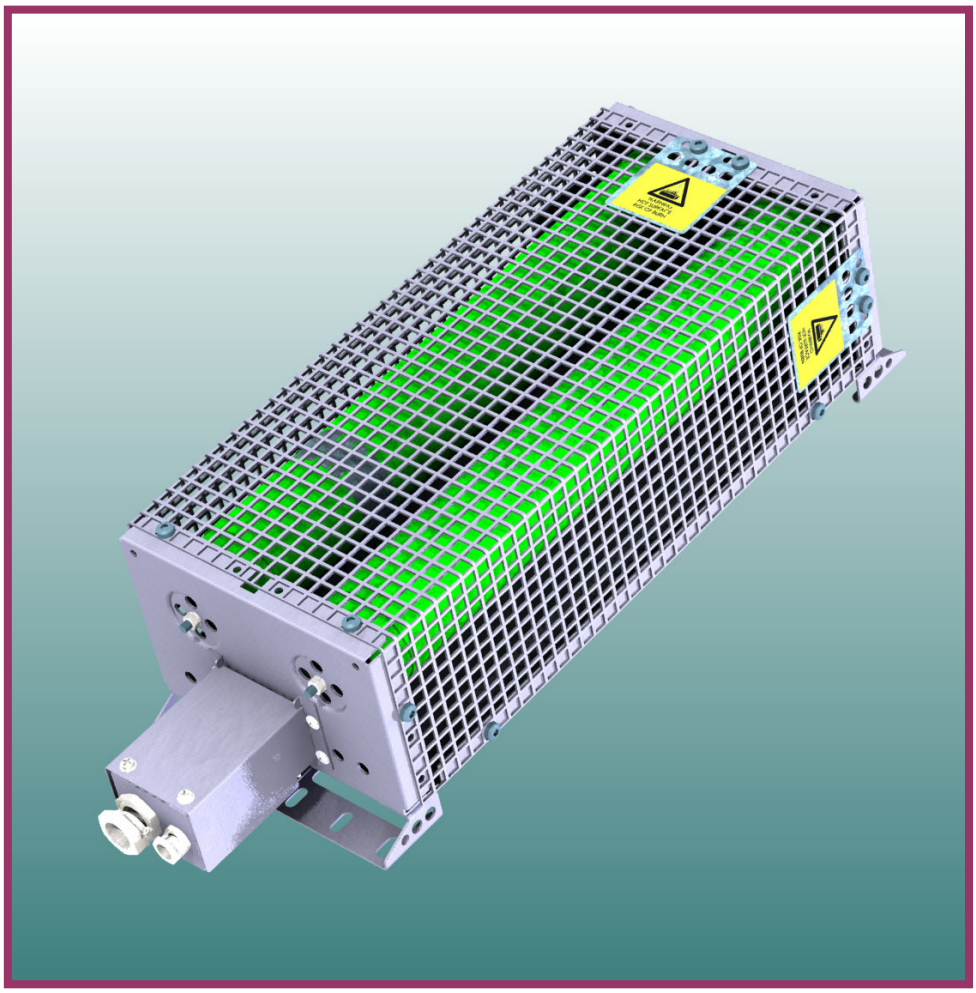
Σ SIGMA-UL

CERAMIC WIRE WOUND
BRAKE RESISTORS IP 21
(Preliminary Datasheet)



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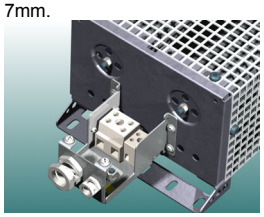
DANOTHERM

SIGMA ZRF 55/… 0A8X is a range of Ceramic Wire Wound Brake Resistors mounted in IP21 / Type 1X housings and equipped with Thermostats for temperature warning.

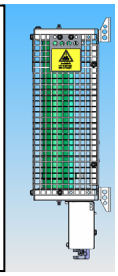
Connection

Power cables are connected through a pg16 cable gland with integrated braid connection. The range of outer diameter of the power cable is 15- 18mm.
The power cables (0.5 – 10 mm²) are connected to a terminal block with screw connections. The PE is connected directly to the connector box with a screw.
The cable for the temperature switch is connected to a terminal block (0.5-4mm²) via a M12 gland with clamping range 3 – 7mm.



Mounting

According the UL-approval the resistors must be mounted vertically.
The protection class is then IP21.
Mounted horizontally the protection class is IP20.



Ratings:

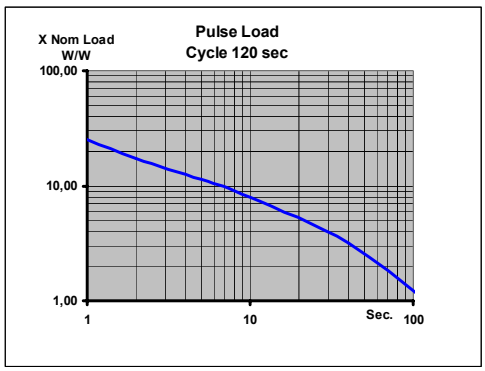
TYPE ZRF-XXX 0A8X	PN W @40°C Approved UL508 c UL us	Max Surface temp. °C @40°C	Pulse Load in 1 s each 120s. P1/120 kW @40°C	Pulse Load in 5 s each 120 s. P5/120 kW @40°C	Pulse Load in 10s each 120 s. P10/120 kW @40°C	Pulse Load in 40 s each 120 s P40/120 kW @40°C	Time Const. sec. (Steady state)	R Ω - kΩ ±5%, ±10%
ZRF 55/ 300 0A81	430	375	8	4.8	3.5	1.2	330	1 – 0.4
ZRF 55/ 400 0A81	575	375	12	6	4.5	1.6	330	1.5 – 0.9
ZRF 55/ 500 0A81	725	375	18	8	6	2	330	2.2 – 1.2
ZRF 55/ 600 0A81	875	375	22	10	7	2.6	330	2.5 – 1.5
ZRF 55/ 400 0A82	900	375	24	12	9	2.7	330	3.0 – 1.8
ZRF 55/ 500 0A82	1130	375	36	16	12	3.3	330	4.0 – 2.2
ZRF 55/ 600 0A82	1365	375	44	20	14	3.9	330	5.5 – 3.0
ZRF 55/ 500 0A83	1545	375	54	24	18	4.5	330	6.5 – 3.6
ZRF 55/ 600 0A83	1860	375	66	30	21	5.5	330	6.8 – 4.5
ZRF 55/ 500 0A84	2060	375	72	32	24	6	330	2.0 – 4.8
ZRF 55/ 600 0A84	2480	375	88	40	28	9.5	330	2.8 – 6.2
ZRF 55/ 500 0A86	3065	375	105	56	36	9	330	3.3 – 6.8
ZRF 55/ 600 0A86	3690	375	130	60	52	11	330	3.5 – 10
ZRF 55/ 500 0A89	4030	375	160	70	54	12	330	1.5 – 6.8
ZRF 55/ 600 0A89	4855	375	180	85	60	14	330	1.8 – 10

General Specifications	
Temperature Coefficient:	<±100ppm
Dielectric strength:	2500VAC 1 minute
Working Voltage:	UL: 600VAC / CE: 690VAC; 1100VDC
Isolation Resistance:	> 20 MΩ
Overload:	5-10x in10 sec; 25-35 x in 1 s
Environmental:	-40 °C – 90 °C
Derating :	Linear: 40°C = P_N to 70°C = 0.5*PN
Approvals	UL 508

PN: NOMINAL POWER WITH NATURAL COOLING and mounted in a vertical position

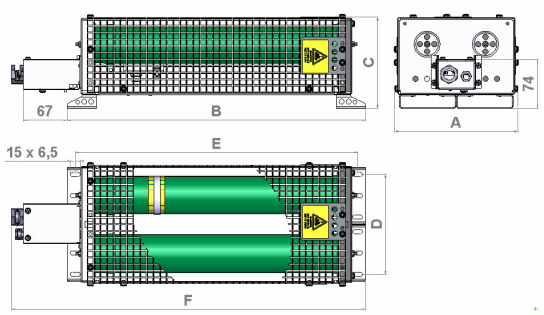
PULSE LOAD

The curves show the pulse load ability compared to the nominal load for the ZRF resistors under the following conditions: The load is a periodic pulse load with a constant **period time** of **120 sec** and a pulse width from **one second to 40 sec**.



Typical values

For all other load conditions and more accurate values please contact DANOTHERM. By mean of **individual thermal models** we can simulate the rises of temperatures in the components and on the surfaces during and between specified pulses.



Type	A ± 2	B1 ± 2	C±2	D±1	E±3	F ± 3	Weight
ZRF 55/ 300 0A81	97	350	142	64	326	435	2,5 Kg
ZRF 55/ 400 0A81	97	450	142	64	426	535	3,0 Kg
ZRF 55/ 500 0A81	97	550	142	64	526	635	3,5 Kg
ZRF 55/ 600 0A81	97	650	142	64	626	735	4,0 Kg
ZRF 55/ 400 0A82	188	450	142	150	426	535	5,0 Kg
ZRF 55/ 500 0A82	188	550	142	150	526	635	5,5 Kg
ZRF 55/ 600 0A82	188	650	142	150	626	735	6,5 Kg
ZRF 55/ 500 0A83	279	550	142	240	526	635	7,8 Kg
ZRF 55/ 600 0A83	279	650	142	240	626	735	8,5 Kg
ZRF 55/ 500 0A84	188	550	252	150	526	635	9,5 Kg
ZRF 55/ 600 0A84	188	650	252	150	626	735	11 Kg
ZRF 55/ 500 0A86	274	550	252	240	526	635	14 Kg
ZRF 55/ 600 0A86	274	650	252	240	626	735	15 Kg
ZRF 55/ 500 0A89	274	550	342	240	526	635	17 Kg
ZRF 55/ 600 0A89	274	650	342	240	626	735	18 Kg

Type identification:

If you have chosen a SIGMA ZRF Brake Resistor with IP21 protection it is necessary to specify the size (length of resistor components), the configuration (Number of components) and the ohm value.
Please specify your CBR Brake resistor as follows

ZRF 55/ 500 22R 0A82

Configuration: 0A81 = One Resistor Components; 0A82 = Two Resistor Comp. 0A83 = Three Resistor components ….
Ohm Value (Examples: 2R2=2.2Ω; 22R=22 Ω; 220R=220Ω; 2K2 = 2.2 kΩ)
Length of resistor tube in mm.