Parameterizable Analog Calculator

AS 3.10 SDC

FEATURES

- **Calculating functions:**

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  - Minimum-/ Maximum selector
  - Linearization

- **Freely configurable:**
  3 inputs ± 10 V
  1 output 0(4)...20 mA/ 0(2)...10 V

- **Parameterization without auxiliary power via PC-interface**

- **Galvanic 3-way isolation of 2,5 kV**

- **Low internal consumption**


FUNCTION

The Analog Calculator is used for calculations such as addition, subtraction and linearization of analog values which as a result have an analog signal in kind of a current or a voltage. Due to its customized setting of all individual input signals, the mode of calculation and the output signal the device has a large range of application. It is equipped with bipolar voltage inputs as well as a current and voltage output.

The AS 3.10 SDC is being parameterized by the USB2 adapter in connection with KALIB-Software. The basic calculation units can be selected directly, linearizations are produced by a table of values and a polynomial calculation with optimization. Actual measured values of input and output can also be visualized.

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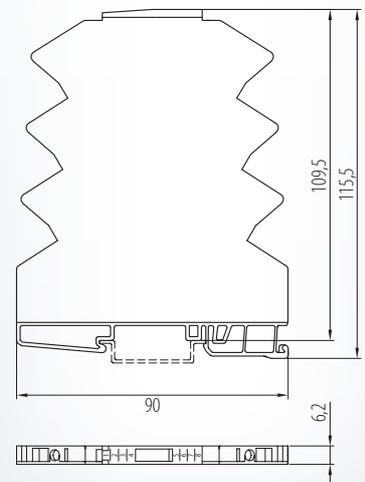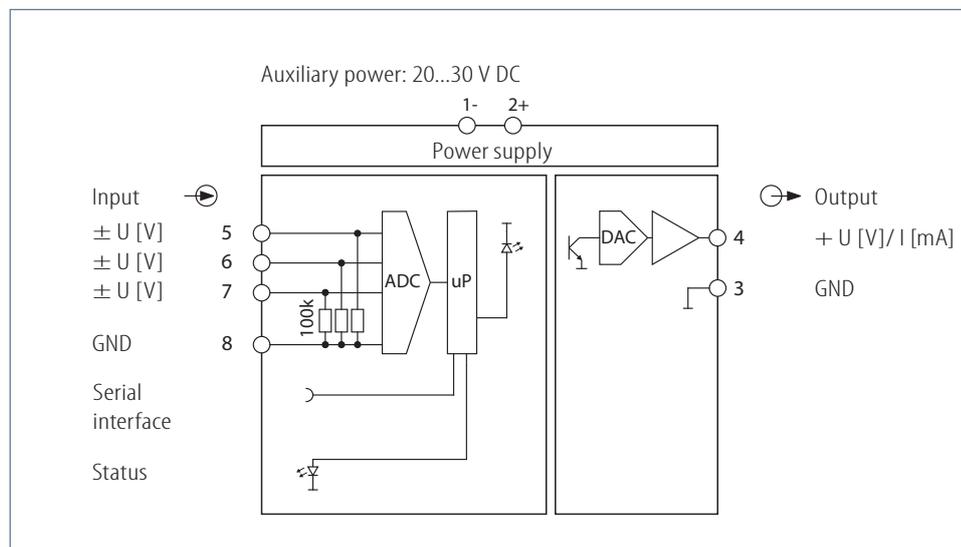
AS 3.10 SDC

Connection diagram:
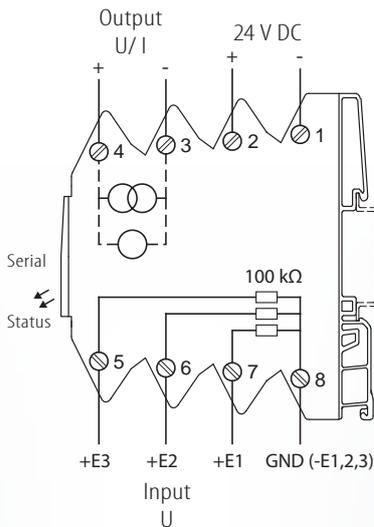
Input:

I:	DC voltage (bipolar):	–10...0...+10 V; input resistance approx. 100 kΩ
	connection:	E1 = terminal 8 - , 7 + ; E2 = terminal 8 - , 6 + ; E3 = terminal 8 - , 5 +
Adjustable per input:		range start, range end: –10,25...0...+10,25 V
		Cut–Off–Min: on falling below this value is set as input
		Cut–Off–Max: on exceeding this value is set as input
		error limit Min: on falling below a defined fixed value is set as output
		error limit Max: on exceeding a defined fixed value is set as output
		evaluation of input between –100%...0%...+100%
		(with -100%...0% calculated inversion of input)
Basic calculating:		output = E1 + E2 + E3
		output = E1 × E2
		output = E1 / E2
		output = Min/ Max (E1, E2, E3) (minimum-/ maximum selector)
		output = (E1 + E2) / E3
		output = (E1 + E2) × E3
Functions:		output = f (E1, E2, E3)
		User-defined functions possible based on pairs of variates (linearization).
		Other calculation functions on request.

Output:

I:	load–independent DC current:	0(4)...20 mA	permissible load max. 580 Ω
	connection:	terminal 3 -, 4 +	
U:	load–independent DC voltage:	0(2)...10 V	permissible load ≥ 1 kΩ
	connection:	terminal 3 -, 4 +	

The minimum/ maximum limits for current and voltage output are freely selectable and adjustable in clear text. On exceeding or falling below the limits at the output, the specified limit is set at the output (only within the error limits at the input).

Adjustment:

Measuring ranges and parameterization are adjustable in parameter data by KALIB–Software.
You need a PC and the interface adapter USB2 with KALIB–Software.

Display:

LED status:	green, active	input signals are in standard range, device ready for use
	green, flashing	input out of predetermined limits or
		exceeding of measuring range

Environmental conditions:

Storage temperature:	–40...+70 °C
Operating temperature:	0...55 °C
Isolation voltage:	
	2,5 kV eff. 1 sec. input–output
	2,5 kV eff. 1 sec. auxiliary voltage

Auxiliary power:

24 V DC:	20...30 V DC
	< 1,5 W
Influence of auxiliary power:	< 0,1 %

Characteristics of transmission:

Transmission error:	< 0,12 %
Resolution:	15 bit
Linearity error:	< 0,1 %
Temperature error:	< 100 ppm/ K
Load influence I:	< 50 ppm of final value
Load influence U:	< 0,2 % at 1 kΩ load
Setting time:	< 500 msec.

Directive:

EMC Directive:	2014/30/EU*
Low Voltage Directive:	2014/35/EU

*minimum deviations possible during HF-radiation influence

Mounting details:

Housing for top hat rail	
Type of protection:	IP 20
Mounting rail fixed according to	EN 50022-35 x 6,2 mm
Width:	6,2 mm
Weight:	52 g
Material:	Polyamide PA
Flammability class:	V0 (UL 94)
Approval:	CE
Connection:	screw clamps 0,14...2,5 mm^2

For safety reasons we recommend to mount the housing for top hat rail with a distance > 1 mm to each other. Please check parameter before initial operation!

Ordering information:		**Type:**	**AS 3.10 SDC** 24 V DC
		Accessories:	USB2/ USB-Simulator with KALIB–Software, manual

23.10.2018

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