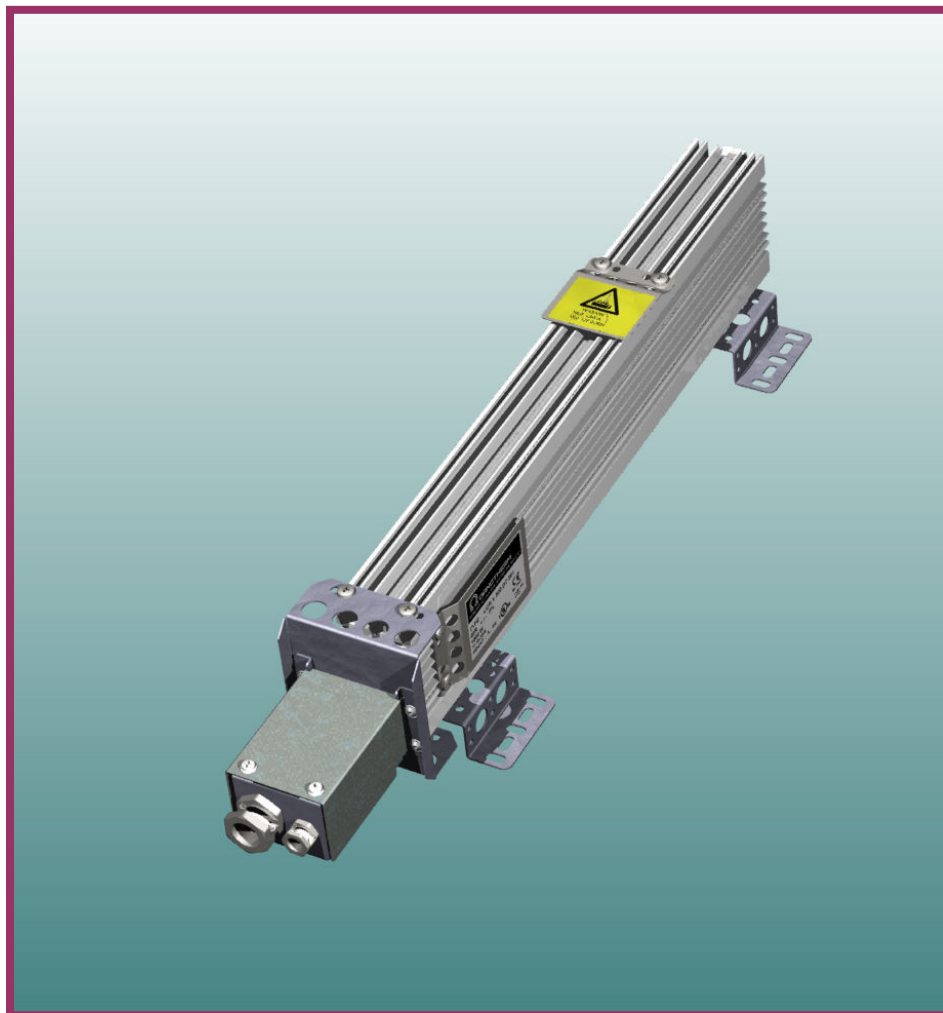


α ALPHA CCR-DT

ALUMINIUM HOUSED
COMPACT BRAKE RESISTORS IP 21



CCR-V XXX DT belonging to our medium range of **ALPHA ALUMINIUM HOUSED COMPACT BRAKE RESISTORS** is electrically insulated and can easily be integrated in compact constructions and it is specially constructed for high pulse loads compared to the average load.

The resistors comply with **IP21 / 1X** giving electrical and thermal protection. The resistors are Silicone free. The power range is from 140 W to 2900 W steady state load and pulse loads of 60 times compared to the nominal load in

one second each 120s. Danotherm has developed **thermal models** for all resistor types and resistor values. By using these models we are able to calculate the temperature rises in the resistor wire and on the surface for all possible load applications. We offer our assistance to our customers to find the optimum solution for any situation. All types are equipped with thermo watch. This range is generally approved to UL 508 (E208678), please consult Danotherm

CRUS

ALPHA CCR DT is a range of compact Aluminum Profile Brake Resistors with protection class IP21. The resistors are supplied with an internal 200°C thermostat and equipped with a connection box, which contains cable glands and cable connection to the resistor and the thermostat.

Connection

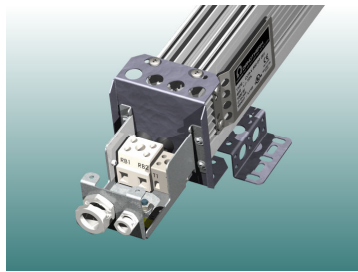
Power cables are connected through a pg16 cable gland with integrated braid connection. The range of outer diameter of the power cable is 15- 18mm.

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.

High Temperature Warning

The CCR DT resistors have a "High Temperature" warning label on the profile. The resistors can optionally be supplied with a Protecting Grating



Ratings Resistors with 200°C T.W.

TYPE CCR-V DT	PN W @40°C Approved UL508	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%
CCR-V 135 D T 281	140	230	6.3	1.9	1.5	0.50	1000	4 – 0.4
CCR-V 191 D T 281	190	230	8.5	3.1	1.9	0.70	1000	5 – 0.5
CCR-V 241 D T 281	250	230	11.2	4	2.5	0.75	1000	10 – .5
CCR-V 295 D T 281	300	230	13.5	4.8	3.0	0.9	1000	10 – 0.8
CCR-V 345 D T 281	380	240	17.1	6.1	3.8	1.1	1000	10 – 1.0
CCR-V 445 D T 281	480	250	21.6	7.8	4.8	1.4	1000	16 – 1.2
CCR-V 545 D T 281	620	270	27.9	10.4	6.2	1.8	1000	20 – 1.4
CCR-V 645 D T 281	790	300	35.5	12.8	8	2.4	1000	20 – 1.6
CCR-V 345 D T 282	760	250	34	12.3	7.7	2.2	1000	5 – 0.5
CCR-V 445 D T 282	960	270	43	15.5	9.7	2.8	1000	8- 0.6
CCR-V 545 D T 282	1240	300	55	20	12.5	3.7	1000	10 – 0.8
CCR-V 645 D T 282	1580	340	71	25	16	4.7	1000	10 – 0.8
CCR-V 345 D T 283	1140	250	51	18	11.5	3.4	1000	3 – 0.3
CCR-V 445 D T 283	1440	270	64	23	14.5	4.3	1000	5 – 0.3
CCR-V 545 D T 283	1860	300	83	30	18	5.5	1000	6.5 – 0.3
CCR-V 645 D T 283	2370	340	106	38	24	7.1	1000	6.5 – 0.3
CCR-V 720 D T 283	2900	350	116	41	27	8.7	1000	6.5 – 0.3

General Specifications	
Temperature Coefficient:	<±100ppm
Dielectric strength:	2500VAC 1 minute
Working Voltage:	UL: 600VAC / CE: 690VAC; 1100VDC
Isolation Resistance:	> 20 MΩ
Overload:	5-10x in 10 sec; 25-35 x in 1 s
Environmental:	-40 °C – 90 °C
Derating :	Linear: 40°C = P _N to 70°C = 0.5*P _N
Thermo watch contact	N.C. 2A, 250V
Approvals	UL 508

PN: NOMINAL POWER WITH NATURAL COOLING and mounted in a vertical position SURFACE TEMPERATURE: 195°C @ 40°C AMB near Connector Box and Thermostat.

*) Configuration: 2X1: ONE resistor profile; 2X2 TWO resistor profiles; 2X3 THREE resistor profiles

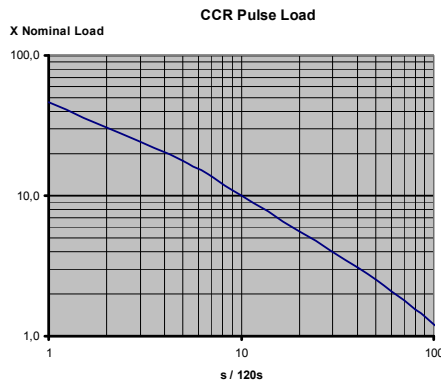
X specifies thermostat temperature: X=5: 130°C; X=6: 160°C; X=7: 180°C; X=8: 200°C; X=0 no thermostat.

3XX: Resistors with protection grid

NB: As alternative to the two and three profile versions please consider the CBT type.

PULSE LOAD

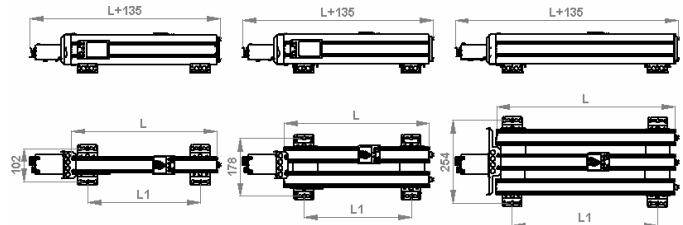
The curves show the pulse load ability compared to the nominal load for the CCR resistors under the following conditions: The load is a periodic pulse load with a constant period time of 120 sec and a pulse width from one second to 40 sec.



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.

Mechanical Data

Resistors with one, two and three resistor profiles



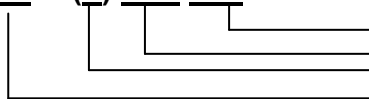
Type	L ± 2	L1 ± 2	Weight	Type	L ± 2	L1 ± 2	Weight
CCR-V 135 D T 281	135	-	1,3 Kg	CCR-V 345 D T 282	345	245	4 Kg
CCR-V 191 D T 281	191	91	1,8 Kg	CCR-V 445 D T 282	445	345	5g
CCR-V 241 D T 281	241	141	2,0 Kg	CCR-V 545 D T 282	454	445	6 Kg
CCR-V 295 D T 281	295	195	2,1 Kg	CCR-V 645 D T 282	645	545	7 Kg
CCR-V 345 D T 281	345	245	2,5 Kg	CCR-V 345 D T 283	345	345	8 Kg
CCR-V 445 D T 281	445	345	2,9 Kg	CCR-V 445 D T 283	445	345	9Kg
CCR-V 545 D T 281	545	445	3,6 Kg	CCR-V 545 D T 283	545	445	10 Kg
CCR-V 645 D T 281	645	545	4,3 Kg	CCR-V 645 D T 283	645	545	11Kg
CCR-V 720 D T 281	720	620	5 Kg	CCR-V 720 D T 283	720	620	12Kg

Type identification:

If you have chosen a CBR Brake Resistor with IP21 protection it is necessary to specify the size (length), the configuration (Number of profiles) and the ohm value.

Please specify your CBR Brake resistor as follows

CCR-V 645 D (T) 22R 281



Configuration: See above, or if XXX > 400: Customer specified version
 Ohm Value (: 2R2=2.2Ω; 22R=22 Ω; 220R=220Ω; 2K2 = 2.2 kΩ) Standard: 10%
 T With Thermostat
 Length of resistor profile in mm.
 More configurations (IP23, IP50, Protection grid) can be supplied, please consult Danotherm Electric A/S for further details.