

# Multichannel Amplifier

## For strain gauge sensors

Model 9236

CAD data 2D/3D for this device:  
Download directly at [www.traceparts.com](http://www.traceparts.com)  
Info: refer to data sheet 80-CAD-EN



- Operates with up to 4 measuring channels
- Voltage output 0 to  $\pm 5$  V / 0 to  $\pm 10$  V
- Protected against reverse connection and short-circuit
- Also available as circuit board without housing
- Simple configuration using DIP switch
- High degree of protection up to IP67

### Applications

Situations often occur in practice in which it is necessary to place a measuring amplifier immediately in the neighborhood of the sensor in order to be able to access a standard signal there. In this way, long distances to the evaluating electronics can be covered.

This task can ideally be performed by the 9236 in-line measuring amplifier. With its high degree of protection (IP67) its single-channel version can be integrated into the application even in the tough environment outside the switch gear cabinet.

In the multichannel version, up to four measuring channels can be implemented in one housing for the DIN carrier rail. This means that it can be located either in the switch gear cabinet, or in the immediate neighborhood of the sensor.

Users who want to put the amplifier onto an existing circuit board or who wish to construct their own housing can also obtain the amplifier as an open circuit board. It can be integrated by means of screw terminals.

The 9236 measuring amplifier finds applications wherever the output signal from sensors based on wire strain gauges, such as force, pressure or torque sensors, must be converted into a voltage signal, e.g.

- ▶ Automatic production machinery
- ▶ Laboratory measurements
- ▶ Integration into customer's circuit boards
- ▶ Field measurements

### Description

The measuring amplifier itself is powered by voltages between 15 V and 30 V. Internally, the highly accurate, short-circuit protected sensor excitation voltage is generated and used to supply the sensor's measuring bridge. The input range of the amplifier is appropriate for sensitivities between 0.5 and 30 mV/V and is also suitable for semiconductor strain gauge.

The analog output voltage can be set to a range from 0 to  $\pm 5$  V or 0 to  $\pm 10$  V. DIP switches are used to set the input range. Fine adjustments and zero point setting are performed by means of multi-turn potentiometers that are mounted on the circuit board. The sensors are connected, and the auxiliary power supplied, through user-friendly screw terminals.

The amplifier in the IP67 version can, if in fact necessary, be achieved by clamping, gluing, or with the aid of a cable tie. The open circuit board has mounting holes for easy assembly. The amplifier's limit frequency is 1 kHz.

## Technical Data

### Connectable sensors

#### Strain gauges

Bridge resistance:	350 Ω ... 5 kΩ
Connection technology:	4 wire
Excitation:	2.5 V
Excitation current:	10 mA
Power consumption:	approx. 0.3 VA
Configurable characteristic:	0,5 mV/V ... 30 mV/V
Default setting:	1.5 mV/V

#### Analog output

Output voltage selectable:	0 ... ± 5 V / 0 ... ± 10 V (standard) selectable
Output resistance:	440 Ω

#### General amplifier values

Measurement error:	0.1 % F.S.
Zero point: 25 % / 5 % (standard) of measurement range selectable	
Temperature coefficient:	< 100 ppm/K
Zero drift:	< 0.4 μV/K
Auxiliary power:	15 ... 30 V DC
Current consumption:	20 mA / 1 channel
Cut-off frequency:	1 kHz
Range of operating temperature:	0 ... 60 °C
Humidity:	10 ... 80 %, no condensation

#### Housing IP67

Kind of housing:	tube housing
Connection:	via PG7 at screw terminal
Dimensions (L x W):	120 x 25 [mm]
Material:	aluminium
Protection class:	IP67
Weight:	150 g

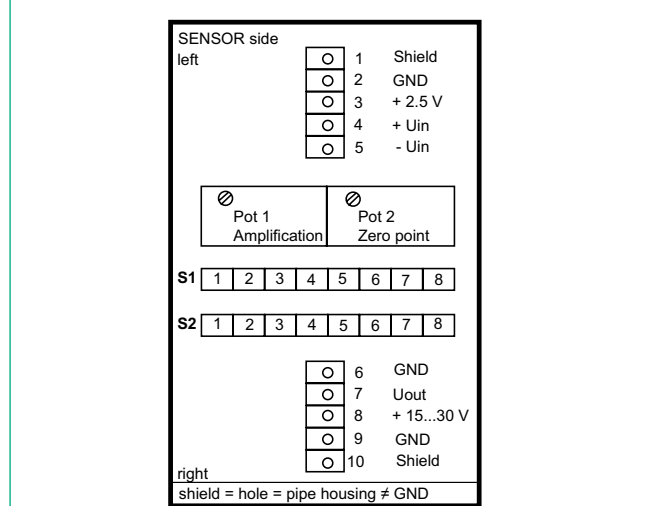
#### Housing IP20 2-4 channel

Kind of housing:	mounting rail housing
Connection:	at screw terminal
Dimensions (L x W x D):	108 x 90 x 63 [mm]
Material:	plastic
Protection class:	IP20
Weight:	150 g

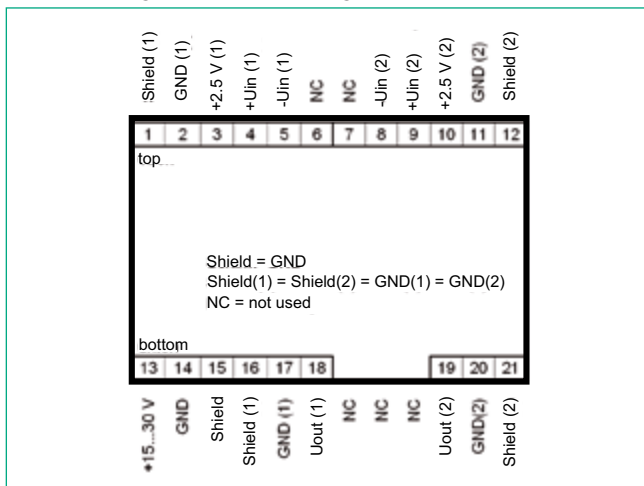
#### Open circuit board

Connection:	on screw terminal
Dimensions (L x W):	59 x 19 [mm]
Mounting:	4 holes for screws 2.5 in grid 14.6 x 53.6 [mm]
Weight:	50 g

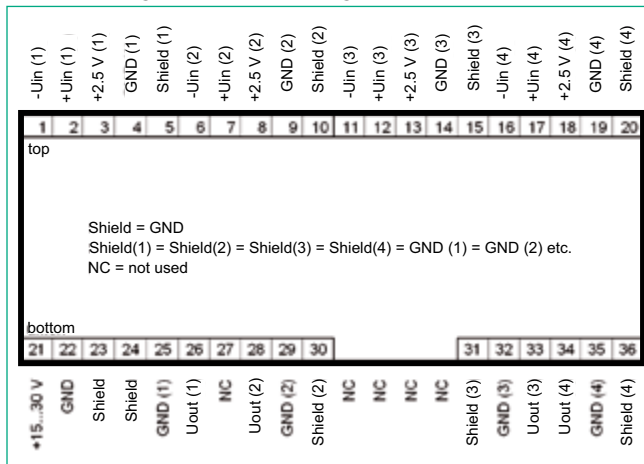
#### Terminal assignment for circuit board and version in tube housing



#### Terminal assignment for mounting rail version, 2 channel



#### Terminal assignment for mounting rail version, 3 or 4 channel



#### Order Code

Amplifier	9236 - V	X	0	0
IP67	_____	0		
Open circuit board	_____	1		
2 channel	_____	2		
3 channel	_____	3		
4 channel	_____	4		

#### Order Information

3 channel version in mounting rail housing **Model 9236-V300**

#### Calibration of a complete measuring chain

consisting of sensor and measuring amplifier 9236, per measuring channel, to the customer's trimming data. Otherwise, to standard settings typical for the sensor.

Order Code **9236-ABG**

#### Accessory

##### Strain gauge simulator

For an easy calibration of amplifiers to strain gauge sensors (please refer to data sheet 76-9405) **Model 9405**

**The CAD drawing (3D/2D) for this device can be imported online directly into your CAD system.**

Download via [www.burster.com](http://www.burster.com) or directly at [www.traceparts.com](http://www.traceparts.com). For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.