



4-digit measuring instruments for direct and alternating currents

DSM 96 4-digit

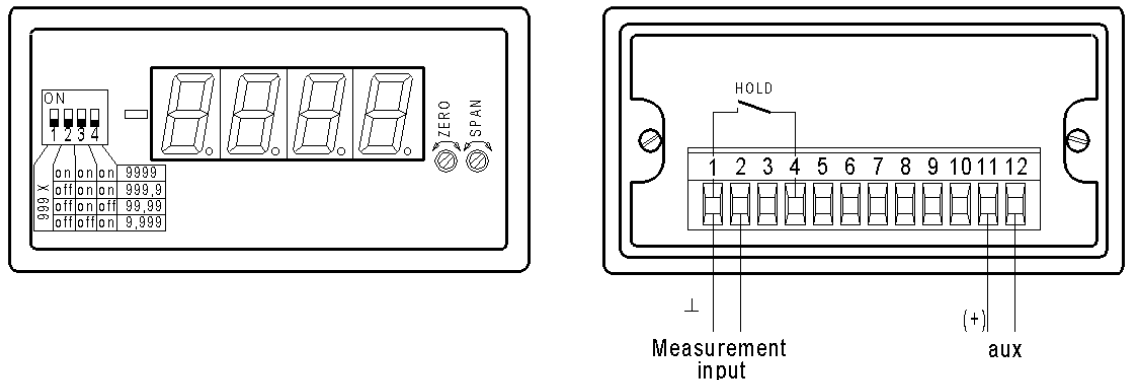
Application	The DSM 96 digital measuring instrument can be used to measure direct current, direct voltage, alternating current and alternating voltage, as well as to display converted non-electrical values.	
Function	Measured values are sent to a 4-digit A/D converter via series and shunt resistors (in the case of alternating current, via an RMS rectifier). Values are converted in accordance with the "dual slope" principle and displayed via 7-segment low-voltage LEDs. A hold function can be achieved by connecting two terminals. Zero point adjustment is automatic. Decimal points, blanking of the last digit, zero point and the display range can be modified by removing the front panel.	
Technical data	Display	7-segment low-voltage LED, 13 mm high, red, 4 digits
	Decimal points	Can be adjusted via DIP switch on the front panel
	Blanking	Of last digit via DIP switch on the front panel
	Polarity	Via minus (-) display
	Overflow	Display flashes
	Resolution	Maximum display +/- 9999
	Meas. rate	Approx. 3 measurements per second
	Meas. principle	Dual slope integration
	Accuracy	+/- 0.1 % from meas. value +/- 1 digit for direct voltage +/- 0.2 % from meas. value +/- 2 digits for direct current +/- 0.2 % from final value +/- 2 digits for alternating current values regardless of waveform, RMS value up to peak factor 4, DC, 40-1000 Hz
	Hold function	By connecting terminals 1 + 4
	Temperature range	-15 °C to +20 °C to +30 °C to +55 °C
	Temperature influence	< 0.05 % at 10 K
	Overload capacity	10 x voltage, max. 850 V, 10 x current up to 20 mA, 2 x at values above this
	Test voltage	at a working voltage up to 300V 4 kV between measuring input and aux. voltage at a working voltage up to 600V 5,2 kV between measuring input and aux. voltage
Regulations	EMC	DIN EN 61 326
	Mechanical strength	DIN EN 61 010 Part 1
	Electrical safety	DIN EN 61010 part 1, Housing all insulated, protection class II, at a working voltage up to 300V (network to neutral conductor) degree of pollution 2, overvoltage category CAT III at a working voltage up to 600V (network to neutral conductor) degree of pollution 2, overvoltage category CAT III
	Accuracy, overload	DIN EN 60 688
	Isolation	DIN EN 61010 Teil 1, 3,52 kV 50 Hz 10 sec. und 5,2 kV 50 Hz 10 sec.
	Creepages and clearances	DIN EN 61 010 Part 1
	Degree of protection	DIN EN 60 529, housing IP 50, terminals IP 10
Aux. voltage	AC	230 V AC +/-20 %, 45-65 Hz, 3 VA
	Options	24 V DC, -15 % to +25 %, 2.5 W, (EMC DIN EN 61 326 Class A) 6-30 V AC + DC or 36-265 V AC + DC, 2.5 VA, (EMC DIN EN 61 326 Class A)
Weight		350 g

Technical data for possible meas. ranges:

	Measuring range	Display	Internal resistance
Direct voltage DC	+/- 60 mV	+/- 1000 to 9999	> 100 MOhm
	+/- 100 mV	+/- 1000 to 9999	> 100 MOhm
	+/- 1 V	+/- 1000 to 9999	> 100 MOhm
	+/- 10 V	+/- 1000 to 9999	1 MOhm
	+/- 100 V	+/- 1000 to 9999	1 MOhm
	+/- 600 V	+/- 1000 to 9999	1 MOhm
Direct current DC	+/- 1 μ A	+/- 1000 to 9999	100 kOhm
	+/- 10 μ A	+/- 1000 to 9999	10 kOhm
	+/- 100 μ A	+/- 1000 to 9999	1 kOhm
	+/- 1 mA	+/- 1000 to 9999	100 Ohm
	+/- 10 mA	+/- 1000 to 9999	10 Ohm
	+/- 20 mA	+/- 1000 to 9999	10 Ohm
	4 - 20 mA	1000 to 9999	10 Ohm
	+/- 100 mA	+/- 1000 to 9999	1 Ohm
	+/- 1 A	+/- 1000 to 9999	0.1 Ohm
	+/- 5 A	+/- 1000 to 9999	0.02 Ohm
Direct and alternating voltage AC + DC RMS	0-100 mV	1000 to 9999	> 100 MOhm
	0-1 V	1000 to 9999	100 kOhm
	0-10 V	1000 to 9999	1 MOhm
	0-100 V	1000 to 9999	1 MOhm
	0-600 V	1000 to 9999	1 MOhm
Direct and alternating current AC + DC RMS	0 -1 mA	1000 to 9999	100 Ohm
	0 -10 mA	1000 to 9999	10 Ohm
	0 -100 mA	1000 to 9999	1 Ohm
	0-1 A	1000 to 9999	0.1 Ohm
	0-5 A	1000 to 9999	0.02 Ohm

Please ask about other ranges!

Remove the front frame and front panel and use the DIP switch to modify the settings for decimal points and blanking of the last digit. The zero point and the display range can be modified by inserting a screwdriver into the bore holes labelled "ZERO" und "SPAN" and turning the spindle potentiometers.

**Connection**

Via a plug-in 12-pin terminal strip, screw connection max. 2.5 mm²

Connect the earth terminal (terminal 1) to terminal 4 to save the last measured value (hold function). A new measured value will only be displayed once following disconnection of this link. If you are using cables longer than 0.5 m, we recommend that shielded cables (shield on terminal 1) are used for the hold function. The connection to earth for measurements should be made using an isolated cable.

Note the polarity when connecting a DC type measured variable!

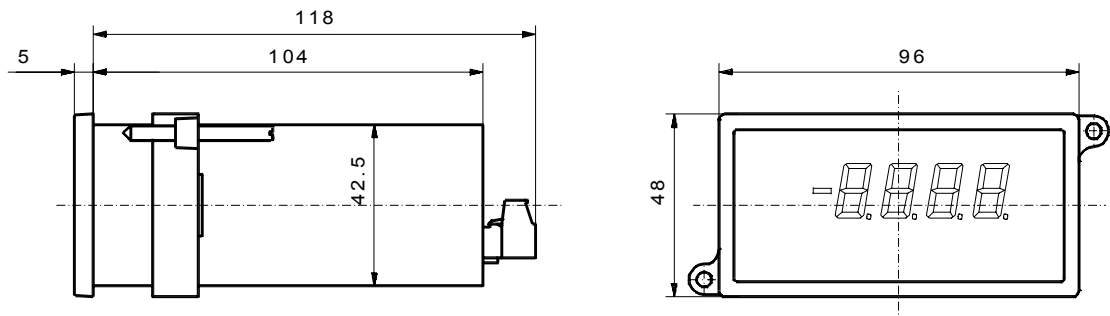
Note the polarity when connecting a DC type auxiliary voltage!



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Dimensions

panel cutout 92 x 45 mm

Fusing

The devices are fitted with short-circuit-proof transformers; an overvoltage protection device is not required for the auxiliary voltage.