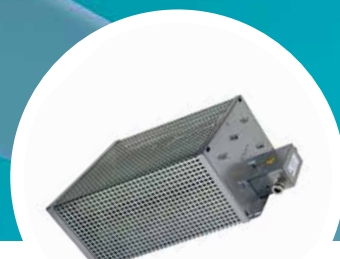
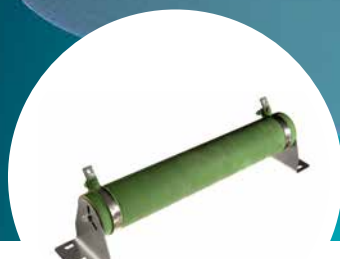
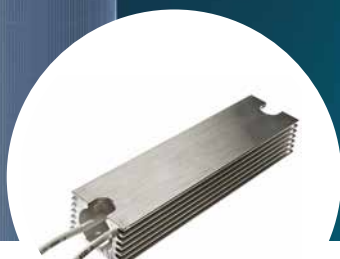
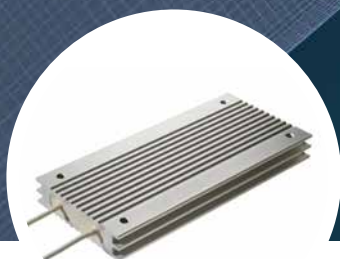
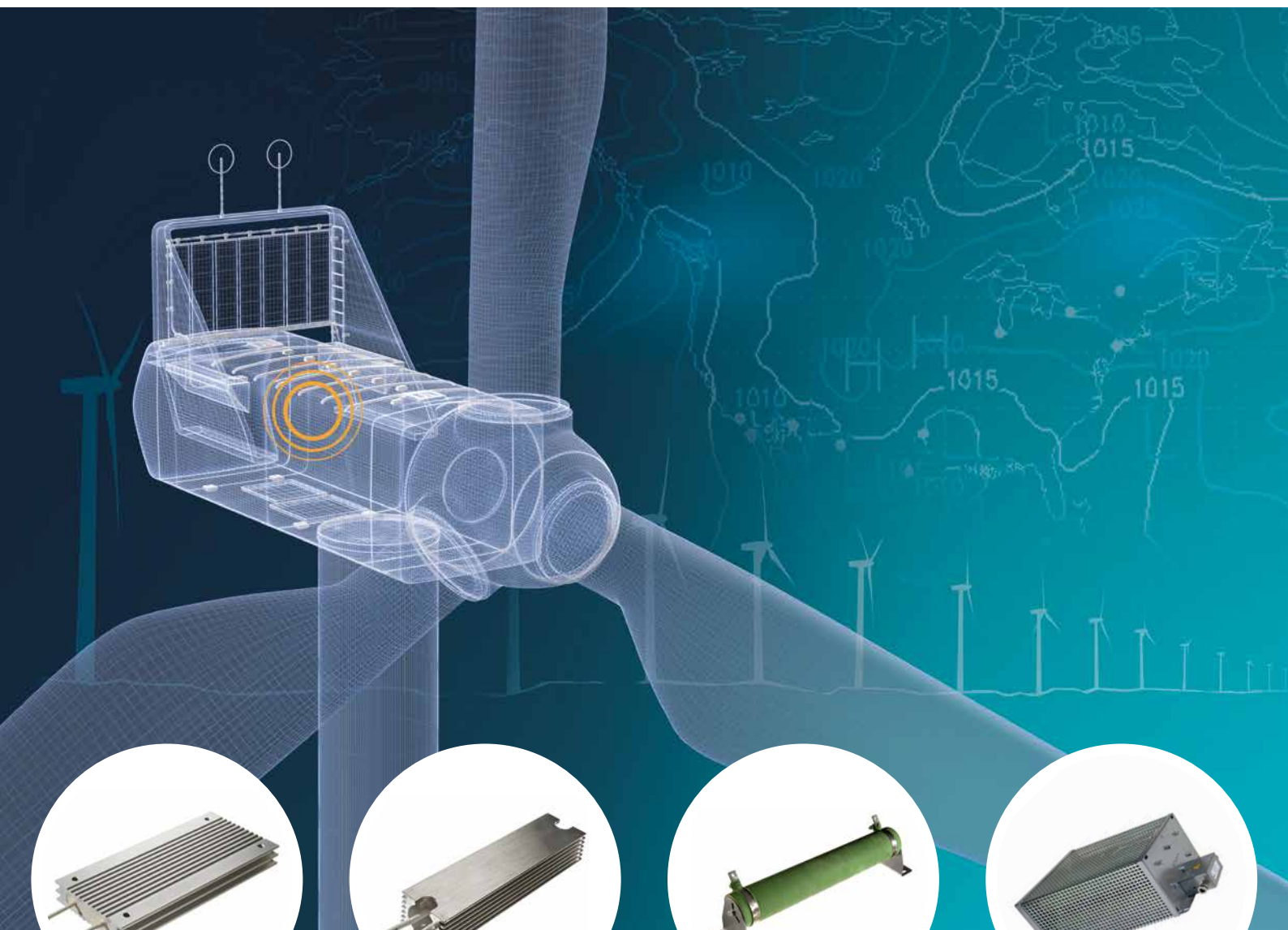


POWER RESISTORS



LEADING IN SENSORS

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Reliable Power Resistors – for safe applications!


We appreciate your interest in our Metallux power resistors. Every Metallux product stands for high reliability, outstanding quality, extreme accuracy, expertise and innovation. Our company's highly-qualified consultation expertise ensures that our customers receive the best possible added value. As consultants and innovators, we are happy to support our customers.


Wire resistors, in the form of classic tube resistors, or in an aluminium profile combine the high load capacity of conventional resistor materials with optimised thermal conduction. An additional performance increase is provided for compact designs with a high degree of protection for assembly on a surface with good thermal conduction properties. The series PWR-S, PWR-R and PWR-O satisfy the requirements of UL508 and are particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.

 ANDREAS OBERASCHER
Chairman of the board / CEO

 METALLUX AG – founded in 1986 and for years now a leading manufacturer of sensors, membrane sensors, resistors, pressure sensors and industrial joysticks in thick-film technology.



 Whether a standard resistor or a customised solution: Our power resistors are used in a multitude of areas, e.g. in gate control systems, in wind energy installations, in crane systems, and many more.

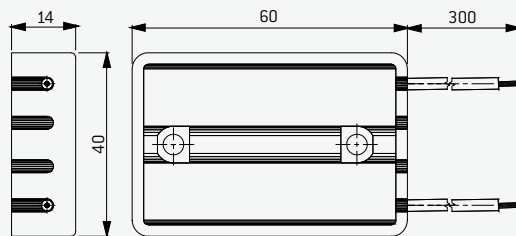
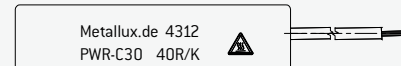
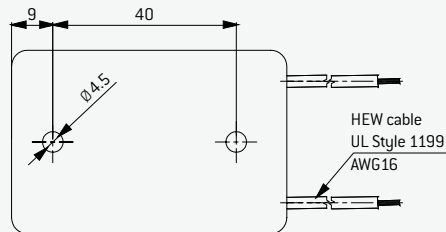
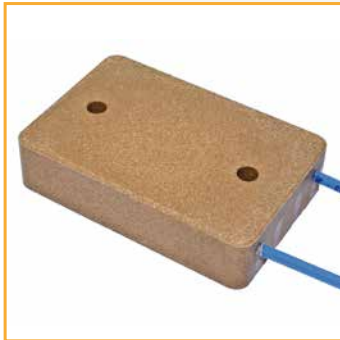
	PWR-C	Wire power resistor in ceramic casing
	PWR-S	Wire power resistor in aluminium casing c  US
	PWR-R	Wire power resistor in aluminium casing c  US
	PWR-O	Wire power resistor in aluminium casing c  US
	PWR-F	Wire power resistor in aluminium casing c  US
	PWR-RFI	Wire power resistor in stainless steel casing
	PWR-GR	Resistor assembly with PWR-R
	PWR-GF	Resistor assembly with PWR-F
	PWR-TR	Wire and tube resistors PWR-TR2xx, PWR-TR3xx, PWR-TR4xx and assembly accessories PWR-TR
	PWR-X	Wire and tube resistors in stainless steel casing IP 20
		Special designs, Applications, Enquiry form



PWR-C WIRE POWER RESISTORS IN CERAMIC CASING



Wire resistors in ceramic casing are power resistors with high load capacity optimised for use in closed systems. Tried and tested resistor materials guarantee good long-term stability. Easy assembly and variable connection lines are the advantages of this Type series.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling P_N at 25° C		Resistance values	Max. voltage	L_1	L_2	/g/
	$P_{NDC=30\%}$ /W/	$P_{NDC=100\%}$ /W/					
PWR-C 30	100 W	30 W	5 R – 100 R	600 V \cong	60	40	80

SAMPLE ORDER

PWR-C30 50 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

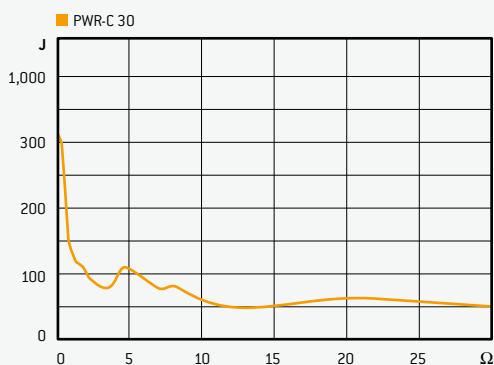
Time constant 4.5 – 5.8 min.

Degree of protection IP 50

Storage temperature -10° C – +50° C

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



PARAMETER

Max. surface temperature 250° C

Tolerance $\pm 5\%$, $\pm 10\%$

Temperature coefficient TC $\leq \pm 150$ ppm/K

Stability at P_N at 25° C, 1,000 h $\pm 5\%$

Max. overload capacity $10 \times P_{NDC=100\%}$, 5 sec.

Insulation resistance at 500 VDC ≥ 10 G Ω

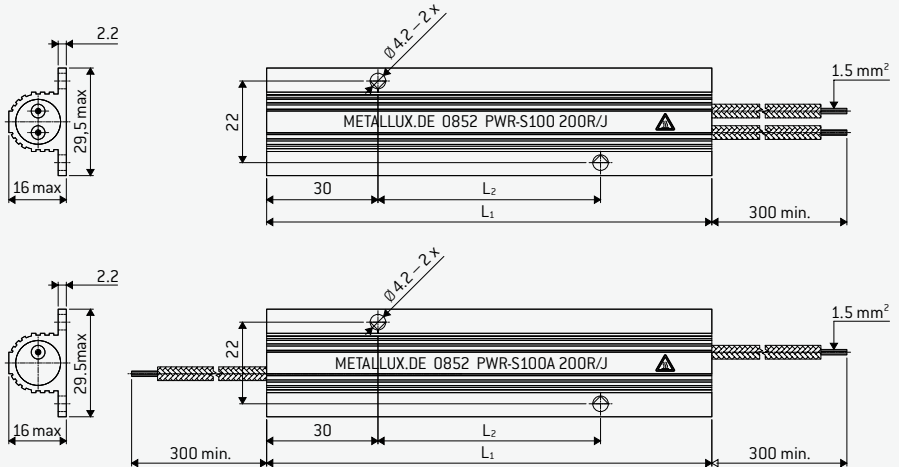
Test voltage 800 V \cong

Connection lines UL PTFE wire line AWG16 style 1199, 200° C, 600 V

PWR-S WIRE POWER RESISTOR IN ALUMINIUM CASING



Wire resistors in aluminium profile combine the high pulse load capacity of conventional resistor materials with optimised thermal conduction and a high degree of protection. Assembly on a surface with good thermal conduction properties improves the heat dissipation additionally and leads to an increased load capacity. The series PWR-S satisfies the requirements of UL508 and is particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling		With cooling	Resistance values	Max. voltage	L ₁	L ₂	L ₃	/g/
	P _{NDC=30%} /W/	P _{NDC=100%} /W/	P _N at 25° C						
PWR-S 30	20	10	30W	0R8 – 51 R	300V≅	(40)	(30)	(5)	25
PWR-S 45	30	15	45W	0R9 – 56 R	400V≅	55	25	15	35
PWR-S 60	40	20	60W	1R5 – 110 R	600V≅	77	47	15	52
PWR-S 90	60	30	90W	2R2 – 160 R	700V≅	104	64	20	73

SAMPLE ORDER

PWR-S30 35 R/J 150 mm connection lines

Inductance < 0.2 mH at 1 kHz

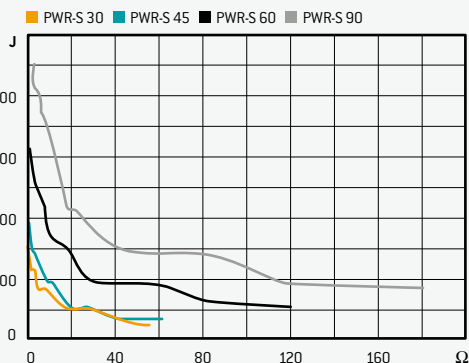
Time constant 6.6 – 7.1 min.

Degree of protection IP 55 (opt. IP 65)

Storage temperature -10° C – +50° C

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



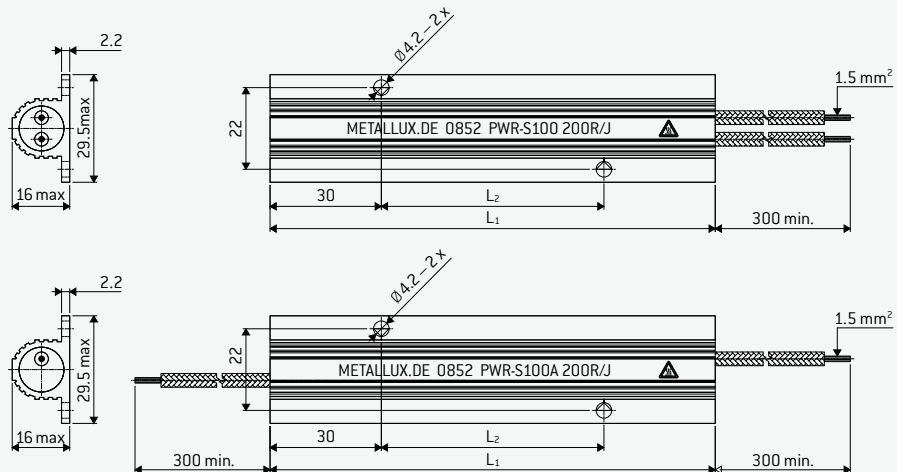
PARAMETER

Max. surface temperature	250° C
Tolerance	± 5 %
Temperature coefficient TC	≤ ± 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 5 %
Max. overload capacity	10 x P _{NDC=100%} , 5 sec.
Insulation resistance at 500 VDC	≥ 10 GΩ
Test voltage	4,000 V≅
Connection lines	UL SIFGL wire line AWG16 style 3071, 200° C, 600 V UL PTFE wire line AWG16 style 1199, 200° C, 600 V UL FEP wire line AWG16 style 10203, 200° C, 600 V

PWR-S WIRE POWER RESISTOR IN ALUMINIUM CASING (2)



Wire resistors in aluminium profile combine the high pulse load capacity of conventional resistor materials with optimised thermal conduction and a high degree of protection. Assembly on a surface with good thermal conduction properties improves the heat dissipation additionally and leads to an increased load capacity. The series PWR-S satisfies the requirements of UL508 and is particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling		With cooling P_N at 25° C	Resistance values	Max. voltage	L_1	L_2	/g/
	$P_{NDC=30\%}$ /W/	$P_{NDC=100\%}$ /W/						
PWR-S100	70	30	100 W	2R4 – 180 R	700 V \cong	120	60	86
PWR-S100A	70	30	100 W	2R0 – 130 R	700 V \cong	120	60	86
PWR-S125	85	40	125 W	3R9 – 300 R	800 V \cong	165	105	115
PWR-S125A	85	40	125 W	3R0 – 220 R	800 V \cong	165	105	115
PWR-S150	100	45	150 W	4R3 – 300 R	1,000 V \cong	180	120	120
PWR-S150A	100	45	150 W	3R3 – 240 R	1,000 V \cong	180	120	120

SAMPLE ORDER

PWR-S125 50 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

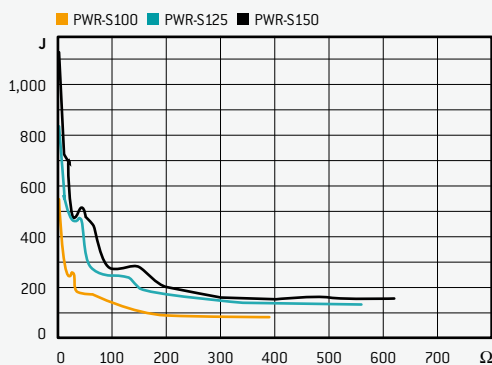
Time constant 6.6 – 7.1 min.

Degree of protection IP55 (opt. IP65)

Storage temperature -10° C – +50° C

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



PARAMETER

Max. surface temperature 250° C

Tolerance $\pm 5\%$ (J); $\pm 10\%$ (K)

Temperature coefficient TC $\leq \pm 150$ ppm/K

Stability at P_N at 25° C, 1,000 h $\pm 5\%$

Max. overload capacity $10 \times P_{NDC}=100\%$, 5 sec.

Insulation resistance at 500VDC ≥ 10 G Ω

Test voltage 4,000 V \cong

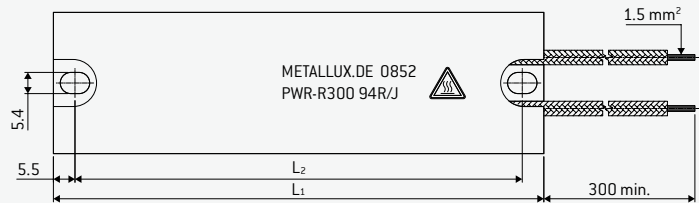
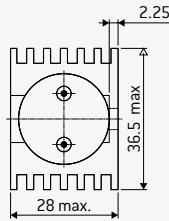
Connection lines

UL SIFGL wire line AWG16 style 3071, 200° C, 600 V
UL PTFE wire line AWG16 style 1199, 200° C, 600 V
UL FEP wire line AWG16 style 10203, 200° C, 600 V

PWR-R WIRE POWER RESISTOR IN ALUMINIUM CASING



Wire resistors in aluminium profile combine the high pulse load capacity of conventional resistor materials with optimised thermal conduction and a high degree of protection. Assembly on a surface with good thermal conduction properties improves the heat dissipation additionally and leads to an increased load capacity. The series PWR-R satisfies the requirements of UL508 and is particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling		With cooling	Resistance values	Max. voltage	L ₁	L ₂	/g/
	P _{NED=30% /W/}	P _{NED=100% /W/}	P _N at 25° C					
PWR-R 150	120	45	150 W	1R6 – 180 R	1,000 V \cong	90	79	180
PWR-R 200	160	60	200 W	2R2 – 240 R	1,000 V \cong	105	94	208
PWR-R 300	240	70	300 W	4R7 – 420 R	1,500 V \cong	155	144	310
PWR-R 400	320	80	400 W	6R8 – 620 R	2,000 V \cong	200	189	400
PWR-R 500	400	100	500 W	9R1 – 910 R	2,300 V \cong	260	249	515
PWR-R 600	480	120	600 W	12 R – 1K2	2,800 V \cong	320	309	635

SAMPLE ORDER

PWR-R300 100 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

Time constant 6.6 – 7.1 min.

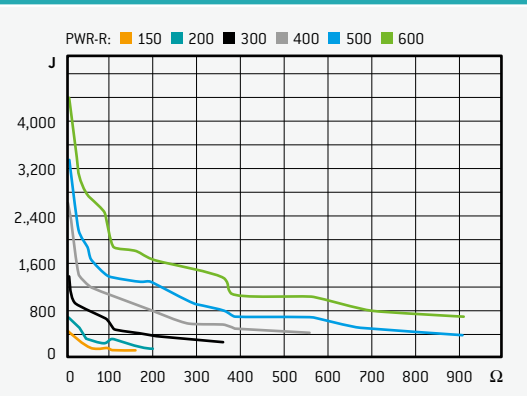
Degree of protection IP55 (opt. IP65)

Storage temperature -10° C – +50° C

PWR-RTxxx version with integrated temperature switch for all performance classes.

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



PARAMETER

Max. surface temperature 250° C

Tolerance $\pm 5\%$

Temperature coefficient TC $\leq \pm 150$ ppm/K

Stability at P_N at 25° C, 1,000 h $\pm 5\%$

Max. overload capacity $10 \times P_{NDC}=100\%$, 5 sec.

Insulation resistance at 500 VDC ≥ 10 G Ω

Test voltage 4,000 V \cong

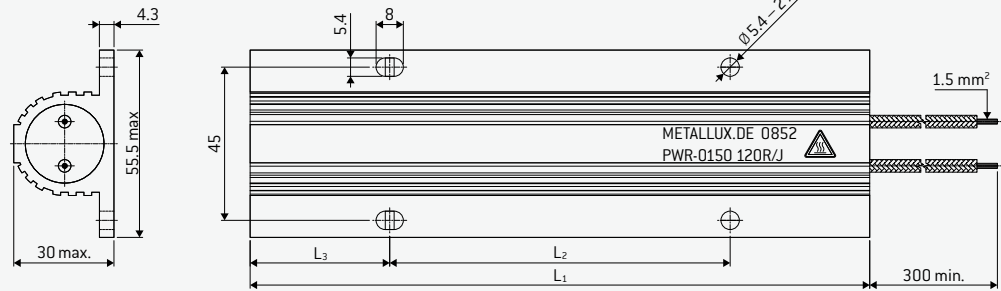
Connection lines

UL SIFGL wire line AWG16 style 3071, 200° C, 600 V
UL PTFE wire line AWG16 style 1199, 200° C, 600 V
UL FEP wire line AWG16 style 10203, 200° C, 600 V

PWR-0 WIRE POWER RESISTOR IN ALUMINIUM CASING



Wire resistors in aluminium profile combine the high pulse load capacity of conventional resistor materials with optimised thermal conduction and a high degree of protection. Assembly on a surface with good thermal conduction properties improves the heat dissipation additionally and leads to an increased load capacity. The series PWR-0 satisfies the requirements of UL508 and is particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling		With cooling P_N at 25° C	Resistance values	Max. voltage	L ₁	L ₂	L ₃	/g/
	$P_{NDC=30\%}$ /W/	$P_{NDC=100\%}$ /W/							
PWR-0 150	120	45	150 W	1R6 – 180 R	1,000 V \cong	72	40	16	195
PWR-0 200	160	60	200 W	2R2 – 240 R	1,000 V \cong	87	55	16	235
PWR-0 300	240	70	300 W	4R7 – 430 R	1,500 V \cong	137	85	26	325
PWR-0 400	320	80	400 W	6R8 – 620 R	2,000 V \cong	182	100	41	415
PWR-0 500	400	100	500 W	9R1 – 910 R	2,300 V \cong	242	160	41	530
PWR-0 600	480	120	600 W	12 R – 1K2	2,800 V \cong	302	220	41	670

SAMPLE ORDER

PWR-0150 56 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

Time constant 6.6 – 7.1 min.

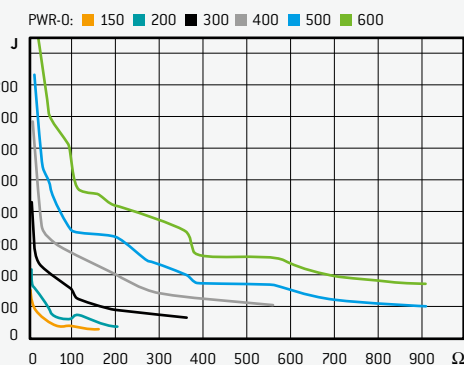
Degree of protection IP55 (opt. IP65)

Storage temperature -10° C – +50° C

PWR-0Txxx version with integrated temperature switch for all performance classes.

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



PARAMETER

Max. surface temperature 250° C

Tolerance $\pm 5\%$

Temperature coefficient TC $\leq \pm 150$ ppm/K

Stability at P_N at 25° C, 1,000 h $\pm 5\%$

Max. overload capacity $10 \times P_{NDC=100\%}$, 5 sec.

Insulation resistance at 500VDC ≥ 10 G Ω

Test voltage 4,000 V \cong

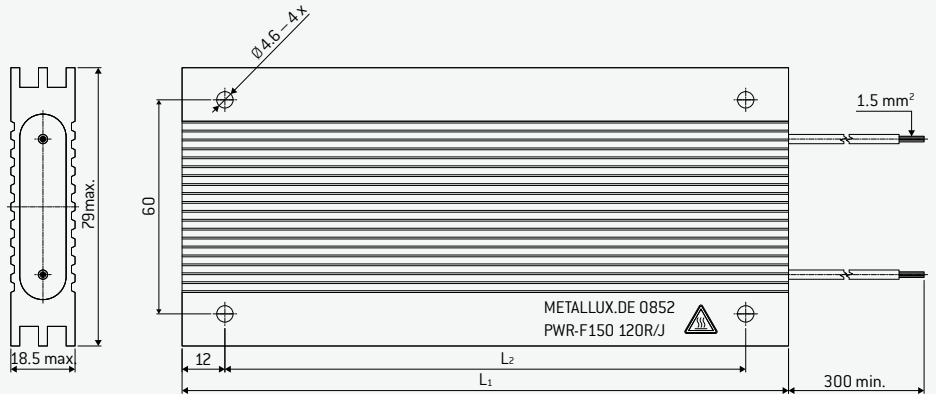
Connection lines

UL SIFGL wire line AWG16 style 3071, 200° C, 600 V
UL PTFE wire line AWG16 style 1199, 200° C, 600 V
UL FEP wire line AWG16 style 10203, 200° C, 600 V

PWR-F WIRE POWER RESISTOR IN ALUMINIUM CASING



Wire resistors in aluminium profile combine the high pulse load capacity of conventional resistor materials with optimised thermal conduction and a high degree of protection. Assembly on a surface with good thermal conduction properties improves the heat dissipation additionally and leads to an increased load capacity. The series PWR-F satisfies the requirements of UL508 and is particularly suitable for applications as brake resistor, charging and discharging resistor, or also as heating resistor.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling		With cooling	Resistance values	Max. voltage	L ₁	L ₂	/g/
	P _{NDC=30%} /W/	P _{NDC=100%} /W/	P _N at 25° C					
PWR-F 150	225	75	150 W	2R2 – 220 R	1,000 V≅	80	56	250
PWR-F 200	300	100	200 W	3R6 – 390 R	1,000 V≅	110	86	350
PWR-F 300	450	150	300 W	5R6 – 560 R	1,500 V≅	163	139	500
PWR-F 400	600	200	400 W	7R5 – 820 R	1,500 V≅	216	192	650
PWR-F 500	750	250	500 W	10 R – 1 K	2,000 V≅	270	246	800
PWR-F 600	900	300	600 W	11R – 1K1	2,000 V≅	300	276	900

SAMPLE ORDER

PWR-F600 90 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

Time constant 6.6 – 7.1 min.

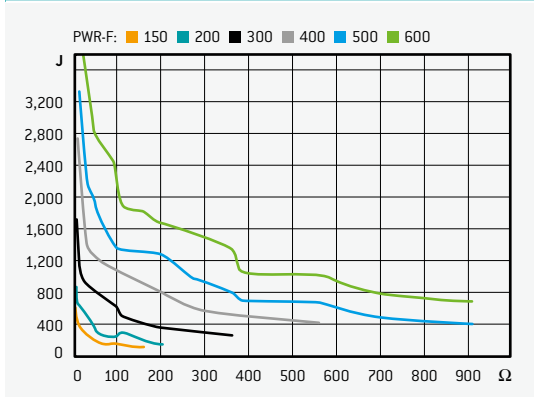
Degree of protection IP55 (opt. IP65)

Storage temperature -10° C – +50° C

PWR-FTxxx version with integrated temperature switch for all performance classes.

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



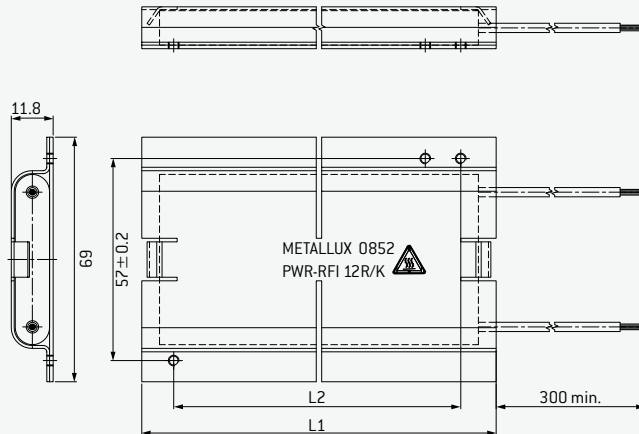
PARAMETER

Max. surface temperature	250° C
Tolerance	± 5 %
Temperature coefficient TC	≤ ± 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 5 %
Max. overload capacity	10 x P _{NDC=100%} , 5 sec.
Insulation resistance at 500 VDC	≥ 10 GΩ
Test voltage	4,000 V≅
Connection lines	UL SIFGL wire line AWG16 style 3071, 200° C, 600 V UL PTFE wire line AWG16 style 1199, 200° C, 600 V UL FEP wire line AWG16 style 10203, 200° C, 600 V

PWR-RFI WIRE POWER RESISTOR IN STAINLESS STEEL CASING



The extremely flat and, at the same time, sturdy design of the wire power resistors in stainless steel casing make this resistor series interesting for all applications with limited installation space and rough environmental surroundings.



TYPE SELECTION AND DIMENSIONS

Type	Without cooling	With cooling	Resistance values	Max. voltage	L ₁	L ₂	/g/
	P _{NDC=100%} /W/	P _N at 25° C					
PWR-RFI 600	35	170 W	4 R – 150 R	1,000 V \cong	100	81	200
PWR-RFI 1300	65	320 W	8 R – 430 R	1,500 V \cong	202	175	420

SAMPLE ORDER

PWR-RFI600 33 R/J 300 mm connection lines

Inductance < 0.2 mH at 1 kHz

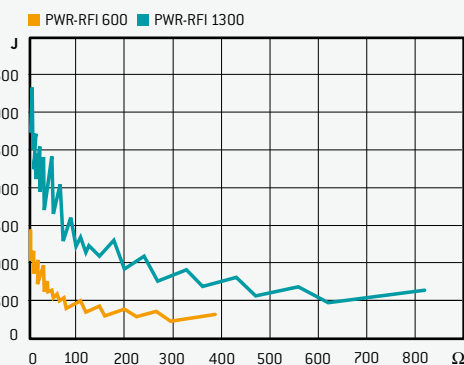
Time constant 5.2 – 6.7 min.

Degree of protection IP 33

Storage temperature -10° C – +40° C

The duty cycle DC in percent is based on a cycle time of 120 sec.

PULSE ENERGY



PARAMETER

Max. surface temperature	250° C
Tolerance	± 10 %
Temperature coefficient TC	≤ 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 10 %
Max. overload capacity	10 × P _{NDC} 100 %, 5 sec.
Insulation resistance at 500VDC	≥ 10 GΩ
Test voltage	1,500 V
Connection lines	UL PTFE wire line, style 1199, AWG16, 200° C, 600 V

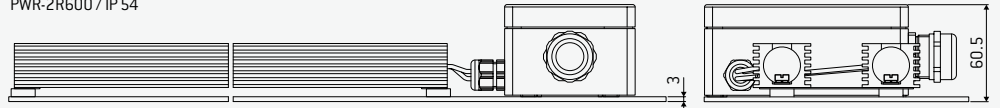
PWR-GR RESISTOR ASSEMBLY



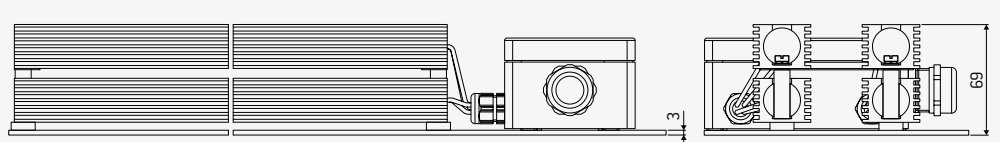
The type series PWR-GR consists of resistors of the type series PWR-R which are switched variably and connected by means of a terminal box. The basic version is optimised for two or four resistors. Besides that, any combination of resistor values and performances can be adapted.



PWR-2R600 / IP 54



PWR-4R600 / IP 54



TYPE SELECTION AND DIMENSIONS

Type	Resistance value	Nominal power	Max. pulse load	Max. voltage	L ₁	L ₂	/g/
					mm	mm	
PWR-2GR 600	4R1 – 3K0	240W	Up to 6 kJ	600 V≅	460	440	2.600
PWR-4GR 600	8R2 – 1K5	480W	Up to 12 kJ	600 V≅	460	440	3.900

SAMPLE ORDER

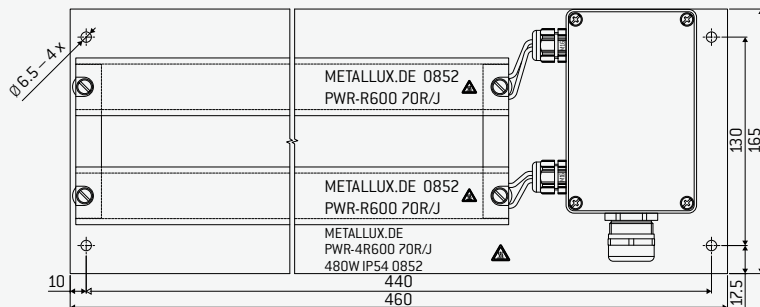
PWR-2GR600 100 R/J

Degree of protection IP 54 (IP 20)

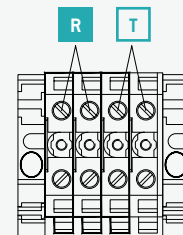
Storage temperature -40° C – +70° C

PARAMETER

Max. surface temperature	250° C	Tolerance	± 10 %
---------------------------------	--------	------------------	--------



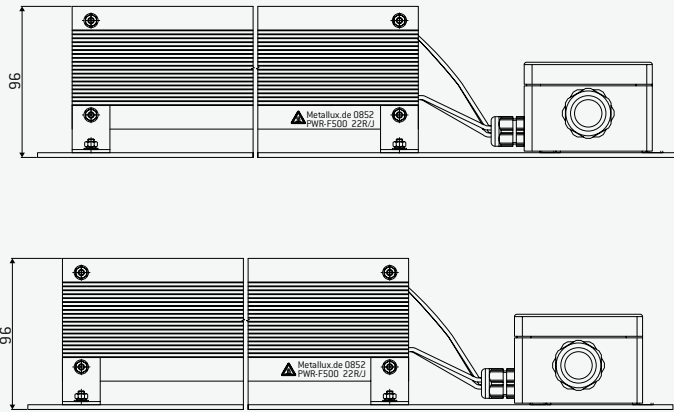
Weidmüller clamp
800 V / 32 A / 0.5 – 4 mm² [0.5 – 6 mm²]
R – resistor, T – temperature switch



PWR-GF RESISTOR ASSEMBLY



The type series PWR-GF consists of resistors of the type series PWR-R which are switched variably and connected by means of a terminal box. The basic version is optimised for two or four resistors. Besides that, any combination of resistor values and performances can be adapted.



TYPE SELECTION AND DIMENSIONS

Type	Resistance value	Nominal power	Max. pulse load	Max. voltage	L ₁	L ₂	/g/
					mm	mm	
PWR-2GF 500	5R0 – 2K0	500 W	Up to 8 kJ	600 V ≅	460	440	2,900
PWR-2GF 600	5R6 – 2K2	600 W	Up to 9 kJ	600 V ≅	490	470	3,100
PWR-4GF 500	2R7 – 3K9	1,000 W	Up to 16 kJ	600 V ≅	460	440	4,500
PWR-4GF 600	2R7 – 4K3	1,200 W	Up to 18 kJ	600 V ≅	490	470	4,900

SAMPLE ORDER

PWR-2GR600 100 R/J

Degree of protection IP 54 (IP 20)

Storage temperature -40° C – +70° C

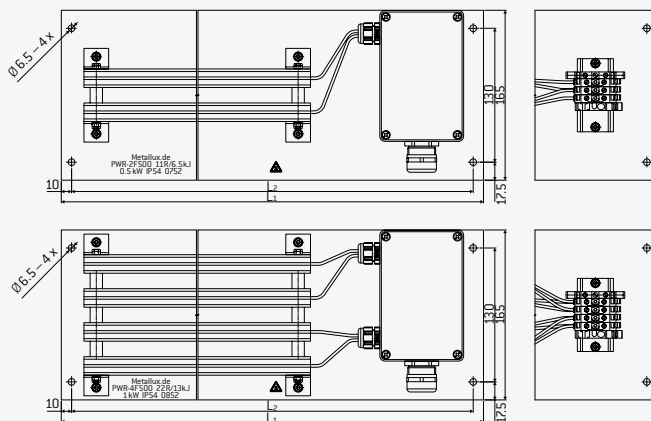
PARAMETER

Max. surface temperature

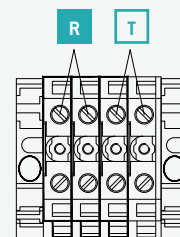
250° C

Tolerance

± 10 %



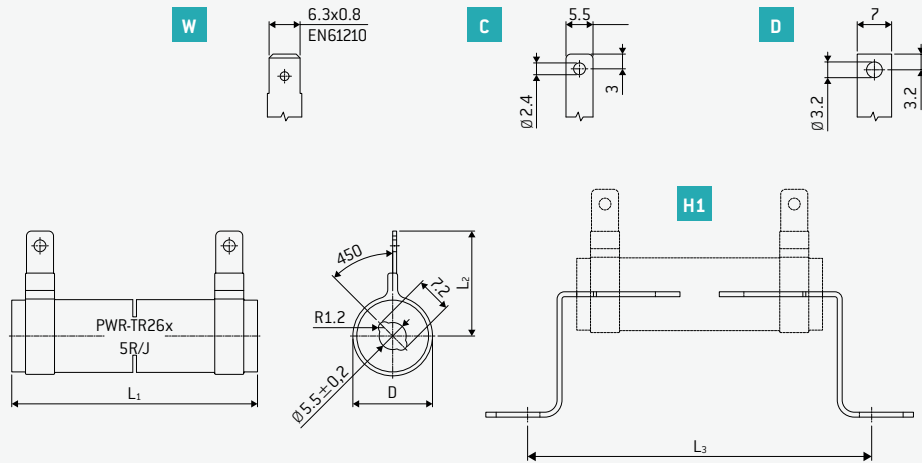
Weidmüller terminal
800 V / 32 A / 0.5 – 4 mm² (0.5 – 6 mm²)
R – resistor, T – temperature switch



PWR-TR 2XX WIRE AND TUBE RESISTOR UP TO 40W



Cemented wire tube resistors are thermally optimised resistor designs with a broad spectrum of resistance values and performances. Diverse combination possibilities of the electrical properties, as well as multiple connection and assembly options make these resistors interesting for several applications of automation technology and in mechanical and systems engineering.



TYPE SELECTION AND DIMENSIONS

Type	P _N at 25° C	Resistance value	D _{max}	L ₁	L _{2max}	Weight	L ₃	Connection
			mm	mm	mm	g	mm	
PWR-TR 260.01	15 W	0R8 – 12 K	17	50 ± 0.6	25	30	72 ± 1	C
PWR-TR 260	20 W	0R9 – 15 K	17	60 ± 0.8	25	36	82 ± 1	B, D
PWR-TR 261	30 W	1R5 – 22 K	17	80 ± 1.4	25	44	103 ± 1	B, D
PWR-TR 262	40 W	1R8 – 27 K	17	100 ± 1.8	25	51	123 ± 1	B, D

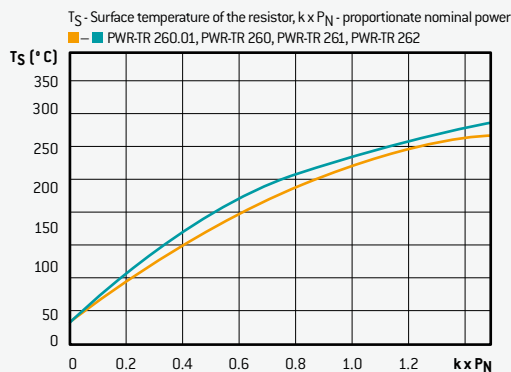
PWR-TRR – Adjustable resistors with additional tap clamp

SAMPLE ORDER

PWR-TR261 5K 5% B H1

Holder	H1 (10 g)
Degree of protection	IP 00
Storage temperature	-25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE



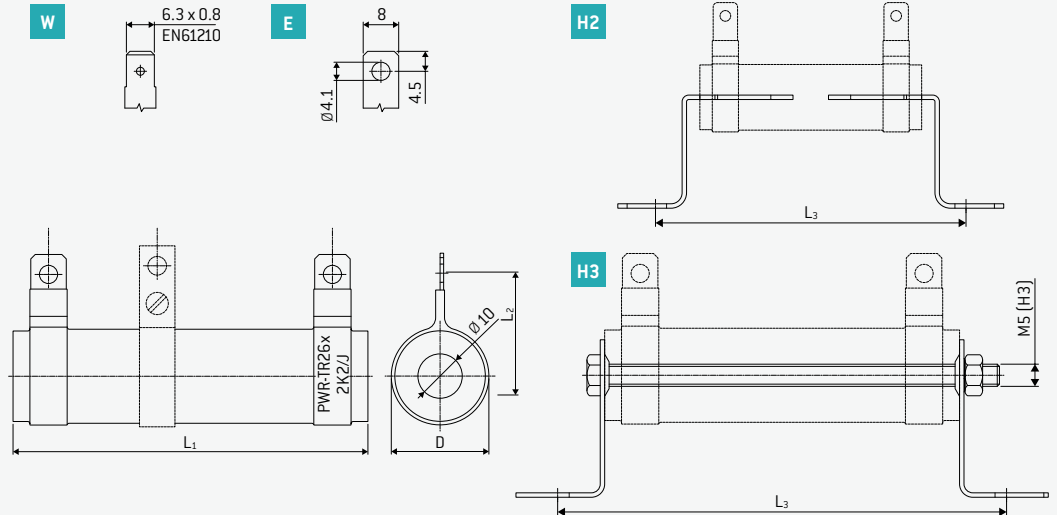
PARAMETER

Tolerance	± 5 % (± 10 %)
Temperature coefficient TC	≤ ± 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 5 %
Max. overload capacity	10 x P _N in 5 sec.
Test voltage against holder	1,500 V

PWR-TR 2XX WIRE AND TUBE RESISTOR UP TO 100 W (2)



Cemented wire tube resistors are thermally optimised resistor designs with a broad spectrum of resistance values and performances. Diverse combination possibilities of the electrical properties, as well as multiple connection and assembly options make these resistors interesting for several applications of automation technology and in mechanical and systems engineering.



TYPE SELECTION AND DIMENSIONS

Type	P_N at 25° C	Resistance value	D_{max}	L_1	L_{2max}	Weight	L_3	Connection
			mm	mm	mm	g	mm	
PWR-TR 265	30 W	1R0 – 16 K	24	55 ± 0.9	32	45	78 ± 1	C
PWR-TR 266	50 W	1R8 – 27 K	24	80 ± 1.4	32	60	103 ± 1	B/E
PWR-TR 267	75 W	3R0 – 51 K	24	120 ± 2.2	32	80	144 ± 1	B/E
PWR-TR 268	100 W	4R7 – 68 K	24	164 ± 3	32	110	188 ± 1	B/E

PWR-TRR – Adjustable resistors with additional tap clamp

SAMPLE ORDER

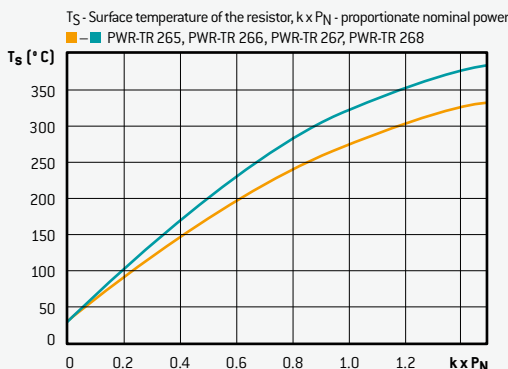
PWR-TR268 5 R 10 % E H3

Holder H2 (17 g)
H3 (34 g)

Degree of protection IP 00

Storage temperature -25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE



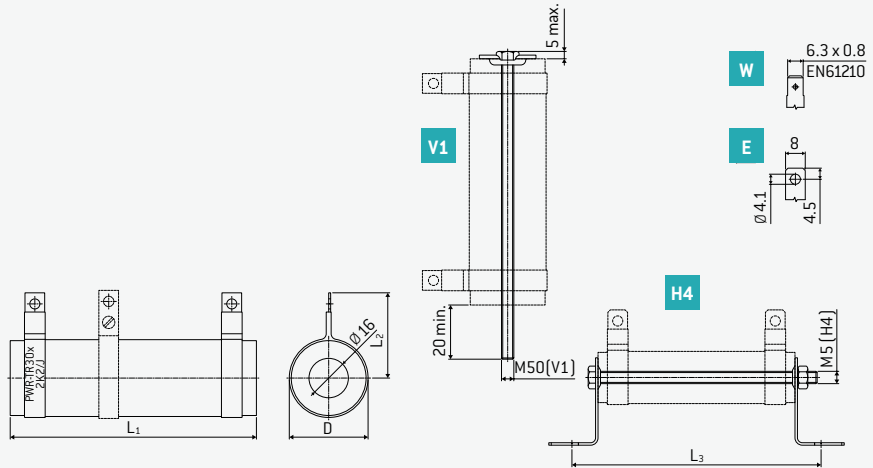
PARAMETER

Tolerance	± 5 % (± 10 %)
Temperature coefficient TC	≤ ± 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 5 %
Max. overload capacity	10 x P_N in 5 sec.
Test voltage against holder	2,000 V

PWR-TR 3XX WIRE AND TUBE RESISTOR UP TO 200 W



Cemented wire tube resistors are thermally optimised resistor designs with a broad spectrum of resistance values and performances. Diverse combination possibilities of the electrical properties, as well as multiple connection and assembly options make these resistors interesting for several applications of automation technology and in mechanical and systems engineering.



TYPE SELECTION AND DIMENSIONS

Type	P _N at 25° C	Resistance value	Operational voltage	D _{max}	L ₁	L _{2max}	Weight	L ₃	Connection
				mm	mm	mm	g	mm	
PWR-TR 301	75 W	0R4 – 47 K	1,200 V \cong	35	100 \pm 1.8	40	130	124 \pm 1	B/E
PWR-TR 302	100 W	0R6 – 82 K	1,500 V \cong	35	135 \pm 2.5	40	180	160 \pm 1	B/E
PWR-TR 303	150 W	0R9 – 110 K	2,000 V \cong	35	200 \pm 3.8	40	270	226 \pm 1	B/E
PWR-TR 304	200 W	1R2 – 120 K	2,500 V \cong	35	275 \pm 4.6	40	400	302 \pm 1	B/E

PWR-TRR – Adjustable resistors with additional tap clamp

SAMPLE ORDER

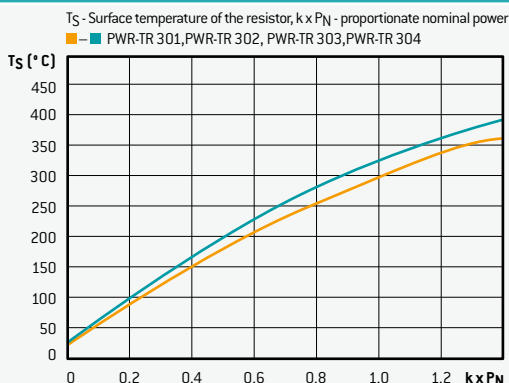
PWR-TR302 28 R 5 % E V1

Holder H4 (55 g)
V1 (29 g)

Degree of protection IP 00

Storage temperature -25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE



PARAMETER

Tolerance $\pm 5\%$ ($\pm 10\%$)

Temperature coefficient TC $\leq \pm 150$ ppm/K

Stability at P_N at 25° C, 1,000 h $\pm 5\%$

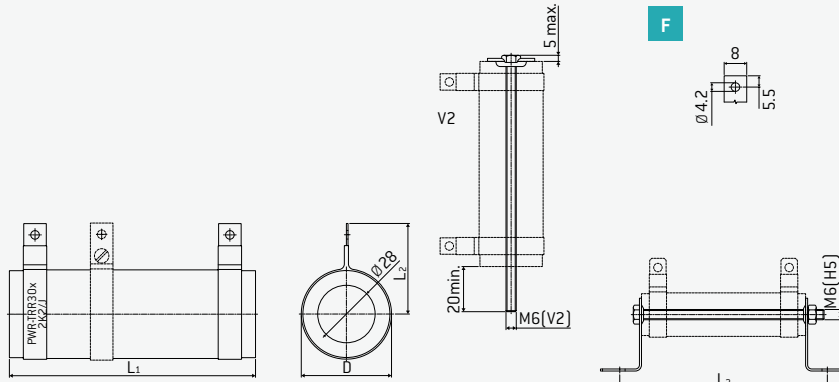
Max. overload capacity 10 x P_N in 5 sec.

Test voltage against holder 3,000 V \cong

PWR-TR 3XX WIRE AND TUBE RESISTOR UP TO 500 W (2)



Cemented wire tube resistors are thermally optimised resistor designs with a broad spectrum of resistance values and performances. Diverse combination possibilities of the electrical properties, as well as multiple connection and assembly options make these resistors interesting for several applications of automation technology and in mechanical and systems engineering.



TYPE SELECTION AND DIMENSIONS

Type	P_N at 25° C	Resistance value	Operational voltage	Dmax	L ₁	L _{2max}	Weight	L ₃	Connection
				mm	mm	mm	g	mm	
PWR-TR 305	200 W	0R7 – 82 K	2,000 V	47	130 ± 3	50	300	155 ± 1	F
PWR-TR 306	300 W	1R0 – 120 K	2,500 V	47	182 ± 3.4	50	400	208 ± 1	F
PWR-TR 307	400 W	1R5 – 160 K	2,750 V	47	250 ± 4.2	50	550	277 ± 1	F
PWR-TR 308	500 W	2R6 – 200 K	3,000 V	47	310 ± 5	50	700	337 ± 1	F

PWR-TRR – Adjustable resistors with additional tap clamp

SAMPLE ORDER

PWR-TR308 180 K 10 % F H5

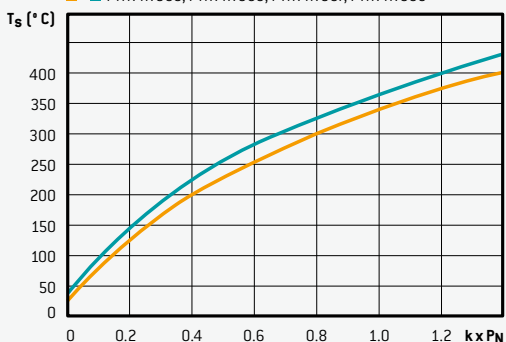
Holder H5 (91 g)
V2 (57 g)

Degree of protection IP 00

Storage temperature -25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE

T_S - Surface temperature of the resistor, $k \times P_N$ - proportionate nominal power
 ■ — PWR-TR 305, PWR-TR 306, PWR-TR 307, PWR-TR 308



PARAMETER

Tolerance ± 5 % (± 10 %)

Temperature coefficient TC ≤ ± 150 ppm/K

Stability at P_N at 25° C, 1,000 h ± 5 %

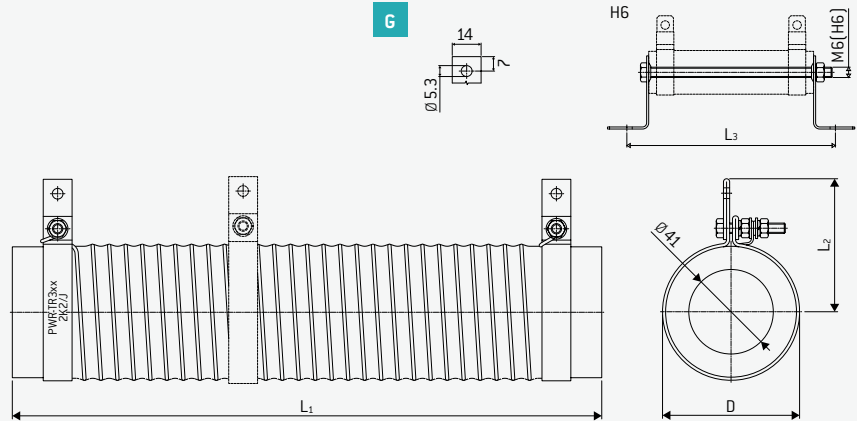
Max. overload capacity 10 × P_N in 5 sec.

Test voltage against holder 4,000 V ≅

PWR-TR 3XX WIRE AND TUBE RESISTOR UP TO 1300 W (3)



Cemented wire tube resistors are thermally optimised resistor designs with a broad spectrum of resistance values and performances. Diverse combination possibilities of the electrical properties, as well as multiple connection and assembly options make these resistors interesting for several applications of automation technology and in mechanical and systems engineering.



TYPE SELECTION AND DIMENSIONS

Type	P_N at 25° C	Resistance value	Operational voltage	D_{max}	L_1	L_{2max}	Weight	L_3	Connection
				mm	mm	mm	g	mm	
PWR-TR 309	750 W	3R6 – 130 K	4,000 V	68	390 ± 5.5	68	2,200	430 ± 1	G
PWR-TR 310	1,000 W	4R7 – 180 K	4,500 V	68	515 ± 6.8	68	2,800	555 ± 1	G
PWR-TR 320	1,300 W	6R2 – 180 K	4,500 V	68	660 ± 6.8	68	3,500	700 ± 1	G

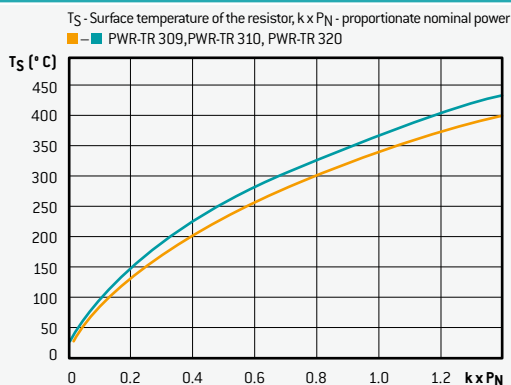
PWR-TRR – Adjustable resistors with additional tap clamp

SAMPLE ORDER

PWR-TR310 5 R8 5% G H6

Holder	H6 (390 g)
Degree of protection	IP 00
Storage temperature	-25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE



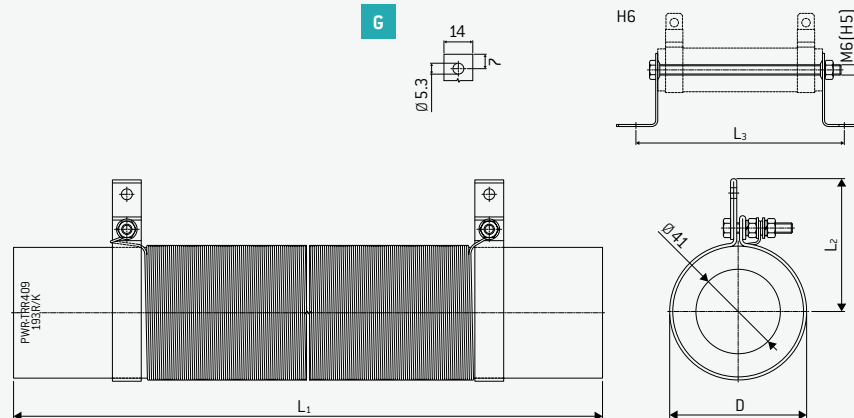
PARAMETER

Tolerance	± 5 % (± 10 %)
Temperature coefficient TC	≤ ± 150 ppm/K
Stability at P_N at 25° C, 1,000 h	± 5 %
Max. overload capacity	10 x P_N in 5 sec.
Test voltage against holder	4,000 V ≅

PWR-TR 4XX WIRE AND TUBE RESISTOR



Tube resistors wrapped with oxidised resistor wire can utilise the maximum performance of the resistor material. The insulation effect of the oxide sheath allows for continuous wrapping without distance between the windings. This enables higher pulse performances as well as a broad spectrum of resistance values.



TYPE SELECTION AND DIMENSIONS

Type	P_N at 25° C	Resistance value	Operational voltage	D_{max}	L_1	L_{2max}	Weight	L_3	Connection
				mm	mm	mm	g	mm	
PWR-TR 409	1,500 W	4R7 – 1K5	4,000 V \cong	68	390 \pm 5.5	68	3,100	430 \pm 1	G
PWR-TR 410	2,000 W	5R6 – 2K2	4,500 V \cong	68	515 \pm 7.6	68	3,750	555 \pm 1	G
PWR-TR 420	2,600 W	8R2 – 2K7	4,500 V \cong	68	660 \pm 8.3	68	5,600	700 \pm 1	G

SAMPLE ORDER

PWR-TR409 40K 5% G H6

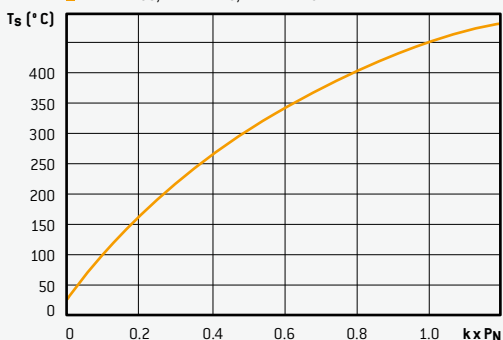
Holder H6 (390 g)

Degree of protection IP 00

Storage temperature -25° C – +40° C

PERFORMANCE-TEMPERATURE-CURVE

T_s - Surface temperature of the resistor, $k \times P_N$ - proportionate nominal power
 ■ PWR-TR 409, PWR-TR 410, PWR-TR 420



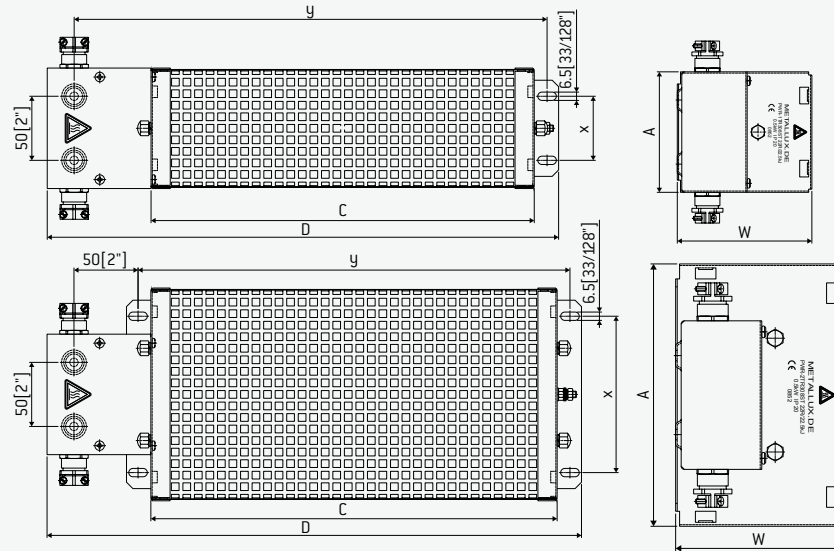
PARAMETER

Tolerance	$\pm 5\%$
Temperature coefficient TC	$\leq \pm 150$ ppm/K
Stability at P_N at 25° C, 1,000 h	$\pm 5\%$
Max. overload capacity	10 $\times P_N$ in 5 sec.
Test voltage against holder	4,000 V \cong

PWR-X WIRE AND TUBE RESISTOR IN STAINLESS STEEL CASING IP 20



The resistor series PWR-X is a ready-to-install combination of tube resistors. Depending on the casing size and the installed tube resistor, a performance range from 400 W to 6 kW is covered. The type series are characterised by high flexibility and enable various individual solutions. As an option, we offer the matching temperature switch for each performance class.



TYPE SELECTION AND DIMENSIONS

Type	P _n at 25° C	Resistance value	W _{ad}	Surface temperature	A x B x C, D	x / y	Weight
PWR-					mm	mm	g
-1TR 307S (T)	400 W	5 R – 100 R *	8 kJ*	max. 80° C	94 x 105 x 275, 375	50/345	1,900
-1TR 308S (T)	500 W	5 R – 100 R *	10 kJ*	max. 80° C	94 x 105 x 335, 435	50 / 405	2,100
-2TR 307S (T)	800 W	5 R – 100 R *	16 kJ*	max. 80° C	166 x 105 x 275, 375	122/295	2,800
-2TR 308S (T)	1,000 W	5 R – 100 R *	20 kJ*	max. 80° C	166 x 105 x 335, 435	122/355	3,100
-4TR 307S (T)	1,600 W	5 R – 100 R *	32 kJ*	max. 80° C	166 x 177 x 275, 375	122/295	4,600
-4TR 308S (T)	2,000 W	5 R – 100 R *	40 kJ*	max. 80° C	166 x 177 x 335, 435	122/355	5,200
-6TR 308S (T)	3,000 W	5 R – 100 R *	60 kJ*	max. 80° C	238 x 177 x 335, 435	194/355	7,100

SAMPLE ORDER

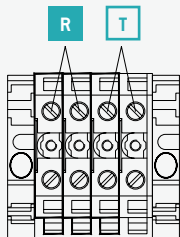
PWR-1TR308S 50 R 10 %

Degree of protection IP 20

Storage temperature -40° C – +60° C

CONNECTION TERMINAL

Weidmüller terminal SAK 6 800V 41A 0.5 – 6 mm²
R – resistor, T – temperature switch



PARAMETER

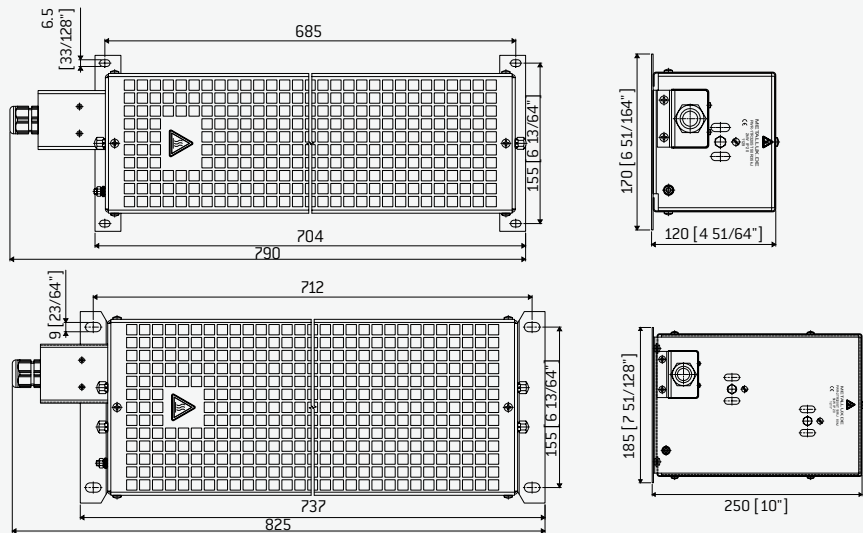
Tolerance	± 10 %
Temperature coefficient TC	≤ ± 150 ppm/K
Test voltage against holder	1,500 V ≅

* Other values upon request.

PWR-X WIRE AND TUBE RESISTOR IN STAINLESS STEEL CASING IP 20 (2)



The resistor series PWR-X is a ready-to-install combination of tube resistors. Depending on the casing size and the installed tube resistor, a performance range from 400 W to 6 KW is covered. The type series are characterised by high flexibility and enable various individual solutions. As an option, we offer the matching temperature switch for each performance class.



TYPE SELECTION AND DIMENSIONS

Type	P_{rated} 25° C	Resistance value	W_{ad}	Surface temperature	A x B x C, D	x / y	Weight
PWR-					mm	mm	g
-1TR 320S	2,000 W	5 R – 100 R*	40 kJ*	max. 250° C	170 x 120 x 704, 790	155/685	5,500
-2TR 320S	5,000 W	5 R – 100 R*	80 kJ*	max. 250° C	185 x 250 x 737, 825	155/712	1,1000
-3TR 320S	6,000 W	5 R – 100 R*	120 kJ*	max. 250° C	327 x 230 x 737, 847	300/712	13,200

SAMPLE ORDER

PWR-1TR308S 50 R 10 %

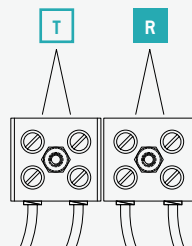
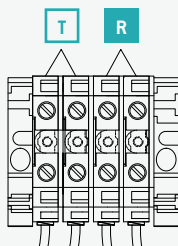
Degree of protection IP 20

Storage temperature -40° C – +60° C

CONNECTION TERMINAL

Weidmüller terminal
SAK 6 800V 41A 0.5 – 6 mm²
R – resistor, T – temperature switch

Ceramic terminals



PARAMETER

Tolerance ± 10 %

Temperature coefficient TC ≤ ± 150 ppm/K

Test voltage against holder 1,500 V≅

* Other values upon request.

SPECIAL DESIGNS/APPLICATIONS



Thanks to their simple design, wire resistors are virtually limitless in their variability and, because of this, can be adapted to suit the most applications. On this page, you will find a few examples of this together with typical applications.



STARTING RESISTANCE FOR COMPRESSORS AND HEAT PUMPS



The decentralised use of regenerative energy sources has long been a key component of modern building automation. Power resistors equipped with a fuse are essential for limitation of initial current for compressor motors.



PRECHARGING RESISTOR



To protect the on-board electronics against overvoltage, power resistors are utilised in modern vehicles for a controlled initial start.



BRAKE RESISTOR (LIFTS)



One typical use case of brake resistors is for application in hoisting units. These include particularly lifts for persons and loads.



CHOPPER RESISTOR (CHAIN HOISTS AND CABLE HOISTS)



Crane, chain, and cable hoists create regenerative energy when lowering loads which must be dissipated in the intermediate circuit.

ENQUIRY FORM FOR POWER RESISTORS

1. Electrical nominal values				
Resistance type		If known		
Resistance value		Ω		
Tolerance absolute		%		
TCR		ppm/K		
VCR		ppm/V		

2. Operational conditions				
Operational voltage		V		
Continuous power rating		W		
Max. performance		W		
Pulse form	Rectangle	<input type="checkbox"/>	Charging/Discharging function	<input type="checkbox"/>
	Triangle	<input type="checkbox"/>	Capacity	F
Pulse length (sound)		sec.		Other pulse form - please provide a curve
Pause time (toff)		sec.		
Cycle		DC%		

4. Ambient conditions		
Ambient temperature		°C
Humidity		% r.h.
Degree of protection		

5. Mechanical features		
Length		mm
Width or diameter		mm
Connection lines (cable type)		If they deviate from standard
Length of the connection lines		mm

6. Quantity, delivery date		
Quantity		Units
Delivery date		Calendar week / Year

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METALLUX AG

Robert-Bosch-Straße 29
71397 Leutenbach-Nellmersbach
Germany

FON +49 (0)7195/59 80 - 0
FAX +49 (0)7195/59 80 - 300
E-mail: info@metallux.de

System Certification
to ISO 9001:2015