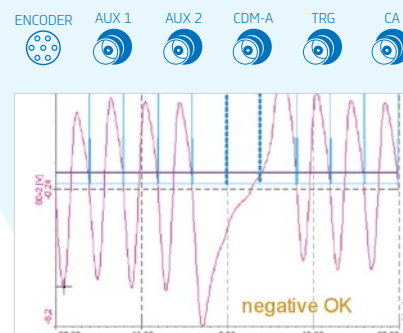


TESTBED INTERFACE

Testbed interface, via RS232 or TCP/IP is provided to link the analyzer to a testbed for automated measurements. An open AK-protocol, or native interfaces for AVL PUMA Open, and DT2 is supported. In addition, calculated results can be also transferred via CAN-out. Results can be recorded from mapping tools for immediate feedback.

CRANKANGLE CPU

Included Crankangle CPU, is able to handle of various crank marker disc signals which provides CDM- and TRIG-signals. If more angle resolution is required, the Crankangle CPU will do the interpolation up to 0.1 deg. Pickup sensors, for the native CDM signals, like 60-2, can be directly connected. The isolated input can handle voltages from 0.5 V up to 60 V. The Crankangle CPU will do gap filling and interpolation.



SUITABLE FOR COLD START

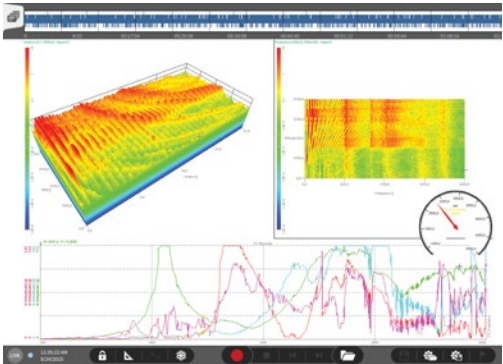
At cold start tests the combustion analyzer runs and records signals before the piston makes the first move, recording the complete start process for further investigation.

▼

ADDITIONAL MEASUREMENTS AND ANALYSES

The system is not limited to CA measurement only. The hardware and software architecture provides for various other measurements such as recorder, FFT analyzer, scope, power measurement and long term measurement.

- > Recorder
- > FFT analyzer
- > Order tracking
- > Rotational and torsional vibration
- > Transient recorder
- > Electrical power (after frequency converter)



▼

CONFIGURATION EXAMPLES



	DEWE-2600-CA2-PROF	DEWE-800-CA2-PROF
Analog input channels	8, 16 (expandable to 32, 64)	8, 16 (expandable to 32, 64)
Optional low speed temperature and voltage inputs (5 Hz) voltage	64 (in groups of 8)	64 (in groups of 8)
Amplitude resolution	16 bit	16 bit
Sampling rate	1 MHz (optional up to 5 MHz)	1 MHz (optional up to 5 MHz)
Input range	±10 V	±10 V
Charge inputs	Variable 1 to 16 depending on amplifier configuration (DAQP-CHARGE-B)	Variable 1 to 16 depending on amplifier configuration (DAQP-CHARGE-B)
Charge input range	10 to 10000 pC	10 to 10000 pC
Drift compensation	AC coupling	AC coupling
CAN input	Input and output up to 1 Mb/s	Input and output up to 1 Mb/s
FlexRay and XCP	Optional	Optional
Storage memory	1 TB	1 TB
Digital input channels	8 if digital out is used, 16 TTL	-
Digital outputs	8 TTL	8 TTL
Crank angle inputs	TTL based CDM and TRG (BNC) TTL based encoder (A,B,Z on multicore connector) CA input for native pickup sensors like 60-2 (BNC)	TTL based CDM and TRG (BNC) TTL based encoder (A,B,Z on multicore connector) CA input for native pickup sensors like 60-2 (BNC)
Temperature range	0 to +50 °C	0 to +50 °C
Power supply	100 to 240 V _{AC} input (50/60 Hz) 120 W max. 9 to 36 V _{DC} , battery powered up to 2 h	100 to 240 V _{AC} input (50/60 Hz) 120 W max.
Dimensions (W x D x H)	417 x 246 x 303 mm (16.4 x 9.6 x 11.9 in.)	437 x 443 x 181 mm (17.2 x 17.4 x 7.1 in.)
Weight without batteries	Typ. 14 kg (31 lb.)	Typ. 12 kg (26.4 lb.)
Please find current specifications in the latest price list		