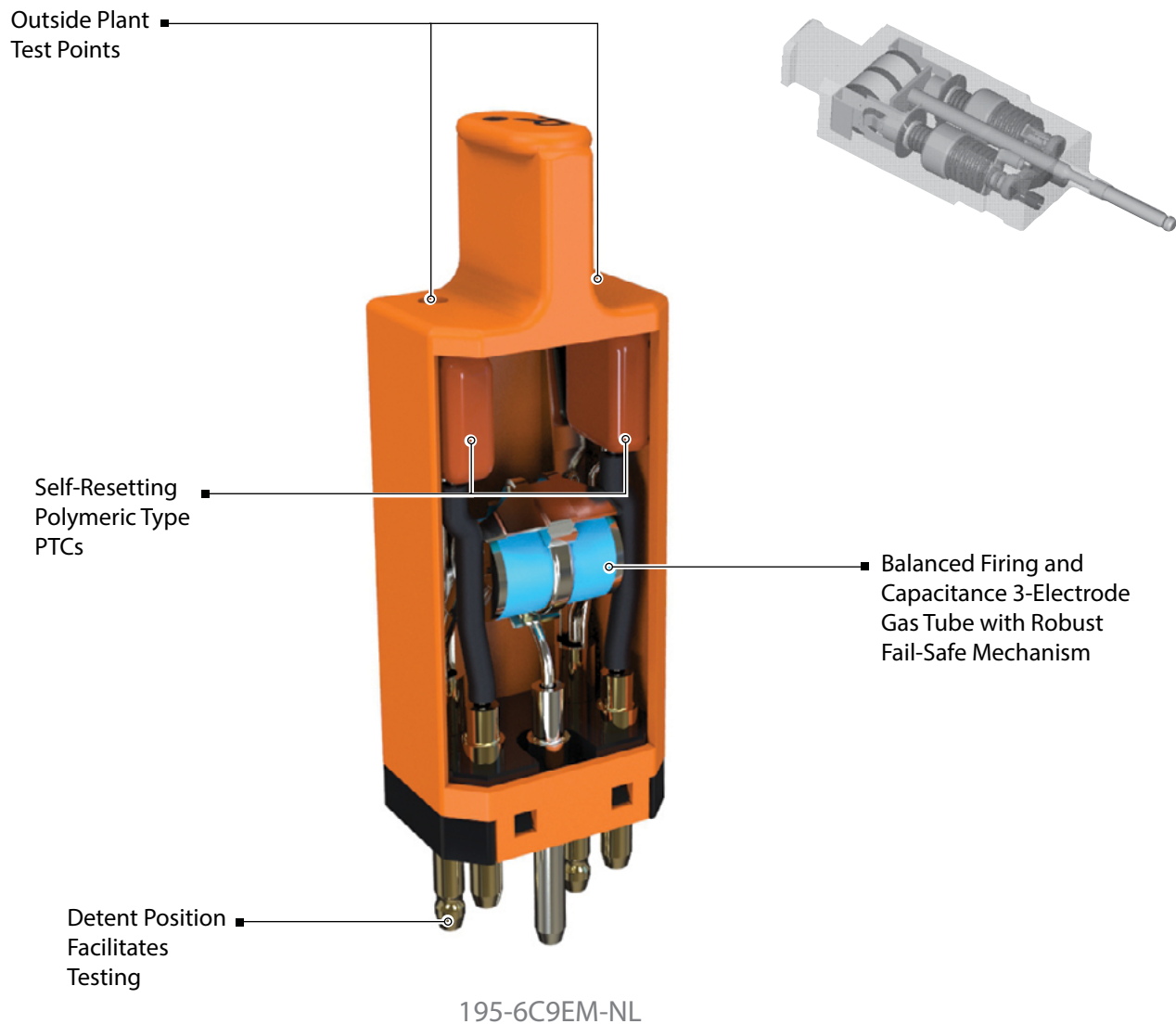


MODULE SELECTION GUIDE

Primary Protection Modules



FEATURES/BENEFITS:

- 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
- 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
- Meets Telcordia GR-974 Requirements (Telcordia Analysis DA-1940)
- Listed to UL 497 for Primary Protection

MODULE CROSS REFERENCE SELECTION GUIDE

	Tii MODEL NUMBER	COLOR	TEST POINTS	VOLTAGE	OVER CURRENT	COMMSCOPE CROSS	CIRCA CROSS	EMERSON CROSS	BOURNS CROSS
GAS TUBE WITHOUT OVER CURRENT	175-3BIEW-N	BLACK	NO	350	NO	3BIEW			
	173-3B3EW-N	RED	NO	350	NO	3B3EW			
	175-3C1EW-NL	BLACK	YES	350	NO	3C1F	3B1E	R3B1E	2420-31-N-T
	173-3C3EW-N	RED	YES	350	NO	3C3EW			
GAS TUBE WITH OVER CURRENT	195-6B1EM-N	BLACK	NO	350	YES	4R1AN-180			
	193-6B3EM-N	RED	NO	350	YES	4R3AN-180			
	195-6C1EM-N	BLACK	YES	350	YES	4R1AT-180			
	193-6C3EM-N	RED	YES	350	YES	4R3AT-180			
	195-6C1EM-NL	BLACK	YES	350	YES	4C1EW	C4B1E	R4C1E	2440-41-N-T
	195-6C9EM-NL	ORANGE		350	YES	4C1FS	C3B1FS-BAL		2440-49-N-T
SOLID STATE WITHOUT OVER CURRENT	105-3B1ES-N	BLACK	NO	300	NO	3B1ES			
	103-3B3ES-N	RED	NO	300	NO	3B3ES			
	105-3C1ES-N	BLACK	YES	300	NO	3C1S	3B1S-300	R3C1S	A0365896
	103-3C3ES-N	RED	YES	300	NO	3C3ES			
	105-3B1FS-N	BLACK	NO	240	NO	3B1FS			
	103-3B3FS-N	RED	NO	240	NO	3B3FS			
	105-3C1FS-N	BLACK	YES	240	NO	3C1FS	3B1FS-240	R3C1FS	A0358185
	103-3C3FS-N	RED	YES	240	NO	3C3FS			
	105-3C1S75-N	BLACK	YES	75	NO				
SOLID STATE WITH OVER CURRENT	115-6B1ESC-N	BLACK	NO	300	YES	4B1ES			
	113-6B3ESC-N	RED	NO	300	YES	4B3ES			
	115-6C1ESC-N	BLACK	YES	300	YES	4C1S	4B1S-300	R4C1S	A0361533
	113-6C3ESC-N	RED	YES	300	YES	4C3ES			
	115-6B1FSC-N	BLACK	NO	240	YES	4C1FS	4B1FS-240	R4C1FS	A0360047
	113-6B3FSC-N	RED	NO	240	YES	4B3FS			
	115-6C1FSC-N	BLACK	YES	240	YES	4C1FS			
	113-6C3FSC-N	RED	YES	240	YES	4C3FS			
	115-6C1S75-N	BLACK	YES	75	YES	4C1FS-75	C4B1S-75		
	113-6C3S75-N	RED	YES	75	YES		4B3S-75		

Gas Discharge Tube (GDT)

- A robust balanced three-electrode design.
- Automatically resets after current surges of up to 10,000 Amps and high voltages.
- Attractive for protecting high-speed carrier lines, such as T1, due to Ultra Low Capacitance.

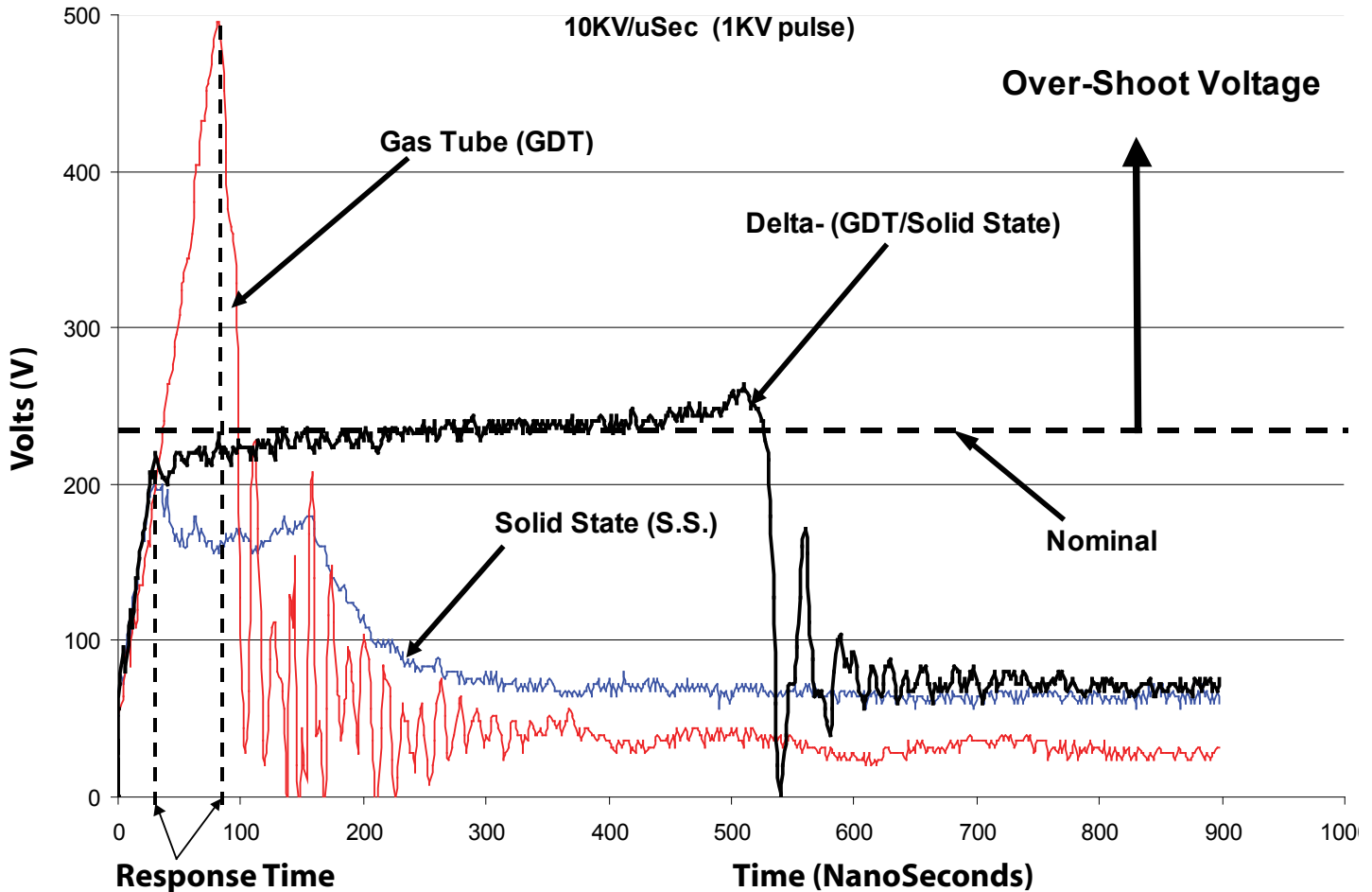
Solid State (S.S.)

- Solid State thyristor based design.
- Tighter voltage range which results in lower over-shoot voltage.
- Quick transient response time.
- Automatically resets after current surges of up to 100 Amps.

Delta (GDT/TVS)

- A robust balanced three-electrode GDT coordinated with Transient Voltage Suppressor (TVS) diodes.
- Tighter voltage range which results in lower over-shoot voltage.
- Quick transient response time.
- Automatically resets after current surges of up to 20,000 Amps and high voltages.

Response of Overvoltage Protector



Nanosecond = Billionth of a Second

Actual waveshapes recorded by Tektronix TDS520 Oscilloscope

A GUIDE TO SELECTING PROTECTOR MODULES

CONSIDER:	GAS TUBE	SOLID STATE	DELTA (GDT/TVS)
RESPONSE TIME	GOOD	BEST	BEST
VOLTAGE PRECISION	GOOD	BETTER	BEST
CURRENT CAPABILITY	BETTER	GOOD	BEST
LOW CAPACITANCE	BEST	GOOD	BETTER
SERVICE LIFE	BETTER	GOOD	BEST

FOR ANALOG AND DIGITAL TELEPHONY SIGNALS

Tii MODEL NUMBER:	TECHNOLOGY	SUGGESTED APPLICATIONS
175-3C1EW, 3B1E	GAS TUBE 350 VOLT	ANALOG (CO OR LINE CARD), T1
115-6C1FSC, 4B1S,	SOLID STATE 240 VOLT	CO LINES TO A DIGITAL SWITCH
115-6C1S75, 4B1S (75)	SOLID STATE 75 VOLT	DIGITAL (LINE CARD)
195BCDXN-230	DELTA 240 VOLT	DIGITAL (CO LINES)
195BCDXN-75	DELTA 75 VOLT	DIGITAL (LINE CARD)

FOR CAT 5E & CAT6 DATA SIGNALS - (WHEN USED W/ Tii 505E & 606 BLOCKS)

Tii MODEL NUMBER:	TECHNOLOGY	SUGGESTED APPLICATIONS
LVP18	SOLID STATE 18 VOLT	ETHERNET/LAN
LVP27	SOLID STATE 27 VOLT	IP CAMERAS (12-24V APPLICATIONS)
LVP65	SOLID STATE 65 VOLT	ETHERNET/POE