Characteristics

1500 - STANDARD SIGNAL - CURRENT - MEAN -

- Function:	Arithmetic mean of input signals
- Input:	2...4x 4...20 mA
- Output:	1x 4...20 mA
- Supply:	24 VDC ±10%
- Current consumption:	<50 mA (without input signals)
- Accuracy:	see technical data
- Electrical connection:	4 plug-in terminal strips, 4-pole
- Temperature range:	-10...+60 °C (ambient)
- Protection:	IP20
- Dimensions:	117,2x22,5x113,6 mm
- Material Enclosure:	PA66 GF30

Technical data

Input		
Input module:	Name:	MS-EUI
	Current:	4x 4...20mA
	Input resistance:	50 Ω maximum
	Resolution:	16 bit
	Measuring rate:	0,1 s
	Combined error:	0,2% of range
	Internal bus:	I2C
	Connection:	for SIM slot
Output		
Output module:	Name:	MS-AUI
	Standard signal current:	1x 4...20mA
	Load current output:	500 Ω maximum
	Resolution:	12 bit
	Measuring rate:	0,1 s
	Filter/damping:	0...1 s
	Combined error:	0,2% of range
	Temperature coefficient:	50 ppm/K
	Internal bus:	I2C
	Connection:	for SIM slot
Processor		
CPU module:	Name:	MS-CPU-C
	Clock rate:	8 MHz
	Internal bus:	I2C
	Connection:	for SIM slot

Applications

The DR-AS4K is designed to convert 2...4 input signals into one summing-up signal (arithmetic mean). Range of application are installations where instead of separate signals a single summing-up signal is needed, for example for a multipoint load measuring.

Technical data (continued)

Supply

Voltage:	24 VDC ±10%
Current consumption:	<50 mA (without input signals)
Reverse battery protection:	available (no function, no damage)

Ambient conditions

Operating temperature:	-10...+60 °C
Storing temperature:	-20...+70 °C

Mechanics

Case DR22,5:	
Dimensions:	117,2x22,5x1 13,6 mm
Material:	PA66 GF30
Color:	black
Flammability:	UL94 V-0
Mounting:	DIN rail TS35
Protection:	IP 20
Weight:	approx. 180 g
Electrical connection:	4 plug-in terminal strips 4-pole
Clamping range:	0,13...3,31 mm²
EMC:	Directive 2004/108/EC

Functional description

- Out of up to 4 ground referenced signals 4...20 mA the arithmetic mean is converted
- The mean is output as a summing-up signal of 4...20 mA
- Only used inputs are included into the calculation
- Used inputs are detected automatically by the device
- An input is rated as used above around 3 mA
- Values below 3 mA are rated as 0 mA and the input is regarded as unused
- Inputs with 3,8 mA or 21 mA are activating an error output signal
- The error output signal is 3,8 mA or 21 mA
- The error output signal is still available if other inputs have a valid input signal

Table Input signal <> output signal

Input 1	Input 2	Input 3	Input 4	Output
12 mA	20 mA	0 mA	0 mA	16 mA
12 mA	3,8 mA	4 mA	0 mA	3,8 mA
12 mA	4 mA	0 mA	6 mA	7,33 mA
10 mA	12 mA	3,8 mA	21 mA	3,8 mA
10 mA	12 mA	21 mA	3,8 mA	21 mA
0 mA	2 mA	2 mA	0 mA	3,8 mA
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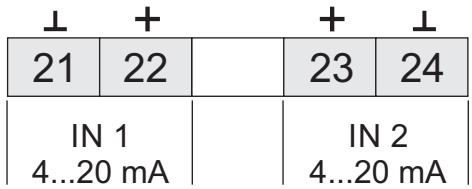
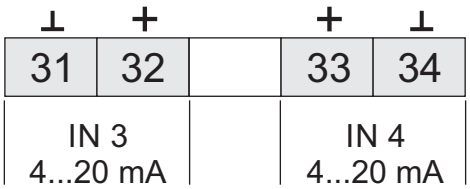
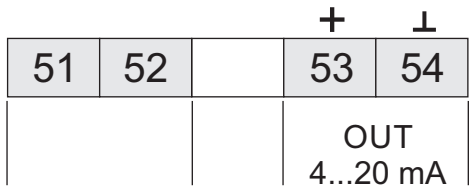
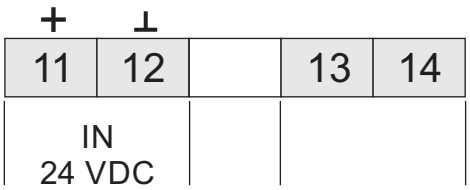
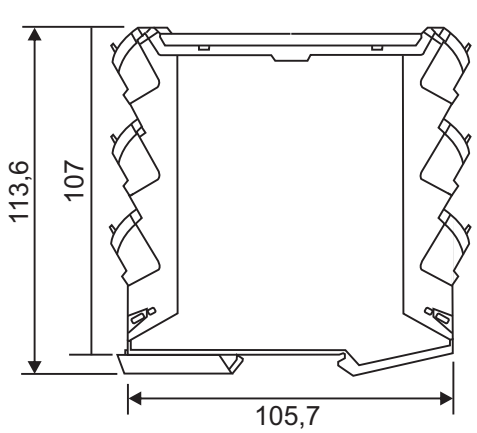
Electrical connection

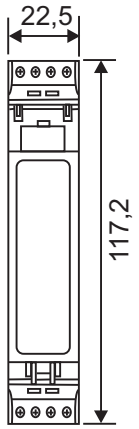
Current input 1 and 2	Current input 3 and 4
	

Current output sum	Supply
	

Dimensions (in mm)



side view



top view

Order number

DR-AS4K	Analog Summing Amplifier 4-Channel
Standard model	Order-No.: ????
Customized model	(on request)