

CRITEC[®]

TDX Series

Transient Discriminating™ TVSS



ERICO[®]

TDX Series

Best Value Engineered Protection

With emphasis on efficiency and value, ERICO developed the TDX Series. Utilizing the very latest technologies, the TDX Series of surge protection devices provides unparalleled life, protection and safety – with the surge ratings sufficient for even the most lightning-exposed, mission-critical sites. The TDX Series, which features ERICO's patented Transient Discriminating™ (TD™) Technology, has been developed and optimized for service entrance and distribution panel IEEE C62.41 Cat C3 and B3 applications. The TDX combines many safety features and performance benefits resulting in the best value your money can buy.



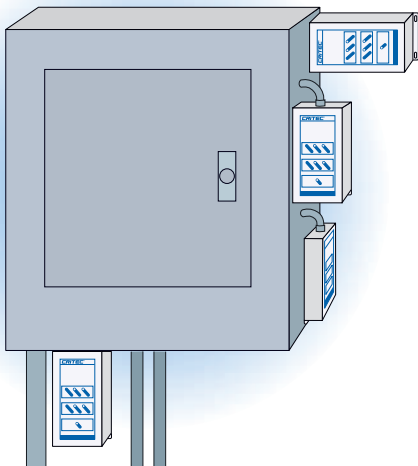
TDX150 is ideal for service entrance protection.



TDX100 is the best value for distribution panel protection.



The compact size of the TDX50 is ideal for point-of-use protection.



The compact size of TDX units enables multiple installation options.

Features Include:

- Compact size
- Easy installation
- 10-year free-replacement warranty
- Extended service life with Transient Discriminating Technology

Owner Benefits:

- Choice of three surge ratings to match the performance to the requirements and budget
- Long life - backed by ERICO's "10-year free-replacement warranty"
- Facility safety - **three separate safety technologies utilized**

Specifier Benefits:

- Free technical and application support
- Electronic risk analysis and selection tools
- Complies to NEMA LS1
- Independently tested and verified
- UL 1449 Edition 2 Listed

Maintainer Benefits:

- No regular maintenance required
- Facility safety - **three separate safety technologies utilized**
- TDX100 and TDX150 feature audible alarm and Form C contacts for remote monitoring
- Predictive indication - status indication operates prior to removal of all protection

Installer Benefits:

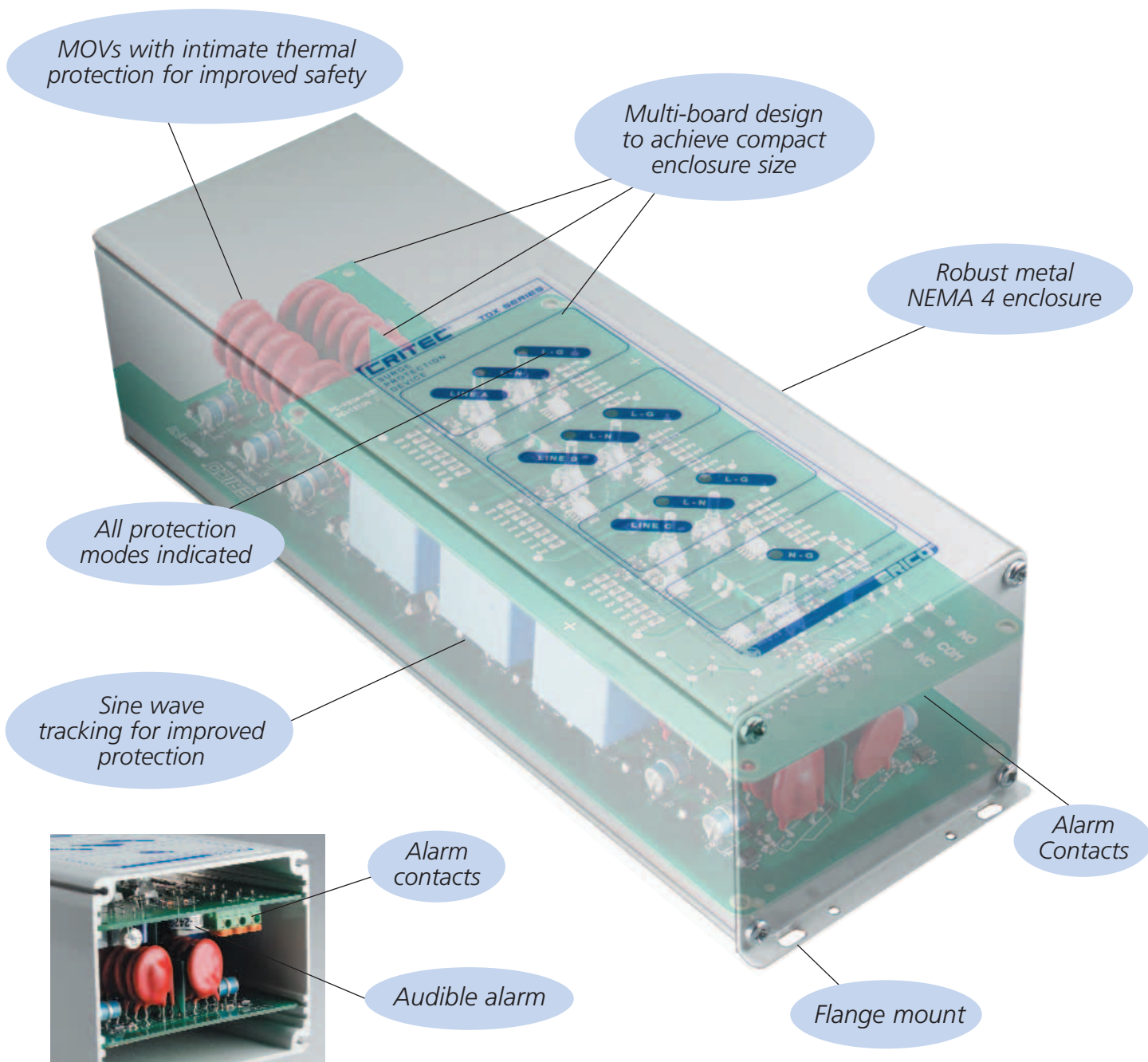
- Prewired with 24" pigtail
- NEMA 4 enclosure is suitable for outdoor use
- Optional flush cover plates
- Suitable for all panels up to 65kAIC Short Circuit Current Rated

Key Specifications

- Transient Discriminating™ (TD™) Technology for extended service life
- 65kAIC rated (Short Circuit Current Rating)
- NEMA 4 Metal enclosure suitable for outdoor use
- Width of 4.11" allows units to fit between adjacent panel boards
- Depth < 3.4" allows for flush panel mounting with optional kit
- EMI/RFI Sine Wave Filtering
- All modes protected
- Form C contacts and Audible Alarm on TDX100 & TDX150 units
- 10-year free-replacement warranty
- UL 1449 Second Edition Listed













3/4" NEMA 4 nipple and prewired connection leads.



Uncompromised Reliability and Safety

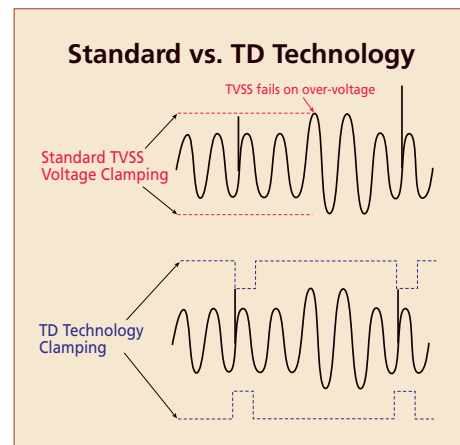
Through normal use, TVSSs are subjected to a variety of electrical phenomenon. The TDX unit's multiple safety technologies not only address the spectacular catastrophic events, but also those due to normal aging. Only the TDX Series features the following three technologies - resulting in uncompromised reliability and safety:

Problem	Solution		
	Primary Protection	Secondary Protection	Tertiary Protection
Temporary Over-voltages This traditionally causes premature MOV aging and risk of fire.			
Abnormal Over-voltages This traditionally causes rapid MOV failure and risk of fire.			
Short Circuit MOV Due to Aged MOV This traditionally causes risk of TVSS damage and fire.			
Short Circuit MOV Due to Excessive Surge Current This traditionally causes risk of TVSS damage and fire.			

Transient Discriminating Technology

To provide safety and long life in real world conditions, ERICO developed Transient Discriminating (TD) Technology. TD Technology introduces an active frequency discriminating circuit to provide low level transient clamping, yet is immune to 50/60Hz temporary over-voltages. TD is resilient to over-voltage events, yet provides uncompromised protection levels, resulting in continued protection even after severe events.

Traditional technologies are based on voltage-limiting components such as metal oxide varistors (MOVs) and/or Silicon Avalanche Diodes (SADs). Their primary goal is to clamp transient voltages as low as possible. This comes at a price - vulnerability to temporary over-voltages (TOVs). The low clamping voltage translates to a low maximum continuous operating voltage (MCOV). Some TVSS devices will fail if exposed to voltages just 10% above the nominal! Underwriters Laboratories considers TOVs so important that UL 1449 was revised in 1998 to include product safety testing under severe over-voltage conditions. While UL 1449 Edition 2 Listing ensures that the failure of the TVSS is safe, it does not address the length of life of the TVSS. Industry experience has shown that most TVSS devices fail due to TOVs - not too many transients or too large a transient. For more information, ask for a copy of our certified TD Technology Extended Life Test Report.



Thermal Intimate MOVs

Safety is paramount, so in addition to TD technology, all TDX Series units feature intimate thermal protection. Should an MOV begin to overheat due to aging or excess stress, the thermal protection device, which is bonded directly to the MOV substrate, immediately and safely isolates that component allowing its neighboring units to continue operation (A). Other designs require the MOV to overheat to dangerous levels to produce enough heat to operate more distant thermal devices (B). These low cost designs often share thermal devices, so more than just the failing MOV is disconnected. The TDX only disconnects the aged component, thus providing increased protection and longer overall product life.



Over-current Fusing

All TDX units include over-current fusing as the third protection technology. MOV failure typically involves a low impedance condition which draws excessive current from the supply. Each MOV is individually fused for isolation. This high capacity fusing and other design/safety features result in the TDX series being Listed for use in services with ratings of up to 65kAIC.



Which Surge Rating?

Choosing a TVSS surge rating is probably the industry's most controversial issue. Simply stated, TVSS devices rated above 200kA are a poor investment, especially where budgets are limited. The new IEEE C62.41.2 provides a welcome reality check with its recommendation of a 100kA 8/20 μ s surge rating for exposed service entrance locations (increased from 10kA 8/20 μ s). AC service entrance surge amplitudes larger than 100kA are extremely rare. The service lines and equipment insulation are not high enough to allow sufficient voltage to develop to generate this current at the facility service panel. The only justifiable reason for larger surge ratings is to provide longer TVSS life because each doubling of surge rating provides two to five times the length of life.

However, because ERICO's patented TD Technology eliminates the most frequent cause of TVSS failure, over-sizing the TVSS is no longer required. Backed by our 10-year replacement warranty, the TDX Series for service and branch protection is the best protection investment you can make.



Industry's smallest profile is ideal for installation between electrical panels, within stud walls or any tight location.

Features Incorporated In All ERICO TDX Products



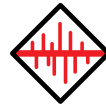
Three Safety Technologies

The exclusive combination of three safety technologies ensures that the TDX Series will remain safe under or eliminate the many failure scenarios that can affect traditional TVSSs.



Long Life

Specifically developed to offer long life in harsh service conditions. Over 500,000 Category B impulses can be withstood. Exceeds the requirements of ANSI/IEEE C62.41-1991 and ANSI/IEEE C62.45 - 1987.



Multi-Pulse

Over 75% of all lightning exhibits multiple re-strikes of energy within 30-200ms of the main discharge. TD products are specifically designed to withstand this excessive energy and heating to ensure protection is provided when needed.



Safety Approved

TDX products are independently tested by Underwriters' Laboratory to meet the fire, electrical safety and technical requirements of UL 1449 Edition 2.



Multi-Source

The technology is designed and tested to suit many different transient waveshapes. This ensures that the TDX protects against all transient sources from the larger lightning transients to the smaller spikes and glitches common in business and industrial applications.



Low Let-Through Voltage

TD provides many new advantages and benefits, without sacrificing the most important performance specification. "Let-through" is a measure of the clamped voltage that reaches your equipment. A low let-through means a high level of protection for sensitive equipment. This low let-through voltage is not at the expense of the very high over-voltage withstand.



Extra Fast Transient Withstand

TD products are tested with international test pulses, including the very high-speed EFT bursts. This ensures optimum protection in real-world conditions.



EMC/RFI

TD products are designed and tested to meet international specifications so they do not effect other equipment, nor are they affected by electromagnetic radiation.



Short Circuit Current Rating

To address the new requirement of 2002 NEC®, the TDX Series has been approved by UL for use on circuits with short circuit current ratings of up to 65kAIC.



10-Year Free-Replacement Warranty

We are so confident that ERICO's TD technology provides extended life, we back the TDX Series with a 10-year free-replacement warranty*. Our warranty even covers damage due to over-voltages, abnormally high numbers of surges and damage from direct lightning strikes!

*Copies are available upon request or from our web site: www.erico.com.



Independently Tested

We guarantee our products meet their claimed ratings. While some competitors provide bold marketing hype, ERICO sets clear standards by publishing independently certified surge ratings.

Although surge results are independently tested, ERICO is one of the few TVSS designers with the size and resources to commit to the funding of a permanent 180kA 8/20 μ s in-house high-energy laboratory. Our modern research and testing facilities include state-of-the-art engineering laboratories and equipment capable of simulating the direct and indirect effects of lightning strikes, surges and transients. These testing facilities give us the ability to test and refine our products during the design process. Additionally, ERICO has facilities for extended life testing, over-voltage safety, fault-current behavior and EMI/RFI performance.



65kAIC Short Circuit Current Rating

The 2002 issue of the National Electric Code requires as of January 1, 2002 that all TVSSs must be marked with their short circuit current rating (SCCR). The rating of the TVSS should be greater than or equal to the circuit to which it is being connected. As panels with ratings up to 42kAIC are occasionally encountered, the TDX has been listed for use on circuits up to 65kAIC, enabling it to be connected to all of today's commonly rated panels.

	Model	Surge Rating (8/20 μ s per line)	Distribution System	Size (L x W x D)	Audible Alarm & Contacts
TDX50	TDX50 120	50kA	1 \emptyset 2W+G 120V	4 x 4.1 x 2.5"	
	TDX50 240	50kA	1 \emptyset 2W+G 220-240V	4 x 4.1 x 2.5"	
	TDX50 120/240	50kA	1 \emptyset 3W+G 120/240V	4 x 4.1 x 2.5"	
	TDX50 120/208	50kA	3 \emptyset Wye 4W+G 120/208-127/220V	6 x 4.1 x 2.5"	
	TDX50 277/480*	50kA	3 \emptyset Wye 4W+G 220/380-277/480V	6 x 4.1 x 2.5"	
	TDX50 347/600	50kA	3 \emptyset Wye 4W+G 347/600V	6 x 4.1 x 2.5"	
TDX100	TDX100 120/240	100kA	1 \emptyset 3W+G 120/240V	8 x 4.1 x 3.3"	✓
	TDX100 120/208	100kA	3 \emptyset Wye 4W+G 120/208-127/220V	8 x 4.1 x 3.3"	✓
	TDX100 277/480	100kA	3 \emptyset Wye 4W+G 220/380-277/480V	8 x 4.1 x 3.3"	✓
	TDX100 347/600	100kA	3 \emptyset Wye 4W+G 347/600V	8 x 4.1 x 3.3"	✓
	TDX100 120/240D	100kA	3 \emptyset 4W+G 120/240V Delta High Leg	8 x 4.1 x 3.3"	✓
	TDX100 240D	100kA	3 \emptyset 3W+G 240V	8 x 4.1 x 3.3"	✓
	TDX100 480D*	100kA	3 \emptyset 3W+G 480V	8 x 4.1 x 3.3"	✓
TDX150	TDX150 120/240	150kA	1 \emptyset 3W+G 120/240V	12 x 4.1 x 3.3"	✓
	TDX150 120/208	150kA	3 \emptyset Wye 4W+G 120/208-127/220V	12 x 4.1 x 3.3"	✓
	TDX150 277/480	150kA	3 \emptyset Wye 4W+G 220/380-277/480V	12 x 4.1 x 3.3"	✓
	TDX150 347/600	150kA	3 \emptyset Wye 4W+G 347/600V	12 x 4.1 x 3.3"	✓
	TDX150 120/240D	150kA	3 \emptyset 4W+G 120/240V Delta High Leg	12 x 4.1 x 3.3"	✓
	TDX150 240D	150kA	3 \emptyset 3W+G 240V	12 x 4.1 x 3.3"	✓
	TDX150 480D*	150kA	3 \emptyset 3W+G 480V	12 x 4.1 x 3.3"	✓

*For motor control applications these units also applicable to "No Neutral" 480V Wye 3W+G systems

