LCR-2000/3000/6000

Water-cooled high-power resistors · All-plastic PVDF housing · Non-inductive pulse loads

Applications

- Lightning / surge tests: damping and matching resistors for 8/20μs and 10/1000μs waveform generators
- HV pulse and impulse voltage / current generators: PFN termination
- Accelerators, fusion / plasma systems: HV divider boards and pulse dump resistors
- Laser / radar modulator supplies: xenon lamp discharge loads, Marx generators, line-modulator dummy loads
- HV supply factory dummy loads: half the volume of oil-cooled resistor cabinets, silent, higher precision
- Medical X-ray / CT, HV division / discharge, IGBT snubbers
- Electrostatic precipitation / spraying, magnetizing / degaussing, HF/HV storage-converter circuits
- HVDC transmission, rail traction supplies, petrochemical explosion-proof environments
- Semiconductor wafer production, vacuum coating, HV test benches

Key Advantages

- Inductance ≤10nH: ns response, clean pulse edges, no overshoot / ringing
- Capacitance ≤110pF: no HV pulse self-oscillation; faithful waveforms
- 8.5kV peak + 11kV insulation: absorbs pulse spikes without tripping
- Direct pure-water / glycol cooling: no overheating or thermal runaway during continuous high-power pulse trains
- PVDF plastic: CTI≥600, UL94-V0; acid / moisture resistance, reliable insulation
- Wide 1Ω - 100MΩ range; ±2% / ±5% / ±10% tolerance options; broader coverage than comparable products
- Vibration / shock resistant: stamped alloy resistor plates and special assembly meet stringent vibration requirements
- RoHS certified: lead- and halogen-free; meets EU environmental standards
- High energy density: half the volume of oil-cooled cabinets; silent, maintenance-free

Product Features

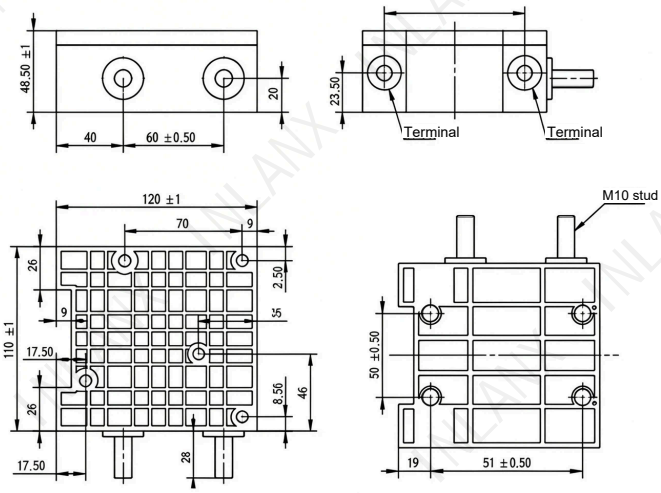
- All-plastic PVDF housing / channels resist HV and high-temperature aging
- Helical waterway: unrestricted flow, no dead zones; symmetric alloy strips
- Ports: 1/8", 3/8", φ10×1; horizontal mounting, φ10×60 mounting holes
- Operating range: -55°C ~ +155°C; custom designs available

Preferred Resistance Values

1Ω、5Ω、10Ω、20Ω、25Ω、30Ω、33Ω、36Ω、40Ω、45Ω、50Ω、55Ω、60Ω



Dimensional Drawing



Cooling and Materials

Cooling method	Single- or dual-channel cooling; dual channels increase power by 50%.
Coolant	High-purity water or 50% glycol (glycol reduces cooling power by 20%).
Resistive material	Resistance alloy strip
Housing material	PVDF，CTI ≥ 600，UL94-V0
Housing color	Translucent natural (white), light blue, dark blue, black
Weight	604 g

Electrical Characteristics

Resistance range	1Ω – 100MΩ	Tolerance	±2% (G) ±5% (J) ±10% (K)
Inductance	≤ 10 nH	Distributed capacitance	≤ 110 pF
Water pressure	< 1 MPa	Temperature coefficient	5–100°C ≤ 150 ppm/°C
Maximum peak voltage	8.5 kV	Max. operating surge voltage	8.5 kV
Insulation voltage	11 kV peak	Clearance	≥ 17 mm

Power Ratings

Inlet water temperature	Flow rate	Power	Duration
60°C	2 L/min	2.75 kW	Continuous
60°C	3 L/min	4.0 kW	Continuous
50°C	3 L/min	7.0 kW	30 min
50°C	4 L/min	9.3 kW	30 min
70°C	3 L/min	3.0 kW	30 min
70°C	4 L/min	4.0 kW	30 min

Power - Flow Rate - Temperature Rise Curves

