Analogue multiplier

AD-MU 200 GA

Description

With the analogue multiplier AD-MU 200 GA two independent analogue signals can be multiplied with each other. The two input signals are adjustable in offset and in amplification. A counting output is available as option. The function is: A=
Meaning: K1/K2=amplification factors of the inputs, O1/O2= offset of both inputs, KG=total amplification, OG=total offset. K1/K2 and O1/O2 are adjustable by the customer via the trimmer.

Application

Multiplication of two analogue signals for ascertaining the product from two physical magnitudes, such as amount of heat, d.c. power.
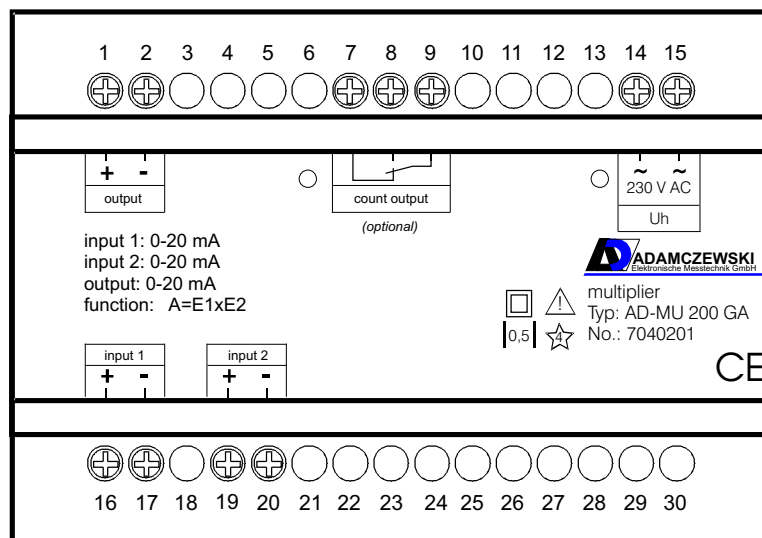

Important note

- the two inputs <u>must</u> be galvanically separated
- the output <u>must not</u> have any connection to the inputs

Technical data

construction type	surface housing
power supply	230 VAC or 20...30 VDC (*) internal galvanical separated others on request
power-consumption	approx. 4 W
input 1 + 2	voltage or current, also bipolar max. -20..0..+20 mA or max. -10..0..+10 V
input-impedance	50 Ohm with current, resp. 100 kOhm with voltage
output	current max. -20..0..+20 mA voltage max. -10..0..+10 VDC
output-load	max. 800 Ohm with 20 mA
linearity error	< 0,2%
effect of temperature	< 50 ppm/K
insulation test voltage	signal/supply: 4 kV RMS with 230 VAC signal/supply: 2 kV with 30 VDC
protective systems	input/output: against over-voltage, power-rack: against over-current, over-voltage, over-temperature
CE-conformity	EN 50081-2, EN 50082-2
ambient temperature	0-50°C
optionally	count-output relay (valuation (*)e.g. 1 imp = 1 kWh) relay-data: max. 250 VAC, 2 A, 100 VA

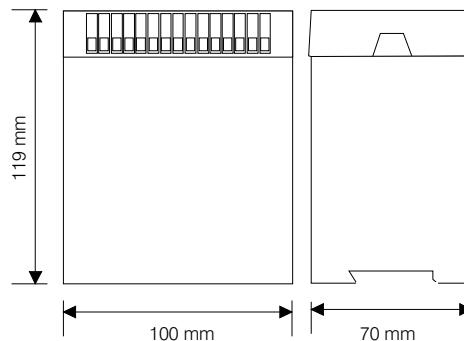(*) values must be defined by order

Connection and dimension: AD-MU 200 GA

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

protection: IP 20
weight : ca. 350 gr.
terminals: 2,5 mm², max. 230 V

output

count output
(optional)

230 V AC
Uh

input 1: 0-20 mA
input 2: 0-20 mA
output: 0-20 mA
function: A=E1xE2

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multiplier
Typ: AD-MU 200 GA
No.: 7040201

0,5

CE

input 1   input 2

| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

119 mm

100 mm   70 mm

The balance-check is located behind the frontpanel

For balance-check instructions see backside of data-sheet

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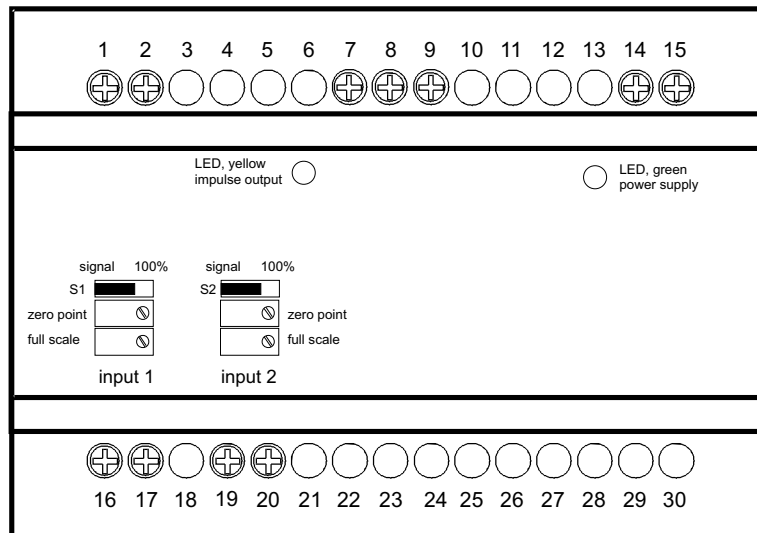Elektronische Messtechnik GmbH

Balance-check instructions

Setting the evaluation of input signals:
1) Set the switch of input 1 (S1) to "Signal"
2) Set the switch of input 2 (S2) to "100%"
3) Now adjust input 1 with the two trimmers to the output signal.
   During multiplication it must be assumed that the second input has the valency "1", that is:
   Input 1 = 0% --> output = 0%
   Input 1 = 100% --> output = 100%
4) Set input 2 analogue to this.
5) After completed adjustment set both switches to "Signal"

Example:
- Set S1 to Signal, S2 to 100%
- Now feed in 0% = 0mA at input 1.
- Trim output to 0 mA with the zero trimmer 1
- Now feed in 100% = 20 mA at input 1
- Trim the output to 100 % = 20 mA with the range trimmer
- Now set switch S 1 to position "100%" and switch S2 to position "Signal".
- Now feed in "0% = 4 mA" at input 2
- Trim the output signal to 0% = 0mA with the zero point trimmer
- Now feed in 100% = 20 mA at input 2
- Trim the output to 100% = 20 mA with the range trimmer.
- Don't forget: set both switches now to "Signal"

View on the control panels AD-MU 200 GA

The balance-check is
located behind the front-panel