

TECHNICAL SPECIFICATION

## ReliaGear™ neXT

UL 67 recognized module for surge protection for power panelboards





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# Introduction

The ReliaGear™ neXT surge protective device (SPD) plug-in module uses the ABB TPME and TPHE integrated SPDs. The TPME and TPHE SPDs are UL 1449 listed, and the ReliaGear neXT SPD plug-in module is a UL 67 recognized component.

ABB SPDs are engineered for reliability, flexibility and long life in the most extreme surge environments. The true maximum surge current rating has been proven successful in third-party tests. These SPD models connect to the panelboard or switchboard bus stacks, occupying 10X of bus space. In power panels, SPDs are offered only in 40" and 45" wide enclosures (not available in 30" wide enclosures). In switchboards, the minimum section widths for SPDs are 35" wide one-sided configuration or 40" wide two-sided configuration (see 1VAL088301-TG SWBD technical application guide for more details). TPME and TPHE SPDs are UL 1449 listed SPDs and third-party tested per IEEE C62.62 and NEMA LS-1 for the rated 8x20  $\mu$ s surge current per mode with fusing included. Standard features include a surge counter, audible alarm, indicating lights and dry contacts. Rating options range from 65 kA per mode to 300 kA per mode. All mode protection is provided with surge components (MOVs) connected on the phase-to-neutral, phase-to-ground and neutral-to-ground paths as appropriate for the voltage configuration.



## Surge protective devices

The SPD module is a plug-in accessory to be installed on the bus stack.

— Available in different configurations according to system voltage, impulse current and type:

System voltage	120 V AC Wye, 277 V AC Wye, 347 V AC Wye, 480 V AC Delta
Minimum 8 x 20 $\mu$ s single impulse surge current (per mode)	65 kA, 80 kA, 125 kA, 150 kA, 200 kA, 300 kA
UL 1449 SPD type	Type 1 Type 2

## Features and benefits

- UL 67 recognized module with an integrated UL 1449, Type 1, Type 2 SPD
- cUL, CSA C22.2
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts
- Occupies 10X of space
  - Power panels: In 40" and 45" wide enclosures (not available in 30" wide enclosures)
  - Switchboards: Minimum section width = 35" wide one-sided configuration OR 40" wide two-sided configuration
- Thermally protected MOV design eliminates the need for additional upstream over-current protection

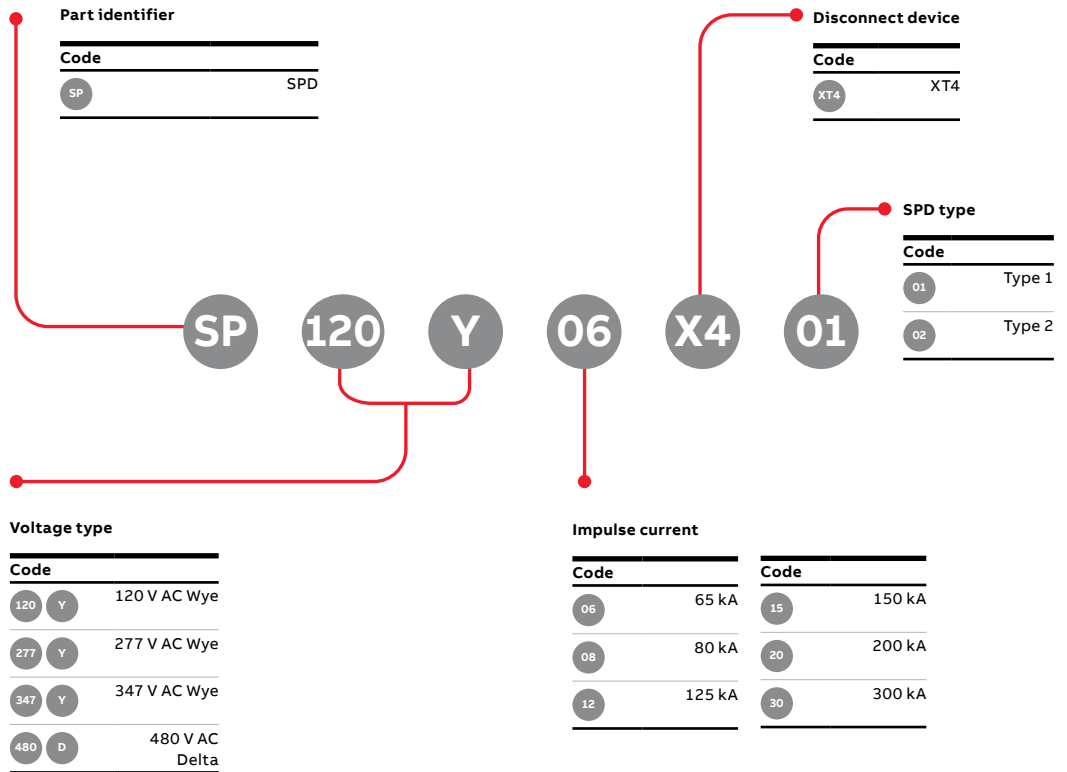
## Technical characteristics/data

Connection method	XT4 disconnect connected to ReliaGear bus stack through line-side connector (LSC)
Operating temperature	-13 °F to 149 °F (-25 °C to 65 °C)
Weight	35 lbs. (15.9 kg)
Dimensions (LxHxW)	15.25 in x 7.94 in x 13.84 in (387.60 mm x 201.67 mm x 351.53 mm)

## Catalog number scheme

Surge protective device (SPD), UL 67 recognized module

Refer to the following catalog number selection and cross reference guide to understand which UL 1449 SPD (TPXX prefix) is integrated into the UL 67 recognized ReliaGear™ neXT plug-in SPD module (SP prefix).



## Cross reference guide

### TPME / TPHE SPD unit to ReliaGear™ neXT SP module

UL 1449 SPD (TP\*) within UL 67 recognized ReliaGear neXT plug-in SPD module (SP\*):

Description	ReliaGear neXT catalog number	UL 1449 SPD catalog number
neXT SPD 120Y 65 kA XT4 service entrance main lug	SP120Y06X401	TPME120Y06NSBXT1
neXT SPD 120Y 65 kA XT4	SP120Y06X402	TPME120Y06NSBX
neXT SPD 120Y 80 kA XT4 service entrance main lug	SP120Y08X401	TPME120Y08NSBXT1
neXT SPD 120Y 80 kA XT4	SP120Y08X402	TPME120Y08NSBX
neXT SPD 120Y 125 kA XT4 service entrance main lug	SP120Y12X401	TPHE120Y12NSBXT1
neXT SPD 120Y 125 kA XT4	SP120Y12X402	TPHE120Y12NSBX
neXT SPD 120Y 150 kA XT4 service entrance main lug	SP120Y15X401	TPHE120Y15NSBXT1
neXT SPD 120Y 150 kA XT4	SP120Y15X402	TPHE120Y15NSBX
neXT SPD 120Y 200 kA XT4 service entrance main lug	SP120Y20X401	TPHE120Y20NSBXT1
neXT SPD 120Y 200 kA XT4	SP120Y20X402	TPHE120Y20NSBX
neXT SPD 120Y 300 kA XT4 service entrance main lug	SP120Y30X401	TPHE120Y30NSBXT1
neXT SPD 120Y 300 kA XT4	SP120Y30X402	TPHE120Y30NSBX
neXT SPD 277Y 65 kA XT4 service entrance main lug	SP277Y06X401	TPME277Y06NSBXT1
neXT SPD 277Y 65 kA XT4	SP277Y06X402	TPME277Y06NSBX
neXT SPD 277Y 80 kA XT4 service entrance main lug	SP277Y08X401	TPME277Y08NSBXT1
neXT SPD 277Y 80 kA XT4	SP277Y08X402	TPME277Y08NSBX
neXT SPD 277Y 125 kA XT4 service entrance main lug	SP277Y12X401	TPHE277Y12NSBXT1
neXT SPD 277Y 125 kA XT4	SP277Y12X402	TPHE277Y12NSBX
neXT SPD 277Y 150 kA XT4 service entrance main lug	SP277Y15X401	TPHE277Y15NSBXT1
neXT SPD 277Y 150 kA XT4	SP277Y15X402	TPHE277Y15NSBX
neXT SPD 277Y 200 kA XT4 service entrance main lug	SP277Y20X401	TPHE277Y20NSBXT1
neXT SPD 277Y 200 kA XT4	SP277Y20X402	TPHE277Y20NSBX
neXT SPD 277Y 300 kA XT4 service entrance main lug	SP277Y30X401	TPHE277Y30NSBXT1
neXT SPD 277Y 300 kA XT4	SP277Y30X402	TPHE277Y30NSBX
neXT SPD 347Y 65 kA XT4 service entrance main lug	SP347Y06X401	TPME347Y06NSBXT1
neXT SPD 347Y 65 kA XT4	SP347Y06X402	TPME347Y06NSBX
neXT SPD 347Y 80 kA XT4 service entrance main lug	SP347Y08X401	TPME347Y08NSBXT1
neXT SPD 347Y 80 kA XT4	SP347Y08X402	TPME347Y08NSBX
neXT SPD 347Y 125 kA XT4 service entrance main lug	SP347Y12X401	TPHE347Y12NSBXT1
neXT SPD 347Y 125 kA XT4	SP347Y12X402	TPHE347Y12NSBX
neXT SPD 347Y 150 kA XT4 service entrance main lug	SP347Y15X401	TPHE347Y15NSBXT1
neXT SPD 347Y 150 kA XT4	SP347Y15X402	TPHE347Y15NSBX
neXT SPD 480Y 65 kA XT4 service entrance main lug	SP480D06X401	TPME480D06NSBXT1
neXT SPD 480Y 65 kA XT4	SP480D06X402	TPME480D06NSBX
neXT SPD 480Y 80 kA XT4 service entrance main lug	SP480D08X401	TPME480D08NSBXT1
neXT SPD 480Y 80 kA XT4	SP480D08X402	TPME480D08NSBX
neXT SPD 480Y 125 kA XT4 service entrance main lug	SP480D12X401	TPHE480D12NSBXT1
neXT SPD 480Y 125 kA XT4	SP480D12X402	TPHE480D12NSBX
neXT SPD 480Y 150 kA XT4 service entrance main lug	SP480D15X401	TPHE480D15NSBXT1
neXT SPD 480Y 150 kA XT4	SP480D15X402	TPHE480D15NSBX
neXT SPD 480Y 200 kA XT4 service entrance main lug	SP480D20X401	TPHE480D20NSBXT1
neXT SPD 480Y 200 kA XT4	SP480D20X402	TPHE480D20NSBX
neXT SPD 480Y 300 kA XT4 service entrance main lug	SP480D30X401	TPHE480D30NSBXT1
neXT SPD 480Y 300 kA XT4	SP480D30X402	TPHE480D30NSBX

## TPME UL 1449 series integrated surge protective device

Within UL 67 recognized ReliaGear™ neXT SPD module



### Designed for ABB distribution equipment

- UL listed 1449, type 1, type 2 SPD
- cUL, CSA C22.2
- Connect to the panelboard or switchboard bus bars
- Thermally protected MOV design eliminates the need for additional upstream over-current protection
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts

Voltage	Configuration	Part number	
208Y/120	3-phase, 4-wire + ground	TPME120YXX*	
480Y/277	3-phase, 4-wire + ground	TPME277YXX*	
600Y/347	3-phase, 4-wire + ground	TPME347YXX*	
480 Delta	3-phase, 3-wire + ground	TPME480DXX*	
Desired kA	XX Code		
65 kA per mode/130 kA per phase	06		
80 kA per mode/160 kA per phase	08		
Options	Mounting	UL type	Suffix (*)
ReliaGear neXT	Integral	Type 2	NSBX
power panelboard		Type 1	NSBXT1

Electrical characteristics	
Maximum surge current rating	65 kA per mode / 130 kA per phase 80 kA per mode / 160 kA per phase
Nominal discharge current rating (L-N)	20 kA
Operating frequency	50–60 Hz
Surge life (IEEE C62.41–C3 10 kA)	≥ 5000 impulses
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kAIC
Standard monitoring	Status indicator lights (one per phase) and red service light Audible alarm with silencer and test switch Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC) 6-digit LCD re-settable surge event counter

### EMI/RFI filter attenuation

Maximum attenuation frequency	-50 dB at 100 kHz
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### Mechanical characteristics

Installation location	Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2020 Type 1 and Type 2 installation locations
Altitude	0–12,000 ft. (3.66 km)
Product design	Individually fused thermally protected MOV technology

### Regulations and certifications

UL 1449	VZCA2: E320456 Type 1 / Type 2
UL 1283	VZCA8: E320456 Type 1 / Type 2
cUL, CSA C22.2	FOKY2: E320456 Type 2
UL 96A	Yes
IEEE C62.62, C62.72, C62.41	Yes
Listed by	UL

## TPHE UL 1449 series integrated surge protective device

Within UL 67 recognized ReliaGear™ neXT SPD module



### Designed for ABB distribution equipment

- UL listed 1449, type 1, type 2 SPD
- cUL, CSA C22.2
- Thermally protected MOV design eliminates the need for additional upstream over-current protection
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts

Voltage	Configuration	Part number	
208Y/120	3-phase, 4-wire + ground	TPHE120YXX*	
480Y/277	3-phase, 4-wire + ground	TPHE277YXX*	
600Y/347	3-phase, 4-wire + ground	TPHE347YXX*	
480 Delta	3-phase, 3-wire + ground	TPHE480DXX*	
Desired kA		XX Code	
125 kA per mode / 250 kA per phase		12	
150 kA per mode / 300 kA per phase		15	
200 kA per mode / 400 kA per phase		20	
300 kA per mode / 600 kA per phase		30	
Options	Mounting	UL type	Suffix (*)
ReliaGear neXT	Integral	Type 2	NSBX
power panelboard		Type 1	NSBXT1

Electrical characteristics	
Maximum surge current rating	125 kA per mode / 250 kA per phase 150 kA per mode / 300 kA per phase 200 kA per mode / 400 kA per phase 300 kA per mode / 600 kA per phase
Nominal discharge current rating (L-N)	20 kA
Operating frequency	50–60 Hz
Surge life (IEEE C62.41–C3 10 kA)	≥ 20,000 impulses
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kAIC
Standard monitoring	Status indicator lights (one per phase) and red service light Audible alarm with silencer and test switch Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC) 6-digit LCD re-settable surge event counter

EMI/RFI filter attenuation	
Maximum attenuation frequency	-50 dB at 100 kHz

Mechanical characteristics	
Enclosure type	NEMA 1
Installation location	Service entrance equipment, primary distribution equipment - Rated for UL and NEC 2020 Type 2 installation locations
Altitude	0–12,000 ft. (3.66 km)
Product design	Individually fused thermally protected MOV technology

Regulations and certifications	
UL 1449	VZCA7: E320456 type 1 / type 2
UL 1283	VZCA7: E320456 type 1 / type 2
cUL, CSA C22.2	FOKY2: E320456 type 2
UL 96A	Yes
IEEE C62.62, C62.72, C62.41	Yes
Listed by	UL



## TPME and TPHE surge protective devices

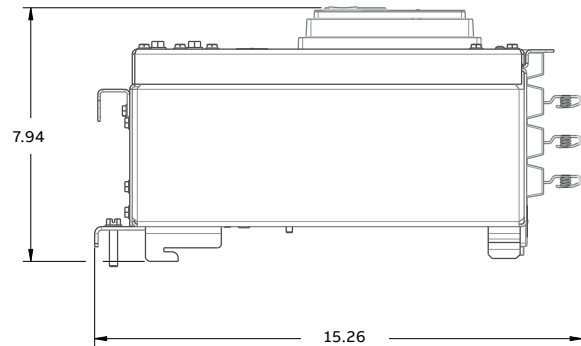
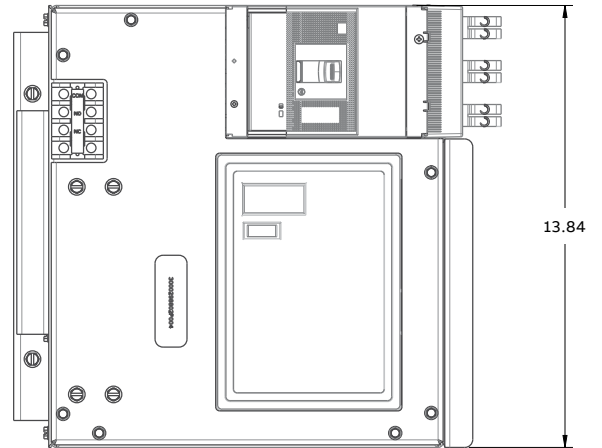
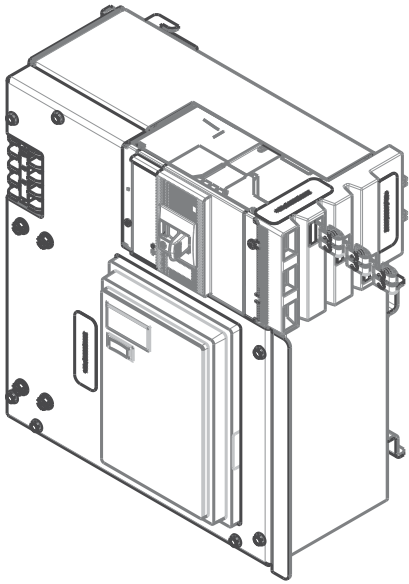
### Performance and ratings

#### Performance data

Model number	Protection mode	MCOV	VPR	IEEE Cat. B3 100 kHz / 500 A	IEEE Cat. B3 C1 6 kV/3 kA	IEEE Cat. C3 20 kV/10 kA
TPME120S	L-L	300	1200	752	844	1007
TPHE120S	L-N	150	900	470	600	793
	L-G	150	800	463	485	670
	N-G	150	700	452	476	680
	L-L	640	2000	1340	1597	1827
TPHE277Y	L-N	320	1500	727	1053	1170
	L-G	320	1200	800	893	1073
	N-G	320	1200	792	880	1180
	L-L	840	2500	1723	2020	2220
TPHE347Y	L-N	420	1500	883	1187	1467
	L-G	420	1500	1000	1113	1240
	N-G	420	1500	1000	1120	1240
	L-L	1110	3000	1800	2647	2933
TPHE480D	L-N	-	-	-	-	-
	L-G	550	1800	1223	1407	1607
	N-G	-	-	-	-	-
	L-L	-	-	-	-	-

## ReliaGear™ neXT SP module

### Dimensions

**Size information**

Length (in.) [mm]	15.25 [387.60]
Width (in.) [mm]	13.84 [351.53]
Height (in.) [mm]	7.94 [201.67]





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