CANcockpit

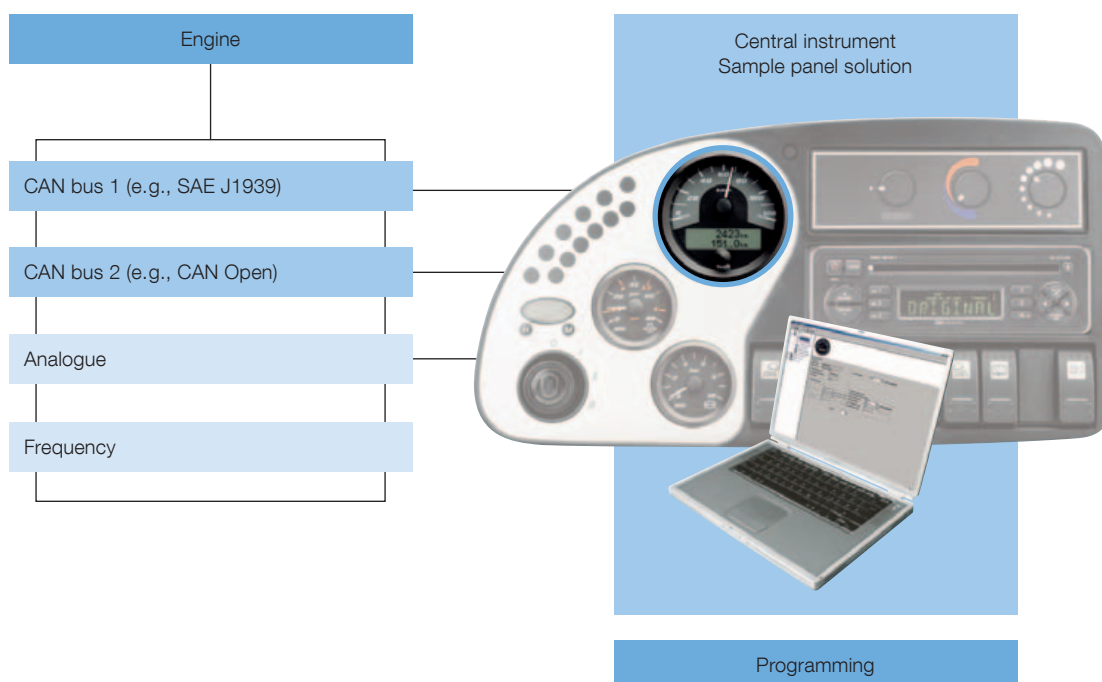Flexible instrumentation with CAN bus technology

VDO

CANcockpit

Handle complex requirements with ease

The VDO brand is synonymous with customised solutions that handle sophisticated technical tasks while offering maximum ease of operation. VDO products are deployed in a wide range of applications from construction vehicles, agricultural and forestry equipment to stationary machines, sports cars and boats.

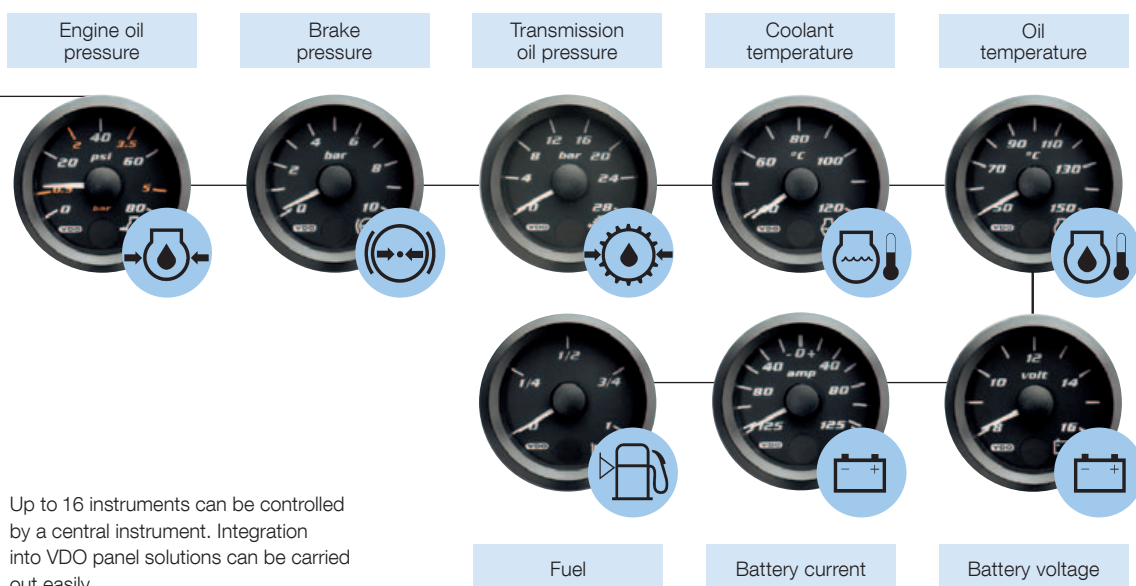CANcockpit is the flexible system solution for processing data from various analogue and digital sensors via a central instrument connected to a CAN bus. It can be precision configured to meet specific needs and is simple to expand whenever required. In addition, this modular instrumentation solution may be integrated into existing VDO panel solutions. Thanks to the powerful WINgauge software it is exceptionally easy to program. CANcockpit is also capable of processing two CAN protocols (e. g., SAE J1939 and CAN open) simultaneously.

Engine

CAN bus 1 (e.g., SAE J1939)

CAN bus 2 (e.g., CAN Open)

Analogue

Frequency

Central instrument
Sample panel solution

Programming

CANcockpit

Profit from these benefits

- **Flexibility** – Data from up to two CAN buses running different protocols (e.g., SAE J1939 and CAN open) can be processed simultaneously.

- **Safety** – Easy DTC (diagnostic trouble code) handling of the protocol defined by J1939 through comprehensive functionality and setting options.

- **Diagnostic support** – Configuration checking, plus online recording of selected measurement values via recorder function for download onto PC and evaluation using standard tools.

- **Compatibility** – Analogue, frequency and CAN inputs are available.

- **Integration** – CANcockpit can easily be incorporated into existing VDO panel solutions, with different bezels helping to simplify fitting.

- **Programmability** – Specific limits can be set and programmed so that an alarm triggers when they are exceeded.

- **Modularity** – Simple cabling requirements and straightforward subsequent expansion.

- **Convenience** – Automatic plausibility check for the parameters entered and various functional checks carried out by special WINgauge software during input phase.

- **Personalisation** – Flexible LC-display options allow icons to be defined and corporate logos to be displayed.

- **Readability** – Display instruments designed for maximum clarity.

Engine oil pressure	Brake pressure	Transmission oil pressure	Coolant temperature	Oil temperature

	Fuel	Battery current	Battery voltage

Up to 16 instruments can be controlled by a central instrument. Integration into VDO panel solutions can be carried out easily.

Variable configuration options

CANcockpit, the flexible solution for a wide range of applications, offers numerous configuration and expansion options. It is based around a central instrument which can be either a tachometer or a speedometer. The central instrument features two CAN inputs supporting different CAN protocols, two frequency inputs, three resistive inputs, one 4–20 mA input, plus one 0–5 volt input. In addition, it is equipped with two switched outputs, a configurable digital display field and more. Three sample standard applications are shown below:

Basic configuration

Sample requirement:
A generator is to be fitted with a tachometer measuring up to 3,000 rpm. There is only one CAN bus; the limit values and settings are clearly defined.

CANcockpit provides the solution:
Once the tachometer has been set up as the central instrument you will have access to the desired tachometer display and the option of viewing other data, e. g., as part of an inspection routine, as and when required. All data can be displayed on the central instrument, allowing you to monitor current engine data at any time without the need for other satellite instruments.

Standard configuration

Sample requirement:
Instrumentation for a digger is one example of a standard configuration using CANcockpit. A tachometer and four more instruments need to be added to a CAN bus.

CANcockpit provides the solution:
Once the instrumentation solution has been programmed (a simple procedure), key engine data such as coolant/engine oil/ transmission oil temperatures will be displayed alongside rpm and operating hours, plus fuel level – giving you a clear overview of crucial information at all times.

CAN bus 1

(e. g., SAE J1939)

Basic configuration

CAN bus 1

Standard configuration

CAN bus 1

Analogue

Complex configuration
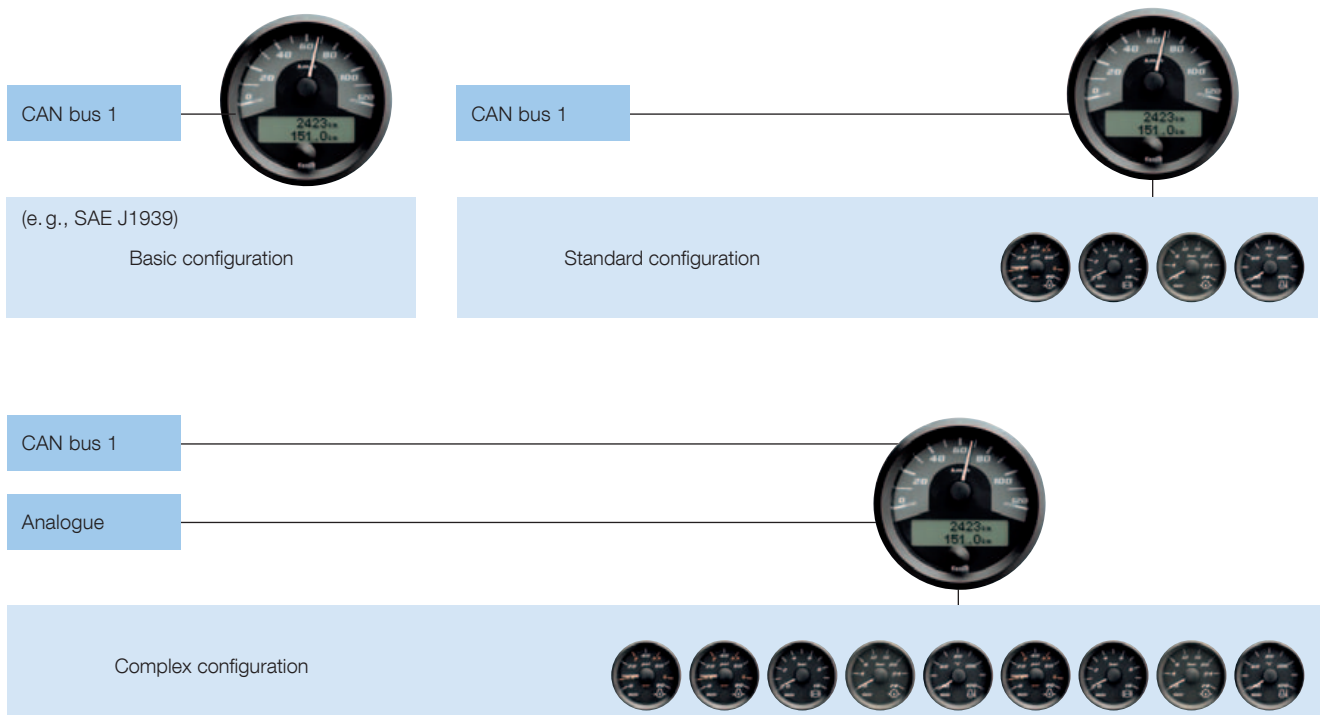
Complex configuration

Sample requirement:
Rigorous safety requirements and different vehicle deployment scenarios (construction sites and public roads) often require complex configurations. One example is a mobile crane, the central instrument of which is to be hooked up to manage nine more instruments. All data comes from analogue sensors and frequency sensors via a CAN bus.

CANcockpit provides the solution:
CANcockpit can cover even this complex configuration with ease. The instruments are connected and set, allowing a wide range of physical engine data to be displayed at all times, as well as e.g., hydraulic data (CAN open). For you, this means maximum choice when it comes to putting together the required display instruments.

Technical data

Movement	Stepper motor
Installation diameter [mm]	Central instrument 80, 85, 100, satellite instruments 52, 80, 100
Lighting	Backlight, LED, standard white
Protection	IP65 IEC 60.529 from front
Lens	Glass, coated
Bezel	Plastic, black, triangular profile as standard
	Future options: triangular profile in chrome and round profile in black
Plug	Central instrument: 4 PIN Mate-N-Lok and 26 PIN MODU ll
	Satellite instruments: 6 PIN Mate-N-Lok
Display angle	Approx. 210° for the central instrument, 240° for other display instruments
Warning light	In each satellite instrument
CAN inputs	2 × (e. g., SAE J1939, CAN open)
Frequency inputs	1 × Hall, 1 × universal
Analogue inputs	3 × resistive, 1 × 4–20 mA, 1 × 0–5 volt
Outputs	2 × switched outputs 0.5 A
Operating voltage	12–24 volt (min. 10,5 volt, max. 32 volt)
Installation angle	Any for central instrument, 0–85° for satellite instruments
Operating temperature	–40 to + 85 °C, limited LCD readability beyond –20 °C and +70 °C
Storage temperature	–40 to + 85 °C

For further information about VDO visit the website at www.vdo.com.

WINgauge

Flexible configuration software

WINgauge has been specially developed for CANcockpit. This software enables the convenient and flexible configuration of individual instruments or a complete series of instruments. In addition to maximum functionality and customisable programming, WINgauge offers maximum ease of operation. We also offers training to help you program a CANcockpit solution. This training tells users everything they need to know about the innovative features, such as how to personalise the system and integrate corporate logos and symbols into the central instrument's display.
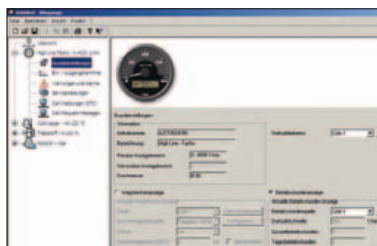
Selecting the central instrument and basic settings

Setting the basic CAN settings (if applicable)

Sensor database and mapping adjustemnts for optimum performance

Setting warnings and alarms including choice of response and priorities

DTC handling and personal configuration with individual messages and symbols

Programming of requests, e.g., query operating hours
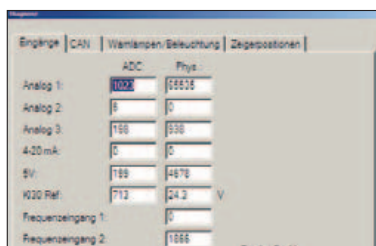

Adding satellite instruments
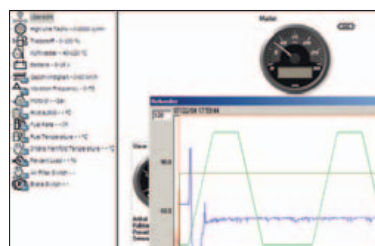

Adding display gauges
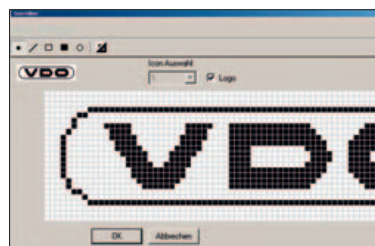
Programming the central instrument, e.g., with a proprietary logo or symbol

The individual project is now programmed

Numerous diagnostic options are available

Capturing, storing and processing selected data by connecting to a PC