

### Description

The isolation amplifier AD-TV 420 GVD serves the galvanic separation of analogue signals and of transmitter signals. When a 2-wire transmitter is connected, this will be supplied directly via a galvanically separated and current-limited supply voltage. All measuring ranges and outputs can be freely parameterized. This can be carried out via the optional operating panel AD-VarioControl or via the programming software AD-Studio. The wide bipolar input measuring range makes this buffer amplifier into the universal type for almost all applications in the area of standard signals and beyond. All supply ranges are covered with the wide range power pack.

### Application

Amplification, transformation and electrical isolation of current or voltage signals



### Specific characteristics

- bipolar current input (+/- 0,5 mA bis +/- 50 mA)
- bipolar voltage input (+/- 1 V bis +/- 100 V)
- Power supply for 2- / 3-wire transmitters
- 2 bipolar current or voltage output
- Operating module as an accessory
- 23 mm narrow housing with detachable terminal clamp

### Business data

#### Order number

Isolation amplifier AD-TV 420 GVD

#### Accessory (optional)

Operating module [AD-VarioControl / AD-VarioConnect](#)  
USB programming adapter [AD-Variopass](#)  
Configuration software 70|AD-Studio

### Information

#### Downloads

Operation manual VarioControl [man-variocontrol-ad-en.pdf](#)  
Tender text [tv420gvd.zip](#)

### Technical specifications

#### Input current

Measuring range -50 ... + 50 mA DC  
Input resistance 40 Ohm

#### Input voltage

Measuring range -100 ... + 100 V DC  
Input resistance 1 MOhm

#### Transmitter supply

Off-load voltage 24,5 V  
Voltage at 20mA 19,5 V  
Current limit ~ 25 mA

#### Current outputs

Max. output range -21,5 ... 21,5 mA DC  
Max. burden 400 Ohm  
Residual ripple 40 µAss

#### Voltage outputs

Max. output range -10,5 ... 10,5 V DC  
Min. burden 10 kOhm  
Residual ripple 30 mVss

#### Resolution

Input 16 bit  
Output 12 bit

#### Transmission behaviour

Linearity error 0,2 % of full scale  
Rise time 200 ms (output auf 90 %)  
Temperature influence +/- 100 ppm/K of full scale

#### 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 4,4 VA / 2,8 W

#### Housing

Dimensions (WxHxD) 23x110x134 mm  
With operating module (bxhxt) 23x110x138 mm  
Type of protection IP 20  
Connection method detachable terminal 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 ~ 150 g  
Manner of fastening 35 mm DIN rail 35mm

## Technical specifications

### Environmental conditions

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

### EMC

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

<sup>1)</sup>During electromagnetic disturbance minor changes in output signal are possible.

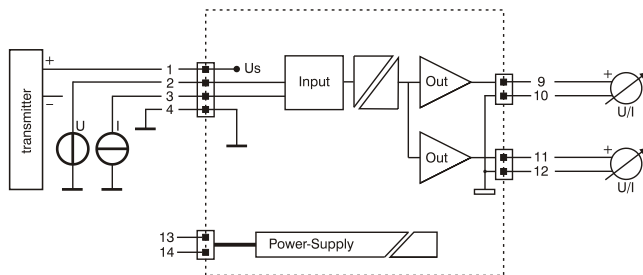
### Electrical safety requirements

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

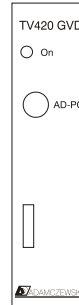
### Galvanic isolation, test voltages

Input/output	3,51 kV (1 min)
Signal/auxiliary voltage	3,75 kV (1 min)

## Block and wiring diagram



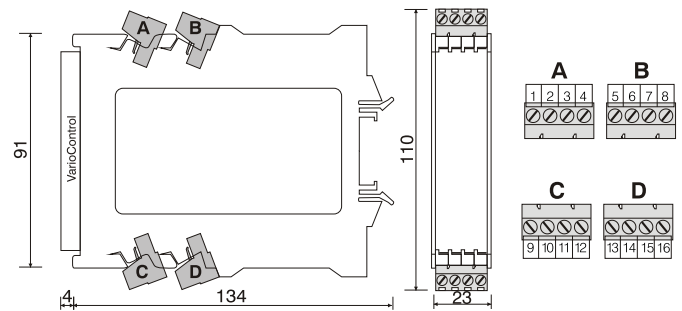
## Display and operating elements



**On:** LED for operating display in green  
 on - normal operation  
 flashing - Signal failure, signal outside range limits

**AD-PC:** Communication interface for configuration by a PC  
 Communication interface for VarioControl

## Dimensions



## Modbus Communication

The optional AD-VarioConnect operating module has an RS-485 interface. The data is transferred via the Modbus RTU protocol, the AD-VarioConnect operating module represents a Modbus slave. Communication takes place according to the master-slave procedure and starts with a request from the master, e.g. from a PLC or a PC. Each bus participant must have a unique address. If a slave detects that its address has been addressed by the master, the slave always sends an answer. The slaves never communicate with each other. They are also not able to start a communication with the master.

The Modbus master can read out the individual registers of the AD-TV 420 GVD via the addresses.

The default standard data format is 19200,e,8,1 with slave address 1. These settings can be changed via the AD-VarioConnect operating module.

Start address	Number of registers	Name	Unit	Data type	read	write
<b>Measured values:</b>						
40805	2	Scaled input		7	1	0
40809	2	Input signal	mA / V	7	1	0
40909	2	Output signal 1	mA / V	7	1	1
40911	2	Output signal 2	mA / V	7	1	1

### Legend of the datatypes:

U08: 1	S08: 2	U16: 3	S16: 4	U32: 5	S32: 6	float: 7
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