

Precise. Rugged. Universal.

Dual-Scan SMB/Scan

- ▶ Durable module for the measurement of analog voltages and temperatures
- ▶ 7 differential inputs: -3,5 V to +16 V
- ▶ 7 NiCr-Ni inputs: -100 °C to +1372 °C
- ▶ Data communication via Serial Measuring Bus (SMB) to calibration systems, PCs, ...
- ▶ High-speed CAN bus connection
- ▶ Cascading of up to 8 devices in SMB mode or up to 50 devices via CAN bus
- ▶ For Calibration and Measuring systems from ATI, Bosch, dSPACE, ETAS, IAV, National Instruments, Vector, CSM, ...



Dual-Scan – half and half

Dual-Scan belongs to the **xx-Scan device family** and collects measurement data and transmit it to a host (PC/laptop, data logger).

The **communication** between Dual-Scan and the host is either done via a high-speed **CAN bus** or alternatively using the **SMB bus** (Serial Measuring Bus defined by Bosch).

Dual-Scan provides **7 inputs** for connection of **NiCr-Ni thermocouples** (type K). Due to digital alignment and linearization with **online cold junction compensation**, Dual-Scan achieves a typical measuring accuracy of ± 1 °C throughout the entire measuring range from -100 °C to +1372 °C. A **broken sensor connection** is automatically recognized. Approx. every 150 ms the temperature values are updated in the internal buffer or sent via CAN bus.

Dual-Scan provides another **7 inputs for analog differential voltages** from -3,5 V to +16 V with a resolution of 5 mV. They are cyclically measured, stored and updated in the internal buffer approx. every 15 ms in SMB mode, or sent via CAN bus.

The currently measured values and the state of operation are permanently shown on the **back-lit LCD**. The power supply of 8 V to 32 V can be passed through from device to device, according to all xx-Scan devices.

Because of their easy handling and the excellent-price-performance ratio Dual-Scan is well suitable for a wide range of applications, particularly for **automotive measurement systems**.

Communication via SMB bus

Communication via **SMB bus** is fully compatible and without any limitation to all "SMB bus only" devices of the xx-Scan family.

Using selectable device addresses it is possible to cascade up to 8 devices of different types and in arbitrary order on a standard RS232C interface. Dual-Scan can be of course also used with an **USB interface** via USB / RS232 adaptor. Control of the measurement process and data recording is supported by standard software of leading suppliers like INCA from ETAS, VISION from ATI (Accurate Technologies Incorporation), CalDesk from dSPACE, CANape from Vector and others.

Communication via CAN bus

The **measurement data can be transmitted with full resolution and speed via High-Speed CAN bus**.

Configuration for the CAN bus is done like other xx-Scan devices with the **CSM Config Tool**. It is a very easy to use Windows based application, which allows to configure CAN bus parameters, device type as well as type and number of measurement channels. Device specific settings are **stored permanently in the device** itself. All settings are passed to an configuration file, which is compatible with the industry standard **CANdb** from Vector.

The advantages of data acquisition via CAN bus can be used with all above mentioned software products, e.g. with INCA from ETAS. Quasi-simultaneously other signals can be measured via SMB bus.

Software Interface

The measurement values from Dual-Scan are available in volt and degree Celsius.

Via **CAN bus** the measured values are transmitted **completely**, with **full resolution** and with a **transmission rate up to 1 Mbit/s**. CAN bus parameters can be **configured** via the serial RS232 interface or optionally via CAN bus.

Both the SMB protocol and the CAN bus transmission are disclosed, well described and therefore can be integrated very simply and efficiently into specific applications.

Dual-Scan and UniCAN

Dual-Scan is also well suitable as a measurement module for stand alone data acquisition with our data logger UniCAN for diagnosis and measurement on the CAN bus.

CSM DKD Calibration Service

We recommend a calibration interval of 1 year.

For further technical information and references please ask our technical sales and distribution.

Spezifikation Dual-Scan SMB/CAN

| Technical Data | Dual-Scan SMB/CAN | |
|--|--|--------------------------------------|
| Inputs | 7 Differential Inputs | 7 NiCr-Ni Inputs |
| Measurement Range | -3.5 V to +16.0 V | -100 °C to +1372 °C |
| Resolution (1 LSB) | approx. 5 mV | 1 °C |
| Accuracy (Ta=25 °C) | ±8 mV + 1 LSB | typ. ±1 °C |
| Cycle Time | 15 ms (7 channels) | 150ms (7 channels) |
| Input Protection | ±20 V continuous Pulse 8 kV (ESD) | ±20 V continuous Pulse 8 kV (ESD) |
| Display | LCD illuminated | |
| Serial Interface Cascadable Software Protocol | RS232C, 38400 Baud max. 8 devices SMB | |
| CAN Interface ¹⁾ | CAN 2.0B (active) High-Speed CAN (ISO 11898) 125 kBits/sec up to max. 1 Mbit/s (configurable) | |
| Dimensions (W x H x D) | approx. 105 x 88 x 186 mm | |
| Weight | approx. 860 g | |
| Operating temperature (LCD) ²⁾ | 0 °C to +50 °C | |
| Humidity / Protection | max. 80 % (non condensing) | |
| Power Supply / Over Voltage Protection | 8 - 32 V DC 32 V continuous | |
| Current Consumption / Power Consumption | typ. 167 mA at 12 V typ. 2.0 W / max. 2.5 W | |
| Conformity | CE | |

1) The CAN interface (instead of SMB) is chosen as soon as the CAN cable is detected.

2) The device can also be delivered as a version without display for an operation temperature of -40 °C up to +85 °C.

Part numbers:

ART0202063 Dual-Scan SMB/CAN (Dual-Scan with Binder socket)

Shipping content: Dual-Scan, CSM Config Tool, documentation, Calibration certificate according to DIN EN ISO/IEC 17025, ART0202099 xx-Scan CAN bus Cable Set K43 & K44

ART0202066 Dual-Scan SMB/CAN LEMO CAN IN, CAN OUT (Dual-Scan with LEMO sockets)

Shipping content: Dual-Scan, CSM Config Tool, documentation, Calibration certificate according to DIN EN ISO/IEC 17025