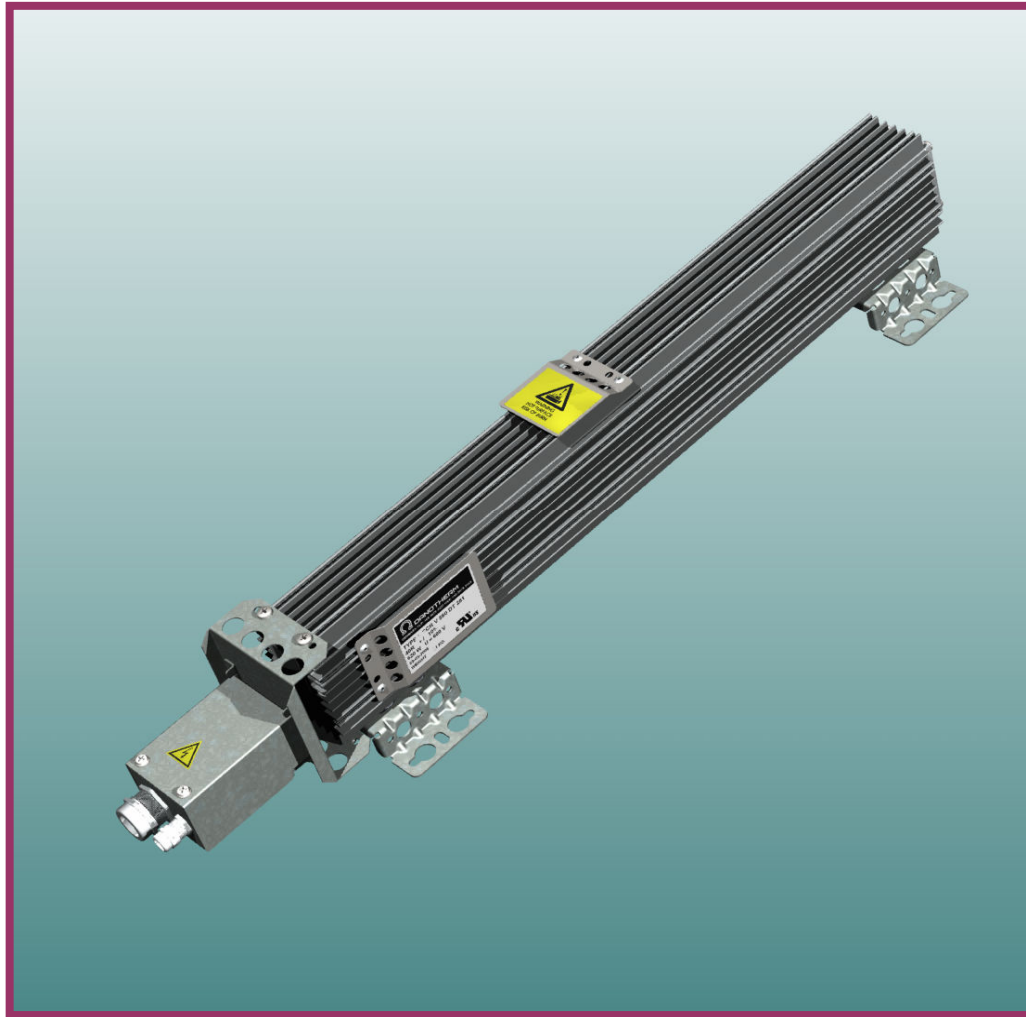


α ALPHA CBR-DT

ALUMINIUM HOUSED
COMPACT BRAKE RESISTORS IP 21



CBR-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. 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 280 W to 3400 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 can be equipped with thermo watch. This range is generally approved to UL 508, (E208678) please consult Danotherm:



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

Connection

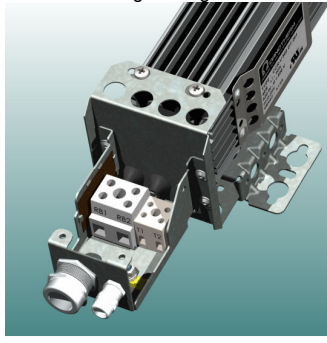
Power cables are connected through a pg16 cable gland with integrated braid connection. The range of outer diameter of the power cable is 15- 18mm.

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 thermo watch is connected to a terminal block (0.5-4mm²) via a M12 gland with clamping range 3 – 7mm.

High Temperature Warning

The CBR BT 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 thermo watch.

TYPE CBR-V DT -V: Profile vertically D: Box IP21 H: High Pulse (HELIX) T: Internal Thermostat 281 Configuration*)	PN W @40°C Approved UL508 cULUS	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)	RΩ ±10% (±5% on request)
CBR-V 160 D T 281	280	230	12.6	4.54	2.84	0.84	1000	0.5 – 1000
CBR-V 210 D T 281	360	230	16.2	5.83	3.65	1.08	1000	0.8 – 1500
CBR-V 260 D T 281	450	230	20	7.2	4.56	1.35	1000	1.5 – 2000
CBR-V 330 D T 281	570	230	25.6	6.24	5.75	1.70	1000	1.8 – 2000
CBR-V 400 D T 281	680	240	30	10	6.85	2.04	1000	2.0 – 2000
CBR-V 460 D T 281	790	250	35	12.7	7.9	2.23	1000	2.4 – 40
CBR-V 560 D T 281	960	270	43	15.4	9.7	2.8	1000	3.0 – 45
CBR-V 660 D T 281	1130	300	50	18	11	3.3	1000	3.5 – 50
CBR-V 760 D T 281	1290	340	58	20	12.6	3.8	1000	4.0 – 55
CBR-V 460 D T 282	1400	250	70	25	15	4.4	1000	1.2 – 20
CBR-V 560 D T 282	1720	270	86	30	19	5.6	1000	1.6 – 22
CBR-V 660 D T 282	2034	300	101	36	22	6.6	1000	1.5 – 25
CBR-V 760 D T 282	2300	340	116	41	25	7.6	1000	2.0 – 27
CBR-V 460 D T 283	2090	250	105	38	23	6.7	1000	1.5 – 13
CBR-V 560 D T 283	2530	270	129	46	29	8.4	1000	1.8 – 15
CBR-V 660 D T 283	3120	300	152	54	34	9.9	1000	2.2 – 17
CBR-V 760 D T 283	3410	340	174	62	37	11	1000	2.4 – 18

General Specifications

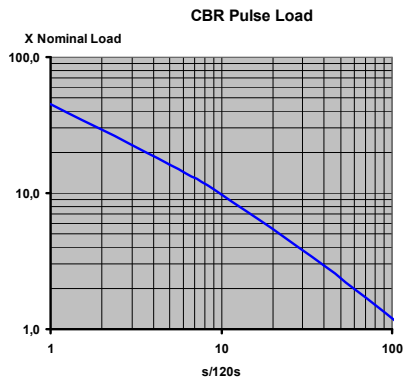
Temperature Coefficient:	≤±100ppm
Dielectric strength:	2500VAC 1 minute
Working Voltage:	UL: 600VAC / CE: 690VAC; 1100VDC
Isolation Resistance:	> 20 MΩ
Overload:	5-10x in10 sec; 25-35 x in 1 s
Environmental:	-40 °C – 90 °C
Derating :	Linear: 40°C = P _N to 70°C = 0.5*P _N
Thermo watch contact.	NC, 2A, 250V
Approvals	UL 508

PN: NOMINAL POWER WITH NATURAL COOLING, 200°C T.W. and mounted in a vertical position.
SURFACE TEMPERATURE: 200°C @ 40°C AMB near Connector Box and Thermostat.

Configurations: 2X1: ONE resistor profile; 2X2 TWO resistor profiles; 2X3 THREE resistor profiles.
X specifies thermo watch 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 an alternative to the two- and three profile versions please consider the CBT type

PULSE LOAD

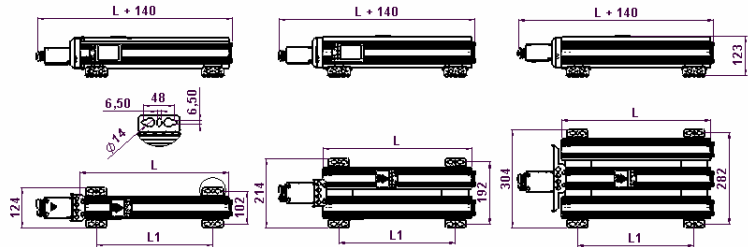
The curves show the pulse load ability compared to the nominal load for the CCR resistors under the following conditions: The load is a periodic pulse load with a constant period time of 120 sec and a pulse width from one second to 40 sec.



For all other load conditions 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.

Mechanical Data

Resistors with one, two and three resistor profiles

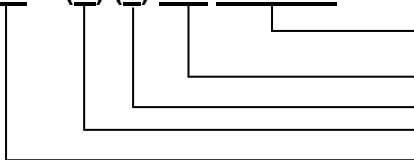


Type	L ± 2	L1 ± 2	Weight	Type	L ± 2	L1 ± 2	Weight
CBR-V 160 D T 281	160	70	1,3 Kg	CBR-V 460 D T 282	460	360	7,5 Kg
CBR-V 210 D T 281	210	110	1,8 Kg	CBR-V 560 D T 282	560	460	9 Kg
CBR-V 260 D T 281	260	160	2,4 Kg	CBR-V 660 D T 282	660	560	10,5 Kg
CBR-V 330 D T 281	330	230	3,0 Kg	CBR-V 760 D T 282	760	660	11,9 Kg
CBR-V 400 D T 281	400	300	3,5 Kg				
CBR-V 460 D T 281	460	360	3,9 Kg	CBR-V 460 D T 283	460	360	11 Kg
CBR-V 560 D T 281	560	460	4,6 Kg	CBR-V 560 D T 283	560	460	13,2 Kg
CBR-V 660 D T 281	660	560	5,4 Kg	CBR-V 660 D T 283	660	560	15,5 Kg
CBR-V 760 D T 281	760	660	6,1 Kg	CBR-V 760 D T 283	760	660	18 Kg

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

CBR-V 645 D (H) (T) 281 22R 10%



Ohm Value (Examples: 2R2=2.2Ω; 22R=22 Ω; 220R=220Ω; 2K2 = 2.2 kΩ (10% standard)
Configuration: (See above) or if XXX > 400: customer specified version
T With Thermostat
H indicates if HELIX winding is used. Specified by DANOTHERM
Length of resistor profile in mm.
More configurations and types (IP65, IP50, Protection grid) can be supplied, please consult Danotherm Electric A/S for further details.