

Description

The HART supply isolation amplifier AD-STH 40 GVC is designed for the galvanic isolation and amplification of transmitter signals (0/4-20 mA) and standard analog signals (0/4-20 mA and 0/2-10VDC). When connecting a 2 - wire transmitter, it is powered directly through an electrically isolated and current limited power supply voltage. Because the AD-STH 40 GVC is permeable on the current path for FSK signals (Frequency Shift Keying, eg HART-protocol) also a smart HART-transmitter can be connected at the input of the supply isolation amplifier. This HART transmitter can be programmed or read out from the output of the AD-STH 40 GVC using the integrated programming resistor. The standard signals 0/4-20 mA and 0/2-10 V are freely selectable via switch or terminal on both the input and at the output. All ranges are calibrated fixed, but can be adjusted via front-trimmer. In addition, this device comes standard with a configuration interface AD-PC, with which the input and output measurement signal with the optional AD-Studio programming software in the range of max. 20 mA or 10 VDC can be freely programmed. The selected linear output signal follows the input size up to a limit independent of the connected load. Input, output and power supply voltage are galvanically isolated from each other with high insulation. An integral electronic wide range power supply with high efficiency prevents strong heating and allows high output loads.

Application

Galvanically isolated supply of a smart HART-transmitter while separation, amplification or conversion of standard analog signals.



Specific characteristics

- All standard signals at the input and output are freely selectable
- FSK transmission (e.g. HART protocol)
- Switchable zero and span trimmer
- Special signals can be parameterized via interface

Business data

Order number AD-STH 40 GVC

Technical specifications

Input current

Measuring range	0 ... 20 mA; 4 ... 20 mA ¹⁾
Input resistance	ca. 75 Ohm
Resolution	10 Bit

Input voltage

Measuring range	0 ... 10 V; 2 ... 10 V ¹⁾
Input resistance	>700 kOhm
Resolution	10 Bit

Transmitter supply

Full load voltage	ca. 20 V DC
Current limit	ca. 30 mA
Open-circuit voltage	ca. 26 V DC

Input filter

Setting range (via interface)	10 ms / filter value (0 ... 30000)
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Output current

Output range	0 ... 20 mA; 4 ... 20 mA ¹⁾
Max. burden	400 Ohm
Residual ripple	50 µAss
Resolution	11 Bit

Output voltage

Output range	0 ... 10 V; 2 ... 10 V ¹⁾
Min. burden	10 kOhm
Residual ripple	20 mVss
Resolution	11 Bit

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	3,9 VA / 1,9 W

Trimmer

Trim range	ca. +/- 20 %
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Transmission behaviour

Basic accuracy	< 0,3 %
Temperature influence	100 ppm/K
Response time	~ 70 ms

Housing

Dimensions (WxHxD)	18x110x134 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	~ 130 g
Manner of fastening	35 mm DIN rail 35mm

Environmental conditions

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



Technical specifications

EMC

Product family standard	EN 61326 ²⁾
Emitted interference	EN 55011, CISPR11 Cl. B

Electrical safety requirements

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

Galvanic isolation, test voltages

Input / output	2,5 kV (1 min.)
Signal / supply unit	3 kV (1 min.)

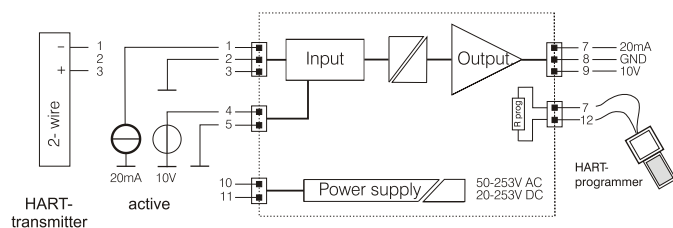
Protection circuits

Input	electrical surge protection
Output	electrical surge protection
Power supply	Protection against overvoltage, overcurrent and reverse polarity

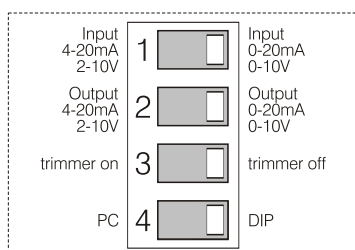
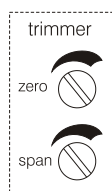
¹⁾ Special signals are configurable via the interface.

²⁾ During electromagnetic disturbance minor changes in output signal are possible.

Block and wiring diagram



Function DIP-switch



Trimmer on
Factory setting, according to standard
signals switches 1 and 2

Trimmer off
Activates the front trimmer for Offset (zero)
and span
Adjustment range: + / -20%

DIP Factory settings, input and output signals
such as switches 1-3

PC AD-studio setup position, Switches 1-3
functionless

Dimensions

