

Surgelagic® Surge Protective Devices LC, XR, and XW Series

Class 1311

Catalog

1311CT0101R6/07

2007



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Product Description

LC Series

The LC Series Surge Protective Device (SPD) is a surge protection filter that offers high-quality surge protection and noise filtration for any microprocessor-based product, PLC, motion control, original equipment manufacturer (OEM), or any industrial load. The LC can be connected to the incoming power source (20 A or less) to protect the control panel components from the outside environment.



This product is ideal for panel builders as well as manufacturers and integrators of instrumentation cabinets for industrial, medical, and commercial applications.

The LC uses a series/hybrid suppression circuit that delivers 40,000 peak amps of surge protection. It also provides sine wave tracking protection with up to -75 dB of noise filtration. The series design yields maximum protection, resulting in UL® Recognized clamping voltage of 330 V (120 V unit) and 800 V (230 V unit).

Operation is achieved by incorporating the latest fusing technology. The product is contained in a Type 1 enclosure for maximum safety. The LC Series has been tested and recognized by UL and cUL to UL 1449 and UL 1283 standards.

The LC mounts quickly and easily to any 1.38 in. (35 mm) DIN rail or can be flange mounted. The screw terminals provide easy connection to the power system. The small footprint of the LC provides greater installation flexibility, even in situations where space is limited.

Design Features

- Compact design provides easy mounting inside equipment cabinets.
- Green status LED provides continuous monitoring of performance.
- Series installation provides the tightest clamping and noise filtration possible.

Performance Features

Surge Capacity	L-N	L-G	N-G
40 kA/phase	20 kA	20 kA	20 kA

Catalog Number	Configuration	Voltage	Continuous Current	MCOV▲	UL Suppressed Voltage Rating (SVR)		
					L-N	L-G	N-G
TVS120LC5	1-phase, 2-wire + ground	120 V	5 A	150 V	330 V	330 V	330 V
TVS120LC10		120 V	10 A	150 V	330 V	330 V	330 V
TVS120LC15		120 V	15 A	150 V	330 V	330 V	330 V
TVS120LC20		120 V	20 A	150 V	330 V	330 V	330 V
TVS230LC5		230 V	5 A	320 V	800 V	800 V	700 V
TVS230LC10		230 V	10 A	320 V	800 V	800V	700 V
TVS230LC15		230 V	15 A	320 V	800 V	800 V	700 V
TVS230LC20		230 V	20 A	320 V	800 V	800 V	700 V

▲ MCOV=Maximum Continuous Operating Voltage

SurgeLogic® Surge Protective Devices

Product Description

Product Description—XR Series

The XR Series Surge Protective Device (SPD) provides high quality surge protection in a compact and versatile package. This product is ideal for panel builders as well as manufacturers and integrators of instrumentation cabinets for industrial, medical, and commercial applications.



The XR uses a hybrid suppression circuit that delivers 40,000 peak amps of surge protection. It also provides sine wave tracking protection and noise filtration.

Operation is achieved by incorporating the latest fusing technology. The product is contained in a Type 4x enclosure for maximum flexibility and safety. The XR Series is cUL and UL Listed under UL 1449 (Second Edition dated February 9, 2007).

Design Features

- Compact design provides easy mounting inside or outside the equipment cabinets.
- Two types of enclosures are available, with either a side or back direct nipped connector for custom mounting.
- Green status LEDs provide continuous monitoring of performance.
- An audible alarm indicates a fault condition.

Performance Features

Surge Capacity	L-N	L-G	N-G
40 kA/phase	20 kA	20 kA	20 kA

XR Series Voltage Specifications		MCOV [▲]	UL Suppressed Voltage Rating (SVR)	
Catalog Number	Service Voltage		L-N	N-G
TVS120XR40...	120/240 V, 1-phase	150 V	500 V	800 V
TVS230XR40...	230 V, 1-phase	320 V	900 V	900 V
TVS120XR...	120 V, 1-phase	150 V	500 V	800 V

▲ MCOV=Maximum Continuous Operating Voltage

Product Description—XW Series

The XW Series Surge Protective Device (SPD) is a multi-phase surge suppressor in a compact and affordable package. This product is ideal for panel builders and machine tool manufacturers. The XW Series TVSS can be used in industrial, medical, and commercial applications.



The XW uses a hybrid suppression circuit that delivers 100,000 peak amps of surge protection. It also provides sine wave tracking protection and noise filtration.

Operation is achieved by incorporating the latest fusing technology. Each metal oxide varistor (MOV) is individually fused and the product is contained in a Type 1 enclosure for increased flexibility and safety. The XW Series is UL and cUL Listed under UL 1449 (Second Edition dated February 9, 2007).

Design Features

- Compact design provides easy mounting inside or outside the equipment cabinets.
- Green status LEDs provide continuous monitoring of the three phases.
- An audible alarm indicates a fault condition.

Performance Features

Surge Capacity	L-N	L-G	N-G
100 kA/phase	50 kA	50 kA	50 kA

XR Series Voltage Specifications		MCOV [▲]	UL Suppressed Voltage Rating (SVR)			
Catalog Number	Service Voltage		L-N	L-G	N-G	L-L
TVS1XW100C	120/240 V, 1-phase	150 V	400 V	500 V	400 V	800 V
TVS2XW100C	208Y/120 V, 3-phase	150 V	400 V	500 V	400 V	800 V
TVS3XW100C	240D/120 V, 3-phase	275/150 V	700/500 V	700/500 V	500 V	800 V
TVS4XW100C	480Y/277 V, 3-phase	320 V	900 V	900 V	900 V	1800 V
TVS5XW100C	480D V, 3-phase	640 V	—	—	—	1800 V
TVS6XW100C	240D V, 3-phase	300 V	—	—	—	800 V
TVS7XW100C	380Y/220 V, 3-phase	320 V	900 V	900 V	900 V	1800 V
TVS8XW100C	600Y/347 V, 3-phase	420 V	900 V	900 V	900 V	2500 V
TVS9XW100C	600D V, 1-phase	840 V	—	—	—	2500 V

▲ MCOV=Maximum Continuous Operating Voltage

Application Information—LC, XR, And XW Series

The effects of lightning and the damage caused by lightning-generated transients are well known. The failure of sensitive electronic equipment can be attributed directly to lightning-generated transients as well as lower magnitude transients generated within a facility.

Transient voltages generated from inductive motors, pumps, electric welders, etc., may cause electronic equipment to malfunction or fail.

As a result of the above transient disturbances, it is beneficial for manufacturers to install protection within their equipment. The OEM products shown in this catalog provide a convenient means of incorporating transient voltage protection within a new or existing cabinet using a DIN rail, a direct nipped connector, or flange-mounting procedures.

Selection and Specifications

LC Series

Selection

Catalog Number	Rated Load Current	Nominal Line Voltage
TVS120LC5(C)	5 A	120 V
TVS120LC10(C)	10 A	
TVS120LC15(C)	15 A	
TVS120LC20(C)	20 A	
TVS230LC5(C)	5 A	230 V
TVS230LC10(C)	10 A	
TVS230LC15(C)	15 A	
TVS230LC20(C)	20 A	

(C)= dry contact option

General Specifications

Maximum Surge Current	40 kA
Enclosure	Type 1
Product Weight	1 lb.
Connection Method	Terminals/Spade lugs sized for 22 to 12 AWG wire
Terminal Capacity	22 to 14 AWG Stranded
Terminal Torque	30 lb-in. (3.39 N•m)
Mounting Method	DIN rail or flange mounting
Circuit Type	Series hybrid
Thermal Fusing	Yes
Sine Wave Tracking	Yes
EMI/RFI Noise Rejection	Up to -75 dB
Operating Temperature	-40° to +140°F (-40° to +60°C)
Operating Frequency	50/60 Hz
Diagnostics	Green status LED, Form C dry contacts (optional)
Product Standards	UL 1449 to UL 1449–Second Edition dated February 9, 2007, UL 1283, CSA C22.2 No. 0–M91 and No. 8–M1989, IEC 61643–1

XR Series

Selection

Catalog Number	Voltage	Mounting
TVS120XRB	120 V	Back nipple connector
TVS120XRS	120 V	Side nipple connector
TVS120XR40B	120/240 V	Back nipple connector
TVS120XR40S	120/240 V	Side nipple connector
TVS230XR40B	230 V	Back nipple connector
TVS230XR40S	230 V	Side nipple connector

Surgeloc[®] Surge Protective Devices

Selection and Specifications

General Specifications

Maximum Surge Current	40 kA/Phase
Enclosure	Type 4X
Product Weight	1.2 lbs.
Connection Method	Parallel, 10 AWG stranded wire
Thermal Fusing	Yes
Operating Temperature	-40° to +160°F (-40° to +70°C)
Operating Frequency	50/60 Hz
Diagnostics	Green status LED
Product Standards	cUL _{us} to UL 1449—Second Edition dated February 9, 2007 and to CSA C22.2 No. 0–M91

XW Series

Selection

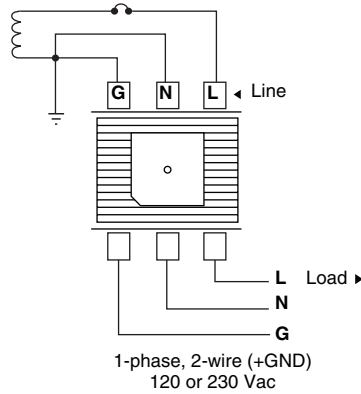
Catalog Number	Voltage	Merlin Gerin [®] Multi 9 [™] C60N Supplementary Protector			VSP20
		Rating	2 Pole	3 Pole	Quantity Fuses
TVS1XW100C	120/240 V	30 A, curve B	MG17437	—	2
TVS2XW100C	208Y/120 V	30 A, curve B	—	MG17462	3
TVS3XW100C	240D/120 V	30 A, curve B	—	MG17462	3
TVS4XW100C	480Y/277 V	30 A, curve B	—	MG17462	3
TVS5XW100C	480D V	—	—	—	3
TVS6XW100C	240D V	30 A, curve B	—	MG17462	3
TVS7XW100C	380Y/220 V	30 A, curve B	—	MG17462	3
TVS8XW100C	600Y/347 V	—	—	—	3
TVS9XW100C	600D V	—	—	—	3

General Specifications

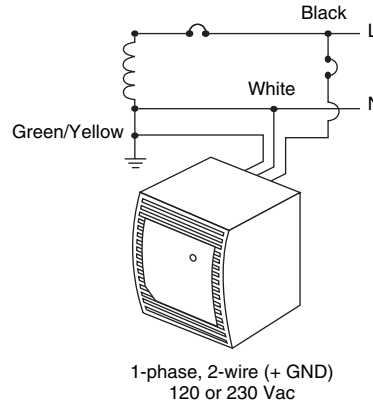
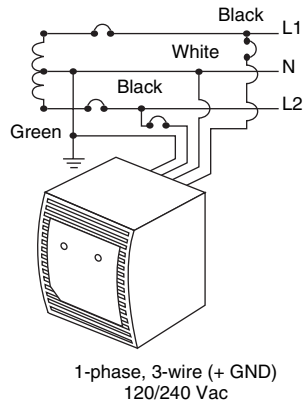
Maximum Surge Current	100 kA/Phase
Enclosure	Type 1
Product Weight	6.7 lbs.
Connection Method	Parallel, 10 AWG stranded wire
Thermal Fusing	Yes
EMI/RFI Noise Rejection	Up to -40 dB
Operating Temperature	-40° to +160°F (-40° to +70°C)
Operating Frequency	50/60 Hz
Diagnostics	Green status LEDs, dry contacts, audible alarm
Product Standards	cUL _{us} to UL 1449—Second Edition dated February 9, 2007 and to CSA C22.2 No. 0–M91

Wiring Diagrams

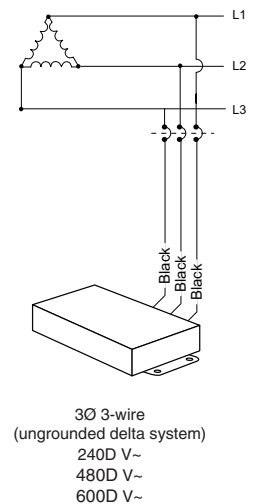
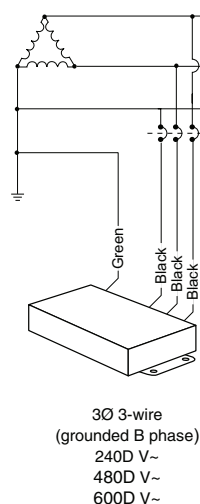
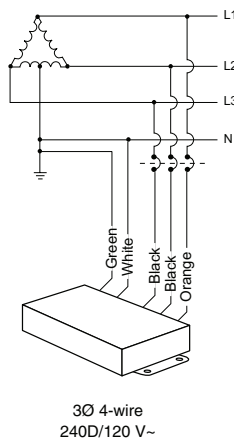
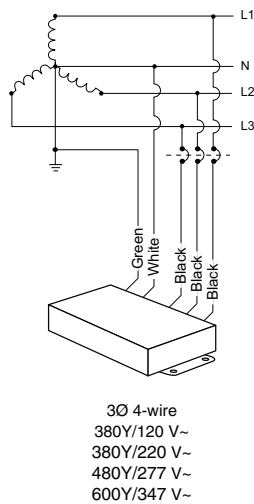
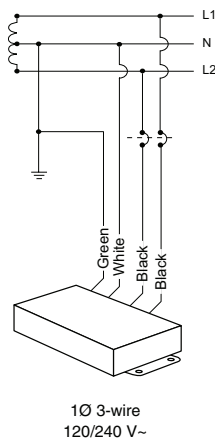
LC Series



XR Series

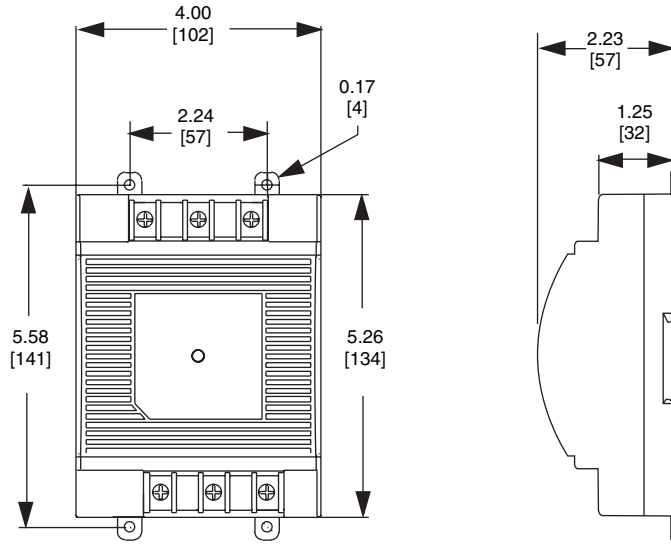


XW Series



Dimensions

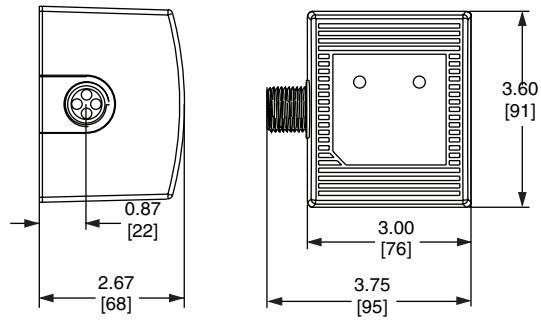
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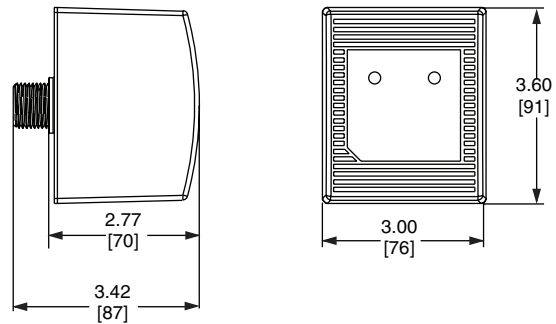
Dimensions: in.
[mm]

XR Series

Side Nipple Connector



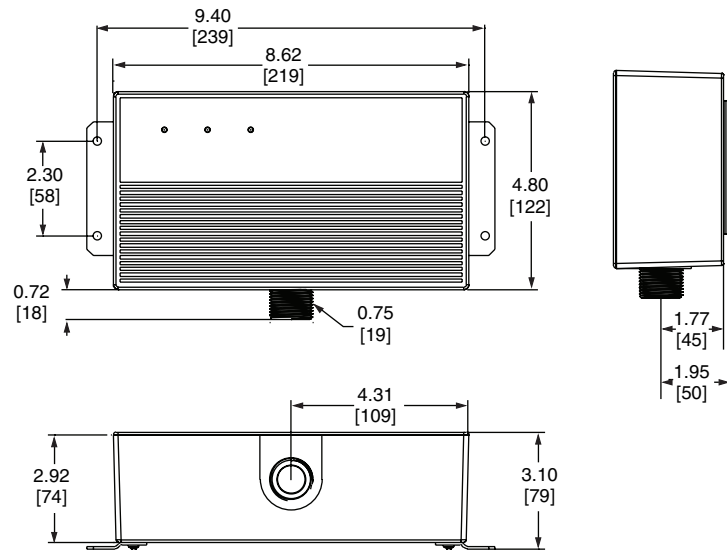
Back Nipple Connector



Dimensions: in.
[mm]

Surgelogic[®] Surge Protective Devices Dimensions

XW Series



Dimensions: in.
[mm]

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