

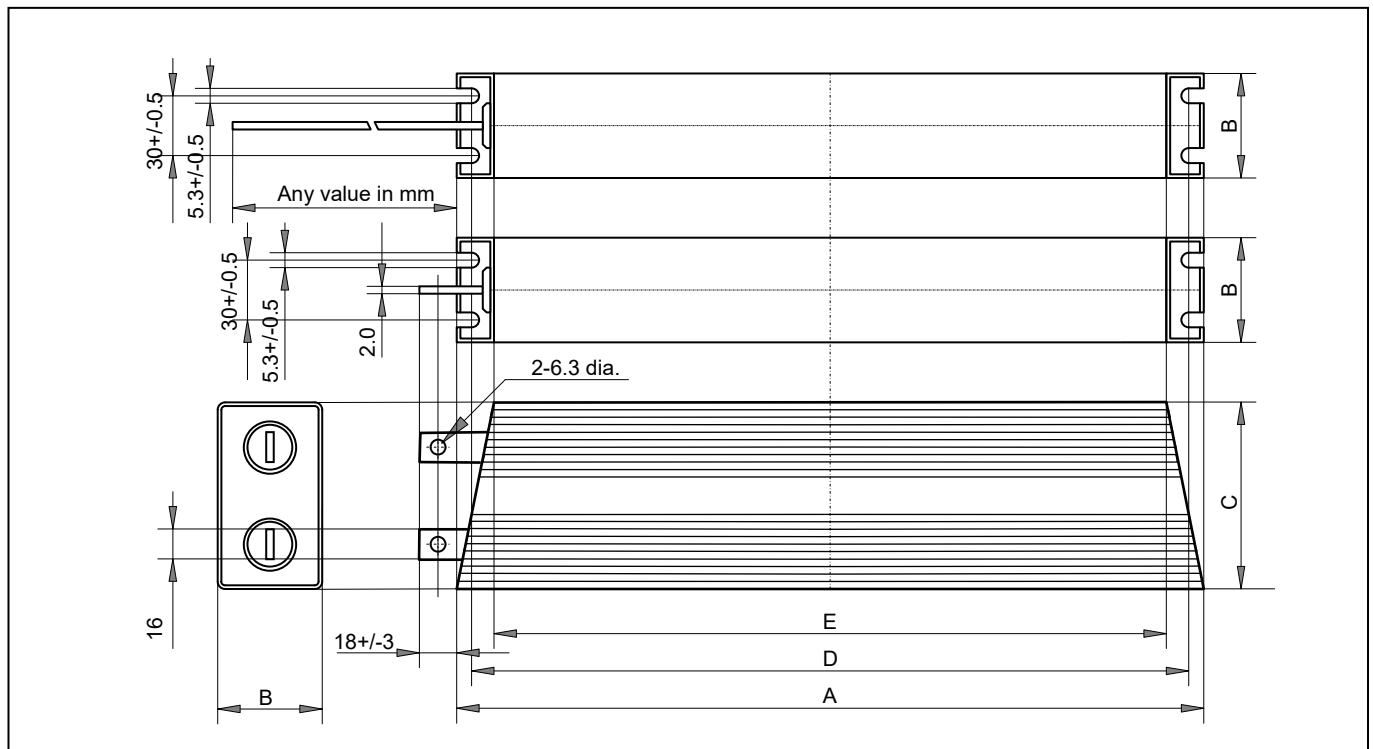
1600, 2000, 2400, 2800 W  
 Metal Clad Wire Wound Resistors  
 ULM1600, ULM2000, ULM2400, ULM2800  
 IRM1600, IRM2000, IRM2400, IRM2800



Features and Applications

- 1600W to 2800W (on chassis) metal clad wire wound resistors, UL certified (ULM).
- Minimum resistance value of 0.3 Ω and inductive and non inductive winding are available.
- Metal tab terminals and wire leaded terminals are available.
- Current detection, motor control, recycle braking resistor and dumping resistor of the power electronics.

Dimensions (mm)



(mm)	A±2	B±0.5	C±0.5	D±2	E±2	Weight (kg)
ULM1600	330	50	100	315	290	2.5
ULM2000	400	50	100	385	360	3.1
ULM2400	480	50	100	465	440	3.7
ULM2800	550	50	100	535	510	4.3
IRM1600	330	50	100	315	290	2.5
IRM2000	400	50	100	385	360	3.1
IRM2400	480	50	100	465	440	3.7
IRM2800	550	50	100	535	510	4.3

1600, 2000, 2400, 2800 W Metal Clad Wire Wound Resistors

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IRM1600, IRM2000, IRM2400, IRM2800

Ordering Information

Type	Ind./non-ind.	Resistance	Tolerance	Terminals	Voltage
ULM2800	N	50 ohm	J	L	4500V
ULM1600	--- (inductive)	See table	+/-1.0% (F)	TAB (metal)	1500V
ULM2000	N (non-inductive)		+/-5.0% (J)	FL xxx mm (Fly wire)	2500V
ULM2400					3400V
ULM2800					4500V
IRM1600					
IRM2000					
IRM2400					
IRM2800					

Note: Tolerance +/-5%(J) is standard.

Rated Power and Resistance

Type	Rated Power on chassis	Rated Power in free air	Resistance (ohm)		Tolerance (%)
			Non inductive	Inductive	
ULM1600 / IRM1600	1600W	570 W	1.5 - 88.0	0.30 - 23.0	F (1%), J(5%)
ULM2000 / IRM2000	2000W	650 W	2.0 - 113.0	0.45 - 30.5	F (1%), J(5%)
ULM2400 / IRM2400	2400W	720 W	2.5 - 144.0	0.60 - 37.0	F (1%), J(5%)
ULM2800 / IRM2800	2800W	750 W	3.0 - 135.0	0.70 - 33.5	F (1%), J(5%)

Note: Resistance range in IRM1600-2800 model can extend to 10kohm, call factory.

Performances

Category Temperature, Ambient	-55 °C to +200 °C	
Insulation Resistance	Minimum 20MΩ	
Voltage Proof	AC 1500, 2500, 3500, 4500V for 1 min. - 2mA	
Temperature Coefficient	+/- 260ppm/K in maximum	
Short Time Overload	+/- 3.0%	10 times rated power – 5 seconds
Moisture Resistance	+/- 3.0%	40 °C, 95%RH, DC100V case-terminal, 500 hours
Thermal Shock	+/- 5.0%	Power rating 30 minutes – minus 25 °C15 minutes
Vibration	+/- 2.0%	10Hz-55Hz-10Hz, 1 minutes, 2 hours, x-y z direction
Humidity	+/- 3.0%	40°C, 95%RH, 0.1 rated power 1.5 hours on, 0.5 hours off, 500 hours
Load Life	+/- 5.0%	Rated power, 1.5 hours on 0.5 hours off, 500 hours

Flying Wire Lead and Resistance Selection

Type	3.5 sq mm	2.0 sq mm	UL3512 AWG10	UL3512 AWG14
ULM1600 / IRM1600	0.30 - 0.99 ohm	1.0 ohm ---	0.30 - 0.99 ohm	1.0 ohm ---
ULM2000 / IRM2000	0.45 - 0.99 ohm	1.0 ohm ---	0.45 - 0.99 ohm	1.0 ohm ---
ULM2400 / IRM2400	0.60 - 0.99 ohm	1.0 ohm ---	0.60 - 0.99 ohm	1.0 ohm ---
ULM2800 / IRM2800	0.70 - 0.99 ohm	1.0 ohm ---	0.70 - 0.99 ohm	1.0 ohm ---

