Isolation Amplifier

AD-TV 400 GVD

Description

The isolation amplifier AD-TV 400 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. Due to its current-sinking output, transmitter signals can also be separated or converted. 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
- bipolar current or voltage output
- current sink output
- Operating module as an accessory
- 23 mm narrow housing with detachable terminal clamp

Business data

Order number	
Isolation amplifier	AD-TV 400 GVD
Accessory (optional)	
Operating module	AD-VarioControl
USB programming adapter	AD-VarioPass
Configuration software	AD-Studio

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
Output current	
Max. output range	-21,5 ... 21,5 mA DC
Max. burden	400 Ohm
Residual ripple	40 µAss
Output voltage	
Max. output range	-10,5 ... 10,5 V DC
Min. burden	10 kOhm
Residual ripple	30 mVss
Current sink output	
Current sink	0/4 ... 20 mA DC
Max. voltage to be applied	35 V DC
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 VA / 2,4 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 mm² flex wire / 4 mm² one wire
Bolting torque terminals	0,5 Nm
Weight	~ 150 g
Manner of fastening	35 mm DIN rail 35mm

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Technical specifications

Environmental conditions

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

EMC

Product family standard [1)]	EN 61326-1
Emitted interference	EN 55011, CISPR11 Cl. B, Gr. 1

[1)]During electromagnetic disturbance minor changes in output signal are possible.

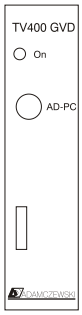
Electrical safety requirements

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

Galvanic isolation, test voltages

Input/output	3,75 kV (1 min)
Signal/auxiliary voltage	4 kV (1 min)

Display and operating elements

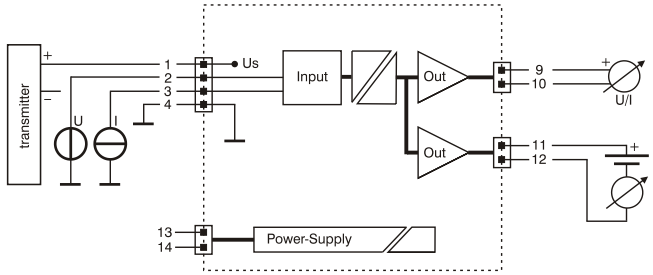


On: LED for operating display in green
on - normal operation
flashing - Signal failure, signal outside range limits

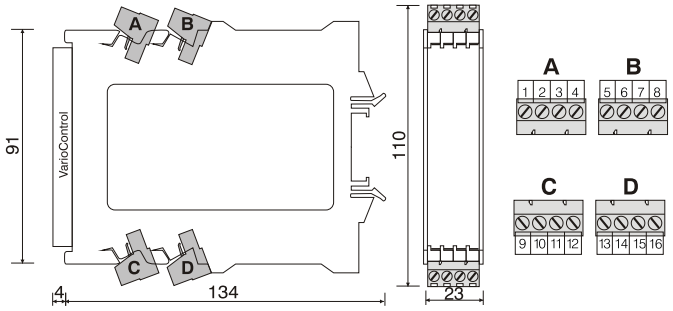
AD-PC: Communication interface for configuration by a PC

Communication interface for VarioControl

Block and wiring diagram



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 400 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
Measured values:						
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