

OA - Series

Power Wire - Wound Resistor

FEATURES

- Resistance from 0,02Ω
- Temperature Coefficients to ±20ppm/°C
- Resistance Tolerances to ±0,01%
- Power Rating to 15Watt
- Working Temperature to 350°C
- Good Pulse Handling Capabilities
- Non-Inductive Windings (Option)
- RoHS - compliant



RATED VALUES (IEC 60115-1)

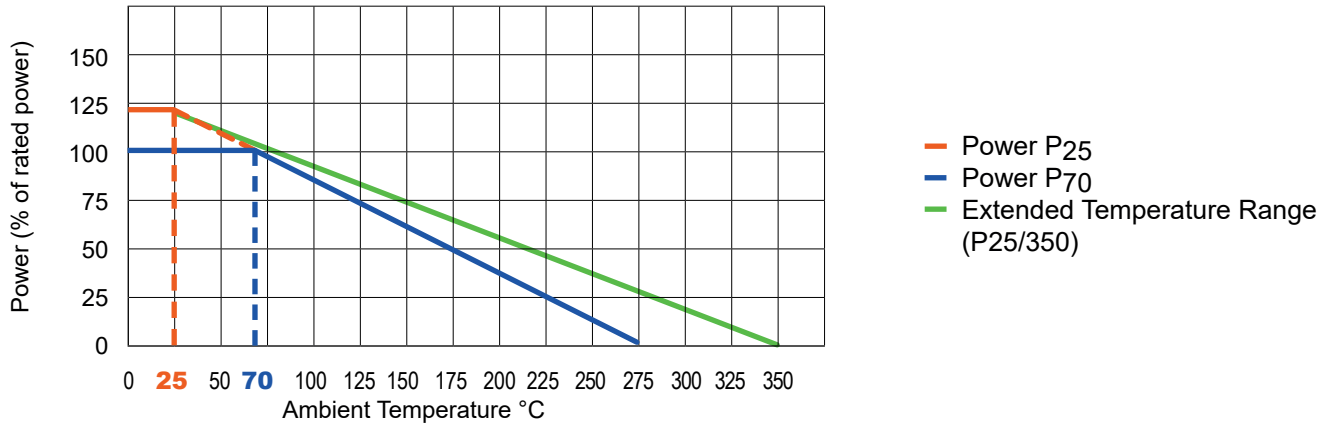
Resistance Range	Ω	0,02Ω to 320KΩ
Resistance Tolerance	%	Depending on needed power, from 0,02% to 1,0%
Temperature Coefficient	ppm/°C	±20 > 10Ω; ±50 from 1Ω - 9,9Ω; ±90 from 0,5Ω to 0,99Ω, less 0,5Ω on request
Working Voltage (U _{max})	V	√(P x R) or max. Voltage, see following table
Insulation Resistance (R _{ins})	Ω	1G
Operating Temperature Range (T)	°C	55°C to 350°C ¹

Type	U _{max} (V)	Power / Ambient Temperature			Tolerance- /Resistance Range ¹		
		(W) P25	(W) P70	(W) P25/350 ¹	±1,0% / Ω	±0,5% / Ω	±0,1% / Ω
OA001	8,5	0,10	0,080	0,086	0R05 - 500R0	0R03 - 500R0	1R00 - 500R0
OA040	20	0,40	0,328	0,344	0R05 - 2K500	0R03 - 2K500	1R00 - 2K500
OA075	29	0,75	0,615	0,646	0R03 - 7K500	0R03 - 7K500	1R00 - 7K500
OA010	52	1,00	0,820	0,860	0R03 - 10K00	0R30 - 10K00	1R00 - 10K00
OA015	60	1,50	1,230	1,290	0R02 - 12K50	0R30 - 12K50	1R00 - 12K50
OA250	130	2,50	2,050	2,150	0R02 - 22K00	0R30 - 22K00	1R00 - 22K00
OA300	140	3,00	2,460	2,580	0R02 - 40K00	0R30 - 40K00	1R00 - 40K00
OA400	210	4,00	3,280	3,440	0R02 - 45K00	0R30 - 45K00	1R00 - 45K00
OA500	360	5,00	4,100	4,300	0R02 - 95K00	0R30 - 95K00	1R00 - 95K00
OA700	620	7,00	5,740	6,030	0R02 - 150K0	0R30 - 150K0	1R00 - 150K0
OA100	850	10,0	8,200	8,600	0R02 - 250K0	0R30 - 250K0	1R00 - 250K0
OA150	1000	15,0	12,30	12,90	0R02 - 320K0	0R30 - 320K0	1R00 - 320K0

Resistance tolerances less than ±0,1%, depending on material availability, upon request.

¹ The design of the OA series allows the use of resistors with a tolerance of ≥1% up to the maximum temperature of 350 ° C. (see power derating curve). Based on standard nominal specifications a higher operating temperature causes a drift of the resistance value. Related to the test conditions for continuous load, an additional change of values (drift) is to be expected.

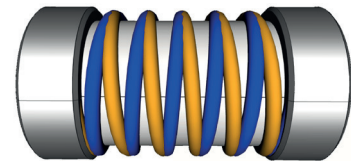
POWER DERATING CURVE



CONSTRUCTION

Resistance Material	Wire, Special Alloy
Winding	Wire Windings on Ceramics
Coating	Silicone
Lead Wires	Tin Plated Copper Wire
Marking	Lacquer, solvent-resistant

INDUCTANCE- REDUCED VERSION



Ayrton - Perry Winding, Option „N“
(Reduces the max. resistance value by half)

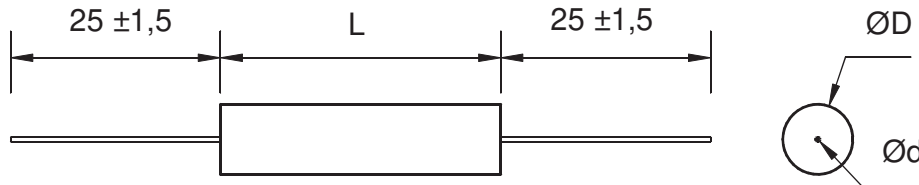
PERFORMANCE

IEC 60115-1	Test	Conditions of Test	Specification ΔR
4.23	Moisture Resistance	+85°C, 85% R.H., Rated Voltage, 1000h	$\pm(0,2\% R + 0,05\Omega)$
4.19	Thermal Shock	-55°C 15 Minutes, +150°C 15 Minutes, 5 Cycles	$\pm(0,2\% R + 0,01\Omega)$
4.6	Dielectric Strength	U_{ins} 500V for OAS010/015/020; other 1000V for 1 Minute	10G Ω
4.13	Short Time Overload	5x Rated Voltage U_{max} , 5s	$\pm(0,2\% R + 0,01\Omega)$
4.25	Endurance	(275°C) +70°C, U_{max} 1,5h „ON“ and 0,5h „OFF“, 1000h (350°C) +70°C, U_{max} 1,5h „ON“ and 0,5h „OFF“, 1000h	$\pm(1,0\% R + 0,05\Omega)$ $\pm(3,0\% R + 0,05\Omega)$
4.22	Vibration	Frequency 10Hz to 500Hz, in x,y,z Direction	$\pm(0,1\% R + 0,05\Omega)$
4.16	Shock	5 Impulses at 100g for 5ms	$\pm(0,1\% R + 0,05\Omega)$
4.18	Soldering Resistance	260°C, max. 5s	$\pm(0,1\% R + 0,01\Omega)$

Measuring distance 9,5 mm from the end of the body.

- Note: Resistors of a closer precision range (resistance tolerance $<0.1\%$ in combination with resistance values $\leq 1\Omega$) should be hand-soldered by trained personnel, otherwise a change of nominal values (drift) can occur.

DIMENSIONS



	D	L	d		D	L	d
OA001	2,0 ±0,8	3,8 ±1,5	0,450 ±0,05	OA300	6,4 ±0,8	12,7 ±1,5	1,02 ±0,05
OA040	2,4 ±0,8	6,4 ±1,5	0,511 ±0,05	OA400	6,9 ±0,8	17,1 ±1,5	1,02 ±0,05
OA075	2,4 ±0,8	8,4 ±1,5	0,511 ±0,05	OA500	7,9 ±0,8	26,0 ±1,5	1,02 ±0,05
OA010	2,4 ±0,8	10,3 ±1,5	0,511 ±0,05	OA700	7,9 ±0,8	31,0 ±1,5	1,02 ±0,05
OA015	4,0 ±0,8	8,9 ±1,5	0,813 ±0,05	OA100	9,5 ±0,8	45,5 ±1,5	1,02 ±0,05
OA250	4,7 ±0,8	12,7 ±1,5	0,813 ±0,05	OA150	13,0 ±0,8	46,0 ±1,5	1,29 ±0,05

All Dimension in mm

OPTIONS

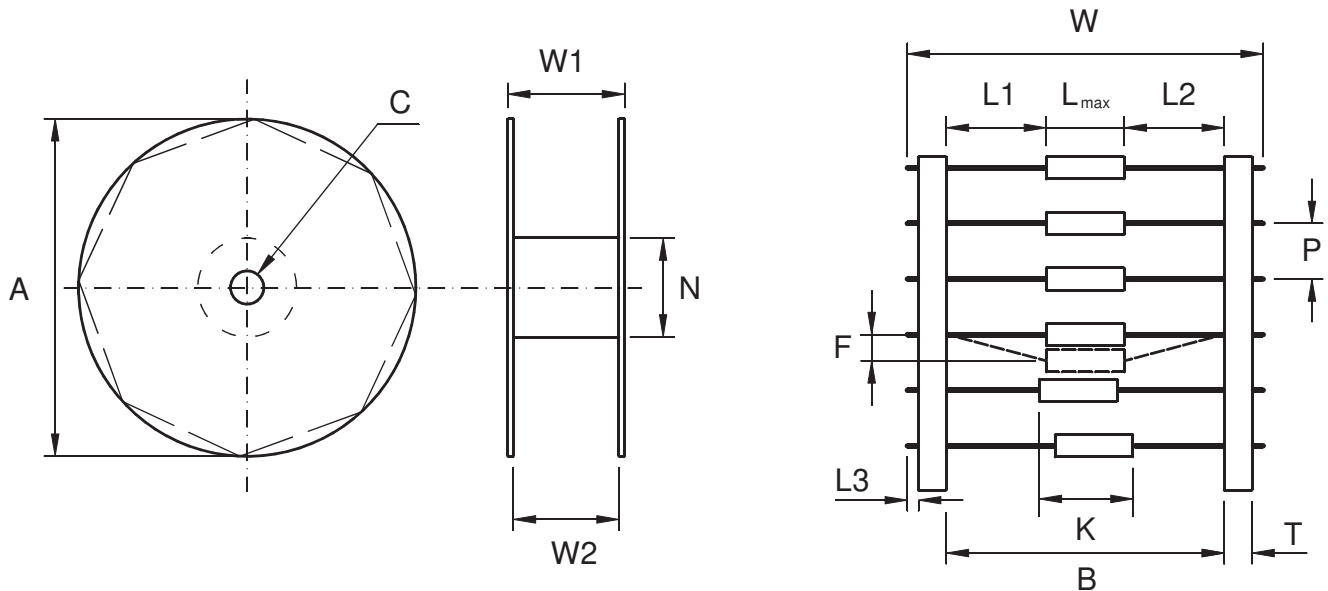
Inductance - reduced Version (N)	Nominal Resistance Value x 0,5
4 - Terminal (Kelvin) Connector (K)	Depending on Type and Resistance Value on Request
Special Lead Wires	E.g. for Spot Welding, on Request
Resistor - Sets	Matching (Selection) of Resistors by Equal TCR and Tolerance

PACKAGING

Quantity	Reel 10"	Reel 12"	Reel 14"
500	OA250; OA300	OA100; OA400; OA500; OA700	-
750	-	-	OA100; OA700
1000	-	OA300	OA400; OA500
1500	-	OA250	OA300
2000	OA001; OA075; OA010; OA015	-	-
3000	-	OA001; OA075; OA010; OA015	OA250
5000	-	-	OA001; OA075; OA010; OA015

Loose quantities are packed in ESD safe packing, 1000 pieces each.

TAPE & REEL DIMENSIONS



Reel	A	C	N	W1	W2
10"	254,0 ±1,5	29,0 ±1,0	75,0 ±1,0	W2 +5...+8	B +1,5 ... +8
12"	305,0 ±1,5	29,0 ±1,0	75,0 ±1,0	W2 +5...+8	B +1,5 ... +8
14"	355,5 ±1,5	29,0 ±1,0	75,0 ±1,0	W2 +5...+8	B +1,5 ... +8

Belt Dimensions

Protrusion of Lead Ends (L3)	0,8 max.
Centring Tolerance (K)	±1,5
Belt (T)	5,0...6,5
Belt Width (W)	110,0 max.
Deflection (F)	1,2 max.
L1 = (B - L _{max} + L2) ±1,5	
L2 = (B - L _{max} + L1) ±1,5	

Body Diameter - Spacing

Diameter of Resistor (D)	≤ 5,0 ±0,5	≤ 10,0 ±0,5	> 10,0 ±0,5
Distance between Resistors (P)	5,0 ±0,5	10,0 ±0,5	15,0 ±0,5

Body Length - Internal Spacing of the Belt

Resistor Length (L _{max})	≤ 16,5	≤ 28,5	≤ 45,0	> 45,0
Internal Spacing (B)	52,0	63,0	73,0	83,0

All Dimension in mm

ORDERING INFORMATION

OA010 100R00 0,1% TK20 (OA010 100Ω; ±0,1%; ±20ppm/°C)

Type	Special	Resistance Value	Tolerance	Temperature Coefficient	Power	Options	Packaging
OA010	- XXX	0R1000 100R00 10K000	0,02% 0,05% 0,1% 0,25% 0,5% 1,0%	TK20 TK50 TK90	-	- N K	- G (taped)

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