

193-/93- Series

5-Pin/1-Pin Gas Tube/ Overcurrent Protector Modules with PTCs

Ideal for High-Speed Networks
in High Surge Exposure
Environments

Balanced Capacitance Three-
Electrode GDT Design

PTCs for Sneak Current Protection

Detent Position Facilitates Testing

Available With or Without Test Points

Meets Telcordia GR-974
Requirements (Telcordia Analysis
DA-1940)



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193-6B3EM



93-6C3EM-N



193-6C3EM-L

Tii 5-pin/1-pin Gas Tube with PTC modules are dependable plug-in devices that guard sensitive telecommunications systems from dangerous voltage surges. The three-element GDT with 4 Ohm (nominal resistance) PTCs provide both overvoltage and overcurrent protection. This prevents destructive line-to-line overvoltages and sneak currents from reaching valuable telecom equipment. The combination of GDT and PTCs provide excellent electrical protection while minimally affecting high frequency xDSL and ISDN signals.

These modules include a heat activated fail-safe mechanism that provide additional protection against power crosses. Test points allow easy test access to the outside plant. The 193/93 Series modules utilize 4 Ohm (nominal resistance) PTCs with hold current of 120mA in excess of 3 hours. The PTCs are resettable and will automatically revert to low resistance when the cause of overcurrent is removed.

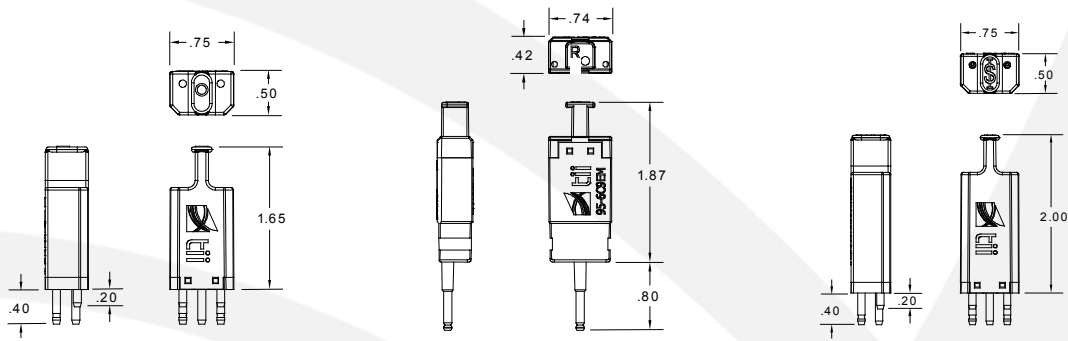
KEY PRODUCT BENEFITS

- ▶ Heat activated fail-safe mechanism provides additional protection.
- ▶ Available with test points to access the outside plant.
- ▶ Prevents costly damage to circuitry and extends equipment life.
- ▶ Protects personnel from dangerous voltage surges.

INDUSTRY STANDARDS

- ▶ Meets Telcordia GR-974 requirements (Telcordia Analysis DA-1940).

193-/93- Series



Dimensions are in Inches

SPECIFICATIONS

Electrical Specifications	193-/93-	Test Parameters
DC Breakdown Voltage	280-420V	2000V/Sec. max.
Impulse Breakdown Voltage	<750	100V/μSec. max.
Capacitance (Line to Line)	<1.0pF	1 MHz, 0 VDC
(Line to Ground)	<3.0pF	1 MHz, 0 VDC
Capacitance Balance (L1 - Ground : L2 - Ground)	< 1.0pF	
Fail-Safe Operation	<50 Sec @ 2A <15 Sec @ 10A <10 Sec @ 40A <3 Sec @ 120A	
Maximum Single Surge	24 kA	8/20 μSec max.
Insertion Loss	< 0.5 dB up to 30 MHz	
Return Loss	-20 dB up to 30 MHz	
Overcurrent Protection (PTC):		
Line in to Line Out Resistance	4 Ohms nominal	
Hold Current	0.15A	
Trip Current	0.30A	
Max Trip Current	1.0A within 5 secs	
Insulation Resistance	10GΩ	100VDC
DC Holdover (after activation)		
52V	260MA	<150 mSec
135V	200MA	max. to reset to
150V	140MA	operating mode

ORDERING INFORMATION

Pin Type	Protector Type	Test Point Access	Application (Color)	Technology	Special Designation
193-	6 = Voltage + PTC Over Current Protection	B = No Test Points	Special Services	EM = 350V, 3 Element GDT w/ PTC	Blank = Gold Pin
93-		C = Test Points			N = Tin Pins
					L = Gold Pins (2.00" Body)
					NL = Tin Pins (2.00" Body)