

MA08.1/MS08.1

Measurement Amplifiers for SMT Systems for Measuring Voltages and Acquiring Voltage-Fed Transducers



The MS08.1 is used to acquire up to eight electric voltages. The MA08.1 provides an additional transducer supply per measurement channel making it possible to acquire voltage-fed transducers with a non-ratiometric voltage output.



Areas of Application

- Monitoring of supply voltages
- Acquisition of voltage signals (e.g. ECU or sensor outputs)
- Current measuring using shunts
- Cell voltage monitoring

Advantages

- High safety and flexibility due to galvanically isolated measurement channels
- Extensive transducer support thanks to settable supply
- Simple parameterization via transducer memory (can also be used in connection with externally- or non-fed transducers such as shunts)
- Optical indication of channel and module state

Signal Conditioning

The signal conditioning of both measurement amplifiers can be parameterized per channel. This applies to both the adjustable voltage measuring ranges of the modules and the transducer supply of the MA08.1. The resulting combination possibilities guarantee flexible and thus efficient use of the measurement amplifiers.

Measurement Calculation

The measurement amplifiers are suitable for both linear and non-linear transducers. In the case of linear transfer behavior, measured values are calculated on the basis of transducer sensitivity and offset. For the acquisition of non-linear

transducers, polynomials up to the sixth order can be configured with freely selectable coefficients.

Transducer Parameter Memory

If required, all relevant channel parameters can be stored in the electronic data sheet of the transducer. This not only reduces the amount of time required for configuration but also reduces the danger of incorrect parameterization. Typical user errors, such as a transducer supply that has been set incorrectly or resolution loss due to unsuitable measurement ranges, are thus no longer possible.



Technical Data

General

Number of channels	8
Transducer	Voltage measuring Voltage-fed transducers with voltage output (absolute) Currents (using external shunts)
Sampling rate	100 kSPS, time-synchronous over all channels
Data rate	1 SPS ... 50 kSPS online, can be set per module
Transducer memory	TEDS ready

Measurement Input

Measurement range	± 100 mV ... ± 60 V, in stages (1,2,5 per decade)
Input impedance	1 M Ω (measurement ranges $< \pm 5$ V) / 510 k Ω (measurement ranges $\geq \pm 5$ V)
Resolution	16 bit
Anti-aliasing filter	Butterworth, 6th order, 16 kHz, can be switched on per channel
Digital filters	FIR 10 Hz ... 10 kHz, in stages, can be set per module
Galvanic isolation	Per channel

Sensor Supply

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Output voltage and current	+5 V / 50 mA ± 5 V / 50 mA +12 V / 120 mA +15 V / 150 mA ± 15 V / 150 mA Current-limited, short-circuit-proof	+13 V / 15 mA (unregulated)
Galvanic isolation	No	Galvanic isolation

Environmental Conditions

Storage	-30 °C ... +85 °C, 10 % ... 90 % rel. humidity, non-condensing
Operation	-30 °C ... +70 °C, 10 % ... 90 % rel. humidity, non-condensing

Order Numbers

MA08.1	Measurement amplifier for SMT systems for measuring voltages and acquiring voltage-fed transducers (8 channels)
MA08.1-CAL	MA08.1 calibration
MA08.1-ADJ	MA08.1 adjustment
MS08.1	Measurement amplifier for SMT systems for measuring voltages and for measuring currents using shunts (8 channels)
MS08.1-CAL	MS08.1 calibration
MS08.1-ADJ	MS08.1 adjustment