

SYSTEM FEATURES



- Providing the highest level of protection with the lowest let-through voltage in the industry
- Fail-Safe Design
- Optional Component Level Fusing
- NEMA LS1 Compliance – single pulse tested at independent 3rd party lab (NEMA LS 1, 2.2-9 and 3-9)
- Form C dry relay contacts and audible alarm with silence button
- Two suppression technologies: MOV and Enhanced Transient Filter
- UL 1283 Tracking Filter
- CE Compliant
- Ultra, Compact Footprint – efficiency and performance
- 30-Year Unlimited Free Replacement Warranty

PRODUCT SPECIFICATIONS

GENERAL SPECIFICATIONS

Maximum Rated Surge Current: 160kA per phase; 80kA per mode
Application: ANSI/IEEE C62.41 Location C, B & A. Ideal for low exposure service entrance, motor control centers, distribution panels, branch panels and critical loads
Design: Optimum performing parallel hybrid with component level fusing
Warranty: 30-Year Unlimited Free Replacement
Safety Listing: UL 1449 2nd Edition 2005 Revision (effective 2/9/2007) and UL 1283

ELECTRICAL SPECIFICATIONS

Modes of Protection: All Modes. L-N, L-L, L-G, & N-G
 Input Power Frequency: 40-440Hz (47-64 Hz with enhanced filter option)
Response Time: < 1 nanosecond
Standard Monitoring: Status indicator lights (one per phase & one service LED); Form C dry relay contacts for suppressor status; Audible alarm with silence button
Short Circuit Current Rating: 200 kAIC on all units. No upstream over-current protection required on CLF unit. Non CLF units require 60A Max fuse or breaker.

MECHANICAL SPECIFICATIONS

Dimensions (approx.): 11.50" H x 8.28" W x 6.28" D (292 mm H x 210 mm W x 160 mm D)
Enclosure: Steel. Weather-proof. NEMA 4 (IP 56)
Connection: Pre-wired with 36" (915 mm) of #10 AWG (5.26 mm²) conductor
Mounting: Multi-point mounting feet
Operating Environment: -40° C to 70° C (-40° F to 160° F)
 5% to 95% non-condensing humidity
Weight: 20 lbs. (9.1 kg)

AVAILABLE CONFIGURATIONS

Model Number	Description
TK-ST160-1P120	120VAC, 1Ø 2-wire + grd
TK-ST160-1P240*	240VAC, 1Ø 2-wire + grd
TK-ST160-1S240	120/240VAC, 1Ø SPLIT-PHASE, 3-wire +grd
TK-ST160-3Y208	120/208VAC, 3Ø WYE, 4-wire + grd
TK-ST160-3Y380*	220/380VAC, 3Ø WYE, 4-wire + grd
TK-ST160-3Y415*	240/415VAC, 3Ø WYE, 4-wire + grd
TK-ST160-3Y480	277/480VAC, 3Ø WYE, 4-wire + grd
TK-ST160-3Y600	347/600VAC, 3Ø WYE, 4-wire + grd
TK-ST160-3D240	120/240VAC, 3Ø high-leg DELTA, 4-wire + grd (B phase must be 208V)
TK-ST160-240NN	240VAC, 3Ø DELTA, 3-wire + grd
TK-ST160-380NN	380VAC, 3Ø DELTA, 3 wire + grd
TK-ST160-480NN	480VAC, 3Ø DELTA, 3-wire + grd
TK-ST160-600NN	600VAC, 3Ø DELTA, 3-wire + grd

*CE approved models

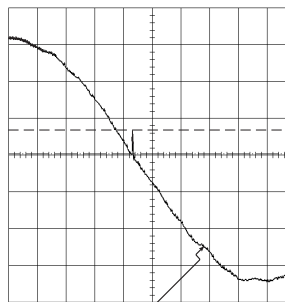
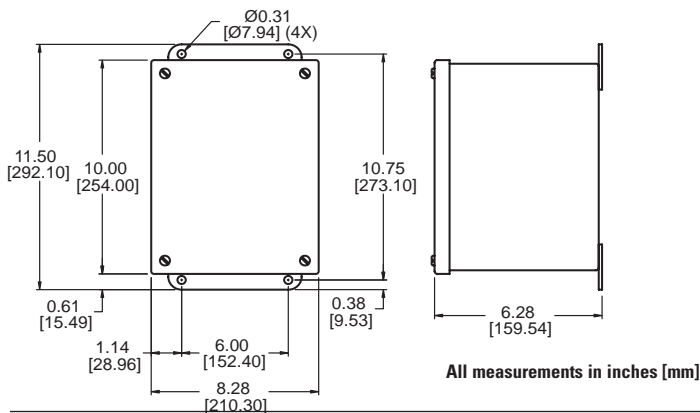
AVAILABLE OPTIONS

- Order as a Suffix** Example: TK- ST160-3Y208-FL
- Enhanced Transient Filter (ETF): add suffix "-F"
 - Component Level Fusing (CLF): add suffix "-L"
 - Surge Counter: add suffix "-B"
 - NEMA 4X Stainless Steel Enclosure: add suffix "-XX"
- Order as a Separate Item (30 Year Warranty)**
- Fused Disconnect Switch: DF-200KAIC-60A-3/4
 - Non-Fused Disconnect Switch: DN-200KAIC-60A-3/4

EMI / RFI FILTER ATTENUATION – MIL STANDARD 220B

Frequency	Attenuation
1kHz	2 dB
10kHz	17 dB
100kHz	40 dB
1MHz	18 dB
10MHz	6 dB
100MHz	1 dB
Max. Attenuation Frequency	41 dB @ 106 kHz





Peak Let-Through Voltage Level - 40V
Reference Level Zero Crossing of AC Sine Wave

For 120/208V Configuration

ANSI/IEEE C62.41.1
Category A1 Ring Wave
2000V, 67A Test Plot

L-N Mode, Dynamic,
180° Phase Angle,
6" Leads, Positive Polarity
500 Mega samples/sec
55V/div Vertical

ANSI/IEEE C62.41.1-2002, C62.41.2-2002, & C62.45-2002
Measured Limited Voltage

Model Number	System Voltage	System Configuration	Protection Mode	MCOV	UL SVR			UL 1449 2 nd Edition 2005 Revision Suppressed Voltage Ratings
					ETF Models A1 Ring Wave 2kV, 67A 180° Phase Angle	All Models B3/C1 Impulse Wave 6kV, 3kA 90° Phase Angle	All Models C3 Impulse Wave 20kV, 10kA 90° Phase Angle	
TK-ST160-1P120	120V	1-Phase 2-wire+grnd	L-N	150V	40V	546V	960V	400V
			L-G	150V	76V	1010V	400V	
			N-G	150V	54V	860V	400V	
TK-ST160-1P240	240V	1-Phase 2-wire+grnd	L-N	320V	42V	990V	1437V	800V
			L-G	320V	61V	1017V	1523V	800V
			N-G	320V	50V	940V	1340V	800V
TK-ST160-1S240	120/240V	1-Phase 3-wire+grnd	L-N	150V	40V	546V	960V	400V
			L-G	150V	76V	1010V	400V	
			N-G	300V	46V	903V	1310V	800V
TK-ST160-3Y208	120/208V	3-Phase WYE 4-wire+grnd	L-N	150V	40V	546V	960V	400V
			L-G	150V	76V	564V	1010V	400V
			L-L	300V	46V	903V	1310V	800V
TK-ST160-3Y380	220/380V	3-Phase WYE 4-wire+grnd	N-G	150V	54V	507V	860V	400V
			L-N	320V	42V	990V	1437V	800V
			L-G	320V	61V	1017V	1523V	800V
TK-ST160-3Y415	240/415V	3-Phase WYE 4-wire+grnd	L-L	640V	60V	1813V	2190V	1500V
			N-G	320V	50V	940V	1340V	800V
			L-N	320V	42V	990V	1437V	800V
TK-ST160-3Y480	277/480V	3-Phase WYE 4-wire+grnd	L-G	320V	61V	1017V	1523V	800V
			L-L	640V	60V	1813V	2190V	1500V
			N-G	320V	50V	940V	1340V	800V
TK-ST160-3Y600	347/600V	3-Phase WYE 4-wire+grnd	L-N	420V	56V	1242V	1710V	1200V
			L-G	420V	99V	1294V	1783V	1200V
			L-L	840V	76V	2280V	2893V	2000V
TK-ST160-3D240	120/240V	3-Phase high-leg DELTA 4-wire+grnd	N-G	420V	88V	1190V	1610V	1200V
			L-N	150V	40V	546V	960V	400V
			H-N	320V	42V	990V	1437V	800V
TK-ST160-240NN	240V	3-Phase DELTA 3-wire+grnd	L-G	150V	76V	564V	1010V	400V
			L-L	320V	61V	1017V	1523V	800V
			H-L	470V	46V	1250V	1640V	1500V
TK-ST160-380NN	380V	3-Phase DELTA 3-wire+grnd	N-G	150V	54V	507V	860V	400V
			L-G	550V	912V	1423V	1870V	1500V
			L-L	550V	39V	1481V	1950V	1500V
TK-ST160-480NN	480V	3-Phase DELTA 3-wire+grnd	L-G	550V	912V	1423V	1870V	1500V
			L-L	550V	39V	1481V	1950V	1500V
			L-G	750V	1253V	1907V	2420V	2000V
TK-ST160-600NN	600V	3-Phase DELTA 3-wire+grnd	L-L	750V	36V	1927V	2410V	2000V

EFT = Enhanced Transient Filter (-F suffix). All tests performed with 6" (152 mm) lead length, positive polarity. All voltages are peak values (±10%) measured from the zero reference point at the phase angles referenced above using a 10 µs/div display rate and 500 Mega samples/sec sampling rate. Specifications subject to change without notice, see web site, www.tpssurge.com for latest revisions.