ALUMINUM HOUSED RESISTOR

TYPE HCL SERIES

INTRODUCTION

TE Connectivity (TE)'s Aluminum Housed Resistor Type HCL Series are designed in a ultra slim package capable of dissipating high power where space is at a premium and heat sinking is available. The resistor is capable of absorbing high overloads in relation to its size. Aluminum Housed Resistor Type HCL Series are ideal for use in servo drives & controllers and frequency inverters. They are used for motor braking, dummy loads and in conventional power resistor applications.

FEATURES

- Ultra slim package – 7.25 mm
- High power to size ratio
- High overload capability
- UL approved

APPLICATIONS

- Servo drives
- Controllers
- Frequency inverter

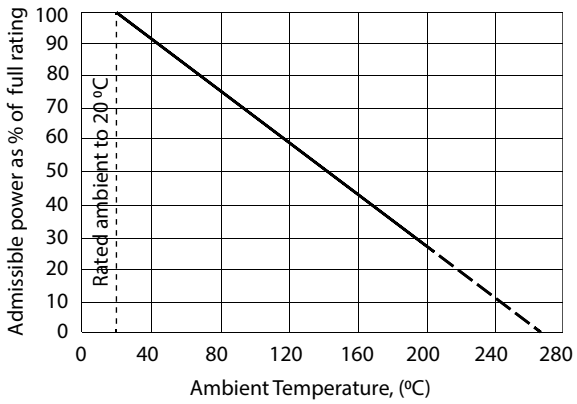
ELECTRICAL CHARACTERISTICS

Feature		Specification	
Power rating	In Free Air	@20 °C	@40 °C
	HCL130	70	50
	HCL165	100	65
Resistance range		See chart below	
Tolerance		±5 %, ±10 % (tighter on request / evaluation)	
Maximum operating voltage (VAC) - (f=50 Hz)		1000 V; In accordance with UL 508 specification reduced to 600 V	
Maximum operating voltage (VDC)		1414 V; In accordance with UL 508 specification reduced to 848V	
Surge voltage capability (V) (Between active part and housing)		4000 V; in accordance with IEC 61800-5-1	
Insulation resistance		≥100 MΩ @ 500 VDC	
Dielectric strength (f=50Hz, 1Min)		2200 VAC for 1 Minute	
TCR		-80 ppm/^{0}C to 200 ppm/^{0}C	
Cable		Standard insulated 18 AWG, 600 V, 200 °C	
Resistor body		Anodized extruded aluminium profile	
UL file number		E164323	

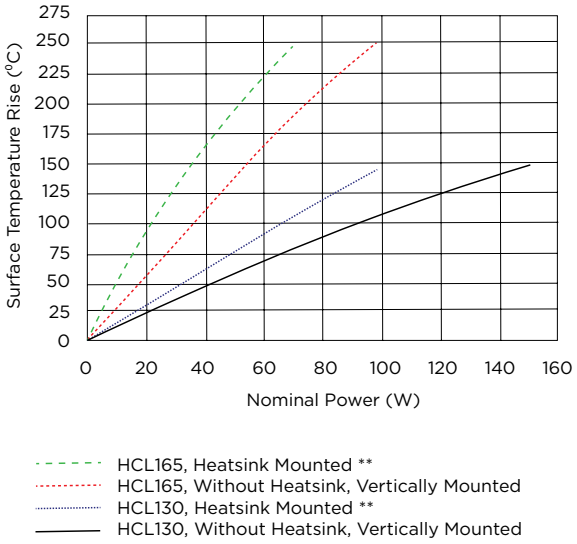
ENVIRONMENTAL CHARACTERISTICS

Characteristic	Requirement	Test Method
Endurance	ΔR ≤ ±10%	1000 Hrs rated power in free air
Damp heat steady state	ΔR ≤ ±10%	40 °C RH 90 ~ 95% - 56 days
Dielectric strength	2200 VAC 1 Minute	-
Insulation resistance	≥100 MΩ @ 500 VDC	Tested for insulation resistance with a calibrated meter at 500 VDC

DERATING CHART



POWER VS SURFACE TEMPERATURE RISE



** All tests are conducted using a 0.5°C/W rated heat sink. A thermal transfer compound must be applied to ensure low thermal resistance between resistor and heat sink. The heat sink must be flat to ensure good contact with the resistor.

OVERLOAD RATING

The resistors were tested by applying the specified overload power for 1.2 or 7.2 or 48 seconds within a 120 seconds cycle comprising of both on and off periods. These are equivalent to duty cycles of 1%, 6% and 40% which are typical braking cycles used in drive systems.

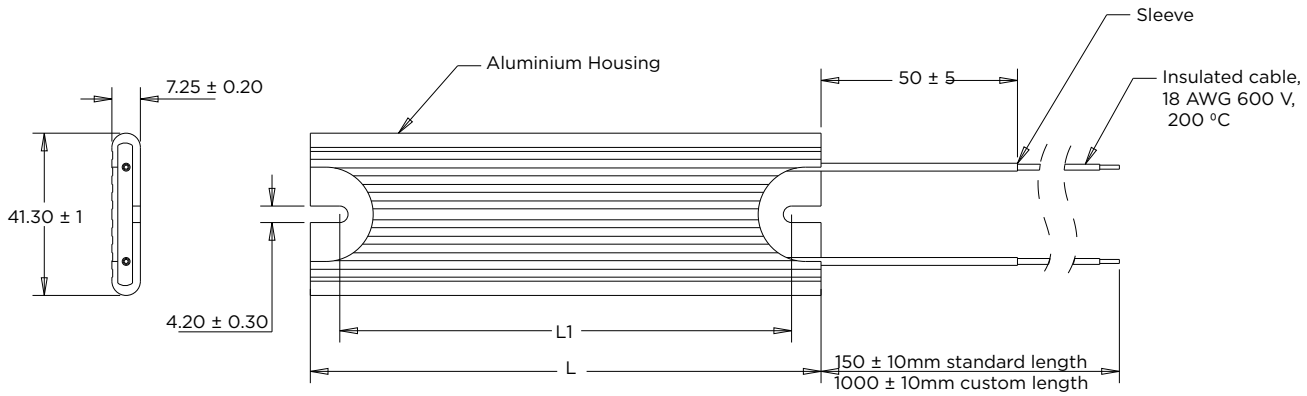
HCL130

Type	Value (Ω)	Power Rating @ 40°C	Pulse load (W) 40°C 120s Duty cycle		
			1.2s Pulse	7.2s Pulse	48s Pulse
HCL130	3.3	50	1650	550	150
	500		900	500	130
	3300		590	425	100

HCL165

Type	Value (Ω)	Power Rating (W) @ 40°C	Pulse load (W) 40°C 120s Duty cycle		
			1.2s Pulse	7.2s Pulse	48s Pulse
HCL165	4.7	65	1750	1000	245
	1000		1000	700	175
	5600		450	400	125

DIMENSIONS (Unit:mm)



Type	Resistance value range	L±1.5 (mm)	L1±1.5 (mm)
HCL130	3R3 – 3K3	130	115
HCL165	4R7 – 5K6	165	150

MARKING

Resistors will be marked with

- TE Logo
- Type
- Tolerance code
- Resistance value
- Termination
- Cable length and
- Date/ batch code

ORDERING INFORMATION

Part Number
HCL130 J 4R7 C X

Common Part

HCL130	Aluminum Housed Resistor Type HCL Series
HCL165	

Resistance Tolerance

J	5 %
K	10 %

Resistance Value

4R7	4.7 Ω
56R	56 Ω
1K0	1K Ω

Cable length

X	150mm
M**	Custom
M1000	1000 mm

Termination type

C	Cable
M	Custom

te.com

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