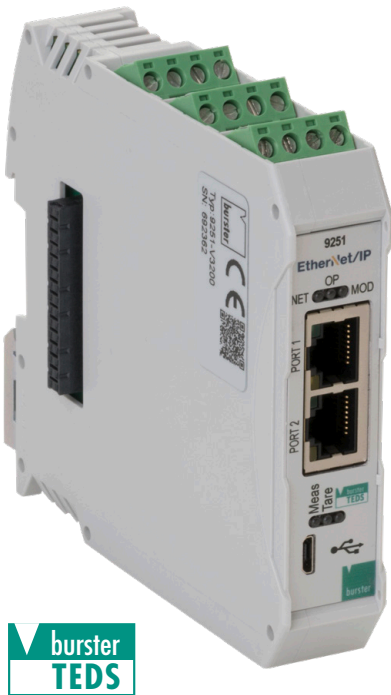


Fieldbus Controller for the 9250 Instrumentation Amplifier series

MODEL 9251



Highlights

- NEW: Measuring input: Strain gage, Potentiometer, ± 10 V
- Non-linearity $< 0,005$ % F.S.
- TARA function with LED display
- PROFINET, EtherCAT and EtherNet/IP
- High measurement speed
- Up to 8 model 9250 instrumentation amplifiers can be modularly connected

Applications

- Automation technology
- Production
- Research and development
- Mechanical engineering
- Test-bench equipment



NEW
9251 with integrated
strain gage
measuring input



Product description

The new 9250/9251 amplifier generation unites all the features that make modern measurement data acquisition actually possible for the first time. Network-compatible, high-precision, user-friendly, smart and versatile: the combined system of amplifier module and Fieldbus controller can be integrated into any existing setup.

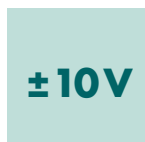
The Fieldbus controller delivers all signals exactly where they are needed, to be combined, checked and linked. With the available Fieldbus interfaces, you are flexible, perfectly connected and you save time, costs and other resources when linking to and integrating into existing systems. Due to the integrated measuring input, the use of a Fieldbus controller module is sufficient for single-channel applications. For multi-channel applications, the system can be expanded to up to 9 measuring channels.

Up to 8 bus-compatible model 9250 instrumentation amplifiers can be cascaded on the model 9251 Fieldbus controller. Automatic detection and addressing of the instrumentation amplifier modules allows easy expansion. By means of measuring input, the fieldbus controller can be operated as a stand-alone device.

Some applications require large amounts of measurement data to be acquired and transmitted within a very short time. Very fast PLC communication with high update rates is needed. To optimize data throughput, the model 9251 Fieldbus controller can transmit a whole data array with the last 32 measured values per channel. The scaled measured values are read simultaneously in the real-time data of the Fieldbus link.



Fieldbus controller 9251 with up to 8 instrumentation amplifiers 9250

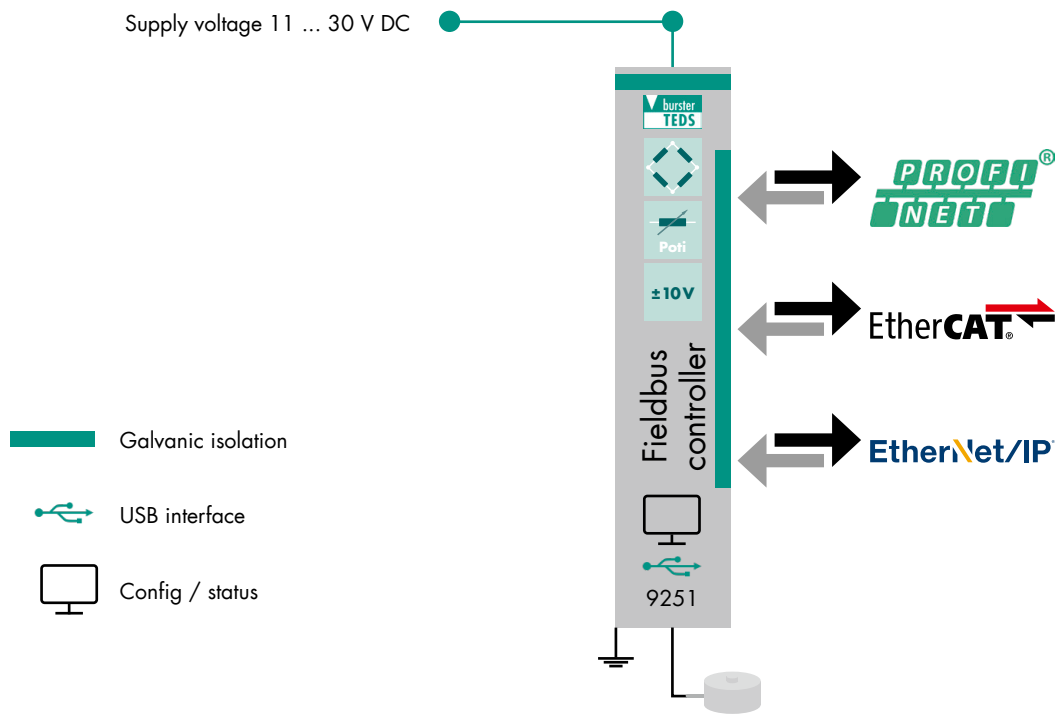


Technical data

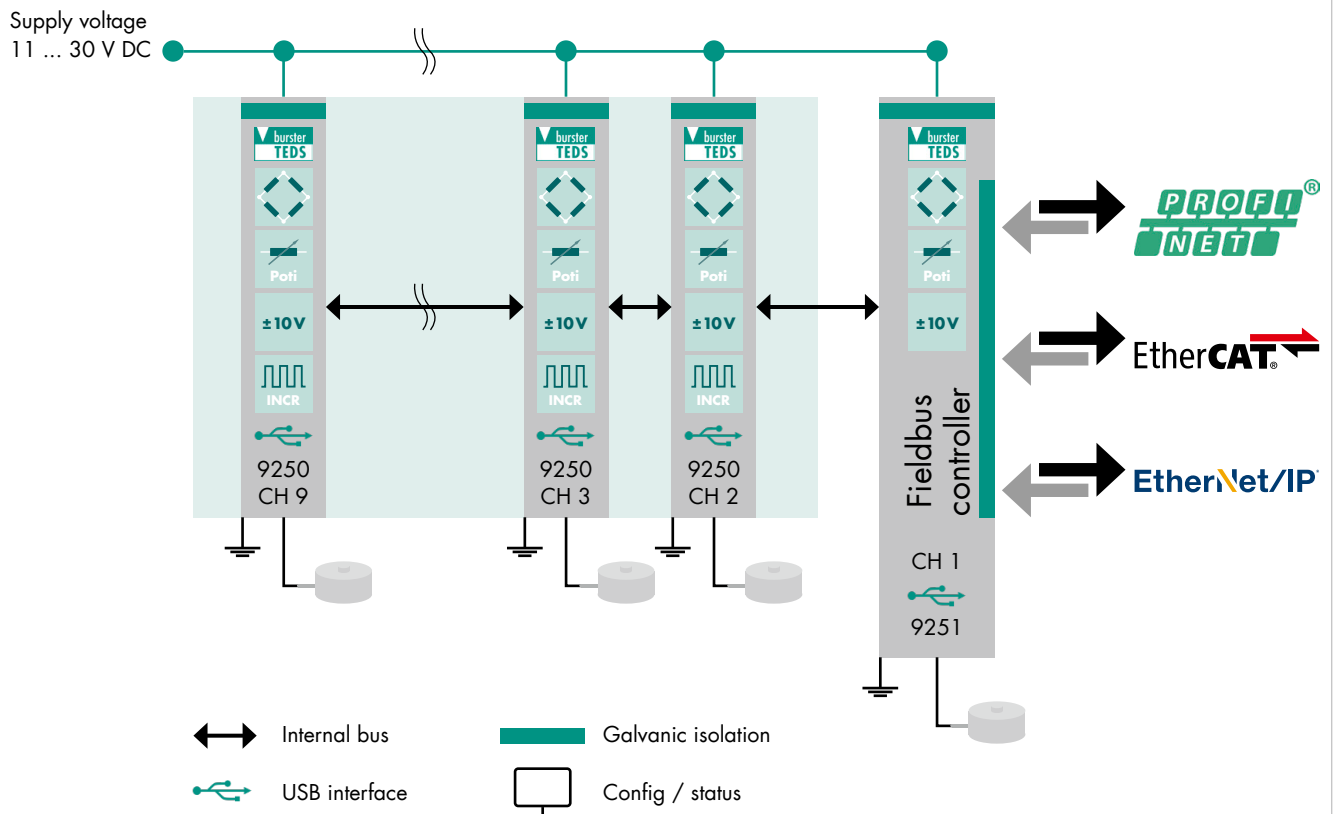
| Interfaces | | |
|---|--|---|
| PROFINET | | |
| Connection | | 2 x RJ45, 10/100 Mbit/s |
| Communication | | RT communication Cyclical real-time process data <i>Short mode:</i> Transmission of each individual measured value for slow measurements or very fast PLC communication <i>Extended mode:</i> Simultaneous transmission of 32 measured values for high measurement speed Acyclical parameter data |
| EtherCAT | | |
| Connection | | 2 x RJ45, 10/100 Mbit/s |
| Communication | | PDO – Process Data Objects Transmission of each individual measured value for slow measurements or very fast PLC communication Simultaneous transmission of 32 measured values for high measurement speed SDO – Service Data Objects |
| EtherNet/IP | | |
| Connection | | 2 x RJ45, 10/100 Mbit/s |
| Communication | | cyclical data transmission (implicit messaging) acyclical data transmission (explicit messaging) |
| Internal communication bus to the 9250 modules | | |
| Transmission speed | | 3.6 kHz per channel |
| Number of devices (model 9250) | | Up to 8 |
| Compatible sensors / provisional data | | |
| Strain gage full bridge | | |
| Excitation voltage | | 2.5 / 5 / 10 V, configurable, short-circuit proof |
| Connection technology | | 4 or 6 wire, automatic recognition |
| Excitation current | | approx. 40 mA |
| Input impedance | | 1 GOhm |
| Measuring ranges | | ±15 mV, ±30 mV, ±300 mV |
| Potentiometer | | |
| Excitation voltage | | 5 V |
| Excitation current | | max. 40 mA |
| Resistance | | > 200 Ohm |
| Input impedance | | 1 GOhm |
| Voltage metering | | |
| Measuring range | | ±10 V |
| Input impedance | | 1 GOhm |

| Housing | |
|------------------------------|---|
| Material | Polyamide |
| Dimensions (WxHxD) | 22.5 x 110 x 115 mm |
| Weight | Approx. 210 g |
| Protection class | IP20 to EN 60529 |
| Connections | Screw clamps, up to 2.5 mm, RJ45, USB Micro B |
| General data | |
| Supply voltage | 11 ... 30 V DC, galvanic isolation, inverse polarity protection, overvoltage protection |
| Power consumption | Approx. 3 W |
| Operating temperature range | 0 °C ... +50 °C |
| Storage temperature range | -25 °C ... +70 °C |
| Humidity | 0 ... 70 % non-condensing |
| Sampling rate | 10000/s (in standalone mode) 1000/s (per channel when cascading of 1 to 8 model 9250 instrumentation amplifiers) |
| Electrical isolation | Instrumentation amplifier, supply voltage |
| Error limit | ±0.03 % F.S. |
| AD conversion | 24-Bit |
| Non-linearity | < 0.005 % F.S. |
| Temperature coefficient Gain | < 15 ppm/K Rd |
| Input zero drift | < 0.1 µV/K |
| Common mode rejection (CMRR) | 140 dB (Bei DC) |
| Installation | Grounded mounting rail 35 mm to DIN EN 50022 |
| Interfaces | 2 x RJ45, Micro-USB for configuration, internal bus interface for cascading up to 8 bus-compatible model 9250 instrumentation amplifiers |
| Display | 1 x status LED, 3 x fieldbus-specific LEDs, 1 x TARA LED, 1 x TEDS LED |

Block diagram – singlechannel application, fieldbus controller with measuring input and load cell

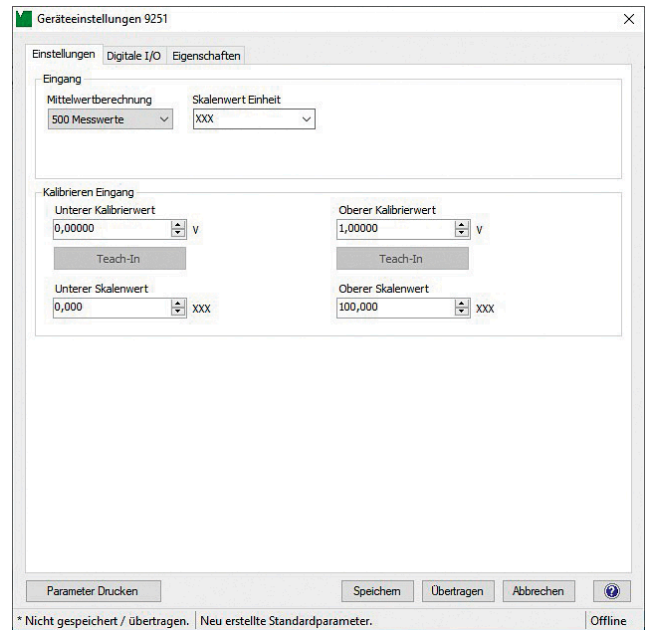


Block diagram – multichannel application with universal instrumentation amplifier, fieldbus controller with measuring input and load cells



DigiVision PC software

- Free of charge at www.burster.com
- Convenient device configuration via front-panel USB port
- Automatic recognition of amplifier modules in DigiVision
- Backup facility for storing settings
- Analog output configuration
- Scaling of output values
- Configuration of PLC I/O outputs
- Device information



Accessories

| Order code | |
|------------|---|
| 9900-K358 | USB cable for configuration |
| 9250-Z001 | 1 set of terminals (supplied with device) |

Calibration of the measuring chain

| Calibration of measuring chain | |
|--------------------------------|--|
| 92ABG | Calibration of the measuring chain in sensor's reference direction |
| 92ABG-S | Calibration of the measuring chain according to customer request |

Calibration certificate with accreditation symbol

Calibration certificate with accreditation symbol for Feldbus-Controller 9251 with measuring input. The calibration is based on the accreditation of the calibration laboratory D-K-15141-01-00 for the scope of accreditation listed in the annex. The traceability to national standards as well as wide international recognition (DAkKS as a signatory of the multilateral agreements of EA, ILAC and IAF) are guaranteed.



Calibration certificates for instrumentation amplifiers

| Standard factory calibration certificate for instrumentation amplifiers (WKS) | |
|--|--|
| On request | Calibration is performed by electrical simulation of the input variables. |
| Calibration certificate with accreditation symbol for instrumentation amplifiers (DKD) | |
| On request | Our ISO 17025 accredited calibration laboratory (DAkKS) offers accredited calibrations in accordance with its scope of services. Calibration is performed by electrical simulation of the input variables. |

Calibration certificates for measurement chains

| Standard factory calibration certificate for measurement chains (WKS) | |
|--|---|
| Optional available | <p>Normally, our standard factory calibration certificate contains measuring points which are recorded starting from zero in 5 steps (distributed as evenly as possible over the measuring range) until the nominal sensor value is reached. In this process, the change of the physical input variable takes place with increasing and decreasing signal with unchanged installation position of the sensor.</p> <p>Calibration is performed in conjunction with a transducer (sensor) for physical quantities and is based on the procedure specified in the sensor data sheet.</p> |
| Special factory calibration certificate for measurement chains (WKS) | |
| On request | We are happy to calibrate sensors and measurement chains to the customer's specification. |
| Calibration certificate with accreditation symbol for measurement chains (DKD) | |
| Optional available | <p>Our ISO 17025 accredited calibration laboratory (DAkkS) offers accredited calibration certificates according to its scope of services. The applied calibration procedures can also be taken from the data sheet of the used transducer (sensor).</p> <p>Calibration is performed in conjunction with a transducer (sensor) for physical quantities.</p> |

Example order

| PROFINET 4-channel instrumentation amplifiers with compression load cells | | | |
|---|--|---|--------------------------|
| 4 x | | Miniature compression load cell | Model 8402-6005-N000S000 |
| 1 x | | Fieldbus controller | Model 9251-V3200 |
| 3 x | | Universal instrumentation amplifier | Model 9250-V000010 |
| 4 x | | Compensation of measurement chain | 92ABG |
| EtherCAT 1-channel fieldbus controller with tension and compression load cell | | | |
| 1 x | | Precision miniature tension and compression load cell | Model 8431-5500-T000S000 |
| 1 x | | Fieldbus controller with strain gage input | Model 9251-V1200 |
| 1 x | | Compensation of measurement chain with TEDS sensors | 92ABG-2 |

Order Code

| | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|
| 9 | 2 | 5 | 1 | - | V | | 2 | 0 | 0 |
| Fieldbuses | | | | | | | | | |
| ■ EtherCAT | | | | | | 1 | | | |
| ■ PROFINET | | | | | | 3 | | | |
| ■ EtherNet/IP | | | | | | 4 | | | |
| Analog input signals | | | | | | | | | |
| ■ Measuring input: Strain gage, Potentiometer, ±10 V | | | | | | 2 | | | |