

Resistance wire RD



General Data

Resistance alloy as specified in DIN 46 461 (CuNi44)
Specific electrical resistance 0.49 ($\Omega \times \text{mm}^2 / \text{m}$)
Average temperature constant of the electrical resistor at 20 °C = 0.00004-0.00008
Average linear thermal expansion coefficient between 20 - 100 °C = 13.5×10^{-6}
Melting temperature 1220-1270 °C
Maximum permissible wire temperature up to 600 °C

Advantages

Constant in specific resistance
Influence of the temperature or inherent heating on the resistance value practically insignificant (max. 0.8 % at 100 °C temperature rise)
Firmly adhering surface oxide coating withstands any temperature change and protects against further oxidation under continuous load
Very easy to machine thanks to softness and malleability
Suitable for soft soldering, hard soldering or welding

Applications

Resistance wire for the production of technical resistances, shunts and for general laboratory needs.



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		RD 100/0,1	RD 100/0,2	RD 100/0,3	RD 100/0,4	RD 100/0,6	RD 100/0,8	
Electrical data	Typ							
	Operating data							
	Resistance	62.400 Ω/m	15.600 Ω/m	6.930 Ω/m	3.900 Ω/m	1.730 Ω/m	0.975 Ω/m	
	Specific electrical resistance	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	
	Current intensity for wire temperature (100°C)	0.237 A	0.560 A	0.940 A	1.340 A	2.210 A	3.190 A	
Current intensity for wire temperature (200°C)	0.396 A	0.940 A	1.570 A	2.240 A	3.700 A	5.330 A		
Current intensity for wire temperature (300°C)	0.537 A	1.280 A	2.120 A	3.080 A	5.000 A	7.210 A		

		RD 100/1,0	RD 100/1,2	RD 100/1,5	RD 100/2,0	RD 100/3,0	RD 100/4,0	
Electrical data	Typ							
	Operating data							
	Resistance	0.624 Ω/m	0.433 Ω/m	0.277 Ω/m	0.156 Ω/m	0.069 Ω/m	0.039 Ω/m	
	Specific electrical resistance	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	0.49 (Ωx mm ²)/m	
	Current intensity for wire temperature (100°C)	4.220 A	5.300 A	7.000 A	10.000 A	16.600 A	23.900 A	
Current intensity for wire temperature (200°C)	7.050 A	8.850 A	11.700 A	16.800 A	27.800 A	40.000 A		
Current intensity for wire temperature (300°C)	9.550 A	12.000 A	15.800 A	22.700 A	37.700 A	54.000 A		

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4 Enclosures & Accessories

Magnet wires and litz wires



Resistance wire

RD



30 Mechanical data	30 Mechanical data							
	Typ	highest wire temperature	Mean linear coefficient of thermal expansion between 20 - 100 °C	Mean temperature coefficient of resistance at 20 °C	Melting point	Wire diameter	Weight	Remark
	RD 100/0,1	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.10 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/0,2	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.20 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/0,3	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.30 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/0,4	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.40 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/0,6	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.60 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/0,8	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	0.80 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.



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30 Mechanical data	Typ	highest wire temperature	Mean linear coefficient of thermal expansion between 20 - 100 °C	Mean temperature coefficient of resistance at 20 °C	Melting point	Wire diameter	Weight	Remark
	RD 100/1,0	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	1.00 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/1,2	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	1.20 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/1,5	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	1.50 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/2,0	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	2.00 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/3,0	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	3.00 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.
	RD 100/4,0	to 600 °C	13.5x10 ⁻⁶	0.00004-0.00008	1220-1270 °C	4.00 mm	0.10 kg	The specified wire temperatures apply for blank Isotan wires, especially unclamped in still air. Oxidized wires have a higher radiated temperature. The current load precisely required for a defined temperature can ultimately only be explicitly determined for the relations and requirements on the customer side for the specified intended use.

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