

## Description

The vario-separation amplifier AD-TV 33 GL serves the galvanic separation and amplification of standard DC analogue signals. The standard signals 0-20 mA, 4-20 mA and 0-10 V are freely selectable at the front via switches at the input as well as at the output. All measuring ranges are permanent calibrated, however, they can still be adjusted via potentiometer at the front, which can be switched on. The selected output signal follows linear the input magnitude and is independent from the connected load up to a limiting value. Input, output and the supply voltage are galvanically separated from each other with a high insulation. An integral electronic wide range power pack with high efficiency prevents strong increases in temperature and allows high output loads. A high pack density is achieved in combination with the narrow type of construction. The universality saves storage costs, a diversity of types is therefore eliminated.

## Application

For load amplification, galvanic decoupling and conversion of impressed standard signal measuring magnitudes.



## Specific characteristics

- all standard signals at input and output are freely selectable
- switchable zero point trimmer and final value trimmer
- high output load
- 18 mm narrow housing
- wide range power supply

## Business data

**Order number**  
AD-TV 33 GL

## Information

### Downloads

Tender text [tv33gl.zip](#)  
Safety instructions [ad-safety-instructions.pdf](#)

## Technical specifications

### Input current

Measuring range 0 ... 20 mA  
Input resistance 50 Ohm

### Input voltage

Measuring range 0 ... 10 V  
Input resistance 200 kOhm

### Output current

Output range 0 ... 20 mA  
Max. burden 500 Ohm  
Residual ripple 20 µAss

### Output voltage

Output range 0 ... 10 V  
Min. burden 500 Ohm  
Residual ripple 10 mVss

### Supply

Voltage range AC 50 ... 253 V AC, 50/60 Hz  
Nominal voltage AC 230 V AC  
Voltage range DC 20 ... 253 V DC  
Nominal voltage DC 24 V DC  
Power consumption AC / DC 2,8 VA / 1,5 W

### Transmission behaviour

Basic accuracy < 0,2 % of full scale  
Temperature influence 100 ppm/K of full scale  
Response time ~ 40 ms (10...90 % output signal)

### Housing

Dimensions (WxHxD) 18x78x103 mm  
Type of protection IP 20  
Connection method screw clamp  
Terminals, wire cross section 2,5 mm<sup>2</sup> flex wire / 4 mm<sup>2</sup> one wire  
Bolting torque terminals 0,5 Nm  
Weight ~ 140 g  
Manner of fastening 35 mm DIN rail 35mm

### Environmental conditions

Ambient temperature -10 ... 50 °C  
Storage and transport -10 ... 70 °C (no condensation)

### EMC

Product family standard EN 61326-1 <sup>1)</sup>  
Emitted interference EN 55011, CISPR11 Cl. B, Gr. 1

### Electrical safety requirements

Product family standard EN 61010-1  
Overvoltage category II  
Pollution degree 2

### Galvanic isolation, test voltages

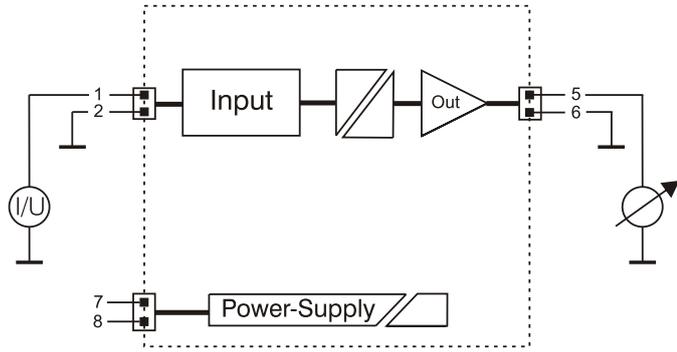
Input / output 2,5 kV, 50 Hz (1 min.)  
Signal / supply unit 4 kV, 50 Hz (1 min.)

### Protection circuits

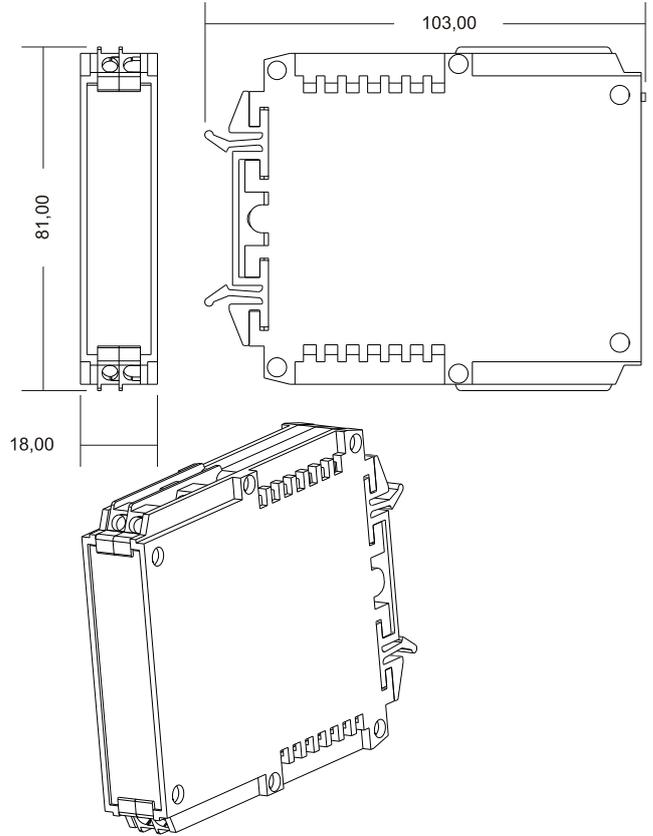
Input electrical surge protection  
Output electrical surge protection  
Power supply electrical surge and reverse current protection

<sup>1)</sup> During checking, slight signal deviations are possible.

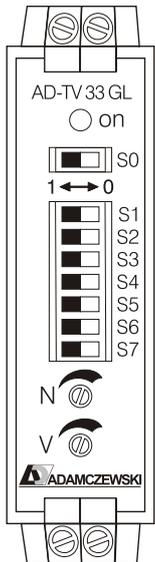
**Block and wiring diagram**



**Dimensions**



**Circuit examples**



Configuration									
Input	S0	S1	S2	S3	S4	S5	S6	S7	Output
0-20 mA	1	N	0	0	N	V	1	0	0-20 mA
0-20 mA	1	N	0	1	N	V	1	0	4-20 mA
0-20 mA	1	N	0	0	N	V	0	1	0-10 V
4-20 mA	1	N	1	0	N	V	1	0	0-20 mA
4-20 mA	1	N	0	0	N	V	1	0	4-20 mA
4-20 mA	1	N	1	0	N	V	0	1	0-10 V
0-10 V	0	N	0	0	N	V	1	0	0-20 mA
0-10 V	0	N	0	1	N	V	1	0	4-20 mA
0-10 V	0	N	0	0	N	V	0	1	0-10 V

V = 0 = Span-trimmer active      N = 0 = Zero-trimmer of  
 V = 1 = Span-trimmer off        N = 1 = Zero-trimmer active

**Switch Operation:**

- S0: Input signal current or voltage
- S1: Activation zero-trimmer
- S2: Input signal 4...20 mA
- S3: Output signal 4...20 mA
- S4: Activation zero-trimmer
- S5: Activation span-trimmer
- S6: Output signal current
- S7: Output signal voltage

After activation of the trimmer the calibrated values can be adjusted. If activation is restored, the device has the default values.