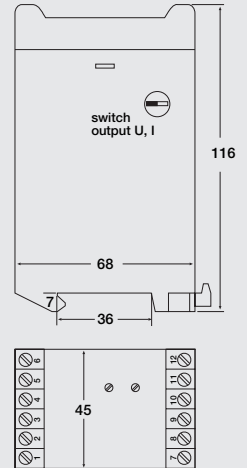
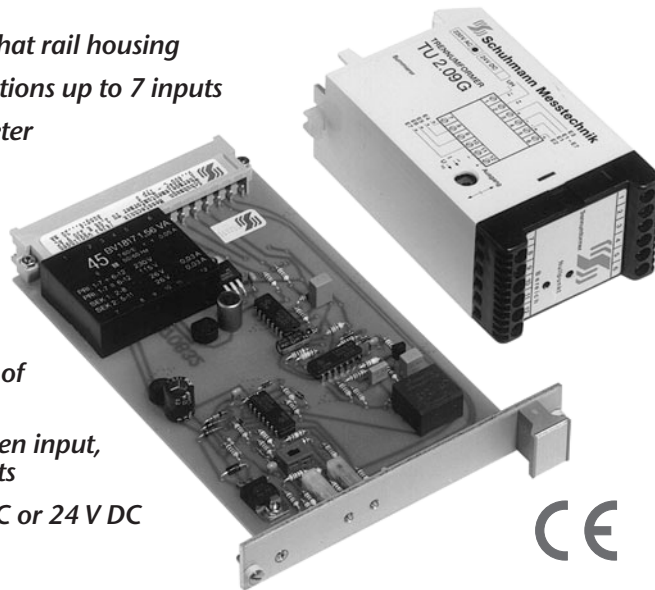


Adder/ Subtractor TU 2.09 Mean Value Meter



Features:

- Eurocard version or top hat rail housing*
- adder or subtractor functions up to 7 inputs*
- optional mean value meter*
TU 2.09 G 845
- fine-adjustment of zero and span*
- standard current- and voltage inputs mixable when wiring*
- user-specific adjustment of the arithmetic operation*
- galvanic isolation between input, output and supply circuits*
- auxiliary power 230 V AC or 24 V DC possible*



Application:

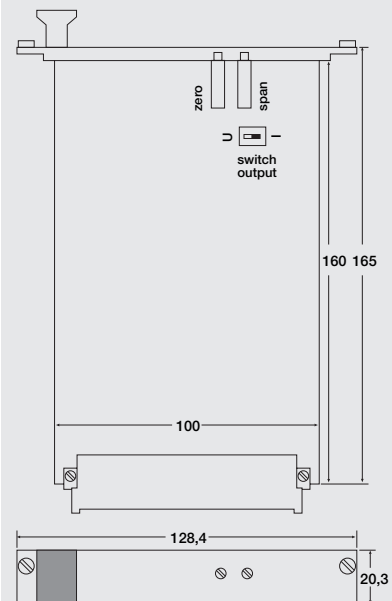
The TU 2.09 is used to add up or to subtract up to 7 current or voltage inputs. The details of the input variables and factors are user-specific and guarantee a large range of application, e.g., leveling in vessels, adding up flows of fuels to determine the calorification value respectively fuel consumption, as well as adding up flows in water

technology. Proportional calculations or computations can also be realised with integrated correction values. Due to the large and flexible range of application the adder/subtractor is adjusted ex works according to the user-specific input details (see also ordering information in clear text).

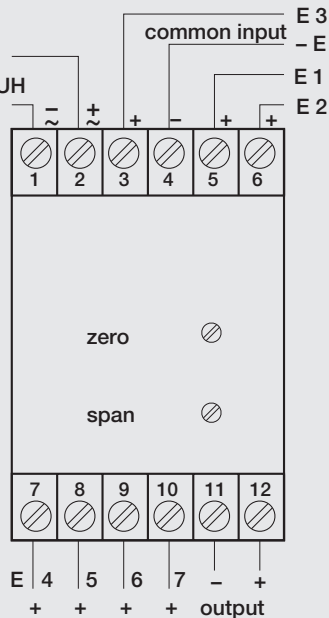
Function:

The TU 2.09 is adding up to max. 7 currents or voltages. The subtraction takes place by polarity of the inputs and has to be considered when connecting. The input variables (E1, E2, E3 - E7) are optionally interconnected as current or voltage among each other within the range of value mentioned on the reverse side and provided according to the predetermined arithmetic operation as standard output signal. The internal processing of the input signals takes place by the

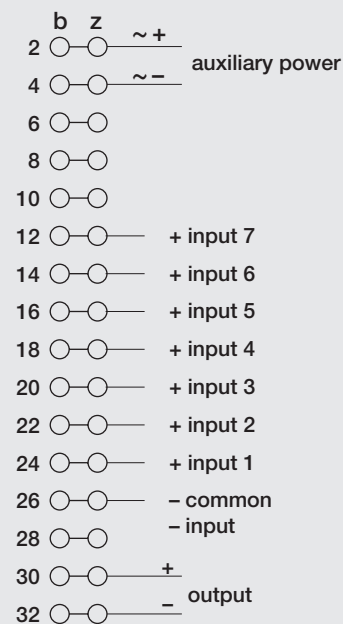
preparation of the values into signals. These are added by a summing amplifier and given out as sign-compatible result via output amplifier. Due to the galvanic isolation between input and output circuits switching in succession of several adders/subtractors is possible without any problems. **Please note that the inputs of a single converter are not decoupled, that means, galvanically connected.**



Housing



Eurocard



Input: up to 7 inputs
the input channels are not galvanically decoupled.

Input measuring range	Current	Voltage
max.	-50 mA – +50 mA	-100 V DC – +100 V DC
min.	-0,1 mA – +0,1 mA	-100 mV – +100 mV

The input range and factors will be adjusted user-specific ex works (see also details in clear text).

Output:

I : impressed direct current = 0(4)...20 mA
(max. permissible load = 1 k Ω)
U : impressed d.c. voltage = 0(2)...10 V
(max. permissible load = 500 Ω)
Signal limiting at approx. 1,5 x final value
Other outputs on request.

Auxiliary power:

A.C. voltage: 230 V (200...250 V) AC
(50...60 Hz)
consumption 15 mA
D.C. voltage: 24 V DC (20...30 V)
consumption approx. 90 mA
Influence of auxiliary power: < 0,1%
Special voltages on request.

Characteristics of transmission:

Linearity error: < 0,02%
Temperature error : < 0,6% (at 0...55 $^{\circ}$ C)
Load influence: < 0,05%
Common mode rejection ratio:
> 100 dB
Zero point setting: -35...+40%
Range setting: 70...145%

Environmental conditions:

Storage temperature: -40...+70 $^{\circ}$ C
Operating temperature: 0...55 $^{\circ}$ C
Isolation voltage: > 500 V input-output
> 4 kV auxiliary voltage AC
> 500 V auxiliary voltage DC

Electromagnetic compatibility law

Germany in accordance with
EMC Directive: 2004/18/EG*
Low-Voltage Directive: 2006/95/EG

Mounting details:

Housing for top hat rail
Type of protection: IP 20 housing / IP 10 clamps
Width: 45 mm
Rail-mounting fixed according to
EN 50022-35 x 7,5 mm
Weight : 310 g

Eurocard

Front panel anodized aluminium 3HE/4TE
(128,4/20,3 mm)
Connector 32 pole type F according to
DIN 41612
Weight : 250 g

Ordering information:

Type: **TU 2.09 E** Eurocard
TU 2.09 G Housing for top hat rail
TU 2.09 G 845 Mean value meter
Input/output details: in clear text e.g.
E1: 0...20 mA $\hat{=}$ 0...50 m 3 /h
E2: 0...20 mA $\hat{=}$ 0...30 m 3 /h
A: 0...20 mA $\hat{=}$ 0...80 m 3 /h
Auxiliary power: in clear text (e.g. 230 V AC)

* minimum deviations possible during HF-radiation influence